Department of Energy
Carlsbad Field Office
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NMED Hazardous
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Mr. John E. Kieling, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505-6303

Subject: Transmittal of the Recertification Audit Report for the AMWTP, Audit A-13-01

Dear Mr. Kieling:

This letter transmits the Final Audit Report for Carlsbad Field Office (CBFO) Recertification Audit A-13-01 of the Advanced Mixed Waste Treatment Project (AMWTP) for processes performed to characterize and certify waste in accordance with the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit. Recertification Audit A-13-01 was conducted October 15-18, 2012.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

If you have any questions, please contact Mr. Dennis S. Miehls, Acting Director, CBFO Office of Quality Assurance, at (575) 234-7491.

Sincerely,

Jose R. Franco, Manager
Carlsbad Field Office

Enclosure

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cc: w/Report Narrative

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cc: w/enclosures

WIPP Operating Record	ED
CBFO QA File	ED
CBFO M&RC	ED

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

ADVANCED MIXED WASTE TREATMENT PROJECT

TRU WASTE CHARACTERIZATION AND CERTIFICATION

ACTIVITIES

IDAHO FALLS, IDAHO

AUDIT NUMBER A-13-01

October 15 - 18, 2012

Prepared by: _____ **Date:** 7/30/13
Porf Martinez, CTAC
Audit Team Leader

Approved by: _____ **Date:** 7/30/13
Dennis S. Miehls, CBFO
Acting Quality Assurance Director

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Recertification Audit A-13-01 was conducted to evaluate the adequacy, implementation, and effectiveness of Advanced Mixed Waste Treatment Project (AMWTP) transuranic (TRU) waste characterization activities performed at the Idaho National Laboratory (INL) relative to the requirements specified in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) Waste Analysis Plan (WAP), and the *CBFO Quality Assurance Program Document* (QAPD).

The audit was performed at the INL and AMWTP facilities in Idaho Falls, Idaho, October 15 through 18, 2012. The audit team concluded that, overall, the AMWTP technical and quality assurance (QA) programs, as applicable to the audited activities, were adequate in addressing WAP requirements. The audit team concluded that, overall, the defined AMWTP programs for characterizing contact-handled (CH) Summary Category Group (SCG) S3000 homogeneous solids and CH SCG S5000 debris waste were being satisfactorily implemented in accordance with the CBFO QAPD and the HWFP WAP, and were effective in achieving the desired results.

The audit team identified eight concerns during the audit as described in the interim audit report. No WAP-related conditions adverse to quality were identified as a result of the audit.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the AMWTP TRU waste characterization activities for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste.

The following general areas, as required by Attachment C6, Section C6-3 of the HWFP, were audited:

- Results of previous audits
- Changes in programs or operations
- New programs or activities being implemented
- Changes in key personnel

The following WAP-related QA elements were audited:

- Personnel Qualification and Training
- Nonconformances
- Records

The following WAP-related waste characterization technical elements were audited for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste:

- Acceptable Knowledge (AK) including waste certification (i.e., Waste Stream Profile Forms)
- Project-Level Data Validation and Verification (V&V)
- Solids Sampling and Analysis (SS&A)
- Headspace Gas Sampling and Analysis (HSG S&A)
- Real-time Radiography (RTR)
- Visual Examination (VE)
- WIPP Waste Information System/Waste Data System (WWIS/WDS)

Evaluation of adequacy of AMWTP documents was based on the current revisions of the following documents:

- *CBFO Quality Assurance Program Document,* DOE/CBFO-94-1012
- Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, EPA No. NM4890139088-TSDF, the New Mexico Environment Department

Programmatic and technical checklists were developed from the current revisions of the following documents:

- *Certification Plan for INL Transuranic Waste*, MP-TRUW-8.1
- *AMWTP Quality Assurance Project Plan*, MP-TRUW-8.2
- Related AMWTP QA and technical implementing procedures

2.2 Purpose

Audit A-13-01 was conducted to assess AMWTP waste characterization activities related to the certification of CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste for compliance to the HWFP WAP requirements. The audit team also evaluated specific QA elements relating to WAP requirements.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Courtland Fesmire	CBFO Management QA Representative
Porf Martinez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
Cindi Castillo	Auditor, CTAC
Randall Allen	Auditor, CTAC
Tammy Bowden	Auditor, CTAC
Berry Pace	Auditor, CTAC
Norm Frank	Auditor, CTAC
Roger Vawter	Auditor, CTAC
Charlie Riggs	Auditor, CTAC

Earl Bradford	Auditor, CTAC
Paul Gomez	Technical Specialist, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Charlene Roberts	Technical Specialist, CTAC
Rhett Bradford	Technical Specialist, CTAC
Prissy Martinez	Technical Specialist, CTAC
BJ Verret	Technical Specialist, CTAC

OBSERVERS

Norma Castaneda	CBFO Office of the National TRU Program
Kenneth Lickliter	CBFO Office of the National TRU Program
Steve Holmes	New Mexico Environment Department (NMED)
Ricardo Maestas	NMED
Connie Walker	NMED Contractor
Lee Beidelman	DOE Idaho
Bruce LaRue	Idaho Department of Environmental Quality (IDEQ)
Pete Johansen	IDEQ

4.0 AUDIT PARTICIPANTS

The individuals at the INL and AMWTP facilities who were contacted during the audit are identified in Attachment 1. A pre-audit meeting was held at the INL building WMF-1613 conference room, and via video conference from the AMWTP Energy Drive Facility (EDF) building EDF-259, conference room 524, in Idaho Falls, Idaho, on October 15, 2012. Daily meetings were held with AMWTP management and staff to discuss issues and audit status. The audit was concluded with a post-audit meeting held in building EDF-259, room 524, of the AMWTP EDF in Idaho Falls, Idaho, on October 18, 2012.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

This audit was performed to assess the ability of AMWTP to characterize CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste to the requirements specified in the CBFO QAPD and the HWFP WAP. The WAP-related characterization methods assessed were AK, HSG S&A, SS&A, RTR, and VE. Other WAP-related activities evaluated were project-level data V&V, data quality objective (DQO) reconciliation, the preparation of waste stream profile forms (WSPFs), WWIS/WDS data entry, training and qualification, nonconformances, and records.

The audit team concluded that the applicable AMWTP TRU waste characterization activities, as described in the associated AMWTP implementing procedures, are satisfactory in meeting WAP requirements. Attachment 2 is a list of personnel contacted during the audit by area evaluated. Attachment 3 contains the objective evidence compiled during the audit (provided in boxes). Attachment 4 is the table of

audited documents. Attachment 5 is a list of processes and equipment evaluated during the audit. Attachment 6 is the procedure revision matrix. Details of audit activities are described below.

5.2 General

5.2.1 Results of Previous Audits

The results of CBFO Recertification Audit A-12-03 of AMWTP were examined. No conditions adverse to quality (CAQ) requiring a corrective action report (CAR) were issued as a result of the referenced audit.

5.2.2 Changes in Programs or Operations

The certified VE process for characterizing CH SCG S3000 solids waste, implemented for the south boxline in the waste treatment facility, building WMF-676, is no longer being used. Procedure INST-FOI-022, *Visual Examination of S3000 Waste in the Facility*, has been deactivated.

5.2.3 New Programs or Activities Being Implemented

No new programs or new activities have been implemented since the previous audit.

5.2.4 Changes in Key Personnel

The following personnel changes have occurred since the previous audit:

- President and Project Manager changed from Dick Raaz to Dave Sandlin, Acting President and Project Manager
- QA Manager changed from Elvin Dumas to Angela Morse
- Training Manager changed from Mike Parrish to Todd Goldberg

5.3 WAP-related Quality Assurance Activities

The audit team evaluated WAP-related QA program elements specific to questions in the C6-1 checklist, and the technical activities defined in the remaining C6 checklists. Each WAP-related QA element audited is discussed in detail in the following sections. The methods used to select objective evidence are discussed, the objective evidence used to assess compliance with the WAP and CBFO QAPD is cited briefly, and the results of the assessment are provided. The following WAP-related QA elements were evaluated by the audit team:

5.3.1 Personnel Qualification and Training

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.2, Personnel Qualification and Training, as well as WAP-related requirements from

Table C6-1. The audit team conducted interviews with responsible personnel in the AMWTP Training Department. The following implementing procedures were reviewed to determine the degree to which the procedures adequately address upper-tier requirements: MP-RTQP-14.4, Rev. 18, *Personnel Qualification and Certification*; MP-RTQP-14.6, Rev. 7, *Job Analysis;* MP-RTQP-14.16, Rev. 6, *Training Program Evaluation*; MP-RTQP-14.19, Rev. 6, *Training Records Administration*; MP-Q&SI-5.8, Rev. 8, *Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists*; and LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix*. The results of the review indicate that the procedures adequately address upper-tier requirements.

Personnel training records associated with VE, RTR, HSG S&A, SS&A, AK, and site project management were examined to verify implementation of associated requirements and to verify that personnel performing characterization activities are appropriately qualified. The records reviewed provided objective evidence of AMWTP training program implementation. The audit team evaluated AMWTP Qualification/Requalification Packages (Qualification Cards) and related individual training files for the various AMWTP positions; job analysis documentation; AMWTP-Employee Training History (from the AMWTP training database (TRAIN system)); VE expert (VEE) appointment memoranda; AK expert (AKE) training for revised AK summaries; RTR operator test drum (capability demonstrations) and training container records; eye examination forms; and management assessment reports of the AMWTP training program.

No WAP-related concerns regarding personnel training and qualification were identified during the audit. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for personnel qualification and training are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.2 Nonconformances

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.3, Quality Improvement, as well as WAP-related requirements from Table C6-1. The audit team conducted interviews with representatives of the AMWTP QA program. The following implementing procedures were reviewed to determine the degree to which the procedures adequately address upper-tier requirements: MP-Q&SI-5.1, Rev. 9, *Investigation and Root Cause Analysis*; MP-Q&SI-5.3, Rev. 12, *Corrective Action*; and MP-Q&SI-5.4, Rev. 21, *Identification of Nonconforming Conditions.* The results of the review indicate that the procedures adequately address upper-tier requirements.

Randomly selected nonconformance reports (NCRs) were evaluated to ensure that nonconforming conditions were appropriately identified, documented, dispositioned, resolved, and tracked through closure. The audit team reviewed sampling of NCRs, including verifications, to ensure that AMWTP was appropriately documenting and

reporting WAP-related nonconformances (identified at the site project management level) to CBFO as required. The review indicated AMWTP is documenting and reporting WAP-related nonconformances as required.

No WAP-related concerns regarding nonconformances were identified during the audit. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for nonconformances are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.3.3 Records

The audit team verified that the AMWTP met the requirements of CBFO QAPD Section 1.5, Records, as well as WAP-related requirements from Table C6-1. The audit team evaluated the adequacy of AMWTP procedure MP-DOCS-18.2, Rev. 15, *Records Management*, with respect to the requirements of the CBFO QAPD and the WAP, and determined that the procedure contains adequate flow-down of upper-tier requirements. The results of the review indicate that the procedure adequately addresses upper-tier requirements.

The audit team interviewed records management personnel and observed activities to determine if AMWTP record storage methods were in compliance with procedural and WAP requirements. Documents for record coordinator designation and training, records transmittals, and record indices were reviewed during the evaluation. The audit team observed records management activities at the records center.

No WAP-related concerns regarding records were identified during the audit. The procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for records are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4 Technical Activities

Each technical area audited is discussed in detail in the following sections. The methods used to select objective evidence are discussed, the objective evidence used to assess compliance with the HWFP is cited briefly, and the results of the assessment are provided.

5.4.1 Table C6-1, WAP Checklist

The audit was performed to assess AMWTP's ability to manage and perform TRU waste characterization and certification activities for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The C6-1 WAP checklist addresses general program requirements from an overall management perspective. The general requirements checklist addresses both technical requirements and specific WAP-related QA programmatic requirements that, when collectively implemented, ensure effective

overall management of TRU waste characterization and certification activities. Requirements are integrated into controlled documents that will ensure the waste characterization strategy as defined in the WAP is accomplished and documented in accordance with controlled processes and procedures.

Technical activities evaluated for characterization and certification activities consisted of data-generation and project-level data V&V, AK, RTR, VE, SS&A, HSG S&A (including Performance Demonstration Program [PDP] participation), and preparation of WSPFs for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. Objective evidence was selected and reviewed to evaluate the implementation of the associated characterization activities. Batch Data Reports (BDRs), sampling records, and personnel training documentation were included in the evaluation. The audit included direct observation of actual waste characterization activities. Each characterization process involves:

- Collecting raw data
- Collecting quality assurance/quality control samples or information
- Reducing the data to a useable format, including a standard report
- Review of the report by the data generation facility and the site project office
- Comparing the data against program DQOs
- Reporting the final waste characterization information to the WIPP

The flow of data from the point of generation to inclusion in the WSPF for each characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures. Specific procedures audited and the objective evidence reviewed are described in the following sections.

During the audit, AMWTP demonstrated compliance with the waste characterization requirements of the HWFP WAP through documentation and by performing characterization activities.

Objective evidence was reviewed to ensure project-level activities were adequately performed to support waste characterization. The audit team reviewed AMWTP procedures MP-TRUW-8.14, Rev. 12, *Preparation of Waste Stream Profile Forms;* MP-TRUW-8.8, Rev. 32, *Level I Data Validation*; MP-TRUW-8.9, Rev. 24, *Level II Data Validation;* and MP-TRUW-8.25, Rev. 18, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis,* relative to project-level and random selection activities, to determine the degree to which the procedures adequately address HWFP WAP requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

BDRs were evaluated based on project-level requirements for SS&A, HSG S&A, RTR, and VE for CH SCG S3000 homogeneous solids and CH SCG S5000 debris waste. The project-level data V&V process was evaluated by reviewing the following BDRs:

Solids Sampling & Analysis (SS&A)

SSG11-00008	SSC12-00001	SSG12-00001	

Headspace Gas Sampling & Analysis (HSG S&A)

HS111-00023	HS112-00002	HS112-00005	

Real-time Radiography (RTR)

RTR11-00393	RTR12-00019	RTR12-00070	RTR12-00101

Visual Examination (VE)

VEB11-00929	VEB12-00555	VEB12-00711	VEB12-00747

The audit team evaluated the random selection process for HSG S&A and SS&A. Random selection documentation for HSG samples and their associated BDRs were evaluated for the supercompacted SCG S5000 debris waste stream BN510.1, for Boxline Lots 2 & 3, and random selection documentation for solids samples for SCG S3000 solids waste stream BNINW216, First/Second Stage Sludge for Lot 21. The evaluation determined that the random selection process for HSG S&A and SS&A is being performed in accordance with applicable procedures.

Procedures and objective evidence were reviewed to ensure that AMWTP can adequately perform data reconciliation and properly prepare WSPFs. A review was performed on the CH SCG S5000 debris and CH SCG S3000 homogeneous solids WSPF/Characterization Information Summary for waste streams BNINW216, First/Second Stage Sludge; BNINW218, Building 374 Sludge; BN835, Solidified Acid/Caustic Waste; BN510, Supercompacted Debris Waste; BN004, Special Setups Waste; BN836, Cemented Sludge; BN222, Solidified Plutonium Recovery Incinerator Waste; BN510.1, Supercompacted Debris Waste; and BN600, AMWTP WMF-676 PCB Contaminated Debris. The results of the review of the above referenced documents indicate that AMWTP is completing WSPFs in accordance with applicable requirements.

No WAP-related concerns were identified during the audit. The audit team verified that AMWTP is satisfactorily implementing the program requirements from an overall management perspective, including the project-level data V&V process to characterize and certify waste for disposal in accordance with HWFP WAP requirements.

Overall, the procedures reviewed and objective evidence assembled and evaluated during the audit provided evidence that procedures are adequately established for compliance with HWFP WAP requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.2 Table C6-2, Solids and Soils/Gravel Sampling Checklist

The audit team evaluated the AMWTP's ability to characterize CH SCG S3000 homogeneous solids waste and CH SCG S4000 soils/gravel waste using the solids sampling methods of coring and obtaining representative grab samples. The AMWTP

has the capability to sample both CH SCG S3000 homogeneous solids waste and CH SCG S4000 soils/gravel wastes.

The audit team evaluated the following AMWTP implementing procedures: MP-TRUW-8.17, Rev. 7, *Co-Located Core Sampling Control Charts*; INST-OI-16, Rev. 40, *Drum Coring Operations*; MP-TRUW-8.34, Rev. 8, *WIPP Sample Transfers*; INST-OI-73, Rev. 13, *Manual Drum Coring Operations*; INST-OI-75, Rev. 11, *Container-in-Container Sampling*; MP-TRUW-8.8, Rev. 32, *Level I Data Validation*; and LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix,* relative to solids and soils/gravel sampling activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

AMWTP solids sampling activities were evaluated by examining two BDRs, SSG12-00004 and SSC12-00004. No sampling operations were observed during this audit. The audit team toured building WMF-634, Coring Facility, and examined coring tools and storage of sampling equipment and samples. The audit team reviewed training records for solids sampling operators and verified that their required training and qualifications had been achieved and were current. Equipment blank records were evaluated, sample tags were checked, custody seals were examined, and control charts were verified to be compliant with applicable requirements.

The AMWTP performs its own SCG S3000 solids sampling and performs SCG S3000 solids and SCG S4000 soils/gravel waste sampling for other generator sites. The AMWTP retains responsibility for the accuracy and completeness of SCG S3000 BDRs by performing project-level data V&V. Solids analysis was not evaluated as part of this audit. The AMWTP utilizes the services of the INL analytical laboratory for analysis of solids samples. The INL laboratory program is audited and approved by CBFO and is currently qualified and certified.

No WAP-related concerns were identified in the evaluation of solids and soils/gravel sampling during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 solids and CH SCG S5000 debris waste using the solids and soils/gravel sampling process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.3 Table C6-3, Acceptable Knowledge Checklist

The audit team evaluated the AK process for characterizing CH SCG S5000 debris and CH SCG S3000 homogeneous solids wastes. For the evaluation, the audit team used the WAP Table C6 checklists, primarily checklist C6-3, for demonstration of HWFP compliance. Two waste streams were examined during the audit, including S5000 mixed waste debris stream BN510.1, the supercompacted debris waste stream (RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste*

(BN510.1)) and an S3000 mixed waste solids stream (RPT-TRUW-63, *Acceptable Knowledge Summary for Cemented Sludge (BN836)*), a waste stream generated at the Mound Plant.

The audit team evaluated the following AMWTP implementing procedures: MP-TRUW-8.1, Rev. 22, *Certification Plan for INL Transuranic Waste*; MP-TRUW-8.2, Rev. 16, *Quality Assurance Project Plan*; MP-TRUW-8.11, Rev. 24, *Data Reconciliation*; MP-TRUW-8.13, Rev. 24, *Collection, Review, and Management of Acceptable Knowledge Documentation*; and MP-TRUW-8.14, Rev. 12, *Preparation of Waste Stream Profile Forms,* relative to AK activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

Numerous documents from the AK record that demonstrate adherence to the applicable requirements were reviewed and compiled as objective evidence, including relevant AK summary reports, WSPFs and associated attachments, AK source document summaries, and BDRs from characterization testing. Random container selection memos for HSG and solids sampling lots, as appropriate, were reviewed along with corresponding HSG and solids analysis summary reports and data reconciliation packages that compared the results of characterization testing with the AK record. In addition, the audit team examined AK discrepancy resolution documentation for discrepancies in the AK record and the resolution of discrepancies identified during characterization testing. Further, the audit team reviewed NCRs dealing with the identification and treatment of prohibited items.

In addition to the respective AK summary reports for the two waste streams (RPT-TRUW-83, Rev. 3, and RPT-TRUW-63, Rev. 6), WAP-required and/or supporting information from AK upper-tier documents was reviewed by the audit team including RPT-TRUW-06, *AMWTP Baseline AK for Newly Generated Waste*; RPT-TRUW-13, *AK Knowledge Document for INL Stored TRU Waste-Mound Plant Waste*; RPT-TRUW-12, *AMWTP Waste Stream Designations*; RPT-TRUW-07, *Determination of Radioisotopic Content in TRU Waste Based on AK*; and RPT-TRUW-05, *Waste Matrix Code Reference Manual*. The audit team examined WAP-compliant AK accuracy reports, and the most recent internal surveillance report. Requisite training records were reviewed for AKEs and site project managers (SPMs) and found to be compliant with applicable training requirements.

A total of five drums were tracked for the WAP-required traceability exercise, including two drums from the BN836 waste stream, one of which was part of the latest SS&A lot, and three drums from the supercompacted waste stream BN510.1, with two of those drums from distinct HSG S&A lots for the boxline process in the AMWTP facility. In addition to HSG S&A and SS&A BDRS, the relevant VE and RTR characterization BDRs were also examined. The audit team also compiled traceability data from active and historic waste container databases.

No WAP-related concerns were identified in the evaluation of AK activities during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 solids and CH SCG S5000 debris waste using the AK process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.4 Table C6-4, Headspace Gas Checklist

The audit team reviewed AMWTP implementing procedures MP-TRUW-8.8, Rev. 32, *Level I Data Validation*; MP-TRUW-8.25, Rev. 18, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*; INST-OI-43, Rev. 22, *HGAS Sampling and Analysis Operations*; INST-OI-45, Rev. 17, *Drum Filter Installation*; and INST-OI-50, Rev. 14, *WMF-615 Filter Insertion Operations*, relative to HSG sampling activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

The audit team evaluated AMWTP operations for HSG S&A using an automated online sampling and analytical system with gas chromatography/mass spectrometry (GC/MS) and gas chromatography/thermal conductivity detector (GC/TCD). HSG S&A operations were evaluated by observation, by examining the equipment, by conducting personnel interviews, and by reviewing HSG S&A BDRs. The audit team reviewed BDRs HS111-00023 and HS112-00002. The results of the review indicated that the BDRs were complete and compliant with applicable requirements. The audit team verified that AMWTP has successfully participated in the latest PDP, Cycle 26A. The determination of method detection limits and performance and accuracy studies were verified compliant to requirements. Laboratory logbooks, standard gas certifications, and the current WIPP-approved equipment were audited and found to be compliant. Measuring and test equipment was audited and found to be acceptable. Training and qualification of sampling individuals was confirmed to be acceptable to the AMWTP training program. Random sampling documentation was provided and evaluated to indicate compliance to the requirements for the random selection process. Confirmation of sample size and containers selected for waste stream BN510.0, Boxline Lot 2, and waste stream BN510.1 Boxline Lot 3, were verified to be compliant.

No WAP-related concerns were identified in the evaluation of HSG sampling activities during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 solids and CH SCG S5000 debris waste using the HSG sampling process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.5 Table C6-5, Radiography Checklist

The audit team evaluated the adequacy, implementation, and effectiveness of AMWTP characterization and certification of CH SCG S5000 debris waste and CH SCG S3000 solids waste using the RTR characterization process.

The audit team reviewed AMWTP procedures MP-TRUW-8.8, Rev. 32, *Level I Data Validation*; INST-OI-12, Rev. 49, *Real-Time Radiography Operations (Drum);* and INST-OI-81, Rev. 10, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*, relative to RTR activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

The audit team evaluated RTR operator required test and training drum audio/video media for four RTR operators. Records of RTR operator training and qualification, including test and training drum documentation, were examined. The audit team verified that RTR operators were appropriately qualified as required for compliance with training requirements.

The audit team evaluated RTR operations in building WMF-634. RTR operations for the scan of container number 10202305 was observed using RTR Unit 101 for S3000 solids waste. The audit team also examined RTR operational log entries for both RTR Units 101 and 106 (Unit 106 was out of service at the time of the audit) to verify logbook entries were logged correctly and reviewed by the facility shift supervisor as required. Both RTR units are located in building WMF-634 and are appropriately equipped with the required components.

The audit team examined the following RTR BDRs:

RTR11-00378	RTR11-00387	RTR11-00401	RTR11-00414
RTR11-00426	RTR11-00442	RTR12-00015	RTR12-00029
RTR12-00054	RTR12-00081	RTR12-00096	

No WAP-related concerns were identified in the evaluation of RTR activities during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 solids and CH SCG S5000 debris waste using the RTR process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.6 Table C6-6, Visual Examination Checklist

The audit team evaluated the adequacy, implementation, and effectiveness of AMWTP characterization and certification of CH SCG S5000 debris waste and CH SCG S3000 solid waste using the VE characterization process.

The audit team reviewed procedures MP-TRUW-8.8, Rev. 32, *Level I Data Validation*; INST-OI-34, Rev. 27, *Non-Facility Visual Examination Operations;* INST-FOI-17, Rev. 25, *Facility Visual Examination Operations*; INST-FOI-20, Rev. 36, *Supercompactor and Post-Compaction Operations*; and LST-RTQP-03-IM, Rev. 0, *WIPP Training Requirements Implementation Matrix*, relative to VE activities, to determine the degree to which procedures adequately address upper-tier requirements. The results of the review indicate that the procedures adequately address HWFP WAP requirements.

The certified VE process for characterizing SCG S3000 solids waste, implemented for the south boxline in the waste treatment facility, building WMF-676, is no longer being used. Procedure INST-FOI-022, *Visual Examination of S3000 Waste in the Facility*, has been deactivated.

AMWTP uses the two-operator VE characterization method in which VE is performed by two qualified operators who examine the waste and place it into containers.

The audit team conducted interviews with VE operators and reviewed training and qualification records. The audit team toured building WMF-676 where boxline VE operations are performed. VE operations were not being performed at time of audit in the boxline for S5000 debris waste. The audit team also examined VE operational logbook entries for both boxlines and verified entries were logged correctly and reviewed by the facility shift supervisor as required.

The audit team examined the following VE BDRs:

VEB12-00044	VEB12-00200	VEB12-00540	VEB12-00725
VEB12-00764	VEB12-00766	VEB12-00941	VNC12-00156

The audit team examined training records for VE operators/independent technical reviewers (ITRs) and SPMs, and confirmed the appointment of VEEs. The audit team verified that VE operators, ITRs, and SPMs were appropriately qualified as required.

No WAP-related concerns were identified in the evaluation of VE activities during the audit. The procedure reviews, field observations, and document reviews provided evidence that the applicable requirements for characterizing CH SCG S3000 solids and CH SCG S5000 debris waste using the VE process are adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.4.7 WWIS/WDS

The audit team conducted interviews with responsible personnel and reviewed AMWTP implementing procedure MP-TRUW-8.5, Rev. 28, *TRU Waste Certification*, relative to WWIS/WDS data entry, to determine the degree to which the procedure adequately addresses HWFP WAP WWIS/WDS requirements. The results of the review indicate that the procedure adequately addresses HWFP WAP requirements.

The audit team reviewed documentation of WDS access requests and requests for removal from WDS access for AMWTP waste certification official (WCO) personnel. The audit team determined that appropriate personnel have been granted access to the WDS and are adequately trained in WDS operations. Access control to WDS applications is established using AMWTP user identification and passwords for network/server access and WDS assigned access user names and passwords.

The audit team observed data entry and uploading to the WDS Offsite Shipping Module (OSM) and reviewed selected documentation packages to provide objective evidence of data entry into the WDS certification module and the OSM. The audit team determined that WCOs properly enter data directly into WDS characterization and certification modules. Data entry is properly performed to complete characterization data and submit it for certification.

No WAP-related concerns were identified in the evaluation of WWIS/WDS activities during the audit. The procedure reviewed and objective evidence assembled and evaluated during the audit provided evidence that the applicable requirements for WWIS/WDS are adequately established for compliance with HWFP WAP WWIS/WDS requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

6.0 CORRECTIVE ACTIONS, OBSERVATIONS, AND RECOMMENDATIONS

6.1 Corrective Action Reports

During the audit, the audit team may identify CAQs, as defined below, and document such conditions on CARs.

> *Condition Adverse to Quality (CAQ) – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.*
>
> *Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the Quality Assurance (QA) program.*

No WAP-related CARs were issued during this audit.

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. Audit team members, the audit team leader (ATL), and the CBFO QA representative evaluate the CAQs to determine if they are significant using the following definitions:

> *CAQ – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.*
>
> *Significant CAQ – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the QA program.*

Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL and the CBFO QA representative, determines if the CAQ is an isolated case requiring only remedial action and therefore can be corrected during the audit. Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL and the CBFO QA representative, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the CBFO QA representative categorizes the condition as corrected during audit (CDA) according to the definition below.

> *CDAs – Isolated deficiencies that do not require a root cause determination or actions to preclude recurrence. Correction of the deficiency can be verified prior to the end of the audit. Examples include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or not dated (isolated), and one or two individuals that have not completed a reading assignment.*

No WAP-related CDAs were corrected during this audit.

7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

During the audit, the audit team may identify potential problems or suggestions for improvement that should be communicated to the audited organization. The CBFO QA representative evaluates these conditions and classifies them as Observations or Recommendations using the following definitions.

> *Observation – A condition that, if not controlled, could result in a CAQ.*
>
> *Recommendation – Suggestion that is directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.*

Once a determination is made, the CBFO QA representative categorizes the condition appropriately.

7.1 Observations

No WAP-related Observations were identified during this audit.

7.2 Recommendations

No WAP-related Recommendations were identified during this audit.

8.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: Personnel Contacted During the Audit by Subject Area
Attachment 3: Objective Evidence Compiled During the Audit (provided in boxes)
Attachment 4: Table of Audited Documents
Attachment 5: List of Processes and Equipment Evaluated During the Audit
Attachment 6: Procedure Revision Matrix

U.S. Department of Energy
Carlsbad Field Office

CONTENT MAP

Final Audit Report of Audit A-13-01 of the Advanced Mixed Waste Treatment Project (AMWTP) Waste Characterization and Certification Program

Audit Number A-13-01
October 15 – 18, 2012

CONTENT MAP

This box contains the Final Audit Report of CBFO Audit A-13-01 of the of the AMWTP Quality Assurance Program and the AMWTP Transuranic (TRU) Waste Characterization and Certification Program conducted October 15-18, 2012. The box also contains a list of objective evidence used to conduct the audit. The documents have been organized into color-coded folders, one each for the AMWTP Implementing Procedures (purple folder), Final Audit Report (manila folder), the C-6 Checklist (brown folder), General Information (green folder), Solids and Soils/Gravel Sampling (light blue folder), Acceptable Knowledge (blue folder), Headspace Gas (brown folder), Real-Time Radiography (red folder), and Visual Examination (yellow folder). The list below identifies each document by name and number and indicates where each may be found.

CONTENT MAP	**Black Folder**

Final Audit Report	**Manila Folder**

Final Audit Report
- Attachment 1 – Personnel Contacted During the Audit
- Attachment 2 – Personnel Contacted During the Audit by Subject Area
- Attachment 3 – Objective Evidence Compiled During the Audit (provided in boxes)
- Attachment 4 – Table of Audited Documents
- Attachment 5 – Lists of Processes and Equipment Evaluated During the Audit
- Attachment 6 – Procedure Revision Matrix

C6 Checklist	**Brown Folder**
C6-1	Waste Analysis Plan (WAP) Checklist
C6-2	Solids and Soils/Gravel Sampling (SOL) Checklist
C6-3	Acceptable Knowledge (AK) Checklist
C6-4	Headspace Gas Checklist
C6-5	Radiography (RTR) Checklist
C6-6	Visual Examination (VE) Checklist

AMWTP TRU Program Implementing Procedures Audited Purple Folder
See Final Report Attachment 4 for List of Audited AMWTP Procedures

Attachment 3 - Objective Evidence	
General Information (Checklist C6-1) Waste Analysis Plan (WAP)	**Green Folder**
GEN1	RTR Batch Data Reports - RTR11-00393, RTR12-00019, RTR12-00070, and RTR12-00101
GEN2	VE Batch Data Reports - VEB11-00929, VEB12-00555, VEB12-00711, and VEB12-00747
GEN3	Solids Batch Data Reports - SSC12-00001, SSG11-00008, and SSG12-00001
GEN4	HSG Batch Data Reports - HS112-00002, HS112-00005, and HS111-

	00023
GEN5	AK Source Document Review Summaries
GEN6	Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot 21-SPC-007-11 Sampling Report for BNINW216, Lot 21
GEN7	Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2-SPC-001-12; Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3-SPC-002-12; Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2-SPC-007-12; Preliminary Statistics of Headspace Gas Sampling for BN510.1 WS – NDK-001-12
GEN8	AMWTP Surveillance Reports
GEN9	Nonconformance Reports - 67075, 70341, 71445 & 73050
GEN10	Nonconformance Reports - 68515, 71820 & 72480
GEN11	Nonconformance Reports - 38207, 66282, 71804, 72751, 72081, 72223 & 72461
GEN12	Waste Certification Data Entry Form (WCDEF) and Offsite Shipping Module (OSM) for containers: BN10107499, BN10376540, BN10432952, BN10463815, and BN10449002
GEN13	Reconciliation with Data Quality Objectives for WSPF BNINW216.277, Rev. 1; WSPF BN510.1 (lot numbers BN510.1.0113; BN510.1.0174; BN510.1.0151)
GEN14	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.)
GEN15	Qualification records for selected CCP personnel.
GEN16	Hazardous Waste Manifest - 001600433GBF
GEN17	Hazardous Waste Manifest - 001600458GBF
Solids and Soils/Gravel Sampling (Checklist C6-2)	**Light Blue Folder**
SOL1	Batch Data Report - SSG12-00004
SOL2	Batch Data Report - SSC12-00004
SOL3	Design drawings and schematics for automated coring
SOL4	Design drawings and schematics for polycarbonate liners
SOL5	American Diamond Tool cleaning procedure
SOL6	American Diamond Tool Equipment Sampling Blank Procedure
SOL7	Sampling Batch SG12-00004 Cleaning Certificate of Analysis
SOL8	Sampling Batch SSC12-00004 Cleaning Certificate of Analysis
SOL9	Coring spare parts list
SOL10	Sample ID examples
SOL11	Custody Seal example
SOL12	Chain of Custody Records for Solids Sampling
SOL13	AMWTP SOW
SOL14	Chain of Custody Records for Solids Sampling
SOL15	Co-located Solid Sampling F-Test Results-JHK-002-10 Co-located Core Sample Control Charts-JHK-002-11

Acceptable Knowledge (Checklist C6-3)	Blue Folder
AK1	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3
AK2	AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6
AK3	AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14
AK4	AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7
AK5	Waste Stream Profile Form and attachments for waste stream BN510.1
AK6	Waste Stream Profile Form and attachments for waste stream BN836
AK7	Waste Matrix Code Reference Manual, Rev. 30
AK8	AWMTP Waste Stream Designations, RPT-TRUW-12, Rev. 18
AK9	AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1and BN836
AK10	AK Source Document Reference List
AK11	AK Source Document Summaries for waste stream BN510.1
AK12	AK Source Document summaries for waste steam BN836
AK13	NCRs for prohibited items
AK14	AK Discrepancy Resolutions in the AK record (AK-14)
AK15	AK Discrepancy Resolutions at Characterization and AK Reevaluations
AK16	WTS Database Container Inventory and Screenshots
AK17	HSG Random Container Selection Memos for waste stream BN510.1
AK18	HSG Sampling Report for BN510.1
AK19	Solids Random Container Selection Memos for waste stream BN836
AK20	Solids Sampling Report for BN836
AK21	Data Reconciliation reports for BN510.1
AK22	Database spreadsheet (Electronic Hold on Container)
AK23	“Hold” Tag
AK24	Waste Material Parameter Weight Estimate memos for waste streams BN510.1 and BN836
AK25	Management Assessment Status Report
AK26	AK Accuracy Assessment by waste streams BN510.1 and BN836
AK27	Batch Data Report - RTR06-00548
AK28	Batch Data Report - RTR06-00062
AK29	Batch Data Report - VEB11-00835
AK30	Batch Data Report - VEB11-00837
AK31	Batch Data Report - VEB12-00021
AK32	Batch Data Report - VEB12-00020
AK33	Batch Data Report - VEB12-00649
AK34	Batch Data Report - VEB12-00650
AK35	Batch Data Report - VEB12-00651
AK36	Batch Data Report - HS111-00023
AK37	Batch Data Report - HS112-00002
AK38	Batch Data Report - SSC07-00101
AK39	Batch Data Report - ALD07014V
AK40	Batch Data Report - ALD07011S
AK41	Batch Data Report - ALD07018M
AK42	Batch Data Report - ALD07007N

AK43	Training/Qualification records for Acceptable Knowledge personnel performing characterization related activities
Headspace Gas (Checklist C6-4)	**Brown Folder**
HSG1	Batch Data Report - HS111-00023
HSG2	Batch Data Report - HS112-00002
HSG3	PDP Memo 6/4/12
HSG4	Batch Data Report HS111-00014
HSG5	Random Selection Memo 1/5/12
HSG6	Random Selection Memo 1/9/12
Real-Time Radiography (Checklist C6-5)	**Red Folder**
RTR1	Batch Data Reports - RTR11-00378, RTR11-00387, RTR11-00401, RTR11-00414, RTR11-00426, RTR11-00442, RTR12-00015, RTR12-00029, RTR12-00054, RTR12-00081, and RTR12-00096
RTR2	RTR Operator Training Records
RTR3	Nonconformance Reports – 68025 and 68706
Visual Examination (Checklist C6-6)	**Yellow Folder**
VE1	Batch Data Reports - VEB12-00044, VNC12-00156, VEB12-00200, VEB12-00540, VEB12-00725, VEB12-00764, VEB12-00766, and VEB12-00941
VE2	Training Records for VE operators
VE3	SMP-01-11 AMWTP Project VEE Designee

Table C6-1 Waste Analysis Plan (WAP) Checklist
AMWTP Recertification Audit A-13-01
October 15-18, 2012

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Waste Analysis Plan (WAP) General Checklist for use at DOE's Generator/Storage Sites

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	WASTE STREAM IDENTIFICATION					
1	Does the generator/storage site define "waste stream" as waste materials that have common physical form that contain similar hazardous constituents, and that are generated from a single process or activity? (Attachment C Section C-0a)	MP-TRUW-8.13, S. 3.3.5 (Note above)	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)**	Y	
2	Are procedures in place to ensure that the generator/storage site assigns one of the Summary Category Groups (S3000-homogeneous solids, S4000-soils/gravel, S5000-debris waste) to each waste stream? (Section C-1b)	MP-TRUW-8.13, App. B I.C.a MP-TRUW-8.14, S. 3.1	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.2.7 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2 7 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
3	Are procedures in place to ensure that the generator/storage site assigns Waste Matrix Code Groups (e.g., solidified inorganics, solidified organics, salt waste, soils, combustible waste, filters, graphite, heterogeneous debris waste, inorganic nonmetal waste, lead/cadmium metal, uncategorized metal) to each waste stream? (Section C-0a)	MP-TRUW-8.13, App. B I.C.b MP-TRUW-8.14, S. 3.1	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2.8 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2.8 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)**	Y	
4	Are procedures in place to ensure that the generator/storage site assigns a Waste Stream WIPP Identifier (ID) to each waste stream? (Section C3-12b(1))	MP-TRUW-8.14, S. 3.1	Y	Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4a	Are procedures in place for generator/storage sites to submit an AK Sufficiency Determination (Determination Request) to the Permittees to meet all or part of the waste characterization requirements including: • All information specified in Permit Attachment C4, Section C4-3d • Identification of relevant hazardous constituents, and correctly identifies all toxicity characteristic and listed hazardous waste numbers • All hazardous waste number assignments must be substantiated by supporting data and, if not, whether this lack of substantiation compromises the interpretation • Resolution of data discrepancies between different AK sources must be technically correct and documented • The AK Summary includes all the identification of waste material parameter weights by percentage of the material in the waste stream, and determinations are technically correct • All prohibited items specified in the TSDF-WAC should be addressed, and conclusions drawn are technically adequate and substantiated by supporting information • If the AK record includes process control information specified in Permit Attachment C4, Section C4-3b, the information should include procedures, waste manifests, or other documentation demonstrating that the controls were adequate and sufficient. • The site must provide the supporting information necessary to substantiate technical conclusions within the Determination Request, and this information must be correctly interpreted. (Section C-0b, Section C4-3d)	MP-TRUW-8.13, S. 3.5	Y	N/A	N/A	AMWTP is not seeking an AK Sufficiency Determination for the waste streams that were audited.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4b	If a generator/storage site does not submit a Determination Request or if the Determination Request is not approved, are procedures in place for the generator/storage site to perform radiography or VE on 100% of the containers in a waste stream and chemical sampling and analysis on a representative sample of the waste stream using headspace gas sampling and analysis (for debris waste) or solids sampling and analysis (for homogeneous solid or soil/gravel waste) as specified in Permit Attachments C1 and C2? (Section C-0b)	MP-TRUW-8.2, S. C-0b MP-TRUW-8.9, S. 2.0 MP-TRUW-8.11 (All) MP-TRUW-8.13, S. 3.6	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
4c	Are procedures in place to ensure that the generator/storage sites complete a Waste Stream Profile Form (WSPF) and Characterization Information Summary (CIS) as specified in Permit Attachment C3, Sections C3-12b(1) and C3-12b(2)? (Section C-0c)	MP-TRUW-8.14, S. 3.1	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
5	Are procedures in place to ensure that the generator/storage site divides waste streams into waste stream lots if all of the waste within a waste stream is not accessible for sampling and analysis, as required, at one time? If so, is the division of waste streams into waste stream lots based on staging, transportation and handling issues? (Section C-1a)	MP-TRUW-8.11, S. 3.1, Form-1195 (WSPF) and Form-1598 (CIS) MP-TRUW-8.14, S. 3.1 & 4.0	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
6	Are procedures in place to ensure that the generator/storage site assigns EPA hazardous waste numbers associated with the waste? If so, do these assigned EPA hazardous waste numbers correspond to the permitted EPA hazardous waste numbers in Table C-9? Are there any assigned EPA hazardous waste numbers that are not permitted EPA hazardous waste numbers on the Table C-9? If so, did the generator/storage site reject the waste for shipment to and disposal at WIPP? Did the generator assign a state hazardous waste codes or numbers? If so, is it assigned to waste that is permitted at WIPP? (Section C-1b)	MP-TRUW-8.13, S. 3.4.2	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)**	Y	
7	Are procedures in place to ensure that Summary Category Groups are defined as follows: S3000- Homogeneous solids are solid material, inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste excluding soils, that do not meet NMED criteria for classification as debris and are at least 50 percent by volume homogeneous solids or comprise the majority of the waste stream S4000- Waste streams that are at least 50 percent by volume soil/gravel, or comprise the majority of the waste stream S5000- Waste streams that are at least 50 percent volume materials that meet the NMED criteria for debris, or comprise the majority matrix of materials. The criteria for debris are solid materials intended for disposal that exceed 2.36 inch particle size and is a manufactured object, plant or animal matter, or natural geologic material. Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material. (Section C-0a)	MP-TRUW-8.13, S. 4.0	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.2.7 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2 7 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
8	Does the generator/storage facility have procedures in place to ensure that the following waste characterization parameters will be obtained: • Determination whether TRU mixed waste streams comply with the applicable provisions of the TSDF-WAC • Determination whether TRU mixed wastes exhibit a hazardous characteristic per 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart C) • Determination whether TRU mixed wastes are listed per 20.4.1.200 NMAC (incorporating 40 CFR 261 Subpart D) • Estimation of waste material parameter weights (Section C-2)	Bullet 1: MP-TRUW-8.13, S. 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17 (all) Bullets 2:&3: MP-TRUW-8.13, S. 3.5.2 Bullet 4: MP-TRUW-8.13, S. 3.5.1.6 & Appendix B, I.M MP-TRUW-8.9, S.1.0, 3.1 and 3.2 MP-TRUW-8.13, S. 3.3.3, 3.3.7, 3.5.1.6, 3.5.2, 3.5.3, & Appendix B, I.M	Bullets 1-4: Y	Bullet 1: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.7.2.6 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.5 & 1.6.2 **(AK-2)** NCRs for prohibited items **(AK-13)** Waste Matrix Code Reference Manual, Rev. 30 **(AK-7)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** Bullets 2&3: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)** Bullet 4: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev.1, S. 1.4.5 & Table 2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.6 & Table 1-3 **(AK-2)**	Bullets 1-4: Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Waste Material Parameter Weight Estimate memos for waste streams BN510.1 and BN836 **(AK-24)** <u>RTR BDRs:</u> RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** <u>VE BDRs:</u> VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** <u>SS BDRs:</u> SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** <u>HSG BDRs:</u> HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge S3000 AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge S3000 AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste S3000		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups S3000 AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge S3000 AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste S3000 AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) S5000 AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste S5000 **(GEN-5)**		
9	Are procedures in place to ensure that waste streams identified to contain incompatible materials or materials incompatible with waste containers cannot be shipped unless treated to remove the incompatibility? (Section C-1c)	MP-TRUW-8.13, S. 3.3.7 & 3.5.6 INST-FOI-17 (All) MP-Q&SI-5.4 (All)	Y	NCRs for prohibited items **(AK-13)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** "Hold" Tag **(AK-23)** Database spreadsheet (Electronic Hold on Container) **(AK-22)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
10	Are procedures in place to ensure that the generator/storage site uses acceptable knowledge and, as necessary, headspace-gas sampling and analysis, radiography, (visual examination), and homogeneous waste sampling and analysis as specified in Table C-5? (Section C-3)	MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4) MP-TRUW-8.9, S. 3.1 and 3.2 MP-TRUW-8.14, S. 3.0	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** Traceability BDRs: <u>RTR</u> RTR06-00548 **(AK-27)** RTR06-00062 **(AK-28)** <u>VE</u> VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** <u>HSG S&A</u> HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** <u>Solids S&A</u> SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** <u>RTR BDRs:</u> RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** <u>VE BDRs:</u> VEB11-00929 VEB12-00555 VEB12-00711	Y	Solids Analysis was not performed for AMWTP waste streams since the last audit.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				VEB12-00747 **(GEN-2)** <u>SS BDRs:</u> SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** <u>HSG BDRs:</u> HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
	UNACCEPTABLE WASTE					

12	Are procedures in place to ensure that the generator/storage site ensures, through administrative and operational procedures and characterization techniques, that waste containers do not include the following unacceptable waste:
	• liquid waste is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable
	  • Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination
	  • Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited
	  • Containers with Hazardous Waste number U134 assigned shall have no observable liquid
	  • Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits
	• non-radionuclide pyrophoric materials
	• hazardous wastes not occurring as co-contaminants with TRU wastes (non-mixed hazardous wastes)
	• wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes
	• wastes containing explosives or compressed gases (continued below)
		MP-TRUW-8.9, S. 3.1
		MP-TRUW-8.11, S. 3.2
		MP-TRUW-8.13, S. 3.3.3, 3.3.7, 3.5.1.6, 3.5.2 & 3.5.3
		INST-FOI-17, (All)
		INST-OI-12, (All)
			Y	RTR BDRs:
				RTR11-00393
				RTR12-00019
				RTR12-00070
				RTR12-00101
				(GEN-1)
				VE BDRs:
				VEB11-00929
				VEB12-00555
				VEB12-00711
				VEB12-00747
				(GEN-2)
				SS BDRs:
				SSC12-00001
				SSG11-00008
				SSG12-00001
				(GEN-3)
				HSG BDRs:
				HS112-00002
				HS112-00005
				HS111-00023
				(GEN-4)
				AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge
				AK Source Document Review Summary: P420A Rev. 7 with WSPF and
					Y	Solids Analysis was not performed for AMWTP waste streams since the last audit.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
12a	• wastes with polychlorinated biphenyls (PCBs) not authorized under an EPA PCB waste disposal authorization • wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers of D001, D002, or D003) • waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8, unless specifically approved through a Class 3 permit modification • any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination of a statistically representative subpopulation of the wastes stream in each shipment pursuant to Permit Attachment C7 • any waste container from a waste stream which has not been preceded by an appropriate, certified Waste Stream Profile Form (see Section C-1d) (Section C-1c)	MP-TRUW-8.9, S. 3.1 MP-TRUW-8.11, S. 3.2 MP-TRUW-8.13, S. 3.3.3, 3.3.7, 3.5.1.6, 3.5.2 & 3.5.3 INST-FOI-17, (All) INST-OI-12, (All)	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document	Y	Solids Analysis was not performed for AMWTP waste streams since the last audit.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	WASTE ACCEPTANCE CONTROL					
14	Are procedures in place to ensure that the generator/storage site uses a Waste Stream Profile Form (WSPF) which includes, at a minimum, the information indicated on the attached WSPF found in Figure C-1 and a Characterization Information Summary (CIS) prior to waste disposal at the WIPP? (Section C-1d)	MP-TRUW-8.14 (All)	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
16	Are procedures in place to ensure that additional WSPFs are provided to WIPP and NMED for waste streams or portions of waste streams that are reclassified based upon waste characterization information? (Section C-1d)	MP-TRUW-8.14, S. 3.1	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
16a	Are criteria in place to determine the specific circumstances under which a WSPF is revised versus when a new WSPF is required? (Section C-1d)	MP-TRUW-8.14, S. 3.3	Y	N/A	N/A	No examples of WSPF revisions for the waste streams and audit period examined.
	LABORATORY QUALIFICATION					
17	Are procedures in place to ensure that the generator/storage site conduct analyses using laboratories that are qualified through participation in the Performance Demonstration Program (PDP) for headspace gas sampling and analysis, and PDP homogeneous waste sampling and analysis? (Section C-3a(3))	INST-OI-43, S. 4.0 & Table 3 MP-TRUW-8.8, S. 3.4.8.15	Y	PDP Memo 6/4/12 **(HSG-3)**	Y	AMWTP only performs sampling for solids. Solids analysis is performed by AMWTP and PDP participation is verified under a separate audit.
18	Are procedures in place to ensure that the generator/storage sites conduct analyses using laboratories that implement the analytical methods through laboratory-documented standard operating procedures (SOPs) that ensure that analytical QAOs are met? (Section C-3a(3))	INST-OI-43, All	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Y	AMWTP only performs solids sampling. Solids analysis is performed by AMWTP.
19	Are procedures in place to ensure that documented laboratory QA/QC programs include the following: • Facility organization • List of equipment/instrumentation • Operating procedures • Laboratory QA/QC procedures • Quality assurance review • Laboratory records management (Section C-4a(4))	INST-OI-43, All MP-TRUW-8.2, S. B-0 MP-TRUW-8.8, S. 3.4	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Y	AMWTP only performs solids sampling. Solids analysis is performed by AMWTP

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	GENERAL SAMPLING AND ANALYTICAL REQUIREMENTS					
20	Are procedures in place to ensure that headspace gas sampling and analysis shall be used to: • Determine the types and concentrations of VOCs in the void volume of waste containers • VOC constituents shall be compared to those assigned by Acceptable Knowledge (Section C-3a(1))	MP-TRUW-8.11, S. 3.2.8	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary:	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
22	Are procedures in place to ensure that compounds not on the list of target analytes are reported as tentatively identified compounds (TICs) and that the TIC will be added to the target analyte list if it appears in the 20.4.1.200 NMAC (incorporating 40 CFR 261) Appendix VIII list and if they are reported in 25% of the waste containers sampled from a given waste stream? (Section C-3a(1))	MP-TRUW-8.11, S. 3.2.14 MP-TRUW-8.8, S. 3.4.7.4, NOTE 4 INST-OI-43, Table 2	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
23	Are procedures in place to ensure that a randomly selected set of samples will be collected through core sampling or other EPA approved sampling from the population of waste containers for homogeneous and soil/gravel waste streams? Are procedures in place that a sufficient number of samples are collected to evaluate the toxicity characteristic of a waste stream at a 90 percent Upper Confidence limit as specified in Attachment C2? (Section C-3a(2))	MP-TRUW-8.11, S. 3.2.10 MP-TRUW-8.25, S. 3.4, 3.5 & 3.6 INST-OI-16, All INST-OI-73, All INST-OI-75, All	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)** Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot 21-SPC-007-11 Sampling Report for BNINW216, Lot 21 **(GEN-6)**		
24	Are procedures in place to ensure that total analyses or TCLP of VOCs, SVOCs, and RCRA-regulated metals are performed on all core samples to determine if the waste exhibits a toxicity characteristic? (Section C-3a(2))	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
25	Are procedures in place to ensure that Acceptable Knowledge is used in waste characterization activities to delineate TRU mixed waste streams, to assess whether TRU mixed wastes comply with the TSDF-WAC, to assess whether TRU mixed waste exhibits a hazardous characteristic (20.4.1.200 NMAC, incorporating 40 CFR 261 Subpart C), and to assess whether TRU wastes are listed (20.4.1.200 NMAC, incorporating 40 CFR 261 Subpart D), and to estimate waste material parameter weights? (Section C-3b)	MP-TRUW-8.13, S. 3.3.5, 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17 (All) MP-TRUW-8.13, S. 3.5.2 MP-TRUW-8.13, S. 3.5.1.6 & Appendix B I.M	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2 **(AK-2)** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.7.2.6 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.5 & 1.6.2 **(AK-2)** NCRs for prohibited items **(AK-13)** Waste Matrix Code Reference Manual **(AK-7)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)** AK Summary for	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.6 & Table 1-3 **(AK-2)** Waste Material Parameter Weight Estimate memos for waste streams BN510.1 and BN836 **(AK-24)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
26	Are procedures in place to ensure that radiography and/or visual examination are used as necessary to: • Examine a waste container to determine the physical form • Identify observable liquid in excess of TSDF-WAC limits and containerized gases • Verify the physical form matches the waste stream description (Section C-3c)	INST-OI-12, (All) INST-OI-81, (All) INST-OI-34, (All) INST-FOI-17, (All)	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
27	Are procedures in place to ensure that the following characterization activities shall occur for newly generated wastes: • Acceptable Knowledge for all wastes, with sampling and analysis as necessary to augment AK including; - Either visual examination during packaging or radiography (or VE in lieu of radiography) after packaging for all waste containers, ensuring this occurs prior to any treatment designed to supercompact waste - Headspace gas analysis for randomly selected containers, except for qualifying waste containers belonging to LANL sealed sources waste streams - Total VOC, SVOC, and Metals analyses for a selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment C2 - Evaluation of any TICs found in headspace gas and totals analyses (Section C-3d(1))	MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4) MP-TRUW-8.11, S. 3.2 MP-TRUW-8.25, (All)	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** HSG Random Container Selection Memos for waste stream BN510.1 **(AK-17)** HSG Sampling Report for BN510.1 **(AK-18)** Data Reconciliation reports for BN510.1 **(AK-21)** <u>RTR BDRs:</u> RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** <u>VE BDRs:</u> VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** <u>SS BDRs:</u> SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Debris Waste **(GEN-5)** Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot 21-SPC-007-11 Sampling Report for BNINW216, Lot 21 **(GEN-6)** Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2-SPC-001-12 Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3-SPC-002-12 Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2-SPC-007-12 Preliminary Statistics of Headspace Gas Sampling for BN510.1 WS –NDK-001-12 **(GEN-7)**		
27a	Are procedures in place to ensure that the visual examination during packaging for all waste containers includes the documentation of packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate DAC in accordance with Permit Attachment C1, Section C1-1? (Section C-3d(1))	INST-OI-34, S. 4.2 INST-FOI-17, S. 4.2 & 4.4	Y	VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
28	Are procedures in place to ensure that the following characterization activities shall occur for retrievably stored wastes: • Acceptable Knowledge for all wastes, with sampling and analysis as necessary to augment AK including; - Visual examination or radiography for all waste containers - Headspace gas analysis for randomly selected containers except for qualifying waste containers belonging to LANL sealed sources waste streams - Total VOC, SVOC, and Metals analyses for a statistically selected number of homogeneous solids and soil/gravel waste containers as specified in Attachment C2 - Evaluation of any TICs found in headspace gas and totals analyses (Section C-3d(2))	MP-TRUW-8.13, S. 3.5 & 3.8 (Notes 1-4) MP-TRUW-8.11, S. 3.2 MP-TRUW-8.25, (All)	Y	AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** RTR06-00548 **(AK-27)** RTR06-00062 **(AK-28)** SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** Solids Random Container Selection Memos for waste stream BN836 **(AK-19)** Solids Sampling Report for BN836 **(AK-20)** Data Reconciliation reports for BN836 **(AK-21)** <u>RTR BDRs:</u> RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** <u>VE BDRs:</u> VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** <u>SS BDRs:</u> SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** <u>HSG BDRs:</u> HS112-00002	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot 21-SPC-007-11 Sampling Report for BNINW216, Lot 21 **(GEN-6)** Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2-SPC-001-12 Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3-SPC-002-12 Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2-SPC-007-12 Preliminary Statistics of Headspace Gas Sampling for BN510.1 WS –NDK-001-12 **(GEN-7)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	DATA GENERATION, VERIFICATION, VALIDATION, DOCUMENTATION, AND QUALITY ASSURANCE					
30	Are procedures in place to ensure that the following Data Quality Objectives are met: • Use Acceptable Knowledge to delineate TRU mixed waste streams, assess whether TRU mixed wastes comply with the applicable requirements of the TSDF-WAC, assess whether TRU mixed wastes exhibit a hazardous characteristic, assess whether TRU mixed wastes are listed and to estimate waste material parameter weights • Use Headspace gas sampling and analysis, as necessary, to identify and quantify VOCs in waste containers to resolve the assignment of EPA hazardous waste numbers • Perform totals analyses of homogeneous solids and soils/gravel wastes to establish if the waste is hazardous based on the toxicity characteristics levels in 20.4.1.200 NMAC through a comparison of the upper confidence limits (UCL_{90}) of the mean concentrations to resolve the assignment of hazardous waste numbers • Use radiography or visual examination to determine physical waste form, the absence of prohibited items, and additional waste characterization techniques that may be used based on Summary Category Groups (Section C-4a(1))	MP-TRUW-8.13, S. 3.3.5, 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17, (All) MP-TRUW-8.13, S. 3.5.2 MP-TRUW-8.13, S. 3.5.1.6 & Appendix B I.M MP-TRUW-8.11, S. 3.2 MP-TRUW-8.13, S. 3.3.3, 3.3.7, 3.5.1.6, 3.5.2 & 3.5.3	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2 **(AK-2)** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.7.2.6 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.5 & 1.6.2 **(AK-2)** NCRs for prohibited items **(AK-13)** Waste Matrix Code Reference Manual **(AK-7)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				& 1-2 **(AK-2)** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.6 & Table 1-3 **(AK-2)** Waste Material Parameter Weight Estimate memos for waste streams BN510.1 and BN836 **(AK-24)** <u>RTR BDRs:</u> RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** <u>VE BDRs:</u> VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** <u>SS BDRs:</u> SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** <u>HSG BDRs:</u> HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
31	Are procedures in place to ensure that the following Quality Assurance Objectives are adequately defined and assessed for each characterization method: • Precision as a measure of the mutual agreement among multiple measurements. • Accuracy as the degree of agreement between a measurement result and a true or known value. • Completeness is a measure of the amount of valid data obtained from a method compared to the total amount of data obtained that is expressed as a percentage. • Comparability is the degree to which one data set can be compared to another data set. • Representativeness as an expression of the degree to which data represent characteristics of a population. (Section C-4a(2))	MP-TRUW-8.8, S. 3.1.3.13, 3.2.4.10, 3.4.5.7, 3.4.8.13, 3.4.5.5, 3.4.8.13 & 3.5.3.14 INST-OI-43, S. 5.0 & Table 2	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
32	With respect to data generation, are procedures in place to ensure that the generator/storage site's waste characterization program meets the following general requirements: • Analytical data packages and batch data reports must be reported accurately in a pre-approved format, must be maintained in permanent files, and must be traceable? • All data must receive a technical review by another qualified analyst? (Section C3-10a)	INST-OI-43, S. 4.0 MP-TRUW-8.8, S. 3.1, 3.2, 3.4 & 3.5 INST-OI-16, S. 4.23 INST-OI-73, S. 4.23 INST-OI-75, S. 4.15	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
33	Are procedures in place to ensure that the generator/storage site performs validation of waste characterization data for each waste container? (Section C-4)	MP-TRUW-8.9, (All) MP-TRUW-8.8, (All)	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
34	Are procedures in place to ensure that the generator/storage site has a pre-approved format for reporting waste characterization data? (Section C-4a(4))	MP-TRUW-8.9, (All) MP-TRUW-8.8, (All) INST-OI-43, S. 4.8 INST-OI-16, S. 4.23 INST-OI-73, S. 4.23 INST-OI-75, S. 4.15 INST-OI-34, (All) INST-FOI-17, (All)	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
35	Are procedures in place to ensure that the generator/storage site prepares analytical, testing, and sampling batch data reports to meet the requirements of their own site-specific QAPjP and/or SOPs? (Section C-4a(4))	MP-TRUW-8.9, (All) MP-TRUW-8.8, (All) INST-OI-43, S. 4.8 INST-OI-16, S. 4.23 INST-OI-73, S. 4.23 INST-OI-75, S. 4.15	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
36	Are procedures in place to ensure that all raw data is collected and managed at the data generation level in accordance with the following criteria: • All raw data shall be signed and dated in reproducible ink by the individual collecting the data, or signed and dated using electronic signatures • All data shall be recorded clearly, legibly, and accurately in field and laboratory records and include all applicable sample identification numbers • All changes to original data shall be lined out, initialed, and dated by the individual making the change. Original data may not be obliterated or otherwise be made unreadable • All data shall be transferred and reduced from field and laboratory records completely and accurately • All field and laboratory records shall be maintained as specified in Table C-6 of Attachment C • Data shall be organized into standard reporting formats for reporting purposes. • All electronic and video data must be stored to ensure that waste container, sample and QC data are readily retrievable (Section C3-10a)	MP-TRUW- 8.1, S. G.1, G.3 & G.4 MP-TRUW-8.8, S. 3.1, 3.2, 3.4.8.17-3.4.12 & 3.5.3.20 MP-DOCS-18.2, All INST-OI-16, S. 4.11.50.7 INST-OI-73, S. 4.23 INST-OI-75, S. 4.4.10.3	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	AMWTP uses electronic signatures.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
37	Are procedures in place to ensure that 100% of batch data reports are subject to independent technical review by an individual qualified to review the data who was not involved in the generation or recording of the data under review. The reviewer shall release the data through signature with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. The review shall ensure the following, as applicable: • Data generation and reduction were conducted according to the methods used and reported in the proper units and significant figures • Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or a 100 percent check of all hand calculations • The data have been reviewed for transcription errors • The testing, sampling, and analytical QA documentation for BDRs is complete and includes, as applicable, raw data, DAC and equilibrium calculations and times, calculation records, chain of custody forms, calibration records, QC sample results and copies or originals of gas canister sample tags. • All QC sample results are within established control limits, and if not, the data has been appropriately qualified • Reporting flags were assigned correctly • Sample holding times and preservation requirements were met, or exceptions documented • Radiography tapes are reviewed on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is less frequent. The radiography tape will be reviewed against the data on the radiography form to ensure that data are complete and correct • Field sampling records are complete • QAOs have been met (Section C3-10a(1))	MP-TRUW-8.1, S. G.3 & G.4 MP-TRUW-8.8, S. 3.1, 3.2, 3.4 & 3.5	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
40	Are procedures in place to ensure that 100 percent of all batch data reports receive a Site Project Manager signature release with an associated review checklist prior to characterization of the associated waste and shipment to the WIPP. This release shall ensure the following: • The Site Project Manager or designee shall determine the validity of the drum age criteria (**DAC**) assignment made at the data generation level based upon an assessment of the data collection and evaluation necessary to make the assignment. • Testing batch QC checks were properly performed. Radiography data are complete and acceptable based on evidence of videotape review of one waste container per day or once per testing batch, whichever is less frequent • Sampling batch QC checks were properly performed, and meet the established QAOs and are within established data usability criteria • Analytical batch QC checks were properly performed and meet the established QAOs and are within established data usability criteria • Online batch QC checks were properly performed and meet the established QAOs and are within established data usability criteria • Proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken • Data generation level independent technical review, validation, and verification have been performed as evidenced by the completed review checklists and appropriate signature releases. • Independent technical reviewers were not involved in the generation or recording of the data under review. • Batch Data review checklists are complete • Batch Data Reports are complete and data properly reported • Verify that data are within established data assessment criteria and meet all applicable QAOs (Section C3-10(b)(1))	MP-TRUW-8.9 (All)	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)** Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot 21-SPC-007-11 Sampling Report for BNINW216, Lot 21 **(GEN-6)** Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2-SPC-001-12 Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3-SPC-002-12 Headspace Gas Sampling Report		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Memorandum for BN510.1 Boxline Lot 2-SPC-007-12 Preliminary Statistics of Headspace Gas Sampling for BN510.1 WS –NDK-001-12 **(GEN-7)**		
42	Are procedures in place to ensure that a repeat of the data review process at the data generation level will be performed on a minimum of one randomly chosen waste container every quarter to determine if the verification and validation is performed according to documented procedures? (Section C3-10b)	MP-TRUW-8.9, S. 3.3	Y	AMWTP Surveillance Report Surveillance 68686- Level 1 Data Generation & Validation Quarterly – Headspace Gas BDR 1Q2012 AMWTP Surveillance Report Surveillance 71536-Second Quarter Level 1 Data Generation & Validation Quarterly – RTR BDR 2Q2012 AMWTP Surveillance Report Surveillance 72733-TRU Programs 3rd Quarter Level 1 Data Generation & Validation Quarterly – VEB BDR 3Q2012 **(GEN-8)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
43	Are procedures in place and checklists are available to prepare a Site Project Manager (SPM) Summary and a Data Validation Summary (the summaries may be in the same document)? The SPM Summary includes a validation checklist for each batch that is of sufficient detail to document all aspects of a batch data report that could affect data quality. The Data Validation Summary must identify each Batch Data Report reviewed, describe how the validation was performed, identify all problems, and identify all acceptable and unacceptable data. Summaries must include release signatures. (Section C3-10b(2))	MP-TRUW-8.9, S. 3.0 & 3.1	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	
44	Are procedures in place to ensure that non-administrative, WAP-related nonconformances first identified at the site project manager level are reported to the Permittees within seven calendar days of identification, that nonconformance reports are prepared within 30 calendar days, and that corrective action is implemented prior to waste shipment? (Section C3-13)	MP-TRUW-8.2, S. C3-13 MP-Q&SI-5.4, S. 3.4.2	Y	NCRs: 67075, 70341, 71445 & 73050 **(GEN-9)** NCRs: 68515, 71820 & 72480 **(GEN-10)**	Y	
45	Are procedures in place to ensure that any waste container for which a nonconformance report (NCR) has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container is appropriately identified, reconciled, corrected, and documented? Are nonconformance reports prepared for nonconformances identified? Are nonconformances identified and tracked, and does the Site Project Manager oversee the nonconformance report process? (Section C3-13)	MP-TRUW-8.2, S. C3-13 MP-Q&SI-5.4, (All)	Y	NCRs: 67075, 70341, 71445 & 73050 **(GEN-9)** NCRs: 68515, 71820 & 72480 **(GEN-10)** NCRs: 38207, 66282, 71804, 72751, 72081, 72223 & 72461 **(GEN-11)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLE CONTROL					
46	Are procedures in place to ensure that the site's sample handling and control program includes the following: • Field documentation of samples including point of origin, date of sample, container identification, sample type, analysis requested, and chain-of-custody (COC) number? • Proper labeling and/or tagging including proper sample numbering, sample identification, sample date, sampling conditions, and analysis requested? • COC record including name of sample relinquisher, sample receiver, and date and time of sample transfer? and • Proper sample handling and preservation? (Section C-4a(3))	INST-OI-16, S. 4.15 - 4.17 INST-OI-73, S. 3.1.17; 4.14 - 4.17 INST-OI-75, S. 4.6 - 4.8	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	AMWTP uses on-line sampling and analysis for HSG, samples are not transferred or stored.
47	Are procedures in place to ensure that the site's QAPjP or site-specific procedures includes COC forms to control the sample from the point of origin to the final analysis result reporting? (Section C-4a(3))	INST-OI-16, S. 4.15 - 4.17 INST-OI-73, S. 4.14 - 4.17 INST-OI-75, S. 4.6 - 4.8	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	AMWTP uses on-line sampling and analysis for HSG, samples are not transferred or stored.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	DATA TRANSMITTAL					
48	Are procedures in place to ensure that the generator/storage site transmits data by hard copy or electronic copy from the data generation level to the site project level? If electronic, does the generator/site have a hard copy available on demand? (Section C-4a(6))	MP-TRUW-8.9, S. 3.2	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	
50	Are procedures in place to ensure that the generator/storage site inputs the data into the WWIS manually or electronically? (Section C-4a(6))	MP-TRUW-8.5, S. 3.0	Y	Waste Certification Data Entry Form (WCDEF) and Offsite Shipping Module (OSM) for containers BN10107499 BN10376540 BN10432952 BN10463815 BN10449002 **(GEN-12)**	Y	
51	Are procedures in place to ensure that the generator/storage site enters the data into the WWIS in the exact format required by the database? (Section C-4a(6))	MP-TRUW-8.5, S. 3.0	Y	Waste Certification Data Entry Form (WCDEF) and Offsite Shipping Module (OSM) for containers BN10107499 BN10376540 BN10432952 BN10463815 BN10449002 **(GEN-12)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
51a	Are procedures in place to ensure that if a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including associated TICs, for every waste container associated with the composite sample in the WWIS? (Section C3-12b(4))	MP-TRUW-8.5, S. 3.0	Y	Reconciliation with Data Quality Objectives for WSPF BNINW216.277, Rev. 1; WSPF BN510.1 (lot numbers BN510.1.0113; BN510.1.0174; BN510.1.0151)**(GEN-13)**	Y	
52	Are procedures in place to ensure all of the data presented on Table C-7 of the Permit is transmitted to the WWIS? (Table C-7)	MP-TRUW-8.5, S. 3.0	Y	Waste Certification Data Entry Form (WCDEF) and Offsite Shipping Module (OSM) for containers BN10107499 BN10376540 BN10432952 BN10463815 BN10449002 **(GEN-12)**	Y	
	RECORDS AND RECORD MANAGEMENT					
55	Are procedures in place to ensure that the generator/storage site's hard copy and/or electronic data reports follow the Permittees' format requirements? (Section C-4a(4))	MP-TRUW-8.9, S. 3.2	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

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		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56	Are procedures in place to ensure that hard copy or electronic Waste Stream Profile Form will include the following: • Generator/storage site name • Generator/storage site EPA ID • Date of audit report approval by NMED (if obtained) • Original generator of waste stream • Whether waste is Contact-Handled or Remote-Handled • Waste Stream WIPP Identification Number • Summary Category Group • Waste Matrix Code Group • Waste Material Parameter Weight Estimates per unit of waste • Waste stream name • A description of the waste stream • Applicable EPA hazardous waste codes numbers • Applicable TRUCON codes • A listing of acceptable knowledge documentation used to identify the waste stream • The waste characterization procedures used and the reference and date of the procedure • Certification signature of Site Project Manager, name, title, and date signed (Section C3-12b(1))	MP-TRUW-8.14, S. 3.1 & 6.0	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56a	Are procedures in place to ensure that hard copy or electronic Characterization Information Summary will include the following: • Data reconciliation with DQOs • Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL_{90}, RTL, and associated EPA hazardous waste numbers that must be applied to the waste stream. • Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable). • TIC listing and evaluation. • Radiography and visual examination summary to document that all prohibited items are absent in the waste (if applicable). • A complete listing of all container identification numbers used to generate the Waste Stream Profile Form, cross-referenced to each Batch Data Report. • Complete AK summary, including stream name and number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s) and Waste Matrix Code Group, other TWBIR information, waste stream description, areas of operation, generating processes, RCRA determinations, radionuclide information, all references used to generate the AK summary, and any other information required by Permit Attachment C4, Section C4-2b. • Method for determining Waste Material Parameter Weights per unit of waste. • List of any AK Sufficiency Determinations requested for the waste stream. • Certification through acceptable knowledge or testing and/or analysis that any waste assigned the hazardous waste number of U134 (hydrofluoric acid) no longer exhibits the characteristic of corrosivity. This is verified by ensuring that no liquid is present in U134 waste. • A justification for the selection of radiography and/or VE as an appropriate method of characterizing the waste. (Section C3-12b(2))	MP-TRUW-8.14, S. 3.1.3, 3.1.4, 3.1.5 & Form-1598	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document	Y	

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		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
56b	Are procedures in place to assure that ongoing container characterization results are cross referenced to Batch Data Reports? (Section C3-12b)	MP-TRUW-8.14, S. 3.1.3.4	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document	Y	

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		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
58	Are procedures in place to ensure that project level reports are compiled into Characterization Information Summaries? (Section C3-12b)	MP-TRUW-8.14, S. 3.1.3 & Form-1598	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
59	Are procedures in place to ensure that the generator/storage site uses forms for data reporting that are pre-approved forms in site-specific documentation? (Section C3-12)	MP-TRUW-8.8, S. 3.1, 3.2, 3.4 & 3.5 INST-OI-43, S. 4.8 INST-OI-16, S. 4.23 INST-OI-73, S. 4.23 INST-OI-75, S. 4.15	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
60	Are procedures in place to ensure that the generator/storage site's site project manager submits to the WIPP facility a summary of the waste stream information and reconciliation with data quality objectives (DQOs) once a waste stream is characterized? (Section C-4a(6))	MP-TRUW-8.14, S. 3.1.10	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
61	Are procedures in place to ensure that the generator/storage site project office completes a WSPF based on the Batch Data Reports? (C3-12b)	MP-TRUW-8.14, S. 3.1	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** SS BDRs: SSC12-00001 SSG11-00008 SSG12-00001 **(GEN-3)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
				Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
62	Are procedures in place to ensure that the generator/storage Site Project Manager submits the WSPF to the Permittees for DOE's approval along with the accompanying Characterization Information Summary for that waste stream? (Section C-4a(6))	MP-TRUW-8.14, S. 3.1.10	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
63	Are procedures in place to ensure that the generator/storage site maintains records related to waste characterization sampling and analysis activities in the testing, sampling or analytical facilities files, or site project files for those facilities located on-site? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2 S. 3.5 and Appendix B	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	
64	Are procedures in place to ensure that the appropriate documented training and indoctrination is performed for all individuals and that procedures are documented in site specific QAPjPs and procedures? (Section C3-14)	MP-RTQP-14.4, (All) MP-TRUW-8.2, S. C3-14 LST-RTQP-03-IM, S. 2.0	Y	Qualification records for selected CCP personnel. **(GEN-15)** RTR Operator Training Records **(RTR-2)**	Y	
65	Are procedures in place to ensure that the generator/storage site requires contract waste analytical facilities to forward testing, sampling and analytical records along with testing, sampling and analytical batch data reports to the site project office for inclusion in the sites project files? (Section C-4a(7))	N/A	N/A	N/A	N/A	Solids analysis is performed by the INL Analytical Laboratory, which CBFO has previously certified. The analytical laboratory was not in the scope of this audit.
66	Are procedures in place to ensure that the generator/storage site has an appropriate records inventory and disposition schedule (RIDS) or equivalent that was prepared and approved by appropriate site personnel? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2 (All)	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	
67	Are procedures in place to ensure that the generator/storage site maintains all records relevant to an enforcement action, regardless of disposition, until they are no longer needed for enforcement action, and then dispositioned per the approved RIDS? (Section C-4a(7))	MP-DOCS-18.2, (All)	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
68	Are procedures in place to ensure that the generator/storage site maintains records that are designated as Lifetime Records for the life of the waste characterization program plus six years or that the records have been transferred to the WIPP Records Archive facility? Lifetime Records include: • Field sampling data forms, • Field and laboratory COC forms, • Test facility and laboratory Batch Data Reports, • Waste Stream Characterization Package, • Sampling plans, • Data reduction, validation, and reporting documentation, • Acceptable knowledge documentation, • WSPF and Characterization Information Summary (Section C-4a(7), Table C-6)	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2, S. 3.6.4.1, 4.0, & App. B	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
69	Are procedures in place to ensure that the generator/storage site maintains records that are designated as Non-Permanent Records for ten years from the date of record generation, and then dispositioned according per the approved RIDS or transferred to the WIPP Records Archive facility? Non-Permanent Records include: • Nonconformance documentation, • Variance documentation, • Assessment documentation, • Gas canister tags, • Methods performance documentation, • PDP documentation, • Sampling equipment certifications, • Calculations and related software documentation, • Training/qualification documentation, • QAPjP documentation (all revisions), • Calibration documentation, • Analytical raw data, • Procurement documentation, • QA procedures (all revisions), • Technical implementing procedures (all revisions), and • Audio/video recording (radiography, visual, etc.). (Section C-4a(7), Table C-6)	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2, App. B	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	
70	Are procedures in place to ensure that the generator/storage site has raw data that	MP-TRUW-8.8,	Y	HSG BDRs:	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	is identifiable and legible, and provides documentary evidence of quality? (Section C-4a(7))	S. 3.1, 3.2, 3.4 & 3.5 INST-OI-43, S. 4.8 INST-OI-16, S. 4.23 INST-OI-73, S. 4.23 INST-OI-75, S. 4.15		HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** <u>SS BDRs:</u> SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** <u>RTR BDRs:</u> RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** <u>VE BDRs:</u> VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**		
<u>71</u>	Are procedures in place to ensure that if the generator/storage site ceases to operate, that all records be transferred before closeout? (Section C-4a(7))	MP-TRUW-8.2, S. C-4a(7) MP-DOCS-18.2, App. B	Y	Project Record Categories, Classification, Disposition, and Retention Matrix (Appendix B of MP-DOCS-18.2.) **(GEN-14)**	Y	The AMWTP is still in operations, however, should work cease, records will be transmitted to the WIPP in accordance with MP-DOCS-18.2.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-1 Waste Analysis Plan (WAP) Checklist [1]	Procedure Documented		Example of Implementation/Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why?)	Item Reviewed	Adequate? Y/N	
	SHIPMENT					
72	Are procedures in place to ensure that the generator/storage site accurately completes an EPA Hazardous Waste Manifest prior to shipping the waste to WIPP that contains the following information: • Generator/storage site name and EPA ID • Generator/storage site contact name and phone number • Quantity of waste • List of up to six state and/or federal hazardous waste numbers in each line item • Listing of all container IDS • Signature of authorized generator representative (Section C-5b)	MP-TRUW-8.12, S. 3.3.6-3.3.21	Y	Hazardous Waste Mamifest: 001600433GBF**(GEN-16)** 001600458GBF**(GEN-17)**	Y	
73	Are procedures in place to ensure that the generator/storage site accurately completes the following container specific information: • Waste stream identification number • List of hazardous waste numbers per container • Certification data • Shipping data (Section C-5b)	MP-TRUW-8.12, S. 3.3.6-3.3.21	Y	Hazardous Waste Mamifest: 001600433GBF**(GEN-16)** 001600458GBF**(GEN-17)**	Y	

1. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table C6-2 Solids and Soils/Gravel Sampling Checklist
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Solids and Soils/Gravel Sampling Checklist

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	GENERAL SOLIDS SAMPLING REQUIREMENTS					
75	Are procedures documented that adequately ensure that when a Determination Request has not been approved, sampling and analysis of newly generated homogeneous solid and soil/gravel waste streams shall be conducted in accordance with the requirements specified in Attachment C1, Section C1-2? (Section C-3d(1)(a))	N/A	N/A	N/A	N/A	Newly generated waste is not in the scope of this audit.
76	Are procedures in place to ensure that the number of newly generated soils/gravel waste containers to be randomly sampled will be determined using the procedure specified in Section C2-1, wherein a statistically selected portion of the waste will be sampled? (Section C-3d(1)(a))	N/A	N/A	N/A	N/A	Newly generated waste is not in the scope of this audit.
77	Are procedures in place to ensure that the following sample collection requirements for retrievably stored and newly generated waste streams are met: • The number of random samples collected for characterization of retrievably homogeneous solid and soil/gravel stored waste is performed by developing preliminary mean and variance estimates for each analyte to define the number of required random samples; and that the sample selection process is adequately documented. • A minimum of 5 waste containers in a retrievably stored waste streams are sampled to establish the preliminary estimate for the number of samples. • Based on the number of samples required by the preliminary estimate, the subsequent sample means and deviations for each analyte are evaluated against the regulatory threshold for each constituent to determine if additional samples shall be collected. • Samples (the number of which is statistically determined) are collected to verify that a TRU mixed waste is below the regulatory threshold, where the regulatory threshold is the toxicity limit for toxicity characteristics and the PRQL for listed waste constituents. • Samples from preliminary estimates counted as required samples were randomly selected and were collected, analyzed, and validated using representative methods (Section C2-1a)	MP-TRUW-8.25, S. 3.4, 3.5 & 3.6	Y	Solids Sampling Plan for BNINW216 – Lot 21-SPC-006-11 Addendum to Solids Sampling Plan for BNINW216-Lot21-SPC-007-11 Sampling Report for BNINW216, Lot 21 **(GEN-6)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
80	Are procedures in place that allow toxicity characteristic contaminants associated with F-numbers for a waste stream to be omitted from sampling requirements? (Section C2-1a)	MP-TRUW-8.13, S. 3.8.3	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	SOLIDS SAMPLING PROCEDURES					
81	Do procedures ensure that samples for retrievably stored waste are collected using appropriate coring tools or other EPA approved methods, and that newly generated wastes that are sampled from a process as it is generated are sampled using EPA approved methods, including scoops and ladles, that are capable of collecting a representative sample? (Section C1-2a)	INST-OI-16, (All) INST-OI-75, (All) INST-OI-73, (All)	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	Newly generated waste is not in the scope of this audit.
82	Do site specific procedures, QAPjPs, and/or SOPs indicate that rotational coring tools are available for the collection of cores and non-rotational coring tools available for collection of cores in relatively soft media? The method used shall be appropriate to retrieve the maximum core amount. The coring tools will include the following features: • Removable tube liners constructed of rigid materials unlikely to affect the composition and/or concentration of target analytes in the sample core (Teflon®) and sufficiently transparent to allow visual examination of the core. The liner outer diameters are between 1-2 inches and the liner wall thickness is no greater than 1/16 inch. The liner shall fit flush with the coring tool inner wall and be of sufficient length to hold a core representative of the waste along the entire depth of the waste. • Sleeves composed of polycarbonate, Teflon, or glass for most samples and brass or stainless steel for non-metal samples • Liner end caps shall fit tightly around the ends of the liner and shall be composed of materials unlikely to affect the composition and/or concentration of analytes in the core (Teflon®) • Spring retainers shall be used when the physical properties of the sampling media may cause the sample to fall out of the liner. The retainer shall be composed of inert materials and the inner diameter shall not be less than the inner diameter of the liner • Coring tools may have an air lock mechanism. The air lock shall also close when the core is removed from the waste container • Core extruders shall be used to extrude the liner if the liner does not slide freely • Coring tools shall be of sufficient length to hold the liner and shall be constructed to allow placement of the liner leading edge as close as possible to the coring tools leading edge	INST-OI-16, S. 3.2.16, 4.4 & 4.11 INST-OI-73, S. 3.2.16 & 4.4	Y	Design drawings and schematics for automated coring **(SOL-3)** and polycarbonate liners **(SOL-4)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
82a	• All surfaces of the coring tool that have the potential to contact the sample core or sample media shall be cleaned prior to use • Rotational coring tools shall have a mechanism to minimize inner liner rotation and shall be designed to minimize frictional heat transfer to the sample core • The leading edge of the coring tool ~~is~~ may be sharpened and tapered to a diameter equivalent or slightly smaller than the inner diameter of the liner. • Non-Rotational coring tools shall be designed to minimize the kerf width (1/2 the difference between the outer diameter of the tool and the tools inlet inner diameter) (Section C1-2a(1))	INST-OI-16, S. 4.6.2 INST-OI-73, S. 3.1.33, 3.1.40 & 3.2.16	Y	American Diamond Tool cleaning procedure **(SOL-5)** AMWTP SOW for equipment blanks **(SOL-13)**	Y	All sampling equipment is purchased as "certified clean" and is single-use-only. Coring samplers are cleaned per American Diamond Tool procedure. Both Stainless Steel and diamond bits used for drilling cores.
83	Does the site adequately document that the liner material and retainers are not likely to contain any analytes of concern? (Section C1-2a(1))	INST-OI-16, S. 4.24 INST-OI-73, S. 4.24 INST-OI-75, S. 4.16	Y	American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** Sampling Batch SG12-00004 Cleaning Certificate of Analysis **(SOL-7)** Sampling Batch SSC12-00004 Cleaning Certificate of Analysis **(SOL-8)**	Y	All sampling equipment is purchased as "certified clean" and is single-use-only.
84	Are procedures in place to ensure that equipment blanks are collected and evaluated to verify that liner material, retainers, or other sampling equipment in contact with the sample do not contain analytes of concern? (Section C1-2b(2))	INST-OI-16, S. 4.24 INST-OI-73, S. 4.24 INST-OI-75, S. 4.16	Y	American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** Sampling Batch SG12-00004 Cleaning Certificate of Analysis **(SOL-7)**	Y	Equipment blank sampling and analysis performed by American Diamond Tool.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLE COLLECTION					
85	Are procedures in place to ensure that sampling is completed in a timely manner, within 60 minutes of core collection, or that the core shall remain in the capped liner, or the coring tool shall remain in the waste container with the air lock mechanism attached? (Section C1-2a(2))	INST-OI-16, S. 3.1.18 INST-OI-73, S. 4.9.39.1 Note1&2	Y	SS BDR: SSC12-00004 **(SOL-2)**	Y	Core Sample Date contains time of each core sample and each sub sample. Interview verified cores either sampled within 1 hour or core collection or that core liner is capped.
86	Are procedures in place to ensure that VOC samples are sampled prior to extruding the core from the liner and that the sample locations are documented? These samples may be collected by choosing a single sample from the representative subsection of the core, or three equal length VOC sample locations on the core are selected randomly along the long axis of the core to form a single 15-gram composite sample. Smaller sample sizes may be used if method PRQL requirements are met for all analytes. (Section C1-2a(2))	INST-OI-16, S. 4.11 INST-OI-73, S. 4.11	Y	SS BDR: SSC12-00004 **(SOL-2)**	Y	WTS printouts contain location of each sample and amounts taken.
87	Are procedures documented to ensure that a VOC sample is collected using a metal coring cylinder or equivalent equipment as described in SW-846 and that the sample is immediately extruded into a 40 mL VOA vial (or other containers specified in appropriate SW-846 methods)? (Section C1-2a(2))	INST-OI-16, S. 4.11 INST-OI-73, S. 4.11.19.2 Notes 1&2	Y	SS BDR: SSC12-00004 **(SOL-2)**	Y	VOA sample vial is 20 ml.
88	Are procedures in place to ensure that SVOC and Metals sample location(s) on the core are selected randomly along the long axis of the core and that the sample locations are documented, or that samples are collected at the same locations as VOC samples? Samples may be collected by splitting or compositing the representative subsection of the core. The representative subsections are chosen by randomly selecting a location along the portion of the core from which the sample was taken? (Section C1-2a(2))	INST-OI-16, S. 4.11 Notes 1&2 INST-OI-73, S. 4.11 Notes 1&2	Y	SS BDR: SSC12-00004 **(SOL-2)**	Y	
89	Are procedures in place to ensure that the SVOC and Metals sample s are collected using equipment constructed of materials unlikely to affect the composition or concentrations of the samples? (Section C1-2a(2))	INST-OI-16, S. 4.24 INST-OI-73, S. 4.24 INST-OI-75, S. 4.16	Y	American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** Sampling Batch SSG12-00004 Cleaning	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				Certificate of Analysis **(SOL-7)**		
90	Are procedures in place to ensure that newly generated waste samples collected by means other than coring are collected as soon as possible and that spatial and temporal homogeneity is evaluated to determine if composite or grab samples are appropriate? (Section C1-2a(2))	INST-OI-75, S. 3.1.19 & 4.2.3	Y	SS BDR: SSG12-00004 **(SOL-1)**	Y	No newly generated waste is core-sampled, however, legacy waste is.
91	Are procedures in place to ensure sample volumes, preservatives, containers, and holding times meet the following specifications: Minimum sample quantity VOC 15 grams SVOC 50 grams Metals 10 grams (Quantity may be increased or decreased according to the requirements of the analytical laboratory, as long as the QAOs are met.) Preservative VOC Cool to 4C SVOC Cool to 4C Metals Cool to 4C Sample Container VOC 40 mL VOA glass vial (or other appropriate containers) cap SVOC glass jar with Teflon® lined cap Metals polyethylene or polypropylene bottle Holding Time from Date of Collection VOC 14 days prep/40 days analyze SVOC 14 days prep/40 days analyze Metals 180 days/ 28 days Hg (Table C1-4)	INST-OI-16, Exhibit 1 INST-OI-73, Exhibit 1 INST-OI-75, Exhibit 1	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	COC contains sample storage/preservative information. WTS printout contains amounts of sample taken and container size information. Holding time is N/A. Holding time is from time of collection to time of analysis. Analysis is performed by INL-CCP laboratory and they determine holding times. INL-CCP laboratory is evaluated under a separate audit.
	QUALITY CONTROL SAMPLE COLLECTION					
92	Are procedures in place to ensure that sampling precision will be determined through the collection of co-located core field duplicate samples for core samples and through the collection of co-located samples for samples collected using alternate methods at the frequency of once per 20 sample batch collected over 14 days or once per week, whichever is more frequent? (Section C1-2b(1))	INST-OI-16, S. 4.3.9.9 Notes 1-4 INST-OI-75, S. 4.2.3 Notes 2&3 INST-OI-73, S. 4.3.23 Notes 1& 2	Y	SS BDRs: SSG12-00004, p. 14-18 **(SOL-1)** SSC12-00004, p. 14-19 **(SOL-2)**	Y	
93	Are procedures in place to ensure that co-located cores are collected side by	INST-OI-16, S.	Y	SS BDR:	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	side as close as feasible to each other, that the cores are collected and handled in the same manner? (Section C1-2b(1))	4.3.9.9 Note 1 INST-OI-73, S. 4.3.23 Note 1		SSC12-00004, p. 14-19 **(SOL-2)**		
94	Are procedures in place to ensure that an additional sampling location is found or new co-located cores are collected if the visual examination of the original co-located cores detects inconsistency in the sample color, texture, or waste type? (Section C1-2b(1))	INST-OI-16, S. 4.3.10 & 4.3.11 INST-OI-73, S. 4.1.7	Y	Interview with SS SME 10/17/12 verified core examination and that additional core sample is taken if discrepancies are noted.	Y	
95	Are procedures in place to ensure that all surfaces of sampling tools that have the potential to come into contact with the sample, including tube liners, endcaps, spring retainers, extruders, coring tool surfaces, or any other sampling equipment, are either thoroughly decontaminated or disposed of after each sampling event? (Sections C1-2b(2), C1-2b(3))	INST-OI-16, S. 3.2.15 & 4.4 Note 2 INST-OI-75, S. 4.2.2.9 INST-OI-73, S. 4.4 Note 2	Y	Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)**	Y	Sampling equipment used once, then disposed of after the sampling event.
96	Are procedures in place to ensure that equipment blanks are collected from randomly selected fully assembled coring tools or randomly selected liners (if they are cleaned separately) and from randomly selected sampling equipment (e.g. VOC subsampler, spoons, bowls) at a frequency of once per equipment cleaning batch and that the sample is collected prior to first use? (Section C1-2b(2))	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S. 4.24	Y	American Diamond Tool cleaning procedure **(SOL-5)** American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** AMWTP SOW **(SOL-13)**	Y	Equipment Blanks taken and analyzed by American Diamond Tool.
97	Are procedures in place to ensure that equipment blanks will be collected in the area where sampling equipment coring tools are cleaned, prior to covering the coring tools with protective wrapping and storage? (Section C1-2b(2))	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S. 4.24	Y	American Diamond Tool cleaning procedure **(SOL-5)** American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** AMWTP SOW **(SOL-13)**	Y	Equipment Blanks taken and analyzed by American Diamond Tool. All equipment is certified clean and stored in protective wrapping until used.
99	Are procedures in place to ensure that miscellaneous sampling tool equipment blanks will be collected by pouring deionized or HPLC water over the surface of the equipment and into a clean sample container appropriate for the requested analysis? (Section C1-2b(2))	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S.	Y	American Diamond Tool cleaning procedure **(SOL-5)** American Diamond Tool Equipment Sampling	Y	Equipment Blanks taken and analyzed by American Diamond Tool.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
		4.24		Blank Procedure **(SOL-6)** AMWTP SOW **(SOL-13)**		
100	Are procedures in place to ensure that equipment blanks are analyzed for VOC, SVOC, and Metals and that the entire equipment batch will be re-cleaned and re-sampled if any analytes are detected at levels greater than 3 times the MDL or PRDL? (Section C1-2b(2))	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S. 4.24	Y	Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)**	Y	Equipment Blanks taken and analyzed by American Diamond Tool.
101	Are procedures and processes in place to ensure that equipment blanks are traceable to a specific equipment cleaning batch and that the equipment cleaning batch is traceable to specific identified sampling equipment? Are sampling equipment or coring tools labeled with unique identification numbers that are referenced in field records? (Section C1-2b(3))	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S. 4.24	Y	Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)**	Y	
102	Are procedures in place to ensure that disposable sampling equipment is certified as clean prior to use? (Section C1-2b(2))	INST-OI-16, S. 3.2.15 & 4.4 Note 2 INST-OI-75, S. 4.2.2.9 INST-OI-73, S. 4.4 Note 2	Y	Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)**	Y	Sampling equipment is purchased as “certified clean”.
	SAMPLE EQUIPMENT TESTING, INSPECTION AND MAINTENANCE					
103	Are procedures in place to ensure that all sampling and coring tools are tested prior to use in accordance with manufacturers specification to ensure that the air-lock mechanism and rotation mechanism are in working order? (Section C1-2c)	INST-OI-16, S. 4.6	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	Checks are documented as question # 6 on the AMWTP Solid Sampling Checklist in each sampling BDR.
104	Are procedures in place to ensure that malfunctioning sampling and coring tools are repaired or replaced prior to use? (Section C1-2c)	INST-OI-16, S. 4.6.2.4	Y	Interview with SS SPM 10/17/12	Y	
105	Are procedures in place to ensure that all equipment is cleaned, sealed inside a protective wrapping and stored in a clean area?	INST-OI-16, S. 3.1.14	Y	Cleaning certifications for SS BDRs:	Y	Equipment purchased clean or has blank performed by American

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	(Section C1-2c)	INST-OI-75, S. 3.1.15 & 4.2.2.7.1 INST-OI-73, S. 4.4.2		SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)**		Diamond Tool
106	Are procedures in place to ensure that an adequate spare part inventory is available? (Section C1-2c)	INST-OI-16, S. 3.2.15 INST-OI-73, S. 3.1.33 INST-OI-75, S. 3.1.30	Y	Coring spare parts list **(SOL-9)**	Y	Walkthrough and examined spare parts 10/17/12
107	Are procedures in place to ensure that all equipment maintenance and repair is documented in field records and that field record logbooks are available to document equipment maintenance and repair activities? (Section C1-2c)	N/A	N/A	N/A	N/A	All documentation is recorded electronically.
108	Are procedures in place to ensure that inspection of equipment and work area cleanliness will encompass the following: • Sample collection equipment in the immediate area of sample collection shall be inspected daily for cleanliness and that any visible contamination that has a potential to contaminate a waste sample shall be thoroughly cleaned upon discovery • The waste coring and sampling work areas shall be maintained in clean condition • Expendable equipment shall be visually inspected for cleanliness prior to use and properly discarded after use • Protective wrapping on coring tools and other sampling equipment are visually inspected prior to unwrapping. Coring tools or other equipment with torn protective wrappers or with visible contamination are returned to be cleaned or properly discarded prior to use. • All sampling equipment shall be visually inspected prior to use to determine if protective wrapping is torn or if equipment is contaminated after unwrapping. Equipment with torn wrapping or signs of contamination will be returned for cleaning or properly discarded. • Clean sampling and coring equipment is segregated from all equipment that has not been decontaminated. (Section C1-2c)	INST-OI-16, S. 3.1.20, 3.2.9, 4.6.2 & 4.6.4.1 INST-OI-75, S. 4.1.5.5 & 4.2.2.7 INST-OI-73, S. 3.1.23, 3.2.13, 4.4.3.2 & 4.11.3	Y	Solid sampling checklist in BDRs: SSG12-00004, p. 52-71 **(SOL-1)** SSC12-00004, p. 46-60 **(SOL-2)**	Y	Checks are documented as questions on the AMWTP Solid Sampling Checklist in each sampling BDR.
109	Are procedures documented to ensure that scales used for weighing sub-samples are calibrated as necessary to maintain its operation within manufacturer's specification, that the calibration is documented, that calibration	INST-OI-16, S. 3.2.20	Y	SS BDRs: SSG12-00004, p. 47-51 **(SOL-1)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	is verified using NIST traceable weights upon each day of use, and that all calibration verification is documented in field records? (Section C1-2d)	INST-OI-75, S. 4.1.7 INST-OI-73, S. 3.2.18		SSC12-00004, p. 41-45 **(SOL-2)**		
	SAMPLE HANDLING AND CUSTODY					
111	Do formats for field logs and custody records specify documentation of the following information: • Signature of individual initiating custody control, along with the date and time • Documentation of sample numbers for each sample under custody. Sample numbers will be referenced to a specific sampling event description that will identify the sampler(s) through signature, date and time of sample collection, type/number containers for each sample, sample matrix, preservatives (if applicable), requested methods of analysis, place/address of sample collection and the waste container number • For off-site shipping, method of shipping transfer, responsible shipping organization or corporation, and associated air bill or lading number.	INST-OI-16, S. 4.14 & 4.15 INST-OI-75, S. 4.6 & 4.7 INST-OI-73, S. 4.14 & 4.15 MP-TRUW-8.34, S. 3.1.11-14	Y	SS BDRs: SSG12-00004, p. 37-44 **(SOL-1)** SSC12-00004, p. 35-38 **(SOL-2)**	Y	
111a	• Signatures of custodians relinquishing and receiving custody of samples including date and time of transfer. • Description of final sample container disposition, along with signature of individual removing sample container from custody • Comments section • Documentation of discrepancies, breakage or tampering (Section C1-5)	INST-OI-16, S. 4.14 & 4.15 INST-OI-75, S. 4.6 & 4.7 INST-OI-73, S. 4.14 & 4.15 MP-TRUW-8.34, S. 3.1.11-14	Y	SS BDRs: SSG12-00004, p. 37-44 **(SOL-1)** SSC12-00004, p. 35-38 **(SOL-2)**	Y	
112	Are procedures in place to ensure that samples and sampling equipment are identified with unique identification numbers? (Section C1-5)	INST-OI-16, S. 3.1.17.1 & 3.1.36 INST-OI-75, S. 3.1.18.1 & 3.1.32	Y	SS BDRs: SSG12-00004, p. 37-44 **(SOL-1)** SSC12-00004, p. 35-38 **(SOL-2)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
		INST-OI-73, S. 3.1.17.1 & 3.1.35				
113	Do sample tags or labels contain the following information: • Sample ID number • Sampler initials and organization • Ambient temperature and pressure (for gas samples only) • Sample description • Requested analysis • Date and time of collection • QC designation (if applicable) (Section C1-5)	INST-OI-16, S. 4.14 INST-OI-75, S. 3.1.18.1 & 4.6 INST-OI-73, S. 4.11.36.1	Y	Examined Sample ID examples **(SOL-10)**	Y	
114	Are procedures in place to ensure waste containers and samples are sealed with intact custody seals and that one or more of the following custody conditions are met: • It is in the possession of an authorized individual • It is in the view of an authorized individual, after being in the possession of that individual • It was in the possession of an authorized individual and access to the sample was controlled by locking or placement of signed custody seals that prevent undetected access • It is in a designated secure area, such as a controlled access location with complete documentation of personnel access or a radiological containment area (hot cell or glove box) (Section C1-5)	INST-OI-16, S. 3.1.19, 3.1.37 & 4.12.8 INST-OI-75, S. 3.1.20, 4.4.8 & 4.5.33 INST-OI-73, S. 3.1.19, 3.1.36 & 4.12.7	Y	Examined Custody Seal example **(SOL-11)**	Y	
117	Are procedures in place to ensure that sample custody is maintained until the sample is released by the SPM or is expended? (Section C1-5)	MP-TRUW-8.2, S. C3-10b(2) MP-TRUW-8.9, S. 4.0 COC	Y	Chain of Custody Records for Solids Sampling **(SOL-12)** Chain of Custody	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				Records for Solids Sampling **(SOL-14)**		
118	Are procedures in place to ensure that samples in glass jars are wrapped in plastic to prevent breakage and placed in appropriate containers, such as coolers, for shipment? (Section C1-6)	MP-TRUW-8.34, S. 3.1.6.1	Y	Interview with SS SME 10/17/12.	Y	
119	Are procedures in place to ensure that adequate cold packs are included in the sample shipping container to ensure that all temperature requirements are met? (Section C1-6)	MP-TRUW-8.34, S. 3.1.6.3	Y	Interview with SS SME 10/17/12.	Y	Custody forms contain preservation information.
120	Are procedures in place to ensure that sample COC forms are secured for shipment to the inside of the sealed and locked shipping container ~~lid~~ and that samples and shipping containers are affixed with tamper proof seals? (Section C1-6)	MP-TRUW-8.34, S. 3.1.12-14	Y	Interview with SS SME 10/17/12.	Y	
121	Are procedures in place to ensure that appropriate blank samples are included with each shipment container containing VOC samples? (Section C1-6)	INST-OI-16, S. 4.13 INST-OI-75, S. 4.5 INST-OI-73, S. 4.13 MP-TRUW-8.34, S. 3.1.5.1.C	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)**	Y	BDRs contain blank sample identification in sample BDR and on COC.
122	Are procedures in place to ensure that a custody seal or device is securely affixed across the lid and body of each sample and shipment container, and is traceable to the individual who affixed the seal or device? (Section C1-6)	INST-OI-16, S. 3.1.19, 3.1.37 & 4.12.8.1 INST-OI-75, S. 3.1.20 & 4.4.8.1 INST-OI-73, S. 3.1.19, 3.1.36 & 4.12.7.1 MP-TRUW-8.34, S. 3.1.14	Y	Interview with SS SME 10/17/12.	Y	
	LABORATORY OPERATIONS					
123	Are procedures in place to ensure that only laboratories that are qualified	N/A	N/A	N/A	N/A	AMWTP only performs solids

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	through participation in the Performance Demonstration Program are eligible to analyze waste samples? (Section C-3a(3))					sampling. Solids analysis is performed by INL/CCP and audited separately.
124	Are procedures available from all participating laboratories that adequately document that custody is maintained until the sample is released by the site project manager or until the sample is expended? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.
	VOLATILE AND SEMI-VOLATILE ANALYSIS OF CORE SAMPLES					
125	Are procedures documented to ensure that all VOC and SVOC analyses are evaluated using the following criteria: • GC/MS Tunes, Initial Calibrations and Continuing Calibration will be performed and evaluated using criteria in Table C3-5 (VOCs) or Table C3-7 (SVOCs) and SW-846 methods • Precision is shall be assessed through analyzing of laboratory duplicates or matrix spike duplicates, LCS replicates, and PDP blind-audit samples in comparison to Table C3-4 (VOCs) and Table C3-6 (SVOCs). • Accuracy as %R is shall be assessed through evaluation of LCS, Matrix spikes, PDP blind-audit samples, and surrogate compounds in comparison to criteria in Table C3-4 and Table C3-5 (VOCs) and Table C3-6 and Table C3-7 (SVOCs) or the SW-846 method. • Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples collected. • Comparability is assessed through use of standardized SW-846 methods sample preparation and methods that meet the QAO requirements in Tables C3-4 and C3-5 (VOCs) and Tables C3-6 and C3-7(SVOCs), traceable standards, and by requiring participation in the PDP. • Representativeness is assured through the use of unbiased sample collection. • Results and method detection limits are expressed in Mg/Kg. • All method detection limits and program required quantitation limits	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	shall be less than or equal to the limits listed in Table C3-4 or Table C3-6 and the detection limit study procedures shall be documented in SOPs. (Section C3-6 and C3-7)					
126	Are procedures documented to ensure that Tentatively Identified Compounds shall be added to the target analyte list if detected in a given waste stream if they are reported in 25% of the waste containers sampled from a given waste stream, and if they appear in the 20.4.1.200 NMAC (incorporating 40 CFR 261) Appendix VIII list? (Section C-3a(1))	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.
126a	Are procedures documented to ensure that the following criteria are met with regard to the recognition and reporting of TICS for GC/MS Methods for homogeneous solids and soils and gravels in accordance with SW-846 criteria: • Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum. • The relative intensities of the major ions should agree within ± 20 percent. • Molecular ions present in the reference spectrum should be present in the sample spectrum. • Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds. • Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks. • The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC (incorporating 40 CFR 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples. • TICs for headspace gas analyses that are performed through FTIR analyses shall be identified in accordance with the specifications of SW-846 Method 8410. (Section C3-1)	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
126b	TICs shall be reported as part of the analytical batch data reports for GC/MS Methods in accordance with the following minimum criteria: • a TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 10% of the area of the nearest internal standard. • a TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard. • a TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard. • a TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard. (Section C3-1)	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	METALS ANALYSIS OF CORE SAMPLES					
127	Are procedures in place to ensure that all Metals analyses are evaluated using the following criteria: • Precision shall be assessed by analyzing of laboratory sample duplicates or laboratory matrix spike duplicates, LCS replicates, and PDP blind audit samples in comparison to Table C3-8 • Accuracy is shall be assessed through analysis of laboratory , matrix spikes, PDP blind-audit samples, serial dilutions, interference check samples, and laboratory control samples in comparison to criteria in Tables C3-8 and C3-9 • Instrument detection limits are expressed in ug/L and results are listed in Mg/Kg. • All instrument detection limits and program required detection limits shall be less than the limits listed in Table C3-8 and the detection limit study procedures shall be documented in laboratory SOPs. The Instrument detection limits shall be less than the associated PRDL for each analyte *(This requirement is not mandatory if the sample concentrations are greater than 5 times the instrument detection limit (IDL) for a method)* • Instrument detection limits shall be determined semiannually using procedures documented in laboratory SOPs	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.
127a	• Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. • Comparability is assessed through use of standardized SW-846 sample preparation and methods that meet the QAO requirements in Tables C3-8 and C3-9, demonstrating successful participation in the PDP and use of traceable standards. • Representativeness is assured through the use of unbiased sample collection and preparation of samples using unbiased methods. • Results PRQLs are expressed in Mg/Kg wet weight (Section C3-8)	N/A	N/A	N/A	N/A	AMWTP only performs solids sampling. Solids analysis is performed by INL/CCP and audited separately.

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	QUALITY ASSURANCE OBJECTIVES					
128	Are procedures in place to ensure that the sample completeness rate is expressed as the number of valid samples collected as a percentage of the total samples collected for each waste stream? The rate must be greater than 90 percent for all compounds in a waste stream. (Section C3-3)	MP-TRUW-8.11, S. 3.2.15	Y	AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
129	Are procedures in place to ensure that sampling operations are comparable through the use of standardized procedures, sampling equipment, and measurement unit's participation in the PDP? (Section C3-3)	INST-OI-16, (All) INST-OI-75, (All) INST-OI-73, (All)	Y	SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 (**SOL-2)**	Y	AMWTP only performs solids sampling. Analysis is performed by INL/CCP and participation in PDP is verified in a separate audit.
130	Are procedures in place to ensure that sampling precision shall be determined through the collection of field duplicates at a rate of 1 per sampling batch (up to 20 samples) or 1 per week, whichever is more frequent? (Section C3-3)	INST-OI-16, S. 4.3.9.9 Notes 1 & 2 INST-OI-75, S. 4.2.3 Notes 2 & 3 INST-OI-73, S. 4.3.23 Notes1 & 2	Y	SS BDRs: SSG12-00004, p. 14-19 **(SOL-1)** SSC12-00004, p. 14-24 **(SOL-2)**	Y	
131	Are procedures in place to ensure that the variance measured between co-located core samples is compared to the variance within the waste stream using the F-test? (Section C3-3)	MP-TRUW-8.17, S. 3.1 & 3.2	Y	Co-located Solid Sampling F-Test Results-JHK-002-10 Co-located Core Sample Control Charts-JHK-002-11 **(SOL-15)**	Y	
132	Are procedures in place to ensure that sampling accuracy as a result of equipment blank evaluation is determined through the collection of equipment blanks at a frequency of once per equipment cleaning batch? (Section C3-3)	INST-OI-16, S. 4.24 INST-OI-75, S. 4.16 INST-OI-73, S. 4.24	Y	American Diamond Tool cleaning procedure **(SOL-5)** American Diamond Tool Equipment Sampling Blank Procedure **(SOL-6)** Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)**	Y	

	WAP Requirement AMWTP Recertification Audit A-13-01 Table C6-2 Solids and Soils/Gravel Sampling Checklist [1]	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
133	Are procedures in place to ensure that the representativeness of samples is demonstrated through the following requirements: • Use of coring tools and sampling equipment that are clean prior to use • The entire depth of the waste minus a documented safety factor shall be cored and the core collected shall have a core length greater than or equal to 50 percent • The core recovery is calculated as the length of the core collected over the depth of the waste in the container • Coring operations and tools should be designed to minimize alteration of the in-place waste characteristics and the minimum waste disturbance shall be verified by visually examining the core and documenting the observation in field logbooks *(Note: if core recovery is less than 50 percent, a second core shall be randomly selected. The core with the best recovery shall be used for sample collection)* (Section C3-3)	INST-OI-16, (All) INST-OI-73, (All) INST-OI-75, (All)	Y	Bullet 1: Cleaning certifications for SS BDRs: SSG12-00004 **(SOL-7)** SSC12-00004 **(SOL-8)** AMWTP SOW **(SOL-13)** Bullets 2 & 3: SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** Bullet 4: SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** Design drawings and schematics for automated coring **(SOL-3)** and polycarbonate liners **(SOL-4)**	Y	

1. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table C6-3 Acceptable Knowledge (AK) Checklist
AMWTP Recertification Audit A-13-01
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Acceptable Knowledge (AK) Checklist[1]

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	GENERAL REQUIREMENTS					
134	Are the primary document(s) required in Permit Attachment C4 containing acceptable knowledge information available? (Section C4-2)	MP-TRUW-8.13, S. 3.3, 3.4, & 3.5 MP-TRUW-8.14, S. 3.1	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)**	Y	The audit team conducted recertification audit A-13-01 at the AMWTP for contact-handled (CH) TRU Mixed Waste for summary category groups (SCG) S5000 debris and S3000 solids waste. The audit team evaluated the CH SCG S5000 Supercompacted Debris Waste stream, BN510.1 and the CH SCG S3000 Cemented Sludge BN836 solids waste stream.

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
135	Has the generator developed a methodology whereby a logical sequence of acceptable knowledge information that progresses from general facility to more detailed waste-specific information can be acquired? (Section C4-2)	MP-TRUW-8.13, S. 3.1 & 3.2	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)** AK Source Document Summaries for waste stream BN510.1 **(AK-11)** AK Source Document summaries for waste steam BN836 **(AK-12)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
136	Does the site have adequate procedures in place to ensure that the Acceptable Knowledge process is adequately implemented? Do these procedures facilitate the mandatory traceability analysis performed for each Summary Waste Category Group examined during the audit? (Section C4-2)	MP-TRUW-8.13, S. 3.2 & 3.5 MP-TRUW-8.14, S. 3.1	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** Waste Stream Profile Form and attachments for waste stream BN510.1 **(AK-5)** Waste Stream Profile Form and attachments for waste stream BN836 **(AK-6)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)** AK Source Document Summaries for waste stream BN510.1 **(AK-11)** AK Source Document summaries for waste steam BN836 **(AK-12)** Traceability BDRs	Y	A total of five containers were subjected to the WAP required traceability exercise including at least one container from HSG or Solids Sampling and Analysis. The container numbers are: BN510.1 BN10421829 BN10430658 BN10452423 BN836 10123139 10059943

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				RTR: RTR06-00548 **(AK-27)** RTR06-00062 **(AK-28)** VE: VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** HSG S&A: HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** Solids S&A: SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** HSG Random Sample Selection Memos for waste stream BN510.1 **(AK-17)** HSG Sampling Reports for BN510.1 **(AK-18)** Solids Random Sample Selection Memos for waste stream BN836 **(AK-19)** Solids Sampling Report for BN836 **(AK-20)** Data Reconciliation reports for BN510.1 and BN836 **(AK-21)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				WTS Database Container Inventory and Screenshots **(AK-16)**		
137	Does the generator site's TRU mixed waste management program information clearly define (or provide a methodology for defining) waste categorization schemes and terminology, provide a breakdown of the types and quantities of TRU mixed waste generated/stored at the site, and describe how waste is tracked and managed at the generator site (including historical and current operations? Do procedures ensure that waste streams are adequately identified? (Section C4-2a)	MP-TRUW-8.13, S. 3.3, 3.4.3, 3.5.1.4 (and note above) & 3.5.1.8	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AWMTP Waste Stream Designations, RPT-TRUW-12, Rev. 18 **(AK-8)** WTS Database Container Inventory and Screenshots **(AK-16)**	Y	
138	Does site documentation procedures indicate that the site will document, justify, and consistently define waste streams and assign EPA hazardous waste numbers? (Section C4-2b)	MP-TRUW-8.13, S. 3.5.2	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	REQUIRED AND ADDITIONAL INFORMATION					
140	Does the generator site document that the following must be included in the acceptable knowledge record: 1. Map of the site with the areas and facilities involved in TRU waste generation, treatment, and storage identified 2. Facility mission description as related to TRU waste generation and management (e.g., nuclear weapons research may involve metallurgy, radiochemistry, and nuclear physics operations that result in specific waste streams) 3. Description of the operations that generate TRU waste at the site (e.g., plutonium recovery, weapons design, or weapons fabrication) 4. Waste identification or categorization schemes used at the facility (e.g., item description codes, content codes) 5. Types and quantities of TRU mixed waste generated, including historical generation through future projections 6. Correlation of waste streams generated from the same building and process, as appropriate (e.g., sludge, combustibles, metals, and glass) 7. Waste certification procedures for retrievably stored and newly generated wastes to be sent to the WIPP facility (Section C4-2a)	1-7: MP-TRUW-8.13, S. 3.2.4 & note above	1-7: Y	**1.** AMWTP-RPT-TRUW-06, Rev. 14, S. 3.1 & Figure 2 **(AK-3)** AMWTP-RPT-TRUW-13, Rev. 7, S. 3.1 & Appendix A **(AK-4)** **2.** AMWTP-RPT-TRUW-06, Rev. 14, S. 3.2 & 3.3 **(AK-3)** AMWTP-RPT-TRUW-13, Rev. 7, S. 3.1 (**AK-4)** **3.** AMWTP-RPT-TRUW-06, Rev. 14, S. 3.6 **(AK-3)** AMWTP-RPT-TRUW-13, Rev. 7, S. 3.2 (**AK-4)** **4.** AMWTP-RPT-TRUW-06, Rev. 14, S. 3.5.1 **(AK-3)** AMWTP Waste Stream Designations RPT-TRUW-12, Rev. 18**(AK-8)** AMWTP-RPT-TRUW-13, Rev. 7, S. 3.4 **(AK-4)** **5.** RPT-TRUW-63, Rev. 6, S. 1.2.3 (**AK-2)** WTS Database Container Inventory **(AK-16)** RPT-TRUW-83, Rev. 3, S. 1.2.3 **(AK-1)** **6.** RPT-TRUW-06, Rev. 14, S. 3.10 **(AK-3)** AMWTP Waste Stream Designations RPT-TRUW-12, Rev.18 **(AK-8)** **7.** AMWTP-RPT-TRUW-06, Rev. 14, S. 3.8 **(AK-3)** AMWTP-RPT-TRUW-13,	1-7: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				Rev. 7, S. 3.9 **(AK-4)**		
141	Does the generator site document that the following shall be collected for each waste stream: A. Area(s) and/or building(s) from which the waste stream was or is generated B. Waste stream volume and time period of generation (e.g., 100 standard waste boxes of retrievable stored waste generated from June 1977 through December 1977) C. Waste generating process described for each building (e.g., batch waste stream generated during decommissioning operations of glove boxes), including processes associated with U134 waste generation, if applicable. D. Documentation demonstrating how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU non-mined waste) E. Process flow diagrams (e.g., a diagram illustrating glove boxes from a specific building to a size reduction facility to a container storage area). In the case of research/development, analytical laboratory waste, or the similar processes where process flow diagrams cannot be created, a description of the waste generating processes, rather than a formal process flow diagram, may be included if this modification is justified and the justification is placed in the auditable record F. Material inputs or other information that identifies the chemical content of the waste stream and the physical waste form (e.g., glove box materials and chemical handled during glove box operations, events or processes that may have modified the chemical or physical properties of the waste stream after generation, data obtained through visual examination of newly generated waste that later undergoes radiography; information demonstrating neutralization of U134 [hydrofluoric acid] and waste compatibility.	A-F: MP-TRUW-8.13, S. 3.2.5, (note above)	A-F: Y	RPT-TRUW-83, Rev. 3 **(AK-1)** RPT-TRUW-63, Rev. 6 **(AK-2)** **A.** S. 1.2.2 **(AK-1)** S. 1.2.2 (**AK-2)** **B.** S. 1.2.3 **(AK-1)** S. 1.2.3 **(AK-2)** **C.** S. 1.4 **(AK-1)** S. 1.4 **(AK-2)** **D.** AMWTP Waste Stream Designations RPT-TRUW-12, Rev. 18, Appendix A **(AK-8)** RPT-TRUW-63, Rev. 6, S. 1.6 **(AK-2)** AMWTP-RPT-TRUW-13, Rev. 7, S. 5.4.1 **(AK-4)** **E.** Figure 1 **(AK-1)** AMWTP-RPT-TRUW-13, Rev. 7, Figure 3-8 **(AK-4)** **F.** S. 1.4.4, 1.4.5, 1.7, Tables 1, 2, 3, & Appendix A **(AK-1)** S. 1.4.5, 1.4.6 & 1.6.1 **(AK-2)**	A-F: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	(Section C4-2b)					
142	Do site documents/procedures require that the facility will provide a summary to the Permittees that summarizes all information collected, including basis and rationale for all waste stream designations? Is an example of this summary available for audit review? If discrepant hazardous waste data exist in required information, do sites consider applying all hazardous waste numbers, but assess and evaluate the information to determine the appropriate hazardous waste number consistent with RCRA requirements? (Section C4-2b)	MP-TRUW-8.13, S. 3.5 & 3.7	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AK Discrepancy Resolutions in the AK record **(AK-14)**	Y	
143	Do site procedures indicate that if the required AK information is not available for a particular waste stream, that the waste stream will not be eligible for an AK Sufficiency Determination? (Section C4-2)	MP-TRUW-8.13, S. 3.6	Y	AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1and BN836 **(AK-9)**	Y	AMWTP has not requested a AKSD but all required information is available

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
144	Have the following procedures been prepared?: A. Procedures for identifying and assigning the physical waste form of the waste B. Procedures for delineating waste streams and assigning Waste Matrix Codes C. Procedures for resolving inconsistencies in acceptable knowledge documentation D. Procedures for headspace gas sampling and analysis, visual examination and/or radiography, and homogeneous waste sampling and analysis, if applicable	**A:** MP-TRUW-8.13, App. B I. [C, K, & L] **B:** MP-TRUW-8.13, S. 3.4.1, 3.3.5 & 3.5.1.3 **C:** MP-TRUW-8.13, S. 3.7, Appendix E **D:** INST-OI-16, (All) INST-OI-43, (All) INST-OI-73, (All) INST-OI-75, (All) INST-OI-12, (All) INST-OI-81, (All) INST-OI-34, (All) INST-FOI-17, (All)	A-I: Y	**A.** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.4.4, 1.4.5, Tables 1, 2, & Appendix A **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.5, 1.4.6 & Table 1-3 **(AK-2)** **B.** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2.9 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2.9 **(AK-2)** Waste Matrix Code Reference Manual R30 **(AK-7)** **C.** AK Discrepancy Resolutions in the AK record **(AK-14)** **D.** HGS BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** SS BDRs: SSG12-00004 **(SOL-1)** SSC12-00004 **(SOL-2)** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442	A-I: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	E. For newly generated waste, procedures describing process controls used to ensure prohibited items (specified in the WAP, Permit Attachment C) are documented and managed F. Procedures to ensure radiography and visual examination include a list of prohibited items that the operator shall verify are not present in each container (e.g. liquid exceeding TSDF-WAC limits, corrosives, ignitables, reactives, and incompatible wastes)	**E:** MP-TRUW-8.13, S. 3.3.7 & 3.5.6 INST-FOI-17, (All) **F.** INST-OI-12, (All) INST-OI-81, (All) INST-OI-34, (All) INST-FOI-17, (All)		RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** **E.** VE BDRs: VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** **F.** RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	G. Procedures to document how changes to Waste Matrix Codes, waste stream assignment, and associated Environmental Protection Agency hazardous waste numbers based on material composition are documented for any waste H. Procedures that ensure the assignment of EPA hazardous waste numbers is appropriate, consistent with RCRA requirements, and adequately considers site historical waste management I. Procedures for estimating waste material parameter weights (Section C4-2b)	**G:** MP-TRUW-8.13, S. 3.7 & Appendix E **H:** MP-TRUW-8.13, S. 3.5.2 **I:** MP-TRUW-8.13, S. 3.5.1.6 and note above, Appendix B I.M		VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** **G.** AK Discrepancy Resolutions in the AK record **(AK-14)** AK Discrepancy Resolutions at Characterization and AK Reevaluations **(AK-15)** **H.** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)** **I.** AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.6 & Table 1-3 **(AK-2)** Waste Material Parameter Weight Estimate memos for waste streams BN510.1		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				and BN836 **(AK-24)**		
145	Does the generator provide procedures or written commitment to collect additional acceptable knowledge information, as available and as necessary to augment mandatory information? (Section C4-2c)	MP-TRUW-8.13, S. 3.2.6	Y	AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1and BN836 **(AK-9)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
145a	For waste containers that belong to LANL sealed sources waste streams, and for which headspace gas sampling and analysis is not required, are there procedures in place to assure the collection of the following additional AK? A. Documentation that the waste container contents meet the definition of sealed sources per 10 CFR 30.4 and 10 CFR 35.2 (effective January 1, 2004) B. Documentation of the certification of the sealed sources as U.S. Department of Transportation Special Form Class 7 (Radioactive) Material per 49 CFR 173.403 (effective October 1, 2003) C. Documentation of contamination survey results that validate the integrity of each sealed source per 10 CFR 34.27 (effective January 1, 2004). D. AK documentation does not indicate the use of VOCs or VOC-bearing materials as constituents of the sealed sources. E. The outer casing of each sealed source must be of a non-VOC bearing material, which must be verified at the time of packaging. F. AK documentation that includes but is not limited to, as available and as necessary to determine the hazardous constituents associated with sealed sources, the following: source manufacturer's sales catalogues, original purchase records, source manufacturer's fabrication documents, source manufacturer's drawings, source manufacturer's fuel capture assembly reports, source manufacturer's operational procedures for cleanliness requirements, source manufacturer's shipping documents, source manufacturer's welding records, transuranic batch material records, and information from national databases (e.g., NMMSS). All of this information may not and need not be available for each source, but sufficient information must be included in the auditable record to derive an adequate understanding of source construction and history to ensure that no VOCs are present in association with the sealed source itself that would render the source hazardous. If AK data indicate that assignment of a hazardous waste number related to organic materials is required in association with a source, this specific source will be assigned to a separate waste stream and that waste stream will be subject to headspace gas sampling unless a separate AK Sufficiency Determination is approved for the waste stream. (Section C4-2c)	N/A	N/A	N/A	N/A	This is not a LANL audit

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
146	Does the generator site document that all additional specific, relevant information used in the acceptable knowledge process will be identified and its use explained? Is all necessary information assembled and has it been appropriately used? (Section C4-2c)	MP-TRUW-8.13, S. 3.2.6	Y	AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1and BN836 **(AK-9)**	Y	
147	Does the generator site discrepancy analysis documentation (for acceptable knowledge additional and required documentation) indicate that if discrepancies are detected, the site may consider applying all hazardous waste numbers indicated in the required and additional information, but must assess and evaluate the information to determine the appropriate hazardous waste numbers consistent with RCRA requirements? (Section C4-2c)	MP-TRUW-8.13, S. 3.7 & Appendix E	Y	AK Discrepancy Resolutions in the AK record **(AK-14)**	Y	
	TRAINING					
148	Does the generator site have procedures to ensure that all personnel involved with acceptable knowledge waste characterization have the following training, and is this training documented? A. WIPP WAP in Permit Attachment C and the TSDF-WAC specified in this permit B. State and Federal RCRA regulations associated with solid and hazardous waste characterization C. Discrepancy resolution and reporting D. Site-specific procedures associated with waste characterization using acceptable knowledge (Section C4-3a)	MP-TRUW-8.2, S. C4-3a MP-RTQP-14.4, (All) LST-RTQP-03-IM, S. 2.0	Y	Training/Qualification records for Acceptable Knowledge personnel performing characterization related activities **(AK-43)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	PROCEDURES					
149	Has the generator site developed the following procedures, and are these procedures technically sufficient?		A-D: Y	A: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)** AK Source Document Summaries for waste stream BN510.1 **(AK-11)** AK Source Document summaries for waste steam BN836 **(AK-12)**	A-D: Y	
	A. Sites must prepare and implement a written procedure outlining the specific methodology used to assemble acceptable knowledge records, including the origin of the documentation, how it will be used, and any limitations associated with the information (e.g., identify the purpose and scope of a study that included limited sampling and analysis data).	A: MP-TRUW-8.13, S. 3.2				
	B. Sites must develop and implement a written procedure to compile the required acceptable knowledge record.	B: MP-TRUW-8.13, S. 3.2		B: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	C. Sites must develop and implement a written procedure that ensures unacceptable wastes (e.g., reactive, ignitable, corrosive) are identified and segregated from TRU mixed waste populations sent to WIPP. D. Sites must prepare and implement a written procedure to evaluate acceptable knowledge and resolve discrepancies. For example, if different sources of information indicate different hazardous wastes are present, then sites must include all sources of information in its records and may choose to either conservatively assign hazardous waste numbers, or assign only those numbers deemed appropriate and consistent with RCRA requirements. All information used to justify assignment of hazardous waste numbers must be placed in the auditable record. Further, the assignment of hazardous waste numbers shall be tracked in the auditable record to all required documentation.	C: MP-TRUW-8.13, S. 3.3.7 & 3.5.6 INST-FOI-17, (All) MP-Q&SI-5.4, (All) D: MP-TRUW-8.13, S. 3.7 & Appendix E		AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)** C: NCRs for prohibited items **(AK-13)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)** "Hold" Tag **(AK-23)** Database spreadsheet (Electronic Hold on Container) **(AK-22)** D. AK Discrepancy Resolutions in the AK record **(AK-14)**		
149a	E. Sites must prepare and implement a written procedure to identify hazardous wastes and assign the appropriate hazardous waste numbers to each waste stream. The following are minimum baseline requirements/standards that site-specific procedures must include to ensure comparable and consistent characterization of hazardous waste:	E1: MP-TRUW-	E1-E6: Y	E1: AK Summary for	E1-E6: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	1. Compile all of the required information in an auditable record.	8.13, S. 3.2.4, 3.2.5 & 3.7 note 1		Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7 (**AK-4)**		
	2. Review the compiled information and delineate waste streams. Delineation of waste streams must comply with the WAP definition in Permit Attachment C, Section C-0a, and justify combining waste historically managed separately as TRU mixed and TRU non-mixed waste streams into a single waste stream.	E2: MP-TRUW-8.13, S. 3.3.5 note above		E2: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3**,** S. 1.6, 1.7.2.2, 1.7.2.3, 1.7.2.4 & 1.7.2.6 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.5 & 1.6.2 **(AK-2)**		
	3. Review the compiled information to determine if the waste stream is compliant with the TSDF-WAC	E3: MP-TRUW-8.13, S. 3.3.7, 3.5.6 & 3.5.3 INST-FOI-17, (All)		E3: NCRs for prohibited items **(AK-13)** Waste Matrix Code Reference Manual Rev. 30 **(AK-7)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	4. Review the required information to determine if the waste is listed under 20.4.1.200 NMAC (incorporating 40 CFR 261), Subpart D. Assign all listed hazardous waste numbers, unless the site chooses to justify an alternative assignment and document the justification in the auditable record. 5. Review the required information to determine if the waste exhibits a hazardous characteristic or may contain hazardous constituents included in the toxicity characteristics specified in 20.4.1.200 NMAC (incorporating 40 CFR 261, Subpart C. If a toxicity characteristic contaminant is identified and is not included as a listed waste, sites may evaluate available data and assign the toxicity characteristic hazardous waste number consistent with RCRA requirements. All data examined to reach the hazardous waste number determination must be placed in the auditable record and must present a clear justification for the hazardous waste number analyses. 6. Review the compiled information to provide an estimate of the material parameter weights for each container to be stored or disposed of at WIPP. For newly generated waste, procedures shall be developed and implemented to characterize hazardous waste using acceptable knowledge prior to packaging.	E4&5: MP-TRUW- 8.13, S. 3.5.2 E6: MP-TRUW-8.13, S. 3.5.1.6 Appendix B, Section I, M		E4&5: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7 & Table 3**(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.6, Tables 1-1 & 1-2 **(AK-2)** E6: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 1, S. 1.4.5 & Table 2 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.4.6 & Table 1-3 **(AK-2)** Waste Material Parameter Weight Estimate memos for waste streams BN510.1 and BN836 **(AK-24)**		
149b	F. Sites shall ensure that results of audits of the TRU mixed waste characterization programs at the site are available in the records. G. Sites shall identify all process controls (implemented to ensure that the waste contains no prohibited items and to control hazardous waste content and/or physical form) that have been applied to retrievably stored waste and/or may presently be applied to newly generated waste. Process controls are applied at the time of waste generation/packaging to control waste content, whereas any activities performed after waste generation/packaging to identify prohibited items, hazardous waste content, or physical form are waste characterization activities, not process controls. The AK record must contain specific process control and supporting	F: MP-M&IA-17.2, S. 6.0 G: MP-TRUW-8.13, S. 3.5.6, Appendix B, Section I, Items I through M INST-FOI-17, (All)	F-G: Y	F. Management Assessment Status Report **(AK-25)** G. AK Source Document summaries for waste steam BN836, P474A, P379A **(AK-12)** VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)**	F-G: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	documentation identifying when these process controls are used to control waste content. See Permit Attachment C, Section C-2 for programmatic requirements related to process controls. (Section C4-3b)			VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)** VEB12-00651 **(AK-35)**		
150	Does the site have implemented procedures which comply with the following criteria to establish acceptable knowledge records: A. Acceptable knowledge information shall be compiled in an auditable record, including a road map for all applicable information. B. The overview of the facility and TRU mixed waste management operations in the context of the facility's mission shall be correlated to specific waste stream information.	A: MP-TRUW-8.13, (All) B: MP-TRUW-8.13, S. 3.2.4, 3.3, & Appendix B	A-E: Y	A: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1 and BN836 **(AK-9)** B: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.0 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63,	A-E: Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	C. Correlations between waste streams, with regard to time of generation, waste generating processes, and site-specific facilities shall be clearly described. For newly generated wastes, the rate and quantity of waste to be generated shall be defined.	C: MP-TRUW-8.13, S. 3.2.4, 3.2.5, & 3.3		Rev. 6, S. 1.0 **(AK-2)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14, S. 3.2, 3.3 & 3.5 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7, S. 3.1 & 3.4 (**AK-4)** C: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2.3, 1.2.4 & 1.4 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2.3, 1.2.4 & 1.4 **(AK-2)** AK Baseline Document for AMWTP Waste, RPT-TRUW-06, Rev. 14, S. 3.5, 3.6 & 7.2 **(AK-3)** AK Document for INL Stored TRU Waste-Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 7, S. 3.2 & 3.3 (**AK-4)**		
	D. A reference list shall be provided that identifies documents, databases, Quality Assurance protocols, and other sources of information that support	D: MP-TRUW-8.13, S. 4.0 & 6.0		D: AK Source Document Reference List **(AK-10)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	the acceptable knowledge information. E. Container inventories for TRU mixed waste in retrievable storage shall be delineated into waste streams by correlating the container identification to all of the required and additional AK information. (Section C4-3c)	E: MP-TRUW-8.13, S. 3.3.5, 3.4.3 & 3.5.1.4		E: AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.2.3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6, S. 1.2.3 **(AK-2)** WTS Database Container Inventory and screenshots **(AK-16)**		
151	If the generator site submitted an AK Sufficiency Determination Request for a specific waste stream, did the site provide all of the requisite information including the identification of the applicable scenario for which approval is sought? (Section C-0b)	MP-TRUW-8.13, S. 3.6	Y	N/A	N/A	The generator is not seeking an AK Sufficiency Determination for the waste streams audited.
	AUGMENTATION OF ACCEPTABLE KNOWLEDGE					
152	Does the generator site have written procedures for the augmentation of all acceptable knowledge information using sampling and analysis. Sampling and analysis consists of radiography, visual examination, headspace gas, and homogeneous waste sampling and analysis. Do site procedures indicate that the following sampling and analysis will be conducted based upon the results of the Determination Request Any scenario denied - 100% RTR or VE and statistical HSG or solids S&A Scenario 1 Granted -No sampling and analysis radiography/visual examination is required Scenario 2 Granted-Radiography/visual examination is not required but statistical HSG or solids S&A is required Scenario 3 Granted-100% RTR or VE is required, sampling and analysis is not required (Section C4-1, C-0b)	MP-TRUW-8.13, S. 3.5, 3.6 & 3.8 (Notes 1-4)	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3 **(AK-1)** AK Summary for Cemented Sludge BN836, RPT-TRUW-63, Rev. 6 **(AK-2)** RTR BDRs: RTR06-00548 **(AK-27)** RTR06-00062 **(AK-28)** VE BDRs: VEB11-00835 **(AK-29)** VEB11-00837 **(AK-30)** VEB12-00021 **(AK-31)** VEB12-00020 **(AK-32)** VEB12-00649 **(AK-33)** VEB12-00650 **(AK-34)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				VEB12-00651 **(AK-35)** <u>HSG S&A BDRS:</u> HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** <u>Solids S&A BDRs:</u> SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** HSG Random Sample Selection Memos for waste stream BN510.1 **(AK-17)** HSG Sampling Reports for BN510.1 **(AK-18)** Solids Random Sample Selection Memos for waste stream BN836 **(AK-19)** Solids Sampling Report for BN836 **(AK-20)** Data Reconciliation reports for BN510.1 and BN836 **(AK-21)**		
155	Does the generator site have procedures for reevaluating acceptable knowledge if the results of the waste characterization indicate that the waste to be shipped does not match the approved waste stream or if the data from radiography or visual examination for waste streams without an AK Sufficiency Determination exhibit this discrepancy? Does this procedure describe how the waste is reassigned, acceptable knowledge reevaluation, and appropriate hazardous waste numbers are assigned? (Section C4-3e)	MP-TRUW-8.13, S. 3.7	Y	AK Discrepancy Resolutions at Characterization and AK Reevaluations **(AK-15)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
156	Do site procedures indicate that debris wastes are assigned toxicity characteristic EPA numbers based on AK regardless of the quantity or concentration? (C4-3e)	MP-TRUW-8.13, S. 3.5.2.3 & 3.5.2.4	Y	AK Summary for Supercompacted Debris Waste BN510.1, RPT-TRUW-83, Rev. 3, S. 1.7.2.5 & Table 3 **(AK-1)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	CRITERIA FOR ASSEMBLING AN ACCEPTABLE KNOWLEDGE RECORD DELINEATING THE WASTE STREAM					
158	If wastes are reassigned to a different waste matrix code based on site visual examination or radiography or Permittee confirmation activities, does the generator site have written documentation to ensure that the following steps are followed: A. Review existing information based on the container identification number and document all differences in hazardous waste number assignments B. If differences exist in the hazardous waste numbers that were assigned, reassess and document all required acceptable knowledge information (Section C3-b) associated with the new designation C. Reassess and document all sampling and analytical data associated with the waste D. Verify and document that the reassigned waste matrix code was generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during radiography or visual examination E. Record all changes to acceptable knowledge records F. If discrepancies exist in the acceptable knowledge information for the revised waste matrix code, document the segregation of the affected portion of the waste stream, and define the actions necessary to fully characterize the waste (Section C4-3e)	MP-TRUW-8.13, S. 3.7. Form 1070	Y	AK Discrepancy Resolutions at Characterization and AK Reevaluations **(AK-15)**	Y	
161	Do site procedures ensure that headspace gas and solid/soil analytical data are used to resolve AK assignments for hazardous waste, as necessary? If a constituent is detected in headspace gas that the site believes isn't from the waste process, the site must provide documentation to support any determination that organic constituents are associated with packaging materials, radiolysis, or other uses not consistent with solvent use. If the source of the detected headspace gas solvents cannot be identified, the appropriate F listing will be assigned. If a constituent in a listed waste is present in solid/soil analytical results, the appropriate listed waste shall be added to the waste stream. F-listed waste assigned by acceptable knowledge shall not be removed based on headspace gas or solids analysis. In the case of totals/TCLP analysis, do procedures reflect the allowance for concentration assessments, wherein sites may add or remove total/TCLP and non-toxic F003 constituents found in headspace and solid/soil analyses? (Section C4-3e)	MP-TRUW-8.13, S. 3.8	Y	HSG S&A BDRs: HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** Solids S&A BDRs: SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** HSG Sampling Reports for BN510.1 **(AK-18)** Solids Sampling Report for BN836 **(AK-20)**	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
162	If sampling and analysis conducted to augment AK determines that a hazardous constituent as identified in headspace gas sampling or soil/homogeneous waste sampling is present in the waste, does the generator site indicate that they will: 1) assign the hazardous waste number to the entire waste stream as applicable, or 2) segregate drums containing detectable concentrations of solvent into a separate waste stream, and assign applicable hazardous waste numbers? (Section C4-3e)	MP-TRUW-8.13, S. 3.8 & Appendix E	Y	HSG S&A BDRs: HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** Solids S&A BDRs: SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** HSG Sampling Reports for BN510.1 **(AK-18)** Solids Sampling Report for BN836 **(AK-20)**	Y	
163	Does the generator site document, justify, and consistently delineate waste streams and assign hazardous waste numbers based on site specific permit requirements or state-enforced agreements? (Section C4-3e)	MP-TRUW-8.13, S. 3.5.2	Y	N/A	N/A	There are no specific Idaho state hazardous waste codes to be applied.

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
164	Does the generator site have written methodologies for determining the mean concentration of solvent VOCs detected by either headspace gas analysis or homogeneous waste sampling for each waste stream or waste stream lot, and are all data ("U" flags designated as one half the MDL and "J" flags, which are less than the PRQL but greater than the MDL)? (Section C4-3e)	MP-TRUW-8.11, S. 3.2.8 & 3.2.10	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600)	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
165	Do procedures ensure that spent solvent assignments are made by using the UCL_{90} (of mean concentration), and comparing this with the PRQLs? If the UCL_{90} exceeds the PRQL, is acceptable knowledge reevaluated and determine potential source of the constituent? (Section C4-3e)	MP-TRUW-8.11, S. 3.0 MP-TRUW-8.13, S. 3.7, 3.8 & Appendix E	Y	HSG S&A BDRs: HS111-00023 **(AK-36)** HS112-00002 **(AK-37)** Solids S&A BDRs: SSC07-00101 **(AK-38)** ALD07014V **(AK-39)** ALD07011S **(AK-40)** ALD07018M **(AK-41)** ALD07007N **(AK-42)** HSG Sampling Reports for BN510.1 **(AK-18)** Solids Sampling Report for BN836 **(AK-20)**	Y	
167	Does the site have written procedures for situations where concentrations of some VOCs are orders of magnitude higher than other target analytes? In these cases, elevated MDLs may be generated, and those constituents with an elevated MDL but "U" designation will not be used in mean calculations. (Section C4-3e)	MP-TRUW-8.11, S.3.2.8 & 3.2.10	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – $1^{st}/2^{nd}$ Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste	Y	

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	DATA QUALITY REQUIREMENTS					
168	Are acceptable knowledge processes consistently applied among all generator sites, and does each generator site comply with the following data quality requirements for acceptable knowledge documentation:		A-E: Y		A-E: Y	
	A. Precision - Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing acceptable knowledge documentation, do not lend themselves to statistical evaluations of precision. However, the acceptable knowledge information will be addressed by the independent review of acceptable knowledge information during internal and external audits.	A: MP-M&IA-17.2, (All)		A: Management Assessment Status Report **(AK-25)**		
	B. Accuracy - Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new waste matrix code and/or designation of different hazardous waste numbers based on sampling and analysis data and discrepancies identified by the Permittees during waste confirmation will be reported as a measure of acceptable knowledge accuracy.	B. MP-TRUW-8.13, S. 3.9		B: AK Accuracy Assessment by waste streams BN510.1 and BN836 **(AK-26)**		
	C. Completeness - Completeness is an assessment of the number of waste streams or number of samples collected to the number of samples determined to be useable through the data validation process. The acceptable knowledge record must contain 100 percent of the information (Permit Attachment C4-3) The usability of the acceptable knowledge information will be assessed for completeness during audits.	C. MP-TRUW-8.13, S. 3.2.4 & 3.2.5		C: AK Forms 1066 TRU Waste Management AK Checklist for waste streams BN510.1 and BN836 and AK Forms 1067 TRU Waste Stream AK Documentation Checklist for waste streams BN510.1and BN836 **(AK-9)**		
	D. Comparability - Data are considered comparable when one set of data can be compared to another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the acceptable knowledge process. All sites must assign hazardous waste numbers in accordance with Permit Attachment C4-4 and provide this information regarding its waste to other sites who store or generate a similar waste stream.	D. MP-TRUW-8.2, S. C4-3a & C3-9		D: Training records for AKEs and SPMs **(AK-43)**		

	WAP Requirement[2] AMWTP Recertification Audit A-13-01 Table C6-3 Acceptable Knowledge (AK) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	E. Representativeness - Representativeness expresses the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring that the process of obtaining, evaluating, and documenting acceptable knowledge information is performed in accordance with the minimum standards established in Permit Attachment C4. Sites also must assess and document the limitations of the acceptable knowledge information used to assign hazardous waste numbers (e.g., purpose and scope of information, date of publication, type and extent to which waste parameters are addressed). (Section C3-9)	E: MP-TRUW-8.2, S. C4-3a MP-RTQP-14.4, (All) MP-TRUW-8.13, S. 3.2		E:Training records for AKEs and SPMs **(AK-43)** AK Source Document Summaries for waste stream BN510.1 **(AK-11)** AK Source Document summaries for waste steam BN836 **(AK-12)**		
169	Does the generator site address quality control by tracking its performance with regard to the use of acceptable knowledge by: 1) assessing the frequency of inconsistencies among information, and 2) documenting the results of waste discrepancies identified by the generator/storage site during waste characterization or the Permittees during waste confirmation using radiography, review of radiography audio/video recordings, or visual examination, or review of visual examination records. In addition, the acceptable knowledge process and waste stream documentation must be evaluated through internal assessments by generator/storage site quality assurance organizations. (Section C4-3e)	MP-TRUW-8.13, S. 3.7, 3.9, Appendix D, E & G MP-M&IA-17.2, S. 6.0	Y	AK Discrepancy Resolutions in the AK record **(AK-14)** AK Discrepancy Resolutions at Characterization and AK Reevaluations and AK Resolution Ledger **(AK-15)** AK Accuracy Assessment by waste streams BN510.1 and BN836 **(AK-26)** Management Assessment Status Report **(AK-25)**	Y	

1. NMED expects a traceability analysis to be performed, the results of which should be presented on this checklist under the "Examples of Implementation" column. Further, the traceability analysis process and results should be discussed in the Final Audit Report.

2. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements are meant to determine whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table C6-4 Headspace Gas Checklist
AMWTP Recertification Audit A-13-01
October 15-18, 2012

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Headspace Gas Checklist

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	HEADSPACE GAS SAMPLING FREQUENCY					
182	Are procedures in place to ensure that randomly selected retrievably stored and newly generated waste containers will undergo headspace gas sampling and analysis as required to augment AK? (Section C-3a)	MP-TRUW-8.25, S. 3.2 & 3.3	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** Random Selection Memo 1/5/12 **(HSG-5)** Random Selection Memo 1/9/12 **(HSG-6)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2-SPC-001-12 Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3-SPC-002-12 Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2-SPC-007-12 Preliminary Statistics of Headspace Gas Sampling for BN510.1 WS –NDK-001-12 **(GEN-7)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
183	Are procedures in place to ensure that randomly selected containers will be allowed to equilibrate to sampling room temperature for 72 hours prior to sampling (18° C or higher) and that the drum ages specified in accordance with Section C1-1a(1) are met? All information necessary to determine drum age criteria must be determined, including but not limited to: • Scenario Determination • Packaging Configuration • Filter Diffusivity • Liner/Lid Opening Diameter (Section C1-1a)	INST-OI-43, S. 3.1.1, 3.1.11, 4.4.1.1.2, 4.5.3 & Appendix E MP-TRUW-8.8, S. 3.4.4 & Appendix A	Y	HSG BDRs: HS111-00023, p. 51 & 21 **(HSG-1)** HS112-00002, p. 50 & 22 **(HSG-2)**	Y	
	HEADSPACE GAS SAMPLING GENERAL REQUIREMENTS					
184	Are procedures in place to ensure all containers of waste are vented through filters to ensure that gases are adequately vented preventing over pressurization or development of conditions that would lead to the development of ignitable, corrosive, reactive, or other characteristic waste? (Section C-1c)	INST-OI-43, S. 4.5.2 INST-OI-45, (All) INST-OI-50, (All)	Y	HSG BDRs: HS111-00023, p. 21 **(HSG-1)** HS112-00002, p. 22 **(HSG-2)**	Y	
186	Are procedures in place to ensure that the following gas sample container and holding time requirements are met: • The minimum sample volume for VOC. sample collection is 250 mL. (Note: a single 100 mL sample may be collected if the headspace is limited) • Holding temperatures shall be between 0° C and 40°C (Table C1-1)	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
187	Are procedures in place to ensure that all sampling is performed in an appropriate radiation containment area? (Section C1-1a)	INST-OI-43, S. 4.4.1.3 INST-OI-11, (All)	Y	Demo and walkthrough of Bldg 634, 10/16/12	Y	
188	Are procedures in place to ensure that headspace gases is analyzed for the analytes listed in Table C3-2 of the Attachment C3? (Section C1-1a(1))	INST-OI-43, S. 4.0 & Appendix A, Table 2	Y	HSG BDRs: HS111-00023, p. 18-19 **(HSG-1)** HS112-00002, p. 18-20 **(HSG-2)**	Y	
189	Are procedures in place to ensure that all headspace gas analyses utilize either SUMMA® or equivalent canisters or on-line integrated sampling/analysis systems? (Section C1-1a(1))	INST-OI-43, S. 4.0	Y	Demo and walkthrough of Bldg 634, 10/16/12	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	MANIFOLD SAMPLING					
190	Are procedures, processes, and equipment in place to ensure that the following sampling procedures are implemented: • The sampling equipment is leak checked and cleaned upon first use and as needed • The manifold and sample canisters are evacuated to 0.1 mm Hg prior to sample collection • Cleaned and evacuated sample canisters are attached to the evacuated manifold before the manifold inlet valve is opened • The manifold inlet valve is attached to a changeable filter connected to either a side port needle sampling head capable of forming an airtight seal (for penetrating a filter or rigid poly liner when necessary), a drum punch sampling head capable of forming an airtight seal (capable of punching through the metal lid of a drum while maintaining and airtight seal for sampling through the drum lid), or a sampling head with an airtight fitting for sampling through a pipe overpack container filter vent hole. Refer to Section C1-1a(4) for descriptions of these sampling heads. • Field blanks are collected using samples of room air collected in the sampling area in the immediate vicinity of the waste container. *(Note: field blanks for SUMMA® canisters are collected directly into the canister without the use of the manifold.)* • Manifold equipped with purge assembly that allows QC samples to be collected through all sampling components that affect compliance with QAOs • The manifold internal volume is calculated and documented in a field logbook • The total volume of headspace gas collected is calculated by adding the canister volume and internal manifold volume and should be less than 10 percent of the available headspace volume when a volume estimate is available (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
191	Are procedures, processes, and equipment in place to ensure that the following manifold sample side conditions are met: • The sampling head forms a leak-tight connection with the sampling manifold • A flexible hose allowing movement from the purge assembly to the waste container • Pressure sensors that are pneumatically connected to the manifold and must be able to measure absolute pressure from 0.05 mm Hg to 1000 mm Hg with a resolution of that must be 0.01 mm Hg at 0.05 mm of Hg. The pressure sensors shall have an operating range of 15° C to 40° C. • Sufficient canister ports shall be available to allow simultaneous collection of headspace gas samples and duplicates for VOC analysis. • Ports not occupied with sample canisters require a plug to prevent ambient air from entering the system • Ports shall have VCR® fittings for connection to the sample canisters to prevent degradation of the fitting on the canister and manifold. • Sample canisters are leak-free, stainless steel pressure vessels, with a Cr-NiO SUMMA® passivated interior surface or canisters with equivalently inert surfaces, bellows valve, and a pressure/vacuum gauge. All canisters shall have VCR ® fittings to sampling and analytical equipment • The pressure/vacuum gauge must be mounted on each manifold and shall be helium-leak tested to 1.5 X 10^{-7} cc/s, have all stainless steel construction, and be capable of operating at temperatures to 125° C	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.
191a	• A dry vacuum pump capable of reducing the manifold pressure to 0.05 mm Hg. (Note: If an oil vacuum pump is used precautions such as a molecular sieve or cryogenic trap shall be used to prevent diffusion of oil vapors back into the manifold) • A minimum distance between the needle and the valve that isolates the pump from the manifold in order to minimize the dead volume in the manifold. • If real time equipment blanks are not available, the manifold shall be equipped with an OVA capable of detecting all analytes listed in Table C3-2 and is capable of measuring total VOC concentrations below the lowest headspace gas PRQL (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
192	Are procedures, processes, and equipment in place to ensure that the following manifold standard side conditions are met: • A cylinder of compressed zero air, helium, argon, or nitrogen that is hydrocarbon and CO_2 free air (only hydrocarbon and CO_2-free gases required for FTIRS) and certified by the manufacturer to contain less than one ppm VOCs. The gas is used to clean the manifold between samples and to provide gas for the collection of equipment and on-line blanks *(Note: a zero air or nitrogen generator may be used, provided a sample of air is collected and found to contain less than 1 ppm total VOCs and the air is humidified)* • Cylinders of reference gas with known concentrations of analytes from Table C3-2 certified by the manufacturer to provide gases for evaluating the accuracy of the headspace gas sampling process • All cylinders of reference gases and zero air shall be connected to flow regulating devices • A humidifier filled with ASTM Type I or II water, connected, and opened to the standard side of the manifold between the compressed gas cylinders and the purge assembly shall be used, if the Fourier Transform Infrared System (FTIRS) is not used. No humidifier if the FTIRS is used *(Note: Compressed gas may include water vapor between 1000 and 10000 ppmv in lieu of a humidifier)* • The humidifier is off-line during system evacuation to prevent manifold flooding	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.
192a	• A purge assembly that allows the sampling head to be connected to the standard side of the manifold. • A flow indicating device or pressure regulator that is connected downstream of the purge assembly to monitor the flow rate or pressure of gases through the purge assembly to ensure that excess flow is available to prevent ambient air from contaminating the QC samples and allow sample of gas from the compress gas cylinders to be collected near ambient pressure. (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.
193	Do procedures ensure that NIST Certified (or equivalent) ambient pressure sensors maintained in the sampling area must have a sufficient measurement range for the expected ambient barometric pressures and a resolution shall be 1.0 mm Hg or less? (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
194	Do procedures ensure that the NIST traceable (or equivalent) temperature sensor in the sampling location shall have a sufficient measurement range for the ambient temperatures (18° to 50°C)? (Section C1-1a(2))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.
	DIRECT CANISTER SAMPLING					
195	Are procedures, processes, and equipment in place to ensure that the following operating conditions are in place for direct canister sampling: • Canisters are evacuated to 0.1 mm Hg prior to use and attached to a changeable filter connected to the sampling head • Sampling heads are capable of either punching through the metal lid of the drums while maintaining an airtight seal for sampling through the drum lid, penetrating a filter or the septum in the orifice of a self-tapping screw, or maintaining an airtight seal for sampling through a pipe overpack container filter vent hole. • Field duplicates are collected in the same manner and at the same time and using the same type of sampling apparatus as used for headspace gas sample collection. • Field blanks shall be samples of room air collected in the immediate vicinity of the waste drum sampling area prior to removal of the drum lid. • Equipment blanks and field reference standards shall be collected using a purge assembly equivalent to the standard side of the manifold • Less than 10 percent of the headspace is withdrawn when a headspace estimate is available *(Note: The total volume withdrawn is can be determined by adding the canister volume and the internal volume of the sampling head)* • Each sample canister is shall be equipped with a pressure/vacuum gauge capable of indicating leaks and sample collection volumes. The gauge shall be helium leak tested to 1.5 X 10^{-7} cc/s, have all stainless steel construction and be capable of tolerating temperatures to 125° C • Summa® canisters or equivalent are used to collect samples (Section C1-1a(3))	N/A	N/A	N/A	N/A	AMWTP uses an on-line sampling system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLING HEADS UNDER DRUM LIDS: SAMPLING THROUGH A CARBON FILTER					
196	Are procedures, process, and equipment adequate to ensure that samples collected through a filter meet the following requirements: • The lid of the drum's 90-mil rigid poly liner shall contain a hole for venting to the drum • That non-vented drums are not sampled until an internal nonconformance report is prepared, submitted, and resolved in order to obtain a representative sample • The filter shall be sealed to prevent outside air from entering the drum • The sampling head for collecting drum headspace gas shall consist of a side-port needle, a filter to prevent particle contamination of the sample, and an adapter to connect the side-port needle to the filter • The sampling head is cleaned or replaced after each use • The housing of the filter shall allow insertion of the sampling needle through the filter element or a sampling port with septum that bypasses the filter element into the drum headspace • The side port needle shall be used to reduce the potential for plugging • The purge assembly shall be modified for compatibility with the side port needle. (Section C1-1a(4)(i))	Bullets 1 & 2: INST-OI-43, S. 1.0, Appendix E, S. 4.4.2.5.5 Bullet 3: INST-OI-43, S. 4.5.4-4.5.7 Bullets 4-8: INST-OI-43, Appendix C	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Y	Demo 10/16/12 Interview with HSG personnel 10/16/12.
	SAMPLING HEADS UNDER DRUM LIDS: SAMPLING THROUGH THE DRUM LID					
197	Are procedures in place to establish the criteria for sampling through the drum lid as opposed to sampling through a filter? (Section C1-1a(4)(ii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
197a	If sampling through a pipe overpack container filter vent hole with an airtight device is used, are procedures in place to ensure that a sampling head with an airtight seal for sampling through a pipe overpack container filter vent hole are available? (Section C1-1a(4)(iii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
197b	If sampling through a pipe overpack container filter vent hole is used, are the following criteria met: • The seal between the pipe overpack container surface and sampling apparatus shall be designed to minimize intrusion of ambient air. • The filter shall be replaced as quickly as is practicable with the airtight sampling apparatus to ensure that a representative sample can be taken. • All components of the sampling system that come into contact with sample gases shall be cleaned according to requirements for direct canister sampling or manifold sampling, whichever is appropriate, prior to sample collection. • Equipment blanks and field reference standards shall be collected through all the components of the sampling system that contact the headspace-gas sample. • During sampling, openings in the pipe overpack container shall be sealed to prevent outside air from entering the container. • A flow-indicating device shall be connected to sampling system and operated according to the direct canister or manifold sampling requirements, as appropriate. (Section C1-1a(4)(iii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
197c	If sampling through a pipe overpack container filter vent hole is used, are the following criteria met? • The site has documentation that demonstrates that they have determined through testing the appropriate length of time for exchanging the filter with the sampling device to assure representative samples are collected. (Section C1-1a(4)(iii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
198	Are procedures, process, and equipment adequate to ensure that samples collected through the drum lid by punching meet the following requirements: • The lid of the drum's 90-mil rigid poly liner shall contain a hole for venting to the drum. If the DAC for Scenario 1 is met, a sample may be collected from inside the 90-mil rigid poly liner. • If headspace gas samples are collected from the drum headspace prior to venting the 90-mil rigid poly liner, the sample is not acceptable and a nonconformance report shall be prepared, submitted, and resolved. • The drum lid shall be breached using a punch that forms an airtight seal between the drum lid and the manifold or canister • The seal between the drum lid and the sampling head shall be designed to minimize the intrusion of ambient air • All components of the sampling system that come in contact with sample gases shall be purged with humidified zero air, nitrogen, or helium prior to sample collection • Equipment blanks and field reference standards shall be collected through all components of the punch that contact the headspace gas sample • Pressure shall be applied to the punch until the drum lid has been breached • Provisions shall be made to relieve excessive drum pressure increases during drum punch operations; potential pressure increases may occur during sealing of the drum punch to the drum lid • The filter is sealed to prevent outside air from entering the drum (Section C1-1a(4)(ii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.
198a	• A flow indicating device or pressure regulator to verify flow of gases shall be pneumatically connected to the drum punch and operated in the same manner as the flow indicating device • Equipment are used to secure the drum punch sampling system to the drum lid • If the headspace gas sample is not taken at the time of drum punching, the presence and diameter of the rigid liner vent hole is documented during the punching operation for use in determining an appropriate Scenario 2 DAC. (Section C1-1a(4)(ii))	N/A	N/A	N/A	N/A	AMWTP only samples through sample ports or filters.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	QUALITY CONTROL SAMPLE COLLECTION					
199	Are procedures in place to ensure that the following QC sample requirements are met: • Field QC samples are collected on per sample batch basis for manifold and direct canister sampling. A sampling batch is defined as up to 20 samples collected within 14 days of the first sample • Field samples are collected and analyzed on a per on-line batch basis for on-line sampling/analysis systems. An on-line batch is defined as the number of headspace gas samples that are collected within a 12 hour period from the same on-line integrated analysis system • For the manifold sampling method, field blanks, equipment blanks, field duplicates, and field reference samples are collected prior to sample collection on a per sampling batch basis or one per day, whichever is more frequent • For the direct canister sampling method field blanks and field duplicates are collected on a per sampling batch basis prior to sample collection; while equipment blanks and field reference samples are collected after equipment purchase, cleaning, and assembly	Bullets1, 3 & 4: N/A Bullet 2: INST-OI-43, S. 5.0	Bullets1, 3 & 4: N/A Bullet 2: Y	Bullet 2: HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** Demo 10/16/12 Interview with HSG personnel 10/16/12.	Bullets1, 3 & 4: N/A Bullet 2: Y	1st, 3rd, and 4th Bullets: N/A since AMWTP uses on-line systems.
199a	• For the On-line sampling method, field blanks, equipment blanks, field duplicates, and field reference samples are collected on a per on-line batch basis. *(Note: The on-line blank replaces the laboratory and equipment blanks, the on-line duplicate replaces the field duplicate and the laboratory duplicate, and the on-line sample control replace the field reference standard and the laboratory control sample.)* (Section C1-1b, C1-1b(1), C1-1b(2), C1-1b(3), C1-1b(4))	INST-OI-43, S. 5.0, Appendix A, Table 3	Y	Bullet 2: HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** Demo 10/16/12 Interview with HSG personnel 10/16/12.	Y	On-line system used.
200	Do procedures adequately assign the site project QA manager with the responsibility of monitoring field QC results and initiate the nonconformance report process in the event the following acceptance criteria are not met or sample collection frequencies are not met: • Field and equipment blanks shall be less than 3 times the detection limits specified in Table C3-2 and equipment blank results determined by FTIR shall be less than the PRQL specified in Table C3-2 (Section C1-1b(1) and C1-1b(2)) • Field reference standards shall have a recovery of between 70 and 130% (Table C1-3) • Field Duplicates shall have an RPD of less than or equal to 25 (Sections C1-1b and C1-1b(4); Table C1-3)	MP-TRUW-8.9, S. 3.2, & 6.0	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	AMWTP uses on-line analysis and provides an on-line control standard.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
201	Are procedures in place to ensure that field reference standards meet the following criteria: • Field reference standards shall contain a minimum of 6 analytes listed in Table C3-2 at a range of between 10 and 100 ppmv and at concentrations greater than the MDL • Field reference standards shall be traceable to a nationally recognized standard, if available • If commercial gases are used, they shall be accompanied by a Certificate of Analysis and all field reference standards are traceable to certificates. • Commercial gases are not used past the manufacturer specified shelf life. • Field reference samples are submitted blind to the laboratory at a frequency of one per sampling batch. (Note: Field reference standards may be discontinued for direct canister method if QAO accuracy objectives are met) (Section C1-1b(3))	Bullets 1- 4: INST-OI-43, S. 5.0 Bullet 5: N/A	Bullets 1- 4: Y Bullet 5: N/A	Bullets 1-4: HSG BDRs: HS111-00023, p. 47 **(HSG-1)** HS112-00002, p.46 **(HSG-2)** Bullet 5: N/A	Bullets 1- 4: Y Bullet 5: N/A	Bullets 1- 4: AMWTP analyzes Online Control Samples instead of Field Reference Standards since they operate an online sampling and analysis system. Bullet 5 is N/A since AMWTP uses on-line systems.
202	Are procedures in place to ensure that field duplicate samples are collected sequentially and in accordance with Table C1-1? (Section C1-1b(4))	INST-OI-43, S. 4.4.7 Note, 4.4.7.3.13, 5.0, Tables 3, 14 & 15 (duplicates)	Y	HSG BDRs: HS111-00023, p.15 **(HSG-1)** HS112-00002, p.15 **(HSG-2)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLE EQUIPMENT TESTING, INSPECTION AND MAINTENANCE					
203	Are procedures in place to ensure that sample containers are cleaned in accordance with the following specifications: • All sampling components that contact sample gases are constructed of inert materials such as stainless steel or Teflon® • The sampling manifold and canisters are properly cleaned and leak checked prior to each sampling event in accordance to or equivalent with TO-14A or TO-15 methodology • SUMMA® canisters or equivalent are cleaned on an equipment cleaning batch basis. An equipment cleaning batch is defined as the number of canisters that can be cleaned together at one time using the same cleaning method • The cleaning system consists of an optional oven and a vacuum manifold which uses a dry vacuum pump or a cryogenic trap backed by an oil sealed pump • Prior to cleaning a 24 hour leak check shall be performed (+/- 2 psig) on all canisters • Canisters that shall be checked for leaks, repaired, and reprocessed • One canister per equipment cleaning batch is filled with humid zero air or humid high purity nitrogen and analyzed for VOCs • A batch is considered clean if VOC concentrations are less than 3 times the MDLs specified in Table C3-2 • Certified leak-free canisters are evacuated to 0.1 mm Hg or less for storage • Canister cleaning certification documentation is available at the cleaning facility and the cleaning facility initiates canister tags. (Section C1-1c, C1-1c(1))	N/A	N/A	N/A	N/A	AMWTP uses on-line systems.
204	Are procedures in place to ensure that manifold pressure sensors and ambient air temperature sensors are certified prior to initial use and annually using NIST traceable standards? In addition OVAs if used shall be calibrated daily using known calibration gases and the balance of the OVA calibration is consistent with the manifold purge gas? (Section C1-1d)	INST-OI-43, Appendix C	Y	Verified current M&TE for: TI-221-001A, due 6/25/12, TIC-221-001A, Due 6/25/12, PI-221-001A, due 7/31/13, VG-221-001A, due 7/13/13 and TI-232-063B, due 4/20/13	Y	OVAs not used.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
205	Are procedures in place to ensure that sampling equipment are cleaned and leak checked using the following specifications: • Surfaces of all sampling equipment that will come in contact with sample gases are thoroughly inspected and cleaned prior to assembly • Manifolds and sampling heads shall be purged with humidified zero air, nitrogen, or helium and leak checked after assembly • The cleaning shall be repeated if routine system cleaning is inadequate • Manifolds and sampling heads which are reused shall be cleaned and leak checked according to procedures in the EPA's Compendium Method TO-14A or TO-15 after sample collection, field duplicate collection, field blank collection, and after the additional cleaning require for field reference samples. All manifold ports shall be capped or closed with valves (sample canisters may be attached as well) • Manifolds are cleaned by heating the sample side of the manifold to 150° C and periodically evacuated and flushed with humidified zero air, nitrogen, or helium • Manifolds not in use are demonstrated as clean before storage with a positive pressure of humidified zero air, nitrogen, or helium gas in the sampling and standard sides • Sampling is suspended when the analysis of an equipment blank indicated the if VOC limits have been exceeded or if a leak test fails • Sampling systems are cleaned after field reference standard collection by installing a gas tight connector in place of the sampling head, between the flexible hose and purge assembly. This allows the sample and standard side to be flushed with humidified zero air, nitrogen, or helium in conjunction with heated pneumatic lines • Needles, airtight fitting or seal, adapters, and filters are cleaned in accordance with the EPA Method TO-14A or TO-15 procedures. Sample heads shall be discarded or cleaned according to Method TO-15. In addition, the needle, the airtight fitting and seal, and the filter should be purged with zero air, nitrogen, or helium and capped for storage (Section C1-1c(2) , Section C1-1c(3), Section C1-1c(4), and Section C1-c(5))	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	SAMPLE HANDLING AND CUSTODY					
207	Do formats for field logs and custody records specify documentation of the following information: • Name of sampling facility • Waste container identification number • Sample identification number of each sample referenced to waste container • Sample matrix • Time and date of sample collection • Type/number and size of sample container(s) • Method of sample preservation • Requested analyses • Sampler(s) name through signature • Signatures of custodians relinquishing and receiving custody of samples including date and time of transfer until time of final disposition • Analytical laboratory • Off-site shipping information (date, time, shipper, mode, air bill or lading number) (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
208	Are procedures are in place to ensure that samples and sampling equipment are identified with unique identification numbers? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
209	Do sample tags or labels contain the following information: • Sample Description • Ambient temperature and pressure • Sample identification number • Analyses requested • Date/Time of collection • QC Designation (if applicable) • Sampler's initials and organization (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
210	All sampling equipment, canisters, and samples are identified with unique identification numbers that are traceable to equipment cleaning batches? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
211	Are procedures in place to ensure samples are sealed with intact custody seals and that one or more of the following custody conditions are met: • It is in the possession of an authorized individual • It is in the view of an authorized individual, after being in the possession of that individual • It was in the possession of an authorized individual and access to the sample was controlled by locking or placement of signed custody seals that prevent undetected access • It is in a designated secure area, such as a controlled access location with complete documentation of personnel access or a radiological containment area (hot cell or glove box) (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
212	Are procedures in place to ensure that discrepant sample information, indications of damage, or indications of tampering are documented? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
214	Are procedures in place to ensure that sample custody is maintained until the sample is released by the site project manager or expended? (Section C1-5)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
215	Are procedures in place to ensure that SUMMA® canisters are packaged to prevent damage to the pressure gauge or associated connections by packaging in metal boxes with separate compartments or cardboard boxes with foam inserts? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
216	Are procedures in place to ensure that samples are packaged to prevent damage to the sample container and maintain preservation temperature? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
217	Are procedures in place to ensure that adequate cold packs are included in the DOT approved sample shipping container to ensure that all temperature requirements are met? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.
218	Are procedures in place to ensure that sample COC forms are secured for shipment to the inside of the sealed or locked shipping container lid and that samples and shipping containers are affixed with tamper proof seals or devices? (Section C1-6)	N/A	N/A	N/A	N/A	AMWTP uses an on-line system.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	LABORATORY OPERATIONS					
220	Are procedures in place to ensure that all VOC analyses are evaluated using the following criteria: • Precision is assessed by analyzing of laboratory duplicates, Laboratory Control Sample (LCS), and PDP blind-audit samples in comparison to Table C3-2 • Accuracy is as %R shall be assessed by analyzing LCS samples and PDP blind audit samples in comparison to criteria in Table C3-3 • MDLs are expressed in nanograms for VOCs and must be less than or equal to those listed in Table 3-2 • Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. A composited sample is treated as one sample for the purposes of completeness, because only one sample is run through the analytical instrument • Comparability shall be achieved through the use of standardized methods, traceable standards by requiring successful participation in the PDP program • Representativeness will be achieved by collecting sufficient numbers of samples using clean sampling equipment that does not introduce sample bias. • All method detection limits and program required detection limits shall be less than the Program Required Detection Limits listed in Table C3-2 and the detection limit study procedures shall be documented in laboratory SOPs. In addition, the laboratory shall demonstrate that they are capable of meeting the Program Required Detection Limits by analyzing at least one calibration standard below the PRQL	Bullets 1 & 2: INST-OI-43, S. 4.4.7.3.18, 5.0, Tables 2, 3, 14 & 15 (DUP) INST-OI-43, S. 4.4.4.2, 5.0, Tables 3, 14 & 15 (OCS) INST-OI-43, S. 4.4.2.1, 4.5.9, 4.5.17 & Table 3, (PDP) Bullet 3: INST-OI-43, S. 4.8.5.2, Appendix A Table 2 & Appendix. B Equation (5) Bullet 4: INST-OI-43, S. 5.0 Bullet 5: INST-OI-43, (All) Bullet: 6: INST-OI-43, (All) Bullet: 7: INST-OI-43, S. 5.0 (PRQL defined), Appendix A Table 2	Y	Bullets 1 & 2: HSG BDRs: HS111-00023, p. 9-11 **(HSG-1)** HS112-00002, p. 9-11 **(HSG-2)** PDP approval memo **(HSG-3)** Bullets 3 & 4: HSG BDRs: HS111-00014 (**HSG-4)** Bullet 5: HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** PDP approval memo **(HSG-3)** Bullet 6: HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** Bullet 7: HSG BDRs HS111-00014 **(HSG-4)**	Y	Bullet 5: Examined Certificates of accuracy for CCV, ISTDS, OCS included in HSG BDRs

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
	(Section C3-5)					
221	Are procedures in place to ensure that only laboratories that are qualified through participation in the Performance Demonstration Program are eligible to analyze waste samples? (Section C-3a(3))	MP-TRUW-8.8, S. 3.4.8.15 INST-OI-43, Appendix A, Table 3	Y	PDP approval memo **(HSG-3)**	Y	
222	Are procedures in place to ensure that Tentatively Identified Compounds shall be added to the target compound list if they are reported in 25% of the waste containers sampled from a given waste stream and if they appear in the 20 NMAC 4.1.200 (incorporating 40 CFR 261) Appendix VIII list? (Section C-3a(1))	MP-TRUW-8.11, S. 3.2.14	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
222a	Are procedures documented to ensure that the following criteria are met with regard to the recognition and reporting of TICS for GC/MS Methods for headspace gas sampling: • Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum. • The relative intensities of the major ions should agree within ± 20 percent. • Molecular ions present in the reference spectrum should be present in the sample spectrum. • Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds. • Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks. • The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC (incorporating 40 CFR 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples. • TICs for headspace gas analyses that are performed through FTIR analyses shall be identified in accordance with the specifications of SW-846 Method 8410. (Section C3-1)	Bullets 1-6: INST-OI-43, S. 4.8.3 MP-TRUW-8.8, S. 3.4.7 Bullet 7: N/A	Bullets 1-6: Y Bullet 7: N/A	Bullets 1-6: HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)** Interview with operator 10/15/12 Bullet 7: N/A	Bullets 1-6: Y Bullet 7: N/A	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
222b	Are procedures in place to assure that TICs are reported as part of the analytical batch data reports for GC/MS Methods in accordance with the following minimum criteria: • a TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 10% of the area of the nearest internal standard.	Bullet 1: INST-OI-43, S. 4.8.3 MP-TRUW-8.8, S. 3.4.7	Bullet 1: Y	Bullet 1: Examined HG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Bullet 1: Y	
	• a TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard. • a TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard. • a TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard. (Section C3-1)	Bullets 2-4: N/A	Bullets 2-4: N/A	Bullets 2-4: N/A since AMWTP does not composite.	Bullets 2-4: N/A	AMWTP does not composite.
	QUALITY ASSURANCE OBJECTIVES					
224	Are procedures in place to ensure that the precision of the headspace gas sampling and analysis must be assessed by the sequential collection of field duplicates for manifold sampling operations or simultaneous collection of field duplicates for direct canister sampling operations for VOCs? (Section C3-2)	INST-OI-43, S. 4.4.7 Note, 5.0, Tables 2, 3, 14 & 15 (DUP)	Y	HSG BDRs: HS111-00023, p. 15 **(HSG-1)** HS112-00002, p. 15 **(HSG-2)**	Y	Demo on 10/16/12.
225	Are procedures in place to ensure that corrective action will be taken if the duplicate RPD exceeds 25% for any analyte found greater than the PRQL in both of the duplicate samples? (Section C3-2)	MP-TRUW-8.9, S. 3.2 & 6.0	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
226	Are procedures in place to ensure that the accuracy of headspace gas sampling is assessed through the collection of field reference standards and at a frequency of one field response standard for every 20 containers sampled or per sampling batch and through the collection of equipment blanks at the frequency of one for every equipment cleaning batch ? (Section C3-2)	INST-OI-43, S. 4.2.1.2.1, 5.0, Tables 3, 12, 14 & 15 (EB) INST-OI-43, S. 4.3.1.8, 4.4.4.2, 5.0, Appendix A Tables 3 & 14 (OCS) MP-TRUW-8.8, S. 3.4.5.5 (OCS) & 3.4.5.6 (Blanks)	Y	HSG BDRs: HS111-00023, p. 9-10 & 13 **(HSG-1)** HS112-00002, p. 9-10 & 13 **(HSG-2)**	Y	LCS takes the place of FRS for online sampling and analysis. Demo on 10/16/12.
227	Are procedures in place to ensure that corrective actions are taken if the field reference standard is less than 70% recovery or greater than 130% and that if the blank concentration for any blank exceeds 3 times the MDL listings in Table B3-2? (Section C3-2)	INST-OI-43, S. 5.0, Tables 14 & 15 (EB); INST-OI-43, S. 4.3.1.8 NOTE, 4.4.4.2, 5.0, Appendix A Tables 3 & 14 (OCS) MP-TRUW-8.8, S. 3.4.5.5 (OCS) & 3.4.5.6 (Blanks) MP-TRUW-8.9, S. 3.2 & 6.0	Y	HSG BDRs: HS111-00023, p. 1 & 14 **(HSG-1)** HS112-00002, p. 1 & 14 **(HSG-2)** HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)**	Y	
228	Are procedures in place to ensure that sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste steam, where a valid sample is defined as a sample collected in accordance with approved sampling methods and the drum was properly prepared for sampling? (Section C3-2)	MP-TRUW-8.9, S. 1.0 MP-TRUW-8.11, S. 3.2.15	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
229	Are procedures in place to ensure that the minimum sampling completeness percentage for any waste stream is 90 percent? (Section C3-2)	MP-TRUW-8.11, S. 3.2.15	Y	HSG BDRs: HS112-00002 HS112-00005 HS111-00023 **(GEN-4)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary:	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-4 Headspace Gas Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N(Why?)	Item Reviewed	Adequate? Y/N	
				P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
230	Are procedures in place to ensure that sample comparability is assured through the use and application of uniform procedures and equipment and application of data usability criteria, and that corrective action is taken if the uniform procedures and equipment are not used without approved and justified deviations? (Section C3-2)	INST-OI-43, (All)	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Y	Demo on 10/16/12.
231	Are procedures in place to ensure that sample representativeness is maintained? (Section C3-2)	MP-TRUW-8.25, S. 3.4	Y	HSG BDRs: HS111-00023 **(HSG-1)** HS112-00002 **(HSG-2)**	Y	Demo on 10/16/12.

1. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table C6-5 Radiography Checklist
AMWTP Recertification Audit A-13-01
October 15-18, 2012

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Radiography Checklist

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	QUALITY ASSURANCE OBJECTIVES					
233	Are process procedures in place to meet the following Quality Assurance Objectives? <u>Precision</u> • Does the site describe in its QAPjP and SOP(s) activities to reconcile any discrepancies between two radiography operators with regard to identification of the waste matrix code, liquids in excess of TSDF-WAC limits, and compressed gases through independent replicate scans and independent observations? And additionally, activities to verify the precision of radiography prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern? <u>Accuracy</u> • Was accuracy obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100 percent of the required items in a training container during their initial qualification and subsequent requalification	MP-TRUW-8.8, S. 3.1.3.13	Y	<u>RTR BDRs:</u> RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** RTR Operator Training Records **(RTR-2)**	Y	
233a	<u>Completeness</u> • Was an audio/videotape (or equivalent media) of the radiography examination and a radiography data form validated according to the requirements in Section C3-10? • Was an audio/videotape (or equivalent media) of the radiography examination and a radiography data form obtained for 100% of the waste containers subject to radiography? <u>Comparability</u> • Is comparability ensured through the use of standardized radiography procedures and operator training and qualifications (Section C3-4a)	MP-TRUW-8.8, S. 3.1.3.13	Y	<u>RTR BDRs:</u> RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** RTR Operator Training Records **(RTR-2)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	CHARACTERIZATION AND SYSTEM REQUIREMENTS					
234	Does the site have procedures to ensure that radiography is used to identify and verify waste container contents and verify the waste's physical form? Does the site have procedures to identify prohibited materials? (Section C-3c; C1-3)	INST-OI-12, S. 4.7 & Exhibit 5 INST-OI-81, S. 4.7 & Exhibit 4	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
235	Do procedures or other supporting documentation ensure that every waste container will undergo radiography and/or VE as necessary to augment AK? (Section C-3c)	INST-OI-12, S. 4.7 INST-OI-81, S. 4.7 MP-TRUW-8.11, S. 3.1.1.2	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)** VE BDRs: VEB11-00929 VEB12-00555 VEB12-00711 VEB12-00747 **(GEN-2)** AK Source Document	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
236	Do procedures ensure that containers whose contents prevent full examination are examined by visual examination rather than by radiography unless the site certifies that visual examination would provide no additional relevant information for that container based on the AK information for the waste stream? (Section C1-3)	INST-OI-12, S. 4.10.36.1 & associated Notes INST-OI-81, S. 4.10.29.1 & associated Notes	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
237	Do procedures or other supporting documentation ensure that the physical form determined by radiography is compared with the waste stream descriptions? If discrepancies are noted, will a new waste stream be identified? (Section C-3c)	INST-OI-12, S. 4.10.40 INST-OI-81, S. 4.10.33 MP-TRUW-8.9, S. 3.1	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)** NCRs: 68025 68706 **(RTR-3)** AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev. 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris (BN600) AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		
238	Are there procedures to ensure the data is obtained from an audio/video recorded scan provided by trained radiography operators? (Section C1-3)	INST-OI-12, S. 3.2.1 & 4.9 NOTE 3 INST-OI-81, S. 3.2.1 & 4.9 NOTE 3	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
239	Were all activities required to achieve the radiography objective described in site Quality Assurance Project Plans (QAPjPs) and Standard Operating Procedures (SOPs)? (Section C3-4)	INST-OI-12, (All) INST-OI-81, (All)	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
240	Did the radiography system consist of the following equipment or equivalent: • an X-ray producing device? • an imaging system? • an enclosure for radiation protection? • a waste container handling system? • an audio/video recording system or equivalent? • an operator control and data acquisition station? (Section C1-3)	INST-OI-12, (All) INST-OI-81, (All)	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	Verified the equipment and devices during field observations.
241	Did the X-ray producing device have controls which allow the operator to vary voltage, thereby controlling image quality? Was it possible to vary the voltage, typically between 150-400 kV, to provide an optimum degree of penetration through the waste? Was high-density material examined with the X-ray device set on the maximum voltage? Was low-density material examined at lower voltage settings to improve contrast and image definition? (Section C1-3)	INST-OI-12, S. 4.9.3.2 INST-OI-81, S. 4.9.3.2	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	Verified the equipment and devices during field observations.

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
242	Do procedures or other documentation ensure that an audio/videotape or equivalent is made of the waste container scan and maintained as a non-permanent record? (Section C1-3)	INST-OI-12, S. 4.9 NOTE 2, 4.9.3.3 NOTE, 4.10 NOTE 2 & 3 INST-OI-81, S. 4.9 NOTE 3, 4.9.3.3 NOTE, 4.10 NOTE 2 & 3	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
	DATA COMPILATION					
243	Are there procedures to ensure that a radiography data form is used to document the waste matrix code, ensure the waste container contains no ignitable, corrosive or reactive waste by documenting the absence of liquid in excess of TSDF-WAC limits or compressed gases, and verify that the physical form of the waste is consistent with the waste stream description documented on the WSPF? (Section C1-3)	INST-OI-12, S. (All) INST-OI-81, S. (All)	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
245	If radiography indicates that the waste does not match the waste stream description, do procedures ensure that the appropriate corrective action was taken? (Section C-3c)	INST-OI-12, S. 4.10.40.1 INST-OI-81, S. 4.10.33.1	Y	NCRs: 68025 68706 **(RTR-3)**	Y	
246	If a discrepancy is noted, do procedures ensure that the proper waste stream assignment is determined, the correct hazardous waste numbers assigned, and the resolution documented? (Section C-3c)	MP-TRUW-8.13, S. 3.5.2.1 & 3.5.2.4.1	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
				AK Source Document Review Summary: P402A Rev. 8 with WSPF and CIS – 1st/2nd Stage Sludge AK Source Document Review Summary: P420A Rev 7 with WSPF and CIS – Building 374 Sludge AK Source Document Review Summary: P437A Rev. 9 with WSPF and CIS – Solidified Acid and Caustic Waste AK Source Document Review Summary: P609A Rev. 7 with WSPF and CIS – Special Setups AK Source Document Review Summary: P646A Rev. 8 with WSPF and CIS – Cemented Sludge AK Source Document Review Summary: P841A Rev. 1 with WSPF and CIS – Solidified Plutonium Recovery Incinerator Waste AK Source Document Review Summary: P1358A Rev. 1 with WSPF and CIS – AMWTP WMF-676 PCB Contaminated Debris AK Source Document Review Summary: P1030A with WSPF and CIS – Super Compacted Debris Waste **(GEN-5)**		

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	TRAINING					
247	Do site procedures ensure that only trained personnel are allowed to operate radiography equipment? (Section C1-3)	INST-OI-12, S. 3.2.1 INST-OI-81, S. 3.2.1 MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
248	Do site procedures ensure that training requirements for radiography operators is based upon existing industry standard training requirements? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	
249	Does the documented training program provide radiography operators with both formal and on-the-job training (OJT)? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	
250	Does the documented training program ensure that the radiography operators are instructed in the specific waste generating practices and typical packaging configurations expected to be found in each waste stream at the site? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	
251	Does the documented training program ensure that the OJT and apprenticeship are conducted by an experienced, qualified radiography operator prior to qualification of the candidate? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	
252	Is the documented training program site specific? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	
262	Does the documented training program ensure that a training drum with various container sizes is scanned by each operator on a semiannual basis? Is the videotape reviewed by a supervisor to ensure that operator's interpretations remain consistent and accurate? (Section C1-3)	MP-TRUW-8.1, Appendix F, S. F.2	Y	RTR Operator Training Records **(RTR-2)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
263	Do site procedures ensure that the site prepares Testing Batch Data Reports or equivalent which includes all data pertaining to radiography for up to 20 waste containers without regard to waste matrix? (Section C3-10)	MP-TRUW-8.8, S. 3.1	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
	QUALITY ASSURANCE					
265	Does the documented training program ensure that the imaging system characteristics are verified on a routine basis? (Section C1-3)	MP-TRUW- 8.1, App. F, S. F.2 INST-OI-12, S. 4.6, 4.6.3 & NOTE 1 INST-OI-81, S. 4.6, 4.6.3 & NOTE 1	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
266	Do procedures ensure that independent replicate scans and replicate observations of the video output of the radiography process are performed under uniform conditions and procedures? Are independent replicate scans performed on one waste container per day or per testing batch of 20 samples, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the water container? Are independent observations of one scan (not the replicate scan) performed once per day or per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container? (Section C1-3)	INST-OI-12, S. 4.9 Note 4, 4.9.1, 4.9.2, 4.10.12, 4.10.13 & 4.10.14 INST-OI-81, S. 4.9 NOTE 2, 4.9.1, 4.9.2, 4.10.12, 4.10.13 & 4.10.14	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
267	Do procedures ensure that oversight functions include periodic audio/video media reviews of accepted waste containers, are performed by qualified radiography operators that were not involved in the original scans of the waste containers? (Section C1-3)	INST-OI-12, S. 4.9 NOTE 4, 4.9.1 NOTE, 4.10.13, 4.10.15 INST-OI-81, S. 4.9 NOTE 2, 4.9.1 NOTE, 4.10.13, 4.10.15,	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
268	Is the site project manager responsible for monitoring the quality of the radiography data and calling for corrective action, when necessary? (Section C1-3)	MP-TRUW-8.2, S. C1-3 MP-TRUW-8.9, S. 2.0, 3.2 & 6.0	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
	DATA VALIDATION, REVIEW, VERIFICATION AND REPORTING					
277	Do procedures ensure that all applicable data generation review verification and validation activities specified in C3-10 are followed, including all signatory releases? (Section C3-10)	MP-TRUW-8.8, S. 3.1	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
278	Do procedures ensure that radiography tapes have been reviewed at a frequency of one waste container per day or once per testing batch, whichever is less frequent, to ensure data are correct and completed? (Section C1-3)	INST-OI-12, S. 4.10.14 INST-OI-81, S. 4.10.14	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	
279	Do procedures ensure that all applicable project-level signatory releases and DQOs (Section C3-11) as specified in the WAP are performed? (Section C3-10b)	MP-TRUW-8.9, S. 3.1, 3.2 & 6.0	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)**	Y	
282	At the data generation level, do procedures ensure that all electronic and video data stored appropriately to ensure that waste container, sample, and associated QA data are readily retrievable? Are radiography tapes reviewed, at a frequency of one waste container per day or once per testing batch, whichever is less frequent, against the data reported on the radiography form? (Section C3-10a, C3-10a(1))	INST-OI-12, S. 4.9 NOTE 3, 4.9.2 & 7.0 INST-OI-81, S. 4.9 NOTE 3, 4.9.2 & 7.0	Y	RTR BDRs: RTR11-00378 RTR11-00387 RTR11-00401 RTR11-00414 RTR11-00426 RTR11-00442 RTR12-00015 RTR12-00029 RTR12-00054 RTR12-00081 RTR12-00096 **(RTR-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-5 Radiography Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
283	At the project level, do procedures require the Site Project Manager to certify that the radiography data are complete and acceptable based on the videotape review of at least one waste container per testing batch or daily, whichever is less frequent? (Section C3-10b(1))	MP-TRUW-8.9, S. 3.2 and 6.0	Y	RTR BDRs: RTR11-00393 RTR12-00019 RTR12-00070 RTR12-00101 **(GEN-1)**	Y	

1. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

Table C6-6 Visual Examination (VE) Checklist
AMWTP Recertification Audit A-13-01
October 15- 18, 2012

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Visual Examination (VE) Checklist

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-6 Visual Examination (VE) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
	TRAINING					
296	Is there documentation which shows that a standardized training program for visual examination operators has been developed? Is it specific to the site and include the various waste configurations generated/stored at the site? (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 QP-VE-0001, (All)	Y	Training Records for VE operators **(VE-2)**	Y	
297	Is there documentation which shows that the visual examination operators receive training on the specific waste generating processes, typical packaging configurations, and waste material parameters expected to be found in each Waste Matrix Code at the site? (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 QP-VE-0001, (All)	Y	Training Records for VE operators **(VE-2)**	Y	
298	Are the visual examination personnel requalified once every two years? (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 QP-VE-0001, (All)	Y	Training Records for VE operators **(VE-2)**	Y	
298a	Does the training include the following regardless of Summary Category Group? • Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste. • Identifying when VE cannot be used to meet the DQOs. (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 QP-VE-0001, (All)	Y	Training Records for VE operators **(VE-2)**	Y	
	VISUAL EXAMINATION EXPERT REQUIREMENTS					
300	Does documentation ensure that the site has designated a visual examination expert? Is the visual examination expert familiar with the waste generating processes that have taken place at the site? Is the visual examination expert familiar with all of the types of waste being characterized at that site? (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 QP-VE-0001, (All)	Y	SMP-01-11 AMWTP Project VEE Designee **(VE-3)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-6 Visual Examination (VE) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
301	Does documentation ensure that the visual examination expert shall be responsible for the overall direction and implementation of the visual examination aspects of the program? Does the site's QAPjP specify the selection, qualification, and training requirements of the visual examination expert? (Section C1-4)	MP-TRUW-8.1 Appendix G, S. G.2 INST-FOI-17, S. 2.0 INST-OI-34, S. 2.0	Y	SMP-01-11 AMWTP Project VEE Designee **(VE-3)**	Y	
	VISUAL EXAMINATION PROCEDURES					
304	Do procedures indicate that all visual examination activities are documented on video/audio media or VE performed by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting? (Section C1-4)	INST-OI-34, S. 3.2.5 INST-FOI-17, S. 2.0 & 3.1.17	Y	VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	
304a	Are procedures in place to ensure that when VE is performed using a second operator, each operator performing VE shall observe for themselves the waste being placed in the container or the contents within the examined waste container when waste is not removed? (Section C1-4)	INST-OI-34, S. 5.0 INST-FOI-17, S. 2.0 & 3.1.17	Y	VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	
313	Do site procedures ensure that when liquid is found, the non-transparent internal container holding the liquid will be assumed to be filled with liquid and this volume will be added to the total liquid in the container being characterized using VE? The container being characterized using VE would then be rejected and/or repackaged to exclude the internal container if it is over the TSDF-WAC limits. (Section C-3c)	INST-FOI-17, S. 4.2.21.2 & Exhibit 4 INST-OI-34, S. 3.1.3, 4.2.20 & Exhibit 4	Y	VE BDRs: VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)**	Y	

	WAP Requirement[1] AMWTP Recertification Audit A-13-01 Table C6-6 Visual Examination (VE) Checklist	Procedure Documented		Example of Implementation/ Objective Evidence, as applicable		Comment (e.g., any change in procedure since last audit, etc.)
		Location	Adequate? Y/N (Why)	Item Reviewed	Adequate? Y/N	
314	Are process procedures in place to meet the following Quality Assurance Objectives? <u>Precision</u> • Precision is maintained by reconciling any discrepancies between the operator and the independent technical reviewer with regard to identification of waste matrix code, liquids in excess of TSDF-WAC limits, and compressed gases. <u>Accuracy</u> • Accuracy is maintained by requiring operators to pass a comprehensive examination and demonstrate satisfactory performance in the presence of the VE expert during their initial qualification and subsequent requalification. <u>Completeness</u> • A validated VE data form will be obtained for 100 percent of the waste containers subject to VE. <u>Comparability</u> • The comparability of VE data from different operators shall be enhanced by using standardized VE procedures and operator qualifications. (Section C3-4b)	MP-TRUW-8.8, S. 3.2.4.10	Y	<u>VE BDRs:</u> VEB12-00044 VNC12-00156 VEB12-00200 VEB12-00540 VEB12-00725 VEB12-00764 VEB12-00766 VEB12-00941 **(VE-1)** Training Records for VE Operators **(VE-2)**	Y	

1. The WAP requirements should be presented in documents, such as procedures. Each of the questions posed under WAP requirements is meant to ask whether procedures are in place or whether documents are evident which demonstrate that the specific WAP requirement is or can be met.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 15-Oct-2012

Time: 11:44 **GEN1**

Batch Type Real Time Radiography

Batch Report No. RTR11-00393

Batch Id RTR11-00393

Open Date 13-NOV-11 14:36:43

Close Date 15-NOV-11 12:29:09

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10140326	RF-480	0000080168	13-NOV-11 14:36:43	Original	P	SAMUEL PHILLIPS
10030279	RF-336	0000080171	13-NOV-11 16:29:16	Original	P	SAMUEL PHILLIPS
10030942	RF-480	0000080172	13-NOV-11 17:07:19	Original	P	SAMUEL PHILLIPS
10000676	RF-335	0000080175	13-NOV-11 17:45:56	Original	P	SAMUEL PHILLIPS
10359842	RF-003	0000080178	14-NOV-11 09:04:18	Original	P	NANCY BUNCE
10140325	RF-480	0000080181	14-NOV-11 10:38:21	Original	P	NANCY BUNCE
10000670	RF-376	0000080183	14-NOV-11 11:06:02	Original	P	SAMUEL PHILLIPS
10000678	RF-376	0000080186	14-NOV-11 12:12:20	Original	P	SAMUEL PHILLIPS
10000678	RF-376	0000080188	14-NOV-11 13:01:13	RTR OIO	P	KENT KEARN
10000686	RF-376	0000080190	14-NOV-11 13:18:45	Original	P	NANCY BUNCE
10003029	RF-330	0000080191	14-NOV-11 13:55:52	Original	P	NANCY BUNCE
10032068	RF-376	0000080194	14-NOV-11 14:18:52	Original	P	NANCY BUNCE
10032068	RF-376	0000080195	14-NOV-11 15:02:48	Replicate / Duplicate	P	SETH OLDHAM
10003956	RF-480	0000080197	14-NOV-11 16:32:23	Original	P	KENT KEARN
10003561	RF-442	0000080198	14-NOV-11 16:51:24	Original	P	KENT KEARN
10003613	RF-330	0000080200	14-NOV-11 17:08:14	Original	P	NANCY BUNCE
10116444	RF-480	0000080201	14-NOV-11 17:28:57	Original	P	KENT KEARN
10139566	RF-001	0000080205	15-NOV-11 09:10:13	Original	P	FRANK KUCK
10140539	RF-320	0000080206	15-NOV-11 09:42:17	Original	P	FRANK KUCK
10126782	RF-337	0000080209	15-NOV-11 11:05:19	Original	P	FRANK KUCK
10000584	RF-337	0000080211	15-NOV-11 12:05:25	Original	P	FRANK KUCK
10003934	RF-336	0000080212	15-NOV-11 12:29:09	Original	P	FRANK KUCK

**********Batch Comments**********

Written By	Date	Comment
KBIRCH	11-DEC-11 17:37:20	This batch was validated to MP-TRUW-8.8.
KBIRCH	11-DEC-11 17:37:20	Rework; 10032068 analysis # 0000080194 the remaining contents of container need to reflect the split for HEPA filter IDC, add lead liner to waste items by weight (1/16)
KBIRCH	11-DEC-11 17:37:20	Rework; 10359842 analysis #000008178 corrected layer of confinement to 2 to reflect the >4L sealed container identified during A/V.
KBIRCH	11-DEC-11 17:37:20	Rework; 10140325 analysis #0000080181 add lead liner to waste items by weight (1/16)
KBIRCH	11-DEC-11 17:37:20	Rework; 10000686 analysis #0000080190 operator idcntifies the waste as HEPA filters per TRUW-05 remaining waste in waste parameters needs to be split. Cellulosics 90% and Aluminum-based Metals/Alloys 10%.
KBIRCH	11-DEC-11 17:37:20	Rework; 10003613 analysis #0000080200 add lead liner to waste parameters to waste items by weight (1/16)
KBIRCH	11-DEC-11 17:37:20	Rework; 10003029 analysis #0000080191 operator identifies liquid in an internal container prohibited , in waste parameters 1 one gallon poly bottle needs to be entered into the waste by weight.
KBIRCH	11-DEC-11 17:41:43	Demote to Ops
NBUNCE	12-DEC-11 09:32:56	Esigned.
KBIRCH	12-DEC-11 17:19:18	rework appears to be correct waiting on 200%
DGASPER	13-DEC-11 10:51:12	200% review completed on AMWTP sludge.
KBIRCH	17-DEC-11 14:55:31	Promote to SPM
SCANIFF	19-DEC-11 15:53:43	ITR please review your answers to checklist questions 7,12,and 22. In addition comments are required in the comment section for questions 18 and 19.
SCANIFF	19-DEC-11 15:53:43	Demote to ITR for rework to ITR checklist.
KBIRCH	20-DEC-11 06:32:53	Promote to SPM
SCANIFF	20-DEC-11 14:00:59	Rework complete, promote batch.
GBYRAM	08-OCT-12 08:51:01	Demote to ITR for review of original/replicate container
KBIRCH	08-OCT-12 09:17:28	promoted to SPM
KBIRCH	08-OCT-12 09:17:28	added comment in checklist # 18 to agree with origianl operator
SCANIFF	08-OCT-12 10:47:05	Rework complete. Promote.

AMWTP

Advanced Mixed Waste Treatment Project

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Batch Report Coversheet

Date: 15-Oct-2012

Time: 11:44

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2143352	KBIRCH	11-DEC-2011 17:41:43	Demote to Ops
2143632	NBUNCE	12-DEC-2011 09:32:56	
2145851	KBIRCH	17-DEC-2011 14:55:31	Promote to SPM
2146824	SCANIFF	19-DEC-2011 15:53:43	Demote to ITR for rework to ITR checklist.
2147019	KBIRCH	20-DEC-2011 06:32:53	Promote to SPM
2147385	SCANIFF	20-DEC-2011 14:00:59	Rework complete, promote batch.
2360100	GBYRAM	08-OCT-2012 08:51:01	Demote to ITR for review of original/replicate container
2360132	KBIRCH	08-OCT-2012 09:17:28	promoted to SPM
2360321	SCANIFF	08-OCT-2012 10:47:06	Rework complete. Promote.

***** End of Batch Report Coversheet Report *****

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Advanced Mixed Waste Treatment Project

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Non-Conformance Report

Date: 15-Oct-2012

Time: 11:44

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00393

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10140325	26057	CLOSED	13-FEB-07	06-APR-07
10140539	26055	CLOSED	13-FEB-07	06-APR-07
10000584	66806	CLOSED	15-NOV-11	15-AUG-12
10000584	9387	CLOSED	24-AUG-04	01-JUN-06
10000670	66773	CLOSED	14-NOV-11	27-JAN-12
10000670	66774	CLOSED	14-NOV-11	27-JAN-12
10000670	9390	CLOSED	24-AUG-04	20-DEC-11
10000676	66762	CLOSED	13-NOV-11	27-JAN-12
10000676	66763	CLOSED	13-NOV-11	27-JAN-12
10000676	9394	CLOSED	24-AUG-04	20-DEC-11
10000678	66776	CLOSED	14-NOV-11	13-MAR-12
10000678	66778	CLOSED	14-NOV-11	13-MAR-12
10000678	9395	CLOSED	24-AUG-04	20-DEC-11
10000686	66779	CLOSED	14-NOV-11	13-MAR-12
10000686	66780	CLOSED	14-NOV-11	13-MAR-12
10000686	9397	CLOSED	24-AUG-04	20-DEC-11
10003029	66784	CLOSED	14-NOV-11	29-AUG-12
10003029	66785	CLOSED	14-NOV-11	29-AUG-12
10003029	9399	CLOSED	24-AUG-04	01-JUN-06
10003561	10242	CLOSED	14-SEP-04	01-JUN-06
10003561	66794	CLOSED	14-NOV-11	14-MAR-12
10003613	10248	CLOSED	14-SEP-04	01-JUN-06
10003613	66795	CLOSED	14-NOV-11	16-AUG-12
10003934	10245	CLOSED	14-SEP-04	01-JUN-06
10003934	66807	CLOSED	15-NOV-11	22-AUG-12
10003956	10244	CLOSED	14-SEP-04	20-DEC-11
10003956	66792	CLOSED	14-NOV-11	26-JAN-12
10003956	66793	CLOSED	14-NOV-11	26-JAN-12
10030279	15222	CLOSED	06-JUN-05	16-JUN-06
10030279	19267	CLOSED	22-NOV-05	16-JUN-06
10030279	66756	CLOSED	13-NOV-11	16-AUG-12
10030279	66757	CLOSED	13-NOV-11	16-AUG-12
10030279	66758	CLOSED	13-NOV-11	16-AUG-12
10030279	66759	CLOSED	13-NOV-11	16-AUG-12
10030942	15801	CLOSED	14-JUN-05	20-DEC-11
10030942	66760	CLOSED	13-NOV-11	26-JAN-12
10030942	66761	CLOSED	13-NOV-11	26-JAN-12
10032068	15581	CLOSED	11-JUN-05	20-DEC-11
10032068	66786	CLOSED	14-NOV-11	31-JAN-12
10126782	27060	CLOSED	14-APR-07	20-DEC-11
10126782	66801	CLOSED	15-NOV-11	26-JAN-12

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Advanced Mixed Waste Treatment Project

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Non-Conformance Report

Date: 15-Oct-2012

Time: 11:44

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10139566	26365	CLOSED	04-MAR-07	20-DEC-11
10139566	66797	OPEN	15-NOV-11	
10140325	26046	CLOSED	12-FEB-07	20-DEC-11
10140325	27026	CLOSED	11-APR-07	19-MAY-08
10140325	66771	CLOSED	14-NOV-11	31-JAN-12
10140325	66772	CLOSED	14-NOV-11	31-JAN-12
10140326	26009	CLOSED	11-FEB-07	20-DEC-11
10140326	66754	CLOSED	13-NOV-11	26-JAN-12
10140326	66755	CLOSED	13-NOV-11	26-JAN-12
10140539	26020	CLOSED	12-FEB-07	21-DEC-11
10140539	66798	CLOSED	15-NOV-11	26-JAN-12
10359842	66765	OPEN	14-NOV-11	
10359842	66766	OPEN	14-NOV-11	
10359842	66767	OPEN	14-NOV-11	

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

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Checklist Report

Date: 15-Oct-2012

Time: 11:44

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 11-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See Batch comments
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		No significant differences between original and replicate operator
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		No significant differences between original and independent observation operator

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 11-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	No		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 17-DEC-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See Batch comments
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		No significant differences between original and replicate operator
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		No significant differences between original and independent observation operator

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 17-DEC-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	No		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 20-DEC-11 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		See Batch comments
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Replicate ran on 11/14/11 #10032068. No significant differences between original and replicate. Original operator left out lead liner to waste items and needed the split for HEPA filter IDC
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		OIO ran on 11/14/11 #10000678. No significant differences between original and independent

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 20-DEC-11 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			observation operator. I agree with original operator
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 08-OCT-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		See Batch comments
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Replicate ran on 11/14/11 #10032068. No significant differences between original and replicate. Original operator left out lead liner to waste items and needed the split for HEPA filter IDC. I agree with the original operator for impenetrable object No.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		OIO ran on 11/14/11 #10000678. No significant differences between original and independent

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer KATHY BIRCH **Approval Level** Independent Technical Reviewer

Approval Date 08-OCT-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			observation operator. I agree with original operator
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 19-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies were identified. References: AMWTP-RPT-TRUW-05 AMWTP-RPT-TRUW-12 AMWTP-RPT-TRUW-56
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 19-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	A replicate scan was performed to drum 10032068 on 11/14/2011 by S. Oldham. There were no significant differences reported.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	An OIO was performed to drum 10000678 on 11/14/2011 by K. Kearn. There were no significant differences reported.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	No	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	Demote to ITR for rework to ITR checklist.

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer GEORGE BYRAM **Approval Level** SPM Data Validation

Approval Date 08-OCT-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies were identified. References: AMWTP-RPT-TRUW-05 AMWTP-RPT-TRUW-12 AMWTP-RPT-TRUW-56
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer GEORGE BYRAM **Approval Level** SPM Data Validation

Approval Date 08-OCT-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	A replicate scan was performed to drum 10032068 on 11/14/2011 by S. Oldham. There were no significant differences reported.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	An OIO was performed to drum 10000678 on 11/14/2011 by K. Kearn. There were no significant differences reported.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	No	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 08-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies were identified. References: AMWTP-RPT-TRUW-05 AMWTP-RPT-TRUW-12 AMWTP-RPT-TRUW-56
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 08-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	A replicate scan was performed to drum 10032068 on 11/14/2011 by S. Oldham. There were no significant differences reported.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	An OIO was performed to drum 10000678 on 11/14/2011 by K. Kearn. There were no significant differences reported.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00393 **Open Date** 13-NOV-11 **Close Date** 15-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2360321	SCANIFF	08-OCT-12	SPM	Rework complete. Promote.
2360132	KBIRCH	08-OCT-12	ITR	promoted to SPM
2360100	GBYRAM	08-OCT-12	SPM	Demote to ITR for review of original/replicate container
2147385	SCANIFF	20-DEC-11	SPM	Rework complete, promote batch.
2147019	KBIRCH	20-DEC-11	ITR	Promote to SPM
2146824	SCANIFF	19-DEC-11	SPM	Demote to ITR for rework to ITR checklist.
2145851	KBIRCH	17-DEC-11	ITR	Promote to SPM
2143352	KBIRCH	11-DEC-11	ITR	Demote to Ops

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 15-Oct-2012
Time: 11:44

Batch Id RTR11-00393 **Container Id** 10140326 **Analysis Id** 0000080168

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 13-NOV-2011 14:36 **Gross Weight** 350.595 **Lbs.** **Net Weight** 274.595 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 04-FEB-1975 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Metal debris in the form of pipe flanges, tools and scrap metal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner, lead lined volrath can located at center of waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable — Unable to penatrate Lead liner, lead lined valwath can located at center of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead liner for volrath can	1.000	EACH	3.000	3.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10140326 **Analysis Id** 0000080168

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	221.595
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	53.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2131857	SPHILLIPS	13-NOV-2011 14:36	

Batch Id RTR11-00393 **Container Id** 10030279 **Analysis Id** 0000080171

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 13-NOV-2011 16:29 **Gross Weight** 295.470 Lbs. **Net Weight** 220.470 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5330 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-JAN-1977 00:00 **Operator** SPHILLIPS

Result Comment This drum contains plastic waste in the form of poly bottles. Operator stated on recording 0.30 pints of containerized liquid there is 0.27 pints. Also stated 1 layer of confinment there is two.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .27 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .27 pints

Other Liquids 0 pints **Comment** liquid in multable locations 4 large poly bottles located throughout the waste with 0.03 pints each also one bottle located batween bottom chime and bottom of drum with 0.15 pints of liquid (liquid greater than 60 Mils) Total amount of liquid 0.27

Prohibited Liquids Present Yes **Comment** Containerized liquid Greater than 60 mils. .

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Poly bottles greater than 4 Liters throughout drum.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable tp penatrate lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000

Batch Id RTR11-00393 **Container Id** 10030279 **Analysis Id** 0000080171

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
large poly bottle greater than 4L	1.000	EACH	1.500	1.500
Wood	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.270	PINTS	1.000	0.270

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.270
Cellulosics	0.000	5.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	165.200
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2131897	SPHILLIPS	13-NOV-2011 16:29	

Batch Id RTR11-00393 **Container Id** 10030942 **Analysis Id** 0000080172

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 13-NOV-2011 17:07 **Gross Weight** 383.670 Lbs. **Net Weight** 306.670 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-MAR-1977 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Metal debris in the form of piping and scrap metal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Leaded liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable to pentarate lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead sheeting	1.000	EACH	10.000	10.000
plastic waste	1.000	EACH	6.000	6.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10030942 **Analysis Id** 0000080172

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	240.420
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	60.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2131910	SPHILLIPS	13-NOV-2011 17:07	

Batch Id RTR11-00393 **Container Id** 10000676 **Analysis Id** 0000080175

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 13-NOV-2011 17:45 **Gross Weight** 207.270 Lbs. **Net Weight** 131.270 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-335 Absolute 8 x 8 Filters

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-MAR-1985 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of Absolute filters with wood frames.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable to penatrate lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic waste.	1.000	EACH	6.000	6.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10000676 **Analysis Id** 0000080175

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	74.770
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2131965	SPHILLIPS	13-NOV-2011 17:57	
2131962	SPHILLIPS	13-NOV-2011 17:45	

Batch Id RTR11-00393 **Container Id** 10359842 **Analysis Id** 0000080178

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 14-NOV-2011 09:04 **Gross Weight** 617.400 **Lbs.** **Net Weight** 474.400 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S3114 **IDC** RF-003 Organic Setups, Oil Solids

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-MAY-2010 07:41 **Operator** SPHILLIPS

Result Comment This drum contains Sludge!
Rework; Corrected layer of confinement to 2. NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 16 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 23 pints

Other Liquids 7 pints **Comment** 1 pint of liquid at bottom of drum, Also a large poly bottle with 16 pints of liquid located at bottom of waste and 6 pints of liquid located at bottom chime. Total amount of liquid is 23 pints.

Prohibited Liquids Present Yes **Comment** PCBs with liquid and liquid greater than 1%

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	PCBs with liquid
			PCB Mass (lbs)	474.4	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Large poly bottle located at bottom of waste.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable to penatrate the liquid in the poly bottle located at bottom of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Large poly bottle	1.000	EACH	1.500	1.500

Batch Id RTR11-00393 **Container Id** 10359842 **Analysis Id** 0000080178

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Organic Matrix	23.000	PINTS	1.000	23.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	100.000	472.900
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143631	NBUNCE	12-DEC-2011 09:32	
2132163	SPHILLIPS	14-NOV-2011 09:04	

Batch Id RTR11-00393 **Container Id** 10140325 **Analysis Id** 0000080181

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 14-NOV-2011 10:38 **Gross Weight** 357.210 **Lbs.** **Net Weight** 281.210 **Lbs**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-JUN-1973 00:00 **Operator** SPHILLIPS

Result Comment This Drum contains metal debris in the form of instrumentation parts.
Rework; Added lead liner to waste items by weight (1/16). NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? Yes **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner and leaded rubber glove	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable unable to penatrate lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
leaded rubber glove	1.000	EACH	3.000	3.000
plastic waste.	1.000	EACH	6.000	6.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR11-00393 **Container Id** 10140325 **Analysis Id** 0000080181

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	220.950
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	0.000
Rubber	0.000	3.000
Plastic (Waste Materials)	0.000	6.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143627	NBUNCE	12-DEC-2011 09:30	
2132222	SPHILLIPS	14-NOV-2011 10:38	

Batch Id RTR11-00393 **Container Id** 10000670 **Analysis Id** 0000080183

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 11:06 **Gross Weight** 229.320 **Lbs.** **Net Weight** 153.320 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-MAR-1986 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of hepa filters with wood frames.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable unable to penatrate bottom 1 inch of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10000670 **Analysis Id** 0000080183

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	98.820
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132225	SPHILLIPS	14-NOV-2011 11:06	

Batch Id RTR11-00393 **Container Id** 10000678 **Analysis Id** 0000080186

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 12:12 **Gross Weight** 209.480 **Lbs.** **Net Weight** 133.480 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-NOV-1986 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of hepa filters with wood frames.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic waste	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10000678 **Analysis Id** 0000080186

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	78.980
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132241	SPHILLIPS	14-NOV-2011 12:12	

Batch Id RTR11-00393 **Container Id** 10000678 **Analysis Id** 0000080188

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 13:01 **Gross Weight** 209.480 Lbs. **Net Weight** 133.480 Lbs

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 19-NOV-1986 00:00 **Operator** KKEARN

Result Comment Waste consists of wood framed HEPA filters

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	14.000	EACH	0.250	3.500
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10000678 **Analysis Id** 0000080188

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	79.980
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	11-DEC-2011 17:34	KBIRCH	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant differences between original and independent observation operator

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143351	KBIRCH	11-DEC-2011 17:34	No significant differences between original and independent observation operator

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132256	KKEARN	14-NOV-2011 13:01	

Batch Id RTR11-00393 **Container Id** 10000686 **Analysis Id** 0000080190

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 13:18 **Gross Weight** 209.480 Lbs. **Net Weight** 132.480 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-MAY-1986 00:00 **Operator** KKEARN

Result Comment Waste consists of wooden framed HEPA filters
Rework: Updated waste parameters. NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	15.000	EACH	0.250	3.750
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Uncured Cement	4.000	PINTS	3.000	12.000

Batch Id RTR11-00393 **Container Id** 10000686 **Analysis Id** 0000080190

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	6.673
Other metals	0.000	50.000
Other Inorganic Materials	0.000	12.000
Cellulosics	90.000	60.057
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143612	NBUNCE	12-DEC-2011 09:17	
2132258	KKEARN	14-NOV-2011 13:18	

Batch Id RTR11-00393 **Container Id** 10003029 **Analysis Id** 0000080191

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 13:55 **Gross Weight** 224.910 **Lbs.** **Net Weight** 147.910 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5330 **IDC** RF-330 Paper and Rags-Dry

Recording Id IRTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-JAN-1985 00:00 **Operator** KKEARN

Result Comment Waste consists of poly bottles, tubing, and plastic bags
Rework; Added 1 one gallon poly bottle into the waste by weight. NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 70

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .5 pints

Other Liquids 0 pints **Comment** .5 pt of liquid in a poly bottle near the bottom of the waste

Prohibited Liquids Present Yes **Comment** > 60 mils

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Batch Id RTR11-00393 **Container Id** 10003029 **Analysis Id** 0000080191

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.500
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	97.410
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143616	NBUNCE	12-DEC-2011 09:21	
2132268	KKEARN	14-NOV-2011 13:55	

Batch Id RTR11-00393 **Container Id** 10032068 **Analysis Id** 0000080194

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 14-NOV-2011 14:18 **Gross Weight** 257.990 **Lbs.** **Net Weight** 180.990 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-MAY-1977 00:00 **Operator** KKEARN

Result Comment Waste consists of wood framed HEPA filters
Rework; Corrected Waste parameters. NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	12.000	EACH	0.250	3.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Uncured Cement	6.000	PINTS	3.000	18.000

Batch Id RTR11-00393 **Container Id** 10032068 **Analysis Id** 0000080194

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	30.000	32.997
Other metals	0.000	50.000
Other Inorganic Materials	0.000	18.000
Cellulosics	70.000	76.993
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143622	NBUNCE	12-DEC-2011 09:28	
2132287	KKEARN	14-NOV-2011 14:18	

Batch Id RTR11-00393 **Container Id** 10032068 **Analysis Id** 0000080195

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 14-NOV-2011 15:02 **Gross Weight** 257.990 **Lbs.** **Net Weight** 180.990 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-MAY-1977 00:00 **Operator** SOLDHAM

Result Comment This drum contains wood framed filters.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc. metal	1.000	EACH	2.000	2.000
Plastic bag for waste	12.000	EACH	0.250	3.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cured Cement (Other Inorganics)	5.000	PINTS	1.125	5.630

Batch Id RTR11-00393 **Container Id** 10032068 **Analysis Id** 0000080195

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	10.000	12.036
Other metals	0.000	50.000
Other Inorganic Materials	0.000	5.630
Cellulosics	90.000	108.324
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132303	SOLDHAM	14-NOV-2011 15:02	

Batch Id RTR11-00393 **Container Id** 10003956 **Analysis Id** 0000080197

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 16:32 **Gross Weight** 330.750 Lbs. **Net Weight** 253.750 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-JUL-1980 00:00 **Operator** KKEARN

Result Comment Waste consists of cans, pipe, and metal pans

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic bags and sheeting	1.000	EACH	10.000	10.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10003956 **Analysis Id** 0000080197

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	193.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132331	KKEARN	14-NOV-2011 16:32	

Batch Id RTR11-00393 **Container Id** 10003561 **Analysis Id** 0000080198

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 16:51 **Gross Weight** 213.885 Lbs. **Net Weight** 137.885 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5122 **IDC** RF-442 Raschig Rings, Leached

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-MAR-1982 00:00 **Operator** KKEARN

Result Comment Waste consists of rashig rings

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 35

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Fiber pack	1.000	EACH	6.000	6.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420

Batch Id RTR11-00393 **Container Id** 10003561 **Analysis Id** 0000080198

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	100.000	81.385
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132335	KKEARN	14-NOV-2011 16:51	

Batch Id RTR11-00393 **Container Id** 10003613 **Analysis Id** 0000080200

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 14-NOV-2011 17:08 **Gross Weight** 202.860 Lbs. **Net Weight** 125.860 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5330 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-DEC-1983 00:00 **Operator** KKEARN

Result Comment Waste consists of plastic bags, containers, and sheeting
Rework; Added lead liner to waste parameters. NB 12/12/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10003613 **Analysis Id** 0000080200

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	75.860
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143618	NBUNCE	12-DEC-2011 09:24	
2132338	KKEARN	14-NOV-2011 17:08	

Batch Id RTR11-00393 **Container Id** 10116444 **Analysis Id** 0000080201

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 14-NOV-2011 17:28 **Gross Weight** 388.080 **Lbs.** **Net Weight** 312.080 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-SEP-1972 00:00 **Operator** KKEARN

Result Comment Waste consists of metal containers

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420

Batch Id RTR11-00393 **Container Id** 10116444 **Analysis Id** 0000080201

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	311.660
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132341	KKEARN	14-NOV-2011 17:28	

Batch Id RTR11-00393 **Container Id** 10139566 **Analysis Id** 0000080205

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 15-NOV-2011 09:10 **Gross Weight** 533.610 Lbs. **Net Weight** 458.610 Lbs.
Equipment Z-213-101 **Waste Matrix Code** S3121 **IDC** RF-001 First Stage Sludge
Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 07-SEP-1972 00:00 **Operator** FKUCK

Result Comment Waste appears to be sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000
Idc Change Reason
Rigid Liner Present? Yes **LinerType** TYPE I
Liner Punctured? Yes **Sharp Objects?** No
Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? No **Layers Of Confinement** 0
Fill Factor 90
Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? Yes - Unacceptable lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10139566 **Analysis Id** 0000080205

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	358.610
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132368	FKUCK	15-NOV-2011 09:10	

Batch Id RTR11-00393 **Container Id** 10140539 **Analysis Id** 0000080206

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 15-NOV-2011 09:42 **Gross Weight** 246.960 **Lbs.** **Net Weight** 169.960 **Lbs**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-320 Heavy Non-special Source Metal

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-1975 00:00 **Operator** FKUCK

Result Comment Waste consists of tantalum molds.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead bowl and misc lead parts inside a 1 gallon paint can, located on side of waste near the bottom.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable tantalum molds

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead items inside a paint can	1.000	EACH	10.000	10.000
90 mil liner lid	1.000	EACH	3.000	3.000
Plastic bag for waste	5.000	EACH	0.250	1.250
1 Gal. Paint Can w/ Lid	2.000	EACH	0.840	1.680

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00393 **Container Id** 10140539 **Analysis Id** 0000080206

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.680
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	162.350
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132370	FKUCK	15-NOV-2011 09:42	

Batch Id RTR11-00393 **Container Id** 10126782 **Analysis Id** 0000080209

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 15-NOV-2011 11:05 **Gross Weight** 264.600 Lbs. **Net Weight** 188.600 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Wash, PVC

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-OCT-1972 00:00 **Operator** FKUCK

Result Comment Waste appears to be plastic sheeting or a tarp inside a lead lined fiberpack.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead sheeting or lining inside a fiberpack	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead sheeting or lining inside the fiberpack

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead sheeting or lining for an overpack	1.000	EACH	75.000	75.000
90 mil liner lid	1.000	EACH	3.000	3.000
Fiber pack	1.000	EACH	6.000	6.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	80.000	PINTS	0.420	33.600

Batch Id RTR11-00393 **Container Id** 10126782 **Analysis Id** 0000080209

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	75.000
Other Inorganic Materials	0.000	33.600
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	74.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132383	FKUCK	15-NOV-2011 11:05	

Batch Id RTR11-00393 **Container Id** 10000584 **Analysis Id** 0000080211

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 15-NOV-2011 12:05 **Gross Weight** 209.475 Lbs. **Net Weight** 132.475 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5319 **IDC** RF-337 Plastics, Teflon, Wash, PVC

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-FEB-1980 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of plastic tubing and sheeting.

---Package---

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 25

Bag Closure Method Twisted and Taped

---Liquids---

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

---Contents-Drum or Box---

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead liner

---Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

---Waste Items byWeight---

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner lid	1.000	EACH	3.000	3.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber glove	2.000	EACH	5.500	11.000
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00393 **Container Id** 10000584 **Analysis Id** 0000080211

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	0.000
Rubber	0.000	11.000
Plastic (Waste Materials)	100.000	16.435
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132396	FKUCK	15-NOV-2011 12:05	

Batch Id RTR11-00393 **Container Id** 10003934 **Analysis Id** 0000080212

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 15-NOV-2011 12:29 **Gross Weight** 222.705 **Lbs.** **Net Weight** 145.705 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5330 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00210 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-DEC-1984 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of plastic bottles and bags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber glove	1.000	EACH	5.500	5.500
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00393 **Container Id** 10003934 **Analysis Id** 0000080212

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	102.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	5.500
Plastic (Waste Materials)	100.000	38.205
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132398	FKUCK	15-NOV-2011 12:29	

------End of RTR Analysis Report------

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 15-Oct-2012

Time: 11:46

RTR Batch Id: RTR11-00393 **Container Id:** 10032068 **Equipment Id:** Z-213-101

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-376** Gross Weight(Lbs): **257.99**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000080194	14-NOV-2011 14:18	0000080195	14-NOV-2011 15:02
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	1RTR11-00210		1RTR11-00210	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	KENT KEARN		SETH OLDHAM	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5410	S5000	S5410
Packaging				
Rigid Liner Present?	Y		Y	
Liner Type Code:	TYPE 1		TYPE 1	
Liner Punctured:	Y		Y	
Liner Lid Deformed:	N		N	
Layers Of Confinement:	3		3	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	80		80	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	Y		Y	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	Yes, Rejected	lead liner	Yes, Rejected	lead liner
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR11-00393 **Container Id:** 10032068 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	Yes, Unacceptable lead liner
Result Comment:	Waste consists of wood framed HEPA filters	This drum contains wood framed filters.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2143350	KBIRCH	11-DEC-11	

-----End of RTR Replicate Comparison Report-----

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 66754

Title: RTR Characterization

Originator: Phillips, Samuel	**Date Opened:** 11/13/11
Responsible Dept: Plant Manager	**Batch #:** RTR11-00393
Container ID: 10140326	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Samuel Phillips	**Originator Sign Date:** 11/13/11

Production Comments: **Approved Remediation:** **SDOP**

Unable to penetarate Lead liner and lead lined valwath can located at center of waste.

Performed By: Kenny Burnside	**Performed Date:** 01/26/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45 note prior to section 3.1.8 and step 3.1.11, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.11.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-067-12 (see attached). Actions required for closure of this NCR are complete.
Note: "Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR." KB 1/26/12

SPM Verification Complete By: Kenny Burnside	**SPM Verification Complete Date:** 01/26/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10140326 has been assigned IDC RF-480 and meets debris feedstock requirements.
2) Inner drums' FGE plus two sigma error sum is <325 g for the virtual SDOP.
3) Gross weight of the SDOP does not exceed 6,000 lb.
4) RTR and assay characterization have been completed. No prohibited items were identified that prevents container movement into the facility.
5) Form-1862 is attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.
Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 01-26-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 01/26/12

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 66755

Title: RTR Characterization

Originator: Phillips, Samuel	**Date Opened:** 11/13/11
Responsible Dept: Plant Manager	**Batch #:** RTR11-00393
Container ID: 10140326	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Samuel Phillips	**Originator Sign Date:** 11/13/11

Production Comments: **Approved Remediation:** SDOP

Lead liner, lead lined valwath can located at center of waste.

Performed By: Kenny Burnside	**Performed Date:** 01/26/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45 note prior to section 3.1.8 and step 3.1.11, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.11.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-067-12 (see attached). Actions required for closure of this NCR are complete.
Note: "Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR." KB 1/26/12

SPM Verification Complete By: Kenny Burnside	**SPM Verification Complete Date:** 01/26/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10140326 has been assigned IDC RF-480 and meets debris feedstock requirements.
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Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 01-26-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 01/26/12

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 04-Oct-2012

Time: 10:49

Batch Type Real Time Radiography
Batch Report No. RTR12-00019
Batch Id RTR12-00019
Open Date 19-JAN-12 15:50:54
Close Date 21-JAN-12 11:14:25
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10429429	BN-508	0000081725	19-JAN-12 15:50:54	Original	P	FRANK KUCK
10429511	BN-508	0000081727	19-JAN-12 16:37:12	Original	P	FRANK KUCK
10161178	RF-900	0000081732	19-JAN-12 18:13:38	Original	P	FRANK KUCK
10151749	RF-336	0000081735	20-JAN-12 09:36:33	Original	P	CONLEY BEEBE
10343069	RF-336	0000081737	20-JAN-12 10:10:29	Original	P	CONLEY BEEBE
10145214	MD-836	0000081738	20-JAN-12 11:11:52	Original	P	CONLEY BEEBE
10059515	RF-330	0000081741	20-JAN-12 11:51:50	Original	P	CONLEY BEEBE
10136829	RF-336	0000081744	20-JAN-12 12:52:22	Original	P	CONLEY BEEBE
10082825	RF-330	0000081746	20-JAN-12 13:19:43	Original	P	SHAWN JORDAN
10136826	RF-336	0000081747	20-JAN-12 13:43:11	Original	P	SHAWN JORDAN
10362364	RF-004	0000081748	20-JAN-12 13:59:11	Original	P	SHAWN JORDAN
10136829	RF-336	0000081749	20-JAN-12 14:23:07	Replicate / Duplicate	P	SHAWN JORDAN
10362364	RF-004	0000081751	20-JAN-12 14:45:06	RTR OIO	P	CONLEY BEEBE
10146908	RF-002	0000081753	20-JAN-12 15:30:45	Original	P	SHAWN JORDAN
10161157	RF-336	0000081754	20-JAN-12 16:02:08	Original	P	SHAWN JORDAN
10126923	RF-336	0000081756	20-JAN-12 16:26:39	Original	P	SHAWN JORDAN
10215336	RF-336	0000081758	20-JAN-12 16:54:04	Original	P	SHAWN JORDAN
10085583	RF-900	0000081760	20-JAN-12 17:46:23	Original	P	SHAWN JORDAN
10226909	RF-336	0000081764	21-JAN-12 08:43:12	Original	P	DIANNA MOORE
10130260	RF-002	0000081766	21-JAN-12 09:13:01	Original	P	DIANNA MOORE
10001150	RF-697	0000081768	21-JAN-12 10:20:47	Original	P	DIANNA MOORE
10085818	RF-336	0000081771	21-JAN-12 11:13:25	Original	P	DIANNA MOORE

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	30-JAN-12 07:47:25	30-JAN-12 CHINKLE AKE This batch is promoted. chd 1/30/12
DLEE	03-FEB-12 11:36:39	This batch was validated to MP-TRUW-8.8.
DLEE	03-FEB-12 11:36:40	Rework drum 10161157 Operator needs to "Add Item" of Plastic Debris it 100% Plastic waste at approx. 10 lbs and remove the plastic debris in 100% Cellulosics from to the wastes items by weight section of the waste parameters.
DLEE	03-FEB-12 11:36:40	Rework drum 10126923 Operator needs to "Add Item" of Plastic Debris it 100% Plastic waste at approx. 8 lbs and remove the plastic debris in 100% Cellulosics from to the wastes items by weight section of the waste parameters.
DLEE	03-FEB-12 11:39:04	Demote to Operations for rework.
SJORDAN	06-FEB-12 16:36:07	Rework complete.
DLEE	12-FEB-12 07:50:34	Rework completed to satisfaction.
DLEE	12-FEB-12 07:51:05	200% was completed by K. Hughes. Promote to SPM.
KBURNSIDE	21-FEB-12 08:22:08	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2174543	DLEE	03-FEB-2012 11:39:04	Demote to Operations for rework.
2176141	SJORDAN	06-FEB-2012 16:36:07	Rework complete.
2179639	DLEE	12-FEB-2012 07:51:05	200% was completed by K. Hughes. Promote to SPM.
2181641	KBURNSIDE	21-FEB-2012 08:22:09	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 04-Oct-2012

Time: 10:49

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00019		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10001150	19037	CLOSED	10-NOV-05	12-JAN-06
10001150	68403	OPEN	21-JAN-12	
10001150	68521	OPEN	25-JAN-12	
10001150	7837	CLOSED	13-JUL-04	12-JAN-06
10059515	27707	CLOSED	20-MAY-07	21-FEB-12
10059515	68390	CLOSED	20-JAN-12	28-AUG-12
10059515	68737	CLOSED	02-FEB-12	28-AUG-12
10085583	41297	CLOSED	10-SEP-08	21-FEB-12
10085583	41560	CLOSED	02-OCT-08	21-FEB-12
10085583	68397	OPEN	20-JAN-12	
10085818	68406	CLOSED	21-JAN-12	28-AUG-12
10085818	68407	CLOSED	21-JAN-12	28-AUG-12
10126923	41311	CLOSED	11-SEP-08	21-FEB-12
10145214	41290	CLOSED	10-SEP-08	02-FEB-12
10145214	41558	CLOSED	02-OCT-08	02-FEB-12
10145214	68388	OPEN	20-JAN-12	
10215336	41308	CLOSED	11-SEP-08	21-FEB-12
10226909	68399	CLOSED	21-JAN-12	28-AUG-12
10085818	42405	CLOSED	09-DEC-08	10-DEC-08
10085818	42406	CLOSED	09-DEC-08	06-MAY-09
10161157	33642	CLOSED	14-AUG-07	09-SEP-08
10429429	45700	OPEN	05-JUN-09	
10429511	40194	OPEN	06-JUL-08	

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 04-Oct-2012

Time: 10:49

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 03-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See batch comments.
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10136829 was the replicate exam done on 1/20/12. Original Operator enters 90% Fill Factor and 100% paper and rags for remaining waste parameters. The Replicate Operator enters 95% Fill Factor and 100% Plastic for remaining waste parameters. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs for TRUW-05 accepts cellulosic or plastic for this

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 03-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
			IDC.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10362364 was exam on 1/20/12. The Original Operator enters 85% Fill Factor and the OIO Operator enters 90% Fill Factor. This does not affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	No		See batch comments.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 12-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10136829 was the replicate exam done on 1/20/12. Original Operator enters 90% Fill Factor and 100% paper and rags for remaining waste parameters. The Replicate Operator enters 95% Fill Factor and 100% Plastic for remaining waste parameters. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs for TRUW-05 accepts cellulosic or plastic for this

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 12-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
			IDC.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10362364 was exam on 1/20/12. The Original Operator enters 85% Fill Factor and the OIO Operator enters 90% Fill Factor. This does not affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 21-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-08-623 R7, NCR-68521, and RPT-TRUW-05.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10001150

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 21-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10362364 on 1/20/12 at 1445. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00019 **Open Date** 19-JAN-12 **Close Date** 21-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2181641	KBURNSIDE	21-FEB-12	SPM	SPM reviewed and approved.
2179639	DLEE	12-FEB-12	ITR	200% was completed by K. Hughes. Promote to SPM.
2174543	DLEE	03-FEB-12	ITR	Demote to Operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 04-Oct-2012

Time: 10:49

Batch Id RTR12-00019 **Container Id** 10429429 **Analysis Id** 0000081725

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 19-JAN-2012 15:50 **Gross Weight** 260.190 **Lbs.** **Net Weight** 147.190 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-508 AMWTP Newly Generated Debris

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-DEC-2011 16:59 **Operator** FKUCK

Result Comment Waste consists of metal in the form of a large housing and other miscelaneous metal debris.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 85

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
thin wall 55 gallon drum	1.000	EACH	30.000	30.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
cloth coveralls, wood	1.000	EACH	5.000	5.000
plastic sheeting, and bags	1.000	EACH	5.000	5.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10429429 **Analysis Id** 0000081725

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	137.190
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	113.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2164967	FKUCK	19-JAN-2012 15:50	

Batch Id RTR12-00019 **Container Id** 10429511 **Analysis Id** 0000081727

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 19-JAN-2012 16:37 **Gross Weight** 191.835 Lbs. **Net Weight** 77.835 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-508 AMWTP Newly Generated Debris

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-DEC-2011 15:49 **Operator** FKUCK

Result Comment Waste consists primarily of sheet metal and misc. small metal debris.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting	1.000	EACH	1.000	1.000
thin wall 55 gallon drum	1.000	EACH	30.000	30.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
electrical cord	1.000	EACH	10.000	10.000
plastic bags, polybottle	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10429511 **Analysis Id** 0000081727

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	62.585
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	5.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	113.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2164993	FKUCK	19-JAN-2012 16:37	

Batch Id RTR12-00019 **Container Id** 10161178 **Analysis Id** 0000081732

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 19-JAN-2012 18:13 **Gross Weight** 178.605 **Lbs.** **Net Weight** 101.605 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-DEC-1972 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of plastic sheeting, bags, ppe, and polybottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
vacuum cleaner motor and housing	1.000	EACH	10.000	10.000
dry cell batterys	4.000	EACH	0.250	1.000
respirator cartridges	4.000	EACH	0.250	1.000
respirator	1.000	EACH	1.000	1.000
Wood Frame HEPA 8 x 8 x 6	1.000	EACH	4.860	4.860

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00019 **Container Id** 10161178 **Analysis Id** 0000081732

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	1.186
Other metals	0.000	1.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	4.674
Rubber	0.000	1.000
Plastic (Waste Materials)	100.000	81.225
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165024	FKUCK	19-JAN-2012 18:13	

Batch Id RTR12-00019 **Container Id** 10151749 **Analysis Id** 0000081735

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 09:36 **Gross Weight** 189.630 **Lbs.** **Net Weight** 128.630 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-JUL-1972 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be paper and rags,towels,wipes, tape rolls, ect.. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape. Near the bottom of drum	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting.	1.000	EACH	5.000	5.000
Lead tape	1.000	EACH	0.250	0.250
Scrap metal.	1.000	EACH	0.500	0.500
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10151749 **Analysis Id** 0000081735

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	122.630
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165417	CBEEBE	20-JAN-2012 09:36	

Batch Id RTR12-00019 **Container Id** 10343069 **Analysis Id** 0000081737

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 10:10 **Gross Weight** 191.835 **Lbs.** **Net Weight** 130.835 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-OCT-1971 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be paper and rags, towels, wipes,ect.. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic tubing	1.000	EACH	20.000	20.000
Plastic sheeting.	1.000	EACH	10.000	10.000
Floor sweepings	1.000	EACH	4.000	4.000
Scrap metal, nuts,bolts, ect..	1.000	EACH	4.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000
1 Quart Plastic Container w/ Lid	3.000	EACH	0.140	0.420

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00019 **Container Id** 10343069 **Analysis Id** 0000081737

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.520
Cellulosics	100.000	89.895
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	30.420
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165422	CBEEBE	20-JAN-2012 10:10	

Batch Id RTR12-00019 **Container Id** 10145214 **Analysis Id** 0000081738

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 11:11 **Gross Weight** 657.090 **Lbs.** **Net Weight** 578.490 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** MD-836 High Level Sludge/Cement

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-APR-1975 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 0

Fill Factor 90

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense waste MD-836

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
1/4 Inch Plywood Spacer (Packaging)	1.000	EACH	1.200	1.200
1/2 Inch Plywood Spacer (Packaging)	1.000	EACH	2.400	2.400

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10145214 **Analysis Id** 0000081738

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	578.490
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	3.600

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165509	CBEEBE	20-JAN-2012 11:11	

Batch Id RTR12-00019 **Container Id** 10059515 **Analysis Id** 0000081741

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 11:51 **Gross Weight** 224.910 **Lbs.** **Net Weight** 147.910 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-JUL-1979 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be paper and rags,towels, wipes, tape rolls, ect.. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 4

Fill Factor 60

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** There are (3) small plastic bottles with Approx. 1 tsp. of liquid in each between the middle and bottom chine.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting & small plastic bottles	1.000	EACH	25.000	25.000
Plastic bag for waste	19.000	EACH	0.250	4.750
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Batch Id RTR12-00019 **Container Id** 10059515 **Analysis Id** 0000081741

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	0.030
Cellulosics	100.000	18.130
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	29.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165526	CBEEBE	20-JAN-2012 11:51	

Batch Id RTR12-00019 **Container Id** 10136829 **Analysis Id** 0000081744

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 12:52 **Gross Weight** 180.810 Lbs. **Net Weight** 116.810 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-SEP-1972 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be paper and rags,towels, wipes, ect..

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	leaded tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead tape	1.000	EACH	0.130	0.130
Plastic tubing	1.000	EACH	4.000	4.000
5 gallon plastic bucket w/ lid	1.000	EACH	4.000	4.000
Plastic sheeting	1.000	EACH	8.000	8.000
Respirator filters	2.000	EACH	0.250	0.500
Respirator	1.000	EACH	1.500	1.500
Cardboard liner	1.000	EACH	4.000	4.000

Batch Id RTR12-00019 **Container Id** 10136829 **Analysis Id** 0000081744

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.350
Other metals	0.000	0.130
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	98.830
Rubber	0.000	1.500
Plastic (Waste Materials)	0.000	16.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165548	CBEEBE	20-JAN-2012 12:52	

Batch Id RTR12-00019 **Container Id** 10082825 **Analysis Id** 0000081746

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 13:19 **Gross Weight** 158.760 **Lbs.** **Net Weight** 81.760 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-JUL-1973 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging, poly bottles and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .28 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .28 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** Liquid in three gallon poly bottles in bottom half of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	24.000	PINTS	0.420	10.080
Liquids for Other Inorganics	0.280	PINTS	1.000	0.280

Batch Id RTR12-00019 **Container Id** 10082825 **Analysis Id** 0000081746

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	10.360
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	71.400
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165564	SJORDAN	20-JAN-2012 13:19	

Batch Id RTR12-00019 **Container Id** 10136826 **Analysis Id** 0000081747

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 13:43 **Gross Weight** 165.375 **Lbs.** **Net Weight** 104.375 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-SEP-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags, cardboard and plywood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .01 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .01 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .01 pints of liquid in a pint sized caulk tube near bottom chine of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	5.000	5.000
respirator cartridges	10.000	EACH	0.250	2.500
caulk tube	1.000	EACH	0.100	0.100
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360
Liquids for Other Inorganics	0.010	PINTS	1.000	0.010

Batch Id RTR12-00019 **Container Id** 10136826 **Analysis Id** 0000081747

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	1.750
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.370
Cellulosics	100.000	93.905
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.350
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165579	SJORDAN	20-JAN-2012 13:43	

Batch Id RTR12-00019 **Container Id** 10362364 **Analysis Id** 0000081748

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 13:59 **Gross Weight** 694.575 Lbs. **Net Weight** 630.575 Lbs

Equipment Z-213-106 **Waste Matrix Code** S3150 **IDC** RF-004 Special Setups

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-NOV-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be Sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10362364 **Analysis Id** 0000081748

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	630.575
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165585	SJORDAN	20-JAN-2012 13:59	

Batch Id RTR12-00019 **Container Id** 10136829 **Analysis Id** 0000081749

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 14:23 **Gross Weight** 180.810 **Lbs.** **Net Weight** 119.810 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-SEP-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging, plastic tubing, plastic bucket and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape near top of waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
rubber mask	1.000	EACH	1.000	1.000
respirator cartridge	2.000	EACH	0.250	0.500
lead tape	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10136829 **Analysis Id** 0000081749

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.350
Other metals	0.000	0.250
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.150
Rubber	0.000	1.000
Plastic (Waste Materials)	100.000	114.060
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165591	SJORDAN	20-JAN-2012 14:23	

Batch Id RTR12-00019 **Container Id** 10362364 **Analysis Id** 0000081751

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 14:45 **Gross Weight** 694.575 **Lbs.** **Net Weight** 630.575 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3150 **IDC** RF-004 Special Setups

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 29-NOV-1971 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be sludge. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10362364 **Analysis Id** 0000081751

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	630.575
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	31-JAN-2012 16:34	DLEE	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment OIO Check completed.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2172924	DLEE	31-JAN-2012 16:34	OIO Check completed.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165595	CBEEBE	20-JAN-2012 14:45	

Batch Id RTR12-00019 **Container Id** 10146908 **Analysis Id** 0000081753

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 15:30 **Gross Weight** 641.655 **Lbs.** **Net Weight** 565.655 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-AUG-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be Sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10146908 **Analysis Id** 0000081753

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	565.655
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165621	SJORDAN	20-JAN-2012 15:31	
2165619	SJORDAN	20-JAN-2012 15:30	

Batch Id RTR12-00019 **Container Id** 10161157 **Analysis Id** 0000081754

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 16:02 **Gross Weight** 189.630 **Lbs.** **Net Weight** 128.630 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-DEC-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper and rags.
Updated waste parameters screen. SJ. 02/06/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .03 pints of liquid in a pint size poly bottle in bottom of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	1.000	EACH	10.000	10.000
respirator cartridges	1.000	EACH	0.250	0.250
metal debris	1.000	EACH	2.000	2.000
d-cell battery	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00019 **Container Id** 10161157 **Analysis Id** 0000081754

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.175
Other metals	0.000	0.250
Other Inorganic Materials	0.000	1.290
Cellulosics	100.000	114.665
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2176137	SJORDAN	06-FEB-2012 16:35	
2165641	SJORDAN	20-JAN-2012 16:02	

Batch Id RTR12-00019 **Container Id** 10126923 **Analysis Id** 0000081756

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 16:26 **Gross Weight** 205.065 Lbs. **Net Weight** 141.065 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-OCT-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags and tape rolls. Updated waste parameters screen. SJ. 02/06/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .09 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .12 pints **Containerized Liquid Amt** 0 pints

Other Liquids .03 pints **Comment** .09 of liquid in a gallon poly bottle near bottom of drum and .03 pints of liquid in the waste near bottom of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	1.000	EACH	8.000	8.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00019 **Container Id** 10126923 **Analysis Id** 0000081756

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	24.000	PINTS	0.420	10.080
Liquids for Other Inorganics	0.120	PINTS	1.000	0.120

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	10.200
Cellulosics	100.000	122.615
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	8.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2176134	SJORDAN	06-FEB-2012 16:34	
2165674	SJORDAN	20-JAN-2012 16:26	

Batch Id RTR12-00019 **Container Id** 10215336 **Analysis Id** 0000081758

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 16:54 **Gross Weight** 143.325 Lbs. **Net Weight** 67.325 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-FEB-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Leaded rubber gloves	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator cartridge	2.000	EACH	0.250	0.500
rubber mask	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber glove	3.000	EACH	5.500	16.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10215336 **Analysis Id** 0000081758

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.350
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.150
Rubber	0.000	17.500
Plastic (Waste Materials)	100.000	49.325
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165721	SJORDAN	20-JAN-2012 16:54	

Batch Id RTR12-00019 **Container Id** 10085583 **Analysis Id** 0000081760

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 20-JAN-2012 17:46 **Gross Weight** 183.015 **Lbs.** **Net Weight** 103.015 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-SEP-1973 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging, plastic tubing, plastic bottles and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .26 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .26 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .25 pints in a small poly bottle near bottom chine of drum and .01 pints of liquid in a quart poly bottle near bottom of drum.

Prohibited Liquids Present Yes **Comment** Internal container with >60 mL of liquid.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal catch pan	1.000	EACH	4.000	4.000
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Small poly bottle	1.000	EACH	0.100	0.100
metal debris	1.000	EACH	10.000	10.000

Batch Id RTR12-00019 **Container Id** 10085583 **Analysis Id** 0000081760

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.260	PINTS	1.000	0.260

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.260
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	92.755
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	63.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165794	SJORDAN	20-JAN-2012 17:46	

Batch Id RTR12-00019 **Container Id** 10226909 **Analysis Id** 0000081764

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-JAN-2012 08:43 **Gross Weight** 156.555 Lbs. **Net Weight** 95.555 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-JAN-1972 00:00 **Operator** DMOORE

Result Comment Remaining waste appears to be wood, cardboard, paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can 4 inches below the 2nd chine	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator masks	1.000	EACH	30.000	30.000
Misc metals, aerosol can, wire	1.000	EACH	5.000	5.000
5 gal paint buckets, tubing, sheeting, PVC pipe	1.000	EACH	15.000	15.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00019 **Container Id** 10226909 **Analysis Id** 0000081764

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.200
Cellulosics	100.000	41.105
Rubber	0.000	30.000
Plastic (Waste Materials)	0.000	15.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2166229	DMOORE	21-JAN-2012 08:43	

Batch Id RTR12-00019 **Container Id** 10130260 **Analysis Id** 0000081766

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-JAN-2012 09:13 **Gross Weight** 515.970 **Lbs.** **Net Weight** 439.970 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-FEB-1975 00:00 **Operator** DMOORE

Result Comment Waste appears to be sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 2.5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 2.5 pints **Comment** Liquid is just off bottom in two places 1.5 pint, and just above the 2nd chine 1 pint.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	2.500	PINTS	1.000	2.500

Batch Id RTR12-00019 **Container Id** 10130260 **Analysis Id** 0000081766

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	439.970
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2166332	DMOORE	21-JAN-2012 09:13	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 04-Oct-2012

Time: 10:49

Batch Id RTR12-00019 **Container Id** 10001150 **Analysis Id** 0000081768

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-JAN-2012 10:20 **Gross Weight** 321.930 **Lbs.** **Net Weight** 244.930 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S4200 **IDC** RF-697 Dirt

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-AUG-1975 00:00 **Operator** DMOORE

Result Comment Waste appears to be dirt. Waste Matrix code in TRUW-05 is 5490 for IDC RF-374. AK concurs with the recommended IDC change from RF-374 to RF-697 for container 10001150. AKR-08-623 was revised (R7) and attached to NCR 68521 to support this change. CHD 1/30/12

Package

IDC Correct Yes **Recommended IDC** RF-697 **Summary Category** S4000

Idc Change Reason > 50% of waste appears to be dirt. Per TRUW-05 this is the recommended IDC.

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Possible dirt waste with impenetreble areas.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc plastic, plastic bagging	1.000	EACH	15.000	15.000
PPE, rags	1.000	EACH	10.000	10.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00019 **Container Id** 10001150 **Analysis Id** 0000081768

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	10.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	15.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	100.000	219.930
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2171523	CHINKLE	30-JAN-2012 07:47	This batch is promoted. chd 1/30/12
2166463	DMOORE	21-JAN-2012 10:20	

Batch Id RTR12-00019 **Container Id** 10085818 **Analysis Id** 0000081771

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-JAN-2012 11:13 **Gross Weight** 357.210 **Lbs.** **Net Weight** 282.210 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00011 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-OCT-1973 00:00 **Operator** DMOORE

Result Comment Remaining waste appears to be paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 0

Fill Factor 75

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Impenetrable areas with lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting, bottles, bagging	1.000	EACH	25.000	25.000
Misc metals	1.000	EACH	4.000	4.000
Leaded rubber glove	4.000	EACH	5.500	22.000
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00019 **Container Id** 10085818 **Analysis Id** 0000081771

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	4.200
Cellulosics	100.000	127.010
Rubber	0.000	22.000
Plastic (Waste Materials)	0.000	25.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2166497	DMOORE	21-JAN-2012 11:13	

------End of RTR Analysis Report------

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AMWTP

RTR Replicate Comparison Report

Date: 04-Oct-2012

Time: 10:50

RTR Batch Id: RTR12-00019 **Container Id:** 10136829 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-336** Gross Weight(Lbs): **180.81**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000081744	20-JAN-2012 12:52	0000081749	20-JAN-2012 14:23
Procedure /Revision:	INST-OI-12	47 FC-2	INST-OI-12	47 FC-2
Recording Media Id:	2RTR12-00011		2RTR12-00011	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	CONLEY BEEBE		SHAWN JORDAN	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5300	S5000	S5300
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	90		95	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	Yes, Acceptable	leaded tape	Yes, Acceptable	lead tape near top of waste.
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

AMWTP
Advanced Mixed Waste Treatment Project

RTR Replicate Comparison Report

Time: 10:50

RTR Batch Id: RTR12-00019 **Container Id:** 10136829 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	The remaining waste appears to be paper and rags,towels, wipes, ect..	Drum contents appear to be plastic bagging, plastic tubing, plastic bucket and PPE.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2172987	DLEE	31-JAN-12	Replicate Comparison completed.

-----End of RTR Replicate Comparison Report-----

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 68521

Title: AK Characterization

Originator: Hinkle-Daniel, Caralea	**Date Opened:** 01/25/12
Responsible Dept: Waste Programs	**Batch #:** RTR12-00019
Container ID: 10001150	**Tag Applied:** No

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Caralea Hinkle-Daniel	**Originator Sign Date:** 01/25/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

RTR recommended an IDC change from RF-374 to RF-697 for container 10001150. This is a change in WMC from S5490 to S4200, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 1/25/12

AK concurs with the recommended IDC change from RF-374 to RF-697 for container 10001150. AKR-08-623 was revised R(7) and attached to NCR 68521 to support this change. CHD 1/31/12

Performed By: Caralea Hinkle-Daniel	**Performed Date:** 01/31/12

Waste Programs Evaluation/Verification:

SPM Verification Complete By:	**SPM Verification Complete Date:**
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

RTR recommended an IDC change from RF-374 to RF-697 for container 10001150. This is a change in WMC from S5490 to S4200, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 1/25/12

AK concurs with the recommended IDC change from RF-374 to RF-697 for container 10001150. AKR-08-623 was revised R(7) and attached to NCR 68521 to support this change. CHD 1/31/12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By:	**QA Verification Comp Date:**

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 04-Oct-2012

Time: 09:56

Batch Type Real Time Radiography
Batch Report No. RTR12-00070
Batch Id RTR12-00070
Open Date 03-MAY-12 13:52:45
Close Date 04-MAY-12 17:15:09
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10438382	BN-500	0000082951	03-MAY-12 13:52:45	Original	P	CONLEY BEEBE
10438382	BN-500	0000082952	03-MAY-12 14:20:06	Replicate / Duplicate	P	CINDY TIEGS
10433286	BN-500	0000082953	03-MAY-12 15:16:27	Original	P	CONLEY BEEBE
10438818	BN-500	0000082954	03-MAY-12 15:37:04	Original	P	CONLEY BEEBE
10438619	BN-600	0000082955	03-MAY-12 16:20:12	Original	P	CONLEY BEEBE
10438411	BN-500	0000082956	03-MAY-12 16:43:41	Original	P	CONLEY BEEBE
10438466	BN-500	0000082957	03-MAY-12 17:22:26	Original	P	CONLEY BEEBE
10438466	BN-500	0000082958	03-MAY-12 17:38:31	RTR OIO	P	CINDY TIEGS
10439034	BN-600	0000082959	03-MAY-12 18:18:30	Original	P	CONLEY BEEBE
10083390	RF-336	0000082960	04-MAY-12 09:08:31	Original	P	CINDY TIEGS
10014895	RF-320	0000082961	04-MAY-12 09:44:06	Original	P	CINDY TIEGS
10352600	RF-003	0000082962	04-MAY-12 10:33:54	Original	P	CINDY TIEGS
10095800	RF-337	0000082963	04-MAY-12 11:08:31	Original	P	CINDY TIEGS
10085652	RF-002	0000082964	04-MAY-12 11:49:23	Original	P	CINDY TIEGS
10073820	RF-002	0000082966	04-MAY-12 13:14:23	Original	P	DAVEY SUMNERS
10255293	RF-004	0000082967	04-MAY-12 13:50:57	Original	P	DAVEY SUMNERS
10314325	RF-743	0000082968	04-MAY-12 14:50:28	Original	P	CRAIG SIMMONS
10308806	RF-742	0000082969	04-MAY-12 16:00:42	Original	P	JOHN CUMMINGS
10003335	RF-300	0000082970	04-MAY-12 16:15:49	Original	P	JOHN CUMMINGS
10439395	LA-005	0000082971	04-MAY-12 16:51:40	Original	P	JOHN CUMMINGS
10439394	LA-005	0000082972	04-MAY-12 17:10:33	Original	P	JOHN CUMMINGS
10439395	LA-005	0000273601	22-MAY-12 10:17:45	Supplemental	P	DAVEY SUMNERS

**********Batch Comments**********

Written By	Date	Comment
JCUMMINGS	04-MAY-12 17:15:10	Closed out the batch Per S.S.
DLEE	10-MAY-12 14:25:51	This batch was validated to MP-TRUW-8.8.
DLEE	10-MAY-12 14:25:51	Information Only: The Replicate Comparison was validated by both ITRs K. Hughes and D. Lee but has only K. Hughes signature.
DLEE	10-MAY-12 14:25:51	Rework drum 10314325 Operator needs to correct PCB mass to reflect the net weight of 329.87 lbs.
DLEE	10-MAY-12 14:29:23	Demote to Operations for rework.
CSIMMONS	10-MAY-12 14:35:20	Rework complete.
DLEE	10-MAY-12 14:39:42	Rework completed to satisfaction. Waiting 200% review.
CSIMMONS	10-MAY-12 14:41:02	200% Review complete.
DLEE	10-MAY-12 14:43:04	Promote to SPM
KBURNSIDE	10-MAY-12 16:45:01	SPM reviewed and approved.

**********RTR/VE Update (RVU) Comments**********

Written By	Date	Comment
RWALKER	25-JUN-12 18:19:42	This supplement was validated electronically to MP-TRUW-8.8.
RWALKER	25-JUN-12 18:20:27	No rework was identified for this supplement.
RWALKER	25-JUN-12 18:21:53	Promoted supplement to SPM level.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2224339	JCUMMINGS	04-MAY-2012 17:15:10	Closed out the batch Per S.S.
2229221	DLEE	10-MAY-2012 14:29:23	Demote to Operations for rework.
2229226	CSIMMONS	10-MAY-2012 14:35:20	Rework complete.
2229230	DLEE	10-MAY-2012 14:43:04	Promote to SPM
2229301	KBURNSIDE	10-MAY-2012 16:45:02	SPM reviewed and approved.

**********RTR/VE Update (RVU) E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2264520	RWALKER	25-JUN-2012 18:21:53	Promoted supplement to SPM level.

***** End of Batch Report Coversheet Report *****

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Non-Conformance Report

Date: 04-Oct-2012

Time: 09:56

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00070

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10003335	12278	CLOSED	13-JAN-05	16-JUN-06
10083390	27963	CLOSED	09-JUN-07	10-MAY-12
10083390	28656	CLOSED	07-JUL-07	10-MAY-12
10083390	70527	CLOSED	04-MAY-12	14-JUN-12
10083390	70528	CLOSED	04-MAY-12	14-JUN-12
10083390	70529	CLOSED	04-MAY-12	14-JUN-12
10083390	70530	CLOSED	04-MAY-12	14-JUN-12
10085652	70540	OPEN	04-MAY-12	
10095800	27956	CLOSED	08-JUN-07	10-MAY-12
10095800	27957	CLOSED	08-JUN-07	10-MAY-12
10095800	70535	CLOSED	04-MAY-12	14-JUN-12
10095800	70536	CLOSED	04-MAY-12	14-JUN-12
10095800	70537	CLOSED	04-MAY-12	14-JUN-12
10095800	70538	CLOSED	04-MAY-12	14-JUN-12
10095800	70539	CLOSED	04-MAY-12	14-JUN-12
10255293	70541	OPEN	04-MAY-12	
10308806	70542	OPEN	04-MAY-12	
10352600	70534	OPEN	04-MAY-12	
10438619	70521	OPEN	03-MAY-12	
10439034	70526	OPEN	03-MAY-12	

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 04-Oct-2012

Time: 09:56

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This batch was open and close in May.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum10438382 was the replicate exam done on 5/3/12. Original Operator enters 50% Fill Factor and the Replicate Operator enters 60% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		OIO Drum 10438466 was exam on 5/3/12. Original Operator enters 50% Fill Factor and the OIO

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			Operator enters 60% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	No		See batch comments.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This batch was open and close in May.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum10438382 was the replicate exam done on 5/3/12. Original Operator enters 50% Fill Factor and the Replicate Operator enters 60% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		OIO Drum 10438466 was exam on 5/3/12. Original Operator enters 50% Fill Factor and the OIO

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			Operator enters 60% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 10-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 10-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10438466 on 5/3/12 at 1738. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00070 **Open Date** 03-MAY-12 **Close Date** 04-MAY-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2229301	KBURNSIDE	10-MAY-12	SPM	SPM reviewed and approved.
2229230	DLEE	10-MAY-12	ITR	Promote to SPM
2229221	DLEE	10-MAY-12	ITR	Demote to Operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 04-Oct-2012

Time: 09:57

Batch Id RTR12-00070 **Container Id** 10438382 **Analysis Id** 0000082951

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 13:52 **Gross Weight** 66.150 **Lbs.** **Net Weight** 6.150 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-APR-2012 08:52 **Operator** CBEEBE

Result Comment The remaining waste appears to be filter media with light metal mesh.cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting	1.000	EACH	1.000	1.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438382 **Analysis Id** 0000082951

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	0.440
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	3.960
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223365	CBEEBE	03-MAY-2012 13:52	

Batch Id RTR12-00070 **Container Id** 10438382 **Analysis Id** 0000082952

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 14:20 **Gross Weight** 66.150 **Lbs.** **Net Weight** 6.150 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-APR-2012 08:52 **Operator** CTIEGS

Result Comment Remaining waste appears to contain filter media.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 60

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting	1.000	EACH	1.000	1.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438382 **Analysis Id** 0000082952

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	0.440
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	3.960
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223403	CTIEGS	03-MAY-2012 14:20	

Batch Id RTR12-00070 **Container Id** 10433286 **Analysis Id** 0000082953

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 15:16 **Gross Weight** 123.480 **Lbs.** **Net Weight** 63.480 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-FEB-2012 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be a large canister type filter with a light metal outside and a light metal mesh inside. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Rubber "O" ring.	1.000	EACH	0.250	0.250
Plastic , PPE.	1.000	EACH	3.000	3.000
Respirator filters	9.000	EACH	0.500	4.500
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10433286 **Analysis Id** 0000082953

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	70.000	41.811
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	30.000	17.919
Rubber	0.000	0.250
Plastic (Waste Materials)	0.000	3.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223437	CBEEBE	03-MAY-2012 15:16	

Batch Id RTR12-00070 **Container Id** 10438818 **Analysis Id** 0000082954

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 15:37 **Gross Weight** 63.945 **Lbs.** **Net Weight** 2.945 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-APR-2012 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be filter media with a light metal mesh. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting.	1.000	EACH	1.000	1.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438818 **Analysis Id** 0000082954

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	0.145
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	1.301
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223442	CBEEBE	03-MAY-2012 15:37	

Batch Id RTR12-00070 **Container Id** 10438619 **Analysis Id** 0000082955

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 16:20 **Gross Weight** 119.070 **Lbs.** **Net Weight** 59.070 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-600 WMF-676 PCB Contaminated Debris

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-APR-2012 13:15 **Operator** CBEEBE

Result Comment The remaining waste appears to be plastic sheeting, plastic bottles, paper and rags, towels,wipes, ect.. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	S5000 waste with PCB's.
			PCB Mass (lbs)	59.07	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Wire brush	2.000	EACH	1.000	2.000
Scrap metal, nuts, bolts, cans, ect..	1.000	EACH	3.000	3.000
Rubber gloves	1.000	EACH	1.000	1.000
Plastic bag for waste	7.000	EACH	0.250	1.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438619 **Analysis Id** 0000082955

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.200
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	25.000	13.630
Rubber	0.000	1.000
Plastic (Waste Materials)	75.000	40.240
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223467	CBEEBE	03-MAY-2012 16:20	

Batch Id RTR12-00070 **Container Id** 10438411 **Analysis Id** 0000082956

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 16:43 **Gross Weight** 79.380 **Lbs.** **Net Weight** 19.380 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-APR-2012 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be filter media with a light metal mesh.cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting, PPE, knife, ect..	1.000	EACH	4.000	4.000
Respirator filters	9.000	EACH	0.500	4.500
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438411 **Analysis Id** 0000082956

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	4.163
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	10.467
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223485	CBEEBE	03-MAY-2012 16:43	

Batch Id RTR12-00070 **Container Id** 10438466 **Analysis Id** 0000082957

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 17:22 **Gross Weight** 68.355 Lbs. **Net Weight** 8.355 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-APR-2012 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be filter media with a light metal mesh. cb

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic sheeting.	1.000	EACH	1.000	1.000
Tape roll	1.000	EACH	0.250	0.250
Plastic bag for waste	3.000	EACH	0.250	0.750
Box Knife	1.000	EACH	0.250	0.250
Leather Gloves	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438466 **Analysis Id** 0000082957

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.125
Aluminum-based Metals/Alloys	10.000	0.561
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	5.795
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.875
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223505	CBEEBE	03-MAY-2012 17:22	

Batch Id RTR12-00070 **Container Id** 10438466 **Analysis Id** 0000082958

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 17:38 **Gross Weight** 68.355 Lbs. **Net Weight** 8.355 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-500 Newly Generated Debris (not BN-508)

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 12-APR-2012 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain filter media, metal mesh.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 60

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
tape roll,	1.000	EACH	1.000	1.000
knife	1.000	EACH	0.250	0.250
plastic sheeting	1.000	EACH	1.000	1.000
Plastic bag for waste	3.000	EACH	0.250	0.750
Leather Gloves	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10438466 **Analysis Id** 0000082958

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.250
Aluminum-based Metals/Alloys	10.000	0.486
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	5.870
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	10-MAY-2012 14:11	DLEE	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant differences between original and OIO.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2229205	DLEE	10-MAY-2012 14:11	OIO Check completed
2225911	KHUGHES	06-MAY-2012 15:12	valid

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223510	CTIEGS	03-MAY-2012 17:38	

Batch Id RTR12-00070 **Container Id** 10439034 **Analysis Id** 0000082959

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 03-MAY-2012 18:18 **Gross Weight** 85.995 Lbs. **Net Weight** 25.995 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-600 WMF-676 PCB Contaminated Debris

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-APR-2012 00:00 **Operator** CBEEBE

Result Comment The remaining waste appears to be plastic, plastic tubing, PPE, ect.. cb.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 45

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	Yes - Prohibited	S 5000 debri with PCB's.
			PCB Mass (lbs)	26	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Paper & Rags,towels, wipes, ect..	1.000	EACH	1.000	1.000
Scrap metal, fittings,wire brush, ect..	1.000	EACH	1.500	1.500
Plastic bag for waste	4.000	EACH	0.250	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10439034 **Analysis Id** 0000082959

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	23.495
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223524	CBEEBE	03-MAY-2012 18:18	

Batch Id RTR12-00070 **Container Id** 10083390 **Analysis Id** 0000082960

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-MAY-2012 09:08 **Gross Weight** 280.035 **Lbs.** **Net Weight** 204.035 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-JUL-1973 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead lined drum with paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .13 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .13 pints

Other Liquids 0 pints **Comment** liquid inpint poly bottle middle of waste.

Prohibited Liquids Present Yes **Comment** >60ml containerized

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	poly bottles

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead liner dense areas of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
pint poly bottle	1.000	EACH	0.150	0.150
plastic sheeting, poly bottles	1.000	EACH	8.000	8.000
poly bottles	2.000	EACH	1.250	2.500
Plastic bag for waste	2.000	EACH	0.250	0.500
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.130	PINTS	1.000	0.130

Batch Id RTR12-00070 **Container Id** 10083390 **Analysis Id** 0000082960

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	0.130
Cellulosics	100.000	92.755
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	11.150
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2223999	CTIEGS	04-MAY-2012 09:08	

Batch Id RTR12-00070 **Container Id** 10014895 **Analysis Id** 0000082961

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 04-MAY-2012 09:44 **Gross Weight** 158.760 **Lbs.** **Net Weight** 81.760 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-320 Heavy Non-special Source Metal

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-JUL-1984 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain two fiber packs with tantalum crucibles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 4

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Fiber pack	2.000	EACH	6.000	12.000
Plastic bag for waste	10.000	EACH	0.250	2.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10014895 **Analysis Id** 0000082961

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	67.260
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	12.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224016	CTIEGS	04-MAY-2012 09:44	

Batch Id RTR12-00070 **Container Id** 10352600 **Analysis Id** 0000082962

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-MAY-2012 10:33 **Gross Weight** 515.970 **Lbs.** **Net Weight** 455.970 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-003 Organic Setups, Oil Solids

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Acceptable	IDC contains PCB.
			PCB Mass (lbs)	455.97	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable poly bottle impenetrable areas.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly bottles (1 gal)	2.000	EACH	1.000	2.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10352600 **Analysis Id** 0000082962

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	453.970
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224047	CTIEGS	04-MAY-2012 10:33	

Batch Id RTR12-00070 **Container Id** 10095800 **Analysis Id** 0000082963

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-MAY-2012 11:08 **Gross Weight** 317.520 **Lbs.** **Net Weight** 241.520 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Wash, PVC

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 28-JAN-1974 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead lined drum poly bottles, plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .34 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .34 pints

Other Liquids 0 pints **Comment** poly bottle with .25 pts and poly bottle with .09 pts.

Prohibited Liquids Present Yes **Comment** >60 ml containerized liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can middle bottom of waste	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	poly bottle middle waste

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areas, lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
>4 liter lealed poly bottle	1.000	EACH	1.250	1.250
filter media	1.000	EACH	5.000	5.000
misc metals	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000
Aerosol Can	1.000	EACH	0.240	0.240

Batch Id RTR12-00070 **Container Id** 10095800 **Analysis Id** 0000082963

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.340	PINTS	1.000	0.340

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.240
Aluminum-based Metals/Alloys	0.000	0.500
Other metals	0.000	100.000
Other Inorganic Materials	0.000	0.340
Cellulosics	0.000	4.500
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	130.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224077	CTIEGS	04-MAY-2012 11:11	
2224074	CTIEGS	04-MAY-2012 11:08	

Batch Id RTR12-00070 **Container Id** 10085652 **Analysis Id** 0000082964

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 04-MAY-2012 11:49 **Gross Weight** 698.985 **Lbs.** **Net Weight** 555.985 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-JUL-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 1 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 3 pints

Other Liquids 2 pints **Comment** poly bottle approx 1 pt liquid and approx 1 pt in bagging at bottom and approx 1 pt liquid in bagging on side of waste.

Prohibited Liquids Present Yes **Comment** >60ml containerized liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	120.000	PINTS	0.420	50.400
Liquids for Inorganic Matrix	3.000	PINTS	1.000	3.000

Batch Id RTR12-00070 **Container Id** 10085652 **Analysis Id** 0000082964

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	50.400
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	100.000	504.585
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224101	CTIEGS	04-MAY-2012 11:49	

Batch Id RTR12-00070 **Container Id** 10073820 **Analysis Id** 0000082966

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 04-MAY-2012 13:14 **Gross Weight** 663.705 **Lbs.** **Net Weight** 520.705 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-1972 00:00 **Operator** DSUMNERS

Result Comment Remaining waste appears to be primarily inorganic matrix, second stage sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 1 pints

Other Liquids 1 pints **Comment** 1 pint in pocket side of 55 gal drum, lower chime area.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting	1.000	EACH	5.000	5.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	120.000	PINTS	0.420	50.400
Liquids for Inorganic Matrix	1.000	PINTS	1.000	1.000

Batch Id RTR12-00070 **Container Id** 10073820 **Analysis Id** 0000082966

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	50.400
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	100.000	465.305
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224135	DSUMNERS	04-MAY-2012 13:14	

Batch Id RTR12-00070 **Container Id** 10255293 **Analysis Id** 0000082967

Container Type 85 FOR NEW DRUM - 85 **Analysis Status** Pass

RTR Date 04-MAY-2012 13:50 **Gross Weight** 782.775 **Lbs.** **Net Weight** 618.775 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3150 **IDC** RF-004 Special Setups

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-OCT-2008 23:28 **Operator** DSUMNERS

Result Comment Remaining waste appears to be primarily inorganic matrix, sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10255293 **Analysis Id** 0000082967

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	618.775
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	146.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224153	DSUMNERS	04-MAY-2012 13:50	

Batch Id RTR12-00070 **Container Id** 10314325 **Analysis Id** 0000082968

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 04-MAY-2012 14:50 **Gross Weight** 471.870 **Lbs.** **Net Weight** 329.870 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-SEP-2009 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily sludge. The 55 gallon drum is inverted in the 83 gallon drum.
Rework corrected PCB Mass cjs 05/10/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 98

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Acceptable	PCB waste
			PCB Mass (lbs)	329.87	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10314325 **Analysis Id** 0000082968

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	329.870
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2229225	CSIMMONS	10-MAY-2012 14:34	Rework
2224246	JCUMMINGS	04-MAY-2012 14:50	

Batch Id RTR12-00070 **Container Id** 10308806 **Analysis Id** 0000082969

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 04-MAY-2012 16:00 **Gross Weight** 586.530 **Lbs.** **Net Weight** 443.530 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-742 Pits 11 & 12 Second Stage Sludge

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2009 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** Yes

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 12.5 pints

Other Liquids 12.5 pints **Comment** 12 pints on the top of the waste. .5 pints at the bottom of the waste.

Prohibited Liquids Present Yes **Comment** > 1% by volume.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	12.500	PINTS	1.000	12.500

Batch Id RTR12-00070 **Container Id** 10308806 **Analysis Id** 0000082969

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	443.530
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224289	JCUMMINGS	04-MAY-2012 16:00	

Batch Id RTR12-00070 **Container Id** 10003335 **Analysis Id** 0000082970

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 04-MAY-2012 16:15 **Gross Weight** 229.320 **Lbs.** **Net Weight** 153.320 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5126 **IDC** RF-300 Graphite Molds

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-FEB-1985 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily graghite.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 45

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10003335 **Analysis Id** 0000082970

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	149.320
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224303	JCUMMINGS	04-MAY-2012 16:15	

Batch Id RTR12-00070 **Container Id** 10439395 **Analysis Id** 0000082971

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 04-MAY-2012 16:51 **Gross Weight** 77.175 **Lbs.** **Net Weight** 13.175 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3140 **IDC** LA-005 LANL Mixed Salt Waste

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-MAY-2012 10:17 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily salts in 1 gallon paint can.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 15

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Gal. Paint Can w/ Lid	1.000	EACH	0.840	0.840

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10439395 **Analysis Id** 0000082971

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	12.085
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224330	JCUMMINGS	04-MAY-2012 16:51	

Batch Id RTR12-00070 **Container Id** 10439394 **Analysis Id** 0000082972

Container Type 425 drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approved **Analysis Status** Pass

RTR Date 04-MAY-2012 17:10 **Gross Weight** 77.175 **Lbs.** **Net Weight** 18.175 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3140 **IDC** LA-005 LANL Mixed Salt Waste

Recording Id 2RTR12-00039 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-APR-2005 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily salt in metal cans.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 15

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	2.000	EACH	0.250	0.500
8802 Vollrath Can w/ Lid	2.000	EACH	1.140	2.280

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00070 **Container Id** 10439394 **Analysis Id** 0000082972

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.280
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	15.395
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2224338	JCUMMINGS	04-MAY-2012 17:10	

End of RTR Analysis Report

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
RTR Replicate Comparison Report

Date: 04-Oct-2012
Time: 09:58

RTR Batch Id: RTR12-00070 **Container Id:** 10438382 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon (UN1A2/X425/S), DOT/WIPP approve** Gen-IDC: **BN-500** Gross Weight(Lbs): **66.15**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000082951	03-MAY-2012 13:52	0000082952	03-MAY-2012 14:20
Procedure /Revision:	INST-OI-12	47 FC-3	INST-OI-12	47 FC-3
Recording Media Id:	2RTR12-00039		2RTR12-00039	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	CONLEY BEEBE		CINDY TIEGS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5490	S5000	S5490
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	50		60	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR12-00070 **Container Id:** 10438382 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	The remaining waste appears to be filter media with light metal mesh.cb.	Remaining waste appears to contain filter media.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2225910	KHUGHES	06-MAY-12	valid

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 04-Oct-2012

Time: 08:23

Batch Type Real Time Radiography

Batch Report No. RTR12-00101

Batch Id RTR12-00101

Open Date 10-JUN-12 14:12:45

Close Date 11-JUN-12 17:45:27

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10233468	RF-960	0000083707	10-JUN-12 14:12:45	Original	P	SAMUEL PHILLIPS
10230977	RF-960	0000083709	10-JUN-12 14:35:06	Original	P	SAMUEL PHILLIPS
10232593	RF-320	0000083710	10-JUN-12 14:55:59	Original	P	SAMUEL PHILLIPS
10232591	RF-960	0000083713	10-JUN-12 16:11:34	Original	P	SAMUEL PHILLIPS
10233446	RF-360	0000083715	10-JUN-12 17:06:22	Original	P	SAMUEL PHILLIPS
10233435	RF-090	0000083718	10-JUN-12 17:35:18	Original	P	SAMUEL PHILLIPS
10233446	RF-360	0000083720	10-JUN-12 17:56:16	Replicate / Duplicate	P	BILL HUGGINS
10234986	RF-697	0000083721	11-JUN-12 08:56:05	Original	P	AARON ATWELL
10244009	RF-371	0000083723	11-JUN-12 09:41:22	Original	P	AARON ATWELL
10244062	RF-330	0000083725	11-JUN-12 10:06:49	Original	P	AARON ATWELL
10244054	RF-337	0000083727	11-JUN-12 10:37:28	Original	P	AARON ATWELL
10234732	RF-330	0000083729	11-JUN-12 11:15:08	Original	P	AARON ATWELL
10244037	RF-330	0000083731	11-JUN-12 11:38:30	Original	P	AARON ATWELL
10244005	RF-330	0000083733	11-JUN-12 11:59:57	Original	P	AARON ATWELL
10083268	RF-990	0000083736	11-JUN-12 13:24:49	Original	P	SAMUEL PHILLIPS
10432240	BN-508	0000083739	11-JUN-12 14:37:06	Original	P	SAMUEL PHILLIPS
10429437	BN-508	0000083742	11-JUN-12 15:15:40	Original	P	SAMUEL PHILLIPS
10217868	RF-330	0000083745	11-JUN-12 16:20:10	Original	P	SAMUEL PHILLIPS
10233762	RF-330	0000083747	11-JUN-12 16:52:22	Original	P	SAMUEL PHILLIPS
10244043	RF-330	0000083750	11-JUN-12 17:08:16	Original	P	SAMUEL PHILLIPS
10244043	RF-330	0000083751	11-JUN-12 17:26:41	RTR OIO	P	BILL HUGGINS
10244047	RF-360	0000083753	11-JUN-12 17:44:27	Original	P	SAMUEL PHILLIPS

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	12-JUN-12 14:35:28	12-JUN-12 CHINKLE AKE Batch is promoted. chd 6/12/12
KHUGHES	13-JUN-12 10:18:37	Validated electronically.
KHUGHES	15-JUN-12 14:26:33	promote to SPM
KBURNSIDE	26-JUL-12 10:25:18	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2259027	KHUGHES	15-JUN-2012 14:26:33	promote to SPM
2291166	KBURNSIDE	26-JUL-2012 10:25:18	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 04-Oct-2012

Time: 08:23

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00101		
Trackwise Number		**Status**	**Opened Date**	**Closed Date**	

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10083268	71262	OPEN	11-JUN-12	
10232593	71240	CLOSED	10-JUN-12	31-JUL-12
10233435	71243	OPEN	10-JUN-12	
10233435	71291	OPEN	12-JUN-12	
10234986	71249	OPEN	11-JUN-12	
10234986	71270	OPEN	12-JUN-12	
10429437	43250	OPEN	28-JAN-09	
10429437	71030	OPEN	30-MAY-12	

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 04-Oct-2012

Time: 08:23

Batch Id RTR12-00101 **Open Date** 10-JUN-12 **Close Date** 11-JUN-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 15-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10233446, observation date 06-10-12. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10244043, observation date 06-10-12. No significant differences between original and OIO.

Batch Id RTR12-00101 **Open Date** 10-JUN-12 **Close Date** 11-JUN-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 15-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id RTR12-00101 **Open Date** 10-JUN-12 **Close Date** 11-JUN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 26-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-761, AKR-12-748 R4, NCR-71291, NCR-71270, and RPT-TRUW-05.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10233435, 10234986

Batch Id RTR12-00101 **Open Date** 10-JUN-12 **Close Date** 11-JUN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 26-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10244043 on 6/11/12 at 1726. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00101 **Open Date** 10-JUN-12 **Close Date** 11-JUN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2291166	KBURNSIDE	26-JUL-12	SPM	SPM reviewed and approved.
2259027	KHUGHES	15-JUN-12	ITR	promote to SPM

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 04-Oct-2012

Time: 08:23

Batch Id RTR12-00101 **Container Id** 10233468 **Analysis Id** 0000083707

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 14:12 **Gross Weight** 339.570 **Lbs.** **Net Weight** 278.570 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This Drum contains Concrete in the form of bricks

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal debris	1.000	EACH	10.000	10.000
PPE/paper and rags	1.000	EACH	20.000	20.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00101 **Container Id** 10233468 **Analysis Id** 0000083707

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	239.570
Cellulosics	0.000	24.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254127	SPHILLIPS	10-JUN-2012 14:12	

Batch Id RTR12-00101 **Container Id** 10230977 **Analysis Id** 0000083709

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 14:35 **Gross Weight** 401.310 **Lbs.** **Net Weight** 340.310 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Concrete in the form of blocks/bricks

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10230977 **Analysis Id** 0000083709

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	336.310
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254155	SPHILLIPS	10-JUN-2012 14:35	

Batch Id RTR12-00101 **Container Id** 10232593 **Analysis Id** 0000083710

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 14:55 **Gross Weight** 381.465 **Lbs.** **Net Weight** 320.465 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-320 Heavy Non-special Source Metal

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-JAN-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Metal debris in the form of Glove Box parts.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead scrap throughout drum.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Bottom 6" of drum is impenatrable.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead scrap	1.000	EACH	10.000	10.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00101 **Container Id** 10232593 **Analysis Id** 0000083710

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	301.425
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	10.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254174	SPHILLIPS	10-JUN-2012 14:55	

Batch Id RTR12-00101 **Container Id** 10232591 **Analysis Id** 0000083713

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 16:11 **Gross Weight** 377.055 **Lbs.** **Net Weight** 316.055 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 10-JAN-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains concrete in the form of cinderblocks.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	1.000	1.000
paper and rags	1.000	EACH	3.000	3.000
plastic waste	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10232591 **Analysis Id** 0000083713

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	305.805
Cellulosics	0.000	7.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254214	SPHILLIPS	10-JUN-2012 16:11	

Batch Id RTR12-00101 **Container Id** 10233446 **Analysis Id** 0000083715

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 17:06 **Gross Weight** 154.350 **Lbs.** **Net Weight** 93.350 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Insulation!

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00101 **Container Id** 10233446 **Analysis Id** 0000083715

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	87.350
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254242	SPHILLIPS	10-JUN-2012 17:06	

Batch Id RTR12-00101 **Container Id** 10233435 **Analysis Id** 0000083718

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 17:35 **Gross Weight** 652.680 **Lbs.** **Net Weight** 591.680 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S4200 **IDC** RF-090 Dirt

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Dirt.
AK concurs with the recommended IDC change from RF-371 to RF-090 for container 10234435. AKR-12-761 was attached to NCR 71291 to support this change. CHD 6/12/12

Package

IDC Correct Yes **Recommended IDC** RF-090 **Summary Category** S4000

Idc Change Reason This drum contains Greater than 50% dirt.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable to penatrate Dirt.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	1.000	1.000
wood	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10233435 **Analysis Id** 0000083718

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	100.000	584.680
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2256371	CHINKLE	12-JUN-2012 14:35	Batch is promoted. chd 6/12/12
2254282	SPHILLIPS	10-JUN-2012 17:36	
2254280	SPHILLIPS	10-JUN-2012 17:35	

Batch Id RTR12-00101 **Container Id** 10233446 **Analysis Id** 0000083720

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 10-JUN-2012 17:56 **Gross Weight** 154.350 **Lbs.** **Net Weight** 93.350 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-DEC-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Wire and stick pins	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10233446 **Analysis Id** 0000083720

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	86.350
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2254293	BHUGGINS	10-JUN-2012 17:56	

Batch Id RTR12-00101 **Container Id** 10234986 **Analysis Id** 0000083721

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 08:56 **Gross Weight** 659.295 **Lbs.** **Net Weight** 598.295 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S4200 **IDC** RF-697 Dirt

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-DEC-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily soil / gravel.
Recomend an IDC change to RF-697 Dirt.
AK concurs with the recommended IDC change from RF-371to RF-697 for container 10234986. AKR-12-748 was revised (R4) and attached to NCR 71270 to support this change. CHD 6/12/12

Package

IDC Correct Yes **Recommended IDC** RF-697 **Summary Category** S4000

Idc Change Reason waste appears to be dirt / gravel

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable 95% of the waste in this drum is impenetrable

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	15.000	PINTS	0.125	1.880

Batch Id RTR12-00101 **Container Id** 10234986 **Analysis Id** 0000083721

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.880
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	100.000	592.415
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2256370	CHINKLE	12-JUN-2012 14:35	Batch is promoted. chd 6/12/12
2254943	AATWELL	11-JUN-2012 08:56	

Batch Id RTR12-00101 **Container Id** 10244009 **Analysis Id** 0000083723

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 09:41 **Gross Weight** 260.190 **Lbs.** **Net Weight** 199.190 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-OCT-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be construction rubble in the form of fire brick and busted up cinderblock.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
PPE & Cardboard	1.000	EACH	10.000	10.000
Metal debris	1.000	EACH	40.000	40.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	12.000	PINTS	0.125	1.500

Batch Id RTR12-00101 **Container Id** 10244009 **Analysis Id** 0000083723

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	40.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	145.190
Cellulosics	0.000	14.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255018	AATWELL	11-JUN-2012 09:41	

Batch Id RTR12-00101 **Container Id** 10244062 **Analysis Id** 0000083725

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 10:06 **Gross Weight** 152.145 **Lbs.** **Net Weight** 91.145 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-JAN-1972 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of cardboard, wood, towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	5.000	5.000
Respirator cartridges	7.000	EACH	0.250	1.750
D-cell batteries	2.000	EACH	0.250	0.500
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00101 **Container Id** 10244062 **Analysis Id** 0000083725

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	1.225
Other metals	0.000	0.500
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	81.060
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255037	AATWELL	11-JUN-2012 10:06	

Batch Id RTR12-00101 **Container Id** 10244054 **Analysis Id** 0000083727

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 10:37 **Gross Weight** 185.220 **Lbs.** **Net Weight** 124.220 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-NOV-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of towels, wipes and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .03 pints

Other Liquids .03 pints **Comment** Aprox .03 pints of liquid in bagging just below middle chine

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal debris	1.000	EACH	3.000	3.000
plastic waste	1.000	EACH	10.000	10.000
D-cell batteries	5.000	EACH	0.250	1.250
lead tape	1.000	EACH	0.100	0.100
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Batch Id RTR12-00101 **Container Id** 10244054 **Analysis Id** 0000083727

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.350
Other Inorganic Materials	0.000	2.550
Cellulosics	100.000	106.820
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255071	AATWELL	11-JUN-2012 10:37	

Batch Id RTR12-00101 **Container Id** 10234732 **Analysis Id** 0000083729

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 11:15 **Gross Weight** 143.325 **Lbs.** **Net Weight** 82.325 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-DEC-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of PPE, wood, paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 96

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Respirator cartridges	2.000	EACH	0.250	0.500
Metal debris	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00101 **Container Id** 10234732 **Analysis Id** 0000083729

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.350
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	73.935
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255100	AATWELL	11-JUN-2012 11:15	

Batch Id RTR12-00101 **Container Id** 10244037 **Analysis Id** 0000083731

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 11:38 **Gross Weight** 145.530 **Lbs.** **Net Weight** 84.530 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-DEC-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of cardboard, PPE, paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead tape	1.000	EACH	0.250	0.250
plastic waste	1.000	EACH	3.000	3.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00101 **Container Id** 10244037 **Analysis Id** 0000083731

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	75.990
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255119	AATWELL	11-JUN-2012 11:38	

Batch Id RTR12-00101 **Container Id** 10244005 **Analysis Id** 0000083733

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 11:59 **Gross Weight** 191.835 **Lbs.** **Net Weight** 130.835 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-DEC-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of PPE, towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal debris	1.000	EACH	2.000	2.000
Plastic waste	1.000	EACH	5.000	5.000
Lead tape	1.000	EACH	0.100	0.100
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00101 **Container Id** 10244005 **Analysis Id** 0000083733

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	120.125
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255127	AATWELL	11-JUN-2012 11:59	

Batch Id RTR12-00101 **Container Id** 10083268 **Analysis Id** 0000083736

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 13:24 **Gross Weight** 549.045 **Lbs.** **Net Weight** 488.045 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S4200 **IDC** RF-990 Dirt

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-AUG-1973 00:00 **Operator** SPHILLIPS

Result Comment This Drum contains Dirt!

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S4000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable unable to penatrate dirt.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10083268 **Analysis Id** 0000083736

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	100.000	488.045
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255185	SPHILLIPS	11-JUN-2012 13:24	

Batch Id RTR12-00101 **Container Id** 10432240 **Analysis Id** 0000083739

Container Type 85 FOR NEW DRUM - 85 **Analysis Status** Pass

RTR Date 11-JUN-2012 14:37 **Gross Weight** 196.245 **Lbs.** **Net Weight** 109.245 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-508 AMWTP Newly Generated Debris

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-JAN-2012 15:10 **Operator** SPHILLIPS

Result Comment This drum contains Metal debris in the form of conduits, piping and scrap metal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead puck. located at center of waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55 gallon silver	1.000	EACH	28.000	28.000
paper and rags	1.000	EACH	3.000	3.000
lead puck	1.000	EACH	5.000	5.000
plastic waste	1.000	EACH	8.000	8.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00101 **Container Id** 10432240 **Analysis Id** 0000083739

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	90.475
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	5.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	3.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	8.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	87.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255329	SPHILLIPS	11-JUN-2012 15:17	
2255282	SPHILLIPS	11-JUN-2012 14:37	

Batch Id RTR12-00101 **Container Id** 10429437 **Analysis Id** 0000083742

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 11-JUN-2012 15:15 **Gross Weight** 189.630 **Lbs.** **Net Weight** 106.630 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** BN-508 AMWTP Newly Generated Debris

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-DEC-2011 15:42 **Operator** SPHILLIPS

Result Comment This drum contains Metal debris in the form of crushed metal drums and scrap metal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 75

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	small pice of lead located at bottom of waste	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55 gallon silver	1.000	EACH	28.000	28.000
lead	1.000	EACH	0.250	0.250
paper, rags and wood	1.000	EACH	7.000	7.000
plastic waste	1.000	EACH	5.000	5.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00101 **Container Id** 10429437 **Analysis Id** 0000083742

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	93.120
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	7.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	83.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255327	SPHILLIPS	11-JUN-2012 15:15	

Batch Id RTR12-00101 **Container Id** 10217868 **Analysis Id** 0000083745

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 16:20 **Gross Weight** 165.375 **Lbs.** **Net Weight** 104.375 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-FEB-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of towels, wipes and ppe.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape located at bottom of waste	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead	1.000	EACH	0.200	0.200
plastic waste	1.000	EACH	10.000	10.000
metal debris	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00101 **Container Id** 10217868 **Analysis Id** 0000083745

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.200
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	85.815
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255390	SPHILLIPS	11-JUN-2012 16:20	

Batch Id RTR12-00101 **Container Id** 10233762 **Analysis Id** 0000083747

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 16:52 **Gross Weight** 152.145 **Lbs.** **Net Weight** 91.145 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-JAN-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of towels and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape and leaded rubber glove located at bottom of waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal debris	1.000	EACH	1.500	1.500
lead tape	1.000	EACH	0.250	0.250
leaded rubber glove	1.000	EACH	5.000	5.000
plastic waste	1.000	EACH	15.000	15.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10233762 **Analysis Id** 0000083747

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	69.145
Rubber	0.000	5.000
Plastic (Waste Materials)	0.000	15.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255409	SPHILLIPS	11-JUN-2012 16:52	

Batch Id RTR12-00101 **Container Id** 10244043 **Analysis Id** 0000083750

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 17:08 **Gross Weight** 143.325 **Lbs.** **Net Weight** 82.325 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of towels, wipes and paper.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape and a TID.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	2.000	2.000
plastic waste	1.000	EACH	5.000	5.000
respirator	1.000	EACH	3.000	3.000
Lead	1.000	EACH	0.200	0.200

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	45.000	PINTS	0.125	5.630

Batch Id RTR12-00101 **Container Id** 10244043 **Analysis Id** 0000083750

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.200
Other Inorganic Materials	0.000	5.630
Cellulosics	100.000	66.495
Rubber	0.000	3.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255437	SPHILLIPS	11-JUN-2012 17:28	
2255416	SPHILLIPS	11-JUN-2012 17:08	

Batch Id RTR12-00101 **Container Id** 10244043 **Analysis Id** 0000083751

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 17:26 **Gross Weight** 143.325 **Lbs.** **Net Weight** 82.325 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 23-DEC-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of paper,rags.wipes towels,Filters,Cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape and TID'S	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Sheeting	1.000	EACH	3.000	3.000
Filter Cartridges	2.000	EACH	0.250	0.500
Small Hardware	1.000	EACH	1.000	1.000
Respirator Mask	1.000	EACH	0.500	0.500
Lead tape and TID'S	1.000	EACH	0.120	0.120

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00101 **Container Id** 10244043 **Analysis Id** 0000083751

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.120
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	77.205
Rubber	0.000	0.500
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	14-JUN-2012 09:11	KHUGHES	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant differences between original and OIO.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2257839	KHUGHES	14-JUN-2012 09:11	valid

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255436	BHUGGINS	11-JUN-2012 17:26	

Batch Id RTR12-00101 **Container Id** 10244047 **Analysis Id** 0000083753

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 11-JUN-2012 17:44 **Gross Weight** 127.890 **Lbs.** **Net Weight** 66.890 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 2RTR12-00060 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-DEC-1971 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Insulation

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 92

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	8.000	8.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	5.000	PINTS	0.420	2.100

Batch Id RTR12-00101 **Container Id** 10244047 **Analysis Id** 0000083753

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	8.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	54.890
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2255478	SPHILLIPS	11-JUN-2012 17:44	

End of RTR Analysis Report

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 04-Oct-2012

Time: 08:25

RTR Batch Id: RTR12-00101 **Container Id:** 10233446 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-360** Gross Weight(Lbs): **154.35**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000083715	10-JUN-2012 17:06	0000083720	10-JUN-2012 17:56
Procedure /Revision:	INST-OI-12	47 FC-3	INST-OI-12	47 FC-3
Recording Media Id:	2RTR12-00060		2RTR12-00060	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	SAMUEL PHILLIPS		BILL HUGGINS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5410	S5000	S5410
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	90		95	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Time: 08:25

RTR Batch Id: RTR12-00101 **Container Id:** 10233446 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	This drum contains Insulation!	The waste in this container appears to be primarily Insulation.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2257446	KHUGHES	13-JUN-12	valid

-----End of RTR Replicate Comparison Report-----

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

GEN2

Date: 02-Oct-2012

Time: 15:42

Batch Type VE Boxline
Batch Report No. VEB11-00929
Batch Id VEB11-00929
Open Date 14-NOV-11 04:49:08
Close Date 17-NOV-11 04:56:33
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10427133	BN-508	0000259947	14-NOV-11 04:49:08	Original	P	JAMES YOUNG
10427132	BN-508	0000259948	14-NOV-11 05:08:42	Original	P	JAMES YOUNG
10427131	BN-508	0000259949	14-NOV-11 05:22:12	Original	P	JAMES YOUNG
10427130	BN-508	0000259966	16-NOV-11 22:07:20	Original	P	JUSTIN BURTON
10427177	BN-508	0000259967	16-NOV-11 22:15:06	Original	P	JUSTIN BURTON
10427176	BN-508	0000259968	16-NOV-11 22:47:36	Original	P	JUSTIN BURTON
10427175	BN-508	0000259969	16-NOV-11 22:53:48	Original	P	JUSTIN BURTON
10427174	BN-508	0000259970	16-NOV-11 23:04:33	Original	P	JUSTIN BURTON
10427173	BN-508	0000259971	16-NOV-11 23:12:48	Original	P	JUSTIN BURTON
10427172	BN-508	0000259972	17-NOV-11 00:42:47	Original	P	JUSTIN BURTON
10427171	BN-508	0000259973	17-NOV-11 00:52:07	Original	P	JUSTIN BURTON
10427170	BN-508	0000259974	17-NOV-11 00:59:26	Original	P	JUSTIN BURTON
10427169	BN-508	0000259975	17-NOV-11 01:10:26	Original	P	JUSTIN BURTON
10427168	BN-508	0000259976	17-NOV-11 01:29:10	Original	P	JUSTIN BURTON
10427167	BN-508	0000259977	17-NOV-11 01:34:50	Original	P	JUSTIN BURTON
10427166	BN-508	0000259978	17-NOV-11 01:48:44	Original	P	JUSTIN BURTON
10427164	BN-508	0000259979	17-NOV-11 02:58:11	Original	P	JUSTIN BURTON
10427165	BN-508	0000259980	17-NOV-11 03:07:22	Original	P	JUSTIN BURTON
10427163	BN-508	0000259981	17-NOV-11 04:45:39	Original	P	JUSTIN BURTON
10427162	BN-508	0000259982	17-NOV-11 04:56:33	Original	P	JUSTIN BURTON

FOR INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
RWALKER	17-NOV-11 08:19:46	This batch was validated electronically per MP-TRUW-8.8.
RWALKER	17-NOV-11 08:19:46	There was no rework for this batch.
RWALKER	17-NOV-11 08:19:46	Promoted batch to SPM level.
KBURNSIDE	17-NOV-11 09:22:43	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2132773	RWALKER	17-NOV-2011 08:19:46	Promoted batch to SPM level.
2132780	KBURNSIDE	17-NOV-2011 09:22:43	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 15:43

Batch Id VEB11-00929 **Container Id** 10427133 **Analysis Id** 0000259947

VE Date 14-NOV-11 04:49:08 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 138.92 lbs

Closure Date 14-NOV-11 04:49:08 **Procedure Id** INST-FOI-17 **Net Weight** 112.92 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JUSTIN BURTON **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427133 **Analysis Id** 0000259947

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	109.165
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132090	JYOUNG	14-NOV-11 04:49:08	
2132091	JBURTON	14-NOV-11 04:49:10	

Batch Id VEB11-00929 **Container Id** 10427132 **Analysis Id** 0000259948

VE Date 14-NOV-11 05:08:42 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 149.94 lbs

Closure Date 14-NOV-11 05:08:42 **Procedure Id** INST-FOI-17 **Net Weight** 123.94 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JUSTIN BURTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427132 **Analysis Id** 0000259948

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	1.000	PINTS	0.937	0.940

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	123.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2132092	JYOUNG	14-NOV-11 05:08:43	
2132093	JBURTON	14-NOV-11 05:08:45	

Batch Id VEB11-00929 **Container Id** 10427131 **Analysis Id** 0000259949

VE Date 14-NOV-11 05:22:12 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 **lbs**

Closure Date 14-NOV-11 05:22:12 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 **lbs**

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JUSTIN BURTON **Equipment ID** VE BiD RPCK

---*General*---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---*Liquids*---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---*Contents*---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---*IDC Verification*---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427131 **Analysis Id** 0000259949

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	129.010
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132094	JYOUNG	14-NOV-11 05:22:13	
2132095	JBURTON	14-NOV-11 05:22:14	

Batch Id VEB11-00929 **Container Id** 10427130 **Analysis Id** 0000259966

VE Date 16-NOV-11 22:07:20 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 79.38 lbs

Closure Date 16-NOV-11 22:07:20 **Procedure Id** INST-FOI-17 **Net Weight** 53.38 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427130 **Analysis Id** 0000259966

Visual Exam Comment Remaining waste by weight percent is Plastic (Waste Material) consisting of plastic sheeting and tape

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	4.000	PINTS	1.554	6.220
Iron	2.000	PINTS	7.807	15.610

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.610
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	6.220
Plastic (Waste Materials)	100.000	31.550
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132666	JBURTON	16-NOV-11 22:07:21	
2132667	JYOUNG	16-NOV-11 22:07:23	

Batch Id VEB11-00929 **Container Id** 10427177 **Analysis Id** 0000259967

VE Date 16-NOV-11 22:15:06 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 83.79 lbs

Closure Date 16-NOV-11 22:15:06 **Procedure Id** INST-FOI-17 **Net Weight** 57.79 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427177 **Analysis Id** 0000259967

Visual Exam Comment Remaining waste by weight percent is Plastic (Waste Material) consisting of plastic sheeting and tape

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550
Iron	1.000	PINTS	7.807	7.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	48.430
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132668	JBURTON	16-NOV-11 22:15:07	
2132669	JYOUNG	16-NOV-11 22:15:08	

Batch Id VEB11-00929 **Container Id** 10427176 **Analysis Id** 0000259968

VE Date 16-NOV-11 22:47:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 101.43 lbs

Closure Date 16-NOV-11 22:47:36 **Procedure Id** INST-FOI-17 **Net Weight** 75.43 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427176 **Analysis Id** 0000259968

Visual Exam Comment Remaining waste by weight percent is iron consisting of misc scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	3.000	PINTS	1.554	4.660
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	67.020
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132670	JBURTON	16-NOV-11 22:47:37	
2132671	JYOUNG	16-NOV-11 22:47:39	

Batch Id VEB11-00929 **Container Id** 10427175 **Analysis Id** 0000259969

VE Date 16-NOV-11 22:53:48 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 88.20 lbs

Closure Date 16-NOV-11 22:53:48 **Procedure Id** INST-FOI-17 **Net Weight** 62.20 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 35 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427175 **Analysis Id** 0000259969

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550
Plastic	3.000	PINTS	0.937	2.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	57.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2132672	JBURTON	16-NOV-11 22:53:48	
2132673	JYOUNG	16-NOV-11 22:53:48	

Batch Id VEB11-00929 **Container Id** 10427174 **Analysis Id** 0000259970

VE Date 16-NOV-11 23:04:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 16-NOV-11 23:04:33 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427174 **Analysis Id** 0000259970

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	66.945
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132674	JBURTON	16-NOV-11 23:04:33	
2132675	JYOUNG	16-NOV-11 23:04:34	

Batch Id VEB11-00929 **Container Id** 10427173 **Analysis Id** 0000259971

VE Date 16-NOV-11 23:12:48 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 101.43 lbs

Closure Date 16-NOV-11 23:12:48 **Procedure Id** INST-FOI-17 **Net Weight** 75.43 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 30 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427173 **Analysis Id** 0000259971

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10013472	destroyed @ 676- SHD/1	RF-480
10242105	destroyed @ 676- SHD/1	RF-480
10425049	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	73.560
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132676	JBURTON	16-NOV-11 23:12:48	
2132677	JYOUNG	16-NOV-11 23:12:49	

Batch Id VEB11-00929 **Container Id** 10427172 **Analysis Id** 0000259972

VE Date 17-NOV-11 00:42:47 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 134.51 lbs

Closure Date 17-NOV-11 00:42:47 **Procedure Id** INST-FOI-17 **Net Weight** 108.51 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427172 **Analysis Id** 0000259972

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	104.755
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132700	JBURTON	17-NOV-11 00:42:47	
2132701	JYOUNG	17-NOV-11 00:42:49	

Batch Id VEB11-00929 **Container Id** 10427171 **Analysis Id** 0000259973

VE Date 17-NOV-11 00:52:07 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 88.20 lbs

Closure Date 17-NOV-11 00:52:07 **Procedure Id** INST-FOI-17 **Net Weight** 62.20 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427171 **Analysis Id** 0000259973

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	6.000	PINTS	0.969	5.810
Plastic	8.000	PINTS	0.937	7.500

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	48.890
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.810
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132702	JBURTON	17-NOV-11 00:52:07	
2132703	JYOUNG	17-NOV-11 00:52:08	

Batch Id VEB11-00929 **Container Id** 10427170 **Analysis Id** 0000259974

VE Date 17-NOV-11 00:59:26 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 17-NOV-11 00:59:26 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427170 **Analysis Id** 0000259974

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	5.000	PINTS	0.937	4.690

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	61.920
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.690
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2132704	JBURTON	17-NOV-11 00:59:26	
2132705	JYOUNG	17-NOV-11 00:59:27	

Batch Id VEB11-00929 **Container Id** 10427169 **Analysis Id** 0000259975

VE Date 17-NOV-11 01:10:26 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 lbs

Closure Date 17-NOV-11 01:10:26 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427169 **Analysis Id** 0000259975

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	1.000	PINTS	0.125	0.130
Paper	2.000	PINTS	0.969	1.940
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	66.140
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.130
Cellulosics	0.000	1.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132706	JBURTON	17-NOV-11 01:10:26	
2132707	JYOUNG	17-NOV-11 01:10:26	

Batch Id VEB11-00929 **Container Id** 10427168 **Analysis Id** 0000259976

VE Date 17-NOV-11 01:29:10 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 lbs

Closure Date 17-NOV-11 01:29:10 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427168 **Analysis Id** 0000259976

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	1.000	PINTS	0.125	0.130
Paper	2.000	PINTS	0.969	1.940
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	126.940
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.130
Cellulosics	0.000	1.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132708	JBURTON	17-NOV-11 01:29:10	
2132709	JYOUNG	17-NOV-11 01:29:11	

Batch Id VEB11-00929 **Container Id** 10427167 **Analysis Id** 0000259977

VE Date 17-NOV-11 01:34:50 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 141.12 lbs

Closure Date 17-NOV-11 01:34:50 **Procedure Id** INST-FOI-17 **Net Weight** 115.12 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427167 **Analysis Id** 0000259977

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	1.000	PINTS	0.125	0.130
Rubber	2.000	PINTS	1.554	3.110
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	109.070
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.130
Cellulosics	0.000	0.000
Rubber	0.000	3.110
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132710	JBURTON	17-NOV-11 01:34:50	
2132711	JYOUNG	17-NOV-11 01:34:50	

Batch Id VEB11-00929 **Container Id** 10427166 **Analysis Id** 0000259978

VE Date 17-NOV-11 01:48:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 121.28 lbs

Closure Date 17-NOV-11 01:48:44 **Procedure Id** INST-FOI-17 **Net Weight** 95.28 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427166 **Analysis Id** 0000259978

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	92.465
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132712	JBURTON	17-NOV-11 01:48:44	
2132713	JYOUNG	17-NOV-11 01:48:44	

Batch Id VEB11-00929 **Container Id** 10427164 **Analysis Id** 0000259979

VE Date 17-NOV-11 02:58:11 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 165.38 lbs

Closure Date 17-NOV-11 02:58:11 **Procedure Id** INST-FOI-17 **Net Weight** 139.38 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427164 **Analysis Id** 0000259979

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	1.000	PINTS	0.125	0.130
Paper	1.000	PINTS	0.969	0.970
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	136.405
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.130
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2132714	JBURTON	17-NOV-11 02:58:11	
2132715	JYOUNG	17-NOV-11 02:58:14	

Batch Id VEB11-00929 **Container Id** 10427165 **Analysis Id** 0000259980

VE Date 17-NOV-11 03:07:22 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 99.23 lbs

Closure Date 17-NOV-11 03:07:22 **Procedure Id** INST-FOI-17 **Net Weight** 73.23 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 30 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427165 **Analysis Id** 0000259980

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10242105	destroyed @ 676- SHD/1	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	2.000	PINTS	0.125	0.250
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	71.105
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.250
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2132716	JBURTON	17-NOV-11 03:07:22	
2132717	JYOUNG	17-NOV-11 03:07:22	

Batch Id VEB11-00929 **Container Id** 10427163 **Analysis Id** 0000259981

VE Date 17-NOV-11 04:45:39 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 74.97 lbs

Closure Date 17-NOV-11 04:45:39 **Procedure Id** INST-FOI-17 **Net Weight** 48.97 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427163 **Analysis Id** 0000259981

Visual Exam Comment Remaining waste by weight percent is Plastic (Waste Material) consisting of plastic sheeting and tape.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043132	destroyed @ 676- SHD/1	RF-480
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	46.060
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132731	JBURTON	17-NOV-11 04:45:39	
2132732	JYOUNG	17-NOV-11 04:45:42	

Batch Id VEB11-00929 **Container Id** 10427162 **Analysis Id** 0000259982

VE Date 17-NOV-11 04:56:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 160.97 lbs

Closure Date 17-NOV-11 04:56:33 **Procedure Id** INST-FOI-17 **Net Weight** 134.97 lbs

Container Type 55 **Revision** 23

Operator 1 JUSTIN BURTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB11-00929 **Container Id** 10427162 **Analysis Id** 0000259982

Visual Exam Comment Remaining waste by weight percent is Plastic (Waste Material) consisting of plastic sheeting and tape.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043132	destroyed @ 676- SHD/1	RF-480
10242105	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	6.000	PINTS	1.554	9.320
Wood	2.000	PINTS	0.702	1.400

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.340
Rubber	0.000	9.320
Plastic (Waste Materials)	100.000	122.305
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2132733	JBURTON	17-NOV-11 04:56:33	
2132734	JYOUNG	17-NOV-11 04:56:35	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 02-Oct-2012

Time: 15:45

Batch Id VEB11-00929 **Open Date** 14-NOV-11 **Close Date** 17-NOV-11

Reviewer REED WALKER **Approval Level** Independent Technical Reviewer

Approval Date 17-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB11-00929 **Open Date** 14-NOV-11 **Close Date** 17-NOV-11

Reviewer REED WALKER **Approval Level** Independent Technical Reviewer

Approval Date 17-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	No		

Batch Id VEB11-00929 **Open Date** 14-NOV-11 **Close Date** 17-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 17-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	None identified.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB11-00929 **Open Date** 14-NOV-11 **Close Date** 17-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 17-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB11-00929 **Open Date** 14-NOV-11 **Close Date** 17-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2132780	KBURNSIDE	17-NOV-11	SPM	SPM reviewed and approved.
2132773	RWALKER	17-NOV-11	ITR	Promoted batch to SPM level.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 02-Oct-2012

Time: 15:46

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB11-00929		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 02-Oct-2012

Time: 15:47

Batch Type VE Boxline
Batch Report No. VEB12-00555
Batch Id VEB12-00555
Open Date 08-JUL-12 05:17:09
Close Date 08-JUL-12 10:25:56
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10448532	BN-508	0000278049	08-JUL-12 05:17:09	Original	P	PAUL HURLEY
10448446	BN-508	0000278053	08-JUL-12 07:15:21	Original	P	KEN DOWNS
10448531	BN-508	0000278054	08-JUL-12 07:24:36	Original	P	HOWARD SHELL
10448538	BN-508	0000278055	08-JUL-12 07:33:37	Original	P	HOWARD SHELL
10448537	BN-508	0000278056	08-JUL-12 07:36:54	Original	P	KEN DOWNS
10448534	BN-508	0000278057	08-JUL-12 07:59:03	Original	P	KEN DOWNS
10448529	BN-508	0000278058	08-JUL-12 07:42:55	Original	P	HOWARD SHELL
10448539	BN-508	0000278059	08-JUL-12 07:49:24	Original	P	RICHARD SCOTT
10448530	BN-508	0000278061	08-JUL-12 08:05:39	Original	P	RICHARD SCOTT
10448552	BN-508	0000278062	08-JUL-12 08:10:57	Original	P	HOWARD SHELL
10448528	BN-508	0000278063	08-JUL-12 08:17:21	Original	P	HOWARD SHELL
10448551	BN-508	0000278064	08-JUL-12 08:23:18	Original	P	RICHARD SCOTT
10448526	BN-508	0000278065	08-JUL-12 08:32:16	Original	P	HOWARD SHELL
10448550	BN-508	0000278067	08-JUL-12 08:37:17	Original	P	RICHARD SCOTT
10448525	BN-508	0000278069	08-JUL-12 08:44:18	Original	P	HOWARD SHELL
10448527	BN-508	0000278071	08-JUL-12 08:45:59	Original	P	KEN DOWNS
10448524	BN-508	0000278072	08-JUL-12 08:59:19	Original	P	KEN DOWNS
10448547	BN-508	0000278074	08-JUL-12 09:58:32	Original	P	KEN DOWNS
10448553	BN-508	0000278076	08-JUL-12 10:24:56	Original	P	RICHARD SCOTT
10448546	BN-508	0000278079	08-JUL-12 10:12:01	Original	P	HOWARD SHELL

FOR INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
JSIMONSON	09-JUL-12 11:34:58	This batch was validated electronically only per MP-TRUW-8.8.
JSIMONSON	09-JUL-12 11:48:29	Promoted to SPM.
SCANIFF	11-JUL-12 09:08:23	Promote.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2274384	JSIMONSON	09-JUL-2012 11:48:29	Promoted to SPM.
2276090	SCANIFF	11-JUL-2012 09:08:23	Promote.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 15:49

Batch Id VEB12-00555 **Container Id** 10448532 **Analysis Id** 0000278049

VE Date 08-JUL-12 05:17:09 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 08-JUL-12 05:17:09 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 77 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448532 **Analysis Id** 0000278049

Visual Exam Comment Remaining waste by weight percent is cellulosics consisting of scrap wood.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	68.815
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273260	PHURLEY	08-JUL-12 05:17:09	
2273261	SHIGH	08-JUL-12 05:17:10	

Batch Id VEB12-00555 **Container Id** 10448446 **Analysis Id** 0000278053

VE Date 08-JUL-12 07:15:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 08-JUL-12 07:15:21 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448446 **Analysis Id** 0000278053

Visual Exam Comment Waste is Cellulosics consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447089	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	68.815
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273300	KDOWNS	08-JUL-12 07:15:21	
2273301	RBUSH1	08-JUL-12 07:15:23	

Batch Id VEB12-00555 **Container Id** 10448531 **Analysis Id** 0000278054

VE Date 08-JUL-12 07:24:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 83.79 lbs

Closure Date 08-JUL-12 07:24:36 **Procedure Id** INST-FOI-17 **Net Weight** 57.79 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 68 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448531 **Analysis Id** 0000278054

Visual Exam Comment The remaining waste by weight percent is cellulosicis consisting of wood debris.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	57.790
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2273302	HSHELL	08-JUL-12 07:24:36	
2273303	CMETZ	08-JUL-12 07:24:38	

Batch Id VEB12-00555 **Container Id** 10448538 **Analysis Id** 0000278055

VE Date 08-JUL-12 07:33:37 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 90.41 lbs

Closure Date 08-JUL-12 07:33:37 **Procedure Id** INST-FOI-17 **Net Weight** 64.41 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 86 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448538 **Analysis Id** 0000278055

Visual Exam Comment The remaining waste by weight percent is cellulosicis consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	0.250	PINTS	7.807	1.950

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.950
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	62.455
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273317	HSHELL	08-JUL-12 07:33:37	
2273318	CMETZ	08-JUL-12 07:33:39	

Batch Id VEB12-00555 **Container Id** 10448537 **Analysis Id** 0000278056

VE Date 08-JUL-12 07:36:54 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 123.48 lbs

Closure Date 08-JUL-12 07:36:54 **Procedure Id** INST-FOI-17 **Net Weight** 97.48 lbs

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448537 **Analysis Id** 0000278056

Visual Exam Comment Waste is Cellulosics consisting of paper and wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447089	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	94.990
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273319	KDOWNS	08-JUL-12 07:36:54	
2273320	RBUSH1	08-JUL-12 07:36:56	

Batch Id VEB12-00555 **Container Id** 10448534 **Analysis Id** 0000278057

VE Date 08-JUL-12 07:59:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 136.71 **lbs**

Closure Date 08-JUL-12 07:59:03 **Procedure Id** INST-FOI-17 **Net Weight** 110.71 **lbs**

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 66 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448534 **Analysis Id** 0000278057

Visual Exam Comment Waste is Cellulosics consisting of paper and wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447089	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	5.000	PINTS	0.420	2.100
Uncured Cement	2.000	PINTS	3.000	6.000

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.100
Cellulosics	100.000	102.610
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273329	KDOWNS	08-JUL-12 07:59:03	
2273330	RBUSH1	08-JUL-12 07:59:04	

Batch Id VEB12-00555 **Container Id** 10448529 **Analysis Id** 0000278058

VE Date 08-JUL-12 07:42:55 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 61.74 lbs

Closure Date 08-JUL-12 07:42:55 **Procedure Id** INST-FOI-17 **Net Weight** 35.74 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 72 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448529 **Analysis Id** 0000278058

Visual Exam Comment The remaining waste by weight percent is plastic consisting of sheeting and bags.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	5.000	PINTS	0.833	4.170

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.170
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	31.570
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273322	HSHELL	08-JUL-12 07:42:55	
2273323	CMETZ	08-JUL-12 07:42:57	

Batch Id VEB12-00555 **Container Id** 10448539 **Analysis Id** 0000278059

VE Date 08-JUL-12 07:49:24 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 454.23 **lbs**

Closure Date 08-JUL-12 07:49:24 **Procedure Id** INST-FOI-17 **Net Weight** 428.23 **lbs**

Container Type 55 **Revision** 24

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 85 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448539 **Analysis Id** 0000278059

Visual Exam Comment Remaining waste by weight percent is other inorganic material consisting of cured concrete.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447359	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	2.000	EACH	1.860	3.720

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	2.000	PINTS	0.833	1.670
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	420.970
Cellulosics	0.000	5.390
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273324	RSCOTT	08-JUL-12 07:49:24	
2273325	MBECK1	08-JUL-12 07:49:27	

Batch Id VEB12-00555 **Container Id** 10448530 **Analysis Id** 0000278061

VE Date 08-JUL-12 08:05:39 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 456.44 lbs

Closure Date 08-JUL-12 08:05:39 **Procedure Id** INST-FOI-17 **Net Weight** 430.44 lbs

Container Type 55 **Revision** 24

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448530 **Analysis Id** 0000278061

Visual Exam Comment Remaining waste by weight percent is other inorganic material consisting of cured concrete.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447359	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	1.000	PINTS	0.833	0.830
Iron	1.500	PINTS	7.807	11.710
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	11.710
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	416.025
Cellulosics	0.000	0.830
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273331	RSCOTT	08-JUL-12 08:05:39	
2273332	MBECK1	08-JUL-12 08:05:42	

Batch Id VEB12-00555 **Container Id** 10448552 **Analysis Id** 0000278062

VE Date 08-JUL-12 08:10:57 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 101.43 lbs

Closure Date 08-JUL-12 08:10:57 **Procedure Id** INST-FOI-17 **Net Weight** 75.43 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448552 **Analysis Id** 0000278062

Visual Exam Comment The remaining waste by weight percent is plastic consisting of bags, sheeting and paint buckets.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	72.520
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273334	HSHELL	08-JUL-12 08:10:57	
2273335	CMETZ	08-JUL-12 08:10:58	

Batch Id VEB12-00555 **Container Id** 10448528 **Analysis Id** 0000278063

VE Date 08-JUL-12 08:17:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 72.77 lbs

Closure Date 08-JUL-12 08:17:21 **Procedure Id** INST-FOI-17 **Net Weight** 46.77 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 78 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448528 **Analysis Id** 0000278063

Visual Exam Comment The remaining waste by weight percent is plastic consisting of bags, sheeting and paint buckets.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	5.000	PINTS	0.833	4.170

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.170
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	42.595
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2273336	HSHELL	08-JUL-12 08:17:21	
2273337	CMETZ	08-JUL-12 08:17:22	

Batch Id VEB12-00555 **Container Id** 10448551 **Analysis Id** 0000278064

VE Date 08-JUL-12 08:23:18 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 438.80 lbs

Closure Date 08-JUL-12 08:23:18 **Procedure Id** INST-FOI-17 **Net Weight** 412.80 lbs

Container Type 55 **Revision** 24

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448551 **Analysis Id** 0000278064

Visual Exam Comment Remaining waste by weight percent is other inorganic material consisting of cured concrete.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447359	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	7.000	PINTS	7.807	54.650
Plastic	16.000	PINTS	0.937	14.990

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	54.650
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	343.155
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	14.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273338	RSCOTT	08-JUL-12 08:23:18	
2273339	MBECK1	08-JUL-12 08:23:19	

Batch Id VEB12-00555 **Container Id** 10448526 **Analysis Id** 0000278065

VE Date 08-JUL-12 08:32:16 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 lbs

Closure Date 08-JUL-12 08:32:16 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 82 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448526 **Analysis Id** 0000278065

Visual Exam Comment The remaining waste by weight percent is plastic consisting of bags, sheeting and paint buckets.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Cardboard	2.000	PINTS	0.833	1.670

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.580
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	66.440
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273345	HSHELL	08-JUL-12 08:32:17	
2273346	CMETZ	08-JUL-12 08:32:20	

Batch Id VEB12-00555 **Container Id** 10448550 **Analysis Id** 0000278067

VE Date 08-JUL-12 08:37:17 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 321.93 lbs

Closure Date 08-JUL-12 08:37:17 **Procedure Id** INST-FOI-17 **Net Weight** 295.93 lbs

Container Type 55 **Revision** 24

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448550 **Analysis Id** 0000278067

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447359	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	35.000	PINTS	1.125	39.380

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	256.550
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	39.380
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273352	RSCOTT	08-JUL-12 08:37:17	
2273353	MBECK1	08-JUL-12 08:37:18	

Batch Id VEB12-00555 **Container Id** 10448525 **Analysis Id** 0000278069

VE Date 08-JUL-12 08:44:18 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs

Closure Date 08-JUL-12 08:44:18 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 78 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448525 **Analysis Id** 0000278069

Visual Exam Comment The remaining waste by weight percent is iron based metal alloys consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Wood	2.000	PINTS	0.702	1.400
Cardboard	1.000	PINTS	0.833	0.830
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	80.375
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.140
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273358	HSHELL	08-JUL-12 08:44:19	
2273359	CMETZ	08-JUL-12 08:44:20	

Batch Id VEB12-00555 **Container Id** 10448527 **Analysis Id** 0000278071

VE Date 08-JUL-12 08:45:59 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 116.87 lbs

Closure Date 08-JUL-12 08:45:59 **Procedure Id** INST-FOI-17 **Net Weight** 90.87 lbs

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448527 **Analysis Id** 0000278071

Visual Exam Comment Waste is Cellulosics consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10445936	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	90.865
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273360	KDOWNS	08-JUL-12 08:45:59	
2273361	RBUSH1	08-JUL-12 08:46:01	

Batch Id VEB12-00555 **Container Id** 10448524 **Analysis Id** 0000278072

VE Date 08-JUL-12 08:59:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs

Closure Date 08-JUL-12 08:59:19 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 63 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448524 **Analysis Id** 0000278072

Visual Exam Comment Waste is Cellulosics consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10445936	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	88.660
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273368	KDOWNS	08-JUL-12 08:59:19	
2273369	RBUSHI	08-JUL-12 08:59:20	

Batch Id VEB12-00555 **Container Id** 10448547 **Analysis Id** 0000278074

VE Date 08-JUL-12 09:58:32 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 132.30 lbs

Closure Date 08-JUL-12 09:58:32 **Procedure Id** INST-FOI-17 **Net Weight** 106.30 lbs

Container Type 55 **Revision** 24

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448547 **Analysis Id** 0000278074

Visual Exam Comment Waste is Cellulosics consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10445936	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	106.300
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273447	KDOWNS	08-JUL-12 09:58:32	
2273450	RBUSH1	08-JUL-12 09:58:34	

Batch Id VEB12-00555 **Container Id** 10448553 **Analysis Id** 0000278076

VE Date 08-JUL-12 10:24:56 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 297.68 lbs

Closure Date 08-JUL-12 10:24:56 **Procedure Id** INST-FOI-17 **Net Weight** 271.68 lbs

Container Type 55 **Revision** 24

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448553 **Analysis Id** 0000278076

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of misc. scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447359	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
6 volt lantern battery	1.000	EACH	2.000	2.000
9 volt battery	2.000	EACH	0.150	0.300
D-cell Battery	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	10.000	PINTS	1.125	11.250
Copper	0.500	PINTS	9.369	4.680
Plastic	4.000	PINTS	0.937	3.750

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	249.195
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	7.480
Other Inorganic Materials	0.000	11.250
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2273461	RSCOTT	08-JUL-12 10:24:56	
2273462	MBECK1	08-JUL-12 10:24:58	

Batch Id VEB12-00555 **Container Id** 10448546 **Analysis Id** 0000278079

VE Date 08-JUL-12 10:12:01 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 90.41 lbs

Closure Date 08-JUL-12 10:12:01 **Procedure Id** INST-FOI-17 **Net Weight** 64.41 lbs

Container Type 55 **Revision** 24

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CODY METZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 79 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00555 **Container Id** 10448546 **Analysis Id** 0000278079

Visual Exam Comment The remaining waste by weight percent is plastic consisting of bags and sheeting.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10141407	destroyed @ 676- BXI/16	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Rubber	1.000	PINTS	1.554	1.550
Wood	1.000	PINTS	0.702	0.700
Iron	0.250	PINTS	7.807	1.950

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.950
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.610
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	57.295
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2273455	HSHELL	08-JUL-12 10:12:02	
2273456	CMETZ	08-JUL-12 10:12:05	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 02-Oct-2012

Time: 15:57

Batch Id VEB12-00555 **Open Date** 08-JUL-12 **Close Date** 08-JUL-12

Reviewer JAY SIMONSON **Approval Level** Independent Technical Reviewer

Approval Date 09-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB12-00555 **Open Date** 08-JUL-12 **Close Date** 08-JUL-12

Reviewer JAY SIMONSON **Approval Level** Independent Technical Reviewer

Approval Date 09-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No operator rework.

Batch Id VEB12-00555 **Open Date** 08-JUL-12 **Close Date** 08-JUL-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 11-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC , WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00555 **Open Date** 08-JUL-12 **Close Date** 08-JUL-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 11-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00555 **Open Date** 08-JUL-12 **Close Date** 08-JUL-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2276090	SCANIFF	11-JUL-12	SPM	Promote.
2274384	JSIMONSON	09-JUL-12	ITR	Promoted to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 02-Oct-2012

Time: 15:59

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00555		
Trackwise Number		Status		Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 02-Oct-2012

Time: 16:00

Batch Type VE Boxline

Batch Report No. VEB12-00711

Batch Id VEB12-00711

Open Date 17-AUG-12 12:54:54

Close Date 17-AUG-12 17:26:45

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10455126	BN-508	0000282857	17-AUG-12 12:54:54	Original	P	JOHN CUNNINGHAM
10455117	BN-508	0000282860	17-AUG-12 13:07:44	Original	P	JOHN CUNNINGHAM
10455255	BN-508	0000282863	17-AUG-12 13:24:20	Original	P	JOHN CUNNINGHAM
10455125	BN-508	0000282864	17-AUG-12 13:32:40	Original	P	JOHN CUNNINGHAM
10455247	BN-508	0000282865	17-AUG-12 13:49:37	Original	P	JOHN CUNNINGHAM
10455254	BN-508	0000282866	17-AUG-12 13:57:03	Original	P	JOHN CUNNINGHAM
10455246	BN-508	0000282867	17-AUG-12 14:07:19	Original	P	JOHN CUNNINGHAM
10455253	BN-508	0000282868	17-AUG-12 14:14:30	Original	P	JOHN CUNNINGHAM
10455245	BN-508	0000282869	17-AUG-12 14:24:36	Original	P	JOHN CUNNINGHAM
10455252	BN-508	0000282870	17-AUG-12 14:40:52	Original	P	JOHN CUNNINGHAM
10455244	BN-508	0000282871	17-AUG-12 14:50:13	Original	P	JOHN CUNNINGHAM
10455251	BN-508	0000282872	17-AUG-12 15:03:06	Original	P	JOHN CUNNINGHAM
10455250	BN-508	0000282880	17-AUG-12 15:40:17	Original	P	JOHN CUNNINGHAM
10455243	BN-508	0000282881	17-AUG-12 15:47:59	Original	P	JOHN CUNNINGHAM
10455242	BN-508	0000282882	17-AUG-12 15:54:38	Original	P	JOHN CUNNINGHAM
10455241	BN-508	0000282883	17-AUG-12 16:31:36	Original	P	JOHN CUNNINGHAM
10455249	BN-508	0000282884	17-AUG-12 16:40:36	Original	P	JOHN CUNNINGHAM
10455248	BN-508	0000282885	17-AUG-12 16:46:57	Original	P	JOHN CUNNINGHAM
10455240	BN-508	0000282886	17-AUG-12 16:55:01	Original	P	JOHN CUNNINGHAM
10455037	BN-508	0000282892	17-AUG-12 17:25:45	Original	P	DARREN BUTTE

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
RBTHOMPSON	18-AUG-12 06:12:01	Initial ITR review of Batch.
RBTHOMPSON	18-AUG-12 18:21:13	ITR review complete.
RBTHOMPSON	18-AUG-12 18:21:53	Promote to SPM.
NSTYHL	20-AUG-12 09:06:27	SPM review complete.
NSTYHL	20-AUG-12 09:06:27	Approve batch.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 02-Oct-2012

Time: 16:00

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2312456	RBTHOMPSON	18-AUG-2012 18:21:53	Promote to SPM.
2313426	NSTYHL	20-AUG-2012 09:06:27	Approve batch.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455126 **Analysis Id** 0000282857

VE Date 17-AUG-12 12:54:54 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 138.92 lbs

Closure Date 17-AUG-12 12:54:54 **Procedure Id** INST-FOI-17 **Net Weight** 112.92 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455126 **Analysis Id** 0000282857

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	3.000	PINTS	1.125	3.380
Wood	16.000	PINTS	0.702	11.230
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	94.655
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.220
Cellulosics	0.000	11.230
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311121	JCUNNINGHAM	17-AUG-12 12:54:54	
2311122	ALOFTUS	17-AUG-12 12:54:55	

Batch Id VEB12-00711 **Container Id** 10455117 **Analysis Id** 0000282860

VE Date 17-AUG-12 13:07:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 321.93 lbs

Closure Date 17-AUG-12 13:07:44 **Procedure Id** INST-FOI-17 **Net Weight** 295.93 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00711 **Container Id** 10455117 **Analysis Id** 0000282860

Visual Exam Comment The waste by weight percent is scrap metal

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	4.000	PINTS	1.125	4.500
Wood	12.000	PINTS	0.702	8.420
Glass	3.000	PINTS	2.082	6.250
Plastic	14.000	PINTS	0.937	13.120

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	262.800
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	11.590
Cellulosics	0.000	8.420
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	13.120
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2311124	JCUNNINGHAM	17-AUG-12 13:07:44	
2311125	ALOFTUS	17-AUG-12 13:07:46	

Batch Id VEB12-00711 **Container Id** 10455255 **Analysis Id** 0000282863

VE Date 17-AUG-12 13:24:20 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 330.75 lbs

Closure Date 17-AUG-12 13:24:20 **Procedure Id** INST-FOI-17 **Net Weight** 304.75 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455255 **Analysis Id** 0000282863

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cured Cement (Other Inorganics)	3.000	PINTS	1.125	3.380
Paper	2.000	PINTS	0.969	1.940
Wood	10.000	PINTS	0.702	7.020
Cardboard	7.000	PINTS	0.833	5.830
Glass	3.000	PINTS	2.082	6.250
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	277.200
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	10.890
Cellulosics	0.000	14.790
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311131	JCUNNINGHAM	17-AUG-12 13:24:20	
2311132	ALOFTUS	17-AUG-12 13:24:22	

Batch Id VEB12-00711 **Container Id** 10455125 **Analysis Id** 0000282864

VE Date 17-AUG-12 13:32:40 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 299.88 lbs

Closure Date 17-AUG-12 13:32:40 **Procedure Id** INST-FOI-17 **Net Weight** 273.88 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455125 **Analysis Id** 0000282864

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Cured Cement (Other Inorganics)	7.000	PINTS	1.125	7.880
Paper	1.000	PINTS	0.969	0.970
Wood	12.000	PINTS	0.702	8.420
Glass	2.000	PINTS	2.082	4.160
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	249.830
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	13.720
Cellulosics	0.000	9.390
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311134	JCUNNINGHAM	17-AUG-12 13:32:40	
2311135	ALOFTUS	17-AUG-12 13:32:43	

Batch Id VEB12-00711 **Container Id** 10455247 **Analysis Id** 0000282865

VE Date 17-AUG-12 13:49:37 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 222.71 lbs

Closure Date 17-AUG-12 13:49:37 **Procedure Id** INST-FOI-17 **Net Weight** 196.71 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455247 **Analysis Id** 0000282865

Visual Exam Comment The waste by weight percent is scrap metal

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	4.000	PINTS	1.125	4.500
Paper	1.000	PINTS	0.969	0.970
Rubber	3.000	PINTS	1.554	4.660
Wood	12.000	PINTS	0.702	8.420
Glass	1.000	PINTS	2.082	2.080
Plastic	1.000	PINTS	0.937	0.940

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	174.295
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	7.420
Cellulosics	0.000	9.390
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2311141	JCUNNINGHAM	17-AUG-12 13:49:38	
2311142	ALOFTUS	17-AUG-12 13:49:39	

Batch Id VEB12-00711 **Container Id** 10455254 **Analysis Id** 0000282866

VE Date 17-AUG-12 13:57:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 216.09 lbs

Closure Date 17-AUG-12 13:57:03 **Procedure Id** INST-FOI-17 **Net Weight** 190.09 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455254 **Analysis Id** 0000282866

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	4.000	PINTS	1.125	4.500
Rubber	3.000	PINTS	1.554	4.660
Wood	14.000	PINTS	0.702	9.830
Glass	1.000	PINTS	2.082	2.080
Raschig Rings	3.000	PINTS	0.625	1.880
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	165.360
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	9.300
Cellulosics	0.000	9.830
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311146	JCUNNINGHAM	17-AUG-12 13:57:03	
2311147	ALOFTUS	17-AUG-12 13:57:05	

Batch Id VEB12-00711 **Container Id** 10455246 **Analysis Id** 0000282867

VE Date 17-AUG-12 14:07:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 260.19 lbs

Closure Date 17-AUG-12 14:07:19 **Procedure Id** INST-FOI-17 **Net Weight** 234.19 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455246 **Analysis Id** 0000282867

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Cured Cement (Other Inorganics)	3.000	PINTS	1.125	3.380
Rubber	1.000	PINTS	1.554	1.550
Wood	12.000	PINTS	0.702	8.420
Raschig Rings	3.000	PINTS	0.625	1.880
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	214.470
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.940
Cellulosics	0.000	8.420
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311155	JCUNNINGHAM	17-AUG-12 14:07:19	
2311156	ALOFTUS	17-AUG-12 14:07:21	

Batch Id VEB12-00711 **Container Id** 10455253 **Analysis Id** 0000282868

VE Date 17-AUG-12 14:14:30 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 235.94 lbs

Closure Date 17-AUG-12 14:14:30 **Procedure Id** INST-FOI-17 **Net Weight** 209.94 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455253 **Analysis Id** 0000282868

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cured Cement (Other Inorganics)	1.000	PINTS	1.125	1.130
Wood	6.000	PINTS	0.702	4.210
Cardboard	1.000	PINTS	0.833	0.830
Raschig Rings	8.000	PINTS	0.625	5.000
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	195.635
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	7.390
Cellulosics	0.000	5.040
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311171	JCUNNINGHAM	17-AUG-12 14:14:30	
2311172	ALOFTUS	17-AUG-12 14:14:31	

Batch Id VEB12-00711 **Container Id** 10455245 **Analysis Id** 0000282869

VE Date 17-AUG-12 14:24:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 315.32 lbs

Closure Date 17-AUG-12 14:24:36 **Procedure Id** INST-FOI-17 **Net Weight** 289.32 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Advanced Mixed Waste Treatment Project

Batch Id VEB12-00711 **Container Id** 10455245 **Analysis Id** 0000282869

Visual Exam Comment The waste by weight percent is scrap metal

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cured Cement (Other Inorganics)	8.000	PINTS	1.125	9.000
Wood	8.000	PINTS	0.702	5.620
Cardboard	1.000	PINTS	0.833	0.830
Raschig Rings	4.000	PINTS	0.625	2.500
Plastic	4.000	PINTS	0.937	3.750

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	266.355
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	12.760
Cellulosics	0.000	6.450
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2311177	JCUNNINGHAM	17-AUG-12 14:24:36	
2311178	ALOFTUS	17-AUG-12 14:24:38	

Batch Id VEB12-00711 **Container Id** 10455252 **Analysis Id** 0000282870

VE Date 17-AUG-12 14:40:52 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 160.97 lbs

Closure Date 17-AUG-12 14:40:52 **Procedure Id** INST-FOI-17 **Net Weight** 134.97 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455252 **Analysis Id** 0000282870

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cured Cement (Other Inorganics)	1.000	PINTS	1.125	1.130
Paper	1.000	PINTS	0.969	0.970
Wood	8.000	PINTS	0.702	5.620
Raschig Rings	3.000	PINTS	0.625	1.880
Plastic	7.000	PINTS	0.937	6.560

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	117.545
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.270
Cellulosics	0.000	6.590
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.560
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311182	JCUNNINGHAM	17-AUG-12 14:40:52	
2311183	ALOFTUS	17-AUG-12 14:40:55	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455244 **Analysis Id** 0000282871

VE Date 17-AUG-12 14:50:13 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 171.99 lbs

Closure Date 17-AUG-12 14:50:13 **Procedure Id** INST-FOI-17 **Net Weight** 145.99 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455244 **Analysis Id** 0000282871

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cured Cement (Other Inorganics)	3.000	PINTS	1.125	3.380
Wood	4.000	PINTS	0.702	2.810
Cardboard	1.000	PINTS	0.833	0.830
Raschig Rings	3.000	PINTS	0.625	1.880
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	133.960
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.520
Cellulosics	0.000	3.640
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311185	JCUNNINGHAM	17-AUG-12 14:50:13	
2311186	ALOFTUS	17-AUG-12 14:50:15	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455251 **Analysis Id** 0000282872

VE Date 17-AUG-12 15:03:06 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 194.04 lbs

Closure Date 17-AUG-12 15:03:06 **Procedure Id** INST-FOI-17 **Net Weight** 168.04 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455251 **Analysis Id** 0000282872

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454189	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Wood	6.000	PINTS	0.702	4.210

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	162.990
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	4.210
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311203	JCUNNINGHAM	17-AUG-12 15:03:06	
2311204	ALOFTUS	17-AUG-12 15:03:07	

Batch Id VEB12-00711 **Container Id** 10455250 **Analysis Id** 0000282880

VE Date 17-AUG-12 15:40:17 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 127.89 lbs

Closure Date 17-AUG-12 15:40:17 **Procedure Id** INST-FOI-17 **Net Weight** 101.89 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455250 **Analysis Id** 0000282880

Visual Exam Comment The waste by weight percent is scrap wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	101.890
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311264	JCUNNINGHAM	17-AUG-12 15:40:18	
2311265	ALOFTUS	17-AUG-12 15:40:22	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455243 **Analysis Id** 0000282881

VE Date 17-AUG-12 15:47:59 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs

Closure Date 17-AUG-12 15:47:59 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	Comment
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455243 **Analysis Id** 0000282881

Visual Exam Comment The waste by weight percent is scrap wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	86.455
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311269	JCUNNINGHAM	17-AUG-12 15:47:59	
2311270	ALOFTUS	17-AUG-12 15:48:01	

Batch Id VEB12-00711 **Container Id** 10455242 **Analysis Id** 0000282882

VE Date 17-AUG-12 15:54:38 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs

Closure Date 17-AUG-12 15:54:38 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455242 **Analysis Id** 0000282882

Visual Exam Comment The waste by weight percent is scrap wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	88.660
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311272	JCUNNINGHAM	17-AUG-12 15:54:38	
2311273	ALOFTUS	17-AUG-12 15:54:40	

Batch Id VEB12-00711 **Container Id** 10455241 **Analysis Id** 0000282883

VE Date 17-AUG-12 16:31:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 251.37 lbs

Closure Date 17-AUG-12 16:31:36 **Procedure Id** INST-FOI-17 **Net Weight** 225.37 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455241 **Analysis Id** 0000282883

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	5.000	PINTS	1.125	5.630
Wood	5.000	PINTS	0.702	3.510
Cardboard	3.000	PINTS	0.833	2.500
Fire Brick	5.000	PINTS	3.123	15.620
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	194.460
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	22.090
Cellulosics	0.000	6.010
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311301	JCUNNINGHAM	17-AUG-12 16:31:36	
2311302	ALOFTUS	17-AUG-12 16:31:39	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455249 **Analysis Id** 0000282884

VE Date 17-AUG-12 16:40:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 257.99 lbs

Closure Date 17-AUG-12 16:40:36 **Procedure Id** INST-FOI-17 **Net Weight** 231.99 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455249 **Analysis Id** 0000282884

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	6.000	PINTS	0.702	4.210
Fire Brick	5.000	PINTS	3.123	15.620
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	211.215
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	15.620
Cellulosics	0.000	4.210
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311305	JCUNNINGHAM	17-AUG-12 16:40:37	
2311306	ALOFTUS	17-AUG-12 16:40:39	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455248 **Analysis Id** 0000282885

VE Date 17-AUG-12 16:46:57 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 293.27 lbs

Closure Date 17-AUG-12 16:46:57 **Procedure Id** INST-FOI-17 **Net Weight** 267.27 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Advanced Mixed Waste Treatment Project

Batch Id VEB12-00711 **Container Id** 10455248 **Analysis Id** 0000282885

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Uncured Cement	4.000	PINTS	3.000	12.000
Rubber	3.000	PINTS	1.554	4.660
Wood	1.000	PINTS	0.702	0.700
Cardboard	1.000	PINTS	0.833	0.830
Fire Brick	6.000	PINTS	3.123	18.740
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	228.135
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	32.000
Cellulosics	0.000	1.530
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311312	JCUNNINGHAM	17-AUG-12 16:46:57	
2311313	ALOFTUS	17-AUG-12 16:46:59	

Batch Id VEB12-00711 **Container Id** 10455240 **Analysis Id** 0000282886

VE Date 17-AUG-12 16:55:01 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 lbs

Closure Date 17-AUG-12 16:55:01 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 lbs

Container Type 55 **Revision** 25

Operator 1 JOHN CUNNINGHAM **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455240 **Analysis Id** 0000282886

Visual Exam Comment The waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453920	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	3.000	PINTS	1.125	3.380
Cardboard	1.000	PINTS	0.833	0.830
Fire Brick	2.000	PINTS	3.123	6.250
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	121.360
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	9.630
Cellulosics	0.000	0.830
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311336	JCUNNINGHAM	17-AUG-12 16:55:01	
2311337	ALOFTUS	17-AUG-12 16:55:02	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:00

Batch Id VEB12-00711 **Container Id** 10455037 **Analysis Id** 0000282892

VE Date 17-AUG-12 17:25:45 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 116.87 lbs

Closure Date 17-AUG-12 17:25:45 **Procedure Id** INST-FOI-17 **Net Weight** 90.87 lbs

Container Type 55 **Revision** 25

Operator 1 DARREN BUTTE **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JUSTIN BURTON **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00711 **Container Id** 10455037 **Analysis Id** 0000282892

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal/Alloys conisisting of misc. scrap metals.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10225167	676- BXI/8	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	6.000	PINTS	0.937	5.620

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	85.245
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2311349	DBUTTE	17-AUG-12 17:25:45	
2311350	JBURTON	17-AUG-12 17:25:48	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 02-Oct-2012

Time: 16:10

Batch Id VEB12-00711 **Open Date** 17-AUG-12 **Close Date** 17-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 18-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB12-00711 **Open Date** 17-AUG-12 **Close Date** 17-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer
Approval Date 18-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB12-00711 **Open Date** 17-AUG-12 **Close Date** 17-AUG-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 20-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. MP-TRUW-05, MP-TRUW-06
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC/WMC and summary category for newly generated waste are assigned by the operators during the VE event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No residual liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00711 **Open Date** 17-AUG-12 **Close Date** 17-AUG-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 20-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	Audio/Video recording and QC checks reference not applicable.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Scales were not used during this VE event.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00711 **Open Date** 17-AUG-12 **Close Date** 17-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2313426	NSTYHL	20-AUG-12	SPM	Approve batch.
2312456	RBTHOMPSON	18-AUG-12	ITR	Promote to SPM.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 02-Oct-2012

Time: 16:10

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00711		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	**Trackwise Number**	**Status**	**Opened Date**	**Closed Date**

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 16:11

Batch Type VE Boxline
Batch Report No. VEB12-00747
Batch Id VEB12-00747
Open Date 28-AUG-12 14:24:07
Close Date 29-AUG-12 10:25:53
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE DiD RPCK VE Drum Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10456922	BN-508	0000283895	28-AUG-12 14:24:08	Original	P	JEFF REDELK
10456928	BN-508	0000283900	28-AUG-12 15:16:33	Original	P	JEFF REDELK

FOR INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 16:11

**********Batch Comments**********

Written By	Date	Comment
RGUNNING	29-AUG-12 10:25:55	Esigned.
RGRISE	29-AUG-12 12:07:34	Initial validation performed electronically per MP-TRUW-8.8
RGRISE	29-AUG-12 12:07:34	Promote batch to SPM level.
KBURNSIDE	29-AUG-12 16:15:10	SPM reviewed and approved.

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Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 16:11

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2321460	RGUNNING	29-AUG-2012 10:25:55	
2321729	RGRISE	29-AUG-2012 12:07:34	Promote batch to SPM level.
2321949	KBURNSIDE	29-AUG-2012 16:15:10	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

VE Boxline and Repackaging Report

Time: 16:11

Batch Id VEB12-00747 **Container Id** 10456922 **Analysis Id** 0000283895

VE Date 28-AUG-12 14:24:08 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 61.74 lbs

Closure Date 28-AUG-12 14:24:08 **Procedure Id** INST-FOI-17 **Net Weight** 35.74 lbs

Container Type 55 **Revision** 25

Operator 1 JEFF REDELK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROSS J GUNNING **Equipment ID** VE DiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

AMWTP
Advanced Mixed Waste Treatment Project

VE Boxline and Repackaging Report

Time: 16:11

Batch Id VEB12-00747 **Container Id** 10456922 **Analysis Id** 0000283895

Visual Exam Comment Remaining waste by weight percent is plastic waste consisting of bubble suits and air hoses from entry into system 390 cell area for wimpecads.

Source Container

Is there a source container? No

Source Container ID	Location	IDC

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	34.190
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2320483	JREDELK	28-AUG-12 14:24:08	
2320484	RGUNNING	28-AUG-12 14:24:10	

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Advanced Mixed Waste Treatment Project

VE Boxline and Repackaging Report

Date: 02 Oct 2012
Time: 16:12

Batch Id VEB12-00747 **Container Id** 10456928 **Analysis Id** 0000283900

VE Date 28-AUG-12 15:16:33 **Analysis Status** Pass
Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 41.90 lbs
Closure Date 28-AUG-12 15:16:33 **Procedure Id** INST-FOI-17 **Net Weight** 15.90 lbs
Container Type 55 **Revision** 25
Operator 1 JEFF REDELK **Waste Matrix** S5490 **Summary Category Group** S5000
Operator 2 ROSS J GUNNING **Equipment ID** VE DiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags
Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints
Containerized Liquid pints **Total Liquid Amount** 0 pints
Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 16:12

Batch Id VEB12-00747 **Container Id** 10456928 **Analysis Id** 0000283900

Visual Exam Comment Remaining waste by weight percent is plastic waste consisting of bubble suits and air line hoses from cell entry into system 390 for wimpecad drums.

---Source Container---

Is there a source container? No

Source Container ID	Location	IDC

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	14.345
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2320602	JREDELK	28-AUG-12 15:16:33	
2320603	RGUNNING	28-AUG-12 15:16:35	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:12

Batch Id VEB12-00747 **Open Date** 28-AUG-12 **Close Date** 29-AUG-12

Reviewer RONALD GRISE **Approval Level** Independent Technical Reviewer
Approval Date 29-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB12-00747 **Open Date** 28-AUG-12 **Close Date** 29-AUG-12

Reviewer RONALD GRISE **Approval Level** Independent Technical Reviewer
Approval Date 29-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:12

Batch Id VEB12-00747 **Open Date** 28-AUG-12 **Close Date** 29-AUG-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 29-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:12

Batch Id VEB12-00747 **Open Date** 28-AUG-12 **Close Date** 29-AUG-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation
Approval Date 29-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:12

Batch Id VEB12-00747 **Open Date** 28-AUG-12 **Close Date** 29-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2321949	KBURNSIDE	29-AUG-12	SPM	SPM reviewed and approved.
2321729	RGRISE	29-AUG-12	ITR	Promote batch to SPM level.

AMWTP
Advanced Mixed Waste Treatment Project

Non-Conformance Report

Time: 16:12

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00747		
Trackwise Number		Status		Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

GEN3

RECORD
CMC 04/30/2012

SSC12-00001
BATCH DATA REPORT

Report Date: April 24, 2012

Narrative:

This report provides test results and documentation for the Solid Sampling examination of the following containers using INST-OI-73.

10427585

Position	Signature	Date
AMWTP Site Project Manager		4/30/12

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SSC12-00001

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AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 15-Apr-2012

Time: 17:17

Batch Type Solid Sampling Coring

Batch Report No. SSC12-00001

Batch Id SSC12-00001

Open Date 12-APR-12 15:28:32

Close Date 15-APR-12 17:14:51

Batch Status CLOSED

Test Facility Idaho AMWTP

Equipment Id Z-250-801 634-Coring

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10427585	SR-256	649	14-APR-12 10:55:32	Original	P	DAVEY SUMNERS
10427585	SR-256	650	14-APR-12 11:29:16	Replicate / Duplicate	P	NICHOLAS INGLE

600003

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 23-Apr-2012

Time: 09:14

**********Batch Comments**********

Written By	Date	Comment
MKREMIN	15-APR-12 17:14:52	WMF-634, Coring room
MKREMIN	15-APR-12 17:14:53	waste matrix code 3110
MKREMIN	15-APR-12 17:14:53	,
JSIMONSON	19-APR-12 12:19:26	This batch was validated per MP-TRUW-8.8.
JSIMONSON	19-APR-12 12:46:22	Rework: Batch Comments. Please enter a comment to "Please disregard the blank comment and the Waste matrix code," and that "the correct Waste Matrix Code is S3110."
MKREMIN	23-APR-12 07:46:57	Please disregard batch comment waste matrix code 3110 . Waste matrix code is S3110.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP SUPERCEDED

Date: 15-Apr-2012

Batch Report Coversheet

Time: 17:17

**********Batch Comments**********

Written By	Date	Comment
MKREMIN	15-APR-12 17:14:52	WMF-634, Coring room
MKREMIN	15-APR-12 17:14:53	,
MKREMIN	15-APR-12 17:14:53	waste matrix code 3110

SUPERCEDED

600004

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 15-Apr-2012

Time: 17:17

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2210803	MKREMIN	15-APR-2012 17:14:53	,

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 15-Apr-2012
Time: 17:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Core Sample

Core Sample ID 650
Equipment Procedure ID INST-OI-73 **Procedure Revision ID** 12 FC-2
Core Sample Date 14-APR-12 11:29:16
Taken By NICHOLAS INGLE
Core Sample Type Co-located/Field Duplicate

Core Length 8.00 in.
Core Recovered (%) 76.2
Depth Of Waste 10.5 in.
Core Sector 1
Horizontal Position 29766 mils East

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
1102-06-01-011	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description Undisturbed Dry, granular consistency and white in color.

Core Sector Comment

Core Sample Comment

Cancel Date **By** **Reason**

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210329	NINGLE	14-APR-2012 11:16:26	
2210330	NINGLE	14-APR-2012 11:18:36	
2210341	NINGLE	14-APR-2012 11:43:29	
2210407	NINGLE	14-APR-2012 14:05:20	

Sub Sample

Core Sample ID 650
Sub Sample ID 10438636
Weight 2.78 gms
Sub Sample Date 14-APR-12 14:01:00
Volume 20 ml.
Taken By NICHOLAS INGLE
Custody Seal Attached Y **Preserved to 4 Degrees C** Y
Sample Requested PVOC
Required Distance 5.50 in. **Actual Distance** 5.50 in.
Distance From Top Comment

Sub Sample Comment
PVOC 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210405	NINGLE	14-APR-2012 14:03:52	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 15-Apr-2012
Time: 17:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Core Sample

Core Sample ID 649
Equipment Procedure ID INST-OI-73 **Procedure Revision ID** 12 FC-2
Core Sample Date 14-APR-12 10:55:32
Taken By DAVEY SUMNERS
Core Sample Type Initial Core Sample

Core Length 9.50 in.
Core Recovered (%) 90.5
Depth Of Waste 10.5 in.
Core Sector 4
Horizontal Position 25766 mils East

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
1102-06-01-010	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description undisturbed Dry, granular consistency and white in color.
Core Sector Comment
Core Sample Comment

Cancel Date **By** **Reason**

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2209754	DSUMNERS	12-APR-2012 15:29:26	saving data
2209914	NINGLE	13-APR-2012 13:28:20	saving data
2209915	NINGLE	13-APR-2012 13:31:11	actual sector
2209916	NINGLE	13-APR-2012 13:36:32	.
2210014	NINGLE	13-APR-2012 16:52:24	depth of waste
2210326	NINGLE	14-APR-2012 11:07:22	.

Sub Sample

Core Sample ID 649
Sub Sample ID 10438629
Weight 2.93 gms
Sub Sample Date 14-APR-12 13:31:08
Volume 20 ml.
Taken By NICHOLAS INGLE
Custody Seal Attached Y **Preserved to 4 Degrees C** Y
Sample Requested PVOC
Required Distance 6.50 in. **Actual Distance** 6.50 in.
Distance From Top Comment

Sub Sample Comment
pvoc

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210395	NINGLE	14-APR-2012 13:39:04	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 Sub Sample ID 10438630 Weight 2.73 gms
Sub Sample Date 14-APR-12 13:33:39 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 6.00 in. Distance From Top Comment

Sub Sample Comment
NHVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210396	NINGLE	14-APR-2012 13:41:11	

Sub Sample

Core Sample ID 649 Sub Sample ID 10438631 Weight 12.22 gms
Sub Sample Date 14-APR-12 13:39:49 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 5.50 in. Distance From Top Comment

Sub Sample Comment
Hydrazine Sample

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210397	NINGLE	14-APR-2012 13:45:03	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438632 **Weight** 12.47 gms
Sub Sample Date 14-APR-12 13:45:52 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested NHVOC
Required Distance in. **Actual Distance** 5.00 in. **Distance From Top Comment**

Sub Sample Comment
Formaldehyde Sample

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2210399	NINGLE	14-APR-2012 13:47:18	

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438633 **Weight** 2.82 gms
Sub Sample Date 14-APR-12 13:47:59 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SPARE
Required Distance in. **Actual Distance** 4.50 in. **Distance From Top Comment**

Sub Sample Comment
Spare 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2210400	NINGLE	14-APR-2012 13:48:39	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 Sub Sample ID 10438634 Weight 2.96 gms

Sub Sample Date 14-APR-12 13:49:21 Volume 20 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested SPARE

Required Distance in. Actual Distance 4.00 in. Distance From Top Comment

Sub Sample Comment
Spare 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210401	NINGLE	14-APR-2012 13:50:08	

Sub Sample

Core Sample ID 649 Sub Sample ID 10438635 Weight 35.13 gms

Sub Sample Date 14-APR-12 13:53:35 Volume 125 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested SVOC, METALS

Required Distance in. Actual Distance 3.50 in. Distance From Top Comment

Sub Sample Comment
SVOC METALS

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210403	NINGLE	14-APR-2012 13:53:29	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438649 **Weight** 2.56 gms

Sub Sample Date 14-APR-12 14:45:53 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip blank

Sub Sample Comment
Trip blank 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210430	NINGLE	14-APR-2012 14:47:33	

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438650 **Weight** 2.81 gms

Sub Sample Date 14-APR-12 14:47:20 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip blank

Sub Sample Comment
Trip Blank 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210431	NINGLE	14-APR-2012 14:49:05	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438651 **Weight** 2.85 gms
Sub Sample Date 14-APR-12 14:49:18 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
Trip blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210432	NINGLE	14-APR-2012 14:50:24	

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438652 **Weight** 12.29 gms
Sub Sample Date 14-APR-12 14:50:41 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
Trip Blank 4

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210433	NINGLE	14-APR-2012 14:52:28	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 649 **Sub Sample ID** 10438653 **Weight** 12.38 gms

Sub Sample Date 14-APR-12 14:52:44 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
Trip Blank 5

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210436	NINGLE	14-APR-2012 14:53:18	
2210462	NINGLE	14-APR-2012 15:43:44	
2210509	NINGLE	14-APR-2012 18:34:59	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 Sub Sample ID 10438637 Weight 2.77 gms
Sub Sample Date 14-APR-12 14:03:10 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance in. Actual Distance 5.00 in. Distance From Top Comment

Sub Sample Comment
PVOC 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210406	NINGLE	14-APR-2012 14:04:50	

Sub Sample

Core Sample ID 650 Sub Sample ID 10438640 Weight 2.61 gms
Sub Sample Date 14-APR-12 14:05:57 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance in. Actual Distance 4.50 in. Distance From Top Comment

Sub Sample Comment
PVOC 3

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210408	NINGLE	14-APR-2012 14:08:09	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 Sub Sample ID 10438641 Weight 2.83 gms

Sub Sample Date 14-APR-12 14:07:32 Volume 20 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 4.00 in. Distance From Top Comment

Sub Sample Comment
NHVOC 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210412	NINGLE	14-APR-2012 14:11:02	

Sub Sample

Core Sample ID 650 Sub Sample ID 10438642 Weight 2.85 gms

Sub Sample Date 14-APR-12 14:08:18 Volume 20 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 3.75 in. Distance From Top Comment

Sub Sample Comment
NHVOC 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210413	NINGLE	14-APR-2012 14:12:54	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 Sub Sample ID 10438643 Weight 2.97 gms
Sub Sample Date 14-APR-12 14:09:18 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 3.50 in. Distance From Top Comment

Sub Sample Comment
NHVOC 3

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210414	NINGLE	14-APR-2012 14:15:38	

Sub Sample

Core Sample ID 650 Sub Sample ID 10438644 Weight 12.43 gms
Sub Sample Date 14-APR-12 14:11:53 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 3.00 in. Distance From Top Comment

Sub Sample Comment
Hydrazine Sample

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210416	NINGLE	14-APR-2012 14:17:52	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438645 **Weight** 12.32 gms

Sub Sample Date 14-APR-12 14:13:09 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested NHVOC

Required Distance in. **Actual Distance** 2.50 in. **Distance From Top Comment**

Sub Sample Comment
Formaldehyde Sample

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210417	NINGLE	14-APR-2012 14:19:15	

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438646 **Weight** 3.00 gms

Sub Sample Date 14-APR-12 14:14:57 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested SPARE

Required Distance in. **Actual Distance** 2.25 in. **Distance From Top Comment**

Sub Sample Comment
Spare 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210418	NINGLE	14-APR-2012 14:22:01	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438647 **Weight** 2.78 gms
Sub Sample Date 14-APR-12 14:16:36 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SPARE
Required Distance in. **Actual Distance** 2.00 in. **Distance From Top Comment**

Sub Sample Comment
Spare 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210419	NINGLE	14-APR-2012 14:23:55	

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438648 **Weight** 38.74 gms
Sub Sample Date 14-APR-12 14:20:17 **Volume** 125 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SVOC, METALS
Required Distance in. **Actual Distance** 1.75 in. **Distance From Top Comment**

Sub Sample Comment
SVOC METALS

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210420	NINGLE	14-APR-2012 14:25:10	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 Sub Sample ID 10438654 Weight 2.57 gms
Sub Sample Date 14-APR-12 15:03:03 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. Actual Distance 0.00 in. Distance From Top Comment trip blank

Sub Sample Comment
trip blank 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210440	NINGLE	14-APR-2012 15:05:10	

Sub Sample

Core Sample ID 650 Sub Sample ID 10438655 Weight 2.87 gms
Sub Sample Date 14-APR-12 15:05:31 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. Actual Distance 0.00 in. Distance From Top Comment trip blank

Sub Sample Comment
Trip blank 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210441	NINGLE	14-APR-2012 15:06:14	

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438656 **Weight** 2.70 gms
Sub Sample Date 14-APR-12 15:06:50 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210442	NINGLE	14-APR-2012 15:07:38	
2210443	NINGLE	14-APR-2012 15:08:10	

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438657 **Weight** 12.24 gms
Sub Sample Date 14-APR-12 15:07:24 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 4

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210444	NINGLE	14-APR-2012 15:09:09	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00001	10427585	SR-256	S3110	425

Sub Sample

Core Sample ID 650 **Sub Sample ID** 10438658 **Weight** 12.38 gms

Sub Sample Date 14-APR-12 15:09:26 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 5

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2210445	NINGLE	14-APR-2012 15:10:09	
2210464	NINGLE	14-APR-2012 15:45:31	
2210510	NINGLE	14-APR-2012 18:36:50	

******End of Core Analysis Report******

ALD LOG # 1204161

AMWTP

Chain Of Custody

Print Date: 16-Apr-2012
Print Time: 10.03
COC No.: 0000532

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00001	10427585	SR-256	10438629	14-Apr-2012	13:31	20 / ml	2.93 / gms	PVOC	Nicholas Ingle	pvoc	
SSC12-00001	10427585	SR-256	10438630	14-Apr-2012	13:33	20 / ml	2.73 / gms	NHVOC	Nicholas Ingle	NHVOC	
SSC12-00001	10427585	SR-256	10438631	14-Apr-2012	13:39	20 / ml	12.22 / gms	NHVOC	Nicholas Ingle	Hydrazine Sample	
SSC12-00001	10427585	SR-256	10438632	14-Apr-2012	13:45	20 / ml	12.47 / gms	NHVOC	Nicholas Ingle	Formaldehyde Sample	
SSC12-00001	10427585	SR-256	10438633	14-Apr-2012	13:47	20 / ml	2.82 / gms	SPARE	Nicholas Ingle	Spare 1	
SSC12-00001	10427585	SR-256	10438634	14-Apr-2012	13:49	20 / ml	2.96 / gms	SPARE	Nicholas Ingle	Spare 2	
SSC12-00001	10427585	SR-256	10438635	14-Apr-2012	13:53	125 / ml	35.13 / gms	SVOC METALS	Nicholas Ingle	SVOC METALS	
SSC12-00001	10427585	SR-256	10438649	14-Apr-2012	14:45	20 / ml	2.56 / gms	TRIP BLANK	Nicholas Ingle	Trip blank 1	
SSC12-00001	10427585	SR-256	10438650	14-Apr-2012	14:47	20 / ml	2.81 / gms	TRIP BLANK	Nicholas Ingle	Trip Blank 2	
SSC12-00001	10427585	SR-256	10438651	14-Apr-2012	14:49	20 / ml	2.85 / gms	TRIP BLANK	Nicholas Ingle	Trip blank 3	
SSC12-00001	10427585	SR-256	10438652	14-Apr-2012	14:50	20 / ml	12.29 / gms	TRIP BLANK	Nicholas Ingle	Trip Blank 4	
SSC12-00001	10427585	SR-256	10438653	14-Apr-2012	14:52	20 / ml	12.38 / gms	TRIP BLANK	Nicholas Ingle	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date		Discrepancies / Comments
Relinquished By	Nicholas Ingle	Nicholas Ingle	4/16/12	10:23	David J Preston 4/16/12
Received By	David J. Preston	David J Preston	4/16/12	10:23	FGE 2.82 E-04 (Calculated Ratio Assay)
Relinquished By	David J. Preston	David J Preston	4/16/12	10:25	On Site Transfer
Received By	John H. Nicklas	John H Nicklas	4/16/12	1405	Transfer Container ID: 4 TID #: 077603 David J Preston 4/16/12
Relinquished By					
Received By					
Relinquished By					
Received By					

0000532

COPY OF IN-PROCESS RECORD

ALD LOG #
1204161

AMWTP

Chain Of Custody

Print Date: 16-Apr-2012
Print Time: 10:26
COC No.: 0000533

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00001	10427585	SR-256	10438636	14-Apr-2012	14:01	20 / ml	2.78 / gms	PVOC	Nicholas Ingle	PVOC 1	
SSC12-00001	10427585	SR-256	10438637	14-Apr-2012	14:03	20 / ml	2.77 / gms	PVOC	Nicholas Ingle	PVOC 2	
SSC12-00001	10427585	SR-256	10438640	14-Apr-2012	14:05	20 / ml	2.61 / gms	PVOC	Nicholas Ingle	PVOC 3	
SSC12-00001	10427585	SR-256	10438641	14-Apr-2012	14:07	20 / ml	2.83 / gms	NHVOC	Nicholas Ingle	NHVOC 1	
SSC12-00001	10427585	SR-256	10438642	14-Apr-2012	14:08	20 / ml	2.85 / gms	NHVOC	Nicholas Ingle	NHVOC 2	
SSC12-00001	10427585	SR-256	10438643	14-Apr-2012	14:09	20 / ml	2.97 / gms	NHVOC	Nicholas Ingle	NHVOC 3	
SSC12-00001	10427585	SR-256	10438644	14-Apr-2012	14:11	20 / ml	12.43 / gms	NHVOC	Nicholas Ingle	Hydrazine Sample	
SSC12-00001	10427585	SR-256	10438645	14-Apr-2012	14:13	20 / ml	12.32 / gms	NHVOC	Nicholas Ingle	Formaldehyde Sample	
SSC12-00001	10427585	SR-256	10438646	14-Apr-2012	14:14	20 / ml	3.00 / gms	SPARE	Nicholas Ingle	Spare 1	
SSC12-00001	10427585	SR-256	10438647	14-Apr-2012	14:16	20 / ml	2.78 / gms	SPARE	Nicholas Ingle	Spare 2	
SSC12-00001	10427585	SR-256	10438648	14-Apr-2012	14:20	125 / ml	38.74 / gms	SVOC, METALS	Nicholas Ingle	SVOC METALS	
SSC12-00001	10427585	SR-256	10438654	14-Apr-2012	15:03	20 / ml	2.57 / gms	TRIP BLANK	Nicholas Ingle	trip blank 1	
SSC12-00001	10427585	SR-256	10438655	14-Apr-2012	15:05	20 / ml	2.87 / gms	TRIP BLANK	Nicholas Ingle	Trip blank 2	
SSC12-00001	10427585	SR-256	10438656	14-Apr-2012	15:06	20 / ml	2.70 / gms	TRIP BLANK	Nicholas Ingle	trip blank 3	
SSC12-00001	10427585	SR-256	10438657	14-Apr-2012	15:07	20 / ml	12.24 / gms	TRIP BLANK	Nicholas Ingle	trip blank 4	
SSC12-00001	10427585	SR-256	10438658	14-Apr-2012	15:09	20 / ml	12.38 / gms	TRIP BLANK	Nicholas Ingle	trip blank 5	

6000033

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date		Discrepancies / Comments
Relinquished By	Nicholas Ingle	Nicholas Ingle	4/16/12	10:38	David J Preston 4/16/12
Received By	David J. Preston	David J Preston	4/16/12	10:38	FGE 3.42 E-04 (Calculated Ratio Assay)
Relinquished By	David J. Preston	David J Preston	4/16/12	10:39	on Site Transfer
Received By	John H. Nicholas	John H Nicholas	4/16/12	1405	Transfer Container #5 TID #: 077655 David J Preston 4/16/12
Relinquished By					
Received By					
Relinquished By					
Received By					

COPY OF IN-PROCESS RECORD

AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
Nick Ingle	4/7/12	0850	4.0°c	4.3°c	4.0°c	No samples in Fridge
Nick Ingle	4/7/12	1811	4.4°c	4.5°c	3.9°c	No samples in Fridge
Marcial Trejo	4/8/12	0905	4.0°c	4.2°c	4.0°c	No samples in Fridge
Nick Ingle	4/8/12	1735	4.5°c	4.9°c	4.0°c	Samples in Fridge
DAVE SUMMERS	04/09/12	0720	3.8°c	4.9°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/09/12	1835	4.4°c	4.5°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/10/12	0722	3.8°c	4.5°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/10/12	1830	3.9°c	4.9°c	3.8°c	Samples in Refrig
JESSE HOWARD	04/11/12	0715	3.4°c	4.0°c	3.3°c	SAMPLES IN FRIDGE
DAVE SUMMERS	04/12/12	0715	3.8°c	3.8°c	3.4°c	NO SAMPLES IN Refrig
Nick Ingle	4/13/12	1022	3.7°c	3.8°c	3.5°c	No samples in Fridge
Nick Ingle	4/13/12	1802	3.7°c	3.8°c	3.5°c	No Samples in Fridge
Nick Ingle	4/14/12	0940	3.6°c	3.7°c	3.6°c	No Samples in Fridge
Marcial Trejo	4/14/12	1847	4.1°c	3.6°c	3.5°c	Samples in Fridge
Nick Ingle	4/15/12	0802	3.5°c	3.5°c	3.4°c	Samples in Fridge
Nick Ingle	4/15/12	1718	3.5°c	3.6°c	3.4°c	Samples in Fridge.

6/11/12

AMWTP Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Form-1602, Rev. 6
Effective: 06/04/09

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/04/12 **to** 04/15/12

Time	Equipment Check/Data Point		Normal Condition	Off-Spec Condition	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
0800	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	3.8°C	3.8°C	3.4°C	3.8°C	3.6	3.7°C	3.4°C
		High Temp	2°C to 6°C	<2°C or >6°C	4.9°C	4.5°C	4.0°C	3.8°C	3.8	3.8°C	4.1°C
		Low Temp	2°C to 6°C	<2°C or >6°C	3.8°C	3.8°C	3.3°C	3.4°C	3.5	3.5°C	3.4°C
		Refrigerator	Locked	Unlocked	Locked	Locked	Locked	Locked	Locked	Locked	Locked
	Blow down the air receiver for the WMF-634 air compressor per INST-OI-27, Characterization Facility Main Building Air System Operations. (if completed √)				✓	✓	✓	✓	✓	✓	✓
	DVS nitrogen gas bottle pressure		>300 psi	<300 psi	850#	850#	850#	600#	800psi	800 PSI	800psi
	HGAS nitrogen gas bottle pressure		>300 psi	<300 psi	725#	600#	525#	375#	250 psi (2)	220psi (3)	200psi (3)
	HGAS helium gas bottle pressure		>300 psi	<300 psi	1425#	1425#	1425#	1425#	1425psi	1425psi	1425psi
	WMF-634 inside temperature (Use WTS to verify.)		>65°F	<65°F	73°F	73°F	73°	73°F	74°	73°F	74°F
				Operator Initial	✓	✓	✓	✓	M	EBO	EBO
				SS Review Initial	JB	JB	JB	JB	SM	SM	SM
2000	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		High Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Low Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Refrigerator	Locked	Unlocked	①	①	①	①	①	①	①
				Operator Initial	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				SS Review Initial	JB	JB	JB	JB	SM	SM	SM

1. Temperature readings are recorded once every shift in accordance with procedure. However, if extenuating circumstances prevent documentation every shift, then the temperature readings must be taken at a minimum of once a day to ensure sample integrity is maintained and the requirement of SW-846 is met.
2. Recording refrigerator temperature is only required while samples are in the refrigerator and data from Form-1602 can be transferred to Form-1585 by a qualified coring operator.

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 **to** 04/15/12

Time	Equipment Check/Data Point Coring Vent. Control Panel		Normal Condition	Off-Spec Condition	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
0800	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	3200	3200	3200	3200	3200	3200	3200
		PV (scfm)	3100 – 3300	<3100 or >3330	3209	3260	3230	3209	3218	3210	3170
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	150	150	150	150	150	150	150
		PV (scfm)	144 – 156	<144 or >156	147	145	146	146	148	147	148
				Operator Initial							
				SS Review Initial					SM	SM	SM
2000	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	①	①	①	①	①	①	①
		PV (scfm)	3100 – 3300	<3100 or >3330	①	①	①	①	①	①	①
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	①	①	①	①	①	①	①
		PV (scfm)	144 - 156	<144 or >156	①	①	①	①	①	①	①
				Operator Initial	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				SS Review Initial					SM	SM	SM

0010426

AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 3 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 **to** 04/15/12

Reading should be taken once a week on Sunday when system is operating. Date Data Taken: 04/15/12

Equipment Check/Data Point	Normal Condition	Off-Spec Condition	Reading
PDI-232-020 Zone 2 – Bank 1 – Stage 1 HEPA filters	≤5 in. WC	**>5 in. WC**	0.0
PDI-232-020 Zone 2 – Bank 1 – Stage 2 HEPA filters	≤5 in. WC	**>5 in. WC**	0.0
PDI-232-020 Zone 2 – Bank 2 – Stage 1 HEPA filters	≤5 in. WC	**>5 in. WC**	2.5
PDI-232-020 Zone 2 – Bank 2 – Stage 2 HEPA filters	≤5 in. WC	**>5in. WC**	1.2
PDI-232-040 Zone 3 – North – Stage 1 HEPA filter	≤5 in. WC	**>5 in. WC**	0.0
PDI-232-040 Zone 3 – North – Stage 2 HEPA filter	≤5 in. WC	**>5 in. WC**	0.0
PDI-232-040 Zone 3 – North – Stage 3 HEPA filter	≤5 in. WC	**>5 in. WC**	0.0
PDI-232-041 Zone 3 – South – Stage 1 HEPA filter	≤5 in. WC	**>5 in. WC**	3.1
PDI-232-041 Zone 3 – South – Stage 2 HEPA filter	≤5 in. WC	**>5 in. WC**	2.0
PDI-232-041 Zone 3 – South – Stage 3 HEPA filter	≤5 in. WC	**>5 in. WC**	1.8
PDI-220-003 Drum Vent System – 1st Stage HEPA	1.0 in. WC to 2.75 in. WC	**>2.75 in. WC**	2.1
PDI-220-004 Drum Vent System – 2nd Stage HEPA	.6 in. WC to 2.35 in. WC	**>2.75 in. WC**	0.9
Low Flow Check (Total between PDI-220-003 and PDI-220-004)	<3.35 in. WC	**>3.35 in. WC**	3.0
		Operator Initial	EBO
		SS Review Initial	SM

6000227

AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 4 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 **to** 04/15/12

WMF-634 Generator Checks	Normal	Off Spec	Date:													
			Time:													
Fuel Level (gauge)	>1/2	<1/2														
Coolant temperature (°F)	70 – 215	>215														
Engine Oil Pressure (psi)	30 – 50	<25 loaded <15 idling														
Generator Output Voltage (vAC)	480	<476 or >484														
Generator Output Frequency (Hz)	60	<59 or >61														
Running Hours Note 2	N/A	N/A														
		Operator Initial														
		SS Review Initial														

NOTE 1: Generator checks are to be performed at startup (whether manual or automatic) and every 2 ± ½ hours there after until Generator is shut down.

NOTE 2: Diesel Generator is allowed only 200 hr/yr of operation.

NOTE 3: Enter N/A if generator did not run this week.

600028

AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 5 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 **to** 04/15/12

Comments: Note ① No Night Operations

② Out of spec - low press.

6001029

AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form. ..15
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 **Scale Calibration Expiration Date:** 10/30/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
04/12/12	0800	MTE-158	30.00g +/- .01g	30.00g	Pass	
04/12/12	0800	MTE-130	50.00g +/- .01g	50.00g	Pass	
04/12/12	0800	MTE-158+130	80.00g +/- .01g	80.00g	Pass	
4/13/12	09 54	MTE-158	30.00g +/- .01g	30.00g	Pass	
4/13/12	09 55	MTE-130	50.00 +/- .01g	50.00g	Pass	
4/13/12	09 56	MTE-158 + MTE-130	80.00 +/- .01g	80.00g	Pass	
4/14/12	08 36	MTE-158	30.00 +/- .01g	30.00g	Pass	
4/14/12	08 37	MTE-130	50.00 +/- .01g	50.00g	Pass	
4/14/12	08 38	MTE-158 + MTE-130	80.00 +/- .01g	80.00g	Pass	
4/15/12	0924	MTE-158	30.00 +/- .01g	30.00 g	PASS	
4/15/12	0925	MTE-130	50.00 +/- .01g	50.00 g	PASS	
4/15/12	0926	MTE-158&130	80.00 +/- .01g	80.00 g	PASS	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form ...15
Rev. 4
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
04/09/12	0830	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/09/12	0830	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/09/12	0830	MTE-314	500.00 +/- 0.01G	499.99G	PASS	
04/10/12	0810	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/10/12	0810	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/10/12	0810	MTE-314	500.00 +/- 0.01G	499.99G	PASS	
04/11/12	0825	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/11/12	0825	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/11/12	0825	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
04/12/12	0807	MTE-179	50.00 +/- 0.01g	50.00g	Pass	
04/12/12	0807	MTE-161	150.00 +/- 0.01g	150.00g	Pass	
04/12/12	0807	MTE-314	500.00 +/- 0.01g	500.00g	Pass	
4/13/12	0951	MTE-179	50.00 +/- .01g	50.00g	Pass	
4/13/12	0952	MTE-161	150.00 +/- .01g	150.00g	Pass	
4/13/12	0953	MTE-314	500.00 +/- .01g	499.99g	Pass	
4/14/12	0828	MTE-179	50.00 +/- .01g	50.00g	Pass	
4/14/12	0829	MTE-161	150.00 +/- .01g	150.00g	Pass	
4/14/12	0830	MTE-314	500.00 +/- .01g	500.00g	Pass	
4/15/12	0920	MTE-179	50.00 +/- .01g	50.00g	PASS	
4/15/12	0921	MTE-161	150.00 +/- .01g	150.00g	PASS	
4/15/12	0922	MTE-314	500.00 +/- .01g	500.00g	PASS	
04/20/12	0800	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/20/12	0800	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/20/12	0800	MTE-314	500.00 +/- 0.01G	500.00G	PASS	

Gen0331

AMWTP
Advanced Mixed Waste Treatment Project

M&TE Usage Report

Form-1625, Rev. 3
Effective: 08/26/08

Implementing Document: INST-CMNT-10.5.1

M&TE Type:	Torque Wrench	M&TE ID No.:	MTE-506	
Date Last Calibrated:	8/6/2011	Calibration Due Date:	8/6/2012	

Equipment used since date M&TE last calibrated

Implementing Document/ Procedure	Equipment/ Container Type	Equipment/ Container ID No.	Calibrated Reading/ Torque Applied	User's Name
OI-73	Metal Filter	10427585	15 FT. LBS	Nick Engle / Nick / 4/15/12
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date
				/ /
				Name (Print) / Signature / Date

Cmp032

NOTE: *Personnel must complete this form every day that M&TE is used and forward to the CMMS (Maximo) Administrator.*

AMWTP Advanced Mixed Waste Treatment Project	M&TE Usage Report	Form-1625, Rev. 3 Effective: 08/26/08 Page 1 of 1

Implementing Document: INST-CMNT-10.5.1

M&TE Type:	Torque Wrench	M&TE ID No.:	MTE - 331	
Date Last Calibrated:	5/11/2011	Calibration Due Date:	5/11/2012	

Equipment used since date M&TE last calibrated

Implementing Document/ Procedure	Equipment/ Container Type	Equipment/ Container ID No.	Calibrated Reading/ Torque Applied	User's Name
DI-73	55 gl drum	10427585	40 FT. LBS	Nick Ingle / Nick / 4/15/12 Name (Print) Signature Date
				/ / Name (Print) Signature Date
				/ / Name (Print) Signature Date
				/ / Name (Print) Signature Date
				/ / Name (Print) Signature Date
				/ / Name (Print) Signature Date
				/ / Name (Print) Signature Date

Cw1033

NOTE: *Personnel must complete this form every day that M&TE is used and forward to the CMMS (Maximo) Administrator.*

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Batch Number: SSC12-00001

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	4/13/12 4/14/12	0942 0815	N. Ingle N. Ingle	Glovebox inspection SAT. Glovebox inspection SAT.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	4/13/12 4/14/12	1031 0956	N. Ingle N. Ingle	background and Standardization PASS background and standardization Pass.
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	4/13/12 4/14/12	0959 0840	N Ingle N. Ingle	Electronic balances SAT. Electronic balances SAT.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	4/13/12 4/14/12	0942 0815	N. Ingle N. Ingle	sampling and glovebox support equipment SAT. sampling and support equipment SAT.
4b. Document any deficiencies in the comments section.						N. Ingle N. Ingle	No deficiencies No deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	4/13/12	1629	N Ingle	WTS updated.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	4/15/12	1655	N. Ingle	WTS updated

Cur10034

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00001

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	4/13/12	1532	N. Ingle	N/A Manual sampling, no barrel used for collecting sample.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	4/14/12	1310	N. Ingle	visibly clean
7b. Were any defective sampling tools identified?	☐	☒	☐	4/14/12	1310	N. Ingle	no defective tools
7c. Was the SS and SME notified?	☐	☐	☒	4/14/12	1310	N. Ingle	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	4/14/12	1310	N. Ingle	packaging intact.
7e. Document any deficiencies by ID number in the comments section.						N. Ingle	No deficiencies

Gw10035

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00001

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☒	☐	☐	4/13/12	1651	N. Ingle	Depth calculated
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					N. Ingle	**Formula for a 55-gallon Drum:** Distance from top of drum to waste 23 in. 34.5 - (Distance from the top lip of the drum to waste + 1) = 10.5 in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	4/14/12	1055	N. Ingle	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	4/14/12	1101	N. Ingle	Sample material capped
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☒	☐	☐	4/14/12	1104	N. Ingle	sample undisturbed
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☒	☐	☐	4/14/12	1104	N. Ingle	WTS updated

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 4 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Batch Number: SSC12-00001

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	4/14/12	11 05	N. Ingle	Initial core sample
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	4/14/12	11.05	N. Ingle	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	4/14/12	1350	N. Ingle	labels verified
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	4/14/12	1355	N. Ingle	labels verified
14. Have custody seals been signed and dated?	☒	☐	☐	4/14/12	15 15	N. Ingle	signed and dated.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	4/14/12	1546	N. Ingle	screens updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	4/14/12	18 36	N Ingle	screens updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	4/14/12	18 36	N. Ingle	placed in fridge
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	4/14/12	18 38	N. Ingle	verified locked

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Batch Number: SSC12-00001

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Nicholas Ingle (Print Name) _____ (Signature) 4/15/12 (Date)

Checklist reviewed by SS: Steve Massey (Print Name) _____ (Signature) 04/15/12 (Date)

Gen0.38

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP Solid Sampling Checklist

Form-1599
Rev. 8
Effective: 04/05/12

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00001

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	4/14/12	11 12	N. Ingle	Glovebox SAT.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	4/14/12	0956	N. Ingle	background and standardization PASS
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	4/14/12	08 40	N. Ingle	Electronic balances SAT.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	4/14/12	11 12	N. Ingle	Sampling and support equipment SAT.
4b. Document any deficiencies in the comments section.						N. Ingle	No deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	4/13/12	16 29	N. Ingle	WTS updated.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	4/15/12	1655	N. Ingle	WTS updated.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00001

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	4/14/12	11 19	N. Ingle	Manual coring, no barrel used to collect sample.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	4/14/12	14 00	N. Ingle	Equipment visibly clean
7b. Were any defective sampling tools identified?	☐	☒	☐	4/14/12	1400	N. Ingle	No defective tools
7c. Was the SS and SME notified?	☐	☐	☒	4/14/12	1400	N. Ingle	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	4/14/12	1400	N. Ingle	Packaging intact
7e. Document any deficiencies by ID number in the comments section.						N. Ingle	No deficiencies

6000040

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00001

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☒	☐	☐	4/13/12	1651	N. Engle	Depth calculated
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					N. Engle	**Formula for a 55-gallon Drum:** Distance from top of drum to waste 23 in. 34.5 - (Distance from the top lip of the drum to waste + 1) = 10.5 in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	4/14/12	1129	N. Engle	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	4/14/12	1132	N. Engle	Sample material capped.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☒	☐	☐	4/14/12	1136	N. Engle	Sample undisturbed
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☒	☐	☐	4/14/12	1136	N. Engle	WTS updated

Cond41

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Batch Number: SSC12-00001

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	4/14/12	11 37	N. Ingle	No inconsistencies
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	~~☒~~ NR 4/23/12	☒	4/14/12	11 37	N. Ingle	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	4/14/12	14 17	N. Ingle	Labels verified
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	4/14/12	14 28	N. Ingle	Labels verified
14. Have custody seals been signed and dated?	☒	☐	☐	4/14/12	15 15	N. Ingle	Signed and dated
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	4/14/12	15 46	N. Ingle	Screens updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	4/14/12	18 36	N. Ingle	Screens updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	4/14/12	18 36	N. Ingle	placed in Fridge
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	4/14/12	18 38	N. Ingle	Verified locked

0042

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427585

Sample Origin: **Automated Core** ☐ **Manual Core** ☒ **Container Grab** ☐

Batch Number: SSC12-00001

Sample Type: **Initial** ☐ **Co-located** ☒ **Resample** ☐ **Field Duplicate** ☐

Additional comments:

Checklist completed by OT:	Nicholas Ingle Print Name	N Ingle Signature	4/15/12 Date
Checklist reviewed by SS:	Steve Massey Print Name	W D Massey Signature	04/15/12 Date

600343

AMWTP Advanced Mixed Waste Treatment Project	Solid Sampling Independent Technical Reviewer Checklist	Form-1421, Rev. 13 Effective: 08/16/07 at 1500 Hrs. Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSC12-00001	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the QA documentation for the Batch Data Reports complete and does it include data reports and QC results? o Coring Batch Cover Sheet o Table of Contents (manual review only) o Coring Analysis Reports (manual review only) o Chain of Custody (manual review only) o Refrigerator Temperature Log Sheet (Form-1585) (manual review only) and/or Characterization Round Sheet (Form-1602) o Analytical Balance Calibration Check Sheet (Form-1215) (manual review only) o Solid Waste Sampling Checklist (Form-1599) (manual review only) o Solid Sampling Independent Reviewer Checklist (Form-1421) (manual review only) o Supplemental Batch Comment Form (Form-1491) (manual review only) o Associated NCRs (referenced in WTS)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Has the Chain of Custody been initiated properly, filled out correctly and completely?	X			
4. Was each Coring Operator qualified at the time of each coring event?	X			
5. Was the E-signature History review performed?	X			
6. Was the core sample and sub-sample collected based on a random selection method using randomly selected horizontal and vertical planes?	X			

Gw0044

Testing Batch No.: SSC12-00001	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? • If any of these conditions have not been met, record the NCR number in the comments section. o Sealing of the liner prior to sampling o Refrigeration of the samples	X			
8. Were the cores visually examined?	X			
9. Was the co-located core visually compared to the first core and were the results acceptable?	X			
10. Were the units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated correctly?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling and coring tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? o Was the coring tool inspection satisfactory? o Was the sampling equipment protective wrapper intact? o Was the sampling area inspection satisfactory? o Were the sampling tools visually clean after unwrapping?	X			
16. Were co-located cores or samples collected at a frequency of one per sampling batch, as defined in INST-OI-16 and/or INST-OI-73?	X			

6w1045

Testing Batch No.: SSC12-00001	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet DQOs or QAOs? If so indicate all NCR numbers in the batch comment section.			X	
18. For drums that contain smaller containers, has one randomly selected smaller container been sampled, as applicable?	X			
19. Has the use of INST-OI-16 and/or INST-OI-73, sampling equipment, and measurement units been consistent?	X			
20. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-16, Drum Coring Operations and/or INST-OI-73, Manual Drum Coring Operations?	X			
21. Was the correct revision of the procedure documented on each analysis report?	X			
22. Does the core sample collected have a length ≥ to 50% of the depth of the waste?	X			
23. If core recovery is <50%, has a second core location been randomly selected?			X	
24. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
25. Were the rework requirements clearly identified in WTS or on the BDR?	X			See Batch Comments.

ITR Print Name: Jay Simonson	ITR Signature: Jay T. Simonson	Date: 04/23/2012

600046

AMWTP Advanced Mixed Waste Treatment Project	Site Project Manager Solid Sampling Checklist	Form-1401 Rev.9 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSC12-00001

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives been met? Precision: • Has a co-located core sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Coring Tools – Liners – Sampling Equipment Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • The containers were randomly selected from the container population and the subsampling location in the core was randomly selected. Comparability: • Was the correct version of INST-OI-16 or INST-OI-73 used?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

600047

Batch Data Report #: SSC12-00001

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(2) continued Representativeness: • Were non-disposable coring tools and sampling equipment cleaned prior to sampling? • Has ≥50% of the depth of the waste or the core with the best core recovery been used for sample collection? • Was the waste disturbance minimized verified by visual examination of the core and the documented in the field logbook?	☒	☐	☐		
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(4) Was the scale in calibration, and a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the blanks acceptable? **NOTE:** *The analytical results for the equipment blanks are less than 3 times the MDL for VOCs and SVOCs and less than 3 times the PRDLs for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Are samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	

000048

Batch Data Report #: SSC12-00001

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(7) Were samples collected within 14 days and is a time given between coring and sub-sampling?	☒	☐	☐	MP-TRUW-8.2, Table C1-4 and C1-2b(1)	
(8) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2, C3-10	
(9) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(10) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, coring tool test, and random location of sub-sample?*	☒	☐	☐	MP-TRUW-8.2, Table C3- 12	
(11) Is the location (point of origin) where each sample was taken included in the batch data report? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Does the batch data report include a record of analysis requested and laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

600049

Batch Data Report #: SSC12-00001

Question		Response YES	Response NO	Response N/A	Requirement	Comment
(14)	Is the depth of waste included for each waste container?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15)	Is the time between coring and sub-sampling less than one hour? If time is greater than 1 hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(16)	The data for all containers within this batch meet the review, validation, and verification requirements. • Are proper units (e.g. grams or liters) and significant figures used? • Is the BDR complete (all pages identified in the BDR and numbered accordingly)? • WTS Coring Batch Cover Sheet • Table of Contents (manual review only) • WTS Coring Analysis Reports • Chain of Custody • Refrigerator Temperature Log Sheet (Form-1585) and/or Form-1602, Characterization Round Sheet • Analytical Balance Calibration Check Sheet (Form-1215) • Solid Waste Sampling Checklist (Form-1599) • Solid Sampling Independent Reviewer Checklist (Form-1421) • Supplemental Batch Comment Form (Form-1491) • Associated NCRs	☒	☐	☐	MP-TRUW-8.2, C3-10b	

600050

Batch Data Report #: SSC12-00001

	Question	Response YES	Response NO	Response N/A	Requirement	Comment
(17)	Review all NCRs (open and closed). Can the batch be approved?	☐	☐	☒	MP-TRUW-8.2, C3-13	No NCR's identified.
(18)	Were the following inspections performed? • Was the coring tool inspection satisfactory? • Was the sampling equipment protective wrapped intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2B(2)	
(19)	Are the calculation of core recovery and co-located core description included in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(20)	All data associated with this BDR is acceptable for signature release?	☒	☐	☐	MP-TRUW-8.2, C3-10b(2)	

Comments:

SPM: Kenny Burnside (Print Name) _____ (Signature) 4/30/12 (Date)

608951

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSC12-00001

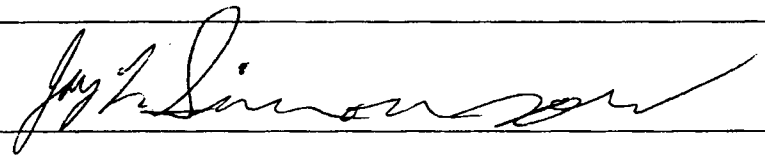
Item	Date	Name	Comments
1.	04/15/12	Mike Kremin Coring Operator	WMF-634, Coring room
2.	04/15/12	Mike Kremin Coring Operator	Waste matrix code 3110
3.	04/15/12	Mike Kremin Coring Operator	,
4.	04/19/12	Jay Simonson ITR	This batch was validated per MP-TRUW-8.8.
5.	04/19/12	Jay Simonson ITR	Rework: Batch Comments. Please enter a comment to "Please disregard the blank comment and the Waste matrix code," and that "the correct Waste Matrix Code is S3110."
6.	04/23/12	Mike Kremin Coring Operator	Please disregard batch comment waste matrix code 3110 . Waste matrix code is S3110.
7.	04/23/12	Jay Simonson ITR	Rework was performed completely and satisfactorily by a qualified operator.
8.	04/23/12	Jay Simonson ITR	Minor rework was performed on Solid Waste Sampling Checklists (Forms-1599).

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSC12-00001

Item	Date	Name	Comments
8.	04/23/12	Jay Simonson ITR	Level I validation complete.
9.	04/23/12	Jay Simonson ITR	Promoted to SPM.
10.	04/23/12	Jay Simonson Signature	

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AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSC12-00001

Item	Date	Name	Comments
1.	4/30/12	Kenny Burnside	SPM reviewed and approved. K B 4/30/12
2.			
3.			
4.			
5.			N A KB 4/30/12
6.			
7.			
8.			

000054

RECORD
CMC 11/21/2011

SSG11-00008
BATCH DATA REPORT

Report Date: November 17, 2011

Narrative:

This report provides test results and documentation for the Solid Sampling examination of the following containers using INST-OI-75:

10424093; 10424091; 10423965; 10424108; 10423940.

No Nonconformance Reports are associated with this Batch Data Report.

Position	Signature	Date
AMWTP Site Project Manager		11/21/11

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SSG11-00008

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Batch Report Cover Sheet
Core Sample Analysis Reports
Chain(s) of Custody
Refrigerator Temperature Logsheet (Form-1585) and/or Characterization Round Sheet (Form-1602)
Analytical Balance Calibration Check Sheet (Form-1215)
Solid Waste Sampling Checklist(s) (Form-1599)
Independent Technical Reviewer Small Container Sampling Checklist(s) (Form-1858)
Site Project Manager Small Container Sampling Checklist(s) (Form-1859)
Batch Data Report Supplemental Comment Form (Form-1491)

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 17-Nov-2011

Time: 13:38

Batch Type Solid Sampling Grab

Batch Report No. SSG11-00008

Batch Id SSG11-00008

Open Date 31-OCT-11 08:54:09

Close Date 06-NOV-11 11:55:08

Batch Status CLOSED

Test Facility Idaho AMWTP

Equipment Id Z-250-801 634-Coring

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10424093	AE-254	637	31-OCT-11 10:27:04	Original	P	MICHAEL KREMIN
10424093	AE-254	638	31-OCT-11 10:27:00	Replicate / Duplicate	P	MICHAEL KREMIN
10424091	AE-254	639	02-NOV-11 09:51:00	Original	P	DAVEY SUMNERS
10423965	AE-254	640	03-NOV-11 08:46:00	Original	P	DAVEY SUMNERS
10424108	AE-254	641	04-NOV-11 08:35:00	Original	P	DAVEY SUMNERS
10423940	AE-254	642	05-NOV-11 13:27:23	Original	P	ABEL ESCOBAR

**********Batch Comments**********

Written By	Date	Comment
NINGLE	06-NOV-11 11:55:08	WMF-634 Coring
NINGLE	06-NOV-11 11:55:08	Waste Matrix Code: S3110
NINGLE	06-NOV-11 11:55:08	.
JSIMONSON	10-NOV-11 07:58:35	This batch was validated per MP-TRUW-8.8.
JSIMONSON	10-NOV-11 08:09:14	Rework: Container 10424093; analysis (event ID) 637, sample IDs 10426290. 10426291, and 10426292; and analysis (event ID) 638, sample IDs 10426302, 10426303, and 10426304. Per INST-OI-75, Rev 8, FC-1, Operator needs to enter the appropriate sequence number (e. g. 1-3) for each trip blank in the Grab Sample comments. Please review and revise as necessary.
JSIMONSON	10-NOV-11 08:09:40	Minor rework required on Forms-1599, Solid Waste Sampling Checklist(s).
JSIMONSON	10-NOV-11 08:15:40	Demoted to Operations for rework.
JSIMONSON	17-NOV-11 13:34:37	Rework was performed completely and satisfactorily by qualified operators.
JSIMONSON	17-NOV-11 13:35:10	Level I validation complete.
JSIMONSON	17-NOV-11 13:37:40	Promoted to SPM.

600031

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 17-Nov-2011

Time: 13:38

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2129224	NINGLE	06-NOV-2011 11:55:09	.
2130560	JSIMONSON	10-NOV-2011 08:15:40	Demoted to Operations for rework.
2132970	JSIMONSON	17-NOV-2011 13:37:40	Promoted to SPM.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Package Sampled

Event ID 637
Event Date 31-OCT-11 10:27:04
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 4
Random Package Selected for Sample 1

Matrix Physical Description WMC S3110 semi moist absorbant like material tan in color with blue and white flakes through out also has purple and white rock like material through out the sample

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126165	MKREMIN	31-OCT-2011 10:34:09	STEP4.2.3.7
2126175	MKREMIN	31-OCT-2011 10:55:22	step4.2.3.15.4

Grab Sample

Event ID 637
Sample Date 31-OCT-11 11:02:03
Taken By MICHAEL KREMIN
Sample Requested PVOC
Randomly Selected Quadrant 1

Sample ID 10426284
Weight 2.70 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Sampled 1
Quadrant Comment

Grab Sample Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126176	MKREMIN	31-OCT-2011 11:04:20	4.2.3.21.12
2126343	MKREMIN	31-OCT-2011 15:31:32	
2126361	MKREMIN	31-OCT-2011 15:50:09	

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637 | Sample ID 10426285 | Weight 2.91 gms
Sample Date 31-OCT-11 11:04:26 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC | Quadrant Comment
Randomly Selected Quadrant 1 | Quadrant Sampled 1
Grab Sample Comment

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126177	MKREMIN	31-OCT-2011 11:05:52	4.2.3.21.12

Grab Sample

Event ID 637 | Sample ID 10426286 | Weight 2.90 gms
Sample Date 31-OCT-11 11:06:41 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE | Quadrant Comment
Randomly Selected Quadrant 1 | Quadrant Sampled 1
Grab Sample Comment

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126178	MKREMIN	31-OCT-2011 11:07:42	4.2.3.21.12

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637
Sample ID 10426287
Weight 2.94 gms
Sample Date 31-OCT-11 11:08:48
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Quadrant Comment
Randomly Selected Quadrant 1
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126179	MKREMIN	31-OCT-2011 11:08:48	4.2.3.21.12

Grab Sample

Event ID 637
Sample ID 10426288
Weight 39.00 gms
Sample Date 31-OCT-11 11:10:19
Volume 125 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Quadrant Comment
Randomly Selected Quadrant 1
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126185	MKREMIN	31-OCT-2011 11:12:37	4.2.3.21.12

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 17-Nov-2011

Time: 12:46

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637 | Sample ID 10426290 | Weight 2.53 gms

Sample Date 31-OCT-11 11:22:18 | Volume 20 ml.

Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK | Quadrant Comment

Randomly Selected Quadrant | Quadrant Sampled 0

Grab Sample Comment
trip blank 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126198	MKREMIN	31-OCT-2011 11:24:55	4.5.27

Grab Sample

Event ID 637 | Sample ID 10426291 | Weight 2.76 gms

Sample Date 31-OCT-11 11:25:06 | Volume 20 ml.

Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK | Quadrant Comment

Randomly Selected Quadrant | Quadrant Sampled 0

Grab Sample Comment
trip blank 2

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126200	MKREMIN	31-OCT-2011 11:26:01	4.5.27

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AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637
Sample ID 10426290
Weight 2.53 gms
Sample Date 31-OCT-11 11:22:18
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126198	MKREMIN	31-OCT-2011 11:24:55	4.5.27

Grab Sample

Event ID 637
Sample ID 10426291
Weight 2.76 gms
Sample Date 31-OCT-11 11:25:06
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126200	MKREMIN	31-OCT-2011 11:26:01	4.5.27

SUPERCEDED

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637
Sample ID 10426292
Weight 2.72 gms
Sample Date 31-OCT-11 11:26:06
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0

Grab Sample Comment
trip blank 3

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126201	MKREMIN	31-OCT-2011 11:26:57	2.5.27
2132391	MKREMIN	15-NOV-2011 11:24:46	.
2132392	NINGLE	15-NOV-2011 11:24:48	.

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 637

Sample ID 10426292

Weight 2.72 gms

Sample Date 31-OCT-11 11:26:06

Volume 20 ml.

Taken By MICHAEL KREMIN

Custody Seal Attached Y

Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Quadrant Comment

Randomly Selected Quadrant

Quadrant Sampled 0

Grab Sample Comment
trip blank

Cancel Date

By

Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126201	MKREMIN	31-OCT-2011 11:26:57	2.5.27

SUPERCEDED

000010

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Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 06-Nov-2011
Time: 11:57

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Package Sampled

Event ID 638
Event Date 31-OCT-11 10:27:00
Taken By MICHAEL KREMIN
Sample Type Field Duplicate

Equipment Procedure ID INST-OI-75 Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 4
Random Package Selected for Sample 1

Matrix Physical Description WMC S3110 semi moist absorbant like material tan in color with blue and white flakes through out also has purple and white rock like material through out the sample

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126191	MKREMIN	31-OCT-2011 11:17:23	4.2.3.23.6

Grab Sample

Event ID 638
Sample Date 31-OCT-11 11:18:12
Taken By MICHAEL KREMIN
Sample Requested PVOC
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment

Sample ID 10426293
Weight 2.67 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126209	MKREMIN	31-OCT-2011 11:46:04	
2126347	MKREMIN	31-OCT-2011 15:33:13	
2126362	MKREMIN	31-OCT-2011 15:51:10	

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638 | Sample ID 10426294 | Weight 2.84 gms
Sample Date 31-OCT-11 11:20:18 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 1
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126210	MKREMIN	31-OCT-2011 11:47:21	.

Grab Sample

Event ID 638 | Sample ID 10426295 | Weight 2.92 gms
Sample Date 31-OCT-11 11:21:28 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 1
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126211	MKREMIN	31-OCT-2011 11:48:22	.

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426296
Weight 2.63 gms
Sample Date 31-OCT-11 11:22:27
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126215	MKREMIN	31-OCT-2011 11:49:40	,

Grab Sample

Event ID 638
Sample ID 10426297
Weight 2.82 gms
Sample Date 31-OCT-11 11:23:45
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126216	MKREMIN	31-OCT-2011 11:50:36	.

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426298
Weight 2.68 gms
Sample Date 31-OCT-11 11:24:40
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126217	MKREMIN	31-OCT-2011 11:51:28	

Grab Sample

Event ID 638
Sample ID 10426299
Weight 2.85 gms
Sample Date 31-OCT-11 11:25:38
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126218	MKREMIN	31-OCT-2011 11:52:27	

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426300
Weight 2.65 gms
Sample Date 31-OCT-11 11:26:38
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126219	MKREMIN	31-OCT-2011 11:53:32	,

Grab Sample

Event ID 638
Sample ID 10426301
Weight 38.28 gms
Sample Date 31-OCT-11 11:29:39
Volume 125 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126220	MKREMIN	31-OCT-2011 11:54:55	

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426302
Weight 2.73 gms
Sample Date 31-OCT-11 12:04:37
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank 1
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126223	MKREMIN	31-OCT-2011 12:05:27	
2132393	MKREMIN	15-NOV-2011 11:26:18	
2132394	NINGLE	15-NOV-2011 11:26:19	

Grab Sample

Event ID 638
Sample ID 10426303
Weight 2.78 gms
Sample Date 31-OCT-11 12:05:47
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank 2
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126224	MKREMIN	31-OCT-2011 12:06:27	

600016

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426302
Weight 2.73 gms
Sample Date 31-OCT-11 12:04:37
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126223	MKREMIN	31-OCT-2011 12:05:27	

Grab Sample

Event ID 638
Sample ID 10426303
Weight 2.78 gms
Sample Date 31-OCT-11 12:05:47
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126224	MKREMIN	31-OCT-2011 12:06:27	

SUPERCEDED

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426304
Weight 2.85 gms
Sample Date 31-OCT-11 12:06:35
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
trip blank 3
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2126225	MKREMIN	31-OCT-2011 12:07:09	

******End of Core Analysis Report******

000017

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424093	AE-254	S3110	425

Grab Sample

Event ID 638
Sample ID 10426304
Weight 2.85 gms
Sample Date 31-OCT-11 12:06:35
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0

Grab Sample Comment
trip blank

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2126225	MKREMIN	31-OCT-2011 12:07:09	

SUPERCEDED

000017

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424091	AE-254	S3110	425

Package Sampled

Event ID 639
Event Date 02-NOV-11 09:51:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75
Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 28
Random Package Selected for Sample 4

Matrix Physical Description WMC 3110. Waste is light gray to white, granular and dry.

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127079	DSUMNERS	02-NOV-2011 09:52:36	saving data
2127094	DSUMNERS	02-NOV-2011 10:13:18	saving data

Grab Sample

Event ID 639
Sample Date 02-NOV-11 09:55:38
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 1

Sample ID 10426420
Quadrant Sampled 1

Weight 2.89 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Quadrant Comment

Grab Sample Comment
pvoc

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	1D031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127081	DSUMNERS	02-NOV-2011 09:59:26	saving data
2127093	DSUMNERS	02-NOV-2011 10:09:44	saving data
2127180	DSUMNERS	02-NOV-2011 12:43:32	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424091	AE-254	S3110	425

Grab Sample

Event ID 639 | Sample ID 10426421 | Weight 2.82 gms
Sample Date 02-NOV-11 09:56:41 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127084	DSUMNERS	02-NOV-2011 10:00:43	saving data

Grab Sample

Event ID 639 | Sample ID 10426422 | Weight 2.62 gms
Sample Date 02-NOV-11 09:57:08 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
spare 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127086	DSUMNERS	02-NOV-2011 10:02:39	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 06-Nov-2011
Time: 11:58

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424091	AE-254	S3110	425

Grab Sample

Event ID 639 Sample ID 10426423 Weight 2.86 gms
Sample Date 02-NOV-11 09:58:01 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 Quadrant Sampled 1 Quadrant Comment
Grab Sample Comment
spare 2
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127090	DSUMNERS	02-NOV-2011 10:04:44	saving data

Grab Sample

Event ID 639 Sample ID 10426424 Weight 36.96 gms
Sample Date 02-NOV-11 10:03:00 Volume 125 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 1 Quadrant Sampled 1 Quadrant Comment
Grab Sample Comment
svoc/metals
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127092	DSUMNERS	02-NOV-2011 10:06:42	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424091	AE-254	S3110	425

Grab Sample

Event ID 639 Sample ID 10426426 Weight 2.65 gms
Sample Date 02-NOV-11 12:18:30 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
Trip Blank 1
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127171	DSUMNERS	02-NOV-2011 12:24:57	saving data

Grab Sample

Event ID 639 Sample ID 10426427 Weight 2.57 gms
Sample Date 02-NOV-11 12:25:11 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
Trip Blank 2
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID03I-1088	05_12321

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127174	DSUMNERS	02-NOV-2011 12:27:07	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424091	AE-254	S3110	425

Grab Sample

Event ID 639 **Sample ID** 10426428 **Weight** 2.70 gms

Sample Date 02-NOV-11 12:27:31 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant **Quadrant Sampled** 0 **Quadrant Comment**

Grab Sample Comment
Trip Blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J008615 SPAT	ID031-1088	05_12321

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2127176	DSUMNERS	02-NOV-2011 12:28:39	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423965	AE-254	S3110	425

Package Sampled

Event ID 640
Event Date 03-NOV-11 08:46:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 28
Random Package Selected for Sample 12

Matrix Physical Description WMC- 3110. Waste is light gray and white, moist and granular in texture.

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127542	DSUMNERS	03-NOV-2011 08:07:26	saving data
2127592	DSUMNERS	03-NOV-2011 09:27:55	saving data

Grab Sample

Event ID 640
Sample Date 03-NOV-11 08:49:28
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 2
Quadrant Sampled 2

Sample ID 10426475
Weight 2.74 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Quadrant Comment

Grab Sample Comment
PVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127559	DSUMNERS	03-NOV-2011 08:50:25	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423965	AE-254	S3110	425

Grab Sample

Event ID 640 Sample ID 10426476 Weight 2.70 gms
Sample Date 03-NOV-11 08:51:33 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 Quadrant Sampled 2 Quadrant Comment
Grab Sample Comment
NHVOC
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2127560	DSUMNERS	03-NOV-2011 08:52:02	saving data

Grab Sample

Event ID 640 Sample ID 10426477 Weight 2.98 gms
Sample Date 03-NOV-11 08:53:12 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 2 Quadrant Sampled 2 Quadrant Comment
Grab Sample Comment
Spare 1
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2127561	DSUMNERS	03-NOV-2011 08:54:19	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423965	AE-254	S3110	425

Grab Sample

Event ID 640 | Sample ID 10426478 | Weight 2.71 gms
Sample Date 03-NOV-11 08:54:28 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2127562	DSUMNERS	03-NOV-2011 08:55:41	saving data

Grab Sample

Event ID 640 | Sample ID 10426479 | Weight 37.40 gms
Sample Date 03-NOV-11 08:58:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: SVOC/METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2127564	DSUMNERS	03-NOV-2011 08:59:23	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423965	AE-254	S3110	425

Grab Sample

Event ID 640 | Sample ID 10426480 | Weight 2.68 gms
Sample Date 03-NOV-11 10:32:48 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127637	DSUMNERS	03-NOV-2011 10:33:52	saving data

Grab Sample

Event ID 640 | Sample ID 10426481 | Weight 2.60 gms
Sample Date 03-NOV-11 10:34:05 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127640	DSUMNERS	03-NOV-2011 10:35:52	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423965	AE-254	S3110	425

Grab Sample

Event ID 640 **Sample ID** 10426482 **Weight** 2.66 gms

Sample Date 03-NOV-11 10:36:11 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Quadrant Comment

Randomly Selected Quadrant **Quadrant Sampled** 0

Grab Sample Comment
Trip Blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2127641	DSUMNERS	03-NOV-2011 10:37:20	saving data
2127654	DSUMNERS	03-NOV-2011 10:55:20	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424108	AE-254	S3110	425

Package Sampled

Event ID 641
Event Date 04-NOV-11 08:35:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 28
Random Package Selected for Sample 28

Matrix Physical Description WMC 3110, Light gray to white,granular and moist. clumpable

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128115	DSUMNERS	04-NOV-2011 08:03:50	saving data
2128158	DSUMNERS	04-NOV-2011 08:57:36	saving data

Grab Sample

Event ID 641
Sample Date 04-NOV-11 08:39:00
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 3
Quadrant Sampled 3
Grab Sample Comment PVOC

Sample ID 10426592
Weight 2.64 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128134	DSUMNERS	04-NOV-2011 08:40:23	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424108	AE-254	S3110	425

Grab Sample

Event ID 641 | Sample ID 10426593 | Weight 2.96 gms
Sample Date 04-NOV-11 08:41:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 3 | Quadrant Sampled 3 | Quadrant Comment

Grab Sample Comment
NHVOC

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128148	DSUMNERS	04-NOV-2011 08:41:58	saving data

Grab Sample

Event ID 641 | Sample ID 10426594 | Weight 2.86 gms
Sample Date 04-NOV-11 08:43:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 3 | Quadrant Sampled 3 | Quadrant Comment

Grab Sample Comment
Spare 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128151	DSUMNERS	04-NOV-2011 08:44:09	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424108	AE-254	S3110	425

Grab Sample

Event ID 641 | Sample ID 10426595 | Weight 2.94 gms
Sample Date 04-NOV-11 08:45:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 3 | Quadrant Sampled 3 | Quadrant Comment
Grab Sample Comment: Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128154	DSUMNERS	04-NOV-2011 08:45:53	saving data

Grab Sample

Event ID 641 | Sample ID 10426596 | Weight 38.83 gms
Sample Date 04-NOV-11 08:49:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 3 | Quadrant Sampled 3 | Quadrant Comment
Grab Sample Comment: SVOC/METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128155	DSUMNERS	04-NOV-2011 08:50:40	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424108	AE-254	S3110	425

Grab Sample

Event ID 641 | Sample ID 10426597 | Weight 2.80 gms
Sample Date 04-NOV-11 09:14:57 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128175	DSUMNERS	04-NOV-2011 09:15:53	saving data

Grab Sample

Event ID 641 | Sample ID 10426598 | Weight 2.90 gms
Sample Date 04-NOV-11 09:16:08 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128178	DSUMNERS	04-NOV-2011 09:17:02	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 06-Nov-2011
Time: 12:00

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10424108	AE-254	S3110	425

Grab Sample

Event ID 641 **Sample ID** 10426599 **Weight** 2.64 gms

Sample Date 04-NOV-11 09:17:13 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant **Quadrant Sampled** 0 **Quadrant Comment**

Grab Sample Comment
Trip Blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128179	DSUMNERS	04-NOV-2011 09:18:02	saving data
2128265	DSUMNERS	04-NOV-2011 10:55:46	saving data

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423940	AE-254	S3110	425

Package Sampled

Event ID 642
Event Date 05-NOV-11 13:27:23
Taken By ABEL ESCOBAR
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 8 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 26
Random Package Selected for Sample 10

Matrix Physical Description WMC S3110, Moist absorbent like consistency, granular grey/white in color.

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128733	AESCOBAR	05-NOV-2011 11:49:24	.
2128783	AESCOBAR	05-NOV-2011 13:30:28	.
2128838	AESCOBAR	05-NOV-2011 14:10:07	.

Grab Sample

Event ID 642
Sample Date 05-NOV-11 13:46:25
Taken By ABEL ESCOBAR
Sample Requested PVOC
Randomly Selected Quadrant 1
Grab Sample Comment PVOC

Sample ID 10426670
Weight 2.77 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Sampled 1
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128804	AESCOBAR	05-NOV-2011 13:49:49	.
2128897	AESCOBAR	05-NOV-2011 16:01:05	.
2128920	AESCOBAR	05-NOV-2011 16:51:24	.

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423940	AE-254	S3110	425

Grab Sample

Event ID 642
Sample ID 10426693
Weight 2.99 gms
Sample Date 05-NOV-11 13:48:33
Volume 20 ml.
Taken By ABEL ESCOBAR
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant 1
Quadrant Sampled 1
Grab Sample Comment
NHVOC
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128821	AESCOBAR	05-NOV-2011 13:56:14	

Grab Sample

Event ID 642
Sample ID 10426694
Weight 2.89 gms
Sample Date 05-NOV-11 13:50:48
Volume 20 ml.
Taken By ABEL ESCOBAR
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Quadrant Comment
Randomly Selected Quadrant 1
Quadrant Sampled 1
Grab Sample Comment
SPARE 1
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128825	AESCOBAR	05-NOV-2011 13:59:21	

AMWTP
Advanced Mixed Waste Treatment Project

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423940	AE-254	S3110	425

Grab Sample

Event ID 642 | Sample ID 10426695 | Weight 2.72 gms
Sample Date 05-NOV-11 13:52:03 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment

Grab Sample Comment
SPARE 2

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128828	AESCOBAR	05-NOV-2011 14:01:42	.

Grab Sample

Event ID 642 | Sample ID 10426696 | Weight 39.26 gms
Sample Date 05-NOV-11 13:57:14 | Volume 125 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment

Grab Sample Comment
SVOC METALS

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128830	AESCOBAR	05-NOV-2011 14:03:38	.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 06-Nov-2011
Time: 12:00

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423940	AE-254	S3110	425

Grab Sample

Event ID 642 | Sample ID 10426710 | Weight 2.61 gms
Sample Date 05-NOV-11 14:30:23 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: TRIP BLANK 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128880	AESCOBAR	05-NOV-2011 14:49:34	

Grab Sample

Event ID 642 | Sample ID 10426711 | Weight 2.87 gms
Sample Date 05-NOV-11 14:31:12 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: TRIP BLANK 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2128883	AESCOBAR	05-NOV-2011 14:51:25	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 06-Nov-2011
Time: 12:00

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG11-00008	10423940	AE-254	S3110	425

Grab Sample

Event ID 642 **Sample ID** 10426712 **Weight** 2.93 gms

Sample Date 05-NOV-11 14:33:41 **Volume** 20 ml.

Taken By ABEL ESCOBAR **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant **Quadrant Sampled** 0 **Quadrant Comment**

Grab Sample Comment
TRIP BLANK 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2128884	AESCOBAR	05-NOV-2011 14:53:12	.

******End of Core Analysis Report******

ALD LOG # 1111031

AMWTP

Chain Of Custody

Print Date: 03-Nov-2011
Print Time: 11:22
COC No.: 0000521
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10424093	AE-254	10426284	31-Oct-2011	11:02	20 / ml	2.70 / gms	PVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426285	31-Oct-2011	11:04	20 / ml	2.91 / gms	NHVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426286	31-Oct-2011	11:06	20 / ml	2.90 / gms	SPARE	Michael Kremin		
SSG11-00008	10424093	AE-254	10426287	31-Oct-2011	11:08	20 / ml	2.94 / gms	SPARE	Michael Kremin		
SSG11-00008	10424093	AE-254	10426288	31-Oct-2011	11:10	125 / ml	39.00 / gms	SVOC, METALS	Michael Kremin		
SSG11-00008	10424093	AE-254	10426290	31-Oct-2011	11:22	20 / ml	2.53 / gms	TRIP BLANK	Michael Kremin	trip blank	
SSG11-00008	10424093	AE-254	10426291	31-Oct-2011	11:25	20 / ml	2.76 / gms	TRIP BLANK	Michael Kremin	trip blank	
SSG11-00008	10424093	AE-254	10426292	31-Oct-2011	11:26	20 / ml	2.72 / gms	TRIP BLANK	Michael Kremin	trip blank	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	31-OCT-11 16:49:17	
Received By	Angel Aguinaga	Electronically signed in WTS	31-OCT-11 16:49:17	
Relinquished By	Angel Aguinaga		11-3-11 11:25 AM	
Received By	GARN DYE		11-3-11 11:28 AM	
Relinquished By	GARN DYE		11-3-11 1200 PM	BOL# AMWTP000069 Hand Delivered
Received By	BILL STRONG		11-03-11 1225	Seal # 077687 11/3/11
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD LOG #
1111031

AMWTP

Chain Of Custody

Print Date: 03-Nov-2011
Print Time: 11:28
COC No.: 0000522
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10424093	AE-254	10426293	31-Oct-2011	11:18	20 / ml	2.67 / gms	PVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426294	31-Oct-2011	11:20	20 / ml	2.84 / gms	PVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426295	31-Oct-2011	11:21	20 / ml	2.92 / gms	PVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426296	31-Oct-2011	11:22	20 / ml	2.63 / gms	NHVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426297	31-Oct-2011	11:23	20 / ml	2.82 / gms	NHVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426298	31-Oct-2011	11:24	20 / ml	2.68 / gms	NHVOC	Michael Kremin		
SSG11-00008	10424093	AE-254	10426299	31-Oct-2011	11:25	20 / ml	2.85 / gms	SPARE	Michael Kremin		
SSG11-00008	10424093	AE-254	10426300	31-Oct-2011	11:26	20 / ml	2.65 / gms	SPARE	Michael Kremin		
SSG11-00008	10424093	AE-254	10426301	31-Oct-2011	11:29	125 / ml	38.28 / gms	SVOC, METALS	Michael Kremin		
SSG11-00008	10424093	AE-254	10426302	31-Oct-2011	12:04	20 / ml	2.73 / gms	TRIP BLANK	Michael Kremin	trip blank	
SSG11-00008	10424093	AE-254	10426303	31-Oct-2011	12:05	20 / ml	2.78 / gms	TRIP BLANK	Michael Kremin	trip blank	
SSG11-00008	10424093	AE-254	10426304	31-Oct-2011	12:06	20 / ml	2.85 / gms	TRIP BLANK	Michael Kremin	trip blank	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	31-OCT-11 16:48:03	
Received By	Angel Aguinaga	Electronically signed in WTS	31-OCT-11 16:48:03	
Relinquished By	Angel Aguinaga		11-3-11 11:37 AM	
Received By	GARN DYE		11-3-11 11:37AM	
Relinquished By	GARN Dye		11-3-11 1155 AM	BOL#AMWTP000659 Hand Deliver Seal #077690 11/3/11
Received By	Bill Strong		11-03-11 1225	
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD LOG # 1111031

AMWTP

Chain Of Custody

Print Date: 03-Nov-2011
Print Time: 11:17
COC No.: 0000523
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10424091	AE-254	10426420	02-Nov-2011	09:55	20 / ml	2.89 / gms	PVOC	Davey Sumners	pvoc	
SSG11-00008	10424091	AE-254	10426421	02-Nov-2011	09:56	20 / ml	2.82 / gms	NHVOC	Davey Sumners		
SSG11-00008	10424091	AE-254	10426422	02-Nov-2011	09:57	20 / ml	2.62 / gms	SPARE	Davey Sumners	spare 1	
SSG11-00008	10424091	AE-254	10426423	02-Nov-2011	09:58	20 / ml	2.86 / gms	SPARE	Davey Sumners	spare 2	
SSG11-00008	10424091	AE-254	10426424	02-Nov-2011	10:03	125 / ml	36.96 / gms	SVOC, METALS	Davey Sumners	svoc/metals	
SSG11-00008	10424091	AE-254	10426426	02-Nov-2011	12:18	20 / ml	2.65 / gms	TRIP BLANK	Davey Sumners	Trip Blank 1	
SSG11-00008	10424091	AE-254	10426427	02-Nov-2011	12:25	20 / ml	2.57 / gms	TRIP BLANK	Davey Sumners	Trip Blank 2	
SSG11-00008	10424091	AE-254	10426428	02-Nov-2011	12:27	20 / ml	2.70 / gms	TRIP BLANK	Davey Sumners	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		11/03/11 1120	
Received By	GARY DYE		11/03/11 1120	
Relinquished By	GARY DYE		11/3/11 1205	BOL# AMWTP000069 Hand Delivered
Received By	Bill Strong		11-03-11 1225	Seal# 077689 11-3-11
Relinquished By				
Received By				
Relinquished By				
Received By				

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1111071

AMWTP

Chain Of Custody

Print Date: 07-Nov-2011
Print Time: 13:11
COC No.: 0000524
Page 1 of 1

Shipping Location: AMWTP **Analytical Location:** Analytical Chemistry Lab **Sampling Location:** WMF-634 Coring Glove Box **Sample Matrix:** Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10423965	AE-254	10426475	03-Nov-2011	08:49	20 / ml	2.74 / gms	PVOC	Davey Sumners	PVOC	
SSG11-00008	10423965	AE-254	10426476	03-Nov-2011	08:51	20 / ml	2.70 / gms	NHVOC	Davey Sumners	NHVOC	
SSG11-00008	10423965	AE-254	10426477	03-Nov-2011	08:53	20 / ml	2.98 / gms	SPARE	Davey Sumners	Spare 1	
SSG11-00008	10423965	AE-254	10426478	03-Nov-2011	08:54	20 / ml	2.71 / gms	SPARE	Davey Sumners	Spare 2	
SSG11-00008	10423965	AE-254	10426479	03-Nov-2011	08:58	125 / ml	37.40 / gms	SVOC, METALS	Davey Sumners	SVOC/METALS	
SSG11-00008	10423965	AE-254	10426480	03-Nov-2011	10:32	20 / ml	2.68 / gms	TRIP BLANK	Davey Sumners	Trip Blank 1	
SSG11-00008	10423965	AE-254	10426481	03-Nov-2011	10:34	20 / ml	2.60 / gms	TRIP BLANK	Davey Sumners	Trip Blank 2	
SSG11-00008	10423965	AE-254	10426482	03-Nov-2011	10:36	20 / ml	2.66 / gms	TRIP BLANK	Davey Sumners	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	04-NOV-11 11:58:55	
Received By	Angel Aguinaga	Electronically signed in WTS	04-NOV-11 11:58:55	
Relinquished By	Angel Aguinaga		11-7-11 13:17pm	BOL # AMWTP000661 Hand Carried Seal: 077658
Received By	Judy Pederson-Campbell		11-7-2011 13:17	11-7-11
Relinquished By	Judy Pederson-Campbell		11-7-11 14:09	
Received By	Bill Strong		11-07-11 1430	
Relinquished By				
Received By				
Relinquished By				
Received By				

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000041

AMWTP

Print Date: 07-Nov-2011
Print Time: 13:18
COC No.: 0000525
Page 1 of 1

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Chain Of Custody

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10424108	AE-254	10426592	04-Nov-2011	08:39	20 / ml	2.64 / gms	PVOC	Davey Sumners	PVOC	
SSG11-00008	10424108	AE-254	10426593	04-Nov-2011	08:41	20 / ml	2.96 / gms	NHVOC	Davey Sumners	NHVOC	
SSG11-00008	10424108	AE-254	10426594	04-Nov-2011	08:43	20 / ml	2.86 / gms	SPARE	Davey Sumners	Spare 1	
SSG11-00008	10424108	AE-254	10426595	04-Nov-2011	08:45	20 / ml	2.94 / gms	SPARE	Davey Sumners	Spare 2	
SSG11-00008	10424108	AE-254	10426596	04-Nov-2011	08:49	125 / ml	38.83 / gms	SVOC, METALS	Davey Sumners	SVOC/METALS	
SSG11-00008	10424108	AE-254	10426597	04-Nov-2011	09:14	20 / ml	2.80 / gms	TRIP BLANK	Davey Sumners	Trip Blank 1	
SSG11-00008	10424108	AE-254	10426598	04-Nov-2011	09:16	20 / ml	2.90 / gms	TRIP BLANK	Davey Sumners	Trip Blank 2	
SSG11-00008	10424108	AE-254	10426599	04-Nov-2011	09:17	20 / ml	2.64 / gms	TRIP BLANK	Davey Sumners	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	04-NOV-11 11:59:48	
Received By	Angel Aguinaga	Electronically signed in WTS	04-NOV-11 11:59:48	
Relinquished By	Angel Aguinaga		11-7-11 13:23 pm	
Received By	Judy Pedersen-Campbell		11-7-11 13:23	
Relinquished By	Judy Pedersen-Campbell		11-7-11 1408	BOL # AMWTP000661 Hand Carried Sealed ~~077667~~ 077667
Received By	Bill Strong		11-07-11 1430	
Relinquished By				
Received By				
Relinquished By				
Received By				

COPY OF IN-PROCESS RECORD

000042

1111071

AMWTP

Chain Of Custody

Print Date: 07-Nov-2011
Print Time: 13:06
COC No.: 0000526
Page 1 of 1

Shipping Location: AMWTP **Analytical Location:** Analytical Chemistry Lab **Sampling Location:** WMF-634 Coring Glove Box **Sample Matrix:** Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG11-00008	10423940	AE-254	10426670	05-Nov-2011	13:46	20 / ml	2.77 / gms	PVOC	Abel Escobar	PVOC	
SSG11-00008	10423940	AE-254	10426693	05-Nov-2011	13:48	20 / ml	2.99 / gms	NHVOC	Abel Escobar	NHVOC	
SSG11-00008	10423940	AE-254	10426694	05-Nov-2011	13:50	20 / ml	2.89 / gms	SPARE	Abel Escobar	SPARE 1	
SSG11-00008	10423940	AE-254	10426695	05-Nov-2011	13:52	20 / ml	2.72 / gms	SPARE	Abel Escobar	SPARE 2	
SSG11-00008	10423940	AE-254	10426696	05-Nov-2011	13:57	125 / ml	39.26 / gms	SVOC, METALS	Abel Escobar	SVOC METALS	
SSG11-00008	10423940	AE-254	10426710	05-Nov-2011	14:30	20 / ml	2.61 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 1	
SSG11-00008	10423940	AE-254	10426711	05-Nov-2011	14:31	20 / ml	2.87 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 2	
SSG11-00008	10423940	AE-254	10426712	05-Nov-2011	14:33	20 / ml	2.93 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Abel Escobar		11/07/11 1310	
Received By	Judy Pedersen-Campbell		11/07/2011 1310	
Relinquished By	Judy Pedersen Campbell		11/07/11 1409	BOL # AMWTP000661 Hand Carried seal 077635 11-7-11
Received By	Bill Strong		11-07-11 1430	
Relinquished By				
Received By				
Relinquished By				
Received By				

COPY OF IN-PROCESS RECORD

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AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
Abel Escobar	09/12/11	0735	3.6 °C	3.7 °C	3.4 °C	Samples in fridge
Nick Ingle	09/12/11	1820	3.4°C	3.6°C	3.3°C	Samples in Fridge
Abel Escobar	09/13/11	0730	3.2	3.4 °C	2.8 °C	Samples in fridge
Abel Escobar	~~09/23/11~~ 10/12/11	1600	3.6°C	4.0 °C	3.5°C	No Samples in fridge
mike Krevnick	10/30/11	0732	3.8°C	3.9°C	3.5°C	NO SAMPLES IN Fridge
Nick Ingle	10/31/11	0749	3.9°C	4.0°C	3.5°C	No Samples in Fridge
mike Krevnick	10/31/11	1500	3.6°C	4.0°C	3.5°C	SAMPLES IN FRIDGE
DAVE SUMMERS	11/01/11	0730	3.6°C	3.8°C	3.5°C	Samples in Refrig
DAVE SUMMERS	11/01/11	1830	3.5°C	3.7°C	3.4°C	Samples in Refrig
Reese Evans	11/02/11	0730	3.6°C	3.7°C	3.4°C	Samples in Fridge
DAVE SUMMERS	11/02/11	1830	3.5°C	3.7°C	3.4°C	Samples in Refrig
Reese Evans	11/03/11	0700	3.6°C	3.7°C	3.5°C	Samples in Fridge
DAVE SUMMERS	11/03/11	1830	3.5°C	3.8°C	3.4°C	Samples in Refrig
DAVE SUMMERS	11/04/11	0700	3.9°C	3.9°C	3.4°C	Samples in Refrig
DAVE SUMMERS	11/04/11	1830	3.5°C	3.9°C	3.3°C	Samples in Refrig
Nick Ingle	11/05/11	0800	3.8°C	3.9°C	3.5°C	Samples in Fridge
Nick Ingle	11/05/11	1756	3.4°C	3.9°C	3.3°C	Samples in Fridge
Abel Escobar	11/06/11	0730	3.8°C	3.8°C	3.8°C	Samples in fridge

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 **Scale Calibration Expiration Date:** 10/30/2012

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
10/30/11	1310	MTE-158	30.00 +/- .01g	30.00g	Pass	
10/30/11	1311	MTE-130	50.00 +/- .01g	50.01g	Pass	
10/30/11	1312	MTE-158 & MTE-130	80.00 +/- .01g	80.01g	Pass	
10/31/11	0846	MTE-158	30.00 +/- .01g	30.00 g	Pass	
10/31/11	0841	MTE-130	50.00 +/- .01g	50.00 g	Pass	
10/31/11	0842	MTE-158 & 130	80.00 +/- .01g	80.00 g	Pass	
11/01/11	1119	MTE-158	30.00 +/- .01g	30.00g	PASS	
11/01/11	1119	MTE-130	50.00 +/- .01g	50.00g	PASS	
11/01/11	1119	MTE-158 + 130	80.00 +/- .01g	80.00 g	PASS	
11/02/11	0800	MTE-158	30.00 +/- .01g	30.00 g	PASS	
11/02/11	0800	MTE-130	50.00 +/- .01g	50.00 g	PASS	
11/02/11	0800	MTE-158 + 130	80.00 +/- .01g	80.00 g	PASS	
11/03/11	0731	MTE-158	30.00 +/- .01g	30.00 g	PASS	
11/03/11	0731	MTE-130	50.00 +/- .01g	50.00 g	PASS	
11/03/11	0731	MTE-158 & 130	80.00 +/- .01g	80.00 g	PASS	
11/04	0719	MTE-158	30.00 +/- .01g	30.00 g	PASS	
11/04	0719	MTE-130	50.00 +/- .01g	50.00 g	PASS	
11/04	0719	MTE-158 & 130	80.00 +/- .01g	80.00 g	PASS	
11/05	0902	MTE-158	30.00 +/- .01g	30.00g	Pass	
11/05	0903	MTE-130	50.00 +/- .01g	50.00g	Pass	
11/05	0904	MTE-158 + MTE-130	80.00 +/- .01g	80.00g	Pass	

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AMWTP Advanced Mixed Waste Treatment Project	Analytical Balance Calibration Check Sheet	Form Rev. 4 Effective: 04/08/08 Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09-01-12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
09/10/11	1043	MTE-179	50.00 +/- .01g	50.00 G	PASS	
09/10/11	1044	MTE-161	150.00 +/- .01g	150.00 G	PASS	
09/10/11	1045	MTE-314	500.00 +/- .01g	500.00 G	PASS	
09/11/11	0916	MTE-179	50.00 +/- .01g	50.00g	Pass	
09/11/11	0917	MTE-161	150.00 +/- .01g	150.00g	Pass	
09/11/11	0918	MTE-314	500.00 +/- .01g	500.00g	Pass	
09/12/11	0842	MTE-179	50.00 +/- .01g	50.00g	Pass	
09/12/11	0843	MTE-161	150.00 +/- .01g	150.00g	Pass	
09/12/11	0844	MTE-314	500.00 +/- .01g	500.00g	Pass	
10/30/11	0802	MTE-179	50.00 +/- .01g	50.00g	PASS	
10/30/11	0803	MTE-161	150.00 +/- .01g	150.00g	PASS	
10/30/11	0804	MTE-314	500.00 +/- .01g	500.00g	PASS	
10/31/11	0830	MTE-179	50.00 +/- .01g	50.00 g	PASS	
10/31/11	0831	MTE-161	150.00 +/- .01g	150.00 g	PASS	
10/31/11	0832	MTE-314	500.00 +/- .01g	499.99 g	PASS	
11/1/11	1120	MTE-179	50.00 +/- .01g	50.00 g	PASS	
11/1/11	1120	MTE-161	150.00 +/- .01g	150.00 g	PASS	
11/1/11	1120	MTE-314	500.00 +/- .01g	500.00 g	PASS	
11/2/11	0615	MTE-179	50.00 +/- .01g	50.00 g	PASS	
11/2/11	0615	MTE-161	150.00 +/- .01g	150.00 g	PASS	
11/2/11	0615	MTE-314	500.00 +/- .01g	500.00 g	PASS	
11/3/11	0725	MTE-179	50.00 +/- .01g	50.00 g	PASS	
11/3/11	0725	MTE-161	150.00 +/- .01g	150.00 g	PASS	
11/3/11	0725	MTE-314	500.00 +/- .01g	500.00 g	PASS	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form ..15
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
11/04/11	0718	MTE-179	50.00 +/- .01g	50.00	PASS	
11/04/11	0718	MTE-161	150.00 +/- .01g	150.00	PASS	
11/04/11	0718	MTE-314	500.00 +/- .01g	500.00	PASS	
11/05/11	09 08	MTE-179	50.00 +/- .01g	50.00g	Pass	
11/05/11	09 09	MTE-161	150.00 +/- .01g	150.00g	Pass	
11/05/11	09 10	MTE-314	500.00 +/- .01g	500.00g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

AMWTP Solid Sampling Checklist

Form-1599
Rev. 7
Effective: 03/01/11

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	10/30/11 10/31/11	0755 0956	N. Ingle M Kremin	glovebox inspected and SAT. glove Box INSPECTION completed SAT
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☐	☐	☒	10/30/11 10/31/11	0742 0954	N. Ingle M Kremin	No secondary waste being bagged out N/A no secondary waste
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	10/30/11 10/31/11	1315 0842	N. Ingle M. Kremin	Electronic balances performance checked and SAT ELECTRONIC BALANCE checks completed
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	10/30/11 10/31/11	0759 0800	N. Ingle M Kremin	Sampling and support equipment SAT. INSPECTION COMPLETED
4b. Document any deficiencies in the comments section.						N. Ingle	No deficiencies no deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	10/30/11 10/31/11	1345 0830	N. Ingle M. Kremin	WTS updated WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	10/31/11	1950	M Kremin	WTS UPDATED

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☑	10/31/11	0840	M. Kemin	N/A
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	10/31/11	0845	M. Kemin	Visibly Clean
7b. Were any defective sampling tools identified?	☐	☒	☐	10/31/11	0845	M Kemin	No Defective Tools
7c. Was the SS and SME notified?	☐	☐	☒	10/31/11	0845	M Kemin	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	10/31/11	0845	M Kemin	Packaging Intact
7e. Document any deficiencies by ID number in the comments section.						M-Kemin	No Defective comments

640000

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☑	10/31/11	0850	M Kreinik	N/A
8b. Log the results in the comments section. **N/A for Grab sampling.**						M Kreinik	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☑	☐	☐	10/31/11	~~1024~~ 1102	M Kreinik	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☑	☐	☐	10/31/11	1138	M Kreinik	All sample material capped
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☑	10/31/11	1115	M Kreinik	N/A
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☑	10/31/11	1115	M Kreinik	N/A

050000

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 4 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☑	10/31/11	1042	M Kremin	N/A
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☑	10/31/11	1042	M Kremin	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☑	☐	☐	10/31/11	1126	M Kremin	verified completed
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☑	☐	☐	10/31/11	1126	M Kremin	verified completed
14. Have custody seals been signed and dated?	☑	☐	☐	10/31/11	1139	M Kremin	verified complete
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☑	☐	☐	10/31/11	1534	M Kremin	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☑	☐	☐	10/31/11	1555	M Kremin	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☑	☐	☐	10/31/11	1535	M Kremin	verified completed
18. The refrigerated sample storage area has been verified to be locked and secured.	☑	☐	☐	10/31/11	1540	M Kremin	verified locked

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin:	Automated Core	Manual Core	Container Grab
	☐	☐	☒

Sample Type:	Initial	Co-located	Resample	Field Duplicate
	☒	☐	☐	☐

Additional comments:

	Print Name	Signature	Date
Checklist completed by OT:	Michael Kremin	Michael Kremin	10/31/11
Checklist reviewed by SS:	Dave Becker	Dave Becker	11/2/11

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP Solid Sampling Checklist

Form-1599
Rev. 7
Effective: 03/01/11

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☑	☐	☐	10/31/11	0756	M Kremin	Inspection completed
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☑	☐	☑	10/31/11	0754	MKremin	N/A No secondary waste
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☑	☐	☐	10/31/11	0842	M Kremin	checks completed
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☑	☐	☐	10/31/11	0800	M Kremin	Inspections completed
4b. Document any deficiencies in the comments section.						M Kremin	Nothing Defective Found
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☑	☐	☐	10/31/11	0850	M Kremin	Verified
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	10/31/11	1750	M Kremin	WTS updated

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☑	10/31/11	1115	M Kennick	N/A
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☑	☐	☐	10/31/11	1115	M Kennick	VISIBLY CLEAN
7b. Were any defective sampling tools identified?	☐	☑	☐	10/31/11	1115	M Kennick	NO DEFECTIVE TOOLS
7c. Was the SS and SME notified?	☐	☐	☑	10/31/11	1115	M Kennick	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☑	☐	☐	10/31/11	1115	M Kennick	PACKAGING INTACT
7e. Document any deficiencies by ID number in the comments section.						M Kennick	NO DEFECTIVE ITEMS

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☑	10/31/11	1120	M Kramer	N/A
8b. Log the results in the comments section. **N/A for Grab sampling.**						M Kramer	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☑	☐	☐	10/31/11	1125	M Kramer	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☑	☐	☐	10/31/11	1130	Mike Kramer	All Samples capped
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☑	10/31/11	1130	M Kramer	N/A
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☑	10/31/11	1130	M Kramer	N/A

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☑	☐	10/31/11	1206	Mike Kremer	NO INCONSISTENCIES
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☑	10/31/11	1206	M Kremer	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☑	☐	☐	10/31/11	1204	M Kremer	VERIFIED COMPLETE
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☑	☐	☐	10/31/11	1207	M Kremer	VERIFIED COMPLETE
14. Have custody seals been signed and dated?	☑	☐	☐	10/31/11	1208	M Kremer	VERIFIED COMPLETE
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☑	☐	☐	10/31/11	1534	M Kremer	WTS UPDATED
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☑	☐	☐	10/31/11	1555	M Kremer	WTS UPDATED
17. Have trip blanks been prepared and placed into refrigerated storage?	☑	☐	☐	10/31/11	1535	M Kremer	VERIFIED COMPLETED
18. The refrigerated sample storage area has been verified to be locked and secured.	☑	☐	☐	10/31/11	1540	M Kremer	VERIFIED LOCKED

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424093

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Additional comments:

Checklist completed by OT:	Michael Kremis Print Name	Michael Kremis Signature	10/31/11 Date
Checklist reviewed by SS:	Dave Bakes Print Name	Dave Bakes Signature	11/01/11 Date

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424091

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	11/1/11 11/2/11	1132 0815	DSummers DSummers	Glovebox inspected, no issues noted. Glovebox inspected, no issues noted
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☐	☐	☒	11/1/11 11/2/11	1117 0815	DSummers DSummers	No soft waste to bag out. No waste to bag out.
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	11/2/11 11/1/11	0815 1121	DSummers DSummers	SAT no issues noted Scales checked, no issues noted.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	11/2/11 11/1/11	0815 1132	DSummers DSummers	tools inspected, no issues noted. tools inspected, no issues noted
4b. Document any deficiencies in the comments section.						DSummers	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/1/11	1535	DSummers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/2/11	1440	DSummers	WTS updated

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424091

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	11/1/11	1132	D Summers	GRAB Sampling ops per OI-75 not REQUIRED. NOT USED for Sampling.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	11/2/11	0950	D Summers	VERIFIED all tools clean and good condition, all packaged tools clean and packaging was intact prior to USE. NO DEFICIENCIES NOTED.
7b. Were any defective sampling tools identified?	☐	☒	☐	11/2/11	0950	D Summers	
7c. Was the SS and SME notified?	☐	☐	☒	11/2/11	0950	D Summers	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	11/2/11	0950	D Summers	
7e. Document any deficiencies by ID number in the comments section.						D Summers	

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424091

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	11/2/11	0950	D Summers	N/A GRAB Sampling per OI-75
8b. Log the results in the comments section. **N/A for Grab sampling.**						D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	11/2/11	0951	D Summers	WTS updated to reflect time of material in pan.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	11/2/11	0951	D Summers	Verified sampling completed within 1 hour time limit of material being placed in pan.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	11/2/11	0951	D Summers	N/A for OI-75 GRAB Sampling
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	11/2/11	0951	D Summers	N/A for OI-75 GRAB Sampling

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424051

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	11/2/11	1005	D Summers	Initial Sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	11/2/11	1005	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	11/2/11	1010	D Summers	Verified complete and match WTS screens
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	11/2/11	1010	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	11/2/11	1200	D Summers	Verified signed and intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	11/2/11	1243	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	11/2/11	1243	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	11/2/11	1243	D Summers	CREATED and placed with samples in Refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	11/2/11	1245	D Summers	Samples placed in Refrig Verified locked.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 104240Y1

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: DAVEY SUMMERS (Print Name) _____ (Signature) 11/02/11 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) _____ (Signature) 11/02/11 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423965

Batch Number: SS611-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	11/03/11 11/02/11	0734 1541	D SUMMERS D SUMMERS	Glovebox cleaned and inspected NO DEFICIENCIES OR ISSUES NOTED. glovebox cleanliness + external condition REVERIFIED
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☐	☐	☒	11/03/11 11/02/11	0730 1541	D SUMMERS D SUMMERS	NO SOFT WASTE TO BAGOUT. NO SOFT WASTE TO BAGOUT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	11/03/11 11/02/11	0731 1121	D SUMMERS D SUMMERS	SCALES SAT, NO ISSUES NOTED. SCALES SAT, NO ISSUES NOTED.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	11/03/11 11/02/11	0734 1541	D SUMMERS D SUMMERS	tools + equipment cleaned and inspected REVERIFIED SAT. ALL tools + EQUIPMENT cleaned and inspected. NO DEFICIENCIES NOTED.
4b. Document any deficiencies in the comments section.						D SUMMERS	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/03/11	0633	D SUMMERS	WTS updated for Removal.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/03/11	1611	D SUMMERS	WTS updated for NEW filter installed

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423965

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	11/03/11	0735	D SUMNERS	NOT USED for Sample Recovery N/A per OI-75 Grab Sampling.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	11/03/11	0845	D SUMNERS	tools are visibly clean all packaging intact No Deficiencies noted
7b. Were any defective sampling tools identified?	☐	☒	☐	11/03/11	0845	D SUMNERS	
7c. Was the SS and SME notified?	☐	☐	☒	11/03/11	0845	D SUMNERS	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	11/03/11	0845	D SUMNERS	
7e. Document any deficiencies by ID number in the comments section.						D SUMNERS	

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423965

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	11/03/11	0847	D Summers	N/A for OI-75 GRAB samples
8b. Log the results in the comments section. **N/A for Grab sampling.**						D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	11/03/11	0847	D Summers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	11/03/11	0900	D Summers	Verified sampling completed within 1 hr time limit
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	11/03/11	0900	D Summers	N/A for OI-75 GRAB sampling
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	11/03/11	0900	D Summers	N/A for OI-75 GRAB sampling

SSG0000

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423965

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	11/03/11	0900	D SUMNERS	N/A INITIAL Sample Only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	11/03/11	0900	D SUMNERS	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	11/03/11	0920	D SUMNERS	Verified correct and match in WTS.
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	11/03/11	0920	D SUMNERS	
14. Have custody seals been signed and dated?	☒	☐	☐	11/03/11	1053	D SUMNERS	signed and verified intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	11/03/11	1053	D SUMNERS	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	11/03/11	1053	D SUMNERS	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	11/03/11	1055	D SUMNERS	Trips created labeled and placed with samples in Refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	11/03/11	1055	D SUMNERS	Samples in Refrig Verified Locked, intact, and SECURE.

SSG00008

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Drum Number: 10423965

Batch Number: SSGll-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Danny Summers (Print Name) [signature] (Signature) 11/03/11 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) [signature] (Signature) 11/03/11 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424108

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	11/04/11 11/03/11	0725 1600	D SUMMERS D SUMMERS	REVERIFIED GLOVEBOX CLEAN WITH NO DEFICIENCIES NOTED. GLOVEBOX CLEANED & INSPECTED, NO DEFICIENCIES NOTED
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☐	☐	☒	11/04/11 11/03/11	0720 1600	D SUMMERS D SUMMERS	NO SOFT WASTE TO BAGOUT NO SOFT WASTE TO BAGOUT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	11/04/11 11/03/11	0720 0731 1600	D SUMMERS D SUMMERS	SCALE CHECKS SAT SCALE CHECKS SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	11/04/11 11/03/11	0725 1600	D SUMMERS D SUMMERS	tools & equipment verified clean and good condition, NO ISSUES noted tools & equipment, cleaned & inspected NO ISSUES NOTED
4b. Document any deficiencies in the comments section.						D SUMMERS	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/04/11	0750	D SUMMERS	WTS filter screen updated for REMOVAL
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/04/11	1656	D SUMMERS	WTS filter screen updated for INSTALLATION.

2500000

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424103

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	11/04/11	0730	DSUMMERS	N/A FOR OI-75 GRAB Sampling
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	11/04/11	0830	DSUMMERS	all tools and sampling equipment clean and inspected. packaging intact. NO DEFICIENCIES NOTED.
7b. Were any defective sampling tools identified?	☐	☒	☐	11/04/11	0830	DSUMMERS	
7c. Was the SS and SME notified?	☐	☐	☒	11/04/11	0830	DSUMMERS	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	11/04/11	0830	DSUMMERS	
7e. Document any deficiencies by ID number in the comments section.						DSUMMERS	

650000

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 1042408

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	11/04/11	0830	DSUMMERS	N/A for OI-75 GRAB Sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**						DSUMMERS	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	11/04/11	0835	DSUMMERS	WTS updated to reflect correct time.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	11/04/11	0850	DSUMMERS	Verified sampling completed within 1 hour time limit.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	11/04/11	0850	DSUMMERS	N/A for OI-75 GRAB Sampling
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	11/04/11	0850	DSUMMERS	N/A for OI-75 GRAB Sampling

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424108

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	11/04/11	0850	D Sumner	N/A Initial sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	11/04/11	0850	D Sumner	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	11/04/11	0920	D Sumner	Verified correct and data matches WTS screens
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	11/04/11	0920	D Sumner	
14. Have custody seals been signed and dated?	☒	☐	☐	11/04/11	1050	D Sumner	Signed and verified intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	11/04/11	1055	D Sumner	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	11/04/11	1055	D Sumner	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	11/04/11	1055	D Sumner	Trips created, labeled and placed with samples in Refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	11/04/11	1055	D Sumner	Samples in Refrig verified locked, intact and securE.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10424108

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG11-00008

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Darcy Summers (Print Name) _____ (Signature) 11/04/11 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) _____ (Signature) 11/04/11 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423940

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	11/05/11 11/04/11	0900 1119	A. Escobar D Sumners	Glove box has been inspected to be clean and is SAT. Glovebox material condition of cleanliness checked SAT NO ISSUES NOTED.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☐	☐	☒	11/05/11 11/04/11	0820 1119	A. Escobar D Sumners	NO soft waste will be bagged out. NO SOFT WASTE TO BAG OUT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	11/05/11 11/04/11	0910 0720	A. Escobar D Sumners	Scales checked SAT. SCALES CHECKED SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	11/05/11 11/04/11	0900 1119	A. Escobar D Sumners	Sampling tools and equipment has bee inspected and cleaned SAT. No deficiencies noted. sampling tools & Equipment inspected + cleaned SAT NO DEFICIENCIES noted.
4b. Document any deficiencies in the comments section.						A. Escobar D Sumners	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/05/11	1020	A. Escobar	Filter has been removed and WTS updated.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	11/06/11	1127	N. Fogle	Filter installed and WTS updated.

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423940

Batch Number: SS611-00006

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	11/05/11	1030	A. Escobar	Grab sampling
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	11/05/11	1030	A. Escobar	Equipment is visibly clean and verified by certificate.
7b. Were any defective sampling tools identified?	☐	☒	☐	11/05/11	1030	A. Escobar	No defective tools identified.
7c. Was the SS and SME notified?	☐	☐	☒	11/05/11	1030	A. Escobar	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	11/05/11	1030	A. Escobar	Packaging or expendable sampling equipment was intact prior to use.
7e. Document any deficiencies by ID number in the comments section.						A. Escobar	NO deficiencies noted.

470004

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423940

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	11/05/11	1030	A. Escobar	Grab sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**						A. Escobar	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	11/05/11	1346	A. Escobar	WTS sampling screen has been updated.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	11/05/11	1358	A Escobar	Verified that sample material has been processed within the 60 minute limit.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	11/05/11	1327	A. Escobar	Grab sample
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	11/05/11	1327	A. Escobar	Grab sample

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423940

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	11/05/11	1333	A. Escobar	Initial Sample only.
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	11/05/11	1333	A. Escobar	Initial Sample only.
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	11/05/11	1405	A. Escobar	Sample labels have been verified to contain complete information.
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	11/05/11	1406	A. Escobar	Sample label has been verified to contain complete information.
14. Have custody seals been signed and dated?	☒	☐	☐	11/05/11	1550	A. Escobar	Custody seals have been signed and dated.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	11/05/11	1600	A. Escobar	Screens have been updated to reflect custody seal attached.
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	11/05/11	1650	A. Escobar	Screens have been updated to reflect "Sample Preserved to 4 degrees C"
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	11/05/11	1650	A. Escobar	Trip blanks have been prepared and placed in fridge.
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	11/05/11	1650	A. Escobar	Fridge has been verified to be locked and secured.

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10423940

Batch Number: SSG11-00008

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Nick Ingle (Print Name) Nick A (Signature) 11/06/11 (Date)

Checklist reviewed by SS: Steve Massey (Print Name) WS Ma (Signature) 11/06/11 (Date)

AMWTP Advanced Mixed Waste Treatment Project	**Independent Technical Reviewer Small Container Sampling Checklist**	Form-1858, Rev. 1 Effective: 05/29/08 Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG11-00008	**Location: Z-250-801**			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the quality assurance (QA) documentation for the Batch Data Reports (BDR) complete and include data reports and quality checklist (QC) results? • Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist (manual review only) • Form-1858, Independent Technical Reviewer Small Container Sampling Checklist (Manual grab sampling review only) • Form-1491, Supplemental Batch Comment Form, as applicable • Associated nonconformance reports (NCRs)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Was each operator qualified at the time of each sampling event?	X			
4. Has the Chain of Custody (COC) been initiated properly filled out and is it complete?	X			
5. Was the E-signature History review performed?	X			
6. Were the samples and field duplicate based on a random selection method?	X			

Testing Batch No.: SSG11-00008	Location: Z-250-801			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. • Samples • Refrigeration	X			
8. Was the initial small container sample visually examined?	X			
9. Was the field duplicate visually compared to the first sample and were the results acceptable?	X			
10. Were the correct units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? • Was the sampling tools inspection satisfactory? • Was the sampling equipment protective wrapper intact? • Was the sampling area inspection satisfactory? • Were the sampling tools inspected after unwrapping?	X			
16. Were field duplicate samples collected at a frequency of one per sampling batch, as defined in INST-OI-75, Container-in-Container Sampling?	X			

Testing Batch No.: SSG11-00008	Location: Z-250-801			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet data quality objectives (DQOs) or quality assurance objectives (QAOs)? If so, indicate all NCR numbers in the batch comment section.		X		
18. Have the use of INST-OI-75, sampling equipment, and measurement units been consistent?	X			
19. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-75?	X			
20. Was the correct revision of the procedure documented on each analysis report?	X			
21. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
22. Were the rework requirements clearly identified in waste tracking system (WTS) or on the BDR?	X			See Batch Comments.

ITR Print Name: Jay Simonson	ITR Signature: Jay L. Simonson	Date: 17 November 2011

AMWTP Advanced Mixed Waste Treatment Project	Site Project Manager Small Container Sampling Checklist	Form-1859 Rev. 2 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSG11-00008

Question	Response			Requirement	Comment
	YES	NO	N/A		
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives (QAOs) been met? Precision: • Has a field duplicate sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Tools (if required) – Sampling Equipment? Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • Were the containers randomly selected from the container population, the small container randomly selected and the grid location randomly selected prior to obtaining samples? Comparability • Was the correct version of INST-OI-75, Container-in-Container Sampling, used? Representativeness: • Was non-disposable sampling equipment cleaned prior to sampling?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

Batch Data Report #: SSG11-00008

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(4) Was the scale in calibration, and was a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the equipment blanks acceptable? **NOTE:** *The analytical results for the equipment blanks are less than 3 times the minimum detection limit (MDL) for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) and less than 3 times the program required detection limits (PRDLs) for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Were samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(7) Were samples collected within 14 days of the first sample of the batch?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(8) Were samples collected and containerized within one hour? If time was greater than one hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(9) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2 C3-10	

Batch Data Report #: SSG11-00008

Question	Response			Requirement	Comment
	YES	NO	N/A		
(10) Is a physical description of the field duplicate included in the batch data report?	☒	☐	☐	MP-TRUW-8.2 Table C3-12	
(11) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, and random location of sample.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is the location (point of origin) where each sample was taken included in the batch data report (BDR)? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(14) Does the batch data report include a record of the analyses requested and identify the laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

Batch Data Report #: SSG11-00008

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(16) Does the data for all containers within this batch meet the following review, validation, and verification requirements? • Proper units (e.g. grams or liters) and significant figures used • The BDR is complete (all pages identified in the BDR and numbered accordingly) • WTS Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • WTS Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist • Form-1858, Independent Reviewer Small Container Sampling Checklist • Form-1491, Supplemental Batch Comment Form, as applicable. • Associated nonconformance reports (NCRs)	☒	☐	☐	MP-TRUW-8.2, C3-10b	
(17) Review all NCRs (open and closed). Can the batch be approved?	☒	☐	☐	MP-TRUW-8.2, C3-13	

Batch Data Report #: SSG11-00008

Question	Response			Requirement	Comment
	YES	NO	N/A		
(18) Were the following inspections performed? • Was the sampling tool inspection satisfactory? • Was the sampling equipment protective wrapping intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(19) Is all data associated with this BDR acceptable for signature release?	☒	☐	☐	MP-TRUW-8.2, C3-10b(2)	

Comments:

SPM (Print Name): Kenny Burnside SPM Signature /Date: 11/21/11

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG11-00008

Item	Date	Name	Comments
1.	11/06/11	Nick Ingle Coring Operator	WMF 634 Coring
2.	11/06/11	Nick Ingle Coring Operator	Waste Matrix Code: S3110
3.	11/06/11	Nick Ingle Coring Operator	.
4.	11/10/11	Jay Simonson ITR	This batch was validated per MP-TRUW-8.8.
5.	11/10/11	Jay Simonson ITR	Rework: Container 10424093; analysis (event ID) 637, sample IDs 10426290. 10426291, and 10426292; and analysis (event ID) 638, sample IDs 10426302, 10426303, and 10426304. Per INST-OI-75, Rev 8, FC-1, Operator needs to enter the appropriate sequence number (e. g. 1-3) for each trip blank in the Grab Sample comments. Please review and revise as necessary.
6.	11/10/11	Jay Simonson ITR	Minor rework required on Forms-1599, Solid Waste Sampling Checklist(s).
7.	11/10/11	Jay Simonson ITR	Demoted to Operations for rework.
8.	11/17/11	Jay Simonson ITR	Rework was performed completely and satisfactorily by qualified operators.

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG11-00008

Item	Date	Name	Comments
9.	11/17/11	Jay Simonson ITR	Level I validation complete.
10.	11/17/11	Jay Simonson ITR	Promoted to SPM.
11.	11/17/11	Jay Simonson Signature	Jay T. Simonson

155000

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Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG11-00008

Item	Date	Name	Comments
12.	11/21/11	Kenny Burnside SPM	SPM reviewed and approved. K Burnside 11/21/11

N
A KB 11/21/11

SSG0008

Note: Data Validation Reviewers should continue with indicating the Item number in the first column in numerical sequence. This page's Item number column was intentionally left blank in the event a batch may require additional comment pages.

RECORD CORRECTION
SSG12-00001 /B-2012-0002
SWALKER / 06/07/2012

RECORD
CMC 05/17/2012

SSG12-00001
BATCH DATA REPORT

Report Date: April 30, 2012.

Narrative:

This report provides test results and documentation for the Solid Sampling examination of the following containers using INST-OI-75:

10427583; 10427585; 10427582; 10427590; 10427584.

No Nonconformance Reports are associated with this Batch Data Report.
10427585 is Non-Report from batch SSG12-00001.

Position	Signature	Date
AMWTP Site Project Manager		5/10/12

Table of Contents
SSG12-00001

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Batch Narrative
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Batch Report Cover Sheet
Core Sample Analysis Reports
Chain(s) of Custody
Refrigerator Temperature Logsheet (Form-1585) and/or Characterization Round Sheet (Form-1602)
Analytical Balance Calibration Check Sheet (Form-1215)
Solid Waste Sampling Checklist(s) (Form-1599)
Independent Technical Reviewer Small Container Sampling Checklist(s) (Form-1858)
Site Project Manager Small Container Sampling Checklist(s) (Form-1859)
Batch Data Report Supplemental Comment Form (Form-1491)

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 03-May-2012

Time: 08:05

Batch Type Solid Sampling Grab
Batch Report No. SSG12-00001
Batch Id SSG12-00001
Open Date 03-APR-12 14:12:15
Close Date 11-APR-12 14:02:36
Batch Status CLOSED
Test Facility Idaho AMWTP
Equipment Id Z-250-801 634-Coring

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10427583	SR-256	643	03-APR-12 15:22:00	Original	P	DAVEY SUMNERS
10427583	SR-256	644	03-APR-12 15:22:00	Replicate / Duplicate	P	DAVEY SUMNERS
10427582	SR-256	646	08-APR-12 10:19:34	Original	P	MICHAEL KREMIN
10427590	SR-256	647	09-APR-12 15:10:00	Original	P	DAVEY SUMNERS
10427584	SR-256	648	10-APR-12 12:46:00	Original	P	DAVEY SUMNERS

SSG12-00001

AMWTP

Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Date: 03-May-2012

Time: 08:05

**********Batch Comments**********

Written By	Date	Comment
DSUMNERS	11-APR-12 14:02:37	closed per direction
KBIRCH	11-APR-12 16:36:20	demote to operations
DSUMNERS	11-APR-12 16:51:27	per direction
JSIMONSON	23-APR-12 16:54:42	This batch was validated per MP-TRUW-8.8.
JSIMONSON	24-APR-12 09:35:38	Rework: Batch Comments. Please enter "WMF 634, Coring Room, Waste Matrix Code S3110." into Batch Comments per INST-OI-75, section 4.15.2.5.
JSIMONSON	24-APR-12 09:43:14	Rework: Container 10427583, events 643 & 644; containers 10427582, 10427590, and 10427584. Please enter "Correction: WMC is S3110" into the Matrix Physical Description.
JSIMONSON	24-APR-12 09:54:24	Demoted to Operations for rework.
DSUMNERS	25-APR-12 10:25:49	WMF-634, Coring Room, Waste Matrix Code S3110
JSIMONSON	25-APR-12 11:04:29	Demoted to Operations for rework.
JSIMONSON	25-APR-12 12:28:43	Rework was performed completely and satisfactorily by a qualified operator and verified by a second qualified operator.
JSIMONSON	25-APR-12 12:29:22	Level I validation complete.
JSIMONSON	25-APR-12 12:39:53	Promoted to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Date: 03-May-2012

Batch Report Coversheet

Time: 08:05

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2209442	DSUMNERS	11-APR-2012 14:02:37	closed per direction
2209488	KBIRCH	11-APR-2012 16:36:20	demote to operations
2209492	DSUMNERS	11-APR-2012 16:51:27	per direction
2215924	JSIMONSON	24-APR-2012 09:54:24	Demoted to Operations for rework.
2216787	JSIMONSON	25-APR-2012 11:04:29	Demoted to Operations for rework.
2216834	JSIMONSON	25-APR-2012 12:39:53	Promoted to SPM.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:31

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Package Sampled

Event ID 643
Event Date 03-APR-12 15:22:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Used
Serial Number | Part Type

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-1

No. of Packages in Container 3
Random Package Selected for Sample 2

Matrix Physical Description 3110,Waste is yellowish in color,moist gelatin like in texture. Correction: WMC is S3110. dls 04/25/12.

Package Comment

Cancel Date | By | Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2203992	DSUMNERS	03-APR-2012 14:16:28	saving data
2204122	DSUMNERS	03-APR-2012 15:31:46	saving data
2204259	DSUMNERS	03-APR-2012 17:41:05	saving data
2204260	DSUMNERS	03-APR-2012 17:42:01	saving data
2204266	DSUMNERS	03-APR-2012 17:49:40	saving data
2204272	DSUMNERS	03-APR-2012 17:58:42	saving data
2216698	DSUMNERS	25-APR-2012 10:22:31	rework.
2216699	JHOWARD	25-APR-2012 10:22:33	rework

Grab Sample

Event ID 643
Sample Date 03-APR-12 15:31:00
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 2
Quadrant Sampled 2
Grab Sample Comment
PVOC

Sample ID 10437556
Weight 2.96 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204131	DSUMNERS	03-APR-2012 15:41:59	saving data

000006

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 11-Apr-2012
Time: 14:37

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00801	10427583	SR-256	S3110	425

Package Sampled

Event ID 643
Event Date 03-APR-12 15:22:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75
Procedure Revision ID 10 FC-1

Equipment Used

Serial Number	Part Type

No. of Packages in Container 3
Random Package Selected for Sample 2

Matrix Physical Description 3110,Waste is yellowish in color,moist gelatin like in texture.
Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2203992	DSUMNERS	03-APR-2012 14:16:28	saving data
2204122	DSUMNERS	03-APR-2012 15:31:46	saving data
2204259	DSUMNERS	03-APR-2012 17:41:05	saving data
2204260	DSUMNERS	03-APR-2012 17:42:01	saving data
2204266	DSUMNERS	03-APR-2012 17:49:40	saving data
2204272	DSUMNERS	03-APR-2012 17:58:42	saving data

Grab Sample

Event ID 643
Sample Date 03-APR-12 15:31:00
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 2

Sample ID 10437556
Quadrant Sampled 2

Weight 2.96 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Grab Sample Comment
PVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	1D031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2204131	DSUMNERS	03-APR-2012 15:41:59	saving data

SUPERCEDED

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:32

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 | Sample ID 10437557 | Weight 2.67 gms
Sample Date 03-APR-12 15:33:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204134	DSUMNERS	03-APR-2012 15:43:57	saving data

Grab Sample

Event ID 643 | Sample ID 10437558 | Weight 12.33 gms
Sample Date 03-APR-12 15:38:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC-Hydrazine
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204135	DSUMNERS	03-APR-2012 15:46:54	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:32

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 | Sample ID 10437559 | Weight 12.22 gms
Sample Date 03-APR-12 15:44:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC-Formaldahyde
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204136	DSUMNERS	03-APR-2012 15:49:16	saving data	

Grab Sample

Event ID 643 | Sample ID 10437560 | Weight 2.89 gms
Sample Date 03-APR-12 15:46:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: Spare 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204137	DSUMNERS	03-APR-2012 15:52:18	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:33

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 | Sample ID 10437561 | Weight 2.83 gms
Sample Date 03-APR-12 15:47:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204141	DSUMNERS	03-APR-2012 15:58:34 saving data	

Grab Sample

Event ID 643 | Sample ID 10437562 | Weight 34.70 gms
Sample Date 03-APR-12 15:52:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: SVOC/METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204145	DSUMNERS	03-APR-2012 16:03:12 saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:33

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 | Sample ID 10437704 | Weight 2.73 gms
Sample Date 04-APR-12 11:51:17 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204988	DSUMNERS	04-APR-2012 11:52:43	saving data	

Grab Sample

Event ID 643 | Sample ID 10437705 | Weight 2.82 gms
Sample Date 04-APR-12 11:52:58 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204989	DSUMNERS	04-APR-2012 11:53:46	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:33

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 | Sample ID 10437706 | Weight 2.91 gms
Sample Date 04-APR-12 11:54:06 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204990	DSUMNERS	04-APR-2012 11:54:55 saving data	

Grab Sample

Event ID 643 | Sample ID 10437707 | Weight 12.37 gms
Sample Date 04-APR-12 11:55:14 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204991	DSUMNERS	04-APR-2012 11:56:39 saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:34

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 643 Sample ID 10437708 Weight 12.41 gms

Sample Date 04-APR-12 11:57:00 Volume 20 ml.

Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment

Grab Sample Comment
Trip Blank 5

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204992	DSUMNERS	04-APR-2012 11:57:51	saving data	
2205002	DSUMNERS	04-APR-2012 12:30:21	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:34

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Package Sampled

Event ID 644
Event Date 03-APR-12 15:22:00
Taken By DAVEY SUMNERS
Sample Type Field Duplicate

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-1

Equipment Used

Serial Number	Part Type

No. of Packages in Container 3
Random Package Selected for Sample 2

Matrix Physical Description 3110, Waste is yellowish in color,moist gelatin like in texture. Correction: WMC is S3110. JH 04/25/12

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204159	DSUMNERS	03-APR-2012 16:11:08	saving data
2204271	DSUMNERS	03-APR-2012 17:58:02	saving data
2216788	JHOWARD	25-APR-2012 11:12:56	rework complete
2216789	CBEEBE	25-APR-2012 11:12:57	Rework complete

Grab Sample

Event ID 644
Sample Date 03-APR-12 15:56:00
Taken By DAVEY SUMNERS
Sample Requested PVOC

Sample ID 10437564
Weight 2.75 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Randomly Selected Quadrant
Quadrant Sampled 2
Quadrant Comment

Grab Sample Comment
PVOC 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204189	DSUMNERS	03-APR-2012 16:30:45	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 11-Apr-2012
Time: 14:38

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Package Sampled

Event ID 644
Event Date 03-APR-12 15:22:00
Taken By DAVEY SUMNERS
Sample Type Field Duplicate

Equipment Procedure ID INST-OI-75
Procedure Revision ID 10 FC-1

Equipment Used

Serial Number	Part Type

No. of Packages In Container 3
Random Package Selected for Sample 2

Matrix Physical Description 3110, Waste is yellowish in color,moist gelatin like in texture.
Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date		Comment
2204159	DSUMNERS	03-APR-2012 16:11:08	saving data	
2204271	DSUMNERS	03-APR-2012 17:58:02	saving data	

Grab Sample

Event ID 644
Sample Date 03-APR-12 15:56:00
Taken By DAVEY SUMNERS
Sample Requested PVOC

Sample ID 10437564
Weight 2.75 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Randomly Selected Quadrant
Quadrant Sampled 2
Quadrant Comment

Grab Sample Comment
PVOC I

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date		Comment
2204189	DSUMNERS	03-APR-2012 16:30:45	saving data	

SUPERCEDED

000013

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:34

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437565 | Weight 2.80 gms
Sample Date 03-APR-12 15:58:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: PVOC 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204191	DSUMNERS	03-APR-2012 16:33:00	saving data	

Grab Sample

Event ID 644 | Sample ID 10437566 | Weight 2.76 gms
Sample Date 03-APR-12 15:59:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: PVOC 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204206	DSUMNERS	03-APR-2012 16:50:31	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:34

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437567 | Weight 2.73 gms
Sample Date 03-APR-12 16:01:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204215	DSUMNERS	03-APR-2012 17:03:32	saving data	

Grab Sample

Event ID 644 | Sample ID 10437568 | Weight 2.91 gms
Sample Date 03-APR-12 16:02:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204216	DSUMNERS	03-APR-2012 17:05:14	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:35

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437569 | Weight 2.97 gms
Sample Date 03-APR-12 16:04:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204218	DSUMNERS	03-APR-2012 17:07:07	saving data	

Grab Sample

Event ID 644 | Sample ID 10437570 | Weight 12.44 gms
Sample Date 03-APR-12 16:07:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: NHVOC-HYDRAZINE
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204221	DSUMNERS	03-APR-2012 17:10:58	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:35

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437571 | Weight 12.35 gms
Sample Date 03-APR-12 16:11:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
NHVOC-formaldehyde
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204225	DSUMNERS	03-APR-2012 17:17:34	saving data
2205070	DSUMNERS	04-APR-2012 14:12:52	saving data

Grab Sample

Event ID 644 | Sample ID 10437572 | Weight 2.91 gms
Sample Date 03-APR-12 16:13:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
Spare 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204228	DSUMNERS	03-APR-2012 17:19:25	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:36

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437573 | Weight 2.75 gms
Sample Date 03-APR-12 16:15:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204229	DSUMNERS	03-APR-2012 17:21:57	saving data	
2204233	DSUMNERS	03-APR-2012 17:27:42	saving data	

Grab Sample

Event ID 644 | Sample ID 10437574 | Weight 36.33 gms
Sample Date 03-APR-12 16:17:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment: SVOC/METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204232	DSUMNERS	03-APR-2012 17:24:10	saving data	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 Sample ID 10437709 Weight 2.76 gms
Sample Date 04-APR-12 12:08:18 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
Trip Blaank 1
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204993	DSUMNERS	04-APR-2012 12:09:14	saving data	

Grab Sample

Event ID 644 Sample ID 10437710 Weight 2.62 gms
Sample Date 04-APR-12 12:14:26 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
Trip Blank 2
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204995	DSUMNERS	04-APR-2012 12:15:26	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:36

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437711 | Weight 2.89 gms
Sample Date 04-APR-12 12:15:41 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204996	DSUMNERS	04-APR-2012 12:17:21	saving data

Grab Sample

Event ID 644 | Sample ID 10437712 | Weight 12.49 gms
Sample Date 04-APR-12 12:17:41 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2204997	DSUMNERS	04-APR-2012 12:18:37	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:37

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427583	SR-256	S3110	425

Grab Sample

Event ID 644 | Sample ID 10437713 | Weight 12.48 gms

Sample Date 04-APR-12 12:18:59 | Volume 20 ml.

Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip Blank 5

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2204998	DSUMNERS	04-APR-2012 12:19:58	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 05-Jun-2012
Time: 07:25

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Package Sampled

Event ID 646
Event Date 08-APR-12 10:19:34
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 11
Random Package Selected for Sample 10

Matrix Physical Description WMC 3110 dry granular sand like consistancy white and light brown in color correction : WMC is S3110. MDK 04/24/2012

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207266	MKREMIN	07-APR-2012 18:00:49	WMC 3110,
2207514	MKREMIN	08-APR-2012 10:34:00	,
2216052	MKREMIN	24-APR-2012 13:13:45	correction : WMC is S3110. MDK 04/24/2012
2216054	NINGLE	24-APR-2012 13:13:46	correction : WMC is S3110. NAI 04/24/2012

Grab Sample

Event ID 646
Sample Date 08-APR-12 10:40:51
Taken By MICHAEL KREMIN
Sample Requested PVOC
Randomly Selected Quadrant 4
Quadrant Sampled 4

Sample ID 10438129
Weight 2.70 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Quadrant Comment

Grab Sample Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207516	MKREMIN	08-APR-2012 10:44:29	pvoc
2207571	MKREMIN	08-APR-2012 13:53:23	,
2207587	MKREMIN	08-APR-2012 14:38:23	.
2207693	MKREMIN	08-APR-2012 16:38:34	.

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SUPERSEDED ~~SUPERSEDED~~ jp 06-05-12

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 03-May-2012

Time: 08:38

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Package Sampled

Event ID 646
Event Date 08-APR-12 10:19:34
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 11
Random Package Selected for Sample 10

Matrix Physical Description WMC 3110 dry granular sand like consistancy white and light brown in color correction : WMC is S3110. MDK 04/24/2012

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207266	MKREMIN	07-APR-2012 18:00:49	WMC 3110,
2207514	MKREMIN	08-APR-2012 10:34:00	,
2216052	MKREMIN	24-APR-2012 13:13:45	correction : WMC is S3110. MDK 04/24/2012
2216054	NINGLE	24-APR-2012 13:13:46	correction : WMC is S3110. NAI 04/24/2012

Grab Sample

Event ID 646
Sample ID 10438129
Weight 2.70 gms
Sample Date 08-APR-12 10:40:51
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested PVOC
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 4
Grab Sample Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207516	MKREMIN	08-APR-2012 10:44:29	pvoc
2207571	MKREMIN	08-APR-2012 13:53:23	,
2207587	MKREMIN	08-APR-2012 14:38:23	.
2207693	MKREMIN	08-APR-2012 16:38:34	.

~~SUPERSEDED~~ jp 06-05-12

SUPERSEDED
000022

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 11-Apr-2012
Time: 14:40

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Package Sampled

Event ID 646
Event Date 08-APR-12 10:19:34
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 11
Random Package Selected for Sample 10

Matrix Physical Description WMC 3110 dry granular sand like consistancy white and light brown in color

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207266	MKREMIN	07-APR-2012 18:00:49	WMC 3110,
2207514	MKREMIN	08-APR-2012 10:34:00	,

Grab Sample

Event ID 646
Sample Date 08-APR-12 10:40:51
Taken By MICHAEL KREMIN
Sample Requested PVOC
Randomly Selected Quadrant
Quadrant Sampled 4
Grab Sample Comment

Sample ID 10438129
Weight 2.70 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207516	MKREMIN	08-APR-2012 10:44:29	pvoc
2207571	MKREMIN	08-APR-2012 13:53:23	,
2207587	MKREMIN	08-APR-2012 14:38:23	
2207693	MKREMIN	08-APR-2012 16:38:34	

SUPERCEDED

000022

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:38

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646 | Sample ID 10438130 | Weight 2.77 gms
Sample Date 08-APR-12 10:41:59 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207517	MKREMIN	08-APR-2012 10:47:14	

Grab Sample

Event ID 646 | Sample ID 10438131 | Weight 12.33 gms
Sample Date 08-APR-12 10:44:19 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment
hydrazine sample
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207519	MKREMIN	08-APR-2012 10:51:50	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:38

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646
Sample ID 10438132
Weight 12.25 gms
Sample Date 08-APR-12 10:49:19
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment
formaldehyde
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207520	MKREMIN	08-APR-2012 10:53:48	

Grab Sample

Event ID 646
Sample ID 10438133
Weight 2.83 gms
Sample Date 08-APR-12 10:52:21
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Quadrant Comment
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment
spare 1
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207522	MKREMIN	08-APR-2012 10:56:25	

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Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:39

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646 | Sample ID 10438134 | Weight 2.98 gms
Sample Date 08-APR-12 10:53:56 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment
spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207523	MKREMIN	08-APR-2012 10:57:51	

Grab Sample

Event ID 646 | Sample ID 10438135 | Weight 39.65 gms
Sample Date 08-APR-12 10:58:10 | Volume 125 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207524	MKREMIN	08-APR-2012 11:00:35	
2207582	MKREMIN	08-APR-2012 14:21:03	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:40

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646 | Sample ID 10438136 | Weight 2.83 gms
Sample Date 08-APR-12 13:28:54 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: trip blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207568	MKREMIN	08-APR-2012 13:48:24	

Grab Sample

Event ID 646 | Sample ID 10438137 | Weight 2.84 gms
Sample Date 08-APR-12 13:29:40 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: trip blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207569	MKREMIN	08-APR-2012 13:49:41	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:40

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646 | Sample ID 10438138 | Weight 2.57 gms
Sample Date 08-APR-12 13:31:16 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
trip blank 3

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207570	MKREMIN	08-APR-2012 13:51:46	

Grab Sample

Event ID 646 | Sample ID 10438142 | Weight 12.47 gms
Sample Date 08-APR-12 13:34:57 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
trip blank 4

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207572	MKREMIN	08-APR-2012 13:56:12	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 03-May-2012

Time: 08:41

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427582	SR-256	S3110	425

Grab Sample

Event ID 646 Sample ID 10438144 Weight 12.50 gms

Sample Date 08-APR-12 13:38:26 Volume 20 ml.

Taken By MICHAEL KREMIN Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment

Grab Sample Comment
trip blank 5

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2207573	MKREMIN	08-APR-2012 13:57:15	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 03-May-2012

Time: 08:41

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Package Sampled

Event ID 647

Event Date 09-APR-12 15:10:00

Taken By DAVEY SUMNERS

Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 10

Random Package Selected for Sample 7

Matrix Physical Description 3110. Waste is white to light yelow in color, soft gell like to hard granular with some moisture. Correction: WMC is S3110. dls 04/25/12.

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2208403	DSUMNERS	09-APR-2012 14:54:30	saving data
2208436	DSUMNERS	09-APR-2012 15:44:18	saving data
2216709	DSUMNERS	25-APR-2012 10:29:42	rework complete
2216710	JHOWARD	25-APR-2012 10:29:43	rework complete

Grab Sample

Event ID 647

Sample ID 10438283

Weight 2.63 gms

Sample Date 09-APR-12 15:19:00

Volume 20 ml.

Taken By DAVEY SUMNERS

Custody Seal Attached Y

Preserved to 4 Degrees C Y

Sample Requested PVOC

Quadrant Comment

Randomly Selected Quadrant 1

Quadrant Sampled 1

Grab Sample Comment
PVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208409	DSUMNERS	09-APR-2012 15:21:41	saving data	
2208543	DSUMNERS	09-APR-2012 18:00:25	saving data	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 11-Apr-2012
Time: 14:42

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Package Sampled

Event ID 647
Event Date 09-APR-12 15:10:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75
Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages In Container 10
Random Package Selected for Sample 7

Matrix Physical Description 3110. Waste is white to light yelow in color, soft gell like to hard granular with some moisture.

Package Comment

Cancel Date | By | Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2208403	DSUMNERS	09-APR-2012 14:54:30	saving data
2208436	DSUMNERS	09-APR-2012 15:44:18	saving data

Grab Sample

Event ID 647
Sample Date 09-APR-12 15:19:00
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 1
Quadrant Sampled 1
Grab Sample Comment PVOC

Sample ID 10438283
Weight 2.63 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2208409	DSUMNERS	09-APR-2012 15:21:41	saving data
2208543	DSUMNERS	09-APR-2012 18:00:25	saving data

SUPERCEDED

000029

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 03-May-2012

Time: 08:41

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID 647 | Sample ID 10438284 | Weight 2.84 gms | Volume 20 ml.

Sample Date 09-APR-12 15:21:00

Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested NHVOC

Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment

Grab Sample Comment
NHVOC

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208410	DSUMNERS	09-APR-2012 15:23:22	saving data	

Grab Sample

Event ID 647 | Sample ID 10438285 | Weight 12.44 gms | Volume 20 ml.

Sample Date 09-APR-12 15:23:36

Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested NHVOC

Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment

Grab Sample Comment
NHVOC-Hydrazine

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208411	DSUMNERS	09-APR-2012 15:25:13	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:41

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSGI2-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID 647 | Sample ID 10438286 | Weight 12.14 gms
Sample Date 09-APR-12 15:25:26 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: NHVOC-Formaldehyde
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208415	DSUMNERS	09-APR-2012 15:27:51	saving data	

Grab Sample

Event ID 647 | Sample ID 10438287 | Weight 2.70 gms
Sample Date 09-APR-12 15:27:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: Spare 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208422	DSUMNERS	09-APR-2012 15:29:43	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:41

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID 647 | Sample ID 10438288 | Weight 2.58 gms
Sample Date 09-APR-12 15:28:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208423	DSUMNERS	09-APR-2012 15:31:26	saving data	

Grab Sample

Event ID 647 | Sample ID 10438289 | Weight 38.48 gms
Sample Date 09-APR-12 15:31:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: SVOC/Metals
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Teaspoon	93694	J006443	ID031-0169	03-U002899
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208424	DSUMNERS	09-APR-2012 15:34:49	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:42

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID 647 | Sample ID 10438301 | Weight 2.86 gms
Sample Date 09-APR-12 16:18:46 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208470	DSUMNERS	09-APR-2012 16:19:44	saving data	

Grab Sample

Event ID 647 | Sample ID 10438302 | Weight 2.98 gms
Sample Date 09-APR-12 16:20:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208473	DSUMNERS	09-APR-2012 16:20:51	saving data	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID 647 | Sample ID 10438303 | Weight 2.60 gms
Sample Date 09-APR-12 16:21:10 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment
Trip Blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208476	DSUMNERS	09-APR-2012 16:21:59	saving data	

Grab Sample

Event ID 647 | Sample ID 10438304 | Weight 12.27 gms
Sample Date 09-APR-12 16:22:17 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment
Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208479	DSUMNERS	09-APR-2012 16:23:07	saving data	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:42

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427590	SR-256	S3110	425

Grab Sample

Event ID	647	**Sample ID**	10438305	**Weight**	12.45 gms
Sample Date	09-APR-12 16:23:26			**Volume**	20 ml.
Taken By	DAVEY SUMNERS	**Custody Seal Attached**	Y	**Preserved to 4 Degrees C**	Y
Sample Requested	TRIP BLANK			**Quadrant Comment**	
Randomly Selected Quadrant		**Quadrant Sampled**	0		

Grab Sample Comment
Trip Blank 5

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2208480	DSUMNERS	09-APR-2012 16:24:13	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:42

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Package Sampled

Event ID 648
Event Date 10-APR-12 12:46:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages In Container 9
Random Package Selected for Sample 9

Matrix Physical Description 3110. Light yellow in color, dry, crystal like to soft gell in texture. Correction: WMC is S3110. dls 04/25/12.

Package Comment

Cancel Date By Reason

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209066	DSUMNERS	10-APR-2012 12:38:13	saving data
2209104	DSUMNERS	10-APR-2012 13:39:33	saving data
2216707	DSUMNERS	25-APR-2012 10:28:25	rework
2216708	JHOWARD	25-APR-2012 10:28:26	rework

Grab Sample

Event ID 648
Sample Date 10-APR-12 12:51:00
Taken By DAVEY SUMNERS
Sample Requested PVOC
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment PVOC

Sample ID 10438373
Weight 2.80 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209067	DSUMNERS	10-APR-2012 12:53:14	saving data
2209212	DSUMNERS	10-APR-2012 16:34:01	saving data

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 11-Apr-2012
Time: 14:43

SUPERCEDED

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Package Sampled

Event ID 648
Event Date 10-APR-12 12:46:00
Taken By DAVEY SUMNERS
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 10 FC-2

Equipment Used

Serial Number	Part Type

No. of Packages in Container 9
Random Package Selected for Sample 9

Matrix Physical Description 3110. Light yellow in color, dry, crystal like to soft gell in texture.

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date		Comment
2209066	DSUMNERS	10-APR-2012 12:38:13	saving data	
2209104	DSUMNERS	10-APR-2012 13:39:33	saving data	

Grab Sample

Event ID 648
Sample Date 10-APR-12 12:51:00
Taken By DAVEY SUMNERS
Sample Requested PVOC

Sample ID 10438373
Weight 2.80 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Randomly Selected Quadrant 4
Quadrant Sampled 4

Quadrant Comment

Grab Sample Comment
PVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date		Comment
2209067	DSUMNERS	10-APR-2012 12:53:14	saving data	
2209212	DSUMNERS	10-APR-2012 16:34:01	saving data	

SUPERCEDED

000036

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:43

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648
Sample ID 10438374
Weight 2.94 gms
Sample Date 10-APR-12 12:52:00
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment
NHVOC
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209068	DSUMNERS	10-APR-2012 12:55:38 saving data	

Grab Sample

Event ID 648
Sample ID 10438375
Weight 12.37 gms
Sample Date 10-APR-12 12:54:00
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested NHVOC
Quadrant Comment
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment
NHVOC-Hydrazine
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209071	DSUMNERS	10-APR-2012 13:07:09 saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:43

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648 | Sample ID 10438377 | Weight 12.12 gms
Sample Date 10-APR-12 12:55:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment

Grab Sample Comment
NHVOC-Formaldehyde

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209077	DSUMNERS	10-APR-2012 13:16:00	saving data	

Grab Sample

Event ID 648 | Sample ID 10438378 | Weight 2.93 gms
Sample Date 10-APR-12 12:56:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment

Grab Sample Comment
Spare 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209078	DSUMNERS	10-APR-2012 13:19:36	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:44

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648 | Sample ID 10438379 | Weight 2.86 gms
Sample Date 10-APR-12 12:57:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
20 ML Vial	S326-0020	048357	11-2277	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209079	DSUMNERS	10-APR-2012 13:21:45	saving data	

Grab Sample

Event ID 648 | Sample ID 10438380 | Weight 40.00 gms
Sample Date 10-APR-12 12:59:00 | Volume 125 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: SVOC/METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	103008-01	08-1616	0815354
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Chisel	15642	060908-01	08-897	08 07082
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209083	DSUMNERS	10-APR-2012 13:28:56	saving data	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:44

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648
Sample ID 10438383
Weight 2.72 gms
Sample Date 10-APR-12 14:01:50
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
Trip Blank 1
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209107	DSUMNERS	10-APR-2012 14:02:58	saving data	

Grab Sample

Event ID 648
Sample ID 10438384
Weight 2.63 gms
Sample Date 10-APR-12 14:03:20
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0
Grab Sample Comment
Trip Blank 2
Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209109	DSUMNERS	10-APR-2012 14:04:08	saving data	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:45

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648 | Sample ID 10438385 | Weight 2.66 gms
Sample Date 10-APR-12 14:04:26 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209112	DSUMNERS	10-APR-2012 14:05:18 saving data	

Grab Sample

Event ID 648 | Sample ID 10438386 | Weight 12.19 gms
Sample Date 10-APR-12 14:05:35 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2209113	DSUMNERS	10-APR-2012 14:06:28 saving data	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 03-May-2012
Time: 08:45

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00001	10427584	SR-256	S3110	425

Grab Sample

Event ID 648 | Sample ID 10438387 | Weight 12.16 gms

Sample Date 10-APR-12 14:06:49 | Volume 20 ml.

Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip Blank 5

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	048357	11-2277	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date		Comment
2209114	DSUMNERS	10-APR-2012 14:07:35	saving data	

******End of Core Analysis Report******

SSG12-000001

ALD Document: Log 1204051 CCP-SRS SR-256.tif - Scanned:4/9/2012 10:22:50 AM

ALD LOG # 1204051

AMWTP

Chain Of Custody

Print Date: 05-Apr-2012
Print Time: 10:50
COC No.: 0000527
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00001	10427583	SR-256	10437556	03-Apr-2012	15:31	20 / ml	2.96 / gms	PVOC	Davey Summers	PVOC	
SSG12-00001	10427583	SR-256	10437557	03-Apr-2012	15:33	20 / ml	2.67 / gms	NHVOC	Davey Summers	NHVOC	
SSG12-00001	10427583	SR-256	10437558	03-Apr-2012	15:38	20 / ml	12.33 / gms	NHVOC	Davey Summers	NHVOC-Hydrazine	
SSG12-00001	10427583	SR-256	10437559	03-Apr-2012	15:44	20 / ml	12.22 / gms	NHVOC	Davey Summers	NHVOC-Formaldehyde	
SSG12-00001	10427583	SR-256	10437560	03-Apr-2012	15:46	20 / ml	2.89 / gms	SPARE	Davey Summers	Spare 1	
SSG12-00001	10427583	SR-256	10437561	03-Apr-2012	15:47	20 / ml	2.83 / gms	SPARE	Davey Summers	Spare 2	
SSG12-00001	10427583	SR-256	10437562	03-Apr-2012	15:52	125 / ml	34.70 / gms	SVOC, METALS	Davey Summers	SVOC/METALS	
SSG12-00001	10427583	SR-256	10437704	04-Apr-2012	11:51	20 / ml	2.73 / gms	TRIP BLANK	Davey Summers	Trip Blank 1	
SSG12-00001	10427583	SR-256	10437705	04-Apr-2012	11:52	20 / ml	2.82 / gms	TRIP BLANK	Davey Summers	Trip Blank 2	
SSG12-00001	10427583	SR-256	10437706	04-Apr-2012	11:54	20 / ml	2.91 / gms	TRIP BLANK	Davey Summers	Trip Blank 3	
SSG12-00001	10427583	SR-256	10437707	04-Apr-2012	11:55	20 / ml	12.37 / gms	TRIP BLANK	Davey Summers	Trip Blank 4	
SSG12-00001	10427583	SR-256	10437708	04-Apr-2012	11:57	20 / ml	12.41 / gms	TRIP BLANK	Davey Summers	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Summers	Electronically signed in WTS	04-APR-12 18:01:48	
Received By	Cooley Banks	Electronically signed in WTS	04-APR-12 18:03:48	
Relinquished By	Cooley Banks	Cooley Banks	05-APR-12 1105	FGE for Sample Drum #1 1.10E-03 4/5/12
Received By	Radiulle Hubber		05Apr-12 1105	
Relinquished By	Radiulle Hubber		05 Apr-12 1108	on site Transfer TID 077654 4/5/12
Received By	Bill Strong		5-Apr-12 1215	
Relinquished By				
Received By				
Relinquished By				
Received By				

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SSG12-00001

ALD Document: Log 1204051 CCP-SRS SR-256.tif - Scanned:4/9/2012 10:22:50 AM

ALD LOG # 1204051

AMWTP

Chain Of Custody

Print Date: 05-Apr-2012
Print Time: 10:57
COC No.: 0000528
Page 1 of 2

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00001	10427583	SR-256	10437564	03-Apr-2012	15:56	20 / ml	2.75 / gms	PVOC	Davey Sorensen	PVOC 1	
SSG12-00001	10427583	SR-256	10437565	03-Apr-2012	15:58	20 / ml	2.80 / gms	PVOC	Davey Sorensen	PVOC 2	
SSG12-00001	10427583	SR-256	10437566	03-Apr-2012	15:59	20 / ml	2.76 / gms	PVOC	Davey Sorensen	PVOC 3	
SSG12-00001	10427583	SR-256	10437567	03-Apr-2012	16:01	20 / ml	2.73 / gms	NHVOC	Davey Sorensen	NHVOC1	
SSG12-00001	10427583	SR-256	10437568	03-Apr-2012	16:02	20 / ml	2.91 / gms	NHVOC	Davey Sorensen	NHVOC 2	
SSG12-00001	10427583	SR-256	10437569	03-Apr-2012	16:04	20 / ml	2.97 / gms	NHVOC	Davey Sorensen	NHVOC 3	
SSG12-00001	10427583	SR-256	10437570	03-Apr-2012	16:07	20 / ml	12.44 / gms	NHVOC	Davey Sorensen	NHVOC-HYDRAZINE	
SSG12-00001	10427583	SR-256	10437571	03-Apr-2012	16:11	20 / ml	12.35 / gms	NHVOC	Davey Sorensen	NHVOC-formaldehyde	
SSG12-00001	10427583	SR-256	10437572	03-Apr-2012	16:13	20 / ml	2.91 / gms	SPARE	Davey Sorensen	Spare 1	
SSG12-00001	10427583	SR-256	10437573	03-Apr-2012	16:15	20 / ml	2.75 / gms	SPARE	Davey Sorensen	Spare 2	
SSG12-00001	10427583	SR-256	10437574	03-Apr-2012	16:17	125 / ml	36.33 / gms	SVOC, METALS	Davey Sorensen	SVOC/METALS	
SSG12-00001	10427583	SR-256	10437709	04-Apr-2012	12:08	20 / ml	2.76 / gms	TRIP BLANK	Davey Sorensen	Trip Blank 1	
SSG12-00001	10427583	SR-256	10437710	04-Apr-2012	12:14	20 / ml	2.62 / gms	TRIP BLANK	Davey Sorensen	Trip Blank 2	
SSG12-00001	10427583	SR-256	10437711	04-Apr-2012	12:15	20 / ml	2.89 / gms	TRIP BLANK	Davey Sorensen	Trip Blank 3	
SSG12-00001	10427583	SR-256	10437712	04-Apr-2012	12:17	20 / ml	12.49 / gms	TRIP BLANK	Davey Sorensen	Trip Blank 4	
SSG12-00001	10427583	SR-256	10437713	04-Apr-2012	12:18	20 / ml	12.48 / gms	TRIP BLANK	Davey Sorensen	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sorensen	Electronically signed in WTS	04-APR-12 18:04:04	
Received By	Cordey Beebe	Electronically signed in WTS	04-APR-12 18:04:04	
Relinquished By	Cordey Beebe	Cordey Beebe	05APR12 1105	FGE for Sample Drum 1.31e-03 9/5/12
Received By	Rachelle Hubler	Rachelle Hubler	05Apr-12 1105	

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AMWTP

Chain Of Custody

Print Date: 05-Apr-2012
Print Time: 10:57
COC No.: 6000528
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ALD LOG # 1204051

Relinquished By	Rachelle Hubler	05-Apr-12 1110	On Site Transfer	
Received By	Bill Strong	5-Apr-12 1215	FED ON 4/5/12	
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD Document: Log 1204051 CCP-SRS SR-256.tif - Scanned:4/9/2012 10:22:50 AM

SS61 2-00001

ALD LOG # 1209111

AMWTP

Chain Of Custody

Print Date: 11-Apr-2012
Print Time: 09:10
COC No.: 0000529

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00001	10427582	SR-256	10438129	08-Apr-2012	10:40	20 / ml	2.70 / gms	PVOC	Michael Kremin		
SSG12-00001	10427582	SR-256	10438130	08-Apr-2012	10:41	20 / ml	2.77 / gms	NHVOC	Michael Kremin		
SSG12-00001	10427582	SR-256	10438131	08-Apr-2012	10:44	20 / ml	12.33 / gms	NHVOC	Michael Kremin	hydrazine sample	
SSG12-00001	10427582	SR-256	10438132	08-Apr-2012	10:49	20 / ml	12.25 / gms	NHVOC	Michael Kremin	formaldehyde	
SSG12-00001	10427582	SR-256	10438133	08-Apr-2012	10:52	20 / ml	2.83 / gms	SPARE	Michael Kremin	spare 1	
SSG12-00001	10427582	SR-256	10438134	08-Apr-2012	10:53	20 / ml	2.98 / gms	SPARE	Michael Kremin	spare 2	
SSG12-00001	10427582	SR-256	10438135	08-Apr-2012	10:58	125 / ml	39.65 / gms	SVOC, METALS	Michael Kremin		
SSG12-00001	10427582	SR-256	10438136	08-Apr-2012	13:28	20 / ml	2.83 / gms	TRIP BLANK	Michael Kremin	trip blank 1	
SSG12-00001	10427582	SR-256	10438137	08-Apr-2012	13:29	20 / ml	2.84 / gms	TRIP BLANK	Michael Kremin	trip blank 2	
SSG12-00001	10427582	SR-256	10438138	08-Apr-2012	13:31	20 / ml	2.57 / gms	TRIP BLANK	Michael Kremin	trip blank 3	
SSG12-00001	10427582	SR-256	10438142	08-Apr-2012	13:34	20 / ml	12.47 / gms	TRIP BLANK	Michael Kremin	trip blank 4	
SSG12-00001	10427582	SR-256	10438144	08-Apr-2012	13:38	20 / ml	12.50 / gms	TRIP BLANK	Michael Kremin	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	08-APR-12 16:28:43	
Received By	David Preston	Electronically signed in WTS	08-APR-12 16:28:43	
Relinquished By	David Preston	Electronically signed in WTS	09-APR-12 11:11:40	
Received By	Davey Sumners	Electronically signed in WTS	09-APR-12 11:11:40	
Relinquished By	Davey Sumners		04/11/12 0916	David J Preston 4/11/12
Received By	David J. Preston	David J Preston	04/11/12 0916	FGE 2.01E+00 (Drum FGE Assay)

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ALD LOG #
1204111

AMWTP

Chain Of Custody

Print Date: 11-Apr-2012
Print Time: 09:10
COC No.: 0000529
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Relinquished By	D.J. Preston	David J Preston	4/11/12 0919	On site transfer 4/11/12
Received By	John Nicholas	John Nicholas	4/11/12 1650	TID 077659 David J Preston
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000001

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ALD LOG #
1204111

AMWTP

Chain Of Custody

Print Date: 11-Apr-2012
Print Time: 09:26
COC No.: 0000530
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Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00001	10427590	SR-256	10438283	09-Apr-2012	15:19	20 / ml	2.63 / gms	PVOC	Davey Sumners	PVOC	
SSG12-00001	10427590	SR-256	10438284	09-Apr-2012	15:21	20 / ml	2.84 / gms	NHVOC	Davey Sumners	NHVOC	
SSG12-00001	10427590	SR-256	10438285	09-Apr-2012	15:23	20 / ml	12.44 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSG12-00001	10427590	SR-256	10438286	09-Apr-2012	15:25	20 / ml	12.14 / gms	NHVOC	Davey Sumners	NHVOC-Formaldehyde	
SSG12-00001	10427590	SR-256	10438287	09-Apr-2012	15:27	20 / ml	2.70 / gms	SPARE	Davey Sumners	Spare 1	
SSG12-00001	10427590	SR-256	10438288	09-Apr-2012	15:28	20 / ml	2.58 / gms	SPARE	Davey Sumners	Spare 2	
SSG12-00001	10427590	SR-256	10438289	09-Apr-2012	15:31	125 / ml	38.48 / gms	SVOC, METALS	Davey Sumners	SVOC/Metals	
SSG12-00001	10427590	SR-256	10438301	09-Apr-2012	16:18	20 / ml	2.86 / gms	TRIP BLANK	Davey Sumners	Trip Blank 1	
SSG12-00001	10427590	SR-256	10438302	09-Apr-2012	16:20	20 / ml	2.98 / gms	TRIP BLANK	Davey Sumners	Trip Blank 2	
SSG12-00001	10427590	SR-256	10438303	09-Apr-2012	16:21	20 / ml	2.60 / gms	TRIP BLANK	Davey Sumners	Trip Blank 3	
SSG12-00001	10427590	SR-256	10438304	09-Apr-2012	16:22	20 / ml	12.27 / gms	TRIP BLANK	Davey Sumners	Trip Blank 4	
SSG12-00001	10427590	SR-256	10438305	09-Apr-2012	16:23	20 / ml	12.45 / gms	TRIP BLANK	Davey Sumners	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		04/11/12 0934	David J Preston 4/11/12
Received By	David J. Preston	David J Preston	04/11/12 0934	FGE 3.98E-03 (Calculated Ratio Assay)
Relinquished By	David J. Preston	David J Preston	4/11/12 0939	ON SITE TRANSFER David J Preston 4/11/12
Received By	John H. Nichols	John H Nichols	4/11/12 1650	TID 077660
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000001

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ALD LOG #
1204111

AMWTP

Chain Of Custody

Print Date: 11-Apr-2012
Print Time: 09:39
COC No.: 0000531
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Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00001	10427584	SR-256	10438373	10-Apr-2012	12:51	20 / ml	2.80 / gms	PVOC	Davey Sumners	PVOC	
SSG12-00001	10427584	SR-256	10438374	10-Apr-2012	12:52	20 / ml	2.94 / gms	NHVOC	Davey Sumners	NHVOC	
SSG12-00001	10427584	SR-256	10438375	10-Apr-2012	12:54	20 / ml	12.37 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSG12-00001	10427584	SR-256	10438377	10-Apr-2012	12:55	20 / ml	12.12 / gms	NHVOC	Davey Sumners	NHVOC-Formaldehyde	
SSG12-00001	10427584	SR-256	10438378	10-Apr-2012	12:56	20 / ml	2.93 / gms	SPARE	Davey Sumners	Spare 1	
SSG12-00001	10427584	SR-256	10438379	10-Apr-2012	12:57	20 / ml	2.86 / gms	SPARE	Davey Sumners	Spare 2	
SSG12-00001	10427584	SR-256	10438380	10-Apr-2012	12:59	125 / ml	40.00 / gms	SVOC, METALS	Davey Sumners	SVOC/METALS	
SSG12-00001	10427584	SR-256	10438383	10-Apr-2012	14:01	20 / ml	2.72 / gms	TRIP BLANK	Davey Sumners	Trip Blank 1	
SSG12-00001	10427584	SR-256	10438384	10-Apr-2012	14:03	20 / ml	2.63 / gms	TRIP BLANK	Davey Sumners	Trip Blank 2	
SSG12-00001	10427584	SR-256	10438385	10-Apr-2012	14:04	20 / ml	2.66 / gms	TRIP BLANK	Davey Sumners	Trip Blank 3	
SSG12-00001	10427584	SR-256	10438386	10-Apr-2012	14:05	20 / ml	12.19 / gms	TRIP BLANK	Davey Sumners	Trip Blank 4	
SSG12-00001	10427584	SR-256	10438387	10-Apr-2012	14:06	20 / ml	12.16 / gms	TRIP BLANK	Davey Sumners	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		04/11/12 0947	David J Preston 4/11/12
Received By	David J. Preston	David J Preston	04/11/12 0947	FGE 2.89 E-02 (Calculated Ratio Assay)
Relinquished By	David J. Preston	David J Preston	04/11/12 0951	ON SITE TRANSFER David J Preston
Received By	J.L. H. McGee		4/11/12 1650	TID 077681 4/11/12
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-00001

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AMWTP Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

SSG12-000001

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
Abel Escobar	09/12/11	0735	3.6 °C	3.7 °C	3.4 °C	Samples in fridge
Nick Ingle	09/12/11	1520	3.4°C	3.4°C	3.3°C	Samples in Fridge
Abel Escobar	09/13/11	0730	3.2	3.4°C	2.8 °C	Samples in Fridge
Abel Escobar	09/13/11	1600	3.6°C	4.0 °C	3.5°C	No Samples in fridge
Mike Kremin	10/30/11	0752	3.8°C	3.9°C	3.5°C	NO SAMPLES IN FRIDGE
Nick Ingle	10/31/11	0749	3.9°C	4.0°C	3.5°C	No samples in Fridge
mike Kremin	10/31/11	1800	3.6°C	4.0°C	3.5°C	SAMPLES IN FRIDGE
DAVE SUMMERS	11/01/11	0730	3.6°C	3.8°C	3.5°C	Samples in Refrig
DAVE SUMMERS	11/01/11	1830	3.5°C	3.7°C	3.4°C	Samples in Refrig
Jesse Evans	11/02/11	0730	3.6°C	3.7°C	3.4°C	Samples in Fridge
DAVE SUMMERS	11/02/11	1830	3.5°C	3.7°C	3.4°C	Samples in Refrig
Jesse Evans	11/03/11	0700	3.6°C	3.7°C	3.5°C	Samples in Fridge
DAVE SUMMERS	11/03/11	1830	3.5°C	3.8°C	3.4°C	Samples in Refrig
DAVE SUMMERS	11/04/11	0700	3.9°C	3.9°C	3.4°C	Samples in Refrig
DAVE SUMMERS	11/04/11	1830	3.5°C	3.9°C	3.3°C	Samples in Refrig
Nick Ingle	11/05/11	0800	3.8°C	3.9°C	3.5°C	Samples in Fridge
Nick Ingle	11/05/11	1756	3.4°C	3.9°C	3.3°C	Samples in Fridge
Abel Escobar	11/06/11	0730	3.8°C	3.8°C	3.8°C	Samples in fridge
mike Kremin	11/06/11	1530	3.6°C	5.5°C	3.3°C	SAMPLES IN FRIDGE
mike Kremin	11/7/11	0730	3.6°C	3.7°C	3.4°C	SAMPLES IN FRIDGE
JESSE HOWARD	04/02/12	0725	4.0°C	4.2°C	3.9°C	NO SAMPLES IN FRIDGE
DAVE SUMMERS	04/03/12	0734	4.0°C	4.2°C	3.9°C	NO Samples in Refrig
DAVE SUMMERS	04/04/12	0708	4.0°C	4.5°C	3.9°C	NO Samples in Refrig
DAVE SUMMERS	04/04/12	1830	4.0°C	4.8°C	3.8°C	Samples in Refrig
Carley Beebe	04/05/12	0830	3.8°C	4.0°C	3.8°C	Samples in Refrige
mike Kremin	04/06/12	0815	4.2°C	4.2°C	4.1°C	NO SAMPLES IN FRIDGE

C00050

AMWTP Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

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Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
Nick Ingle	4/7/12	0850	4.0°c	4.3°c	4.0°c	No samples in Fridge
Nick Ingle	4/7/12	1811	4.4°c	4.5°c	3.9°c	No samples in Fridge
Marcial Trejo	4/8/12	0905	4.0°c	4.2°c	4.0°c	No samples in Fridge
Nick Ingle	4/8/12	1735	4.5°c	4.9°c	4.0°c	Samples in Fridge
DAVE SUMMERS	04/09/12	0720	3.8°c	4.9°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/09/12	1835	4.4°c	4.5°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/10/12	0722	3.8°c	4.5°c	3.8°c	Samples in Refrig
DAVE SUMMERS	04/10/12	1830	3.9°c	4.9°c	3.8°c	Samples in Refrig
JESSE HOWARD	04/11/12	0715	3.4°c	4.0°c	3.3°c	SAMPLES IN FRIDGE

SSG12-000001

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AMWTP Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Form-1602, Rev. 6
Effective: 06/04/09

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/08/12

Time	Equipment Check/Data Point		Normal Condition	Off-Spec Condition	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
0800	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	4.0°C	4.0°C	4.0°C	4.0°C	4.1	4.1	4.0
		High Temp	2°C to 6°C	<2°C or >6°C	4.2°C	4.2°C	4.5°C	4.3°C	4.5	4.6	4.4
		Low Temp	2°C to 6°C	<2°C or >6°C	3.9°C	3.9°C	3.9°C	3.8°C	3.8	3.9	3.9
		Refrigerator	Locked	Unlocked	LOCKED	Locked	Locked	Locked	Locked	Locked	Locked
	Blow down the air receiver for the WMF-634 air compressor per INST-OI-27, Characterization Facility Main Building Air System Operations. (if completed √)				✓	✓	✓	✓	✓	✓	✓
	DVS nitrogen gas bottle pressure		>300 psi	<300 psi	550 PSI	850 #	850 #	840 *	840	840	820
	HGAS nitrogen gas bottle pressure		>300 psi	<300 psi	1250 PSI	1100 #	1050 #	1020	1000	925	925
	HGAS helium gas bottle pressure		>300 psi	<300 psi	1450 PSI	1450 #	1450 #	1440 *	1440	1440	1430
	WMF-634 inside temperature (Use WTS to verify.)		>65°F	<65°F	74 °F	73°F	73°F	74°F	73°F	74°F	73°
				Operator Initial	JS	J	J	TP	ESD	ESD	DD
				SS Review Initial	JB	JB.	JB.	SM	SM	SM	SM
2000	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		High Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Low Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Refrigerator	Locked	Unlocked	①	①	①	①	①	①	①
				Operator Initial	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				SS Review Initial	JB	JB.	JB.	SM	SM	SM	SM

SSG12-00001

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1. Temperature readings are recorded once every shift in accordance with procedure. However, if extenuating circumstances prevent documentation every shift, then the temperature readings must be taken at a minimum of once a day to ensure sample integrity is maintained and the requirement of SW-846 is met.
2. Recording refrigerator temperature is only required while samples are in the refrigerator and data from Form-1602 can be transferred to Form-1585 by a qualified coring operator.

AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 2 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/08/12

Time	Equipment Check/Data Point Coring Vent. Control Panel		Normal Condition	Off-Spec Condition	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
0800	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	3200	3200	3200	3200	3200	3200	3200
		PV (scfm)	3100 – 3300	<3100 or >3330	3230	3195	3201	3218	3230	3190	3218
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	150	150	150	150	150	150	150
		PV (scfm)	144 – 156	<144 or >156	146	147	145	143	148	146	147
	Operator Initial				PS	S	S	TDS	CBD	CBD	m
	SS Review Initial				[illegible]	[illegible]	[illegible]	SM	SM	SM	SM
2000	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	0	0	0	0	0	0	0
		PV (scfm)	3100 – 3300	<3100 or >3330	0	0	0	0	0	0	0
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	0	0	0	0	0	0	0
		PV (scfm)	144 - 156	<144 or >156	0	0	0	0	0	0	0
	Operator Initial				N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SS Review Initial				[illegible]	[illegible]	[illegible]	SM	SM	SM	SM

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AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 3 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/08/12

Reading should be taken once a week on Sunday when system is operating. Date Data Taken: 04/08/12

Equipment Check/Data Point	Normal Condition	Off-Spec Condition	Reading
PDI-232-020 Zone 2 – Bank 1 – Stage 1 HEPA filters	≤5 in. WC	>5 in. WC	NA
PDI-232-020 Zone 2 – Bank 1 – Stage 2 HEPA filters	≤5 in. WC	>5 in. WC	NA
PDI-232-020 Zone 2 – Bank 2 – Stage 1 HEPA filters	≤5 in. WC	>5 in. WC	3.0
PDI-232-020 Zone 2 – Bank 2 – Stage 2 HEPA filters	≤5 in. WC	>5in. WC	1.5
PDI-232-040 Zone 3 – North – Stage 1 HEPA filter	≤5 in. WC	>5 in. WC	NA
PDI-232-040 Zone 3 – North – Stage 2 HEPA filter	≤5 in. WC	>5 in. WC	NA
PDI-232-040 Zone 3 – North – Stage 3 HEPA filter	≤5 in. WC	>5 in. WC	NA
PDI-232-041 Zone 3 – South – Stage 1 HEPA filter	≤5 in. WC	>5 in. WC	3.1
PDI-232-041 Zone 3 – South – Stage 2 HEPA filter	≤5 in. WC	>5 in. WC	2.0
PDI-232-041 Zone 3 – South – Stage 3 HEPA filter	≤5 in. WC	>5 in. WC	1.75
PDI-220-003 Drum Vent System – 1st Stage HEPA	1.0 in. WC to 2.75 in. WC	>2.75 in. WC	.15
PDI-220-004 Drum Vent System – 2nd Stage HEPA	.6 in. WC to 2.35 in. WC	>2.75 in. WC	.10
Low Flow Check (Total between PDI-220-003 and PDI-220-004)	<3.35 in. WC	>3.35 in. WC	.25
		Operator Initial	M
		SS Review Initial	SM

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AMWTP Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/08/12

WMF-634 Generator Checks	Normal	Off Spec	Date:														
			Time:														
Fuel Level (gauge)	>1/2	<1/2															
Coolant temperature (°F)	70 – 215	>215															
Engine Oil Pressure (psi)	30 – 50	<25 loaded <15 idling															
Generator Output Voltage (vAC)	480	<476 or >484															
Generator Output Frequency (Hz)	60	<59 or >61															
Running Hours Note 2	N/A	N/A															
		Operator Initial															
		SS Review Initial															

NOTE 1: Generator checks are to be performed at startup (whether manual or automatic) and every 2 ± ½ hours there after until Generator is shut down.

NOTE 2: Diesel Generator is allowed only 200 hr/yr of operation.

NOTE 3: Enter N/A if generator did not run this week.

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AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 5 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/08/12

Comments: ① No Night Shift Operations

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AMWTP Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Form-1602, Rev. 6
Effective: 06/04/09
Page 1 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/02/12 to 04/15/12

SS-G12-000001

Time	Equipment Check/Data Point		Normal Condition	Off-Spec Condition	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
0800	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	3.8°C	3.8°C	3.4°C	3.8°C	3.6	3.7°C	3.4°C
		High Temp	2°C to 6°C	<2°C or >6°C	4.9°C	4.5°C	4.0°C	3.8°C	3.8	3.8°C	4.1°C
		Low Temp	2°C to 6°C	<2°C or >6°C	3.8°C	3.8°C	3.3°C	3.4°C	3.5	3.5°C	3.4°C
		Refrigerator	Locked	Unlocked	Locked	Locked	Locked	Locked	Locked	Locked	Locked
	Blow down the air receiver for the WMF-634 air compressor per INST-OI-27, Characterization Facility Main Building Air System Operations. (if completed √)				✓	✓	✓	✓	✓	✓	✓
	DVS nitrogen gas bottle pressure		>300 psi	<300 psi	850#	850#	850#	600#	800psi	800 PSI	800psi
	HGAS nitrogen gas bottle pressure		>300 psi	<300 psi	725#	600#	525#	375#	(2) 250psi	(3) 220psi	(4) 200psi
	HGAS helium gas bottle pressure		>300 psi	<300 psi	1425#	1425#	1425#	1425#	1425psi	1425psi	1425psi
	WMF-634 inside temperature (Use WTS to verify.)		>65°F	<65°F	73°F	73°F	73°	73°F	74°	73°F	74°F
				Operator Initial							
				SS Review Initial							
2000	Coring Refrigerator Temperature[1,2]	Current Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		High Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Low Temp	2°C to 6°C	<2°C or >6°C	①	①	①	①	①	①	①
		Refrigerator	Locked	Unlocked	①	①	①	①	①	①	①
				Operator Initial	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				SS Review Initial							

1. Temperature readings are recorded once every shift in accordance with procedure. However, if extenuating circumstances prevent documentation every shift, then the temperature readings must be taken at a minimum of once a day to ensure sample integrity is maintained and the requirement of SW-846 is met.
2. Recording refrigerator temperature is only required while samples are in the refrigerator and data from Form-1602 can be transferred to Form-1585 by a qualified coring operator.

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AMWTP Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Form-1602, Rev. 6
Effective: 06/04/09

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 **to** 04/15/12

Time	Equipment Check/Data Point Coring Vent. Control Panel		Normal Condition	Off-Spec Condition	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
0800	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	3200	3200	3200	3200	3200	3200	3200
		PV (scfm)	3100 – 3300	<3100 or >3330	3209	3260	3230 ~~3234~~	3208	3218	3210	3170
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	150	150	150	150	150	150	150
		PV (scfm)	144 – 156	<144 or >156	147	145	146	146	148	147	148
				Operator Initial							
				SS Review Initial					SM	SM	SM
2000	FICS-232-058 Flow Control SW Zone #2	SP	3200	Not 3200	①	①	①	①	①	①	①
		PV (scfm)	3100 – 3300	<3100 or >3330	①	①	①	①	①	①	①
	FICS-232-056 Flow Control SW Zone #3	SP 150	150	Not 150	①	①	①	①	①	①	①
		PV (scfm)	144 - 156	<144 or >156	①	①	①	①	①	①	①
				Operator Initial	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				SS Review Initial					SM	SM	SM

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AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 3 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 to 04/15/12

Reading should be taken once a week on Sunday when system is operating. Date Data Taken: 04/15/12

Equipment Check/Data Point	Normal Condition	Off-Spec Condition	Reading
PDI-232-020 Zone 2 – Bank 1 – Stage 1 HEPA filters	≤5 in. WC	>5 in. WC	0.0
PDI-232-020 Zone 2 – Bank 1 – Stage 2 HEPA filters	≤5 in. WC	>5 in. WC	0.0
PDI-232-020 Zone 2 – Bank 2 – Stage 1 HEPA filters	≤5 in. WC	>5 in. WC	2.5
PDI-232-020 Zone 2 – Bank 2 – Stage 2 HEPA filters	≤5 in. WC	>5in. WC	1.2
PDI-232-040 Zone 3 – North – Stage 1 HEPA filter	≤5 in. WC	>5 in. WC	0.0
PDI-232-040 Zone 3 – North – Stage 2 HEPA filter	≤5 in. WC	>5 in. WC	0.0
PDI-232-040 Zone 3 – North – Stage 3 HEPA filter	≤5 in. WC	>5 in. WC	0.0
PDI-232-041 Zone 3 – South – Stage 1 HEPA filter	≤5 in. WC	>5 in. WC	3.1
PDI-232-041 Zone 3 – South – Stage 2 HEPA filter	≤5 in. WC	>5 in. WC	2.0
PDI-232-041 Zone 3 – South – Stage 3 HEPA filter	≤5 in. WC	>5 in. WC	1.8
PDI-220-003 Drum Vent System – 1st Stage HEPA	1.0 in. WC to 2.75 in. WC	>2.75 in. WC	2.1
PDI-220-004 Drum Vent System – 2nd Stage HEPA	.6 in. WC to 2.35 in. WC	>2.75 in. WC	0.9
Low Flow Check (Total between PDI-220-003 and PDI-220-004)	<3.35 in. WC	>3.35 in. WC	3.0
		Operator Initial	EBO
		SS Review Initial	SM

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AMWTP Advanced Mixed Waste Treatment Project	Characterization Round Sheet	Form-1602, Rev. 6 Effective: 06/04/09 Page 4 of 5

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 to 04/15/12

WMF-634 Generator Checks	Normal	Off Spec	Date:													
			Time:													
Fuel Level (gauge)	>1/2	<1/2														
Coolant temperature (°F)	70 – 215	>215														
Engine Oil Pressure (psi)	30 – 50	<25 loaded <15 idling														
Generator Output Voltage (vAC)	480	<476 or >484														
Generator Output Frequency (Hz)	60	<59 or >61														
Running Hours Note 2	N/A	N/A														
		Operator Initial														
		SS Review Initial														

NOTE 1: Generator checks are to be performed at startup (whether manual or automatic) and every 2 ± ½ hours there after until Generator is shut down.

NOTE 2: Diesel Generator is allowed only 200 hr/yr of operation.

NOTE 3: Enter N/A if generator did not run this week.

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AMWTP
Advanced Mixed Waste Treatment Project

Characterization Round Sheet

Form-1602, Rev. 6
Effective: 06/04/09

Implementing Document: MP-COPS-9.3

Date of Shift Week: 04/09/12 to 04/15/12

Comments: Note ① slo slight Operations
② out of spec - low press.

SG1200001

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AMWTP Advanced Mixed Waste Treatment Project	Analytical Balance Calibration Check Sheet	Form-1215 Rev. 4 Effective: 04/08/08 Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-601 **Scale Calibration Expiration Date:** 10/30/2012

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
04/03/12	0752	MTE-158	30.0g +/- .01g	30.0g	Pass	
04/03/12	0752	MTE 130	50.0g +/- 0.01g	50.0g	Pass	
04/03/12	0752	MTE-158+130	80.0g +/- 0.01g	80.0g	Pass	
04/04/12	0722	MTE 158	30.00g +/- 0.01g	30.00g	PASS	
04/04/12	0722	MTE 130	50.00g +/- 0.01g	50.00g	PASS	
04/04/12	0722	MTE 158 & MTE 130	80.00g +/- 0.01g	80.00g	PASS	
04/06/12	1038	MTE-158	30.00g +/- .01g	30.00g	Pass	
04/06/12	1039	MTE-130	50.00g +/- .01g	50.00g	Pass	
04/06/12	1040	MTE-158 + MTE-130	80.00g +/- .01g	80.00g	Pass	
04/07/12	0941	MTE-158	30.00g +/- .01g	30.00g	Pass	
04/07/12	0942	MTE-130	50.00g +/- .01g	50.00g	Pass	
04/07/12	0943	MTE-158 + MTE-130	80.00g +/- .01g	80.00g	Pass	
04/08/12	0908	MTE-158	30.00g +/- .01g	30.00g	Pass	
04/08/12	0909	MTE-130	50.00g +/- .01g	50.00g	Pass	
04/08/12	0910	MTE-158+130	80.00g +/- .01g	80.00g	Pass	
04/09/12	0820	MTE-158	30.00 +/- .01g	30.00g	Pass	
04/09/12	0820	MTE-130	50.00 +/- .01g	50.00g	Pass	
04/09/12	0820	MTE-130+158	80.00 +/- .01g	80.00g	Pass	
04/10/12	0805	MTE-158	30.00g +/- .01g	30.00g	PASS	
04/10/12	0805	MTE-130	50.00g +/- .01g	50.00g	PASS	
04/10/12	0805	MTE-158+130	80.00g +/- .01g	80.00g	PASS	
04/11/12	0808	MTE-158	30.00g +/- .01g	30.00g	Pass	
04/11/12	0808	MTE-130	50.00g +/- .01g	50.00g	Pass	
04/11/12	0808	MTE-158+130	80.00g +/- .01g	80.00g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form ..15
Rev. 4
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
11/04/11	0718	MTE-179	50.00 +/- .01g	50.00	PASS	
11/04/11	0718	MTE-161	150.00 +/- .01g	150.00	PASS	
11/04/11	0718	MTE-314	500.00 +/- .01g	500.00	PASS	
11/05/11	0908	MTE-179	50.00 +/- .01g	50.00g	Pass	
11/05/11	0909	MTE-161	150.00 +/- .01g	150.00g	Pass	
11/05/11	0910	MTE-314	500.00 +/- .01g	500.00g	Pass	
3/26/12	1341	MTE-179	50.00 +/- .01g	50.00 g	PASS	
3/26/12	1346	MTE-161	150.00 +/- .01g	150.00 g	PASS	
3/26/12	1344	MTE-314	500.00 +/- .01g	500.00 g	PASS	
04/05/12	0750	MTE-179	50.00 +/- 0.01G	50.00 G	PASS	
04/02/12	0750	MTE-161	150.00 +/- 0.01G	150.00 G	PASS	
04/03/12	0750	MTE-314	500.00 +/- 0.01G	499.99 G	PASS	
04/04/12	0716	MTE-179	50.00 +/- 0.01G	50.00 G	PASS	
04/04/12	0716	MTE-161	150.00 +/- 0.01G	150.00 G	PASS	
04/04/12	0716	MTE-314	500.00 +/- 0.01G	499.99 G	PASS	
04/06/12	1035	MTE-179	50.00 +/- .01g	50.00g	Pass	
04/06/12	1036	MTE-161	150.00 +/- .01g	150.00g	Pass	
04/06/12	1037	MTE-314	500.00 +/- .01g	499.99g	Pass	
04/07/12	0935	MTE-179	50.00g +/- .01g	50.00g	Pass	
04/07/12	0939	MTE-161	150.00g +/- .01g	150.00g	Pass	
04/07/12	0940	MTE-314	500.00g +/- .01g	499.99g	Pass	
04/05/12	0904	MTE-179	50.00g +/- .01g	50.00 g	PASS	
04/05/12	0905	MTE-161	150.00g +/- .01g	150.00 g	PASS	
04/05/12	0905	MTE-314	500.00g +/- .01g	500.00 g	PASS	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form ...15
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
04/09/12	0830	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/09/12	0830	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/09/12	0830	MTE-314	500.00 +/- 0.01G	499.99G	PASS	
04/10/12	0810	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/10/12	0810	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/10/12	0810	MTE-314	500.00 +/- 0.01G	499.99G	PASS	
04/11/12	0825	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
04/11/12	0825	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
04/11/12	0825	MTE-314	500.00 +/- 0.01G	500.00G	PASS	

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583 **Sample Origin:** Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001 **Sample Type:** Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	04/04/12 04/05/12	0730 0745	D Summers D Summers	Revalitied gloves condition SAT. glovebox material condition + cleanliness SAT NO ISSUES NOTED
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? NA if soft secondary waste is not removed from glovebox.	☒	☐	☐	04/04/12 04/05/12	0720 0735	D Summers D Summers	CHECKS SAT CHECKS SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	04/04/12 04/05/12	0722 0755	D Summers D Summers	scale checks SAT SCALE CHECK SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	04/04/12 04/05/12	0730 0745	D Summers D Summers	Revenited cleanliness Cleanliness inspected SAT
4b. Document any deficiencies in the comments section.						D Summers	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/03/12	1430	D Summers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	04/05/12	1814	Mike Kramer	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	04/03/12	1400	DSummary	N/A per OI-75 Grab Sampling NOT used for sample Recovery
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	04/03/12	1520	DSummary	tools verified clean and packaging intact NO Deficiencies noted
7b. Were any defective sampling tools identified?	☐	☒	☐	04/03/12	1520	DSummary	
7c. Was the SS and SME notified?	☐	☐	☒	04/03/12	1520	DSummary	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	04/03/12	1520	DSummary	
7e. Document any deficiencies by ID number in the comments section.						DSummary	

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 3 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75 GRAB Sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	04/03/12	1522	D Summers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	04/03/12	1620	D Summers	All samples taken within 1 hour limit
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75
11b. Has this observation been recorded in WTS Core Physical Description comments field? N/A for **Grab sample.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 7 Effective: 03/01/11 Page 4 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	04/03/12	1625	D Summers	Initial Sample
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	04/03/12	1625	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	04/03/12	1625	D Summers	verified complete and correct to WTS screens
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	04/03/12	1625	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	04/04/12	1100	D Summers	signed and intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	04/04/12	1222	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	04/04/12	1222	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	04/04/12	1222	D Summers	Trip blanks created and placed with samples in Refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	04/04/12	1515	D Summers	verified locked after samples placed INSIDE

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427563

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Michael D Kreamer (Print Name) _____ (Signature) 04/05/12 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) _____ (Signature) 04/6/12 04/11/12 (Date)

SSG12-000001

690000

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP Solid Sampling Checklist

Form-1599
Rev. 7
Effective: 03/01/11

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Batch Number: SS612-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	04/04/12 04/03/12	0730 0745	D Summers D Summers	Reverified glovebox condition SAT. glovebox material condition & cleanliness SAT, NO ISSUES NOTED.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift? **NA if soft secondary waste is not removed from glovebox.**	☒	☐	☐	04/04/12 04/03/12	0720 0735	D Summers D Summers	Checks SAT Checks SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	04/04/12 04/03/12	0722 0755	D Summers D Summers	Scale Checks SAT Scale Checks SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	04/04/12 04/03/12	0730 0745	D Summers D Summers	Reverified cleanliness Cleanliness inspection SAT
4b. Document any deficiencies in the comments section.						D Summers	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/03/12	1430	D Summers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	04/05/12	1814	Mike Kreml	WTS updated

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000070

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427563

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	04/03/12	1400	D Summers	N/A per OI-75 Grab Sampling NOT USED For sample Recovery
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	04/03/12	1520	D Summers	tools verified clean and packaging intact NO ~~Defences~~ verified Deficiencies NOTED.
7b. Were any defective sampling tools identified?	☐	☒	☐	04/03/12	1520	D Summers	
7c. Was the SS and SME notified?	☐	☐	☒	04/03/12	1520	D Summers	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	04/03/12	1520	D Summers	
7e. Document any deficiencies by ID number in the comments section.						D Summers	

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 104275B3

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75 Grab sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	04/03/12	1522	D Summers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	04/03/12	1620	D Summers	All samples taken within 1 hour limit
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	04/03/12	1400	D Summers	N/A for OI-75

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	04/03/12	1625	D Summers	NO INCONSISTENCIES NOTED BETWEEN INITIAL C/ FIELD DUP SAMPLES.
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	04/03/12	1625	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	04/03/12	1625	D Summers	VERIFIED COMPLETE AND CORRECT TO WTS SCREENS
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	04/03/12	1625	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	04/04/12	1100	D Summers	SIGNED AND INTACT
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	04/04/12	1410	D Summers	WTS UPDATED
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	04/04/12	1410	D Summers	WTS UPDATED
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	04/04/12	1253	D Summers	TRIP BLANKS CREATED AND PLACED WITH SAMPLES IN REFRIG
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	04/04/12	1515	D Summers	VERIFIED LOCKED AFTER SAMPLES PLACED INSIDE.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427583

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Additional comments:

Checklist completed by OT: Michael D Koenig (Print Name) | Michael D Koenig (Signature) | 04/05/12 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) | Dave Becker (Signature) | 04/5/12 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10421582

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☑	☐	☐	04/01/12 04/08/12	0921 0900	mike Kramer mike Kramer	Glove Box visibly clean Glove Box visibly clean
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☑	☐	☐	04/04/12 04/06/12	0850 0809	mike Kramer mike Kramer	Performace checks SAT Performace check SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☑	☐	☐	04/04/12 04/08/12	0946 0910	mike Kramer mike Kramer	Electronic Balance checks SAT Electronic Balance checks SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☑	☐	☐	04/04/12 04/04/12	0930 0904	mike Kramer mike Kramer	Cleaning And Inspection completed Cleaning & SAT Inspection completed SAT
4b. Document any deficiencies in the comments section.						mike Kramer mike Kramer	No Deficencies No Deficencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☑	☐	☐	04/04/12 04/08/12	1600 0915	mike Kramer mike Kramer	WTS updated WTS update verified
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	04/08/12	1720	mike Kramer	WTS updated

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000075

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427582

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Batch Number: ~~SS60~~ SS612-00001

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☑	04/04/12 04/08/12	1400 0914	mike Kramer mike Kramer	N/A / Grab Sample N/A / Grab Sample
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☑	☐	☐	04/04/12 04/08/12	1405 0918	mike Kramer mike Kramer	Visibly Clean Visibly Clean
7b. Were any defective sampling tools identified?	☐	☑	☐	04/04/12 04/08/12	1405 0918	mike Kramer mike Kramer	No Defective Tools No Defective Tools
7c. Was the SS and SME notified?	☐	☐	☑	04/04/12 04/08/12	1405 0918	mike Kramer mike Kramer	N/A N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☑	☐	☐	04/04/12 04/08/12	1405 0918	mike Kramer mike Kramer	Packaging Intact Packaging Intact
7e. Document any deficiencies by ID number in the comments section.						mike Kramer mike Kramer	No Deficies No Deficies

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427582

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Batch Number: SSG12-00001

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☑	04/04/12 04/08/12	1456 0920	Mike Kremin mike Kremin	N/A GLAB SAmpling N/A GLAB SAmpling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					Mike Kremin mike Kremin	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☑	☐	☐	04/08/12	1040 1058	mike Kremin mike Kremin	WTS updated proc WTS updated SUOC met
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☑	☐	☐	04/08/12	1101	mike Kremin	Verified All samples capped
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☑	04/05/12	1104	mike Kremin	N/A GLAB Sample
11b. Has this observation been recorded in WTS Core Physical Description comments field? N/A for **Grab sample.**	☐	☐	☑	04/05/12	1104	mike Kremin	N/A GLAB SAmple

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427582

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☑	04/08/12	1020	mike Kremer	INITIAL SAMPLE
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☑	04/08/12	1020	mike Kremer	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☑	☐	☐	04/08/12	1105	mike Kremer	SAMPLES LABELS VERIFIED
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☑	☐	☐	04/08/12	1105	mike Kremer	SVOC METALS LABEL VERIFIED
14. Have custody seals been signed and dated?	☑	☐	☐	04/08/12	1414	mike Kremer	VERIFIED COMPLETE
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☑	☐	☐	04/08/12	1440	mike Kremer	WTS UPDATED
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☑	☐	☐	04/08/12	1639	mike Kremer	WTS UPDATED
17. Have trip blanks been prepared and placed into refrigerated storage?	☑	☐	☐	04/08/12	1510	mike Kremer	VERIFIED AND PLACED IN REFRIGERATED STORAGE
18. The refrigerated sample storage area has been verified to be locked and secured.	☑	☐	☐	04/08/12	1639	mike Kremer	VERIFIED LOCKED

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 104275 S2

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

SSG12-000001

Checklist completed by OT: Mike Kremin (Print Name) _____ (Signature) 04/08/2012 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) _____ (Signature) 04/11/12 (Date)

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427590

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	04/05/12	0825	DSummers	Glovebox material condition and cleanliness SAT, NO DEFICIENCIES NOTED
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	04/05/12	0757 0853 redone	DSummers	Checks completed SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	04/05/12	0831	DSummers	Checks completed SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	04/05/12	0825	DSummers	Glovebox tools and equipment verified intact and clean. NO DEFICIENCIES NOTED.
4b. Document any deficiencies in the comments section.						DSummers	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/05/12	1237	DSummers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/19/12	1205	DSummers	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427550

Batch Number: SS612-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

SS612-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	04/09/12	1230	D Summers	N/A per OI-75 Grab Sampling. Not used for Sample Recovery.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	04/09/12	1510	D Summers	Equipment and sampling tools clean and packaging intact. No Deficiencies noted.
7b. Were any defective sampling tools identified?	☐	☒	☐	04/09/12	1510	D Summers	
7c. Was the SS and SME notified?	☐	☐	☒	04/09/12	1510	D Summers	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	04/09/12	1510	D Summers	
7e. Document any deficiencies by ID number in the comments section.						D Summers	

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427550

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☑

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☑	04/04/12	1230	D Summers	N/A for OI-75 Grab Sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☑	☐	☐	04/04/12	1510	D Summers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☑	☐	☐	04/04/12	1532	D Summers	Verified sampling completed within 11hr time limit.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☑	04/04/12	1230	D Summers	N/A for OI-75 Grab Sampling
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☑	04/04/12	1230	D Summers	N/A for OI-75 Grab Sampling

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427590

Batch Number: SS612-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	04/05/12	1230	D Summers	Initial sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	04/05/12	1230	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	04/05/12	1540	D Summers	Verified correct and complete and match WTS screens.
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	04/05/12	1540	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	04/05/12	1650	D Summers	Verified signed and intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	04/05/12	1800	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	04/05/12	1800	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	04/05/12	1800	D Summers	Trip blanks built, labeled, sealed and placed with samples in cooler
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	04/05/12	1804	D Summers	samples intact, fridge locked and secure.

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427590

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Danny Simmons (Print Name) _____ (Signature) 04/10/12 (Date)

Checklist reviewed by SS: Max Becker (Print Name) _____ (Signature) 04/11/12 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427584

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	04/10/12	0815	D Summers	Glovebox material condition and cleanliness SAT, NO Deficiencies NOTED.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	04/10/12	1110	D Summers	Packet assay energy cal, background and standardization checks SAT.
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	04/10/12	0810	D Summers	Scale checks SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	04/10/12	0815	D Summers	All tools and support equipment clean and intact NO Deficiencies NOTED
4b. Document any deficiencies in the comments section.						D Summers	
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/10/12	1234	D Summers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	04/11/12	1234	D Summers	WTS updated

000085

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 2 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427584

Batch Number: SS612-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	04/10/12	1235	DSummers	N/A for OI-75 Grab sampling NOT used for sample material collection.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	04/10/12	1250	DSummers	Verified sampling tools clean and packaging intact. NO DEFICIENCIES NOTED.
7b. Were any defective sampling tools identified?	☐	☒	☐	04/10/12	1250	DSummers	
7c. Was the SS and SME notified?	☐	☐	☒	04/10/12	1250	DSummers	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	04/10/12	1250	DSummers	
7e. Document any deficiencies by ID number in the comments section.						DSummers	

SS612-00001

980000

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP Solid Sampling Checklist

Form-1599
Rev. 8
Effective: 04/05/12

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427584

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00001

Sample Type: Initial ☑ Co-located ☐ Resample ☐ Field Duplicate ☐

SSG12-00001

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	04/10/12	1133	DSummers	N/A for OI-75 Grab Sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					DSummers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	04/10/12	1246	DSummers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	04/10/12	1300	DSummers	Verified sampling completed within the 1 hour limit.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	04/10/12	1245	DSummers	N/A for OI-75 Grab Sampling
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	04/10/12	1245	DSummers	N/A for OI-75 Grab Sampling

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 4 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427584

Batch Number: SSG12-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	04/10/12	1245	D Summers	Initial sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	04/10/12	1245	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	04/10/12	1330	D Summers	Verified complete and correct and that they match WTS.
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	04/10/12	1330	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	04/10/12	1345	D Summers	Verified signed, dated and intact.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	04/10/12	1630	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	04/10/12	1630	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	04/10/12	1630	D Summers	Built, labeled and placed with subsamples
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	04/10/12	1630	D Summers	Verified locked and secure.

880000

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10427584

Batch Number: 55412-00001

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: DAVEY SUMMERS (Print Name) — Signature — 04/11/12 (Date)

Checklist reviewed by SS: Dave Becker (Print Name) — Signature — 04/11/12 (Date)

SS412-000001

000089

AMWTP Advanced Mixed Waste Treatment Project	**Independent Technical Reviewer** **Small Container Sampling Checklist**	Form-1858, Rev. 1 Effective: 05/29/08 Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG12-00001	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the quality assurance (QA) documentation for the Batch Data Reports (BDR) complete and include data reports and quality checklist (QC) results? • Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist (manual review only) • Form-1858, Independent Technical Reviewer Small Container Sampling Checklist (Manual grab sampling review only) • Form-1491, Supplemental Batch Comment Form, as applicable • Associated nonconformance reports (NCRs)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Was each operator qualified at the time of each sampling event?	X			
4. Has the Chain of Custody (COC) been initiated properly filled out and is it complete?	X			
5. Was the E-signature History review performed?	X			
6. Were the samples and field duplicate based on a random selection method?	X			

600090

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG12-00001	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. • Samples • Refrigeration	X			
8. Was the initial small container sample visually examined?	X			
9. Was the field duplicate visually compared to the first sample and were the results acceptable?	X			
10. Were the correct units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? • Was the sampling tools inspection satisfactory? • Was the sampling equipment protective wrapper intact? • Was the sampling area inspection satisfactory? • Were the sampling tools inspected after unwrapping?	X			
16. Were field duplicate samples collected at a frequency of one per sampling batch, as defined in INST-OI-75, Container-in-Container Sampling?	X			

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AMWTP Advanced Mixed Waste Treatment Project	Independent Technical Reviewer Small Container Sampling Checklist	Form-1858, Rev. 1 Effective: 05/29/08 Page 3 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG12-00001	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet data quality objectives (DQOs) or quality assurance objectives (QAOs)? If so, indicate all NCR numbers in the batch comment section.		X		
18. Have the use of INST-OI-75, sampling equipment, and measurement units been consistent?	X			
19. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-75?	X			
20. Was the correct revision of the procedure documented on each analysis report?	X			
21. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
22. Were the rework requirements clearly identified in waste tracking system (WTS) or on the BDR?	X			See Batch Comments.

ITR Print Name: Jay Simonson	ITR Signature: Jay T. Simonson	Date: 25 April 2012

Jay T. Simonson 05 June 2012

000092

AMWTP Advanced Mixed Waste Treatment Project	Site Project Manager Small Container Sampling Checklist	Form-1859 Rev. 2 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSG12-00001

Question	Response			Requirement	Comment
	YES	NO	N/A		
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives (QAOs) been met? Precision: • Has a field duplicate sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Tools (if required) – Sampling Equipment? Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • Were the containers randomly selected from the container population, the small container randomly selected and the grid location randomly selected prior to obtaining samples? Comparability • Was the correct version of INST-OI-75, Container-in-Container Sampling, used? Representativeness: • Was non-disposable sampling equipment cleaned prior to sampling?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

600093

Batch Data Report #: SSG12-00001

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(4) Was the scale in calibration, and was a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the equipment blanks acceptable? NOTE: *The analytical results for the equipment blanks are less than 3 times the minimum detection limit (MDL) for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) and less than 3 times the program required detection limits (PRDLs) for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Were samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(7) Were samples collected within 14 days of the first sample of the batch?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(8) Were samples collected and containerized within one hour? If time was greater than one hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(9) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2 C3-10	

000094

Batch Data Report #: SSG12-00001

Question	Response			Requirement	Comment
	YES	NO	N/A		
(10) Is a physical description of the field duplicate included in the batch data report?	☒	☐	☐	MP-TRUW-8.2 Table C3-12	
(11) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, and random location of sample.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is the location (point of origin) where each sample was taken included in the batch data report (BDR)? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(14) Does the batch data report include a record of the analyses requested and identify the laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

000095

Batch Data Report #: SSG12-00001

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(16) Does the data for all containers within this batch meet the following review, validation, and verification requirements? • Proper units (e.g. grams or liters) and significant figures used • The BDR is complete (all pages identified in the BDR and numbered accordingly) • WTS Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • WTS Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist • Form-1858, Independent Reviewer Small Container Sampling Checklist • Form-1491, Supplemental Batch Comment Form, as applicable. • Associated nonconformance reports (NCRs)	☒	☐	☐	MP-TRUW-8.2, C3-10b	
(17) Review all NCRs (open and closed). Can the batch be approved?	☒	☐	☐	MP-TRUW-8.2, C3-13	

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AMWTP Advanced Mixed Waste Treatment Project	Site Project Manager Small Container Sampling Checklist	Form-1859 Rev. 2 Effective: 12/29/10 Page 5 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSG12-00001

Question	Response			Requirement	Comment
	YES	NO	N/A		
(18) Were the following inspections performed? • Was the sampling tool inspection satisfactory? • Was the sampling equipment protective wrapping intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(19) Is all data associated with this BDR acceptable for signature release?	☒	☐	☐	MP-TRUW-8.2, C3-10b(2)	

Comments:

SPM (Print Name): Kenny Burnside Kenny Burnside

SPM Signature /Date: 5/10/12 6/7/12

260000

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00001

Item	Date	Name	Comments
1.	4/11/12 ~~14/11/12~~ 14/6/12	Davey Sumners Coring Operator	closed per direction
2.	04/11/12	Kathy Birch ITR	demote to operations
3.	14/11/12	Davey Sumners Coring Operator	per direction
4.	04/23/12	Jay Simonson ITR	This batch was validated per MP-TRUW-8.8.
5.	04/24/12	Jay Simonson ITR	Rework: Batch Comments. Please enter "WMF 634, Coring Room, Waste Matrix Code S3110." into Batch Comments per INST-OI-75, section 4.15.2.5.
6.	04/24/12	Jay Simonson ITR	Rework: Container 10427583, events 643 & 644; containers 10427582, 10427590, and 10427584. Please enter "Correction: WMC is S3110" into the Matrix Physical Description.
7.	04/24/12	Jay Simonson ITR	Demoted to Operations for rework.
8.	04/25/12	Davey Sumners Coring Operator	WMF-634, Coring Room, Waste Matrix Code S3110
9.	04/24/12	Jay Simonson ITR	Demoted to Operations for rework.

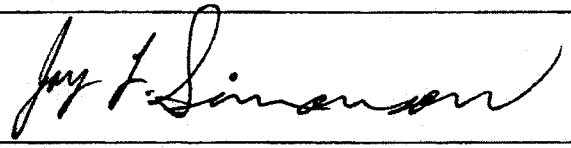
860090

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00001

Item	Date	Name	Comments
10.	04/25/12	Jay Simonson ITR	Rework was performed completely and satisfactorily by a qualified operator and verified by a second qualified operator.
11.	04/25/12	Jay Simonson ITR	Level I validation complete.
12.	04/25/12	Jay Simonson ITR	Promoted to SPM.
13.	06/05/12	Jay Simonson ITR	Note: Container 10427582, Grab Sample 10438129. Randomly Selected Quadrant did not populate in the original BDR. SDCR 2595 was written to populate correct randomly selected quadrant and original page was superseded in the BDR.
14.	06/05/12	Jay Simonson ITR	Promoted to SPM.
13.	06/05/12	Jay Simonson Signature	

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AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

SUPERCEDED

Batch Number SSG12-00001

Item	Date	Name	Comments
10.	04/25/12	Jay Simonson ITR	Rework was performed completely and satisfactorily by a qualified operator and verified by a second qualified operator.
11.	04/25/12	Jay Simonson ITR	Level I validation complete.
12.	04/25/12	Jay Simonson ITR	Promoted to SPM.
13.	04/25/12	Jay Simonson Signature	Jay L. Simonson

660099

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00001

Item	Date	Name	Comments
1.	5/10/12	Kenny Burnside	SPM reviewed and approved. KBF 5/10/12
2.			
3.			
4.			
5.			N/A KB 5/10/12
6.			
7.			
8.			

000200

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Cover Sheet & Case Narrative

Batch No: HS112-00002
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 17-JAN-12 09:25
Batch Analysis Date: 17-JAN-12 14:02
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 19-JAN-12 15:22
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.
NCR: No NCRs associated to this batch

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: A summary of the applicable ICAL is included in this batch. MDLs and MPSs were analyzed within six months, they met criteria.
Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10429587	100	BN-550	S5000	Yes	No	No	1	P
BN10430658	100	BN-550	S5000	Yes	Yes	No	2	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	23-JAN-12 15:06:24	Validation complete. Promote batch.
JKETTEL	ITR	23-JAN-12 10:05:31	Promote to SPM.
CROJAS	HOC	19-JAN-12 15:22:16	Promote to ITR
CROJAS	HOC	18-JAN-12 14:33:11	
CROJAS	HOC	18-JAN-12 14:25:48	
SOLDHAM	HSGO	17-JAN-12 13:58:08	
SOLDHAM	HSGO	17-JAN-12 08:08:34	

INFORMATION ONLY

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS112-00002
Non-Conformances

Date: 25 Sep 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
ICAL Report

Batch No.: ICAL/HS112-00002
Instrument method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\

ICAL Start: 11-JAN-12 13:17
ICAL End: 11-JAN-12 14:13
Sampled by: SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.03E+05	0.000	0.9999	
Methane	4.85E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	
Chloromethane	0.148	0.132	0.132	0.129	0.127	6.18	
Methanol	0.033	0.028	0.028	0.028	0.027	8.09	
Ethyl ether	0.159	0.143	0.142	0.142	0.138	5.65	
1,1-dichloroethylene	0.247	0.224	0.231	0.229	0.228	3.83	
Freon-113	0.641	0.568	0.570	0.566	0.557	5.89	
Acetone	0.118	0.101	0.104	0.106	0.106	6.20	
Carbon disulfide	0.605	0.534	0.549	0.546	0.552	4.95	
Methylene chloride	0.212	0.185	0.188	0.191	0.193	5.54	
trans-1,2-dichloroethylene	0.293	0.258	0.259	0.266	0.268	5.21	
1,1-dichloroethane	0.561	0.476	0.482	0.492	0.497	6.78	
cis-1,2-dichloroethylene	0.311	0.257	0.267	0.270	0.274	7.43	
Methyl ethyl ketone	0.130	0.108	0.112	0.115	0.117	7.10	
Chloroform	0.770	0.631	0.636	0.639	0.631	9.24	
1,1,1-trichloroethane	0.857	0.720	0.722	0.730	0.710	8.21	
Cyclohexane	0.469	0.391	0.406	0.416	0.419	6.93	
Carbon tetrachloride	0.202	0.166	0.177	0.176	0.170	7.98	
Benzene	0.767	0.648	0.658	0.677	0.694	6.82	
1,2-dichloroethane	0.591	0.474	0.478	0.481	0.473	10.24	
Trichloroethylene	0.551	0.452	0.467	0.477	0.484	7.81	
1-Butanol	0.053	0.041	0.044	0.045	0.044	9.74	
Methyl isobutyl ketone	0.119	0.097	0.104	0.107	0.095	9.08	
Toluene	0.663	0.532	0.562	0.572	0.599	8.45	
Tetrachloroethylene	0.683	0.536	0.572	0.560	0.503	11.93	
Chlorobenzene	1.101	0.879	0.930	0.948	0.979	8.58	
Ethylbenzene	0.512	0.408	0.441	0.449	0.464	8.38	
m and p-xylene	0.609	0.482	0.534	0.544	0.564	8.44	
o-xylene	0.579	0.452	0.505	0.526	0.542	9.00	
Bromoform	0.442	0.357	0.401	0.409	0.412	7.56	
1,1,2,2-tetrachloroethane	0.447	0.346	0.393	0.404	0.419	9.25	
1,3,5-trimethylbenzene	0.709	0.556	0.672	0.685	0.720	9.83	
1,2,4-trimethylbenzene	0.654	0.517	0.635	0.654	0.680	10.19	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
BFB Report ICAL

Batch No. ICAL/HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 11-JAN-12 13:09
Apex Scan(s) 430 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.4
75	30.0 - 60.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.2
174	Greater than 50.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	98.5
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	00211-F.D	11-JAN-2012 13:17
ICAL2	ICAL	00312-F.D	11-JAN-2012 13:31
ICAL3	ICAL	00413-F.D	11-JAN-2012 13:45
ICAL4	ICAL	00514-F.D	11-JAN-2012 13:59
ICAL5	ICAL	00615-F.D	11-JAN-2012 14:13

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
BFB Report Shift 1

Batch No. HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 17-JAN-12 09:25
Apex Scan(s) 431 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.9
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7
177	5.0 - 9.0% of mass 176	6
174	Greater than 50.0% of mass 95	94.4
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	98.9
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	17-JAN-2012 09:33
LCS1	LCS	003LC-F.D	17-JAN-2012 09:52
EB	EB	004EB-F.D	17-JAN-2012 10:06
FB	FB	005FB-F.D	17-JAN-2012 10:20

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
BFB Report Shift 2

Batch No. HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 17-JAN-12 14:02
Apex Scan(s) 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	98.1
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	96.4
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	17-JAN-2012 14:10
LCS2	LCS	008LC-F.D	17-JAN-2012 14:27
BN10429587	HS112_00002B-01	009DR-F.D	17-JAN-2012 14:41
BN10429587	HS112_00002B-02	010DR-F.D	17-JAN-2012 14:55
BN10430658	HS112_00002B-03	011DR-F.D	17-JAN-2012 15:09
DILUTION1	HS112_00002B-03(1X)	012DR-F.D	17-JAN-2012 15:24

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

Batch HS112-00002
CCAL Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D

Analyzed on: 17-JAN-12 09:33
Sampled on & by: 17-JAN-12 08:57 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.98	98.0	
Methane	1.00	1.00	99.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.125	6.7	
Methanol	0.029	0.029	0.0	
Ethyl ether	0.145	0.143	1.4	
1,1-dichloroethylene	0.232	0.233	0.4	
Freon-113	0.580	0.577	0.5	
Acetone	0.107	0.105	1.9	
Carbon disulfide	0.557	0.552	0.9	
Methylene chloride	0.194	0.194	0.0	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.269	2.5	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.651	1.5	
1,1,1-trichloroethane	0.748	0.753	0.7	
Cyclohexane	0.420	0.408	2.9	
Carbon tetrachloride	0.178	0.174	2.2	
Benzene	0.689	0.657	4.6	
1,2-dichloroethane	0.499	0.492	1.4	
Trichloroethylene	0.486	0.478	1.6	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.105	0.0	
Toluene	0.586	0.557	4.9	
Tetrachloroethylene	0.571	0.573	0.4	
Chlorobenzene	0.967	0.919	5.0	
Ethylbenzene	0.455	0.431	5.3	
m and p-xylene	0.547	0.514	6.0	
o-xylene	0.521	0.482	7.5	
Bromoform	0.404	0.391	3.2	
1,1,2,2-tetrachloroethane	0.402	0.370	8.0	
1,3,5-trimethylbenzene	0.668	0.603	9.7	
1,2,4-trimethylbenzene	0.628	0.556	11.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Batch HS112-00002
CCAL Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

Analyzed on: 17-JAN-12 14:10
Sampled on & by: 17-JAN-12 11:42 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.97	97.0	
Methane	1.00	0.99	98.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.118	11.9	
Methanol	0.029	0.026	10.3	
Ethyl ether	0.145	0.138	4.8	
1,1-dichloroethylene	0.232	0.223	3.9	
Freon-113	0.580	0.563	2.9	
Acetone	0.107	0.104	2.8	
Carbon disulfide	0.557	0.534	4.1	
Methylene chloride	0.194	0.189	2.6	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.267	3.3	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.653	1.2	
1,1,1-trichloroethane	0.748	0.740	1.1	
Cyclohexane	0.420	0.405	3.6	
Carbon tetrachloride	0.178	0.177	0.6	
Benzene	0.689	0.660	4.2	
1,2-dichloroethane	0.499	0.491	1.6	
Trichloroethylene	0.486	0.477	1.9	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.104	1.0	
Toluene	0.586	0.551	6.0	
Tetrachloroethylene	0.571	0.563	1.4	
Chlorobenzene	0.967	0.903	6.6	
Ethylbenzene	0.455	0.423	7.0	
m and p-xylene	0.547	0.501	8.4	
o-xylene	0.521	0.476	8.6	
Bromoform	0.404	0.387	4.2	
1,1,2,2-tetrachloroethane	0.402	0.365	9.2	
1,3,5-trimethylbenzene	0.668	0.578	13.5	
1,2,4-trimethylbenzene	0.628	0.541	13.9	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
LCS Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D

Analyzed on: 17-JAN-12 09:52
Sampled on & by: 17-JAN-12 09:02 SO
Multiplier: 1.39
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	97.66	
Methane	0.500	0.50	99.32	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.62	101.25	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.60	91.19	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.13	92.27	
Benzene	50.00	47.71	95.42	
1,2-dichloroethane	50.00	47.84	95.68	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.64	92.54	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
LCS Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D

Analyzed on: 17-JAN-12 14:27
Sampled on & by: 17-JAN-12 11:47 SO
Multiplier: 1.38
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	98.15	
Methane	0.500	0.49	97.38	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.63	101.26	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.59	91.17	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.17	92.34	
Benzene	50.00	48.25	96.51	
1,2-dichloroethane	50.00	48.31	96.63	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.46	92.18	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	17-JAN-12 09:52	17-JAN-12 14:27
Sampled on & by:	17-JAN-12 09:02 SO	17-JAN-12 11:47 SO
Multiplier:	1.39	1.38
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D	C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.49	0.49	0.50	
Methane	0.50	0.49	1.98	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	50.62	50.63	0.01	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	45.60	45.59	0.03	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	46.13	46.17	0.08	
Benzene	47.71	48.25	1.14	
1,2-dichloroethane	47.84	48.31	0.99	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.64	46.46	0.39	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

Batch HS112-00002
LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Equipment Blank Report

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\004EB-F.D

Analyzed on: 17-JAN-12 10:06
Sampled on & by: 17-JAN-12 09:12 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval I	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Field Blank Report

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\005FB-F.D

Analyzed on: 17-JAN-12 10:20
Sampled on & by: 17-JAN-12 09:16 SO
Multiplier: 1.42
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval I	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

Batch HS112-00002
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS112_00002B-01	HS112_00002B-02
Container Id.:	BN10429587	BN10429587
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	17-JAN-12 14:41	17-JAN-12 14:55
Sampled on & by:	17-JAN-12 13:17 SO	17-JAN-12 13:29 SO
Multiplier:	1.38	1.38
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\009DR-F.D	C:\HPCHEM\1\DATA\HS112_00002B\010DR-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	J	J	NC	
Methane	U	U	NC	
Chloromethane	J	U	NC	
Methanol	J	J	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	U	U	NC	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	U	U	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	U	U	NC	
Benzene	U	U	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	27	28	2.42	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Internal Standards Summary

Batch No.: HS112-00002
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

CCAL1 Analyzed on: 17-JAN-12 09:33
CCAL2 Analyzed on: 17-JAN-12 14:10

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	6309498	4.10	5959907	6.59
LCS1	6231046	4.07	5720084	6.57
EB	6131714	4.09	5662135	6.58
FB	5865722	4.07	5469082	6.57
CCAL2 STD.	6018153	4.09	5760669	6.59
LCS2	6079556	4.08	5651450	6.58
BN10429587	5990895	4.07	5581731	6.57
BN10429587	6002827	4.08	5525868	6.57
BN10430658	6030452	4.13	5617238	6.62
DILUTION1	5914895	4.08	5504630	6.57

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Drum BN10429587 Sample Report

Batch No.: HS112-00002 **Analysis Status** **Analyzed on:** 17-JAN-12 14:41
Container Id.: BN10429587 Pass **Sampled on & by:** 17-JAN-12 13:17 SO
Lab Sample Id.: HS112_00002B-01 **Multiplier:** 1.38
Instrument Method: VOCGAS **Matrix:** Drum Headspace
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\009DR-F.D **Dilution Files:**

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.082 vol%	J							
Methane	0.019 vol%	U							
Chloromethane	1.1	J							
Methanol	42	J							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	0.62	U							
Acetone	25	J							
Carbon disulfide	1.2	U							
Methylene chloride	1.5	U							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.3	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	0.99	U							
1,1,1-trichloroethane	8.4	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	1.6	J							
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	27								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	53	7.41

Batch HS112-00002
Drum BN10429587 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Drum BN10430658 Sample Report

Batch No.: HS112-00002 **Analysis Status** **Analyzed on:** 17-JAN-12 15:09
Container Id.: BN10430658 Pass **Sampled on & by:** 17-JAN-12 13:42 SO
Lab Sample Id.: HS112_00002B-03 **Multiplier:** 1.43
Instrument Method: VOCGAS **Matrix:** Drum Headspace
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\011DR-F.D **Dilution Files:** 012

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.15 vol%								
Methane	0.019 vol%	U							
Chloromethane	0.99	U							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	0.62	U							
Acetone	170								
Carbon disulfide	1.2	U							
Methylene chloride	580	D							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.3	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	0.99	U							
1,1,1-trichloroethane	7.9	J							
Cyclohexane	2.8	J							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	13								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	34								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
78-87-5	1,2-DICHLOROPROPANE	150	4.71
556-67-2	Cyclotetrasiloxane, octamethyl-	49	7.45

Batch HS112-00002
Drum BN10430658 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10429587	3	S5000	0	0	7	27 Dec 11	27 Dec 11	17 Jan 12	2	21	NF19SD, NF036
P	BN10430658	3	S5000	0	0	7	10 Jan 12	10 Jan 12	17 Jan 12	2	7	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10429587	NA	Y	Y	SETH OLDHAM	
BN10430658	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR
2164151	CROJAS	18-JAN-12 14:25	
2163335	SOLDHAM	17-JAN-12 13:58	

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	27-DEC-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	27-DEC-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						20-MAR-12 08:25:18	Rick Whitmore
To:	TRUPACT Loaded							20-MAR-12 08:26:14	Rick Whitmore
Status:	Container move is done and complete								
From:	635	WC			3	3	1	15-MAR-12 13:21:25	Kim Smith
To:	635	Assembled Payloads						15-MAR-12 13:21:35	Kim Smith
Status:	Container move is done and complete								
From:	628	SJ			14	2	2	14-MAR-12 15:52:34	Fred White
To:	635	WC			3	3	1	14-MAR-12 16:22:51	Rick Whitmore
Status:	Container move is done and complete								
From:	633	SA			6	1	2	14-MAR-12 11:40:13	Fred White
To:	628	SJ			14	2	2	14-MAR-12 11:40:59	Fred White
Status:	Container move is done and complete								
From:	634- Characterization	SK			13	2	1	07-FEB-12 11:37:00	Larry Payne
To:	633	SA			6	1	2	07-FEB-12 11:47:00	Larry Payne
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	1	1	06-FEB-12 15:09:56	Cindy Tiegs
To:	634- Characterization	SK			13	2	1	06-FEB-12 15:15:22	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	1	1	24-JAN-12 11:40:22	Tony Burgess
To:	634- Characterization	SI			1	1	1	24-JAN-12 11:40:46	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:34:51	Scott Taggart
To:	634- Characterization	SG			7	1	1	17-JAN-12 13:35:09	Scott Taggart
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SG			7	1	1	17-JAN-12 12:07:25	Michael Kremin
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:55	Michael Kremin
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	1	1	16-JAN-12 13:14:04	Tony Burgess
To:	634- Characterization	SG						16-JAN-12 16:21:43	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	SX			1	1	1	13-JAN-12 08:11:45	Cindy Tiegs
To:	634- Characterization	SG			7	1	1	13-JAN-12 08:12:02	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					10-JAN-12 15:23:02	Tony Burgess
To:	634- Characterization	SX			1	1	1	10-JAN-12 15:23:27	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	SX			1	1	1	10-JAN-12 13:54:14	Seth Oldham
To:	634- Characterization	HGAS Area	HGAS 001 Machine					10-JAN-12 13:54:30	Seth Oldham
Status:	Container move is done and complete								
From:	628	NL			1	2	1	07-JAN-12 08:34:47	Jason Uptergrove
To:	634- Characterization	SX			1	1	1	07-JAN-12 08:36:06	Jason Uptergrove
Status:	Container move is done and complete								
From:	628	ND			7	1	1	05-JAN-12 16:59:49	Douglas Capell
To:	628	NL			1	2	1	05-JAN-12 17:00:43	Douglas Capell
Status:	Container move is done and complete								
From:	628	SC			7	2	1	31-DEC-11 16:04:59	Chris Stamos
To:	628	ND			7	1	1	31-DEC-11 16:37:53	Chris Stamos
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-DEC-11 08:29:12	Douglas Capell
To:	628	SC			7	2	1	28-DEC-11 08:39:28	Douglas Capell
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-DEC-11 00:45:46	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				28-DEC-11 00:45:08	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				27-DEC-11 22:07:05	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				27-DEC-11 17:19:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				27-DEC-11 13:09:41	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				27-DEC-11 10:50:25	
Status:	Container move is done and complete								

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				27-DEC-11 02:05:27	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				27-DEC-11 01:54:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				27-DEC-11 01:54:12	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				27-DEC-11 01:54:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				27-DEC-11 01:53:47	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				27-DEC-11 01:53:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				27-DEC-11 01:52:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				27-DEC-11 01:38:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				26-DEC-11 22:06:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				26-DEC-11 22:06:23	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-DEC-11 22:06:07	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-DEC-11 22:04:15	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				26-DEC-11 17:31:16	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-DEC-11 17:27:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-DEC-11 17:27:30	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				26-DEC-11 16:57:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				26-DEC-11 09:41:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				26-DEC-11 09:35:51	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				25-DEC-11 00:13:54	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				24-DEC-11 23:59:22	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				24-DEC-11 23:59:09	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				24-DEC-11 05:11:54	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				24-DEC-11 05:11:28	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				23-DEC-11 16:15:48	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				23-DEC-11 16:15:44	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				23-DEC-11 16:15:40	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				23-DEC-11 16:15:36	
Status:	Container move is done and complete								
From:								22-DEC-11 10:31:33	Wayne Ashcraft
To:	676- Facility	General Facility Building	General Facility Subsection I					22-DEC-11 10:31:33	Wayne Ashcraft
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10429587

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	27-DEC-11	RGUNNING	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	27-DEC-11	RGUNNING	N			N
Diffusivity:	9.25E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

DAC Information

Waste Type:	III	**Liner Lid Hole Size:**	NA	**Vent Date:**	10-JAN-12
Rigid Liner:	N	**Inner Bags:**	NA	**Closure Date:**	10-JAN-12
Rigid Liner Lid:	N	**Liner Bags:**	NA	**Layers of Confinement:**	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	**Liner Punctured:**	NA
Liner Hole Size:	NA	**Liner Type:**	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	**Fill Factor:**	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						10-AUG-12 08:13:33	Mark Christensen
To:	TRUPACT Loaded							10-AUG-12 08:16:05	Mark Christensen
Status:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 08:16:58	Larry Hampton
To:	635	Assembled Payloads						05-AUG-12 08:18:34	Larry Hampton
Status:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 07:18:56	Larry Hampton
To:	635	WC						05-AUG-12 08:16:58	Larry Hampton
Status:	Container move is cancelled								
From:	628	NK			13	3	1	03-AUG-12 16:02:20	Larry Hampton
To:	628	SL			6	2	1	03-AUG-12 17:42:38	Larry Hampton
Status:	Container move is done and complete								
From:	628	NK			4	3	2	26-JUL-12 09:54:55	Lonnie Seiler
To:	628	NK			13	3	1	26-JUL-12 10:00:07	Lonnie Seiler
Status:	Container move is done and complete								
From:	628	ND			6	3	1	23-JUL-12 16:04:57	Steven Williams
To:	628	NK			4	3	2	23-JUL-12 16:32:30	Steven Williams
Status:	Container move is done and complete								
From:	628	SE			7	2	2	20-JUL-12 11:40:07	Julie Ragan
To:	628	ND			6	3	1	20-JUL-12 11:44:21	Julie Ragan
Status:	Container move is done and complete								
From:	633	SA			6	2	2	14-JUL-12 13:56:31	Paul Chapman
To:	628	SE			7	2	2	14-JUL-12 13:57:13	Paul Chapman
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SK			13	1	1	07-FEB-12 11:36:51	Larry Payne
To:	633	SA			6	2	2	07-FEB-12 11:48:03	Larry Payne
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	06-FEB-12 15:10:11	Cindy Tiegs
To:	634- Characterization	SK			13	1	1	06-FEB-12 15:15:46	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	24-JAN-12 18:22:22	Tony Burgess
To:	634- Characterization	SG						24-JAN-12 18:23:09	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	SG			7	3	1	24-JAN-12 11:40:29	Tony Burgess
To:	634- Characterization	SI			1	2	1	24-JAN-12 11:41:01	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:49:12	Scott Taggart
To:	634- Characterization	SG			7	3	1	17-JAN-12 13:49:28	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:33	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:43	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:14	Michael Kremin
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:45	Michael Kremin
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	2	1	17-JAN-12 08:25:21	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 09:31:45	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	2	1	16-JAN-12 13:13:50	Tony Burgess
To:	634- Characterization	SG						16-JAN-12 16:21:31	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	Staging Area						13-JAN-12 11:44:26	Jason Uptergrove
To:	634- Characterization	SG			7	2	1	13-JAN-12 11:44:45	Jason Uptergrove
Status:	Container move is done and complete								
From:	628	SA			5	2	2	13-JAN-12 10:22:45	Jason Uptergrove
To:	634- Characterization	Staging Area						13-JAN-12 11:44:03	Jason Uptergrove
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 10:18:14	Jeff Johnson
To:	628	SA			5	2	2	11-JAN-12 10:26:16	Jeff Johnson
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 05:19:12	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/06	EXA/06				11-JAN-12 05:18:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				11-JAN-12 05:17:23	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				11-JAN-12 03:30:42	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				10-JAN-12 21:35:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				10-JAN-12 17:04:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				10-JAN-12 15:15:55	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				10-JAN-12 15:15:37	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				10-JAN-12 15:15:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				10-JAN-12 15:15:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				10-JAN-12 15:14:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				10-JAN-12 15:13:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				10-JAN-12 14:53:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				10-JAN-12 14:52:44	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 14:52:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 14:50:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/8				10-JAN-12 10:57:33	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 10:54:22	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 10:53:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				10-JAN-12 10:53:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				10-JAN-12 09:10:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				10-JAN-12 08:52:03	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				10-JAN-12 05:08:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				10-JAN-12 05:01:10	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				09-JAN-12 21:42:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				09-JAN-12 21:34:52	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				09-JAN-12 21:34:24	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				09-JAN-12 16:16:40	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				09-JAN-12 16:16:14	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				09-JAN-12 11:43:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				09-JAN-12 11:42:57	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				09-JAN-12 11:42:52	
Status:	Container move is done and complete								
From:								08-JAN-12 07:06:59	Jenny Cummins
To:	676- Facility	General Facility Building	General Facility Subsection I					08-JAN-12 07:06:59	Jenny Cummins
Status:	Container move is done and complete								

Headspace Gas Report

Filter Data

BN10430658

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	9.25E-05							
Comment								

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	

Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2163061	SOLDHAM	17-JAN-12 08:08	
2164156	CROJAS	18-JAN-12 14:33	
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Batch Log

Date: 25 SEP 2012
Time: 09:21

$HS112_00002,2012-01-11,14:31:50,SO,0.007,0.004,0.004,0.004,0.004,0.005,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.001,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,15:18:47,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error(EVAC2). Vac_error(EVAC3).||No comment.
S1,HS112_00002,icCLEAN,2012-01-17,08:32:04,640.919,902.280,22.3,SO,,,0.0121,636.036,N/A|No comment.
A1,HS112_00002,icCLEAN,723.197|IC1,2012-01-17,08:36:45 Delivered (723.197).
R,HS112_00002,QC1,2012-01-17,08:41:39|No system comments.
S1,HS112_00002,icCCAL1,2012-01-17,08:57:20,641.682,895.688,22.0,SO,,,0.0097,636.403,N/A|No comment.
S2,HS112_00002,icLCS1,2012-01-17,09:02:26,641.896,890.347,22.2,SO,,,0.0101,636.403,N/A|No comment.
S10,HS112_00002,icEB,2012-01-17,09:12:00,641.163,895.627,22.4,SO,,,0.0015,636.372,N/A|No comment.
S3,HS112_00002,drFB,2012-01-17,09:16:23,634.693,903.745,22.5,SO,,,0.0204,636.403,N/A|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,09:25:04 BFB analysis started.
A1,HS112_00002,icCCAL1,721.458|IC1,2012-01-17,09:29:16 Delivered (721.458).
A2,HS112_00002,icLCS1,711.722|IC2,2012-01-17,09:48:20 Delivered (711.722).
A10,HS112_00002,icEB,710.593|IC10,2012-01-17,10:02:04 Delivered (710.593).
A3,HS112_00002,drFB,723.747|DR3,2012-01-17,10:15:49 Delivered (723.747).
R,HS112_00002,QC2, EB-10,2012-01-17,10:20:43|No system comments.
S2,HS112_00002,icCCAL2,2012-01-17,11:42:08,641.499,885.525,23.0,SO,,,0.0061,636.372,N/A|No comment.
S3,HS112_00002,icLCS2,2012-01-17,11:47:22,641.804,886.776,23.1,SO,,,0.0069,636.311,N/A|No comment.
S8,HS112_00002,drBN10429587,2012-01-17,13:17:41,633.717,872.036,24.1,SO,,,0.0154,634.999,N/A|No comment.
S9,HS112_00002,drBN10429587 DUP,2012-01-17,13:29:13,633.320,876.492,24.2,SO,,,0.0124,634.938,passed|No comment.
S10,HS112_00002,drBN10430658,2012-01-17,13:42:51,632.313,902.280,24.1,SO,,,0.0122,634.693,passed|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,14:01:58 BFB analysis started.
A2,HS112_00002,icCCAL2,709.464|IC2,2012-01-17,14:06:08 Delivered (709.464).
A3,HS112_00002,icLCS2,712.668|IC3,2012-01-17,14:23:40 Delivered (712.668).
A8,HS112_00002,drBN10429587,697.165|DR8,2012-01-17,14:37:24 Delivered (697.165).
A9,HS112_00002,drBN10429587 DUP,699.057|DR9,2012-01-17,14:51:11 Delivered (699.057).
A10,HS112_00002,drBN10430658,717.551|DR10,2012-01-17,15:05:01 Delivered (717.551).
A10,HS112_00002,drBN10430658,740.410|DL10 to 4,2012-01-17,15:18:56 DEP = 104.251. DCP = 917.173. Delivered (740.410).

**********Esignature**********

Esig Approval ID	Esigned By	Esigned Date	Comment
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Batch ID HS112-00002

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are 100 gal puck drums
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRs
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Date: 25 Sep 2012
Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with containers in this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not present, mark N/A.	N/A		Product drums do not have liners.
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst,	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
and complete?			
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have	N/A		

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.			
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected in blank samples at a level greater than three times the MDL.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected in blank samples at a level greater or equal to the MDL.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a level beyond the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer
Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
precision, accuracy, and MDLs performed within the last six months?			
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		No changes necessary.
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		No rework required.

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum/drum duplicate RPD QAO is acceptable.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container · Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable)	Yes	MP-TRUW-8.2, C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Date: 26 Sep 2012

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2167766	NKIRK	23-JAN-12	SPM	Validation complete. Promote batch.
2167676	JKETTEL	23-JAN-12	ITR	Promote to SPM.

NOR LAB®
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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales.
The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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TÜV ISO 9001
Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 556776 **Lot No.**: A076393

Description : Custom Organics Blend

Expiration Date[1]: February 2012 **Storage**: Freezer

Elution Order	Compound	CAS #	Percent Purity [2]	Concentration [3] (weight/weight%)	% Uncertainty [4] (95% C.L.; K=2)
1	Chloromethane (methyl chloride)	74-87-3	99%	0.8180 wt./wt.%	+/-0.58 %
2	Methanol	67-56-1	99%	5.0678 wt./wt.%	+/-0.58 %
3	Diethyl ether (ethyl ether)	60-29-7	99%	1.1191 wt./wt.%	+/-0.58 %
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1	97%	3.0419 wt./wt.%	+/-0.58 %
5	Acetone	67-64-1	99%	9.1213 wt./wt.%	+/-0.58 %
6	1,1-dichloroethene	75-35-4	99%	1.5305 wt./wt.%	+/-0.58 %
7	Methylene chloride (dichloromethane)	75-09-2	99%	1.3239 wt./wt.%	+/-0.58 %
8	Carbon disulfide	75-15-0	99%	1.2229 wt./wt.%	+/-0.58 %
9	trans-1,2-Dichloroethene	156-60-5	99%	1.5289 wt./wt.%	+/-0.58 %
10	1,1-Dichloroethane	75-34-3	98%	1.5285 wt./wt.%	+/-0.58 %
11	2-Butanone (MEK)	78-93-3	99%	11.2501 wt./wt.%	+/-0.58 %
12	cis-1,2-Dichloroethene	156-59-2	99%	1.5311 wt./wt.%	+/-0.58 %
13	chloroform	67-66-3	98%	1.8262 wt./wt.%	+/-0.58 %
14	1,1,1-trichloroethane	71-55-6	99%	2.0271 wt./wt.%	+/-0.58 %
15	Cyclohexane	110-82-7	99%	1.3177 wt./wt.%	+/-0.58 %
16	carbon tetrachloride	56-23-5	99%	2.4428 wt./wt.%	+/-0.58 %
17	1,2-Dichloroethane	107-06-2	99%	1.5270 wt./wt.%	+/-0.58 %
18	Benzene	71-43-2	99%	1.2212 wt./wt.%	+/-0.58 %
19	1-Butanol	71-36-3	99%	11.6559 wt./wt.%	+/-0.58 %
20	Trichloroethene	79-01-6	99%	2.0325 wt./wt.%	+/-0.58 %
21	4-Methyl-2-pentanone (MIBK)	108-10-1	99%	15.7123 wt./wt.%	+/-0.58 %
22	Toluene	108-88-3	99%	1.4188 wt./wt.%	+/-0.58 %
23	Tetrachloroethene	127-18-4	99%	2.6374 wt./wt.%	+/-0.58 %
24	Chlorobenzene	108-90-7	99%	1.7227 wt./wt.%	+/-0.58 %
25	Ethylbenzene	100-41-4	99%	1.6217 wt./wt.%	+/-0.58 %
26	m-Xylene	108-38-3	99%	0.8112 wt./wt.%	+/-0.58 %
27	p-Xylene	106-42-3	99%	0.8108 wt./wt.%	+/-0.58 %
28	o-Xylene	95-47-6	99%	1.6217 wt./wt.%	+/-0.58 %
29	bromoform	75-25-2	99%	4.0540 wt./wt.%	+/-0.58 %
30	1,1,2,2-Tetrachloroethane	79-34-5	99%	2.6377 wt./wt.%	+/-0.58 %
31	1,3,5-Trimethylbenzene	108-67-8	99%	1.8245 wt./wt.%	+/-0.58 %
32	1,2,4-Trimethylbenzene	95-63-6	99%	1.8303 wt./wt.%	+/-0.58 %

Solvent: n/a

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

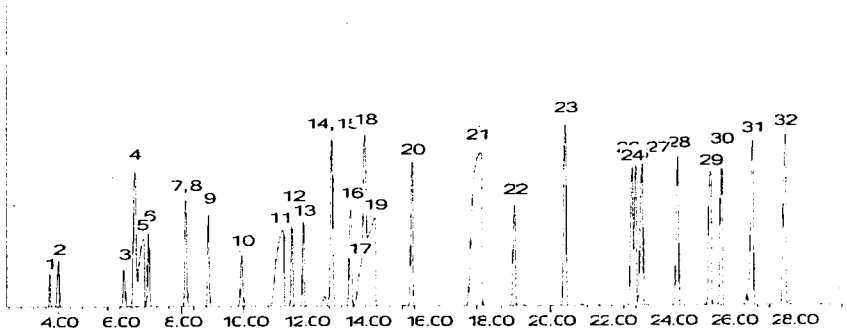
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



Sara Eyster QA Analyst

Date Passed: 24-Aug-2010 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

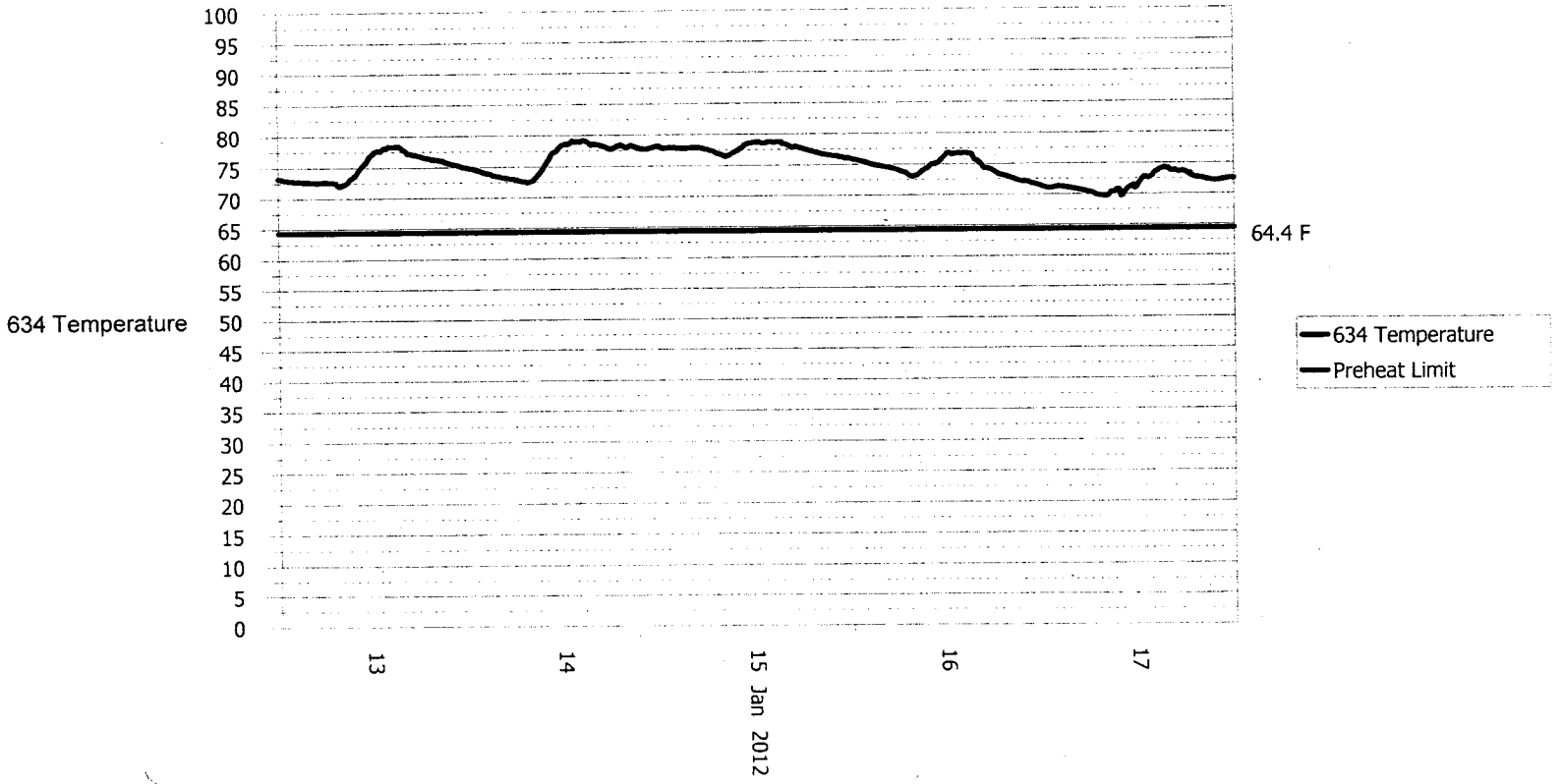
3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Note:

Density = 0.9468

634 Characterization Temperature



Start Date	End Date
13-JAN-12	18-JAN-12

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Cover Sheet & Case Narrative

Batch No: HS112-00005
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 05-APR-12 10:12
Batch Analysis Date: 05-APR-12 16:27
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 17-APR-12 11:08
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A086779
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: A summary of the applicable ICAL is included in the batch. MDL and MPS analyses have been performed within the six months prior to the analysis of this batch and their results are available for review.

Note(s): There are no NCRs associated with the containers in this batch.

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10430910	100	BN-550	S5000	No	No	No	None	P
BN10433911	100	BN-550	S5000	Yes	No	No	1	P
BN10435873	100	BN-550	S5000	Yes	No	No	1	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	23-APR-12 15:06:53	Validation complete. Promote batch.
CROJAS	ITR	19-APR-12 16:04:19	Promote to SPM.
JKETTEL	HOC	17-APR-12 11:08:42	Promote to ITR.
JKETTEL	HOC	17-APR-12 09:05:21	
JKETTEL	HOC	17-APR-12 09:04:33	
SOLDHAM	HSGO	05-APR-12 16:12:28	
SOLDHAM	HSGO	05-APR-12 08:33:24	

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS112-00005
Non-Conformances

Date: 10 Oct 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
ICAL Report

Batch No.: ICAL/HS112-00005
Instrument method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\IC1_120307AA\

ICAL Start: 07-MAR-12 15:52
ICAL End: 07-MAR-12 16:48
Sampled by: SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A086779	A086779	A086779	A086779	A086779
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.02E+05	0.000	1.0000	
Methane	4.81E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	
Chloromethane	0.177	0.149	0.144	0.143	0.141	9.81	
Methanol	0.039	0.032	0.032	0.032	0.031	10.10	
Ethyl ether	0.196	0.165	0.154	0.159	0.157	10.32	
1,1-dichloroethylene	0.285	0.235	0.235	0.238	0.249	8.60	
Freon-113	0.745	0.624	0.603	0.614	0.616	9.22	
Acetone	0.119	0.104	0.101	0.106	0.110	6.33	
Carbon disulfide	0.660	0.582	0.565	0.585	0.621	6.32	
Methylene chloride	0.227	0.193	0.189	0.196	0.204	7.55	
trans-1,2-dichloroethylene	0.299	0.257	0.255	0.260	0.272	6.89	
1,1-dichloroethane	0.593	0.499	0.481	0.500	0.510	8.55	
cis-1,2-dichloroethylene	0.317	0.267	0.259	0.267	0.278	8.25	
Methyl ethyl ketone	0.124	0.105	0.105	0.113	0.122	7.76	
Chloroform	0.816	0.681	0.652	0.667	0.671	9.62	
1,1,1-trichloroethane	1.002	0.854	0.814	0.826	0.821	9.12	
Cyclohexane	0.462	0.403	0.390	0.404	0.419	6.77	
Carbon tetrachloride	0.246	0.214	0.203	0.195	0.199	9.80	
Benzene	0.759	0.626	0.631	0.654	0.693	8.20	
1,2-dichloroethane	0.690	0.556	0.529	0.542	0.539	11.74	
Trichloroethylene	0.569	0.478	0.466	0.481	0.505	8.21	
1-Butanol	0.052	0.044	0.044	0.046	0.047	6.64	
Methyl isobutyl ketone	0.111	0.097	0.101	0.107	0.099	5.68	
Toluene	0.617	0.513	0.514	0.534	0.562	7.91	
Tetrachloroethylene	0.675	0.565	0.585	0.593	0.537	8.74	
Chlorobenzene	1.079	0.903	0.919	0.945	0.978	7.22	
Ethylbenzene	0.488	0.415	0.427	0.441	0.460	6.42	
m and p-xylene	0.558	0.478	0.500	0.520	0.549	6.42	
o-xylene	0.534	0.445	0.477	0.493	0.521	7.20	
Bromoform	0.449	0.377	0.399	0.409	0.417	6.44	
1,1,2,2-tetrachloroethane	0.419	0.348	0.372	0.388	0.411	7.46	
1,3,5-trimethylbenzene	0.682	0.563	0.644	0.670	0.713	8.71	
1,2,4-trimethylbenzene	0.609	0.518	0.607	0.628	0.666	8.97	

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
BFB Report ICAL

Batch No. ICAL/HS112-00005 **Pass?** PASS
Instrument Method: VOCGAS.M **Analyzed On:** 07-MAR-12 15:44
Apex Scan(s) 462 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_120307AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.7
75	30.0 - 60.0% of mass 95	48.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.5
174	Greater than 50.0% of mass 95	96.8
175	5.0 - 9.0% of mass 174	7.5
176	95.0 - 101.0% of mass 174	95.2
173	Less than 2.0% of mass 174	0.0

THIS CHECK APPLIES TO THE FOLLOWING

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	00211-F.D	07-MAR-2012 15:52
ICAL2	ICAL	00312-F.D	07-MAR-2012 16:06
ICAL3	ICAL	00413-F.D	07-MAR-2012 16:20
ICAL4	ICAL	00514-F.D	07-MAR-2012 16:34
ICAL5	ICAL	00615-F.D	07-MAR-2012 16:48

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
BFB Report Shift 1

Batch No. HS112-00005 **Pass?** PASS
Instrument Method: VOCGAS.M **Analyzed On:** 05-APR-12 10:12
Apex Scan(s) 433 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	20.1
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
177	5.0 - 9.0% of mass 176	6.3
174	Greater than 50.0% of mass 95	96.7
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	96.9
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	05-APR-2012 10:20
LCS1	LCS	003LC-F.D	05-APR-2012 10:42
EB	EB	004EB-F.D	05-APR-2012 10:56
FB	FB	005FB-F.D	05-APR-2012 11:09

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
BFB Report Shift 2

Batch No. HS112-00005 **Pass?** PASS
Instrument Method: VOCGAS.M **Analyzed On:** 05-APR-12 16:27
Apex Scan(s) 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.1
75	30.0 - 60.0% of mass 95	48.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	97.6
175	5.0 - 9.0% of mass 174	7.0
176	95.0 - 101.0% of mass 174	97.6
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	05-APR-2012 16:35
LCS2	LCS	008LC-F.D	05-APR-2012 16:51
BN10430910	HS112_00005B-01	009DR-F.D	05-APR-2012 17:05
BN10430910	HS112_00005B-02	010DR-F.D	05-APR-2012 17:19
BN10433911	HS112_00005B-03	011DR-F.D	05-APR-2012 17:32
BN10435873	HS112_00005B-04	012DR-F.D	05-APR-2012 17:46

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
CCAL Report Shift 1

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPchem\1\DATA\HS112_00005B\002CC-F.D

Analyzed on: 05-APR-12 10:20
Sampled on & by: 05-APR-12 09:40 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.00	99.5	
Methane	1.00	1.00	99.5	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.151	0.171	13.2	
Methanol	0.033	0.034	3.0	
Ethyl ether	0.166	0.166	0.0	
1,1-dichloroethylene	0.248	0.254	2.4	
Freon-113	0.640	0.657	2.7	
Acetone	0.108	0.106	1.9	
Carbon disulfide	0.603	0.615	2.0	
Methylene chloride	0.202	0.199	1.5	
trans-1,2-dichloroethylene	0.269	0.269	0.0	
1,1-dichloroethane	0.517	0.512	1.0	
cis-1,2-dichloroethylene	0.278	0.274	1.4	
Methyl ethyl ketone	0.114	0.111	2.6	
Chloroform	0.697	0.708	1.6	
1,1,1-trichloroethane	0.863	0.898	4.1	
Cyclohexane	0.416	0.419	0.7	
Carbon tetrachloride	0.211	0.224	6.2	
Benzene	0.673	0.651	3.3	
1,2-dichloroethane	0.571	0.587	2.8	
Trichloroethylene	0.500	0.499	0.2	
1-Butanol	0.047	0.047	0.0	
Methyl isobutyl ketone	0.103	0.107	3.9	
Toluene	0.548	0.526	4.0	
Tetrachloroethylene	0.591	0.616	4.2	
Chlorobenzene	0.965	0.942	2.4	
Ethylbenzene	0.446	0.434	2.7	
m and p-xylene	0.521	0.500	4.0	
o-xylene	0.494	0.470	4.9	
Bromoform	0.410	0.409	0.2	
1,1,2,2-tetrachloroethane	0.387	0.364	5.9	
1,3,5-trimethylbenzene	0.654	0.611	6.6	
1,2,4-trimethylbenzene	0.606	0.568	6.3	

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
CCAL Report Shift 2

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPchem\1\DATA\HS112_00005B\007CC-F.D

Analyzed on: 05-APR-12 16:35
Sampled on & by: 05-APR-12 11:43 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.98	97.6	
Methane	1.00	0.99	99.0	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.151	0.167	10.6	
Methanol	0.033	0.032	3.0	
Ethyl ether	0.166	0.163	1.8	
1,1-dichloroethylene	0.248	0.247	0.4	
Freon-113	0.640	0.638	0.3	
Acetone	0.108	0.106	1.9	
Carbon disulfide	0.603	0.602	0.2	
Methylene chloride	0.202	0.195	3.5	
trans-1,2-dichloroethylene	0.269	0.266	1.1	
1,1-dichloroethane	0.517	0.511	1.2	
cis-1,2-dichloroethylene	0.278	0.271	2.5	
Methyl ethyl ketone	0.114	0.110	3.5	
Chloroform	0.697	0.707	1.4	
1,1,1-trichloroethane	0.863	0.882	2.2	
Cyclohexane	0.416	0.413	0.7	
Carbon tetrachloride	0.211	0.219	3.8	
Benzene	0.673	0.662	1.6	
1,2-dichloroethane	0.571	0.580	1.6	
Trichloroethylene	0.500	0.490	2.0	
1-Butanol	0.047	0.047	0.0	
Methyl isobutyl ketone	0.103	0.105	1.9	
Toluene	0.548	0.518	5.5	
Tetrachloroethylene	0.591	0.586	0.8	
Chlorobenzene	0.965	0.898	6.9	
Ethylbenzene	0.446	0.422	5.4	
m and p-xylene	0.521	0.488	6.3	
o-xylene	0.494	0.455	7.9	
Bromoform	0.410	0.387	5.6	
1,1,2,2-tetrachloroethane	0.387	0.356	8.0	
1,3,5-trimethylbenzene	0.654	0.567	13.3	
1,2,4-trimethylbenzene	0.606	0.517	14.7	

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
LCS Report Shift 1

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\003LC-F.D

Analyzed on: 05-APR-12 10:42
Sampled on & by: 05-APR-12 09:45 SO
Multiplier: 1.42
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	0.500	0.50	100.14	
Methane	0.500	0.50	99.19	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	47.24	94.49	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	46.94	93.89	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.50	93.00	
Benzene	50.00	46.79	93.58	
1,2-dichloroethane	50.00	48.29	96.58	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.11	91.48	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
LCS Report Shift 2

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\008LC-F.D

Analyzed on: 05-APR-12 16:51
Sampled on & by: 05-APR-12 13:14 SO
Multiplier: 1.41
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Nominal	Calculated	%R	Q Flag
Hydrogen	0.500	0.50	99.21	
Methane	0.500	0.50	99.56	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	47.72	95.45	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	46.90	93.80	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	45.94	91.87	
Benzene	50.00	47.45	94.90	
1,2-dichloroethane	50.00	47.02	94.04	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	47.67	94.59	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS112-00005	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS.M	VOCGAS.M
Analyzed on:	05-APR-12 10:42	05-APR-12 16:51
Sampled on & by:	05-APR-12 09:45 SO	05-APR-12 13:14 SO
Multiplier:	1.42	1.41
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS112_00005B\003LC-F.D	C:\HPCHEM\1\DATA\HS112_00005B\008LC-F.D
Dilution File(s):		

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Original	Duplicate	RPD	Q Flag
Hydrogen	0.50	0.50	0.94	
Methane	0.50	0.50	0.37	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	47.24	47.72	1.01	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	46.94	46.90	0.10	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	46.50	45.94	1.22	
Benzene	46.79	47.45	1.40	
1,2-dichloroethane	48.29	47.02	2.66	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.11	47.67	3.34	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS112-00005
LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Equipment Blank Report

Date: 10-OCT-12

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\004EB-F.D

Analyzed on: 05-APR-12 10:56
Sampled on & by: 05-APR-12 09:56 SO
Multiplier: 1.42
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.009	U
Chloromethane	1.1	U
Methanol	40	U
Ethyl ether	1.3	U
1,1-dichloroethylene	1.8	U
Freon-113	1.4	U
Acetone	16	U
Carbon disulfide	1.3	U
Methylene chloride	1.8	U
trans-1,2-dichloroethylene	1.8	U
1,1-dichloroethane	1.8	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	16	U
Chloroform	2.2	U
1,1,1-trichloroethane	2.6	U
Cyclohexane	1.7	U
Carbon tetrachloride	3.2	U
Benzene	1.6	U
1,2-dichloroethane	2.6	U
Trichloroethylene	2.1	U
1-Butanol	40	U
Methyl isobutyl ketone	29	U
Toluene	1.7	U
Tetrachloroethylene	1.6	U
Chlorobenzene	1.6	U
Ethylbenzene	1.5	U
m and p-xylene	1.9	U
o-xylene	1.7	U
Bromoform	1.6	U
1,1,2,2-tetrachloroethane	2.3	U
1,3,5-trimethylbenzene	3.0	U
1,2,4-trimethylbenzene	3.3	U

Esig Approval I	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17 APR 2012	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Field Blank Report

Date: 10-OCT-12

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\005FB-F.D

Analyzed on: 05-APR-12 11:09
Sampled on & by: 05-APR-12 10:00 SO
Multiplier: 1.42
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.009	U
Chloromethane	1.1	U
Methanol	40	U
Ethyl ether	1.3	U
1,1-dichloroethylene	1.8	U
Freon-113	1.4	U
Acetone	16	U
Carbon disulfide	1.3	U
Methylene chloride	1.8	U
trans-1,2-dichloroethylene	1.8	U
1,1-dichloroethane	1.8	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	16	U
Chloroform	2.2	U
1,1,1-trichloroethane	2.6	U
Cyclohexane	1.7	U
Carbon tetrachloride	3.2	U
Benzene	1.6	U
1,2-dichloroethane	2.6	U
Trichloroethylene	2.1	U
1-Butanol	40	U
Methyl isobutyl ketone	29	U
Toluene	1.7	U
Tetrachloroethylene	1.6	U
Chlorobenzene	1.6	U
Ethylbenzene	1.5	U
m and p-xylene	1.9	U
o-xylene	1.7	U
Bromoform	1.6	U
1,1,2,2-tetrachloroethane	2.3	U
1,3,5-trimethylbenzene	3.0	U
1,2,4-trimethylbenzene	3.3	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval I	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17 APR 2012	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS112-00005	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS112_00005B-01	HS112_00005B-02
Container Id.:	BN10430910	BN10430910
Instrument Method:	VOCGAS.M	VOCGAS.M
Analyzed on:	05-APR-12 17:05	05-APR-12 17:19
Sampled on & by:	05-APR-12 14:00 SO	05-APR-12 14:56 SO
Multiplier:	1.44	1.40
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS112_00005B\009DR-F.D	C:\HPCHEM\1\DATA\HS112_00005B\010DR-F.D
Dilution File(s):		

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Original	Duplicate	RPD	Q Flag
Hydrogen	U	U	NC	
Methane	U	U	NC	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	U	U	NC	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	U	U	NC	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	U	U	NC	
Benzene	U	U	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	J	J	NC	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS112-00005
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Internal Standards Summary

Batch No.: HS112-00005
Instrument Method: VOCGAS.M
CCAL1 Data Path: C:\HPchem\1\DATA\HS112_00005B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS112_00005B\007CC-F.D

CCAL1 Analyzed on: 05-APR-12 10:20
CCAL2 Analyzed on: 05-APR-12 16:35

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	5072897	4.11	5217777	6.61
LCS1	5081940	4.08	4949562	6.58
EB	4937904	4.11	4897449	6.61
FB	4817287	4.09	4757830	6.59
CCAL2 STD.	4902943	4.13	5050559	6.62
LCS2	4988857	4.08	4848893	6.58
BN10430910	4887604	4.13	4758155	6.62
BN10430910	4800222	4.12	4721121	6.61
BN10433911	4747153	4.11	4659741	6.61
BN10435873	4729025	4.08	4597780	6.58

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Drum BN10430910 Sample Report

Batch No.: HS112-00005
Container Id.: BN10430910
Lab Sample Id.: HS112_00005B-01
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\009DR-F.D

Analysis Status: Pass
Analyzed on: 05-APR-12 17:05
Sampled on & by: 05-APR-12 14:00 SO
Multiplier: 1.44
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.014 vol%	U							
Methane	0.009 vol%	U							
Chloromethane	1.1	U							
Methanol	40	U							
Ethyl ether	1.3	U							
1,1-dichloroethylene	1.8	U							
Freon-113	1.4	U							
Acetone	16	U							
Carbon disulfide	1.3	U							
Methylene chloride	1.8	U							
trans-1,2-dichloroethylene	1.8	U							
1,1-dichloroethane	1.8	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	16	U							
Chloroform	2.2	U							
1,1,1-trichloroethane	2.6	U							
Cyclohexane	1.7	U							
Carbon tetrachloride	3.2	U							
Benzene	1.6	U							
1,2-dichloroethane	2.6	U							
Trichloroethylene	2.1	U							
1-Butanol	40	U							
Methyl isobutyl ketone	29	U							
Toluene	2.2	J							
Tetrachloroethylene	1.6	U							
Chlorobenzene	1.6	U							
Ethylbenzene	1.5	U							
m and p-xylene	1.9	U							
o-xylene	1.7	U							
Bromoform	1.6	U							
1,1,2,2-tetrachloroethane	2.3	U							
1,3,5-trimethylbenzene	3.0	U							
1,2,4-trimethylbenzene	3.3	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Drum BN10433911 Sample Report

Batch No.: HS112-00005
Container Id.: BN10433911
Lab Sample Id.: HS112_00005B-03
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\011DR-F.D

Analysis Status Pass

Analyzed on: 05-APR-12 17:32
Sampled on & by: 05-APR-12 15:22 SO
Multiplier: 1.37
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.014 vol%	U							
Methane	0.009 vol%	U							
Chloromethane	1.1	U							
Methanol	40	U							
Ethyl ether	1.3	U							
1,1-dichloroethylene	1.8	U							
Freon-113	1.4	U							
Acetone	16	U							
Carbon disulfide	1.3	U							
Methylene chloride	1.8	U							
trans-1,2-dichloroethylene	1.8	U							
1,1-dichloroethane	1.8	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	16	U							
Chloroform	2.2	U							
1,1,1-trichloroethane	2.6	U							
Cyclohexane	1.7	U							
Carbon tetrachloride	3.2	U							
Benzene	1.6	U							
1,2-dichloroethane	2.6	U							
Trichloroethylene	8.7	J							
1-Butanol	40	U							
Methyl isobutyl ketone	29	U							
Toluene	11								
Tetrachloroethylene	1.6	U							
Chlorobenzene	1.6	U							
Ethylbenzene	1.5	U							
m and p-xylene	3.5	J							
o-xylene	1.7	U							
Bromoform	1.6	U							
1,1,2,2-tetrachloroethane	2.3	U							
1,3,5-trimethylbenzene	3.0	U							
1,2,4-trimethylbenzene	3.3	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	47	7.45

HSGS Headspace Gas
Batch HS112-00005
Drum BN10433911 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Drum BN10435873 Sample Report

Batch No.: HS112-00005
Container Id.: BN10435873
Lab Sample Id.: HS112_00005B-04
Instrument Method: VOCGAS.M
Data Path: C:\HPCHEM\1\DATA\HS112_00005B\012DR-F.D

Analysis Status Pass

Analyzed on: 05-APR-12 17:46
Sampled on & by: 05-APR-12 15:41 SO
Multiplier: 1.41
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.026 vol%	J							
Methane	0.009 vol%	U							
Chloromethane	1.1	U							
Methanol	40	U							
Ethyl ether	1.3	U							
1,1-dichloroethylene	1.8	U							
Freon-113	1.4	U							
Acetone	16	U							
Carbon disulfide	1.3	U							
Methylene chloride	1.8	U							
trans-1,2-dichloroethylene	1.8	U							
1,1-dichloroethane	1.8	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	16	U							
Chloroform	2.2	U							
1,1,1-trichloroethane	2.6	U							
Cyclohexane	1.7	U							
Carbon tetrachloride	3.2	U							
Benzene	1.6	U							
1,2-dichloroethane	2.6	U							
Trichloroethylene	6.4	J							
1-Butanol	40	U							
Methyl isobutyl ketone	29	U							
Toluene	9.7	J							
Tetrachloroethylene	13								
Chlorobenzene	1.6	U							
Ethylbenzene	1.5	U							
m and p-xylene	1.9	U							
o-xylene	1.7	U							
Bromoform	1.6	U							
1,1,2,2-tetrachloroethane	2.3	U							
1,3,5-trimethylbenzene	3.0	U							
1,2,4-trimethylbenzene	3.3	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	51	7.41

HSGS Headspace Gas
Batch HS112-00005
Drum BN10435873 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10430910	3	S5000	0	0	7	14 Jan 12	14 Jan 12	05 Apr 12	2	82	NF19SD, NF036
P	BN10433911	3	S5000	0	0	7	26 Feb 12	26 Feb 12	05 Apr 12	2	39	NF036, NF19SD
P	BN10435873	3	S5000	0	0	7	22 Mar 12	22 Mar 12	05 Apr 12	2	14	NF036, NF19SD

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10430910	NA	Y	Y	SETH OLDHAM	
BN10433911	NA	Y	Y	SETH OLDHAM	
BN10435873	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.
2211580	JKETTEL	17-APR-12 09:04	
2205989	SOLDHAM	05-APR-12 16:12	

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430910

DAC Information

Waste Type:	II	Liner Lid Hole Size:	NA	Vent Date:	14-JAN-12
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	14-JAN-12
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NM			1	1	2	07-APR-12 10:35:02	Chris Stamos
To:	628	NM			1	2	1	07-APR-12 10:37:00	Chris Stamos
Status:	Container move is done and complete								
From:	634- Characterization	SG			21	1	1	07-APR-12 07:48:43	Brady Van Etten
To:	628	NM			1	1	2	07-APR-12 08:05:11	Brady Van Etten
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:06:49	Christopher Midgye
To:	634- Characterization	SG			21	1	1	05-APR-12 15:08:00	Christopher Midgye
Status:	Container move is done and complete								
From:	634- Characterization	SG			22	1	1	05-APR-12 15:06:08	Christopher Midgye
To:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:06:22	Christopher Midgye
Status:	Container move is done and complete								
From:	634- Characterization	SH			18	1	1	21-MAR-12 10:18:28	Chad Hill
To:	634- Characterization	SG			22	1	1	21-MAR-12 10:18:57	Todd Smith
Status:	Container move is done and complete								
From:	634- Characterization	Staging Area						09-MAR-12 17:37:28	Cindy Tiegs
To:	634- Characterization	SH			18	1	1	09-MAR-12 17:37:45	Cindy Tiegs
Status:	Container move is done and complete								
From:	628	NM			14	1	1	09-MAR-12 16:34:56	Jesse Howard
To:	634- Characterization	Staging Area						09-MAR-12 16:35:11	Jesse Howard
Status:	Container move is done and complete								
From:	628	NM			13	1	1	09-MAR-12 16:33:34	Jesse Howard
To:	628	NM			14	1	1	09-MAR-12 16:34:25	Jesse Howard
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430910

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NE			10	3	1	18-JAN-12 11:38:47	Nicholas Ingle
To:	628	NM			13	1	1	18-JAN-12 11:42:33	Greg Brower
Status:	Container move is done and complete								
From:	628	NE			10	3	1	18-JAN-12 11:05:21	Abel Escobar
To:	628	NO						18-JAN-12 11:38:47	Nicholas Ingle
Status:	Container move is cancelled								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				15-JAN-12 09:59:58	Douglas Capell
To:	628	NE			10	3	1	15-JAN-12 10:03:45	Douglas Capell
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				15-JAN-12 09:49:52	Douglas Capell
To:	628	ND						15-JAN-12 09:59:58	Douglas Capell
Status:	Container move is cancelled								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				14-JAN-12 17:50:58	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				14-JAN-12 17:50:09	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				14-JAN-12 17:44:09	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				14-JAN-12 15:51:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				14-JAN-12 05:25:17	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				14-JAN-12 01:26:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				14-JAN-12 01:23:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				14-JAN-12 01:23:18	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				14-JAN-12 01:23:00	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				14-JAN-12 01:22:36	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				14-JAN-12 01:22:04	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430910

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				14-JAN-12 01:08:56	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				14-JAN-12 01:08:37	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				14-JAN-12 01:08:17	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				14-JAN-12 01:08:01	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				14-JAN-12 01:06:10	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				13-JAN-12 22:07:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				13-JAN-12 22:04:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				13-JAN-12 22:04:00	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				13-JAN-12 21:48:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				13-JAN-12 17:31:59	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				13-JAN-12 16:55:50	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				13-JAN-12 16:27:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				13-JAN-12 14:21:16	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/01				13-JAN-12 14:14:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/01				13-JAN-12 11:52:16	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430910

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INA/07	INA/07				13-JAN-12 11:51:52	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/06	INA/06				13-JAN-12 04:28:04	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/05	INA/05				13-JAN-12 04:27:38	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/04	INA/04				12-JAN-12 06:07:10	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/03	INA/03				12-JAN-12 06:07:05	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/02	INA/02				12-JAN-12 06:07:00	
Status:	Container move is done and complete								
From:								11-JAN-12 07:38:02	Michael Powell
To:	676- Facility	General Facility Building	General Facility Subsection I					11-JAN-12 07:38:02	Michael Powell
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10430910

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	14-JAN-12	SFELLOWS	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	14-JAN-12	SFELLOWS	N			N
Diffusivity:	9.25E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10433911

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	26-FEB-12
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	26-FEB-12
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NM			6	1	1	13-JUL-12 10:28:53	Joshua Beck
To:	628	NM			8	1	1	13-JUL-12 10:29:17	Joshua Beck
Status:	Container move is done and complete								
From:	628	NM			10	2	2	14-APR-12 08:52:18	Matthew Reyes
To:	628	NM			6	1	1	14-APR-12 11:06:35	Matthew Reyes
Status:	Container move is done and complete								
From:	628	NM			4	2	2	12-APR-12 16:28:15	Ed Aldrich
To:	628	NM			10	2	2	12-APR-12 16:28:42	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NM			2	2	2	11-APR-12 13:19:26	Ed Aldrich
To:	628	NM			4	2	2	11-APR-12 16:03:32	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NM			2	3	2	10-APR-12 10:22:06	Gerardo Lazalde
To:	628	NM			2	2	2	10-APR-12 10:43:57	Gerardo Lazalde
Status:	Container move is done and complete								
From:	628	NM			2	1	2	07-APR-12 10:35:24	Chris Stamos
To:	628	NM			2	3	2	07-APR-12 10:41:40	Matthew Reyes
Status:	Container move is done and complete								
From:	634- Characterization	SG			21	2	1	07-APR-12 07:48:31	Brady Van Etten
To:	628	NM			2	1	2	07-APR-12 08:05:37	Brady Van Etten
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:52:20	Theresa Palizzi
To:	634- Characterization	SG			21	2	1	05-APR-12 15:52:50	Theresa Palizzi
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10433911

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SG			22	2	1	05-APR-12 15:06:00	Theresa Palizzi
To:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:06:11	Theresa Palizzi
Status:	Container move is done and complete								
From:	634- Characterization	SH			17	1	1	21-MAR-12 10:18:37	Chad Hill
To:	634- Characterization	SG			22	2	1	21-MAR-12 10:19:12	Todd Smith
Status:	Container move is done and complete								
From:	628	NK			6	3	1	09-MAR-12 15:10:59	Cindy Tiegs
To:	634- Characterization	SH			17	1	1	09-MAR-12 15:11:35	Cindy Tiegs
Status:	Container move is done and complete								
From:	628	ND			8	3	1	08-MAR-12 16:54:39	Jace Duke
To:	628	NK			6	3	1	08-MAR-12 17:10:49	Jace Duke
Status:	Container move is done and complete								
From:	628	SA			4	2	1	05-MAR-12 17:30:54	Steve Payne
To:	628	ND			8	3	1	05-MAR-12 17:33:59	Jeff Hunting
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-FEB-12 08:33:58	Jeff Hunting
To:	628	SA			4	2	1	28-FEB-12 08:42:22	Jeff Hunting
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-FEB-12 01:11:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/06	EXA/06				28-FEB-12 01:10:06	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				27-FEB-12 23:02:28	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				27-FEB-12 17:48:41	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				27-FEB-12 02:59:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				26-FEB-12 22:12:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				26-FEB-12 03:08:57	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				26-FEB-12 03:08:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				26-FEB-12 03:08:26	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10433911

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				26-FEB-12 03:08:09	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				26-FEB-12 03:07:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				26-FEB-12 03:07:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				26-FEB-12 03:00:08	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				26-FEB-12 02:59:49	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				26-FEB-12 02:59:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-FEB-12 02:59:13	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-FEB-12 02:57:22	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				25-FEB-12 23:56:04	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				25-FEB-12 23:52:40	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				25-FEB-12 23:52:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				25-FEB-12 23:38:21	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				25-FEB-12 17:44:18	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				25-FEB-12 11:28:00	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				25-FEB-12 11:27:35	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10433911

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				25-FEB-12 09:05:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/01				25-FEB-12 05:36:39	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/01				25-FEB-12 05:36:26	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/07	INA/07				25-FEB-12 05:13:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/06	INA/06				25-FEB-12 05:12:58	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/05	INA/05				25-FEB-12 05:12:54	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/04	INA/04				25-FEB-12 05:12:49	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/03	INA/03				25-FEB-12 05:12:45	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/02	INA/02				25-FEB-12 05:12:40	
Status:	Container move is done and complete								
From:								13-FEB-12 06:57:43	Dennis Haskett
To:	676- Facility	General Facility Building	General Facility Subsection I					13-FEB-12 06:57:43	Dennis Haskett
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10433911

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF036		SC Loadout	26-FEB-12	KHANEY	N			N
Diffusivity:	9.25E-05							
Comment								
NF19SD		SC Loadout	26-FEB-12	KHANEY	N			N
Diffusivity:	1.85E-05							
Comment								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10435873

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	22-MAR-12
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	22-MAR-12
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NM			15	3	2	13-JUL-12 10:30:41	Joshua Beck
To:	628	NM			4	1	1	13-JUL-12 10:31:44	Joshua Beck
Status:	Container move is done and complete								
From:	628	NM			12	3	1	06-JUL-12 11:03:21	Jason Uptergrove
To:	628	NM			15	3	2	06-JUL-12 11:03:40	Jason Uptergrove
Status:	Container move is done and complete								
From:	634- Characterization	SG			18	3	1	07-APR-12 07:48:22	Brady Van Etten
To:	628	NM			12	3	1	07-APR-12 08:04:16	Brady Van Etten
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:51:55	Theresa Palizzi
To:	634- Characterization	SG			18	3	1	05-APR-12 15:57:08	Theresa Palizzi
Status:	Container move is done and complete								
From:	634- Characterization	SG			16	4	1	05-APR-12 15:37:58	Seth Oldham
To:	634- Characterization	HGAS Area	HGAS 001 Machine					05-APR-12 15:38:10	Seth Oldham
Status:	Container move is done and complete								
From:	628	NK			8	1	2	30-MAR-12 17:53:06	Matthew Reyes
To:	634- Characterization	SG			16	4	1	30-MAR-12 17:53:32	Matthew Reyes
Status:	Container move is done and complete								
From:	628	NK			8	1	2	30-MAR-12 16:00:08	Matthew Reyes
To:	634- Characterization	Staging Area						30-MAR-12 17:53:06	Matthew Reyes
Status:	Container move is cancelled								
From:	628	ND			9	1	1	30-MAR-12 15:31:32	Matthew Reyes
To:	628	NK			8	1	2	30-MAR-12 15:52:53	Matthew Reyes
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10435873

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				23-MAR-12 08:37:28	Jeff Johnson
To:	628	ND			9	1	1	23-MAR-12 08:46:08	Jeff Johnson
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				23-MAR-12 05:05:04	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				23-MAR-12 05:04:20	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				23-MAR-12 05:03:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				23-MAR-12 03:09:53	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				22-MAR-12 17:37:58	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				22-MAR-12 12:15:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				22-MAR-12 12:15:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				22-MAR-12 12:15:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				22-MAR-12 12:15:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				22-MAR-12 12:14:37	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				22-MAR-12 12:13:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				22-MAR-12 12:04:18	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				22-MAR-12 12:03:59	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				22-MAR-12 12:03:42	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10435873

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				22-MAR-12 12:01:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/8				22-MAR-12 10:18:28	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				22-MAR-12 10:15:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				22-MAR-12 10:14:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				22-MAR-12 10:14:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				21-MAR-12 17:41:28	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				21-MAR-12 16:56:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				21-MAR-12 16:45:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				21-MAR-12 15:40:25	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				21-MAR-12 15:31:25	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				21-MAR-12 13:04:31	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				21-MAR-12 13:04:06	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				21-MAR-12 08:46:27	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				21-MAR-12 08:46:23	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				21-MAR-12 08:46:19	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10435873

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				21-MAR-12 08:46:15	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				21-MAR-12 08:46:11	
Status:	Container move is done and complete								
From:								20-MAR-12 09:01:48	Kim Radford
To:	676- Facility	General Facility Building	General Facility Subsection I					20-MAR-12 09:01:48	Kim Radford
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10435873

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF036		SC Loadout	22-MAR-12	KHANEY	N			N
Diffusivity:	9.25E-05							
Comment								
NF19SD		SC Loadout	22-MAR-12	KHANEY	N			N
Diffusivity:	1.85E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas Batch HS112-00005 Daily Checks Report

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	nitrogen 1010 psi; helium 1425 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. Date: 09/12/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	nitrogen 1010 psi; helium 1425 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. Date: 09/12/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	nitrogen 1010 psi; helium 1425 psi
Ensure the humidifier contains ASTM Type II water.	PASS	

Verify Method performance demonstration and MDL's are current.	PASS	Exp. Date: 09/12/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2205669	SOLDHAM	05-APR-12 08:33	
2211581	JKETTEL	17-APR-12 09:05	
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00005
Batch Log

Date: 10 OCT 2012
Time: 07:31

$HS112_00005,2012-03-12,17:54:49,SO,0.005,0.004,0.004,0.004,0.003,0.003,0.003,0.003,0.004,0.004,0.004,0.003,0.003,0.003,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.001,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,18:42:01,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error(EVAC1). Vac_error(EVAC2). Vac_error(EVAC3). Vac_error(Final Evac).||No comment.
A0,HS112_00005,BFB,0.000|Loading BFB,2012-04-05,08:43:57 BFB analysis started.
A0,HS112_00005,BFB,0.000|Loading BFB,2012-04-05,08:50:18 BFB analysis started.
S1,HS112_00005,icCLEAN,2012-04-05,09:12:10,635.792,888.730,25.0,SO,,,0.0114,631.184,N/A|No comment.
A1,HS112_00005,icCLEAN,711.417|IC1,2012-04-05,09:18:08 Delivered (711.417).
R,HS112_00005,QC1,2012-04-05,09:23:08|No system comments.
S1,HS112_00005,icCCAL1,2012-04-05,09:40:26,636.036,895.993,25.3,SO,,,0.0072,631.153,N/A|No comment.
S2,HS112_00005,icLCS1,2012-04-05,09:45:42,636.616,906.736,25.2,SO,,,0.0098,631.153,N/A|No comment.
S24,HS112_00005,icEB,2012-04-05,09:56:14,636.036,904.599,25.3,SO,,,0.0026,631.153,N/A|No comment.
S3,HS112_00005,drFB,2012-04-05,10:00:54,629.414,892.453,25.6,SO,,,0.0263,631.123,N/A|No comment.
A0,HS112_00005,BFB,0.000|Loading BFB,2012-04-05,10:11:39 BFB analysis started.
A1,HS112_00005,icCCAL1,716.697|IC1,2012-04-05,10:15:48 Delivered (716.697).
A2,HS112_00005,icLCS1,723.533|IC2,2012-04-05,10:37:21 Delivered (723.533).
A24,HS112_00005,icEB,716.208|IC24,2012-04-05,10:51:11 Delivered (716.208).
A3,HS112_00005,drFB,716.208|DR3,2012-04-05,11:05:00 Delivered (716.208).
R,HS112_00005,QC2, EB-24,2012-04-05,11:09:54|No system comments.
S2,HS112_00005,icCCAL2,2012-04-05,11:43:42,635.914,874.722,26.2,SO,,,0.0056,631.001,N/A|No comment.
S3,HS112_00005,icLCS2,2012-04-05,13:14:25,635.792,897.672,26.7,SO,,,0.0073,630.543,N/A|No comment.
S8,HS112_00005,drBN10430910,2012-04-05,14:00:39,628.224,904.691,26.8,SO,,,0.0013,630.421,N/A|No comment.
S9,HS112_00005,drBN10430910 DUP,2012-04-05,14:56:11,627.491,877.987,26.7,SO,,,0.0012,629.811,passed|No comment.
S10,HS112_00005,drBN10433911,2012-04-05,15:22:05,627.613,859.310,26.7,SO,,,0.0011,629.689,passed|No comment.
S11,HS112_00005,drBN10435873,2012-04-05,15:41:32,627.308,884.091,26.5,SO,,,0.0071,629.536,passed|No comment.
A0,HS112_00005,BFB,0.000|Loading BFB,2012-04-05,16:26:04 BFB analysis started.
A2,HS112_00005,icCCAL2,702.872|IC2,2012-04-05,16:30:14 Delivered (702.872).
A3,HS112_00005,icLCS2,714.377|IC3,2012-04-05,16:46:39 Delivered (714.377).
A8,HS112_00005,drBN10430910,717.063|DR8,2012-04-05,17:00:27 Delivered (717.063).
A9,HS112_00005,drBN10430910 DUP,699.149|DR9,2012-04-05,17:14:10 Delivered (699.149).
A10,HS112_00005,drBN10433911,689.993|DR10,2012-04-05,17:27:58 Delivered (689.993).
A11,HS112_00005,drBN10435873,703.116|DR11,2012-04-05,17:41:46 Delivered (703.116).

**********Esignature**********

Esig Approval ID	Esigned By	Esigned Date	Comment
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Batch ID HS112-00005

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	No liners.
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See Narrative.
MPS Spreadsheet	N	See Narrative.
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See Narrative.
Certificates of Accuracy: OCS Standard	N	See Narrative.
Certificates of Accuracy: Internal Standard	N	See Narrative.
NCR(s)/CAR(s)	N/A	
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2211852	JKETTEL	17-APR-12 11:08	Promote to ITR.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 10-Oct-2012
Time: 07:31

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer CESAR ROJAS **Approval Level** Independent Technical Reviewer
Approval Date 19-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not present, mark N/A.	N/A		
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst,	Yes		

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer CESAR ROJAS **Approval Level** Independent Technical Reviewer
Approval Date 19-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
and complete?			
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	No		Use OCS/OCS Duplicateto determine recoveries
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	No		No target compounds found.
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have	Yes		Use OCS/OCS duplicate.

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer CESAR ROJAS **Approval Level** Independent Technical Reviewer
Approval Date 19-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.			
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	N/A		No dilutions
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of	Yes		

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer CESAR ROJAS **Approval Level** Independent Technical Reviewer
Approval Date 19-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
precision, accuracy, and MDLs performed within the last six months?			
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	Yes		
67. Were there any nonconforming conditions identified which affect data quality?	N/A		No NCRS
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		No rework performed.

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation
Approval Date 23-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	Yes	MP-TRUW-8.2 Table C3-2	
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	No	MP-TRUW-8.2 Table C3-3	OCS and OCS duplicate meets the criterion.
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation
Approval Date 23-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container · Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable)	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS112-00005 **Open Date** 17-APR-12 **Close Date** 17-APR-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2215540	NKIRK	23-APR-12	SPM	Validation complete. Promote batch.
2213017	CROJAS	19-APR-12	ITR	Promote to SPM.

NorLAB®
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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

Analytical Reference Materials

Custom Organics Blend

Catalog # 556776

Lot # A086779

110 Benner Circle Bellefonte, PA 16823-8812
(814) 353-1300

FOR LABORATORY USE ONLY. READ MSDS PRIOR TO USE.

RAW MATERIAL TEST INFORMATION AVAILABLE UPON REQUEST

MANUFACTURED UNDER RESTEK'S ISO 9001 REGISTERED QUALITY SYSTEM

REVIEWED
By dschaffer at 10:39 am, Mar 01, 2012

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.Restek.com

ACCREDITED
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 556776 **Lot No.:** A086779

Description : Custom Organics Blend

Custom Organics Blend, 0.8-15.5 wt/wt%, 1 ml/ampule

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 2013 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/weight%)	Expanded Uncertainty (95% C.L.; K=2)		
1	Chloromethane (methyl chloride)	0.8 wt./wt.%	+/- 0.0047	wt./wt.%	Gravimetric
	CAS # 74-87-3		+/- 0.0652	wt./wt.%	Unstressed
	Purity 99%		+/- 0.0653	wt./wt.%	Stressed
2	Methanol	5.1 wt./wt.%	+/- 0.0294	wt./wt.%	Gravimetric
	CAS # 67-56-1		+/- 0.4052	wt./wt.%	Unstressed
	Purity 99%		+/- 0.4054	wt./wt.%	Stressed
3	Diethyl ether (ethyl ether)	1.1 wt./wt.%	+/- 0.0065	wt./wt.%	Gravimetric
	CAS # 60-29-7		+/- 0.0896	wt./wt.%	Unstressed
	Purity 98%		+/- 0.0897	wt./wt.%	Stressed
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	3.0 wt./wt.%	+/- 0.0177	wt./wt.%	Gravimetric
	CAS # 76-13-1		+/- 0.2432	wt./wt.%	Unstressed
	Purity 97%		+/- 0.2434	wt./wt.%	Stressed
5	Acetone	9.1 wt./wt.%	+/- 0.0529	wt./wt.%	Gravimetric
	CAS # 67-64-1		+/- 0.7286	wt./wt.%	Unstressed
	Purity 99%		+/- 0.7289	wt./wt.%	Stressed
6	1,1-dichloroethene	1.5 wt./wt.%	+/- 0.0088	wt./wt.%	Gravimetric
	CAS # 75-35-4		+/- 0.1217	wt./wt.%	Unstressed
	Purity 99%		+/- 0.1218	wt./wt.%	Stressed
7	Methylene chloride (dichloromethane)	1.3 wt./wt.%	+/- 0.0077	wt./wt.%	Gravimetric
	CAS # 75-09-2		+/- 0.1060	wt./wt.%	Unstressed
	Purity 99%		+/- 0.1060	wt./wt.%	Stressed
8	Carbon disulfide	1.2 wt./wt.%	+/- 0.0071	wt./wt.%	Gravimetric
	CAS # 75-15-0		+/- 0.0980	wt./wt.%	Unstressed
	Purity 99%		+/- 0.0980	wt./wt.%	Stressed
9	trans-1,2-Dichloroethene	1.5 wt./wt.%	+/- 0.0088	wt./wt.%	Gravimetric
	CAS # 156-60-5		+/- 0.1218	wt./wt.%	Unstressed
	Purity 99%		+/- 0.1219	wt./wt.%	Stressed

10	1,1-Dichloroethane	1.5	wt./wt.%	+/-	0.0088	wt./wt.%	Gravimetric
	CAS # 75-34-3			+/-	0.1218	wt./wt.%	Unstressed
	Purity 98%			+/-	0.1219	wt./wt.%	Stressed
11	2-Butanone (MEK)	11.3	wt./wt.%	+/-	0.0653	wt./wt.%	Gravimetric
	CAS # 78-93-3			+/-	0.8986	wt./wt.%	Unstressed
	Purity 99%			+/-	0.8990	wt./wt.%	Stressed
12	cis-1,2-Dichloroethene	1.5	wt./wt.%	+/-	0.0088	wt./wt.%	Gravimetric
	CAS # 156-59-2			+/-	0.1216	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1216	wt./wt.%	Stressed
13	chloroform	1.8	wt./wt.%	+/-	0.0106	wt./wt.%	Gravimetric
	CAS # 67-66-3			+/-	0.1464	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1465	wt./wt.%	Stressed
14	1,1,1-trichloroethane	2.0	wt./wt.%	+/-	0.0118	wt./wt.%	Gravimetric
	CAS # 71-55-6			+/-	0.1627	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1628	wt./wt.%	Stressed
15	Cyclohexane	1.3	wt./wt.%	+/-	0.0076	wt./wt.%	Gravimetric
	CAS # 110-82-7			+/-	0.1053	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1054	wt./wt.%	Stressed
16	carbon tetrachloride	2.4	wt./wt.%	+/-	0.0141	wt./wt.%	Gravimetric
	CAS # 56-23-5			+/-	0.1944	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1945	wt./wt.%	Stressed
17	1,2-Dichloroethane	1.5	wt./wt.%	+/-	0.0088	wt./wt.%	Gravimetric
	CAS # 107-06-2			+/-	0.1219	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1219	wt./wt.%	Stressed
18	Benzene	1.2	wt./wt.%	+/-	0.0071	wt./wt.%	Gravimetric
	CAS # 71-43-2			+/-	0.0972	wt./wt.%	Unstressed
	Purity 99%			+/-	0.0972	wt./wt.%	Stressed
19	1-Butanol	11.7	wt./wt.%	+/-	0.0677	wt./wt.%	Gravimetric
	CAS # 71-36-3			+/-	0.9321	wt./wt.%	Unstressed
	Purity 99%			+/-	0.9325	wt./wt.%	Stressed
20	Trichloroethene	2.0	wt./wt.%	+/-	0.0118	wt./wt.%	Gravimetric
	CAS # 79-01-6			+/-	0.1620	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1621	wt./wt.%	Stressed
21	4-Methyl-2-pentanone (MIBK)	15.7	wt./wt.%	+/-	0.0912	wt./wt.%	Gravimetric
	CAS # 108-10-1			+/-	1.2560	wt./wt.%	Unstressed
	Purity 99%			+/-	1.2566	wt./wt.%	Stressed
22	Toluene	1.4	wt./wt.%	+/-	0.0083	wt./wt.%	Gravimetric
	CAS # 108-88-3			+/-	0.1141	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1142	wt./wt.%	Stressed
23	Tetrachloroethene	2.6	wt./wt.%	+/-	0.0153	wt./wt.%	Gravimetric
	CAS # 127-18-4			+/-	0.2108	wt./wt.%	Unstressed
	Purity 99%			+/-	0.2109	wt./wt.%	Stressed
24	Chlorobenzene	1.7	wt./wt.%	+/-	0.0100	wt./wt.%	Gravimetric
	CAS # 108-90-7			+/-	0.1379	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1380	wt./wt.%	Stressed
25	Ethylbenzene	1.6	wt./wt.%	+/-	0.0094	wt./wt.%	Gravimetric
	CAS # 100-41-4			+/-	0.1297	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1297	wt./wt.%	Stressed
26	m-Xylene	0.8	wt./wt.%	+/-	0.0047	wt./wt.%	Gravimetric
	CAS # 108-38-3			+/-	0.0652	wt./wt.%	Unstressed
	Purity 99%			+/-	0.0652	wt./wt.%	Stressed
27	p-Xylene	0.8	wt./wt.%	+/-	0.0047	wt./wt.%	Gravimetric
	CAS # 106-42-3			+/-	0.0648	wt./wt.%	Unstressed
	Purity 99%			+/-	0.0649	wt./wt.%	Stressed
28	o-Xylene	1.6	wt./wt.%	+/-	0.0094	wt./wt.%	Gravimetric
	CAS # 95-47-6			+/-	0.1298	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1299	wt./wt.%	Stressed

29	bromoform	4.1	wt./wt.%	+/-	0.0235	wt./wt.%	Gravimetric
	CAS # 75-25-2			+/-	0.3241	wt./wt.%	Unstressed
	Purity 99%			+/-	0.3243	wt./wt.%	Stressed
30	1,1,2,2-Tetrachloroethane	2.6	wt./wt.%	+/-	0.0153	wt./wt.%	Gravimetric
	CAS # 79-34-5			+/-	0.2107	wt./wt.%	Unstressed
	Purity 99%			+/-	0.2108	wt./wt.%	Stressed
31	1,3,5-Trimethylbenzene	1.8	wt./wt.%	+/-	0.0106	wt./wt.%	Gravimetric
	CAS # 108-67-8			+/-	0.1459	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1460	wt./wt.%	Stressed
32	1,2,4-Trimethylbenzene	1.8	wt./wt.%	+/-	0.0106	wt./wt.%	Gravimetric
	CAS # 95-63-6			+/-	0.1461	wt./wt.%	Unstressed
	Purity 99%			+/-	0.1462	wt./wt.%	Stressed

Solvent: n/a
CAS #
Purity

Specific Reference Material Notes:
Density = 0.9484

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

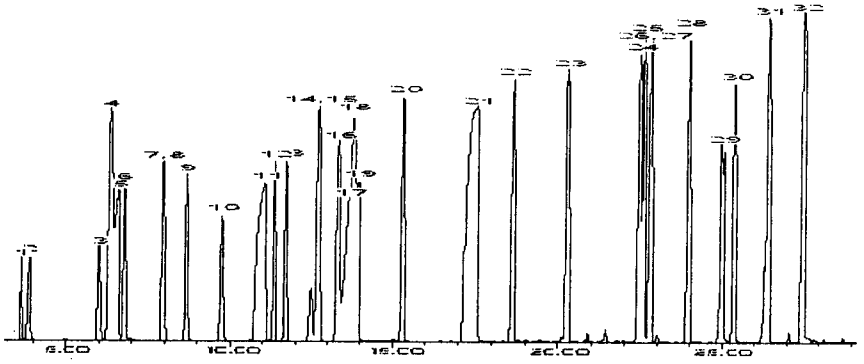
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

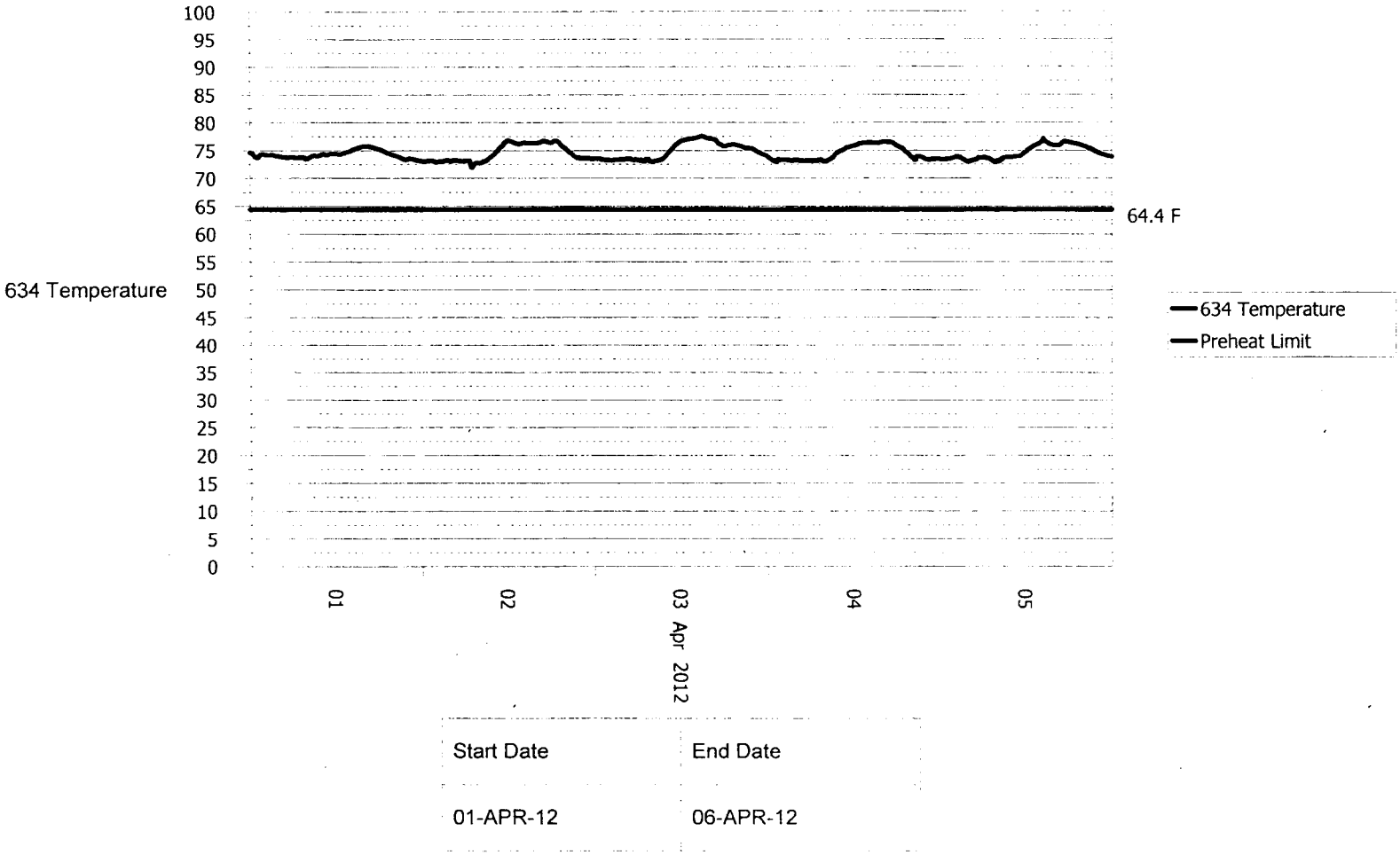
Det. Type:
MSD



Valerie N. Walters - QA Analyst **Date Passed:** 29-Feb-2012 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

634 Characterization Temperature



Start Date	End Date
01-APR-12	06-APR-12

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Cover Sheet & Case Narrative

Batch No: HS111-00023
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 02-NOV-11 09:49
Batch Analysis Date: 02-NOV-11 13:01
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 16-NOV-11 13:10
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.

No NCRs associated with this batch.

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: Summaries of the applicable ICAL, MDLs and MPSs were analyzed within six months, they met criteria.

Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10418907	100	BN-550	S5000	Yes	Yes	No	None	P
BN10421829	100	BN-550	S5000	Yes	No	No	1	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	21-NOV-11 09:44:05	Validation complete. Promote batch.
JKETTEL	ITR	16-NOV-11 15:11:32	Promote.
CROJAS	HOC	16-NOV-11 13:10:57	Promote to ITR.
CROJAS	HOC	16-NOV-11 13:10:21	Promote to ITR
CROJAS	HOC	14-NOV-11 16:39:50	
CROJAS	HOC	14-NOV-11 16:05:45	
SOLDHAM	HSGO	02-NOV-11 12:56:27	
SOLDHAM	HSGO	02-NOV-11 08:24:11	

INFORMATION ONLY

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS111-00023
Non-Conformances

Date: 25 Sep 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023

ICAL Report

Batch No.: ICAL/HS111-00023
Instrument method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\

ICAL Start: 24-OCT-11 15:53
ICAL End: 24-OCT-11 16:48
Sampled by: SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.02E+05	0.000	1.0000	
Methane	4.78E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	
Chloromethane	0.170	0.159	0.151	0.145	0.151	6.20	
Methanol	0.048	0.044	0.043	0.042	0.044	4.88	
Ethyl ether	0.165	0.154	0.150	0.145	0.154	4.85	
1,1-dichloroethylene	0.251	0.240	0.231	0.228	0.243	3.79	
Freon-113	0.614	0.574	0.547	0.534	0.557	5.50	
Acetone	0.113	0.107	0.105	0.103	0.111	3.91	
Carbon disulfide	0.607	0.567	0.565	0.558	0.603	4.00	
Methylene chloride	0.208	0.193	0.187	0.189	0.200	4.46	
trans-1,2-dichloroethylene	0.284	0.262	0.259	0.252	0.270	4.56	
1,1-dichloroethane	0.519	0.487	0.469	0.451	0.478	5.27	
cis-1,2-dichloroethylene	0.285	0.271	0.261	0.255	0.274	4.35	
Methyl ethyl ketone	0.121	0.116	0.115	0.114	0.124	3.79	
Chloroform	0.752	0.694	0.656	0.619	0.644	7.67	
1,1,1-trichloroethane	0.868	0.821	0.772	0.730	0.742	7.28	
Cyclohexane	0.442	0.418	0.411	0.402	0.428	3.68	
Carbon tetrachloride	0.213	0.197	0.191	0.181	0.176	7.50	
Benzene	0.728	0.680	0.670	0.658	0.711	4.22	
1,2-dichloroethane	0.603	0.548	0.514	0.478	0.483	9.84	
Trichloroethylene	0.491	0.455	0.436	0.431	0.456	5.23	
1-Butanol	0.047	0.045	0.045	0.044	0.046	2.81	
Methyl isobutyl ketone	0.114	0.110	0.109	0.105	0.099	5.22	
Toluene	0.608	0.575	0.555	0.559	0.617	4.81	
Tetrachloroethylene	0.674	0.639	0.611	0.574	0.545	8.43	
Chlorobenzene	1.068	0.964	0.939	0.909	0.976	6.18	
Ethylbenzene	0.509	0.465	0.467	0.458	0.497	4.67	
m and p-xylene	0.595	0.566	0.552	0.558	0.619	4.86	
o-xylene	0.563	0.530	0.533	0.546	0.591	4.54	
Bromoform	0.452	0.424	0.413	0.412	0.429	3.80	
1,1,2,2-tetrachloroethane	0.437	0.402	0.413	0.408	0.457	5.41	
1,3,5-trimethylbenzene	0.725	0.680	0.740	0.732	0.817	6.71	
1,2,4-trimethylbenzene	0.651	0.623	0.695	0.701	0.767	8.00	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023
BFB Report ICAL

Batch No. ICAL/HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 24-OCT-11 15:45
Apex Scan(s) 434 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.9
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
177	5.0 - 9.0% of mass 176	6.5
174	Greater than 50.0% of mass 95	93.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	98.0
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	00211-F.D	24-OCT-2011 15:53
ICAL2	ICAL	00312-F.D	24-OCT-2011 16:07
ICAL3	ICAL	00413-F.D	24-OCT-2011 16:21
ICAL4	ICAL	00514-F.D	24-OCT-2011 16:34
ICAL5	ICAL	00615-F.D	24-OCT-2011 16:48

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023
BFB Report Shift 1

Batch No. HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 02-NOV-11 09:49
Apex Scan(s) 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	97.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	97.8
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	02-NOV-2011 09:57
LCS1	LCS	003LC-F.D	02-NOV-2011 10:15
EB	EB	004EB-F.D	02-NOV-2011 10:29
FB	FB	005FB-F.D	02-NOV-2011 10:43

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

Batch HS111-00023
BFB Report Shift 2

Batch No. HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 02-NOV-11 13:01
Apex Scan(s) 430 431 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.7
174	Greater than 50.0% of mass 95	97.8
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	95.9
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	02-NOV-2011 13:09
LCS2	LCS	008LC-F.D	02-NOV-2011 13:30
BN10418907	HS111_00023B-01	009DR-F.D	02-NOV-2011 13:44
DILUTION1	HS111_00023B-01(1X)	010DR-F.D	02-NOV-2011 14:00
BN10418907	HS111_00023B-02	011DR-F.D	02-NOV-2011 14:13
DILUTION1	HS111_00023B-02(1X)	012DR-F.D	02-NOV-2011 14:28
BN10421829	HS111_00023B-03	013DR-F.D	02-NOV-2011 14:42

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

Batch HS111-00023
CCAL Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D

Analyzed on: 02-NOV-11 09:57
Sampled on & by: 02-NOV-11 09:15 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.01	100.6	
Methane	1.00	1.02	101.8	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.147	5.2	
Methanol	0.044	0.041	6.8	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.232	2.9	
Freon-113	0.565	0.552	2.3	
Acetone	0.108	0.102	5.6	
Carbon disulfide	0.580	0.565	2.6	
Methylene chloride	0.196	0.190	3.1	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.461	4.2	
cis-1,2-dichloroethylene	0.269	0.260	3.3	
Methyl ethyl ketone	0.118	0.112	5.1	
Chloroform	0.673	0.637	5.3	
1,1,1-trichloroethane	0.786	0.755	3.9	
Cyclohexane	0.420	0.397	5.5	
Carbon tetrachloride	0.192	0.184	4.2	
Benzene	0.689	0.659	4.4	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.441	2.9	
1-Butanol	0.046	0.044	4.3	
Methyl isobutyl ketone	0.107	0.106	0.9	
Toluene	0.583	0.543	6.9	
Tetrachloroethylene	0.609	0.599	1.6	
Chlorobenzene	0.971	0.903	7.0	
Ethylbenzene	0.479	0.444	7.3	
m and p-xylene	0.578	0.530	8.3	
o-xylene	0.553	0.510	7.8	
Bromoform	0.426	0.404	5.2	
1,1,2,2-tetrachloroethane	0.423	0.383	9.5	
1,3,5-trimethylbenzene	0.739	0.647	12.4	
1,2,4-trimethylbenzene	0.687	0.607	11.6	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

Batch HS111-00023
CCAL Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

Analyzed on: 02-NOV-11 13:09
Sampled on & by: 02-NOV-11 11:17 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.00	99.9	
Methane	1.00	1.02	102.3	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.150	3.2	
Methanol	0.044	0.040	9.1	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.236	1.3	
Freon-113	0.565	0.554	1.9	
Acetone	0.108	0.100	7.4	
Carbon disulfide	0.580	0.562	3.1	
Methylene chloride	0.196	0.189	3.6	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.458	4.8	
cis-1,2-dichloroethylene	0.269	0.261	3.0	
Methyl ethyl ketone	0.118	0.113	4.2	
Chloroform	0.673	0.646	4.0	
1,1,1-trichloroethane	0.786	0.760	3.3	
Cyclohexane	0.420	0.391	6.9	
Carbon tetrachloride	0.192	0.189	1.6	
Benzene	0.689	0.662	3.9	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.443	2.4	
1-Butanol	0.046	0.042	8.7	
Methyl isobutyl ketone	0.107	0.104	2.8	
Toluene	0.583	0.536	8.1	
Tetrachloroethylene	0.609	0.587	3.6	
Chlorobenzene	0.971	0.884	9.0	
Ethylbenzene	0.479	0.434	9.4	
m and p-xylene	0.578	0.516	10.7	
o-xylene	0.553	0.487	11.9	
Bromoform	0.426	0.393	7.7	
1,1,2,2-tetrachloroethane	0.423	0.369	12.8	
1,3,5-trimethylbenzene	0.739	0.628	15.0	
1,2,4-trimethylbenzene	0.687	0.567	17.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023
LCS Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D

Analyzed on: 02-NOV-11 10:15
Sampled on & by: 02-NOV-11 09:21 SO
Multiplier: 1.38
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.51	102.47	
Methane	0.500	0.52	104.42	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	49.92	99.83	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.87	89.74	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.84	89.68	
Benzene	50.00	47.63	95.27	
1,2-dichloroethane	50.00	46.01	92.03	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.08	91.43	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

Batch HS111-00023
LCS Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D

Analyzed on: 02-NOV-11 13:30
Sampled on & by: 02-NOV-11 11:24 SO
Multiplier: 1.39
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.51	102.48	
Methane	0.500	0.51	102.84	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.10	100.20	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.93	89.87	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.23	88.45	
Benzene	50.00	48.01	96.03	
1,2-dichloroethane	50.00	45.86	91.72	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.68	92.62	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

Batch HS111-00023
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 10:15	02-NOV-11 13:30
Sampled on & by:	02-NOV-11 09:21 SO	02-NOV-11 11:24 SO
Multiplier:	1.38	1.39
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D	C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.51	0.51	0.01	
Methane	0.52	0.51	1.52	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	49.92	50.10	0.37	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	44.87	44.93	0.14	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	44.84	44.23	1.38	
Benzene	47.63	48.01	0.80	
1,2-dichloroethane	46.01	45.86	0.34	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.08	46.68	1.29	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

Batch HS111-00023
LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

Batch HS111-00023
Equipment Blank Report

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\004EB-F.D

Analyzed on: 02-NOV-11 10:29
Sampled on & by: 02-NOV-11 09:34 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval I	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

Batch HS111-00023
Field Blank Report

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\005FB-F.D

Analyzed on: 02-NOV-11 10:43
Sampled on & by: 02-NOV-11 09:39 SO
Multiplier: 1.41
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval I	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

Batch HS111-00023
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS111_00023B-01	HS111_00023B-02
Container Id.:	BN10418907	BN10418907
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 13:44	02-NOV-11 14:13
Sampled on & by:	02-NOV-11 11:37 SO	02-NOV-11 11:48 SO
Multiplier:	1.39	1.39
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\009DR-F.D	C:\HPCHEM\1\DATA\HS111_00023B\011DR-F.D
Dilution File(s):	010	012

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.59	0.60	1.12	
Methane	U	U	NC	
Chloromethane	J	J	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	J	J	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	220	220	1.51	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	J	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	J	J	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	J	J	NC	
Benzene	J	J	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	21	22	2.45	
Tetrachloroethylene	J	J	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

Batch HS111-00023
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

Batch HS111-00023
Internal Standards Summary

Batch No.: HS111-00023
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

CCAL1 Analyzed on: 02-NOV-11 09:57
CCAL2 Analyzed on: 02-NOV-11 13:09

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	8994053	4.10	8278615	6.60
LCS1	9056706	4.09	7929537	6.59
EB	8809534	4.12	7801753	6.61
FB	8622999	4.12	7687533	6.62
CCAL2 STD.	8544930	4.12	8052723	6.62
LCS2	8737497	4.10	7725796	6.60
BN10418907	8565219	4.07	7556993	6.57
DILUTION1	8535545	4.12	7598193	6.62
BN10418907	8422874	4.08	7488123	6.58
DILUTION1	8402808	4.10	7470167	6.60
BN10421829	8273116	4.09	7480078	6.59

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023
Drum BN10418907 Sample Report

Batch No.: HS111-00023
Container Id.: BN10418907
Lab Sample Id.: HS111_00023B-01
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\009DR-F.D

Analysis Status: Pass

Analyzed on: 02-NOV-11 13:44
Sampled on & by: 02-NOV-11 11:37 SO
Multiplier: 1.39
Matrix: Drum Headspace
Dilution Files: 010

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.59 vol%								
Methane	0.019 vol%	U							
Chloromethane	3.4	J							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	1.8	J							
Acetone	25	J							
Carbon disulfide	1.2	U							
Methylene chloride	220	D							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.7	J							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	3.1	J							
1,1,1-trichloroethane	7.2	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	3.9	J							
Benzene	2.4	J							
1,2-dichloroethane	1.6	U							
Trichloroethylene	6.9	J							
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	21								
Tetrachloroethylene	1.8	J							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

Batch HS111-00023
Drum BN10421829 Sample Report

Batch No.: HS111-00023
Container Id.: BN10421829
Lab Sample Id.: HS111_00023B-03
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\013DR-F.D

Analysis Status: Pass

Analyzed on: 02-NOV-11 14:42
Sampled on & by: 02-NOV-11 12:11 SO
Multiplier: 1.39
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.018 vol%	J							
Methane	0.019 vol%	U							
Chloromethane	1.3	J							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	25								
Acetone	19	U							
Carbon disulfide	1.2	U							
Methylene chloride	11								
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	2.7	J							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	1.0	J							
1,1,1-trichloroethane	5.5	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	11								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	88								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	8.2	J							
m and p-xylene	22								
o-xylene	7.8	J							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	42	7.43

Batch HS111-00023
Drum BN10421829 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10418907	3	S5000	0	0	7	26 Aug 11	26 Aug 11	02 Nov 11	2	68	NF19SD, NF036
P	BN10421829	3	S5000	0	0	7	18 Sep 11	18 Sep 11	02 Nov 11	2	45	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10418907	NA	Y	Y	SETH OLDHAM	
BN10421829	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR
2132326	CROJAS	14-NOV-11 16:05	
2127181	SOLDHAM	02-NOV-11 12:56	

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	26-AUG-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	26-AUG-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						21-APR-12 08:49:02	Jake Archibald
To:	TRUPACT Loaded							21-APR-12 08:53:05	Jake Archibald
Status:	Container move is done and complete								
From:	628	SJ			10	1	1	19-APR-12 10:00:06	Ed Aldrich
To:	635	Assembled Payloads						19-APR-12 10:00:55	Ed Aldrich
Status:	Container move is done and complete								
From:	628	SJ			9	1	1	18-APR-12 10:52:11	Ed Aldrich
To:	628	SJ			10	1	1	18-APR-12 10:52:29	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			10	3	1	18-APR-12 09:57:25	Ed Aldrich
To:	628	SJ			9	1	1	18-APR-12 10:51:57	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			5	3	2	12-APR-12 14:30:32	Tim Burwell
To:	628	NK			10	3	1	12-APR-12 14:31:42	Tim Burwell
Status:	Container move is done and complete								
From:	628	ND			9	3	1	11-APR-12 16:37:19	Chelsie Beard
To:	628	NK			5	3	2	11-APR-12 16:45:28	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			3	2	1	07-APR-12 13:37:48	Chris Stamos
To:	628	ND			9	3	1	07-APR-12 13:41:39	Chris Stamos
Status:	Container move is done and complete								
From:	628	NK			3	2	1	07-APR-12 10:52:23	Chris Stamos
To:	628	Overpack staging area						07-APR-12 13:37:48	Chris Stamos
Status:	Container move is cancelled								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NK			2	3	2	03-JAN-12 08:00:43	Rick Whitmore
To:	628	NK			3	2	1	03-JAN-12 08:16:50	Rick Whitmore
Status:	Container move is done and complete								
From:	628	NK			12	3	1	30-DEC-11 08:29:31	Bruce Hebdon
To:	628	NK			2	3	2	30-DEC-11 10:58:59	Dave White
Status:	Container move is done and complete								
From:	628	NN			2	1	1	23-DEC-11 17:11:41	Steven Stewart
To:	628	NK			12	3	1	23-DEC-11 17:11:57	Steven Stewart
Status:	Container move is done and complete								
From:	628	NN			11	2	2	07-DEC-11 10:36:30	Justin Hendricks
To:	628	NN			2	1	1	07-DEC-11 10:37:47	Justin Hendricks
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	2	1	26-NOV-11 14:09:16	Jesse Howard
To:	628	NN			11	2	2	26-NOV-11 14:09:36	Jesse Howard
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	2	1	10-NOV-11 08:25:14	Tim Burwell
To:	634- Characterization	SN						10-NOV-11 09:06:23	Tim Burwell
Status:	Container move is cancelled								
From:	634- Characterization	SN			6	3	1	04-NOV-11 08:09:44	Leisa Bunce
To:	634- Characterization	SN			4	2	1	04-NOV-11 08:25:33	Leisa Bunce
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 12:08:13	Nancy Bunce
To:	634- Characterization	SN			6	3	1	02-NOV-11 12:09:05	Nancy Bunce
Status:	Container move is done and complete								
From:	634- Characterization	SN			5	1	1	02-NOV-11 08:27:44	Michael Ricks
To:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 08:28:19	Michael Ricks
Status:	Container move is done and complete								
From:	634- Characterization	SH			9	2	1	28-OCT-11 10:31:07	Frank Kuck
To:	634- Characterization	SN			5	1	1	28-OCT-11 10:32:45	Frank Kuck
Status:	Container move is done and complete								
From:	628	NN			12	2	1	26-OCT-11 16:20:56	Paul Chapman
To:	634- Characterization	SH			9	2	1	26-OCT-11 16:23:00	Paul Chapman
Status:	Container move is done and complete								
From:	628	NN			12	2	1	26-OCT-11 13:58:05	Paul Chapman
To:	634- Characterization	Staging Area						26-OCT-11 16:20:56	Paul Chapman
Status:	Container move is cancelled								
From:	628	NN			12	2	2	14-SEP-11 23:15:05	Greg Stecklein
To:	628	NN			12	2	1	15-SEP-11 01:47:50	Greg Stecklein
Status:	Container move is done and complete								
From:	628	NN			13	2	2	10-SEP-11 01:34:46	Che Miles
To:	628	NN			12	2	2	10-SEP-11 02:13:51	Che Miles
Status:	Container move is done and complete								
From:	628	ND			10	3	1	08-SEP-11 14:36:26	Larin Mortimer
To:	628	NN			13	2	2	08-SEP-11 14:44:36	Larin Mortimer
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	SA			2	3	1	03-SEP-11 10:37:35	Dallas Johnston
To:	628	ND			10	3	1	03-SEP-11 11:16:41	Dallas Johnston
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				27-AUG-11 22:19:14	Tracy Pena
To:	628	SA			2	3	1	27-AUG-11 22:25:01	Tracy Pena
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				27-AUG-11 16:42:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				27-AUG-11 16:41:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				27-AUG-11 16:40:16	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				27-AUG-11 12:45:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				27-AUG-11 08:22:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				27-AUG-11 03:04:51	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				26-AUG-11 23:42:15	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				26-AUG-11 22:51:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				26-AUG-11 22:51:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				26-AUG-11 22:51:07	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				26-AUG-11 22:50:49	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				26-AUG-11 22:50:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				26-AUG-11 22:49:53	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				26-AUG-11 22:37:59	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				26-AUG-11 22:37:40	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				26-AUG-11 22:37:22	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-AUG-11 22:37:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-AUG-11 22:35:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				26-AUG-11 21:47:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-AUG-11 21:44:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-AUG-11 21:43:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				26-AUG-11 17:49:08	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				26-AUG-11 16:25:00	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				26-AUG-11 15:22:12	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				26-AUG-11 14:05:49	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				26-AUG-11 08:36:28	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				26-AUG-11 07:36:20	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				26-AUG-11 07:35:56	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				26-AUG-11 03:23:04	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				26-AUG-11 03:23:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				26-AUG-11 03:22:55	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				26-AUG-11 03:22:50	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				26-AUG-11 03:22:46	
Status:	Container move is done and complete								
From:								23-AUG-11 15:00:17	Cheryl Packer
To:	676- Facility	General Facility Building	General Facility Subsection Ii					23-AUG-11 15:00:17	Cheryl Packer
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10418907

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	26-AUG-11	WASHCRAFT	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	26-AUG-11	WASHCRAFT	N			N
Diffusivity:	9.25E-05							
Comment								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

DAC Information

Waste Type:	II	Liner Lid Hole Size:	NA	Vent Date:	18-SEP-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	18-SEP-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						22-MAR-12 10:39:21	Carl Chapman
To:	TRUPACT Loaded							22-MAR-12 10:41:16	Carl Chapman
Status:	Container move is done and complete								
From:	635	WC			4	1	1	08-MAR-12 14:20:13	John Aguayo
To:	635	Assembled Payloads						08-MAR-12 14:21:06	John Aguayo
Status:	Container move is done and complete								
From:	628	SJ			7	1	2	07-MAR-12 11:03:49	Kim Smith
To:	635	WC			4	1	1	07-MAR-12 13:30:05	Kim Smith
Status:	Container move is done and complete								
From:	628	NK			3	3	2	06-MAR-12 14:31:49	Fred White
To:	628	SJ			7	1	2	06-MAR-12 16:21:10	Fred White
Status:	Container move is done and complete								
From:	628	NK			3	1	1	03-JAN-12 08:00:01	Rick Whitmore
To:	628	NK			3	3	2	03-JAN-12 08:20:36	Rick Whitmore
Status:	Container move is done and complete								
From:	628	NK			11	2	1	30-DEC-11 08:29:49	Bruce Hebdon
To:	628	NK			3	1	1	30-DEC-11 10:55:53	Dave White
Status:	Container move is done and complete								
From:	628	NN			2	2	2	23-DEC-11 17:07:48	Steven Stewart
To:	628	NK			11	2	1	23-DEC-11 17:08:06	Steven Stewart
Status:	Container move is done and complete								
From:	628	NN			2	2	2	20-DEC-11 16:47:10	Craig Muehleip
To:	628	NN			2	2	2	20-DEC-11 16:50:21	Craig Muehleip
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NN			2	2	2	20-DEC-11 16:44:13	Craig Muehleip
To:	628	NM						20-DEC-11 16:45:18	Craig Muehleip
Status:	Container move is cancelled								
From:	628	NN			10	3	2	07-DEC-11 10:43:44	Justin Hendricks
To:	628	NN			2	2	2	07-DEC-11 10:45:58	Justin Hendricks
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	26-NOV-11 14:10:04	Jesse Howard
To:	628	NN			10	3	2	26-NOV-11 14:10:25	Jesse Howard
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	10-NOV-11 08:25:32	Tim Burwell
To:	634- Characterization	SN						10-NOV-11 09:06:10	Tim Burwell
Status:	Container move is cancelled								
From:	634- Characterization	SN			6	2	1	04-NOV-11 08:09:36	Leisa Bunce
To:	634- Characterization	SN			4	3	1	04-NOV-11 08:25:09	Leisa Bunce
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 12:20:16	Cindy Tiegs
To:	634- Characterization	SN			6	2	1	02-NOV-11 12:21:04	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SN			5	2	1	02-NOV-11 08:27:56	Michael Ricks
To:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 08:28:10	Michael Ricks
Status:	Container move is done and complete								
From:	634- Characterization	SH			9	3	1	28-OCT-11 10:31:56	Frank Kuck
To:	634- Characterization	SN			5	2	1	28-OCT-11 10:32:58	Frank Kuck
Status:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 16:20:41	Paul Chapman
To:	634- Characterization	SH			9	3	1	26-OCT-11 16:22:41	Paul Chapman
Status:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 13:58:17	Paul Chapman
To:	634- Characterization	Staging Area						26-OCT-11 16:20:41	Paul Chapman
Status:	Container move is cancelled								
From:	628	NN			15	3	2	14-OCT-11 14:17:57	Mikel Fisher
To:	628	NN			11	2	1	14-OCT-11 14:18:53	Mikel Fisher
Status:	Container move is done and complete								
From:	628	NN			10	3	2	11-OCT-11 16:12:00	Jesse Howard
To:	628	NN			15	3	2	11-OCT-11 16:14:54	Jesse Howard
Status:	Container move is done and complete								
From:	628	NN			9	3	2	06-OCT-11 14:06:56	Steve Hunter
To:	628	NN			10	3	2	06-OCT-11 14:07:27	Steve Hunter
Status:	Container move is done and complete								
From:	628	NN			8	2	2	06-OCT-11 13:28:47	Adam Schenck
To:	628	NN			9	3	2	06-OCT-11 14:05:24	Steve Hunter
Status:	Container move is done and complete								
From:	628	NN			15	1	2	30-SEP-11 16:29:59	Che Miles
To:	628	NN			8	2	2	30-SEP-11 16:38:37	Che Miles
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	ND			4	1	1	27-SEP-11 14:51:37	Tony Burgess
To:	628	NN			15	1	2	27-SEP-11 16:26:18	Dallas Johnston
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				22-SEP-11 10:59:54	Thomas Mills
To:	628	ND			4	1	1	22-SEP-11 16:50:21	Larin Mortimer
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				21-SEP-11 05:08:45	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				21-SEP-11 05:07:51	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				21-SEP-11 03:07:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				20-SEP-11 12:37:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				20-SEP-11 09:35:43	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				19-SEP-11 04:02:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				18-SEP-11 15:14:01	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				18-SEP-11 14:30:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				18-SEP-11 14:29:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				18-SEP-11 14:29:47	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				18-SEP-11 14:29:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				18-SEP-11 14:29:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				18-SEP-11 14:28:33	
Status:	Container move is done and complete								

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				18-SEP-11 14:14:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				18-SEP-11 14:14:04	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				18-SEP-11 14:13:46	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 14:13:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 14:11:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				18-SEP-11 09:19:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 09:15:40	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 09:15:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				18-SEP-11 05:40:27	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				18-SEP-11 03:39:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				18-SEP-11 03:00:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				17-SEP-11 23:42:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				17-SEP-11 20:48:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/01				17-SEP-11 18:00:35	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/01				17-SEP-11 15:03:24	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INA/07	INA/07				17-SEP-11 15:02:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/06	INA/06				16-SEP-11 21:40:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/05	INA/05				16-SEP-11 21:39:36	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/04	INA/04				16-SEP-11 14:32:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/03	INA/03				16-SEP-11 14:31:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/02	INA/02				16-SEP-11 04:25:34	
Status:	Container move is done and complete								
From:								14-SEP-11 02:13:38	Nolan Bjorkman
To:	676- Facility	General Facility Building	General Facility Subsection I					14-SEP-11 02:13:38	Nolan Bjorkman
Status:	Container move is done and complete								

Headspace Gas Report

Filter Data

BN10421829

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	9.25E-05							
Comment								

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	

Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2127065	SOLDHAM	02-NOV-11 08:24	
2132332	CROJAS	14-NOV-11 16:39	
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Batch Log

Date: 25 SEP 2012
Time: 09:31

$HS111_00023,2011-10-
30,17:38:59,SO,0.005,0.004,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,(
.002,0.001,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,18:25:32,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error,manifold & bottles,LK_RT_TST.
Vac_error(EVAC3). Vac_error(Final Evac).||No comment.
S1,HS111_00023,icCLEAN,2011-11-02,08:49:44,649.068,894.711,22.1,SO,,,0.0013,644.215,N/A|No comment.
A1,HS111_00023,icCLEAN,719.291|IC1,2011-11-02,08:54:28 Delivered (719.291).
R,HS111_00023,QC1,2011-11-02,08:59:23|No system comments.
S1,HS111_00023,icCCAL1,2011-11-02,09:15:15,649.800,877.102,22.4,SO,,,0.0068,644.459,N/A|No comment.
S2,HS111_00023,icLCS1,2011-11-02,09:21:03,649.709,896.847,22.5,SO,,,0.0067,644.398,N/A|No comment.
S4,HS111_00023,icEB,2011-11-02,09:34:40,650.075,910.459,22.8,SO,,,0.0014,644.551,N/A|No comment.
S3,HS111_00023,drFB,2011-11-02,09:39:48,642.628,904.325,22.8,SO,,,0.0141,644.551,N/A|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,09:50:06 BFB analysis started.
A1,HS111_00023,icCCAL1,708.670|IC1,2011-11-02,09:54:13 Delivered (708.670).
A2,HS111_00023,icLCS1,716.971|IC2,2011-11-02,10:12:05 Delivered (716.971).
A4,HS111_00023,icEB,724.265|IC4,2011-11-02,10:25:52 Delivered (724.265).
A3,HS111_00023,drFB,719.718|DR3,2011-11-02,10:39:37 Delivered (719.718).
R,HS111_00023,QC2, EB-4,2011-11-02,10:44:29|No system comments.
S2,HS111_00023,icCCAL2,2011-11-02,11:17:42,650.319,893.430,24.3,SO,,,0.0068,644.826,N/A|No comment.
S3,HS111_00023,icLCS2,2011-11-02,11:24:07,649.709,901.273,24.6,SO,,,0.0091,644.704,N/A|No comment.
S8,HS111_00023,drBN10418907,2011-11-02,11:37:55,643.086,895.749,24.6,SO,,,0.0023,644.704,N/A|No comment.
S9,HS111_00023,drBN10418907 DUP,2011-11-02,11:48:11,642.659,893.399,24.8,SO,,,0.0061,644.643,passed|No comment.
S10,HS111_00023,drBN10421829,2011-11-02,12:11:20,642.567,894.528,25.1,SO,,,0.0018,644.673,passed|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,13:02:18 BFB analysis started.
A2,HS111_00023,icCCAL2,719.169|IC2,2011-11-02,13:06:26 Delivered (719.169).
A3,HS111_00023,icLCS2,721.336|IC3,2011-11-02,13:27:26 Delivered (721.336).
A8,HS111_00023,drBN10418907,711.570|DR8,2011-11-02,13:41:13 Delivered (711.570).
A8,HS111_00023,drBN10418907,751.152|DL8 to 4,2011-11-02,13:54:59 DEP = 103.244. DCP = 929.136. Delivered (751.152).
A9,HS111_00023,drBN10418907 DUP,720.634|DR9,2011-11-02,14:10:28 Delivered (720.634).
R,HS111_00023,Re-clean DL,2011-11-02,14:15:16|No system comments.
A9,HS111_00023,drBN10418907 DUP,751.366|DL9 to 4,2011-11-02,14:24:12 DEP = 104.648. DCP = 929.136. Delivered (751.366).
A10,HS111_00023,drBN10421829,712.577|DR10,2011-11-02,14:39:22 Delivered (712.577).
R,HS111_00023,Re-clean DL,2011-11-02,14:44:14|No system comments.

**********Esignature**********

Esig Approval ID	Esigned By	Esigned Date	Comment
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Batch ID HS111-00023

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are puck drums; don't have rigid liner.
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRS
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not present, mark N/A.	N/A		No liners present.
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst,	Yes		

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
and complete?			
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have	N/A		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.			
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected at a level greater than three times the MDL in blank analyses.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected at a level greater than the MDL in blank analyses.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a concentration exceeding the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of	Yes		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
precision, accuracy, and MDLs performed within the last six months?			
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum and drum duplicate met precision criteria.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container · Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable)	Yes	MP-TRUW-8.2, C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2134599	NKIRK	21-NOV-11	SPM	Validation complete. Promote batch.
2132638	JKETTEL	16-NOV-11	ITR	Promote.

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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 556776 **Lot No.:** A076393

Description : Custom Organics Blend

Expiration Date[1]**:** February 2012 **Storage:** Freezer

Elution Order	Compound	CAS #	Percent Purity [2]	Concentration [3] (weight/weight%)	% Uncertainty [4] (95% C.L.; K=2)
1	Chloromethane (methyl chloride)	74-87-3	99%	0.8180 wt./wt.%	+/-0.58 %
2	Methanol	67-56-1	99%	5.0678 wt./wt.%	+/-0.58 %
3	Diethyl ether (ethyl ether)	60-29-7	99%	1.1191 wt./wt.%	+/-0.58 %
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1	97%	3.0419 wt./wt.%	+/-0.58 %
5	Acetone	67-64-1	99%	9.1213 wt./wt.%	+/-0.58 %
6	1,1-dichloroethene	75-35-4	99%	1.5305 wt./wt.%	+/-0.58 %
7	Methylene chloride (dichloromethane)	75-09-2	99%	1.3239 wt./wt.%	+/-0.58 %
8	Carbon disulfide	75-15-0	99%	1.2229 wt./wt.%	+/-0.58 %
9	trans-1,2-Dichloroethene	156-60-5	99%	1.5289 wt./wt.%	+/-0.58 %
10	1,1-Dichloroethane	75-34-3	98%	1.5285 wt./wt.%	+/-0.58 %
11	2-Butanone (MEK)	78-93-3	99%	11.2501 wt./wt.%	+/-0.58 %
12	cis-1,2-Dichloroethene	156-59-2	99%	1.5311 wt./wt.%	+/-0.58 %
13	chloroform	67-66-3	98%	1.8262 wt./wt.%	+/-0.58 %
14	1,1,1-trichloroethane	71-55-6	99%	2.0271 wt./wt.%	+/-0.58 %
15	Cyclohexane	110-82-7	99%	1.3177 wt./wt.%	+/-0.58 %
16	carbon tetrachloride	56-23-5	99%	2.4428 wt./wt.%	+/-0.58 %
17	1,2-Dichloroethane	107-06-2	99%	1.5270 wt./wt.%	+/-0.58 %
18	Benzene	71-43-2	99%	1.2212 wt./wt.%	+/-0.58 %
19	1-Butanol	71-36-3	99%	11.6559 wt./wt.%	+/-0.58 %
20	Trichloroethene	79-01-6	99%	2.0325 wt./wt.%	+/-0.58 %
21	4-Methyl-2-pentanone (MIBK)	108-10-1	99%	15.7123 wt./wt.%	+/-0.58 %
22	Toluene	108-88-3	99%	1.4188 wt./wt.%	+/-0.58 %
23	Tetrachloroethene	127-18-4	99%	2.6374 wt./wt.%	+/-0.58 %
24	Chlorobenzene	108-90-7	99%	1.7227 wt./wt.%	+/-0.58 %
25	Ethylbenzene	100-41-4	99%	1.6217 wt./wt.%	+/-0.58 %
26	m-Xylene	108-38-3	99%	0.8112 wt./wt.%	+/-0.58 %
27	p-Xylene	106-42-3	99%	0.8108 wt./wt.%	+/-0.58 %
28	o-Xylene	95-47-6	99%	1.6217 wt./wt.%	+/-0.58 %
29	bromoform	75-25-2	99%	4.0540 wt./wt.%	+/-0.58 %
30	1,1,2,2-Tetrachloroethane	79-34-5	99%	2.6377 wt./wt.%	+/-0.58 %
31	1,3,5-Trimethylbenzene	108-67-8	99%	1.8245 wt./wt.%	+/-0.58 %
32	1,2,4-Trimethylbenzene	95-63-6	99%	1.8303 wt./wt.%	+/-0.58 %

Solvent: n/a

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

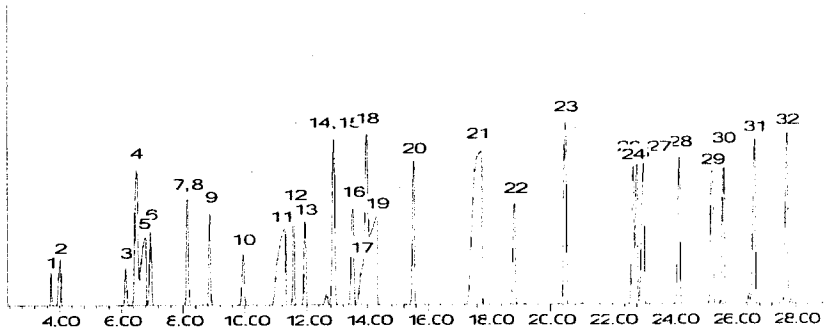
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



Sara Eyster QA Analyst

Date Passed: 24-Aug-2010 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

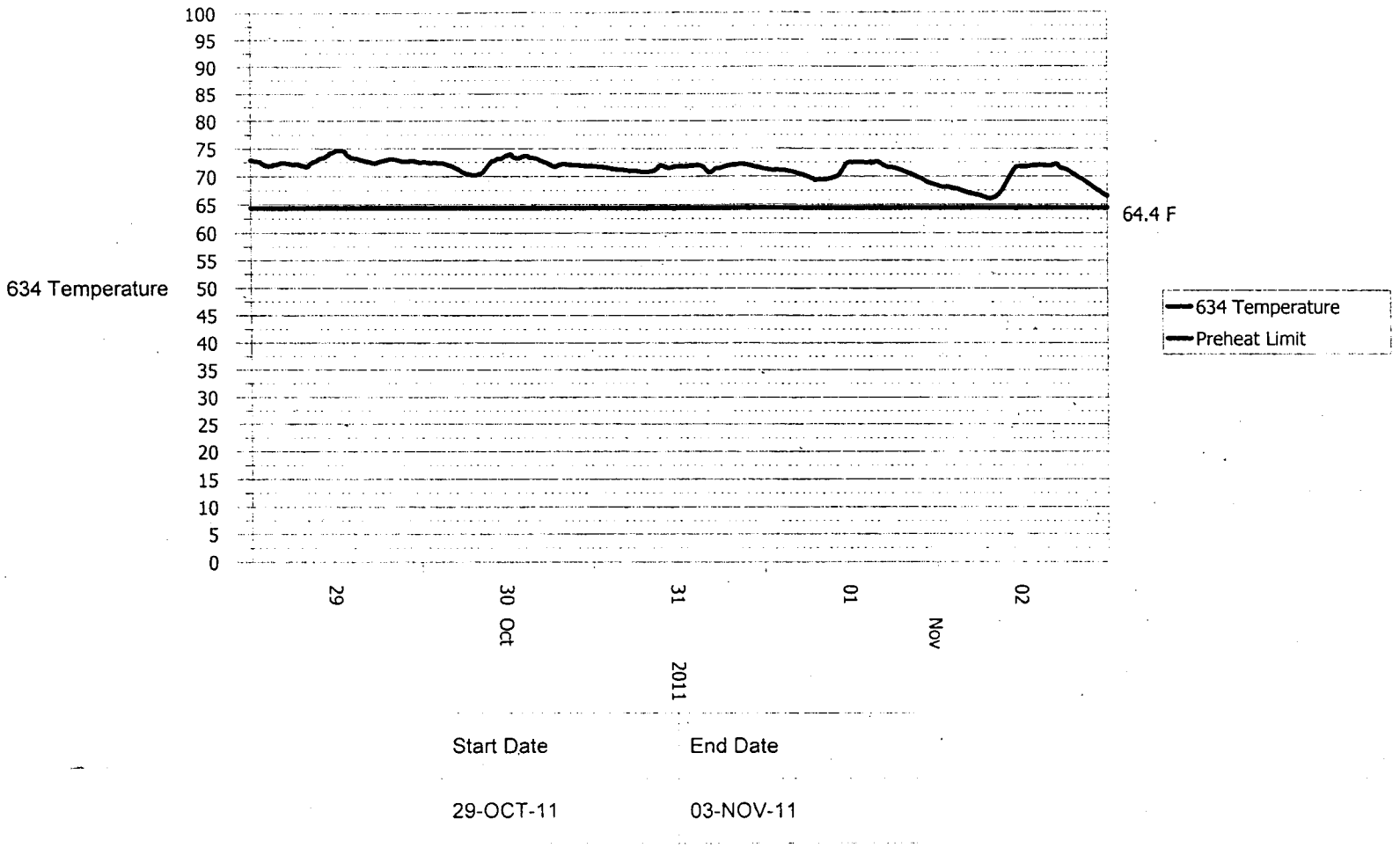
3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Note:

Density = 0.9468

634 Characterization Temperature



Start Date	End Date
29-OCT-11	03-NOV-11

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

RECORD JMC 10/02/12

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P402A	**2. Revision:** 8

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BNINW216 First/Second Stage Sludge Waste Stream Profile Package, Rev. 1, September 17, 2004, Change Notice #1, February 2, 2005, Change Notice #2, January 24, 2007, Change Notice #3, April 2, 2008 and Change Notice #4, August 6, 2010

Document Number: N/A
Revision: N/A
Author: AMWTP and CBFO
Date: 03/08/04

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM4, WM5, WM6, WM7	RF	all	This WSPF address all of the Waste Management Program (WM) elements by providing either a summary of the information or by identifying a reference to the document (s) that contain the information. The WM elements are for those elements that are actually addressed in the package.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	RF-001, RF-002, RF-741, RF-742, RF-800	all	All of the WS elements are addressed in the AK summary report included in the WSPF.

9. Document Summary:

FOR INFORMATION ONLY

Characterization information for waste stream BNINW216 (First/Second Stage Sludge generated at Rocky Flats) submitted to and approved by CBFO. This package includes the following documentation:

* CBFO Approval letter for Change Notice # 4 for BNINW216 Rev. 1, August 6, 2010
* Change Notice # 4 for BNINW216 Rev 1, July 27, 2010
* CBFO Approval letter for Change Notice # 3 for BNINW216 Rev. 1, April 2, 2008
* Change Notice # 3 for BNINW216 Rev 1, March 27, 2008
* CBFO Approval letter for Change Notice # 2 for BNINW216 Rev. 1, January 24, 2007
* Change Notice # 2 for BNINW216 Rev 1, January 24, 2007
* CBFO Approval letter for Change Notice # 1 for BNINW216 Rev. 1, February 2, 2005
* Change Notice # 1 for BNINW216 Rev 1, January 20, 2005
* CBFO Approval letter of WSPF BNINW216, Rev. 1, September 17, 2004
* Waste Stream Profile Form 1195 and CIS for BNINW216, Rev. 1, September 17, 2004
* Acceptable Knowledge Summary, RPT-TRUW-09, Rev. 8, July 5, 2012
* Waste Stream Profile Form HWN Assignment Worksheet, Form 1187 for BNINW216, February 11, 2004
* TRU Waste Stream AK Documentation Checklist, Form 1067 for BNINW216, September 16, 2010
* LDR Notification – IDCs 001, 002, 741, 742, 800, Waste Stream BNINW216
* CBFO Approval letter of WSPF BNINW216, Rev. 0, March 8, 2004
* BNFL transmittal letter to CBFO, March 8, 2004

P402A Revision 8 updates the record to include revised AK Summary Report RPT-TRUW-09, Rev. 8, July 5, 2012

10. Source Document Data Limitations (if any):

NONE

11. AK Expert:	Julie Collins	Julie Collins	10/2/2012	
	Print	Sign	Date	

P402A R8

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

AUG 6 2010

Mr. James Cooper, Acting Deputy Manager
U.S. Department of Energy
Idaho Clean-Up Project
Idaho Operations Office (NE-ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Update for the WIPP Operating Record (Change Notice #4) First and Second Stage Sludge (BNINW216, Rev. 1)

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the Change Notice Number 4 for First and Second Stage Sludge (BNINW216. Rev. 1) and concluded that the Change Notice is complete and the waste stream determinations were made in accordance with the applicable procedures and guidance.

The CBFO therefore approves the Change Notice as submitted. Using the methods approved by the Advanced Mixed Waste Treatment Project (AMWTP), AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have questions on this matter, please contact me at (575) 234-7372.

Sincerely,

Donald C. Gadbury, Director
Office of the National TRU Program

cc:

G. Basabilvazo, CBFO	*ED
C. Gadbury, CBFO	ED
S. McCauslin, CBFO	ED
D. Miehls, CBFO	ED
M. Navarrete, CBFO	ED
K. Watson, CBFO	ED
P. Gilbert, LANL	ED
S. Lott, LANL	ED
G. Lyshik, LANL	ED

CBFO, M&RC
*ED denotes electronic distribution

CBFO:NTP:NC:GS:10-1470:UFC 5900.00

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW216, Revision 1. This waste stream is First/Second Stage Sludge and was approved by DOE/CBFO on September 17, 2004. Change Notice #1 was approved on February 2, 2005, Change Notice #2 was approved on January 24, 2007, and Change Notice #3 was approved on April 2, 2008.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Technical contact phone number**

   Update phone number to (208) 557-6425

2. **WSPF Form-1195, Date of audit report approval by NMED**

   Revise NMED audit approval dates to include 7/2/2004, 1/9/2009, and 1/8/2010

3. **WSPF Form-1195, Title, version number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 19, 6/30/2010

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 13, 6/30/2010

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 11, 6/04/2009

4. **WSPF Form-1195, Waste Stream Information, WIPP ID**

   Add IN-BNINW216

5. **WSPF Form-1195, Waste Stream Information, Description from the WTWBIR**

   Change description as follows:

   See RPT-TRUW-09, Section 1.2.6

6. **WSPF Form 1195, Waste Stream Information, Number of Drums**

   Change Number of Drums to 22,304

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

7. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Acronyms and Abbreviations**

Delete BBWI from list and add the following:

ATWIR	Annual Transuranic Waste Inventory Report
CFR	Code of Federal Regulations
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CH-TRUCON	Contact-Handled TRU Waste Content Codes
DOE	Department of Energy.
DOT	Department of Transportation
EDMS	Electronic Document Management System
FGE	fissile gram equivalents
INL	Idaho National Laboratory
NACE	National Association of Corrosion Engineer
nCi/g	nanocuries per gram
ppm	part per million
ppmv	part per million volume
PRQL	program required quantitation limit
PWTS	Process Waste Transfer System
RFP	Rocky Flats Plant
SDA	Subsurface Disposal Area
TIC	tentatively identified compound
TRU	Transuranic
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TSCA	Toxic Substances Control Act
UCL_{90}	90% upper confidence limit
VE	visual examination
VOCs	volatile organic compounds
WTS	Waste Tracking System

Also spell out the above acronyms in their first use in the AK Summary, as required.

8. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), References**

Revise the note as follows:

Advanced Mixed Waste Treatment Project (AMWTP) documents such as procedures, Acceptable Knowledge (AK) Reports, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.

Revise reference as follows:

6. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), Rev. 37, June 2010

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

Replace references as follows:

4. CKA-002-10, Memo to file, Volume Estimate for BNINW216 First/Second Stage Sludge Waste Stream, July 5, 2010 [C877A]

32. Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005 and November 11, 2008 [P881S]

Add the following references:

48. Material Safety Data Sheet, Micro-cel®E, Celite Corporation, January 17, 2007 [P808S]

49. RCM-001-10, Memo to file, Earliest Pack Date for Rocky Flats Waste Retrieved from Pits 11 and 12, July 05, 2010 [C875S]

50. DOE/TRU-09-3425, Annual Transuranic Waste Inventory Report - 2009, U.S. Department of Energy, Carlsbad, New Mexico, Rev. 0 [P838A]

9. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Cross Reference

Delete cross reference table and delete cross reference page from table of contents.

10. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.3, Waste Stream Volume

Replace Section 1.2.3 as follows:

22,304 containers (4,639 m^3) - current volume [4]

The estimated percentage of the waste greater than 100 nCi/g is 92%. The estimated percentage of waste equal to or less than 100 nCi/g is 8%. [12]

11. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.4, Generation Dates

Delete sub-section 1.2.4.1 and replace section 1.2.4 as follows:

AMWTP stored containers of RFP First/Second Stage Sludge waste were generated from 1968 to 1988. Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization/treatment activities). [2, 49]

12. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.5, TRUCON Codes

Change title to:

Contact-Handled TRU Waste Content Codes (CH-TRUCON) [5, 6]

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

13. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information:**

Change title to:

Transuranic Waste Baseline Inventory Report (TWBIR) and Annual Transuranic Waste Inventory Report (ATWIR) Information [8, 50]

Replace Section 1.2.6 as follows:

ATWIR Waste Stream ID: IN-BNINW216 (formerly identified as TWBIR Waste Stream IDs: IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN-W228.103, and IN-W228.883)

TWBIR waste stream descriptions:

IN-W216.875, IN-W216.98, IN-W216.99: IDC 001 waste consists of immobilized materials generated from first-stage treatment operations in Rocky Flats Plant (RF) Building 774. Aqueous liquids coming into the process originated from Building 771 recovery operations. The liquids were made basic with sodium hydroxide to precipitate iron, magnesium, etc. that also carried down the relatively small precipitate of plutonium and americium hydrated oxides. The precipitate was filtered to produce a sludge (IDC 001), which was placed in a drum with Portland cement. Beginning in 1979, sludge waste from second-stage treatment was combined with first-stage sludge. The combined sludges were also assigned IDC 001. IDC 001 was discontinued in 1986 when the immobilization process changed, and has since been assigned IDC 800.

IN-W228.101, IN-W228.102, IN-W228.103, and IN-W228.883: IDC 002 waste consists of immobilized materials generated from second-stage treatment operations in RF Building 774. Aqueous liquids to be treated originated from first-stage treatment and from numerous buildings on plant site. The liquids were treated in the same manner as the liquids from the first stage, and the resulting sludge (IDC 002) were placed into a drum with Portland cement. Prior to 1973, second-stage sludge may contain miscellaneous debris.

IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN-W228.103, and IN-W228.883: The process that produced sludge from RF Building 774 (IDC 800) was the same process as that which generated IDC 001. The difference between the two IDCs was the immobilization process. For IDC 800, the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing. IDC 800 is most accurately described by the combination of TWBIR numbers for IDC 001 and IDC 002, therefore all TWBIR numbers associated with IDC 001 or IDC 002 were applied to IDC 800.

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

ATWIR waste stream description:

IN-BNINW216 (aqueous sludge wastes from Building 774) was generated from a carrier precipitation and immobilization process (sludge mixed with diatomite and Portland cement). The First/Second Stage Sludge waste stream is comprised of Item Description Codes (IDCs) ID-RF-001, ID-RF-002, and ID-RF-800. The First/Second Sludge waste stream consists of >50% by volume secondary sludge or filter cake from wastewater treatment processes or heavy metal sludges from recovery processes. Two waste matrix codes have been assigned to this waste stream because the immobilization process for this waste stream was changed in 1986. Prior to 1986 the first/second stage sludge was placed into a drum with Portland cement. The excess liquid was immobilized, but a solid monolith was not formed. Subsequent to 1986 the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing. [a(8)]

Add the following footnote:

a. The description in the ATWIR will be revised in the next annual update to include IDCs ID-RF-741 and ID-RF-742.

14. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.8, Waste Matrix Codes

Change first line to:

S3121 - Waste Water Treatment Sludge (IDC 001, IDC 002, IDC 741, IDC 742)

15. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.3.1, Description

Change first paragraph and replace Table 1-1 as follows:

The First/Second Stage Sludge waste stream consists of drums containing First Stage Sludge (IDCs 001 and 741), Second Stage Sludge (IDCs 002 and 742), or Solidified Sludge – Bldg 774 (IDC 800).

Table 1-1. Physical Waste Form Descriptions for First/Second Stage Sludge

IDC	WMC	Description
001 741	S3121	This waste consists of immobilized materials generated from first stage treatment operations in RFP Building 774. Aqueous liquids coming into the process originated from Building 771 recovery operations. The liquids were made basic with sodium hydroxide to precipitate iron, magnesium, etc., that also carried down the relatively small precipitate of plutonium and americium hydrated oxides. The precipitate was filtered to produce sludge which was placed in a drum with Portland cement (IDCs 001 and 741) and assigned container prefix 741. IDC 001 was assigned to the first stage sludge by RFP. IDC 741 is used to identify first stage sludge drums retrieved from the Subsurface Disposal Area (SDA) Pits 11 and 12. The waste was generated prior to 1972, shipped to Idaho National Laboratory (INL), and buried in SDA Pits 11 and 12. The waste was subsequently retrieved from the pits and placed into the Transuranic Storage Area-Retrieval Enclosure (TSA-RE) prior to 1979. Because RFP did not assign IDCs to waste until mid-1971, AMWTP assigned IDC 741 to these waste containers. [1, 2, 4] Beginning in 1979, sludge waste from second stage treatment was combined with first stage sludge and assigned container prefix 7412. The combined sludges were also assigned IDC 001. IDC 001 was discontinued in 1986 when the immobilization process changed, and has since been assigned IDC 800. [43]
002 742	S3121	This waste consists of immobilized materials generated from second stage treatment operations in RFP Building 774. Aqueous liquids to be treated originated from first stage processing and from numerous buildings on plant site. The liquids were treated in the same manner as the liquids from the first stage, and the resulting sludge were placed in a drum with Portland cement (IDCs 002 and 742) and assigned container prefix 742. IDC 002 was assigned to the second stage sludge by RFP. IDC 742 is used to identify second stage sludge drums retrieved from the SDA Pits 11 and 12. The waste was generated prior to 1972, shipped to INL, and buried in the SDA Pits 11 and 12. The waste was subsequently retrieved from the pits and placed into the TSA-RE prior to 1979. Because RFP did not assign IDCs to waste until mid-1971, AMWTP assigned IDC 742 to these waste containers. [1, 2, 4] Prior to 1973, second stage sludge may contain miscellaneous debris, as identified by visual examination (VE) and Real-Time Radiography (RTR) inspections of second stage waste containers. The following types of debris have been identified: cellulosic debris, plastic debris, leaded rubber gloves, rubber debris, [18] rubber gloves, and metal debris. AK indicates that up until 1973, other items (e.g., electric motors, bottles containing residual liquid chemical wastes and mercury, and mercury batteries and lithium batteries) may be present in second stage sludge (IDCs 002 and 742) containers. These items have not been confirmed through characterization activities.
800	S3150	The process that produced sludge from RFP Building 774 (IDC 800) was the same process as that which generated combined first and second stage sludge (container prefix 7412). The difference between the two IDCs was the immobilization process. For IDC 800, the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing. [43]

16. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.4.4.1, Material Inputs – RF IDC 001**

Change title to:

1.4.4.1 Material Inputs – RF IDCs 001 and 741

17. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.4.4.2, Material Inputs – RF IDC 002**

Change title to:

1.4.4.2 Material Inputs – RF IDCs 002 and 742

18. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.4.4, Material Inputs**

Add new sub-section as follows:

1.4.4.5 Absorbent Addition

Non-hazardous immobilization/solidification agents (e.g., Aquaset®, Aquaset II-G® or Micro-Cel® E) may be added to waste containers by AMWTP to treat prohibited liquids. Aquaset is a sodium montmorillonite clay material, Aquaset II-G® is a sepiolite clay, and Micro-Cell E is a synthetic calcium silicate. [32, 48]

19. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.5, Prohibited Items**

Delete the first paragraph and accompanying bullet.

Replace the 2nd paragraph as follows:

The following items are prohibited in waste containers shipped to Waste Isolation Pilot Plant (WIPP) as documented in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. [46, 47]

Add the following as the first and last bullets:

- Liquid waste
- Sealed containers greater than four (4) liters.

Change the last paragraph as follows:

Excess liquid is a common prohibited item identified during RTR and VE in this waste stream. Other prohibited items are expected to be very rare. [1, 2] Drums with excess liquid may be treated by adding non-hazardous absorbent (e.g., Aquaset®, Aquaset II-G®, or

Micro-Cel® E) prior to shipment.[32, 48] Drums with other prohibited items will be treated or rejected as appropriate. Drums with prohibited items will not be part of the waste stream shipped to the WIPP.

20. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.6.2, Hazardous Determination, Characteristic Waste, Ignitability

Add the following to the end of the 1st paragraph:

Containers identified with liquid in excess of WIPP waste acceptance criteria (WAC) limits may be treated using non-hazardous solidification agents (e.g., Aquaset, Aquaset II-G®, or Micro-Cel® E) to render the waste acceptable prior to shipment[32, 48]

The waste materials in this waste stream are not compressed gas and do not contain compressed gas, and the waste does not meet the United States Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173 and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001).

21. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.6.2, Hazardous Determination, Characteristic Waste, Corrosivity

Add the following to the last paragraph:

Containers identified with liquid in excess of WIPP-WAC limits may be treated using non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E).[32, 48] This waste stream does not exhibit the characteristic of corrosivity (D002).

22. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.6.2, Hazardous Determination, Characteristic Waste, Reactivity

Add the following to the end of the first paragraph:

The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source of if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part 173.

Add the following to the beginning of the last paragraph:

Containers identified with compressed gases or aerosol cans will have the prohibited items treated/removed prior to shipment. Containers with liquid in excess of WIPP-WAC limits may be treated with non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E).[32, 48]

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

23. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.7, Radionuclides

Replace Section 1.7 as follows:

The two most prevalent radioisotopes in waste stream BNINW216 can be any two of the following: ^{239}Pu, ^{240}Pu, ^{235}U, and ^{238}U, depending on the relative mixture of weapons-grade plutonium, enriched uranium, and depleted uranium in the waste. The First/Second stage sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [12, 47]

As a minimum, to confirm existing AK data, the ratios of the two most prevalent radionuclides in the isotopic mix are compared. [22] The two most prevalent radionuclides by weight expected in the Building 774 sludge waste drums are ^{239}Pu and ^{240}Pu.

The recommended default mass fraction values of the plutonium isotopes to be used as the AK based values and confirmed during non-destructive assay (NDA) are listed in RPT-TRUW-07, *Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge.*[12]

Table 1-4 provides a breakdown of the radionuclides present so that the general isotopic content of the waste is established.

Table 1-4. Nominal compositions of radionuclide mixtures at RFETS (wt %)

Weapons-Grade Plutonium (WG Pu)		Enriched Uranium (EU)		Depleted Uranium (DU)	
^{238}Pu	0.01 – 0.05%	^{231}Th	negligible	^{231}Th	negligible
^{239}Pu	92.8 – 94.4%	^{234}Th	negligible	^{234}Th	negligible
^{240}Pu	4.85 – 6.5%	^{234}U	~0.1%	^{234}U	~0.0006%
$^{241}Pu^a$	0.3 – 1.0%	^{235}U	~90 – 93%	^{235}U	~0.2%
^{242}Pu	0.005 – 0.60%	^{236}U	~0.4%	^{238}U	~99.8%
		^{238}U	~5.3%		

a. Includes ^{241}Am daughter product

Mass fraction values for ^{241}Am, ^{233}U, ^{235}U, and ^{238}U previously determined for Rocky Flats at the INEEL were based on individual gamma spectrometric measurements. The ^{234}U activities were calculated based on ratios with depleted uranium isotopes. The criteria used for selection and the formulas for determining the ^{234}U mass are presented in RPT-TRUW-07. [12]

Radionuclides such as ^{244}Cm, ^{232}Th, and ^{236}U may be found in Rocky Flats wastes. [12] Americium-241, ^{234}U, and ^{237}Np are expected in most of the Rocky Flats TRU waste containers due to radioactive decay and ingrowth. [14] Americium-243 and ^{245}Cm, other isotopes resulting from radioactive decay, have also been detected during AMWTP

NDA. [15, 20, 21, 38] Potassium-40 may be detected when other radionuclides in a container are significantly lower in concentration. In some cases ^{40}K has been detected in higher concentrations than ^{239}Pu and contributes to 95% of the radionuclide hazard. [16]

AMWTP will employ payload management practices in accordance with the WAC for waste stream BNINW216. The estimated total waste volume for BNINW216 is 4,431 m^3. The estimated percentage of the waste greater than 100 nCi/g is 92%. The estimated percentage of waste equal to or less than 100 nCi/g is 8%.

24. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 2.1, Waste Packaging

Add the following paragraph at the end of Section 2.1:

Some of the 55-gallon drums may be overpacked into 83- or 85-gallon drums. Either four 55-gallon drums or two 83- or 85-gallon drums, with either the drum lid filters or the drum lids removed, may be direct loaded into a standard waste box (SWB) equipped with approved filters.

25. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 2.2, Flammability Consideration

Add the following as the last sentence:

Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, Central Characterization Project (CCP) Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

26. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 2.3, Tradename Index

Add the following as 2nd and 3rd rows:

Aquaset II-G®	Granular sepiolite clay[32]
Micro-Cel®E	Synthetic calcium silicate [48]

Reason/Justification for the Change

Item 1. WSPF Form-1195, phone number of technical contact was updated to reflect change.

Item 2. WSPF Form-1195, audit report approval dates were updated to reflect all audit dates.

Item 3. WSPF Form-1195, documents used for WAP certification were revised to reflect the most recent revisions.

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

Items 4, 5, & 13. WSPF Form-1195 and AK Summary Section 1.2.6 TWBIR information was updated to reflect the WIPP ID and description from the most recent annual update of the TWBIR.

Item 6 and 10. WSPF Form-1195 and AK Summary Report Section 1.2.3, Waste Stream Volume was changed due to the addition of First/Second Stage Sludge containers retrieved from the SDA Pits 11 and 12. The retrieved waste was originally generated at Rocky Flats prior to 1972, shipped to the INL and buried in the SDA Pits 11 and 12. The waste was subsequently retrieved from the pits prior to 1979 and placed in the TSA-RE. The First/Second Stage Sludge waste containers retrieved from Pits 11 and 12 were generated from the same process as the waste containers already included in BNINW216. Therefore, there is no impact on the EPA hazardous waste numbers assigned to waste stream BNINW216.

Item 7. AK Summary Report Acronym and Abbreviation list was updated to reflect all acronyms and abbreviations used in the report. The text of the AK Summary was also updated to spell out the first use of each acronym.

Item 8. The AK Summary Report References was changed to update the note to reflect current practices of Document Control and to identify references that support information revised or updated in the AK Summary.

Item 9. The AK Summary Report, Cross Reference table was deleted because the AK source document cross reference information is no longer needed.

Item 11. AK Summary Report Section 1.2.4, Generation Dates was changed to reflect an earlier waste generation date due to the addition of First/Second Stage Sludge waste containers retrieved from Pits 11 and 12.

Item 12. AK Summary Report Section 1.2.5, TRUCON Codes was updated to delete reference that no longer applies.

Items 14, 15, 16, and 17. AK Summary Report Section 1.2.8 (Waste Matrix Codes), Section 1.3.1 (Description), and Sections 1.4.4.1 and 1.4.4.2 (Material Inputs) were updated to incorporate the addition of information regarding IDCs 741 and 742 assigned to First/Second Stage Sludge waste retrieved from Pits 11 and 12.

Item 18. AK Summary Report Section 1.4.4.5, Material Inputs was changed to provide information regarding absorbents that may be used by AMWTP to treat prohibited liquids.

Item 19. AK Summary Report Section 1.5, Prohibited Items was changed to address all prohibited WIPP waste in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. The last paragraph was modified to clarify disposition of containers identified as containing prohibited liquid that may be treated with non-hazardous absorbents.

Update for WIPP Operating Record (Change Notice #4)

First/Second Stage Sludge (BNINW216, Rev. 1)

Items 20, 21 and 22. AK Summary Report Section 1.6.2, Hazardous Determination language under Ignitability, Corrosivity, and Reactivity were changed to support the recent WIPP Permit Modification concerning prohibited liquids.

Item 23. AK Summary Report general grammar or usage corrections were made to the text in several places that did not affect the summary information or intent.

Item 24. AK Summary Report Section 2.1, Waste Packaging was changed to add a paragraph describing potential direct loading of containers into SWBs.

Item 25. AK Summary Report Section 2.2, Flammability Consideration revised to include sentence identifying procedure used to manage payloads containing flammable VOCs.

Item 26. AK Summary Report Section 2.3, Tradename Index table updated to include absorbents that may be used by AMWTP to treat prohibited liquids.

Update for the WIPP Operating Record (BNINW216) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
	Eric P. Schweinsberg, SPM	7/27/10

Washington
TRU Solutions LLC

WRES:08:146
UFC:5822.00

April 2, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #3)
FIRST/SECOND STAGE SLUDGE (BNINW216, REV. 1)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW216, Rev. 1, First/Second Stage Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax: (575) 234-7083

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW216, Revision 1. This waste stream is First/Second Stage Sludge and was approved by DOE/CBFO on September 17, 2004. Change Notice #1 was approved February 2, 2005 and Change Notice #2 was approved on January 24, 2007.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add audit approval dates January 23, 2007 and January 18, 2008

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Add the following procedure:

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06.

3. **WSPF Form-1195, Description from the TWBIR**

   Revise the cited report from BNFL-5232-Report-TRUW-09 to RPT-TRUW-09, Rev 5, 07/03/07.

4. **WSPF Form-1195, Note: (4)**

   Revise WSPF Form 1195, Note: (4) to read:

   ACMM-2901 was replaced by the CCP-TP-182 procedure. Future analysis conducted in support of ongoing lot characterization will utilize the CCP-TP-182 procedure.

5. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Report Number**

   Revise the report AMWTP-RPT-TRUW-09 to RPT-TRUW-09

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

6. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), References**

Revise Reference 6 to DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008

Revise Reference 8 to DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report -2004, U.S. Department of Energy, Carlsbad, New Mexico.

Add new references as follows:

42. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, October 1982 [P024A]

43. INEL-95/0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste [P016A]

44. CCP-PO-003, CCP Authorized Method of Payload Control (CCP-CH-TRUPAC), [P672A]

45. RPT-TRUW-05, Waste Matrix Code Reference Manual [P399A]

46. MP-TRUW-8.2, Quality Assurance Project Plan

47. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

7. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.4, Generation Dates**

Add the following sentence to the end of the first paragraph:

Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization/treatment activities). [4]

8. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

Revise the current TWBIR numbers to the following:

IN-W216.98, IN-W228.101

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

9. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.3 Waste Stream Description

Section 1.3.1, Revise Table 1.1 as follows:

1995 TWBIR Number(s)	2004 TWBIR Number(s)	IDC	WMC	Description
IN-W216.875 IN-W216.98 IN-W216.99	IN-W216.98	001	S3121	This waste consists of immobilized materials generated from first-stage treatment operations in Rocky Flats Plant (RF) Building 774. Aqueous liquids coming into the process originated from Building 771 recovery operations. The liquids were made basic with sodium hydroxide to precipitate iron, magnesium, etc. that also carried down the relatively small precipitate of plutonium and americium hydrated oxides. The precipitate was filtered to produce sludge (IDC 001), which was placed in a drum with Portland cement. Beginning in 1979, sludge waste from second-stage treatment was combined with first-stage sludge. The combined sludges were also assigned IDC 001. IDC 001 was discontinued in 1986 when the immobilization process changed, and has since been assigned IDC 800. (43)

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

1995 TWBIR Number(s)	2004 TWBIR Number(s)	IDC	WMC	Description
IN-W228.101 IN-W228.102 IN-W228.103 IN-W228.883	IN-W228.101	002	S3121	This waste consists of immobilized materials generated from second-stage treatment operations in RF Building 774. Aqueous liquids to be treated originated from first-stage treatment and from numerous buildings on plant site. The liquids were treated in the same manner as the liquids from the first stage, and the resulting sludge (IDC 002) was placed into a drum with Portland cement. Prior to 1973, second-stage sludge may contain miscellaneous debris, as identified by visual examination and RTR inspections of IDC 002 containers. The following types of debris have been examined: cellulosic debris, plastic debris, leaded rubber gloves, rubber debris, [18] rubber gloves, and metal debris. AK indicates that up until 1973, items such as the following may have been present in second stage sludge (IDC 002). These items have not been confirmed through characterization activities and are as follows: electric motors, bottles containing residual liquid chemical wastes and mercury, mercury batteries, and lithium batteries.

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

1995 TWBIR Number(s)	2004 TWBIR Number(s)	IDC	WMC	Description
IN-W216.875 IN-W216.98 IN-W216.99 IN-W228.101 IN-W228.102 IN-W228.103 IN-W228.883	IN-W216.98, IN-W228.101	800	S3150	The process that produced sludge from RF Building 774 (IDC 800) was the same process as that which generated IDC 001. The difference between the two IDCs was the immobilization process. For IDC 800, the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing.(43) IDC 800 is most accurately described by the combination of TWBIR numbers for IDC 001 and IDC 002, therefore all TWBIR numbers associated with IDC 001 or IDC 002 were applied to IDC 800.

10. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.5, Prohibited Items**

Add the following bullets to the list of prohibitions:

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification (46)

- Any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan (46)

11. **AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.6.2, Hazardous Determination**

Add the following paragraph:

K Listed Codes:

The materials in this waste stream do not meet the definition for K-listed EPA codes. K-listed EPA codes only apply to hazardous waste from specific sources.

The waste is not and does not contain any hazardous waste from specific sources paragraphs (a) of 40 CFR 261.32

12. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 1.7, Radionuclides

Add the following as the last sentence of the first paragraph:

The First/Second stage sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. (12, 47)

13. AK Summary, First/Second Stage Sludge (RPT-TRUW-09), Section 2.0, Shipping Considerations

Revise Section 2.0 Shipping Considerations as follows:

SECTION 2.0, SHIPPING CONSIDERATIONS

2.1 Waste Packaging:

Depending on waste packaging requirements at the time, several combinations of bags and liners were used to prepare 55-gallon drums for shipment. From 1970 to 1972, waste drums were lined with one or two polyethylene drum bags. (26) Use of the 90 mil rigid polyethylene liner began in 1972. The rigid liner was placed in each drum and lined with a polyethylene round bottom drum liner, a polyethylene drum bag and PVC O-ring bag, or a single round bottom polyethylene liner placed between the rigid liner and O-ring bag. (27) Some drums packaged after 1972 may not have rigid liners. (19)

When a drum was full, the drum liners were twisted and taped closed, the lid was secured with a bolted ring, and a tamper-indicating device was attached to the drum. (42)

Typically sludge was placed directly and treated (i.e., monolith) directly in drum bags within the drum and have no inner packaging. Approximately 20 to 60 pounds of Portland cement were added to IDC 001 and 002 First/Second Stage Sludge and can be found layered throughout the drum and packaging. During maintenance cleanout operations, First Stage Sludge was removed from tanks and equipment and placed into smaller containers (poly bottles, metal cans, or poly bags, etc.). These smaller containers may have been single or double bagged prior to placement into the drum. (29, 30)

The typical bag closure method was "twisted and taped". Drum stub bags may be identified in containers that were visually examined or cored at WMF-634. [23] A "Filtered bag" method was used for bag closure in drums visually examined at Argonne-West as part of the 3,100 m^3 Project. [17] Lead sheeting may be found within IDC 001 and 002 First/Second Stage Sludge waste containers. Lead tape may have been used to wrap the outside of the rigid liner.

After drums were inspected, one to two quarts of absorbent material (Oil-Dri®) was placed on the top of the outer, sealed polyethylene drum bag (see section 2.3 for list of constituents associated with Oil-Dri®). This procedure changed in February 1982 when vermiculite was used to fill the void space. The quantity of vermiculite varied from 3-12 pounds according to the amount of waste contained in each drum. [42] The type, amount, and expected time-frame of absorbent use may vary. [24, 28] Aquaset® or vermiculite in varying amounts was added to drums of waste during the 3,100 m^3 Project recovery operations (see section 2.3 for list of constituents associated with Aquaset). [32, 33, 34, 35, 36]

Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate. [45]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. CCP Authorized Method of Payload Control (CCP-CH-TRUPAC), CCP-PO-003. [44]

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

2.3 Tradename Index

Tradename	Chemical Constituents
Aquaset	Sodium montmorillonite [32]
Oil-Dri	Crystalline silica and clay minerals, e.g., montmorillinite, bentonite [33]
Ox Out 536	Water, ammonium bifluoride, and nitric acid [35]
Portland Cement	Tricalcium silicate, dicalcium silicate, tricalcium aluminate, calcium alumino ferrite, gypsum, calcium oxide, magnesium oxide, sodium sulfate, potassium sulfate, crystalline quartz silica, trace chromium [35]
PuriFloc A23 Flocculant	Hydrolyzed polyacrylamide, sodium carbonate, sodium sulfite, sodium sulfate, proprietary ingredients, water [36]

Reason/Justification for the Change

The audit report approval dates were updated to reflect the most recent approval dates.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

WSPF Form-1195, Description from the TWBIR AK summary report number was changed to reflect current AMWTP-approved title, revision number and date

ACMM-2901 was replaced by the CCP-TP-182 procedure which resulted in the modification of WSPF Form-1195, Note: (4) to reflect the use of CCP-TP-182 procedure.

The AK Summary report number was changed to reflect changes in document control protocols.

The AK Summary for First/Second Stage Sludge reference list was updated to identify references that support the information revised or updated in the AK Summary.

AK Summary Section 1.2.4, Generation Dates, was changed to provide clarification that pack dates later that 1988 are the result of repackaging.

Section 1.2.6, TWBIR numbers have been modified to reflect current TWBIR numbers.

Update for WIPP Operating Record (Change Notice # 3)

First/Second Stage Sludge (BNINW216, Rev. 1)

Section 1.3.1, Table 1 was modified to reflect correlation of 1995 with 2004 TWBIR numbers.

AK Summary Section 1.5, prohibited Items, was revised to include in current WIPP prohibitions as noted in MP-TRUW-8.2, Quality Assurance Project Plan.

Section 1.6.2, Hazardous Determination, K-Listed Code information added to reflect compliance with in the requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section B4-1.

AK Summary Section 1.7, Radionuclides, was revised to reflect compliance with the requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section 3.1.6.

AK Summary Section 2.0 Shipping Considerations was revised to make format and general language consistent with other AMWTP AK summaries and to reflect new TRAMPAC procedure.

Update for the WIPP Operating Record (BNINW216) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
[signature]	Eric P. Schweinsberg, SPM	3/27/08

Washington
TRU Solutions LLC

WRES:07:020
UFC:5822.00

January 24, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #2)
FIRST/SECOND STAGE SLUDGE (BNINW216, REV. 1)

Dear Mr. Provencher:

Washington TRU Solutions, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW216, Rev. 1, First/Second Stage Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

for W. M. Wierzbicki, Manager
Regulatory Compliance

WMW:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7083

cc: F. Marcinowski, DOE HQ ED
A. Holland, CBFO ED
R. McCallister, CBFO ED
M Navarrete, CBFO ED
K. Watson, CBFO ED
G. Girard, DOE-ID ED
J. Ziemianski, DOE-ID ED
T. Jenkins, DOE-ID ED
J. Wells, DOE-ID ED
E. Schweinsberg, BNG ED
S. Carpenter, AMWTP ED
R. Chatfield, WTS ED
D. Hofer, WTS ED
G. Johnson, WTS ED
D. Kump, WTS ED
D. Speed, WTS ED
D. Standiford, WTS ED
M. Strum, WTS ED
R. Chavez, WRES ED
R. Kehrman, WRES ED
V. Waldram, LANL ED
P. Gilbert, LANL ED
CBFO M&RC

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7061

Update for WIPP Operating Record (Change Notice # 2)

First/Second Stage Sludge (BNINW216, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW216, Revision 1. This waste stream is First/Second Stage Sludge. Rev. 1 was approved by DOE/CBFO on September 17, 2004 and Change Notice #1 was approved February 2, 2005.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Revise the audit approval dates to the following: 12/23/03, 4/1/05, and 12/9/2005.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07.

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 8, 1/24/07.

3. **WSPF Form-1195, Waste Stream Information, Applicable TRUCON Content Codes**

   Revise the TRUCON Content Codes to ID111/ID211, ID132/ID232.

4. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item: See AK Summary Section 1.4.5, Table 1-3 of the AK summary. This is listed as Item 10 in the Change Notice.

5. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), Report Number**

   Revise the report from BNFL-5232-RPT-TRUW-09 to AMWTP-RPT-TRUW-09.

6. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), TABLES**

   Revise Table of Contents per the following:

   Delete Table 1-2, Estimated percentages of waste materials in BNINW216 waste stream. (Table 1-2 was added in Rev. 4 to add in the estimated CPR.)

Update for WIPP Operating Record (Change Notice # 2)

First/Second Stage Sludge (BNINW216, Rev. 1)

Deletion of Table 1-2 above requires the change of existing Table 1-3 in Rev. 4, Wastes feeding Second Stage Sludge treatment, to Table 1-2 (Table 1-3 in Rev. 4 was Table 1-2 in Rev 2 and Rev 3)

Delete Table 1-4, (Table 1-3 in revision 2 and 3) Waste Material Parameters for First Stage Sludge (RF IDC 001)

Delete Table 1-5, (Table 1-4 in revision 2 and 3) Waste Material Parameters for Second Stage Sludge (RF IDC 002)

Delete Table 1-6, (Table 1-5 in revision 2 and 3) Waste Material Parameters for Filter Debris Waste (sic)

Add new Table 1-3. Estimated Waste Material Parameter Weights per Unit Waste for First/Second Stage Sludge (BNINW216). New Table 1-3 replaces Tables 1-2, 1-4, 1-5, and 1-6 in Rev 4.

Due to the deletions of 1-2, 1-4, 1-5, and 1-6, Table 1-7, Nominal compositions of radionuclide mixtures at RFETS (wt%), becomes Table 1-4. (Table 1-7 was added in Rev. 4 to add radionuclide compositions.)

7. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), REFERENCES**

Update reference list for Acceptable Knowledge Summary for First/Second Stage Sludge, AMWTP-RPT-TRUW-09 as follows:

Add reference number 39, Acceptable Knowledge TRU/TRM Waste Stream Summaries, RMRS-WIPP-98-100, Section 7.24, RF 107.01, TRM Solidified Inorganic Waste. (P431)

Add reference number 40, Memorandum to File from Tim Venneman, "Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste." TV-001-07, January 19, 2007. (C534A)

Add reference number 41, MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge, Rev 15, January 2007.

8. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), Section 1.2.5, TRUCON Codes**

Revise the TRUCON Content Codes to ID111/ID211, ID132/ID232

9. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), Section 1.4.4, Material Inputs/Waste Material Parameters**

Update for WIPP Operating Record (Change Notice # 2)

First/Second Stage Sludge (BNINW216, Rev. 1)

Change Section 1.4.4 to Material Inputs; delete Waste Material Parameters from section title.

Delete Table 1-2 Estimated percentages of waste materials in BNINW216 waste stream.

Change Section 1.4.4.2 Table 1-3 Wastes feeding Second-Stage Sludge treatment to Table 1-2 Wastes feeding Second-Stage Sludge Treatment

10. **AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), Section 1.4.4.5, Waste Material Parameters**

Delete Section 1.4.4.5 and Tables 1-4, 1-5 and 1-6

Add Section 1.4.5 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BNINW216, waste material parameter data from 100% of the completed RTR and VE of First/Second Stage Sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 41% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1972 through 1988 and are representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate waste material parameter weights (by percent) for First/Second Stage Sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge and are summarized in Table 1-3.[40, 41]

Table 1-3. Estimated Waste Material Parameter Weights per Unit Waste for First/Second Stage Sludge (BNINW216).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Inorganic matrix	98
Other Inorganic Materials	1
Cellulosics	<1
Plastics (waste materials)	<1
Rubber	<1

Although individual drums in this waste stream may contain greater than 10% by volume other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids [40]

11. AK Summary, First/Second Stage Sludge (AMWTP-RPT-TRUW-09), Section 2.0, Shipping Considerations

Section 2.4 Flammability Considerations, change to read as follows:

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC).

Reason/Justification for the Change

The audit report approval dates have been revised and updated to reflect the most recent approval date.

Documents used for WAP certification have been revised to reflect the most recent revisions.

The TRUCON Content Codes have been revised to delete the alpha suffixes.

The AK Summary for First/Second Stage Sludge was renumbered to reflect the current operating contractor for AMWTP facility.

Tables 1-2, 1-4, 1-5, and 1-6 were deleted from Rev 4. Table 1-3 was renumbered as 1-2. Tables 1-2, 1-4, 1-5, and 1-6 were replaced with a new Table 1-3 (adding in the WMP weight per unit waste estimates), and Table 1-7 was renumbered as Table 1-4, because waste material parameter information was incorporated into Section 1.4.5, Waste Material Parameters and the new Table 1-3.

Waste material parameter weight estimates per unit of waste and method for determining those estimates have been incorporated into the new Section 1.4.5 to

Update for WIPP Operating Record (Change Notice # 2)

First/Second Stage Sludge (BNINW216, Rev. 1)

meet the revised WIPP Hazardous Waste Facility Permit requirements as described in the Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-12b.

Flammability consideration were changed to clarify the method used for determining flammability as described in Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-11a.

Update for the WIPP Operating Record (BNINW216) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg, SPM	1/24/07

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

FEB 0 2 2005

Mr. Steve Zappe, WIPP Project Leader
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2905 E. Rodeo Park Drive, Bldg. 1
Santa Fe, NM 87505

Subject: Transmittal of Approved Change Notice Number 1 for BNFL Waste Stream Profile Form Number BNINW216, Rev. 1, First/Second Stage Sludge

Dear Mr. Zappe:

The Carlsbad Field Office (CBFO) has approved the change notice number 1 for BNFL Waste Stream Profile Form Number BNINW216, Rev. 1. Enclosed is a copy of the approved form as required by Section B-4(b)(1) of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

If you have any questions on this matter, please contact me at (505) 234-7357 or (505) 706-0066.

Sincerely,

Kerry W. Watson, Director
Office of Characterization and Transportation

Enclosure

cc: w/o enclosure

J. Kieling, NMED	*ED
J. Bearzi, NMED	ED
C. Walker, TechLaw	ED
M. Strum, WTS	ED
R. Chavez, WRES	ED
L. Greene, WRES	ED
K. Zbryk, WRES	ED
W. Ledford, CTAC	ED
WIPP Operating Record	
CBFO M&RC	

*ED denotes Electronic Distribution
CBFO:OCT:KWW:05-05-0192:UFC 5822.00

P402A

Update for WIPP Operating Record (Change Notice #1)
First/Second Stage Sludge (BNINW216, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW216, Revision 1. This waste stream is First/Second Stage Sludge and was approved by DOE/CBFO on September 17, 2004.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF, Applicable TRUCON Content Codes and AK Summary, First/Second Stage Sludge (BNFL-5232-RPT-TRUW-09), Section 1.2.5, TRUCON Codes**

   Add TRUCON Content Codes ID132A, ID232A, ID132B, ID232B, ID132C, ID232C, ID132D, and ID232D. These TRUCON Codes will be applied to First/Second Stage Sludge, IDC 800 that potentially contain greater than 1% beryllium by weight.

2. **AK Summary, First/Second Stage Sludge (BNFL-5232-RPT-TRUW-09), Section 1.6, RCRA Determination, Toxicity**

   Insert the following information at the end of the Toxicity Section.

   A portion of two RFETS waste streams, RF107.01 and RF139.01, was sent to the Idaho National Engineering and Environmental Laboratory (INEEL) for storage and subsequent characterization and treatment by the AMWTP. The AMWTP waste stream BNINW216 includes the IDCs from both of these waste streams and consequently incorporates the HWNs from the two RFETS waste streams. The AMWTP has applied EPA HWN D022 (chloroform), as a conservative measure because chloroform was the only toxicity characteristic compound with a UCL_{90} that exceeded the PRQL in headspace gas sampling during characterization of WSPF BNINW216.01. In addition, even though this waste is not ignitable, F003 has been conservatively applied because F003 listed constituents were detected in headspace gases.

3. **AK Summary, First/Second Stage Sludge (BNFL-5232-RPT-TRUW-09), Section 1.6, RCRA Determination, P and U Listed Codes**

   Change paragraph 2 of this section as follows:

   Acceptable knowledge and solid sampling and analysis data indicate the potential presence of trace amounts of beryllium (less than 1% by weight) in IDC 001 and IDC 002 containers of First/Second Stage Sludge. This characterization is consistent with RFETS WSPF RF139.01 that also identifies beryllium as less than 1% by weight for IDCs 001 and 002.

   Acceptable knowledge and solid sampling data from RFETS WSPF RF107.01 suggest that beryllium may exceed 1% by weight for containers of IDC 800. Therefore, in

accordance with the WIPP transportation requirements, shipments of IDC 800 containers from this waste stream will be limited to 100 Fissile Gram Equivalents (FGE) per payload container and 100 FGE per payload package.

Beryllium contamination is an integral part of the sludge and is not in powder form. It is not a commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code (P015) for beryllium as defined in 40 CRF 261.33 was not assigned to the waste.

4. **AK Summary, First/Second Stage Sludge (BNFL-5232-RPT-TRUW-09), Section 1.7, Radionuclides**

Delete paragraph 3 of this section that provides the following information:

^{137}Cs was detected in Rocky Flats waste during AMWTP NDA confirmatory testing. ^{137}Cs and ^{90}Sr were known to have been used at Rocky Flats in small quantities during research and analytical activities, but were not expected to be present in detectable amounts or at levels that would require reporting. The presence of ^{90}Sr is predicted on the presence of ^{137}Cs, and its activity and mass are determined using a default ratio scaling factor based on ^{137}Cs.

5. **AK Summary, References**

Insert the attached reference to document the Cs/Sr evaluation conducted for update 4 of this change notice (See letter number 04-RF-01306).

6. **AK Summary, First/Second Stage Sludge (BNFL-5232-RPT-TRUW-09), Section 2.0, Shipping Considerations**

Add new Section .5, entitled Payload Management, that includes the following information.

AMWTP will employ payload management practices for waste stream BNINW216. The final payload container will be loaded such that the container is greater than or equal to 100 nCi/g alpha, even though individual containers within the payload may be less than 100 nCi/g. The estimated total waste volume for BNINW216 is 4431m^3. The estimated percentage of the waste above 100 nCi/g is 92%. The estimated percentage of waste less than 100 nCi/g is 8%.

Renumber existing Section 2.5 as Section 2.6.

Reason/Justification for the Change

The preceding information is being added to this waste stream to ensure consistency with IDC 800 characterization presented in RFETS WSPF RF107.01, and IDCs 001 and 002 characterization as described in RFETS WSPF RF139.01.

The current version of this WSPF identifies the entire BNINW216 waste stream as having a beryllium concentration of less than 1% by weight. The RFETS WSPF RF139.01 identifies the potential for beryllium in IDC 800 to exceed 1% by weight based on acceptable knowledge and solid sampling data. Therefore, AMWTP has requested approval of the TRUCON codes identified in Item 1 and update to beryllium, Item 3, as described in Section 1.6, RCRA Determination, P and U Listed Codes. The AMWTP will conservatively manage IDC 800 in accordance with transportation requirements that limit the FGE to 100 per TRUPACT-II.

Section 1.6, RCRA Determination, Toxicity, is being updated to include discussion on two similar RFETS waste streams, RF107.01 and RF139.01. This update describes the similarities in application of EPA HWNs to the identified waste streams and addresses the differences in EPA HWNs applied by the AMWTP.

Paragraph 3 of Section 1.7, Radionuclides, is being deleted in order to be consistent with RFETS radiological characterization of waste streams. BNFL Inc. had previously written an Acceptable Knowledge Discrepancy Resolution (AKR-03-9) to add Cesium-137 and Strontium-90 to all RFETS waste streams. This addition was based on the BNFL Inc. physicists' determination that there was cesium in the RFETS first stage sludge. RFETS acceptable knowledge had previously ruled out Cesium-137 and therefore any computed Strontium-90 as anticipated radionuclides in RFETS waste streams. Subsequently, RFETS and BNFL Inc. physicists completed a review of spectra for multiple waste streams and concluded that Cesium-137 and computed Strontium-90 are not present in this waste stream.

A new section, Payload Management, has been added to update the AK Summary to current CH-WAC requirements.

Update for the WIPP Operating Record (BNINW216) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg	1/20/05

DOE F 1325.8

United States Government **Department of Energy**

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: September 17, 2004

REPLY TO ATTN OF: CBFO:NTP:KWW:JGW:04-2011:UFC:5822

SUBJECT: Approval of AMWTP WSPF BNINW216, Revision 1

TO: Richard Provencher, DOE-ID

The Carlsbad Field Office (CBFO) has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW216, Revision 1. We have concluded that the WSPF is complete and that the waste stream determinations were made in accordance with CBFO procedures and guidance. The CBFO therefore approves the WSPF as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7357.

Kerry W. Watson, Director
Office of Characterization and Transportation

Attachment

P402A

cc: w/attachment

I. Triay, DOE HQ	*ED
F. Marcinowski, DOE HQ	*ED
A. Holland, CBFO	*ED
R. McCallister, CBFO	*ED
M. Navarrete, CBFO	*ED
A. Dobson, BNFL	*ED
A. Dumas, BNFL	*ED
E. Schweinsberg, BNFL	*ED
D. Swale, BNFL	*ED
D. Kump, WTS	*ED
D. Speed, WTS	*ED
D. Standiford, WTS	*ED
M. Strum, WTS	*ED
R. Chavez, WRES	*ED
K. Zbryk, WRES	*ED
H. Borher, DOE ID	*ED
B. Edgerton, DOE ID	*ED
T. Jenkins, DOE ID	*ED
C. Maggart, DOE ID	*ED
J. Medema, DOE ID	*ED
J. Snook, DOE ID	*ED
J. Wells, DOE ID	*ED
WIPP Operating Record	
L. Greene, WRES	
CBFO M&RC	

*ED denotes Electronic Distribution
CBFO:NTP:KWW:JGW:04-2911:UFC:5922

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile	AMWTP Form 1195 Rev. 1 Effective Date: 03/28/2003 MP-TRUW-8.14 Page 1 of 3

WIPP WASTE STREAM PROFILE FORM

Record 10-13-04

Waste Stream Profile Number: BNFW216, Rev. 1

Generator site name: Advanced Mixed Waste Treatment Project

Technical contact: Eric Schweissberg

Generator site EPA ID: ID4890008952

Technical contact phone number: (208) 557-7164

Date of Audit report approval by NMED: 12/23/2003

Title, version number, and date of documents used for WAP certification:

Certification Plan for INEEL CH-TRU Waste, MP-TRUW-8.1, Revision 3, 12/16/03, Revision 4 3/4/04, Revision 5 8/18/04
TRUPACT-II Authorized Methods for Payload Control, MP-TRUW-8.3, Revision 1, 2/6/03, Revision 2 3/29/04
Quality Assurance Project Plan, MP-TRUW-8.2, Revision 2, 3/31/03, Revision 3 8/19/04

Did your facility generate this waste? ☐Yes ☒No If no, provide the name and EPA ID of the original generator:
Rocky Flats Environmental Technology Site, CO7890010526

Waste Stream Information[1]

WIPP ID: IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN-W228.103, IN-W228.883

Summary Category Group: S3000

Waste Matrix Code Group: S3100 – Inorganic Homogeneous Solids

Waste Stream Name: First/Second Stage Sludge

Description from the WTWBIR: See First/Second Stage Sludge AMWTP Waste Stream Summary, BNFL-5232-RPT-TRUW-09, Rev. 2

Defense TRU Waste: (Ref. 9) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs: 0[5]

Number of Drums: 21,304

Number of Canisters: 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[3] D004, D005, D006, D007, D008, D009, D010, D011, D022, F001, F002, F003, F005, F006, F007, and F009

See Reference List, No. 8, Section 1.6

Applicable TRUCON Content Codes: ID111A, ID111C, ID211A, ID211C, ID111D, ID211D

Acceptable Knowledge Information[1]

[For the following, enter supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280, Rev. 3 AMWTP Number P368A, Section 3, Figure 3-1; DWG-5232-32-0101 Site Plan of the Advanced Mixed Waste Treatment Facility

Facility mission description: P368A, Rev. 3, Section 3.1; AMWTP TRU Waste Management Acceptable Knowledge Elements, RPT-TRUW-06, Rev. 1, 11/2003

Description of operations that generate waste: P368A, Rev. 3, Section 3.1

Waste identification/categorization schemes: Advanced Mixed Waste Treatment Project Waste Stream Designations, BNFL-5232-RPT-TRUW-12, Rev. 1, 11/2003

Types and quantities of waste generated: P368A, Rev. 3, Section 23; AMWTP TRU Waste Management Acceptable Knowledge Elements, RPT-TRUW-06, Rev. 1; RWMC EDF-837, Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), 8/24/95; Container Inventory Report for WMF-629 thru WMF-633, 12/24/02 (U122A)

Correlation of waste streams generated from the same building and process, as appropriate: P368A, Rev. 3

Waste certification procedures: TRU Waste Certification, MP-TRUW-8.5, Rev. 5, 3/28/03; Rev. 6, 4/27/04; Rev. 7, 7/12/04; Rev. 8, 8/4/04; Rev. 9, 8/12/04

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: First/Second Stage Sludge AMWTP Waste Stream Summary, BNFL-5232-RPT-TRUW-09, Rev. 2

Waste stream volume and time period of generation: BNFL-5232-RPT-TRUW-09, Rev. 2

P402A

Waste generating process description for each building: BNFL-5232-RPT-TRUW-09, Rev. 2

Process flow diagrams: BNFL-5232-RPT-TRUW-09, Rev. 2

Material inputs or other information identifying chemical/radionuclide content and physical waste form:

First/Second Stage Sludge AMWTP Waste Stream Summary

Which Defense Activity generated the waste: (check one)

- ☒ Weapons activities including defense inertial confinement fusion
- ☐ Naval Reactors development
- ☐ Verification and control technology
- ☐ Defense research and development
- ☐ Defense nuclear waste and material by products management
- ☐ Defense nuclear material production
- ☐ Defense nuclear waste and materials security and safeguards and security investigations

Supplemental Documentation See P368A, Rev. 3

Process design documents: See P368A, Rev. 3

Standard operating procedures: See P368A, Rev. 3

Safety Analysis Reports: See P368A, Rev. 3

Waste packaging logs: See P368A, Rev. 3

Test plans/research project reports: See P368A, Rev. 3

Site databases: See P368A, Rev. 3

Information from site personnel: See P368A, Rev. 3

Standard industry documents: See P368A, Rev. 3

Previous analytical data: See P368A, Rev. 3

Material safety data sheets: See P368A, Rev. 3

Sampling and analysis data from comparable/surrogate Waste: See P368A, Rev. 3

Laboratory notebooks: See P368A, Rev. 3

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography: RTR Operations, INST-OI-12, Rev. 10 5/2/03, Rev. 11 5/8/03, Rev. 15 9/25/03, Rev. 16 1/13/04, Rev. 17 2/19/04, Rev. 18 7/15/04, Rev. 18 FC-1 9/4/04

Visual Examination: Visual Examination Operating Procedures and Data Reporting, INST-OI-34 Rev. 6, 8/13/03, Rev. 6 FC-1, 8/24/04, Rev. 7, 6/23/04, Rev. 8, 7/15/04, Rev. 9, 8/9/04. *Visual examinations have been conducted on 50 containers from the SJ000 summary category group to support establishment of the AMWTP site specific nonconformation rate. None of the containers presented in this WSPF have been selected for visual examination by AMWTP. All containers of SJ000 processed through RTR will be eligible for selection in the ongoing visual examination program.*

Headspace Gas Analysis

VOCs: Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 16, 11/5/03, Rev. 16 FC-1, 11/17/03, Rev. 17 12/11/03, Rev. 18, 2/4/04, Rev. 19, 7/12/04

Flammable: Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 16, 11/5/03, Rev. 16 FC-1, 11/17/03, Rev. 17 12/11/03, Rev. 18, 2/4/04, Rev. 19, 7/12/04

Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis[3]

Total metals: ACMM-8909, Microwave Assisted Digestion of Homogeneous Solids, Rev. 3, 7/11/00, ACMM-2900, Determination of Trace Elements by ICP Atomic Emission Spectrometry, Rev. 4, 8/7/00, ACMM-7802, Determination of Mercury by Cold-Vapor Fluorescence Spectrophotometry, Rev. 8 4/5/00.

PCBs: N/A

VOCs: ACMM-9260, VOCs by Gas Chromatography/Mass Spectrometry, Rev. 3, 8/11/00

Nonhalogenated VOCs: ACMM-9441, Determination of Nonhalogenated Volatile Organics by Gas Chromatography, Rev. 4, 8/10/00

Semi-VOCs: ACMM-9270, SVOCs by Gas Chromatography/Mass Spectrometry, Rev. 1, 8/17/00 ACMM-9500, Sample Preparation for SVOCs and PCBs, Rev. 2, 8/1/00

Other (specify): MP-TRUW-8.25, RCRA Statistical Sampling, Rev. 6 5/01/03, Rev. 7, 8/19/04

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg — Signature of Site Project Manager

Eric P. Schweinsberg, SPM — Printed Name and Title

9/17/04 — Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

(3) Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UPC:5822 from Dr. Inés R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, dated May 18, 2001. This applies only to the data set presented in this WSPF. Future data sets will be sampled and analyzed under current certification programs.

(4) ACMM-2900 is no longer a certified procedure used by the INEEL. This procedure was used at the time that the solids data was analyzed. Any future analysis conducted in support of ongoing lot characterization will utilize ACMM-2901.

(5) Standard Waste Boxes (SWBs) are not part of the current AMWTP inventory. However, it is possible that drums will be loaded into SWBs for shipment, therefore the SWB TRUCONs (ID11C and ID21C) have been included as available TRUCONs.

Waste Stream Profile Continuation Sheet

Reference List:

1. *Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste*, INEL-96/0280, Rev. 3, February 28, 2003. AMWTP Number P368A
2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-S2-0101, Rev. 0, April 29, 1999.
3. AMWTP TRU Waste Management Acceptable Knowledge Elements, BNFL-5232-RPT-TRUW-06, Rev. 1, November 20, 2003.
4. AMWTP Waste Stream Designations, BNFL-5232-RPT-TRUW-12, Rev. 1, November 20, 2003.
5. Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), RWMC EDF-837, August 24, 1995
6. Container Inventory Report for WMF-629 thru WMF-633 (TRIPS query), December 24, 2002.
7. Advanced Mixed Waste Treatment Facility TRU Waste Certification, MP-TRUW-8.5, Rev. 5, March 28, 2003, Rev 6 April 27, 2004. Rev. 7, July, 12 2004, Rev. 8 August 4, 2004, Rev. 9 August 12, 2004.
8. Acceptable Knowledge Summary For First/Second Stage Sludge, BNFL-5232-RPT-TRUW-09, Rev. 0, January 2003, Rev. 1, August 19, 2004, Rev. 2, September 16, 2004.
9. Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), U. S. Department of Energy memorandum from G. E. Dials to Jessie M. Roberson and John M. Wilcynski, May 20, 1997.
10. Real Time Radiography Operations, INST-OI-12, Rev. 10, May 2, 2003; Rev. 11, May 8, 2003, and Rev. 15, September 25, 2003, Rev. 16, January 13, 2004, Rev. 17, February 19, 2004, Rev. 18, July 15, 2004, Rev. 18 FC-1, September 4, 2004.
11. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 6, August 13, 2003, Rev. 6 FC-1, August 24, 2004, Rev. 7, June 23, 2004, Rev. 8, July 15, 2004, Rev. 9, August 9, 2004.
12. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 16, November 5, 2003, Rev. 16 FC-1, November 17, 2003, Rev. 17, December 11, 2003, Rev. 18, February 4, 2004, Rev. 19, July 12, 2004.
13. Microwave Assisted Digestion of Homogeneous Solids, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-8909, Rev. 3, 7/11/00
14. Determination of Trace Elements by ICP Atomic Emission Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-2900, Rev. 4, 8/7/00.
15. Determination of Mercury by Cold-Vapor Fluorescence Spectrophotometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-7802, Rev. 8, 4/5/00
16. VOCs by Gas Chromatography/Mas Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9260, Rev. 3, 8/11/00

Waste Stream Profile Continuation Sheet

17. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9441, Rev. 4., 8/10/00

18. SVOCs by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9270, Rev. 1, 8/17/00

19. Sample Preparation for SVOCs and PCBs, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9500, Rev. 1, 8/1/00

20. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 6, May 1, 2003, Rev. 7, August 19, 2004.

21. INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, U. S. Department of Energy Carlsbad Area Office memorandum from Dr. Ines R. Triay to Ms. Beverly Cook, CBFO:NTP:KWW:VW:01-1022:UFC:5822, May 18, 2001.

22. *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, New Mexico Environment Department, NM4890139088-TSDF, Current to January 15, 2004.

23. *Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, DOE/WIPP 02-3122, Rev. 0.1, July 25, 2002.

24. Waste Stream Profile Form INW216.001-First/Second Stage Sludge, BBWI, May 24, 2001.

25. *Hazardous Waste Code Determination for First/Second Stage Sludge Waste Stream (IDCs 001, 002, 800)*, INEEL/EXT-01-00015, Rev. 2, May 2001.

26. *NMED Approval of the Advanced Mixed Waste Treatment Project Final Audit Report, Audit A-03-05 Waste Isolation Pilot Plant EPA I.D. Number NM4890189088*, Letter from Sandra Y. Martin to Dr Ines Triay, Manager Carlsbad Field Office and Dr. Steven Warren, President Washington TRU Solutions LLC, Dated December 23, 2003.

Characterization Information Summary

Lot Number: BNINW216

SQAO Alvin Draper **Date:** 9/17/04

SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM Lisa P. Steinecker **Date:** Sept 17, 2004

SPM signature indicates concurrence with all information presented in this report.

Characterization Information Summary

Characterization Description:

The AMWTP has compiled AK information for the First/Second Stage Sludge waste stream as required by the WIPP WAP and WIPP WAC. In addition, the AMWTP has conducted confirmatory testing using real time radiography, visual examination for establishment of site specific miscertification rate, headspace gas sampling and analysis, and radioassay. To fulfill the solid sampling confirmation data requirement for this profile, the AMWTP used WAP compliant solid sampling data collected in support of INEEL's WSPF INW216.001 as preliminary samples and as the required ("n") samples to determine the mean concentrations and the upper confidence levels (UCL_{90}s) for toxicity characteristic compounds and to assign and/or confirm hazardous waste codes.

The statistical assessment of the preliminary sample data presented in the INEEL 3,100 m^3 Project report, *Hazardous Waste Code Determination for First/Second Stage Sludge Waste Stream* (IDCs 001, 002, 800), INEEL/EXT-01-00015, Rev. 2 dated May 2001, indicated that at least five (5) drums required coring and sample analysis in accordance with the WAP. Seven drums, two more than required, were randomly selected, cored and analyzed from the entire available population to characterize this waste stream. Analytical data from the seven containers, summarized in Tables 2 through 4 of this profile, satisfy the "n" required sample data for the characterization for all drums that were available for sampling as part of the INEEL 3,100 m^3. The following requirements and rationale justify this conclusion.

Section B2-2a in the WAP states:

> *The preliminary estimates will be made by obtaining a preliminary number of samples from the waste stream or from previous sampling from the waste stream. Preliminary estimates will be based on samples from a minimum of 5 waste containers. Samples collected to establish preliminary estimates that are selected, sampled, and analyzed (in accordance with applicable provisions of the WAP) may be used as part of the required number of samples to be collected. The applicability of the preliminary estimates to the waste stream to be sampled shall be justified and documented.*

Justification and documentation of the preliminary estimates involve compliance with the following bullets from the WAP, Section B2-2a:

- *There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.*

The seven samples used to characterize the waste were randomly selected. The random selection process is documented in INEEL/EXT-01-00015.

- *There is documented evidence that the method of sample collection in the preliminary estimate samples were identical to the methodology to be employed for the required samples.*

Characterization Information Summary

The seven drums randomly selected from the First/Second Stage Sludge waste stream were core sampled in accordance with the WAP under a sampling program certified May 18, 2001. The seven-drum data set was accepted as characterization data for INEEL's WSPF, INW216.001.

- *There is documented evidence that the method of sample analysis in the preliminary estimate samples were identical to the analytical methodology employed for the required samples.*

The seven randomly selected drums were analyzed under INEEL's WAP compliant program. The data were accepted as characterization data for INEEL's WSPF, INW216.001. At the time of characterization, trans-1, 2-dichloroethylene was not listed in the WAP as a target analyte for headspace gas or solid samples. It was added as a target analyte for both types of analyses in January 2001. Sufficient data is available to determine that trans-1, 2-dichloroethylene is not present in this waste stream. This compound is not identified in AK documentation as a constituent of Rocky Flats Plant waste and has not been detected in 25% or more of the samples collected from any RF waste including the First/Second Stage Sludge waste. The AMWTP has conducted solids sampling and analysis of First/Second Stage Sludge wastes to demonstrate the solids sampling process. Random selection was not conducted at the time, because the only population available for sampling was a very limited group of containers that had already been processed through real time radiography and radioassay. Trans-1, 2-dichloroethylene was included as a target analyte in this solids sampling analytical data for a sample collected in July 2003 and was not detected. The sampling conducted on the small population of First/Second Stage Sludge waste was for the purposes of demonstrating AMWTP's ability to collect solid samples and not for the purposes of characterizing the entire waste stream. Furthermore, the samples collected were not used to satisfy the requirements of the WAP for preliminary data estimates, only for the purpose of demonstration.

- *There is documented evidence that the validation of the sample analyses in the preliminary estimate samples were comparable to the validation employed for the required samples. In addition, the validated samples results shall indicate that all sample results were valid according to the analytical methodology.*

The analytical results were obtained in accordance with WAP required analytical methods and were valid. Validation of the analytical data was performed in compliance with the WAP.

The above discussion demonstrates that the sample set meets the bulleted conditions identified in the WAP for use as preliminary data and the required number of samples. The seven-drum data set is being used as preliminary data for this waste stream. The validation of the sample analyses was performed under the INEEL's WAP compliant program as required for the required "n" samples.

Characterization Information Summary

Reconciliation with Data Quality Objectives

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF# BNINW216

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each waste container of waste contain TRU radioactive waste?	✓			
4. Have mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			
6. Have mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the misceritification rate is less than 14 percent for the summary category group?	✓			
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analyses been met for the lot?	✓			

Eric P. Schweinsberg — Signature of Site Project Manager

Eric P. Schweinsberg — Printed Name

9/17/04 — Date

Characterization Information Summary

Table 1A. **Headspace gas summary data.**

ANALYTE	Number of Samples	Number of Samples above MDL[a]	Transformation	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	Upper 90% confidence limit (ppmv)	PRQL (ppmv)	EPA Code
1,1-Dichloroethane[c]	15	1	natural log	2.03	0.437	0.446	0.592	2.30	N/A
1,1-Dichloroethylene[c]	15	2	square root	2.37	1.46	0.470	1.63	3.16	N/A
1,1,1-Trichloroethane[c]	15	10	square root	7.17	3.85	2.34	4.66	3.16	F001/F002[d]
1,1,2-Trichloro-1,2,2-Trifluoroethane	15	0	none	1.40	1.26	0.177	[b]	10	F002[d]
1,1,2,2-Tetrachloroethane	15	0	none	4.80	4.18	0.786	[b]	10	N/A
1,2-Dichloroethane	15	0	none	1.75	1.57	0.152	[b]	10	N/A
Acetone[c]	15	3	natural log	3.07	2.33	0.502	2.50	4.61	F003[d]
Benzene[c]	15	2	natural log	2.15	0.21	0.606	0.422	2.30	F005[d]
Bromoform	15	0	none	1.35	1.11	0.199	[b]	10	N/A
Butanol	15	0	none	11.6	9.81	1.47	[b]	100	N/A
Chlorobenzene	15	0	none	3.85	3.33	0.659	[b]	10	F002[d]
Carbon tetrachloride[c]	15	1	natural log	1.69	0.919	0.247	1.01	2.30	F001[d]
Chloroform	15	0	none	2.10	1.92	0.228	[b]	10	D022[d]
cis-1,2-Dichloroethylene	15	0	none	2.60	2.10	0.634	[b]	10	N/A
Ethyl benzene[c]	15	1	square root	3.18	1.96	0.562	2.15	3.16	N/A
Ethyl ether	15	0	none	3.25	2.31	1.19	[b]	10	N/A
m&p-Xylene[c]	15	1	natural log	3.32	1.36	0.630	1.58	4.61	F003[d]
Methanol[c]	15	1	natural log	3.53	2.45	0.324	2.57	4.61	F003[d]
Methyl ethyl ketone	15	0	none	8.20	6.24	2.49	[b]	100	N/A
Methyl isobutyl ketone	15	0	none	11.6	10.1	1.27	[b]	10	N/A
Methylene chloride[c]	15	1	natural log	2.54	0.845	0.472	1.01	2.30	F001/F002[d]
o-Xylene	15	0	none	4.15	4.03	0.152	[b]	10	F003[d]
Tetrachloroethylene	15	0	none	4.85	3.75	1.40	[b]	10	F001/F002[d]
Toluene	15	0	none	3.55	2.93	0.786	[b]	10	F005[d]
trans-1,2-Dichloroethylene	15	0	none	2.70	2.46	0.203	[b]	10	N/A
Trichloroethylene[c]	15	4	natural log	2.67	0.891	0.836	1.17	2.30	F001/F002[d]

Did the data verify the Acceptable Knowledge Yes ✓ No _____

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The means and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection, therefore the upper 90% confidence limit is not calculated.

c. All values are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge. No additional codes were added as a result of headspace gas sampling.

Statistics Performed by [signature] for Jeff Einerson Date: 9/17/04

Signature

Characterization Information Summary

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None detected during analysis	N/A	N/A	N/A

Did the Data verify the Acceptable Knowledge Yes ✓ No N/A

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Characterization Information Summary

Table 2. Metals summary data.[a]

WSPF# BNINW216

ANALYTE	# Samples[b]	# Samples above MDL	Trans-formation	Max-imum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	RTL (mg/kg)	EPA Code (D004-11)
Arsenic[d]	7	7	natural log	1.19	0.464	0.498	0.735	4.61	D004[c]
Barium[d]	7	7	natural log	4.58	3.72	0.463	3.97	7.60	D005[c]
Cadmium[d]	7	7	natural log	5.35	2.15	1.91	3.19	3.00	D006
Chromium	7	7	none	290	171	101	225	100	D007
Lead[d]	7	7	natural log	7.82	4.97	2.07	6.10	4.61	D008
Mercury[d]	7	7	natural log	0.742	-1.32	1.47	-0.522	1.39	D009[c]
Selenium	7	7	none	0.490	0.287	0.160	0.374	20	D010[c]
Silver	7	7	none	200	103	72.5	142	100	D011
Antimony[d]	7	7	natural log	4.79	2.10	1.81	3.09	N/A	N/A
Beryllium[d]	7	7	natural log	7.86	5.87	1.66	6.77	N/A	N/A
Nickel	7	7	none	310	177	90.2	226	N/A	N/A
Thallium[d]	7	5	natural log	1.55	0.002	1.30	0.708	N/A	N/A
Vanadium[d]	7	7	natural log	3.05	2.57	0.323	2.75	N/A	N/A
Zinc[d]	7	7	natural log	7.31	5.23	1.45	6.04	N/A	N/A

Did the data verify the Acceptable Knowledge? Yes ✓ No _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes.

a. Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFD:NTP:KWW:VW:01-1022:UPC:5822 from Dr. Ines R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, dated May 18, 2001. The data used in support of WSPF INW216.001 is being presented in this WSPF.

b. The seven solid samples were collected under a WAP certified program during the 3,100 m^3 Project to satisfy "n", the calculated number of required waste containers to be sampled, were used as preliminary and as the required samples for this WSPF. The data were originally presented in INEEL/EXT-01-00015 in support of WSPF INW216.001 and are included in this WSPF in tables 2, 3, 3A, 4, and 4A.

c. These HWNs were assigned to the waste stream based upon acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presence above the regulatory threshold limit.

d. The maximum, mean, SD, UCL_{95}, and RTL are presented as transformed values.

Statistics Performed by: Bill Schamerhorn for Jeff Einerson Date: 9/17/04
Signature

Characterization Information Summary

Table 3A. Total VOC summary data.[c, h]

ANALYTE	# Samples[f]	# Samples above MDL	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Limit RTL (mg/kg)	Limit PRQL (mg/kg)	EPA Code
1,1-Dichloroethylene	7	0	0.12	0.109	0.008	[b]	14	N/A	N/A
(trans)-1,2-Dichloroethylene[d]	0	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
1,1,1-Trichloroethane	7	3	3.00	0.804	1.09	1.99	N/A	10	F001/F002[g]
1,1,2,2-Tetrachloroethane	7	0	0.095	0.109	0.008	[b]	N/A	10	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	7	0	0.12	0.109	0.008	[b]	N/A	10	F002[g]
1,1,2-Trichloroethane	7	0	0.12	0.109	0.008	[b]	N/A	10	N/A
1,2-Dichloroethane	7	0	0.12	0.109	0.008	[b]	10	N/A	N/A
Acetone	7	0	0.90	0.735	0.156	[b]	N/A	100	F003[g]
Benzene	7	0	0.12	0.109	0.008	[b]	10	10	F005[g]
Bromoform	7	0	0.12	0.109	0.008	[b]	N/A	10	N/A
Butanol	7	0	6.5	5.36	1.13	[b]	N/A	100	N/A
Carbon disulfide	7	0	0.12	0.109	0.008	[b]	N/A	10	N/A
Carbon Tetrachloride	7	1	4.8	0.779	1.77	[b]	10	10	F001/F002[g]
Chlorobenzene	7	0	0.12	0.109	0.008	[b]	2000	10	F002[g]
Chloroform	7	0	0.12	0.109	0.008	[b]	120	N/A	N/A
Ethyl benzene	7	0	0.12	0.109	0.008	[b]	N/A	10	N/A
Ethyl ether	7	0	1.05	0.879	0.182	[b]	N/A	100	N/A
Isobutanol	7	0	3.00	2.46	0.534	[b]	N/A	100	N/A
Methanol	7	3	7.8	3.54	3.11	6.93	N/A	100	F003[g]
Methyl ethyl ketone	7	0	2.15	1.79	0.381	[b]	4000	100	N/A
Methylene chloride	7	1	0.28	0.134	0.065	[b]	N/A	10	F001/F002[g]
m-Xylene	7	1	0.50	0.259	0.107	[b]	N/A	10	F003
o-Xylene	7	1	0.50	0.259	0.107	[b]	N/A	10	F003
p-Xylene	7	0	0.12	0.109	0.008	[b]	N/A	10	F003
Tetrachloroethylene	7	1	0.8	0.21	0.260	[b]	14	10	F001/F002[g]
Toluene	7	1	0.26	0.131	0.058	[b]	N/A	10	F005[g]
Trichloroethylene	7	1	0.36	0.147	0.094	[b]	10	10	F001/F002[g]
Trichlorotrifluoroethane	7	1	0.36	0.147	0.094	[b]	N/A	10	N/A
Vinyl chloride	7	0	0.12	0.109	0.008	[b]	4	N/A	N/A

Did the data verify the Acceptable Knowledge? Yes ✓ No _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes.

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2) since all measurements or all but one measurement are below detection. Therefore, there are no degrees of freedom associated with the t statistic and the upper 90% confidence limit cannot be calculated.

c. For toxicity characteristic wastes, the TC limit expressed as the Regulatory Threshold Limit (RTL) is used. For listed wastes, the Program Required Quantitation Limit (PRQL) is used.

d. (trans)-1,2-Dichloroethylene was not a target compound at the time the solids data was collected for INW216.001. It was not detected as a TIC in the solid waste stream, and is not above the UCL_{90} of the PRQL in headspace gas and is not indicated as a potential compound by AK. Therefore, sufficient data has been collected to determine that (trans)-1,2-Dichloroethylene is not present in this waste stream.

e. Homogeneous solids sample analyses data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UPC:5822 from Dr. Inez R. Triay to Ms. Beverly Cook, titled *INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste*, dated May 18, 2001. The data used in support of WSPF INW216.001 is being presented in this WSPF.

f. The seven solid samples were collected under a WAP certified program during the 3,100 m^3 Project to satisfy "n", the calculated number of required waste containers to be sampled, were used as preliminary and as the required samples for this WSPF. The data were originally presented in INEEL/EXT-01-00015 in support of WSPF INW216.001 and are included in this WSPF in tables 2, 3, 3A, 4, and 4A

g. These HWNs were assigned to the waste stream based upon acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presence above the regulatory threshold limit.

h. No transformations were performed on this data set because there were not a sufficient number of detects in any of the sample sets.

Statistics Performed by: [signature] for Jeff Einerson Date: 9/17/04

Signature

Characterization Information Summary

Table 3B. Total VOC summary data – tentatively identified compounds.[a]

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None	N/A	N/A	N/A
Did the Data verify the Acceptable Knowledge	Yes ✓	No N/A	
If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A			

a. Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UFC:5822 from Dr. Inés R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, dated May 18, 2001. The data used in support of WSPF INW216.001 is being presented in this WSPF.

Characterization Information Summary

Table 4A. Total SVOC summary data.[a, d]

Analyte	# Samples[c]	# Samples Above MDL	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Limit RTL (mg/kg)	Limit PRQL (mg/kg)	EPA Code
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	7	0	0.115	0.115	0	[b]	N/A	40	N/A
1,4-Dichlorobenzene	7	0	0.12	0.12	0	[b]	150	N/A	N/A
2,4-Dinitrophenol	7	0	0.010	0.010	0	[b]	N/A	40	N/A
2,4-Dinitrotoluene	7	0	0.075	0	0.08	[b]	2.6	N/A	N/A
Cresols(o, m, p)	7	0	0.115	0.115	0	[b]	4000	40	N/A
Hexachlorobenzene	7	1	0.78	0.206	0.253	[b]	2.6	N/A	N/A
Hexachloroethane	7	0	0.12	0.12	0	[b]	60	N/A	N/A
Nitrobenzene	7	0	0.12	0.12	0	[b]	40	40	N/A
Pentachlorophenol	7	0	0.05	0.05	0	[b]	2000	N/A	N/A
Pyridine	7	0	1.5	1.26	0.271	[b]	100	40	NA

Did the data verify the Acceptable Knowledge? Yes ✓ No

If no, describe the basis for assigning the EPA Hazardous Waste Codes. N/A

Notes:

N/A = not applicable. PCBs, listed in this table as Aroclors are not expected constituents of this waste stream based on AK.

a. Sum of the Aroclors is to be less than 50 ppm

b. Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UPC:5822 from Dr. Inez R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (33000) Waste, dated May 18, 2001. The data used in support of WSPF INW216.001 is being presented in this WSPF.

c. The seven solid samples were collected under a WAP certified program during the 3,100 m^3 Project to satisfy "n", the calculated number of required waste containers to be sampled, were used as preliminary and as the required samples for this WSPF. The data were originally presented in INEEL/EXT-01-00015 in support of WSPF INW216.001 and are included in this WSPF in tables 2, 3, 3A, 4, and 4A

d. No transformations were performed on this data set because there were not a sufficient number of detects in any of the sample sets.

Statistics Performed by: [signature] for Jeff Einerson Date: 9/17/04

Signature

Characterization Information Summary

Table 4B. Total SVOC Summary data – tentatively identified compounds.[a]

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (mg/kg)	# Samples Containing TIC	% Detected
Bis(2-ethylhexyl)phthalate[b]	3.5	6	86%
Fluoranthene[b]	9.5	3	43%
Pentachlorobenzene	0.36	1	14%
Phenanthrene	1.1	2	28%[c]
Phenol	0.67	1	14%
Phenol,2-Nitro	0.4	1	14%
Pyrene	0.2	1	14%
Did the Data verify the Acceptable Knowledge	Yes ✓	No	
If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A			

[a] Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UFC:5822 from Dr. Inez R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, dated May 18, 2001. The data used in support of WSPF INW216.001 is being presented in this WSPF.

[b] Both of these constituents are on the 40 CFR Part 261 Appendix VIII list and exceed 25% within the waste stream. Both constituents have either K codes (Hazardous waste from specific sources) or U codes (discarded commercial chemical products). These K and U codes are not applicable to waste generated at the Rocky Flats Plant, therefore the detection of these TICs does not result in additional HWNs. These constituents will be added to the target analyte list for future analysis of First/Second Stage Sludge waste.

[c] The % detected for phenanthrene was incorrectly reported as 15% in the initial WSPF BNINW216. Phenanthrene is not listed in 40 CFR Part 261 Appendix VIII, therefore no further action is required for this constituent.

Characterization Information Summary

Table 5. Correlation of container identification numbers to data package.

Container Number	Headspace Gas Sampling Data Package	RTR Data Package	RA Data Package	Visual Examination Data Package	Solid Sampling Data Package	Solid Analysis Data Package[b]
IDRF741200655[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00004
IDRF741201882[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00003
IDRF741202121[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00003
IDRF741202216[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00004
IDRF741202390[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00004
IDRF741205311[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00004
IDRF741205324[a]	N/A	N/A	N/A	N/A	N/A[c]	ACL00004
10000135	HSG03-00290	RTR03-00001	ASY03-00306	N/A	N/A	N/A
10000147	HSG03-00316	RTR03-00005	ASY03-00259	N/A	N/A	N/A
10000161	HSG03-00282	RTR03-00007	ASY03-00104	N/A	N/A	N/A
10000162	HSG03-00282	RTR03-00007	ASY03-00105	N/A	N/A	N/A
10000171	HSG03-00291	RTR03-00001	ASY03-00307	N/A	N/A	N/A
10000299	HSG03-00297	RTR03-00017	ASY03-00357	N/A	N/A	N/A
10000353	HSG03-00287	RTR03-00017	ASY03-00309	N/A	N/A	N/A
10000379	HSG03-00312	RTR03-00060	ASY03-00261	N/A	N/A	N/A
10000461	HSG03-00310	RTR03-00026	ASY03-00271	N/A	N/A	N/A
10000464	HSG03-00311	RTR03-00026	ASY03-00272	N/A	N/A	N/A
10000472	HSG03-00312	RTR03-00028	ASY03-00266	N/A	N/A	N/A
10000474	HSG03-00313	RTR03-00028	ASY03-00266	N/A	N/A	N/A
10000478	HSG03-00313	RTR03-00028	ASY03-00266	N/A	N/A	N/A
10000490	HSG03-00312	RTR03-00028	ASY03-00266	N/A	N/A	N/A
10000492	HSG03-00311	RTR03-00028	ASY03-00272	N/A	N/A	N/A

a. For drums not characterized by AMWTP, only the solids data will be presented in the WSPF, and these drums will not be entered into WWIS.

b. An ACL Solids Data Package is composed of four separate reports. For example, ACL00004 contains ACL00004M, ACL00004N, ACL00004S, and ACL00004V.

c. Solid sampling data have not been reevaluated by AMWTP. The solids data set being used to support this waste stream profile form was the one used to support the 3100 m^3 WSPF for INW216.001. Solid sampling data package information was not presented in INW216.001.

Characterization Information Summary

Table 6. RTR/VE summary of prohibited items and AK confirmation.

Container Number	RTR Prohibited Items[a]	Visual Examination Prohibited Items[a]	AK Confirmation[b,c]
10000135	None	N/A[d]	Complete
10000147	None	N/A	Complete
10000161	None	N/A	Complete
10000162	None	N/A	Complete
10000171	None	N/A	Complete
10000299	None	N/A	Complete
10000353	None	N/A	Complete
10000379	None	N/A	Complete
10000461	None	N/A	Complete
10000464	None	N/A	Complete
10000472	None	N/A	Complete
10000474	None	N/A	Complete
10000478	None	N/A	Complete
10000490	None	N/A	Complete
10000492	None	N/A	Complete

a. See Table 5 for the associated RTR and Visual examinations. None of the listed containers contain prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPJP), MP-TRUW-8.2.

b. Acceptable Knowledge confirmations for RTR and visual examinations are conducted by an Acceptable Knowledge Expert on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the batches listed in Table 5.

c. None of these drums have a VE in lieu of RTR examination.

d. N/A indicates that a visual examination was not conducted on the container. None of the containers presented in this WSPF have been selected for visual examination by AMWTP.

e. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

Characterization Information Summary

Table 7. Sample identification number cross-correlation table.

Container Number	Headspace Gas Sample Number[a]	Solidified Sample Number(s)
IDRF741200655	N/A	ID02938811M1, ID02938811V1, ID02938811V2
IDRF741201882	N/A	ID02261811M1, ID02261811V1, ID02261811V2
IDRF741202121	N/A	ID01047411M1, ID01047411V1, ID01047411V2
IDRF741202216	N/A	ID02298211M1, ID02298211V1, ID02298211V2
IDRF741202390	N/A	ID03157311M1, ID03157311V1, ID03157311V2
IDRF741205311	N/A	ID00208611M1, ID00208611V1, ID00208611V2
IDRF741205324	N/A	ID00381811M1, ID00381811V1, ID00381811V2
10000135	HSG03-00290B9	N/A
10000147	HSG03-00316B11	N/A
10000161	HSG03-00282C4	N/A
10000162	HSG03-00282C5	N/A
10000171	HSG03-00291C7	N/A
10000299	HSG03-00297C8	N/A
10000353	HSG03-00287C5	N/A
10000379	HSG03-00312B15	N/A
10000461	HSG03-00310B8	N/A
10000464	HSG03-00311C10	N/A
10000472	HSG03-00312B14	N/A
10000474	HSG03-00313C14	N/A
10000478	HSG03-00313C11	N/A
10000490	HSG03-00312B13	N/A
10000492	HSG03-00311C6	N/A

a. The AMWTP headspace gas unit is an on-line sampling and analysis system. The analysis events are sequentially numbered within each batch, but the sample number is not a unique number. The number, presented in this table is a combination of the batch number (HSG03-00290) and the sequential instrument ID used in the batch for reporting (B9). This combination is unique and will allow traceability back to the data as collected and reported.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-09, Rev. 8

Acceptable Knowledge Summary for First/Second Stage Sludge (BNINW216)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-9599.)
Susan Peterman
TRU Programs Manager

07/05/12
Date

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ACRONYMS

AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CH-TRUCON	Contact-Handled TRU Waste Content Codes
DOE	Department of Energy
DOT	Department of Transportation
EDMS	Electronic Document Management System
EPA	Environmental Protection Agency
FGE	fissile gram equivalents
FR	Federal Register
HWN	hazardous waste number
IDC	item description code
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
NACE	National Association of Corrosion Engineer
nCi/g	nanocuries per gram
NDA	non-destructive assay
PCB	polychlorinated biphenyl
ppm	part per million
ppmv	part per million volume
PRQL	program required quantitation limit
PVC	poly vinyl chloride
PWTS	Process Waste Transfer System
RCRA	Resource Conservation and Recovery Act
RFETS	Rocky Flats Environmental Technology Site
RFP	Rocky Flats Plant
RMRS	Rocky Mountain Remediation Services
RTR	real-time radiography
SDA	Subsurface Disposal Area
SWB	standard waste box

TIC	tentatively identified compound
TRU	transuranic
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
UCL_{90}	90% upper confidence limit
VE	visual examination
VOCs	volatile organic compounds
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan (Attachment B of the WIPP Hazardous Waste Permit)
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMP	Waste Material Parameter
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System

REFERENCES

NOTE: *Advanced Mixed Waste Treatment Project (AMWTP) documents such as procedures, Acceptable Knowledge (AK) Reports, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

1. INEL-96/0280, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste [P368A]

2. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant Waste [P649A]

3. RPT-TRUW-12, AMWTP Waste Stream Designations [P393A]

4. CKA-002-10, Memo to file, Volume Estimate for BNINW216 First/Second Stage Sludge Waste Stream, July 5, 2010 [C877A]

5. Waste Stream Profile Form INW216.001-First/Second Stage Sludge, WSPF Update for WIPP Operating Record [P217A]

6. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), Rev. 37, June 2010

7. DOE/LLW-217, DOE Waste Treatability Group Guidance

8. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report -2004, U.S. Department of Energy, Carlsbad, New Mexico.

9. RMRS 2003, Backlog Waste Reassessment Baseline Book, Chapter WF55, March 12, 2003 [P052A]

10. RFETS 1990, Building 774 Set Up Log Book, 1973–1990 [U043A]

11. CO 97-05-30-01, Rocky Flats Environmental Technology Site RCRA Permit

12. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge [P398A]

13. INEEL/EXT-01-00015, Hazardous Waste Code Determination for First/Second Stage Sludge Waste Stream (IDCs 001, 002, 800) [P219A]

14. Radionuclide (Np-237) inconsistent with AK documentation [AKR-03-8]

15. Radionuclides (Cesium-137 and Strontium 90) inconsistent with AK documentation [AKR-03-9]

16. Radionuclide (K40) inconsistent with AK documentation [AKR-03-10]

17. Filtered Bag identified as Method of Bag Closure [AKR-03-18]

18. Filtered Bag identified as Method of Bag Closure [AKR-03-22]

19. Unexpected Packaging Configuration-Unexpected Liner Configuration [AKR-03-25]

20. Radionuclide (Am-243) inconsistent with AK documentation [AKR-03-30]

21. Radionuclide (Cm-245) inconsistent with AK documentation [AKR-03-33]

22. Unexpected packaging configuration – Absence of Drum Bagging [AKR-03-38]

23. Unexpected packaging configuration – drum stub bag [AKR-04-41]

24. Absorbent (Oil-Dri® or Vermiculite) identified outside of Expected Timeframe [AKR-04-46]

25. INEEL 2001, Response to New Mexico Environment Department Concern with IDC 002, Letter to Idaho Department of Environmental Quality, September 27 [C208A]

26. EDF-RWMC-761, Rocky Flats Characterization (1954-1980), July 18, 1994 [U119A]

27. Unexpected packaging configuration – Round bottom liner used instead rigid liner [AKR-04-50]

28. Absorbent (Oil-Dri® or Vermiculite) identified outside of Expected Timeframe [AKR-04-64]

29. Waste/packaging configuration inconsistent with RF-IDC 001 [AKR-04-76]

30. Waste/packaging configuration inconsistent with RF-IDC 001 [AKR-04-77]

31. Rocky Flats – Waste Stream and Residual Identification and Characterization Building 778, Version 3.0, January 1991 [U084A]

32. Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005 and November 11, 2008 [P881S]

33. Material Safety Data Sheet for Oil Dri® Floor Absorbent, Oil-Dri Corporation of America, July 21, 1988 [P426A]

34. Material Safety Data Sheet for Portland Cement, Lone Star Industries Inc., August 10, 1994 [P429A]

35. Material Safety Data Sheet for Ox Out 536, ChemClean Corporation, May 5, 1986 and March 5, 1999 [P129A]

36. Material Safety Data Sheet for PuriFloc (R) A23 Flocculant, Dow Chemical, March 1, 1985 [P065A]

37. RMRS-WIPP-98-100, Acceptable Knowledge TRU/TRM Waste Stream Summaries, Section 7.31, Profile No. RF139.01, TRM Wastewater Treatment Sludge, September 16, 2004 [P432A]

38. Letter to Joseph A. Legare from John A. Ciucci, Revision 2 For Resolution of Cesium-137 (Cs-137) Acceptable Knowledge (AK) Discrepancy Between Rocky Flats Environmental Technology Site (Site) and Idaho National Engineering and Environmental Laboratory (INEEL) [C281A]

39. RMRS-WIPP-98-100, Acceptable Knowledge TRU/TRM Waste Stream Summaries, Section 7.24, RF 107.01, TRM Solidified Inorganic Waste [P431A]

40. Memorandum to file from Tim Venneman, Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste, January 19, 2007 [C534A]

41. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

42. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, October 1982 [P024A]

43. INEL-95/0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste [P016A]

44. CCP-PO-003, CCP Authorized Methods of Payload Control (CCP-CH-TRUPAC) [P672A]

45. RPT-TRUW-05, Waste Matrix Code Reference Manual [P399A]

46. MP-TRUW-8.2, Quality Assurance Project Plan

47. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

48. Material Safety Data Sheet, Micro-cel®E, Celite Corporation, January 17, 2007 [P808S]

49. RCM-001-10, Memo to file, Earliest Pack Date for Rocky Flats Waste Retrieved from Pits 11 and 12, July 05, 2010 [C875S]

50. DOE/TRU-09-3425, Annual Transuranic Waste Inventory Report - 2009, U. S. Department of Energy, Carlsbad, New Mexico, Rev. 0 [P838A]

Acceptable Knowledge Summary for First/Second Stage Sludge

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BNINW216

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

First/Second Stage Sludge

1.2.2 Point of Generation

Rocky Flats Plant (RFP) - Liquid Waste Treatment Area of Building 774

1.2.3 Waste Stream Volume

22,304 containers (4,639 m^3) – current volume[4]

The estimated percentage of the waste greater than 100 nanocuries per gram (nCi/g) is 92%. The estimated percentage of waste equal to or less than 100 nCi/g is 8%.[12]

1.2.4 Generation Dates

AMWTP stored containers of RFP first/second stage sludge waste were generated from 1968 to 1988. Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization/treatment activities).[2, 49]

1.2.5 Contact-Handled TRU Waste Content Codes (CH-TRUCON)[5, 6]

ID111/ID211, ID132/ID232

1.2.6 Transuranic Waste Baseline Inventory Report (TWBIR) and Annual Transuranic Waste Inventory Report (ATWIR) Information[8, 50]

ATWIR Waste Stream ID: IN-BNINW216 (formerly identified as TWBIR Waste Stream IDs: IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN- W228.103, and IN-W228.883).

TWBIR waste stream descriptions:

IN-W216.875, IN-W216.98, IN-W216.99: Item description code (IDC) 001 waste consists of immobilized materials generated from first-stage treatment operations in RFP Building 774. Aqueous liquids coming into the process originated from Building 771 recovery operations. The liquids were made basic with sodium hydroxide to precipitate iron, magnesium, etc. that also carried down the relatively small precipitate of plutonium and americium hydrated oxides. The precipitate was filtered to produce a sludge (IDC 001), which was placed in a drum with Portland cement. Beginning in 1979, sludge waste from second-stage treatment was combined with first-stage sludge. The combined sludges were also assigned IDC 001. IDC 001 was discontinued in 1986 when the immobilization process changed, and has since been assigned IDC 800.

IN-W228.101, IN-W228.102, IN-W228.103, and IN-W228.883: IDC 002 waste consists of immobilized materials generated from second-stage treatment operations in RFP Building 774. Aqueous liquids to be treated originated from first-stage treatment and from numerous buildings on plant site. The liquids were treated in the same manner as the liquids from the first stage, and the resulting sludge (IDC 002) were placed into a drum with Portland cement. Prior to 1973, second-stage sludge may contain miscellaneous debris.

IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN-W228.103, and IN-W228.883: The process that produced sludge from RFP Building 774 (IDC 800) was the same process as that which generated IDC 001. The difference between the two IDCs was the immobilization process. For IDC 800, the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing. IDC 800 is most accurately described by the combination of TWBIR numbers for IDC 001 and IDC 002, therefore all TWBIR numbers associated with IDC 001 or IDC 002 were applied to IDC 800.

ATWIR waste stream description:

IN-BNINW216 (aqueous sludge wastes from Building 774) was generated from a carrier precipitation and immobilization process (sludge mixed with diatomite and Portland cement). The First/Second Stage Sludge waste stream is comprised of IDCs ID-RF-001, ID-RF-002, and ID-RF-800. The First/Second Stage Sludge waste stream consists of >50% by volume secondary sludge or filter cake from wastewater treatment processes or heavy metal sludges from recovery processes. Two waste matrix codes (WMCs) have been assigned to this waste stream because the immobilization process for this waste stream was changed in 1986. Prior to 1986 the first/second stage sludge was placed into a drum with Portland cement. The excess liquid was immobilized, but a solid monolith was not formed. Subsequent to 1986 the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing.[a] (8)

1.2.7 Summary Category Group(3, 7)

S3000 Homogeneous Solids

1.2.8 Waste Matrix Codes(3, 7)

S3121 – Waste Water Treatment Sludge (IDC 001, IDC 002, IDC 741, IDC 742)

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a. The description in the ATWIR will be revised in the next annual update to include IDCs ID-RF-741 and ID-RF-742.

WMC S3121 consists of >50% by volume secondary sludge, or filtercake from wastewater treatment processes or heavy metal sludges resulting from recovery processes.

S3150 – Solidified Homogeneous Solids (IDC 800)

WMC S3150 consists of >50% by volume solidified forms. An example is sludge waste that is immobilized with cement and cured into a solidified form.

Two WMCs have been assigned to this waste stream because the immobilization process for this waste stream was changed in 1986. Prior to 1986 the first/second stage sludge was placed into a drum with Portland cement. The excess liquid was immobilized, but a solid monolith was not formed. Subsequent to 1986 the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing.

1.2.9 Waste Matrix Code Group[7]

S3100 – Inorganic Homogeneous Solids

1.3 Waste Stream Description

1.3.1 Description

The First/Second Stage Sludge waste stream consists of drums containing First Stage Sludge (IDCs 001 and 741), Second Stage Sludge (IDCs 002 and 742), or Solidified Sludge – Bldg 774 (IDC 800).

Table 1-1. Physical waste form descriptions for first/second stage sludge.

IDC	WMC	Description
001 741	S3121	This waste consists of immobilized materials generated from first stage treatment operations in RFP Building 774. Aqueous liquids coming into the process originated from Building 771 recovery operations. The liquids were made basic with sodium hydroxide to precipitate iron, magnesium, etc., that also carried down the relatively small precipitate of plutonium and americium hydrated oxides. The precipitate was filtered to produce sludge, which was placed in a drum with Portland cement (IDCs 001 and 741) and assigned container prefix 741. IDC 001 was assigned to the first stage sludge by RFP. IDC 741 is used to identify first stage sludge drums retrieved from the Subsurface Disposal Area (SDA) Pits 11 and 12. The waste was generated prior to 1972, shipped to Idaho National Laboratory (INL), and buried in the SDA Pits 11 and 12. The waste was subsequently retrieved from the pits and placed into the Transuranic Storage Area-Retrieval Enclosure (TSA-RE) prior to 1979. Because RFP did not assign IDCs to waste until mid-1971, AMWTP assigned IDC 741 to these waste containers.[1, 2, 4] Beginning in 1979, sludge waste from second stage treatment was combined with first stage sludge and assigned container prefix 7412. The combined sludges were also assigned IDC 001. IDC 001 was discontinued in 1986 when the immobilization process changed and has since been assigned IDC 800.[43]

IDC	WMC	Description
002 742	S3121	This waste consists of immobilized materials generated from second stage treatment operations in RFP Building 774. Aqueous liquids to be treated originated from first stage processing and from numerous buildings on plant site. The liquids were treated in the same manner as the liquids from the first stage, and the resulting sludge were placed in a drum with Portland cement (IDCs 002 and 742) and assigned container prefix 742. IDC 002 was assigned to the second stage sludge by RFP. IDC 742 is used to identify second stage sludge drums retrieved from the SDA Pits 11 and 12. The waste was generated prior to 1972, shipped to INL, and buried in the SDA Pits 11 and 12. The waste was subsequently retrieved from the pits and placed into the TSA-RE prior to 1979. Because RFP did not assign IDCs to waste until mid-1971, AMWTP assigned IDC 742 to these waste containers.[1, 2, 4] Prior to 1973, second stage sludge may contain miscellaneous debris, as identified by visual examination (VE) and Real-Time Radiography (RTR) inspections of second stage waste containers. The following types of debris have been identified: cellulosic debris, plastic debris, leaded rubber gloves, rubber debris,[18] rubber gloves, and metal debris. AK indicates that up until 1973, other items (e.g., electric motors, bottles containing residual liquid chemical wastes and mercury, and mercury batteries and lithium batteries) may be present in second stage sludge (IDCs 002 and 742) containers. These items have not been confirmed through characterization activities.
800	S3150	The process that produced sludge from RFP Building 774 (IDC 800) was the same process as that which generated combined first and second stage sludge (container prefix 7412). The difference between the two IDCs was the immobilization process. For IDC 800, the sludge was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing.[43]

In accordance with Attachment B of the Waste Analysis Plan (WAP), a waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. The aqueous sludge wastes from Building 774 were generated from a carrier precipitation and immobilization process and are similar in material and physical form (sludge mixed with diatomite and Portland cement). The feed streams to the process did not change appreciably over time, and therefore the cemented sludge wastes are similar in hazardous constituents.

1.4 Process Description

1.4.1 Areas of Operation

When Building 774 was built in 1952, its primary purpose was to treat radioactive aqueous waste from Building 771. Later, aqueous wastes from numerous buildings on plant site were treated in Building 774. Production and production support processes in Buildings 371, 444, 447, 559, 707, 771, 776, 777, 779, 865, and 883 generated liquid wastes which were treated in Building 774. Building 774 was a combination batch continuous processing operation with a two-stage carrier precipitation process. Aqueous liquid wastes were treated using neutralization, precipitation, flocculation, and clarification processes. The settled solids were then filtered and immobilized.

1.4.2 Waste Generating Process

Most of the aqueous wastes from Building 771 entered the Building 774 liquid waste processing facility by vacuum transfer through the process waste system. Acid wastes containing large quantities of metal ions that were insoluble in basic solutions, or chloride ions that were corrosive to the process equipment, were neutralized with sodium hydroxide (between 2.5 and 12). The purpose of this process was to remove the metal hydroxide solids prior to the succeeding flocculation and clarification processes. The precipitated solids were sent through vacuum filtration.

Acid waste containing only small quantities of metal ions that were insoluble in basic solutions and caustic wastes containing large quantities of un-dissolved solids were mixed with ferric sulfate and calcium chloride reagents and the pH adjusted as necessary with sodium hydroxide. The solids (mainly ferric hydroxide) settled to the bottom of the tank, and the liquid was decanted into the feed tank for the succeeding precipitation and clarification process. The solids were sent through vacuum filtration.

Liquid waste solutions that were relatively free of solids were mixed with the decanted solution from the previously described batch precipitation processes and the filtrate from the rotary drum vacuum filter. These combined wastes were drained into a flash mixer tank where the decontaminating chemical reagents were introduced. The mixture from the flash mixing vessel flowed into the flocculator where anionic polyelectrolyte flocculent (PuriFloc A2336,37) was added. The mixture then flowed into the clarifier where the floc was allowed to settle out (see Section 2.3 for list of constituents associated with PuriFloc). The clarifier supernatant liquid was pumped to the second stage treatment process. The precipitate at the bottom of the tank flowed into the slurry tank awaiting vacuum filtration.

Slurry from the first stage treatment was drawn through diatomite filter media by a vacuum inside a rotating filter drum. The filter media and trapped solids were continually scraped off the drum filter and fed into a 55-gallon drum. Portland cement was added to the bottom of the drum prior to placing sludge into the drum. Portland cement may also have been added on top of the sludge (see Section 2.3 for list of constituents associated with Portland cement).

The slurry from second stage was kept separate from the first stage slurry up until 1979 (IDC 002). Even during this time frame, there was commingling of liquids between the two stages. The effluent from the first stage process required further treatment by second stage process, and the filtrate from the rotary drum vacuum filter was fed back to first stage treatment. Beginning in 1979, slurry from the first and second stage treatment was combined prior to filtration. The combined sludge was assigned IDC 001.

Treated effluent from the first stage processes, filtrate from the second stage vacuum filter, liquid from the waste treatment process drains, and other wastes from numerous other buildings were received into second stage treatment. In the batch radioactive decontamination process, ferric sulfate and calcium chloride reagents were added, and a flocculating agent was also added near the end of the mixing cycle. The supernatant liquid was decanted into treated waste holding tanks. The floc that settled to the tank bottom was then sent through vacuum filtration.

The continuous radioactive decontamination process accepted low chemical content process wastes, primarily water and detergent from the laundry facility. This process was identical in process chemistry to first stage treatment. The treated liquid was pumped into holding tanks. The settled solids were sent through vacuum filtration.

In a process identical to first stage sludge, slurry from the second stage treatment was drawn through diatomite filter media by a vacuum inside a rotating filter drum. The filter media and trapped solids were continually scraped off the drum filter and fed into a 55 gallon drum. Portland cement was added to the bottom of the drum prior to placing sludge into the drum. During processing of second stage sludge, several layers of cement may have been added between layers of sludge. Portland cement may have also been added to the top of the sludge.

Beginning in 1979, slurry from first and second stage treatment was combined prior to filtration, and the sludge was assigned IDC 001.

In 1986, the process for immobilizing first and second stage sludges was changed. Sludge waste generated under the new immobilization process was assigned IDC 800. Processing of first and second stage sludges through treatment, precipitation, and filtration did not change. However, as the sludge was scraped off the drum filter, it was co-fed into a drum with a diatomite and Portland cement mixture, which formed a solid monolith after curing. Assignment of IDC 001 was discontinued at this time.

1.4.3 Process Flow Diagram

See Figure 3-1.

1.4.4 Material Inputs

1.4.4.1 Material Inputs – RF IDCs 001 and 741

The most common wastes that entered first stage treatment were:

- Plutonium ion column effluent
- Americium ion column effluent
- Thiocyanate waste solution
- Caustic scrubber solution
- Part V waste solutions (nitric, sulfuric, and hydrofluoric acids)
- Nitric acid distillate from feed evaporator
- Water distillate from peroxide precipitation filtrate evaporator
- Steam condensate.

The following compounds were used during recovery operations in Building 771 and may be present in IDC 001.

- Nitric acid
- Aluminum nitrate
- Magnesium
- Sodium peroxide

- Calcium fluoride
- Potassium hydroxide
- Ferrous sulfamate
- Sulfuric acid
- Hydrogen peroxide
- Calcium
- Magnesium oxide
- Potassium iodate
- Hydrogen fluoride
- Sodium nitrate
- Hydrochloric acid
- Hydrofluoric acid
- Sodium hypochlorite
- Potassium fluoride

Aqueous wastes containing complexing agents were handled separately and were not mixed with these aqueous waste streams.

1.4.4.2 Material Inputs – RF IDCs 002 and 742

Second stage treatment handled liquids that were treated by first stage treatment, decanted liquids from Tank 40 (slurry holding tank), and low-level or nonradioactive aqueous process wastes from numerous buildings on plant site. Most of the wastes transferred to second stage treatment by the process waste system were only accepted until August 1984 when the precipitation process in Building 374 went on line. After that time, the wastes from Buildings 771 and 774 given below continued to be transferred to Building 774 second stage treatment through the process waste system. Wastes from the remaining buildings also continued to be sent to Building 774 by tanker after August 1984.

Table 1-2. Wastes feeding second stage sludge treatment.

Source Building	Materials
111	Process liquid waste
122	Medical decontamination wash down
123	Acidic solutions, process waste water, and standards and sample waste
331	Filter sludge and antifreeze solution
334	Ammonium persulfate, copper sulfate, etchants, and cleaners
371	Ammonia hydroxide, potassium hydroxide, and process waste water
443	Lithium chloride solution and water treatment additives
444	Process waste water (acidic), waste plating acid
447	Process waste water
460	Process waste water
551	35% hydrogen peroxide, high in tin content
553	Sulfuric acid, baking soda, calcium chloride
559	Standards, caustic scrubber solution, acid wastes, and process waste water
690	Acid solutions

Table 1-2. (continued).

Source Building	Materials
705	Ox Out 536 (water, ammonium bifluoride, and nitric acid)[a, (35)]
707	Calcium fluoride solution and acid solutions
750	Hydrochloric acid and trisodium phosphate
771	Process waste water (residual chemicals, blow down water, decon
774	Floor wash down and silver recovery effluent
776	Ammonia hydroxide, ethanol, hexane, acid solutions, and process waste water
778	Laundry waste water, suma cleaner (acid bath/nitric acid),[(31)] and rinse water/battery acid
779	Acidic and basic solutions and process waste water
865	Acid solutions, scrubber effluent, polishing solution, and process waste water
881	Acid solutions, standards, samples, ammonium chloride, and process waste water
883	Acid solutions, Ox Out 536 (water, ammonium bifluoride, and nitric acid)[(35)], and process waste water[a]
886	Ferric chloride, detergents, and process waste water
889	Equipment decontamination water
991	Acidic and basic solutions and water samples

a. See Section 2.3 for constituents and Ox Out.

1.4.4.3 Material Inputs – RF IDC 800

Inputs for solidified sludge are the same as those for first stage sludge and second stage sludge described above.

1.4.4.4 Miscellaneous Items

Miscellaneous items are those items that have been identified during characterization activities that are not consistent with expectations based on process descriptions. They appear in a small percentage of the waste stream containers and constitute a small percentage of the waste within the container and summary category group and other determinations are not impacted.

Visual examination and RTR inspections of IDC RF 001 containers have identified the following items:

- Cellulosic debris
- Plastic debris
- Leaded rubber gloves and aprons

- Rubber debris,[18] rubber gloves
- Metal Debris
- Filters (metal alloy and cellulosic)
- Inorganic liquid (see Section 1.5).

Visual examination and RTR inspections of IDC RF 002 containers have identified the following items:

- Cellulosic debris
- Plastic debris
- Leaded rubber gloves
- Rubber debris,[18] rubber gloves
- Metal debris
- Inorganic liquid (see Section 1.5).

AK indicates that up until 1973 items such as the following may have been present in second stage sludge (IDC RF 002). These items have not been confirmed through characterization activities.

- Electric motors
- Bottles containing residual liquid chemical wastes and mercury
- Mercury batteries
- Lithium batteries
- Radioactive sources (until 1979).

Visual examination and RTR inspections of IDC RF 800 containers have identified the following items:

- Cellulosic debris
- Plastic debris
- Leaded rubber gloves
- Lead tape
- Rubber debris,[18] rubber gloves
- Metal bolt
- Inorganic liquid (see Section 1.5).

1.4.4.5 Absorbent Addition

Non-hazardous immobilization/solidification agents (e.g., Aquaset®, Aquaset II-G®, or Micro Cel® E) may be added to waste containers by AMWTP to treat prohibited liquids. Aquaset is a sodium montmorillonite clay material, Aquaset II-G® is a sepiolite clay (granular), and Micro-Cel®E is a synthetic calcium silicate.[32, 48]

1.4.5 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BNINW216, WMP data from 100% of the completed RTR and VE of first/second stage sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 41% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1972 through 1988 and are representative of the waste stream. WTS is AMWTPs comprehensive, Department of Energy (DOE)-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for first/second stage sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation and are summarized in Table 1-3.[40, 41]

Table 1-3. Estimated waste material parameter weights per unit waste for First/Second Stage Sludge (BNINW216).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Inorganic matrix	98
Other Inorganic Materials	1
Cellulosics	<1
Plastics (waste materials)	<1
Rubber	<1

Although individual drums in this waste stream may contain greater than 10% by volume other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids.[40]

1.5 Prohibited Items

The following items are prohibited in waste containers shipped to Waste Isolation Pilot Plant (WIPP) as documented in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan.[46, 47]

- Liquid waste or prohibited observable liquids.
- Non-radionuclide pyrophoric materials, such as elemental potassium

- Hazardous wastes not occurring as co-contaminants with transuranic (TRU) mixed wastes (non-mixed hazardous wastes)
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA hazardous waste numbers [HWNs] of D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2 unless specifically approved through a Class 3 permit modification[46]
- Any waste container from a waste stream (or waste stream lot) which has not undergone either radiographic or VE of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2.[46]
- Sealed containers greater than four (4) liters.

Excess liquid is a common prohibited item identified during RTR and VE in this waste stream. Other prohibited items are expected to be very rare.[1, 2] Drums with excess liquid may be treated by adding non-hazardous absorbent (e.g., Aquaset®, Aquaset II-G®, or Micro Cel® E) prior to shipment.[32, 48] Drums with other prohibited items will be treated or rejected as appropriate. Drums with prohibited items will not be part of the waste stream shipped to the WIPP.

1.6 Resource Conservation and Recovery Act (RCRA) Determination

1.6.1 EPA Hazardous Waste Numbers

Toxicity codes: D004, D005, D006, D007, D008, D009, D010, D011, D022

Listed codes: F001, F002, F003, F005, F006, F007, and F009

1.6.2 Hazardous Determination

1.6.2.1 Characteristic Waste

1.6.2.1.1 Ignitability

The waste is a solid and does not meet the definition of *ignitability* (D001) as defined in 40 Code of Federal Regulations (CFR) 261.21. Originally the generator (RF) assigned the F003 code for the non halogenated, non-toxic F003 constituents (acetone, methanol, and xylene). These compounds are listed for their ignitability. The source wastes containing the F003 constituents were not mixed with any other listed (F001, F002, F004, or F005) constituents or wastes at the point of generation in the laboratory.

None of the F003 compounds had a 90% confidence level in either the headspace gas samples or the solid samples greater than the program required quantitation limit (PRQL), but all of the compounds except for methanol were detected in one or more of the headspace gas samples for these drums. Methanol and xylene were both detected in one or more solid samples.[5] The F003 waste streams also were discarded into the Process Waste Transfer System (PWTS) as non-hazardous wastewaters, i.e., diluted with water and flushed at the point of generation. Therefore, it was determined during the 3,100 m^3 Project that the F003 waste was rendered non ignitable prior to subsequent discharge and aggregation within the liquid waste stream destined for sludge generation.[13] Containers identified with liquid in excess of WIPP waste acceptance criteria (WAC) limits may be treated using non-hazardous solidification agents (e.g., Aquaset, Aquaset II-G®, or Micro Cel® E) to render the waste acceptable prior to shipment[32, 48]

The waste materials in this waste stream are not compressed gas and do not contain compressed gas and the waste does not meet the United States Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173 and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001).

1.6.2.1.2 Corrosivity

Under 40 CFR 261,[22] a solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

- It is aqueous with a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, EPA Publications SW-846.
- It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.240 inch) per year at a test temperature of 55°C (130°F) as determined by its test method specified in National Association of Corrosion Engineer (NACE) Standard TM-01-69 as standardized in SW-846.

The waste stream does not meet the characteristic of corrosivity (D002) as defined.[13] The waste is not an aqueous liquid. As has been determined by radiography and VE, none of the drums to be shipped contain 20% by volume aqueous waste. Since 20% by volume is required in order to measure pH, the corrosive characteristic does not apply. The first/second stage sludge waste stream does not meet the definition of liquid in making a determination of corrosivity toward steel because the waste is not a liquid. A knowledge-based determination is allowable when determining whether or not the waste stream is a liquid relative to corrosivity under the Federal Register (FR), 50 FR 18372, dated April 30, 1985. It is stated in the FR, "EPA believes that, for the purposes of the characteristic of ignitability and corrosivity, it will generally be obvious whether or not the waste is a liquid." Residual liquid may be present in some drums, but only drums with liquids below the WIPP WAC ceiling will be shipped to WIPP. Containers identified with liquid in excess of WIPP WAC limits may be treated using non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro Cel® E).[32, 48] This waste stream does not exhibit the characteristic of corrosivity (D002).

1.6.2.1.3 Reactivity

The waste stream does not meet the characteristic of reactivity (D003) as defined under RCRA 40 CFR 261.23. The waste materials are stable and will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes when mixed with water. The materials do not contain sulfides and are not capable of detonation or explosive reaction. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part 173.[13]

The waste may contain trace quantities of cyanide derived from electroplating wastes, and containers with residual amounts of liquid chemical wastes added to the process waste stream (as opposed to piped waste water).[10] Only trace amounts of cyanide are expected in the waste stream feed and would not cause the resulting waste to be reactive. Based on the levels of concentration of cyanide in the feed waste, the alkalinity of the sludges (9 to 11 pH) and the presence of metals (e.g., Fe^{+3}, Cu^{+2}, Al^{+3}), cyanide is not available for release because all free cyanide exists as stable metal complexes.

Second stage sludge generated before 1973 may contain lithium batteries. However, the batteries are spent/used and therefore not reactive. The following rationale supports the decision to not assign EPA hazardous waste codes D003 (reactivity) or D001 (ignitability) to this waste stream due to the potential presence of lithium batteries.[25]

- Lithium metal, which is highly reactive with water, was used as an anode in lithium alkaline batteries. As the battery discharges, the lithium metal is converted to lithium oxide, which is not reactive. The materials in this waste group are therefore neither ignitable (D001) nor reactive wastes (D003) due to the potential presence of batteries.

- Considering the cost of lithium batteries in this time frame (pre-1973), there is no reason a user would replace and discard a lithium battery until the voltage dropped. One of the important features of lithium batteries is the constant voltage (i.e., flat discharge curve), which lasts until all of the lithium has been converted into a non-reactive lithium compound. At that time, virtually none of the lithium is present in the reactive metallic state and there is a sharp voltage drop.

- The lithium contained in batteries present in the 1969–1973 generated second stage sludge waste is no longer reactive or ignitable. According to battery manufacturer information, current lithium batteries have shelf lives of approximately 10 to 20 years (early lithium batteries did not have shelf lives of this length). This is the period of time that it takes for a battery to lose its charge (discharge) due to the electrochemical reaction over time. As the result of discharge, the lithium metal is converted to lithium oxide. By design, lithium batteries are constructed with an excess of positive electrode material to assure that there is enough positive material to react with all of the metallic lithium present. Spent (discharged) lithium batteries do not contain lithium metal and are not toxic, not ignitable, nor reactive. Any battery in the pre-1973 drums is currently 32 years old or older. Based on shelf life, any batteries present have completely discharged.

Containers identified with compressed gases or aerosol cans will have the prohibited items treated/removed prior to shipment. Containers with liquid in excess of WIPP WAC limits may be treated with non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro Cel® E).[32, 48] The materials in the waste stream do not meet the definition of reactivity and will not be assigned the D003 waste code.

1.6.2.1.4 Toxicity

Acceptable knowledge indicates the potential presence of metals, arsenic, barium, cadmium, chromium, lead, mercury (including mercury batteries), selenium, and silver in this waste stream. Results from sampling and analysis of the sludge (See Table 2 of the Characterization Information Summary) confirm that cadmium, chromium, lead, and silver are present in the waste stream in quantities that exceed the toxicity limit and that arsenic, barium, mercury and selenium also are present, but at levels less than the toxicity limit. Based on AK, the waste stream will be assigned all of the EPA codes for the metals including those metals with concentrations that did not exceed regulatory limits. EPA HWNs for these metals are D004 through D011.[13]

Toxicity characteristic organic constituents, tetrachloroethylene, trichloroethylene, carbon tetrachloride, chlorobenzene, chloroform, and benzene were identified in the acceptable knowledge baseline document as potential hazardous constituents present in first/second stage sludge waste. Tetrachloroethylene, trichloroethylene, and carbon tetrachloride were used primarily for cleaning and degreasing. Although chlorobenzene and chloroform were not identified as being used at the RF site in AK source documents, both were detected in characterization samples from the waste as reported in the baseline AK document: chlorobenzene was detected in volatile organic compound (VOC) analysis of a single sample of sludge with a totals concentration significantly less than the regulatory level; and chloroform was detected in headspace gas samples collected at the Idaho National Engineering and Environmental Laboratory (INEEL) with a 90% upper confidence limit (UCL_{90}) greater than the PRQL. Benzene was used as a solvent in laboratory operations.

First and Second Stage Sludge waste was generated from an aqueous waste treatment process and only trace amounts of the solvents listed above are present as shown by the waste stream data. Because these constituents were used as solvents and degreasers and all except chloroform are identified as F-listed, the waste is regulated as listed hazardous waste and not characteristic waste. Therefore, the toxicity characteristic waste codes associated with the F-listed constituents were not assigned to the waste.

Chloroform was the only toxicity characteristic organic compound with a UCL_{90} that exceeded the PRQL in headspace gas sampling done in support of the previous characterization activities for Waste Stream Profile Form (WSPF) INW216.001. Other AK and solid sampling data did not indicate that chloroform was an expected constituent of the waste. The toxicity characteristic HWN D022 for chloroform is assigned to the waste as a conservative measure, although solids data does not exceed the PRQL for chloroform.

Based on AK and sampling data, D004–D011 and D022 have been assigned to this waste stream.

A portion of two Rocky Flats Environmental Technology Site (RFETS) waste streams, RF107.01 and RF139.01, was sent to the INEEL for storage and subsequent characterization and treatment by the AMWTP.[37, 39] The AMWTP waste stream BNINW216 includes the IDCs from both of the waste streams (i.e., RF107.01 and RF139.01) and consequently incorporates the HWNs from the two RFETS waste

streams. The AMWTP has applied EPA HWN D022 (chloroform), as a conservative measure because chloroform was the only toxicity characteristic compound with a UCL_{90} that exceeded the PRQL in headspace gas sampling during characterization of WSPF INW216.001. In addition, even though this waste is not ignitable, F003 has been conservatively applied because F003 listed constituents were detected in headspace gases.

1.6.2.2 Listed Waste

1.6.2.2.1 F Listed Codes

Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, chlorobenzene, and 1,1,2-trichloro-1,2,2-trifluoroethane were commonly used for cleaning, degreasing or paint removal, and the sludges may contain residual amounts of these spent solvents. Headspace gas sampling (Table 1A of the Characterization Information Summary) supports the evaluation with the UCL_{90} for 1,1,1-trichloroethane above the PRQL. Sampling and analysis results for solids did not indicate the presence of any organic compounds above regulatory or program-required limits at the UCL_{90}. Carbon tetrachloride, 1,1,1-trichloroethane, methylene chloride and tetrachloroethylene were all detected (above the minimum detection level) in solid samples taken from one or more of the drums (Table 3A of the Characterization Information Summary). The applicable EPA listed waste codes, F001 and F002, have been assigned to the waste stream based on AK as confirmed by sampling and analysis.[13]

Acetone, benzene, butanol, ethyl benzene, ethyl ether, methanol, toluene, and xylene were used as solvents in laboratory operations. The aqueous waste transferred to Building 774 second stage treatment may have contained small quantities of these spent solvents. Headspace gas samples did not have detections of these compounds with UCL_{90}s in either the headspace gas samples or the solid samples greater than the PRQL. Both methanol and xylene were detected in one or more of the solid samples.[13]

Originally, the generator (RF) assigned the F003 code for the non-halogenated, non-toxic F003 constituents (acetone, methanol, and xylene). These compounds are listed for their ignitability. The source wastes containing the F003 constituents were not mixed with any other listed (F001, F002, F004, or F005) constituents or wastes at the point of generation in the laboratory. The F003 waste streams also were discarded into the PWTS as non-hazardous wastewaters, i.e., diluted with water and flushed at the point of generation. Therefore, it was determined that the F003 waste was rendered non-ignitable prior to subsequent discharge and aggregation within the liquid waste stream destined for sludge generation, and the F003 code was not assigned to the waste. However, the 2,639 drums with analytical results from 3,100 m^3 Project do indicate that some drums have headspace gas results with detections of F003 constituents. Acetone was the most common of the F003 constituents with 2,271 drums with levels above the detection level. However the mean concentration was 4.24 part per million volume (ppmv) and the UCL_{90} was 5.00, which is well below the PRQL of 100. After evaluation of the data and the AK for the waste stream and the containers, it was determined that detections of the F003 constituents in containers do not indicate a different waste population. The data confirms the presence of the F003 listed constituents predicted by AK. The concentrations detected do not render the waste ignitable; however, the F003 HWN will be applied to the waste as a conservative measure and to comply with the WAP requirement that if an F-listed waste constituent is detected, the appropriate HWN shall be applied.[13]

The presence of the F005 solvent benzene was confirmed by detects in headspace gas sampling. Toluene was also routinely detected in historical data for the 3,100 m^3 Project. Assignment of the F005

code is appropriate for this waste stream. EPA code assignments applicable to each analyte are included in Table 1A of the Characterization Information Summary.[13]

Spent stripping, cleaning, and plating solutions from electroplating operations in which cyanides were used were treated in Building 774 up until 1982. The solidified aqueous wastes from this building were derived from the treatment of the hazardous electroplating wastes and are assigned EPA hazardous waste codes F006, F007, and F009.[13] Wastes generated after 1982 continue to carry the F006, F007, and F009 codes because the Building 774 treatment process was a RCRA permitted system that never went through closure.[11]

Based on the above discussion first/second stage sludge will be assigned F001, F002, F003, F005, F006, F007, and F009.

1.6.2.2.2 K Listed Codes

The materials in this waste stream do not meet the definition for K-listed EPA codes. K listed EPA codes only apply to hazardous waste from specific sources. The waste is not and does not contain any hazardous waste from specific sources paragraphs (a) of 40 CFR 261.32.

1.6.2.2.3 P- and U-Listed Codes

The materials in this waste stream do not meet the definition for any P- or U-listed codes. P- and U-listed EPA codes only apply to discarded commercial chemical products, and residues of commercial chemical or off-specification products. The waste is not and does not contain any commercial product, or manufacturing chemical intermediate listed under paragraphs (e) or (f) of 40 CFR 261.33 that when they were discarded were mixed with waste oil or used oil or other material that was applied to the land, or used as a fuel, in lieu of their original intended use as described in detail in 40 CFR 261.33. Sludge waste containers may contain small amounts of mercury in internal containers. However, the related P- and U-listed codes are not applicable based on the rationale presented in the following paragraphs.

Acceptable knowledge and solid sampling and analysis data indicate the potential presence of trace amounts of beryllium (less than 1% by weight) in IDC 001 and IDC 002 containers of first/second stage sludge. This characterization is consistent with RFETS WSPF RF139.01 that also identifies beryllium as less that 1% by weight for IDCs 001 and 002.[37]

Acceptable knowledge and solid sampling data from RFETS WSPF RF107.01 suggest that beryllium may exceed 1% by weight for containers of IDC 800.[39] Therefore, in accordance with the WIPP transportation requirements, shipments of IDC 800 containers from this waste stream will be limited to 100 Fissile Gram Equivalents (FGE) per payload container and 100 FGE per payload package.

Beryllium contamination is an integral part of the sludge and is not in powder form. It is not a commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code (P015) for beryllium as defined in 40 CFR 261.33 was not assigned to the waste.

Acceptable knowledge indicates the presence of residual amounts of contaminated mercury in pint bottles in Second Stage Sludge containers generated prior to 1973. The mercury is described as "contaminated," which denotes that it was used and discarded as waste. According to the Backlog Waste

Reassessment Baseline Book, the liquid chemical wastes were compatible wastes, not commercially pure grade chemicals.[9] Therefore, the U-listed code for mercury does not apply.

The U-listed code (U134) for hydrofluoric acid is not applicable to this waste stream. Hydrofluoric acid may have been used during recovery operations in Building 771, but was not disposed of as unused product within the waste stream. As established previously, this waste does not exhibit the characteristic for corrosivity.

The U-listed code (U079) for trans-1,2-dichloroethylene also is not applicable to this waste stream. It is not an expected constituent of this waste and the waste does not meet the definition of a U-listed waste per 40 CFR 261.33. Although trans 1,2 dichloroethylene is currently a WAP target analyte, it was not included as such in the solids sampling analytical results used to characterize this waste. As stated earlier, the solids samples were collected and analyzed under a WAP compliant program, but prior to the time that trans-1,2-dichloroethylene was added to the target analyte list. It was not detected (as a Tentatively Identified Compound [TIC]) in any of the solid samples analyzed under the 3,100 m^3 Project WIPP compliant program and has not been detected as a TIC in any of the RFP wastes headspace gas samples in 25% or more of samples, including first/second stage sludge.

In addition to the pipeline-transferred waste, wastes in containers that were compatible with the first and second stage treatment processes were treated in Building 774. Some of the wastes in containers exhibited hazardous characteristics. However, the EPA codes applicable to these wastes did not include additional codes that were different from those cited for pipeline-transferred wastes. Therefore, no additional listed waste codes apply.

No discarded chemical products, off-specification compounds chemical residues, spill residues, or hazardous waste from specific sources (40 CFR 261.32) were included in this waste stream. Therefore no K, U, or P listings have been applied to the First/Second Stage Sludge waste stream.

1.6.2.3 TSCA Regulated Contaminants

Acceptable knowledge indicates that the first/second stage sludge waste does not contain PCBs as regulated by the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601 et seq.

1.7 Radionuclides

The two most prevalent radioisotopes in waste stream BNINW216 can be any two of the following: ^{239}Pu, ^{240}Pu, ^{235}U, and ^{238}U, depending on the relative mixture of weapons grade plutonium, enriched uranium, and depleted uranium in the waste.[12, 47]

As a minimum, to confirm existing AK data, the ratios of the two most prevalent radionuclides in the isotopic mix are compared.[22] The two most prevalent radionuclides expected in the Building 774 sludge waste drums are ^{239}Pu and ^{240}Pu.

The recommended default mass fraction values of the plutonium isotopes to be used as the AK based values and confirmed during non-destructive assay (NDA) are listed in RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge.[12]

Table 1-4 provides a breakdown of the radionuclides present so that the general isotopic content of the waste is established.

Table 1-4. Nominal compositions of radionuclide mixtures at RFETS (wt %).

Weapons-Grade Plutonium		Enriched Uranium		Depleted Uranium	
^{238}Pu	0.01 – 0.05%	^{231}Th	negligible	^{231}Th	negligible
^{239}Pu	92.8 – 94.4%	^{234}Th	negligible	^{234}Th	negligible
^{240}Pu	4.85 – 6.5%	^{234}U	~0.1%	^{234}U	~0.0006%
^{241}Pu[a]	0.3 – 1.0%	^{235}U	~90 – 93%	^{235}U	~0.2%
^{242}Pu	0.005 – 0.60%	^{236}U	~0.4%	^{238}U	~99.8%
		^{238}U	~5.3%		

a. Includes ^{241}Am daughter product

Mass fraction values for ^{241}Am, ^{233}U, ^{235}U, and ^{238}U previously determined for RFP at the INEEL were based on individual gamma spectrometric measurements. The ^{234}U activities were calculated based on ratios with depleted uranium isotopes. The criteria used for selection and the formulas for determining the ^{234}U mass are presented in RPT-TRUW-07.(12)

Radionuclides such as ^{244}Cm, ^{232}Th, and ^{236}U may be found in RFP wastes.(12) Americium-241, ^{234}U, and ^{237}Np are expected in most of the RFP TRU waste containers due to radioactive decay and ingrowth.(14) Americium-243 and ^{245}Cm, other isotopes resulting from radioactive decay, have also been detected during AMWTP NDA.(15, 20, 21, 38) Potassium-40 may be detected when other radionuclides in a container are significantly lower in concentration. In some cases, ^{40}K has been detected in higher concentrations than ^{239}Pu and contributes to 95% of the radionuclide hazard.(16)

AMWTP will employ payload management practices in accordance with the WAC for waste stream BNINW216. The estimated total waste volume for BNINW216 is 4,431 m^3. The estimated percentage of the waste greater than 100 nCi/g is 92%. The estimated percentage of waste equal to or less than 100 nCi/g is 8%.

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Depending on waste packaging requirements at the time, several combinations of bags and liners were used to prepare 55-gallon drums for shipment. From 1970 to 1972, waste drums were lined with one or two polyethylene drum bags.(26) Use of the 90 mil rigid polyethylene liner began in 1972. The rigid liner was placed in each drum and lined with a polyethylene round bottom drum liner, a polyethylene drum bag and poly vinyl chloride (PVC) O-ring bag, or a single round bottom polyethylene liner placed between the rigid liner and O-ring bag.(27) Some drums packaged after 1972 may not have rigid liners.(19)

When a drum was full, the drum liners were twisted and taped closed, the lid was secured with a bolted ring, and a tamper-indicating device was attached to the drum.(42)

Typically sludge was placed directly and treated (i.e., monolith) directly in drum bags within the drum and have no inner packaging. Approximately 20 to 60 pounds of Portland cement were added to IDC 001 and 002 First/Second Stage Sludge and can be found layered throughout the drum and packaging. During maintenance cleanout operations, First Stage Sludge was removed from tanks and equipment and placed into smaller containers (poly bottles, metal cans, or poly bags, etc.). These smaller containers may have been single or double bagged prior to placement into the drum.[29, 30]

The typical bag closure method was "twisted and taped". Drum stub bags may be identified in containers that were visually examined or cored at WMF-634.[23] A "Filtered bag" method was used for bag closure in drums visually examined at Argonne-West as part of the 3,100 m^3 Project.[17] Lead sheeting may be found within IDC 001 and 002 First/Second Stage Sludge waste containers. Lead tape may have been used to wrap the outside of the rigid liner.

After drums were inspected, one to two quarts of absorbent material (Oil-Dri®) was placed on the top of the outer, sealed polyethylene drum bag (see Section 2.3 for list of constituents associated with Oil-Dri®). This procedure changed in February 1982 when vermiculite was used to fill the void space. The quantity of vermiculite varied from 3 to 12 pounds according to the amount of waste contained in each drum.[42] The type, amount, and expected time-frame of absorbent use may vary.[24, 28] Aquaset® or vermiculite in varying amounts was added to drums of waste during the 3,100 m^3 Project recovery operations (see Section 2.3 for list of constituents associated with Aquaset).[32–36]

Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate.[45]

Some of the 55-gallon drums may be overpacked into 83- or 85-gallon drums. Either four 55-gallon drums or two 83- or 85-gallon drums, with either the drum lid filters or the drum lids removed, may be direct loaded into a standard waste box (SWB) equipped with approved filters.

2.2 Flammability Considerations

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for VOCs, hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 part per million (ppm) flammable VOCs, are evaluated for compliance with applicable CH TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, Central Characterization Project (CCP) Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[44]

2.3 Tradename Index

Tradename	Chemical Constituents
Aquaset	Sodium montmorillonite clay[32]
Aquaset II-G®	Granular sepiolite clay (granular)[48]
Micro-Cel®E	Synthetic calcium silicate[48]
Oil-Dri	Crystalline silica and clay minerals, e.g., montmorillinite, bentonite[33]
Ox Out 536	Water, ammonium bifluoride, and nitric acid[35]
Portland Cement	Tricalcium silicate, dicalcium silicate, tricalcium aluminate, calcium alumino ferrite, gypsum, calcium oxide, magnesium oxide, sodium sulfate, potassium sulfate, crystalline quartz silica, trace chromium[35]
PuriFloc A23 Flocculant	Hydrolyzed polyacrylamide, sodium carbonate, sodium sulfite, sodium sulfate, proprietary ingredients, water[36]

3.0 PROCESS FLOW DIAGRAMS

This section contains process flow diagrams available for the First/Second Stage Sludge waste stream.

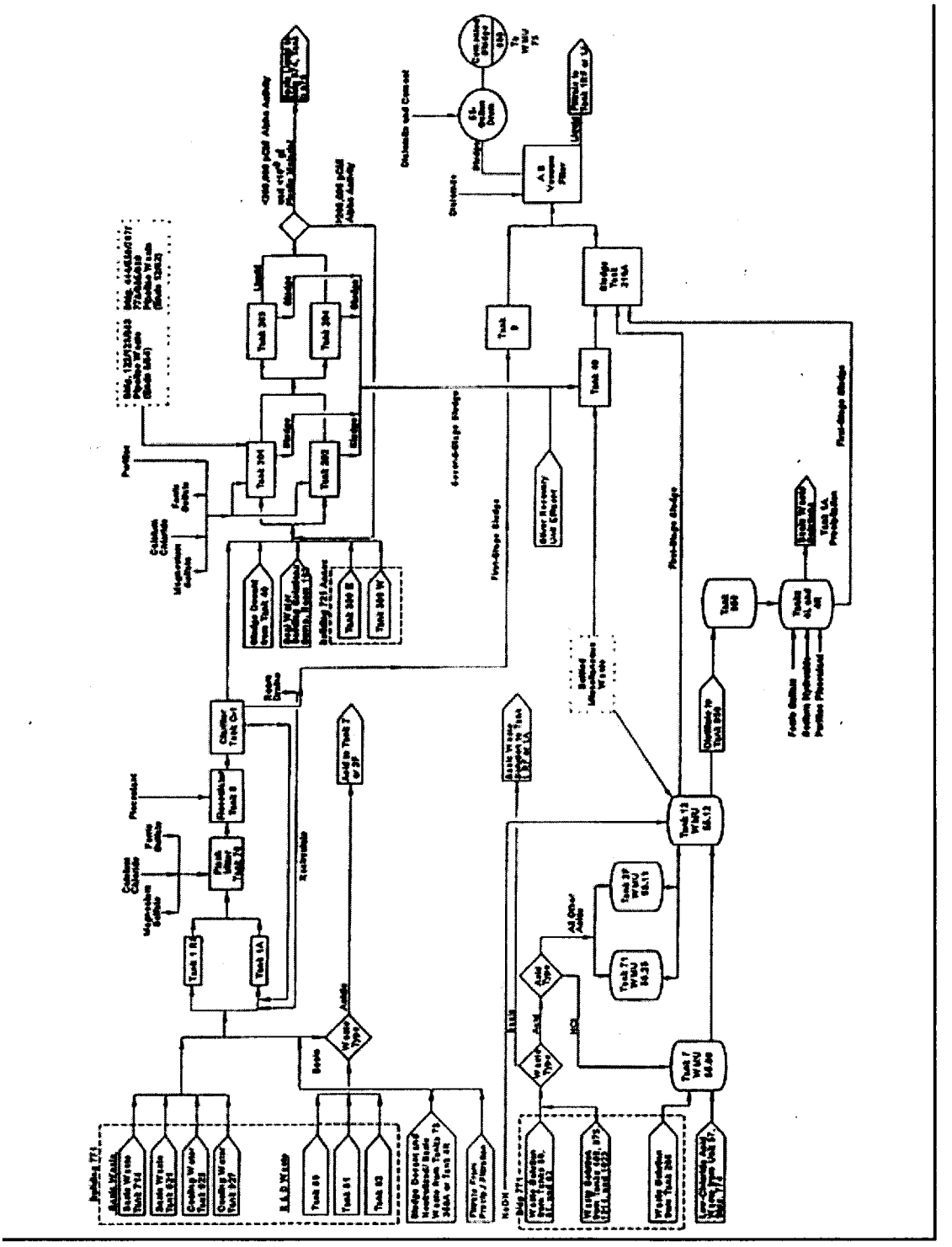


Figure 3-1. Building 774 aqueous waste treatment process.

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BNENL-211

AK Source Document / Rev. Number : ENEL-96/0280, Rev. 3

hwn	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	X			X	✔
F002	X	X	X			X	✔
F003		X				X	✔
F004							✔
F005	X	X				X	✔
F006	X	X				X	✔
F007	X	X				X	✔
F009	X	X				X	✔
D004	X	X		O		X	✔
D005	X	X		O 1/22/04		X	✔
D006	X	X	X	O N/A	X	X	✔
D007	X	X	X			X	✔
D008	X	X	X			X	✔
D009	X	X		O	X	X	✔
D010	X	X		O		X	✔
D011	X	X	X			X	✔
D022	X	X		O		X	✔
D032							✔

AK Expert: Sheila Hailey Sheila Hailey Date: 2/11/04
Print/Sign

Site Project Manager: Sheila Hailey Sheila Hailey Date: 2/11/04
Print/Sign

Waste Stream or Waste Type Description: First/Second Stage Sludge

Waste Stream or IDC Number: BNINW216

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C006A, C155A, C162A, C184A, C522A, C618A, C822S, C842S, D061A, P001A, P006A, P014A, P024A, P041A, P052A, P053A, P061A, P071A, P074A, P075A, P1031A, P109A, P113A, P124A, P126A, P127A, P219A, P226A, P319A, P368A, P402A, P421A, P431A, P432A, P435S, P442A, P443A, P496A, P621A, P649A, P665A, P667A, P671S, P717A, P733S, P741A, P744A, P746A, P755A, P759S, P847A, P888A, P953A, U037A, U043A, U053A, U059A, U069A, U119A, U215A, U223A
Waste stream volume and time period of generation.	WS2	C288A, C499A, C522A, C534A, C535A, C543S, C620A, C842S, C855A, C856A, C861A, C875S, C877A, D061A, P016A, P024A, P052A, P061A, P090A, P1031A, P113A, P127A, P164A, P194A, P198A, P226A, P246A, P318A, P319A, P364A, P365A, P368A, P400A, P402A, P421A, P424A, P431A, P432A, P440A, P442A, P443A, P567A, P621A, P649A, P665A, P671S, P717A, P743A, P744A, P746A, P755A, P758A, P759S, P826A, P838A, P847A, P888A, U043A, U059A, U069A, U122A, U127A, U215A, U223A, U235S
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C008A, C010A, C014A, C031A, C175A, D034A, P001A, P004A, P012A, P013A, P014A, P015A, P016A, P024A, P039A, P040A, P041A, P042A, P052A, P061A, P071A, P074A, P078A, P109A, P124A, P126A, P164A, P226A, P319A, P368A, P402A, P421A, P431A, P432A, P435S, P442A, P443A, P621A, P649A, P665A, P667A, P671S, P717A, P743A, P744A, P746A, P758A, P759S, P888A, U053A, U084A, U093A, U119A
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C063A, C065A, C155A, C162A, C245A, C311A, C312A, C328A, C512A, C546S, D031A, D061A, D070A, D076A, P004A, P006A, P024A, P033A, P042A, P052A, P061A, P062A, P065A, P068A, P074A, P075A, P076A, P079A, P109A, P122A, P124A, P125A, P128A, P129A, P130A, P207A, P219A, P226A, P307A, P310A, P319A, P359A, P365A, P368A, P393A, P401A, P402A, P409A, P421A, P431A, P432A, P435S, P442A, P443A, P496A, P621A, P649A, P665A, P667A, P717A, P744A, P759S, P808S, P888A, U029A, U030A, U037A, U043A, U047A, U084A, U093A, U119A

Implementing Document: MP-TRUW-8.13

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C063A, C196A, C312A, C315A, C316A, C325A, C499A, C504A, C534A, C546S, C566S, C620A, C840S, C841S, C842S, D061A, P001A, P004A, P006A, P012A, P013A, P014A, P015A, P016A, P022A, P024A, P039A, P042A, P043A, P052A, P061A, P063A, P064A, P065A, P074A, P075A, P090A, P109A, P113A, P124A, P141A, P207A, P217A, P219A, P226A, P319A, P358A, P365A, P368A, P372A, P393A, P399A, P402A, P421A, P431A, P432A, P435S, P440A, P442A, P443A, P465A, P496A, P567A, P621A, P649A, P665A, P667A, P670A, P717A, P741A, P744A, P746A, P755A, P758A, P759S, P838A, P847A, P881S, P888A, U093A, U119A, U220S, U223A, U230A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C065A, C079A, C208A, C212A, C224A, C245A, C311A, C328A, C566S, C607A, C840S, C841S, D006A, D026A, D031A, D064A, D070A, D076A, D077A, D078A, P012A, P013A, P015A, P016A, P022A, P052A, P061A, P080A, P122A, P124A, P125A, P207A, P217A, P219A, P226A, P307A, P310A, P365A, P368A, P393A, P402A, P421A, P431A, P432A, P435S, P440A, P442A, P443A, P649A, P665A, P667A, P668S, P717A, P733S, P743A, P744A, P756A, P838A, U029A, U030A, U046A, U053A, U059A, U060A, U082A, U093A, U104A
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C130A, C281A, C285A, C286A, C506A, C551A, C552S, C566S, C840S, C841S, D051A, P024A, P053A, P061A, P075A, P090A, P164A, P189A, P194A, P198A, P226A, P227A, P229A, P240A, P307A, P322A, P368A, P398A, P402A, P431A, P432A, P435S, P440A, P442A, P443A, P496A, P611A, P621A, P649A, P665A, P743A, P744A, P745A, P755A, P759S, P838A, P888A, U220S, U235S
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C201A, C202A, C203A, C208A, C224A, C321A, C511A, C516A, C842S, D070A, P001A, P012A, P013A, P015A, P016A, P022A, P024A, P063A, P226A, P319A, P358A, P368A, P370A, P372A, P399A, P402A, P431A, P432A, P442A, P443A, P465A, P649A, P665A, P667A, P733S, P741A, P744A, P888A, U215A, U223A

<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

All required AK information has been compiled and tracking numbers assigned.

AK Expert: _____ Date: 9-16-10
Print/Sign Date

Site Project Manager: Steve Carpenter Date: 9.16.10
Print/Sign

LDR NOTIFICATION- IDCs 001, 002, 741, 742 and 800

WASTE STREAM BNINW216

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, D022, F001, F002, F003, F005, F006, F007, F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	D022	September 19, 1996
	F001	Nov 8, 1986
	F002	Nov 8, 1986
	F003	Nov 8, 1986
	F005	Nov 8, 1986
	F006	July 8, 1989
	F007	July 8, 1989
	F009	July 8, 1989

DOE F 1325.8

United States Government | Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: MAR 0 8 2004

REPLY TO ATTN OF: CBFO:NTP:KWW:VW:04-1059:UFC:5822

SUBJECT: Approval of AMWTP WSPF BNINW216

TO: Brian Edgerton, DOE-ID
Richard Cullison, DOE-ID

The Carlsbad Field Office (CBFO) has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW216. We have concluded that the WSPF is complete and that the waste stream determinations were made in accordance with CBFO procedures and guidance. The CBFO therefore approves the WSPF as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7357.

for Kerry W. Watson

Kerry W. Watson
CBFO Assistant Manager
Office of National TRU Program

cc:
R. McCallister, CBFO *ED
E. Schweinsberg, BNFL *ED
A. Dobson, BNFL *ED
M. Strum, WTS *ED
D. Standiford, WTS *ED
R. Chavez, WRES *ED
WIPP Operating Record
L. Greene, WRES
CBFO M&RC

*ED denotes Electronic Distribution

P402A

BNFL Inc.

785 Lindsay Blvd
Idaho Falls, ID 83402
Tel: (208) 524-8484
Fax: (208) 524-4442

March 8, 2004

Rick Chavez
WRES
4021 National Park Highway
Carlsbad, NM 88221

Subject: **Transmittal of First/Second Stage Sludge Waste Stream Profile, BNINW216 - EPS-039-2004**

Dear Mr. Chavez:

Attached are the Waste Stream Profile Form BNINW216 and *Acceptable Knowledge Summary for First/Second Stage Sludge*, BNFL-5232-RPT-TRUW-09. If you have any questions or concerns, please contact me at 208 557-7164 or Sheila Hailey of my staff at 208 557-7127.

Sincerely,

Eric P. Schweinsberg, TRU Program Manager
Advanced Mixed Waste Treatment Project

Attachment

cc:
Alan Dobson (w/o attachment)
Jeff May (w/o attachment)
David J. Swale (w/o attachment)
Kerry Watson (w/o attachment)
Jerry Wells
Martin Wheeler (w/o attachment)
AMWTP Document Control

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P420A	2. Revision: 7

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BNINW218 Building 374 Sludge Waste Stream Profile Package, Rev. 1 September 17, 2004, Change Notice #1, February 2, 2005, Change Notice # 2, June 14, 2007 and Change Notice # 3, April 2, 2008

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 3/19/04

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM2, WM3, WM5, WM6	RF	all	Characterization information for waste stream BNINW218 (Building 374 sludge generated at Rocky Flats) submitted to and approved by CBFO.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	RF-007, RF-803, RF-807	all	Characterization information for waste stream BNINW218 (Building 374 sludge generated at Rocky Flats) submitted to and approved by CBFO.

9. Document Summary:

FOR INFORMATION ONLY

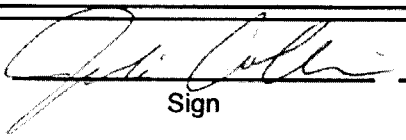
Implementing Document: MP-TRUW-8.13

Characterization information for waste stream BNINW218 (Building 374 sludge generated at Rocky Flats) submitted to and approved by CBFO. This package includes the following documentation:
* CBFO Approval letter for Change Notice # 3 for BNINW218 Rev. 1, April 2, 2008
* Change Notice # 3 for BNINW218 Rev 1, March 27, 2008
* CBFO Approval letter for Change Notice # 2 for BNINW218 Rev. 1, June 14, 2007
* Change Notice # 2 for BNINW218 Rev 1, June 13, 2007
* CBFO Approval letter for Change Notice # 1 for BNINW218 Rev. 1, February 2, 2005
* Change Notice # 1 for BNINW218 Rev 1, January 27, 2005
* CBFO Approval letter of WSPF BNINW218, Rev. 1, September 17, 2004
* Waste Stream Profile Form 1187 and CIS for BNINW218, Rev. 1, September 17, 2004
* Acceptable Knowledge Summary, RPT-TRUW-15, Rev. 11, June 27, 2012
* Waste Stream Profile Form HWN Assignment Worksheet, Form 1187 for BNINW218, March 1, 2004
* TRU Waste Stream AK Documentation Checklist, Form 1067 for BNINW218, July 22, 2009
* LDR Notification - IDCs 007, 803, 807, Waste Stream BNINW218
* CBFO Approval letter of WSPF BNINW218, Rev. 0, March 19, 2004
* BNFL transmittal letter to CBFO, March 18, 2004
* E-mail correspondence from CBFO to AMWTP document services. CBFO approval RPT-TRUW-15, Revision 10A, July 14, 2009

P420A Revision 7 updates the record to include revised AK Summary Report RPT-TRUW-15, Rev. 11, June 27, 2012

10. Source Document Data Limitations (if any):

The above documents address all of the Waste Management Program (WM) elements by providing either a summary of the information or by identifying a reference to the document(s) that contain the information. Therefore, the WM elements identified are for those elements that are actually addressed in the package.

11. AK Expert:	Julie Collins		10/2/2012
	Print	Sign	Date

P420A R7

Washington
TRU Solutions LLC

WRES:08:147
UFC:5822.00

April 2, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #3) BUILDING 374 SLUDGE (BNINW218, REV. 1)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW218, Rev. 1, Building 374 Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:ks

Enclosure

Update for WIPP Operating Record (Change Notice # 3)

Building 374 Sludge (BNINW218, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW218, Revision 1. This waste stream is Building 374 Sludge and was approved by DOE/CBFO on September 17, 2004. Change Notice #1 was approved February 2, 2005 and Change Notice # 2 was approved June 14, 2007.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval dates January 23, 2007 and January 18, 2008.

2. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Add the following procedure:

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06.

3. **WSPF Form-1195, Note: (4)**

   Revise WSPF Form 1195, Note: (4) to read:

   ACMM-2901 was replaced by the CCP-TP-182 procedure. Future analysis conducted in support of ongoing lot characterization will utilize the CCP-TP-182 procedure

4. **AK Summary, Building 374 Sludge (RPT-TRUW-15), Report Number**

   Revise the report AMWTP-RPT-TRUW-15 to RPT-TRUW-15

Update for WIPP Operating Record (Change Notice # 3)
Building 374 Sludge (BNINW218, Rev. 1)

5. **AK Summary, Building 374 Sludge (RPT-TRUW-15), References**

Revise the following references:

6. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008.

8. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report -2004, U.S. Department of Energy, Carlsbad, New Mexico

21. NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, current revision.

22. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, October 29, 2007

38. Material Safety Data Sheet for Ox Out 536; ChemClean Corporation, March 5, 1999 [P129A]

42. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

47. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [P672A]

Delete reference number 51.

6. **AK Summary, Building 374 Sludge (RPT-TRUW-15), Section 1.2.5, Generation Dates**

Revise the second sentence in the second paragraph as follows:

Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization/treatment activities).

7. AK Summary, Building 374 Sludge (RPT-TRUW-15), Section 1.2.7, TWBIR Information

Revise the current TWBIR numbers to the following: IN-W218.909 and IN-W220.114

Update for WIPP Operating Record (Change Notice # 3)

Building 374 Sludge (BNINW218, Rev. 1)

8. Summary, Building 374 Sludge (RPT-TRUW-15), Section 1.3 Physical Waste Form

Section 1.3.1, Revise Table 1.1 as follows:

1995 TWBIR Number(s)	2004 TWBIR Number(s)	IDC	WMC	Description
IN-W218.109 IN-W218.900	IN-W218.909	007	S3121	This waste consists of moist sludge mixed with Portland cement or a diatomite and Portland cement mixture. The moist sludge was produced from 1982 to 1987.
IN-W220.114 IN-W220.925	IN-W220.114	803[a]	S3150	This waste consists of sludge dried in a dryer, and mixed with Portland cement and water, which cured to form a solid monolith. IDC 803 was generated for about one year (1986-1987). ANL-E waste described in IN-W220 is excluded from this waste stream.
IN-W220.114 IN-W220.925	IN-W220.114	807[a,b]	S3121	This waste consists of sludge that bypassed the dryer and was mixed with diatomite and Portland cement. IDC 807 sludge is the same as the IDC 007 sludge generated using the bypass system. IDC 807 was generated from March 1987 to 1991. ANL-E waste described in IN-W220 is excluded from this waste stream.

9. AK Summary, Building 374 Sludge (RPT-TRUW-15), Section 1.6.2, Hazardous Determination

Add the following section:

K-Listed Codes:

The materials in this waste stream do not meet the definition for K-listed EPA codes. K-listed EPA codes only apply to hazardous waste from specific sources. The waste is not and does not contain any hazardous waste from specific sources paragraphs (a) of 40 261.32.

Update for WIPP Operating Record (Change Notice # 3)

Building 374 Sludge (BNINW218, Rev. 1)

10. AK Summary, Building 374 Sludge (RPT-TRUW-15), Section 1.7, Radionuclides

Change the first paragraph as follows:

The WIPP-tracked radionuclides of concern for this waste are: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. [1, 46] The remaining WIPP-tracked radionuclides, ^{137}Cs, and ^{90}Sr, are not expected to be present in measurable quantities in this waste. [40] The Building 374 sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [9, 42]

11. AK Summary, Building 374 Sludge (RPT-TRUW-15), Section 2.2 Flammability Considerations

Replace the entire paragraph with the following:

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with CCP-CH-TRAMPAC, CCP-PO-003. [47]

Reason/Justification for the Change

The audit report approval dates were updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

WSPF Form-1195 Note 4: ACMM-2901 was replaced by the CCP-TP-182 procedure which resulted in the modification of WSPF Form-1195, Note: (4) to reflect the use of CCP-TP-182 procedure.

AK Summary report number was changed to reflect changes in document control protocols.

The AK Summary for Building 374 Sludge reference list was updated to identify references that support the information revised or updated in the AK Summary.

Update for WIPP Operating Record (Change Notice # 3)

Building 374 Sludge (BNINW218, Rev. 1)

AK Summary Section 1.2.5, Generation Dates, was changed to provide clarification that pack dates later that 1988 are the result of repackaging.

Section 1.2.7, TWBIR numbers have been modified to reflect current TWBIR numbers.

Section 1.3.1, Table 1 was modified to reflect correlation of 1995 with 2004 TWBIR numbers.

Section 1.6.2, Hazardous Determination, K-Listed Code information added to reflect compliance with in the requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section B4-1.

AK Summary Section 1.7, Radionuclides was revised to reflect compliance with requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section 3.1.6.

AK Summary Section 2.2, Flammability Consideration was updated to reflect new TRAMPAC procedure and to provide consistency with other AK Summaries.

Update for the WIPP Operating Record (BNINW218) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg, SPM	3/27/08

Washington
TRU Solutions LLC

WRES:07:103
UFC:5822.00

June 14, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #2) BUILDING 374 SLUDGE (BNINW218, REV. 1)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW218, Rev. 1, Building 374 Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:rlj

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7300 • Fax: (505) 234-7061

Update for WIPP Operating Record (Change Notice # 2)

Building 374 Sludge (BNINW218, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW218, Revision 1. This waste stream is Building 374 Sludge. Rev. 1 was approved by DOE/CBFO on September 17, 2004 and Change Notice #1 was approved February 2, 2005.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval dates of: 4/1/05, 12/9/05, and 1/23/07.

2. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Replace the documents used for WAP certification with the most current revisions:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 8, 1/24/07

3. **WSPF Form-1195, Waste Stream Information, Applicable TRUCON Content Codes**

   Delete the existing list of TRUCON Codes and replace with ID111/ID211.

4. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item: See Section 1.4.4, Table 1-3 of the AK summary. This is listed as item 13 in the Change Notice.

5. **AK Summary, Building 374 Sludge, Report Number**

   Revise the report number from BNFL-5232-RPT-TRUW-15, Rev. 2 to RPT-TRUW-15, Rev. 7.

6. **AK Summary, Building 374 Sludge, References**

   Delete existing reference 22 and replace with the following:

   22. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, Rev. 6, November 15, 2006

Update for WIPP Operating Record (Change Notice # 2)
Building 374 Sludge (BNINW218, Rev. 1)

Add additional references as follows:

41. MP-TRUW-8.2, Quality Assurance Project Plan

42. Absorbent material (Oil Dri®) not expected in RD-IC 807 waste containers [AKR-04-48]

43. Absorbent material (Vermiculite) not expected in RD-IC 807 waste containers [AKR-04-83]

44. RPT-TRUW-05, Waste Matrix Code Reference Manual

45. Flammable VOC Reporting in HGAS Batches Inconsistent With AK Summary for BNINW218 [AKR-05-212]

46. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant [P649A]

47. Memorandum from Carolyn Abbott to Eric Schweinsberg, Addition of Methyl Chloride (Chloromethane) as a Target Analyte in Headspace Gas Analysis of BNINW216 and BNINW218 Waste, July 13, 2005 [C512A]

48. Memorandum to file, Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste, January 19, 2007 [C534A]

49. MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation

50. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS) [U127A]

51. MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)

7. **AK Summary, Building 374 Sludge, Basic Waste Stream Information**

Renumber existing sections 1.2.2-1.2.9 as 1.2.3-1.2.10 and add a new section 1.2.2 as follows:

1.2.2. EPA Hazardous Waste Numbers

A. *Toxicity Characteristic Codes:* D006, D007, D008, D009, D010, D011, D032

B. Listed Waste Codes: F001, F002, F005, F006, F007, and F009

Update for WIPP Operating Record (Change Notice # 2)
Building 374 Sludge (ENINW218, Rev. 1)

8. **AK Summary, Building 374 Sludge, Generation Dates**

Delete 1981-1988 and replace with 1982-1988

Delete IDC 007: 1981– 1987 [4] and replace with IDC 007: 1982 – 1987 [4]

9. **AK Summary, Building 374 Sludge, TRUCON Codes**

Delete the existing list of TRUCON Codes and replace with ID111/ID211 [3, 5, 6]

10. **AK Summary, Building 374 Sludge, Table 1-1 Physical Waste Form Descriptions for Bldg. 374 Sludge**

Delete the existing Table 1-1 and Note and replace with the following:

Table 1-1. Physical Waste form Descriptions for Bldg. 374 Sludge.

TWBIR Number(s)	IDC	WMC	Description
IN-W218.109 IN-W218.909	007	S3121	This waste consists of a moist sludge mixed with Portland cement or a diatomite and Portland cement mixture. The moist sludge was produced from 1982 to 1987.
IN-W220.114 IN-W220.925	803[a]	S3150	This waste consists of sludge dried in a dryer, and mixed with Portland cement and water, which cured to form a solid monolith. IDC 803 was generated for about one year (1986-1987). ANL-E waste described in IN-W220 is excluded from this waste stream.
IN-W220.114 IN-W220.925	807[a,b]	S3121	This waste consists of sludge that bypassed the dryer and was mixed with diatomite and Portland cement. IDC 807 sludge is the same as the IDC 007 sludge generated using the bypass system. IDC 807 was generated from March 1987 to 1991. ANL-E waste described in IN-W220 is excluded from this waste stream.

a. IDCs 803 and 807 are not specifically identified in the TWBIR; however, the containers of IDCs 803 and 807 wastes were originally shipped from Rocky Flats to INL using 111 for the content code which is included in IN-W220.

b. Prior to March 1987, IDC 807 was assigned to cemented incinerator sludge generated in Building 771, After March 1987, IDC 807 was assigned to the sludge previously identified under IDC 007. Letters a and b are used to distinguish between the IDC 807 sludge in some AK documents, with a denoting Building 374 sludge after 3/87 and b for incinerator sludge generated before 3/87. IDC 807 is assigned only to Building 374 by-pass sludge in the Waste

11. **AK Summary, Building 374 Sludge, Waste Generating Process**

Add the following information to the end of the last paragraph of section 1.4.2.4:

Oil Dri® and vermiculite have also been noted in IDC RF 807 wastes. IDC RF 807 drums containing Oil Dri® have been identified during real-time radiography (RTR) examination at the AMWTP. The estimated volumes of Oil Dri® and vermiculite did not exceed 50% of the overall volume within the waste containers. [42, 43]

Update for WIPP Operating Record (Change Notice # 2)
Building 374 Sludge (BNINW218, Rev. 1)

12. **AK Summary, Building 374 Sludge, Material Inputs/Waste Material Parameters**

Change the section title from Material Inputs/Waste Material Parameters to Material Inputs.

13. **AK Summary, Building 374 Sludge, Waste Material Parameters**

Delete Section 1.4.3.3 *Waste Material Parameters* and Tables 1-3, 1-4, and 1-5 and replace it with the following:

1.4.4. Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BNINW218, waste material parameter data from 100% of the completed RTR and VE of Building 374 Sludge waste drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 95% of the estimated number of drums for this waste stream. The Building 374 Sludge waste was generated at RF from 1982 through 1988. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1982 to 1988; therefore, the WTS data is representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Building 374 Sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation and are summarized in Table 1-3.[46, 48, 49, 50]

Table 1-3. Estimated Waste Material Parameter Weights per Unit of Waste for Building 374 Sludge (BNINW218).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	6
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	1
Inorganic matrix	93

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids.[2, 46, 48]

Update for WIPP Operating Record (Change Notice # 2)

Building 374 Sludge (BNINW218, Rev. 1)

14. **AK Summary, Building 374 Sludge, Prohibited Items**

Add the following information to the end of the existing bullet list:

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of *MP-TRUW-8.2, Quality Assurance Project Plan*, unless specifically approved through a Class 3 permit modification. [41]

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. [41]

15. **AK Summary, Building 374 Sludge, Hazardous Determination**

Add the following information to the "Listed Waste:" subsection between "F Codes" and "P and U Listed Codes":

K-Listed Codes:

The materials in this waste stream do not meet the definition for K-listed EPA codes. K-listed EPA codes only apply to hazardous waste from specific sources. The waste is not and does not contain any hazardous waste from specific sources paragraphs (a) of 40 CFR 261.32.

16. **AK Summary, Building 374 Sludge, Radionuclides**

Delete the first, second and third paragraph of the section.

Add the following four paragraphs at the beginning of the section:

The WIPP-tracked radionuclides of concern for this waste are: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. [1,46] The remaining WIPP-tracked radionuclides, ^{137}Cs, and ^{90}Sr, are not expected to be present in measurable quantities in this waste. [40]

As a minimum, to confirm existing AK data, the ratios of the two most prevalent radionuclides in the isotopic mix are compared. [22] The two most prevalent radionuclides by weight expected in the Building 374 sludge waste drums are ^{239}Pu and ^{240}Pu. [9]

The recommended default mass fraction values of the plutonium isotopes to be used as the AK based values and confirmed at the AMWTP during non-destructive assay (NDA) are listed in RPT-TRUW-07, *Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge*. [9]

Update for WIPP Operating Record (Change Notice # 2)

Building 374 Sludge (BNINW218, Rev. 1)

Mass fraction values for ^{241}Am, ^{233}U, ^{235}U, and ^{238}U previously determined for Rocky Flats at the Idaho National Engineering and Environmental Laboratory (INEEL) were based on individual gamma spectrometric measurements. The ^{234}U activities were calculated based on ratios with depleted uranium isotopes. The criteria used for selection and the formulas for determining the ^{234}U mass is presented in RPT-TRUW-07. [9]

Add a paragraph to the end of the section as follows:

AMWTP will employ payload management practices in accordance with the WIPP-WAC Appendix B, for waste stream BNINW218. The estimated total waste volume for BNINW218 is 416m^3. The estimated percentage of the waste greater than 100 nCi/g is 66%. The estimated percentage of waste less than or equal to 100 nCi/g is 34%. [9]

17. **AK Summary, Building 374 Sludge, Shipping Considerations**

Delete Sections 2.1, 2.2, 2.3, and 2.4 and replace with the following:

2.1 Waste Packaging

Depending on waste packaging requirements at the time, several combinations of bags and liners were used to prepare 55-gallon drums for shipment. Use of the 90-mil rigid polyethylene liner began in 1972. The rigid liner was placed in each drum and lined with a polyethylene round bottom drum liner, a polyethylene drum bag and PVC O-ring bag, or a single round bottom polyethylene liner placed between the rigid liner and O-ring bag. Some drums packaged after 1972 may not have rigid liners.

When a drum was full, the drum liners were twisted and taped closed, the lid was secured with a bolted ring, and a tamper-indicating device was attached to the drum. Approximately one liter of Oil Dri® was placed in the bottom of the O-ring bag. One liter of Oil Dri® was placed on top of the O-ring bag inside the polyethylene drum bag (See Table 2.1 for list of constituents associated with Oil Dri®).

Typically sludge was placed directly and treated (i.e., monolith) directly in drum bags within the drum and have no inner packaging or may be layered. Diatomite and cement were added to the waste in various amounts. [26] Approximately 20 to 60 pounds of Portland cement were typically added to IDC 007 and 807 Sludge and can be found layered throughout the drum and packaging. After April, 1986, a 1:1 ratio of diatomite and Portland cement was used in a 7:1 sludge/absorbent ratio. (See Table 2-1 for list of constituents associated with Portland cement).

The typical bag closure method was "twisted and taped". Drum stub bags may be identified in containers that were visually examined or cored at WMF-634. [20] A "Filtered bag" method was used for bag closure in drums visually examined at Argonne-West as part of the 3,100 m^3 Project. [23]

After drums were inspected, one to two quarts of absorbent material (Oil-Dri®) was placed on the top of the outer, sealed polyethylene drum bag.[2, 15, 16, 17] This procedure changed in February 1982 when vermiculite was used to fill the void space. The quantity of vermiculite varied from 3-12 pounds according to the amount of waste contained in each drum. The type, amount, and expected time-frame of absorbent use may vary. Aquaset® or vermiculite in varying amounts was added to drums of waste during the 3,100 m^3 Project recovery operations. (See Table 2-1 for list of constituents associated with Aquaset®).

Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate.[44]

2.2 Flammability Considerations

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC).[51] Methyl Chloride (chloromethane) has been added as a target analyte to HSG analyses for this waste stream. Methyl chloride was not originally identified as a target analyte in HSG of RF waste containers. Based on a review of AK, methyl chloride was found in RF AK documents as a chemical used at the facility. During the 3,100 m^3 project, methyl chloride was detected as a TIC in HSG of several of the RF waste streams and was added as a target analyte when the detection occurred in 25% of the HSG samples.[47]

18. AK Summary, Building 374 Sludge, Tradename Index

Delete the section title "2.5 Tradename Index" and replace with "Table 2-1 Tradename Index".

Update for WIPP Operating Record (Change Notice # 2)

Building 374 Sludge (BNINW218, Rev. 1)

Reason/Justification for the Change

The NMED audit report approval dates were updated to reflect the most recent revisions.

The documents used for WAP certification have been revised to reflect the most recent revisions.

TRUCON Content Codes have been revised to delete the alpha suffixes.

A new item entitled *Waste Material Parameter Weight Estimates per Unit of Waste* was added to the WSPF and the AK Summary report to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-12b.

The AK Summary report number was changed to reflect changes in contractor operations and document control protocols.

The AK Summary reference list was updated to identify references that support the information revised or updated in the AK Summary.

A new section 1.2.2 was added to include EPA Hazardous Waste Numbers to address a comment identified during a CBFO audit. Existing sections 1.2.2 through 1.2.9 were renumbered as 1.2.3-1.2.10 as a result of this addition.

The generation dates and description for IDC 007 in Table 1-1 were modified to reflect actual dates for IDC 007 waste within AMWTP inventory.

Modified date of generation within Table 1-1 to ensure consistency. Added footnote "a" within Table 1-1 to provide clarification on IDC numbers not specifically addressed in the TWBIR. Also changed existing "Note" within Table 1-1 to footnote "b" for consistency.

The waste generating process section was revised to include Oil Dri and vermiculite identified within BNINW218 waste.

The section title "Material Inputs/Waste Material Parameters" was changed to "Material Inputs" to accurately reflect information within the section. The existing waste material parameters section and associated tables were deleted as the information was rewritten and moved to a new section.

Two additional waste prohibitions were added to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B-1c.

A paragraph for discussion of K Listed Hazardous Waste Numbers was added to meet the requirements of MP-TRUW-8.13.

Update for WIPP Operating Record (Change Notice # 2)

Building 374 Sludge (BNINW218, Rev. 1)

The radionuclide information was revised to address current WAC requirements and to more accurately reflect the current estimates documented in the AK Summary report for TRU waste less than or equal to 100 nCi/g and greater than 100 nCi/g.

Waste packaging information was revised to consolidate previously identified packaging configurations (where duplication existed) and to include packaging configurations not previously identified (absorbent).

Flammability considerations were revised to clarify the current method used for determining flammability as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-11a.

The Section 2.5 (Tradename Index) was deleted and the deleted Tradename Index information was used to develop Table 2.1.

Update for the WIPP Operating Record (BNINW218) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Steve Carpenter Alt. SPM Printed Name and Title	6.13.07 Date

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

FEB 02 2005

Mr. Steve Zappe, WIPP Project Leader
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2905 E. Rodeo Park Drive, Bldg. 1
Santa Fe, NM 87505

Subject: Transmittal of Approved Change Notice Number 1 for BNFL Waste Stream Profile Form Number BNINW218, Rev. 1, Building 374 Sludge

Dear Mr. Zappe:

The Carlsbad Field Office (CBFO) has approved the change notice number 1 for BNFL Waste Stream Profile Form Number BNINW218, revision 1. Enclosed is a copy of the approved form as required by Section B-4(b)(1) of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

If you have any questions on this matter, please contact me at (505) 234-7357 or (505) 706-0066.

Sincerely,

Kerry W. Watson, Director
Office of Characterization and Transportation

Enclosure

cc: w/o enclosure

J. Kieling, NMED	*ED
J. Bearzi, NMED	ED
C. Walker, TechLaw	ED
M. Strum, WTS	ED
R. Chavez, WRES	ED
L. Greene, WRES	ED
K. Zbryk, WRES	ED
W. Ledford, CTAC	ED
WIPP Operating Record	
CBFO M&RC	

*ED denotes Electronic Distribution
CBFO:OCT:KWW:GB:05-0194:UFC 5822.00

Update for WIPP Operating Record (Change Notice #1)
Building 374 Sludge (BNINW218, Rev. 1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BNINW218, Revision 1. This waste stream is Building 374 Sludge and was approved by DOE/CBFO on September 17, 2004.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **AK Summary, Building 374 Sludge (BNFL-5232-RPT-TRUW-15), Section 1.7, Radionuclides**

   Delete paragraph 3 of this section that provides the following information:

   ^{137}Cs was detected in Rocky Flats waste during AMWTP NDA confirmatory testing. ^{137}Cs and ^{90}Sr were known to have been used at Rocky Flats in small quantities during research and analytical activities, but were not expected to be present in detectable amounts or at levels that would require reporting. The presence of ^{90}Sr is predicted on the presence of ^{137}Cs, and its activity and mass are determined using a default ratio scaling factor based on ^{137}Cs.

2. **AK Summary, References**

   Insert the following reference, as number 40, to the list of references, to document the Cs/Sr evaluation conducted for update 1 of this change notice.

   Letter from John A. Ciucci to Joseph A. Legare, Revision 2 For Resolution of Cesium-137 (Cs-137) Acceptable Knowledge (AK) Discrepancy Between Rocky Flats Environmental Technology Site (Site) and Idaho National Engineering and Environmental Laboratory (INEEL), 04-RF-01306.

3. **AK Summary, Building 374 Sludge (BNFL-5232-RPT-TRUW-15) Section 1.7, Radionuclides**

   Add the following information.

   AMWTP will employ payload management practices in accordance with the WIPP-WAC Appendix E, for waste stream BNINW218. The estimated total waste volume for BNINW218 is 416m^3. The estimated percentage of the waste above 100 nCi/g is 68%. The estimated percentage of waste less than 100 nCi/g is 32%.

Reason/Justification for the Change

Paragraph 3 of Section 1.7, Radionuclides, is being deleted in order to be consistent with RFETS radiological characterization of waste streams. BNFL Inc. had previously written an Acceptable Knowledge Discrepancy Resolution (AKR-03-9) to add Cesium-137 and Strontium-90 to all RFETS waste streams. This addition was based on the BNFL Inc. physicists' determination that there was cesium in the RFETS first stage sludge. RFETS acceptable knowledge had previously ruled out Cesium-137 and therefore any computed Strontium-90 as anticipated radionuclides in RFETS waste streams. RFETS and BNFL Inc. physicists completed a review of spectra for multiple waste streams and concluded that Cesium-137 and computed Strontium-90 are not present in this waste stream.

A new paragraph, that addresses payload management, has been added to Section 1.7 to update the AK Summary to current CH-WAC requirements.

Update for the WIPP Operating Record (BNINW218) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

for MS Stephen P Carpenter SIM/ACE 12.7.05

Signature of Site Project Manager | Printed Name and Title | Date

DOE F 1325.8

United States Government | Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: September 17, 2004

REPLY TO ATTN OF: CBFO:NTP:KWW:JGW:04-2013:UFC:5822

SUBJECT: Approval of AMWTP WSPF BNINW218, Revision 1

TO: Richard Provencher, DOE-ID

The Carlsbad Field Office (CBFO) has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW218, Revision 1. We have concluded that the WSPF is complete and that the waste stream determinations were made in accordance with CBFO procedures and guidance. The CBFO therefore approves the WSPF as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7357

Kerry W. Watson, Director
Office of Characterization and Transportation

Attachment

cc: w/attachment

A. Holland, CBFO	*ED
R. McCallister, CBFO	*ED
M. Navarrete, CBFO	*ED
A. Dobson, BNFL	*ED
A. Dumas, BNFL	*ED
E. Schweinsberg, BNFL	*ED
D. Swale, BNFL	*ED
D. Kump, WTS	*ED
D. Speed, WTS	*ED
D. Standiford, WTS	*ED
M. Strum, WTS	*ED
R. Chavez, WRES	*ED
K. Zbryk, WRES	*ED
H. Borher, DOE ID	*ED
B. Edgerton, DOE ID	*ED
T. Jenkins, DOE ID	*ED
C. Maggart, DOE ID	*ED
J. Medema, DOE ID	*ED
J. Snook, DOE ID	*ED
J. Wells, DOE ID	*ED
WIPP Operating Record	
L. Greene, WRES	
CBFO M&RC	

*ED denotes Electronic Distribution

CBFO:NTP:KWW:KW:04-3013:UFC:1602

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile	AMWTP Form 1195 Rev. 1 Effective Date: 03/28/2003 MP-TRUW-8.14 Page 1 of 3

WIPP WASTE STREAM PROFILE FORM

Record
06 10-13-04

Waste Stream Profile Number: BNINW218, Rev. 1
Generator site name: Advanced Mixed Waste Treatment Project
Technical contact: Eric Schwieneberg
Generator site EPA ID: ID4890008952
Technical contact phone number: (208) 557-7164
Date of Audit report approved by NMED: 12/23/2003
Title, version number, and date of documents used for WAP certification:
Certification Plan for INEEL CH-TRU Waste, MP-TRUW-8.1, Rev. 1, 12/18/02; Rev. 2, 6/11/03; Rev. 3, 10/1/03; Rev. 4, 3/4/04., Rev. 5, 8/18/04TRUPACT-II Authorized Methods for Payload Control (TRAMPAC), MP-TRUW-8.3, Rev. 1, 2/06/03, Rev. 2, 3/29/04
Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 1, 3/26/03; Rev. 2, 3/31/03, Rev. 3, 8/19/04
Did your facility generate this waste? ☐Yes ☒No If no, provide the name and EPA ID of the original generator.
Rocky Flats Environmental Technology Site, CO7890010526

Waste Stream Information[1]
WIPP ID: IN-W218.108, IN-W218.909 IN-W220.114[2], IN-W220.915[2]
Summary Category Group: S3000
Waste Matrix Code Group: Solidified Inorganics
Waste Stream Name: Building 374 Sludge
Description from the WTWBIR: See Reference List, No. 9, Section 1.3.1

Defense TRU Waste: (Ref. 10) ☒Yes ☐No Check One: ☒CH ☐RH
Number of SWBs: 0[3] Number of Drums: 2,000 Number of Canisters: 0
Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5
List applicable EPA Hazardous Waste Codes:[2] D006, D007, D008, D009, D010, D011, D032, F001, F002, F005, F006, F007, and F009
See Reference List, No. 9, Section 1.6

Applicable TRUCON Content Codes: ID111A, ID111C, ID211A, ID211C, ID111D, ID211D

Acceptable Knowledge Information[4]
[For the following, enter supporting documentation used (i.e., references and dates)]

Required Program Information
Map of site: See Reference List, No. 1, Section 3; No. 2
Facility mission description: See Reference List No. 1, Section 3; No. 3
Description of operations that generate waste: See Reference List, No. 1
Waste identification/categorization schemes: See Reference List, No. 4
Types and quantities of waste generated: See Reference List, No. 1, Section 22; Nos. 3, 5 and 6
Correlation of waste streams generated from the same building and process, as appropriate: See Reference List, No. 1
Waste certification procedures: TRU Waste Certification, MP-TRUW-8.5, Rev. 5, 3/28/03; Rev. 6, 4/27/04; Rev. 7, 7/12/04; Rev. 8, 8/4/04; Rev. 9, 8/13/04

Required Waste Stream Information
Area(s) and building(s) from which the waste stream was generated: See Reference List, No. 9
Waste stream volume and time period of generation: See Reference List, No. 9
Waste generating process description for each building: See Reference List, No. 9
Process flow diagram: See Reference List, No. 9
Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference List, No. 9

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile	AMWTP Form 1195 Rev. 1 Effective Date: 03/20/2003 MP-TRUW-8.14 Page 2 of 3

BNDMW218

Which Defense Activity generated the waste: (check one)

☒	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☐	Defense research and development
☐	Defense environmental waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation See Reference List, No. 1

Process design documents: See Reference List, No. 1

Standard operating procedures: See Reference List, No. 1

Safety Analysis Reports: See Reference List, No. 1

Waste packaging logs: See Reference List, No. 1

Test plans/research project reports: See Reference List, No. 1

Site databases: See Reference List, No. 1

Information from site personnel: See Reference List, No. 1

Standard industry documents: See Reference List, No. 1

Previous analytical data: See Reference List, No. 1

Material safety data sheets: See Reference List, No. 1

Sampling and analysis data from comparable/surrogate Waste: See Reference List, No. 1

Laboratory notebooks: See Reference List, No. 1

Sampling and Analysis Information[1]

For the following, when applicable, enter procedure title(s), number(s) and date(s)

Radiography: See Reference List, No. 11

Visual Examination: See Reference List, No. 12, *Visual examinations have been conducted on 50 containers from the 53000 summary category group to support establishment of the AMWTP site specific characterization rate. Most of the containers presented in this WSPF have been selected for visual examination by AMWTP. All containers of 53000 processed through RTR will be eligible for selection in the ongoing visual examination program.*

Headspace Gas Analysis

VOCs: See Reference List, No. 13

Flammables: See Reference List, No. 13

Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis[2] *(See Reference List for Dates)*

Total metals: See Reference List, Nos. 14, 15[5], 16

PCBs: N/A

VOCs: See Reference List, Nos. 17, 18, 19[5]

Nonchlorinated VOCs: See Reference List, Nos. 20, 22

Semi-VOCs: See Reference List, Nos. 19[5], 21[5]

Other (specify): See Reference List, Nos. 23, 24, 25

Waste Stream Profile Form Certification

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schwainsberg — Eric P. Schwainsberg — Sept. 17, 2004

Signature of Site Project Manager — Printed Name and Title — Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/unfeatured sample analysis were used to determine RFA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

(3) The analytical methods used to analyze Building-374 sludge core samples are identical to the Waste Analysis Plan (WAP) methodology approved by Carlsbad. The analytical and preparatory techniques were originally written up as separate methods. When the WAP was finalized, all preparatory and determinative methods were combined into one method under one ACMM number retaining all of the TRU Program requirements. For example, VOC requirements for preparation (ACMM-9501) and determination (ACMM-9261 & 9260) were combined into one method (ACMM-9260). In all cases the methodology did not change. All methods used by the laboratory (both pre-WAP and post-WAP) have been qualified through participation in the RCRA Performance Demonstration Program and in all cases the results have been acceptable. Further details regarding the methods are provided in the Building 374 Sludge characterization report (INEEL/EXT-01-00517, Section 1.3).

(4) ACMM-2900 is no longer a certified procedure used by the INEEL. This procedure was used at the time that the solids data was analyzed. Any future analysis conducted in support of ongoing lot characterization will utilize ACMM-2901.

(5) ANL-E waste described under the TWBIR number is excluded from the RMMWZ18 waste stream.

(6) SWBs are not part of the current inventory, but there is a potential that drums could be loaded into an SWB for shipment, therefore the SWB TRUCON codes (IDI11C and IDI21C) are applicable to this waste stream.

Waste Stream Profile Continuation Sheet

Reference List:

1. *Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste*, INEL-96/0280, Rev. 3, February 28, 2003.

2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-52-0101, Rev. 0, April 29, 1999.

3. AMWTP TRU Waste Management Acceptable Knowledge Elements, BNFL-5232-RPT-TRUW-06, Rev. 0, June 30, 2003, Rev. 1, November 20, 2003.

4. AMWTP Waste Stream Designations, BNFL-5232-RPT-TRUW-12, Rev. 1, November 20, 2003.

5. Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), RWMC EDF-837, August 24, 1995

6. Container Inventory Report for WMF-629 thru WMF-633 (TRIPS query), December 24, 2002.

7. Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 1, December 19, 2002, Rev. 2, June 11, 2003, Rev. 3, October 7, 2003; Rev. 4, March 4, 2004., Rev. 5 August 18, 2004.

8. Advanced Mixed Waste Treatment Project TRU Waste Certification, MP-TRUW-8.5, Rev. 5, March 28, 2003., Rev. 6 April 27, 2004, Rev. 7, July 12, 2004, Rev. 8, August 4, 2004, Rev. 9, August 12, 2004

9. Acceptable Knowledge Summary For Building 374 Sludge, BNFL-5232-RPT-TRUW-15, Rev. 0, February 2004, Rev. 1 August 19, 2004, Rev. 2, September 16, 2004.

10. Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), U. S. Department of Energy memorandum from G. E. Dials to Jessie M. Roberson and John M. Wilcynski, May 20, 1997.

11. Real Time Radiography Operations, INST-OI-12, Rev. 10, May 2, 2003; Rev. 11, May 8, 2003; Rev. 12, June 27, 2003; Rev. 13 July 28, 2003; Rev. 14, July 31, 2003; Rev. 15, September 25, 2003; Rev. 16 January 13, 2004; Rev. 17, February 19, 2004, Rev. 18, July 15, 2004. Rev. 18 FC-1, September 4, 2004.

12. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 6, August 13, 2003, Rev. 6 FC-1 August 24, 2004, Rev. 7 June 23, 2004, Rev. 8 July 15, 2004, Rev. 9 August 9, 2004.

13. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 13, August 13, 2003, Rev. 14, October 1, 2003, Rev. 15, October 6, 2003, Rev. 15 FC-1, October 12, 2003, Rev. 15 FC-2, October 15, 2003; Rev. 16, November 5, 2003; Rev. 16 FC-1, November 17, 2003; Rev. 17, December 11, 2003; Rev. 18, February 4, 2004, Rev. 19 July 12, 2004.

14. Microwave Assisted Digestion of Homogeneous Solids, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-8909, Rev. 3, July 11, 2000.

Waste Stream Profile Continuation Sheet

15. Determination of Trace Elements by ICP Atomic Emission Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-2900, Rev. 3, October 20, 1997.

16. Determination of Mercury by Cold-Vapor Fluorescence Spectrophotometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-7802, Revs. 4 and 5, February 1997 and April 15, 1999.

17. Determination of Total Volatile Organic Compounds in Homogenous Solids and Soil-Gravel by GM/MS, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9261, Revs. 2 and 3, March 1997 and November 20, 1997.

18. VOCs by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9260, Rev. 0 and 2, March 1, 1989 and April 21, 1997

19. Sample Preparation of TRU Waste Characterization Samples for Organic Analysis, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9501, Revs. 3 and 4, February 25, 1998 and April 14, 1999.

20. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9441, Revs. 1 and 2, November 19, 1997 and April 14, 1999.

21. Semi-Volatile Organic Compounds by GC/MS, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9271, Revs. 3 and 4, April 18, 1998 and April 15, 1999.

22. Sample Preparation for Non-halogenated Volatile Organic Compounds, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9501, Revs. 3 and 4, February 25, 1998 and April 14, 1999.

23. Sample Preparation and Analysis for Mercury by AA, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-7802, Revs. 4 and 5, February 1997 and April 15, 1999.

24. Sample Preparation and Analysis for Mercury by ICP, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-8909, Rev. 1, April 6, 1999.

25. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 6, May 1, 2003. Rev. 7 August 19, 2004.

26. INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, U. S. Department of Energy Carlsbad Area Office memorandum from Dr. Ines R. Triay to Ms. Beverly Cook, CBFO:NTF:KWW:VW:01-1022:UFC:5822, May 18, 2001.

27. *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, New Mexico Environment Department, NM4890139088-TSDF, Current to January 15, 2004.

28. Waste Stream Profile Form INW218.001-Building 374 Sludge, BBWI, July 24, 2001.

Waste Stream Profile Continuation Sheet

29. *Characterization of Rocky Flats Plant Building 374 Sludge Waste Stream (IDCs 007, 803, 807)*, INEEL/EXT-01-00517, Rev. 0, July 2001.

30. *Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, DOE/WIPP 02-3122, Rev. 0.1, July 25, 2002; Rev. 1 March 1, 2004.

31. TRUPACT II Authorized Methods for Payload Control (TRAMPAC), MP-TRUW-8.3, Rev. 1, February 6, 2003, Rev. 2 March 29, 2004.

32. Quality Assurance Project Plan, (QAPJP), MP-TRUW-8.2, Rev. 1, February 26, 2003; Rev. 2, March 31, 2003, Revision 3, August 19, 2004.

33. *Population Determination for Waste Stream Profiles BNINW216 and BNINW218*, BNFL-5232-RPT-TRUW-19, Revision 2, July 30, 2004.

34. RFETS WSPF RF 107.03, TRM Solidified Inorganic Waste (F001, F002, F005, F006, F007), August 3, 2004.

Characterization Information Summary

Lot Number: BNINW218

SQAO Alvin Deuyao Date: 9/17/04
SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM Eric P. Schmuckler Date: Sept. 17, 2004
SPM signature indicates concurrence with all information presented in this report.

Characterization Information Summary

Characterization Description:

AMWTP has compiled AK information for the waste stream as required by the WAP and WIPP WAC. In addition, AMWTP has conducted confirmatory testing using real time radiography, visual examination, headspace gas sampling and analysis, and radioassay. In support of the required solid sampling confirmation data, AMWTP has used the solid sampling data collected in support of INEEL's WSPF INW218.001 as preliminary data used to determine the mean concentration of toxicity characteristic compounds and to assign/confirm hazardous waste codes.

Section B2-2a in the WAP states:

> *The preliminary estimates will be made by obtaining a preliminary number of samples from the waste stream or from previous sampling from the waste stream. Preliminary estimates will be based on samples from a minimum of 5 waste containers. Samples collected to establish preliminary estimates that are selected, sampled, and analyzed in accordance with applicable provisions of the WAP may be used as part of the required number of samples to be collected. The applicability of the preliminary estimates to the waste stream to be sampled shall be justified and documented.*

The statistical assessment of the preliminary sample data presented in the INEEL 3,100 m^3 Project report, *Characterization of Rocky Flats Plant Building 374 Sludge Waste Stream (IDCs 007, 803, and 807)* INEEL/EXT-01-00517 dated July 2001, used data from 67 drums to determine the required number of final samples. These 67 drums indicated that five drums were required for final characterization of the waste stream.

INEEL/EXT-01-00517 presents analytical data from 5 containers that meet all necessary requirements for final characterization. These five containers satisfy the "n" required sample data for the characterization of the entire available waste stream stored at the INEEL. Five drums were randomly selected, cored and analyzed from the entire available population to characterize this waste stream. The drums included in the available population are defined by *Population Determination for Waste Stream Profiles BNINW216 and BNINW218*, BNFL-5232-RPT-TRUW-19. Analytical data from these five containers is summarized in Tables 2 through 4 of this profile. The following requirements and rationale justify the use of applying these 5 samples as preliminary and final sample data for this waste stream.

Justification and documentation of the preliminary estimates involve compliance with the following bullets from the WAP, Section B2-2a:

- *There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.*

The five samples used to characterize the waste were randomly selected. The random selection process is documented in INEEL/EXT-01-00517.

- *There is documented evidence that the method of sample collection in the preliminary estimate samples were identical to the methodology to be employed for the required samples.*

Characterization Information Summary

The five drums randomly selected from the Building 374 Sludge waste stream were sampled and analyzed in 1998 and 1999. This was prior to 3100 m^3 certification authority for the WAP. However, the core collection was accomplished using the same drill, auger, and bit apparatus that were ultimately approved as part of the 3100 m^3 certification program. The same core liner materials, disposable sub-sampling collection tools, sample preservation techniques, and chain of custody protocol were used in the 1998 and 1999 time frame as were ultimately approved for certification. A detailed justification that the sample collection of the preliminary samples was identical to INEEL certification sampling program is provided in INEEL/EXT-01-00517.

- *There is documented evidence that the method of sample analysis in the preliminary estimate samples were identical to the analytical methodology employed for the required samples.*

The five randomly selected drums were analyzed under an analytical program identical to the certified program used by the INEEL. Details supporting this evaluation are located in INEEL/EXT-01-00517. The data were accepted as characterization data for INEEL's WSPF, INW218.001. At the time of characterization, trans-1, 2-dichloroethylene was not listed in the WAP as a target analyte for headspace gas or solid samples. It was added as a target analyte for both types of analyses in January 2001. Sufficient data is available to determine that trans-1, 2-dichloroethylene is not present in this waste stream. This compound is not identified in AK documentation as a constituent of Rocky Flats Plant waste and has not been detected in 25% or more of the samples collected from any RF waste including the Building 374 Sludge waste.

- *There is documented evidence that the validation of the sample analyses in the preliminary estimate samples were comparable to the validation employed for the required samples. In addition, the validated samples results shall indicate that all sample results were valid according to the analytical methodology.*

The data for the five randomly selected drums were validated in a comparable method as required. The 3100 m^3 has documented evidence that the validation of the sample analyses in the five drum sample set address all WAP requirements. The 3100 m^3 site project office used their certification to complete validation of all the solid/sampling analysis data packages used for these five randomly selected drums. All validated Quality Assurance Objectives (QAOs) were deemed usable and therefore valid against the 3100 m^3 WAP compliant program.

The above discussion demonstrates that the sample set meets the bulleted conditions identified in the WAP for use as preliminary and the required number of samples.

Characterization Information Summary

Reconciliation with Data Quality Objectives

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF# BNINW218

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each waste container of waste contain TRU radioactive waste?	✓			
4. Have mean concentrations, UCL_{95} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			
6. Have mean concentrations, UCL_{95} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (or a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{95} for the misclassification rate is less than 14 percent for the nonpassy category waste?	✓			
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analytes been met for the lot?	✓			

Eric P. Schweinsberg — Sept 17th, 2004

Signature of Site Project Manager | Printed Name | Date

Characterization Information Summary

Table 1A. Headspace Gas summary data.

Analyte	Total Number of Samples	Number of Samples above MDL[a]	Transformation	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{95} (ppmv)	PRQL (ppmv)	EPA HWNo[d]
1,1-Dichloroethane	15	1	None	7.50	1.81	1.58	2.38	10	N/A
1,1-Dichloroethylene[c]	15	3	natural log	2.72	0.841	0.932	1.17	2.303	N/A
1,1,1-Trichloroethane[c]	15	5	natural log	5.12	1.53	1.80	2.16	2.303	F001
1,1,2-Trichloro-1,2,2-trifluoroethane[c]	15	3	natural log	2.96	0.646	0.925	0.967	2.303	F001
1,1,2,2-Tetrachloroethane	15	0	None	4.80	4.08	0.800	[b]	10	N/A
1,2-Dichloroethane	15	0	None	1.75	1.59	0.155	[b]	10	N/A
Acetone	15	0	None	12.2	8.87	3.18	[b]	100	N/A
Benzene	15	0	None	1.40	1.11	0.284	[b]	10	F005
Bromoform	15	0	None	3.85	3.18	0.645	[b]	10	N/A
Butanol	15	0	None	11.6	10.0	1.50	[b]	100	N/A
Chlorobenzene	15	0	None	3.85	3.24	0.671	[b]	10	N/A
Carbon tetrachloride[c]	15	2	natural log	4.16	1.17	0.885	1.48	2.303	F001
Chloroform	15	0	None	2.10	1.89	0.232	[b]	10	N/A
Cis-1,2-dichloroethylene	15	0	None	2.68	2.02	0.645	[b]	10	N/A
Ethyl benzene	15	0	None	4.85	3.33	1.68	[b]	10	N/A
Ethyl ether	15	0	None	3.25	2.15	1.21	[b]	10	N/A
m&p-Xylene	15	0	None	4.30	2.54	1.08	[b]	10	N/A
Methanol[c]	13	2	natural log	3.73	2.54	0.481	2.71	4.61	N/A
Methyl ethyl ketone	15	0	None	8.20	5.91	2.53	[b]	100	F005
Methyl isobutyl ketone	15	0	None	11.6	10.3	1.291	[b]	100	N/A
Methylene chloride	15	4	None	3.14	1.18	0.834	1.47	10	F002
o-Xylene	15	0	None	4.15	4.01	0.155	[b]	10	N/A
Tetrachloroethylene	15	0	None	4.85	3.57	1.42	[b]	10	F001
Toluene	15	0	None	3.55	2.83	0.800	[b]	10	F005
Trans-1,2-dichloroethylene	15	0	None	2.70	2.49	0.207	[b]	10	N/A
Trichloroethylene	15	1	None	26.6	3.29	6.48	5.57	10	F001

a. When a measurement is reported as below detection, one-half the analyte method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection, therefore the upper 95% confidence limit is not calculated.

c. The maximum, mean, standard deviation, and UCL_{95} and PRQL are presented as transformed values.

d. The HWNs for these constituents have been verified based on acceptable knowledge. No additional codes were added as a result of headspace gas sampling.

Did the data verify the Acceptable Knowledge? Yes ✓ No _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes.

Statistics Performed by: _____ Date: 9/17/04

Signature

Characterization Information Summary

Table 1B. Headspace gas summary data -- tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None identified during analysis	N/A	N/A	N/A
Did the Data verify the Acceptable Knowledge?	Yes ✓	No	
If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A			

Characterization Information Summary

Table 2. Metals summary data[a].

Analyte	# Samples	Number of Samples above PRQL	Transformation	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{95} (mg/kg)	RTL (mg/kg)	EPA HWNs Assigned
Arsenic	5	5	none	4.80	2.94	1.64	4.07	100	N/A
Barium[b]	5	4	natural log	5.19	3.79	0.84	4.37	7.60	N/A
Cadium[b]	5	5	natural log	2.26	1.46	0.58	1.86	3.00	D006[c]
Chromium[b]	5	5	natural log	7.24	4.96	1.60	6.06	4.61	D007
Lead[b]	5	5	natural log	4.13	3.33	0.57	3.71	4.61	D008[c]
Mercury[b]	5	5	natural log	3.61	0.58	1.93	1.90	1.39	D009
Selenium[b]	5	5	square root	1.52	1.15	0.26	1.33	4.47	D010[c]
Silver	5	5	none	71.0	44.4	17.7	56.6	100	D011[c]
Antimony	5	5	none	5.90	3.92	1.85	5.19	N/A	N/A
Beryllium[b]	5	4	square root	7.87	6.05	1.82	7.30	N/A	N/A
Nickel[b]	5	2	natural log	6.38	4.20	1.34	5.12	N/A	N/A
Thallium	5	1	none	11.0	2.75	4.61	6.68	N/A	N/A
Vanadium[b]	5	5	natural log	4.14	3.13	0.572	3.55	N/A	N/A
Zinc[b]	5	5	natural log	7.55	6.40	1.04	7.12	N/A	N/A

a. This data was originally presented in Waste Stream Profile Form INW218.001-Building 374 Sludge

b. The maximum, mean, standard deviation, and UCL_{95} and PRQL are presented as transformed values.

c. The HWNs for these constituents have been applied based on acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presence above the regulatory threshold limit.

Did the data verify the Acceptable Knowledge? Yes ✓ No _____ *If no, describe the basis for assigning the EPA Hazardous Waste Codes.*

Statistics Performed by: Jeff Eisner for Jeff Eisner Date: Sept. 17th, 2004
Signature

Characterization Information Summary

Table 3A. Solid Sample Analysis - Total VOC summary data[a,e].

Analyte	# of Samples	# of Samples above MDL[b]	Mean (mg/kg)	Std Dev. (mg/kg)	Maximum (mg/kg)	UCL_{90} (mg/kg)	RTL (mg/kg)[d]	PRQL (mg/kg)[d]	EPA Code Assigned
1,1-Dichloroethylene	5	1	0.377	0.348	0.865	0.612	14	N/A	N/A
(trans)-1,2-Dichloroethylene[h]	0	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
1,2-Dichloroethane	5	0	0.342	0.159	0.515	[e]	10	N/A	N/A
1,1,1-Trichloroethane	5	1	14.1	30.9	69.3	35.5	N/A	10	F001
1,1,2,2-Tetrachloroethane	5	0	0.444	0.083	0.515	[e]	N/A	10	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	1	1.76	3.35	7.75	4.08	N/A	10	F001[f]
1,1,2-Trichloroethane	5	0	0.833	1.33	3.18	[e]	N/A	10	N/A
Acetone	5	0	1.48	0.232	1.68	[e]	N/A	100	N/A[g]
Benzene	5	0	0.310	0.229	0.515	[e]	10	10	F005[f]
Bromoform	5	0	1.38	2.17	5.26	[e]	N/A	10	N/A
Butanol	5	0	1.10	0.499	1.98	[e]	N/A	100	N/A
Carbon disulfide	5	0	1.08	1.74	4.18	[e]	N/A	10	N/A
Carbon tetrachloride	5	0	0.317	0.220	0.515	[e]	10	10	F001[f]
Chlorobenzene	5	0	0.310	0.229	0.515	[e]	2000	10	N/A
Chloroform	5	0	0.307	0.234	0.515	[e]	120	N/A	N/A
Ethyl benzene	5	0	0.837	1.32	3.18	[e]	N/A	10	N/A
Ethyl ether	5	0	1.32	0.254	1.55	[e]	N/A	100	N/A
Isobutanol	5	0	1.23	0.656	2.18	[e]	N/A	100	N/A
Methanol	5	2	213	469	1052	858	N/A	100	N/A[g]
Methylene chloride	5	1	0.935	1.48	3.57	1.96	N/A	10	F002[f]
Methyl ethyl ketone	5	0	1.45	0.385	2.03	[e]	4000	100	N/A
m-Xylene/p-Xylene	5	0	1.29	2.22	3.26	[e]	N/A	10	N/A[g]
o-Xylene	5	0	1.07	1.75	4.18	[e]	N/A	10	N/A[g]
Pyridine	5	0	1.49	0.589	2.43	[e]	100	40	N/A
Tetrachloroethylene	5	1	0.496	0.567	1.45	0.88	14	10	F001[f]
Toluene	5	1	1.36	2.46	5.75	3.06	N/A	10	F005[f]
Trichloroethylene	5	0	0.314	0.225	0.515	[e]	10	10	F001[f]
Trichlorofluoromethane	5	0	1.20	2.25	5.26	[e]	N/A	10	N/A
Vinyl chloride	5	0	0.320	0.217	0.515	[e]	4	N/A	N/A

a. This data was originally presented in Waste Stream Profile Form INW218.001-Building 374 Sludge

b. When a measurement is reported as below detection, one-half of the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2) since all measurements are below detection. Therefore, there are no degrees of freedom associated with the t statistic and the upper 90% confidence limit is not calculated.

d. For toxicity characteristic constituents, the Regulatory Threshold Limit (RTL) is the TCLP limit (mg/L) multiplied by 20 to calculate the RTL for solid samples in mg/kg. For listed constituents, the Program Required Quantification limit (PRQL) is used.

e. No transformations were performed on this data set because there were not a sufficient number of detects in any of the sample sets.

f. These HWNs were assigned to the waste stream based upon acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presence above the regulatory threshold limit.

g. The EPA code associated with this constituent (F003) is not applicable. The F003 code has been removed from the waste stream because the waste qualifies for the exemption within 40 CFR 261.3(a)(2)(iii).

h. (trans)1,2-Dichloroethylene was not a target compound at the time the solids data was collected for INW218.001. It was not detected as a TIC in the solids data, and is not above the UCL_{90} of the PRQL in headspace gas and is not indicated as a potential compound by AK. Therefore, sufficient data has been collected to determine that (trans)1,2-Dichloroethylene is not present in this waste stream.

Did the data verify the Acceptable Knowledge? Yes ✓ No ______

If no, describe the basis for assigning the EPA Hazardous Waste Codes. Statistics Performed by:

Signature: ______ Date: Sept. 17th, 2004

Characterization Information Summary

Table 3B. Total VOC summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None	N/A	N/A	N/A
Did the Data verify the Acceptable Knowledge?	Yes ✓	No	
If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A			

Characterization Information Summary

Table 4A. Solid Sample Analysis - Total SVOC summary data[a,e].

Analyte	# of Samples	# of Samples above MDL[b]	Mean (mg/kg)	Std Dev. (mg/kg)	Maximum (mg/kg)	UCL_{95} (mg/kg)	RTL (mg/kg)[d]	PRQL (mg/kg)[d]	EPA Code Assigned
1,4-Dichlorobenzene	5	0	0.111	0.020	0.120	[c]	150	N/A	N/A
2,4-Dinitrotoluene	5	0	0.101	0.020	0.110	[c]	2.6	N/A	N/A
Cresols	5	0	0.094	0.015	0.100	[c]	4000	40	N/A
Hexachlorobenzene	5	0	0.175	0.182	0.500	[c]	2.6	N/A	D032
Hexachloroethane	5	0	0.105	0.011	0.110	[c]	60	N/A	N/A
Nitrobenzene	5	0	0.103	0.016	0.110	[c]	40	40	N/A
Pentachlorophenol	5	0	0.095	0	0.095	[c]	2000	N/A	N/A
2,4-Dinitrophenol	5	0	0.106	0.002	0.110	[c]	N/A	40	N/A
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	5	0	0.108	0.027	0.120	[c]	N/A	40	N/A

a. Data originally presented in Waste Stream Profile Form BNW218.001-Building 374 Sludge

b. When a measurement is reported as below detection, one-half of the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2) since all measurements are below detection. Therefore, there are no degrees of freedom associated with the t statistic and the upper 95% confidence limit is not calculated.

d. For toxicity characteristic constituents, the Regulatory Threshold Limit (RTL) is the TCLP limit (mg/L) multiplied by 20 to calculate the RTL for solid samples in mg/kg. For listed constituents, the Program Required Quantification limit (PRQL) is used.

e. No transformations were performed on this data set because there were not a sufficient number of detects in any of the sample sets.

Did the data verify the Acceptable Knowledge? Yes ✓ No _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes.

Statistics Performed by: A. Jeff Ericson for Tetra Tech Date: Sept 17, 2004
Signature

Characterization Information Summary

Table 4B. Total SVOC summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
Bis (2-ethylhexyl) phthalate	34.0	27	48
Did the Data verify the Acceptable Knowledge?	Yes ✓	No	
If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A			

Bis (2-ethylhexyl) phthalate is a common organic contaminant whose presence is attributable to the presence of plastic packaging material. It is also a common laboratory contaminant and was detected in the laboratory blanks associated with 46 of the 56 samples analyzed by the 3100m[3]. As a result, a U code for this compound will not be added to the waste stream profile. This compound will be added to the target analyte list for any future data sets for this waste stream.

Characterization Information Summary

Table 5. Correlation of container identification numbers to data package.

Container Number[a]	Headspace Gas Sampling Data Package	RTR Data Package	RA Data Package	Visual Examination in Lieu of RTR Data Package	Solid Sampling Data Package	Solid Analysis Data Package[b]
10000004	HSG03-00310	RTR03-00026	ASY03-00271	N/A	N/A	N/A
10000048	HSG03-00310	RTR03-00026	ASY03-00270	N/A	N/A	N/A
10000062	HSG03-00278	RTR03-00019	ASY03-00282	N/A	N/A	N/A
10000088	HSG03-00312	RTR03-00019	ASY03-00159	N/A	N/A	N/A
10000091	HSG03-00250	RTR03-00010	ASY03-00159	N/A	N/A	N/A
10000133	HSG03-00280	RTR03-00006	ASY03-00278	N/A	N/A	N/A
10000158	HSG03-00278	RTR03-00019	ASY03-00278	N/A	N/A	N/A
10000165	HSG03-00310	RTR03-00006	ASY03-00274	N/A	N/A	N/A
10000167	HSG03-00310	RTR03-00006	ASY03-00272	N/A	N/A	N/A
10000252	HSG03-00250	RTR03-00016	ASY03-00307	N/A	N/A	N/A
10000320	HSG03-00297	RTR03-00016	ASY04-00032	N/A	N/A	N/A
10000454	HSG03-00310	RTR03-00026	ASY03-00271	N/A	N/A	N/A
10000469	HSG03-00278	RTR03-00028	ASY03-00281	N/A	N/A	N/A
10000070	HSG03-00272	RTR03-00078	ASY03-00281	N/A	N/A	N/A
10000069	HSG03-00282	RTR03-00078	ASY03-00282	N/A	N/A	N/A
IDRF074700443[c]	N/A	N/A	N/A	N/A	N/A	ACL98013
IDRF074703991[c]	N/A	N/A	N/A	N/A	N/A	ACL98013
IDRF074705322[c]	N/A	N/A	N/A	N/A	N/A	ACL98013
IDRF074706766[c]	N/A	N/A	N/A	N/A	N/A	ACL98013
IDRF074706786[c]	N/A	N/A	N/A	N/A	N/A	ACL98013

a. For drums not characterized by AMWTP, only the solids data is presented in the WSTF, and these drums will not be entered into WWIS.

b. An ACL Solids Data Package is composed of four separate reports. For example, ACL98013 contains ACL98013M, ACL98013N, ACL98013S, and ACL98013V7.

Characterization Information Summary

Table 6. RTR/VE summary of prohibited items and AK confirmation.

Container Number	RTR Prohibited Items[a]	Visual Examination Prohibited Items[a]	AK Confirmation[b,c,e]
10000004	None	N/A[d]	Complete
10000048	None	N/A	Complete
10000062	None	N/A	Complete
10000088	None	N/A	Complete
10000091	None	N/A	Complete
10000133	None	N/A	Complete
10000158	None	N/A	Complete
10000165	None	N/A	Complete
10000167	None	N/A	Complete
10000252	None	N/A	Complete
10000320	None	N/A	Complete
10000454	None	N/A	Complete
10000469	None	N/A	Complete
10000070	None	N/A	Complete
10000069	None	N/A	Complete

a. See Table 5 for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPP), MP-TRUW-8.2.

b. Acceptable Knowledge confirmations for RTR and visual examinations are conducted by an Acceptable Knowledge Expert on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the batches listed in Table 5.

c. None of these drums have a VE in lieu of RTR examination.

d. N/A indicates that a visual examination was not conducted on the container. None of the containers presented in this WSPF have been selected for visual examination by AMWTP.

e. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

Characterization Information Summary

Table 7. Sample identification number cross-correlation table.

Container Number	Headspace Gas Sample Number[a]	Solidified Sample Number(s)
10000004	HSG03-00310B10	N/A
10000048	HSG03-00310B5	N/A
10000062	HSG03-00278C7	N/A
10000098	HSG03-00312B5	N/A
10000091	HSG03-00250C8	N/A
10000133	HSG03-00288C7	N/A
10000158	HSG03-00278C13	N/A
10000165	HSG03-00310B4	N/A
10000167	HSG03-00310B7	N/A
10000252	HSG03-00279B8	N/A
10000329	HSG03-00297C12	N/A
10000079	HSG03-00272C8	N/A
10000454	HSG03-00310B12	N/A
10000469	HSG03-00278C11	N/A
10000065	HSG03-00282C10	N/A
ID03F074700443	N/A	ID03I806101V1, ID03I806102V1, ID03I806103M1
ID03F074705991	N/A	ID03I809101V1, ID03I809102V1, ID03I809103M1
ID03F074705322	N/A	ID03I803101V1, ID03I803102V1, ID03I803103M1
ID03F074706766	N/A	ID03I806110V1, ID03I806111V1, ID03I806112M1
ID03F074706786	N/A	ID03I822410V1, ID03I822411V1, ID03I822412M1

a. The AMWTP headspace gas unit is an on-line sampling and analysis system. The analysis events are sequentially numbered within each batch, but the sample number is not a unique number. The number presented in this table is a combination of the batch number (HSG03-00310) and the sequential instrument ID used in the batch for reporting (B10). This combination is unique and will allow traceability back to the data as collected and reported.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-15, Rev. 11

Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11330.)
Susan Peterman
TRU Programs Manager

06/27/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	03/22/04	All	DCR-2627. Initial Issue.
1	08/19/04	All	DCR-3048. Updated to add TRUCON code 11D/211D; Oil-Dri® added as potential absorbent.
2	10/07/04	All	DCR-3296. Incorporate changes per CBFO comments.
3	04/15/05	All	DCR-4152. Incorporate changes per CBFO comments.
4	08/03/05	All	DCR-4462. Add references 41-47. Add new Section 1.2.2 to include EPA Hazardous Waste Numbers.
5	04/04/06	All	DCR-4833. Change reference 44; Add (BNINW218) to end of title.
6		Page 16	DCR-5366. Change RF filter debris to Building 374 Sludge.
7	07/28/07	All	DCR-5991. Change document based on Change Notice Approval (Change Notice #2).
8	10/30/07	References	DCR-6312. Update references as a result of the periodic review.
9	06/30/08	All	DCR-6966. Update per change notice #3.
10	07/14/09	References	DCR-8322. Minor Change. Remove references to close MAR 40045 action item 40099.
11	06/27/12	Various	DCR-11330. Incorporated ITG-Bluehseet-077, DOC-BLUESHEET-06, and updated references.

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ACRONYMS AND ABBREVIATIONS

AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
BBWI	Bechtel BWXT Idaho, LLC
CCP	Central Characterization Project
CPR	combustibles, plastics, rubber
DCP	Direct Cementation Process
DOT	Department of Transportation
EDL	Economic discard limit
EPA	Environmental Protection Agency
HWN	hazardous waste number
IDC	item description code
INEEL	Idaho National Engineering and Environmental Laboratory
N/A	not applicable
NDA	non-destructive assay
pCi/l	Picocuries per liter
PVC	polyvinyl chloride
RFETS	Rocky Flats Environmental Technology Site
RTR	real-time radiography
SWB	standard waste box
TDOP	ten-drum overpack
TRUCON	TRUPACT-II Content Code
TWBIR	Transuranic Waste Baseline Inventory Report
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan (Attachment B of the WIPP Hazardous Waste Permit)
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System
WDS/WWIS	Waste Data System/WIPP Waste Information System

REFERENCES

NOTE: References are cited per the style guide provided by AMWTP Document Control. AMWTP documents that are often repeatedly revised, such as procedures, AK reports, and operating instructions, they are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Data Management System. Previous revisions are available upon request through Document Services.

1. INEL-96/0280, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste [P368A]
2. EDF-2657, INEEL Acceptable Knowledge Waste Stream Summary Sheet – Building 374 Sludge [P238A]
3. RPT-TRUW-12, AMWTP Waste Stream Designations
4. RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste
5. Waste Stream Profile Form (WSPF) INW218.001-Building 374 Sludge, including WSPF Update for WIPP Operating Record, 2003 [P218A]
6. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008
7. DOE/LLW-217, DOE Waste Treatability Group Guidance, 1995
8. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report -2004, U.S. Department of Energy, Carlsbad, New Mexico
9. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge
10. Radionuclide (Np-237) inconsistent with AK documentation [AKR-03-8]
11. Radionuclide (K-40) inconsistent with AK documentation [AKR-03-10]
12. INEEL/EXT-01-00517, Characterization of Rocky Flats Plant Building 374 Sludge Waste Stream (IDCs 007, 803, 807) [P220A]
13. Not used
14. Oil-Dri® is an absorbent not identified with IDC 007, Building 374, Dry Sludge [AKR-03-26]
15. Vermiculite not expected in RF-IDC 007 & 803 waste containers [AKR-03-36]
16. Unspecified absorbent material may be present in RF-IDC 007 Containers [AKR-03-37]
17. Unexpected packaging configuration – Absence of Drum Bagging [AKR-03-35]

18. Unexpected packaging configuration – Absence of Drum Bagging [AKR-03-39]

19. Unexpected packaging configuration, Drum Stub Bag [AKR-04-41]

20. NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, current revision

21. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U.S. Department of Energy, Carlsbad Field Office, Rev. 6.1, October 29, 2007

22. Radionuclide (Am-243) inconsistent with AK documentation [AKR-03-30]

23. Radionuclide (Cm-245) inconsistent with AK documentation [AKR-03-33]

24. Filtered bag identified as method of closure [AKR-03-22]

25. Absorbent material (Oil Dri®) not expected in RF-IDC 807 waste Containers [AKR-04-48]

26. Material Safety Data Sheet for TRIM SOL, Master Chemical Corporation, February 27, 1992 [P130A]

27. Material Safety Data Sheet for Oakite Aluminum Cleaner 164; Oakite Products Inc., January 4, 1990 [P425A]

28. Material Safety Data Sheet for Mariko, Huntington Laboratories, Inc., September 11, 1986 [P128A]

29. Material Safety Data Sheet for Oil-Dri®, Oil-Dri® Corporation of America, March 15, 1993 [P426A]

30. Material Safety Data Sheet for Portland Cement, Lone Star Industries Inc., June 5, 1992 [P429A]

31. Not used.

32. Acceptable Knowledge TRU/TRM Waste Stream Summaries, TRM Solidified Inorganic Waste (F001, F002, F005, F006, F007, F009) Section 7.28, Revision 3, August 25, 2004 [P435S]

33. Material Safety Data Sheet for Aquaset, Fluid Tech Inc., August 1, 2001 [P401A]

34. Material Safety Data Sheet for Oakite Super Ruststripper; Oakite Products Inc., October 1, 1999 [P425A]

35. Material Safety Data Sheet for Oakite Dynadet; Oakite Products Inc., March 27, 1992 [P425A]

36. Material Safety Data Sheet for Oakite 360L; Oakite Products Inc., May 18, 1992 [P425A]

37. Material Safety Data Sheet for Ox Out 536; ChemClean Corporation, March 5, 1986 [P129A]

38. Material Safety Data Sheet for Polymer 1192; Betz Laboratories, Inc., August 1985 [P428A]

39. John A. Ciucci to Joseph A. Legare, Revision 2 For Resolution of Cesium-137 (Cs-137) Acceptable Knowledge (AK) Discrepancy Between Rocky Flats Environmental Technology Site (Site) and Idaho National Engineering and Environmental Laboratory (INEEL) [C281A]

40. MP-TRUW-8.2, Quality Assurance Project Plan

41. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

42. Absorbent Material (Vermiculite) Not Expected in RF-IDC 807 Waste Containers [AKR-04-83]

43. RPT-TRUW-05, Waste Matrix Code Reference Manual

44. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant [P649A]

45. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) [P672A]

46. Memorandum from Tim Venneman to file, Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste, January 19, 2007 [C534A]

47. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

48. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS) [U127A]

NOTICE TO READER

Source documents (e.g., C037, P052, etc.) referenced in the *Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste*, Revision 3, INEL-96/0280, are included in the AK record for the INEEL 3,100 m^3 Project. The same source documents have been added to the AMWTP AK record under a new reference number.
INEEL reference numbers used in the *Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste*, Revision 3, INEL-96/0280, Section 22.0, Solidified Aqueous Waste – Building 374, are listed in the table below. The AMWTP reference numbers corresponding to the INEEL reference numbers provide a crosswalk for the reader to the applicable AMWTP source document.

INEEL Ref No.	AMWTP Ref No.	INEEL Ref No.	AMWTP Ref No.	INEEL Ref No.	AMWTP Ref No.
C010	C010A	P068	P068A	P322	P322A
C013	C013A	P076	P076A	P323	P358A
C015	C015A	P078	P078A	P324	P359A
C031	C031A	P079	P079A	U029	U029A
C063	C063A	P080	P080A	U030	U030A
C087	C087A	P091	P091A	U043	U043A
C111	C111A	P106	P106A	U045	U045A
C112	C112A	P113	P113A	U049	U049A
C113	C113A	P128	P128A	U050	U050A
C114	C114A	P129	P129A	U051	U051A
C121	C121A	P130	P130A	U053	U053A
C122	C122A	P141	P141A	U059	U059A
C154	C154A	P143	P143A	U060	U060A
C175	C175A	P144	P144A	U092	U092A
C184	C184A	P145	P145A		
C242	C242A	P146	P146A		
C243	C243A	P147	P147A		
P001	P001A	P148	P148A		
P004	P004A	P149	P149A		
P012	P012A	P150	P150A		
P013	P013A	P153	P153A		
P014	P014A	P164	P164A		
P015	P015A	P189	P189A		
P016	P016A	P194	P194A		
P022	P022A	P198	P198A		
P024	P024A	P200	P200A		
P026	P026A	P218	P218A		
P033	P033A	P220	P220A		
P043	P043A	P227	P227A		
P047	P047A	P228	P228A		
P052	P052A	P240	P240A		
P053	P053A	P280	P280A		
P062	P062A	P303	P303A		
P067	P067A	P321	P321A		

Acceptable Knowledge Summary Building 374 Sludge

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BNINW218

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Building 374 Sludge

1.2.2 EPA Hazardous Waste Numbers

A. Toxicity Characteristic Codes: D006, D007, D008, D009, D010, D011, D032

B. Listed Waste Codes: F001, F002, F005, F006, F007, and F009

1.2.3 Point of Generation

Rocky Flats Plant - Liquid Waste Treatment Area of Building 374

1.2.4 Waste Stream Volume

2,000 Containers (416 m^3) [4]

IDC 007: 1,668 containers (347 m^3)

IDC 803: 64 containers (13 m^3)

IDC 807: 268 containers (56 m^3)

1.2.5 Generation Dates

1982 – 1988: Rocky Flats generated the waste up through 1991, but the AMWTP only has inventory through 1988. [4]

1988 – Present: Package dates later than 1988 will be associated with some containers. Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization/treatment activities). There is no additional Building 374 Sludge generation occurring at INEEL. [4]

IDC 007: 1982 – 1987 [4]

IDC 803: 1986 – 1987 [4]

IDC 807: 1987 – 1988 [4]

1.2.6 TRUCON Codes

ID111, ID211 [3, 5, 6]

1.2.7 TWBIR Information

IN-W218.909 [3, 8]

IN-W220.114 [3, 8]

1.2.8 Summary Category Group

S3000 Homogenous Solids [3, 7]

1.2.9 Waste Matrix Codes

S3121 – Waste Water Treatment Sludge (IDC 007, IDC 807) [3, 7]

Waste Matrix Code (WMC) S3121 consists of >50% by volume secondary sludge, or filtercake from wastewater treatment processes or heavy metal sludges resulting from recovery processes.

S3150 – Solidified Homogeneous Solids (IDC 803) [3, 7]

WMC S3150 consists of >50% by volume solidified forms. An example is sludge waste that is immobilized with cement and cured into a solidified form.

Two waste matrix codes have been assigned to this waste stream because the cementation immobilization process for this waste stream changed in the 1986 – 1987 timeframe. The immobilization process at other times involved mixing the sludge with Portland cement or a Portland cement and diatomite mixture. The feed streams to the process did not change over time.

1.2.10 Waste Matrix Code Group

S3100 – Solidified Inorganics

1.3 Physical Waste Form

1.3.1 Description

The Building 374 Sludge waste stream consists of drums containing Building 374 Dry Sludge (IDC 007), Solidified Direct Cementation Process (DCP) Sludge (IDC 803), or Building 374 Solidified By-pass Sludge (IDC 807). The aqueous sludge wastes from Building 374 were generated from a carrier precipitation and immobilization process.

Table 1-1. Physical Waste Form Descriptions for Bldg. 374 Sludge.

1995 TWBIR Number(s)	2004 TWBIR Number(s)	IDC	WMC	Description
IN-W218.109 IN-W218.900	IN-W218.909	007	S3121	This waste consists of moist sludge mixed with Portland cement or a diatomite and Portland cement mixture. The moist sludge was produced from 1982 to 1987.
IN-W220.114 IN-W220.925	IN-W220.114	803[a]	S3150	This waste consists of sludge dried in a dryer, and mixed with Portland cement and water, which cured to form a solid monolith. IDC 803 was generated for about one year (1986-1987). ANL-E waste described in IN-W220 is excluded from this waste stream.
IN-W220.114 IN-W220.925	IN-W220.114	807 [a, b]	S3121	This waste consists of sludge that bypassed the dryer and was mixed with diatomite and Portland cement. IDC 807 sludge is the same as the IDC 007 sludge generated using the bypass system. IDC 807 was generated from March 1987 to 1991. ANL-E waste described in IN-W220 is excluded from this waste stream.

a. IDCs 803 and 807 are not specifically identified in the TWBIR; however, the containers of IDCs 803 and 807 wastes were originally shipped from Rocky Flats to INL using 111 for the content code which is included in IN-W220.

b. Prior to March 1987, IDC 807 was assigned to cemented incinerator sludge generated in Building 771, After March 1987, IDC 807 was assigned to the sludge previously identified under IDC 007. Letters a and b are used to distinguish between the IDC 807 sludges in some AK documents, with a denoting Building 374 sludge after 3/87 and b for incinerator sludge generated before 3/87. IDC 807 is assigned only to Building 374 by-pass sludge in the Waste Tracking System (WTS).

1.4 Process Description

1.4.1 Areas of Operation

Building 374 was built in 1980, and was an integral part of the new plutonium (Pu) recovery facility, Building 371. Building 374s primary purpose was to treat radioactive aqueous waste from Building 371, and, on an as needed basis, from Building 774. Only waste that contained plutonium below the economic discard limit (EDL) was processed in Building 374. The treatment process involved three separate stages of precipitation, flocculation, and clarification, followed by evaporation, neutralization (if necessary), and immobilization.

1.4.2 Waste Generating Processes

1.4.2.1 Radioactive Decontamination

Aqueous wastes containing greater than 13,500 picocuries per liter (pCi/l) alpha contamination were treated in the radioactive decontamination process. Wastes were received by pipeline from Buildings 371, 444, 559, 707, 774, 776, 779, 865, 881, 883, and 889. The treatment process involved three separate stages of precipitation, flocculation, and clarification.

The first stage feed tank, D-812, received supernatant from the sludge solidification process and basic waste solutions from Building 371. If needed, the pH of the solutions was adjusted to 10.5 or greater with potassium hydroxide. The basic solutions were pumped to a reactor tank where reagents, including magnesium sulfate, calcium chloride, and ferric sulfate, were added, which attracted and combined with the radioactive isotopes. The reactor contents were mixed with an agitator and flowed continuously by gravity to a flocculator tank. A flocculent (Polymer 1192) was added to aid in agglomeration of the precipitate. [32, 38] The contents were mixed with an agitator and continuously overflowed to a clarifier. A rake at the bottom of the clarifier slowly moved the solids to the center, where they were drawn off the bottom of the tank into the feed tanks, D824 A and B, for the sludge solidification process.

The first-stage clarifier liquids flowed over a weir and were pumped to the second-stage feed tank. The second-stage feed tank also received third-stage clarifier effluent, steam

condensate, and decontamination wastewater from Building 371, wastes from Building 444, and from the 500, 700, and 800 areas. The second- and third-stage reactors, flocculators, and clarifiers functioned exactly as the first stage. Figure 3-1 shows the radioactive decontamination process.

1.4.2.2 Evaporation

The evaporation process concentrated soluble materials from low-level desaltable aqueous wastes. Aqueous wastes were received from Buildings 122, 123, 443, 444, 447, 460, 559, 561, and 566. Clarifier effluent from the radioactive decontamination process, solar pond water, and aqueous wastes from buildings in the 700 and 800 areas were also sent to the evaporator. The aqueous wastes were pumped to the evaporator where they were continuously circulated and heated by steam producing concentrated salt brine and steam. The steam was condensed for use by the boiler plant and cooling tower. The salt brine was dried, using a spray drier, and immobilized with cement. Periodically, a nitric and phosphoric acid descaling solution was used to flush the evaporator heat exchangers. This solution was then sent to the sludge immobilization process. The evaporation process is shown in Figure 3-1.

1.4.2.3 Acid Neutralization

Nitric acid wastes from plutonium recovery operations in Building 371 were received in Building 374 by pipeline. Acid wastes were also received as packaged materials in 55-gallon drums from Buildings 123, 444, 460, 559, 774, 865, 881, and 883. The acid wastes were continuously mixed by an agitator in Tank D-808, and by circulation through a heat exchanger. The heat exchanger removed heat generated during the process. As the liquid circulated, a pH analyzer regulated the amount of neutralization solution containing 46% potassium hydroxide that was fed to the tank to maintain a pH of 12.5. Neutralized acid waste was piped to Tanks D-824 A and B for eventual treatment by the sludge solidification process. The acid neutralization process is shown in Figure 3-2.

1.4.2.4 Sludge Solidification

Liquid wastes treated by the acid neutralization, radioactive decontamination, and evaporation processes were transferred to the sludge solidification process.

The slurry from radioactive decontamination, spent descaling solution from the evaporator, and wastes from acid neutralization were fed into the filter feed tanks, D-824 A and B. Supernatant from the filter feed tanks was decanted to the radioactive decontamination process. The slurry from the feed tanks was pumped to the radioactively contaminated solids on the surface of the filter media. The filter drum was coated with a mixture of diatomite and water or the filtrate. The slurry was fed into the filter pan. The filtrate was drawn through the pre-coat by a vacuum process, leaving the radioactively contaminated solids on the surface of the filter media. An advancing blade continuously removed the sludge and a thin layer of pre-coat. The filtrate from the rotary drum filter was transferred back to the radioactive decontamination process. From here, sludge from the rotary drum filter was immobilized using either the sludge dryer system or the bypass system (Figure 3-2). It is here where final treatment rendered the sludge, either IDC 007, IDC 803, or IDC 807.

(IDC 007): The sludge from the rotary drum filter was immobilized using either the sludge dryer system or the bypass system. In the sludge dryer system, the sludge from the vacuum filters was fed to the dryer feed hopper then conveyed through the dryer in heated flights. The dried sludge was transferred directly into a 55-gallon drum. The resulting waste was assigned IDC 007 and consisted of dispersible fines.

(IDC 803): The process for receiving and treating aqueous feed streams in Building 374 was the same as that for IDC 007. However, the method for solidifying sludge generated from aqueous treatment operations was modified from a bypass system to a dryer system in 1985. The sludge from the vacuum filter was dried in the same manner as the sludge generated prior to October 1982. However, the dried sludge was cemented in the direct cementation process (DCP). The dried sludge overflowed directly into the DCP sludge hopper, and cement and water were mixed in using a

paddle mixer. The sludge, cement, and water mixture was deposited into a 55-gallon drum and allowed to solidify. DCP sludge was assigned IDC 803. Due to mechanical problems, the DCP was only in operation for about a year.

(IDC 807): The process for receiving and treating aqueous feed streams in Building 374 was the same as that for IDC 007. At the time IDC 007 was discontinued in 1987 and replaced by IDC 807, the solidification process in use bypassed the sludge dryer system. The bypass system used a series of two conveyor belts to transfer the moist sludge exiting the vacuum filter directly into the 55-gallon drum. Diatomite and Portland cement in a 1:1 ratio were metered into the drum with the sludge. A 7:1 ratio of sludge to cement/diatomite mixture was used. As the drum was filled, the waste was periodically tamped down using a tamping tool. Oil Dri® and vermiculite have also been noted in IDC RF 807 wastes. IDC RF 807 drums containing Oil Dri® have been identified during real-time radiography (RTR) examination at the AMWTP. The estimated volumes of Oil Dri® and vermiculite did not exceed 50% of the overall volume within the waste containers. [42]

1.4.3 Material Inputs

Material inputs for IDC 007, IDC 803, and IDC 807 are common for this waste stream. Liquid wastes treated by the acid neutralization, radioactive decontamination, and evaporation processes were transferred to the sludge solidification process. The waste streams that were treated in the sludge solidification process are presented in Table 1-2.

Table 1-2. Wastes Treated in the Sludge Solidification Process.

Waste Streams	Source Buildings	Contaminants
Tank D-808: Packaged Acid Wastes and Building 371 Nitric Acid Wastes	Buildings 123, 371, 444, 460, 559, 774, 865, 881, and 883	Acid Wastes.
Tanks D-815, D-819, D-823: Radioactive Decontamination Process Effluent	Buildings 371 and 559, and 700 and 800 Areas	Acids, bases, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, selenium, silver, Trim Sol[a], Oakite Cleaner[a], Ox Out 536[a], acetone, ethyl alcohol, hexane, methanol, methyl ethyl ketone, methylene chloride, eutectic salts, photo developer, and photo stop bath.
Tank D-845: Evaporation Process Descaling Solution (nitric and phosphoric acid)	Buildings 122, 123, 443, 444, 447, 460, 559, 561, 566, 700 and 800 Areas, and Solar Ponds	Radioactive decontamination process effluent contaminants, solar pond water constituents, demineralization salts, water softeners, chemical indicators, 1,1,2-trichloro-1,2,2-trifluoroethane, toluene, penetrant oils, isopropanol, ethylene glycol, Mariko[a] [(28)], diamond paste, spent emulsifier, spent developer.

[a] See Table 2-1 for chemical description of Trademark Names.

In addition to the contaminants described in Table 1-2, liquid wastes set to Tanks D-824A and B can be contaminated with the following spent solvents:

- Tetrachloroethylene
- Trichloroethylene
- 1,1,1-Trichloroethane
- Carbon tetrachloride
- 1,1,2-Trichloro-1,2,2-trifluoroethane
- Acetone
- Methanol
- Xylene
- Benzene
- Toluene.

1.4.3.1 Miscellaneous Items

Miscellaneous items are those items that have been identified during characterization activities that are not consistent with expectations based on process descriptions. They appear in a small percentage of the waste stream containers and constitute a small percentage of the waste within the container and summary category group and other determinations are not impacted.

Visual examination (VE) and RTR inspections of IDC 007 containers have identified the following items:

- Inorganic liquids (see Section 1.5)
- Lead-containing items
- Miscellaneous metal debris
- Miscellaneous plastic debris.

Visual examination and RTR inspections of IDC 803 containers have identified the following item:

- Inorganic liquid (See Section 1.5)

Visual examination and RTR inspections of IDC 807 containers have identified the following item:

- Inorganic liquid (See Section 1.5)
- Lead-containing items
- D-cell battery
- Miscellaneous plastics

1.4.4 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BNINW218, waste material parameter data from 100% of the completed RTR and VE of Building 374 Sludge waste drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 95% of the estimated number of drums for this waste stream. The Building 374 Sludge waste was generated at RF from 1982 through 1988. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1982 to 1988; therefore, the WTS data is representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Building 374 Sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation and are summarized in Table 1-3. [44, 46, 47, 48]

Table 1-3. Estimated Waste Material Parameter Weights per Unit of Waste for Building 374 Sludge (BNINW218).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	6
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	1
Inorganic matrix	93

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids. [2, 44, 46]

1.5 Prohibited Items

The absence of prohibited items is determined and documented through acceptable knowledge and historical confirmation activities. The following item is expected in this waste based upon the above review.

- Liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container [e.g., 55-gallon drum or standard waste box] may not exceed 1% volume of that container)

The following items have been determined as not present in this waste through review of the AK record.

- Non-radionuclide pyrophoric materials, such as elemental potassium
- Hazardous waste not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous waste)
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an EPA PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA Hazardous Waste Numbers (HWN) of D001, D002, or D003)

Excess residual liquid is a common prohibited item identified during RTR and VE in this waste stream. Other prohibited items are expected to be very rare. [1, 44] Drums with excess residual liquid will be treated by adding absorbent prior to shipment. Drums with prohibited items will be treated or rejected as appropriate. Drums with prohibited items will not be part of the waste stream shipped to WIPP.

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification. [20, 40]
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. [40]

1.6 RCRA Determination

1.6.1 EPA Hazardous Waste Numbers

Toxicity Characteristic Codes: D006, D007, D008, D009, D010, D011, D032

Listed Waste Codes: F001, F002, F005, F006, F007, and F009

Rocky Flats Environmental Technology Site (RFETS) has also prepared a waste stream profile form for the Building 374 Sludge waste stream. The following paragraph is from the Rocky Flats submittal.

A portion of this waste stream, generated at RFETS, was sent to INEEL for storage; however, the INEEL waste stream (BNINW218) is also assigned EPA HWN D006, D007, D008, D009, D010, D011 and D032 in addition to F001, F002, F005, F006, F007, and F009. RFETS acceptable knowledge indicates that cadmium, chromium, lead, mercury, selenium and silver are present in this waste stream but that only chromium (D007) is present in concentrations above the RTL. There is no RFETS acceptable knowledge that hexachlorobenzene (D032) is present in this waste stream. Confirmatory solid sampling performed at RFETS detected chromium (D007) and silver (D011) in concentrations above the RTL; whereas, confirmatory solid sampling performed by INEEL detected chromium (D007) and mercury (D009). Because solid and/or headspace sampling performed at RFETS did not detect cadmium, lead, mercury, and hexachlorobenzene at concentrations above their RTLs, EPA HWNs D006, D008, D009, D010 and D032 were not applied to the RFETS waste stream. Per RFETS policy not to assign characteristic EPA HWNs to a listed waste, where the treatment standards for the listed waste addresses the characteristic, D007 (chromium) and D011 (silver) were not applied. [32]

The following sections discuss the application of HWNs by AMWTP.

1.6.2 Hazardous Determination

Ignitability:

The materials in this waste group do not meet the definition of *ignitability* as defined in 40 CFR 261.21. These materials are not liquid, are not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. These materials are not compressed gases, nor do the containers contain compressed gases. These materials are not DOT oxidizers as defined in 49 CFR 173. The materials in this waste group are therefore not ignitable wastes (D001).

Corrosivity:

The materials in this waste do not meet the definition of *corrosivity* as defined in 40 CFR 261.22. Under 40 CFR 261.22, a solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

- It is aqueous with a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical and Chemical Methods," EPA Publications SW-846.
- It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.240 inch) per year at a test temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by its test method specified in National Association of Corrosion Engineer (NACE) Standard TM-01-69 as standardized in SW-846.

The waste is not a liquid and does not meet the criteria for a corrosive hazardous waste as noted above. As determined by radioscopy and VE, none of the drums shipped contained 20% by volume, liquid waste (20% by volume is required in order to measure pH per the prescribed method in 40 CFR 261.22). Results of measurement of pH of residual liquids as reported in INEEL/EXT-01-00517 [12] ranged from 8.6 to 11.9, which supports this determination. Therefore, the corrosive characteristic (D002) does not apply.

Reactivity:

The materials in this waste group do not meet the definition of *reactivity* as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials do not contain sulfides, and are not capable of detonation or explosive reaction. The materials are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, nor do the drums contain explosive materials. Explosives were not handled or used around radioactive material. The waste may contain cyanide from treatment of electroplating wastes. Analysis of bypass sludge indicates a maximum total cyanide concentration of 8.2 mg/kg, and a maximum reactive cyanide concentration of 5.36 mg/kg. These cyanide levels will not cause the waste to be reactive. The materials in this waste group are not reactive wastes (i.e., D003).

The materials in the waste stream do not meet the definition of reactivity and will not be assigned the D003 waste code.

Toxicity:

Acceptable knowledge indicates the presence of metals, cadmium, chromium, lead, mercury, selenium, and silver in this waste stream. Results from solid sampling and analysis of the sludge (see Table 2 of the Characterization Information Summary associated with WSPF BNINW218) confirm that chromium and mercury are present in concentrations above the RTL. The results also indicate that cadmium, lead, selenium, and silver are present in the sludge, but at levels less than the toxicity limit. However, as a conservative measure, the D codes indicated by AK will be retained. The EPA hazardous waste codes (D006 through D011) for these metals have been applied to this waste stream.

Analytical results for semi-volatile organic compounds of solid samples collected in two samples from 1997 and 1998 indicated the potential presence of hexachlorobenzene. [12] These are part of the data set that was used by 3,100 m^3 to establish the required size of the final sample set. See Table 4 in INEEL/EXT-01-00517. [12] No other semi-volatile organic compounds were detected. The INEEL assigned the toxicity code (D032) for hexachlorobenzene as a conservative measure. The AMWTP will maintain this code assignment based on the AK as a conservative measure.

Spent halogenated organic compounds commonly used for their solvent properties for cleaning and degreasing were included in the feed waste. Results from solid sampling and analysis indicate that none of the toxicity volatile organic compounds were detected above the RTL. The appropriate F-listed codes for the halogenated solvents used have been applied to this waste; therefore, the toxicity characteristic waste codes associated with these compounds will not be assigned.

There is no documentation indicating the presence or use of pesticides or herbicides in the areas or processes that generated the aqueous waste from which Building 374 solidified aqueous waste was derived. Therefore, this waste group does not exhibit the characteristic of toxicity due to pesticides or herbicides (D012-D017).

Based on AK and sampling data, D006, D007, D008, D009, D010, D011, and D032 have been assigned to the Building 374 waste stream.

Listed Waste:

F Codes:

Tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and 1,1,2-trichloro-1,2,2-trifluoroethane were commonly used for cleaning and degreasing. Methylene chloride was used primarily for paint removal. The aqueous waste transferred to Building 374 for treatment may have contained small amounts of these spent solvents. Solid sampling organic data (Table 3A and 4A of the Characterization Information Summary associated with BNINW218) and headspace gas sampling results (Table 1A Characterization Information Summary associated with BNINW218) of the Waste Stream Profile Form BNINW218 indicate the presence of F001 and F002 organic compounds, although only the UCL_{90} for 1,1,1-trichloroethane approaches the PRQL. None of the UCL_{90}s exceeded the PRQL. However, because Building 374 solidified aqueous waste was derived from the treatment of a listed hazardous waste the EPA HWNs F001 and F002 are applied.

Acetone, methanol, and xylene were used primarily as solvents in laboratory operations. The aqueous waste transferred to Building 374 for treatment may have contained small amounts of these spent solvents. However, F-listed solvents were not mixed before being discharged into the process waste line. Solvents were also diluted with water and washed into the process waste line at the point of generation. Therefore, the ignitability characteristic was removed at the time of dilution and discharge. Since the F003-listed wastes were rendered non-ignitable prior to subsequent discharge and aggregation within the liquid waste stream destined for sludge generation, the F003 code, which is listed solely for ignitability, does not have to be applied. Neither solid nor headspace gas sampling have indicated UCL_{90} levels of these compounds. Therefore, this waste is not assigned EPA HWN F003.

There is no documentation indicating the presence or use of F004-listed solvents in the areas or processes that generated the aqueous waste from which Building 374 solidified aqueous waste was derived. Therefore, this waste group is not an F004-listed hazardous waste.

F005-listed solvents, benzene and toluene, were used in laboratory operations, and methyl ethyl ketone is identified as a contaminant by AK. The aqueous waste transferred to Building 374 for treatment may have contained small amounts of these spent solvents. Headspace gas sampling results from the 3,100 m^3 Project indicated the presence of benzene, methyl ethyl ketone, and toluene, although the calculated UCL_{90}s were all below the respective PRQLS. The headspace gas data

set presented in Table 1A does not indicate the presence of benzene, toluene, or methyl ethyl ketone. However, because Building 374 solidified aqueous waste was derived from the treatment of a listed hazardous waste, the EPA HWN F005 is applied.

In late 1984 and early 1985, the evaporator in Building 374 began treating spent stripping, cleaning, and plating solutions from electroplating operations in Building 444. The Building 444 electroplating operations utilized cyanide and therefore the Buildings 374 wastewater treatment operations received F007 and F009 wastes, and generated F006 wastewater treatment sludge. The Building 374 sludges were derived from the treatment of spent descaling solution from the evaporator, and were assigned EPA HWNs F006, F007, and F009.

Based on the above discussion Building 374 Sludge will be assigned F001, F002, F005, F006, F007, and F009.

K-Listed Codes:

The materials in this waste stream do not meet the definition for K-listed EPA codes. K-listed EPA codes only apply to hazardous waste from specific sources. The waste is not and does not contain any hazardous waste from specific sources paragraphs (a) of 40 261.32.

P- and U-Listed Codes:

The materials in this waste stream do not meet the definition for any P- or U-listed codes. P- and U-listed EPA codes only apply to discarded commercial chemical products, and residues of commercial chemical or off-specification products. The waste is not and does not contain any commercial product, or manufacturing chemical intermediate listed under paragraphs (e) or (f) of 40 CFR 261.33 that when they were discarded were mixed with waste oil or used oil or other material that was applied to the land, or used as a fuel, in lieu of their original intended use as described in detail in 40 CFR 261.33. The following paragraphs contain detailed justification that P- and U-listed codes are not applicable.

Waste generated from non-restricted operations (or buildings) or after 1974, may be contaminated with trace quantities of beryllium (e.g., less than one percent (1%) of the waste by weight). This beryllium contamination is an integral part of the sludge and is not in powder form. It is not a commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code (P015) for beryllium as defined in 40 CFR 261.33 was not assigned to the waste.

The U-listed code (U134) for hydrofluoric acid is not applicable to this waste stream. Hydrofluoric acid may have been used during recovery operations in Building 771, but was not disposed of as unused product within the waste stream. As established previously, this waste does not exhibit the characteristic for corrosivity.

The U-listed code (U079) for trans-1,2-dichloroethylene also is not applicable to this waste stream. It is not an expected constituent of this waste and the waste does not meet the definition of a U-listed waste per 40 CFR 261.33. Although trans-1,2-dichloroethylene is currently a WAP target analyte, it was not included as such in the solids sampling analytical results used to characterize this waste. The solids samples were collected and analyzed under a WAP compliant program, but prior to the time that trans-1,2-dichloroethylene was added to the target analyte list. It was not detected (as a TIC) in any of the solid samples analyzed under the 3,100 m^3 Project WIPP compliant program and has not been detected as a TIC in any of the RF wastes headspace gas samples in 25% or more of samples, including Building 374 Sludge.

TSCA Regulated Contaminants

Acceptable knowledge indicates that Building 374 Sludge waste does not contain polychlorinated biphenyls (PCBs) as regulated by the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601 et seq.

1.7 Radionuclides

The WIPP-tracked radionuclides of concern for this waste are: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. [1, 44] The remaining WIPP-tracked radionuclides, ^{137}Cs, and ^{90}Sr, are not expected to be present in measurable quantities in this waste. [39] The Building 374 sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [9, 41]

As a minimum, to confirm existing AK data, the ratios of the two most prevalent radionuclides in the isotopic mix are compared. [21] The two most prevalent radionuclides by weight expected in the Building 374 sludge waste drums are ^{239}Pu and ^{240}Pu. [9]

The recommended default mass fraction values of the plutonium isotopes to be used as the AK based values and confirmed at the AMWTP during non-destructive assay (NDA) are listed in RPT-TRUW-07, *Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge*. [9]

Mass fraction values for ^{241}Am, ^{233}U, ^{235}U, and ^{238}U previously determined for Rocky Flats at the Idaho National Engineering and Environmental Laboratory

(INEEL) were based on individual gamma spectrometric measurements. The ^{234}U activities were calculated based on ratios with depleted uranium isotopes. The criteria used for selection and the formulas for determining the ^{234}U mass is presented in RPT-TRUW-07. (9)

Radionuclides such as ^{244}Cm, ^{232}Th, and ^{236}U may be found in Rocky Flats wastes. (9) Americium-241, ^{234}U, and ^{237}Np are expected in most of the Rocky Flats TRU waste containers due to radioactive decay and ingrowth. (10) ^{243}Am and ^{245}Cm, other isotopes resulting from radioactive decay, have also been detected during AMWTP NDA. (22, 23) Potassium-40 may be detected when other radionuclides in a container are significantly lower in concentration. In some cases ^{40}K has been detected in higher concentrations than ^{239}Pu and contributes to 95% of the radionuclide hazard. (11)

AMWTP will employ payload management practices in accordance with the WIPP-WAC Appendix E, for waste stream BNINW218. The estimated total waste volume for BNINW218 is 416 m^3. The estimated percentage of the waste greater than 100 nCi/g is 66%. The estimated percentage of waste less than or equal to 100 nCi/g is 34%. (9)

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Depending on waste packaging requirements at the time, several combinations of bags and liners were used to prepare 55-gallon drums for shipment. Use of the 90-mil rigid polyethylene liner began in 1972. The rigid liner was placed in each drum and lined with a polyethylene round bottom drum liner, a polyethylene drum bag and PVC O-ring bag, or a single round bottom polyethylene liner placed between the rigid liner and O-ring bag. Some drums packaged after 1972 may not have rigid liners.

When a drum was full, the drum liners were twisted and taped closed, the lid was secured with a bolted ring, and a tamper-indicating device was attached to the drum. Approximately one liter of Oil Dri® was placed in the bottom of the O-ring bag. One liter of Oil Dri® was placed on top of the O-ring bag inside the polyethylene drum bag (See Table 2.1 for list for constituents associated with Oil Dri®).

Typically sludge was placed directly and treated (i.e., monolith) directly in drum bags within the drum and have no inner packaging or may be layered. (17, 18) Diatomite and cement were added to the waste in various amounts. (25) Approximately 20 to 50 pounds of Portland cement were typically added to IDC 007 and 807 Sludge and can be found layered throughout the drum and packaging. After April, 1986, a 1:1 ratio of diatomite and Portland cement was

used in a 7:1 sludge/absorbent ratio. (See Table 2-1 for list of constituents associated with Portland cement).

The typical bag closure method was "twisted and taped." Drum stub bags may be identified in containers that were visually examined or cored at WMF-634. [19]
A "Filtered bag" method was used for bag closure in drums visually examined at Argonne-West as part of the 3,100 m^3 Project. [24]
After drums were inspected, one to two quarts of absorbent material (Oil-Dri®) was placed on the top of the outer, sealed polyethylene drum bag. [2, 14, 15, 16] This procedure changed in February 1982 when vermiculite was used to fill the void space. The quantity of vermiculite varied from 3-12 pounds according to the amount of waste contained in each drum. The type, amount, and expected time-frame of absorbent use may vary. Aquaset® or vermiculite in varying amounts was added to drums of waste during the 3,100 m^3 Project recovery operations (See Table 2-1 for list of constituents associated with Aquaset®).

Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate. [43]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with CCP-CH-TRAMPAC, CCP-PO-003. [45]

Table 2-1. Tradename Index

Tradename	Chemical Constituents
Aquaset	Sodium montmorillonite [33]
Mariko	Nonhazardous mixture [28]
Oakite Cleaners	
Oakite Aluminum Cleaner	Sodium carbonate; sodium phosphate, tribasic; tetrasodium pyrophosphate, sodium metasilicate, sodium silicate [27]
Super Ruststripper	Sodium hydroxide, sodium hydroxyethylene diamine triacetate, Trade secret registry (735517), Non-hazardous ingredients [34]
Oakite Dynadet	Sodium hydroxide, tetrasodium pyrophosphate, nonylphenoxy polyethoxy ethanol, dipentene, non-hazardous ingredients [35]
Oakite 360 L	Sodium hydroxide, non-hazardous ingredients [36]
Oil-Dri	Crystalline silica and clay minerals, e.g., montmorillonite, bentonite [29]
Ox Out 536	Water, ammonium bifluoride, and nitric acid [37]
Polymer 1192	Material Safety Data Sheet Section 1, Hazardous Ingredients, states; "This product contains no hazardous ingredients by OSHA regulations or any state Right-To-Know regulations." [38]
Portland Cement	Tricalcium silicate, dicalcium silicate, tricalcium aluminate, calcium alumino ferrite, gypsum, calcium oxide, magnesium oxide, sodium sulfate, potassium sulfate, crystalline quartz silica, trace chromium [30]
TRIM SOL	Water miscible cutting and grinding fluid concentrate, not hazardous per Environmental Protection Agency (EPA) or Department of Transportation (DOT) guidelines [26]

PROCESS FLOW DIAGRAMS

This section contains process flow diagrams available for the Building 374 waste stream.

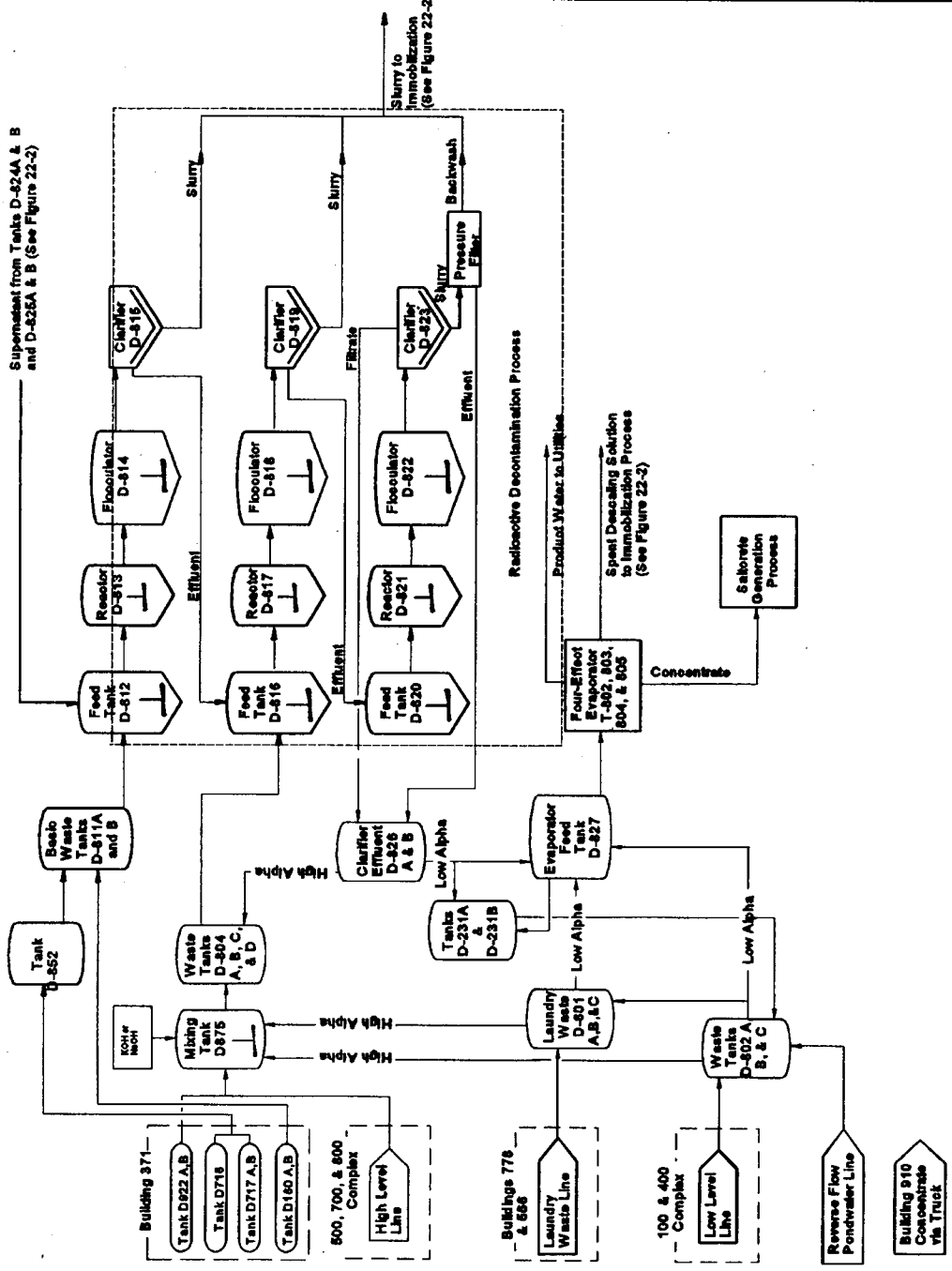

Figure 3-1. Building 374 radioactive decontamination and evaporation processes.

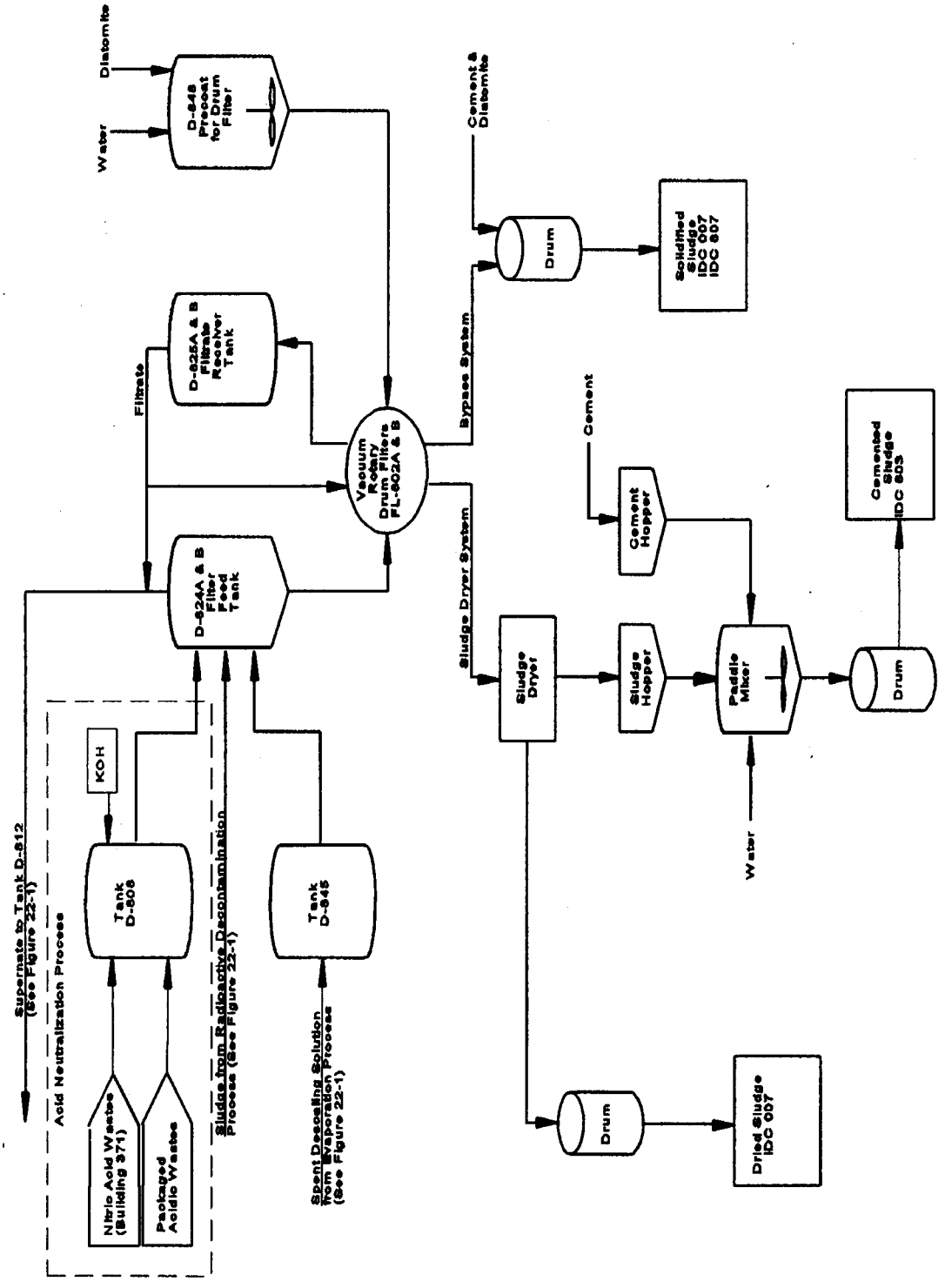

Figure 3-2. Building 374 acid neutralization and sludge immobilization processes.

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BNFNO218

AK Source Document / Rev. Number: INEL-96/0280, Rev. 3

hwn	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	X			X	✓
F002	X	X				X	✓
F003							✓
F004							✓
F005	X	X				X	✓
F006	X					X	✓
F007	X	X				X	✓
F009	X	X				X	✓
D004							✓
D005							✓
D006	X	X		O		X	✓
D007	X	X	X			X	✓
D008	X	X		O		X	✓
D009	X	X	X			X	✓
D010	X	X		O		X	✓
D011	X	X		O		X	✓
D022							✓
D032		X				X	✓

AK Expert: SM Hailey SM Hailey Date: 3/1/04
Print/Sign

Site Project Manager: SM Hailey SM Hailey Date: 3/1/04
Print/Sign

AMWTP Advanced Mixed Waste Treatment Project	TRU Waste Stream AK Documentation Checklist	Form-1067 Rev. 7 Effective: 07/10/09 Page 1 of 2

Implementing Document: MP-TRUW-8.13

Waste Stream or Waste Type Description: Building 374 Sludge

Waste Stream or IDC Number: BNINW218		
AK Information	**AK#<1>**	**Source Document Reference Number**
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C001A, C031S, C087A, C121A, C184A, D061A, P001A, P014A, P052A, P061A, P082A, P113A, P127A, P220A, P238A, P368A, P420A, P422A, P435S, P621A, P649A, P671S, P717A, P744A, U045A, U049A, U051A, U053A, U059A, U069A
Waste stream volume and time period of generation.	WS2	C010S, C154A, C534A, C535A, D061A, P052A, P061A, P127A, P164A, P194A, P198A, P238A, P246A, P318A, P364A, P365A, P368A, P400A, P420A, P422A, P424A, P567A, P621A, P649A, P671S, P717A, P744A, U059A, U069A, U122A, U127A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C010A, C013A, C015A, C015S, C031A, C087A, C121A, C175A, P001A, P004A, P012A, P013A, P014A, P015A, P016A, P026A, P039A, P047A, P052A, P053A, P061A, P078A, P079A, P082A, P106A, P164A, P238A, P368A, P420A, P422A, P435S, P621A, P649A, P671S, P717A, P744A, U031S, U045A, U047A, U049A, U051A, U053A
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C013A, C063A, C111A, C112A, C113A, C121A, C122A, C129A, C200A, C245A, C546S, D061A, D070A, P004A, P015A, P033A, P052A, P053A, P061A, P062A, P067A, P068A, P076A, P079A, P084A, P091A, P106A, P113A, P143A, P144A, P145A, P146A, P147A, P148A, P149A, P150A, P207A, P220A, P238A, P307A, P310A, P359A, P365A, P368A, P401A, P409A, P420A, P422A, P425A, P426A, P427A, P428A, P429A, P430A, P435S, P621A, P649A, P717A, P744A, U029A, U030A, U043A, U045A, U051A
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C184A, C200A, C242A, C243A, C315A, C316A, C326A, C534A, C546S, D061A, P001A, P012A, P013A, P014A, P015A, P016A, P022A, P026A, P039A, P043A, P052A, P061A, P063A, P064A, P106A, P113A, P141A, P207A, P218A, P220A, P238A, P365A, P368A, P372A, P393A, P399A, P420A, P422A, P435S, P465A, P567A, P621A, P649A, P670A, P717A, P744A, U050A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C079A, C111A, C112A, C113A, C121A, C122A, C200A, C224A, C245A, C607A, D006A, D064A, D070A, P012A, P013A, P015A, P022A, P052A, P061A, P067A, P080A, P207A, P218A, P220A, P238A, P307A, P310A, P365A, P368A, P393A, P420A, P422A, P435S, P649A, P717A, P744A, P756A, U029A, U030A, U046S, U049A, U050A, U053A, U059A, U060A, U082A
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C015A, C015S, C129A, C130A, C154A, C281A, C285A, C286A, C551A, C552S, D051A, P047A, P061A, P164A, P189A, P194A, P198A, P227A, P229A, P238A, P240A, P322A, P368A, P398A, P420A, P435S, P611A, P621A, P649A, P744A, U047A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C224A, C321A, C516A, D070A, P001A, P012A, P013A, P015A, P022A, P238A, P358A, P368A, P420A, P465A, P649A, P744A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: _____ TIM VERHEMAN Date: 7-22-09
Print/Sign Date

Site Project Manager: _____ Date: 7.22.09
Print/Sign

LDR NOTIFICATION- IDCs 007, 803, 807

WASTE STREAM BNINW218

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D006, D007, D008, D009, D010, D011, D032, F001, F002, F005, F006, F007, F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited from land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	D032	September 19, 1996
	F001	Nov 8, 1988
	F002	Nov 8, 1988
	F005	Nov 8, 1988
	F006	August 8, 1988
	F007	July 8, 1989
	F009	July 8, 1989

DOE F 1325.8

United States Government | Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: MAR 19 2004

REPLY TO ATTN OF: CBFO:NTP:KWW:VW:04-1091:UFC:5822

SUBJECT: Approval of AMWTP WSPF BNINW218

TO: Brian Edgerton, DOE-ID

The Carlsbad Field Office (CBFO) has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BNINW218. We have concluded that the WSPF is complete and that the waste stream determinations were made in accordance with CBFO procedures and guidance. The CBFO therefore approves the WSPF as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7357.

Kerry W. Watson
CBFO Assistant Manager
Office of National TRU Program

cc:
R. McCallister, CBFO *ED
J. Wells, DOE-ID *ED
E. Schweinsberg, BNFL *ED
A. Dobson, BNFL *ED
M. Strum, WTS *ED
D. Standiford, WTS *ED
R. Chavez, WRES *ED
WIPP Operating Record
L. Greene, WRES
CBFO M&RC

*ED denotes Electronic Distribution

P420A

BNFL Inc.

785 Lindsay Blvd
Idaho Falls, ID 83402
Tel: (208) 524-8484
Fax: (208) 524-4442

March 18, 2004

Kerry Watson
4021 National Parks Highway
Carlsbad, NM 88221

Subject: **Waste Stream Profile, BNINW218– EPS-040-2004**

Dear Mr. Watson:

Attached is Waste Stream Profile (WSPF), BNINW218, for your approval. We have evaluated and reviewed the profile, and believe it is compliant with the WAP.

In the WSPF Characterization Information Summary (Page 2) we have included a discussion about random sampling requirements for the Building 374 Sludge waste stream. The remaining inventory of the approximately 2,000 containers addressed by this waste stream profile form were part of the original population that was randomly sampled by the INEEL 3,100 m3. All containers from the Building 374 Sludge Waste were available for random sampling.

The remaining inventory of 2,000 containers is presently in storage modules at the Advanced Mixed Waste Treatment Project (AMWTP). Therefore the Lot 1/Lot 2 scenario is not applicable for the Building 374 Sludge waste stream. If you have any questions feel free to call me at (208) 557-7164 or Sheila Hailey at (208) 557-7127.

Sincerely,

Eric P. Schweinsberg, TRU Program Manager
Advanced Mixed Waste Treatment Project

Attachment

cc:
A. Dobson, BNFL Inc. (w/o attachments)
R. Chavez, CBFO
S. Hailey, BNFL Inc.
D. Swale, BNFL Inc. (w/o attachments)
J. Wells, DOE-ID
M. Wheeler, BNFL Inc. (w/o attachments)
AMWTP Document Control

Venneman, Timothy E.

From: Schweinsberg, Eric
Sent: Tuesday, July 14, 2009 11:33 AM
To: Venneman, Timothy E.; Carpenter, Steve; Johnson, Micky L.; Tedford, Gina
Subject: FW: CBFO Approval RPT-TRUW-15, Revision 10A
Follow Up Flag: Follow up
Flag Status: Red

FYI

Eric P. Schweinsberg
SPM/TRU Programs
AMWTP - Idaho National Lab
208-557-6425 (Work)
208-351-9247 (Cell)
208-557-6561 (Fax)

We make a living by what we get. We make a life by what we give

---

From: Sena, Gloria - DOE [mailto:Gloria.Sena@wipp.ws]
Sent: Tuesday, July 14, 2009 10:58 AM
To: Document Services
Cc: Brown, Gail L.; Schweinsberg, Eric; Wells, Jerry L; Gilbert, Patsy - LANL; Lyshik, Gwen - LANL
Subject: CBFO Approval RPT-TRUW-15, Revision 10A

As requested in the email from AMWTP Document Services on June 29, 2009, the Carlsbad Field Office (CBFO) has reviewed RPT-TRUW-15, Revision 10A, *Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)*. There were NO comments generated. We have determined that the report continues to meet CBFO requirements.

If you have any questions, please contact Norma Castaneda at (505) 234-7118.

Office of the National TRU Program
Carlsbad Field Office

cc:
WIPP Operating Record
CBFO M&RC

CBFO:NTP:GS:09-1055:UFC 5900.00

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

RECORD JMC 10/02/12

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P437A	**2. Revision:** 9

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BN835 Solidified Acid/Caustic Waste Stream Profile Package, Change Notice #1, and Change Notice #2

Document Number: N/A
Revision: N/A
Author: AMWTP, CBFO
Date: 4/7/05

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM2, WM3, WM5, WM6, WM7	MD	all	The AK Summary Report addresses the WM elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The WSPF includes references to the documents that address the remaining WM elements.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	MD-834, MD-835	all	WSPF and AK Summary Report provides a summary of the information that addresses all of the WS elements.

9. Document Summary:

FOR INFORMATION ONLY

Implementing Document: MP-TRUW-8.13

The WSP package includes characterization information for waste stream BN835 that was approved by CBFO. This revision of the WSP package includes the following documents:
•CBFO Approval letter of CN #2 for WSP BN835. April 2, 2008
•Change Notice # 2 for WSP BN835, March 27, 2008
•CBFO Approval letter of CN #1 for WSP BN835. February 15, 2007
•Change Notice # 1 for WSP BN835, February 14, 2007
•CBFO Approval letter of WSP BN835, April 7, 2005
•WSPF (Form-1195), DQO (Form-1597), and CIS (including Form-1598) for BN835, Rev. 0, April 6, 2005
•Acceptable Knowledge Summary, RPT-TRUW-23, Rev. 6, June 27, 2012
•WSPF HWN Assignment Worksheet (Form-1187) for BN835, August 30, 2005
•TRU Waste Stream AK Documentation Checklist (Form-1067) for BN835, Rev. 3, August 21, 2008
•LDR Notification – IDCs 834, 835, Waste Stream BN835
•BNFL, Inc. transmittal letter Waste Stream Profile BNINW835, EPS-087-2004, December 20, 2004
•BNFL, Inc. transmittal letter Container List for Waste Stream BN835, Lot1, EPS-008-2005, February 23, 2005

Revision 8 updates record to include revised AK Summary Report (RPT-TRUW-23)

Revision 9 of P437A updates the record to include revised AK Summary Report RPT-TRUW-23, Rev. 6, June 27, 2012

10. Source Document Data Limitations (if any):

The characterization only applies to containers certified for disposal at WIPP.

11. AK Expert:	Julie Collins			10/2/2012
	Print		Sign	Date

P437A R9

Update for WIPP Operating Record (Change Notice # 2)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN835, Revision 0. This waste stream is Solidified Acid/Caustic Waste and was approved by DOE/CBFO on April 7, 2005. Change Notice #1 was approved February 15, 2007.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval date January 18, 2008.

2. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Add the following procedure:

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06

3. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Report Number**

   Revise report number from AMWTP-RPT-TRUW-23 to RPT-TRUW-23.

4. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 1.2.4, Generation Dates**

   Added the following after the dates:

   AMWTP stores containers of Mound solidified acid/caustic waste generated from 1975 to 1985. Waste stored at AMWTP with generation dates (i.e., pack date) later than 1985 are the result of repackaging (e.g., waste characterization/treatment activities).

5. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

   Revise to: WIPP Identification Numbers: IN-W174.154, IN-W177.156 [5]

Update for WIPP Operating Record (Change Notice # 2)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

6. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 1.3.1, Description**

Revise Table 1-1 as follows:

TWBIR Numbers	IDC	WMC	Description
IN-W174.154	834	S3113	Acidic waste contained approximately 95% nitric acid with trace amounts of hydrofluoric, hydrochloric, sulfuric and oxalic acids. IDC 834 waste was generated from 1975 through 1980. Since December 1976, acidic waste was combined with caustic liquid wastes from plutonium processing. [1, 16, 17, 18, 23] Acidic waste was absorbed with vermiculite, clay absorbent mixed with diatomaceous earth or aluminum-magnesium-iron silicate clay material (Florco). There are 901 containers of IDC 834. [1, 16]
IN-W177.156	835	S3113	Caustic waste consists primarily of sodium hydroxide and limited amounts of ammonium hydroxide. IDC 835 was generated from 1974 through 1985. Caustic waste was absorbed with vermiculite, clay absorbent mixed with diatomaceous earth or aluminum-magnesium-iron silicate clay material (Florco). [1, 16, 17, 18, 23] There are 1,676 containers of IDC 835. [1, 16]

7. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 1.5, Prohibited Items**

Revised first sentence of first paragraph as follows:

The absence of prohibited items is determined and documented through AK and characterization activities.

Add the following bullets to the first paragraph:

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Plan, unless specifically approved through a Class 3 permit modification. [14]

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as describe in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. [14]

Update for WIPP Operating Record (Change Notice # 2)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

8. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 1.7, Radionuclides**

Add the following as the last sentence of the first paragraph:

The solidified acid/caustic waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [7, 29, 30]

9. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), Section 2.2, Flammability Considerations**

Revise last sentence as follows:

Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

10. **AK Summary, Solidified Acid/Caustic Waste (RPT-TRUW-23), References**

Revise existing references as follows:

4. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008

5. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report-2004, U.S. Department of Energy, Carlsbad Field Office

8. DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, October 29, 2007

9. 9NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Current Revision

13. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [P672A]

Add the following references:

29. INEL-95/0412, Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory, December 1995 [P365A]

30. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

Update for WIPP Operating Record (Change Notice # 2)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

Reason/Justification for the Changes

The audit report approval dates were updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

The AK Summary report number was changed to reflect changes in document control protocols.

CCP was added to the acronym list of RPT-TRUW-23 to identify the Central Characterization Project

AK Summary Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information, was changed to update the TWBIR numbers to reflect the current TWBIR.

AK Summary Section 13.1, Table 1-1 was changed to update the TWBIR numbers to reflect the current TWBIR.

AK Summary Section 1.2.4, Generation Dates was changed to provide clarification that pack dates later that 1985 are the result of repackaging.

AK Summary Section 1.5, Prohibited Items was changed to add two prohibited items to reflect the requirements of the updated Quality Assurance Project Plan, MP-TRUW-8.2, Section B-1c.

AK Summary Section 1.7, Radionuclides was changed to reflect compliance with requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section 3.1.6.

AK Summary Section 2.2, Flammability Consideration was updated to reflect new TRAMPAC procedure.

AK Summary Section 3, References was updated to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN835) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg, SPM	3/27/08

Washington
TRU Solutions LLC

WRES:07:034
UFC:5822.00

February 15, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #1) SOLIDIFIED ACID/CAUSTIC WASTE (BN835, REV.0)

Dear Mr. Provencher:

Washington TRU Solutions, on behalf of the Permittees, has approved the Change Notice Number 1 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN835, Rev. 0, Solidified Acid/Caustic Waste. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance..

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

WMW:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7063

Update for WIPP Operating Record (Change Notice # 1)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN835, Revision 0. This waste stream is Solidified Acid/Caustic Waste and was approved by DOE/CBFO on April 7, 2005.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Delete audit approval date 7/02/04 and add additional audit approval dates 4/1/05, 12/9/05, and 1/23/07.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07.

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 8, 1/24/07.

3. **WSPF Form-1195, Waste Stream Information, Applicable TRUCON Content Codes**

   Revise the TRUCON Content Codes to ID111/ID211.

4. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item: See Section 1.4.4, Table 1.2 of the AK summary. This is listed as Item 8 in the Change Notice.

5. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), Report Number**

   Revise report number from BNFL-5232-RPT-TRUW-23 to AMWTP-RPT-TRUW-23.

6. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), TABLES**

   Revise Table of Contents per the following:

   Delete Table 2-1, Typical Packaging Parameters for Solidified Acid/Caustic Waste

Update for WIPP Operating Record (Change Notice # 1)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

Add Table 1-2 Estimated Waste Material Parameter Weights per Unit of Waste for Solidified Acid/Caustic Waste (BN835)

7. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), Section 1.2.5., TRUCON Codes**

Revise the TRUCON Content Codes to ID111/ID211.

8. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), Section 1.4, Process Description**

Add new Section 1.4.4 as follows:

1.4.4. Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN835, waste material parameter data from 100% of the completed RTR and VE of Solidified Acid/Caustic Waste drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 87% of the estimated number of drums for this waste stream. The Solidified Acid/Caustic waste was generated at Mound from 1974 to 1985. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Solidified Acid/Caustic wastes, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation and are summarized in Table 1-2. [15, 28]

Table 1-2. Estimated Waste Material Parameter Weights per Unit of Waste for Solidified Acid/Caustic Waste (BN835).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Other Inorganic Materials	<1
Plastics (waste)	<1
Rubber	<1
Cellulosics	3
Inorganic Matrix	97

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50% by volume inorganic particulate absorbents, including absorbed liquid wastes. [1, 28]

9. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), Section 1.7, Radionuclides**

Revise first sentence of last paragraph to read as follows: AMWTP will employ payload management with the WAC for waste stream BN835. [8]

10. **AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), Section 1.9, Shipping Considerations**

Section 1.9, Shipping Considerations, delete Section 1.9 and delete Table 2-1 and its introductory paragraph.

Add new Section 2.0, Shipping Consideration, as follows:

2.0 Shipping Consideration

2.1 Waste Packaging

Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. Typically, the rigid liners were lined with a polyethylene drum bag. Typically, plywood spacers were placed between the rigid liner lid and the drum lid before the drum lid was installed. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected, as appropriate. [1, 19, 26]

2.2 **Flammability Consideration**

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC).

Update for WIPP Operating Record (Change Notice # 1)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

11. AK Summary, Solidified Acid/Caustic Waste (AMWTP-RPT-TRUW-23), References

Update reference number 5 to Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, DOE/WIPP 02-3122, Rev. 6, November 15, 2006.

Delete reference number 15 for MP-TRUW-8.3 because it was a duplicate of reference number 13 and replace reference number 15 with the following: MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation, Rev. 15, January 2007.

Add the following as reference number 19: AMWTP-RPT-TRUW-05, Waste Matrix Code Reference Manual Rev. 15, November 2006. (P399A)

Add the following as reference number 20: Monsanto Research Corp 1976, Mound Site Waste Management Reports and Site Plans 1972 to 1976. (P523A).

Add the following as reference number 21: Monsanto Research Corp 1980, Mound Site Waste Management Reports and Site Plans1977 to 1980. (P522A).

Add the following as reference number 22: Monsanto Research Corp 1989, Mound Site Waste Management Reports and Site Plans1981 to 1989. (P524A)

Add the following as reference number 23: Clements, T.L., WIPP Immobilization Criterion Study – TLC-9-84, July 2, 1984. (C349A)

Add the following as reference number 24: Braun, R.T., Radioactive Waste Shipped to INEL, January 28, 1976. (C359A)

Add the following as reference number 25: Edling, D. A. Disposition of High Level Radioactive Caustic and Acid TRU Drums, February 21, 1975. (C362A)

Add the following as reference number 26: Monsanto Research Corp 1989, Mechanical Manual MD-70205 (June 24, 1976 to February 2, 1989), TRU Waste Management February 2, 1989. (P510A)

Add the following as reference number 27: Monsanto Research Corp 1977, Radioactive Waste Process Flowsheets TRU Waste Management, May 31, 1977. (U132A)

Add the following as reference number 28: Memorandum to File from Tim Venneman, "Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste" TV-001-07, January 19, 2007. (C534A)

Update for WIPP Operating Record (Change Notice # 1)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

Reason/Justification for the Change

The NMED audit report approval dates were revised and updated to reflect the approval dates for audits conducted subsequent to the WSPF submittal and to delete the approval date for non-S3000 audit(i.e., 7/2/04 was the approval date for the HSG system)."

The documents used for WAP certification were revised to reflect the most recent revisions.

WSPF Form-1195 TRUCON Content Codes were revised to delete the alpha suffixes.

New item entitled waste material parameter weight estimates per unit of waste was added to Form-1195 as required by MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-12b.

The AK Summary for Solidified Acid/Caustic Waste was renumbered to reflect the current operating contractor for the AMWTP facility.

The Table of Contents for the AK Summary was revised to accommodate changes required by the revised WIPP Hazardous Waste Facility Permit requirements as described in MP-TRUW-8.2, Section B3-12b.

AK Summary TRUCON Content Codes were revised to delete the alpha suffixes and for consistency with WSPF Form-1195.

Waste material parameter weight estimates per unit of waste and method for determining those estimates were incorporated into new Section 1.4.4 and Table 1-2 to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in the Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-12b.

Section 1.9 was deleted and the information concerning flammability considerations was incorporated into Section 2.2.

Table 2-1 and introductory paragraph to Table 2-1 were deleted because packaging information was incorporated into new Section 2.1.

Shipping Consideration Section 2.0 was added to provide format consistency between AMWTP-RPT-TRUW reports.

Waste Packaging Section 2.1 was added to provide waste packaging information to replace the information from the deleted Table 2-1.

Flammability Consideration, Section 2.2, replaced Section 1.9 and was added to clarify the method used for determining flammability as described in MP-TRUW-8.2, Section B3-11a.

Update for WIPP Operating Record (Change Notice # 1)

Solidified Acid/Caustic Waste (BN835, Rev. 0)

The AK Summary for Solidified Acid/Caustic Waste reference list was updated to identify references that support the information revised or updated in the AK Summary including the addition of supporting information as requested during the EPA baseline audit.

Update for the WIPP Operating Record (BN835) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg, SPM	2/14/07

DOE F 1325.8

United States Government · **Department of Energy**

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: April 7, 2005

REPLY TO ATTN OF: CBFO:OCT:KWW:GS:05-1003:UFC 5822.00

SUBJECT: Approval of Advanced Mixed Waste Treatment Project Waste Stream Profile Form Number BN835, Solidified Acid/Caustic Waste

TO: Richard Provencher, DOE-ID
Jeff Snook, DOE-ID

The Carlsbad Field Office (CBFO) has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form Number (WSPF) BN835, Solidified Acid/Caustic Waste. We have concluded that the WSPF is complete and that the waste steam determinations were made in accordance with CBFO procedures and guidance. The CBFO therefore approves the AMWTP WSPF as submitted.

If you have any questions, please contact me at (505) 234-7357.

Kerry W. Watson, Director
Office of Characterization and Transportation

Attachment

P437A

cc: w/o attachment

F. Marcinowski, DOE HQ	*ED
A. Holland, CBFO	ED
R. McCallister, CBFO	ED
M. Navarrete, CBFO	ED
A. Dobson, BNFL	ED
A. Dumas, BNFL	ED
E. Schweinsberg, BNFL	ED
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D. Speed, WTS	ED
D. Standiford, WTS	ED
M. Strum, WTS	ED
R. Chavez, WRES	ED
R. Reeves, WRES	ED
H. Borher, DOE-ID	ED
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T. Jenkins, DOE-ID	ED
C. Maggart, DOE-ID	ED
J. Medema, DOE-ID	ED
J. Wells, DOE-ID	ED
L. Price, LANL	ED
CBFO M&RC	
WIPP Operating Record	

*ED denotes Electronic Distribution

CBFO:DOT:KMM:05-1001:UFC

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form-1195 Rev. 2 Effective Date: 11/30/04 MP-TRUW-8.14 Page 1 of 3

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN835, Rev. 0

Generator site name: Advanced Mixed Waste Treatment Project
Technical contact: Eric Schweinsberg

Generator site EPA ID: ID4890008952
Technical contact phone number: (208) 557-7164

Date of Audit report approval by NMED: 12/23/03; 7/02/04

Title, version number, and date of documents used for WAP certification:

Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 1, 01/14/03; Rev. 2, 04/03/03; Rev. 3, 10/31/03; Rev. 4, 02/11/04; Rev. 5, 8/18/04; Rev. 7, 11/29/04.

Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), MP-TRUW-8.3, Rev. 1, 2/06/03; Rev. 2, 3/29/04; Rev. 3, 12/15/04

Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2, Rev. 1, 2/26/03; Rev. 2, 3/31/03; Rev. 3, 8/19/04

Did your facility generate this waste? ☐Yes ☒No *If no, provide the name and EPA ID of the original generator:*
Mound, OH6890008984

Waste Stream Information[1]

WIPP ID: IN-W174.1082, IN-W174.154 IN-W177.1083, IN-W177.156
Summary Category Group: S3000

Waste Matrix Code Group: Solidified Inorganics
Waste Stream Name: Solidified Acid/Caustic Waste

Description from the WTWBIR: This waste comes from Mound. It consists of acid liquids, mainly nitric, adsorbed onto a clay called Florco (aluminum, magnesium, iron silicate clay). The waste also consists of caustic waste and neutralized liquids, absorbed onto a clay called Florco. The Florco is then placed in a drum bag in a drum lined with a 90-mil poly liner. See note.
Note. The description in the WTWBIR is not entirely correct with respect to the absorbents used in this waste stream. Vermiculite and clay mixed with diatomaceous earth were also used as absorbents.

Defense TRU Waste: (Ref. 10) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs 0 Number of Drums 2577 Number of Canisters 0

Note: The number of drums identified in the TWBIR is incorrect. The number of containers identified in the WSPF is consistent with AK provided by Mound.

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[2] D007, D008, D009, F001, F002

Applicable TRUCON Content Codes: ID111MA/211MA, ID111MC/211MC, ID111MD/211MD

Acceptable Knowledge Information[1]

[For the following, enter supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: See Reference List, No. 1, Appendix A; No. 2

Facility mission description: See Reference List No. 1, Section 3; No. 3

Description of operations that generate waste: See Reference List, No. 1

Waste identification/categorization schemes: See Reference List, No. 4

Types and quantities of waste generated: See Reference List, No. 1, Section 3, 4; Nos. 3, 5 and 6

Correlation of waste streams generated from the same building and process, as appropriate: See Reference List, No. 1

Waste certification procedures: See Reference List 7 and 8

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: See Reference List, No. 9

Waste stream volume and time period of generation: See Reference List, No. 9

P437A

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Waste generating process description for each building: See Reference List, No. 9

Process flow diagrams: See Reference List, No. 9

Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference List, No. 9

Which Defense Activity generated the waste: (check one)

- ☐ Weapons activities including defense inertial confinement fusion
- ☐ Naval Reactors development
- ☐ Verification and control technology
- ☒ Defense research and development
- ☐ Defense nuclear waste and material by products management
- ☐ Defense nuclear material production
- ☐ Defense nuclear waste and materials security and safeguards and security investigations

Supplemental Documentation See Reference List, No. 1

Process design documents: See Reference List, No. 1

Standard operating procedures: See Reference List, No. 1

Safety Analysis Reports: See Reference List, No. 1

Waste packaging logs: See Reference List, No. 1

Test plans/research project reports: See Reference List, No. 1

Site databases: See Reference List, No. 1

Information from site personnel: See Reference List, No. 1

Standard industry documents: See Reference List, No. 1

Previous analytical data: See Reference List, No. 1

Material safety data sheets: See Reference List, No. 1

Sampling and analysis data from comparable/surrogate Waste: See Reference List, No. 1

Laboratory notebooks: See Reference List, No. 1

Sampling and Analysis Information [21, 22, 23]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography: See Reference List, No. 10

Visual Examination: See Reference List, No. 11

Headspace Gas Analysis

VOCs: See Reference List, No. 12, 20

Flammable: See Reference List, No. 12

Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis *(See Reference List for Dates)*

Total metals: See Reference List, Nos. 13, 14, 15, 20

PCBs: N/A

VOCs: See Reference List, Nos. 16, 20

Nonhalogenated VOCs: See Reference List, Nos. 17, 20

Semi-VOCs: See Reference List, Nos. 18, 19, 20

Other (specify): N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
	Eric Schweinsberg	4/6/05

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

Waste Stream Profile Continuation Sheet

Reference List

1. Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste, BNFL-5232-RPT-TRUW-13, Rev. 2, March 2005.
2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-52-0101, Rev. 0, April 1999.
3. AMWTP TRU Waste Management Acceptable Knowledge Elements, BNFL-5232-RPT-TRUW-06, Rev. 2, March 2005.
4. AMWTP Waste Stream Designations, BNFL-5232-RPT-TRUW-12, Rev. 2, March 2005.
5. Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), RWMC EDF-837, August 1995.
6. Container Inventory Report for WMF-629 thru WMF-633 (TRIPS query), December 2002.
7. Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 7, November 2004.
8. Advanced Mixed Waste Treatment Project TRU Waste Certification, MP-TRUW-8.5, Rev. 12, January 2005.
9. Acceptable Knowledge Summary For Solidified Acid/Caustic Waste, BNFL-5232-RPT-TRUW-23, Rev. 0, March 2005.
10. Real Time Radiography Operations, INST-OI-12, Rev. 22, March 2005.
11. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 10, FC-3, February 2005.
12. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 19, FC-1, October 2004.
13. Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-8909, Rev. 8, January 2004.
14. Determination of Mercury by CVAA for TRU Waste Characterization, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-2810, Rev. 2, April 2003.
15. Determination of Metals by ICP-AES for TRU Waste Characterization, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-2901, Rev. 2, April 2003.
16. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9260, Rev. 9, July 2003.
17. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9441, Rev. 8, April 2003.
18. Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9270, Rev. 6, February 2004.
19. Sample Preparation for Semi-Volatile Organic Compounds and Polychlorinated Biphenyls, INEEL Analytical Laboratories Department Analytical Chemistry Methods Manual, ACMM-9500, Rev. 9, February 2004.
20. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 9, March 2005.
21. BNFL Inc., Memorandum, Sampling Plan for BN835 – EPS-063-2004, August 2004.
22. Data Reconciliation, MP-TRUW-8.11, Rev. 9, January 2005.
23. Preparation of Waste Stream Profile Forms, MP-TRUW-8.14, Rev. 4, November 2004.

Characterization Information Summary

Description

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for the waste stream BN835 as required by the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP) and the Contact-Handled Transuranic Waste Acceptance Criteria (CH-WAC). In addition, AMWTP has conducted confirmatory testing and analysis using real time radiography (RTR), headspace gas sampling and analysis, solid sampling and analysis, and radioassay.

Solid sampling was performed on randomly selected containers obtained from waste stream BN835, Solidified Acid/Caustic Waste from the Mound Plant. This waste stream Lot 1 population consists of 504 drums of mixed transuranic waste. Six drums were selected for solid sampling from the Lot 1 population. All of the drums were selected using a simple random selection method in accordance with MP-TRUW-8.25, RCRA Statistical Sampling. BNFL, Inc. memorandum EPS-063-2004, Sampling Plan for BN835, presents the Lot 1 evaluation for the required number of samples, the random generation verification, the list of sampled containers and the comprehensive list of containers. The list of containers will be submitted as a supplement to this report under a separate deliverable. This Characterization Information Summary (CIS) presents analytical data from six containers for the solids totals analysis and 17 containers for headspace gas analysis. These data meet the necessary requirements for confirmatory characterization.

Headspace gas analysis is presented in Tables 1A and 1B. Solid sampling data from the six containers is summarized in Tables 2, 3A, 3B, 4A and 4B of this CIS. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 presents the RTR/Visual Examination (VE) summary of prohibited items and AK confirmation. Table 7 presents the correlation between the container number, the headspace gas sample number and the solid sample number.

These six containers satisfy the "n" required sample data for the characterization of the BN835 Lot 1 (see Attachment 1). The confirmatory characterization process for this waste stream will continue by conducting solids sampling and analysis of randomly selected cores on a waste stream lot basis.

Data Results

The data in this CIS is obtained from the required ("n") samples and is used to determine the mean concentrations and the 90% upper confidence levels (UCL_{90}s) for toxicity characteristic (TC) compounds and to conservatively assign and/or confirm hazardous waste codes for the BN835 waste stream.

The solid samples from the Lot 1 drums were analyzed by the Analytical Laboratories Department at the Idaho National Laboratory (INL) under a program certified in 2003.

Characterization Information Summary

Hazardous waste numbers (HWNs) are assigned based on Acceptable Knowledge. HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). There were no solid sampling UCL_{90} results above the PRQLs for metals. There were no solid sampling results above the MDLs for VOCs. AK data indicate that there are no WAP target analyte semi-volatile organic compounds (SVOCs) present in the waste and there were no solid sampling results above the MDLs for SVOCs. Headspace gas results indicate that 1,1,1-trichloroethane and trichloroethylene have UCL_{90}s above the PRQL and provide confirmation of AK application of HWNs F001 and F002.

The HWN assignment for BN835 waste stream includes D007 (chromium), D008 (lead) and D009 (mercury), and listed codes F001 and F002 for 1,1,1-trichloroethane and trichloroethylene and F001 for carbon tetrachloride.

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF# BN835

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each waste container of waste contain TRU radioactive waste?	✓			AK was used to determine that the waste stream is TRU waste (BNFL-5232-RPT-TRUW-23).
4. Have mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			Containers will be evaluated on an individual basis through headspace gas and WWIS.
6. Have mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent for the summary category group?	✓			All of the containers in this report were included in the S3000 miscertification selection process (EPS-059-2004), however none were selected by random process.
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analyses been met for the lot?	✓			See footnote e Table 3A for non-detects with dilution.

Signature of Site Project Manager

Eric Schweinsberg
Printed Name

4/6/05
Date

WSPF Number: BN835

SQAO [signature] Date: 4/6/05

SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM [signature] Date: 4/6/05

SPM signature indicates concurrence with all information presented in this report.

Characterization Description:

Drum selection and quantity of drums for Totals Analysis; Reduced Headspace Gas Sampling; and/or Newly Generated Soils/Gravel have been evaluated and meet the requirements established in MP-TRUW-8.25, *RCRA Statistical Sampling*.

Y☐ N☐ NA☒

Eric Schmeckpeper 4/6/05

SPM Signature Date

For "N" or "NA" provide rationale.

Drum selection and quantity of drums for Totals Analysis only has been evaluated and meets the requirements of MP-TRUW-8.25.

Table 1A. Headspace Gas summary data. BN835 Lot 1

ANALYTE	Number of Samples	# of Samples above MDL[a]	Transformation Used[e]	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	Upper 90% Confidence Limit (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Code
1,1-Dichloroethane	17	0	None	4.10	3.04	1.01	b	-	10	N/A
1,1-Dichloroethylene[c]	17	9	Natural log	2.65	1.52	0.835	1.79	2.30	10	N/A
1,1,1-Trichloroethane[c]	17	17	Natural log	5.39	4.13	0.897	4.42	2.30	10	F001, F002[d]
1,1,2-Trichloro-1,2,2-trifluoroethane[c]	17	2	Natural log	2.03	0.826	0.536	1.00	2.30	10	N/A
1,1,2,2-Tetrachloroethane	17	0	None	4.55	3.46	1.03	b	-	10	N/A
1,2-Dichloroethane	17	0	None	4.35	2.93	1.07	b	-	10	N/A
Acetone	17	0	None	15.7	13.1	2.05	b	-	100	N/A
Benzene	17	0	None	3.30	2.19	0.763	b	-	10	N/A
Bromoform	17	0	None	4.35	2.79	1.19	b	-	10	N/A
Butanol	17	0	None	19.5	14.4	3.26	b	-	100	N/A
Chlorobenzene	17	0	None	4.10	3.00	1.04	b	-	10	N/A
Carbon tetrachloride[c]	17	4	Natural log	3.00	1.15	0.753	1.39	2.30	10	F001[d]
Chloroform	17	0	None	4.30	2.83	1.09	b	-	10	N/A
cis-1,2-dichloroethylene	17	0	None	3.85	2.38	0.981	b	-	10	N/A
Ethyl benzene	17	0	None	4.70	3.13	1.18	b	-	10	N/A
Ethyl ether	17	0	None	4.65	2.81	1.17	b	-	10	N/A
m-Xylene/p-Xylene	17	0	None	4.45	3.66	1.11	b	-	10	N/A
Methanol[c]	17	6	Natural log	4.42	3.17	0.646	3.38	4.61	100	N/A
Methyl ethyl ketone	17	0	None	18.7	11.9	4.76	b	-	100	N/A
Methyl isobutyl ketone	17	0	None	12.5	10.0	1.99	b	-	100	N/A
Methylene chloride[c]	17	2	Natural log	3.34	1.36	0.828	1.62	2.30	10	N/A
o-Xylene	17	0	None	4.00	2.91	0.964	b	-	10	N/A
Tetrachloroethylene	17	0	None	3.85	3.07	0.918	b	-	10	N/A
Toluene[c]	17	5	Natural log	2.26	1.13	0.535	1.31	2.30	10	N/A
trans-1,2-dichloroethylene	17	0	None	3.30	2.08	0.863	b	-	10	N/A
Trichloroethylene[c]	17	13	Natural log	6.67	3.42	1.96	4.05	2.30	10	F001, F002[d]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. *The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.*

c. The maximum, mean, standard deviation, and UCL_{90}, and PRQL are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Statistics Performed by: Tamara D Sloan Date: 4/6/05
Signature

Table 1B. Headspace gas summary data – tentatively identified compounds. BN835 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
2-Propanol, 2-methyl-	113.3	3	17	18	17	18

NOTE: 2-Propanol, 2-methyl- is found in less than twenty-five percent of the samples from Lot 1. It is not identified in acceptable knowledge and is not listed in 40 CFR, Part 261, Appendix VIII. Therefore, in accordance with the WIPP WAP, no further action is required.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Verification of % Detected Calculation: _____ Date: 4.6.05
Signature

Table 2. Metals summary data. BN835 Lot 1

ANALYTE	# Samples	# Samples above MDL[e]	Trans-formation Used[f]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed RTL	RTL[d]	EPA Code
Arsenic[a]	6	6	Natural log	0.470	0.022	0.252	0.174	4.61	100	N/A
Barium[a]	6	6	Natural log	5.19	4.75	0.321	4.94	7.60	2000	N/A
Cadmium	6	6	None	0.870	0.703	0.196	0.821	-	20	N/A
Chromium	6	6	None	89.0	81.8	5.91	85.4	-	100	D007[b]
Lead[a]	6	6	Natural log	2.30	1.99	0.185	2.10	4.61	100	D008[b]
Mercury	6	1	None	0.023	0.016	0.006	0.019	-	4	D009[b]
Selenium	6	2	None	0.770	0.484	0.206	0.608	-	20	N/A
Silver	6	0	None	0.200	0.183	0.026	c	-	100	N/A
Antimony[a]	6	6	Natural log	0.588	0.219	0.235	0.361	4.61	100	N/A
Beryllium[a]	6	6	Natural log	1.72	1.47	0.234	1.61	4.61	100	N/A
Nickel[a]	6	6	Natural log	3.89	3.55	0.209	3.67	4.61	100	N/A
Thallium	6	5	None	1.50	1.09	0.382	1.32	-	100	N/A
Vanadium	6	6	None	88.0	82.2	5.27	85.3	-	100	N/A
Zinc[a]	6	6	Natural log	4.41	4.25	0.118	4.32	4.61	100	N/A

a. The maximum, mean, standard deviation, and UCL_{95}, and RTL are presented as transformed values.
b. The HWNs for these constituents have been applied based on acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presence above the RTL.
c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.
d. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the regulatory threshold limit (RTL) as the PRQL.
e. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.
f. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and RTL.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Statistics Performed by: Tamara Sblus Date: 4/6/05
Signature

Table 3A. Solid Sample Analysis - Total VOC summary data. BN835 Lot 1

Analyte	# Samples	# Samples above MDL[a]	Trans-formation Used[f]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)[c]	EPA Code
1,1-Dichloroethylene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
(trans)-1,2-Dichloroethylene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
1,2-Dichloroethane	6	0	None	0.095	0.088	0.004	b	-	10	N/A
1,1,1-Trichloroethane	6	0	None	0.095	0.088	0.004	b	-	10	F001, F002[d]
1,1,2,2-Tetrachloroethane	6	0	None	0.095	0.088	0.004	b	-	10	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	6	0	None	0.190	0.178	0.007	b	-	10	N/A
1,1,2-Trichloroethane	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Acetone	6	0	None	-	e	-	b	-	100	N/A
Benzene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Bromoform	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Butanol	6	0	None	-	e	-	b	-	100	N/A
Carbon disulfide	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Carbon tetrachloride	6	0	None	0.190	0.178	0.007	b	-	10	F001[d]
Chlorobenzene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Chloroform	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Ethyl benzene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Ethyl ether	6	0	None	-	e	-	b	-	100	N/A
Isobutanol	6	0	None	-	e	-	b	-	100	N/A
Methanol	6	0	None	-	e	-	b	-	100	N/A
Methylene chloride	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Methyl ethyl ketone	6	0	None	-	e	-	b	-	100	N/A
m-Xylene/p-Xylene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
o-Xylene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Pyridine	6	0	None	-	e	-	b	-	100	N/A
Tetrachloroethylene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Toluene	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Trichloroethylene	6	0	None	0.095	0.088	0.004	b	-	10	F001, F002[d]
Trichlorofluoromethane	6	0	None	0.095	0.088	0.004	b	-	10	N/A
Vinyl chloride	6	0	None	0.095	0.088	0.004	b	-	4	N/A

a. When a measurement is reported as below detection, one-half of the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. For toxicity characteristic constituents that do not have a Program Required Quantitation Limit (PRQL) in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the RTL as the PRQL. For listed constituents, the PRQL is used.

d. These HWNs were assigned to the waste stream based upon acceptable knowledge and have been retained for this waste stream even though the data did not confirm the presense above the PRQL

e. All samples were diluted due to radionuclide content and were below the MDL. Diluted samples below the MDL are not used to calculate the maximum, mean, standard deviation and upper 90% confidence limit.

f. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and RTL.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Statistics Performed by: Tamara E Sloan Date: 4/6/05

Signature

Table 3B. Total VOC summary data – tentatively identified compounds. BN835 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data verify the Acceptable Knowledge? YES: X NO:_____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Verification of % Detected Calculation: N/A Date:_____

Signature

Table 4A. Solid Sample Analysis - Total SVOC summary data. BN835 Lot 1

Analyte	# Samples	# Samples Above MDL[a]	Trans-formation Used[d]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)[c]	EPA Code
1,4-Dichlorobenzene	6	0	None	0.100	0.100	0.000	b	-	40	N/A
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	b	-	2.6	N/A
Cresols	6	0	None	0.200	0.200	0.000	b	-	40	N/A
Hexachloro-benzene	6	0	None	0.100	0.100	0.000	b	-	2.6	N/A
Hexachloroethane	6	0	None	0.100	0.100	0.000	b	-	40	N/A
Nitrobenzene	6	0	None	0.100	0.100	0.000	b	-	40	N/A
Pentachlorophenol	6	0	None	0.100	0.100	0.000	b	-	40	N/A
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	b	-	40	N/A
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	b	-	40	N/A

a. When a measurement is reported as below detection, one-half of the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 to calculate the RTL is used as the PRQL. For listed constituents, the PRQL is used.

d. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL^{90}, and PRQL.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Statistics Performed by: Tamara S Blue
Signature

Date: 4/6/05

Table 4B. Total SVOC summary data – tentatively identified compounds. BN835 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
bis(2-Ethylhexyl) phthalate	2.70	1	6	17	6	17

Did the data verify the Acceptable Knowledge? YES: X NO:_____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Verification of % Detected Calculation: _____ Date: 4.6.05

Signature

Table 5. Correlation of container identification numbers to data package. BN835 Lot 1

Container Number	Headspace Gas Sampling Data Package	RTR Data Package	RA Data Package	Visual Examination Data Package	Solid Sampling Data Package	Solid Analysis Data Package
10001521	HSG04-00415	RTR04-00163	ASY04-00430	N/A	N/A	N/A
10001524	HSG04-00419	RTR04-00160	ASY04-00406	N/A	N/A	N/A
10001525	HSG04-00408	RTR04-00163	ASY04-00401	N/A	SSC04-00004	ALD04012S ALD04018M ALD04014N ALD04013V
10001527	HSG04-00412	RTR04-00163	ASY04-00429	N/A	N/A	N/A
10001547	HSG04-00390	RTR04-00079	ASY04-00353	N/A	N/A	N/A
10001659	HSG04-00408	RTR04-00163	ASY04-00402	N/A	N/A	N/A
10001665	HSG04-00415	RTR04-00163	ASY04-00750	N/A	N/A	N/A
10001667	HSG04-81005	RTR04-00079	ASY04-00352	N/A	N/A	N/A
10001675	HSG04-00412	RTR04-00164	ASY04-00751	N/A	N/A	N/A
10001689	HSG04-81005	RTR04-00163	ASY04-00430	N/A	N/A	N/A
10001694	HSG04-00392	RTR04-00079	ASY04-00358	N/A	N/A	N/A
10001701	HSG04-00419	RTR04-00160	ASY04-00406	N/A	N/A	N/A
10001703	HS205_00016	RTR04-00163	ASY04-00401	N/A	SSC04-00004	ALD04012S ALD04018M ALD04014N ALD04013V
10011369	HSG04-00449	RTR04-00243	ASY04-00661	N/A	SSC04-00008	ALD04017S ALD04022M ALD04019N ALD04018V
10018987	HSG04-00449	RTR04-00214	ASY04-00468	N/A	SSC04-00008	ALD04017S ALD04022M ALD04019N ALD04018V
10021963	HSG04-81006	RTR04-00251	ASY04-00721	N/A	SSC04-00008	ALD04017S ALD04022M ALD04019N ALD04018V
10022194	HS205_00016	RTR05-00041	ASY04-00878	N/A	SSC04-00008	ALD04017S ALD04022M ALD04019N ALD04018V

NOTE: For headspace gas sampling data packages, the HSG prefix represents use of the DVS system and the HS prefix represents use of the HGAS system.

Table 6. RTR/VE summary of prohibited items and AK confirmation. BN835 Lot 1

Container Number	RTR Prohibited Items[a]	Visual Examination Prohibited Items[d]	AK Confirmation[b,c,e]
10001521	None	N/A	Complete
10001524	None	N/A	Complete
10001525	None	N/A	Complete
10001527	None	N/A	Complete
10001547	None	N/A	Complete
10001659	None	N/A	Complete
10001665	None	N/A	Complete
10001667	None	N/A	Complete
10001675	None	N/A	Complete
10001689	None	N/A	Complete
10001694	None	N/A	Complete
10001701	None	N/A	Complete
10001703	None	N/A	Complete
10011369	None	N/A	Complete
10018987	None	N/A	Complete
10021963	None	N/A	Complete
10022194	None	N/A	Complete

a. See Table 5 for the associated RTR data packages. None of the identified containers contain prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2.
b. Acceptable Knowledge confirmation for RTR and visual examination is conducted by an Acceptable Knowledge Expert or Designee on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the data packages listed in Table 5.
c. None of these drums have VE in lieu of RTR examination.
d. N/A indicates these containers were not randomly selected for VE.
e. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

Table 7. Sample identification number cross-correlation table. BN835 Lot 1

Container Number	Headspace Gas Sample Number	Solidified Sample Number(s)
10001521	HSG04-00415C5	N/A
10001524	HSG04-00419C5	N/A
10001525	HSG04-00408B5	10017088, 10017086, 10017085
10001527	HSG04-00412B11	N/A
10001547	HSG04-00390B11	N/A
10001659	HSG04-00408B7	N/A
10001665	HSG04-00415C7	N/A
10001667	HSG04-81005B4	N/A
10001675	HSG04-00412B8	N/A
10001689	HSG04-81005B5	N/A
10001694	HSG04-00392B5	N/A
10001701	HSG04-00419C4	N/A
10001703	HS205_00016B-03	10017834, 10017832, 10017831
10011369	HSG04-00449B6	10021973, 10021971, 10021970
10018987	HSG04-00449B5	10022154, 10022152, 10022151
10021963	HSG04-81006C9	10022110, 10022108, 10022107
10022194	HS205_00016B-01	10022274, 10022273, 10022271

NOTE: The number presented in the Headspace Gas Sample Number column of this table is a combination of the batch number (HSG04-00415) and the sequential instrument ID used in the batch for reporting (C5). This combination is unique and will allow traceability back to the data as collected and reported.

Attachment 1

Evaluation of required number of samples BN835 Lot 1

ANALYTE	Number of Samples[g]	Number of Samples above MDL[h]	Transformation Used[e]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% Confidence Limit (mg/kg)	Transformed PRQL	PRQL (mg/kg)	Required Number of Samples[d, f]	Comments
1,1,1-Trichloroethane	6	0	None	0.095	0.088	0.004	a	-	10		Code F001, F002 applied[b]
1,1,2,2-Tetrachloroethane	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.190	0.178	0.007	a	-	10		No samples above MDL
1,1,2-Trichloroethane	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
1,1-Dichloroethene (1,1-Dichloroethylene)	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL
1,2-Dichloroethane	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	a	-	2.6		No samples above MDL
Cresols	6	0	None	0.200	0.200	0.000	a	-	40		No samples above MDL
Acetone	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Antimony	6	6	Natural log	0.588	0.219	0.235	0.361	4.61	100	5	No associated hazardous waste code[c]
Arsenic	6	6	Natural log	0.470	0.022	0.252	0.174	4.61	100	5	Code not required to be applied[i]
Barium	6	6	Natural log	5.19	4.75	0.321	4.94	7.60	2000	5	Code not required to be applied[i]
Benzene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Beryllium	6	6	Natural log	1.72	1.47	0.234	1.61	4.61	100	5	No associated hazardous waste code[c]
Bromoform	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Butanol	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Cadmium	6	6	None	0.870	0.703	0.196	0.821	-	20	5	Code not required to be applied[i]
Carbon Disulfide	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Carbon Tetrachloride	6	0	None	0.190	0.178	0.007	a	-	10		Code F001 applied[b]
Chlorobenzene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Chloroform	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Chromium	6	6	None	89.0	81.8	5.91	85.4	-	100	5	Code D007 applied[b]
Ethyl ether	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Ethyl benzene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	a	-	2.6		No samples above MDL
Hexachloroethane	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL

ANALYTE	Number of Samples[g]	Number of Samples above MDL[b]	Transformation Used[e]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% Confidence Limit (mg/kg)	Transformed PRQL	PRQL (mg/kg)	Required Number of Samples[d, f]	Comments
Isobutanol	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Lead	6	6	Natural log	2.30	1.99	0.185	2.10	4.61	100	5	Code D008 applied[b]
m&p-Xylene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Mercury	6	1	None	0.023	0.016	0.006	0.019	-	4.0	5	Code D009 applied[b]
Methanol	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Methyl ethyl ketone	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Methylene Chloride	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Nickel	6	6	Natural log	3.89	3.55	0.209	3.67	4.61	100	5	No associated hazardous waste code[c]
Nitrobenzene	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL
o-Xylene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Pentachlorophenol	6	0	None	0.100	0.100	0.000	a	-	40		No samples above MDL
Pyridine	6 (6)	0	None	-	-	-	a	-	100		No samples above MDL
Selenium	6	2	None	0.770	0.484	0.206	0.608	-	20	5	Code not required to be applied[i]
Silver	6	0	None	0.200	0.183	0.026	a	-	100		No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Thallium	6	5	None	1.50	1.09	0.382	1.32	-	100	5	No associated hazardous waste code[c]
Toluene	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Trichloroethene (Trichloroethylene)	6	0	None	0.095	0.088	0.004	a	-	10		Code F001, F002 applied[b]
Trichlorofluoromethane	6	0	None	0.095	0.088	0.004	a	-	10		No samples above MDL
Vanadium	6	6	None	88.0	82.2	5.27	85.3	-	100	5	No associated hazardous waste code[c]
Vinyl Chloride	6	0	None	0.095	0.088	0.004	a	-	4		No samples above MDL
Zinc	6	6	Natural log	4.41	4.25	0.118	4.32	4.61	100	5	No associated hazardous waste code[c]

NOTE:

a. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2) for all measurements that are below detection. Therefore, since measurements are below detection, the upper 90% confidence limit will not be calculated.

b. These HWNs, assigned by AK, are applied to the waste stream even if analytical results for the assigned compounds are not above the PRQL.

c. If there is no hazardous waste code associated with an analyte, then that analyte will not be used to define the number of required samples.

d. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

e. If a transformation is applied to the distribution to improve normality, prior to calculating the mean and variance, then this same transformation is applied to the PRQL / RTL for that analyte.

f. If the calculated sample size is less than 5, then the initial estimated number of required samples is set to the program defined minimum of 5.

g. Diluted samples below the MDL are not used to calculate the maximum, mean, standard deviation and upper 90% confidence limit. The number of diluted samples below the MDL are noted as (#) in the Number of samples column.

h. Distribution testing is not performed on 2 or fewer applicable samples; therefore, a normal distribution is assumed.

i. The HWN is not assigned based on AK, and the upper 90% confidence limits are below the RTL or PRQL.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-23, Rev. 6

Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11331.)
Susan Peterman
TRU Program Manager

06/27/12
Date

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FIGURES

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Figure A-2. Mound plutonium-molybdenum cermet (PMC) production. A3

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Figure A-4. Mound chemical separation steps for recovery and purification of uranium-234 from plutonium-238. ..... A5

Figure A-5. Process flow for the Alpha Wastewater Treatment System in the WD Building. ... A6

ACRONYMS

AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
DOT	U.S. Department of Transportation
DU	depleted uranium
EDL	economic discard limit
EPA	U.S. Environmental Protection Agency
EU	enriched uranium
HWN	hazardous waste number
IDC	item description code
INL	Idaho National Laboratory
PCB	polychlorinated biphenyl
PMC	plutonium-molybdenum cermet
PP	Plutonium Processing (Bldg. 38)
PPO	Pressed plutonium oxide
R	Research (Building)
RTG	Radioisotopic Thermoelectric Generators
RTR	real-time radiography
SM	Special Metallurgical (Building)
SW	Semi-Works (Building)
TRUCON	TRUPACT-II Content Code
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
VE	visual examination
VOCs	volatile organic compounds
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan (Attachment B of the WIPP Hazardous Waste Permit)
WIPP	Waste Isolation Pilot Plant
WD	Waste Disposal (Building)
WDA	Waste Disposal Annex
WMC	waste matrix code
WMP	waste material parameter
WS	Waste Solidification (Facility)

Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN835 (2)

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Solidified Acid/Caustic Waste (2)

1.2.2 Point of Generation

Mound Plant – Special Metallurgical (SM)/Plutonium Processing (PP) Building (Building 38) (also known as SM/PP complex); Semi-Works (SW) Building/Research (R) Building (also known as SW/R Complex); and Waste Solidification (WS) Facility. [1, 20, 21, 22]

1.2.3 Waste Stream Volume (Retrievably Stored)

2,577 – 55 and 85-gallon drums [3]

1.2.4 Generation Dates

1974 - 1985 [1, 3, 16]

AMWTP stores containers of Mound solidified acid/caustic waste generated from 1975 to 1985. Waste stored at AMWTP with generation dates (i.e., pack date) later than 1985 are the result of repackaging (e.g., waste characterization/treatment activities).

1.2.5 TRUPACT-II Content (TRUCON) Codes

ID111/ID211 [4]

1.2.6 Transuranic Waste Baseline Inventory Report (TWBIR) Information

Waste Stream ID: IN-BN835 (previously identified as IN-W174.154, IN-W177.156) [5]

1.2.7 Summary Category Group

S3000 – Homogenous Solids [2, 6]

1.2.8 Waste Matrix Code Group

Solidified Inorganics [2, 9]

1.2.9 Waste Matrix Code

S3113 – Inorganic Particulate Absorbents [2, 6, 19]

Waste Matrix Code (WMC) S3113 consists of waste that is primarily inorganic particulate absorbent materials (i.e., ≥ 50% by volume), including absorbed aqueous liquids, if present. Typical examples of inorganic particulate materials are clay, vermiculite, and diatomaceous earth. [6]

1.2.10 Description from the WTWBIR

This waste comes from the Mound Laboratory. It consists of acid liquids, mainly nitric, absorbed onto a clay called Florco (aluminum, magnesium, iron silicate clay). The waste also consists of caustic liquid waste and neutralized waste liquids, absorbed onto a clay called Florco. The Florco is then placed in a drum bag in a drum lined with a 90-mil poly liner. [5]

*Prior to the use of Florco, clay absorbent mixed with diatomaceous earth and vermiculite were added to acid and caustic liquid wastes to absorb liquids.

1.3 Waste Stream Description

1.3.1 Description

The Solidified Acid/Caustic waste stream consists of drums containing solidified acid (Item Description Code [IDC] 834) and caustic (IDC 835) wastes combined with nonhazardous absorbent (vermiculite, clay absorbent mixed with diatomaceous earth or aluminum-magnesium-iron silicate clay material [Florco]). [1, 10] The waste stream was generated from pressed plutonium oxide (PPO) sphere or plutonium molybdenum cermet (a material consisting of ceramic particles bonded with metal) (PMC) production, isotope recovery, cleaning or leaching of items, and construction of standards. After 1976 acidic and caustic liquid wastes were commingled during the waste treatment process. This waste is similar in material, physical form, and hazardous constituents, and is therefore considered a single waste stream. Table 1-1 identifies the WMC and typical waste description for the Solidified Acid/Caustic Waste. [1, 16, 17, 18]

Table 1-1. Physical Waste Form Descriptions for Solidified Acid/Caustic Waste.

TWBIR Numbers	IDC	WMC	Description
IN-W174.154	834	S3113	Acidic liquid waste contained approximately 95% nitric acid with trace amounts of hydrofluoric, hydrochloric, sulfuric and oxalic acids. IDC 834 waste was generated or repackaged from 1975 through 1980. Since December 1976, acidic liquid waste was combined with caustic liquid waste from plutonium processing in the WS building. [1, 16, 17, 18, 21, 23, 31] Acidic liquid waste was absorbed with vermiculite, clay absorbent mixed with diatomaceous earth or aluminum-magnesium-iron silicate clay material (Florco). There are 901 containers of IDC 834. [1, 16]
IN-W177.156	835	S3113	Caustic liquid waste consists primarily of sodium hydroxide and limited amounts of ammonium hydroxide. IDC 835 was generated from 1974 through 1985. Caustic liquid waste was absorbed with vermiculite, clay absorbent mixed with diatomaceous earth or aluminum-magnesium-iron silicate clay material (Florco). [1, 16, 17, 18, 23] There are 1,676 containers of IDC 835. [1, 3]

1.4 Process Description

1.4.1 Areas of Operation

This waste stream was primarily generated in the PP Building during plutonium processing and recovery operations and from the corrosive vapor scrubber. Liquid waste was collected and processed in the Waste Disposal (WD) Building, which included the Waste Disposal Annex (WDA). Problems with leakage associated with the waste lines used to transfer wastewater to the WDA prompted construction of the high-risk WS Facility. Acidic and caustic liquid waste (also referred to historically as high-risk alpha wastewater) was then processed at the WS Facility. [17, 20, 21, 22]

Acidic and caustic materials were used in research activities, metallography, and decontamination of laboratory equipment and components in the SW/R Complex and the PP Building. Chemical analysis of samples in R Building generated small amounts of acidic and caustic liquid waste. [17, 18]

1.4.2 Waste Generating Processes

1.4.2.1 Plutonium Processing

Acidic and caustic liquid wastes generated during plutonium processing in the PP and R Buildings were classified as high-risk or low-risk depending upon radionuclide activity. The classification of liquids as high-risk or low-risk designated the treatment methodology. Low-risk liquid waste was processed in the Special Metallurgical Building (SM) or WD Building prior to being discharged as treated effluent; this waste is not part of BN835. High-risk liquid wastes were absorbed onto a vermiculite, diatomaceous earth or clay material and shipped offsite for disposal. [16, 17]

High-risk liquid wastes were caustic or acidic depending on where they were generated in the plutonium processes; either during isotope recovery, cleaning or leaching of items, or construction of assay standards. The plutonium processes that generated waste stream BN835 were:

- Pressed plutonium oxide (PPO) production,
- Plutonium-molybdenum cermet (PMC) production,
- Plutonium recovery and,
- Production of standards

The PPO process involved dissolution of ^{238}Pu oxide in a mixture of nitric and hydrofluoric acid. The resulting solution was treated with ammonium hydroxide to precipitate plutonium hydroxide. The solution was filtered, and the plutonium precipitate was washed with dilute ammonium hydroxide solution generating caustic liquid waste. The washed precipitate was vacuum dried and then air-dried overnight. The dried precipitate was crushed to produce a fine powder that was pressed into a 'button' for use in radioisotopic thermoelectric generators (RTGs). Subsequent process activities did not produce liquid waste. [16] See Figure A-1, Mound PPO sphere fabrication flowsheet, for a flow diagram of this process. [1, 17, 18, 20, 21, 32, 33]

The PMC process used a cermet consisting of a sintered granular plutonium dioxide coated with molybdenum to produce ^{238}Pu heat sources. Filtrate from this process was a liquid waste that was subsequently separated into either liquid exceeding the economic discard limit (EDL) sent to recovery or liquid below the EDL sent to waste disposal. [16] See Figure A-2, Mound Plutonium-molybdenum cermet (PMC) production, for a flow diagram of this process. [1, 17, 20]

The plutonium recovery process involved washing or leaching solid objects contaminated with plutonium in water or acid solutions. Following washing or leaching, objects were either returned to their original use or declared as high or low-risk waste based upon assay. Highly acidic plutonium solutions and the wash water were sent to plutonium recovery. The PPO and PMC RTG materials that did not meet product specifications were dissolved in a nitric and hydrofluoric acid mixture and reprocessed. Glass fiber filters were dissolved in a hydrofluorinator-pressurized vessel, and the volatile silicon tetrafluoride generated was removed via a caustic scrubber. Caustic scrubber solutions were designated as recoverable, or high-risk / low risk waste, based on the EDL and sent to recovery or waste treatment as applicable. [16, 17, 18] See Figure A-3, Mound Plutonium recovery flow diagram, for a flow diagram of this process. [1, 17, 20]

High-risk acid waste was also generated during ^{234}U separation projects in R Building. The ^{234}U was extracted from aged ^{238}Pu using nitric acid in R Building. [16] See Figure A-4, Mound Chemical separation steps for recovery and purification of uranium-234 from plutonium-238, for a flow diagram of this process. [1, 17]

Caustic liquid waste was generated primarily from the corrosive vapor scrubber system in the PP Building. The system was charged with a caustic solution (sodium hydroxide) to scrub acidic fumes from all PP operations. Some caustic liquid waste was also generated and processed in the R Building. [1, 16, 17, 18, 20, 21, 22, 33]

After 1976, high-risk acidic liquid waste was combined with caustic liquid waste for processing. This liquid waste was processed at the WS Facility. [1, 16, 17, 20, 21]

Small quantities of waste drums in this waste stream were generated in the SW/R Complex and PP Building from processes other than plutonium recovery (i.e. production of assay standards, research activities, metallography, chemical analysis of samples, and decontamination of laboratory equipment and components). Assay standards were constructed by adding solutions of known plutonium content to absorbent in small (1, 2, and 4 liter*) plastic bottles. These solidified standards were placed in 55-gallon drums to simulate waste drums. [1, 16, 17]

*Drums containing sealed bottles greater than 4-liters will be removed from this waste stream if identified by real-time radiography (RTR).

The H Building housed laundry facilities for both uncontaminated and contaminated clothing. Waste generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank and drained through a pipe to a lift station at the SW Building. From the lift station, the H Building wastewater was pumped to the WD Building influent tanks. Products used in the H Building that would have entered the wastewater included liquid soap containing ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contained ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. [16, 17, 22]

The SW/R Building complex included a small laboratory section that handled alpha emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for research and development, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in the WD Building. Chemicals used in the laboratory included carbon tetrachloride, dichloromethane, 1,1,1-trichloroethane, organophosphate, nitric acid, and sulfuric acid. Chemicals used in other R Building operations included hydrogen peroxide; ammonium hydroxide; hydrofluoric, nitric, sulfuric and lactic acids; methanol, propanol, mineral oil, ethanol, acetone and trichloroethylene; sodium sulfite solution; potassium and copper sulfates; carbonates; and sodium hydroxide (lime).[16, 17, 21, 34, 35, 36]

The SM and the PP processes were virtually the same and are discussed as the SM/PP complex. Wastewater was collected in a 10,000-gallon tank on the west side of the PP Building, pumped to a tanker truck, and transported to the WD Building. PP wastewater from floor drains, shower water, sinks, and a laboratory were collected in sumps. The sump water was then pumped to a tank on the west side of PP and then pumped to a tanker truck for transport to the WD Building for treatment.[16, 17] Wastes generated from plutonium processes were managed as illustrated in Figure 3-5 in RPT-TRUW-13, AK Document for INL Stored Transuranic Waste-Mound Plant Waste. [1]

The laboratory in PP Building performed a variety of analytical procedures, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. Vials of liquid scintillation solution were bagged for pickup, and sent to Building 23 as mixed waste. All other spent chemicals from PP Building were poured down the sink drains into the wastewater tank. Chemicals used in the laboratories included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. 1,1,1-trichloroethane was once used in the SM/PP as a degreaser for metal parts. [16, 17]

In the WD Building, the floor and sink drains are connected to or pumped from sumps to the WD alpha influent tanks. There is a small laboratory in the WD Building where the alpha and beta waste streams are analyzed for pH, sludge moisture, and influent and effluent scintillation counts. This laboratory was not used on a routine basis, but the sink was connected to the WD tanks. Hazardous compounds used in the laboratory included Instagel, which has a xylene base. [12, 17]

An old underground alpha waste pipeline had been used to transfer wastes to the WD Building from the H Building laundry and the SW/R Complex. The drains and connections to this line were plugged when the line was replaced; however, a small amount of water from this pipe continued to be received at the WD Building, mainly after rains. [16, 17]

Floor drains in all buildings described discharged to the alpha wastewater treatment system. Materials common to the floor drains included soapy shower water, mop and plutonium decontamination water, cleansers and detergents, mineral oil, coal-tar based paint, alcohol (ethanol, methanol, propanol), and acetone. Acids (nitric, sulfuric, hydrochloric, and hydrofluoric) were discharged into drains from laboratory sinks. Small amounts of solid chemical wastes were also included in the liquid waste: potassium carbonate, potassium sulfate, copper sulfate, calcium carbonate, oxalic acid, lithium chloride, zirconium oxide, sodium carbonate, caustic soda and lime, potassium pyrosulfite, potassium bromide, nickel sulfate, asbestos fiber, methylene blue, mercury, lead, beryllium, and cyanides. [17, 37, 38, 39, 40, 41, 42]

1.4.2.2 Solidification Process

Liquid waste generated from processes in the PP Building was transferred into a holding tank at the WS Facility and sparged to ensure suspension of the plutonium throughout the liquid batch. After sparging, a 10-gallon aliquot was transferred into a calibrated tank and gravity-fed into a prepared 55-gallon drum. [26] Each prepared drum was filled with 150 pounds of absorbent. After being filled, the drums were kept under negative pressure for a minimum of 16 hours to allow for off-gassing before they were sealed. [1, 17, 20, 21, 22, 27] See Figure A-6, ^{238}Pu Acid-caustic TRU Waste Flowsheet, for a flow diagram of the treatment process in WS Building. [20, 21, 22, 27]

From 1974 to 1976, diatomaceous earth based absorbents (e.g., AutoDri) were used. These absorbents contained calcium carbonate that reacted with the acidic liquid waste and produced carbon dioxide. [17, 18, 24, 25, 27, 37, 43, 44, 45] Closure of those drums was delayed to ensure adequate off-gassing. A different absorbent, trade name Florco, was introduced into the solidification process in 1975 and was used exclusively after 1976. Florco did not contain calcium carbonate and did not produce off-gassing. [1, 16, 17, 18, 26, 27, 44, 45, 46]

Vermiculite was used for wastes processed from the WDA, which discontinued processing high-risk wastes in 1974. Some waste may contain vermiculite. See Figure A-5, Process Flow for the Alpha Wastewater Treatment System in the WD Building, for a flow diagram of the treatment process in the WD Building. [1, 17, 20, 21, 22, 27]

1.4.3 Material Inputs

Material inputs for Solidified Acid/Caustic Waste are listed below: [17, 18, 32]

- Nitric and hydrofluoric acid mixture
- Approximately 95% of the acidic liquid waste is nitric acid with trace amounts of hydrofluoric, hydrochloric, sulfuric and oxalic acids
- Ammonium hydroxide
- Silicon tetrafluoride (removed via the caustic scrubber)

- Sodium carbonate
- Sodium hydroxide
- Hydrogen peroxide
- Hydroxylamine
- Ferrous sulfamate
- Pyrosulfate
- Absorbent (vermiculite, clay with diatomaceous earth, or aluminum-magnesium-from silicate clay). [10,]

In addition to the material inputs listed above, acceptable knowledge (AK) documentation indicates that the following chemicals and organic compounds were used in the Mound Buildings where plutonium processing and recovery occurred, and were potentially discharged into the wastewater treatment system (the WD Facility). Consequently, the potential exists for the following compounds to be present in this waste stream.

- Chemicals used in the SW and R Buildings (laboratory section) included carbon tetrachloride, dichloromethane, 1,1,1-trichloroethane, nitric acid, and sulfuric acid. [16, 17, 36]
- An alloy containing chromium was used for encapsulation of pressed plutonium oxide spheres in R Building. [17]
- Chemicals used in other R Building operations included hydrogen peroxide; ammonium hydroxide; hydrofluoric, nitric, sulfuric and lactic acids; methanol, propanol, mineral oil, ethanol, acetone and trichloroethylene; sodium sulfite solution; potassium and copper sulfates; tri-n-octylphosphine; carbonates; and sodium hydroxide. [16, 17, 34, 35, 36, 37, 38, 39, 40, 41, 42]
- Chemicals used in the laboratory in the PP Building included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. 1,1,1-trichloroethane was once used in the PP Building as a degreaser for metal parts. [16, 17]
- The wash water or leachate from leaded glovebox gloves was sent to the plutonium recovery process in PP Building. [17]
- Paint (coal-tar based), alcohol, and acetone from the H and WD Buildings were discharged into the alpha wastewater treatment system via the floor drains. [16, 17, 37, 39, 40]

- Hazardous compounds used in a small laboratory located in the WD Building included a xylene based liquid scintillation cocktail, Insta Gel. [16, 17]

- Small amounts of solid chemical wastes were also included in the liquid waste discharged to the treatment system: potassium carbonate, potassium sulfate, copper sulfate, calcium carbonate, oxalic acid, lithium chloride, zirconium oxide, sodium carbonate, caustic soda and lime, potassium pyrosulfite, potassium bromide, nickel sulfate, asbestos fiber, methylene blue, mercury, lead, beryllium, and cyanides. [17, 37, 39, 40, 41, 42]

1.4.4 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN835, WMP data from 100% of the completed RTR and visual examination (VE) of Solidified Acid/Caustic Waste drums were obtained from the Advanced Mixed Waste Treatment Project (AMWTP) Waste Tracking System (WTS) database on October 11, 2006. This represents 87% of the estimated number of drums for this waste stream. The Solidified Acid/Caustic waste was generated at Mound from 1974 to 1985. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Solidified Acid/Caustic wastes, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation and are summarized in Table 1-2. [15, 28]

Table 1-2. Estimated WMP Weights per Unit of Waste for Solidified Acid/Caustic Waste (BN835).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Other Inorganic Materials	<1
Plastics (waste)	<1
Rubber	<1
Cellulosics	3
Inorganic Matrix	97

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50% by volume inorganic particulate absorbents, including absorbed liquid wastes. [1, 28]

1.5 Prohibited Items

The absence of prohibited items is determined and documented through AK and characterization activities. RTR or VE is performed on each container in this waste stream to verify the absence of the following prohibited items.

- Liquid waste,
- Non-radionuclide pyrophoric materials,
- Hazardous wastes not occurring as co-contaminants with transuranic mixed wastes,
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes,
- Wastes containing explosives or compressed gases,
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA HWNs of D001, D002, or D003),
- Waste with polychlorinated biphenyls (PCBs) not authorized under an U.S. Environmental Protection Agency (EPA) PCB waste disposal authorization,
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification, [14]
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2, [14]
- Sealed inner containers greater than four liters.

Drums with prohibited items will be treated or rejected as appropriate. Drums with prohibited items will not be part of the waste stream shipped to WIPP. [9]

1.6 RCRA Determination

1.6.1 EPA Hazardous Waste Numbers

This waste has been characterized as a mixed waste. The following EPA Hazardous Waste Numbers (HWNs) have conservatively been assigned to this waste stream.

Toxicity Codes: D007, D008, D009

Listed Codes: F001, F002

Solid samples were analyzed for total metal, volatile organic compounds (VOCs), and semivolatile organic compound (SVOC) constituents. Statistics were calculated based on using one-half the method detection limit (MDL) for less than detectable observations with data transformation applied where appropriate. Using this method, the calculated 90 percent upper confidence limit (UCL_{90}) of the mean concentration did not exceed the associated regulatory threshold limit (RTL) for Resource Conservation and Recovery Act (RCRA) characteristic metals or solvents, or F-listed solvents.

Non-halogenated VOCs (NHVOCs) were extracted using water. The amount of radionuclides extracted with the NHVOC target analytes was higher than those methods that use organic solvent extraction. The radioactivity levels were higher than the laboratory safe handling limits for the analytical instrumentation, therefore requiring dilution of the extracts for the NHVOC samples. The results for these NHVOCs were all non-detects (below the method detection limit [MDL]). The elevated MDLs due to dilution resulted, in some cases, with the MDL above the program required quantification limit (PRQL). Diluted sample results below the MDL were not used to calculate the mean and therefore no UCL_{90} was calculated. The NHVOC pyridine was the only compound that if one half the MDL was used to calculate the mean, the resultant UCL_{90} would be above the PRQL. Pyridine was not identified through AK as part of the waste stream nor was it identified as a TIC in the headspace gas VOC analysis or in the solid sample SVOC TIC analysis. A review of AK confirmed that pyridine was not believed to be present in the waste stream. Based on statistical, chemical and AK review, a HWN for pyridine was not assigned.

Headspace gas sampling and analysis detected 8 VOCs (1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloro-1, 2, 2-trifluoroethane, carbon tetrachloride, methanol, methylene chloride, toluene, trichloroethylene). Statistics were calculated based on using one-half the MDL for less that detectable observations with data transformations applied where appropriate. Of the 8 VOCs detected, only 1,1,1-trichloroethane and trichloroethylene have a UCL_{90} above the PRQL and provide confirmation of AK application of HWNs F001 and F002. Therefore, sample data confirms that no additional characteristic or listed EPA HWNs are required.

1.6.2 Hazardous Determination

Ignitability: The solidified acid/caustic waste does not meet the definition of *ignitability* as defined in 40 CFR 261.21. This waste is not liquid, does not contain explosives, non-radionuclide pyrophoric materials or compressed gases. The waste is not a U.S. Department of Transportation (DOT) oxidizer as defined in 49 CFR 173. Only WIPP compliant drums will be considered candidates for shipment to WIPP. This waste stream does not exhibit the characteristic of ignitability (D001). [2, 16, 17]

Corrosivity: The solidified acidic/caustic waste is not a liquid and does not meet the definition of *corrosivity* in 40 CFR 261.22. Only WIPP compliant drums will be considered candidates for shipment to WIPP. The waste stream does not exhibit the characteristic of corrosivity (D002).

Reactivity: The materials in this waste stream do not meet the definition of *reactivity* as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes when mixed with water. Only WIPP compliant drums will be considered candidates for shipment to WIPP. The waste stream is not reactive (D003).

Toxicity Characteristic: The materials in this waste stream meet the definition of *toxicity* for metals as defined in 40 CFR 261.24. Trace amounts of tantalum, molybdenum, iron, chromium, nickel, mercury, and lead have been identified as waste constituents in low-risk acidic and caustic liquid wastes. These metals may also be expected in trace amounts in the high-risk acidic and caustic liquid wastes. [16, 17] AK documentation indicates that plutonium was leached from leaded (D008) glovebox gloves as part of the plutonium recovery process and this acidic leachate potentially entered this waste stream. AK documentation indicates that chromium (D007), lead (D008), and mercury (D009) were present in some facilities from which this waste stream was generated and therefore could potentially be present in the waste. [17, 36, 41, 42] For these reasons, D007, D008 and D009 are conservatively assigned to this waste stream.

Listed Waste

F–Listed Codes: This waste stream was conservatively characterized as a listed waste because F-listed solvents were used in the same processing areas as this waste. [16, 17, 36, 33] Some of this waste was generated prior to the RCRA and no controls were in place to prohibit these spent solvents from being mixed with acidic or caustic liquid waste.

Carbon tetrachloride, trichloroethylene and 1,1,1-trichloroethane were used for their degreasing and solvent properties in the PP Building and the laboratory section of the SW/R Complex. [16, 17] AK identifies that 1,1,1-trichloroethane was used for degreasing in the PP Building and in various extraction processes performed in both the PP Building and the SW/R. [16, 17, 36, 33] Carbon tetrachloride and trichloroethylene were potentially used in laboratory or production processes. [16, 17, 32, 48] In addition, headspace gas analysis detected 1,1,1-trichloroethane (F001, F002) and trichloroethylene (F001, F002) in concentrations exceeding the PRQL which supports AK. F001 and F002 have been conservatively applied to the waste.

Acetone, methanol and xylene were used in the R and PP Buildings and could have been commingled with this waste. [11, 16, 17, 32, 33, 41, 46] Because the solidified acid/caustic waste is not ignitable (i.e., not assigned D001), EPA hazardous waste number F003 is not assigned to this waste.

P, U and K Listed Codes: Beryllium was identified in AK source documents as a potential contaminant of this waste stream. Small amounts of beryllium metal may have been discharged into the wastewater treatment system. [16 17] The amount of beryllium in the waste is not expected to exceed 1%. This assertion is confirmed by the results of the six containers identified in Table 2 of the CIS. The beryllium concentration is maximum 1.723 mg/kg, UCL_{90} 1.612 mg/kg, and RTL 4.61." The maximum beryllium concentration identified in Table 2 of the CIS 1.723 mg/kg does not exceed 1% by weight Be (per 50 kg drum). Beryllium was not disposed at the Mound site as an unused commercial chemical product, therefore P015 is not assigned. The materials in this waste stream do not meet the definition of a P-listed waste.

The acidic liquid waste consists of spent nitric and trace amounts of spent hydrofluoric acid absorbed onto a clay material (Florco). [16, 17, 18] Solidified Acid/Caustic Waste is not liquid waste. The hydrofluoric acid constituent was not a discarded commercial chemical product, an off-specification species, or a container residue as identified in 40 CFR 261.33. Therefore, the materials in this waste stream are not U-listed hazardous waste.

The materials in this waste stream are not hazardous waste from specific sources because they were not generated from any of the processes listed in 40 CFR 261.32. The materials in this waste stream are not K-listed hazardous waste.

TSCA Regulated Contaminants

There is no AK documentation indicating the disposal of PCBs as regulated by the Toxic Substances Control Act (TSCA), 40 Code of Federal Regulations, Part 761 into the acid or caustic liquid wastes. Therefore, the waste stream is not classified as TSCA regulated.

1.7 Radionuclides

The primary radionuclides contained in Mound transuranic waste stored at the Idaho National Laboratory (INL) are those identified for plutonium metal production (heat source) material (e.g., ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu). Americium-241 (^{241}Am), ^{234}U, and neptunium-237 (^{237}Np) are also expected in most of the containers of transuranic waste due to ingrowth. This waste may also contain weapons grade plutonium containing primarily ^{239}Pu as well as enriched uranium (EU), depleted uranium (DU), and small quantities of other isotopes (209-Polonium, 228-Thorium (Th), ^{229}Th, ^{230}Th, and 231-Protactinium), generated during research activities. ^{234}U is expected in wastes with aged plutonium. ^{233}U may also be detected in some containers of Mound Waste. Cesium-137 (^{137}Cs) may be present in some production glovebox waste containers. Strontium-90 (^{90}Sr) although not reported in the Mound AK, would be expected to be present where ^{137}Cs is observed. The solidified acid/caustic waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [7, 29, 30]

The primary product from heat source plutonium processing for use at the Mount Plant contained plutonium isotopes in the following weight percents: 80% ^{238}Pu, 16% ^{239}Pu, 3% ^{240}Pu, 0.8% ^{241}Pu, and 0.2% ^{242}Pu. The range of expected activities/concentrations is related to waste generation date (e.g., earliest possible generation date, 1961, and latest possible generation date, 1988). ^{234}U is expected in the waste due to aged plutonium as well as part of DU and EU. [7]

AMWTP will employ payload management practices in accordance with the Waste Acceptance Criteria (WAC) for waste stream BN835. [8] The estimated total waste volume for BN835 is 515 m^3. The estimated percentage of the waste above 100 nCi/g is 60%. The estimated percentage of waste less than 100 nCi/g is 40%. [7]

1.8 Defense Determination

The atomic energy defense activities that apply to TRU wastes generated by Mound operations are defense nuclear materials productions and defense research and development. The following are examples of these defense activities:

- Transit program heat sources (Pu-238) used in U.S. Navy navigational satellites beginning in 1961.
- Half-watt heat sources (Pu-238) for the U.S. Navy were produced from 1974 to 1976.
- Multi-hundred watt (MHW) heat sources for the Lincoln Experimental Satellites (LES 8/9), which are U.S. Air Force communications satellites, were fabricated in 1974 and 1975.
- High Performance Generator (HPG) Mod 3 for the Department of Defense in 1976 and 1977.
- Milliwatt Generator (MWG) heat source (Pu-238) capsules for a power supply used in weapons by the U.S. military were fabricated from 1974 and continued into the 1980s.
- Pu-238 heat sources were also produced for non-defense applications, such as weather satellites, the Apollo moon missions, and planetary missions (e.g., Mars, Jupiter, and Saturn); however, Pu-238 contaminated waste from non-defense activities was not separated from the waste from defense work and is therefore commingled.

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. Typically, the rigid liners were lined with a polyethylene drum bag. Typically, plywood spacers were placed between the rigid liner lid and the drum lid before the drum lid was installed. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected, as appropriate. [1, 19, 26]

2.2 Flammability Considerations

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for VOCs, hydrogen and methane. Headspace gas sampling and analysis is performed when required by the Waste Analysis Plan (WAP) and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [9, 13, 14]

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27. Mound Laboratory Radioactive Waste Process Flow Sheets, March 19, 1975 and May 31, 1977 [U132A]

28. Memorandum to file, Waste Material Parameter (WMP) Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste, TV-001-07, January 19, 2007 [C534A]

29. INEL-95/0412, Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory, B. D. Raivo, G. K Becker, T. H. Smith, and G. L. Anderson, December 1995 [P365A]

30. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste [P396A]

31. Interview of Bill Davis, Mound Employee, CCP Record of Communication, April 25, 2003 [C481A]

32. Interview with Dr. Bernie Kokenge, Mound Employee, CCP Record of Communication, revised June 8, 2004 [C464A]

33. EG&G Mound Building 38 Accident Analysis of Internal (Operational) Events, Results and Findings, J. L. Jones, Jr. and T. G. Ryan, June 1994 [P503A]

34. Memo from D. R. Rogers to D. A. Edling, Pu-239 Criticality Procedure R-129, November 13, 1972 [C449A]

35. Interview with Paul Figgins, Mound Employee, CCP Record of Communication, May 15, 2003 and e-mail from Paul Figgins regarding TRU report changes, May 21, 2003 [C466A]

36. MLM-ML-90-48-0001, Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, Audeen W. Fentiman, August 15, 1990 [P493A]

37. WM-F1-81-015, Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification, T. L. Clements, Jr., September 1981 [P319A]

38. MD-10203, Technical Manual - Mound WIPP Certification Program For Newly Generated Contact Handled (CH) Transuranic Waste, Issue 1, June 1, 1985 and Issue 6, April 14, 1989 [P385A]

39. Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste, August 1983 [P474A]

40. MD-10203, Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste, Issue 1 June 1, 1985; Issue 2 June 10, 1986; Issue 5 September 1, 1988; and Issue 6 April 14, 1989 [P525A]

41. Mound Quality Control Plan for the Control Of Radioactive Waste, October 1982 [P536A]

42. TRU Waste Certification Task Sludge From the Waste Disposal Plant [U196A]

43. Memorandum from W. R. Harris to R. K. Blauvelt, Acid/Caustic TRU Waste Drums – Pressure Check (Interim Report), March 4, 1976 [C360A]

44. Memorandum from F. A. Traino to T. C. Elswick, Repackaging of Acid/Caustic Drums, November 28, 1977 [C363A]

45. Memorandum from R. K. Blauvelt to A. G. Barnett, Repackaging of Acid/Caustic Waste, November 15, 1978 [C365A]

46. Interview of Mike Deaton, Mound Employee, CCP Record of Communication, June 5, 2003 [C472A]

47. Memorandum from W. R. Harris to W. T. Cave, Process Review 76-7, July 8, 1976 [C361A]

48. Interview of Clyde J. Chong, Mound, Employee, CCP Record of Communication, revised June 8. 2004 [C467A]

Appendix A

Process Flow Diagrams

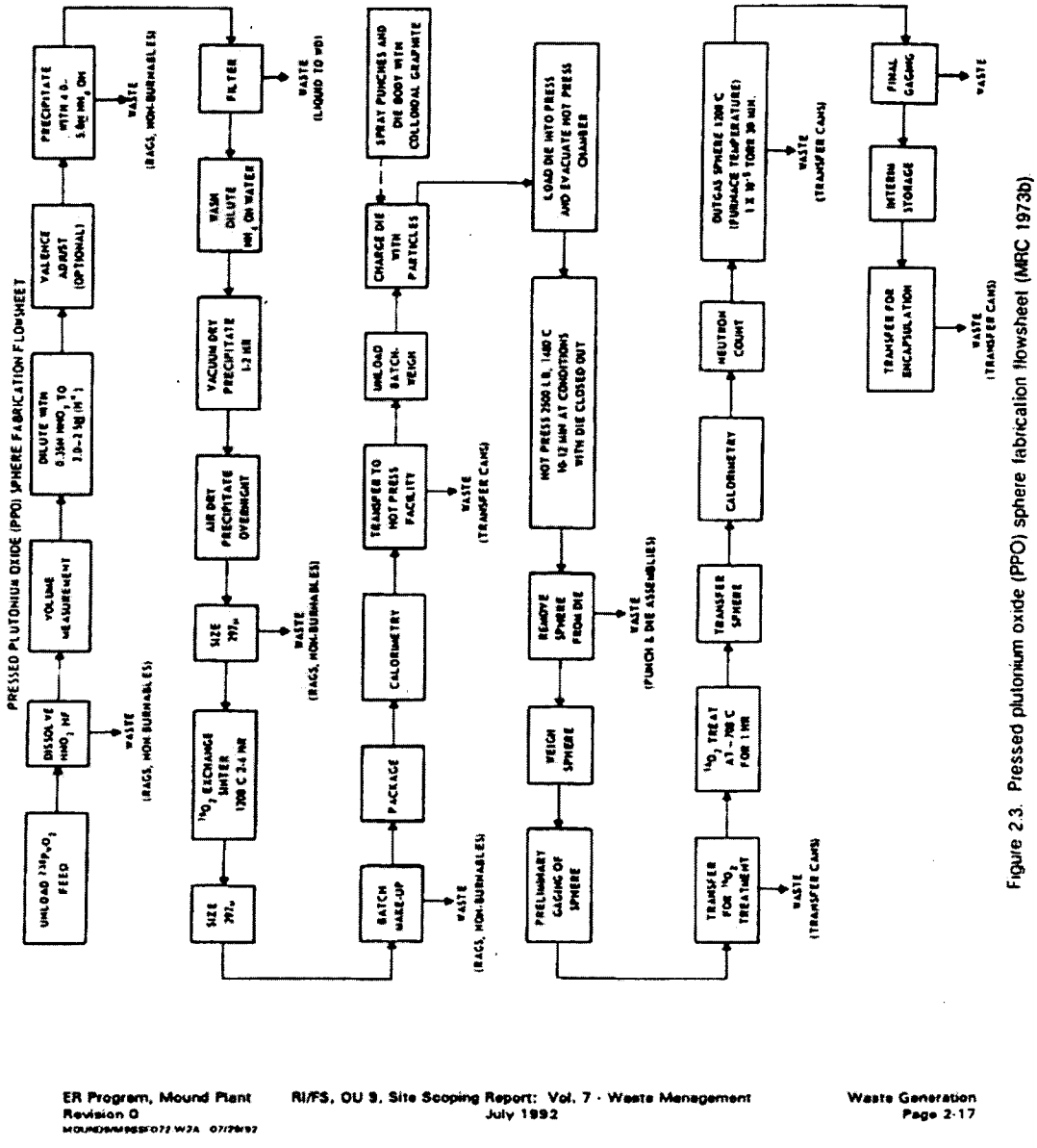


Figure 2.3. Pressed plutonium oxide (PPO) sphere fabrication flowsheet (MRC 1973b)

Figure A-1. Mound pressed plutonium oxide (PPO) sphere fabrication flowsheet.

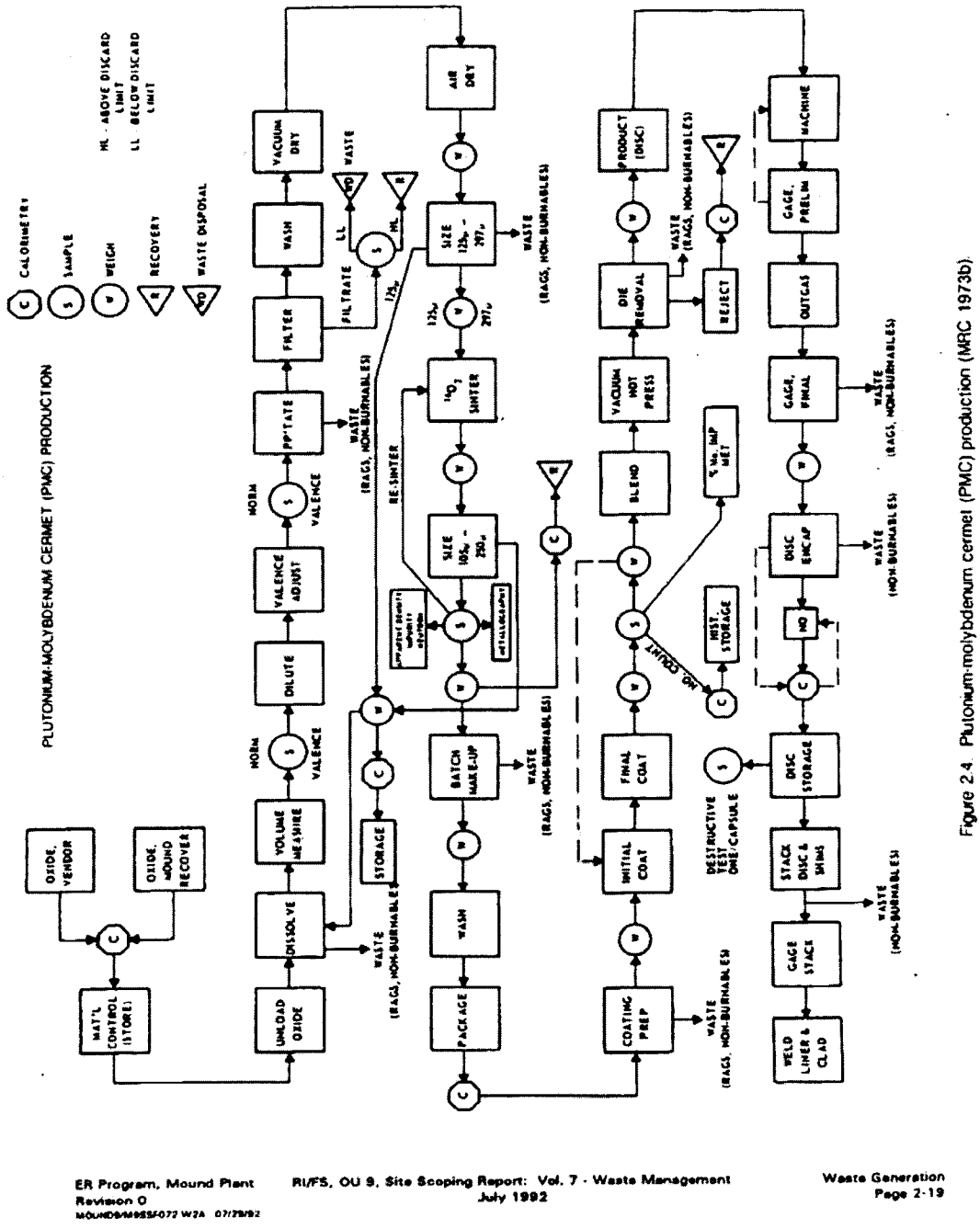


Figure 2.4 Plutonium-molybdenum cermet (PMC) production (MRC 1973b).

ER Program, Mound Plant
Revision 0
MOUNDSMMSSF072 W2A 07/29/92

RI/FS, OU 9, Site Scoping Report: Vol. 7 - Waste Management
July 1992

Waste Generation
Page 2-19

Figure A-2. Mound plutonium-molybdenum cermet (PMC) production.

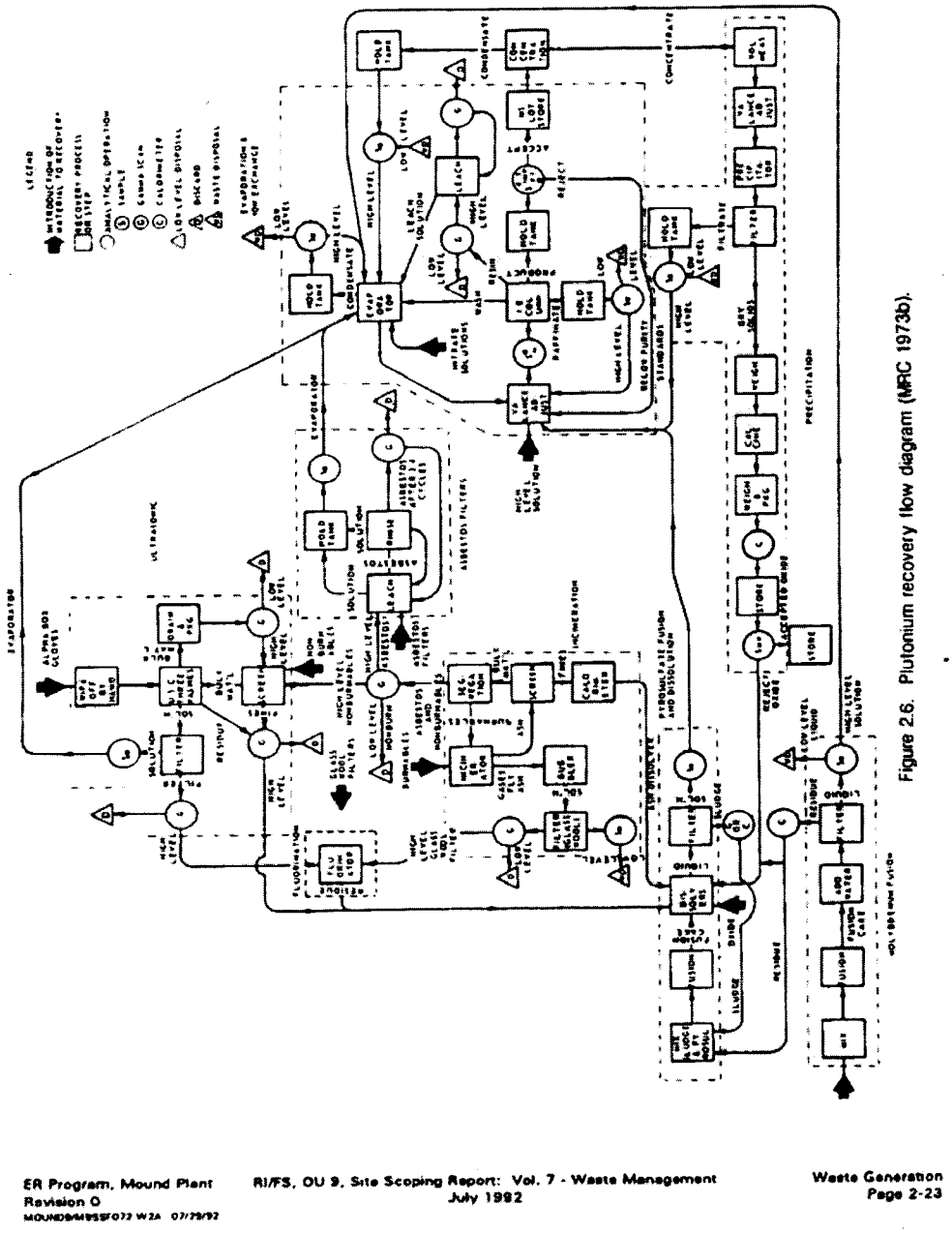


Figure 2.6. Plutonium recovery flow diagram (MRC 1973b).

ER Program, Mound Plant
Revision 0

RI/FS, OU 9, Site Scoping Report: Vol. 7 - Waste Management
July 1992

Waste Generation
Page 2-23

Figure A-3. Mound plutonium recovery flow diagram.

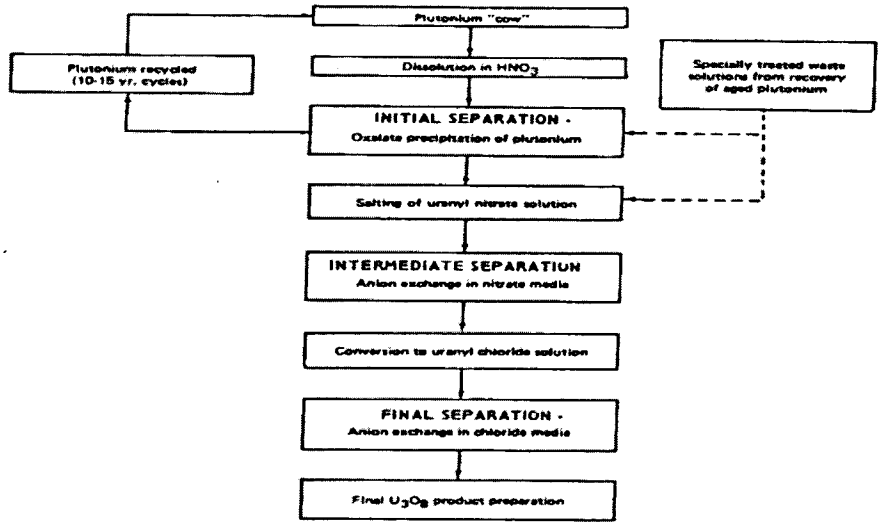


Figure 2.11. Chemical separation steps for recovery and purification of uranium-234 from plutonium-238 (Keister et al. 1978).

Figure A-4. Mound chemical separation steps for recovery and purification of uranium-234 from plutonium-238.

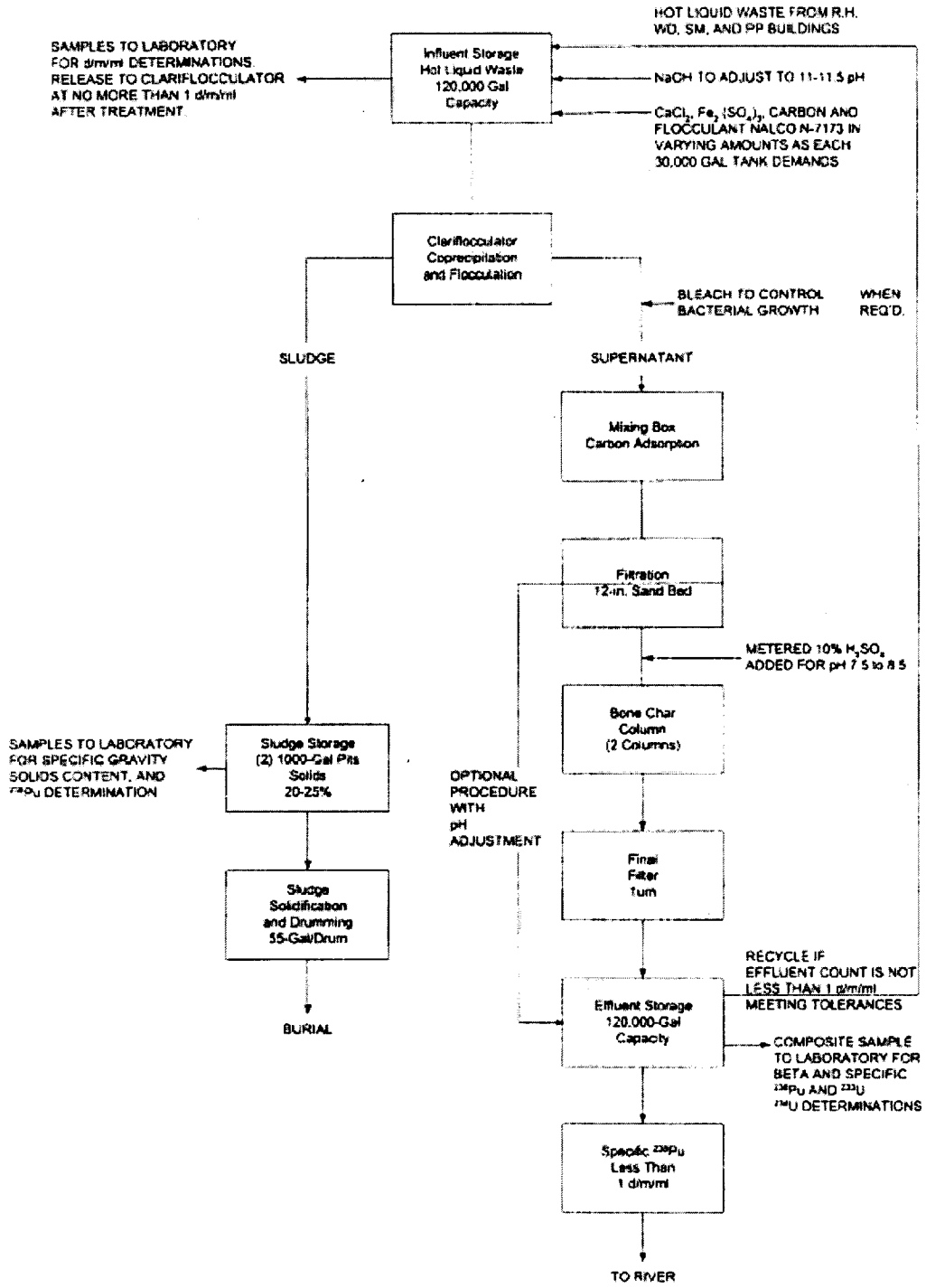
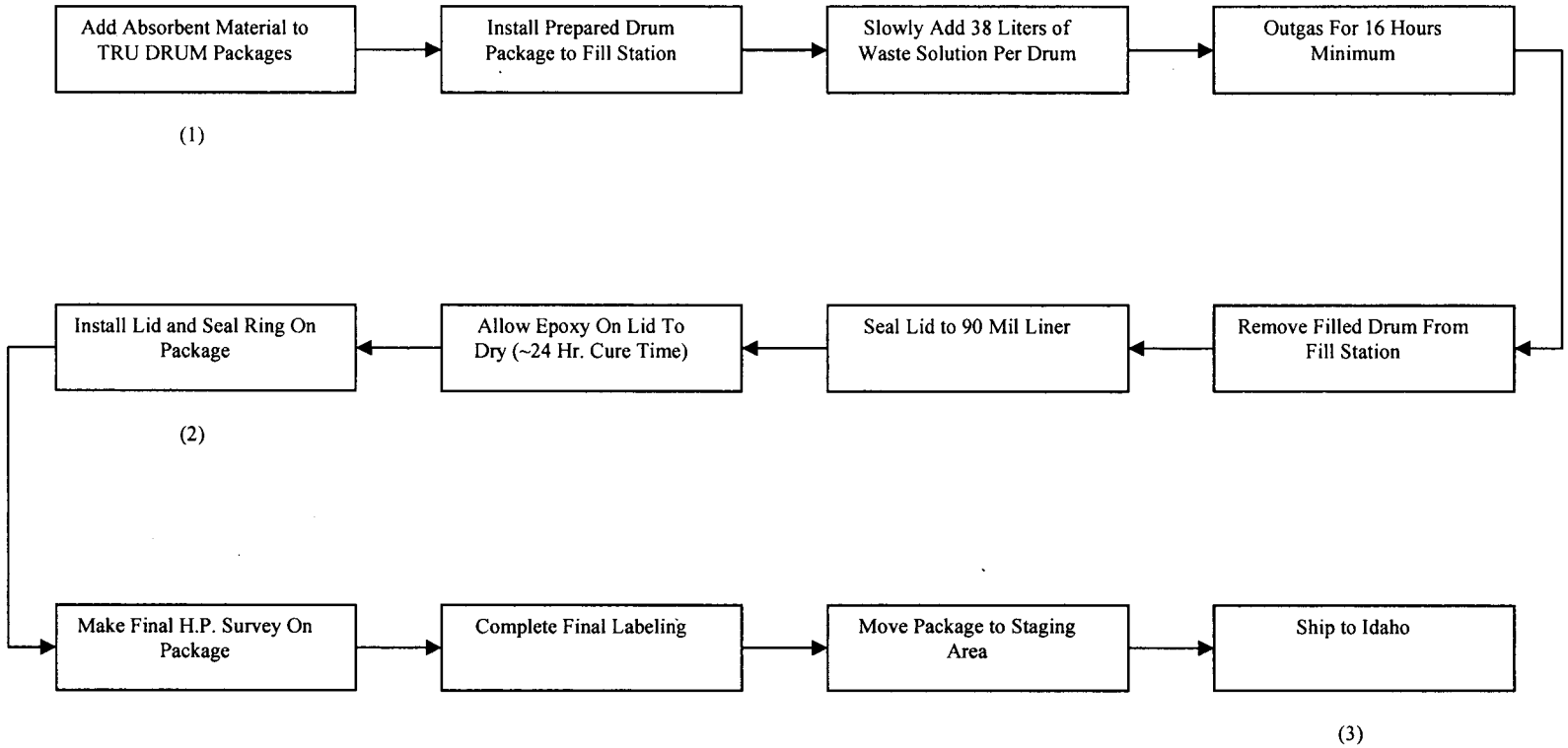


Figure A-5. Process flow for the Alpha Wastewater Treatment System in the WD Building.

Advanced Mixed Waste Treatment Project

Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)



(1) Three 50 lb. bags (150 lbs total) Florco (approximately 75% excess for 38 liters.
(2) Raycohesive – two coats on liner and lid.

Figure A-6. Plutonium-238 Acid-Caustic TRU Waste flowsheet.

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: ~~DOE Approves Retrieval Operations Start-up~~07/17/02, Rev. 10 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BN835 (MD IDCs 834 and 835)

AK Source Document / Rev. Number : P380A and U126A

hwn	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	X			X	✔
F002	X	X	X			X	✔
F003							✔
F004							✔
F005							✔
F006							✔
F007							✔
F009							✔
D004							✔
D005							✔
D006							✔
D007	X	X				X	✔
D008	X	X				X	✔
D009	X	X				X	✔
D010							✔
D011							✔
D022							✔
D032							✔

AK Expert: KATHRYN ZBRYK
Kathryn Zbryk
Print/Sign

Date: 8/30/05

Site Project Manager: Steve Carpenter
Print/Sign

Date: 8.30.05

Implementing Document: MP-TRUW-8.13

Waste Stream Description: Solidified Acid/Caustic Waste **Rev. 3**

Waste Stream Number: BN835

AK Information	(1)AK#	Source Document Reference Number
Required generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area(s) from which TRU waste was or is generated.	**WS1**	C344A, C351A, C358A, C361A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C488A, C490A, P024A, P319A, P380A, P381A, P418A, P423A, P437A, P463A, P469A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P492A, P493A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P518A, P519A, P522A, P523A, P524A, P526A, P527A, P540A, P544A, P545A, P546A, P550A, P551A, U126A, U145A, U146A, U148A, U149A, U150A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U167A, U168A, U169A, U173A, U187A, U190A, U195A, U198A, U202A, U203A, U204A, U207A
Waste stream volume and time period of generation.	**WS2**	C348A, C359A, C363A, C364A, C365A, C366A, C372A, C379A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C534A, C535A, D040A, P024A, P364A, P365A, P380A, P400A, P418A, P437A, P463A, P469A, P482A, P505A, P506A, P507A, P509A, P511A, P519A, P522A, P523A, P524A, P567A, U122A, U126A, U127A, U134A, U142A, U146A, U148A, U149A, U150A, U154A, U159A, U166A, U167A, U187A, U197A, U198A, U202A, U207A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	**WS3**	C361A, C444A, C466A, C473A, P024A, P319A, P364A, P380A, P381A, P418A, P423A, P437A, P463A, P469A, P482A, P483A, P485A, P492A, P493A, P504A, P505A, P507A, P510A, P511A, P518A, P519A, P522A, P523A, P524A, P526A, P527A, P546A, P558A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A
Material inputs or other information identifying chemical content, (e.g., event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste) and chemical composition that could affect the isotopic distribution.	**WS4**	C269A, C303A, C304A, C318A, C324A, C342A, C344A, C349A, C354A, C356A, C359A, C361A, C363A, C385A, C409A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C479A, C480A, C481A, C484A, C488A, C490A, C493A, C513A, P024A, P207A, P307A, P310A, P319A, P365A, P380A, P381A, P418A, P423A, P437A, P457A, P458A, P463A, P469A, P471A, 475A, P485A, P492A, P493A, P497A, P503A, P504A, P505A, P506A, P509A, P510A, P518A, P519A, P521A, P522A, P523A, P524A, P527A, P534A, P545A, P546A, P552A, U126A, U132A, U140A, U149A, U156A, U157A, U159A, U164A, U167A, U172A, U185A, U189A, U195A, U197A, U202A, U204A, U205A, U208A

Implementing Document: MP-TRUW-8.13

Waste Stream Number: BN835

Material inputs or other information identifying physical waste form, (e.g., event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste) and physical composition that could affect the isotopic distribution.	**WS5**	C302A, C348A, C349A, C360A, C362A, C363A, C370A, C376A, C378A, C379A, C383A, C409A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C479A, C485A, C490A, C534A, C535A, D039A, P024A, P207A, P319A, P365A, P380A, P381A, P393A, P399A, P418A, P423A, P437A, P463A, P465A, P469A, P475A, P492A, P493, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P518A, P519A, P521A, P522A, P523A, P524A, P527A, P544A, P545A, P546A, P553A, P556A, P567A, U126A, U145A, U146A, U149A, U153A, U154A, U156A, U157A, U159A, U166A, U167A, U187A, U189A, U190A, U191A, U195A, U197A, U198A, U204A, U205A, U206A, U207A, U208A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	**WS6**	C354A, C493A, P207A, P307A, P310A, P418A, P437A, P492A, P503A, P505A, P506A, P509A, P519A, P527A, U142A, U167A, U185A, U190A, U199A, U205A, U206A, U208A
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (^{241}Am, ^{238}PU, ^{239}Pu, ^{240}PU, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) and the radionuclides comprising 95% of the hazard.	**WS7**	C291A, C389A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C479A, C485A, C488A, C490A, C494A, C508A, C517A, P024A, P319A, P381A, P380A, P398A, P418A, P423A, P437A, P463A, P467A, P469A, P472A, P482A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P513A, P514A, P518A, P519A, P521A, P522A, P523A, P524A, P526A, P527A, P540A, P543A, P544A, P545A, P546A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P611A, P622A, U126A, U137A, U142A, U147A, U149A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U166A, U167A, U168A, U169A, U170A, U172A, U173A, U185A, U187A, U189A, U190A, U195A, U198A, U199A, U202A, U203A, U205A, U208A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	**WS8**	C362A, C369A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C516A, P024A, P319A, P418A, P437A, P465A, P492A, U126A

(1) The AK#s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

All required AK information has been compiled and tracking numbers assigned.

AK Expert: M. L. Johnson M L Johnson Date: 8/21/08
Print/Sign

Site Project Manager: Steve Carpenter Date: 8.21.08
Print/Sign

LDR NOTIFICATION- IDCs 834, 835

WASTE STREAM BN835

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D007, D008, D009, F001, F002 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited from land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	F001	Nov 8, 1988
	F002	Nov 8, 1988

BNFL Inc.

765 Lindsay Blvd
Idaho Falls, ID 83402
Tel: (208) 524-8484
Fax: (208) 524-4442

December 20, 2004

Kerry Watson
US Department of Energy
Carlsbad Field Office
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Waste Stream Profile, BNINW835 - EPS-087-2004

Dear Mr. Watson:

Attached is Waste Stream Profile (WSPF), BNINW835, Solidified Acid/Caustic Waste, and RPT-TRUW-23, *Acceptable Knowledge Summary for Solidified Acid/Caustic* Waste, for your review and approval. We have evaluated and reviewed the profile, and believe it is compliant with the WAP.

The sampling plan and inventory of containers associated with this waste stream are also included in this transmittal as document titled, "Sampling Plan for BN835."

If you have any questions feel free to call me at (208) 557-7164 or Steve Carpenter at (208) 557-7304.

Sincerely,

Eric P. Schweinsberg, TRU Program Manager
Advanced Mixed Waste Treatment Project

attachment

cc:
J. Wells, DOE-ID *ED
R. Chavez, WRES *ED
S. Carpenter, Weston Solutions, Inc. *ED
P. Daly, BNFL Inc. *ED
A. Dobson, BNFL Inc. *ED
D. Swale, BNFL Inc.*ED
AMWTP Document Control

*ED denotes electronic distribution

AMWTP

BNFL Inc.

765 Lindsay Blvd
Idaho Falls, ID 83402
Tel: (208) 557-7000
Fax: (208) 528-9154

February 23, 2005

Kerry Watson
US Department of Energy
Carlsbad Field Office
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Container List for Waste Stream BN835, Lot 1 – EPS-008-2005

Dear Mr. Watson:

Attached is the container list for Waste Stream BN835, Lot 1. It consists of 504 drums of mixed transuranic waste.

This list is submitted in conjunction with the Waste Stream Profile Form for BN835. If you have any questions or concerns feel free to contact me at 208-557-7164.

Sincerely,

Eric P. Schweinsberg, TRU Program Manager
Advanced Mixed Waste Treatment Project

attachment

cc:
M. Italiano, CBFO *ED
R. McCallister, CBFO *ED
J. Wells, DOE-ID *ED
E. Dumas, BNFL Inc. *ED
D. Swale, BNFL Inc. *ED
S. Stewart, SM Stoller Corp. *ED
S. Carpenter, Weston Solutions, Inc. *ED
AMWTP Document Control

*ED denotes electronic distribution

Implementing Document: MP-TRUW-8.13

1. **Source Document Tracking Number:** P609A	2. **Revision:** 7

3. **Category**

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. **Title/Description Information:** BN004 Special Setups Waste Stream Profile Package, December 28, 2005; Change Notice #1, February 15, 2007; Change Notice #2, April 2, 2008; and Change Notice #3, August 5, 2010.

Document Number: N/A

Revision: N/A

Author: AMWTP CBFO

Date: 12/28/05

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM4, WM5, WM6, WM7	RF	all	The WSPF package addresses all of the Waste Management Program (WM) elements by providing either a summary of the information or by identifying references to the documents (e.g. AK baseline and certification procedures) that contain the information; however, only the WM elements that are actually addressed in the package are identified on the Form-1068.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	RF-004, RF-744, RF-802	AK Summary	AK summary addresses all of the waste stream elements.

9. **Document Summary:**

FOR INFORMATION ONLY

Implementing Document: MP-TRUW-8.13

Characterization information for the waste stream BN004 (special setups generated at Rocky Flats) submitted to and approved by CBFO. This package includes the following documentation:

- CBFO Approval letter of CN #3 for WSPF BN004, 8/5/10
- Change Notice # 3 for WSPF BN004, 7/27/10
- CBFO Approval letter of CN #2 for WSPF BN004, 4/2/08
- Change Notice # 2 for WSPF BN004, 3/27/08
- CBFO Approval letter of CN #1 for WSPF BN004, 2/15/07
- Change Notice # 1 for WSPF BN004, 2/12/07
- CBFO Approval letter for WSP BN004, 12/28/05
- Waste Stream Profile Form-1195, DQO Form-1597, and CIS Form-1598 for BN004, Rev. 0, 12/28/05
- Acceptable Knowledge Summary, RPT-TRUW-59, Rev. 4, 06/27/12
- Waste Stream Profile Form HWN Assignment Worksheet Form-1187 for BN004, 3/30/06
- TRU Waste Management AK Documentation Checklist Form-1067 for BN004, 9/16/10
- LDR Notification – IDCs RF-004, RF-744 and RF-802, Waste Stream BN004
- AMWTP transmittal letter WSP BN004, SPC-087-2005, 12/21/05

Revision 2 reorganized profile package to only contain the latest version of the above documents.
Revision 3 updated record to include Change Notice #1 and revised AK Summary Report (RPT-TRUW-59).
Revision 4 updated record to include revised Form-1067.
Revision 5 updated record to include Change Notice #2 and revised AK Summary Report (RPT-TRUW-59).
Revision 6 updated record to include Change Notice #3 and revised AK Summary Report (RPT-TRUW-59).
Revision 7 updated record to include revised AK Summary Report (RPT-TRUW-59, Rev. 4).

The above documents address all of the Waste Management Program (WM) elements by providing either a summary of the information or by identifying a reference to the document(s) that contain the information. Therefore, the WM elements identified above are for those elements that are actually addressed in the package.

Previous versions are archived in EDMS.

10. Source Document Data Limitations (if any):

None

		Julie Collins		10/2/2012
11.	AK Expert:	Print	Sign	Date

P609A R7

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

AUG - 5

Mr. James Cooper, Acting Deputy Manager
U.S. Department of Energy
Idaho Clean-Up Project
Idaho Operations Office (NE-ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Update for the WIPP Operating Record (Change Notice #3) Special Setups Waste (BN004, Rev. 0)

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the Change Notice Number 3 for Special Setups Waste (BN004, Rev. 0) and concluded that the Change Notice is complete and the waste stream determinations were made in accordance with the applicable procedures and guidance.

The CBFO therefore approves the Change Notice as submitted. Using the methods approved by the Advanced Mixed Waste Treatment Project (AMWTP), AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have questions on this matter, please contact me at (575) 234-7372.

Sincerely,

Donald C. Gadbury, Director
Office of the National TRU Program

cc:

G. Basabilvazo, CBFO	*ED
C. Gadbury, CBFO	ED
S. McCauslin, CBFO	ED
D. Miehls, CBFO	ED
M. Navarrete, CBFO	ED
K. Watson, CBFO	ED
P. Gilbert, LANL	ED
S. Lott, LANL	ED
G. Lyshik, LANL	ED
CBFO, M&RC	

*ED denotes electronic distribution

CBFO:NTP:NC:GS:10-1468:UFC 5900.00

Special Setups Waste (BN004, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN004, Revision 0. This waste stream is Special Setups Waste and was approved by DOE/CBFO on December 28, 2005. Change Notice #1 was approved on February 15, 2007 and Change Notice #2 was approved on April 2, 2008.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Revise NMED audit dates to include 7/2/2004, 1/9/2009 and 1/8/2010

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 19, 6/30/2010

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 13, 6/30/2010

   CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 11, 6/4/2009

3. **WSPF Form-1195, Waste Stream Information, WIPP ID**

   Add IN-BN004

4. **WSPF Form-1195, Waste Stream Information, Description from the WTWBIR**

   Change description to:

   See Section 1.2.10 of AK Summary

5. **WSPF Form-1195, Waste Stream Information, Number of Drums**

   Change Number of Drums to 2,302 (55 gallon drums)

6. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Acronyms**

Add the following acronyms:

ATWIR	Annual Transuranic Waste Inventory Report
CH-TRAMPAC	Contact Handled Transuranic Waste Authorized Methods for Payload Control
CFR	Code of Federal Regulations
DOE	Department of Energy
EDMS	Electronic Document Management System
HF	hydrofluoric acid
nCi/g	nanocuries per gram
ppm	parts per million
PRQL	program required quantitation limit
RFETS	Rocky Flats Environmental Technology Site
SDA	Subsurface Disposal Area
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
UCL_{90}	90% upper confidence limit
VE	Visual Examination
VOCs	Volatile Organic Compounds
WTS	Waste Tracking System

Also spell out the above acronyms in their first use in the AK Summary, as required.

7. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.2.3, Waste Stream Volume**

Replace first line with the following:

2,302 55-gallon containers (480 m^3) – current volume [3]

8. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.2.4, Generation Dates**

Change first sentence as follows:

AMWTP stored containers of Rocky Flats Special Setups waste generated from 1968 to 1988. [66]

9. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

Change title to:

Waste Isolation Pilot Plant (WIPP) Waste Stream ID

Special Setups Waste (BN004, Rev. 0)

Change Section 1.2.6 as follows:

Annual Transuranic Waste Inventory Report (ATWIR) Waste Stream ID: IN-BN004 [formerly identified as Transuranic Waste Baseline Inventory Report (TWBIR) Waste Stream ID: IN-W157] (5, 67)

10. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.2.10, Description from the TWBIR**

Change title to:

Descriptions from the TWBIR and ATWIR

Replace Section 1.2.10 as follows:

TWBIR waste stream description:

This waste, generated at RF, consists of liquids absorbed on a cement mixture. The liquid wastes were not compatible with aqueous treatment processes and are handled separately due to their plutonium complexing nature. (5)

ATWIR waste stream description:

IN-BN004 (Special Setups) waste was generated from a waste treatment process (predominately laboratory waste) generated in support of plutonium operations at RFETS. Resins and electrochemical milling sludges were also solidified with the liquid waste. This waste stream is comprised of solidified waste assigned IDC ID-RF-004 and ID-RF-802. Special Setups consists of waste >50% by volume inorganic solidified waste. Specifically, small quantities of liquids solidified in large quantities of cement. [a] (67)

a. The description in the Annual Transuranic Waste Inventory Report (ATWIR) will be revised in the next annual update to add IDC RF 744 and revise the waste stream description to "IN-BN004 (Special Setups) waste was generated from treating wastes (predominately laboratory waste) generated in support of plutonium operations at Rocky Flats. Resins and electrochemical milling sludges were also solidified with the liquid waste. This waste stream is comprised of solidified waste assigned IDC ID-RF-004, ID-RF-744 and ID-RF-802."

11. **AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.3.1, Description**

Replace third sentence of first paragraph as follows:

This waste stream is comprised of solidified waste assigned Item Description Codes (IDCs) RF 004, RF 744, and RF 802.

Special Setups Waste (BN004, Rev. 0)

Replace Table 1-1 as follows:

IDC	WMC	Description
RF 004	S3150	Special Setups Waste – Building 774
RF 744	S3150	Pits 11 and 12 Special Setups
RF 802	S3150	Solidified Laboratory Waste – Building 774

Change second sentence in second paragraph as follows:

A mixture of Portland cement and insulation cement (magnesia cement) was placed in a lined 55-gallon drum and identified with container prefix 744.

Insert following as 3rd paragraph:

Pits 11 and 12 Special Setups (RF 744). RF 744 was assigned by AMWTP to Special Setups containers retrieved from Subsurface Disposal Area (SDA) Pits 11 and 12 and identified with container prefix 744. The process and inputs were the same as waste containers identified as RF 004. The retrieved waste containers were originally generated prior to 1972, shipped to INL and buried in Pits 11 and 12. The waste containers were subsequently retrieved from the pits prior to 1979 and placed in the Transuranic Storage Area-Retrieval Enclosure (TSA-RE).[3]

12. AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.5, Prohibited Items

Revise first paragraph as follows:

The following items are prohibited at the WIPP in accordance with Section B-1c of MP-TRUW-8.2, Quality Assurance Project Plan, and Section 3 of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste. [9, 63]

Add the following as the last bullet:

- Sealed containers greater than four liters.

Add the following sentence to the end of the last paragraph:

Non-hazardous solidification agents Aquaset®, Aquaset II-G®, and Micro-Cel® E may be added to the waste by AMWTP to treat liquid in excess of WIPP-WAC limits. [64, 65]

13. AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.6.2, Hazardous Determination

Add the following as the third sentence under Ignitability:

Furthermore non-hazardous absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids. Containers identified with liquid in excess of WIPP-WAC limits may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E) to render the waste acceptable prior to shipment. [64, 65]

Replace the third sentence under Corrosivity with the following:

Furthermore, absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids. [7, 18, 19, 20, 21] Containers identified with liquid in excess of WIPP-WAC limits may be treated using non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®,or Micro-Cel® E). [64, 65]

Add the following sentence under Reactivity, before the last sentence:

Containers identified with compressed gases or aerosol cans will have the prohibited items treated/removed prior to shipment. Containers with liquid in excess of WIPP-WAC limits may be treated with non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E). [64, 65]

14. AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 1.7, Radionuclides

Delete reference 3 from first sentence.

15. AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 2.1, Waste Packaging

Add the following paragraph to the end of Section 2.1:

Some of the 55-gallon drums may be overpacked into 83- or 85-gallon drums. Either four 55-gallon drums or two 83- or 85-gallon drums, with either the drum lid filters or the drum lids removed, may be direct loaded into an SWB equipped with approved filters.

16. AK Summary for Special Setups Waste (BN004) (RPT-TRUW-59), Section 3, References

Revise the Note as follows:

AMWTP documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System. Previous revisions are available on EDMS.

Special Setups Waste (BN004, Rev. 0)

Revise references as follows:

7. DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, Rev. 6.5, June 30, 2010

61. CCP-PO-003, CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), Central Characterization Project, Rev 11, June 4, 2009

Replace the following references:

3. NDK-001-10, Memo to file, Estimation of Number of Drums for BN004 Waste Stream, July 5, 2010 [C876A]

9. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

52. INST-OI-34, Non-Facility Visual Examination Operations [P387A]

Add the following references:

64. Material Safety Data Sheets, Aquaset® (sodium montmorillonite)and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005 and November 1, 2008 [P881S]

65. Material Safety Data Sheet, Micro-Cel®E, Celite Corporation, January 17, 2007 [P808S]

66. RCM-001-10, Memo to file, Earliest Pack Date for Rocky Flats Waste Retrieved from Pits 11 and 12, July 5, 2010 [C875S]

67. DOE/TRU-2008-3425, Annual Transuranic Waste Inventory Report – 2009 [P838A]

Reason/Justification for the Changes

Item 1. WSPF Form-1195, the audit report approval dates were updated to reflect all audit dates.

Item 2. WSPF Form-1195, the documents used for WAP certification were revised to reflect the most recent revisions.

Items 3, 4, 9, and 10. WSPF Form-1195, TWBIR information was updated to reflect the WIPP ID and description from the most recent annual update of the TWBIR.

Items 5 and 7. WSPF Form-1195 and AK Summary Report Section 1.2.3, Volume was changed to waste stream due to the addition of Special Setups containers retrieved from the SDA Pits 11 and12 and identified with container prefix 744. The retrieved waste containers were originally generated prior to 1972, shipped to INL and buried in Pits 11 and 12. The waste containers were subsequently retrieved from the pits prior to 1979 and placed in the TSA-RE. The Special Setups waste containers retrieved from Pits 11 and 12

were generated from the same process as the waste containers already included in BN004. Therefore, there is no impact on the EPA hazardous waste numbers assigned to waste stream BN004.

Item 6. AK Summary Report Acronym and Abbreviation list was updated to reflect all acronyms and abbreviations used in the report. The text of the AK Summary was also updated to spell out the first use of each acronym.

Item 8. AK Summary Report Section 1.2.4 was changed to reflect an earlier waste generation date due to the addition of the Special Setups waste containers retrieved from Pits 11 and 12.

Item 11. AK Summary Report Section 1.3.1, Section revised to include a description of Special Setups waste containers retrieved from Pits 11 and 12 and assigned RF-744.

Item 12. AK Summary Report Section 1.5, Prohibited Items was changed to address all prohibited WIPP waste in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. The last paragraph was modified to clarify disposition of containers identified as containing prohibited liquid with non-hazardous absorbents.

Item 13. AK Summary Report Section 1.6.2, Language under Ignitability, Corrosivity and Reactivity was changed to support the recent WIPP Permit Modification concerning prohibited liquids.

Item 14. AK Summary Report Section 1.7, Reference 3 no longer applies.

Item 15. AK Summary Report Section 2.1 was changed to add a paragraph describing potential direct loading of containers into SWBs.

Item 16. AK Summary Section 3, References, was changed to update the note to reflect current practices of Document Control and to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN004) certification:

I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Eric P. Schweinsberg, SPM Printed Name and Title	7/27/10 Date

Washington
TRU Solutions LLC

WRES:08:143
UFC:5822.00

April 2, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #2) SPECIAL SETUPS WASTE (BN004, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN004, Rev. 0, Special Setups Waste. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax: (575) 234-7083

Update for WIPP Operating Record (Change Notice # 2)

Special Setups Waste (BN004, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN004, Revision 0. This waste stream is Special Setups Waste and was approved by DOE/CBFO on December 28, 2005. Change Notice #1 was approved on February 15, 2007.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval date January 18, 2008.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 07/01/06

   Add the following procedure:

   CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06.

3. **AK Summary, Special Setups Waste (RPT-TRUW-59), Report Number**

   Revise report number from AMWTP-RPT-TRUW-59 to RPT-TRUW-59.

4. **AK Summary, Special Setups waste (RPT-TRUW-59), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

   Revise the TWBIR number to IN-W157.144

5. **AK Summary, Special Setups waste (RPT-TRUW-59), Section 1.3.1, Description**

   Revise the TWBIR number in Table 1-1 to IN-W157.144

6. **AK Summary, Special Setups waste (RPT-TRUW-59), Section 1.5, Prohibited Items**

Add the following bullets to the first paragraph:

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Plan, unless specifically approved through a Class 3 permit modification. (63)

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as describe in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. (63)

Revise the first paragraph after the bullets to read:

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities. Real-time radiography (RTR) or visual examination (VE) is performed on each container in this waste stream to verify the absence of prohibited items. (51, 52) Containers that are identified as containing prohibited items during RTR or Visual Examination (VE) are treated or rejected, as appropriate. Drums containing prohibited items will not be shipped to WIPP.

7. **AK Summary, Special Setups Waste (RPT-TRUW-59), Section 2.2, Flammability Considerations**

Revise last sentence as follows:

Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). (61)

8. **AK Summary, Special Setups Waste (RPT-TRUW-59), Section 3, References**

Revise the following references:

5. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report 2004, U. S. Department of Energy

7. DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, October 29, 2007

Add the following references:

60. Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant [P203A]

61. CCP-PO-003, CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), Central Characterization Project, Rev. 10, November 16, 2006

Update for WIPP Operating Record (Change Notice # 2)

Special Setups Waste (BN004, Rev. 0)

62. RPT-TRUW-05, Waste Matrix Code Reference Manual [P399A]

63. MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP)

Reason/Justification for the Changes

The audit report approval dates were updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

The AK Summary report number was changed to reflect changes in document control protocols.

AK Summary Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information, was changed to update the TWBIR number to reflect the current TWBIR.

AK Summary, Special Setups waste (RPT-TRUW-59), Section 1.3.1, Description, was changed to update the TWBIR number to reflect the current TWBIR.

AK Summary Section 1.5, Prohibited Items, was changed to add two prohibited items to reflect the requirements of the updated Quality Assurance Project Plan, MP-TRUW-8.2, Section B-1c and to incorporate a variety of approved treatment methods.

AK Summary Section 2.2, Flammability Consideration, was updated to reflect new TRAMPAC procedure.

AK Summary Section 3, References, was updated to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN004) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
	Eric P. Schweinsberg, SPM	3/27/08

Washington
TRU Solutions LLC

WRES:07:032
UFC:5822.00

February 15, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #1) SPECIAL SETUPS WASTE (BN004, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions, on behalf of the Permittees, has approved the Change Notice Number 1 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN004, Rev. 0, Special Setups Waste. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

William M. Wierzbicki

W. M. Wierzbicki, Manager
Regulatory Compliance

WMW:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7083

Update for WIPP Operating Record (Change Notice # 1)

Special Setups Waste (BN004, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN004, Revision, 0. This waste stream is Special Setups Waste and was approved by DOE/CBFO on December 28, 2005.

This WSPF is being revised. The WSPF Form-1195 and AK Summary components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Delete audit approval dates 7/03/04 and 10/25/05 and add additional audit approval dates 4/1/05, 12/9/05, and 1/23/07.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07

   MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control, Rev. 6, 7/01/06

   MP-TRUW-8.2, Quality Assurance Project Plan, Rev. 8, 1/24/07

3. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item: See Section 1.4.5, Table 1-3 of the AK summary. This is listed as Item 5 in the Change Notice.

4. **AK Summary, Special Setups Waste (AMWTP-RPT-TRUW-59), TABLES**

   Revise Table of Contents per the following:

   Delete Table 1-3 Estimated percentage of various materials in BN004

   Change Table 1-4 Waste material parameters for Special Setups waste (BN004) to Table 1-3 Estimated waste material parameter weights per unit of waste for Special Setups waste (BN004)

5. **AK Summary, Special Setups waste (AMWTP-RPT-TRUW-59), Section 1.4, Process Description**

   Section 1.4.4, Material Inputs; delete last paragraph and delete Table 1-3

   Delete Section 1.4.5 and Table 1-4.

Update for WIPP Operating Record (Change Notice # 1)

Special Setups Waste (BN004, Rev. 0)

Add Section 1.4.5 Waste Material Parameters:

1.4.5 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN004, waste material parameter data from 100% of the completed RTR and VE of Special Setups waste drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 49% of the estimated number of drums for this waste stream. The Special Setups waste was generated at RF from 1971 through 1988. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1972 through 1988. Approximately 3% of the waste was generated prior to 1972. AK indicates that the waste generated in 1971 is similar to the wastes that have undergone RTR and VE. Therefore, the WTS data is representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Special Setups waste, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, and are summarized in Table 1-3. [50, 57, 58, 59]

Table 1-3. Estimated waste material parameter weights per unit of waste for Special Setups waste (BN004).

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Inorganic matrix	99
Other Inorganic Materials	<1
Cellulosics	<1
Plastics (waste materials)	<1
Rubber	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids [2, 50]

6. **AK Summary, Special Setups Waste (AMWTP-RPT-TRUW-59), Section 2, Shipping Considerations**

Section 2.2 Flammability Considerations, change to read as follows:

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with

the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with MP-TRUW-8.3, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC).

7. **AK Summary, Special Setups Waste (AMWTP-RPT-TRUW-59), Section 3, References**

Update reference number 50 to Memorandum to File from Tim Venneman, "Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste." TV-001-07, January 19, 2007. (C534A)

Add the following as reference number 57: MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation, Rev. 15, January 2007.

Add the following as reference number 58: BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS). (U127A)

Add the following as reference number 59: AMWTP-RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant, Rev. 0, August 2006. (P469A)

Reason/Justification for the Change

The NMED audit report approval dates were revised and updated to reflect the approval dates for audits conducted subsequent to the WSPF submittal and to delete the approval dates for non-S3000 audits or recertification (i.e., 7/2/04 was the approval date for the HSG system and 10/25/05 is a recertification date for S3000).

Documents used for WAP certification were revised to reflect the most recent revisions.

New item entitled waste material parameter weight estimates per unit of waste was added to WSPF Form 1195 as required by MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-12b.

Table of Contents for the AK Summary was revised to accommodate changes required by the revised WIPP Hazardous Waste Facility Permit requirements as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-12b.

Table 1-3 and last paragraph were deleted from Section 1.4.4 of the AK Summary because cellulosic, plastic, and rubber information was incorporated into Section 1.4.5, Waste Material Parameters.

Update for WIPP Operating Record (Change Notice # 1)

Special Setups Waste (BN004, Rev. 0)

Waste material parameter weight estimates per unit of waste and method for determining those estimates have been incorporated into Section 1.4.5 and Table 1-3 of the AK Summary to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-12b.

Flammability consideration was changed to clarify the method used for determining flammability as described in MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-11a.

Special Setups Waste (BN004) AK Summary reference list was updated to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN004) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P Schweinsberg, SPM	2/12/07

Washington
TRU Solutions LLC

WRES:05:183
UFC:5822.00

December 28, 2005

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: TRANSMITTAL OF APPROVED ADVANCED MIXED WASTE TREATMENT PROJECT WASTE STREAM PROFILE FORM NUMBER BN004, SPECIAL SETUPS WASTE

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN004, Special Setups Waste. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

The Permittees therefore approve the WSPF as submitted. Using the methods approved at AMWTP, the AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7545 or (505) 706-0055.

Sincerely,

D. T. Bignell, Manager
Regulatory Compliance

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AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form-1195 Rev. 2 Effective Date: 11/30/04 MP-TRUW-8.14 Page 1 of 4

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN004, Rev. 0

Generator site name: Advanced Mixed Waste Treatment Project
Technical contact: Eric Schweinsberg

Generator site EPA ID: ID4890008952
Technical contact phone number: (208) 557-6425

Date of Audit report approval by NMED: 12/23/03, 7/03/04, 10/25/05

Title, version number, and date of documents used for WAP certification:
Certification Plan for INEEL Contact-Handled (CH-TRU) Transuranic Waste, MP-TRUW-8.1, Rev. 9, 6/15/05
Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), MP-TRUW-8.3, Rev. 4, 7/13/05
Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2, Rev. 5, 6/15/05

Did your facility generate this waste? ☐Yes ☒No If no, provide the name and EPA ID of the original generator:
Rocky Flats Environmental Technology Site, CO7890010526

Waste Stream Information[1]

WIPP ID: IN-W157
Summary Category Group: S3000

Waste Matrix Code Group: Solidified Inorganics
Waste Stream Name: Special Setups Waste

Description from the WTWBIR: This waste, generated at Rocky Flats Plant, consists of liquids absorbed on a cement mixture. The liquid wastes were not compatible with the aqueous treatment processes and were handled separately due to their plutonium complexing nature.

Defense TRU Waste: (Ref. 1) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs: 0
Number of Drums: 2,102 (55 gallon drums)
Number of Canisters: 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[3] D006, D007, D008, D011, D029, F001, F002, F005, F006, F007 and F009

Applicable TRUCON Content Codes: ID111/ID211

Acceptable Knowledge Information[1]

[For the following, enter supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: See Reference List, No. 1, Section 3, Figure 3-1; No. 2

Facility mission description: See Reference List No. 1, Section 3.1, and No. 3

Description of operations that generate waste: See Reference List, No. 1 Sections 24, and No. 9

Waste identification/categorization schemes: See Reference List, No. 4

Types and quantities of waste generated: See Reference List, No. 1 Section 24, Nos. 3, 5, and 6

Correlation of waste streams generated from the same building and process, as appropriate: See Reference List, No. 1

Waste certification procedures: See Reference List, Nos. 7 and No. 8

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: See Reference List, Nos. 1 Section 24 and 9

Waste stream volume and time period of generation: See Reference List, No.s. 1 Section 24 and 9

Waste generating process description for each building: See Reference List, Nos. 1 Section 24 and 9

Process flow diagrams: See Reference List, No. 9 Section 1.4.2 for list of references for the process flow diagrams

Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference List, No. 9

Which Defense Activity generated the waste: (check one)

☒	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☐	Defense research and development
☐	Defense nuclear waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation See Reference List, No. 1

Process design documents: See Reference List, No. 1

Standard operating procedures: See Reference List, No. 1

Safety Analysis Reports: See Reference List, No. 1

Waste packaging logs: See Reference List, No. 1

Test plans/research project reports: See Reference List, No. 1

Site databases: See Reference List, No. 1

Information from site personnel: See Reference List, No. 1

Standard industry documents: See Reference List, No. 1

Previous analytical data: See Reference List, No. 1

Material safety data sheets: See Reference List, No. 1

Sampling and analysis data from comparable/surrogate Waste: See Reference List, No. 1

Laboratory notebooks: See Reference List, No. 1

Sampling and Analysis Information

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography: See Reference List, No. 10

Visual Examination: See Reference List, No. 11

Headspace Gas Analysis

VOCs: See Reference List, Nos. 12 and 21

Flammable: See Reference List, Nos. 12 and 21

Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis *(See Reference List for Dates)*

Total metals: See Reference List, Nos. 13, 14, 15, and 20

PCBs: N/A

VOCs: See Reference List, Nos. 16 and 20

Nonhalogenated VOCs: See Reference List, Nos. 17 and 20

Semi-VOCs: See Reference List, Nos. 18, 19 and 20

Other (specify): N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
R Eckenbaum for EPSple telefax	Eric P Schweitzberg	12/28/05

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

Waste Stream Profile Continuation Sheet

Reference List

1. Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280, Rev. 3, February 28, 2003. (P368A)
2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-52-0101, Rev. 0, April 1999.
3. AMWTP TRU Waste Management Acceptable Knowledge Elements, AMWTP-RPT-TRUW-06, Rev. 4, August 2005.
4. AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 5, November 2005.
5. Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), RWMC EDF-837, August 1995.
6. Container Inventory Report for WMF-629 thru WMF-633 (TRIPS query), December 2002.
7. Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 9, June 2005.
8. Advanced Mixed Waste Treatment Project TRU Waste Certification, MP-TRUW-8.5, Rev. 16, December 2005.
9. Acceptable Knowledge Summary for Special Setups Waste, AMWTP-RPT-TRUW-59, Rev. 0, December 2005.
10. Real Time Radiography Operations, INST-OI-12, Rev. 23, August 2005.
11. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 12, October 2005.
12. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 20, March 2005.
13. Microwave Assisted Digestion of Homogeneous Solids, Soil and Gravel, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACMM-8909, Rev. 9, January 2005
14. Determination of Mercury by CVAA for TRU Waste Characterization, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-2810, Rev. 3, January 2005
15. Determination of Metals by ICP-AES for TRU Waste Characterization, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-2901, Rev. 3, January 2005
16. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-9260, Rev. 14, December 2005
17. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-9441, Rev. 11, December 2004
18. Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-9270, Rev. 8, January 2005

Waste Stream Profile Continuation Sheet

19. Sample Preparation for Semi-Volatile Organic Compounds and Polychlorinated Biphenyls, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACNMM-9500, Rev. 11, December 2004

20. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 11, October 2005.

21. HGAS Sampling and Analysis Operations, INST-OI-43, Rev. 12, September 2005.

22. Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, NM4890139088-TSDF, October 2005.

23. Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, DOE/WIPP 02-3122, Rev. 3, April 2005.

24. AMWTP Memorandum, Sampling Plan for BN004 – Lot 1-SPC-069-2005, October 2005.

25. Drum Coring Operations, INST-OI-16, Rev. 20, October 2005.

Characterization Information Summary

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN004 as required by the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP) and the Contact-Handled Transuranic Waste Acceptance Criteria (CH-WAC).[22, 23] In addition, AMWTP has conducted confirmatory testing and analysis using real time radiography (RTR) or visual examination (VE), headspace gas sampling and analysis, solid sampling and analysis, and radioassay.

This Characterization Information Summary (CIS) presents the analytical data from five containers for the total solids analysis and 18 other containers for headspace gas analysis. The headspace analytical data associated with the five containers that were solid sampled were not included in the headspace gas analysis. These data meet the necessary requirements for confirmatory characterization. Headspace gas analysis from the 18 containers is presented in Tables 1A and 1B. Solid sampling data from five containers is summarized in Tables 2, 3A, 3B, 4A, and 4B. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 presents the RTR/VE summary of prohibited items and AK confirmation. Table 7 presents the correlation between the container number, the headspace gas sample number, and the solid sample numbers.

Solid sampling was performed on randomly selected containers obtained from BN004–Lot 1, Special Setups Waste from the Rocky Flats Plant. BN004–Lot 1 consists of 870 drums of mixed-transuranic waste.

Data Results

The data in this CIS are obtained from the required ("n") samples from solid sampling and analysis. The data is used to determine the mean concentrations and the 90% upper confidence level (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm hazardous waste numbers (HWNs) for the BN004 waste stream.

The statistical evaluation of the analytical data collected for BN004-Lot 1 is presented in Tables 1A, 2A, 3A, and 4A. Table 5 lists the correlation of container number to solids analysis data packages.

HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results and solid sampling analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). There were no solids sampling UCL_{90} results above the PRQLs for toxicity characteristic metals. The solid sampling results and HSG sampling results for VOCs reflected the UCL_{90} for methanol above the PRQL. However, the waste stream was determined not to be ignitable; therefore, the D001 and F003 HWNs were not applied. There were no other VOC analytes with UCL_{90} values above the PRQL for either the HSG or solid sampling results. AK data indicate that there are no semi-volatile organic compounds (SVOCs)

Characterization Information Summary

present in the waste, and there were no solid sampling results above the PRQL for SVOCs. The HWN assignment for this waste stream includes:

- Toxicity characteristic metals – D006 (cadmium), D007 (chromium), D008 (lead), and D011 (silver)
- Toxicity characteristic organics – D029 (1,1-dichloroethylene)
- Listed codes for organics – F001 and F002 (1,1,1- trichloroethane, trichloroethylene, tetrachloroethylene, and 1,1,2-trichloro-1,2,2-trifluoroethane), F001 (carbon tetrachloride), F002 (methylene chloride), F005 (benzene, methyl ethyl ketone and toluene)
- Listed codes from electroplating operations – F006, F007, and F009 (spent cyanide electroplating wastes)

Solid sampling results and headspace gas results confirm AK. No additional EPA HWNs are required. One constituent (ethanol, CAS No. 64-17-05) was detected as VOC tentatively identified compounds (TICs) in over 25 percent of the headspace confirmatory samples collected; however, this constituent is not listed in 40 CFR 261, Appendix VIII and thus will not be added as a target analyte for this waste stream.

AMWTP Advanced Mixed Waste Treatment Project	**Reconciliation with Data Quality Objectives**	AMWTP Form-1597 Rev. 0 MP-TRUW-8.11 Effective Date: 12/06/04 Page 1 of 1

I certify by signature (below) that sufficient data have been collected to determine the following program-required waste parameters:

WSPF# BN004-Lot 1 Reconciliation

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each container of waste contain TRU radioactive waste?	✓			
4. Have mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			Containers will be evaluated on an individual basis using headspace gas analysis and WWIS.
6. Have mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent for the summary category group?	✓			
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analyses been met for the lot?	✓			

12/28/05

C A Echenbaum for EPS per telecon — Signature of Site Project Manager

Eric P Schweinsberg — Printed Name

12/28/05 — Date

AMWTP Advanced Mixed Waste Treatment Project	**Characterization Information Summary Report**	AMWTP Form-1598 Rev. 0 MP-TRUW-8.14 Effective Date: 11/30/04 Page 1 of 17

WSPF Number: BN004, Rev. 0, (Lot 1)

SQAO Glenn Rueger Date: 12/28/05

SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM R.E. Schreiber for EPS 12/28/05 Date: 12/28/05

SPM signature indicates concurrence with all information presented in this report.

telecon

Characterization Description:

Drum selection and quantity of drums for Totals Analysis, Reduced Headspace Gas Sampling, and/or Newly Generated Soils/Gravel have been evaluated and meet the requirements established in MP-TRUW-8.25, *RCRA Statistical Sampling*.[20]

Y ☒ N ☐ NA ☐

L Eschenbaum for EPS per telecon — 12/28/05

SPM Signature — Date

For "N" or "NA" provide rationale.

Table 1A. Headspace Gas Summary Data. BN004-Lot 1

ANALYTE	Number of Samples	# of Samples above MDL [a]	Trans-formation Used [c]	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	Upper 90 % confidence limit (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Code
1,1-Dichloroethane [c]	18	2	Natural log	2.14	0.35	0.81	0.60	2.30	10	N/A
1,1-Dichloroethylene [c]	18	4	Natural log	2.48	0.87	0.68	1.08	2.30	10	D029 [d]
1,1,1-Trichloroethane [c]	18	9	Natural log	4.14	1.65	1.53	2.13	2.30	10	F001, F002 [d]
1,1,2-Trichloro-1,2,2-trifluoroethane	18	0	None	2.35	1.72	0.46	[b]	-	10	F001, F002 [d]
1,1,2,2-Tetrachloroethane	18	0	None	2.35	1.18	0.85	[b]	-	10	N/A
1,2-Dichloroethane	18	0	None	2.35	1.35	0.73	[b]	-	10	N/A
1,2,4-Trimethylbenzene [f]	18	0	None	2.35	1.18	0.85	[b]	-	10	N/A
1,3,5-Trimethylbenzene [f]	18	0	None	2.30	1.20	0.80	[b]	-	10	N/A
Acetone	18	0	None	25.50	12.83	9.22	[b]	-	100	N/A
Benzene	18	2	None	5.00	1.57	1.29	1.97	-	10	F005 [d]
Bromoform	18	0	None	2.00	1.10	0.65	[b]	-	10	N/A
Butanol	18	0	None	27.50	24.83	1.94	[b]	-	100	N/A
Carbon disulfide [f]	18	0	None	2.50	1.70	0.58	[b]	-	10	N/A
Carbon tetrachloride [c]	18	1	Natural log	2.83	0.42	0.75	0.66	2.30	10	F001 [d]
Chlorobenzene	18	0	None	2.10	1.17	0.68	[b]	-	10	N/A
Chloroform	18	0	None	2.30	1.20	0.80	[b]	-	10	N/A
Chloromethane [g]	18	0	None	2.60	1.70	0.65	[b]	-	10	N/A
cis-1,2-Dichloroethylene	18	0	None	2.25	1.25	0.73	[b]	-	10	N/A
Cyclohexane [f]	18	1	None	3.50	1.29	0.94	1.59	-	10	N/A
Ethyl benzene [c]	18	2	Natural log	7.44	0.92	2.42	1.68	2.30	10	N/A
Ethyl ether	18	0	None	2.30	1.60	0.51	[b]	-	10	N/A
M&p-Xylene [c]	18	2	Natural log	8.46	0.91	2.78	1.78	2.30	10	N/A
Methanol [c]	18	17	Natural log	9.47	7.50	1.59	8.00	4.61	100	N/A [b]
Methyl ethyl ketone	18	0	None	24.50	13.50	8.00	[b]	-	100	F005 [d]
Methyl isobutyl ketone	18	0	None	19.50	16.50	2.18	[b]	-	100	N/A
Methylene chloride	18	0	None	2.30	1.30	0.73	[b]	-	10	F002 [d]
o-Xylene [c]	18	2	Natural log	7.00	0.85	2.19	1.54	2.30	10	N/A
Tetrachloroethylene	18	0	None	1.85	1.05	0.58	[b]	-	10	F001, F002 [d]
Toluene [c]	18	8	Natural log	3.40	0.87	1.02	1.19	2.30	10	F005 [d]
trans-1,2-Dichloroethylene	18	0	None	2.25	1.22	0.75	[b]	-	10	N/A
Trichloroethylene [c]	18	6	Natural log	2.20	0.57	0.68	0.78	2.30	10	F001, F002 [d]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the MDL after dividing by 2. All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, standard deviation, UCL_{90}, and PRQL are presented as transformed values

d. The HWNs for these constituents are assigned based on AK. HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the PRQL.

e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.[20]

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), 1,3,5-trimethylbenzene (CAS No. 108-67-8) and carbon disulfide (CAS No. 75-15-0) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP [reference Section 2.2 of the AK Summary for Non-special Source Metal Debris Waste (BN296)].[9]

g. Chloromethane (CAS No. 74-87-3) is not a target analyte for this waste stream but will be reported because it has been added as a target compound for other waste streams at AMWTP.

h. Although the UCL_{95} level is above the PRQL for methanol, the waste is not ignitable; therefore, no HWN was applied.

Did the Data verify the Acceptable Knowledge? Yes X No_____

If no, describe the basis for assigning the EPA Hazardous Waste Code.

Statistics performed by: _____ Date: 12/28/05

Signature

Table 1B. Headspace Gas Summary Data – tentatively identified compounds. BN004-Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
Ethanol[a]	53	5	18	27.8%	18	27.8%

a. The CAS No. for ethanol is 64-17-05. This is not a 40 CFR 261, Appendix VIII, listed analyte.

Did the data verify the Acceptable Knowledge? YES: X NO: _____

If no, describe the basis for assigning the EPA Hazardous Waste Code. N/A

Verification of % Detected Calculation: L Barkenbus Date: 12/28/05
Signature

Table 2. Metals Summary Data, BN004-Lot 1

ANALYTE	# Samples	# Samples above MDL [a, h]	Trans-formation Used [e]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL [d] (mg/kg)	EPA Code [g]
Arsenic	5	5	None	6.00	4.92	1.00	5.61	–	100	N/A
Barium	5	5	None	260	230	33.9	253	–	2000	N/A
Cadmium [b]	5	5	Natural log	-0.073	-0.463	0.265	-0.281	3.00	20	D006 [c]
Chromium [b]	5	5	Natural log	4.22	3.43	0.470	3.75	4.61	100	D007 [c]
Lead	5	5	None	36.0	17.9	12.5	26.5	–	100	D008 [c]
Mercury	5	0	None	0.005	0.005	0.000	[i]	–	4	N/A
Selenium	5	3	None	0.980	0.564	0.283	0.758	–	20	N/A
Silver [b]	5	3	Natural log	2.64	0.080	2.02	1.46	4.61	100	D011 [c]
Antimony [b]	5	5	Natural log	0.182	-0.060	0.178	0.062	4.61	100	N/A [f]
Beryllium [b]	5	4	Natural log	0.095	-1.19	1.18	-0.384	4.61	100	N/A [f]
Nickel	5	5	None	28.0	22.6	5.32	26.2	–	100	N/A [f]
Thallium	5	2	None	1.90	0.959	0.655	1.41	–	100	N/A [f]
Vanadium [b]	5	5	Natural log	4.79	4.08	0.412	4.36	4.61	100	N/A [f]
Zinc	5	5	None	130	84.8	39.7	112	–	100	N/A [f]

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. The maximum, mean, standard deviation (SD), UCL_{90}, and PRQL are presented as transformed values.
c. These HWNs, assigned by AK, are applied to the waste stream even though analytical results for the assigned compounds are not above the PRQL.
d. To determine whether a HWN should be added, the UCL_{90} is compared against the appropriate limit. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the RTL. RTLs correspond to the analyte PRQL for analytes that are not characteristic hazardous waste constituents.
e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.
f. There are no associated toxicity characteristic HWNs with these analytes.
g. Spent stripping, cleaning, and plating operations in which cyanides and chromium were used are included in this waste stream; therefore, EPA HWNs F006, F007 and F009 are applied based on AK.
h. Distribution testing is not performed on 2 or fewer applicable samples; therefore, a normal distribution is assumed.
i. All measurement are below detection; therefore, the UCL_{90} will not be calculated.

Did the data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Code: N/A

Statistics performed by: Tamara L. Sellers Date: 12/28/05
Signature

Table 3A. Total VOC Summary Data. BN004-Lot 1

ANALYTE	# Samples	# Samples above MDL [a, f]	Transformation Used [e]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Transformed PRQL	PRQL [c] (mg/kg)	EPA Code
1,1-Dichloroethylene	5	0	None	0.185	0.178	0.007	[b]	-	10	D029 [d]
Trans-1,2-dichloroethylene	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
1,1,1-Trichloroethane	5	0	None	0.095	0.088	0.004	[b]	-	10	F001/F002 [d]
1,1,2,2-Tetrachloroethane	5	0	None	0.185	0.178	0.007	[b]	-	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.095	0.088	0.004	[b]	-	10	F001/F002 [d]
1,1,2-Trichloroethane	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
1,2-Dichloroethane	5	0	None	0.185	0.178	0.007	[b]	-	10	N/A
Acetone	5	0	None	1.75	1.68	0.087	[b]	-	100	N/A
Benzene	5	0	None	0.185	0.178	0.007	[b]	-	10	F005 [d]
Bromoform	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Butanol	5	0	None	1.75	1.68	0.087	[b]	-	100	N/A
Carbon disulfide	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Carbon tetrachloride	5	0	None	0.095	0.088	0.004	[b]	-	10	F001 [d]
Chlorobenzene	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Chloroform	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Ethyl benzene	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Ethyl ether	5	0	None	1.75	1.68	0.087	[b]	-	100	N/A
Isobutanol	5	0	None	1.15	1.11	0.048	[b]	-	100	N/A
Methanol	5	5	None	6700	3161	2690	5005	-	100	N/A [g]
Methyl ethyl ketone	5	0	None	1.75	1.68	0.087	[b]	-	100	F005 [d]
Methylene chloride	5	0	None	0.185	0.178	0.007	[b]	-	10	F002 [d]
Pyridine	5	0	None	1.75	1.68	0.087	[b]	-	100	N/A
o-Xylene	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
m&p-Xylene	5	0	None	0.185	0.178	0.007	[b]	-	10	N/A
Tetrachloroethylene	5	0	None	0.185	0.178	0.007	[b]	-	10	F001/F002 [d]
Toluene	5	0	None	0.095	0.088	0.004	[b]	-	10	F005 [d]
Trichloroethylene	5	0	None	0.095	0.088	0.004	[b]	-	10	F001/F002 [d]
Trichlorofluoromethane	5	0	None	0.095	0.088	0.004	[b]	-	10	N/A
Vinyl chloride	5	0	None	0.185	0.178	0.007	[b]	-	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. All measurement are below detection; therefore, the UCL_{90} will not be calculated.
c. To determine whether a HWN should be added, the UCL_{90} is compared against the appropriate limit. For toxicity characteristic (TC) wastes, *the TC limit expressed as the RTL is used if compounds do not have a PRQL in the permit.* For listed wastes, the PRQL is used.
d. These HWNs, assigned by AK, are applied to the waste stream even though analytical results for the assigned compounds are not above the PRQL.
e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.
f. Distribution testing is not performed on 2 or fewer applicable samples; therefore, a normal distribution is assumed.
g. *Although the UCL $_{90}$ was above the PRQL, the waste is not ignitable; therefore, HWN F003 was not applied.*

Did the data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Statistics performed by: Tamara E Sloan Date: 12/28/05
Signature

Table 3B. Total VOC Summary Data – tentatively identified compounds, BN004-Lot 1.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data verify the Acceptable Knowledge? Yes__X__ No_____

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Verification of % Detected Calculation N/A Date: _____
Signature

Table 4A. Total SVOC Summary Data. BN004-Lot 1.

Analyte	# Samples	# Samples Above MDL [a, c]	Trans-formation Used [d]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-fomed PRQL	PRQL (mg/kg)	EPA code
1,2-Dichlorobenzene (o-Dichlorobenzene)	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
1,4-Dichlorobenzene (p-Dichlorobenzene)	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
2,4-Dinitrophenol	5	0	None	0.200	0.200	0.000	[b]	-	40	N/A
2,4-Dinitrotoluene	5	0	None	0.100	0.100	0.000	[b]	-	2.6	N/A
bis(2-Ethylhexyl)phthalate [e]	5	0	None	0.200	0.200	0.000	[b]	-	40	N/A
Fluoranthene [f]	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
Hexachlorobenzene	5	0	None	0.100	0.100	0.000	[b]	-	2.6	N/A
Hexachloroethane	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
2-Methylphenol (o-Cresol)	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
3- & 4-Methylphenol (m- & p-Cresol)	5	0	None	0.200	0.200	0.000	[b]	-	40	N/A
Nitrobenzene	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
Pentachlorophenol	5	0	None	0.100	0.100	0.000	[b]	-	40	N/A
Phenol [g]	5	0	None	0.355	0.151	0.114	[b]	-	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurement are below detection; therefore, the UCL_{90} will not be calculated.

c. Distribution testing is not performed on 2 or fewer applicable samples; therefore, a normal distribution is assumed.

d. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

e. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate is not a target analyte for the BN004 waste stream, but the data will be reported for this analyte. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN004 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN004 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Code: N/A

Statistics performed by: Tamara Sblues Date: 12/28/05

Signature

Table 4B. Total SVOC Summary Data – tentatively identified compounds. BN004-Lot 1.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Code: N/A

Verification of % Detected Calculation N/A Date: _____

Signature

Table 5. Correlation of Container Identification Numbers to Data Package. BN004-Lot 1.

Container Number	Headspace Gas Data Package	RTR Data Package	RA Data Package	Visual Examination Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10001234	HS105_00151	RTR03-00072	ASY03-00348	N/A	N/A	N/A
10001239	HS105_00151	RTR03-00072	ASY03-00347	N/A	N/A	N/A
10001240	HS105_00151	RTR03-00072	ASY03-00347	N/A	N/A	N/A
10001318	HS105_00151	RTR03-00073	ASY03-00347	N/A	N/A	N/A
10001331	HS105_00151	RTR03-00073	ASY03-00347	N/A	N/A	N/A
10001355	HS105_00151 [a]	RTR03-00043	ASY03-00353	N/A	SSC05-00321	ALD05035S ALD05041V ALD05029N ALD05042M
10001387	HS205_00322 [a]	RTR03-00041	ASY03-00264	N/A	SSC05-00321	ALD05035S ALD05041V ALD05029N ALD05042M
10016677	HS105_00151	RTR04-00221	ASY04-00480	N/A	N/A	N/A
10016686	HS105_00151	RTR04-00226	ASY04-00483	N/A	N/A	N/A
10016706	HS505_00050	RTR04-00228	ASY04-00494	N/A	N/A	N/A
10016711	HS105_00151	RTR04-00182	ASY04-00414	N/A	N/A	N/A
10016719	HS105_00151	RTR04-00184	ASY04-00414	N/A	N/A	N/A
10016722	HS105_00151	RTR04-00184	ASY04-00415	N/A	N/A	N/A
10016825	HS505_00045	RTR04-00198	ASY04-00469	N/A	N/A	N/A
10016828	HS505_00045	RTR04-00197	ASY04-00461	N/A	N/A	N/A
10016843	HS505_00050	RTR04-00200	ASY04-00463	N/A	N/A	N/A
10016860	HS505_00050	RTR04-00201	ASY04-00463	N/A	N/A	N/A
10017109	HS505_00050	RTR04-00218	ASY04-00473	N/A	N/A	N/A
10017168	HS105_00151	RTR04-00219	ASY04-00474	N/A	N/A	N/A
10017169	HS205_00322 [a]	RTR04-00219	ASY04-00474	N/A	SSC05-00321	ALD05035S ALD05041V ALD05029N ALD05042M
10017184	HS105_00151	RTR04-00214	ASY04-00480	N/A	N/A	N/A
10019885	HS205_00322 [a]	RTR04-00322	ASY04-00690	N/A	SSC05-00321	ALD05035S ALD05041V ALD05029N ALD05042M
10048273	HS105_00151 [a]	RTR05-04066	ASY05-04785	N/A	SSC05-00321	ALD05035S ALD05041V ALD05029N ALD05042M

NOTE: *For headspace gas sampling data packages, the HSG prefix represents use of the DVS system and the HS prefix represents use of the HGAS system.*

a. Headspace gas data from cored drums were not included in the statistics for headspace gas results. These containers are not included in the BN004 reconciliation Lot 1.

Table 6. RTR/VE Summary of Prohibited Items and AK Confirmation. BN004-Lot 1 [a]

Container Number	RTR Prohibited Items	Visual Examination Prohibited Items [c]	AK Confirmation [b]
10001234	None	N/A	Complete
10001239	None	N/A	Complete
10001240	None	N/A	Complete
10001318	None	N/A	Complete
10001331	None	N/A	Complete
10001355	None	N/A	Complete
10001387	None	N/A	Complete
10016677	None	N/A	Complete
10016686	None	N/A	Complete
10016706	None	N/A	Complete
10016711	None	N/A	Complete
10016719	None	N/A	Complete
10016722	None	N/A	Complete
10016825	None	N/A	Complete
10016828	None	N/A	Complete
10016843	None	N/A	Complete
10016860	None	N/A	Complete
10017109	None	N/A	Complete
10017168	None	N/A	Complete
10017169	None	N/A	Complete
10017184	None	N/A	Complete
10019885	None	N/A	Complete
10048273	None	N/A	Complete

Notes:

a. See Table 5 for the associated RTR and visual examination data packages. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

b. Acceptable Knowledge confirmations for RTR and visual examinations are conducted by an Acceptable Knowledge Expert on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the batches listed in Table 5.

c. None of these drums have a VE in lieu of RTR examination. N/A indicates that containers have been selected for visual examination by AMWTP.

Table 7. Sample Identification Number Cross Correlation Table. BN004-Lot 1

Container Number	Headspace Gas Sample Number	Solid Sample Number(s)
10001234	HS105_00151B-12	N/A
10001239	HS105_00151B-16	N/A
10001240	HS105_00151B-15	N/A
10001318	HS105_00151B-21	N/A
10001331	HS105_00151B-10	N/A
10001355	HS105_00151B-14 [a]	10066793, 10066794, 10066797
10001387	HS205_00322B-04 [a]	10066183, 10066184, 10066187
10016677	HS105_00151B-03	N/A
10016686	HS105_00151B-05	N/A
10016706	HS505_00050C-16	N/A
10016711	HS105_00151B-18	N/A
10016719	HS105_00151B-06	N/A
10016722	HS105_00151B-07	N/A
10016825	HS505_00045B-20	N/A
10016828	HS505_00045B-21	N/A
10016843	HS505_00050C-10	N/A
10016860	HS505_00050C-18	N/A
10017109	HS505_00050C-11	N/A
10017168	HS105_00151B-08	N/A
10017169	HS205_00322B-03 [a]	10066273, 10066274, 10066277
10017184	HS105_00151B-20	N/A
10019885	HS205_00322B-01 [a]	10066424, 10066425, 10066428
10048273	HS105_00151B-13 [a]	10066701, 10066702, 10066705

a. Headspace gas data from cored drums were not included in the statistics for headspace gas results. These containers are not included in the BN004 reconciliation Lot 1.

Attachment A
Evaluation of Required Number of Samples BN004-Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a, b]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c,e,g]	Comments
Arsenic	5	5	*None*	*6.00*	*4.92*	*1.00*	*5.61*	-	*100*	5	Code not required to be applied [i]
Barium	5	5	None	260	230	33.9	253	-	2000	5	Code not required to be applied [i]
Cadmium [f]	5	5	Natural log	-0.073	-0.463	0.265	-0.281	3.00	20	5	Code D006 applied per AK
Chromium [f]	5	5	Natural log	4.22	3.43	0.470	3.75	4.61	100	5	Code D007 applied per AK
Lead	5	5	None	36.0	17.9	12.5	26.5	-	100	5	Code D008 applied per AK
Mercury	5	0	None	0.005	0.005	0.000	-	-	4	-	No samples above MDL
Selenium	5	3	None	0.980	0.564	0.283	0.758	-	20	5	Code not required to be applied [i]
Silver [f]	5	3	Natural log	2.64	0.080	2.02	1.46	4.61	100	5	Code D011 applied per AK
Antimony [f]	5	5	Natural log	0.182	-0.060	0.178	0.062	4.61	100	5	No associated hazardous waste code [d]
Beryllium [f]	5	4	Natural log	0.095	-1.19	1.18	-0.384	4.61	100	5	Code not required to be applied [i]
Nickel	5	5	None	28.0	22.6	5.32	26.2	-	100	5	No associated hazardous waste code [d]
Thallium	5	2	None	1.90	0.959	0.655	1.41	-	100	5	No associated hazardous waste code [d]
Vanadium [f]	5	5	Natural log	4.79	4.08	0.412	4.36	4.61	100	5	No associated hazardous waste code [d]
Zinc	5	5	None	130	84.8	39.7	112	-	100	17	No associated hazardous waste code [d]
1,1-Dichloroethene (1,1-Dichloroethylene)	5	0	None	0.185	0.178	0.007	-	-	10	-	Code D029 applied per AK
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
1,1,1-Trichloroethane	5	0	None	0.095	0.088	0.004	-	-	10	-	Codes F001/F002 applied per AK
1,1,2,2-Tetrachloroethane	5	0	None	0.185	0.178	0.007	-	-	10	-	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.095	0.088	0.004	-	-	10	-	Code F001/F002 applied per AK

ANALYTE	Number of Samples	Number of Samples above MDL [a, h]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c,e,g]	Comments
1,1,2-Trichloroethane	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
1,2-Dichloroethane	5	0	None	0.185	0.178	0.007	-	-	10	-	No samples above MDL
Acetone	5	0	None	1.75	1.68	0.087	-	-	100	-	No samples above MDL
Benzene	5	0	None	0.185	0.178	0.007	-	-	10	-	Code F005 applied per AK
Bromoform	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
Butanol	5	0	None	1.75	1.68	0.087	-	-	100	-	No samples above MDL
Carbon disulfide	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
Carbon tetrachloride	5	0	None	0.095	0.088	0.004	-	-	10	-	Code F001 applied per AK
Chlorobenzene	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
Chloroform	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
Ethyl benzene	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
Ethyl ether	5	0	None	1.75	1.68	0.087	-	-	100	-	No samples above MDL
Isobutanol	5	0	None	1.15	1.11	0.048	-	-	100	-	No samples above MDL
Methanol	5	5	None	6700	3161	2690	5005	-	100	5	Code not required to be applied [j]
Methyl ethyl ketone	5	0	None	1.75	1.68	0.087	-	-	100	-	Code F005 applied per AK
Methylene chloride	5	0	None	0.185	0.178	0.007	-	-	10	-	Code F002 applied per AK
Pyridine	5	0	None	1.75	1.68	0.087	-	-	100	-	No samples above MDL
o-Xylene	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL
m&p-Xylene	5	0	None	0.185	0.178	0.007	-	-	10	-	No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	5	0	None	0.185	0.178	0.007	-	-	10	-	Codes F001/F002 applied per AK
Toluene	5	0	None	0.095	0.088	0.004	-	-	10	-	Code F005 applied per AK
Trichloroethene (Trichloroethylene)	5	0	None	0.095	0.088	0.004	-	-	10	-	Codes F001/F002 applied per AK
Trichlorofluoromethane	5	0	None	0.095	0.088	0.004	-	-	10	-	No samples above MDL

ANALYTE	Number of Samples	Number of Samples above MDL [a, h]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c,e,g]	Comments
Vinyl chloride	5	0	None	0.185	0.178	0.007	-	-	4	-	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
2,4-Dinitrophenol	5	0	None	0.200	0.200	0.000	-	-	40	-	No samples above MDL
2,4-Dinitrotoluene	5	0	None	0.100	0.100	0.000	-	-	2.6	-	No samples above MDL
bis(2-Ethylhexyl) phthalate	5	0	None	0.200	0.200	0.000	-	-	40	-	No samples above MDL
Fluoranthene	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Hexachlorobenzene	5	0	None	0.100	0.100	0.000	-	-	2.6	-	No samples above MDL
Hexachloroethane	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
2-Methylphenol (o-Cresol)	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	5	0	None	0.20	0.200	0.00	-	-	40	-	No samples above MDL
Nitrobenzene	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Pentachlorophenol	5	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Phenol	5	0	None	0.355	0.151	0.114	-	-	40	-	No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). If all measurements are below detection, the UCL_{90} will not be calculated.

b. For analytes that have both an RTL and a PRQL, the PRQL is used to calculate the required number of samples.

c. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not assigned (i.e., it only applies to those cases where a site intends to establish that the constituent is below the regulatory threshold and the associated EPA HWN does not apply).

d. If there is no hazardous waste code associated with an analyte, then that analyte will not be used to define the number of required samples.

e. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

f. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL / RTL for that analyte.

g. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

h. Distribution testing is not performed on 2 or fewer applicable samples; therefore, a normal distribution is assumed.

i. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} is below the RTL or PRQL.

j. Although the UCL_{90} is above the PRQL for methanol, the waste is not ignitable; therefore, HWN F003 was not applied.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-59, Rev. 4

Acceptable Knowledge Summary for Special Setups Waste (BN004)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11340.)
Susan Peterman
TRU Programs Manager

06/27/12
Date

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ACRONYMS AND ABBREVIATIONS

AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH-TRAMPAC	Contact Handled Transuranic Waste Authorized Methods for Payload Control
CH-TRUCON	CH-TRU Waste Content Codes
DOE	Department of Energy
ECM	Electrochemical Milling
EDL	economic discard limit
EDMS	Electronic Document Management System
EDTA	Ethylenediaminetetraacetic acid
EPA	Environmental Protection Agency
HF	hydrofluoric acid
HSG	headspace gas
HWN	hazardous waste number
IDC	item description code
INEEL	Idaho National Engineering and Environmental Laboratory (now INL)
INEL	Idaho National Engineering Laboratory (now INL)
INL	Idaho National Laboratory
nCi/g	nanocuries per gram
NDA	non-destructive assay
PCB	polychlorinated biphenyl
ppm	parts per million
PRQL	program required quantitation limit
RF	Rocky Flats
RFETS	Rocky Flats Environmental Technology Site
RTR	real-time radiography
SDA	Subsurface Disposal Area
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TWBIR	Transuranic Waste Baseline Inventory Report
UCL_{90}	90% upper confidence limit
VE	Visual Examination
VOCs	Volatile Organic Compounds

WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan (Attachment B of the WIPP Hazardous Waste Permit)
WIPP	Waste Isolation Pilot Plant
WMP	Waste material parameter
WMC	Waste Matrix Code
WTS	Waste Tracking System

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN004[1]

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Special Setups Waste[1]

1.2.2 Point of Generation

Rocky Flats (RF) Plant, Building 774[2]

1.2.3 Waste Stream Volume

2,302 55-gallon containers (480 m^3) – current volume[3]

The estimated percentages of transuranic (TRU) activity for special setups waste are 70% greater than 100 nanocuries per gram (nCi/g) and 30% less than 100 nCi/g.

Advanced Mixed Waste Treatment Project (AMWTP) will employ payload management practices in accordance with the Waste Acceptance Criteria (WAC) for waste stream BN004.[7]

1.2.4 Generation Dates

AMWTP stored containers of RF special setups waste generated from 1968 to 1988.[66] Waste stored at AMWTP with generation dates (i.e., pack date) later than 1988 are the result of repackaging (e.g., waste characterization activities).

1.2.5 TRUCON Codes

ID111/ID211[1, 4]

1.2.6 Waste Isolation Pilot Plant (WIPP) Waste Stream ID

Annual Transuranic Waste Inventory Report (ATWIR) Waste Stream ID: IN-BN004 (formerly identified as WIPP Identification Number Transuranic Waste Baseline Inventory Report [TWBIR] Waste Stream ID: IN-W157.144)[5, 67]

1.2.7 Summary Category Group

S3000 Homogenous Solids[1, 6]

1.2.8 Waste Matrix Code Group

Solidified Inorganics

1.2.9 Waste Matrix Codes

S3150 –Solidified Homogeneous Solids

Special setups waste consists of >50% by volume solidified waste form. Specifically, small quantities of liquids were solidified in large quantities of cement as special setups waste. Small quantities of absorbents (Oil-Dri® or vermiculite) were also added. This waste is at least 50% (by volume) inorganic solids and is classified as a homogeneous waste.[36]

1.2.10 Descriptions from the TWBIR and ATWIR

TWBIR waste stream description:

This waste, generated at RF, consists of liquids absorbed on a cement mixture. The liquid wastes were not compatible with aqueous treatment processes and are handled separately due to their plutonium complexing nature.[5]

ATWIR waste stream description:

IN-BN004 (Special Setups) waste was generated from a waste treatment process (predominately laboratory waste) generated in support of plutonium operations at the Rocky Flats Environmental Technology Site (RFETS). Resins and electrochemical milling (ECM) sludges were also solidified with the liquid waste. This waste stream is comprised of solidified waste assigned item description code (IDC) ID-RF-004 and ID-RF-802. Special setups consists of waste >50% by volume inorganic solidified waste. Specifically, small quantities of liquids solidified in large quantities of cement.[a] (67)

1.2.11 Defense Determination

The special setups wastes (BN004) generated at RF and shipped to the Idaho National Laboratory (INL) were generated exclusively through defense program activities. Liquid wastes that were subsequently solidified as special setups waste addressed by this summary were generated from defense related activities (e.g., weapons production and plutonium recovery activities) or from one of the four activities identified in the 1997 Department of Energy (DOE) Carlsbad Area Office (CAO) memorandum[10] as non-defense waste that was inadvertently mixed in the past and from which the non-defense portion cannot be segregated.

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a. The description in the ATWIR will be revised in the next annual update to add IDC RF 744 and revise the waste stream description to "IN-BN004 (Special Setups) waste was generated from treating wastes (predominately laboratory waste) generated in support of plutonium operations at Rocky Flats. Resins and electrochemical milling sludges were also solidified with the liquid waste. This waste stream is comprised of solidified waste assigned IDC ID-RF-004, ID-RF-744 and ID-RF-802."

In accordance with interim guidance, defense wastes are identified as those wastes generated during work involving only defense activities or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non defense portion cannot be segregated. The TRU wastes shipped to the INL covered by the BN004 waste stream profile (WSP) meet this definition.[60]

1.3 Waste Stream Description

1.3.1 Description

Special setups waste was generated from a waste treatment process that solidified process waste (predominantly laboratory liquid waste) generated in support of plutonium operations at RF. Resins and ECM sludges were also solidified with the liquid waste. This waste stream is comprised of solidified waste assigned IDCs RF 004, RF 744, and RF 802. The waste was generated in Building 774. The Special Setups waste is similar in material, physical form, and hazardous constituents and is a single waste stream. The TWBIR number, IDC, waste matrix code (WMC), and waste descriptions for the special setups waste stream are presented in Table 1-1.

Table 1-1. Physical waste form description for special setups waste.

IDC	WMC	Description
RF 004	S3150	Special Setups Waste
RF 744	S3150	Pits 11 and 12 Special Setups
RF 802	S3150	Solidified Laboratory Waste

Special Setups Waste – Building 774 (RF 004). This waste consists of liquids primarily from laboratory operations throughout the plant site that were neutralized, if required, and solidified in Building 774. A mixture of Portland cement and insulation cement (magnesia cement) was placed in a lined 55-gallon drum and identified with container prefix 744. The liquid was neutralized, if required, and then added to the cement mixture. Some drums may contain polyethylene bottles (<4 liters) of solidified waste.[19, 21]

Pits 11 and 12 Special Setups (RF 744). RF 744 was assigned by AMWTP to special setups containers retrieved from Subsurface Disposal Area (SDA) Pits 11 and 12 and identified with container prefix 744. The process and inputs were the same as waste containers identified as RF 004. The retrieved waste containers were originally generated prior to 1972, shipped to INL and buried in Pits 11 and 12. The waste containers were subsequently retrieved from the pits prior to 1979 and placed in the Transuranic Storage Area-Retrieval Enclosure (TSA-RE).[3]

Solidified Laboratory Waste – Building 774 (RF 802). RF 802 replaced RF 004 in approximately 1986.[43] RF changed the IDC, but the process and inputs remained the same.[11]

1.4 Process Description

1.4.1 Areas of Operation

The waste was generated in Building 774 by solidifying waste generated from various locations at RF.[13, 16, 23, 24, 40]

1.4.2 Process Flow Diagrams

The process flow diagram for the solidification of liquid waste as special setups waste is provided in the archived RF information, Waste Stream Residue Identification and Characterization (WSRIC) Building 774.[30]

1.4.3 Waste Generating Processes

The special setups waste treatment process solidified process waste (predominantly laboratory liquid waste that was not compatible with the primary aqueous waste treatment system). The liquids include complexing agents (e.g., Versene [ethylene diaminetetraacetic acid], tetraphosphoric acid, tributyl phosphate, citrate, oxalic acid, sodium lignosulfonate, and americium oxalate), strong acids, and strong bases. The special setups waste treatment process also solidified solids such as ECM sludges or resins. These wastes were generated primarily from the analytical laboratories, research and development laboratories, and maintenance shops located in Buildings 122, 123, 126, 371, 444, 559, 705, 707, 750, 771, 777, 779, 865, 881, 883, 886, and 991.[2, 4, 12, 14, 16, 21, 30, 31, 34, 39, 42, 44]

If the liquids generated in the analytical laboratories in Buildings 371, 559, and 771 contained plutonium above the economic discard limit (EDL), the liquids were sent to Building 771 for recovery prior to the transfer of the liquid waste to Building 774 for solidification.[27]

The bulk of the waste was packaged in small containers (typically plastic bottles) or in drums at the point of origin and transferred to Building 774; however, some of the liquid waste was received by pipeline transfers from Building 771. A setup logbook was used in Building 774 to record the types of waste and generation source. The date of treatment, generation location, waste description, and treatment process were entered in the logbook.[39, 48] The bulk of the liquid waste treated in the special setups process was laboratory waste, acids, and bases; however, other liquids (e.g., coolants, oils) were also solidified in Building 774. Therefore, individual containers in this waste stream may have limited amounts of organics (less than 10 liters). Containers of 50% or greater solidified organic waste are not included in this waste stream.

1.4.3.1 Neutralization and Solidification

In Building 774, the packaged waste received in plastic bottles was placed into a glovebox. Any acid waste was transferred from the glovebox into Tank T-7 located adjacent to the glovebox and neutralized with sodium hydroxide. After sodium hydroxide was added to

Tank T-7, pH paper was used to ensure the acid waste had been neutralized. Basic liquid wastes were not neutralized prior to solidification.[28, 48]

A mixture of approximately 250–300 pounds of Portland Type I/II cement and 100-150 pounds of insulation cement (magnesia cement) was placed in a lined 55-gallon drum, and the drum was placed on a drum roller to ensure mixing of the contents. The drum was then attached to the glovebox.[29, 48] Approximately 80–100 liters of the basic or neutralized liquid waste was added to the cement mixture.[21, 29, 48] The cement mixture in the drum chemically reacted with the waste solution to form a solid monolith.[28, 48] Periodically, polyethylene bottles (<4 liters) were filled with the cement mixture, sent to the small quantity waste generators on the plant site for addition of the liquid waste, and returned to Building 774 where they were packaged into drums.[21]

1.4.4 Material Inputs

Material inputs for special setups waste are presented in Table 1-2 (based on the type of waste) and include liquid wastes from laboratories, production, maintenance, and research and development activities. The special setups waste treatment process was used to solidify liquid wastes containing complexing agents that made the liquid incompatible or would interfere with the primary aqueous liquid waste treatment processes.

Table 1-2. Wastes treated in the solidification process.

Type of Waste	Compound
Laboratory Wastes	Aqueous wastes generated from sampling various waste streams including those that contain listed solvents (acetone, benzene, carbon tetrachloride, methanol, methylene chloride, methyl ethyl ketone, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, toluene, and xylene), toxicity characteristic metals (cadmium, chromium, lead, and silver), and electroplating wastes (cyanide bath rinse solutions that contained cadmium, chromium, nickel, and silver). Spent laboratory standards, including the above constituents and 1,1-dichloroethylene.
Acids/bases	Boric, chromic, hydrochloric, hydrofluoric, nitric, perchloric, phosphoric, tetraphosphoric, sodium hydroxide, sulfamic, sulfuric, oxalic, and tartaric.[2]

Type of Waste	Compound
Commercial products	Ox-out (a water solution of nitric acid and ammonium bifluoride);[33, 45] Versene (a trade name ethylenediaminetetraacetic acid [EDTA] product),[21, 54] Kepro developer (contains 1,1,1-trichloroethane),[33, 55] Metex solution (a trade name for a series of inorganic and organic acids or salts)[35] and Turco solutions (a trade name for a series of cleaners with various combinations of acids, complexing agents, and surfactants).[33, 53]
Complexing agents	Sodium lignosulfonate, tributyl phosphate, tetraphosphoric acid, citrate, oxalic acid, americium oxalate, and EDTA
ECM electrolyte	A mixture of chromic, sulfuric, and phosphoric acids[56]
Radionuclides	^{133}Ba, ^{55}Fe ^{237}Np, ^{239}Pu, ^{90}Sr, and tritium (sources)
Resins	Spent anion and cation resins
Other chemicals	Dicesium hexachloroplutonate, cyanide, acrylonitrile (vinyl cyanide), thiocyanate, and sodium sulfide solutions

1.4.5 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN004, WMP data from 100% of the completed real-time radiography (RTR) and visual examination (VE) of special setups waste drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 49% of the estimated number of drums for this waste stream. The special setups waste was generated at RF from 1971 through 1988. Drums evaluated to estimate the WMP weights per unit of waste were generated from 1972 through 1988. Approximately 3% of the waste was generated prior to 1972. AK indicates that the waste generated in 1971 is similar to the wastes that have undergone RTR and VE. Therefore, the WTS data is representative of the waste stream. WTS is AMWTPs comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for special setups waste, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, and are summarized in Table 1-3.[50, 57–59]

Table 1-3. Estimated waste material parameter weights per unit of waste for Special Setups Waste (BN004).

Potential Waste Material Parameters	Unit Weight by Percent
Iron-based Metals/Alloys	<1
Aluminum-based Metals/Alloys	<1
Inorganic matrix	99
Other Inorganic Materials	<1
Cellulosics	<1
Plastics (waste materials)	<1
Rubber	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic solidified homogeneous solids.[2, 50]

1.5 Prohibited Items

The following items are prohibited at the WIPP in accordance with Section B-1c of MP-TRUW-8.2, Quality Assurance Project Plan, and Section 3 of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste.[9, 63]

- Liquid waste and prohibited observable liquids
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an U.S. Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (hazardous waste numbers [HWNs] D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2 unless specifically approved through a Class 3 permit modification.[63]

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or VE of a statistically representative subpopulation of the waste stream in each shipment, as describe in Attachment B7 of MP-TRUW-8.2.[63]

- Sealed containers greater than four liters.

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities. Real-time radiography or VE is performed on each container in this waste stream to verify the absence of prohibited items.[51, 52] Containers that are identified as containing prohibited items during RTR or VE are treated or rejected, as appropriate. Drums containing prohibited items will not be shipped to WIPP. Non-hazardous solidification agents Aquaset®, Aquaset II-G®, and Micro Cel® E may be added to the waste by AMWTP to treat liquid in excess of WIPP WAC limits.[64, 65]

1.6 Resource Conservation and Recovery Act Determination

1.6.1 EPA Hazardous Waste Numbers

Special setups waste is characterized as mixed-TRU waste. Toxicity characteristic HWNs applied to the waste are D006, D007, D008, D011, and D029. Listed HWNs applied to this waste stream are F001, F002, F005, F006, F007, and F009.

1.6.2 Hazardous Determination

The hazardous waste determination for special setups waste is described in the following subsections.

1.6.2.1 Characteristic Waste

1.6.2.1.1 Ignitability

The materials in this waste stream do not meet the 40 Code of Federal Regulations (CFR) 261.21 definition of ignitability. The materials in this waste stream are not liquid waste. Furthermore, non hazardous absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids. Containers identified with liquid in excess of WIPP WAC limits may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, or Micro Cel® E) to render the waste acceptable prior to shipment.[64, 65] The materials are not liquid and are not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. These materials are not compressed gases, and the containers do not contain compressed gases. These materials are not Department of Transportation (DOT) oxidizers as defined in 49 CFR 173. Feed solutions contained small amounts of oxidizers such as oxalic acid or nitric acid; however, the waste solutions were neutralized and solidified, and the final form does not meet the definition of an oxidizer.[16–21] Therefore, this waste stream does not exhibit the characteristic of ignitability (D001).

1.6.2.1.2 Corrosivity

The materials in this waste do not meet the definition of corrosivity as defined in 40 CFR 261.22. This waste is not a liquid. Furthermore, absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids.[7, 18–21] Containers identified with liquid in excess of WIPP WAC limits may be treated using non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E).[64, 65] Therefore, the corrosive characteristic (D002) does not apply to this waste stream.

1.6.2.1.3 Reactivity

The materials in this waste stream do not meet the 40 CFR 261.23 definition of reactivity. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials are not capable of detonation or explosive reaction. The materials are neither forbidden explosives nor Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, nor do the drums contain explosive materials.[16–21] On five occasions, small volumes of cyanide, acrylonitrile (vinyl cyanide), thiocyanate, and sodium sulfide solution were included in the liquid waste prior to solidification and are included in this waste stream.[39] However, if exposed to pH conditions between 2 and 12.5, they will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment because the chemicals have been stabilized in a solidified monolith. Containers identified with compressed gases or aerosol cans will have the prohibited items treated/removed prior to shipment. Containers with liquid in excess of WIPP WAC limits may be treated with non-hazardous solidification agents to render the waste acceptable prior to shipment (e.g., Aquaset®, Aquaset II-G®, or Micro-Cel® E).[64, 65] The materials in this waste stream are, therefore, not reactive wastes (D003).

1.6.2.1.4 Toxicity

The toxicity characteristic contaminants fall into one of two categories: metals and organics. Organic compounds include halogenated and non-halogenated solvents, pesticides, herbicides, and other toxic organic compounds.

AK documentation indicated the presence of toxicity characteristic metals cadmium (D006), chromium (D007), lead (D008), and silver (D011) because these constituents are present in the liquid wastes from the analytical laboratories and research and development operations.[1, 2, 41] Even though these contaminants were not detected in solid sampling and analysis at concentrations above their associated program required quantitation limit (PRQL) values, the waste stream is conservatively assigned EPA HWNs D006, D007, D008, and D011.

1,1 Dichloroethylene (D029) was detected in the headspace gas (HSG) sampling results. No use for 1,1-dichloroethylene was identified within the RF AK (except as a laboratory calibration standard); however, this constituent was detected in HSG sampling and analysis conducted previously at INL. Even though the calculated 90% upper confidence limit (UCL_{90})

value is below the PRQL value, EPA HWN D029 is conservatively assigned to the special setups waste.

The special setups waste includes analytical waste generated from the sampling of waste streams containing listed solvents including benzene, carbon tetrachloride, tetrachloroethylene, and trichloroethylene that were used as solvents in many operations on the plant site.[32] Because special setups wastes are characterized as listed hazardous wastes, the toxicity EPA HWNs for these constituents are not applied to this waste stream.

1.6.2.2 Listed Waste

1.6.2.2.1 F-Listed Hazardous Waste Numbers

The materials in this waste stream are listed hazardous wastes because they were mixed with or derived from waste listed in 40 CFR 261, Subpart D as hazardous waste from non-specific sources (40 CFR 261.31).

EPA HWN F001, F002, and F005 are assigned to the special setups waste for spent solvents including carbon tetrachloride (F001); tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene (F001, F002); methylene chloride (F002); and benzene, methyl ethyl ketone, and toluene (F005). EPA HWNs F006, F007 and F009 listed HWNs are assigned to the special setups waste because it may be contaminated with spent electroplating wastes. The special setups waste includes analytical waste generated from sampling and analyzing listed waste.

Carbon tetrachloride, tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane were identified in AK documents as solvents commonly used in cleaning, degreasing, production, laboratory, and maintenance operations. Benzene, methylene chloride, and toluene were used as solvents in laboratory operations. In addition, 1,1,1-trichloroethane, trichloroethylene, and paint thinner (methyl ethyl ketone and toluene) were used for cleaning, and methylene chloride was used for paint removal.[2] Waste streams with these listed constituents were sampled and analyzed by the RF laboratories, and the waste generated from the laboratories is included in this waste stream. In addition, small amounts (4–8 liters) of organic solvents may have been added to the waste on occasion. Spent solvent wastes included electropolishing solution (containing 2-ethoxyethanol from metallography laboratories) and scintillation cocktail (containing toluene from tritium analysis).[39] Therefore, EPA HWNs F001, F002, and F005 are assigned to this waste stream.

Acetone, methanol, and xylene (non-chlorinated solvents) were also used as solvents in laboratory and production operations. Waste streams with these listed constituents were sampled and analyzed by the RF laboratories, and the waste generated from the laboratories is included in this waste stream. Methanol was detected in the HSG and solid samples at levels above the PRQL, but special setups waste is not a liquid waste. If a waste no longer exhibits the characteristic of ignitability, the F003 HWN can be removed [40 CFR 261.3(9)(1)]. Because the waste is not ignitable, the EPA HWN F003 is not assigned to this waste stream.

EPA HWNs F006, F007, and F009 are assigned because laboratories could have sampled and analyzed treated aqueous wastes from Buildings 374 and 774 treatment facilities. The treated aqueous waste from Buildings 374 and 774 include aqueous waste from electroplating operations (e.g., cyanide bath rinse solutions that contained cadmium, chromium, nickel, and silver) and the waste generated from the laboratories is included in this BN004 waste stream.[23, 27]

AK indicates that 1,1,1-trichloroethane, carbon tetrachloride, trichloroethylene, ethyl benzene, methanol, and xylene were detected above the PRQL based on HSG and solid sampling conducted previously at INL.[22] Confirmatory solid and HSG sampling and analysis did confirm the presence of listed solvent constituents; however, the concentrations are below the associated PRQLs (except for methanol). No additional EPA HWNs are required; therefore, EPA HWNs F001, F002, F005, F006, F007, and F009 are assigned to this waste stream.

1.6.2.2.2 P-, U-, and K-Listed Hazardous Waste Numbers

Although hydrofluoric acid (HF) was identified as a chemical used (for its intended purpose) during plutonium processing at RF, only spent HF sources could have been sent to special setups process. Based on this information, the U134 HWN does not apply to this waste stream.

Based on a review of AK, it was determined that the special setups waste will contain less than one percent beryllium by weight. If beryllium is present, it is a contaminant of the process and not an unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code for beryllium, as defined in 40 CFR 261.33, is not assigned to the waste.

The materials in this waste stream are not discarded commercial chemical products, off specification species, container residues, or spills thereof (40 CFR 261.33). The materials in this waste stream are not P- or U-listed hazardous waste.

The materials in this waste are not hazardous waste from specific sources since they were not generated from any processes listed in 40 CFR 261.32. The materials in this waste stream are, therefore, not K-listed hazardous waste.

1.6.2.3 Toxic Substances Control Act Regulated Contaminants

Polychlorinated biphenyls are not expected to be present in the special setups waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the WIPP WAC.[9, 38]

1.6.2.4 Other Special Setups Waste Streams

RF107.07 was reviewed as being pertinent to this waste stream (BN004).[13] A more specific WMC (S3150) was assigned to BN004 by INL; whereas the general WMC (S3190) was assigned to RF107.07 by RFETS for these solidified inorganic waste streams. INL identified the

same WMC S3150 that was identified for IDC 004 in TWBIR. Listed waste EPA HWNs F001, F002, F005, F006, F007, and F009 were assigned to both waste streams; however, EPA HWNs D006, D007, D008, and D011, assigned to BN004 based on AK were retained although the UCL_{90} values were below the PRQL values.[2] EPA HWN D029 was conservatively assigned to BN004 because 1,1-dichloroethylene was detected in HSG sampling and analysis conducted previously at INL.[2]

RF107.07 assigned the additional EPA HWNs P030, P098, P099, P106, U003, U103, and U108, which are associated with RF waste generated after January 1995.[13, 16] None of the post-January 1995 waste is included in this waste stream.

1.7 Radionuclides

The WIPP-tracked radionuclides of concern for special setups waste are ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am.[8, 15, 28, 37] The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are expected to be present in measurable quantities in special setups waste because sources were disposed of in special setups.[47] In addition, tritium, plutonium, americium, depleted uranium, enriched uranium, ^{233}U, ^{55}Fe, ^{237}Np, ^{133}Ba, ^{60}Co, ^{228}Th, and Cm (no isotope specified)[2, 39, 46] were introduced into the solidification process in liquids received or as sources from various buildings.[2]

The ratios of the two most prevalent radionuclides in the container are compared to confirm existing AK data in compliance with WAC requirements.[7] The two most prevalent radionuclides anticipated in the special setups waste drums are ^{239}Pu and ^{240}Pu.[8]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Special setups waste was contained in an O-ring bag inside a prepared 55-gallon drum attached to the glovebox.[18, 20] Approximately 10 to 15 pounds of Portland cement were added on top of the special setups waste before the O-ring bag was sealed. The special setups waste may also be contained in polyethylene bottles (<4 liters) inside the lined 55-gallon drum.[21]

Depending on waste packaging requirements at the time, several combinations of bags and liners were used to prepare 55-gallon drums for shipment. From 1970 to 1972, waste drums were lined with a polyethylene drum bag. Three to five pounds of Portland cement were placed in the bottom of the drum and in the drum bag. Use of the 90 mil rigid polyethylene liner began in 1972.[21] The rigid liner was placed in each drum and lined with a polyethylene round bottom drum liner.[19, 21, 25, 26] Three to five pounds of Portland cement were placed in the bottom of the rigid liner and in the round bottom liner. When a drum was full, the drum liners were twisted and taped closed, the lid was secured with a bolted ring, and a tamper-indicating device was attached to the drum.[19, 21]

After drums were inspected, one to two quarts of absorbent material (Oil-Dri®) was placed on the top of the outer, sealed polyethylene drum bag. This procedure changed in February 1982

when vermiculite was used to fill the space between the outer, sealed polyethylene drum bag and the top of the 90-mil rigid liner. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP.[62]

Although the procedure changed in 1982 and required vermiculite to be used, strict adherence to the procedure was not followed based on observations from RTR and/or VE. As a result the type, amount, and expected time-frame of absorbent use will vary. The quantity of vermiculite varied from 3-12 pounds according to the amount of waste contained in each drum.[21, 62]

Some of the 55-gallon drums may be overpacked into 83- or 85-gallon drums. Either four 55-gallon drums or two 83- or 85-gallon drums, with either the drum lid filters or the drum lids removed, may be direct loaded into an Standard Waste Box (SWB) equipped with approved filters.

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact Handled Transuranic Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas sampling and analysis is performed when required by the Waste Analysis Plan (WAP) and/or CH TRAMPAC. At a minimum, the HSG analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable gases are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[61]

3.0 REFERENCES

NOTE: *AMWTP documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

1. RPT-TRUW-12, AMWTP Waste Stream Designations [P393A]

2. INEL-96/0280, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, Rev. 3, February 28, 2003 [P368A]

3. NDK-001-10, Memo to file, Estimation of Number of Drums for BN004 Waste Stream, July 5, 2010 [C876A]

4. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON)

5. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report, U.S. Department of Energy [P746A]

6. DOE/LLW-217, DOE Waste Treatability Group Guidance, 1995 [P670A]

7. DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, Rev. 6.5, June 30, 2010

8. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge [P398A]

9. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

10. Memorandum from DOE CAO to J. M. Roberson, RFFO, and J. M. Wilcynski, INEEL, Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), May 20, 1997 [C191A]

11. Correspondence from G. F. Jaskot to Distribution, Certification Waste Documentation, May 9, 1986 [C008A]

12. Record of Conversation of Maurie Maas, March 19, 2003 [C073A]

13. RMRS-WIPP-98-100, Section 7.29, RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries, TRM Solidified Inorganic Waste (F001, F002, F005, F006, F007, F009, P030, P098, P099, P106, U003, U103, U108), Profile No. RF107.07 [P494A]

14. Telecon between Al Morgan (retired) of Rocky Flats and Jeff Harrison, Building 776 Size Reduction Area, February 27, 1997 [C175A]

15. Interview of Al Morgan, March 19, 1997 [C184A]

16. Backlog Waste Reassessment Baseline Book, Waste Form 60, Solidified Lab Waste [P495A]

17. PSD87-059, EG&G Sampling Program Results FY1987 [P013A]

18. EGG WM 6503, TRU Waste Sampling Program: Volume I Waste Characterization [P015A]

19. INEL-95/0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste, August 10, 2006 [P016A]

20. PSD86-061, EG&G Drum Sampling Program Results FY1986 [P021A]

21. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes [P024A]

22. INEL-95/0397, Summary of Transuranic Waste Characterization Programs at the INEL (1979-Present) [P033A]

23. Backlog Waste Reassessment Baseline Book [P052A]

24. Tasks 3 & 4 Final Draft Report, Reconstruction of Historical Rocky Flats Operations and Identification of Release Points [P053A]

25. WO-4034-C, Packaging Wastes for Shipment Offsite (U) [P063A]

26. WO 4034-F, Waste Packaging Requirements [P064A]

27. Waste Stream Identification and Characterization [P067A]

28. Operational Safety Analysis (OSA), Waste Receipt and Processing No. 774.001 [P070A]

29. A-008-LWTO, Process Qualification Report for Miscellaneous Waste Handling and Solidification (Bottlebox) Building 774 [P073A]

30. Waste Stream and Residue Identification and Characterization Building 774. Version 3.2 [P077A]

31. Waste Stream and Residue Identification and Characterization Building 776. Version 3.2 [P078A]

32. ISSN 0738-0232, RCRA Land Disposal Restrictions: A Guide to Compliance, The Hazardous Waste Consultant. Vol. 12, Issue 6, 1995 Edition [P080A]

33. Materials Hazards Manual [P091A]

34. Waste Stream Residue Identification and Characterization Building 559, Version 5.0 [P107A]

35. Material Safety Data Sheet for Metex Chemicals [P119A]

36. INEL 95/029, RWMC-EDF-805, Matrix Parameter Category Groups (MPCG) Engineering Design File [P141A]

37. EDF-RWMC-840, Document SWEPP NDA Compliance Development, Bechtel BWXT Idaho, LLC [P240A]

38. Comparison of Real Time Radiography (RTR) and Visual Examination Results of the Stored Waste Examination Pilot Plant Certified Waste Sampling Program. EDF 2710 and the associated RTR-VE Database CD, December 11, 2002 [P321A]

39. Building 774 Set Up Log Book [U043A]

40. A History of the Rocky Flats Plutonium/Actinide Recovery Plant 1952 to 1991, Draft October 30, 1991 [U047A]

41. Toxicity Characteristic Leaching Procedure Test Results of Cemented Surrogate Analytical Laboratory Solution Waste—Part 2 [U054A]

42. Drum Prefix Numbers and Corresponding Material Balance Areas [U059A]

43. Inventory values as generated by TRIPS Change Request (TCR) 1821, May 22, 2001 [U092A]

44. Draft Characterization Report: Characterization of Rocky Flats Plant Special Setups Sludge Waste (IDCs 004, 802) [U107A]

45. Material Safety Data Sheet for OX-Out 536, ChemClean Corporation [P129A]

46. EDF-3374, Radioassay Data Collected During 3100 Cubic Meter Project [P322A]

47. Cs-137/Sr-90 expected only in RF-IDC 004 and 480 wastes, February 28, 2005 [AKR 05 208]

48. WO-4021-C, Miscellaneous Aqueous Waste Handling and Solidification [P496A]

49. Not used

50. Memorandum to file, Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste, January 19, 2007 [C534A]

51. INST-OI-12, Real Time Radiography Operations (Drums)[P407A]

52. INST-OI-34, Non-Facility Visual Examination Operations [P387A]

53. Material Safety Data Sheet for Turco, Turco Products various [P605A]

54. Material Safety Data Sheet for Versene, Dow Chemical [P606A]

55. Material Safety Information for Kepro, Kepro Circuit System various [P607A]

56. RFP-1985, The Heats of Solution of Beryllium in Chemical Milling Solutions, James D. Navratil and Franklin L. Oetting [P608A]

57. MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation [P418A]

58. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS) [U127A]

59. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant [P649A]

60. Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant [P203A]

61. CCP-PO-003, CCP Transuranic Authorized Methods For Payload Control (CCP CH TRAMPAC), Central Characterization Project, Rev. 11, June 4, 2009

62. RPT-TRUW-05, Waste Matrix Code Reference Manual [P399A]

63. MP-TRUW-8.2, Quality Assurance Project Plan

64. Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite) Fluid Tech, January 1, 2005 and November 1, 2008 [P881S]

65. Material Safety Data Sheet, Micro-Cel®E, Celite Corporation, January 17, 2007 [P808S]

66. RCM-001-10, Memo to file, Earliest Pack Date for Rocky Flats Waste Retrieved from Pits 11 and 12, July 5, 2010 [C875S]

67. DOE/TRU-20098-3425, Annual Transuranic Waste Inventory Report -2009 [P838A]

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1157 Effective Date: 07/17/02, Rev. 1 MP-TRUW-5.13 Page 1 of 1

WSPF Number: BN004 (RF004, RF802)

AK Source Document / Rev. Number: AMWTP-RPT-TRUW-59, Rev.0

hwn	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X					X	✔
F002	X					X	✔
F003							✔
F004							✔
F005	X					X	✔
F006	X					X	✔
F007	X					X	✔
F009	X					X	✔
D004							✔
D005							✔
D006	X					X	✔
D007	X					X	✔
D008	X					X	✔
D009							✔
D010							✔
D011	X					X	✔
D022							✔
D029	X					X	✔
D032							✔

AK Expert: Vivian Sendelweck Vivian Sendelweck Date: 3/30/06
Print/Sign

Site Project Manager: R A Eschenbach Date: 3/30/06
Print/Sign
R A ESCHENBACH

Waste Stream or Waste Type Description: Special Setups

Waste Stream or IDC Number: BN004

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C001A, C073A, C184A, C522A, C618A, C822S, C842S, D061A, P001A, P012A, P014A, P016A, P024A, P052A, P067A, P1031A, P127A, P319A, P368A, P435S, P442A, P443A, P494A, P495A, P496A, P608A, P609A, P621A, P649A, P667A, P671S, P717A, P733S, P741A, P744A, P746A, P755A, P759S, P847A, P888A, P953A, U043A, U059A, U069A, U119A, U215A, U223A
Waste stream volume and time period of generation.	WS2	C499A, C507A, C522A, C534A, C535A, C543S, C620A, C842S, C855A, C856A, C861A, C875S, C876A, D032A, D061A, P024A, P090A, P1031A, P127A, P198A, P318A, P319A, P364A, P365A, P368A, P400A, P442A, P443A, P567A, P609A, P621A, P649A, P671S, P743A, P744A, P746A, P755A, P758A, P759S, P826A, P838A, P847A, P888A, U043A, U059A, U069A, U122A, U127A, U215A, U223A, U235S
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C008A, C010A, C014A, C175A, P001A, P012A, P014A, P015A, P016A, P024A, P052A, P067A, P070A, P073A, P078A, P107A, P319A, P368A, P435S, P442A, P443A, P494A, P496A, P608A, P609A, P621A, P649A, P667A, P671S, P717A, P743A, P744A, P746A, P758A, P759S, P888A, U043A, U119A
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C063A, C065A, C085A, C245A, C546S, D061A, D070A, D076A, P016A, P024A, P033A, P052A, P053A, P070A, P091A, P107A, P119A, P164A, P207A, P307A, P310A, P319A, P365A, P368A, P393A, P401A, P409A, P435S, P442A, P443A, P494A, P495A, P496A, P605A, P606A, P607A, P608A, P609A, P621A, P649A, P667A, P717A, P744A, P759S, P808S, P888A, U043A, U054A, U107A, U119A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C313A, C315A, C316A, C460A, C499A, C504A, C534A, C546S, C566S, C620A, C840S, C841S, C842S, D061A, P001A, P012A, P014A, P015A, P016A, P021A, P024A, P039A, P043A, P052A, P063A, P064A, P070A, P073A, P090A, P141A, P207A, P319A, P365A, P368A, P372A, P393A, P399A, P435S, P442A, P443A, P465A, P494A, P495A, P496A, P567A, P605A, P606A, P607A, P608A, P609A, P621A, P649A, P667A, P670A, P717A, P741A, P744A, P746A, P755A, P758A, P759S, P838A, P847A, P881S, P888A, U119A, U223A, U230A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C065A, C079A, C085A, C245A, C313A, C566S, C607A, C840S, C841S, D001A, D011A, D064A, D070A, D076A, D077A, P012A, P013A, P015A, P016A, P052A, P053A, P080A, P207A, P307A, P310A, P365A, P368A, P393A, P435S, P442A, P443A, P494A, P495A, P605A, P606A, P607A, P609A, P649A, P667A, P668S, P717A, P733S, P743A, P744A, P756A, P838A, U046A, U054A, U059A, U060A, U082A, U107A
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C130A, C222A, C281A, C285A, C459A, C506A, C551A, C552S, C566S, C840S, C841S, D051A, P024A, P090A, P198A, P227A, P240A, P307A, P322A, P368A, P398A, P435S, P442A, P443A, P494A, P609A, P611A, P621A, P649A, P743A, P744A, P745A, P755A, P759S, P838A, P888A, U043A, U235S
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C073A, C321A, C511A, C516A, C842S, D070A, P001A, P012A, P013A, P015A, P016A, P021A, P024A, P063A, P358A, P368A, P372A, P399A, P442A, P443A, P465A, P609A, P649A, P667A, P733S, P741A, P744A, P888A, U215A, U223A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Nancy Kirk / Nancy Kirk Date: 9/16/10
Print/Sign Date

Site Project Manager: Steve Capen Date: 9/16/10
Print/Sign

LDR NOTIFICATION- IDCs RF004 RF802 RF744

WASTE STREAM BN004

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D006, D007, D008, D011, D029, F001, F002, F005, F006, F007, and F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D011	May 26, 2000
	D029	December 19, 1996
	F001	Nov 8, 1986
	F002	Nov 8, 1986
	F005	Nov 8, 1986
	F006	July 8, 1989
	F007	July 8, 1989
	F009	July 8, 1989

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

December 21, 2005 CCN 05-1550

Mr. Dale Bignell
Washington Regulatory and Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727- Waste Stream Profile, BN004 - SPC-087-2005

Dear Mr. Bignell:

Attached is Waste Stream Profile (WSPF), BN004, Special Setups Waste, and AMWTP-RPT-TRUW-59, *Acceptable Knowledge Summary for Special Setups Waste (BN004)*, for your review and approval. We have evaluated and reviewed the profile, and believe it is compliant with the WAP.

If you have any questions feel free to call me at (208) 557-6323 or Eric P. Schweinsberg (208) 557-6425.

Sincerely,

Steve Carpenter
Acceptable Knowledge/ Alternate Site Project Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

SPC:cc

cc: Rod Arbon, BBWI
Steve Carpenter, BBWI
Rick Chavez, WRES
Joan Connolly, BBWI
Elvin Dumas, BBWI
Guy Girard, DOE-ID
Tally Jenkins, DOE-ID
Ron Reeves, WRES
Frank Russo, BBWI
Jerry Wells, DOE-ID
Ed Ziemianski, DOE-ID
WIPP Site Documents

1. **Source Document Tracking Number:** P646A	2. **Revision:** 8

3. **Category**

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. **Title/Description Information:** BN836 Cemented Sludge Waste Stream Profile Package, April 28, 2006
Change Notice #1, January 24, 2007 Change Notice #2, April 2, 2008

Document Number: N/A

Revision: N/A

Author: AMWTP
CBFO

Date: 04/28/2006

FOR INFORMATION ONLY

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM2, WM3, WM5, WM6, WM7	MD	all	The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	MD-836	all	The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.

Implementing Document: MP-TRUW-8.13

9. Document Summary:

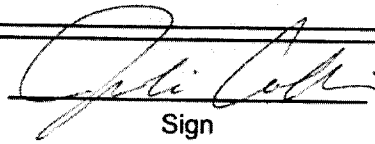
The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.
This revision includes the following documents:

- CBFO Approval letter of CN #2 for WSPF BN836, April 2, 2008
- Change Notice # 2 for WSPF BN836, March 27, 2008
- CBFO Approval letter of CN #1 for WSPF BN836, January 24, 2007
- Change Notice # 1 for WSPF BN836, January 24, 2007
- CBFO Approval letter for WSPF BN836, April 28, 2006
- Waste Stream Profile Form-1195, DQO Form-1597, and CIS Form-1598 for BN836, Rev. 0, April 28, 2006
- Acceptable Knowledge Summary, RPT-TRUW-63, Rev. 6, June 27, 2012
- Waste Stream Profile Form HWN Assignment Worksheet Form-1187 for BN836, April 27, 2006
- TRU Waste Management AK Documentation Checklist Form-1067 for BN836, July 22, 2009
- LDR Notification – MD836, Waste Stream BN836
- AMWTP transmittal letter WSP BN836, JDM 023-2006, April 25, 2006
- E-mail correspondence from CBFO to AMWTP document services. CBFO approval RPT-TRUW-63, Revision 5A, July 14, 2009

P646A Revision 8 updates the record to include revised AK Summary Report RPT-TRUW-63, Rev. 6, June 27, 2012

10. Source Document Data Limitations (if any):

The characterization only applies to containers certified for disposal at WIPP.

11.	AK Expert:	Julie Collins		10/2/2012
		Print	Sign	Date

P646A Rev 8

Washington
TRU Solutions LLC

WRES:08:145
UFC:5822.00

April 2, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #2) CEMENTED SLUDGE (BN836, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN836, Rev. 0, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax (575) 234-7083

Update for WIPP Operating Record (Change Notice # 2)

Cemented Sludge (BN836, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN836, Revision 0. This waste stream is Cemented Sludge and was approved by DOE/CBFO on April 28, 2006. Change Notice #1 was approved January 24, 2007.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval dates January 23, 2007 and January 18, 2008.

2. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Add the following procedure:

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06

3. **AK Summary, Cemented Sludge (RPT-TRUW-63), Report Number**

   Revise report number from AMWTP-RPT-TRUW-63 to RPT-TRUW-63.

4. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

   Revise section as follows:

   WIPP Identification Number IN-W179.158 [8]

5. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.5, Prohibited Items**

   Add the following bullets to the first paragraph:

   - Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Plan, unless specifically approved through a Class 3 permit modification. [60]

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as describe in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. [60]

Revised first sentence of last paragraph as follows:

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities.

6. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.7, Radionuclides**

Revise last sentence to first paragraph as follows:

The cemented sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [2, 27, 38, 42, 54, 61]

7. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 2.2, Flammability *Considerations***

Revise last sentence as follows:

Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [59]

8. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 3.0, References**

Revise existing references as follows:

5. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U.S. Department of Energy, Carlsbad Field Office, October 29, 2007

7. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008

8. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report-2004, U. S. Department of Energy, Carlsbad Field Office

9. DOE/LLW-217, DOE Waste Treatability Group Guidance, T. D. Kirkpatrick, Prepared for DOE Idaho Operations Office, January 1995

10. NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Current Revision

Update for WIPP Operating Record (Change Notice # 2)

Cemented Sludge (BN836, Rev. 0)

Add the following references:

59. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [P672A]

60. MP-TRUW-8.2, *Quality Assurance Project Plan*

61. MP- TRUW-8.1, Certification Plan for INL Transuranic Waste

Reason/Justification for the Changes

The audit report approval dates were updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

The AK Summary report number was changed to reflect changes in document control protocols.

AK Summary Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information, was changed to update the TWBIR number to reflect the current TWBIR.

AK Summary Section 1.5, Prohibited Items was changed to add two prohibited items to reflect the requirements of the updated Quality Assurance Project Plan, MP-TRUW-8.2, Section B-1c.

AK Summary Section 1.7, Radionuclides was updated to clarify statement concerning compliance with requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section 3.1.6.

AK Summary Section 2.2, Flammability Consideration was updated to reflect new TRAMPAC procedure.

AK Summary Section 3, References were updated or added to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN836) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg, SPM 3/27/08

Signature of Site Project Manager | Printed Name and Title | Date

Washington
TRU Solutions LLC

WRES:07:023
UFC:5822.00

January 24, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #1) CEMENTED SLUDGE (BN836, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions, on behalf of the Permittees, has approved the Change Notice Number 1 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN836, Rev. 0, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

Steven C Kahn

for W. M. Wierzbicki, Manager
Regulatory Compliance

WMW:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7061

cc. F. Marcinowski, DOE HQ ED
A. Holland, CBFO ED
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G. Girard, DOE-ID ED
J. Ziemianski, DOE-ID ED
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J. Wells, DOE-ID ED
E. Schweinsberg, BNG ED
S. Carpenter, AMWTP ED
R. Chatfield, WTS ED
D. Hofer, WTS ED
G. Johnson, WTS ED
D. Kump, WTS ED
D. Speed, WTS ED
D. Standiford, WTS ED
M. Strum, WTS ED
R. Chavez, WRES ED
R. Kehrman, WRES ED
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Update for WIPP Operating Record (Change Notice # 1)

Cemented Sludge (BN836, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN836, Revision 0. This waste stream is Cemented Sludge and was approved by DOE/CBFO on April 28, 2006.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Revise the audit approval dates to the following: 12/23/03, 4/1/05, and 12/9/05.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07.

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 8, 1/24/07.

3. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item. See Section 1.4.6, Table 1.3 of the AK summary. This is listed as Item 5 in the Change Notice.

4. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), TABLES**

   Revise Table of Contents per the following:

   Delete Table 1-3 Estimated percentage of various materials in BN836

   Change Table 1-4 Waste material parameters for cemented sludge waste (BN836) to Table 1-3 Estimated waste material parameter weights per unit of waste for cemented sludge waste (BN836).

5. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 1.4, Process Description**

   Section 1.4.5 Material Inputs, delete last paragraph and delete Table 1-3, Estimated percentages of various materials in BN836.

   Delete Section 1.4.6 and Table 1-4.

   Add Section 1.4.6 Waste Material Parameters:

Update for WIPP Operating Record (Change Notice # 1)

Cemented Sludge (BN836, Rev. 0)

1.4.6 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN836, waste material parameter data from 100% of the completed RTR and VE of Mound cemented sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 69% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate waste material parameter weights (by percent) for Mound cemented sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documents and are summarized in Table 1-3. [34, 58]

Table 1-3. Estimated waste material parameter weights per unit of waste for cemented sludge waste (BN836).

Waste Material Parameters	Weight per Unit Waste by Percent
Inorganic Matrix	100
Other Inorganic Materials	<1
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	<1
Iron-based Metals	<1
Other metals	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic sludge. [21]

6. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 2.0, Shipping Considerations**

Section 2.2 Flammability Considerations, change to read as follows:

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH TRAMPAC) requirements. As specified in the CH TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable

CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with MP TRUW 8.3, Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH TRAMPAC).

7. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 3.0, References**

Update reference number 34 to read Memorandum to File from Tim Venneman, "Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste." TV-001-07, January 19, 2007 (C534A)

Add the following as reference number 58: MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge, Rev. 15, January 2007.

Reason/Justification for the Change

The audit report approval dates were revised and updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions.

Table 1-3 and the last paragraph have been deleted from section 1.4.5 because cellulosic, plastic, and rubber information was incorporated into Section 1.4.6, Waste Material Parameters.

Waste material parameter weight estimates per unit of waste and method for determining those estimates have been incorporated into Section 1.4.5 to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in the Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-12b.

Flammability consideration has been changed to clarify the method used for determining flammability as described in Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-11a.

Update for the WIPP Operating Record (BN836) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg Eric P. Schweinsberg, SPM 1/24/07

Signature of Site Project Manager Printed Name and Title Date

Washington
TRU Solutions LLC

WRES:08:036
UFC:5822.00

April 28, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: TRANSMITTAL OF APPROVED ADVANCED MIXED WASTE TREATMENT PROJECT WASTE STREAM PROFILE FORM NUMBER BN838, CEMENTED SLUDGE

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN838, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

The Permittees therefore approve the WSPF as submitted. Using the methods approved at AMWTP, the AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7545 or (505) 706-0055.

Sincerely,

D. T. Bignell, Manager
Regulatory Compliance

DTB:rdr

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7061

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form	AMWTP Form-1195 Rev. 3 Effective Date: 1/26/06 MP-TRUW-8.14 Page 1 of 3

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BNI36, Rev. 0

Generator site name: Advanced Mixed Waste Treatment Project

Technical contact: Eric Schweissberg

Generator site EPA ID: ID4890008952

Technical contact phone number: (208) 557-6425

Date of Audit report approval by NMED: 12/23/03, 7/03/04, 10/25/05

Title, version number, and date of documents used for WAP certification:

Certification Plan for INEEL Contact-Handled (CH-TRU) Transuranic Waste, MP-TRUW-8.1, Rev. 10, 1/3/06
Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), MP-TRUW-8.3, Rev. 5, 1/3/06
Quality Assurance Project Plan (QAPP), MP-TRUW-8.2, Rev. 5, 1/3/06

Did your facility generate this waste? ☐ Yes ☒ No If no, provide the name and EPA ID of the original generator:

Mound, OH6890008964

Waste Stream Information[1]

WIPP ID: IN-W179

Summary Category Group: 83000

Waste Matrix Code Group: Solidified Inorganics

Waste Stream Name: Cemented Sludge

Description from the WTWBIR: This waste, generated at the Mound Plant, consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in Portland cement.

Defense TRU Waste: (Ref. 1) ☒ Yes ☐ No Check One: ☒ CH ☐ RH

Number of SWBs: 0 Number of Drums: 4,323 (55-gallon drums) Number of Canisters: 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[2] D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005

Applicable TRUCON Content Codes: ID111/ID211

Acceptable Knowledge Information[3]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: See Reference List No. 1 (Appendix A) and No. 2

Facility mission description: See Reference List No. 1 (Section 3) and No. 3

Description of operations that generate waste: See Reference List No. 1 (Sections 3 and 5) and No. 9

Waste identification/categorization scheme: See Reference List Nos. 1 and 4

Types and quantities of waste generated: See Reference List No. 9

Correlation of waste streams generated from the same building and process, as appropriate: See Reference List Nos. 1 and 9

Waste certification procedures: See Reference List Nos. 7 and 8

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: See Reference List No. 1 (Sections 3 and 5) and No. 9

Waste stream volume and time period of generation: See Reference List No. 9

Waste generating process description for each building: See Reference List No. 1 (Sections 3 and 5) and No. 9

Process flow diagrams: See Reference List No. 1 (Figure 3-6)

Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference List No. 9

Which Defense Activity generated the waste: (check one)

☐ Weapons activities including defense inertial confinement fusion
☐ Naval Reactors development
☐ Verification and control technology
☐ Defense research and development
☐ Defense nuclear waste and material by products management
☒ Defense nuclear material production
☐ Defense nuclear waste and materials security and safeguards and security investigations

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form	AMWTP Form-1195 Rev. 3 Effective Date: 1/26/06 MP-TRUW-8.14 Page 2 of 3

Supplemental Documentation

Process design documents: None
Standard operating procedures: See Reference List No. 1
Safety Analysis Reports: See Reference List No. 1
Waste packaging logs: None
Test plans/research project reports: See Reference List No. 1
Site databases: See Reference List No. 1
Information from site personnel: See Reference List No. 1
Standard industry documents: See Reference List No. 1
Previous analytical data: See Reference List No. 1
Material safety data sheets: See Reference List No. 1
Sampling and analysis data from comparable/surrogate Waste: See Reference List No. 1
Laboratory notebooks: None

Sampling and Analysis Information

For the following, when applicable, enter procedure title(s), number(s) and date(s)

Radiography: See Reference List No. 10
Visual Examination: See Reference List No. 11

Headspace Gas Analysis

VOCs: See Reference List Nos. 12 and 21
Flammable: See Reference List Nos. 12 and 21
Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis

Total metals: See Reference List Nos. 13, 14, 15, and 20
PCBs: N/A
VOCs: See Reference List Nos. 16 and 20
Nonhalogenated VOCs: See Reference List Nos. 17 and 20
Semi-VOCs: See Reference List Nos. 18, 19, and 20
Other (specify): N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

R. Birkenbaum for ES. R. Birkenbaum Alt. SPM 4/28/06

Signature of Site Project Manager — Printed Name and Title — Date

NOTE: (1) Use back of sheet or continuation sheets, if required.
(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

Waste Stream Profile Continuation Sheet

Reference List

1. Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 4, March 2006.
2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-52-0101, Rev. 0, April 1999.
3. AMWTP TRU Waste Management Acceptable Knowledge Elements, AMWTP-RPT-TRUW-06, Rev. 6, April 2006.
4. AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6, March 2006.
5. Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, NM4890139088-TSDF, March 2006.
6. Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, DOE/WIPP 02-3122, Rev. 4, December 2005.
7. Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 10, January 2006.
8. TRU Waste Certification, MP-TRUW-8.5, Rev. 17, February 2006.
9. Acceptable Knowledge Summary for Cemented Sludge (BN836), AMWTP-RPT-TRUW-63, Rev. 0, April 2006.
10. Real-Time Radiography Operations (Drum), INST-OI-12, Rev. 25, February 2006.
11. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 15, March 2006.
12. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 21, March 2006.
13. Microwave Assisted Digestion of Homogeneous Solids, Soil and Gravel, ACMM-8909, Rev. 10, January 2006.
14. Determination of Mercury by CVAA for TRU Waste Characterization, ACMM-2810, Rev. 3, January 2005.
15. Determination of Metals by ICP-AES for TRU Waste Characterization, ACMM-2901, Rev. 3, January 2005.
16. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, ACMM-9260, Rev. 14, December 2005.
17. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, ACMM-9441, Rev. 12, March 2006.
18. Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, ACMM-9270, Rev. 8, January 2005.
19. Sample Preparation for Semi-Volatile Organic Compounds and Polychlorinated Biphenyls, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACMM-9500, Rev. 11, December 2004.
20. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 12, January 2006.
21. HGAS Sampling and Analysis Operations, INST-OI-43, Rev. 12, September 2005.

Characterization Information Summary

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN836 as required by the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP) and the Contact-Handled Transuranic Waste Acceptance Criteria (CH-WAC).[5,6] To confirm AK, AMWTP has characterized BN836 waste using real-time radiography (RTR) or visual examination (VE), headspace gas sampling and analysis, solid sampling and analysis, and radioassay.

This Characterization Information Summary (CIS) presents analytical data from six containers for total solids analysis and 19 additional containers for headspace gas analysis. The headspace gas analytical data includes results from the six containers that were solid sampled and from 19 containers that were sampled for headspace gas only. These data meet the necessary requirements for confirmatory characterization. Headspace gas data from the 25 containers are presented in Tables 1A and 1B. Solid sampling data from six containers are presented in Tables 2, 3A, 3B, 4A, and 4B. Table 5 correlates container numbers to characterization data packages. Table 6 presents the RTR/VE summary of prohibited items and AK confirmation. Table 7 correlates the container number to the headspace gas and the solid sample numbers.

Solid sampling was performed on randomly selected containers obtained from BN836–Lot 1, Cemented Sludge from the Mound Plant. BN836–Lot 1 consists of 637 drums of mixed transuranic waste.

Data Results

The data in this CIS are obtained from the required ("n") samples from solid sampling and analysis, and headspace gas analysis from 25 containers. The data consist of analyte maximum and mean concentrations, standard deviation, and the 90% upper confidence level (UCL_{90}). The data are used to assign and/or confirm U.S. Environmental Protection Agency (EPA) hazardous waste numbers (HWNs) for the BN836 waste stream by comparing the UCL_{90} to the program-required quantitation limit (PRQL).

HWNs are applied to the waste stream even if headspace gas and solid sampling analytical results for the assigned compounds are less than the program required quantitation limit (PRQL) for those analytes identified by AK and detected in solid or headspace gas sampling. Barium is the only toxicity characteristic metal analyte with a UCL_{90} result above its associated RTL value. There were no volatile organic compounds (VOCs) with UCL_{90} values above the PRQL for either the headspace gas or solid sampling results. The AK indicates that there are no semi-volatile organic compounds (SVOCs) present in the waste, and there were no solid sampling results above the PRQL for SVOCs. The EPA HWN assignment for this waste stream includes:

- Toxicity characteristic metals –D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), and D011 (silver)

Characterization Information Summary

- Listed HWNs for organics – F001 and F002 (1,1,1-trichloroethane and trichloroethylene), F002 (tetrachloroethylene), and F005 (benzene and toluene)

Solid sampling and headspace gas results confirm AK that the above analytes are present in the waste stream. The HWN D005 is required to be applied based on the detection of barium at concentrations above the RTL. The HWNs D004, D006, D007, D008, D009, D010, D011, F001, F002, and F005 are conservatively applied based on the detection of corresponding analytes at concentrations less than the associated RTL/PRQL.

AMWTP Advanced Mixed Waste Treatment Project	Reconciliation with Data Quality Objectives	AMWTP Form-1597 Rev. 0 MP-TRUW-8.11 Effective Date: 12/06/04 Page 1 of 1

I certify by signature (below) that sufficient data have been collected to determine the following program-required waste parameters:

WSPFW EN836, Rev. 0 (Lot 1)

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each container of waste contain TRU radioactive waste?	✓			
4. Have mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			Containers will be evaluated on an individual basis using headspace gas analysis and WWIS.
6. Have mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent for the summary category group?	✓			
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analyses been met for the lot?	✓			

Signature of Site Project Manager

P Ochenbaum
Printed Name

4/28/06
Date

AMWTP Advanced Mixed Waste Treatment Project	Characterization Information Summary Report	AMWTP Form-1508 Rev. 0 MP-THUW-8.14 Effective Date: 11/30/04 Page 1 of 17

WSPF Number: BN836, Rev. 0 (Lot 1)

SQAO Lyle Rymer Date: 4/28/06
SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM L Kirchenbaum Date: 4/28/06
SPM signature indicates concurrence with all information presented in this report.

AMWTP Advanced Mixed Waste Treatment Project	Characterization Information Summary Report	AMWTP Form-1598 Rev. 0 MP-TRUW-8.14 Effective Date: 11/30/04 Page 1 of 17

Characterization Information Summary

Characterization Description:

Drum selection and quantity of drums for Totals Analysis, Reduced Headspace Gas Sampling, and/or Newly Generated Soils/Gravel have been evaluated and meet the requirements established in MP-TRUW-8.25, *RCRA Statistical Sampling.* (22)

Y ☒ N ☐ NA ☐

L Bachenbaum — 4/28/06

SPM Signature — Date

For "N" or "NA" provide rationale.

Table 1A. Headspace gas summary data. BN836 Lot 1

ANALYTE	Number of Samples	# Samples above MDL [a]	Transformation Used [c]	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	Upper 90 % confidence limit (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Code
1,1-Dichloroethane [c]	25	1	Natural log	3.83	0.28	0.82	0.50	2.30	10	N/A
1,1-Dichloroethylene	25	0	None	2.45	1.34	0.30	[b]	-	10	N/A
1,1,1-Trichloroethane [c]	25	14	Natural log	4.39	1.55	1.44	1.93	2.30	10	F001, F002 [d]
1,1,2-Trichloro-1,2,2-trifluoroethane	25	0	None	2.35	1.46	0.24	[b]	-	10	N/A
1,1,2,2-Tetrachloroethane	25	0	None	2.35	1.23	0.62	[b]	-	10	N/A
1,2-Dichloroethane	25	0	None	2.35	1.19	0.32	[b]	-	10	N/A
1,2,4-Trimethylbenzene [f]	25	0	None	2.35	1.14	0.62	[b]	-	10	N/A
1,3,5-Trimethylbenzene [f]	25	0	None	2.30	1.19	0.57	[b]	-	10	N/A
Acetone	25	0	None	25.50	11.90	5.52	[b]	-	100	N/A
Benzene [e]	25	1	Natural log	2.64	0.21	0.72	0.40	2.30	10	F005 [d]
Bromoform	25	0	None	2.00	1.20	0.53	[b]	-	10	N/A
Butanol	25	0	None	27.50	17.80	5.95	[b]	-	100	N/A
Carbon disulfide [f]	25	0	None	2.50	1.45	0.29	[b]	-	10	N/A
Carbon tetrachloride	25	0	None	2.45	1.27	0.31	[b]	-	10	N/A
Chlorobenzene	25	0	None	2.10	1.22	0.52	[b]	-	10	N/A
Chloroform	25	0	None	2.30	1.14	0.43	[b]	-	10	N/A
Chloromethane [g]	25	0	None	2.60	1.31	0.31	[b]	-	10	N/A
cis-1,2-Dichloroethylene	25	0	None	2.25	1.19	0.47	[b]	-	10	N/A
Cyclohexane [f]	25	0	None	2.20	1.16	0.51	[b]	-	10	N/A
Ethyl benzene	25	0	None	2.15	1.22	0.53	[b]	-	10	N/A
Ethyl ether	25	0	None	2.30	1.47	0.30	[b]	-	10	N/A
m&p-Xylene [c]	25	1	Natural log	5.01	0.25	1.09	0.54	2.30	10	N/A [h]
Methanol [c]	25	1	Natural log	3.60	3.19	0.33	3.27	4.61	100	N/A [h]
Methyl ethyl ketone	25	0	None	24.50	13.10	5.85	[b]	-	100	N/A
Methyl isobutyl ketone	25	0	None	19.50	14.58	4.70	[b]	-	100	N/A
Methylene chloride	25	0	None	2.30	1.23	0.50	[b]	-	10	N/A
o-Xylene	25	0	None	2.20	1.31	0.53	[b]	-	10	N/A
Tetrachloroethylene [f]	25	1	Natural log	1.36	0.11	0.46	0.23	2.30	10	F002 [d]
Toluene [e]	25	2	Natural log	2.83	0.32	0.76	0.52	2.30	10	F005 [d]
trans-1,2-Dichloroethylene [c]	25	1	Natural log	2.48	0.24	0.67	0.42	2.30	10	N/A
Trichloroethylene [c]	25	7	Natural log	2.83	0.57	0.83	0.78	2.30	10	F001, F002 [d]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the MDL after dividing by 2. All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, standard deviation, UCL_{90}, and PRQL are presented as transformed values

d. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream because the analyte was detected in the headspace gas even though the UCL_{95} result for the constituent is less than the PRQL.

e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.[20]

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), 1,3,5-trimethylbenzene (CAS No. 108-67-8) and carbon disulfide (CAS No. 75-15-0) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP [reference Section 2.2 of the AK Summary for Cemented Sludge (BNB36)].[9]

g. Chloroethane (CAS No. 74-87-3) is not a target analyte for this waste stream but will be reported because it has been added as a target compound for other waste streams at AMWTP.

h. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN P003 was not applied.

Did the Data verify the Acceptable Knowledge? Yes__X__ No_____

The detection of these analytes in the headspace gas confirms their presence in the waste (which were identified based on AK) and the EPA HWNs are being applied conservatively even though the UCL_{95} result for the constituents are less than the associated PRQL values.

If no, describe the basis for assigning the EPA Hazardous Waste Codes. N/A

Statistics performed by: George Byrne Date: 4/27/06
Signature

Table 1B. Headspace gas summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
2-Propanol, 2-methyl[a]	98.0	8	25	32.0%	25	32.0%

a. Although 2-propanol, 2-methyl (CAS No. 75-65-0) was detected in greater than 25% of the samples for this waste stream, it is not a 40 CFR 261, Appendix VIII listed analyte and will, therefore, not be added as a target analyte for this waste stream.

Did the Data verify the Acceptable Knowledge? Yes: X No: _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes. N/A

Verification of % Detected Calculation: George Bye Date: 4/27/06
Signature

Table 2. Metals summary data. BN836 Lot 1

ANALYTE	# Samples	# Samples above MDL [a]	Transformation Used [d]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed RTL	RTL [e] (mg/kg)	RPA Code
Arsenic [b]	6	6	Natural log	1.72	1.60	0.076	1.65	4.61	100	D004 [i]
Barium [b]	6	6	Natural log	8.67	8.04	0.330	8.23	7.60	2000	D005 [h]
Cadmium [b]	6	6	Natural log	2.08	0.517	1.11	1.19	3.00	20	D006 [i]
Chromium [b]	6	6	Natural log	4.11	3.82	0.195	3.94	4.61	100	D007 [i]
Lead [b]	6	6	Natural log	4.79	4.11	0.374	4.34	4.61	100	D008 [i]
Mercury [b]	6	6	Natural log	1.41	0.885	0.438	1.15	1.39	4	D009 [i]
Selenium	6	6	None	1.90	1.52	0.366	1.74	--	20	D010 [i]
Silver [b]	6	6	Natural log	1.19	0.704	0.327	0.902	4.61	100	D011 [i]
Antimony [b]	6	4	Natural log	1.41	0.097	1.03	0.718	4.61	100	N/A [f]
Beryllium [b]	6	6	Natural log	0.182	-0.400	0.303	-0.217	4.61	100	N/A [f,g]
Nickel [b]	6	6	Natural log	3.78	3.30	0.330	3.50	4.61	100	N/A [f]
Thallium [b]	6	6	Natural log	1.41	0.911	0.351	1.12	4.61	100	N/A [f]
Vanadium	6	6	None	44.0	24.8	16.1	34.5	--	100	N/A [f]
Zinc [b]	6	6	Natural log	5.39	5.08	0.196	5.20	4.61	100	N/A [f]

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. The maximum, mean, standard deviation (SD), UCL_{95}, and RTL are presented as transformed values.
c. To determine whether a HWN should be added, the UCL_{95} is compared against the appropriate limit. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the RTL. RTLs correspond to the analyte PRQL for analytes that are not characteristic hazardous waste constituents.
d. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.
f. There are no associated toxicity characteristic HWNs with these analytes.
g. F015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.
h. This analyte is identified based on AK. HWN D005 is applied to the waste stream because the UCL_{95} result for the constituent is above the RTL.
i. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{95} result for the constituent is not above the RTL.

Did the Data verify the Acceptable Knowledge? Yes X No

The detection of these analytes confirms their presence in the waste (which were identified based on AK) and the EPA HWNs are being applied conservatively for those constituents with UCL_{95} less than the RTL.

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

Statistics performed by: Tamara E. Shelton Date: 4/28/06

Signature

Table 3A. Total VOC summary data. BN836 Lot 1

ANALYTE	# Samples	# Samples above MDL [a]	Transformation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed PRQL	PRQL [c] (mg/kg)	EPA Code
1,1-Dichloroethylene	6	0	None	0.185	0.178	0.005	[b]	--	10	N/A
Trans-1,2-dichloroethylene	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
1,1,1-Trichloroethane	6	0	None	0.090	0.089	0.002	[b]	--	10	F001, F002 [d]
1,1,2,2-Tetrachloroethane	6	0	None	0.185	0.178	0.005	[b]	--	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
1,1,2-Trichloroethane	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
1,2-Dichloroethane	6	0	None	0.185	0.178	0.005	[b]	--	10	N/A
Acetone	6	0	None	0.600	0.550	0.045	[b]	--	100	N/A
Benzene	6	0	None	0.185	0.178	0.005	[b]	--	10	F005 [d]
Bromoform	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Butanol	6	0	None	1.20	1.09	0.066	[b]	--	100	N/A
Carbon disulfide	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Carbon tetrachloride	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Chlorobenzene	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Chloroform	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Ethyl benzene	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Ethyl ether	6	0	None	0.600	0.550	0.045	[b]	--	100	N/A
Isobutanol	6	0	None	1.20	1.00	0.253	[b]	--	100	N/A
Methanol	6	4	None	6.30	2.78	2.21	4.11	--	100	N/A [f]
Methyl ethyl ketone	6	0	None	0.600	0.550	0.045	[b]	--	100	N/A
Methylene chloride	6	0	None	0.185	0.178	0.005	[b]	--	10	N/A
Pyridine	6	0	None	0.600	0.550	0.045	[b]	--	100	N/A
o-Xylene	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
m&p-Xylene	6	0	None	0.185	0.178	0.005	[b]	--	10	N/A
Tetrachloroethylene	6	0	None	0.185	0.178	0.005	[b]	--	10	F002 [d]
Toluene	6	0	None	0.090	0.089	0.002	[b]	--	10	F005 [d]
Trichloroethylene	6	0	None	0.090	0.089	0.002	[b]	--	10	F001, F002 [d]
Trichlorofluoromethane	6	0	None	0.090	0.089	0.002	[b]	--	10	N/A
Vinyl chloride	6	0	None	0.185	0.178	0.005	[b]	--	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. All measurements are below detection; therefore, the UCL_{95} is not calculated.
c. To determine whether a HWN should be added, the UCL_{95} is compared against the appropriate limit. For toxicity characteristic (TC) wastes, the TC limit expressed as the RTL is used if compounds do not have a PRQL in the permit. For listed wastes, the PRQL is used.
d. These analytes were identified by AK and detected in the headspace gas. The HWNs are conservatively applied to the waste stream even though the associated analytes were not detected in solid samples.
e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.
f. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN F003 was not applied.

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Statistics performed by: Tamara D Bles Date: 4/28/06
Signature

Table 3B. Total VOC summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the Data verify the Acceptable Knowledge? Yes X No_____

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Verification of % Detected Calculation: N/A Date: _____
Signature

Table 4A. Total SVOC summary data. BN836 Lot 1

Analyte	# Samples	# Samples Above MDL [a]	Trans-formation Used [c]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA code
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	[b]	–	2.6	N/A
bis(2-Ethylhexyl) phthalate [d, e]	6	2	Natural log	-0.916	-1.93	0.606	-1.56	3.69	40	N/A
Fluoranthene [f]	6	1	None	0.460	0.160	0.147	0.249	–	40	N/A
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	[b]	–	2.6	N/A
Hexachloroethane	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.200	0.200	0.000	[b]	–	40	N/A
Nitrobenzene	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Pentachlorophenol	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Phenol [g]	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurement are below detection; therefore, the UCL_{95} is not calculated.

c. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.

d. The maximum, mean, standard deviation (SD), UCL_{95}, and RTL are presented as transformed values

e. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate was detected in >25% of the samples and even though it is not a TIC, it will be added as a target analyte for the BN836 waste stream. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Statistics performed by: Tamara Stokes Date: 4/28/06
Signature

Table 4B. Total SVOC summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Verification of % Detected Calculation: N/A (Signature) Date: _____

Table 5. Correlation of container identification numbers to data package. BN836 Lot 1

Container Number	Headspace Gas Sampling Data Package	RTR Data Package	RA Data Package	Visual Examination Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10001015	HS206_00047	RTR06-00119	ASY06-00521	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10001175	HS505_00108	RTR05-06363	ASY04-00490	N/A	N/A	N/A
10002218	HS106_00049	RTR04-00237	ASY04-00620	N/A	N/A	N/A
10008841	HS106_00033	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10008842	HS406_00051	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10008843	HS406_00051	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10008846	HS206_00032	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10008847	HS406_00051	RTR06-00072	ASY06-00205	N/A	N/A	N/A
10008848	HS206_00036	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10016469	HS205_00205	RTR05-06365	ASY05-11364	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10019189	HS406_00098	RTR06-00109	ASY06-00487	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10019228	HS406_00082	RTR06-00110	ASY06-00488	N/A	N/A	N/A
10039602	HS206_00029	RTR05-06399	ASY06-00022	N/A	N/A	N/A
10040145	HS106_00044	RTR05-06395	ASY05-11587	N/A	N/A	N/A
10040454	HS206_00036	RTR06-00079	ASY06-00261	N/A	N/A	N/A
10040884	HS106_00044	RTR05-06396	ASY05-11587	N/A	N/A	N/A
10042479	HS206_00032	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10052726	*HS406_00098*	*RTR05-06375*	*ASY05-11495*	*N/A*	*SSC06-00002*	ALD06012S ALD06011V ALD06005N ALD06020M
10055339	HS106_00032	RTR05-06388	ASY06-00194	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10056273	HS206_00018	RTR05-06376	ASY05-11505	N/A	N/A	N/A
10056699	HS106_00031	RTR05-06390	ASY05-11564	N/A	N/A	N/A
10058305	*HS106_00031*	*RTR06-00061*	*ASY06-00130*	*N/A*	*SSC06-00002*	ALD06012S ALD06011V ALD06005N ALD06020M
10059091	HS406_00051	RTR06-00041	ASY06-00124	N/A	N/A	N/A
10061136	HS206_00018	RTR05-06381	ASY05-11526	N/A	N/A	N/A
10062890	HS206_00017	RTR05-06380	ASY05-11535	N/A	N/A	N/A

NOTE: For headspace gas sampling data packages, the HSO prefix represents use of the DVS system and the HS prefix represents use of the HOAS system.

Table 6. RTR/VE summary of prohibited items and AK confirmation. BN836 Lot 1 [a]

Container Number	RTR Prohibited Items	Visual Examination Prohibited Items [c]	AK Confirmation [b]
10001015	None	N/A	Complete
10001175	None	N/A	Complete
10002218	None	N/A	Complete
10008841	None	N/A	Complete
10008842	None	N/A	Complete
10008843	None	N/A	Complete
10008846	None	N/A	Complete
10008847	None	N/A	Complete
10008848	None	N/A	Complete
10016469	None	N/A	Complete
10019189	None	N/A	Complete
10019228	None	N/A	Complete
10039602	None	N/A	Complete
10040145	None	N/A	Complete
10040454	None	N/A	Complete
10040884	None	N/A	Complete
10042479	None	N/A	Complete
10052726	None	N/A	Complete
10055339	None	N/A	Complete
10056273	None	N/A	Complete
10056699	None	N/A	Complete
10058505	None	N/A	Complete
10059091	None	N/A	Complete
10061136	None	N/A	Complete
10062890	None	N/A	Complete

Notes:

a. See Table 5 for the associated RTR and visual examination data packages. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPJP), MP-TRUW-8.2. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

b. Acceptable Knowledge confirmations for RTR and visual examinations are conducted by an Acceptable Knowledge Expert on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the batches listed in Table 5.

c. None of these drums have a VE in lieu of RTR examination. N/A indicates that containers have not been selected for visual examination by AMWTP.

Table 7. Sample identification number cross-correlation table. BN836 Lot 1

Container Number	Headspace Gas Sample Number	Solid Sample Number(s)
10001015	HS206_00047B-11	10089448, 10089450, 10089453
10001175	HS505_00108B-11	N/A
10002218	HS106_00040B-05	N/A
10008841	HS106_00033B-10	N/A
10008842	HS406_00051B-11	N/A
10008843	HS406_00051B-14	N/A
10008846	HS206_00032B-21	N/A
10008847	HS406_00051B-04	N/A
10008848	HS206_00036B-16	N/A
10016469	HS205_00205B-13	10089407, 10089408, 10089411
10019189	HS406_00098B-01	10089848, 10089896, 10089949
10019228	HS406_00082B-01	N/A
10039602	HS206_00029B-18	N/A
10040145	HS106_00044B-10	N/A
10040454	HS206_00036B-08	N/A
10040884	HS106_00044B-07	N/A
10042479	HS206_00032B-13	N/A
10052726	HS406_00098B-03	10089674, 10089675, 10089678
10055339	HS106_00032B-01	10089384, 10089385, 10089388
10056273	HS206_00018B-14	N/A
10056699	HS106_00031B-01	N/A
10058505	HS106_00031B-09	10089635, 10089636, 10089639
10059091	HS406_00051B-10	N/A
10061136	HS206_00018B-20	N/A
10062890	HS206_00017B-19	N/A

Attachment A
Evaluation of required number of samples. BN836 Lot 1

Analyte	# Samples	# Samples above MDL [a]	Transformation Used	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, d, e]	Comments
Arsenic [f]	6	6	Natural log	1.72	1.60	0.076	1.65	4.61	100	5	HWN D004 applied per AK [h]
Barium [f]	6	6	Natural log	8.67	8.04	0.330	8.23	7.60	2000	5	HWN D005 required to be applied [j]
Cadmium [f]	6	6	Natural log	2.08	0.517	1.11	1.19	3.00	20	5	HWN D006 applied per AK [h]
Chromium [f]	6	6	Natural log	4.11	3.82	0.195	3.94	4.61	100	5	HWN D007 applied per AK [h]
Lead [f]	6	6	Natural log	4.79	4.11	0.374	4.34	4.61	100	5	HWN D008 applied per AK [h]
Mercury [f]	6	6	Natural log	1.41	0.885	0.438	1.15	1.39	4	5	HWN D009 applied per AK [h]
Selenium	6	6	None	1.90	1.52	0.366	1.74	–	20	5	HWND010 applied per AK [h]
Silver [f]	6	6	Natural log	1.19	0.704	0.327	0.902	4.61	100	5	HWN D011 applied per AK [h]
Antimony [f]	6	4	Natural log	1.41	0.097	1.03	0.718	4.61	100	5	No associated HWN [d]
Beryllium [f]	6	6	Natural log	0.182	-0.400	0.303	-0.217	4.61	100	5	HWN not required to be applied [h, i]
Nickel [f]	6	6	Natural log	3.78	3.30	0.330	3.50	4.61	100	5	No associated HWN [d]
Thallium [f]	6	6	Natural log	1.41	0.911	0.351	1.12	4.61	100	5	No associated HWN [d]
Vanadium	6	6	None	44.0	24.8	16.1	34.5	–	100	5	No associated HWN [d]
Zinc [f]	6	6	Natural log	5.39	5.08	0.196	5.20	4.61	100	5	No associated HWN [d]
1,1-Dichloroethene (1,1-Dichloroethylene)	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
1,1,1-Trichloroethane	6	0	None	0.090	0.089	0.002	–	–	10	–	HWNs F001/F002 applied per AK [i]
1,1,2,2-Tetrachloroethane	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
1,1,2-Trichloroethane	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
1,2-Dichloroethane	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL

Analyte	# Samples	# Samples above MDL [a]	Transformation Used	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, e, g]	Comments
Acetone	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Benzene	6	0	None	0.185	0.178	0.005	–	–	10	–	HWN F005 applied per AK [f]
Bromoform	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Butanol	6	0	None	1.20	1.09	0.066	–	–	100	–	No samples above MDL
Carbon disulfide	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Carbon tetrachloride	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Chlorobenzene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Chloroform	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Ethyl benzene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Ethyl ether	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Isobutanol	6	0	None	1.20	1.00	0.253	–	–	100	–	No samples above MDL
Methanol	6	4	None	6.30	2.78	2.21	4.11	–	100	5	HWN not required to be applied [i]
Methyl ethyl ketone	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Methylene chloride	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
Pyridine	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
o-Xylene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
m&p-Xylene	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	6	0	None	0.185	0.178	0.005	–	–	10	–	HWN F005 applied per AK [f]
Toluene	6	0	None	0.090	0.089	0.002	–	–	10	–	HWN F005 applied per AK [f]
Trichloroethene (Trichloroethylene)	6	0	None	0.090	0.089	0.002	–	–	10	–	HWNs F001/F002 applied per AK [f]
Trichlorofluoromethane	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Vinyl chloride	6	0	None	0.185	0.178	0.005	–	–	4	–	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL

Analyte	# Samples	# Samples above MDL [a]	Transformation Used	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, d, e]	Comments
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	–	–	2.6	–	No samples above MDL
bis(2-Ethylhexyl) phthalate [f]	6	2	Natural log	-0.916	-1.93	0.606	-1.56	3.69	40	5	HWN not required to be applied [i]
Fluoranthene	6	1	None	0.460	0.160	0.147	0.249	–	40	5	HWN not required to be applied [i]
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	–	–	2.6	–	No samples above MDL
Hexachloroethane	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.200	0.200	0.000	–	–	40	–	No samples above MDL
Nitrobenzene	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
Pentachlorophenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
Phenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). If all measurements are below detection, the UCL_{95} is not calculated.

b. For analytes that have both an RTL and a PRQL, the PRQL is used to calculate the required number of samples.

c. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not applied (i.e., it only applies to those cases where a site intends to establish that the constituent is less than the regulatory threshold and the associated EPA HWN does not apply).

d. If there is no HWN associated with an analyte, then that analyte is not used to define the number of required samples.

e. If there are no samples above the MDL for a given analyte, then that analyte is not used to define the number of required samples.

f. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL / RTL for that analyte.

g. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

h. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.

i. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{95} is less than the RTL or PRQL.

j. This analyte is identified as being present in this waste stream based on AK. HWN D005 is applied to the waste stream because the UCL_{95} result for the constituent is above the RTL.

k. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{95} result for the constituent is less than the RTL.

l. These analytes were identified by AK and detected in the headspace gas. The HWNs are conservatively applied to the waste stream even though the associated analytes were not detected in solid samples.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-63, Rev. 6

Acceptable Knowledge Summary for Cemented Sludge (BN836)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11342.)
Susan Peterman
TRU Programs Manager

06/27/12
Date

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ACRONYMS AND ABBREVIATIONS

AK	Acceptable Knowledge
AMWTP	Advanced Mixed Waste Treatment Project
BN	BNFL Inc.
CAO	Carlsbad Area Office
CCP	Central Characterization Project
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CFR	Code of Federal Regulations
D&D	decontamination and decommissioning
DOD	U.S. Department of Defense
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
HWN	hazardous waste number
IDC	item description code
INL	Idaho National Laboratory
MD	Mound
MDL	method detection limit
nCi/g	nanocuries per gram
PCB	polychlorinated biphenyl
ppm	parts per million
PPO	pressed plutonium oxide
PRQL	program-required quantitation limit
RCRA	Resource Conservation and Recovery Act
R&D	research and development
RTG	radioisotopic thermoelectric generator
RTL	regulatory threshold limit
RTR	real-time radiography
TRU	transuranic
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
UCL90	90% upper confidence limit
VE	visual examination
VOCs	Volatile Organic Compounds
WAC	Waste Acceptance Criteria

WD	Waste Disposal [building at Mound]
WDA	WD Annex
WIPP	Waste Isolation Pilot Plant
WIPP-WAP	Waste Isolation Pilot Plant Waste Analysis Plan
WMC	waste matrix code
WMP	waste material parameter

Acceptable Knowledge Summary for Cemented Sludge (BN836)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN836 [1]

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Cemented Sludge [1]

1.2.2 Point of Generation

Mound (MD) –Waste Disposal (WD) Building. [2, 3]

1.2.3 Waste Stream Volume

4,323 55-gallon drums (908 m^3) – current volume [4]
0 55-gallon drums (0 m^3) – projected volume

The above is an estimate of the number of candidate containers for waste stream BN836. The estimated percentages (by number of containers) of transuranic (TRU) activity are 50% greater than 100 nCi/g and 50% less than 100 nCi/g. [4]

Advanced Mixed Waste Treatment Project (AMWTP) will employ payload management practices in accordance with the Waste Acceptance Criteria (WAC) for waste stream BN836. [5]

1.2.4 Generation Dates

AMWTP stores containers of Mound cemented sludge waste generated from 1974 to 1985. Wastes stored at AMWTP with generation dates (i.e., pack date) later than 1985 are the result of repackaging (e.g., waste characterization activities). [2, 3, 6]

1.2.5 TRUCON Codes

ID111/ID211 [7]

1.2.6 Transuranic Waste Baseline Inventory Report (TWBIR) Information

Waste Stream ID: IN-BN836 (previously identified as IN-W179.158) [8]

1.2.7 Summary Category Group

S3000- Homogeneous Solids [9]

1.2.8 Waste Matrix Code Group

Solidified Inorganics [1, 10]

1.2.9 Waste Matrix Code (WMC)

S3121 – Wastewater Treatment Sludges [1, 9]

Mound cemented sludge waste consists of at least 50 volume percent sludge from a wastewater treatment process that was solidified with cement.

1.2.10 Description from the TWBIR

This waste, generated at the Mound Plant, consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in Portland cement. [8]

1.2.11 AMWTP Defense-Related Determination

Mound wastes were generated during defense-related operations conducted for a variety of customers, including Lawrence Livermore National Laboratory, Hanford Site, Oak Ridge National Laboratory, and the space program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by the Mound Plant was the Space Nuclear Auxiliary Power system which was sponsored by the DOD. Operations at the facility included plutonium processing and recovery, development of reactor fuels, performance of reactor fuel waste studies, and production of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the cemented sludge is the result of commingling of wastes from both defense and domestic related activities. Defense wastes are identified as those wastes generated during work involving only defense activities or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The cemented sludge waste stream, therefore, meets the definition of defense waste from defense nuclear materials production and defense research and development (R&D). [2, 11, 12, 13, 20, 37, 38, 39, 40]

1.3 Waste Stream Description

1.3.1 Description

This waste stream consists of drums containing Mound cemented sludge (Item Description Code [IDC] MD-836). The sludge waste was generated from the treatment of alpha-contaminated wastewaters at the Waste Disposal (WD) Building. The wastewater originated outside process gloveboxes from sources such as floor drains, laboratory sinks, and sumps, as well as the old alpha waste line. The wastewaters were generated from decontamination, laundry, research and analytical operations from several facilities at Mound including the Laundry

(H Building), Plutonium Processing (PP building) /Special Metallurgy (SM building) Complex, Semi-Works (SW building)/Research (R building) Complex, Technical (T building), WD, and the annex on the WD Building (WDA), and Buildings 23, 50, and 51. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing and personnel and contains detergents, cleansers, soaps, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. The sludge was solidified with Portland cement. Florco, a non-hazardous absorbent, may have also been added to this waste stream. [2, 3, 11, 14, 15, 16, 17, 18, 19, 20, 21]

This waste was generated from similar activities and is similar in material, physical form, and hazardous constituents and is a single waste stream. The waste is primarily an inorganic matrix. Individual drums may also contain small amounts of debris including plastic, rubber and paper items. [2, 3, 21, 22] Each container in this waste stream contains at least 50% by volume sludge waste.

1.4 Process Description

1.4.1 Areas of Operation

Mound cemented sludge waste was generated by treating alpha-contaminated wastewater generated from the following operations conducted in H, PP/SM, SW/R, T, WD and WDA Buildings and Buildings 23, 50 and 51: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Laboratory and Research and Development Operations
- Waste Treatment
- Decontamination and Decommissioning (D&D).

1.4.2 Process Flow Diagram

Process flow diagrams for Mound Sludge generating process are provided in Figures 3-6 and 3-8 of RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste. [2] Process flow diagrams of the sludge generating and solidifying processes are also provided in the Mound radioactive waste management site plans and status reports. [14, 15, 16]

1.4.3 Wastewater Generation

The TRU Mound cemented sludge waste stored at the Idaho National Laboratory (INL) was generated from the treatment of alpha-contaminated wastewater collected from various facilities at Mound that housed defense operations related to the design and development of heat sources using ^{238}Pu for spacecraft, generators, and satellites. These operations and facilities included plutonium processing operations, plutonium and other isotope recovery, and other activities supporting these operations including laboratory and R&D operations, maintenance operations, and waste treatment operations. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing, and personnel and contains detergents,

cleansers, soap, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. [2, 3, 11, 18, 19, 20]

The drain systems from all radioactive areas terminated in the WD Building. [53] Alpha-contaminated wastewater was collected from H, PP/SM, SW/R, WD, and WDA Buildings. Alpha-contaminated wastewater was also received from T Building prior to 1976, from the Building 23 sump if it became contaminated, from Building 50 after 1977, and from Building 51 between 1980 and 1983. Floor drains in these buildings, as well as laboratory sink drains, shower water, and sumps contributed to this waste. During the period of time that the waste to be dispositioned by the AMWTP was generated, the primary inputs to the WD included the following: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Wastewater from laundry drains in H Building
- Wastewater from SM/PP complex transferred by pipeline (until 1976)
- Wastewater from SM/PP complex transported by tanker truck (after 1976)
- Wastewater from drains, sumps, showers, and laboratory sinks in SW/R complex
- Wastewater from drains, sumps, and laboratory sinks in WD Building and WDA.

The alpha-contaminated wastewater also includes liquids collected from the old, alpha waste line which was connected to the SW/R complex and the laundry in the H Building. Although these connections were believed to be plugged, a small amount of water from this waste line was received at the WD, mainly after rain. [3, 11]

Demolition of the SM/PP and R Building plutonium processing facilities began in the 1970s; however, the cemented sludge included in this waste stream was generated from 1974 to 1985. These activities included D&D of gloveboxes, conveyor housing, piping, process equipment, and structures. [3, 11, 20, 22] Gloveboxes, process equipment in gloveboxes, and hoods were decontaminated using water, detergent, and hypochlorite. Until 1980, D&D of some of the process equipment used acid solution rinses to recover plutonium. [11] A detergent and paint remover in a high pressure washer was also used to decontaminate building interiors and equipment. [12, 43]

1.4.3.1 SM/PP Complex

Plutonium was processed at the Mound site in the SM Building and PP Building (Building 38), otherwise known as the SM/PP Complex. The primary processes were pressed plutonium oxide (PPO) sphere production and plutonium-molybdenum cermet (PMC) production. The ^{238}Pu was used as the heat source in radioisotopic thermoelectric generators (RTGs), and the RTG units themselves were manufactured at Mound. The alpha-contaminated wastewater that was transferred from the SM/PP complex to the WD included wastewaters from floor drains, shower water, sinks, and a laboratory located in the PP Building. Small quantities of chemicals used in the plutonium production and recovery operations became constituents of the wastewater and include cooling water, trace amounts of alcohols (methanol, ethanol, isopropanol), detergents, shower water, janitorial wastes (wax, wax stripper, and bowl cleaner),

paint, and trace amounts of acetone and trichloroethane. Wastewater from these sources drained into two 500-gallon sumps. The wastewater was transferred to WD via a pipeline until 1976, when the pipeline was sealed and wastewater was pumped from the sumps to a storage tank outside the building. The wastewater was then pumped from the tank to a tanker truck and transported to WD Building for treatment. [3, 11, 18, 19, 20, 44, 48, 49, 50, 51, 62, 63, 64, 65, 70]

A variety of analytical procedures were performed in PP Building laboratory, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. With the exception of liquid scintillation vials, all spent chemicals used in the laboratory were assumed to be radioactively contaminated and were poured down the sink drains into the wastewater system. Scintillation vials and spent cocktail were bagged and sent to Building 23 for dispositioning. Chemicals used in the laboratory included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichloroethane and methanol also were used in the SM/PP complex as a degreaser for metal parts. [3, 11, 19, 20, 22, 43, 45, 49, 50, 51, 52]

1.4.3.2 SW/R Complex

SW, R, and related facilities are considered as the SW/R complex because they are physically joined. Historically, R Building housed tritium recovery, plutonium development work, and analytical support. The SW Building housed tritium recovery and purification; tritium component development, component evaluation, and materials analysis; and research on plutonium actinium, radium, uranium, thorium, and protactinium. During decommissioning, several gloveboxes in the R-140 laboratory area were characterized as TRU waste. Encapsulation was conducted in the R Building and involved welding a machined metal cover over a sphere of PPO spheres. Encapsulation materials included iridium, graphite, tantalum, titanium, hastelloy (an alloy of cobalt, molybdenum, chromium, tungsten, and iron), inconel, platinum-rhodium, and yttrium. Encapsulation operations in the R Building at Mound were conducted until 1979. In addition to encapsulation, several processes in the R Building supported SM/PP production operations, including encapsulation research, shaping and pressing heat sources, and other research. [3, 11, 20]

The SW/R Building complex also included a small laboratory section that handled alpha-emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for R&D, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in WD Building. Chemicals used in the laboratory included carbon tetrachloride, dichloromethane, organophosphate, nitric acid, boric acid, and sulfuric acid. Yearly estimates of waste materials sent to the WD Building from the R Building laboratories included hydrogen peroxide; ammonium hydroxide; and hydrochloric, hydrofluoric, nitric, sulfuric, and lactic acids (approximately 7 pints total); methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene (approximately 5 pints total), and sodium sulfite solution (approximately 1 pint); and 86 lb of various chemicals, including potassium and copper sulfates and carbonates and sodium hydroxide (lime). [3, 11, 12, 18, 19, 20, 29, 44, 45, 46, 47, 48, 52, 63, 64, 65]

1.4.3.3 H Building

The H Building housed the laundry facilities for both uncontaminated (cold) and contaminated (hot) clothing for Mound. All of the water generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank on the "hot side" of the building. The wastewater was pumped to the WD Building alpha wastewater influent tanks. Products used in the H Building included liquid soap that contains ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contains ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. [3, 11, 16]

1.4.3.4 WD and WDA Buildings

WD Building was the central facility for the treatment of radioactive liquid wastes at Mound, and historically included alpha and beta wastewater treatment systems. An addition to WD Building (WDA) was constructed, including the Waste Treatment System (WTS) pipeline, which carried acidic and caustic wastewater from SM and PP to WDA, and began accepting alpha-contaminated wastewater in August 1967. The high-risk portion of the pipeline was not operational until April 1968 and was abandoned in 1974. The WDA alpha-contaminated wastewater treatment was moved to WD, and the WDA alpha influent tanks were converted to use in the beta wastewater treatment system which began treating tritiated wastewater in 1973. Cemented sludge included in this waste stream was generated from 1974 to 1985. [2, 3, 6, 11, 12]

All floor and sink drains in the WD and WDA Buildings were connected to sumps located in the basement of the buildings. Wastewater from the sumps was transferred either by pipeline or by pumping to storage tanks for transfer to the WD alpha influent tanks. There was a small laboratory in WD Building where alpha and beta waste streams were analyzed. This laboratory was not used on a routine basis, but the sink was connected to the WD sumps. Sludge moisture and pH analyses and scintillation counts of influent and effluent wastes were performed. Hazardous compounds used in the WD laboratory included Instagel, which has a xylene base. Spent liquid scintillation cocktail and used scintillation vials, were bagged and dispositioned as mixed waste and sent to Building 23 for storage. The liquid scintillation waste was not sent to INL. [3, 11]

1.4.3.5 Other Buildings

The T Building housed a multitude of research, development, and production programs. The two major radionuclide programs were the polonium and tritium programs. From 1949 to 1973, ^{210}Po programs included a processing and separation program, a fuels R&D program, and a production program with polonium. Decontamination work was done from 1971 through 1973 on the ^{210}Po processing areas. A variety of other activities were performed in the T Building such as nondestructive testing, environmental testing, gamma and mass spectroscopy, calorimetry, neutron activation analysis, and safeguards R&D. Tritium contaminated waste was drummed and sent to the beta contaminated wastewater system. [11, 27]

Building 23 is adjacent to the WD. Drummed radioactive and mixed wastes were stored in Building 23 prior to shipment of the wastes to off-plant disposal facilities. Several floor drains connected to a sump were used to collect any spills or leaks from the stored drums. Liquid wastes in the sump were sampled prior to dispositioning. Nonradioactive or clean material was released to the sanitary sewer system. Contaminated liquid wastes were transported in drums to the WD alpha wastewater influent tanks. (3, 11)

Building 50 housed plutonium operations, including production of heat sources using ^{238}Pu. Building 51 housed an incinerator that was used to burn non-radioactive waste prior to 1974. (11)

1.4.4 Wastewater Treatment Process

The alpha wastewater treatment system in the WD consisted of four influent tanks, two clariflocculators, two sand filters, two bone char columns (after 1977), four effluent storage tanks, two sludge tanks (pits) , and a sludge solidification/drumming unit. All liquid wastes were collected in the influent tanks and sampled for radioactivity and then prepared for treatment. (11, 14, 15, 16)

Chemicals such as activated carbon, calcium chloride, and ferric sulfate; barium chloride aluminum sulfate, and sulfuric acid (before 1976); and sodium hydroxide (after 1975) were added in varying but pre-determined amounts to provide the desired adsorption, phosphate precipitation, flocculation, and scavenging. After 1974, the flocculating agents Nalco C-627 (before 1982) and Nalco N-7173 (after 1981) were also used to improve the quality of the effluent and to reduce the volume of sludge generated. A major portion of the radioisotopes present was retained by the flocculated solids. Each of the four influent tanks was agitated by two mixers to prevent settling of the solids. (11, 14, 15, 16, 19, 20, 23, 53)

The mixture was then pumped into two clariflocculators where the precipitate (sludge) and liquid were separated after the flocculated solids were allowed to settle. Aluminum sulfate (prior to 1976) or sodium hydroxide (after 1976) was added to control the pH between 11.0 and 11.5 and to maximize the precipitation and settling. The supernatant liquid was removed by siphoning the liquid above the settled sludge. Prior to 1977 the supernatant liquid was acidified (using sulfuric acid) and treated with activated carbon and sodium hypochlorite (after 1975 for bacteria control), and then filtered through sand beds prior to being pumped into four effluent tanks. After 1977, the supernatant liquid was treated with activated carbon, filtered through sand beds, neutralized with sulfuric acid to 7.0 to 8.0 pH, and/or passed through a bone char filter (and 1 micron filter after 1979) prior to being pumped into the effluent tanks. If the effluent met the applicable requirements governing discharge of radioactive materials to the environment, it was released to the Great Miami River. If the effluent did not meet the requirements, it was recycled through the process. (11, 14, 15, 16, 19, 23, 53)

The dewatered sludge (approximately 15 to 30 % solids) was then pumped from the clariflocculators into two sludge holding tanks. (20, 24, 25, 26, 44) The principal non-radioactive constituents of the sludge are carbon and ferric hydroxide with minor amounts of calcium

carbonate, calcium phosphate, and calcium oxalate. [26] Prior to 1977, the sludge was treated with caustic soda (sodium hydroxide) to reduce bacterial action. The sludge was sampled on a batch basis to determine activity level prior to solidifying in 55-gallon drums containing 90-mil rigid polyethylene liners. In some cases a drum bag liner may have been used. [11, 14, 15, 16, 21] Two to 2-1/2 bags (about 190 to 240 pounds) of Portland cement were slowly added to approximately 40 gallons of sludge in a waste drum while working the mixer up and down through the sludge-cement mixture and then mixing for about 7 to 10 minutes. After the mixer blades were removed from the drum, unmixed cement was typically added to the top of the sludge-cement mixture. The sludge-cement mixture was allowed to cure overnight before the rigid drum liner lid or drum lid was installed. The drums of cemented sludge typically weigh between 575 and 650 pounds. [20, 22, 24, 25, 26] Based on real-time radiography (RTR) examinations, a bag liner was used in some drums of cemented sludge waste. [21]

1.4.5 Material Inputs

The principal non-radioactive constituents of the sludge (prior to mixing with cement) are carbon and ferric hydroxide with minor amounts of calcium carbonate, calcium phosphate, and calcium oxalate. [26] The chemicals presented in Table 1-1 were used in the Mound plutonium production and recovery, laboratory, R&D, and D&D activities and may have contaminated the alpha-contaminated wastewaters. The chemicals presented in Table 1-2 were used to treat the wastewaters, as well as identified as being in the wastewater (typically in trace amounts) or added to the sludge without treatment (sodium carbonate and sodium chloride). [19, 44] The alpha-contaminated wastewaters were treated in the WD Building, resulting in the cemented sludge waste.

Table 1-1. Chemicals used in Production, Recovery, Laboratory, R&D, and D&D Activities.

Chemical Types	Chemical Compounds
Halogenated solvents used for cleaning/degreasing	Benzene, carbon tetrachloride, methylene chloride, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and trichloroethylene. (2, 11, 12, 29, 45, 50, 51)
Nonhalogenated solvents used for cleaning/degreasing	Acetone, methanol, toluene, and xylene. (3, 11, 12, 18, 19, 20, 29, 45, 48, 49, 50, 51, 52, 62)
Organic solvents used in production processes or laboratories	Acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, dichloromethane, ethanol, methanol, methyl ethyl ketone, methylene chloride, propanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and InstaGel (contains xylenes). (2, 3, 11, 12, 20, 29, 30, 48, 49, 50, 52, 70)
Chemicals used in plutonium processing and recovery operations	Acids (nitric, sulfuric, acetic, hydrochloric, hydrofluoric, and oxalic) ammonium hydroxide, aluminum nitrate, dimethyloxalate ferrous sulfamate, hydroxylamine nitrate, sodium carbonate, sodium hydroxide, and tri-n-octylphosphine (TOPO). (2, 3, 11, 20, 22, 43, 47, 50, 70)
Chemicals used in laboratory operations	Acids (acetic, boric, hydrochloric, hydrofluoric, lactic, nitric, and sulfuric), ammonium hydroxide, carbon tetrachloride, copper sulfate, hydrogen peroxide, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), mineral oil, organophosphate, potassium carbonate, potassium sulfate, sodium hydroxide, sodium sulfite. (2, 3, 11, 20, 22, 29, 52, 70)
Chemicals used in D&D operations	Acid solutions, detergent (e.g., Micro® detergents, nonsolvent based cleaners with no identified RCRA regulated hazardous constituents), hypochlorite, polyurethane foam, RTV rubber, and paint remover (e.g., methylene chloride or methyl ethyl ketone). (11, 12, 20, 31, 32)
Absorbents used in packaging	Florco (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents), Auto-Dri and Dri-Rite (calcium carbonate). (2, 11, 20, 22, 33)

Table 1-2. Chemical Contaminants that may be present in the Cemented Sludge Waste.

Chemical Types	Chemical Compounds
Chemicals used in wastewater treatment processes	Activated carbon, calcium chloride, ferric sulfate, barium chloride, aluminum sulfate, sulfuric acid, sodium hydroxide , sodium hypochlorite, Nalco C-627 and Nalco N-7173 (organic polymers, polyelectrolyte flocculants), and bone char. [14, 15, 16, 17]
Chemicals identified in liquids sent to the wastewater treatment process.	Acetone, acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, oxalic, sulfuric), alcohols (methanol, ethanol, and propanol), ammonia, ammonium bicarbonate and sodium hexamethaphosphate (powdered soap), ammonium hydroxide, asbestos fiber, beryllium, calcium carbonate, caustic soda and lime, chromium, copper sulfate, cyanides, ethylene glycol monobutyl ether and sodium hydroxide (liquid soap), fabric softeners [a], hydrogen peroxide, lead, lithium chloride, mercury, methylene blue, mineral oil, nickel sulfate, paint, potassium bromide, potassium carbonate, potassium pyrosulfate, potassium sulfate, sodium carbonate, sodium chloride, sodium hydroxide, sodium sulfite, trichloroethylene, and zirconium oxide. [11, 18, 19, 20, 44, 63, 64, 65]
Materials used in waste solidification processes	Cement and Florco absorbent (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents). [2, 11, 33]

a. Fabric softeners may include chemicals such as alchohols (e.g, benzyl alcohol, ethanol, isopropyl) alpha-terpineol, benzyl acetate, camphor, chloroform, ethyl acetate, limonene, linalool, and pentane. [55, 56, 57]

1.4.6 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN836, WMP data from 100% of the completed RTR and VE (visual examination) of Mound cemented sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 69% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTPs comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Mound cemented sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, and are summarized in Table 1-3. [34, 58]

Table 1-3. Estimated Waste Material Parameter Weights Per Unit of Waste for Cemented Sludge Waste (BN836).

Waste Material Parameters	Weight per Unit Waste by Percent
Inorganic Matrix	100
Other Inorganic Materials	<1
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	<1
Iron-based Metals	<1
Other metals	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic sludge. [21]

1.5 Prohibited Items

The following items are prohibited at the Waste Isolation Pilot Plant (WIPP) in accordance with Section B-1c of the WIPP Waste Analysis Plan (WIPP-WAP): [10]

- Liquid waste
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristics of ignitability, corrosivity, or reactivity (hazardous waste numbers [HWNs] D001, D002, or D003).
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification. [60]
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2. [60]

- Sealed inner containers greater than four liters.

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities. RTR or VE is performed on each container to verify the absence of prohibited items. [35, 36] Drums with prohibited items are treated or rejected as appropriate. Drums containing prohibited items will not be shipped to WIPP.

1.6 Resource Conservation and Recovery Act (RCRA) Determination

1.6.1 EPA Hazardous Waste Numbers

Mound cemented sludge is characterized as mixed-TRU waste. Toxicity characteristic HWNs assigned to the cemented sludge waste are D004, D005, D006, D007, D008, D009, D010, and D011. Listed HWNs assigned to this waste stream are F001, F002, and F005. [41]

1.6.2 Hazardous Determination

The hazardous waste determination for cemented sludge waste is described in the following subsections.

Ignitability

The materials in this waste stream do not meet the 40 CFR 261.21 definition of *ignitability*. The cemented sludge is not a liquid. Additionally, absorbents (e.g., cement, Florco) were added during packaging of this waste. The waste materials are not compressed gases, nor does the waste contain compressed gases. The waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173 and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. Trace quantities of hypochlorite solutions, hydrogen peroxide, nitric acid, and other potential DOT oxidizers in the wastewater were treated in the WD Building, and trace contamination in the cemented sludge does not meet the definition of a DOT oxidizer. [11, 19, 22, 25, 44] Therefore, this waste stream does not exhibit the characteristic of ignitability (D001).

Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22 definition of *corrosivity*. The cemented sludge waste is not liquid. In addition, absorbents (e.g., cement, Florco) were added during packaging of this waste. [25, 44] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

Reactivity

The materials in this waste stream do not meet the 40 CFR 261.23 definition of *reactivity*. The cemented sludge waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials may contain trace quantities of sulfides

or cyanides but would not generate toxic gas in sufficient quantity to pose a threat to human health or the environment. The materials are neither forbidden explosives nor Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, and the drums do not contain explosive materials. Explosives were produced and tested at Mound Plant, but wastes generated from explosives were managed in waste groups entirely separate from radioactive wastes. [2, 11, 19, 44] Therefore, this waste stream does not exhibit the characteristic of reactivity (D003).

Toxicity

The materials in the cemented sludge waste have been conservatively assigned the toxicity characteristic for metals as defined in 40 CFR 261.24. Based on AK, cemented sludge waste may contain RCRA toxicity constituents due to mixture with toxicity characteristic metals and organics.

AK for cemented sludge waste indicates the presence of toxicity characteristic metals arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011). [11, 28, 29, 66, 67] Based on process descriptions, sources of toxicity characteristic metals were used in the R Building laboratory operations (reference Table 1-1). Arsenic, cadmium, selenium and silver are attributed to chemicals used in laboratory operations. [29] Barium chloride was one of the chemicals used in the WD facility to treat the alpha-contaminated wastewater. [14] The cemented sludge may contain paint contaminated with chromium or lead. [18, 19, 20,44, 63, 64] Mercury was used in analytical and production operations. [11, 20, 28, 29, 48, 52, 67, 68, 69] Chromium and lead were detected in historical sampling of the alpha-contaminated sludge. [18, 19, 20, 28, 44, 63, 64]

Solid samples were analyzed for total metal. Statistics were calculated based on using one-half the method detection limit (MDL) for less than detectable observations with data transformation applied where appropriate. The 90 percent upper confidence limit (UCL_{90}) exceeded the regulatory threshold limit (RTL) for the toxicity characteristic metal barium; consequently, the EPA characteristic HWN D005 assigned by AK is retained for the cemented sludge waste. Although the calculated UCL_{90} did not exceed the associated RTL based on totals for the toxicity characteristic metals arsenic, cadmium, chromium, lead, mercury, selenium and silver, the corresponding EPA characteristic HWNs D004, D006, D007, D008, D009, D010 and D011 are also conservatively assigned to the cemented sludge waste. [41, 66]

> Carbon tetrachloride, chloroform, methyl ethyl ketone, benzene, tetrachloroethylene, and trichloroethylene were identified as chemicals used at Mound for their solvent properties and may be present in the alpha-contaminated wastewater. [2, 3, 11, 12, 29, 45, 48, 51] Carbon tetrachloride, benzene, and trichloroethylene were used for cleaning/degreasing. [2, 3, 11, 12, 29, 45, 51] None of these constituents were detected in the solid sampling; therefore, the toxicity codes for these constituents are not applied.

Listed Waste

F-Listed HWNs

F001, F002, and F005 listed HWNs are conservatively assigned to the Mound cemented sludge waste for spent solvents. [28, 41]

Solid samples were analyzed for volatile organic compounds (VOCs) and semivolatile organic compound constituents and only methanol was detected above the MDL. The calculated UCL_{90} of the mean concentration did not exceed the associated program required quantitation limit (PRQL) for the RCRA characteristic solvents or F-listed solvents. Headspace gas (HGAS) sampling and analysis detected nine VOCs (benzene, 1,1-dichloroethane, trans-1,2-dichloroethylene, methanol, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, and xylene); however, the calculated UCL_{90} did not exceed the associated PRQL for these constituents.

Minor amounts (approximately 5 pints total organics per year) of organics, including trichloroethylene, were disposed of in the alpha-contaminated wastewater. [2, 11, 19, 20] Trace amounts of organics were discharged into a wastewater treatment system regulated by a Clean Water Act point source discharge permit and were eligible for RCRA regulatory exclusions identified in 40 CFR 261.3. Nevertheless, the listed HWNs F00l F002, and F005 were conservatively assigned.

Trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, and methyl ethyl ketone were identified in AK documents as solvents used in cleaning/degreasing and laboratory operations in SM, PP, SW, and R Buildings. [2, 3, 11, 28, 29] 1,1,2-Trichloro-1,2,2-trifluoroethane was used for cleaning/degreasing in other operations. [2, 11, 28, 29] Benzene, tetrachloroethylene, carbon disulfide, and toluene were used as solvents in laboratory and production operations. [2, 11, 29, 48, 52] Paint removers containing methylene chloride or methyl ethyl ketone may have been used in the D&D process. [11, 43] These chemicals were not identified as constituents in the alpha-contaminated wastewater. The wastewater may have been contaminated with trace quantities of these constituents during decontamination operations. EPA HWNs F001, F002, and F005 are conservatively assigned to this waste stream. 1,1,1-Trichloroethane, trichloroethylene, tetrachloroethylene, benzene and toluene were detected in HSG analysis, which support AK. [41]

Acetone, methanol, and xylene (non-chlorinated solvents) were also used as solvents in laboratory and production operations and acetone and methanol were identified as constituents in this wastewater. [11, 18, 19, 20, 28, 29, 44, 48, 49, 50, 51, 52, 62, 63, 64, 65, 70] Cemented sludge is not a liquid waste but may be contaminated with residuals from these solvent operations. If a waste no longer exhibits the characteristic of ignitability, the F003 hazardous waste number can be removed [40 CFR 261.3(g)(1)]. Because the waste is not ignitable, the EPA HWN F003 is not assigned to this waste stream.

Although 2-methyl-2-propanol, (CAS No. 75-65-0) was detected in greater than 25% of the samples for this waste stream, it is not a 40 CFR 261, Appendix VIII listed analyte and will, therefore, not be added as a target analyte for this waste stream.

P-, U- and K-Listed HWNs

Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, only spent forms of hydrofluoric acid would have contaminated the alpha wastewater. [11, 18, 19, 20, 22, 44, 45, 50, 63, 64] This waste stream does not contain and was not derived from an unused commercial product, an off specification species thereof, or a manufacturing intermediate that would be classified as U134 HWN. Based on this information, the U134 HWN does not apply to this waste stream.

Beryllium was identified in AK as a potential contaminant from analysis of weapon components. Typically, less than 50 grams of beryllium waste was generated annually. Based on a review of AK and the solid sampling results, it was determined that the cemented sludge waste contains less than one percent beryllium by weight. [2, 3, 11, 19, 65] If beryllium is present, it is a contaminant of the process and not as an unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code for beryllium, as defined in 40 CFR 261.33, is not assigned to the waste.

The materials in this waste stream are not discarded, unused, commercial chemical products, off-specification species, container residues, or spills thereof (40 CFR 261.33). No P- or U-listed hazardous waste numbers apply to the materials in this waste stream.

The materials in this waste are not hazardous waste from specific sources since they were not generated from any of the processes listed in 40 CFR 261.32. The materials in this waste stream are, therefore, not K-listed hazardous waste.

TSCA Regulated Contaminants

PCBs are not expected to be present in the cemented sludge waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the WAC. [2, 5, 11, 19, 20, 29, 35, 36]

1.7 Radionuclides

The primary radionuclides contained in Mound TRU waste stored at INL are those identified for "heat source" materials (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu). Mound TRU waste is also expected to contain ^{241}Am, ^{235}U, and ^{237}Np, due to ingrowth. Weapons-grade material composed primarily of ^{239}Pu is also expected to be present, as well as small quantities of other isotopes from research activities. Uranium-234 is an expected constituent in aged plutonium. Other radioisotopes that have been measured in Mound wastes are ^{227}Ac, ^{233}U, ^{238}U, ^{137}Cs, and ^{60}Co. Although ^{90}Sr was not detected, it is expected to be present in waste where ^{137}Cs is

observed. The cemented sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [2, 27, 28, 42, 54, 61]

The ratios of the two most prevalent radionuclides in the container are compared to confirm existing AK data in compliance with WAC requirements. The two most prevalent radionuclides anticipated in the cemented sludge waste are ^{238}Pu and ^{239}Pu. [42]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. Some of the rigid liners were lined with a polyethylene drum bag. After being filled with waste, the drum bag, if present, was sealed with tape and the rigid drum liner lid was installed. Based on RTR/VE examination, a cement cap may be present on top of the cemented sludge and the sludge may exhibit variable layers of solidification. Absorbents (such as Florco) may also be present on top of the cemented sludge. Plywood spacers were placed between the rigid liner lid and the drum lid before the drum lid was installed. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate. [21, 24, 25, 26]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for VOCs, hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the HGAS analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HGAS results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [59]

3.0 REFERENCES

NOTE: *References are cited per the style guide provided by AMWTP Document Control. AMWTP documents such as procedures, AK Reports, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Data Management System. Previous revisions are available upon request through Document Services.*

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51. Interview of Clyde J. Chong, Mound, Employee, CCP Record of Communication, revised June 8. 2004[C467A]

52. Interview of Paul Figgins, Mound Employee, CCP Record of Communication, May 15, 2003 and e-mail from Paul Figgins regarding TRU report changes, May 21, 2003 [C466A]

53. Nuclear Waste Program, Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio [U145A]

54. Memorandum to file, Estimated Percentage of Plutonium in Cemented Sludge Waste Stream BN836, MLJ-002-06, April 25, 2006 [C519A]

55. Health Risks of Fabric Softeners, http://www.ourlittleplace.com/fabric.html, Web page visited April 28, 2006 [P643A]

56. Material Safety Data Sheets (MSDS) for Liquid Fabric Softener (Downy), Proctor and Gamble, December 4, 2002 [P644A]

57. Material Safety Data Sheets (MSDS) for Fabric Softener, U.S. Chemical, December 20, 1999 [P645A]

58. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

59. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) [P672A]

60. MP-TRUW-8.2, Quality Assurance Project Plan

61. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

62. Interview of Don Luthey, Mound Employee, CCP Record of Communication, June 10, 2003 [C473A]

63. MD-10203, Technical Manual, Mound WIPP Certification Program For Newly Generated Contact Handled (CH) Transuranic Waste, Issue 1, June 1, 1985 and Issue 6, April 14, 1989 [P385A]

64. Mound Quality Control Plan for the Control Of Radioactive Waste, October 1982 [P536A]

65. Memorandum from P. E. Drez to D. Hopkins, Chemical Compatibility and Materials List Data Requirements for TRUPACT II Authorized Payload Compliance Plan, March 25, 1988 [C477A]

66. Memorandum from R. K. Blauvelt to A. Reiser, Mound Waste Streams, October 25, 1984 [C354A]

67. EDF-RWMC-421, EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes, Rev. 4, April 1, 1994 [P310A]

68. Verification Methods Matrix, March 6, 1995 [U199A]

69. EDF-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste, Rev. 7, December 18, 2002 [P361A]

70. Mound Laboratory List of Chemicals and Materials in TRU Waste Content Codes, June 1989 [U206A]

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BN836, Cemented Sludge Waste May Has/06

AK Source Document / Rev. Number : AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6 and Discrepancy Report D056A – Assessment of Hazardous Waste Numbers Assigned to Cemented Sludge (BN836)

HWN	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	x		X	X	✔
F002	X	X	x		X	X	✔
F003	X	X			X	N/A	✔
F004							✔
F005	X		x		X	X	✔
F006							✔
F007							✔
F009							✔
D004	X		x	o	X	X	✔
D005	X		X		X	X	✔
D006	X	X	x	o	X	X	✔
D007	X	X	x	o	X	X	✔
D008	X	X	x	o	X	X	✔
D009	X	X	x	o	X	X	✔
D010	X	X	x	o	X	X	✔
D011	X	X	x	o	X	X	✔
D022							✔
D029							✔
D032							✔
D001							✔
D002		X				N/A	✔

For column 3, "X" indicates UCL_{95} above the associated PRQL/RTL and "x" indicates detected but UCL_{95} below the PRQL/RTL.
For column 4, AMWTP retained all characteristic toxicity codes even if UCL_{95} was below the RTL value.
For column 6, "N/A" applies because only containers verified to meet WIPP CH-WAC criteria will be included in this waste stream (i.e. not liquid waste); therefore, D002 and F003 are not applicable to containers that can be assigned to this waste stream (reference AMWTP-TRUW-63).

AK Expert: M L Johnson, ML Johnson Print/Sign Date: 4/27/06

Site Project Manager: Steve Carpenter Print/Sign Date: 4.27.06

Waste Stream or Waste Type Description: Cemented Sludge

Waste Stream or IDC Number: BN836

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C343A, C344A, C351A, C358A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C488A, C490A, P024A, P319A, P380A, P381A, P385A, P418A, P423A, P463A, P469A, P474A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P492A, P493A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P540A, P544A, P545A, P546A, P550A, P551A, P646A, P744A, U126A, U145A, U146A, U148A, U149A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U196A, U198A, U202A, U203A, U204A, U207A
Waste stream volume and time period of generation.	WS2	C348A, C359A, C372A, C379A, C411A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C534A, C535A, D040A, D050A, P024A, P364A, P365A, P380A, P400A, P418A, P469A, P482A, P505A, P506A, P507A, P509A, P511A, P519A, P522A, P523A, P524A, P567A, P646A, P744A, U122A, U126A, U127A, U134A, U142A, U146A, U148A, U149A, U154A, U159A, U187A, U197A, U198A, U202A, U207A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C444A, C458A, C466A, C473A, C481A, P024A, P319A, P379A, P380A, P381A, P385A, P418A, P423A, P463A, P464A, P469A, P474A, P482A, P483A, P485A, P492A, P493A, P504A, P505A, P507A, P510A, P511A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P546A, P558A, P646A, P744A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U196A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C269A, C339A, C342A, C344A, C349A, C354A, C356A, C359A, C385A, C409A, C411A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C488A, C490A, C493A, C546S, D056A, D070A, P024A, P207A, P307A, P310A, P319A, P365A, P379A, P380A, P381A, P385A, P409A, P418A, P423A, P457A, P458A, P463A, P464A, P469A, P474A, P475A, P485A, P492A, P493A, P497A, P503A, P504A, P505A, P506A, P509A, P510A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P527A, P532A, P534A, P536A, P539A, P545A, P546A, P552A, P591A, P592A, P623A, P624A, P625A, P643A, P644A, P645A, P646A, P744A, U126A, U132A, U140A, U149A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U195A, U196A, U197A, U202A, U204A, U205A, U208A
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C339A, C348A, C349A, C370A, C376A, C378A, C379A, C383A, C409A, C411A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C479A, C481A, C485A, C490A, C518A, C524A, C525A, C534A, C546S, P024A, P207A, P319A, P365A, P379A, P380A, P381A, P385A, P393A, P399A, P418A, P423A, P463A, P465A, P469A, P474A, P475A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P623A, P624A, P625A, P646A, P670A, P744A, U126A, U145A, U146A, U149A, U153A, U154A, U156A, U157A, U159A, U187A, U189A, U190A, U191A, U195A, U196A, U197A, U198A, U204A, U205A, U206A, U207A, U208A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C354A, C458A, C481A, C493A, D056A, D070A, P207A, P307A, P310A, P319A, P365A, P393A, P418A, P492A, P503A, P505A, P506A, P509A, P512A, P519A, P527A, P532A, P539A, P592A, P623A, P624A, P625A, P646A, P744A, P756A, U060A, U142A, U185A, U190A, U199A, U205A, U206A, U208A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C291A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C490A, C494A, C508A, C517A, C519A, C551A, C552S, D050A, P024A, P319A, P381A, P385A, P398A, P418A, P423A, P463A, P464A, P467A, P469A, P472A, P474A, P482A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P611A, P622A, P623A, P624A, P625A, P646A, P744A, U126A, U137A, U142A, U147A, U149A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U170A, U172A, U173A, U185A, U187A, U189A, U190A, U195A, U196A, U198A, U199A, U202A, U203A, U205A, U208A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C516A, D070A, P024A, P385A, P418A, P465A, P474A, P492A, P525A, P536A, P646A, P744A, U126A, U196A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: TIM VENNEMAN Date: 7-22-09
Print/Sign Date

Site Project Manager: Steve Carpenter Date: 7.22.09
Print/Sign

LDR NOTIFICATION- IDC MD836

WASTE STREAM BN836

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, and F005 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	F001	Nov 8, 1988
	F002	Nov 8, 1988
	F005	Nov 8, 1988
	F006	August 8, 1988

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

April 25, 2006 CCN 06-20231

Mr. Dale Bignell, Director
Washington Regulatory and Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC-07-99ID13727 – Waste Stream Profile, BN836 - JDM-023-06

Dear Mr. Bignell:

Attached is Waste Stream Profile (WSPF), BN836, Cemented Sludge, and AMWTP-RPT-TRUW-63, *Acceptable Knowledge Summary for Cemented Sludge (BN836)*, for your review and approval. We have evaluated and reviewed the profile and believe it is compliant with the Waste Acceptance Plan (WAP).

If you have any questions feel free to call me at 208-557-6404 or Eric Schweinsberg at 208-557-6425.

Sincerely,

Jeffrey D. Mousseau, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

Attachment

SC/skc

cc: Rod Arbon, BBWI
Steve Carpenter, BBWI
Rick Chavez, WRES
Elvin Dumas, BBWI
Tom Fallon, BBWI
Guy Girard, DOE-ID
Jim Jackson, BBWI
Scott Raish, BBWI
Ron Reeves, WRES
Frank Russo, BBWI
Eric Schweinsberg, BBWI
Ingrid Siddoway, BBWI
Jerry Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

Venneman, Timothy E.

From: Schweinsberg, Eric
Sent: Tuesday, July 14, 2009 11:33 AM
To: Tedford, Gina; Carpenter, Steve; Johnson, Micky L.; Venneman, Timothy E.
Subject: FW: CBFO Approval RPT-TRUW-63, Revision 5A
Follow Up Flag: Follow up
Flag Status: Red

fyi

Eric P. Schweinsberg
SPM/TRU Programs
AMWTP - Idaho National Lab
208-557-6425 (Work)
208-351-9247 (Cell)
208-557-6561 (Fax)

We make a living by what we get. We make a life by what we give

---

From: Sena, Gloria - DOE [mailto:Gloria.Sena@wipp.ws]
Sent: Tuesday, July 14, 2009 11:04 AM
To: Document Services
Cc: Brown, Gail L.; Schweinsberg, Eric; Wells, Jerry L; Gilbert, Patsy - LANL; Lyshik, Gwen - LANL
Subject: CBFO Approval RPT-TRUW-63, Revision 5A

As requested in the email from Sherrie Walker on July 2, 2009, the Carlsbad Field Office (CBFO) has reviewed RPT-TRUW-63, Revision 5A, *Acceptable Knowledge Summary for Cemented Sludge (BN836)*. There were no comments generated. We have determined that the report continues to meet CBFO requirements.

If you have any questions, please contact Norma Castaneda at (505) 234-7118.

Office of the National TRU Program
Carlsbad Field Office

cc:
WIPP Operating Record
CBFO M&RC

CBFO:NTP:GS:09-1056:UFC 5822.00

1. Source Document Tracking Number: P841A	2. Revision: 1

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: Waste Stream Profile Package for Solidified Plutonium Recovery Incinerator Waste (BN222)

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 01/29/2010

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3	BN	All	Description of the operations that generate TRU mixed waste at the site
WM5	BN	All	Types and quantities of TRU waste generated, including historical generation through future projections
WM6	BN	All	Correlation of waste streams generated from the same building and process, as appropriate
WM7	BN	AK Summary	Assessment of operations to determine if the TRU waste materials at the generator site meet the definition of defense waste
WS1	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Information identifying the building(s) and/or area(s) from which TRU waste was or is generated
WS2	RF-292, RF-807b/696, RF-818, RF-820	WSPF Form 1195 and AK Summary	Waste stream volume and time period of generation
WS3	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Waste generating process description for each building, including processes with U134 waste generation
WS4	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation
WS5	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation
WS6	RF-292, RF-807b/696, RF-818, RF-820	WSPF Form 1195 and AK Summary	EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned

Implementing Document: MP-TRUW-8.13

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WS7	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard
WS8	RF-292, RF-807b/696, RF-818, RF-820	AK Summary	Documentation identifying the presence of prohibited items

9. Document Summary:

The package includes characterization information for waste stream profile BN222 (Solidified Plutonium Recovery Incinerator Waste) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as associated with: operational area and building description, waste stream volume and time period of generation, waste generation process, material inputs relating to chemical and physical form and events or processes that may have modified the physical properties after waste generation, EPA HWNs, Specific radioisotopes (including the ten WIPP-tracked radionuclides), prohibited items. The package also includes WM3, WM5, WM6, and WM7 elements. WM1, WM2, WM4 and WM8 are included as references within the BN222 WSPF package.

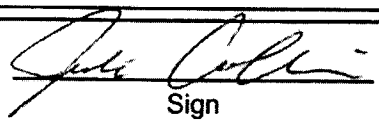
The BN222 WSPF package includes the following documents:

- CBFO Approval letter for WSPF BN222, January 29, 2010
- Waste Stream Profile Form-1195, DQO Form-1597, and CIS Form-1598 for BN222, Rev. 0, January 14, 2010
- Acceptable Knowledge Summary, RPT-TRUW-77, Rev. 1, June 27, 2012
- Waste Stream Profile Form HWN Assignment Worksheet Form-1187 for BN222, February 8, 2010
- TRU Waste Stream AK Documentation Checklist Form-1067 for BN222, February 8, 2010
- LDR Notification – Waste Stream BN222
- AMWTP transmittal letter WSP BN222, ET-065-09, October 1, 2009
- AMWTP re-transmittal letter WSP BN222, ET-001-10, January 5, 2010
- AMWTP re-transmittal letter WSP BN222, ET-007-10, January 14, 2010

P841A Revision 1 updates the record to include revised AK Summary Report RPT-TRUW-77, Rev. 1, June 27, 2012

10. Source Document Data Limitations (if any):

The data is only applicable to WIPP certified containers.

11. AK Expert:	Julie Collins		10/2/2012
	Print	Sign	Date

P841A R1

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
JAN 29 2010

Mr. Richard Provencher, Deputy Manager
U. S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Waste Stream Profile Form (WSPF) BN222, Solidified Plutonium Recovery Incinerator Waste

Dear Mr. Provencher:

The Carlsbad Field Office (CBFO) has reviewed the subject Advanced Mixed Waste Treatment Project Waste Stream Profile Form (WSPF) BN222, Solidified Plutonium Recovery Incinerator and has concluded that the WSPF is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the WSPF as submitted. Using the methods approved for AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have questions on this matter, please contact me at (575) 234-7313.

Sincerely,

Donald C. Gadbury, Director
Office of the National TRU Program

cc:
G. Basabilvazo, CBFO *ED
C. Gadbury, CBFO ED
S. McCauslin, CBFO ED
D. Miehls, CBFO ED
M. Navarrete, CBFO ED
K. Watson, CBFO ED
P. Gilbert, LANL ED
S. Lott, LANL ED
G. Lyshik, LANL ED
CBFO, M&RC
*ED denotes electronic distribution

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN222, Rev 0

Generator site name: Advanced Mixed Waste Treatment Project | Technical contact: Erie Schweinsberg

Generator site EPA ID: ID4890008952 | Technical contact phone number: (208) 557-6425

Date of Audit report approval by NMED: 12/23/2003, 7/2/2004, 4/1/2005, 12/9/2005, 1/23/2007, 1/18/2008, 8/28/2008, 1/9/2009

Title, version number, and date of documents used for WAP certification:

Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev 17, 4/7/2009

CCP Transuranic Authorized Method for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev 11, 6/4/2009

Quality Assurance Project Plan, MP-TRUW-8.2, Rev 11, 9/3/2008

Did your facility generate this waste? ☐Yes ☒No If no, provide the name and EPA ID of the original generator:

Rocky Flats Environmental Technology Site CO7890010526

Waste Stream Information

WIPP ID: IN-BN222 | Summary Category Group: S3000

Waste Matrix Code Group: Solidified Inorganics | Waste Stream Name: Solidified Plutonium Recovery Incinerator Waste

Description from the WTWBIR: The miscellaneous cemented waste is comprised of solidified homogeneous solid wastes generated from the Rocky RF plutonium recovery operations. The BN222 miscellaneous cemented waste incorporates IDCs RF-292, RF- 807b/696, RF-818, and RF-820 and consists of waste >50% by volume solidified homogeneous solids, i.e., particulate or sludge waste immobilized with cement and cured into a solidified form. (3)

Defense TRU Waste: (12) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs 0 | Number of Drums 574 | Number of Canisters 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Summary Information Report, Table 5

List applicable EPA Hazardous Waste Numbers:[2] D004, D005, D006, D007, D008, D009, D010, D011, D022, F001, F002, F005, F006, F007, and F009

Applicable TRUCON Content Codes: ID 111/ID 211, ID 114/ID 214

Acceptable Knowledge Information[1]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: See Reference No. 1 (Section 3)

Facility mission description: See Reference No. 1 (Section 3)

Description of operations that generate waste: See Reference No. 1 (Section 3) and Reference No. 4

Waste identification/categorization schemes: See Reference Nos. 2 and 4

Types and quantities of waste generated: See Reference No. 4

Correlation of waste streams generated from the same building and process, as appropriate: See Reference No. 1 (Section 18) and No. 4

Waste certification procedures: See Reference Nos. 3 and 5

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: See References No. 1(Section 18) and No. 4

Waste stream volume and time period of generation: See Reference No. 4

Waste generating process description for each building: See Reference No. 1 (Section 18) and No. 4

Process flow diagrams: See Reference No. 4

Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference No. 4

Waste Material Parameter Weight Estimates per unit of waste: See Reference No. 4

Which Defense Activity generated the waste: (check one)

☐	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☒	Defense research and development
☐	Defense nuclear waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation

Process design documents:	N/A
Standard operating procedures:	See Reference No. 4
Safety Analysis Reports:	N/A
Waste packaging logs:	N/A
Test plans/research project reports:	N/A
Site databases:	See Reference No. 4
Information from site personnel:	See Reference No. 4
Standard industry documents:	N/A
Previous analytical data:	See Reference No. 4
Material safety data sheets:	See Reference No. 4
Sampling and analysis data from comparable/surrogate Waste:	See Reference No. 4
Laboratory notebooks:	N/A

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography:	See Reference No. 7
Visual Examination:	See Reference No. 6

Headspace Gas Analysis

VOCs:	N/A
Flammable:	See reference No. 9
Other gases (specify):	N/A

Homogeneous Solids/Soils/Gravel Sample Analysis

Total metals:	See reference No's: 8, 14, 15 and 16
PCBs:	N/A
VOCs:	See reference No's: 8 and 13
Nonhalogenated VOCs:	See reference No's: 8 and 12
Semi-VOCs:	See reference No's: 8, 10 and 11
Other (specify):	N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg

Signature of Site Project Manager	Eric P. Schweinsberg, SPM	1/14/2010
	Printed Name and Title	Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs), attach signed Characterization Information Summary (CIS) documenting this determination.

(3) The information in the ATWIR will be revised to include HWNs F006, F007, and F009 in the 2010 annual update.

WASTE STREAM PROFILE CONTINUATION SHEET

Reference List:

1. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant, Rev. 2, August 2008
2. RPT-TRUW-12, Advanced Mixed Waste Treatment Project Waste Stream Designations, Rev. 12, August 2009
3. TRU Waste Certification, MP-TRUW-8.5, Rev 24, September 12, 2008
4. Acceptable Knowledge Summary for, RPT-TRUW-77, Solidified Plutonium Recovery Incinerator Waste (BN222), Rev. 0, January 2010
5. Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 17, April 7, 2009
6. Non-Facility Visual Examination Operations, INST-OI-34, Rev. 21, January 23, 2009
7. Real Time Radiography Operations (Drum), INST-OI-12, Rev. 41, August 26, 2009
8. Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis, MP-TRUW-8.25, Rev. 17, June 5, 2009
9. Waste Isolation Pilot Plant Flammable Gas Analysis, DOE/WIPP 06-3345, Rev. 3.2, May 22, 2009
10. CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, CCP-TP-185, Rev. 1, November 18, 2008
11. CCP Sample Preparation for Semivolatile Organic Compounds, CCP-TP-187 Rev. 1, November 18. 2008
12. CCP Determination of Nonhalogenated Volatile Organics by Gas Chromatography, CCP-TP-186, Rev. 1, August 22, 2007
13. CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, CCP-TP-184 Rev. 0, May 2, 2007
14. Determination of Mercury by CVAA for TRU Waste Characterization, CCP-TP-181 Rev. 0, May 2, 2007
15. CCP Determination of Metals by ICP-AES for TRU Waste Characterization, CCP-TP-182 Rev. 1, January 26, 2009
16. CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel, CCP-TP-183 Rev. 0, May 2, 2007
17. CCP Solids Random Sample Selection for BN222 – Lot 1, SPC-006-09, September 16, 2009
18. NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, May 22, 2009.
19. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U.S. Department of Energy, Carlsbad Field Office, Rev 6.3, February 5, 2009
20. Container-in-Container Sampling, INST-OI-75, Rev. 2, January 23, 2009

Characterization Information Summary

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN222 Solidified Plutonium Recovery Incinerator Waste as required by the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP) and the Transuranic Waste Acceptance Criteria (WAC).[18, 19] In addition, AMWTP has conducted characterization testing and analysis using real time radiography (RTR), solid sampling and analysis, and radioassay.

This Characterization Information Summary (CIS) presents the analytical data from five containers for the totals solids analysis. These data meet the necessary characterization requirements for S3000 homogeneous solid waste. Solid sampling data from five containers is summarized in Tables 2, 3A, 3B, 4A, and 4B. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 presents the RTR/Visual Examination (VE) summary of prohibited items. Table 7 presents the correlation between the container numbers and the solid sample numbers. The Site Project Manager (SPM) signature certifies that through AK, testing and/or analysis that the waste included in this waste stream is not corrosive, ignitable, reactive, or incompatible with the Treatment, Storage, and Disposal Facility (TSDF). The AK Summary for this waste stream contains specific information about the corrosivity, reactivity, and ignitability of the waste stream and is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this lot.

Solid sampling was performed on randomly selected containers obtained from BN222, Lot 1. BN222, Lot 1 consists of 444 drums of mixed transuranic waste.

Selection Process

Drums were identified as candidates for container-in-container solid sampling using the random selection method in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.[8] AMWTP memorandum SPC-006-09, Solids Random Sample Selection for BN222 – Lot 1, presents the random selection process, the list of candidate containers for sampling, and the list of containers assigned to Lot 1.[17] The solid sampling (including random selection of the inner container) was conducted by AMWTP using procedure INST-OI-75, Container-in-Container Sampling.[20] The first five candidate containers were successfully sampled, no substitutions were made. The selection order attributed to the random number, associated AMWTP container ID, and the randomly selected inner container are presented in Table A.

Table A. BN222, Lot 1 Containers Randomly Selected for Coring.

Selection Order	AMWTP Container ID	Inner Container Number
1	10018252	9 of 24
2	10003040	4 of 32
3	10002914	7 of 12
4	10000467	9 of 35
5	10062725	10 of 19

The evaluation to determine the required number of samples for B222, Lot 1 analytes is presented in Attachment A. The required number of samples was calculated for each applicable analyte in accordance with MP-TRUW-8.25. The largest number of samples identified pertains only to toxicity-characteristic or listed-waste analytes and analytes where the associated Environmental Protection Agency (EPA) hazardous waste number (HWN) is not assigned and a site intends to establish that the constituent is below the regulatory threshold. Because AMWTP does not intend to establish that an analyte is below the regulatory threshold, five samples are determined to be sufficient.

Characterization Information Summary

The characterization process for this waste stream will continue by conducting solid sampling and analysis of randomly selected samples on a subsequent waste stream lot basis. It will also include characterization activities through RTR or VE and radioassay on a container basis.

Data Results

The statistical evaluation of the analytical data collected for BN222, Lot 1 is presented in Tables 2, 3A, and 4A. Table 5 lists the correlation of container numbers to characterization data packages. Table 7 lists the correlation of container number to solids sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for toxicity characteristic compounds and to assign and/or support EPA HWN assignments for the BN222 waste stream. Per Section B2-2a of MP-TRUW-8.2, Quality Assurance Project Plan, the AMWTP used the data to calculate the UCL_{90} values for the waste stream and assign EPA HWNs as appropriate.

HWNs are assigned based on AK. HWNs assigned by AK are applied to the waste stream even if the solid sampling analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). Cadmium, chromium, and lead UCL_{90} results are above the PRQLs for metals associated with the toxicity characteristic HWNs (Table 2). No solid sampling UCL_{90} results are above the PRQL values for volatile organic compounds (VOCs) (Table 3a) or for semi-volatile organic compounds (SVOCs) (Table 4a). The HWN assignment for this waste stream includes:

- Toxicity characteristic metals – D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010, (selenium), and D011 (silver)
- Toxicity characteristic organics – D022 (chloroform)
- Listed codes for organics – F001 and F002 (1,1,1- trichloroethane, trichloroethylene, tetrachloroethylene, and 1,1,2-trichloro-1,2,2-trifluoroethane), F001 (carbon tetrachloride), F002 (methylene chloride), F005 (benzene, carbon disulfide, methyl ethyl ketone and toluene)
- Listed codes from electroplating operations – F006, F007 and F009 waste generated as a result of contact with electroplating waste.

Solid sampling results support AK. No additional EPA HWNs are required.

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN222

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90 % Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	☐	☐	☒	WAP headspace gas sampling not required for S3000 waste.
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	☐	☐	☒	Central Characterization Project (CCP) will evaluate containers on an individual basis through transportation headspace gas and WIPP Waste Inventory System (WWIS).
6. Have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	

WSPF No.: BN222

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
8. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
9. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed prior to entering the headspace gas data into WWIS.
11. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-1, for the lot?	☒	☐	☐	Solid sampling lot only.
12. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in the QAPjP, Sections B3-2 through B3-9, for the lot?	☒	☐	☐	Solid sampling QAOs only.
13. Have the program required quantitation limit (PRQLs) for all analyses been met for the lot?	☒	☐	☐	Solid sampling lot only.

WSPF No.: BN222

Data Quality Objective	Yes	No	N/A	Comment
14. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	Solid sampled containers only.
15. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	Solid sampled containers only.
16. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	Solid sampled containers only.
17. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	Solid sampled containers only.
18. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

Site Project Manager — Signature: Eric Schweinsberg — Printed Name: Eric Schweinsberg — Date: 1/14/2010

2nd Site Project Manager — Signature: [signature] — Printed Name: Steve Carpenter — Date: 1.14.10

WSPF Number: BN222 Lot Number: 1

SPM

Printed Name: Eric Schweinsberg Signature: [signature] Date: 1/14/2010

2nd SPM

Printed Name: Steve Carpenter Signature: [signature] Date: 1,14,10

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN222 Lot Number: 1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

WSPF Number: BN222 Lot Number: 1

Table 2. Metals summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [c]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
Arsenic	5	5	None	15.0	10.1	5.48	13.8	-	100	D004 [d]
Barium	5	5	None	430	268	129	357	-	2000	D005 [d]
Cadmium [b]	5	5	Natural log	5.74	4.05	1.63	5.17	3.00	20	D006 [e]
Chromium [b]	5	5	Natural log	7.31	4.95	1.41	5.91	4.61	100	D007 [e]
Lead [b]	5	5	Natural log	8.43	6.10	1.92	7.42	4.61	100	D008 [e]
Mercury [b]	5	3	Natural log	0.742	-2.87	2.71	-1.02	1.39	4	D009 [d]
Selenium	5	4	None	1.90	1.10	0.571	1.49	-	20	D010 [d]
Silver [b]	5	5	Natural log	2.40	1.19	1.06	1.92	4.61	100	D011 [d]
Antimony [b]	5	5	Natural log	5.91	3.24	1.86	4.51	4.61	100	N/A [g]
Beryllium	5	5	None	2.90	1.81	0.844	2.39	-	100	N/A [f, g]
Nickel [b]	5	5	Natural log	10.2	6.08	2.34	7.68	4.61	100	N/A [g]
Thallium [b]	5	5	Natural log	0.336	-0.059	0.515	0.295	4.61	100	N/A [g]
Vanadium	5	5	None	200	147	74.4	198	-	100	N/A [g]
Zinc [b]	5	5	Natural log	6.80	5.78	0.772	6.31	4.61	100	N/A [g]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The maximum, mean, SD, UCL_{95}, and PRQL for these analytes are presented as transformed values.

c. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.

d. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{95} results for the assigned compounds are not above the PRQL.

e. These HWNs, assigned by AK, were supported by characterization.

f. P015 for beryllium as defined in 40 CFR 261 and addressed in RPT-TRUW-77 is not assigned to the waste. The reported values are all less than 1% for beryllium.

g. There are no toxicity characteristic HWNs associated with these analytes.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics performed by:

Printed Name: J. Kettel Signature: Date: 01/14/10

WSPF Number: BN222 Lot Number: 1

Table 3A. Total VOC summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [e]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,1-Dichloroethylene	5	0	None	0.195	0.182	0.009	[b]	-	10	N/A
trans-1,2-Dichloroethylene	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
1,1,1-Trichloroethane [c]	5	1	Natural log	0.693	-1.78	1.38	-0.830	2.30	10	F001/F002 [d]
1,1,2,2-Tetrachloroethane	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethene	5	0	None	0.095	0.091	0.004	[b]	-	10	F001/F002 [d]
1,1,2-Trichloroethane	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
1,2-Dichloroethane	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
Acetone	5	0	None	0.600	0.540	0.042	[b]	-	100	N/A
Benzene	5	0	None	0.095	0.091	0.004	[b]	-	10	F005 [d]
Bromoform	5	0	None	0.195	0.182	0.009	[b]	-	10	N/A
Butanol	5	2	None	16.0	6.52	8.21	12.1	-	100	N/A
Carbon disulfide	5	0	None	0.095	0.091	0.004	[b]	-	10	F005 [d]
Carbon tetrachloride	5	0	None	0.095	0.091	0.004	[b]	-	10	F001 [d]
Chlorobenzene	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
Chloroform	5	0	None	0.095	0.091	0.004	[b]	-	10	D022 [d]
Ethyl benzene	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
Ethyl ether	5	0	None	1.75	1.63	0.091	[b]	-	100	N/A
Isobutanol	5	0	None	0.600	0.540	0.042	[b]	-	100	N/A
Methanol	5	0	None	1.15	1.09	0.042	[b]	-	100	N/A
Methyl ethyl ketone	5	0	None	1.15	1.09	0.042	[b]	-	100	F005 [d]
Methylene chloride	5	0	None	0.095	0.091	0.004	[b]	-	10	F002 [d]
Pyridine	5	0	None	1.75	1.63	0.091	[b]	-	100	N/A
o-Xylene [c]	5	1	Natural log	-1.47	-2.21	0.416	-1.92	2.30	10	N/A
m- & p-Xylene	5	0	None	0.095	0.091	0.004	[b]	-	10	N/A
Tetrachloroethylene	5	0	None	0.095	0.091	0.004	[b]	-	10	F001/F002 [d]
Toluene [c]	5	1	Natural log	0.336	-1.86	1.23	-1.02	2.30	10	F005 [d]
Trichloroethylene [c]	5	1	Natural log	-1.71	-2.26	0.308	-2.05	2.30	10	F001/F002 [d]
Trichlorofluoromethane	5	0	None	0.195	0.182	0.009	[b]	-	10	N/A
Vinyl chloride	5	0	None	0.195	0.182	0.009	[b]	-	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

c. The maximum, mean, SD, UCL_{90} and PRQL for these analytes are presented as transformed values.

d. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{90} results for the assigned compounds are not above the associated PRQL.

e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics performed by:

Printed Name: J. Kettel Signature: _____ Date: 2/14/12

WSPF Number: BN222 Lot Number: 1

Table 3B. Total VOC summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentration (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: N/A Signature: N/A Date: N/A

Verification of % Detected Calculation:

Printed Name: N/A Signature: N/A Date: N/A

WSPF Number: BN222 Lot Number: 1

Table 4A. Total SVOC summary data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used [c]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	5	0	None	0.100	0.100	0	[b]	-	40	N/A
1,4- Dichlorobenzene	5	0	None	0.100	0.100	0	[b]	-	40	N/A
2,4-Dinitrophenol	5	0	None	0.100	0.100	0	[b]	-	40	N/A
2,4-Dinitrotoluene	5	0	None	0.100	0.100	0	[b]	-	2.6	N/A
bis(2-Ethylhexyl)phthalate [e]	5	1	None	0.380	0.156	0.125	0.242	-	40	N/A
Fluoranthene [d, f]	5	1	Natural log	-0.236	-1.89	0.924	-1.26	3.69	40	N/A
Hexachlorobenzene	5	1	None	0.280	0.136	0.080	0.191	-	2.6	N/A
Hexachloroethane	5	0	None	0.100	0.100	0	[b]	-	40	N/A
o-Cresol	5	0	None	0.100	0.100	0	[b]	-	40	N/A
m- and p-Cresol	5	0	None	0.100	0.100	0	[b]	-	40	N/A
Nitrobenzene	5	0	None	0.100	0.100	0	[b]	-	40	N/A
Pentachlorophenol [d]	5	2	Natural log	0.095	-1.51	1.13	-0.738	3.69	40	N/A
Phenol [g]	5	2	None	3.10	0.960	1.32	1.87	-	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

c. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

d. The maximum, mean, SD, UCL_{90}, and PRQL for this analyte are presented as transformed values.

e. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics performed by:

Printed Name: J. Kettel Signature: Date: 01/14/10

WSPF Number: BN222 Lot Number: 1

Table 4B. Total SVOC Summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentration (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
Phenol, 2,4,6-trichloro-	0.50	1	5	20%	5	20%
Tetrachlorophenol	0.62	1	5	20%	5	20%
Pyrene	0.54	1	5	20%	5	20%

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: M. Johnson Signature: For M. Johnson Date: 1/14/10

Verification of % Detected Calculation:

Printed Name: Jason Ketter Signature: Date: 01/14/10

WSPF Number: BN222 Lot Number: 1

Table 5. Correlation of container identification numbers to data package.

Container No.	Headspace Gas Analysis Data Package [a]	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
10000467	N/A	RTR03-00026	ASY03-00268	N/A	SSG08-00010	ALD08017V ALD08011N ALD08015S ALD08033M
10002914	N/A	RTR03-00058	ASY03-00345	N/A	SSG08-00010	ALD08017V ALD08011N ALD08015S ALD08033M
10003040	N/A	RTR03-00058	ASY04-00224	N/A	SSG08-00010	ALD08017V ALD08011N ALD08015S ALD08033M
10018252	N/A	RTR05-04067	ASY05-04963	N/A	SSG08-00010	ALD08017V ALD08011N ALD08015S ALD08033M
10062725	N/A	RTR05-06319	ASY05-11141	N/A	SSG08-00011	ALD08017V ALD08011N ALD08015S ALD08033M

a. WAP headspace gas sampling not required for S3000 waste.

WSPF Number: BN222 Lot Number: 1

Table 6. RTR/VE summary of prohibited items.

Container No.	RTR Prohibited Items [a, c]	VE Prohibited Items [a, b, c]
10000467	None	N/A
10002914	None	N/A
10003040	None	N/A
10018252	None	N/A
10062725	None	N/A

a. See Table 5 for the associated RTR data packages. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2. Radiography or visual examination is performed on each container in this waste stream as a characterization activity.

b. N/A indicates that none of these drums have a VE in lieu of RTR examination or used the VE technique.

c. The absence of prohibited items is determined and documented through acceptable knowledge and characterization activities. Radiography or visual examination is performed on each container in this waste stream to determine the absence of prohibited items.

WSPF Number: BN222 Lot Number: 1

Table 7. Correlation of container numbers to sample numbers.

Container No.	Headspace Gas Sample Number [a]	Solid Sample Number(s)
10000467	N/A	10231957, 10231958, 10231961
10002914	N/A	10231831, 10231834, 10231858
10003040	N/A	10231785, 10231787, 10231790
10018252	N/A	10231329, 10231330, 10231333
10062725	N/A	10232837, 10232838, 10232841

a. WAP headspace gas sampling not required for S3000 waste.

Attachment A
Evaluation of Required Number of Samples BN222-Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [f]	Comments
Arsenic	5	5	None	15.0	10.1	5.48	13.8	-	100	5	Code D004 applied per AK
Barium	5	5	None	430	268	129	357	-	2000	5	Code D005 applied per AK
Cadmium [g]	5	5	Natural log	5.74	4.05	1.63	5.17	3.00	20	5	Code D006 applied per AK
Chromium [g]	5	5	Natural log	7 31	4 95	1.41	5.91	4.61	100	14 [c]	Code D007 applied per AK
Lead [g]	5	5	Natural log	8.43	6.10	1.92	7.42	4.61	100	5	Code D008 applied per AK
Mercury [g]	5	3	Natural log	0.742	-2.87	2.71	-1.02	1.39	4	5	Code D009 applied per AK
Selenium	5	4	None	1.90	1.10	0.571	1.49	-	20	5	Code D010 applied per AK
Silver [g]	5	5	Natural log	2.40	1.19	1.06	1.92	4.61	100	5	Code D011 applied per AK
Antimony [g]	5	5	Natural log	5.91	3.24	1.86	4.51	4.61	100	[d]	No associated hazardous waste code
Beryllium	5	5	None	2.90	1.81	0.844	2.39	-	100	5	Code not required to be applied [h]
Nickel [g]	5	5	Natural log	10.2	6.08	2.34	7.68	4.61	100	[d]	No associated hazardous waste code
Thallium [g]	5	5	Natural log	0.336	-0.059	0.515	0.295	4.61	100	[d]	No associated hazardous waste code
Vanadium	5	5	None	200	147	74.4	198	-	100	[d]	No associated hazardous waste code
Zinc [g]	5	5	Natural log	6 80	5.78	0.772	6.31	4.61	100	[d]	No associated hazardous waste code
1,1-Dichloroethene (1,1-Dichloroethylene)	5	0	None	0.195	0.182	0.009	-	-	10	[e]	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	5	0	None	0.095	0.091	0.004	-	-	10	[e]	No samples above MDL
1,1,1-Trichloroethane [g]	5	1	Natural log	0.693	-1.78	1.38	-0.830	2.30	10	5	Codes F001/F002 applied per AK
1,1,2,2-Tetrachloroethane	5	0	None	0.095	0.091	0.004	-	-	10	[e]	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.095	0.091	0.004	-	-	10	[e]	Code F001/F002 applied per AK
1,1,2-Trichloroethane	5	0	None	0.095	0.091	0.004	-	-	10	[e]	No samples above MDL
1,2-Dichloroethane	5	0	None	0.095	0.091	0.004	-	-	10	[e]	No samples above MDL
Acetone	5	0	None	0.600	0.540	0.042	-	-	100	[e]	No samples above MDL
Benzene	5	0	None	0.095	0.091	0.004	-	-	10	[e]	Code F005 applied per AK

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	Staudard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [f]	Comments
Bromoform	5	0	None	0.195	0.182	0.009	-	-	10	e	No samples above MDL
Butanol	5	2	None	16.0	6.52	8.21	12.1	-	100	5	HWN not required to be applied [i]
Carbon disulfide	5	0	None	0.095	0.091	0.004	-	-	10	e	Code F005 applied per AK
Carbon tetrachloride	5	0	None	0.095	0.091	0.004	-	-	10	e	Code F001 applied per AK
Chlorobenzene	5	0	None	0.095	0.091	0.004	-	-	10	e	No samples above MDL
Chloroform	5	0	None	0.095	0.091	0.004	-	-	10	e	Code D022 applied per AK
Ethyl benzene	5	0	None	0.095	0.091	0.004	-	-	10	e	No samples above MDL
Ethyl ether	5	0	None	1.75	1.63	0.091	-	-	100	e	No samples above MDL
Isobutanol	5	0	None	0.600	0.540	0.042	-	-	100	e	No samples above MDL
Methanol	5	0	None	1.15	1.09	0.042	-	-	100	e	No samples above MDL
Methyl ethyl ketone	5	0	None	1.15	1.09	0.042	-	-	100	e	Code F005 applied per AK
Methylene chloride	5	0	None	0.095	0.091	0.004	-	-	10	e	Code F002 applied per AK
Pyridine	5	0	None	1.75	1.63	0.091	-	-	100	e	No samples above MDL
o-Xylene [g]	5	1	Natural log	-1.47	-2.21	0.416	-1.92	2.30	10	5	HWN not required to be applied [i]
m&p-Xylene	5	0	None	0.095	0.091	0.004	-	-	10	e	No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	5	0	None	0.095	0.091	0.004	-	-	10	e	Codes F001/F002 applied per AK
Toluene [g]	5	1	Natural log	0.336	-1.86	1.23	-1.02	2.30	10	5	Code F005 applied per AK
Trichloroethene [g] (Trichloroethylene)	5	1	Natural log	-1.71	-2.26	0.308	-2.05	2.30	10	5	Codes F001/F002 applied per AK
Trichlorofluoromethane	5	0	None	0.195	0.182	0.009	-	-	10	e	No samples above MDL
Vinyl chloride	5	0	None	0.195	0.182	0.009	-	-	4	e	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	5	0	None	0.100	0.100	0	-	-	40	e	No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	5	0	None	0.100	0.100	0	-	-	40	e	No samples above MDL
2,4-Dinitrophenol	5	0	None	0.100	0.100	0	-	-	40	e	No samples above MDL
2,4-Dinitrotoluene	5	0	None	0.100	0.100	0	-	-	2.6	e	No samples above MDL
bis(2-Ethylhexyl) Phthalate [j]	5	1	None	0.380	0.156	0.125	0.242	-	40	5	HWN not required to be applied [i]

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	Upper 90% confidence limit (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [f]	Comments
Fluoranthene [g, k]	5	1	Natural log	-0.236	-1.89	0.924	-1.26	3.69	40	5	HWN not required to be applied [i]
Hexachlorobenzene	5	1	None	0.280	0.136	0.080	0.191	-	2.6	5	HWN not required to be applied [i]
Hexachlorocthane	5	0	None	0.100	0.100	0	-	-	40	[e]	No samples above MDL.
2-Methylphenol (o-Cresol)	5	0	None	0.100	0.100	0	-	-	40	[e]	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	5	0	None	0.100	0.100	0	-	-	40	[e]	No samples above MDL
Nitrobenzene	5	0	None	0.100	0.100	0	-	-	40	[e]	No samples above MDL
Pentachlorophenol [g]	5	2	Natural log	0.095	-1.51	1.13	-0.738	3.69	40	5	HWN not required to be applied [j]
Phenol [l]	5	2	None	3.10	0.960	1.32	1.87	-	40	5	HWN not required to be applied [i]

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} for the analyte is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, UCL_{90}, and PRQL.

c. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not assigned (i.e., it only applies to those cases where a site intends to establish that the constituent is below the regulatory threshold and the associated EPA HWN does not apply). The HWN for chromium (D007) is applied to the waste stream; therefore, chromium is not used in determining "n" for constituent.

d. If there is no HWN associated with an analyte, then that analyte will not be used to define the number of required samples.

e. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

f. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

g. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.

h. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-77 is not assigned to the waste. The reported values were all less than 1% for beryllium.

i. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} result for the waste stream and lot is below the PRQL.

j. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

k. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

l. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-77, Rev. 1

Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11343.)
Susan Peterman
TRU Programs Manager

06/27/12
Date

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ACRONYMS AND ABBREVIATIONS

AK	Acceptable Knowledge
AMWTP	Advanced Mixed Waste Treatment Project
ANL-W	Argonne National Laboratory-West
ATWIR	Annual Transuranic Inventory Report
BN	BNFL Inc.
CAO	Carlsbad Area Office (currently known as Carlsbad Field Office/CBFO)
CCP	Central Characterization Project
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CH-TRUCON	contact-handled Transuranic waste content code
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EDL	economic discard limit
EPA	U.S. Environmental Protection Agency
HSG	headspace gas
HWN	hazardous waste number
IDC	item description code
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
MDL	method detection limit
nCi/g	nanocuries per gram
NDA	non-detectable analyte
PCB	polychlorinated biphenyl
PVC	polyvinyl chloride
ppm	parts per million
PRQL	program-required quantitation limit
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (name prior to 1990 when waste shipped to INL)
RFETS	Rocky Flats Environmental Technical Services (renamed in mid-1990s)
RTR	real-time radiography

TRU	transuranic
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
UCL_{90}	90% upper confidence limit
VE	visual examination
VOCs	Volatile Organic Compounds
WAC	Waste Acceptance Criteria
WMC	waste matrix code
WMP	waste material parameter
WSPF	waste stream profile form
WTS	waste tracking system
WIPP	Waste Isolation Pilot Plant

Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN222, Rev. 0

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Solidified Plutonium Recovery Incinerator Waste

1.2.2 Point of Generation

Rocky Flats Plant (RF)–Buildings 371, 771 and 776 [2, 4, 18, 22, 23, 26, 30, 39]

1.2.3 Waste Stream Volume

574, 55-gallon drums (122 m3) – current volume [31]
0, 55-gallon drums (0 m3) – projected volume

The above is an estimate of the number of containers for waste stream BN222. Approximately 100% of the containers have transuranic (TRU) activity greater than100 nCi/g. [5]

1.2.4 Generation Dates

Solidified Plutonium Recovery Incinerator Waste (waste stream BN222) was generated from 1974 to 1987. Containers from waste stream BN222 stored at AMWTP with generation dates (i.e., pack date) later than 1987 are the result of repackaging (e.g., waste characterization activities). [4, 22, 26]

1.2.5 Contact-Handled Transuranic waste content code (CH-TRUCON)

ID 111/ID 211, ID 114/ID 214 [8]

1.2.6 Transuranic Waste Inventory Baseline Inventory Report (TWBIR) Information

Annual Transuranic Waste Inventory Report (ATWIR) Waste Stream ID: IN-BN222. [9]

1.2.7 Summary Category Group

S3000- Homogeneous Solids [16]

1.2.8 Waste Matrix Code Group

Solidified Inorganics [16]

1.2.9 Waste Matrix Code (WMC)

S3150 – Solidified Homogeneous Solids [16]

WMC S3150 consists of at least 50 volume percent solidified homogeneous solids. The waste is comprised of particulate (ash and soot) and sludge waste* that has been immobilized/solidified with cement. [10]

1.2.10 Description from the annual update to the TWBIR

The waste is comprised of solidified homogeneous solid wastes generated from the RF plutonium recovery incinerator operations. The IN-BN222 waste stream includes IDCs ID-RF-292, ID-RF-807b/696, ID-RF-818, and ID-RF-820. The BN222 waste stream consists of waste >50% by volume solidified homogeneous solids, i.e., particulate or sludge waste solidified by adding Portland cement." [9]

1.2.11 AMWTP Defense-Related Determination

As outlined in the 1997 Carlsbad Area Office (CAO) interim guidance on insuring that waste qualifies for disposal at the Waste Isolation Pilot Plant (WIPP), TRU waste is eligible for disposal at WIPP if it has been generated in whole or part by one of the atomic energy defense activities listed in section 10101(3) of the Nuclear Waste Policy Act of 1982 (NWPA) and is not high level or spent nuclear fuel. [7, 40]

The waste comprising BN222 waste stream that was generated at RF and shipped to the Idaho National Laboratory (INL) was generated in support of defense research and development program activities or was inherently mixed with defense-related wastes to the extent that the defense and non-defense waste cannot be separated. The plutonium recovery incinerator operation was the initial step in recovering plutonium from cellulosic, plastic and filter waste at the RF. Incinerator ash has been determined to be a defense-related waste and was generated from defense-related activities or during work in which defense and non-defense waste (i.e., combustibles from the americium purification project) were inadvertently mixed as feed to the incinerator in the past and from which the non-defense portion cannot be segregated. [6]

The waste comprising BN222 waste stream meets the criteria of defense related waste as documented in the 1997 CAO memorandum. This memorandum also documents that

* In accordance with RCRA definitions (40 CFR 260.10) any solid or semi-solid generated from an air pollution control facility is included in the definition of sludge. Some of this waste will meet the RCRA definition of sludge.

there is no historical record or evidence that the RF facility ever handled spent nuclear fuel or high level waste. [6]

In addition, BN222 waste stream was generated by a waste process that meets the criteria outlined in Section 2 (Definitions), Item 3 (atomic energy defense activity) of the NWPA. [40]

Based on the above information, the waste associated with this waste stream does not meet the definition of high level waste or spent nuclear fuel and is classified as defense-related waste.

1.3 Waste Stream Description

1.3.1 Description

This waste stream is comprised of plutonium recovery incinerator waste generated during the RF plutonium recovery operations within Building 771 that were subsequently solidified by adding Portland cement in either Building 771 or Building 371. Some containers of solidified waste were subsequently repackaged in Building 776. [2, 17, 23]

This waste stream includes: solidified ash from the incinerator burn chamber and solidified soot and scrubber sludge from the incinerator off-gas system of the RF Building 771 plutonium recovery incinerator. The BN222 waste stream, Solidified Plutonium Recovery Incinerator Waste, is from a single process and is similar in material, physical form, hazardous constituents, and is a single waste stream. See Section 1.7.2.[2, 17, 18, 23]

Incinerator off-gas scrubber sludge was generated by the filtration of the potassium hydroxide (KOH) scrubber liquid and consists of a diatomite (also called diatomaceous earth) filtrate material and fly ash. Prior to 1986, Portland cement was added to the off-gas scrubber sludge during the packaging process in Building 771 and the waste was identified as IDC RF-292. [17, 34, 39] During late 1985, incinerator off-gas scrubber sludge solidification activities ceased within Building 771. The off-gas scrubber sludge was transferred to Building 371 for solidification by adding Portland cement and water to the sludge and was identified as IDC RF-696 (aka RF-807b)†. [2, 16, 18, 23]

Building 771 plutonium recovery incinerator operations also produced incinerator ash from the incinerator burn chamber and incinerator soot from the clean-up of the plutonium recovery incinerator off-gas system. Prior to 1986, incinerator ash and soot

† RF-696 is an IDC developed by the 3,100 m^3 Project. IDC RF-696 was created to avoid confusion associated with the dual usage of IDC 807 by RF for two different waste streams. RF shipped both solidified by-pass sludge from Building 374 and incinerator sludge solidified in Building 371 to the INL as IDC 807. In order to avoid confusion during the INL 3,100 m^3 Project, the RF-696 (aka RF-807b) was created and assigned to drums of cemented incinerator sludge that were solidified in Building 371 and IDC RF-807 (aka RF-807a) was retained and assigned to drums of solidified by-pass sludge from Building 374.

were not solidified. The unsolidified incinerator ash and soot are not included in the BN222 waste stream. Beginning in late 1985, incinerator ash and soot wastes were solidified within Building 371 by adding Portland cement and water. The resulting wastes were identified as RF-818 and RF-820, respectively. (2, 16, 23)

Prior to shipment to the INL, RF conducted drum inspections and added absorbent material (i.e., vermiculite or Oil-Dri®). The added absorbent was typically placed outside the outer, sealed polyethylene drum bag; however some drums may contain no absorbent material. (16)

Containers that are identified as having prohibited liquids may be treated using Aquaset® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. (42, 46)

Aquaset® is a non-hazardous sodium montmorillonite clay material. It may be used to solidify prohibited aqueous liquids within the waste containers comprising this waste stream.

Micro-Cel® E is a non-hazardous synthetic calcium silicate that may be used to solidify prohibited liquids within waste containers comprising this waste stream.

Some containers of solidified plutonium recovery incinerator wastes were subsequently repackaged in Building 776. The repackaging of plutonium recovery incinerator waste did not result in a change to the chemical composition or waste form for this waste. (2, 4)

Although individual drums may also contain small amounts of debris (PPE, plastic, metal, glass, cement bags, Ful-Flo filters, metal, unburned feed material, and broken plastic molds), each container in this waste stream will contain at least 50% by volume solidified homogeneous solid waste. (2, 16, 18)

1.4 Process Description

1.4.1 Areas of Operation

The plutonium recovery incinerator wastes were generated from the plutonium recovery incineration operations within RF Building 771. The wastes were subsequently solidified with Portland cement in Buildings 371 or 771. Repackaging of some containers of the waste was conducted within Building 776. The repackaging of plutonium recovery incinerator waste did not result in a change to chemical composition or waste form. (2, 4, 16, 17, 23, 30, 39)

1.4.2 Process Flow Diagram

Process flow diagrams for incineration, solidification and repackaging operations for BN222 waste stream are provided in the AMWTP archived RF documents: RF

procedure WO-4500 (TRU Waste Compliance Program for the WIPP-WAC), Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, and the Waste Stream and Residue Identification and Characterization for Building 776. [13, 15, 39]

1.4.3 Waste Generation

Building 771 housed the RF plutonium recovery incinerator. The plutonium recovery incinerator in Building 771 was constructed for two main purposes. The first was to reduce the volume of cellulosic, plastic and filter waste to reduce disposal costs. The second was to generate an ash from which plutonium could be recovered. The incineration system was comprised of a multi-chamber, refractory-lined firebox; heat exchangers; caustic scrubber off-gas system; rotary filter; ball mill (used to pulverize ash); dedicated vacuum system; various gloveboxes, tanks, pipes, and valves; and a filter plenum. [2, 34, 39]

BN222 waste stream includes ash, soot, and scrubber sludge generated from the plutonium recovery incinerator that was subsequently solidified. The waste within this waste stream was generated from the plutonium recovery incinerator operations within the Building 771. The plutonium recovery incinerator received combustible wastes (cellulosic, plastics, and Ful-Flo filters) that contained recoverable amounts of plutonium that were above the economic discard limit (EDL) from RF plutonium production and plutonium recovery operations. Combustible wastes that were fed to the incinerator included IDCs: RF-330 (Paper and Rags-Dry), RF-331 (Ful-Flo Filters not from Incinerator), RF-336 (Paper and Rags-Moist), and RF-337 (Plastic, Teflon, Washables, PVC). The ash, soot and sludge waste resulting from the plutonium incinerator recovery incineration process underwent subsequent solidification within Buildings 371 and/or 771 using Portland cement. [2, 18, 23, 34, 39]

The off-gas scrubber system was composed of: two air-to-gas heat exchangers that drew in room air to help cool the incinerator off-gas before it passed through a caustic scrubber with a venturi off-gas system component and resulted in an increased scrubbing efficiency of the KOH caustic scrubber solution. After the off-gas passed through the venturi scrubber, the gas was filtered through the incinerator filter plenum prior to being discharged into the Building 771 HVAC system. The KOH caustic solution was processed through a rotary drum vacuum filter to separate the particulate material from the caustic solution. Incinerator off-gas scrubber sludge was generated by the filtration of the KOH scrubber liquid and consists of a diatomite filtrate material and fly ash. [2, 34, 39]

Prior to 1974, incinerator off-gas sludge did not undergo solidification and was identified as RF-290. The unsolidified sludge is not included as part of the BN222 waste stream. Beginning in 1974 but prior to 1977, Portland cement was added to sludge for absorption of free liquids. The sludge was placed in a PVC bag and sealed with tape, double contained in plastic bags, and placed into 1-gallon metal paint cans containing Portland

cement. After 1977 but prior to 1986, Portland cement was added in layers with the sludge and the sludge was capped with Portland cement. The sludge was packaged in poly bottles (2-liter, 4-liter, or 1-gallon polyethylene bottles) that were double bagged. Up to 25 cans or bottles were placed in a 55-gallon drum and identified as IDC RF-292. [2, 16, 17, 34, 39]

During late 1985, the plutonium recovery incinerator off-gas sludge was transferred to Building 371 and solidified. The solidified sludge waste was produced by mixing Portland cement and water with incinerator sludge within plastic molds and allowed to cure. The solidified sludge waste was removed from the molds, double-bagged prior to placement into 55-gallon containers, and identified as IDC RF-696. IDC RF-696 is incinerator sludge solidified in Building 371 that was generated between 1985 and 1987 (see prior footnote). [2, 22, 35, 36, 37]

Prior to 1986, plutonium recovery incinerator ash from the burn chamber and incinerator soot from clean up of the off-gas system did not undergo solidification and were identified as RF-420 (incinerator ash) or RF-422 (soot). The unsolidified ash and soot are not included as part of the BN222 waste stream. During late 1985, this ash and soot underwent solidification in Building 371. The solidified ash and soot wastes were produced by mixing Portland cement and water within plastic molds and allowed to cure. The solidified ash and soot wastes were removed from the molds, double-bagged prior to placement into 55-gallon containers, and identified as IDCs RF-818 and RF-820, respectively. [2, 23, 37]

Some containers of solidified plutonium recovery incinerator wastes underwent repackaging within Building 776. The repacking did not result in a change to the physical form or chemical composition of the solidified waste. [2, 4, 15]

1.4.4 Material Inputs

Building 771 generated plutonium recovery incinerator wastes. [2, 17, 23]

Combustible wastes used as feed to the plutonium recovery incinerator contained recoverable amounts of plutonium. These combustible wastes were generated from routine and non-routine activities in support of plutonium production and recovery operations from RF Buildings 371, 707, 771, 776, 777 and 779. The combustible wastes used as feed to the plutonium recovery incinerator included RF-330 (Paper and Rags-Dry), RF-331 (Ful-Flo filters), RF-336 (Paper and Rags-Moist), and RF-337 (Plastic, Teflon, Wash, PVC). The BN222 waste stream may contain chemical constituents associated with the combustible waste feed IDCs that were generated by the plutonium production and recovery processes. Hazardous waste chemical constituents are discussed in Section 1.4.6. [2, 23, 34, 39]

Diatomaceous earth and potassium hydroxide are material inputs to the plutonium incinerator off gas scrubber system. Although corrosive material was part of the material inputs to this waste stream the waste will not meet the definition of a corrosive waste. The waste stream is not a liquid waste and absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging at RF for purposes of absorbing liquids and to prevent the accumulation of liquids in the drum. Furthermore, any containers found to have WIPP-prohibited liquids will be treated by AMWTP to render the waste acceptable prior to shipment. [2, 25]

The BN222 wastes underwent solidification using Portland cement within Buildings 771 or 371. [2, 18, 23, 34, 39]

Prior to shipment to the INL, non-hazardous absorbents such as Oil-Dri® or vermiculite were typically placed between the outer drum bag and the rigid liner. Non-hazardous solidification agents Aquaset® and Micro-Cel® E may be added to the waste by AMWTP to treat prohibited liquids. [2, 32, 33]

1.4.5 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for the BN222 waste stream, WMP data for 521 containers with completed real-time radiography (RTR) or visual examination (VE) data of BN222 waste drums were obtained from the AMWTP Waste Tracking System (WTS) database for containers examined prior to August 17, 2009. This population represents greater than 90% of the estimated number of drums for this waste stream (i.e., 521 out of 574 drums). Four hundred and forty four drums of the 444 drums included in Lot 1 have been characterized by RTR/VE and their data are included in the WMP calculations. Drums used to calculate WMPs were generated from 1974 through 1987 and are representative of the waste stream. The estimated WMP weights (by percent) for the BN222 waste stream, excluding drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. These weight percentages are summarized in Table 1-1. [19, 27]

Table 1-1. Estimated Waste Material Parameter Weight per Unit of Waste for Solidified Plutonium Recovery Incinerator Waste. (BN222)

Waste Material Parameters	Weight per Unit Waste by Percent
Iron-based Metals/Alloys	2 %
Aluminum-based Metals/Alloys	<1 %
Other Metals	<1 %
Other Inorganic Materials	1 %
Cellulosics	<1 %
Rubber	<1 %
Plastic (waste materials)	7 %
Organic Matrix	0 %
Inorganic Matrix	90 %
Soils/Gravel	0 %

Although individual drums in this waste stream may contain debris materials, the waste within each container will be greater than 50%, by volume, solidified inorganic homogenous waste. [2, 17, 30]

1.4.6 Constituents Associated with RCRA-Regulated Hazardous Waste Numbers (HWNs) for Combustible Waste Feed to Incinerator

The hazardous constituents associated with RCRA-regulated HWNs that are contaminants of the combustible waste feed to the plutonium recovery incinerator and the resulting solidified plutonium recovery incinerator waste are presented in Table 1-2.

Table 1-2. Potential Chemical Contaminants Associated with Combustible Waste Feed to the Plutonium Recovery Incinerator

Chemical	Source of Chemical Contaminant
1-Butanol	Analytical laboratory analysis [2]
1,1,1-Trichloroethane	Analytical laboratory analysis, plutonium component production, cleaning, degreasing, decontamination solvent. [1, 2, 39]
1,1,2-Trichloro-1,2,2-triflouroethane (Freon TF)	Analytical laboratory analysis, plutonium component production, cleaning, degreasing. [1, 2, 39]
Acetone	Analytical laboratory analysis, cleaning, plutonium component production. [1, 2, 39]
Arsenic	Analytical laboratory analysis. [1, 2, 25, 34, 39]
Barium	Analytical laboratory analysis. [1, 2, 25, 34, 39]
Benzene	Analytical laboratory analysis, plutonium component production. [1, 2]
Beryllium	A component of weapons parts. [2, 34]
Cadmium	Analytical laboratory analysis. [1, 2, 25, 34, 39]
Carbon disulfide	Analytical laboratory analysis. [34, 38]
Carbon tetrachloride	Analytical laboratory analysis, plutonium component production, cleaning, degreasing. [1, 34, 39]
Chloroform	Analytical laboratory analysis. [1, 2, 24, 25, 38, 41]
Chromium	Analytical laboratory analysis. [1, 2, 24, 25, 34, 39]
Lead	Analytical laboratory analysis, contained in paint. [1, 2, 25 34, 39]
Mercury	Analytical laboratory analysis. [1, 25, 34, 39]
Methanol	Analytical laboratory analysis, cleaning, glass. [1, 2]
Methyl ethyl ketone	Analytical laboratory analysis, contaminant in paint. [1, 34]
Methylene chloride	Analytical laboratory analysis, paint removal. [1, 2, 39]
Selenium	Analytical laboratory analysis. [1, 2, 25, 34, 39]

Chemical	Source of Chemical Contaminant
Silver	Analytical laboratory analysis. [1, 2, 25, 34, 39]
Tetrachloroethylene	Plutonium component production, analytical laboratory analysis, cleaning, degreasing. [1, 2, 39]
Toluene	Analytical laboratory analysis. [1, 2, 24, 34]
Trichloroethylene	Analytical laboratory analysis, plutonium component production, cleaning, degreasing, decontamination solvent. [1, 2, 39]
Xylene	Analytical laboratory analysis, cleaning, glass. [1, 2]

In addition, the F006, F007 and F009 HWNs assigned to this waste stream are associated with cadmium, chromium, lead and cyanide electroplating chemicals. These HWNs were previously assigned by the 3,100 m^3 project to the WIPP-approved WSPF INW222.001 Miscellaneous Cemented Sludge due to the identification of minor amounts of filter debris (i.e. Ful-Flo filters) within containers of cemented incinerator sludge. Filter debris waste contaminated with electroplating waste are assigned the F006, F007 and F009 HWNs.

1.5 AK Sufficiency Determination

No Acceptable Knowledge (AK) Sufficiency Determinations apply to this waste stream.

1.6 Prohibited Items

WIPP prohibited items have been identified through RTR/VE. Potential prohibited items that may be found in this waste stream are identified in RPT-TRUW-05, Waste Matrix Code Reference Manual, (e.g., sealed containers > 4 liters, liquids). [16]

The following items are prohibited at the WIPP in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan: [3, 11]

- Liquid waste - Waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (i.e., 55-gallon drum or standard waste box) may not exceed 1 volume percent of that container. Payload containers with U134 waste shall have no detectable liquid
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes

- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristics of ignitability, corrosivity, or reactivity (HWNs D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, unless specifically approved through a Class 3 permit modification
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment
- Sealed containers greater than four liters.

The absence of prohibited items is determined and documented through AK and characterization activities (i.e., RTR/VE). RTR or VE is performed on each container to verify the absence of prohibited items. [20, 21] Drums containing prohibited items will not be shipped to WIPP. Drums with prohibited items are treated or rejected as appropriate. [44, 45]

1.7 RCRA Determination

1.7.1 EPA HWNs

BN222 waste stream is characterized as mixed-TRU waste because mixed-TRU combustible waste generated from routine and non-routine activities in support of plutonium production and recovery operations was treated in the plutonium recovery incinerator in Building 771. The plutonium recovery incinerator wastes in BN222 were solidified with the addition of Portland cement. Applicable AK HWNs are supported by the chemical constituents identified in Section 1.4.6 and by AMWTP analytical results.

Toxicity characteristic HWNs applied to the BN222 waste stream are D004, D005, D006, D007, D008, D009, D010, D011 and D022. Listed HWNs applied to this waste stream are F001, F002, F005, F006, F007 and F009. [1, 2, 14, 18, 24, 25, 29, 30]

1.7.2 Hazardous Determination

Ignitability

The waste materials in this waste stream do not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of *ignitability*. The BN222 waste stream is not a liquid waste. Furthermore non-hazardous absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids. Containers with WIPP-prohibited liquids will be treated using non-hazardous solidification agents (e.g., Aquaset® or Micro-Cel® E) to render the waste acceptable prior to shipment. In addition, the waste materials in this waste stream are not compressed gas and do not contain compressed gas and the waste does not meet the United States Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001). [1]

Corrosivity

The waste materials in this waste stream do not meet the 40 CFR 261.22 definition of *corrosivity*. The BN222 waste stream is not liquid. Furthermore, absorbents (i.e., cement, vermiculite, and Oil-Dri®) were added during packaging for purposes of absorbing liquids. [2, 25] Containers with WIPP-prohibited liquids will be treated by AMWTP to render the waste acceptable prior to shipment using Aquaset® or Micro-Cel® E). This waste stream does not exhibit the characteristic of corrosivity (D002). [1]

Reactivity

The waste materials in this waste stream do not meet the 40 CFR 261.23 definition of *reactivity*. The BN222 waste stream is stable and will not: undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste is not a sulfide bearing waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source of if heated under confinement. The waste is not readily capable detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part, 173. Although the waste contains minor amounts of filter debris (i.e. Ful-Flo filters) that are assigned F006, F007 and F009 listed HWNs associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment. This waste stream does not exhibit the characteristic of reactivity (D003). [1]

Toxicity

BN222 waste stream contains RCRA toxicity constituents associated with toxicity characteristic metals and organics. The RCRA toxicity characteristic metals and organics assigned to this waste stream are: arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), silver (D011) and chloroform (D022). [25, 34]

Solid samples were analyzed at the AMWTP for RCRA toxicity characteristic metals. Statistics were calculated based on using one-half the method detection limit (MDL) for less than detectable observations and with data transformation applied where appropriate. The 90 percent upper confidence limit (UCL_{90}) exceeded the program-required quantitation limit (PRQL) for the toxicity characteristic metals: cadmium, chromium and lead. The D006, D007 and D008 HWNs were previously assigned based on AK. Therefore the D006, D007 and D008 HWNs are retained to the BN222 waste stream.

Although the AMWTP calculated UCL_{90} values did not exceed the PRQL for arsenic, barium, mercury, selenium and silver, the corresponding D004, D005, D009, D010, and D011 HWNs are assigned based on AK to the BN222 waste stream. [1, 24, 25]

RCRA toxicity characteristic organic compounds include halogenated and non-halogenated toxic compounds. The plutonium recovery incinerator accepted plutonium-contaminated solid combustibles including paper, plastic, polypropylene and rubber wastes. The combustible materials may have been contaminated with RCRA toxicity characteristic organic compounds including tetrachloroethylene, trichloroethylene, carbon

tetrachloride, methyl ethyl ketone, and benzene. [25] AMWTP solid sampling analytical results reflect UCL_{90} values below the PRQL (or not detected) for methyl ethyl ketone (D035), tetrachloroethylene (D039), trichloroethylene (D040), carbon tetrachloride (D019), and benzene (D018). These constituents were identified through AK as F-listed hazardous waste sources for this waste stream and are addressed below under the F-Listed HWNs section. The D018, D019, D035, D039, D040 HWNs are not assigned to the BN222 waste stream.

Chloroform was detected above the PRQL by the 3,100 m^3 Project in the headspace gas analytical results for containers in the WIPP-approved INW222.001 WSPF and HWN D022 was assigned by the 3,100 m^3 Project. Although chloroform was not detected in the solid sampling performed by AMWTP, the D022 HWN is assigned based on AK to the BN222 waste stream. [25]

Listed Waste

F-Listed HWNs

F-listed HWNs F001, F002, F003, F005, F006, F007 and F009 were assigned by the 3,100 m^3 Project to the INW222.001 WSPF. F-listed HWNs F001, F002, and F005 were assigned by RFETS to the RF118.01 and RF119.01 WSPFs. The AMWTP has assigned the F-listed HWNs F001, F002, F005, F006, F007 and F009 to the BN222 waste stream. [24, 25, 34]

AK documentation reflects that the incinerator waste comprising this waste stream have been contaminated with the F001, F002 and F005 spent solvent constituents associated with combustible feed materials to the incinerator. [2] The resultant incinerator waste would retain applicable listed HWNs based on current regulatory requirements (i.e., the RCRA derived from rule).

AK identified that halogenated solvents were used in the plutonium production operations for cleaning and degreasing (tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and 1,1,2-trichloro-1,2,2-trifluoroethane), and methylene chloride was used primarily for paint removal. None of these compounds were reported in the AMWTP solid sampling for this waste stream with UCL_{90} values above their associated PRQLs. The F001 and F002 HWNs are assigned based on AK for tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane (F001 and F002); carbon tetrachloride (F001); and methylene chloride (F002) to the BN222 waste steam. [24, 25]

Non-halogenated F003 compounds (acetone, methanol, 1- butanol, and xylene) were also identified in the AK record as potential contaminants associated with the combustible waste processed in the plutonium recovery incinerator operations. [2] The RFETS did not assign the F003 HWN to IDCs comprising this waste stream; however, the F003 HWN

was assigned to INW222.001 WSPF. [25, 34] In accordance with current RCRA criteria, if a waste no longer exhibits the characteristic of ignitability, the F003 HWN is not applicable [40 CFR 261.3(g)(1)]. The BN222 waste stream does not exhibit the characteristic of ignitability. The F003 HWN has not been assigned to the BN222 waste stream. [1, 43]

AMWTP AK reflects that F005 spent solvent constituents: benzene, carbon disulfide, methyl ethyl ketone, and toluene are associated with combustible waste that was feed to the plutonium recovery incinerator. The 3,100 m^3 Project assigned F005 to benzene and toluene in INW222.001 WSPF. The UCL_{90} value for toluene was reported by the 3,100 m^3 Project above the PRQL in the headspace gas analytical results for containers in the WIPP-approved INW222.001 WSPF. Toluene was also detected in the AMWTP solid sampling for this waste stream but the analytical results reflect that the UCL_{90} for toluene was below its associated PRQL. Because the above spent solvent constituents were identified in AK and were associated with feed to the plutonium recovery incinerator, the F005 HWN is assigned to the BN222 waste stream. [2, 24, 25, 34]

During the 3,100 m^3 Project, the F006, F007 and F009 HWNs were assigned to INW222.001 WSPF miscellaneous cemented sludge based on the mixture rule due to the presence of filter media (i.e., identification of Ful-Flo filters) within the waste stream. To support consistent HWN application associated with prior INL profiling for the same wastes, the AMWTP has assigned the F006, F007 and F009 HWNs based on AK to the BN222 waste stream. [14, 25]

P-, U- and K-Listed HWNs

The waste materials in this waste stream are not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, the waste materials in this waste stream were not mixed with, or derived from the treatment, storage, or disposal of P or U-listed waste. As a result, P- or U-listed HWNs are not assigned to this waste stream. [1, 25]

Although hydrofluoric acid was identified as a chemical used during plutonium processing and in the laboratories at RF, only spent forms of hydrofluoric acid would have contaminated the waste. Furthermore this waste stream was not mixed with, does not contain, and was not derived from an unused commercial chemical product, an off-specification species thereof, a manufacturing intermediate or contains spill residues thereof that would be classified as a U134 HWN. Based on this information, the U134 HWN is not assigned to the BN222 waste stream. [1, 2, 25]

Beryllium was identified in AK as a potential contaminant for RF wastes. Based on a review of AK, it was determined that the BN222 waste stream will contain less than one percent beryllium by weight. Beryllium is a contaminant associated with this waste. The

source of the beryllium is not associated with a powdered form and is not associated with unused commercial chemical product, an off-specification species, a container residue or contains a spill residue thereof. Therefore, the P015 HWN for beryllium is not assigned to the BN222 waste stream. [1, 25, 34]

The waste materials within this waste stream are not hazardous waste from specific sources listed in 40 CFR 261.32 (i.e., K-listed hazardous waste) and they have not been mixed with, derived from the treatment, storage or disposal of K-listed wastes and do not contain spill residues thereof. The waste materials in the BN222 waste stream are not assigned K-listed HWNs. [1, 25, 34]

Table 1-3 provides information that justifies that the IDCs included in the waste stream meet the WIPP waste stream definition. These IDCs included in this waste stream are from a single process (Building 771 plutonium recovery incinerator operations). In addition the IDCs contain similar hazardous constituents/HWNs and are similar in physical form (solidified incinerator sludge, ash and soot).

Table 1-3. IDCs, similar hazardous constituents/HWNs, waste stream generation process and waste physical form description.

IDC	Hazardous Constituents/HWNs	Waste Stream Generation Process	Waste Physical Form Description	Same Waste Stream
RF-292	D004-D011, D022, F001, F002, F005, F006, F007, F009*	Building 771 Plutonium recovery incinerator	Solidified plutonium recovery off-gas sludge	Yes
RF-696/807b	D004-D011, D022, F001, F002, F005, F006, F007, F009*	Building 771 Plutonium recovery incinerator	Solidified plutonium recovery off-gas sludge	Yes
RF-818	D004-D011, D022, F001, F002, F005, F006, F007, F009*	Building 771 Plutonium recovery incinerator	Solidified plutonium recovery incinerator ash	Yes
RF-820	D004-D011, D022, F001, F002, F005, F006, F007, F009*	Building 771 Plutonium recovery incinerator	Solidified plutonium recovery incinerator soot	Yes

* D022, F006, F007 and F009 assigned based on AK from INL 3,100 m^3 Project INW222.001 WSPF. [25]

Toxic Substances Control Act (TSCA) Regulated Contaminants

PCB items and PCB concentrations equal to or exceeding 50 ppm are not expected in the BN222 waste stream. If containers are identified as containing PCB electrical items (e.g., ballast, capacitors) the waste containers will be labeled and shipped in accordance with applicable WIPP WAC requirements. [1]

Other Applicable Waste Streams

The following waste streams were reviewed as being pertinent to the BN222 waste stream: RFETS waste streams RF118.01 (un-solidified ash from Building 771 plutonium recovery incinerator) and RF119.01 (solidified off-gas scrubber sludge from Building 771 plutonium recovery incinerator); Idaho National Engineering and Environmental Laboratory (INEEL) 3,100 m^3 Project waste stream INW222.001 (which includes IDCs RF-292 and RF-696). [24, 25, 34]

The waste matrix code S3150 (Solidified Homogeneous Solids) was assigned to the BN222 waste stream by AMWTP and to the INW222.001 waste stream by the 3,100 m^3 Project at INEEL. [24, 25] The waste matrix codes S3111 (Ash) and S3129 (Unknown/Other Inorganic Sludges) were assigned by RFETS to the RF118.01 and RF119.01 waste streams (respectively). [34] AMWTP has assigned the more specific WMC S3150 to the BN222 waste stream versus the WMC S3129 assigned by RFETS. The WMC S3111 was applied by RFETS to the incinerator ash waste stream that was not solidified and is not applicable to waste in the BN222 waste stream.

RF118.01 WSPF is the RFETS waste stream profile for the un-solidified incinerator ash generated after August 1989. The un-solidified ash (i.e., IDC RF-420) is not included in the BN222 waste stream; however the solidified ash waste (i.e., IDC RF-818) is included in the BN222 waste stream. The HWNs identified within RF118.01 WSPFs are included within BN222 waste stream. [34]

RF119.01 WSPF is associated with incinerator sludge (IDC RF-292) generated after January 1984. Solidified incinerator sludge generated prior to 1988 is included in the BN222 waste stream. The HWNs identified within RF119.01 WSPF are included within BN222 waste stream. [34]

EPA HWNs D004 through D011, F001, F002, and F005 were assigned by RFETS to the RF118.01 and RF119.01 waste streams. [34] In addition to the D004 through D011, F001, F002 and F005; D022, F003, F006, F007 and F009 HWNs were also assigned to the INW222.001 waste stream by the 3,100 m^3 Project. The EPA HWN D022 was assigned by the 3,100 m^3 Project to the WIPP-approved INW222.001 WSPF because chloroform was detected in headspace gas (HSG) sampling with UCL_{90} values above the PRQL. [24, 25] The F006, F007 and F009 HWNs were assigned to the INW222.001 waste stream based on the presence of filter media (i.e., Ful-Flo filters) within drums of cemented

incinerator sludge (i.e., RF-292). The AMWTP retains the D004 through D011, F001, F002, and F005 HWNs assigned by RFETS and the 3,100 m^3 Project for the BN222 waste stream and furthermore retains D022 and F006, F007 or F009 HWNs assigned by the 3,100 m^3 Project. [14, 25]

The F003 HWN constituents are listed only for ignitability. If a waste no longer exhibits the characteristic of ignitability, the F003 HWN can be removed [40 CFR 261.3(g)(1)]. The BN222 waste stream does not exhibit the characteristic of ignitability. [42, 44. 45, 46]

1.8 Radionuclides

The WIPP-tracked radionuclides of concern for this waste are: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are not expected within this waste stream. [2, 5]

To confirm existing AK data, the ratios of the two most prevalent radionuclides in the isotopic mix are compared. The two most prevalent radionuclides expected in BN222 waste drums are ^{239}Pu and ^{240}Pu. [5]

The recommended default mass fraction values of the plutonium isotopes to be used as the AK-based values and confirmed at the AMWTP during non-destructive assay (NDA) are listed in RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge. [5]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

2.1.1 Drums

This waste was typically packaged in one of three packaging configurations: double bags inside 1-gallon metal cans, polyethylene bottles (2-liter, 4-liter, 1-gallon bottles) that were double-bagged, or only PVC bags. [2, 16, 17, 23]

Up to 25 cans, bottles, or bagged solidified waste were placed in a 55-gallon drum. [16, 17, 23, 30] Depending on waste packaging requirements at the time, several combinations of drum bags and liners were used to prepare the 55-gallon drums for shipment. Variations include, but are not limited to: a rigid liner was placed in each drum with one or two polyethylene drum bags (including o-ring bags and round bottom poly bags). [12]

Atypical packaging include the use of Vollrath cans as well as various combinations of the types and numbers of drum bags including no drum bags. [16]

The most prevalent manner of bag closure was "twist and tape", however, "twisted and tied" or "fold and tape" were also used. Heat-sealed "filtered bags" may be found in some RF containers that were visually examined at Argonne National Laboratory-West (ANL-W) as part of a previous VE program conducted in Idaho. (16)

Prior to March 1982, one to two quarts of absorbent material (i.e., Oil-Dri®) was usually placed on top of the outer, sealed polyethylene drum bag; however some drums may contain no absorbent material. After February 1982 vermiculite was also used to fill the space between the outer, sealed polyethylene drum bag and the top of the 90-mil rigid liner. The quantity of vermiculite varied from 3-12 pounds in each drum. (16)

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen and methane. Headspace gas sampling and analysis is performed when required by the CH-TRAMPAC. HSG analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, Central Characterization Project (CCP) Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). (28)

3.0 REFERENCES

1. RPT-TRUW-12, AMWTP Waste Stream Designations, current revision [P393A]

2. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant, current revision [P649A]

3. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, current revision

4. Discrepancy Report D061A, Prefix use, building numbers, and process changes that occurred during the operational history at the Rocky Flats (RF) Facility, Rev. 3, August 5, 2009 [D061A]

5. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, current revision [P398A]

6. Memorandum from George E. Dials, DOE CAO, to J. M. Roberson, RFFO, and J. M. Wilcynski, INEEL, Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), May 20, 1997 [C191A]

7. Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant, February 13, 1997 [P203A]

8. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), Rev. 30, July 2009

9. DOE/TRU-09-3425, Annual Transuranic Waste Inventory Report - 2009, U. S. Department of Energy, Carlsbad Field Office, Rev. 0

10. DOE/LLW-217, DOE Waste Treatability Group Guidance, T. D. Kirkpatrick, Prepared for DOE Idaho Operations Office, Rev. 0, January 1995 [P670A]

11. MP-TRUW-8.2, Quality Assurance Project Plan, current revision.

12. WO-4034, Packaging Wastes for Shipment Offsite (U), Rev. C, October 13, 1986 [P063A]

13. WO-4500, TRU Waste Compliance Program for WIPP-WAC (U), Rev. F, January 19, 1987 [P043A]

14. Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Description Code (IDCs): RF-292, RF-371 and RF-377, January 29, 2009 [D043A]

15. Waste Stream Residue Identification and Characterization, Building 776, Version 3.2, 1992 [P078A]

16. RPT-TRUW-05, Waste Matrix Code Reference Manual, current revision. [P399A]

17. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, October 1982 [P024A]

18. EDF-2722, Waste Stream Summary Sheet-Miscellaneous Cemented Sludge, INEEL, Rev. 4, January 6, 2003 [P286A]

19. Memorandum to file, Waste Material Parameter Weight per Unit Waste Calculations for Proposed BN222 Waste Stream, MLJ-002-09, September 15, 2009 [C605A]

20. INST-OI-12, Real-Time Radiography Operations (Drum), current revision

21. INST-OI-34, Non-Facility Visual Examination Operations, current revision

22. Memorandum to File from Jeff Harrison, Historical Use of IDC 807, July 18, 1996 [C114A]

23. INEL-95/0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste, July, 1995 [P016A]

24. INEEL/EXT-02-00112, Characterization of Rocky Flats Plant Building Miscellaneous Cemented Sludge Waste Stream (IDCs 292 and 807b), Rev. 0, February, 2002 and Rev 1, March 2002 [P287A]

25. Waste Stream Profile Form INW222.001-Miscellaneous Cemented Sludges, Transmittal Letter (CCN 31196) from Thomas Monk to Jerry. L. Wells, U.S. DOE, April 10, 2002 and WSPF Update for WIPP Operating Record, 2/19/03 [P288A]

26. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS) [U127A]

27. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, current revision

28. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), current revision [P672A]

29. EDF-369, Hazardous Waste Constituents of INEL Contact-Handled Stored Transuranic Waste. D. E. Kudera, May 19, 1989 [P307A]

30. EGG-WMM-6503, TRU Waste Sampling Program: Volume I – Waste Characterization. Clements, Thomas L. Jr., and Donald E Kudera, September 1985 [P015A]

31. Discrepancy Report D062A, Volume Estimate for Proposed Waste Stream BN222, Solidified Plutonium Recovery Incinerator Waste, Rev. 1, September 15, 2009 [D062A]

32. Material Safety Data Sheet for Portland cement, Lone Star Industries, Inc. [P429A]

33. Material Safety Data Sheet for Oil-Dri® Floor Absorbent, Oil-Dri Corporation of America, July 21, 1988 [P426A]

34. RMRS-WIPP-98-100, RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries, Section 7.3 Rev. 14, May 23, 2002 and Section 7.37, Rev. 0, January 6, 2005 [P435S]

35. Letter to File, Assignment of Unique IDC (696) to IDC 807b Waste Containers, July 12, 2002 [C235A]

36. WO-4034, Waste Packaging for Offsite Shipment (U), Rev. A, August 16, 1985 [P372A]

37. Memorandum from J.K. Paynter to Al Morgan, EG&G Rocky Flats, Inc., "Creation and deletion dates of IDCs" June 16, 1994 [C050A]

38. Estimating Historical Emissions from Rocky Flats (Task 5 Draft report), November 1992 [P023A]

39. Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, May 5, 1994 - March 5, 2001 [P052A]

40. U.S. Congress, Nuclear Waste Policy Act of 1982 [P757A]

41. EDF-RWMC-421, EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes, EG&G Idaho, Inc. Rev. 4, April 1, 1994 [P310A]

42. Material Safety Data Sheets; Aquaset II-H, Fluid Tech, Inc. August 1, 2001 [P401A]

43. Discrepancy Report D076A, of the F003 HWN assignment between AK source documents and WIPP-approved WSPFs, September 21, 2009 [D076A]

44. INST-OI-68, Drum Treatment Facility Operations, current revision

45. INST-FOI-23, Special Case Waste Operations, current revision

46. Material Safety Data Sheet; MICRO-CEL®E, Celite Corporation, January 17, 2007 [P808S]

47. Resource Conservation and Recovery Act, Code of Federal Regulations, Parts 260 through 268, Current version

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BN222

AK Source Document / Rev. Number: RPT-TRUW-77 Rev. 0

HWN	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	X		X	X	✔
F002	X	X	X		X	X	✔
F003	X		X		X	0 [a]	✔
F005	X	X	X		X	X	✔
F006	X	X			X	X	✔
F007	X	X			X	X	✔
F009	X	X			X	X	✔
D004	X	X	X	0	X	X	✔
D005	X	X	X	0	X	X	✔
D006	X	X	X		X	X	✔
D007	X	X	X		X	X	✔
D008	X	X	X		X	X	✔
D009	X	X	X	0	X	X	✔
D010	X	X	X	0	X	X	✔
D011	X	X	X	0	X	X	✔
D022	X	X	X	0	X	X	✔

[a] In accordance with 40 CFR 261.3(g)(1), waste identified with the HWN F003 solely for the characteristic of ignitability is not an F003 waste if this characteristic is removed. Because the waste is not a liquid, the EPA HWN F003 is not retained for this waste stream

AK Expert: Tim Venneman/ **Date:** February 8, 2010
Print/Sign

Site Project Manager: Steve Capp **Date:** 2.8.10 Print/Sign

Waste Stream or Waste Type Description: Solidified Plutonium Recovery Incinerator Residues

Waste Stream or IDC Number: BN222

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C018A, C072A, C114A, C155A, C162A, C171A, C184A, C185A, C235A, C289A, C299A, C522A, C533A, C789S, D029A, D030A, D061A, P001A, P006A, P012A, P014A, P016A, P024A, P035A, P052A, P058A, P060A, P061A, P067A, P079A, P082A, P098A, P113A, P117A, P127A, P164A, P167A, P319A, P368A, P369A, P370A, P435S, P442A, P443A, P595A, P599A, P621A, P633A, P637A, P649A, P667A, P671S, P717A, P733S, P744A, P841A, U013A, U043A, U047A, U049A, U059A, U069A, U077A
Waste stream volume and time period of generation.	WS2	C072A, C289A, C499A, C507A, C522A, C535A, C605A, C620A, D029A, D030A, D061A, D062A, P024A, P061A, P090A, P113A, P127A, P164A, P237A, P246A, P286A, P318A, P319A, P364A, P365A, P368A, P400A, P442A, P443A, P567A, P595A, P621A, P633A, P637A, P649A, P671S, P744A, P826A, P841A, U059A, U069A, U122A, U127A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C008A, C010A, C014A, C018A, C050A, C114A, C171A, C175A, C180A, C185A, P001A, P012A, P014A, P015A, P016A, P024A, P035A, P038A, P039A, P052A, P053A, P055A, P056A, P058A, P060A, P061A, P062A, P067A, P078A, P079A, P081A, P082A, P092A, P098A, P106A, P109A, P110A, P117A, P163A, P164A, P167A, P175A, P282A, P368A, P369A, P435S, P442A, P443A, P599A, P621A, P633A, P637A, P649A, P667A, P671S, P717A, P744A, P841A, U015A, U047A, U049A, U077A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C050A, C063A, C072A, C076A, C078A, C155A, C162A, C184A, C218A, C245A, C533A, C546S, D043A, D053A, D058A, D061A, D070A, D073A, D074A, D076A, P006A, P015A, P016A, P024A, P033A, P035A, P038A, P052A, P053A, P056A, P060A, P061A, P062A, P067A, P068A, P076A, P079A, P081A, P083A, P092A, P094A, P098A, P106A, P108A, P109A, P113A, P163A, P207A, P282A, P283A, P284A, P285A, P286A, P287A, P288A, P307A, P310A, P319A, P359A, P365A, P368A, P369A, P393A, P401A, P409A, P426A, P427A, P429A, P435S, P442A, P443A, P595A, P598A, P599A, P621A, P633A, P637A, P649A, P667A, P717A, P744A, P808S, P841A, U013A, U030A, U043A, U047A, U097A
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C018A, C022A, C063A, C184A, C242A, C243A, C289A, C299A, C315A, C316A, C499A, C504A, C521A, C533A, C546S, C566S, C605A, C620A, C789S, C840S, C841S, D061A, P001A, P006A, P008A, P012A, P014A, P015A, P016A, P024A, P032A, P035A, P039A, P043A, P052A, P056A, P058A, P061A, P063A, P064A, P090A, P094A, P098A, P113A, P117A, P141A, P207A, P237A, P282A, P283A, P286A, P319A, P365A, P368A, P370A, P372A, P393A, P399A, P435S, P442A, P443A, P465A, P567A, P595A, P599A, P621A, P633A, P637A, P649A, P667A, P670A, P717A, P744A, P841A, U004A, U097A, U219S, U230A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C076A, C078A, C079A, C116A, C245A, C299A, C566S, C607A, C840S, C841S, D010A, D012A, D016A, D017A, D033A, D043A, D053A, D058A, D064A, D070A, D073A, D074A, D076A, P012A, P013A, P015A, P016A, P023A, P035A, P038A, P052A, P053A, P056A, P058A, P061A, P067A, P080A, P094A, P108A, P207A, P237A, P239A, P282A, P283A, P284A, P285A, P286A, P287A, P288A, P307A, P310A, P365A, P368A, P393A, P435S, P442A, P443A, P595A, P598A, P599A, P633A, P637A, P649A, P667A, P717A, P733S, P744A, P841A, U030A, U046A, U049A, U059A, U060A, U082A, U097A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C072A, C130A, C134A, C137A, C174A, C180A, C184A, C210A, C220A, C221A, C506A, C551A, C552S, C566S, C840S, C841S, P024A, P035A, P053A, P056A, P061A, P062A, P067A, P076A, P079A, P090A, P092A, P094A, P098A, P117A, P156A, P163A, P164A, P189A, P190A, P194A, P195A, P198A, P227A, P232A, P240A, P282A, P283A, P286A, P296A, P307A, P322A, P368A, P398A, P435S, P442A, P443A, P595A, P611A, P621A, P633A, P637A, P649A, P744A, P759S, P841A, U047A, U073A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C321A, C511A, C516A, C568S, C613S, C614S, C615S, C616S, D070A, P001A, P012A, P013A, P015A, P016A, P024A, P063A, P237A, P319A, P358A, P368A, P370A, P372A, P399A, P442A, P443A, P465A, P633A, P637A, P649A, P667A, P733S, P744A, P841A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Tim Vendeman — Print/Sign — Date: 2-8-10 — Date

Site Project Manager: Steve Carpenter — Print/Sign — Date: 2.8.10

LDR NOTIFICATION

WASTE STREAM: BN222

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004 through D011, D022, F001, F002, F005, F006, F007 and F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act.

Container Identification numbers	Hazardous waste number(s)	Land disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	D022	September 19, 1996
	F001	Nov 8, 1988
	F002	Nov 8, 1988
	F005	Nov 8, 1988
	F006	August 8, 1988
	F007	July 8, 1989
	F009	July 8, 1989

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

October 1, 2009 C-2009-0424

Mr. J.M. Usher
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Waste Stream Profile BN222 – ET-065-09

Dear Mr. Usher:

This letter accompanies the Waste Stream Profile BN222, *Solidified Plutonium Recovery Incinerator Waste*, and RPT-TRUW-77, *Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)*, for your review and approval. We have evaluated and reviewed the profile and believe it is compliant with the Waste Acceptance Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Rick Chavez, WRES
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
Marc Italiano, CBFO
James M. Jackson, BBWI
Talley W. Jenkins, Jr., DOE-ID
Jason P. Lance, BBWI
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Matthew E. Storms, BBWI
Jerry L Wells, DOE-ID
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

January 5, 2010 C-2010-0008

Mr. J. M. Usher
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Re-Submittal of Waste Stream Profile BN222 – ET-001-10

Dear Mr. Usher:

This letter accompanies the Waste Stream Profile BN222, *Solidified Plutonium Recovery Incinerator Waste*, and RPT-TRUW-77, *Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)*, for your review and approval. We have incorporated your comments within the profile and believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Rick Chavez, WRES
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
Marc Italiano, CBFO
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Jason P. Lance, BBWI
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Matthew E. Storms, BBWI
J. R. Strobel, CBFO
Jerry L. Wells, DOE-ID
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

January 14, 2010 C-2010-0027

Mr. J. M. Usher
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Re-Submittal of Waste Stream Profile BN222 – ET-007-10

Dear Mr. Usher:

This letter accompanies the Waste Stream Profile BN222, *Solidified Plutonium Recovery Incinerator Waste*, and RPT-TRUW-77, *Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)*, for your review and approval. We have incorporated your comments within the profile and believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

JM Jackson
ACTNG FOR

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Rick Chavez, WRES
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
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William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Matthew E. Storms, BBWI
J. R. Stroblel, CBFO
Jerry L. Wells, DOE-ID
AMWTP Correspondence Control

B-2012-0203
RECORD
JMC 10/02/12

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P1358A	2. Revision: 1

3. **Category**

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BN600 Waste Stream Profile package, AMWTP WMF-676 PCB contaminated Debris (BN600)

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 07/28/2011

FOR INFORMATION ONLY

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM4, WM5, WM6, WM7, WM8	BN	All	The AK Summary addresses all of the required Waste Management (WM) elements by providing either a summary of the information or by identifying a reference to the document(s) that contain the information. Therefore, the WM elements identified in this summary are for those elements that are found in this package.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	BN-600	All	The AK Summary addresses all of the required Waste Stream (WS) elements

9. Document Summary:

This document is a compilation of all characterization information for waste stream BN-600 (AMWTP WMF676 PCB Contaminated Debris) submitted to and approved by CBFO. The document addresses newly generated debris from the south box line treatment of organic setups (RF-003/RF-743). See RPT-TRUW-88 DCR for additional information. This package includes the following documentation:

CBFO Approval letter for WSPF BN600, 7-28-11
Waste Stream Profile Form-1195, 7-21-11
Form-1597 Reconciliation with Data Quality Objectives, 7-21-11
Form-1598 Characterization Information Summary Report, 7-21-11
RPT-TRUW-88, Rev. 1, Acceptable Knowledge Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600), 8-27-12
Form-1187 Hazardous Waste Number Assignment Worksheet, 8-9-11
Form-1067 TRU Waste Stream AK Documentation Checklist 8-9-11
LDR BN600 Form-1777, 8-3-11
BN600 submittal letter, 6-21-11

P1358A Revision 1 updates the record to include revised AK Summary Report RPT-TRUW-88 Rev. 1, 8-27-12.

10. Source Document Data Limitations (if any):
The data is only applicable to WIPP certified containers.

11. AK Expert:	Julie Collins	Julie Collins	10/2/2012
	Print	Sign	Date

P1358 A R1

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JUL 2 8 2011

Mr. James Cooper, Acting Deputy Manager
U. S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Waste Stream Profile Form BN600, AMWTP WMF-676 PCB Contaminated Debris (BN600)

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the subject Advanced Mixed Waste Treatment Project Waste Stream Profile Form (WSPF) BN600, AMWTP WMF-676 PCB Contaminated Debris (BN600). The CBFO has concluded that the WSPF is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the WSPF as submitted. Using the methods approved AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Data System.

If you have questions on this matter, please contact me at (575) 234-7313.

Sincerely,

for J. R. Stroble, Director
Office of the National TRU Program

cc:

G. Basabilvazo, CBFO	*ED
C. Gadbury, CBFO	ED
S. McCauslin, CBFO	ED
D. Miehls, CBFO	ED
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CBFO:NTP:JRS:ANC:11-1425:UFC 5900.00

AMWTP Advanced Mixed Waste Treatment Project	**Waste Stream Profile Form**	Form-1195 Rev. 5 Effective: 03/02/11 Page 1 of 3

Implementing Document: MP-TRUW-8.14

Waste Stream Profile Number: BN600

Generator site name: Advanced Mixed Waste Treatment Project
Technical contact: Eric Schweinsberg

Generator site EPA ID: ID4890008952
Technical contact phone number: (208)557-6425

Date(s) of audit report approval by NMED: 4/29/2005 (Revised 5/3/2005), 6/16/06, 1/18/08, 1/9/09, 1/8/2010, 1/25/11

Title, version number, and date of documents used for WAP certification:

Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev 20, 12/28/2010
Quality Assurance Project Plan, MP-TRUW-8.2, Rev 14, 12/28/2010
CCP Transuranic Authorized Method for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 12, 12/29/2010

Did your facility generate this waste? ☒ Yes ☐ No If no, provide the name and EPA ID of the original generator:

Waste Stream Information

WIPP ID: IN-BN600 (3)
Summary Category Group: S5000

Waste Matrix Code Group: Heterogeneous Debris Waste
Waste Stream Name: AMWTP WMF-676 PCB Contaminated Debris (BN600)

Description from the ATWIR: AMWTP WMF-676 PCB contaminated debris is generated as a result of removing and/or treating prohibited PCB waste within the AMWTF WMF-676 north and south box lines and the drummed waste packaging glovebox (DWPG) and special case waste (SCW) areas (4)

Defense TRU Waste: ☒ Yes ☐ No Check One: ☒ CH ☐ RH

Number of SWBs 0 Number of Drums 745 Number of Canisters 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary Report, Table 5

List applicable EPA Hazardous Waste Numbers:[2] D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007 and F009

Applicable TRUCON Content Codes: ID 125/225

Acceptable Knowledge Information[1]

(For the following, enter the supporting documentation used [i.e., references and dates]
)

Required Program Information

Map of site: Reference No. 2
Facility mission description: Reference No. 3
Description of operations that generate waste: References Nos.1 and 3

Waste identification/categorization schemes: References Nos, 1,3, 4, and 5
Types and quantities of waste generated: References Nos.1 and 3
Correlation of waste streams generated from the same building and process, as appropriate: References Nos.1and 3

Waste certification procedures: Reference Nos. 7 and 15

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: References Nos. 1 and3
Waste stream volume and time period of generation: References Nos.1 and 3
Waste generating process description for each building: References Nos.1 and 3
Documentation regarding how site has historically managed the waste: References Nos.1 and 3
Process flow diagrams: References Nos.1 and 3
Material inputs or other information identifying chemical/radionuclide content and physical waste form: References Nos. 1, 3, 4, 5 and 6
Waste Material Parameter Weight Estimates per unit of waste Reference No.1

Which Defense Activity generated the waste: (check one)

- ☒ Weapons activities including defense inertial confinement fusion [5]
- ☐ Verification and control technology
- ☐ Defense nuclear waste and material by products management
- ☐ Defense nuclear waste and materials security and safeguards and security investigations
- ☐ Naval Reactors development
- ☐ Defense research and development
- ☐ Defense nuclear material production

Additional Acceptable Knowledge Documentation

Process design documents:	N/A
Standard operating procedures:	Reference No.1 (see references 11, 23, 24, 31, 33, 34, 35, 38, 39, 47, 48, 50 and 51 in RPT-TRUW-88)
Safety Analysis Reports:	Reference No 11
Waste packaging records:	N/A
Test plans/research project reports:	N/A
Site databases:	Reference No 1 (see reference 49 in RPT-TRUW-88)
Information from site personnel:	Reference No 1 and 14 (see reference 36 in RPT-TRUW-88)
Standard industry documents:	N/A
Analytical data relevant to the waste stream:	References No. 1 (see references 26, 27 and 28 of the RPT-TRUW-88)
Material safety data sheets:	Reference No 1 (see references 16, 32, 37, 40, 41, 42, 43 and 44 of the RPT-TRUW-88)
Sampling and analysis data from comparable/surrogate waste streams:	N/A
Laboratory notebooks:	N/A

Characterization Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s)

Radiography:	References Nos.8
Visual Examination:	References Nos. 9 and 10

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name	Date
Erii Schweinsberg	Erii Schweinsberg	7/21/11

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

(3) The proposed ATWIR number is not currently in the ATWIR. The noted ATWIR number will be included in the 2012 ATWIR.

(4) The noted description is not currently in the ATWIR. The description will be included in the 2012 ATWIR.

(5) Additional defense activities that are related to this waste include defense research and development and defense nuclear material production.

WASTE STREAM PROFILE CONTINUATION SHEET

Reference List:

1. RPT-TRUW-88, Acceptable Knowledge Summary for WMF-676 PCB Contaminated Debris Waste (BN600), July, 2011
2. DWG-5232-52-0101, Site Plan of the Advanced Mixed Waste Treatment Facility, Rev. 0, April 1999
3. RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste, Rev. 13, July 13, 2011
4. RPT-TRUW-12, AMWTP Waste Stream Designations, Draft, Rev 17, July 20, 2011
5. RPT-TRUW-05, Waste Matrix Code Reference Manual, Rev 27, June 8, 2011
6. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Rev. 17, June 23, 2011
7. MP-TRUW-8.5, Advanced Mixed Waste Treatment Project TRU Waste Certification, Rev. 25, December10, 2009
8. INST-OI-12, Real Time Radiography Operations, Rev. 47, June 22, 2011
9. INST-OI-34, Non-Facility Visual Examination Operations, Rev 24, March 17, 2011
10. INST-FOI-17, Facility Visual Examination Operations, Rev 22, March 17, 2011
11. RPT-DSA-02, Documented Safety Analysis, Rev. 7, April 6, 2011
12. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, Rev 20, December 28, 2010
13. MP-TRUW-8.2, Quality Assurance Project Plan, , Rev 14, December 28, 2010
14. HWD-041811-03, AMWTP Hazardous Waste Determination for WMF-676 PCB Contaminated Debris (BN-600), July 20, 2011
15. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), Central Characterization Project, Rev. 12, December 29, 2010

AMWTP Advanced Mixed Waste Treatment Project	**Reconciliation with Data Quality Objectives**	Form-1597 Rev. 5 Effective: 6/14/2011@1800 hrs Page 1 of 3

Implementing Document: MP-TRUW-8.11

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: **BN600**

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90 % Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	☒	☐	☐	
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	☐	☐	☒	Central Characterization Project (CCP) will evaluate containers on an individual basis through transportation headspace gas and WIPP Data System (WDS).
6. Have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	WAP solid sampling not required for this S5000 waste stream.

WSPF No.: BN600

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
8. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
9. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
11. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	
12. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in the Quality Assurance Project Plan (QAPjP), Sections C3-2 through C3-9, for the lot?	☒	☐	☐	WAP solid sampling not required for this S5000 waste stream.
13. Have the program required quantitation limit (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BN600

Data Quality Objective	Yes	No	N/A	Comment
14. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
16. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
17. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	
18. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

Site Project Manager — Signature: Eric Schweinsberg — Printed Name: Eric Schweinsberg — Date: 7/21/11

2nd Site Project Manager — Signature — Printed Name: Steve Carpenter — Date: 7.21.11

WSPF Number: BN600 Lot Number: 1

SPM

Printed Name: Eric Schweinsberg Signature: [signature] Date: 7/21/11

2nd SPM

Printed Name: Steve Gasparte Signature: [signature] Date: 7.21.11

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN600 Lot Number: 1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream AMWTP WMF-676 PCB Contaminated Debris (BN600) as required by MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. [12, 13] In addition, AMWTP has conducted characterization testing and analysis using real-time radiography (RTR), headspace gas sampling and analysis, and radioassay.

Justification for Selection of Radiography and/or VE as an Appropriate Method for Characterizing Waste

The BN600 waste is characterized by RTR or visual examination (VE). The BN600 waste is amenable to using either RTR or VE. Both methods are equally capable of providing qualified personnel the means to examine the waste and meet the data quality objectives (DQOs). VE is an appropriate method for characterizing BN600 waste because it can be accomplished and recorded per the Quality Assurance Project Plan (QAPjP, MP-TRUW-8.2) during packaging of the waste into 55 gallon drums. Radiography is an appropriate method for BN600 waste because it can be readily accomplished per the QAPjP (MP-TRUW-8.2) after the waste is packaged. However, where dense or otherwise impenetrable objects and/or lead shielding create a condition or configuration where examination using radiography will not yield acceptable DQOs, only direct visual examination is appropriate. RTR was performed on the containers in Lot 1 because the waste was already packaged.

The Site Project Manager (SPM) signature certifies that through AK, testing, and/or analysis the waste included in this waste stream is not corrosive, ignitable, reactive, or incompatible with the Treatment, Storage, and Disposal Facility (TSDF) and does not contain any liquids. The AK Summary for this waste stream contains specific information about the corrosivity, reactivity, and ignitability of the waste stream and is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this profile. [1]

Data Results

This Characterization Information Summary (CIS) presents the headspace gas analytical data from all eleven containers included in BN600 waste stream Lot 1. These data meet the necessary characterization requirements for S5000 debris waste. The statistical evaluation of the analytical data collected for BN600, Lot 1 is presented in Tables 1A and 1B. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 lists the RTR/VE summary of prohibited items. Table 7 lists the correlation of container number to headspace gas sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for each volatile compound and to resolve the assignment of EPA HWNs for the BN600 waste stream. Per Section C2-2a of MP-TRUW-8.2, the AMWTP used the data to calculate the UCL_{90} values for the waste stream and assign EPA HWNs as appropriate.

HWNs are assigned based on AK. HWNs assigned by AK are retained for the waste stream even if the headspace gas sampling analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). Acetone and toluene UCL_{90} results are above the PRQL values for constituents associated with the F-listed spent solvent HWNs (Table 1A). HWN F003 for acetone as defined in 40 CFR 261 and addressed in RPT-TRUW-88 is not assigned to the waste because the BN600 waste does not exhibit the characteristic of ignitability. HWN F005 for toluene was assigned by AK. The HWN assignment based on AK for this waste stream includes:

- Toxicity characteristic metals – D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010, (selenium), and D011 (silver).
- Toxicity characteristic organics – D022 (chloroform), D027 (1,4- dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D032 (hexachlorobenzene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).
- F-Listed HWNs for spent solvents used for cleaning and degreasing , and laboratory operations – F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F002 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F004 (cresols and nitrobenzene); and F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone, pyridine, and toluene).
- F-Listed HWNs from electroplating operations – F006, F007 and F009 waste generated as a result of contact with electroplating waste.

Headspace sampling results support AK. No additional EPA HWNs are required.

WSPF Number: BN600 Lot Number: 1

Table 1A. Headspace Gas Summary Data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [h]	11	0	None	1.30	1.30	0	[c]		10	
Methanol	11	0	None	28.0	28.0	0	[c]		100	
Ethyl ether	11	0	None	0.800	0.800	0	[c]		10	
1,1,2-Trichloro-1,2,2-trifluoroethane	11	0	None	0.950	0.950	0	[c]		10	F001, F002 [e]
1,1-Dichloroethylene	11	0	None	1.05	1.05	0	[c]		10	D029 [e]
Acetone	11	4	None	240	74.5	92.0	113		100	[f]
Methylene chloride	11	0	None	0.650	0.650	0	[c]		10	F001, F002 [e]
trans-1,2-Dichloroethylene	11	0	None	0.750	0.750	0	[c]		10	
1,1-Dichloroethane	11	0	None	0.700	0.700	0	[c]		10	
Methyl ethyl ketone	11	0	None	7.00	7.00	0	[c]	-	100	F005 [e]
Chloroform	11	0	None	0.950	0.950	0	[c]	-	10	D022 [e]
1,1,1-Trichloroethane	11	0	None	1.10	1.10	0	[c]	-	10	F001, F002 [e]
Carbon tetrachloride	11	0	None	1.05	1.05	0	[c]	-	10	F001 [e]
Benzene	11	0	None	0.800	0.800	0	[c]	-	10	F005 [e]
1,2-Dichloroethane	11	0	None	1.25	1.25	0	[c]	-	10	D028 [e]
Butanol	11	0	None	14.0	14.0	0	[c]	-	100	
Trichloroethylene	11	1	None	4.30	1.16	1.04	1.59	-	10	F001, F002 [e]
Methyl isobutyl ketone	11	0	None	9.00	9.00	0	[c]	-	100	
Toluene [d]	11	10	Natural log	3.66	1.99	1.05	2.43	2.30	10	F005 [g]
Tetrachloroethylene	11	0	None	0.750	0.750	0	[c]	-	10	F001, F002 [e]
Chlorobenzene	11	0	None	0.600	0.600	0	[c]	-	10	F002 [e]
Ethyl benzene [d]	11	1	Natural log	1.57	0.047	0.505	0.256	2.30	10	
m- & p-Xylene [d]	11	1	Natural log	2.71	0.150	0.848	0.501	2.30	10	
o-Xylene [d]	11	1	Natural log	1.55	0.045	0.498	0.251	2.30	10	
Bromoform	11	0	None	0.900	0.900	0	[c]	-	10	
1,1,2,2-Tetrachloroethane	11	0	None	1.00	1.00	0	[c]	-	10	
Cyclohexane [i]	11	1	None	3.30	1.16	0.709	1.46	-	10	
Carbon disulfide [d, h]	11	1	Natural log	0.588	-0.271	0.285	-0.153	2.30	10	F005 [e]
1,2,4-Trimethylbenzene [i]	11	0	None	0.900	0.900	0	[c]	-	10	
1,3,5-Trimethylbenzene [i]	11	0	None	0.800	0.800	0	[c]	-	10	

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, and UCL_{90}.

c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

d. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

e. The HWNs for these constituents have been applied based on acceptable knowledge.

f. HWN F003 for acetone as defined in 40 CFR 261 and addressed in RPT-TRUW-88 is not assigned to the waste because the BN600 waste does not exhibit the characteristic of ignitability.

g. This HWN, assigned by AK, was supported by characterization. No additional HWNs were added as a result of headspace gas sampling.

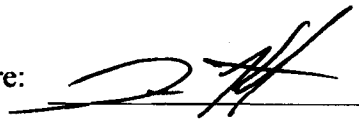
h. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

i. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: J. Kettel Signature:  Date: 7/21/11

WSPF Number: BN600 Lot Number: 1

Table 1B. Headspace Gas Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound [a]	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date [b]
1R-α-Pinene	33	1	11	9.1	1	11	9.1
α-Pinene	38	3	11	27	3	11	27
β-Pinene	28	1	11	9.1	1	11	9.1
d-Limonene	28	1	11	9.1	1	11	9.1
Hexane	3100	1	11	9.1	1	11	9.1
Limonene	1700	4	11	36	4	11	36
Methylcyclopentane	600	1	11	9.1	1	11	9.1

Notes:

a) TICs include 1R-α-pinene (CAS 7785-70-8), α-pinene (CAS 80-56-8), β-pinene (CAS 127-91-3), d-limonene (CAS 5989-27-5), hexane (CAS 110-54-3), limonene (CAS 138-86-3), and methylcyclopentane (CAS 96-37-7).

b) The TICs with >25% detections (α-pinene and limonene) are not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: N. Kirk Signature: Nancy Kirk Date: 7/21/11

Verification of % Detected Calculation:

Printed Name: J. Kettel Signature: [signature] Date: 7/21/11

WSPF Number: BN600 Lot Number: 1

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package [a]	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
10152444	HS111-00010	RTR11-00170	ASY11-01312	N/A	N/A	N/A
10317287	HS111-00010	RTR11-00170	ASY11-01311	N/A	N/A	N/A
10364365	HS111-00010	RTR11-00170	ASY11-01310	N/A	N/A	N/A
10364368	HS111-00010	RTR11-00170	ASY11-01310	N/A	N/A	N/A
10364369	HS111-00010	RTR11-00170	ASY11-01314	N/A	N/A	N/A
10389379	HS111-00010	RTR11-00170	ASY11-00313	N/A	N/A	N/A
10389380	HS111-00010	RTR11-00170	ASY11-00311	N/A	N/A	N/A
10395487	HS111-00010	RTR11-00081	ASY11-00420	N/A	N/A	N/A
10395696	HS111-00010	RTR11-00170	ASY11-01322	N/A	N/A	N/A
10395697	HS111-00010	RTR11-00086	ASY11-01320	N/A	N/A	N/A
10395698	HS111-00010	RTR11-00170	ASY11-01321	N/A	N/A	N/A

a. VE was not performed on any of the containers in Lot 1
b. WAP solid sampling is not required for S5000 waste

WSPF Number: BN600 Lot Number: 1

Table 6. RTR/VE Summary of Prohibited Items.

Container No.	RTR Prohibited Items [a]	VE Prohibited Items [b]
10152444	None	N/A
10317287	None	N/A
10364365	None	N/A
10364368	None	N/A
10364369	None	N/A
10389379	None	N/A
10389380	None	N/A
10395487	None	N/A
10395696	None	N/A
10395697	None	N/A
10395698	None	N/A

a. See Table 5 for the associated RTR data packages. None of the identified containers contain prohibited items as defined by Section C-1c of the AMWTP Quality Assurance Project Plan, MP-TRUW-8.2.

b. VE was not performed on any of the containers in Lot 1.

WSPF Number: BN600 Lot Number: 1

Table 7. Correlation of Container Numbers to Sample Numbers

Container No.	Headspace Gas Sample Number	Solid Sample Number(s) [a]
10152444	HS111_00010B-17	N/A
10317287	HS111_00010B-07	N/A
10364365	HS111_00010B-03	N/A
10364368	HS111_00010B-06	N/A
10364369	HS111_00010B-09	N/A
10389379	HS111_00010B-08	N/A
10389380	HS111_00010B-10	N/A
10395487	HS111_00010B-01	N/A
10395696	HS111_00010B-15	N/A
10395697	HS111_00010B-16	N/A
10395698	HS111_00010B-11	N/A

a. WAP solid sampling is not required for S5000 waste

Attachment A
Evaluation of Required Number of Samples. BN600 Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	Required number of samples [c, d, e]	Comments
Chloromethane [h]	11	0	None	1.30	1.30	0	-	-	10		No samples above MDL
Methanol	11	0	None	28.0	28.0	0	-	-	100		No samples above MDL
Ethyl ether	11	0	None	0.800	0.800	0	-	-	10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	11	0	None	0.950	0.950	0	-	-	10		HWNs F001/F002 applied
1,1-Dichloroethylene	11	0	None	1.05	1.05	0	-	-	10		HWN D029 applied
Acetone	11	4	None	240	74.5	92.0	113	-	100		HWN not applied [f]
Methylene chloride	11	0	None	0.650	0.650	0	-	-	10		HWNs F001/F002 applied
trans-1,2-Dichloroethylene	11	0	None	0.750	0.750	0	-	-	10		No samples above MDL
1,1-Dichloroethane	11	0	None	0.700	0.700	0	-	-	10		No samples above MDL
Methyl ethyl ketone	11	0	None	7.00	7.00	0	-	-	100		HWN F005 applied
Chloroform	11	0	None	0.950	0.950	0	-	-	10		HWN D022 applied
1,1,1-Trichloroethane	11	0	None	1.10	1.10	0	-	-	10		HWNs F001/F002 applied
Carbon tetrachloride	11	0	None	1.05	1.05	0	-	-	10		HWN F001 applied
Benzene	11	0	None	0.800	0.800	0	-	-	10		HWN F005 applied
1,2-Dichloroethane	11	0	None	1.25	1.25	0	-	-	10		HWN D028 applied
Butanol	11	0	None	14.0	14.0	0	-	-	100		No samples above MDL
Trichloroethylene	11	1	None	4.30	1.16	1.04	1.59	-	10		HWNs F001/F002 applied
Methyl isobutyl ketone	11	0	None	9.00	9.00	0	-	-	100		No samples above MDL
Toluene	11	10	Natural log	3.66	1.99	1.05	2.43	2.30	10	10	HWN F005 applied
Tetrachloroethylene	11	0	None	0.750	0.750	0	-	-	10		HWN F001/F002 applied
Chlorobenzene	11	0	None	0.600	0.600	0	-	-	10		HWN F002 applied
Ethyl benzene	11	1	Natural log	1.57	0.047	0.505	0.256	2.30	10		HWN not required to be applied [g]
m- & p-Xylene	11	1	Natural log	2.71	0.150	0.848	0.501	2.30	10		HWN not required to be applied [g]

Attachment A
Evaluation of Required Number of Samples. BN600 Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	Required number of samples c, d, e	Comments
o-Xylene	11	1	Natural log	1.55	0.045	0.498	0.251	2.30	10		HWN not required to be applied [g]
Bromoform	11	0	None	0.900	0.900	0	-	-	10		No samples above MDL
1,1,2,2-Tetrachloroethane	11	0	None	1.00	1.00	0	-	-	10		No samples above MDL
Cyclohexane [i]	11	1	None	3.30	1.16	0.709	1.46	-	10		No associated HWN
Carbon disulfide [h]	11	1	Natural log	0.588	-0.271	0.285	-0.153	2.30	10		HWN F005 applied
1,2,4-Trimethylbenzene [i]	11	0	None	0.900	0.900	0	-	-	10		No samples above MDL
1,3,5-Trimethylbenzene [i]	11	0	None	0.800	0.800	0	-	-	10		No samples above MDL

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and UCL_{90}.

c. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

d. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10.

e. The required number of samples for VOCs listed in Table 4.4.1of the WIPP Hazardous Waste Facility Permit was calculated using equation A-8 in MP-TRUW-8.25.

f. HWN F003 for acetone as defined in 40 CFR 261 and addressed in RPT-TRUW-88 is not assigned to the waste because the BN600 waste does not exhibit the characteristic of ignitability.

g. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} result for the waste stream and lot is below the PRQL.

h. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

i. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-88, Rev. 1

Acceptable Knowledge Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600)

Advanced Mixed Waste Treatment Project

(Signature on File. DCR-11344.)
Susan Peterman
TRU Programs Manager

08/27/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/28/11	All	DCR-10156. Initial issue. Document created to support new direct ship PCB Waste Stream Profile Form for WIPP.
1	08/27/12	Various	DCR-11344. Applied ITG-Bluesheet-077. Updated document owner.

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ACRONYMS AND ABBREVIATIONS

AK	acceptable knowledge
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
BC	Battelle Columbus Laboratory
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
DIEG	Drum Import/Export Glovebox
DOT	U.S. Department of Transportation
DWPG	drummed waste packaging glovebox
EPA	U.S. Environmental Protection Agency
HSG	headspace gas
HWD	hazardous waste determination
HWMA	Hazardous Waste Management Act
HWN	hazardous waste number
IDC	item description code
MD	Mound
NWPA	Nuclear Waste Policy Act
OSHA	Occupational Safety and Health Administration

PCB	polychlorinated biphenyl
PI	prohibited item
PPE	Personnel protection equipment
ppm	parts per million
PRQL	Program-Required Quantitation Limit
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats
RFETS	Rocky Flats Environmental Technology Site (formerly Rocky Flats Plant)
RFP	Rocky Flats Plant
RL	Richland, Washington
RTR	real-time radiography
S/C	Supercompactor
SCW	special-case waste
SDOP	six drum overpack
SWB	standard waste boxes
TRU	transuranic
TSCA	Toxic Substance Control Act
VE	visual examination
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMF	Waste Management Facility
WMP	Waste material parameter
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System

Advanced Mixed Waste Treatment Facility

Acceptable Knowledge Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN600

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Advanced Mixed Waste Treatment Project (AMWTP) Waste Management Facility (WMF)-676 Polychlorinated Biphenyl (PCB) Contaminated Debris (BN600)

1.2.2 Point of Generation

Advanced Mixed Waste Treatment Facility (AMWTF), Building WMF-676[(2)]

1.2.3 Waste Stream Volume

Current Volumes:

26, 55 gallon drums (5.4 m^3) [(2) (36) (49)]

Projected Volumes:

719 55-gallon drums (149.6 m^3) [(2) (36) (49)]

All containers within this waste stream will be greater than100 nCi/g. Each payload container shipped to Waste Isolation Pilot Plant (WIPP) will be certified as containing more than 100 nCi/g TRU activity.[(10) ((22)]

1.2.4 Generation Dates

The waste generation timeframe is from 2005 through 2018.[(2)]

1.2.5 TRU Waste Content Codes

ID 125/225[(3)]

1.2.6 Waste Isolation Pilot Plant Waste Stream ID

Waste Stream ID: IN-BN600

1.2.7 Summary Category Group

S5000—Debris Waste [(14)]

1.2.8 Waste Matrix Code Group

Heterogeneous Debris Waste [14]

1.2.9 Waste Matrix Code

S5490 –Unknown/Other Heterogeneous Debris [14]

This Waste Matrix Code (WMC) includes waste that is estimated to contain a minimum of 50% by volume of heterogeneous debris waste that does not meet the criteria for assignment into any of the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.[4]

1.2.10 Description from the Annual Transuranic Waste Inventory Report

This waste is currently not in the Annual Transuranic Waste Inventory Report (ATWIR).[12] The following information will be added to the ATWIR during the 2012 data call. The ATWIR waste stream ID will be IN-BN600.

AMWTP WMF-676 PCB contaminated debris is generated as a result of removing and/or treating prohibited PCB waste within the AMWTF WMF-676 north and south box lines and the drummed waste packaging glovebox (DWPG) and special-case waste (SCW) areas.

1.2.11 AMWTP Defense Related Determination

The BN600 waste is generated in support of AMWTP processing of defense related waste for shipment to WIPP.

The WMF-676 is the treatment facility at the AMWTP. It includes the AMWTP supercompactor, box line, and shredding/sizing operations. The AMWTF conducts prohibited item (PI) removal and/or treatment within designated areas (e.g., north and south box lines, DWPG and SCW).

The BN600 waste is generated during the removal and/or treatment of PCB prohibited waste from RF organic setups waste and supercompactor feedstock within WMF-676. The Rocky Flats (RF) organic setups waste and supercompactor feedstock are defense related wastes.

The supercompactor feedstock waste includes wastes that were generated at the RF, Mound (MD), Battelle Columbus (BC), and Hanford (RL). The AMWTP supercompactor feedstock waste and RF organic setups waste were generated from defense related processes or activities. The waste within this waste stream was generated primarily from weapons activities. Other defense activities that may contribute to waste in this stream are from defense research and development and defense nuclear material production.[13] [52] [53] [54]

RF organic setups waste has been profiled to WIPP by Rocky Flats Environmental Technology Site (RFETS) under WIPP-approved Waste Stream Profile Form (WSPF)-RF-135.01 and by the Central Characterization Project (CCP) under WIPP-approved WSPF ID-RF-S3114. CCP is currently shipping ID-RF-3114 waste to WIPP for disposal. RF organic setups waste is defense related waste [i.e., previously associated with defense weapons activities at the Rocky Flats Plant (RFP)][5] [27] [28]

The AMWTP supercompactor waste stream and its debris feedstock waste are covered under WIPP-approved WSPF BN510.1 and currently being shipped to WIPP for disposal. The supercompactor feedstock debris waste and resulting compacted debris waste are defense related wastes.[26]

There are no historical records or evidence that the supercompactor feedstock from RF, MD, RL, and BC facilities or the RF organic setups waste includes any spent nuclear fuel or high level waste. The AMWTP does not generate high level waste or accept high level waste from off-site generators.[5]

As outlined in the 1997 interim guidance on ensuring that waste qualifies for disposal at WIPP and the 1996 guidance on determining defense waste, TRU waste is eligible for disposal at WIPP, if it has been generated in whole or part by one of the atomic energy defense activities listed in the Nuclear Waste Policy Act of 1982 (NWPA) and is not high level or spent nuclear fuel. The interim guidance also includes defense and non-defense wastes that were inadvertently mixed (in the past) and from which the non-defense portion cannot be segregated.[6] [7] [15] [18] [19]

The BN600 waste is not spent nuclear fuel or high level waste. The TRU wastes included in the BN600 WSPF meet the definition of defense-related waste.[5] [26] [27] [28]

1.3 Waste Stream Description

1.3.1 Description

The BN600 waste is PCB contaminated heterogeneous debris waste generated during the removal and/or treatment of PCB prohibited waste within WMF-676. The waste includes: PCB electrical equipment (e.g., capacitors, ballast, transformers), PIG® mats/blankets/pillows, size-reduced drum liners and empty containers, personal protective equipment (PPE), wipes, and supercompactor (S/C) feedstock debris that is contaminated due to PCB spills (e.g., paper and rags; gloves; wipes; asbestos; PPE; plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; Raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete).[2] [14] [36]

Minor amounts of soils/gravels and homogenous solid waste (e.g., RF organic setups residuals , Oil-Dri®, vermiculite, Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G®, Micro-Cel® E) may be present within the BN600 waste containers. Non-debris waste will comprise less than 50% by volume of the waste within each container.[2]

The BN600 waste meets the definition of a WIPP waste stream in that the materials within this waste stream have common physical form, contain similar hazardous constituents and are generated from a single process or activity (i.e., remediating PCB prohibited waste within WMF-676).[20] [21]

Table 1. Waste Form Description for BN600 waste.

ATWIR Number[a]	IDC[14]	WMC[14]	Description[14]
IN-BN600	BN-600	S5490	WMF-676 PCB contaminated debris

a. There is currently no ATWIR number for this waste stream. The proposed ATWIR number will be provided for inclusion into the ATWIR at the 2012 data call.

1.4 Process Description

1.4.1 Areas of Operation

BN600 waste is generated as secondary debris waste within the AMWTP WMF-676. [2] [31] [34] [35] [36] [38] [39] [47] [48]

1.4.2 Process Flow Description and Diagrams

Figure 1 provides a process flow diagram for BN600 waste.

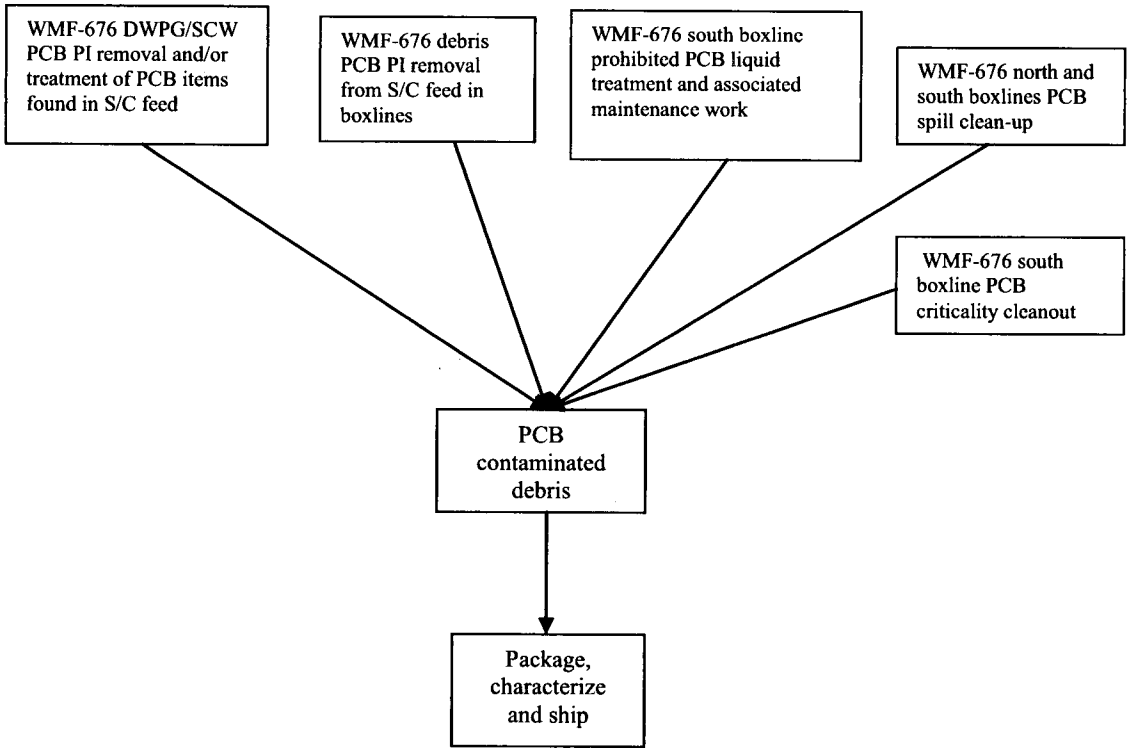


Figure 1. Process flow diagram for BN600.

1.4.3 Waste Generating Process

BN600 waste is generated within WMF-676 during removal and/or treatment of prohibited PCB waste (e.g., PCB items from S/C feed and PCB liquids within RF organic setups). The WIPP and the AMWTP supercompactor facilities prohibit various forms of PCB waste. Waste containers with any amount of PCB liquid are prohibited at the WIPP facility. The AMWTP supercompactor prohibits waste with PCB concentrations equal to or greater than 50 parts per million (ppm) PCBs from being compacted.

Secondary debris is generated from two primary sources of PCB waste:

1. Authorized debris feedstock to the AMWTP supercompactor.
2. Treating Rocky Flats PCB contaminated organic setups (S3114).

PCB prohibited waste is periodically found in the supercompactor feedstock during VE or RTR. Feedstock debris is comprised of authorized debris waste from MD, RF, BC and RL as noted in the WIPP-approved WSPF BN510.1. [30]

Any debris feedstock IDC has the potential to contain a PCB item. The following authorized supercompactor feedstock IDCs have been identified as sources of PCB debris items based on RTR and/or AK: RF-302 Benelex® and Plexiglas®, RF-320 Heavy Non-special Source Metal, RF-330 Paper and Rags-Dry, RF-336 Paper and Rags-Moist,, RF-371 Fire Brick, RF-440 Glass, RF-480 Scrap Metal (Non SS),RF-481 Leached Metals (Non SS), RF-490 High efficiency particulate air (HEPA) Filters and CWS Filters, RL-712 Hanford Plutonium Finishing Plant Debris, RL-714 Hanford Radiochemical Processing Lab 325 Bldg Debris, RL-716 Hanford 231-Z Building Debris, MD-847 LSA <100 nCi/g Combustible, MD-848- LSA <100 nCi/g Non-Combustible, RF-950 LSA Metal, Glass, etc. RF-960 Concrete, Asphalt, etc, and RF-970 Wood.[14]

PCB contaminated debris is also generated as a result of treating Rocky Flats organic setup waste.[28]

WMF-676 RF Organic Setups Prohibited PCB Liquid Treatment

Containers of RF organic setups wastes with prohibited PCB liquids are loaded into six drum overpacks (SDOPs) for transport to the AMWTP WMF-676 south box line. To remove the organic setups wastes for treatment, the containers may be cut open by the BROKK®. The waste in the bags is removed from the liners and placed in the south box line trough for treatment. The drums and liners are segregated from the waste and undergo size reduction.[47] [48]

Prior to treating RF organic setups waste within the south box line, a transfer container with a new drum liner is brought into the south box line. Treated RF organic setups waste is placed in the drum liner within the transfer container and moved to the Drum Import/Export Glovebox (DIEG). At the DIEG the drum liner is removed from the transfer container and placed into a new 55-gallon drum for export from the treatment facility. The empty transfer container is lined with a new drum liner and moved back to the south box line for loading with RF organic setups. The process is repeated as necessary. [47] [48]

WMF-676 Prohibited PCB Item Removal in the Box Lines

Boxes and SDOPs of authorized debris feedstock to the supercompactor are transported into the north and south box lines. SDOPs contain 55-gallon and/or 83-gallon drums of debris waste. The south box line will not receive debris waste while treating the organic setups wastes. The debris waste containers are dumped into the box line trough(s) and are visually examined (VE) for WIPP and AMWTP supercompactor PIs. WIPP and AMWTP supercompactor prohibited PCB items (e.g., PCB ballast, PCB capacitors) identified in the box lines are removed/segregated from the box line trough and managed separately to prevent compaction and possible PCB contamination of the supercompactor.[24] [31]

If PCB items are breached and/or leaking within a box line trough, the PCB items and all debris feedstock materials that contacted the PCB waste is removed from the trough and the trough area is decontaminated. If required, PCB items removed from the box line may be transported to special-case waste (SCW) for further treatment and repackaging.[31] [38]

WMF-676 Prohibited PCB Item Removal/Treatment in the WMF-676 DWPG or SCW

PCB liquids are prohibited at WIPP and PCBs greater than 50 ppm are prohibited from being processed in the AMWTP supercompactor.[29] Direct feed 55-gallon authorized debris feedstock to the supercompactor found to contain prohibited PCB items during real-time radiography (RTR) examination may be transported directly to WMF-676 DWPG or SCW for removal/segregation of the items and/or treatment of the PCB waste. PCB items removed from the box line may be transported to the SCW for further treatment and repackaging.[23][38][39]

WMF-676 Criticality Cleanout of South Box Line

Criticality cleanout of the WMF-676 south box line is conducted periodically during PCB treatment of RF organic setups wastes.

Established criticality controls require criticality cleanout operations to remove RF organic setups residuals within the south boxline between RF organic setups batches.

When applicable, RF organic setups residuals are either manually (swept up, scrapped, wiped) or remotely removed (i.e., BROKK®) between RF organic setups batches. RF organic setups residuals are removed to less than 3liter volume limit in order to reduce the probability of a criticality accident during the lifetime of operations.

WMF-676 PCB Spill Cleanup

Spills of PCB waste may occur within the WMF-676 north or south box line areas, the WMF-676 DWPG, and the WMF-676 SCW during removal and/or treatment of PCB contaminated waste. Spill cleanup will include removal of the spilled material and decontamination of the area. The spilled PCB liquid and all other waste material (e.g., secondary waste) in contact with PCB waste are removed and containerized. PIG® mats/blankets/pillows may be used during spill response to absorb PCB liquids. Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G®, or Micro-Cel® E may also be used in limited amounts to absorb prohibited liquids within containers.[2][16][32][34][35][36][37][40]

WMF-676 PCB decontamination involves a double-wash/-rinse and swipe sampling of the spill area.

Non-hazardous Sunrise® Exeter and Simple Green® cleaning solutions are used for decontaminating PCB contaminated areas. An optional decontamination step may include the use of acetone or hexane. Following decontamination activities, a wipe saturated with hexane is used to swipe a 100 cm^2 area of the decontaminated area, and the swipe sample is analyzed for PCB content by the onsite laboratory to verify that PCB cleanup standards are met.[34][35][36][41][42][43][44]

WMF-676 South Box Line Equipment Maintenance

The south box line equipment (e.g., BROKK® manipulator) used to cut open containers, size reduce liners and containers, mix absorbents and load treated RF organic setups wastes into new containers is assumed to be PCB contaminated. Periodically, personnel enter the south box line and perform maintenance as required on this equipment to ensure optimum operating functions (e.g., replacement of parts, oil changes, repair of the BROKK®, etc). Decontamination may also be conducted

on the equipment during maintenance work. PCB contaminated debris is generated during maintenance and decontamination of equipment.[35][36]

1.4.4 Material Inputs

BN600 waste generated during removal and treatment of PCB contaminated waste include: PCB electrical equipment (e.g., capacitors, ballast, transformers), PIG® mats/blankets/pillows, size-reduced drum liners and empty containers, personnel protection equipment (PPE), wipes, and S/C feedstock debris that is contaminated due to PCB spills (e.g., paper and rags; gloves; wipes; asbestos; PPE; plastic and rubber items; filters; leaded gloves, aprons; bricks and sheeting; metal with and without lead or cadmium; floor tiles; piping sheet rock, insulation, and glass; Raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete).[2] [14] [36]

Non-hazardous absorption agents: Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E may be added to the waste to immobilize by absorption prohibited PCB liquids. PIG® mats/blankets/pillows may be used in PCB liquid spill cleanup responses. [16] [32] [36] [37] [47]

Non-hazardous decontamination solutions Sunrise® Exeter and Simple Green® are used during initial wash steps of PCB decontamination. Acetone and hexane may be used to wipe/rinse PCB spill areas as a final decontamination step. Hexane is used during swipe sampling to verify that PCB cleanup standards are met.[34] [35] [41] [42] [43] [44]

Minor amounts of non-debris waste may be present within the BN600 waste containers. Each container within this waste stream will contain greater than 50% PCB contaminated heterogeneous debris waste.[2][14]

Chemical and material inputs associated with BN600 wastes are identified in Table 2.

Table 2. Chemical/material inputs associated with the BN600 waste.

Chemical/Material Inputs	Source and/or Use
1,1,1-Trichloroethane [1]	S/C feedstock contaminant and RF organic setups contaminant.[28] [30] [36]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon)[1]	S/C feedstock contaminant and RF organic setups contaminant.[28] [30] [36]
1,1,2,2-Tetrachloro-1,2-difluoroethane[1]	S/C feedstock contaminant. [30] [36]
1,1-Dichloroethylene[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
1,2-Dichlorobenzene[1]	S/C feedstock, RF organic setups contaminant. [28] [30] [36]
1,2-Dichloroethane [1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
1,4-Dichlorobenzene[1]	S/C feedstock contaminant, RF organic setups contaminant. [28] [30] [36]
2-Ethoxyethanol[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
2-Nitropropane[1]	S/C feedstock contaminant. [30] [36]
2,4-Dinitrotoluene[1]	S/C feedstock contaminant, RF organic setups contaminant. [28] [30] [36]

Chemical/Material Inputs	Source and/or Use
Acetone[(1)]	S/C feedstock contaminant and RF organic setups contaminant. Performing PCB decontamination of spill areas. [(28) (30) (36)]
Arsenic[(1)]	S/C feedstock contaminant [(30)]
Asbestos	S/C feedstock [(30)]
Barium[(1)]	S/C feedstock contaminant [(30)]
Benzene[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Beryllium[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Cadmium[(1)]	S/C feedstock contaminant. [(30) (36)]
Carbon disulfide[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Carbon tetrachloride[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Chromium[(1)]	S/C feedstock contaminant. [(30) (36)]
Chloroform[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Chlorobenzene[(1)]	S/C feedstock contaminant[(30) (36)]
Cresols[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Cyclohexane[(1)]	S/C feedstock contaminant.[(30) (36)]
Electroplating waste (electroplating sludge, cyanide plating and cleaning bath) [(1)]	S/C feedstock contaminant.[(30) (36)]
Ethyl benzene[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Ethyl ether[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Hexachlorobenzene[(1)]	RF Organic setups contaminant.[(28) (36)]
Hexachloroethane[(1)]	S/C feedstock contaminant, RF organic setups contaminant. [(28) (30) (36)]
Hexane[(1)]	Performing PCB decontamination and swipe sampling. [(36)]
Hydrofluoric acid	S/C feedstock contaminant. [(30)]
Isobutanol[(1)]	S/C feedstock contaminant. [(30) (36)]
Lead[(1)]	S/C feedstock contaminant. [(30) (36)]
Mercury[(1)]	S/C feedstock contaminant. [(30) (36)]
Methanol[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30)]
Methyl ethyl ketone[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]
Methyl isobutyl ketone[(1)]	S/C feedstock contaminant [(30)]
Methylene chloride[(1)]	S/C feedstock contaminant and RF organic setups contaminant. [(28) (30) (36)]

Chemical/Material Inputs	Source and/or Use
n-Butyl alcohol (butanol) [1]	S/C feedstock contaminant, RF organic setups contaminant. [28] [30]
Nitrobenzene[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
Pentachlorophenol[1]	S/C feedstock contaminant, RF organic setups contaminant[28] [30] [36]
Pyridine[1]	S/C feedstock contaminant, RF organic setups contaminant. [28] [30] [36]
Selenium[1]	S/C feedstock contaminant.[30] [36]
Silver[1]	S/C feedstock contaminant.[30] [36]
Tetrachloroethylene[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
Trichlorofluoromethane[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
Toluene[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
Trichloroethylene[1]	S/C feedstock contaminant and RF organic setups contaminant. [28] [30] [36]
Vinyl chloride[1]	S/C feedstock contaminant[30] [36]
Xylene[1]	S/C feedstock contaminant and RF organic setups contaminant.[28] [30] [36]
Micro-Cel E®[36]	WMF-676 prohibited liquid absorption of organic liquids[47] [36]
PIG® mats/blankets/pillows[36]	Spill clean-up[36]
PCB contaminated items (See material inputs above)[36]	WMF-676 prohibited item treatment and removal[36]
Sunrise® Exeter cleaning solutions[36]	Performing PCB decontamination of spill areas[36]
Simple Green® cleaning solutions[36]	Performing PCB decontamination of spill areas[36]

1.4.5 Waste Material Parameters

To estimate the waste material parameters (WMPs) weight percentages for the BN600 waste, WMP data for 26 containers of item description code (IDC) BN-600 with completed RTR data were obtained from the AMWTP Waste Tracking System (WTS) database that were examined as of 5/18/11. This population represents 100% of the existing inventory (26 out of 26) and 3% of the estimated number of drums for this waste stream (i.e., 26 out of 745 drums). Eleven (11) drums of the available 26 drums included in Lot 1 have been characterized by RTR and their data are included in the overall WMP calculations. Drums used to calculate WMPs are representative of the waste stream. The estimated WMP weights (by percent) for the BN600 waste, excluding drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13, Collection, Review and Management of Acceptable Knowledge Documentation. These weight percentages are summarized in Table 3.[8] [20] [23]

Table 3. Waste material parameters for BN600 waste

Waste Material Parameters	Estimated Percent WMP Weight/Unit Waste
Iron-based metals/alloys	62%
Aluminum-based metals/alloys	<1%
Other metals	4%
Other inorganic materials	2%
Cellulosics	3%
Rubber	0%
Plastics (waste materials)	29%
Inorganic matrix	0%
Organic matrix	0%
Soils/gravel	0%

1.5 Acceptable Knowledge Sufficiency Determination

No acceptable knowledge (AK) sufficiency determinations apply to this waste stream.

1.6 Waste Prohibited at the WIPP Facility

The following wastes are prohibited at WIPP and therefore will not be shipped to the WIPP facility for disposal. The listed prohibited conditions are in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan.[21] [22]

- Liquid waste and observable liquid containing PCBs.
- Sealed containers greater than 4 liters.
- Non-radionuclide pyrophoric materials.
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes.
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes.
- Wastes containing explosives or compressed gases.
- Wastes with PCBs not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization.
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (Hazardous Waste Numbers [HWNs] D001, D002, or D003).

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved though a WIPP Class 3 permit modification.

AMWTP Waste Services hazardous waste determinations (HWD), AMWTP packaging procedures, AMWTP RTR or VE procedures are used to support the absence of prohibited items for newly generated waste. Containers with WIPP prohibited observable liquids will be treated using non-hazardous absorption agents (e.g., Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E) to render the waste acceptable prior to shipment.[16] [23] [24] [32] [33] [36] [40] [51]

Drums containing WIPP prohibited items will not be shipped to WIPP.[21] [22]

1.7 Resource Conservation and Recovery Act (RCRA) Determination

The BN600 waste is (and has been) subject to the state of Idaho Hazardous Waste Management Act (HWMA)/RCRA requirements (e.g., 40 CFR 264 and 40 CFR 265) and are currently being managed under the AMWTP RCRA permitting requirements until they are shipped off-site. [17] [29]

1.7.1 EPA Hazardous Waste Numbers

The following HWNs are assigned to BN600 waste: D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007 and F009.[1] [2] [36]

The BN600 waste is generated during the removal and/or treatment of PCB prohibited waste from RF organic setups waste (ID-RF-S3114) and supercompactor feedstock (BN510.1). The HWNs assigned to BN600 waste are derived from the compilation of the HWNs assigned to the RF organic setups waste and supercompactor feedstock. Table 4 identifies the HWNs associated with the two WIPP-approved WSPFs as well as the AMWTP HWNs assigned to this waste stream.[26] [28] [36]

Table 4. HWN assigned by waste stream.

Constituent	ID-RF-S3114[28]	BN510.1[26]	BN600[36]
Toxicity Characteristic Metal Compounds			
Arsenic	-	D004	D004
Barium	-	D005	D005
Cadmium	-	D006	D006
Chromium	-	D007	D007
Lead	-	D008	D008
Mercury	-	D009	D009
Selenium	-	D010	D010
Silver	-	D011	D011

Constituent	ID-RF-S3114[28]	BN510.1[26]	BN600[36]
Toxicity Characteristic Organic Compounds			
Chloroform	D022	D022	D022
Cresol	D026	-	[a]
1,4-Dichlorobenzene	D027	D027	D027
1,2-Dichloroethane	D028	D028	D028
1,1-Dichloroethylene	D029	D029	D029
2,4-Dinitrotoluene	D030	D030	D030
Hexachlorobenzene	D032	-	D032
Hexachloroethane	D034	D034	D034
Nitrobenzene	D036	-	[a]
Pentachlorophenol	D037	D037	D037
Vinyl chloride	-	D043	D043
F-Listed Organic Solvents			
1,1,1-Trichloroethane	F001and F002	F001and F002	F001and F002
1,1,2-Trichloro-1,2,2-trifluoroethane	F002	F001and F002	F001and F002
1,1,2,2-Tetrachloro-1,2-difluoroethane	-	F001	F001
1,2-Dichlorobenzene	F002	F002	F002
Carbon tetrachloride	F001	F001	F001
Chlorobenzene	-	F002	F002
Methylene chloride	F002	F001and F002	F001and F002
Tetrachloroethylene	F002	F001and F002	F001and F002
Trichloroethylene	F002	F001and F002	F001and F002
Trichlorofluoromethane	F001and F002	F001and F002	F001and F002
Cresols	-	F004	F004
Nitrobenzene	-	F004	F004
2-Ethoxyethanol	F005	F005	F005
2-Nitropropane	-	F005	F005
Benzene	F005	F005	F005
Carbon disulfide	F005	F005	F005
Isobutanol	-	F005	F005
Methyl ethyl ketone	F005	F005	F005
Pyridine	F005	F005	F005
Toluene	F005	F005	F005

Constituent	ID-RF-S3114[28]	BN510.1[26]	BN600[36]
Other F-Listed Wastes			
Wastewater treatment sludges from electroplating operations	-	F006	F006
Spent cyanide plating bath solutions from electroplating operations	-	F007	F007
Spent stripping and cleaning bath solutions from electroplating operations	-	F009	F009

a. D026 and D036 are not assigned; they are addressed under the EPA HWN F004.

1.7.2 Hazardous Waste Determination

1.7.2.1 Historical Management

The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1]

The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on RCRA mixture and/or derived from rules.[1] [2] [36]

1.7.2.2 Ignitability

The materials in this waste stream do not meet the 40 CFR 261.21, definition of ignitability. Hexane and acetone may be used during the final decontamination of PCB spill areas. PCB contaminated hexane and acetone rags/wipe are included in BN600 wastes.

The BN600 waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, WIPP prohibited PCB liquids will be removed or undergo treatment (absorption) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids will be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The waste is not compressed gas and does not contain compressed gas. The BN600 waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173, Shippers—General Requirements for Shipments and Packagings. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. BN600 waste does not exhibit the characteristic of ignitability (D001).[1] [36]

1.7.2.3 Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22, definition of corrosivity. BN600 waste is not liquid waste and does not contain WIPP prohibited PCB liquids. Containers that are identified as having prohibited PCB liquids will be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. BN600 waste does not exhibit the characteristic of corrosivity (D002).[1] [36]

1.7.2.4 Reactivity

The waste materials in this waste stream do not meet the 40 CFR 261.23, definition of reactivity. BN600 waste is not a liquid waste. Any containers that are identified as having prohibited PCB liquids will be treated using Aquaset®, Aquaset II-G®, Petroset II®, or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. BN600 waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The waste does not contain explosive material and is not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173. Although the waste is assigned F006, F007, and F009 listed HWNs (associated with cyanide electroplating operations), the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The BN600 waste does not exhibit the characteristic of reactivity (D003).[(1) (36)]

1.7.2.5 Toxicity Characteristic

The material in this waste stream exhibits the toxicity characteristic for metals and organics.

The RCRA toxicity characteristic metals and organics assigned to this waste stream are: D004 through D011, D022, D027, D028, D029, D030, D032, D034, D037, and D043.[(1) (36)]

Prior profiling of the AMWTP supercompacted debris waste stream (i.e., BN510.1) resulted in the assignment of the following RCRA toxicity characteristic metal HWNs D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), and D011 (silver). These HWNs are assigned to the BN600 waste.[(1) (29) (36)]

There is no AK documentation indicating past or current presence/use of pesticides or herbicides that would have contaminated this waste stream. Therefore BN600 waste does not exhibit the toxicity characteristic due to pesticides or herbicides (D012–D017).[(1) (25) (26) (27) (28) (36)]

Prior profiling of RF solidified organic setups (i.e., ID-RF-S3114) resulted in the assignment of RCRA toxicity characteristic organic HWNs: D022 (chloroform); D026 (cresols); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1 1-dichloroethylene); D030 (2,4-dinitrotoluene); D032 (hexachlorobenzene); D034 (hexachloroethane); D036 (nitrobenzene) and D037 (pentachlorophenol). These HWNs, with the exception of D026 and D036, are assigned to the BN600 waste. Due to cross contamination of F-listed waste associated with the supercompactor feedstock, the D026 and D036 HWNs for cresols and nitrobenzene (respectively) are not assigned but rather addressed within the F-listed waste section below.[(1) (27) (28) (29) (36)]

Prior profiling of the AMWTP supercompacted debris waste stream (i.e., BN510.1) resulted in the assignment of the RCRA toxicity characteristic organic HWNs D022 (chloroform), D027 (1,4-dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030

(2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride). These HWNs are assigned to the BN600 waste.[1] [26] [29] [36]

The AMWTP assigned the following toxicity characteristic HWNs to the BN600 waste: D004 through D011, D022, D027, D028, D029, D030, D032, D034, D037, and D043.[1] [29] [36]

1.7.2.6 Listed Waste

F-Listed HWNs

The RCRA listed HWNs assigned to this waste stream are: F001, F002, F004, F005, F006, F007, and F009. [1] [36]

Prior WIPP-approved WSPFs for AMWTP supercompacted waste (BN510.1) and CCP RF organic setups wastes (ID-RF-S3114) resulted in the AMWTP assignment of the following listed HWNs (and applicable hazardous constituents) to BN600 waste:[26] [28] [29] [36]

F001:

1,1,1-trichloroethane (BN510.1 and ID-RF-S3114 WSPFs), 1,1,2-trichloro-1,2,2-trifluoroethane (BN510.1 WSPF), 1,1,2,2-tetrachloro-1,2-difluoroethane (BN510.1 WSPF), carbon tetrachloride (BN510.1 and ID-RF-S3114 WSPFs), methylene chloride (BN510.1 WSPF), tetrachloroethylene (BN510.1 WSPF), trichloroethylene (BN510.1 WSPF) and trichlorofluoromethane (BN510.1 and ID-RF-ID-RF-S3114 WSPFs). The RCRA F001 HWN is assigned to the BN600 waste.[26] [28] [29] [36]

F002:

1,1,1-trichloroethane (BN510.1 and ID-RF-S3114 WSPFs), 1,1,2-trichloro-1,2,2-trifluoroethane (BN510.1 and ID-RF-S3114 WSPFs); 1,2-dichlorobenzene (BN510.1 and ID-RF-S3114 WSPFs), chlorobenzene (BN510.1 WSPF), methylene chloride (BN510.1 and ID-RF-S3114 WSPFs); tetrachloroethylene (BN510.1 and ID-RF-S3114 WSPFs), trichloroethylene (BN510.1 and ID-RF-S3114 WSPFs), and trichlorofluoromethane (BN510.1 and ID-RF-S3114 WSPFs). The RCRA F002 HWN is assigned to the BN600 waste. [26] [28] [29] [36]

F004:

Cresols and nitrobenzene (BN510.1 WSPF). The RCRA F004 HWN is assigned to the BN600 waste.[26] [28] [29] [36]

F005:

2-ethoxyethanol (BN510.1 and ID-RF-S3114 WSPFs), 2-nitropropane (BN510.1 WSPF), benzene (BN510.1 and ID-RF-S3114 WSPFs), carbon disulfide (BN510.1 and ID-RF-S3114 WSPFs), isobutanol (BN510.1 WSPF), methyl ethyl ketone (BN510.1 and ID-RF-S3114 WSPFs), pyridine (BN510.1 and ID-RF-S3114 WSPFs) and toluene (BN510.1 and ID-RF-S3114 WSPFs). The UCL_{90} HSG results for toluene exceeded the PRQL for the constituent.[50] The RCRA F005 HWN is assigned to the BN600 waste.[26] [28] [29] [36]

F006, F007 and F009:

F006, F007, and F009 (BN510.1 WSPF) are assigned due to electroplating waste contamination associated with S/C feedstock. The RCRA F006, F007, and F009 HWNs are assigned to the BN600 waste. [26] [29] [36]

F003:

The RCRA F003 HWN is not assigned to the BN600 waste. Acetone may be used during the final decontamination of PCB spill areas at the AMWTP. PCB contaminated acetone rags/wipe are included in BN600 wastes. The UCL_{90} headspace gas (HSG) results for acetone exceeded the Program-Required Quantitation Limit (PRQL) for the constituent.[50] The BN600 waste is not a liquid waste and does not exhibit the RCRA characteristic of ignitability (i.e., D001).

Non-halogenated hazardous constituents associated with the BN510.1 and ID-RF-3114 WSPFs include: Acetone (BN510.1 and ID-RF-S3114 WSPFs), cyclohexanone (BN510.1 WSPF), ethyl benzene (BN510.1 and ID-RF-S3114 WSPFs), ethyl ether (BN510.1 and ID-RF-S3114 WSPFs), methanol (BN510.1 and ID-RF-S3114 WSPFs), methyl isobutyl ketone (BN510.1 WSPF), n-butyl alcohol/butanol (BN510.1 and ID-RF-S3114 WSPFs), and xylenes (BN510.1 and ID-RF-S3114 WSPFs). The BN600 waste does not exhibit the characteristic of ignitability as defined in 40 CFR 261.21. Any prohibited PCB liquids associated with waste containers undergo treatment using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents. The RCRA F003 HWN is not assigned to the BN600 waste. (1) (26) (29) (36)

P-, U-, and K- Listed HWNs

The waste stream is not classified as P, U or K-listed waste. (1) (36)

The material in this waste stream is not a discarded unused commercial chemical product, off specification species, container residues (or spill residues thereof) listed in either 40 CFR 261.32, nor have they been known to contact sources of RCRA P or U-listed hazardous wastes. The BN600 waste is not a P or U-listed hazardous waste. (1) (25) (26) (28) (36)

Based on a review of AK, it was determined that the BN600 waste is not expected to contain >1% beryllium by weight. Only trace amounts of beryllium are expected. Any detection of beryllium would be associated with process contamination not as a result of an unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof of beryllium powder. Based on this information, the P015 HWN for beryllium powder, as defined in 40 CFR 261.33 is not assigned to the BN600 waste. (1) (25) (26) (28) (36)

Although hydrofluoric acid was identified as a chemical contaminant associated with the supercompactor debris waste feedstock, only spent forms of hydrofluoric acid would have contaminated the feedstock debris waste. Based on this information, the U134 HWN is not assigned to this waste stream. (1) (25) (26) (28) (36)

Authorized supercompactor debris feedstock and RF organic setups wastes are not RCRA K-listed wastes. The AMWTP does not generate RCRA K-listed waste. Based on this information, the BN600 waste is not a RCRA K-listed waste. (1) (25) (26) (28) (36)

1.8 Toxic Substances Control Act Regulated Contaminants

This waste stream is assumed to be equal to or greater than 50 ppm PCBs and is regulated as a Toxic Substances Control Act (TSCA) waste under 40 CFR 761. (1) (36)

BN600 waste is generated as a result of contact with waste classified as PCB sources (i.e., equal to or greater than 50 ppm) in WMF-676. Secondary debris waste included in this waste stream has come in direct contact with PCB sources associated with treating prohibited PCB liquids within RF organic setups sludge in the south box line, removal of prohibited PCB items from authorized supercompacted feedstock in both box lines, criticality cleanout of south box line, maintenance of PCB contaminated equipment in south box line, PCB spill response in both box lines, and PCB item removal and/or treatment in DWPG/SCW.[9] [13] [25] [26] [36]

Asbestos may be included in this waste stream from spill cleanup within box line associated with the S/C feedstock. Asbestos has been identified in some of the debris feedstock waste. Any containers identified as containing regulated types or quantities (e.g., greater than 1% of friable asbestos) will be labeled, as required, in accordance with TSCA and Occupational Safety and Health Administration (OSHA) regulations.[30]

1.9 Other Applicable Waste

There are no other applicable waste streams.

1.10 Radionuclides

The radionuclides of concern for the BN600 waste are: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are not expected to be present in measurable quantities in BN600 waste. The two most prevalent radionuclides expected in the BN600 waste are ^{239}Pu and ^{240}Pu. [10]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

BN600 wastes are packaged in accordance with INST-OI-24, Packaging Radioactive Waste or INST-FOI-38, Drum Import/Export Glovebox Operations. [33] [48]

BN600 wastes (e.g., drum carcasses and liners) from INST-FOI-38, south box line operations are direct loaded into a 125 mil polyethylene rigid liner which is transferred to the export glove box. The liner is then transferred to a DOT 7A Type A 55 gallon drum which has a 8 mil polyethylene bag or a 12 mil polyethylene transfer sleeve. [36] [48]

Other WMF-676 BN-600 wastes are packaged per INST-OI-24 using 55 gallon drums that are DOT 7A Type A-approved. Wastes are single or double bagged using a 6 mil (or thicker) bag and/or placed in an open head drum with a 6 mil (or thicker) polyethylene drum bag liner. A waste container may be direct loaded, loaded with a single bag, or loaded with multiple bags. [33] [36] [47]

Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents may be added to waste container to absorb prohibited liquids. [33] [36] [47]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. HSG sampling and analysis is performed when required by the WIPP-Waste Analysis Plan (WAP) and/or CH-TRAMPAC. At a minimum, the headspace gas (HSG) analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[11]

3.0 REFERENCES

NOTE: *AMWTP documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

(1) RPT-TRUW-12, AMWTP Waste Stream Designations.

(2) RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste).

(3) DOE/WIPP 01-3194, CH-TRU Waste Content Codes (CH-TRUCON).

(4) DOE/LLW-217, DOE Waste Treatability Group Guidance, T. D. Kirkpatrick, Prepared for DOE Idaho Operations Office, Rev. 0, January 1995. [P670A].

(5) Memorandum from George E. Dials, DOE CAO, to J. M. Roberson, RFFO, and J. M. Wilcynski, INEEL, Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), May 20, 1997. [C191A]

(6) Correspondence from Frank Marcinowski to EM-13 (Stan Wolf, 301-903-7962), Process for TRU Waste Defense Determination, February 2005. [C329A]

(7) Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant, February 1997. [P203A]

(8) Memo to File, Estimated WMP for WMF-676 PCB contaminated debris. [C1019A]

(9) Summary of PCB AK Sources, Wastren, Inc., September 2001. [C207A]

(10) RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge.

(11) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), Central Characterization Project. [P672A]

(12) DOE/TRU-10-3425, Annual Transuranic Waste Inventory Report - 2010, U.S. Department of Energy, Carlsbad Field Office, Rev. 0. [P1109A]

(13) RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant.

(14) RPT-TRUW-05, Waste Matrix Code Reference Manual.

(15) U.S. Congress, Nuclear Waste Policy Act of 1982. [P757A]

(16) Material Safety Data Sheet, Micro-Cel® E, Celite Corporation, January 17, 2007. [P808S]

(17) ID4890008952, AMWTP HWMA/RCRA Permit and interim status documents.

(18) 10 CFR 962, Byproduct Material. [P1086S]

(19) Interim Status Requirements for NRC Licensees Managing Radioactive Mixed Waste, Clarification, EPA Office of Solid Waste and Emergency Response, October 15, 1989. [P1085S]

(20) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.

(21) MP-TRUW-8.2, Quality Assurance Project Plan.

(22) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste.

(23) INST-OI-12, Real-Time Radiography Operations (Drum).

(24) INST-FOI-17, Facility Visual Examination Operations.

(25) CCP-AK-INL-005, Rev. 4, CCP Acceptable Knowledge Summary Report for Rocky Flats Immobilized Organic Liquids Stored at the INL, Waste Streams ID-RF-S3114 and ID-RF-S3150-A, October 20, 2009. [P634A]

(26) BN510.1 Supercompacted Debris Waste Stream Profile Package, September 10, 2010. [P1030A]

(27) RF135.01, Rev. 0, Rocky Flats Environmental Technology Site WIPP Waste Stream Profile Form, TRM Solidified Organic Waste, March 23, 2005. [P1100A]

(28) Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-RF-S3114 WSPF Package, November 15, 2006. [P666A]

(29) 40 CFR Parts 260-280.

(30) RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1).

(31) INST-FOI-16-Box Line Operations.

(32) Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005 and November 11, 2008 [P881S]

(33) INST-OI-24, Packaging Radioactive Waste.

(34) MP-EC&P-7.10, Spill Response Procedure.

(35) INST-OI-88, Spill/Leak Response and Cleanup.

(36) AMWTP Hazardous Waste Determination (HWD 041811-03), July 20, 2011. [C1018A]

(37) Material Safety Data Sheets, PIG® Acid Encapsulating/Neutralizing, Absorbents, February 5, 2007; and PIG® Packing Material, Absorbents, February 1, 2007. [P866S]

(38) INST-FOI-23, Special Case Waste Operations.

(39) INST-FOI-21, Drummed Waste Handling Operations.

(40) Material Safety Data Sheets for Petroset II and Petroset II G, Fluid Tech, Inc. June 8, 1998 and March14, 2006. [P657S]

(41) Material Safety Data Sheets for Sunrise® Exeter, Sunrise Environmental Scientific, March 15, 2001. [P1310S]

(42) Material Safety Data Sheets for Simple Green®, Sunshine Makers Inc., May 2009. [P1298S]

(43) Material Safety Data Sheets for Acetone, Fisher Scientific, March 18, 2004. [P1294S]

(44) Material Safety Data Sheets for Hexane, Fisher Scientific, September 11, 1996. [P1309S]

(45) RPT-NFCS-20, Criticality Safety Evaluation for Sludge Drum Processing in South Box Line.

(46) RPT-NFCS-11, Criticality Safety Evaluation for Container Conveyors within the AMWTF.

(47) INST-FOI-39, Processing Sludge Drums in the South Box Line. (Suspended)

(48) INST-FOI-38, Drum Import/Export Glovebox Operations. (Suspended)

(49) Memo to File, Estimated Number of Containers for the BN600 PCB Contaminated Debris Waste Stream – WJE-001-11. [C1016A]

(50) INST-OI-43, HGAS Sampling and Analysis Operations

(51) INST-OI-34, Non-Facility Visual Examination Operations

(52) RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste

(53) RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory

(54) RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP

AMWTP Advanced Mixed Waste Treatment Project	**Waste Stream Profile Form** **HWN Assignment Worksheet**	Form-1187 Rev. 3 Effective: 12/29/10 Page 1

Implementing Document: MP-TRUW-8.13

WSPF Number: BN600

AK Summary Report / Rev. Number: RPT-TRUW-88, Rev. 0

HWN	AK ASSIGNED		CHARAC.	DELETE CHARAC.		WSPF	PERMITTED
F001	X					X	✔
F002	X					X	✔
F003			[1]				✔
F004	X					X	✔
F005	X		X			X	✔
F006	X					X	✔
F007	X					X	✔
F009	X					X	✔
D004	X					X	✔
D005	X					X	✔
D006	X					X	✔
D007	X					X	✔
D008	X					X	✔
D009	X					X	✔
D010	X					X	✔
D011	X					X	✔
D022	X					X	✔
D027	X					X	✔
D028	X					X	✔
D029	X					X	✔
D030	X					X	✔
D032	X					X	✔
D034	X					X	✔
D037	X					X	✔
D043	X					X	✔

AK Expert: J.L. Gwiedthorpe (Print/Sign) **Date:** 8/9/11

Site Project Manager: Eric Schweinsberg **Date:** 8/9/11

[1] The UCL_{90}HSG results for acetone exceeded the PRQL. The waste within this waste stream is not a 40 CFR 261 RCRA ignitable waste. No HWN assigned.

AMWTP Advanced Mixed Waste Treatment Project	TRU Waste Stream AK Documentation Checklist	Form-1067 Rev. 9 Effective: 07/12/11 Page 1 of 2

Implementing Document: MP-TRUW-8.13

Waste Stream or Waste Type Description: WMF-676 PCB contaminated Debris

Waste Stream or IDC Number: BN600

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C1018A, P1100A, P634A
Waste stream volume and time period of generation.	WS2	C1016A, C1018A, C1019A, C1023A, P1100A, P634A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C1018A, P1100A, P634A
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C1018A, C1022A, P1030A, P1100A, P1291S, P1292S, P1293S, P1294S, P1295S, P1296S, P1297S, P1298S, P1299S, P1300S, P1301S, P1302S, P1303S, P1304S, P1305S, P1306S, P1307S, P1308S, P1309S, P1310S, P634A, P657S, P666A, P808S, P866S
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C1018A, C1019A, C1024A, C207A, P1030A, P1100A, P634A, P657S, P670A, P881S
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned. Documentation regarding how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU nonmixed waste).	WS6	C1018A, P1030A, P1085S, P1086S, P1100A, P634A, P666A
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	P1030A, P1100A, P634A, P666A
Documentation identifying the presence of prohibited items listed in Section C-1c of the WIPP-WAP.	WS8	C1018A, P1030A, P1100A, P634A, P666A

<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

Implementing Document: MP-TRUW-8.13

All required AK information has been compiled and tracking numbers assigned.

AK Expert: J. L. Gould Thorpe (Print/Sign) Date: 8/9/11 (Date)

Site Project Manager: Eric Schmeisberg (Print/Sign) Date: 8/9/11

Waste Stream

Name: WMF-676 PCB Contaminated Debris (BN600)

Number: BN600

The mixed waste identified on manifest number 000793223GBF and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004 F005, F006, F007, and F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act.

Hazardous waste number(s)	Land Disposal Prohibition effective date
D004	May 26, 2000
D005	May 26, 2000
D006	May 26, 2000
D007	May 26, 2000
D008	May 26, 2000
D009	May 26, 2000
D010	May 26, 2000
D011	May 26, 2000
D022	September 19, 1996
D027	September 19, 1996
D028	September 19, 1996
D029	September 19, 1996
D030	September 19, 1996
D032	September 19, 1996
D034	September 19, 1996
D037	September 19, 1996
D043	September 19, 1996
F001	Nov 8, 1986
F002	Nov 8, 1986
F004	Nov 8, 1986
F005	Nov 8, 1986
F006	July 8, 1989
F007	July 8, 1989
F009	July 8, 1989

NOTE: *The SPM/AKE signature below indicates concurrence/verification that the Waste Stream name and number, the EPA Hazardous Waste Numbers, and the Land Disposal Prohibition effective dates have been entered and are technically correct. The Shipping Representative signature below indicates concurrence/verification that the manifest number has been entered and is technically correct.*

AMWTP Advanced Mixed Waste Treatment Project	Land Disposal Restriction Notification	Form-1777, Rev. 0 Effective: 1/24/07 2 of 2 Page 1 of 1

Implementing Document: MP-TRUW-8.14

8/1/11

SPM/AKE

Printed Name: Tim Venneman Signature: _____ Date: 7-28-11

Shipping Representative

Printed Name: _____ Signature: _____ Date: 08/03/11

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

June 21, 2011

C-2011-0236

Mr. Rick Chavez
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Submittal of Waste Stream Profile BN600 – ET-035-11

Dear Mr. Chavez:

This letter accompanies the Waste Stream Profile BN600, *AMWTP WMF-676 PCB Contaminated Debris*, and RPT-TRUW-88, *Acceptable Knowledge Summary for AMWTP WMF-676 PCB Contaminated Debris (BN600)*, for your review and approval. We believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

JMJackson for

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ECT/ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
Marc Italiano, CBFO
James M. Jackson, BBWI
Talley W. Jenkins, Jr., DOE-ID
Jason P. Lance, BBWI
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Wesley A. Skaar, BBWI
Matthew E. Storms, BBWI
J. R. Stroblel, CBFO
Elizabeth C. Thiel, BBWI
Jerry L. Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

68/70

1. Source Document Tracking Number: P1030A	2. Revision: 4

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BN510.1 Supercompacted Debris Waste Stream Profile Package

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 9/10/10

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM4, WM5, WM6, WM7	BN	All	The AK Summary addresses all of the required Waste Management (WM) elements by providing either a summary of the information or by identifying a reference to the document(s) that contain the information. Therefore, the WM elements identified in this summary are for those elements that are found in this package.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	BN-550	All	The AK Summary includes all waste stream (WS) elements.
WS4, WS6, WS7, WS8	BN-600	All	BN510.1 Supercompacted Debris Waste Stream Profile Package
WS5	BN-600		Characterization information for waste stream BN510.1

9. Document Summary:

FOR INFORMATION ONLY

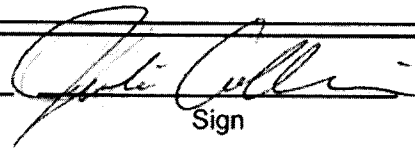
Implementing Document: MP-TRUW-8.13

Characterization information for waste stream BN510.1 (supercompacted waste generated at AMWTP) submitted to and approved by CBFO. This package includes the following documentation:
* CBFO approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1), September 5, 2012
* Change Notice #2 for Supercompacted Debris Waste (BN510.1) Revision 1, July 31, 2012
* Correspondence letter from AMWTP to CBFO requesting Change Notice #2, August 2, 2012
* CBFO approval of Change Notice #1 for Supercompacted Debris Waste (BN510.1), January 31, 2012
* Change Notice #1 for Supercompacted Debris Waste (BN510.1) Revision 0, January 30, 2012
* EPA Approval Letter and Report dated March 16, 2011 associated with the Unannounced Continued Compliance Inspection performed in November 2010.
* CBFO e-mail correspondence noting review and approval of RPTs: TRUW-83 and TRUW-82 are not required.
* EPA DOCKET NO. A-98-49; II-A4-143,
* CBFO Approval Letter for WSPF BN510.1, September 10, 2010
* AMWTP Form-1195, Waste Stream Profile Form for BN510.1, September 10, 2010
* AMWTP Form-1597, Reconciliation with Data Quality Objectives, September 10, 2010
* AMWTP Form-1598, Characterization Information Summary Report, September 10, 2010
* RPT-TRUW-83, Rev 3, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), September 17, 2012
* AMWTP Form-1187, Waste Stream Profile Form HWN Assignment Worksheet, September 21, 2010
* AMWTP Form-1067, TRU Waste Stream AK Documentation Checklist. September 21, 2010
* LDR Notification - IDC BN510.1
* Initial Submittal Letter to CBFO, September 9, 2010
* Final Submittal Letter to CBFO, September 10, 2010

P1030A Revision 4 updates the record to include Change Notice #2 and RPT-TRUW-83, Rev 3.

10. Source Document Data Limitations (if any):

None

11. AK Expert:	Julie Collins		10/2/2012
	Print	Sign	Date

P1030A R4

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

SEP - 5 2012

Mr. James Cooper, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Change Notice #2 for Waste Stream Profile Form Number BN510.1

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the *Update for the Waste Isolation Pilot Plant (WIPP) Operating Record (Change Notice #2) for Waste Stream Profile Form Number BN510.1, Supercompacted Debris Waste,* for the Advanced Mixed Waste Treatment Project (AMWTP).

The CBFO has concluded that the change notice is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the change notice as submitted. Using the methods approved at the AMWTP, the data can be entered into the certification and shipping modules of the Waste Isolation Pilot Plant Waste Data System.

If you have questions, please contact Norma Castaneda at (575) 234-7118.

Sincerely,

J. R. Stroble

J. R. Stroble, Director
Office of the National TRU Program

Enclosure

CBFO:NTP:NC:PG:12-0586:UFC 5900.00

cc: w/enclosure

N. Castaneda, CBFO	*ED
C. Fesmire, CBFO	ED
B. Mackie, CBFO	ED
T. Morgan, CBFO	ED
M. Pinzel, CBFO	ED
R. Unger, CBFO	ED
J. Wells, DOE-ID	ED
W. Lattin, DOE-ID	ED
J. Cooper, DOE-ID	ED
D. Haar, ITG	ED
S. Peterman, ITG	ED
E. Schweinsberg, ITG	ED
R. Chavez, WTS	ED
D. Cook, WTS	ED
R. Galbraith, WTS	ED
K. Guillermo, WTS	ED
J. Haschets, WTS	ED
R. Kantrowitz, WTS	ED
R. Kehrman, WTS	ED
C. Kirkes, WTS	ED
S. Kouba, WTS	ED
R. Lee, WTS	ED
C. Luoma, WTS	ED
W. Most, WTS	ED
M. Pearcy, WTS	ED
M. Ramirez, WTS	ED
A. Ray, WTS	ED
R. Reeves, WTS	ED
F. Romo, WTS	ED
M. Sensibaugh, WTS	ED
F. Sharif, WTS	ED
M. Strum, WTS	ED
K. Urquidez, WTS	ED
J. Vernon, WTS	ED
V. Waldram, WTS	ED
M. Walentine, WTS	ED
P. Gilbert, LANL	ED
S. Lott, LANL	ED
G. Lyshik, LANL	ED
CBFO M&RC	

*ED denotes electronic distribution

Update for WIPP Operating Record (Change Notice #2)

Supercompacted Debris Waste (BN510.1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN510.1. This waste stream is Supercompacted Debris Waste and was approved by DOE/CBFO on September 10, 2010. Change Notice #1 for BN510.1 was approved by CBFO on January 31, 2012.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of Audit report approval by NMED**

Added additional audit approval date May 24, 2012.

2. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.1, Areas of Operation**

Add the following paragraph to Section 1.4.1 immediately following the bullets, prior to the final paragraph.

The boxed waste includes six-drum overpacks (SDOPs containing up to six 55- or 85-gallon drums), The SDOPs are of two types. One type is packaged with characterized debris drums for processing in AMWTF. These contain drums with IDCs confirmed by RTR to be acceptable feedstock waste. The other type is packaged with drums that are not characterized but are labeled with historical AK information that indicates acceptable feedstock waste.

3. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.3, Waste Generating Process**

Replace the second paragraph of Section 1.4.3 with the following: "Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG. Boxes of waste, including SDOPs, are introduced into a boxline for sorting and repackaging into 55-gal drums. The SDOPs with uncharacterized drums undergo RTR to confirm the waste is >50% debris in each drum. The drum contents are then visually examined in the boxline trough to confirm the waste is approved feed stock. The other boxed wastes undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed in the boxline or special-case waste (SCW) glovebox. After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55-gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor."

Supercompacted Debris Waste (BN510.1)

4. AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Appendix A, Supercompactor Debris Waste Feedstock, Heterogeneous Waste Type.

Modify Appendix A under the Combustibles Waste Type to include IDCs RF-430 and RF-431 and under the Heterogeneous Debris Waste Type to include IDCs BN-510, BN-550,and RF-241. These portions of the table now read:

COMBUSTIBLES	RF	010	Paper & Rags
	RF	020	Wood & Benelex
	RF	030	Plastic
	RF	040	Rubber
	RF	33A	WIPP Experimental Test Program (WETP) Bin Program-Combustibles A (IDCs 335, 336, 337 and 339)
	RF	33B	WETP Bin Program – Combustibles B (IDCs 330, 337, and 339)
	RF	302	Benelex® and Plexiglas®
	RF	330	Paper and Rags-Dry
	RF	336	Paper and Rags-Moist
	RF	337	Plastic, Teflon®, Washables, PVC
	RF	339	Leaded Rubber Gloves and Aprons
	RF	430	Unleached Ion Column Resin
	RF	431	Leached Resin
	RF	460	Washables, Rubber, Plastic
	RF	463	Leaded Rubber Gloves and Aprons
	RF	464	Benelex® and Plexiglas®
	RF	833	Plastics, TRU Mixed
	RF	831	Dry Combustibles
	RF	832	Wet Combustibles
	RF	900	Low specific activity (LSA) Paper, Plastics, Etc.
	RF	970	Wood

HETEROGENEOUS	BC	201	Non-combustible solids
	BC	202	Combustible Solids-Paper/Cloth
	BN	508	AMWTP Newly Generated Debris
	BN	510	Supercompacted Debris
	BN	550	Supercompacted Debris (BN510.1)
	MD	801	Rags, Paper, Wood, etc.
	MD	802	Dry Box Gloves & O-Rings
	MD	803	Metal, Equipment, Pipe, Valves, etc.
	MD	804	Plastic, Tygon□, Mani-Boots, etc.
	MD	805	Asbestos Filters
	MD	810	Glass, Flasks, Sample Vials, Etc.
	MD	813	Glass Filters and Fiberglass
	MD	814	Graphite Waste
	MD	824	Equipment Boxes, Non-combustible
	MD	825	Equipment Drums, Non-combustible
	MD	826	Equipment Boxes, Combustible
	MD	827	Equipment Drums, Combustible

	MD	838	<10 nCi/g Non-combustible
	MD	847	Low Specific Activity (LSA) <100 nCi/g Combustible
	MD	848	LSA <100 nCi/g Non-combustible
	RF	241	Americium Process Residue
	RF	372	Grit
	RF	374	Blacktop, Concrete, Dirt, and Sand
	RF	750	Pits 11 and 12 Debris
	RF	760	Pad 1 Cells 1 and 2 RF Debris
	RF	950	LSA Metal, Glass, etc.
	RF	960	Concrete, Asphalt, etc.
	RL	712	Hanford Plutonium Finishing Plant Debris
	RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
	RL	716	Hanford 231-Z Building Debris

Reason/Justification for Changes

Item 1.

WSPF, Form-1195, the audit report approval dates were updated to reflect the most recent approval date.

Item 2.

AK Summary Report, Section 1.4.1, Areas of Operation, was updated to describe the two types of SDOPs introduced into the boxline as supercompactor feed.

Item 3.

AK Summary Report, Section 1.4.3, Waste Generating Process, was updated to reflect a revised process flow for SDOPs. At retrieval, the historical AK information listed on the container is entered into the WTS. The historical information includes the generator, and waste type (IDC). If the container information identifies the waste as an approved feedstock IDC, then it is acceptable for uncharacterized SDOP building. Uncharacterized SDOPs are built from specific approved feedstock IDCs. Prior to loading, individual containers will not require RTR/VE and NDA. However, the SDOP will undergo RTR to confirm that each container's contents are greater than 50 percent debris. The SDOPs will be sent to the boxline for processing where visual examination will confirm that the waste type of each container in an SDOP is approved feed stock. The process for SDOPs created with RTR certified containers is unchanged. A certified VE is performed on the repackaged waste from the boxline to confirm the waste as a BN-508.

Item 4.

AK Summary Report, Appendix A, Supercompactor Debris Waste Feedstock, Heterogeneous Waste Type, was updated to include the IDCs RF-241, RF-430, RF-431, BN-510 and BN-550. IDCs BN-510 and BN-550 represent supercompacted debris from waste streams BN510 and BN510.1, respectively. Including them as approved feedstock allows poorly compacted 100 gallon containers or other supercompaction errors to be efficiently reprocessed.

Supercompacted Debris Waste (BN510.1)

The changes submitted in this change notice do not affect the waste stream designation, assignment of EPA hazardous waste numbers, or the waste matrix code as identified in the previously approved waste stream profile form.

Update for the WIPP Operating Record (BN510.1) certification

I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of TRU Programs Manager	Sue Peterman, TRU Programs Manager Printed Name and Title	7/31/12 Date

Idaho Treatment Group

August 2, 2012

C-2012-0235

Transmitting Electronically
Site.documents@wipp.ws

Washington TRU Solutions
Attn: Mr. Richard Chavez
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-EM0001467, Request for Approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1) – DHH-15-12

Dear Mr. Chavez:

The Advanced Mixed Waste Treatment Project (AMWTP) requests approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1). Enclosed is the change notice for approval and the associated Acceptable Knowledge Report, RPT-TRUW-83, Rev. 3A, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1).

After receiving approval on these documents, the revisions will be processed through the Document Control process. If you have any questions or comments, please call me at 208-557-6718 or Ms. Susan Peterman at 208-557-6383.

Sincerely,
IDAHO TREAMENT GROUP, LLC

Dave H. Haar
Waste Programs Manager

SMP/skc

Enclosures

cc: ***Transmitting Electronically***
Stephen Carpenter, ITG
Trey Greenwood, WTS
James Jackson, ITG
William Lattin, DOE-ID
Mark Pearcy, WTS
Eric Schweinsberg, ITG
Susan Peterman, ITG
Jerry Wells, DOE-ID
Mary V. Willcox, DOE-ID
AMWTP Correspondence Control

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JAN 31 2012

Mr. James Cooper, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Waste Stream Profile Form Change Notice #1 for BN510.1, Supercompacted Debris Waste

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the Update for the WIPP Operating Record (Change Notice #1) for Waste Stream Profile Form (WSPF) Number BN510.1, *Supercompacted Debris Waste* at the Advanced Mixed Waste Treatment Project (AMWTP). The CBFO has concluded that the Change Notice is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the Change Notice as submitted. Using the methods approved at the AMWTP, the data can be entered into the certification and shipping modules of the Waste Isolation Pilot Plant Waste Data System.

Please contact Norma Castaneda at (575) 234-7118, if you have questions.

Sincerely,

J. R. Stroble, Director
Office of the National TRU Program

Enclosure

CBFO:NTP:NC:GL:12-0412:UFC 5900.00

cc: w/enclosure

M. Pinzel, CBFO	*ED
T. Morgan, CBFO	ED
N. Castaneda, CBFO	ED
B. Mackie, CBFO	ED
R. Unger, CBFO	ED
C. Fesmire, CBFO	ED
J. Wells, DOE-ID	ED
W. Lattin, DOE-ID	ED
D. Haar, ICP	ED
E. Schweinsberg, AMWTP	ED
D. Cook, WTS	ED
C. Kirkes, WTS	ED
M. Pearcy, WTS	ED
M. Ramirez, WTS	ED
A. Ray, WTS	ED
F. Romo, WTS	ED
F. Sharif, WTS	ED
J. Vernon, WTS	ED
M. Strum, WTS	ED
K. Urquidez, WTS	ED
M. Walentine, WTS	ED
R. Chavez, RES	ED
R. Galbraith, RES	ED
K. Guillermo, RES	ED
J. Haschets, RES	ED
R. Kehrman, RES	ED
S. Kouba, RES	ED
W. Most, RES	ED
D. Sellmer, CTAC	ED
P. Gilbert, LANL	ED
G. Lyshik, LANL	ED
S. Lott, LANL	ED
P. Roush, WIPP Operating Record	ED
D. Guevara, RCRA Chronology	ED
CBFO M&RC	

*ED denotes electronic distribution

Update for WIPP Operating Record (Change Notice #1)

Supercompacted Debris Waste (BN510.1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN510.1. This waste stream is Supercompacted Debris Waste and was approved by DOE/CBFO on September 10, 2010.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Added additional audit approval date January 25, 2011.

2. **WSPF Form-1195, Technical contact:, Technical contact phone number:**

   Updated to: Sue Peterman, (208) 557 6383

3. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Updated the following procedures:

   - Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 21, 8/05/11
   - Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 15, 8/09/11
   - CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 12, 12/29/10.

4. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), ACRONYMS**

   Added the following acronyms: "HWMA - Hazardous Waste Management Act" and "SDOP – six-drum overpack box."

5. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.2.10, Description from the ATWIR.**

   Updated section as follows: "The Annual Transuranic Waste Inventory Report (ATWIR) description for waste stream BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste.[28]"

6. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.3, Waste Stream Description.**

   Revised the first paragraph third sentence to read: "The supercompacted debris waste (i.e., BN510.1) has a common physical form that contains similar hazardous constituents and is generated from a single process or activity."

   Added fourth sentence to read: "The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]"

Updated Table 1, Physical waste form description for BN510.1, to remove the existing footnote a and to relabel the existing footnote b as footnote a.

7. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.3, Waste Generating Process.**

   Modified second paragraph, second sentence and added new third and fourth sentences. That paragraph now reads as follows: "Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG *[drummed waste packaging glovebox]*. Boxed waste, including six-drum overpacks (SDOPs containing up to six 55- or 85 gallon drums), are introduced into a boxline for sorting and repackaging into 55-gal drums. The boxed wastes, including the SDOPs undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed in the boxline or special-case waste (SCW) glovebox (prohibited items processed in the SCW glovebox are not returned as feedstock). After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55 gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor."

8. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.4, Material Inputs.**

   Revised the second to the last paragraph to add PIG absorbents. That paragraph now reads as follows: "Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II®, Petroset IIG®, or PIG® absorbents may be added to the waste by AMWTP to absorb prohibited liquids within debris waste.[38, 39, 42, 48, 49, 50]"

9. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.5, Waste Material Parameters.**

   Revised the first paragraph to read as follows: "The original waste material parameter (WMP) weight percentages for the BN510.1 waste stream estimate were based on the visual examination (VE) data for 100-gallon product drums generated from 2005 through 2009. WMP data for 22,399 containers with completed RTR/VE data from the BN510 waste stream were obtained from the AMWTP Waste Tracking System (WTS) database for containers examined prior to January 1, 2010. This population represented approximately 54% of the estimated volume of supercompacted waste (i.e., 22,399 out of 41,600 drums projected for BN510 and BN510.1 waste streams). The updated estimate is based on the VE data from 3,426 drums of BN510.1 supercompacted waste visually examined prior to September 12, 2011. The estimated WMP weights (by percent) for the BN510.1 waste stream, excluding 100 gallon drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13. The updated estimated WMP weight parameters are representative of the BN510.1 waste stream and are summarized in Table 2.[12, 13, 46]"

Revised Table 2, "Waste material parameters for supercompacted debris waste," to read as follows:

Waste Material Parameters	Estimated Percent WMP weight/unit waste
Iron-based Metals/Alloys	79
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	1
Cellulosics	12
Rubber	<1
Plastics (waste materials)	7
Inorganic Matrix	<1
Organic Matrix	0
Soils/Gravel	<1

10. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.6, Prohibited Items.**

Deleted the last bullet because it is not needed for a waste stream approved for shipment to WIPP. This is per discussion with CBFO during review and approval for AMWTP WSPF BN600.

Revised 3rd paragraph to read as follows: "Boxline(s) are used to VE and repackage the boxed debris waste into 55-gallon drums. Debris waste feedstock treated or examined in the DWPG, and waste from maintenance and cleanup activities, is either examined by RTR or visually examined. The 55-gallon drums are non-destructive assayed. These drums of debris waste feedstock are then supercompacted and the pucks packaged into a 100-gallon product drum (IDC BN-550).[10, 11]"

Revised last paragraph to add PIG® absorbents.

11. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7, Resource Conservation and Recovery Act (RCRA) Determination.**

Inserted new paragraph to read as follows: "The BN510.1 waste is (and has been) subject to the State of Idaho Hazardous Waste Management Act (HWMA)/RCRA requirements (e.g., 40 CFR 264 and 40 CFR 265) and is currently being managed under the AMWTP RCRA permitting requirements until it is shipped off-site.[44, 45]"

12. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2, Hazardous Determination.**

    Deleted the paragraph and inserted new paragraphs to read as follows:

    "1.7.2.1 Hazardous Waste Management

    "The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1] The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on the RCRA mixture and/or derived-from rules.[1, 6]

    "The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]"

    The addition of the section heading numbered 1.7.2.1 renumbered subsequent sections in 1.7.2.

13. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.1, Ignitability.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

14. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.2, Corrosivity.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

15. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.3, Reactivity.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

16. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 3, References**

Revised the following reference: "28. DOE/TRU-11-3425, Annual Transuranic Waste Inventory report – 2011, U. S. Department of Energy, Carlsbad Field Office, Rev. 0 [P1374A]"

Revised the following references to read:

"40. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]"

"41. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]"

Added Reference 43 as follows:

"43.CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4 2010 [P855A]"

Added the following references:

"44. ID4890008952, AMWTP HWMA/RCRA Permit and interim status documents."

"45. Resource Conservation and Recovery Act, 40 CFR Parts 260 through 280."

"46. MLJ-03-11, Memorandum to File, Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream, September 27, 2011. [C1045A]"

"47. Hazardous Waste Determination #071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508. [C1051A]"

"48. Material Safety Data Sheets for Universal PIG® Absorbents (MSD-014) New Pig Corp. October 10, 2011. [P1376S]"

"49. Material Safety Data Sheets for Oil-Only PIG® Absorbents (MSD-016) New Pig Corp. August 3, 2011. [P1377S]"

"50. Material Safety Data Sheets for BLUE PIG® Sock Absorbents (MSD-029) New Pig Corp. February 9, 2011. [P1378S]"

17. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Appendix A**

Added the following IDCs in their proper location in the table:

Waste Type	Site	IDC	Description
Combustibles	RF	010	Paper & Rags
Combustibles	RF	020	Wood & Benelex
Combustibles	RF	030	Plastic
Combustibles	RF	040	Rubber
Graphite	RF	070	Graphite
Heterogeneous	RF	750	Pits 11 and 12 Debris
Heterogeneous	RF	760	Pad 1 Cells 1 and 2 RF Debris
Inorganic Non-Metal	RF	060	Glass
Uncategorized Metal	RF	050	Metal Scrap

Reason/Justification for Changes

Item 1.

WSPF, Form-1195, the audit report approval dates were updated to reflect the most recent approval date.

Item 2.

WSPF Form-1195, updated the technical contact and phone number.

Item 3.

WSPF Form-1195, documents used for WAP certification were revised to reflect the most recent revisions.

Item 4.

AK Summary Report, List of Acronyms was updated to reflect revised information.

Item 5.

AK Summary Report, Section 1.2.10, Description from the ATWIR, and footnote a was updated and footnote b was deleted per issue of 2011 ATWIR.

Item 6.

AK Summary Report, Section 1.3, Waste Stream Description, First paragraph was updated per the current WAP language. Text was added to state that the BN510 waste was not being

generated after addition of the Hanford waste. Table 1 was updated to remove the existing footnote a and to relabel the existing footnote b as footnote a.

Item 7.

AK Summary Report, Section 1.4.3, Waste Generating Process language was updated to add current process flow. The SDOPs are currently created from 85-gallon or 55-gallon drums that have a certified RTR/VE and non-destructive assay (NDA). These drums were originally characterized because they were planned to be processed as direct feed. The SDOPs loaded with these drums, are dumped into the box lines for processing and packaging as BN-508s. It was determined that it was more economical to process containers via SDOP than direct feed. A revised process for creating SDOPs is proposed based on the following on information. At retrieval, the historical information listed on the container is entered into the WTS. The historical information includes the generator, waste type (IDC), weight, and pack date. If the container information identifies the waste as an approved feedstock IDC, then it is acceptable for SDOP building. SDOPs will be built from specific sole generator approved feedstock IDCs. Boxed waste RTR will be performed on the SDOP to confirm that each container's contents are greater than 50 percent approved feedstock debris from the identified generator. The SDOPs will be sent to the boxline for processing. A certified VE is performed on the repackaged waste from the boxline to confirm the waste as a BN-508. RTR/VE and NDA will not be required for the individual containers prior to loading into the SDOP.

Item 8.

AK Summary Report, Section 1.4.4, Material Input, was updated to include the addition of PIG absorbents.

Item 9.

AK Summary Report, Section 1.4.5, Waste Material Parameters, was updated for BN510.1 waste only, rather than a composite of BN510 and BN510.1 waste.

Item 10.

AK Summary Report, Section 1.6, Prohibited Items, was updated. The last bullet was deleted because it is not needed for a waste stream approved for shipment to WIPP. Revised third paragraph for clarification and consistency with the process. Revised last paragraph to add PIG® absorbents.

Item 11.

AK Summary Report, Section 1.7, RCRA Determination, was changed to support recent WIPP Permit Modification concerning assigning hazardous waste numbers (HWNs) consistent with RCRA requirements.

Item 12.

AK Summary Report, Section 1.7.2, Hazardous Determination, was changed to support recent WIPP Permit Modification concerning documentation of how waste was historically managed.

Text was added to state that the BN510 waste was not being generated after addition of the Hanford waste.

Item 13.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.1, Ignitability. Revised paragraph to add PIG® absorbents.

Item 14.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.2, Corrosivity. Revised paragraph to add PIG® absorbents.

Item 15.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.3, Reactivity. Revised paragraph to add PIG® absorbents.

Item 16.

AK Summary Report, Section 3, References, was updated to update revised documents referenced in the AK Summary and to identify references that support the information revised.

Item 17.

AK Summary Report, Appendix A, IDCs RF-010, RF-020, RF-030, RF-040, RF-050, RF-070, and RF-060 were added to support their addition to the BN510.1 waste stream. These debris IDCs were used by the Rocky Flats Plant prior to June 1971. They are precursor IDCs to the three-digit IDCs currently approved as feed stock and listed in Appendix A. An example is RF-010 (paper and rags) is equivalent to RF-330 (paper and rags-dry) and RF-336 (paper and rags-moist). Waste to be retrieved by AMWTP includes waste shipped from the Rocky Flats Plant prior to 1972. Some of this waste may be included in the historically retrieved waste from the Subsurface Disposal Area (SDA), and stored in cargos, bins, and 85-gallon over packs at the Transuranic Storage Area-Retrieval Enclosure (TSA-RE). This waste may also be retrievably stored on Pad 1, Cells 1 and 2. Waste assigned these IDCs may be retrieved and treated in the Supercompactor facility. The addition of these IDCs to the BN510.1 waste stream does not increase the total volume of waste shipped to WIPP because this waste is included in the inventory and does not add additional EPA Hazardous Waste numbers to the profile.

AK Summary Report, Appendix A, IDCs RF-750 and RF-760 were added to support their addition to the BN510.1 waste stream. These IDCs are assigned by AMWTP to Rocky Flats Plant debris waste that was generated prior to the assignment of IDCs by the Rocky Flats Plant and is equivalent to approved RF IDCs listed in Appendix A. IDC RF-750 is assigned to debris waste historically retrieved from Pits 11 and 12 and stored in cargos, bins and 85-gallon over packs at TSA-RE.. IDC RF-760 is assigned to waste being retrieved from the TSA-RE, Pad 1, Cells 1 and 2. IDC RF-750 and RF-760 are also assigned to debris waste from these locations where the historical information on the container is limited but based on adequate container information and characterization (RTR/VE and NDA); the waste is determined to be equivalent

to approved Rocky Flats debris waste. The addition of these IDCs to the BN510.1 waste stream does not increase the total volume of waste shipped to WIPP and does not add additional EPA Hazardous Waste Numbers to the profile.

The changes submitted in this change notice do not affect the waste stream designation, assignment of EPA hazardous waste numbers, or the waste matrix code as identified in the previously approved waste stream profile form.

Update for the WIPP Operating Record (BN510.1) certification

I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of TRU Programs Manager	Printed Name and Title	Date
	SM Peterman TRU Programs Manager	1/30/12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 16 2011

OFFICE OF
AIR AND RADIATION

J R Stroble, Manager
National TRU Program
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Dear Mr. Stroble:

This letter provides the results of the U.S. Environmental Protection Agency's (EPA) unannounced continued compliance inspection at the Advanced Mixed Waste Treatment Project (AMWTP) facility in Idaho Falls, ID. On November 17-18, 2010, EPA inspected AMWTP's waste characterization (WC) program for contact-handled (CH) transuranic (TRU) waste. As a result of this unannounced continued compliance inspection, EPA confirmed that AMWTP continues to characterize CH TRU waste consistent with the conditions and limitations from EPA's baseline approval granted in October 2006 (EPA Air Docket No. A-98-49; II-A4-66). The enclosed report (EPA Air Docket No. A-98-49; II-A4-143) gives the details of the evaluation.

In accordance with 40 CFR 194.8(b), during this on-site inspection, EPA evaluated samples of the following waste characterization activities used to characterize CH TRU debris waste from Hanford:[1]

- Acceptable knowledge (AK)
- Nondestructive assay (NDA)
- Real-time radiography (RTR) for CH retrievably-stored TRU debris waste (S5000)
- Visual examination (VE for newly generated TRU waste)

During the inspection, EPA raised an issue concerning AMWTP's use of AK documents prepared by the Hanford-Central Characterization Project for the Hanford debris waste managed by AMWTP as BN510.1 waste. To address this EPA issue, AMWTP staff revised Hanford

[1] Hanford is sending approximately 800 55-gallon drums of debris waste belonging to four waste streams that were characterized by Hanford prior to termination of the non-CCP Hanford waste characterization program in 2008.

debris waste specific AK documents. This revision incorporated AK for the subject waste stream that Hanford generated which EPA approved as part of the baseline approval of August 2008 (EPA Air Docket No. A-98-49; II-A4-106).

EPA has determined that the AMWTP implemented CH waste characterization program in the configuration observed during this unannounced inspection is consistent with the limitations described in the October 2006 baseline inspection report cited above.

If you have any questions, please contact Rajani Joglekar (202 343-9462) or Ed Feltcorn (202 343- 9422).

Sincerely,

Tom Peake

Tom Peake, Director
Center for Waste Management and Regulations

Enclosure

cc: electronic distribution
Alton Harris, DOE EM
Ed Ziemianski, CBFO
Court Fesmire, CBFO
Norma Casteneda, CBFO
Dennis Miehls, CBFO
Martin Navarrete, CBFO
Jon Edwards, EPA
Steve Zappe, NMED
David Ploetz, WTS
Allison Pangle, CTAC

From:	Carpenter, Steve
To:	Venneman, Timothy E.
Subject:	FW: EPA"s Report - Unannounced Continued Compliance Inspection at AMWTP
Date:	Thursday, March 24, 2011 8:40:26 AM
Attachments:	AMWTP Continued Compliance Approval Letter Mar 16.pdf AMWTP Unannounced Continued Compliance report 16 Mar 2011.pdf

---

Steve Carpenter, P.G.
Acceptable Knowledge Manager/Alternate Site Project Manager
for AMWTP at INL
CELL: 208-680-1127
OFFICE at EDF: 208-557-6323

There's a lot of whiners in every crowd.
R. Lee Ermey

From: Schweinsberg, Eric
Sent: Thursday, March 24, 2011 6:32 AM
To: Carpenter, Steve
Cc: Tedford, Gina
Subject: FW: EPA's Report - Unannounced Continued Compliance Inspection at AMWTP

Well – I guess they are satisfied with the reports where they stand...let's talk it this morning.

Eric P. Schweinsberg
Site Project Manager/TRU Programs
AMWTP
208-557-6425 (Office)
208-351-9247 (Mobile)
208-557-6561 (Fax)

From: Site Documents - DOE [mailto:SiteD@wipp.ws]
Sent: Wednesday, March 23, 2011 9:06 AM
To: Schweinsberg, Eric
Cc: Lyshik, Gwen - LANL; Castaneda, Norma - DOE
Subject: FW: EPA's Report - Unannounced Continued Compliance Inspection at AMWTP

Eric, please see attached AMWTP Approval for the Continued Compliance Inspection. Per CBFO NTP the 2 documents (RPT-TRUW-82 R2A AND RPT-TRUW-93 R1A) sent to EPA does not require CBFO review and approval. Per the conference call yesterday please close out action on your end.

Thank you,
Patsy Gilbert

Los Alamos National Laboratory, Contractor to the
United States Department of Energy
575-234-7517
575-706-0014

From: Castaneda, Norma - DOE
Sent: Wednesday, March 23, 2011 9:04 AM
To: Site Documents - DOE
Cc: Waldram, Veronica - WTS
Subject: FW: EPA's Report - Unannounced Continued Compliance Inspection at AMWTP

Please forward this EPA concurrence to AMWTP regarding Hanford waste BN510.1 at AMWTP.
Thanks, Norma

From: Joglekar, Rajani - EPA
Sent: Wednesday, March 16, 2011 6:44 AM
To: Harris, Alton - DOE EM; Ziemianski, Edward - DOE; Stroble, J. R. - DOE; Fesmire, Courtland - DOE; Castaneda, Norma - DOE; Miehls, Dennis - DOE; Navarrete, Martin - DOE; Ploetz, David - WTS; Quintana, Irene - WTS
Cc: Zappe, Steve; Edwards.Jonathan@epamail.epa.gov; Feltcorn.Ed@epamail.epa.gov; Bender.Lindsey@epamail.epa.gov; Lee.Raymond@epamail.epa.gov
Subject: EPA's Report - Unannounced Continued Compliance Inspection at AMWTP

EPA DOCKET NO. A-98-49; II-A4-143

WASTE CHARACTERIZATION INSPECTION REPORT

EPA UNANNOUNCED CONTINUED COMPLIANCE INSPECTION NO. EPA-AMWTP-CH-UA-10.10.24 OF THE CONTACT-HANDLED WASTE CHARACTERIZATION PROGRAM AT THE ADVANCED MIXED WASTE TREATMENT PROJECT

November 17-18, 2010

U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
Center for Waste Management and Regulations
1200 Pennsylvania Avenue, NW
Washington, DC 20460

March 2011

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ACRONYMS AND ABBREVIATIONS

AK	acceptable knowledge
AKE	Acceptable Knowledge Expert
AKSR	Acceptable Knowledge Summary Report
Am	americium
AMWTP	Advanced Mixed Waste Treatment Project
BC	Battelle Columbus
BDR	batch data report
BN	AMWTP (prefix)
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
DU	depleted uranium
EA	Expert Analyst
EPA	U.S. Environmental Protection Agency
ES&H	Environment, Safety, and Health
EU	enriched uranium
FGE	fissile gram equivalent
FR	Federal Register
HLW	high-level waste
HS	heat source
IDC	Item Description Code
INL	Idaho National Laboratory
ITR	Independent Technical Reviewer
IWAS	Integrated Waste Assay System
LWA	Land Withdrawal Act
MD	Mound

nCi/g	nanocuries per gram
NCR	nonconformance report
NDA	nondestructive assay
NWPA	Nuclear Waste Policy Act of 1982
PFP	Plutonium Finishing Plant
PK	process knowledge
PPE	personal protective equipment
Pu	plutonium
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats
RFETS	Rocky Flats Environmental Technology Site
RL	Hanford
RTR	real-time radiography
SDOP	six-drum overpack
SHENC	Super High Efficiency Neutron Counter
SNF	spent nuclear fuel
SPM	Site Project Manager
T1	Tier 1
T2	Tier 2
TBD	to be determined
Th	thorium
TRU	transuranic
U	uranium
VE	visual examination
WAC	Waste Acceptance Criteria
WG	weapons-grade
WIPP	Waste Isolation Pilot Plant
WMC	waste matrix code
WMP	waste material parameter
WSPF	waste stream profile form
WTS	Waste Tracking System

1.0 EXECUTIVE SUMMARY

In accordance with 40 CFR 194.8(b), the U.S. Environmental Protection Agency (EPA or the Agency) conducted unannounced continued compliance Inspection No. EPA-AMWTP-CH-UA-10.10.24 of the waste characterization program for contact-handled (CH) transuranic (TRU) wastes at the U.S. Department of Energy (DOE) Advanced Mixed Waste Treatment Project (AMWTP). This on-site inspection occurred at the AMWTP[1] on November 17–18, 2010, and covered selected aspects of AMWTP's approved TRU waste characterization processes. In accordance with the provisions of 40 CFR 194.8(b), as issued in a July 16, 2004, *Federal Register* (FR) notice (69 FR 42571–42583), EPA conducted an unannounced continued compliance inspection of the site's program to characterize wastes proposed for disposal at the Waste Isolation Pilot Plant (WIPP). Following the inspection, while reviewing AMWTP provided documents, EPA inspectors identified one issue requiring December 6, 2010 discussion. AMWTP had used Acceptable Knowledge (AK) information prepared by the Hanford Central Characterization Project which EPA had not approved. For this Hanford waste, AMWTP should have used AK generated under the old Hanford program that EPA approved in August 2008 (EPA Docket No. A-98-49; II-A4, 106). AMWTP revised relevant AK reports which EPA received in February. As a result of this unannounced continued compliance inspection, EPA confirmed that the AMWTP CH TRU waste characterization program continues to maintain its approval to characterize CH TRU waste consistent with the conditions and limitations that are discussed in the baseline inspection report (see EPA Docket No. A-98-49; IIA4-66). There were no changes to the Tier 1 (T1) or Tier 2 (T2) designations indicated in the initial AMWTP approval table as a result of this unannounced continued compliance inspection. The approval table has been updated to reflect format changes and the revised AMWTP approval table is provided as Table 7 of this report.

During this inspection, the Agency evaluated samples of the following waste characterization activities used to characterize CH TRU debris waste from Hanford:[2]

- Acceptable knowledge (AK)
- Nondestructive assay (NDA)
- Real-time radiography (RTR) for CH retrievably stored TRU debris waste (S5000)
- Visual examination (VE) for newly generated TRU waste

2.0 PURPOSE OF CONTINUED COMPLIANCE EVALUATIONS

Under the changes to 40 CFR 194.8 promulgated in the July 16, 2004, *Federal Register* notice, EPA has the authority to conduct continued compliance inspections to verify that the site continues to use only the approved waste characterization processes to characterize the waste and remains in compliance with all the regulatory requirements. This inspection was performed for

[1] The AMWTP is located on DOE's Idaho National Laboratory (INL) outside of Idaho Falls, Idaho.

[2] Hanford is sending approximately 800 55-gallon drums of debris waste belonging to four waste streams that were characterized by Hanford prior to termination of the non-CCP Hanford waste characterization program in 2008.

the purpose of determining AMWTP waste characterization program compliance with 40 CFR 194.24.

3.0 PURPOSE OF THIS REPORT

This report documents the basis for EPA's decision to maintain the approval of the AMWTP waste characterization program for CH TRU wastes. Specifically, this report does the following:

- Describes the sample of the AMWTP waste characterization systems evaluated during this inspection
- Identifies all areas where waste characterization systems have changed relative to the baseline approval configuration and assesses the impact, if any, of those changes
- Provides objective evidence to support the EPA continued approval basis for all waste characterization systems
- Provides objective evidence of outstanding findings or concerns, as applicable
- Describes any tests or demonstrations completed during the course of the inspection and their relevance to EPA's approval decision

Sections of this report reference the documents that the EPA inspection team reviewed in support of the technical determination. To see or obtain copies of any items identified, write to the following address:

Quality Assurance Manager
USDOE/Carlsbad Area Field Office
P.O. Box 3090
Carlsbad, NM 88221

EPA's continued approval of the AMWTP waste characterization program will be conveyed to DOE separately by letter. More information is also on EPA's website at http://www.epa.gov/radiation/WIPP/index.html in accordance with 40 CFR 194.8(b)(3).

4.0 SCOPE OF THE CONTINUED COMPLIANCE INSPECTION

The scope of EPA's unannounced continued compliance Inspection No. EPA-AMWTP-CH-UA-10.10.24 was the evaluation of selected elements of the waste characterization systems in use at AMWTP to characterize TRU wastes that had been approved during the baseline inspection. Specifically, the EPA inspection team focused on the following:

- AK: AMWTP components implemented to characterize Hanford TRU BN510.1 waste, including AK Summary Reports (AKSRs); Waste Stream Profile Forms (WSPFs) for both the BN510.1 waste stream and the BN510 waste stream, the latter of which has been emplaced in the WIPP since October 1, 2009; Batch Data Reports (BDRs) for NDA, VE and RTR; traceability of containers through the entire characterization process; and

tracking of EPA-selected Hanford containers from receipt at AMWTP through certification and/or emplacement in the WIPP

- NDA: Direct observation of the two Z-211-102 and Z-211-103 Integrated Waste Assay System (IWAS) NDA units in Building WMF-634 and evaluation of the two in-plant Z-390-100 and Z-390-101 IWAS NDA units in Building 639 by evaluation of NDA BDRs provided in October 2010

- VE/RTR training through interviews of personnel, review of training records, and examination of training materials; audio/video tapes recording physical contents of selected repackaged containers included in the provided VE/RTR BDRs.

5.0 PERFORMANCE OF CONTINUED COMPLIANCE INSPECTION

Background

In preparation for a scheduled inspection, the EPA technical inspectors typically obtain and review the latest revisions of key procedures and reports in the preparation of inspection checklists. For an unannounced inspection, EPA technical inspectors prepare using what they know to be the latest revisions of these documents. However, these documents may have been revised or superceded without EPA's knowledge. This requires that the EPA inspection team modify or adjust the inspection's scope on short notice while onsite. For this inspection, the revisions of the relevant documents for AK, NDA, RTR, and VE that the EPA inspection team used to prepare were sufficient to obtain a general understanding of the processes, although many AK documents had been updated without provision to EPA, and other AK documents required changes subsequent to the inspection. AMWTP also provided revisions of some documents during the inspection.

Logistics

The logistics of an unannounced inspection are different from a scheduled inspection. Because site personnel do not know an inspection will be occurring on a given day, certain aspects of the site's waste characterization program or key personnel may not be available for evaluation. For this inspection, key personnel in the areas of AK, NDA, RTR, and VE were available.

EPA's unannounced Inspection No. AMWTP-CH-UA-10.10.24 took place November 17–18, 2010. EPA reviewed additional documents that were provided after the inspection to complete its evaluation of several of the technical areas within the inspection's scope. The inspection involved the following steps:

(1) Reviewing the waste characterization processes that were approved under EPA's baseline inspection;

(2) Obtaining and reviewing site procedures, reports, and other technical information related to waste characterization activities at AMWTP in advance of the inspection; and

(3) Examining draft checklists specific to each technical area before the inspection.

As part of this unannounced inspection, EPA inspectors did the following:

(1) Interacted with Carlsbad Field Office (CBFO) and AMWTP personnel to arrange inspection logistics;

(2) Verified onsite the technical adequacy or qualifications of waste characterization personnel, procedures, processes, and equipment by means of interviews, observation, and demonstrations, and recorded the results, as appropriate;

(3) Recorded all concerns on EPA Inspection Issue Tracking Forms, as appropriate, and provided completed forms to CBFO and site personnel as they were generated;

(4) Communicated all pertinent information to CBFO and AMWTP personnel onsite, as appropriate;

(5) Pursued resolution of all identified issues before completion of the inspection by discussions with CBFO and AMWTP personnel;

(6) Conducted entrance, exit, and daily briefings for CBFO and AMWTP management personnel, as appropriate; and

(7) Reviewed additional information provided by AMWTP after the inspection, and achieved resolution of outstanding issues with AMWTP and CBFO.

The evaluation consisted of interviewing personnel, observing equipment operations that follow site procedures, and inspecting records related to each of the waste characterization processes within the inspection's scope. An important aspect of this evaluation was the objective evidence documenting the effectiveness of the waste characterization processes. Objective evidence typically takes the form of BDRs, radioassay data sheets, AKSRs and related documents, AK accuracy reports, and RTR tapes. During this inspection, EPA selected samples of each of these items, based on the number and variety of items each waste characterization process produced, consistent with standard inspection techniques. Based on the evaluation of the waste characterization processes in conjunction with the sample of objective evidence, EPA determined the technical adequacy of the waste characterization processes within the inspection's scope. The EPA inspection team consisted of the personnel shown in Table 1.

Table 1. Continued Compliance Inspection Participants

Name	Affiliation, Area of Expertise
Rajani Joglekar	EPA Headquarters, Lead Inspector
Ed Feltcorn	EPA Headquarters, Inspector
Lindsey Bender	EPA Headquarters, Inspector
Kathy Economy	EPA Headquarters, Observer
Connie Walker	SC&A, AK Technical Evaluator
Patrick Kelly	SC&A, NDA Technical Evaluator
Dorothy Gill	SC&A, RTR & VE Technical Evaluator
Kira Darlow	SC&A, AK Observer
Rose Gogliotti	SC&A, NDA Technical Evaluator-In-Training

The EPA inspection team interviewed and obtained information and/or inspection support from a number of AMWTP, CBFO, and DOE personnel listed in Table 2.

Table 2. Personnel Contacted During Inspection

Personnel	Affiliation	Area of Expertise/Function
Courtland Fesmire	DOE-CBFO	Observer
Lisa Frost	CWI	
Eric Schweinsberg	AMWTP	SPM
James Seamens	AMWTP	NDA, EA, AKE
Tom Johnson	CWI-CH TRU STR	
Gina Tedford	BNWI-AMWTP	SPM, AKE
Barbara Broomfield	WTS-CCP	
Bill Vercanic	WTS-CCP	
Steve Carpenter	AMWTP	SPM, AKE
Randy Morris	AMWTP	AKE
Rachelle Hubler	AMWTP	AKE

6.0 TECHNICAL WASTE CHARACTERIZATION AREAS

Sections 6.1 through 6.4 of this report detail the four technical areas assessed during this inspection—Acceptable Knowledge (AK), Non-Destructive Assay (NDA), Real-Time Radiography (RTR), and Visual Examination (VE).

6.1 Acceptable Knowledge and Load Management

Background

EPA examined the AK process and associated information to determine whether AMWTP remained in compliance with 40 CFR 194.8 requirements for CH newly generated soil, debris, and solid waste present in the Subsurface Disposal Area. AMWTP is also approved for retrievably-stored debris and solid waste originating from AMWTP, but these categories were not evaluated during EPA's unannounced continued compliance inspection.

The BN510 waste stream was a newly generated S5000 waste stream composed of waste that originated from Mound (MD), Rocky Flats Environmental Technology Site (RFETS), Battelle Columbus (BC), and Bettis Atomic Power Laboratory (Bettis). The waste stream is managed in the AMWTP facility. EPA's baseline approval of the AMWTP stated that addition of any waste streams to BN510 outside of those already included in the waste stream (i.e., Mound, RFETS, Battelle Columbus, and Bettis) is a T1 change requiring EPA's approval prior to implementation. This requirement is documented in EPA's baseline approval (Docket No: A-98-49, II-A4-66, September 2006) and in Table 7 of this report.

CBFO requested the addition of four Hanford waste streams to BN510 in March 2010 on behalf of AMWTP. At that time, Hanford's original certified program was no longer in place and DOE

contracted the Central Characterization Project (CCP) to characterize and ship Hanford wastes to AMWTP for characterization and ultimate emplacement in WIPP. Prior to termination of their program, Hanford shipped several thousand drums from three of the four proposed waste streams to WIPP under Hanford's original WIPP waste characterization program. CBFO approved the remaining waste stream (RLMPFPCD), but Hanford did not ship it to WIPP because an approved WSPF was not issued, although the AKSR had been approved. Below is a description of these four waste streams discussed in the Hanford AKSR (RPT-TRUW-82, Revision 2A).

- **Waste Stream RLM231ZD.001: Hanford 231 Z Building Waste.** This waste stream is composed of 66 containers of CH debris [S5400 Waste Matrix Code (WMC)] packaged in 55-gallon drums that were emplaced in 85-gallon overpacks. Waste Stream RLM231ZD.001 was generated by the 231-Z metallurgical research and plutonium fabrication, decontamination and decommissioning (D&D), technology development, and facility cleanout activities.

- **Waste Stream RLM325D.001: Hanford 325 Building Radiochemical Processing Laboratory Waste.** This waste stream is composed of CH debris (S5400 WMC) in 55-gallon drums that were placed in 85-gallon overpacks. Waste Stream RLM325D.001 consists of debris waste generated at the 325 Building Radiochemical Processing Laboratory and includes 220 containers with generation dates from September 28, 1972, through February 12, 1990.

- **Waste Stream MPFPD: Mixed Plutonium Finishing Plant Debris.** This waste stream consists of mixed TRU debris waste (S5490 WMC) generated between 1970 and the present in support of plutonium metal production operations and glove box activities (e.g., maintenance, clean out, decontamination, decommissioning, stabilization) associated with the Plutonium Finishing Plant (PFP) Complex.

- **Waste Stream RLMPFPCD: The Richland Mixed PFP Comprehensive Debris Waste Stream.** The RLMPFPCD waste stream is a mixed, heterogeneous debris waste stream (S5400 WMC) generated from 1970 through the present in support of PFP's plutonium production and stabilization activities. It is composed of a variety of inorganic, organic and other debris including both process and D&D waste. All of the facilities included in the MPFPD waste stream are included in Waste Stream RLMPFPCD, which includes the Building 242-Z-Waste Treatment Facility, 291-Z-Ventilation/Exhaust Air Stack Building, and PFP Ancillary Facilities.

EPA reviewed information pertaining to the Hanford waste streams proposed for shipment, and approved shipment of the waste streams to AMWTP in June 2010 (see EPA Air Docket No. A-98-49, II-A4-127). Hanford-CCP began shipping drums to AMWTP during September 2010. EPA's June 2010 approval stated that AMWTP must provide specific documentation for EPA's review to verify that the Hanford debris was adequately characterized by AMWTP for inclusion in the BN510 waste stream. During the unannounced continued compliance inspection, EPA evaluated this required documentation, including:

- Revised AK documentation for the BN510.1 waste stream showing how Hanford AK and other documentation have been incorporated
- The revised WSPF for AMWTP's BN510.1 waste stream to include Hanford waste
- BDRs from VE for physical contents and NDA for radiological contents of the BN510.1 waste stream debris
- Evidence tracing Hanford debris waste in AMWTP's waste tracking system.

As required by the WIPP Resource Conservation and Recovery Act (RCRA) permit, AMWTP integrated the Hanford waste streams, retired the BN510 waste stream, and created Waste Stream BN510.1. This waste stream includes all previous waste streams that feed into BN510, as well as the new waste streams from the Hanford site.

Technical Evaluation

EPA's previous AMWTP T1 approval (EPA Docket No. A-98-49, II-A4-127) addressed whether sufficient data were available to demonstrate that the waste being shipped from Hanford fits the acceptable envelope for the BN510.1 waste stream. The scope of this unannounced, continued compliance inspection included evaluating whether AMWTP has sufficiently implemented the characterization process with respect to these new waste streams, including incorporation, interpretation, and integration of AK and RTR/VE/NDA characterization.

In September 2010, Hanford-CCP (on behalf of DOE) initiated shipment of several hundred previously characterized and certified drums from Waste Streams RLM325D.001, RLM231ZD.001 MPFPD, and RLMPFPCD to AMWTP. These wastes will be repackaged, characterized, supercompacted, and shipped to WIPP as part of the BN510.1 waste stream. EPA examined the technical elements listed in this section for each of the waste streams to determine whether the information was adequately integrated into the waste stream and related documentation, i.e., the AMWTP "envelope." These technical elements include those presented in EPA's June 2010 approval letter. Additionally, the new BN510.1 waste stream was evaluated to determine whether it was adequately defined, including radiological and physical composition. Key limitations, as specified in the *Land Withdrawal Act* (LWA), were also evaluated.

(1) Acceptable knowledge documentation associated with the BN510.1 waste stream was evaluated to determine the adequacy of the Advanced Mixed Waste Treatment Project's Hanford waste stream document review and integration and was found to be adequate.

EPA examined references as part of this inspection, including the following:

- RPT-TRUW-03, Drum Assay Technical Review Report, Advanced Mixed Waste Treatment Project, Revision 7, December 7, 2006
- RPT-TRUW-06, AMWTP Baseline AK for Newly-Generated Waste, Advanced Mixed Waste Treatment Project, Revision 12, August 16, 2010

- RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Advanced Mixed Waste Treatment Project, Revision 16, August 12, 2010
- RPT-TRUW-12, AMWTP Waste Stream Designations, Advanced Mixed Waste Treatment Project, Revision 15, November 3, 2010
- RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), Advanced Mixed Waste Treatment Project, Revision 6, September 11, 2008
- RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, Advanced Mixed Waste Treatment Project, Revision 1, June 21, 2010
- RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, Advanced Mixed Waste Treatment Project, Revision 2A, date to be determined (TBD)
- RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Advanced Mixed Waste Treatment Project, Revision 0, September 10, 2010
- RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Advanced Mixed Waste Treatment Project, Revision 1A, date TBD
- P853A, Revision 1, CCP-PK-RL-101, Revision 2, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: MPFPDD, Larry Porter, Central Characterization Project (CCP), June 4, 2010
- P854A, Revision 1, CCP-PK-RL-102, Revision 2, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: RLM325D.001, Larry Porter, Central Characterization Project (CCP), June 4, 2010
- P855A, Revision 1, CCP-PK-RL-103, Revision 2, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z Building Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: RLM231ZD.001, Larry Porter, Central Characterization Project (CCP), June 4, 2010
- HNF-36515 Hanford Mixed PFP Comprehensive Debris (RLMPFPCD), Revision 0, revised document will have new title, date and "P" reference number
- HNF-6489, Revision 1, Hanford Mixed PFP Debris Waste Stream (MPFPD), revised document will have new title, date and "P" reference number.

To understand the interrelationships of these documents, one must understand the history of the Hanford waste streams accepted at the AMWTP and the characterization program approval process. EPA evaluated the information and concluded as follows.

AMWTP used Hanford-CCP process knowledge (PK) reports for debris Waste Streams MPFPDD, RLM231ZS.001 and RLM325D.001 to compile a new Hanford AKSR (RPT-TRUW-82, Revision 1). Information from RPT-TRUW-82, Revision 1 was then used to

generate a new, broader AKSR (RPT-TRUW-83, Revision 0) for the Hanford BN510.1 waste stream. Hanford-CCP's MPFPDD waste stream is similar to Waste Streams RLMPFPCD and MPFPD from the original Hanford program. EPA concluded that AMWTP's use of Hanford-CCP's PK documents for the three waste streams was inappropriate, since at the time of the unannounced inspection, EPA had not approved Hanford-CCP's baseline program. EPA also concluded that AMWTP had not integrated AK information generated by Hanford, who had characterized these drums for WIPP disposal prior to termination of the Hanford program. During a conference call with EPA, AMWTP, Hanford-CCP, and CBFO on December 6, 2010, EPA informed the participants that AMWTP should have used AK documents for the subject waste streams that were prepared under the old Hanford program and asked that AMWTP revise relevant documents.

AMWTP acknowledged EPA's decision and agreed that the Hanford and BN510.1 AKSRs required revision. AMWTP then submitted Revision 2A of RPT-TRUW-82 that modified the document to include the Hanford-approved AKSRs, rather than the Hanford-CCP PK reports. EPA found that the AMWTP RPT-TRUW reports were adequately modified to include information about the four Hanford waste streams, and the modifications were based on data presented in the Hanford-approved AKSRs. EPA finds the revision to be acceptable.

The AKSR for the Hanford waste streams (RPT-TRUW-82, Revision 2A) was created simply by combining the Hanford-approved AKSRs for the four waste streams (RLM231ZA.001, RLM325D.001, MPFPD, and RLMPFPCD) and adding a title page to the merged document. AMWTP representatives indicated that this information was accepted "as is," with little review of associated references or the AKSRs. The AKSRs for the Hanford waste stream were generated under EPA-approved programs. In the future, EPA expects any AKSR to be based on AK generated through an EPA-approved program and that source documents used to generate AKSRs are available in the AMWTP record. AMWTP representatives provided a cross-reference that showed that the source documents were in the AMWTP record.

(2) The revised waste stream profile form for the Advanced Mixed Waste Treatment Project BN510.1 waste stream was reviewed and found to be adequate.

The WSPF for BN510 was retired and a new WSPF was generated for the BN510.1 waste stream. The WSPF for the new waste stream is dated September 10, 2010, and AMWTP representatives indicated that this profile had not been modified since its latest approval. Contents of the WSPF were compared to the requirements in AMWTP Form 1900, Revision 1, and the WSPF was found to be complete with respect to required contents.

(3) Data tracking and data traceability of Hanford waste in the Advanced Mixed Waste Treatment Project system, including traceability of batch data reports, was examined and found to be adequate.

AMWTP uses the AMWTP Waste Tracking System (WTS) to track information pertaining to incoming drums from offsite sources, including the Hanford drums. Figure 1 presents the data flow and characterization process associated with Hanford drums. As shown in this chart, drums from Hanford arrive and are assigned an AMWTP drum number; drums then undergo screening

NDA and RTR (i.e., "fast scan") to evaluate their acceptability according to the INL waste acceptance criteria. If a drum is acceptable, it is combined with others into a six-drum overpack (SDOP). The SDOP is then shredded, and the shredded SDOP is loaded into 55-gallon drums called "silvers." VE is performed on a "silver" at the time of drum loading and is followed by NDA, after which it is supercompacted or "pucked."[3] The pucks are placed in a 100-gallon drum which may be sent to the INL-CCP Super High Efficiency Neutron Counter (SHENC) for additional assay if data suggest the drum's TRU alpha activity may be less than 100 nanocuries per gram (nCi/g). Table 3 presents examples of drums sent from Hanford as they went through the AMWTP process described above (the table progresses from left to right). The table does not include all of the "silvers" generated from the specified SDOP, but includes examples to demonstrate traceability of the process. Table 3 and Figure 1 indicate that data are traceable from the original Hanford drums through the final 100-gallon product drum. Per agreements with the State of Idaho, any drum from Hanford must undergo characterization within six months of receipt at AMWTP, and must be removed from Idaho within six months of characterization. The first Hanford drums arrived at AMWTP in September 2010.

(4) The integration of Hanford waste into the BN510.1 waste stream with respect to waste stream definition was evaluated and found to be adequate.

The BN510.1 newly generated debris waste stream is produced from supercompaction of 55-gallon containers of debris waste. The supercompacted debris consists of material with similar chemical matrices, physical form, and hazardous constituents and is a single waste stream.

The original AMWTP BN510 feedstock debris was generated during plutonium pit production; depleted uranium component fabrication; enriched uranium processing; support operations including: recovery, treatment, maintenance, laboratory analysis, and machining of non-nuclear weapon components; research and development; special order work; fabrication of plutonium-238 (^{238}Pu) heat sources and manufacture of radioisotopic thermoelectric generators; D&D activities; and materials development. Waste streams generated at Hanford, as described above in the AK Background section and in RPT-TRUW-83, Revision 1A, fit the general feedstock descriptions expected at the AMWTP facility. It should be noted that all feedstock debris is commingled during unpackaging/shredding, sorting, and supercompaction, with the resulting WMC being S5490, "Unknown or Other Heterogeneous Debris." See Item (1) for requirements pertaining to integration of data into documents, and Items (5) and (6) for information about the radiological and physical composition of the waste stream and Hanford feedstock.

[3] *Pucks* are 55-gallon drums of TRU waste that have been compacted into smaller disks by crushing; the *pucks* are then over-packed in 100-gallon drums, which are referred to as *pucked drums*.

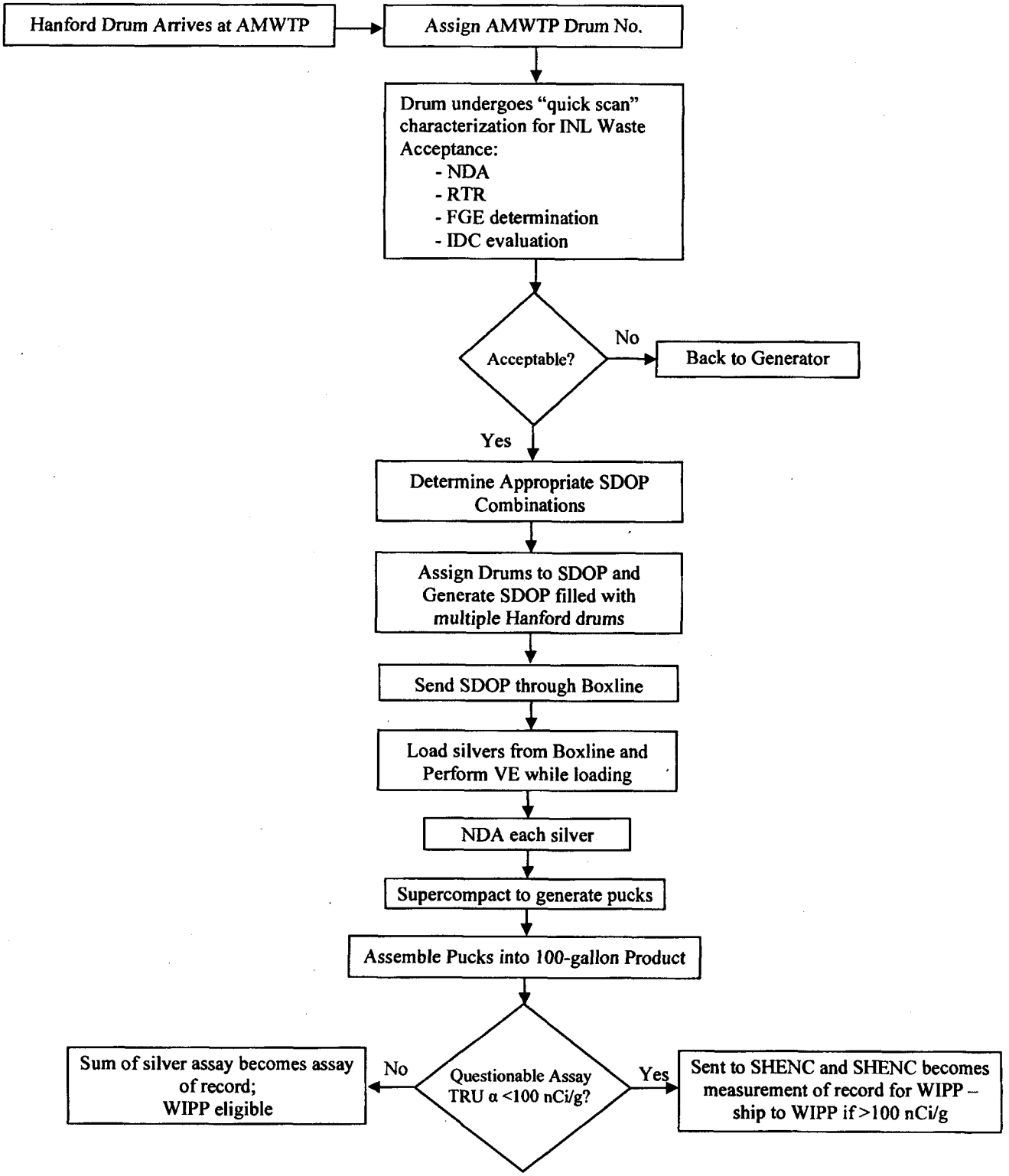

Figure 1. Hanford Drum Process Flow through the Advanced Mixed Waste Treatment Project

Table 3. Example Traceability of Hanford Drums through the Advanced Mixed Waste Treatment Project

Hanford Drum Number/Waste Stream	Fast Scan NDA BDR	Fast Scan RTR BDR	AMWTP Drum Number	SDOP	Silver number - No association with original AMWTP or Hanford Drum Number*	VE BDR (generated during loading of silver)	NDA BDR (generated by NDA of silver prior to pucking)	Product drum number (100-gallon containing pucks)	SHENC of 100 gallon? Y/N and BDR number
0026719/MPFPDD	ASY10-01501	RTR10-00152	10373072	10378197	10379920	VEB10-00914	ASY10-01912	BN10379712	Yes, INNDAD10085
0030006/RLM325D	ASY10-01503	RTR10-00140	10369476	10378197	10379915	VEB10-00914	ASY10-01912	BN10379714	No
0030209/RLM325D	ASY10-01474	RTR10-00140	10369559	10378197	10379905	VEB10-00914	ASY10-01912	BN10379716	No
0037465/RLM231ZD	ASY10-01474	RTR10-00140	10369566	10378197	10379919	VEB10-00914	ASY10-01911	BN10379718	No
0044257/MPFPDD	ASY10-01502	RTR10-00141	10373041	10378197	10379917	VEB10-00914	ASY10-01911	BN10379719	No
0044837/MPFPDD	ASY10-01501	RTR10-00142	10373073	10378197	10379950	VEB10-00915	ASY10-01916	BN10379878	No

* A total of 13 "silvers" were generated from shredding of SDOP10378197; only six are shown in this table.

(5) Acceptable knowledge information pertaining to the radiological characteristics of transuranic wastes was examined with respect to the BN510.1 envelope and found to be adequate.

The radionuclides of concern for BN510 were: ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, uranium-233 (^{233}U), ^{234}U, ^{238}U, and americium-241 (^{241}Am). AMWTP indicated that they did not expect the feedstock waste to contain measurable quantities of the remaining WIPP-tracked radionuclides, cesium-137 and strontium-90. Additional radionuclides which may be present in feedstock debris, as indicated the BN510 AKSR, were ^{241}Pu, thorium-228 (^{228}Th), ^{231}Th, ^{232}Th, ^{234}Th, ^{235}U, ^{236}U, curium-244, and neptunium-237. The two most prevalent radionuclides by activity expected in the majority of BN510 AMWTP supercompacted debris product drums are ^{239}Pu and ^{240}Pu, while the most prevalent radionuclides by activity will likely always include ^{239}Pu and a different second TRU or U radionuclide due to waste commingling. Addition of the Hanford waste streams in BN510.1 did not significantly modify the general discussion in the AKSR pertaining to the radionuclides of concern or the expected radionuclides. Table 4 presents the two most prevalent radionuclides by feedstock as identified in the AKSR (RPT-TRUW-83, Revision 1A) for the BN510 waste stream. A combination of any two of the common radionuclides identified may be detected as the most prevalent in waste containers that have multiple generators and a mixture of weapons-grade (WG) and heat source (HS) Pu, enriched uranium (EU), and depleted uranium (DU).

Table 4. Predominant Transuranic Radionuclides Expected in Debris Wastes by Generator Site

Generator Site	Principal Pu Type	Predominant TRU Radionuclides
RF	WG	^{239}Pu, ^{240}Pu
RF	WG/DU/EU	^{239}Pu (^{235}U or ^{238}U)[a]
MD	WG	^{239}Pu, ^{240}Pu
MD	HS	^{238}Pu, ^{239}Pu
BC	WG	^{239}Pu, ^{240}Pu
RL	Combination WG/Fuel-grade Pu	^{239}Pu (^{241}Pu or ^{241}Am)
BN	RFETS waste	^{239}Pu, ^{240}Pu
BN	Combination WG/HS	^{238}Pu, ^{239}Pu
BN	Combination WG/HS & U	^{239}Pu (^{240}Pu, ^{238}Pu, ^{241}Am, ^{235}U or ^{238}U)[a]

[a] When waste contains DU or EU, and WG Pu, the prevalent radionuclides will include U.

EPA examined the information above against data presented in RPT-TRUW-82, Revision 2A, to determine whether the Hanford waste streams were adequately represented in the BN510.1 AKSR. This review indicated that ^{240}Pu, ^{241}Pu, ^{241}Am, and ^{238}U are expected, and ^{238}U may be a predominant radionuclide based on mass.

EPA also interviewed Mr. Randy Morris, AMWTP Acceptable Knowledge Expert (AKE), to understand how AK data from each of the AKSRs were reviewed and integrated into the BN510.1 waste stream. He stated that historic AK container data, previously approved Hanford AKSRs and representative source documents were reviewed to ensure that the radiological compositions of accepted containers were well understood. Mr. Morris also stated that the predominant radionuclide AK information from each AKSR was evaluated and incorporated in

the BN510.1 AKSR "as is." EPA's comparison of the BN510.1 report and individual AKSRs showed that Mr. Morris' approach was followed and is acceptable. EPA also interviewed Mr. Jim Seamens to better understand the use of AK by NDA Expert Analysts (EAs). Mr. Seamens stated that default isotopics are used when the NDA isotopic determinations are inconclusive, as necessary. Mr. Seamens stated that he reviewed NDA data provided by Hanford and data obtained through site screening to determine whether drums from the four waste streams are acceptable and were "assayable" by the AMWTP system. All but six drums were found to be acceptable. In instances where default isotopics were used, Mr. Seamens indicated these were developed on a case-by-case basis, using available AK information. EPA found that AMWTP had adequately considered the radiological composition of the Hanford waste streams and adequately integrated that information into the BN510.1 AKSR.

(6) Identification of physical form including waste material parameters and prohibited items was assessed with respect to the BN510.1 envelope and found to be adequate.

The BN510 waste stream was composed of supercompacted debris waste that included combustibles (e.g., rags, gloves, wipes); personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks and sheeting; metal with and without lead or cadmium; glass; wood; inorganic debris; Plexiglas®; Benelex®; pieces of equipment; small amounts of process residue and graphite; asphalt, concrete, dirt and sand; and noncombustible solids packaged in 55-gallon drums, supercompacted, and packaged into 100-gallon product drums. AMWTP estimated the waste material parameter (WMP) weight percentages for BN510 using WMP data from 100% of the completed RTR and VE of supercompacted debris waste drums as obtained from the AMWTP WTS database as of October 11, 2006. The AKSR states that this represents 19% of the AMWTP-estimated number of drums for this waste stream and 100% of characterized waste stream containers.

AMWTP updated this understanding of physical composition in the BN510.1 report by examining information from the WIPP Data System/WIPP Waste Information System RTR and VE data for 22,399 Hanford containers shipped to WIPP between 2005 and 2009. The estimated WMPs are representative of the BN510.1 waste stream and are summarized in Table 5.

Table 5. BN510.1 Waste Material Parameters for Supercompacted Debris Waste

Waste Material Parameters	Estimated WMP Weight Percent
Iron-based Metals/Alloys	52
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	3
Cellulosics	22
Rubber	1
Plastics (waste materials)	22
Organic Material	<1
Soils/Gravel	<1
Inorganic Matrix	<1

The AKSR for BN510.1 was not updated to specifically include the anticipated physical composition of the Hanford waste. Instead, the waste stream was modified to reflect data acquired through ongoing VE of the BN510 waste stream in 2009. Therefore, the physical composition of each of the four Hanford waste streams was examined to determine whether the composition would "fit" the general BN510.1 envelope. RPT-TRUW-82, Revision 2A provides WMP distributions by weight percent for each of the four waste streams, as listed in Table 6.

Table 6. Waste Material Parameter Estimated Percentages for Hanford Waste Streams

WMPs	WMP Weight/Unit Waste (Anticipated Weight Percent Range)			
	RLMPFPCD	MPFPD	RLM325ZD.001	RLM231ZD.001
Iron-based Metals/Alloys	40 (0-83)	48 (0-100)	40.91 (0 - 96.58)	74 (1-98)
Aluminum-based Metals/Alloys	<1 (0-100)	<1 (0-83)	0.08 (0 - 6.54)	<1 (0-1)
Other Metals	1 (0-70)	5 (0-87)	1.83 (0 - 56.73)	<1 (0-10)
Other Inorganic Materials	11 (0-85)	8 (0-100)	26.21 (0 - 90.67)	3 (0-38)
Cellulosics	15 (0-73)	12 (0-92)	9.13 (0 - 87.58)	10 (0-86)
Rubber	8 (0-49)	9 (0-91)	3.76 (0 - 59.64)	2 (0-19)
Plastics (waste materials)	25 (0-67)	18 (0-100)	18.10 (2.74 - 98.16)	11 (2-58)
Organic Material	<1 (0-49)	<1	Not reported	Not reported
Soils/Gravel	<1 (0-49)	<1	Not reported	Not reported
Inorganic Matrix	<1(0-49)	<1	Not reported	Not reported

The Hanford MPFPD AKSR did not provide estimated percentages; those presented were included in reference P853A.

These data suggest that the anticipated weight percent range for each waste stream encompasses the previously identified WMP percentages. Regardless of individual WMP percentage, the overall organic and inorganic percentages of the Hanford waste streams compare favorably with the anticipated WMPs.

Liquid is a prohibited item that is related to EPA compliance. Feedstock debris containers that are identified as containing prohibited items during RTR or VE are treated or rejected, as appropriate.

(7) Defense status of the new waste streams incorporated into BN510.1 was evaluated and found to be adequate.

DOE-WIPP-3122 (the WIPP waste acceptance criteria or WAC) requires generator sites to use AK to determine if a WIPP-bound TRU waste stream meets the definition of defense waste. Based on DOE guidance, a TRU waste is eligible for disposal at WIPP if it has been generated in whole or in part by one of the atomic energy defense activities listed in Section 10101(3) of the *Nuclear Waste Policy Act of 1982* (NWPA). All feedstock to the BN510.1 waste stream (Rocky Flats, Mound, Battelle Columbus, Hanford, and AMWTP) were generated from defense-related processes or activities. With respect to Hanford, the waste was generated during nuclear materials production, nuclear waste and materials byproducts management, and defense research and development activities conducted at Hanford facilities. Hanford analytical labs or facilities may have carried out non-defense activities concurrently with defense-related activities, but segregation of waste into defense and non-defense subsets is not possible. The defense determination discussions specific to the RLMPFPCD, MPFPD, RLM325ZD.001, and

RLM231SD.001 AKSRs included in RPT-TRUW-82, Revision 2A state that all four waste streams were derived by defense-related activities in whole or in part and meet the definition of defense waste. EPA has examined the arguments presented in RPT-TRUW-82, Revision 2A and agrees that the waste streams include defense-related waste material.

(8) The identification of BN510.1 feed waste streams as transuranic and not high-level waste or spent nuclear fuel was examined and found to be adequate.

The Public Law 102-579, LWA, bans the disposal at WIPP of spent nuclear fuel (SNF) and high-level waste (HLW) as defined by the NWPA. HLW is defined by the NWPA as "the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation." According to the NWPA, SNF is "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing." DOE Manual 435.1, *Radioactive Waste Management*, expands on this definition to clarify that "test specimens of fissionable material irradiated for research and development only, and not production of power or plutonium, may be classified as waste, and managed in accordance with the requirements of this Order when it is technically infeasible, cost prohibitive, or would increase worker exposure to separate the remaining test specimens from other contaminated material."

EPA examined RPT-TRUW-82, Revision 2A and RPT-TRUW-83, Revision 1A and determined that the BN510.1 feed stock waste streams are not SNF or HLW. With regard to Waste Streams MPFPD and RLMPFPCD (RPT-TRUW-82, Revision 2A), PFP did not process SNF nor was the facility involved with the separation or reprocessing of constituent elements from reactor fuel, so their resulting wastes do not contain irradiated fuel elements withdrawn from a reactor, only un-irradiated materials from testing. Therefore, these PFP wastes are not SNF or HLW. Waste Stream RLM325D.001 contains laboratory wastes and other debris items and does not contain SNF, and the debris items it does contain are incidental to reprocessing, as described in DOE M 435.1-1. This determination was submitted to and approved by the DOE Richland Operations Office in December 2006. Therefore, the waste is not SNF, HLW, and is not a waste historically managed as HLW. With regard to Waste Stream RLM231ZD.001, the 231-Z Building converted Pu nitrate to metal, performed casting and machining operations for weapons components, and recovered Pu from waste and scrap generated at Hanford and offsite facilities. The 231-Z Building did not reprocess SNF, was not involved with the separation or reprocessing of constituent elements from reactor fuel and did not manage or generate HLW.

(9) The radiological controls associated with BN510.1 feed waste streams designed to ensure that the waste is transuranic were evaluated and found to be adequate.

TRU alpha contamination is composed of radionuclides with atomic numbers greater than 92 and half-lives greater than 20 years. Drums destined for emplacement in WIPP must contain more than 100 nCi/g TRU alpha activity. As presented in Figure 1 and Table 3, Hanford feedstock undergoes screening assay prior to emplacement in SDOPs. "Silvers" generated by packaging of

shredded SDOPs also undergo NDA before pucking, and 100-gallon drums may undergo further assay using the SHENC if previous assays are of question. Each Hanford drum is assayed prior to shipment to AMWTP, and the INL WAC requires that these drums be TRU. The radiological composition of the waste streams and BN510.1 feed waste streams is well understood.

RPT-TRUW-07, Appendix G presents the anticipated percentages of wastes that may be less than or equal to 100 nCi/g. As shown in this appendix, no wastes from Hanford are expected to be less than 100 nCi/g. As part of the transfer of waste from Hanford to AMWTP for management as BN510.1, AMWTP is supposed to receive only drums whose TRU alpha concentration is greater than 100 nCi/g. Therefore, AMWTP will not receive any non-TRU debris waste from Hanford for management as BN510.1 waste.

(10) Load Management of the BN510.1 waste stream was evaluated with respect to the new Hanford feed waste streams and found to be adequate.

Load management is approved for the BN510.1 waste stream, and sufficient information was available to evaluate whether the Hanford waste would require this option. For waste streams that are TRU in the aggregate, AMWTP may employ load management. Specifically, individual containers in a TRU waste stream vary in their TRU alpha activity concentration, i.e., some containing more than 100 nCi/g and some containing less than 100 nCi/g. A final payload container, typically a ten-drum overpack, can be loaded such that on the whole the payload's TRU alpha activity exceeds 100 nCi/g, but the TRU alpha activity of the individual containers within the payload may be less than 100 nCi/g. As mentioned above, no waste drums from Hanford will have TRU alpha activity less than 100 nCi/g. This means that while load management is allowed in the AMWTP program, load management is not expected for these Hanford wastes.

Acceptable Knowledge Findings and Concerns

EPA did not identify any findings or concerns associated with AK during this inspection. However, EPA raised an issue concerning inappropriate use of Hanford-CCP prepared AK information specific to the Hanford waste integrated as BN510.1 waste by AMWTP. AMWTP revised two documents (RPT-TRUW-82, Revision 2A, and RPT-TRUW-83, Revision 1A) to address EPA issue. The revisions are acceptable.

Acceptable Knowledge Summary

EPA's unannounced inspection verified that AMWTP has sufficiently implemented the characterization process with respect to these new waste streams. EPA determined that integration of Hanford waste into the BN510.1 waste stream was appropriately documented and the BN510.1 waste streams were adequately defined, including the radiological and physical composition of the waste streams.

Changes to AK Tiering

There are no changes to the AK T1 and T2 assignments made during the baseline inspection as a result of this inspection.

6.2 Nondestructive Assay

Because this unannounced inspection focused on the continued compliance of a site that had an existing baseline approval, the emphasis was on the continued operations of a subset of the approved equipment. Accordingly, an evaluation of the design and basic operating principles of the Z-211-102 and -103 and Z-390-100 and -101 IWAS is not addressed in this report, but is addressed in detail in EPA's baseline inspection report (see EPA Docket No.A-98-49; II-A4-66). This report focuses on selected operational aspects of the IWAS Z-211-102 and -103 NDA systems and the preparation of NDA BDRs for the BN510.1 wastes. Specifically, this inspection focused on the following:

- Confirming that the design and technical capabilities of the NDA systems' hardware and software had not changed since EPA's last inspection
- Adequacy of the current revisions of pertinent AMWTP NDA procedures and documents
- Operational and maintenance history of the NDA systems in the last year
- Knowledge, understanding and training status of AMWTP NDA personnel

EPA examined references as part of this inspection, including the following:

- RPT-TRUW-03, Drum Assay Technical Review Report, Advanced Mixed Waste Treatment Project, Revision 7, December 7, 2006
- RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), Advanced Mixed Waste Treatment Project, Revision 6, September 11, 2008
- INST-FO1-01, In-Plant Drum Assay Operations, Revision 19, November 23, 2009
- INST-TRUW-8.1.1, Drum Assay Post-Maintenance Calibration and Verification, Revision 11, January 5, 2010
- INST-O1-14, Drum Assay Operations, Revision 25, November 18, 2009
- RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Advanced Mixed Waste Treatment Project, Revision 16, August 12, 2010
- MP-TRUW-8.8, Level 1 Data Validation, Revision 29, May 27, 2010
- AMWTP Work Order No. 327399, K Normalization Failure for the Z-390-101 IWAS NDA Unit, March 20, 2010
- Nonconformance Report No. 55734, Assay 100 (Z-390-100) 3 Sigma Failure, September 26, 2010
- AMWTP Work Order No. 327399, K Normalization Failure for the Z-390-100 IWAS NDA Unit, October 20, 2010

- Employees by Qualifications/Certifications, November 18, 2010: TCNDAETR – Non-Destructive Assay ETR; QCASYITR– Non-Destructive Assay Independent Technical Reviewer (ITR); and FQPOT9BO – Drum Assay
- CBFO Memorandum: Approval Status Notification – Primary NDA PDP Drum Cycle 16A, June 25, 2009
- NDA BDRs from the Z-390-100 and 101 IWAS Systems Nos. ASY-10-01885, ASY-10-01892, ASY-10-01893, ASY-10-01896, ASY-10-01897, ASY-10-01905, ASY-10-01906, ASY-10-001907 and ASY-10-001910.

Technical Evaluation

The following aspects of the Z-211-102 and -103 IWAS were evaluated during this inspection:

(1) The Z-211-102 and Z-211-103 Integrated Waste Assay System nondestructive assay systems are the same systems that were approved previously.

The Z-211-102 and -103 IWAS systems are located at AMWTP in Building WMF-634. By direct observation of the systems and their documentation, the EPA inspection team verified that the systems have not been moved and that there have been no substantive hardware or software changes to these systems since EPA's baseline approval (see EPA Docket No. A-98-49; IIA4-66).

(2) The design and operational range of the Z-211-102, Z-211-103, Z-390-100 and Z-390-101 Integrated Waste Assay System nondestructive assay systems were assessed and were found to be unchanged from EPA's baseline approval and remain adequate for the wastes currently being assayed.

The Z-211-102, Z-211-103, Z-390-100 and Z-390-101 IWAS NDA systems function using the same technical approach as was observed during EPA's baseline inspection. The active mode for neutron assays has been turned off and must be intentionally initiated by the operator for the neutron generator to fire. This leaves the passive mode neutron with californium-252 Add-A-Source matrix correction and the high-resolution gamma system with two broad energy germanium detectors. This is the same hardware configuration as was observed during the baseline inspection.

(3) Performance/maintenance of the Z-211-102, Z-211-103, Z-390-100 and Z-390-101 Integrated Waste Assay System nondestructive assay systems and documentation thereof were evaluated and found to be adequate.

Two performance-related issues were identified with the assay of the DCAL 1999 standard: one 3-Sigma failure on the $^{240}Pu_{EFF}$[4] on January 31, 2010, for the Z-390-100 IWAS unit, and another on October 18, 2010, for the Z-390-101 IWAS unit. Both events were addressed via the

[4] $^{240}Pu_{EFF}$ is defined as the mass of ^{240}Pu that would produce the same coincidence response upon assay as that obtained from all the even-numbered isotopes of Pu in an actual sample. Typically, the $^{240}Pu_{EFF}$ is 2-20% larger than the actual ^{240}Pu content.

AMWTP nonconformance process in a technically correct manner and were appropriately documented. Additionally, there were two K Normalization failures: one in March 2010 on the Z-390-101 IWAS NDA unit, and another in October 2010 on the Z-390-100 IWAS NDA unit. Both events were addressed via the AMWTP nonconformance process in a technically correct manner and were appropriately documented. There were no performance/maintenance issues relative to the Z-211-102, Z-211-103, Z-390-100 and Z-390-101 IWAS NDA units as a result of this inspection.

(4) All four Advanced Mixed Waste Treatment Project Integrated Waste Assay System nondestructive assay units, i.e., Z-211-102, Z-211-103, Z-390-100 and Z-390-101, had successfully participated in Drum Cycle 16A of the Carlsbad Field Office-sponsored Performance Demonstration Program, as required.

(5) Personnel training was assessed and found to be adequate.

All AMWTP NDA EAs, ITRs, and NDA operators associated with the calibration, operation and data review and approval of the Z-211-102, Z-211-103, Z-390-100 and Z-390-101 IWAS NDA systems had current training. AMWTP provided the following three training forms: Employees by Qualifications/Certifications, QCNDAETR – Non-Destructive Assay Expert; QCASITR – Nondestructive Assay ITR; and FQPOT9B0 – Drum Assay. All forms were dated November 18, 2010.

(6) Nondestructive assay batch data reports were evaluated and found to be adequate.

AWMTP had provided nine NDA BDRs to EPA in early October 2010. These had been requested as part of the two-step approval of the T1 change adding new Hanford waste streams to BN510 and were provided upon completion of supercompaction and assay of the Hanford waste using the in-plant Z-390-100 and Z-390-101 IWAS NDA units located in Building 639 at AMWTP. EPA's review of paper copies of these BDRs in advance of this inspection had generated a series of specific questions regarding preparation of the BDRs, and addressing these was the main focus of this inspection. AMWTP's position is that the official NDA BDR is the electronic version; therefore, several aspects of the NDA BDRs are not adequately represented in the paper copy and are available only in the electronic version. Mr. Jim Seamens, NDA EA, provided information during the inspection, and upon viewing the electronic NDA BDRs, EPA determined that they were adequate.

Nondestructive Assay Findings and Concerns

EPA did not identify any findings or concerns associated with NDA during this inspection.

Nondestructive Assay Summary

The Z-211-102, Z-211-103, Z-390-100 and Z-390-101 IWAS NDA units at AMWTP continue to be in compliance with EPA's baseline approval.

Changes to Nondestructive Assay Tiering

There are no changes to the NDA T1 and T2 assignments made during the baseline inspection as a result of this inspection.

6.3 Real-Time Radiography

Real-Time Radiography for Retrievably Stored (Legacy) Waste

EPA limited its review of RTR to ITR and Site Project Manager (SPM) review, nonconformance report (NCR) processing, and liquid volume determination. AMWTP personnel informed EPA that RTR operators do not calculate the volume of liquid in waste drums. They estimate the volume and use the table in procedure INST-OI-12 to convert the estimate to consistent units of measure. NCR No. 54679 was initiated for drum No. 10375763 because of the presence of liquid. This NCR was properly processed and closed. For BDR RTR10-00150, EPA determined that ITR- and SPM-level reviews were performed and documented.

Real-Time Radiography Findings and Concerns

EPA did not identify any findings or concerns associated with RTR procedures and processes during this inspection.

Real-Time Radiography Summary

EPA determined that RTR data continue to be generated in accordance with an approved procedure by qualified personnel.

Changes to Real-Time Radiography Tiering

There are no changes to the RTR T1 and T2 assignments made during the baseline inspection as a result of this inspection.

6.4 Visual Examination

Visual Examination for Newly Generated Waste

In March 2010, CBFO requested a T1 change for the AMWTP BN510.1 waste stream on behalf of AMWTP and provided eight VE BDRs for EPA's review. During the onsite visit, EPA inspectors interviewed a VE operator and a VE expert to verify that these BDRs had been generated in accordance with procedure INST-OI-17, Facility Visual Examination Operations. BN510.1 waste is generated when BN-508 waste is subject to VE and supercompaction. The final configuration of the BN510.1 waste is compacted waste in 100-gallon containers. EPA reviewed BDR Nos.VEB10-00898, VEB10-00899, VEB10-00903, VEB10-00904, VEB10-00905, VEB10-00906, VEB10-00909 and VEB10-00910. Site VE personnel answered EPA's questions with regard to WMP weight assignment, balance information, calculation of liquid volumes, and ITR. No NCRs were associated with the BDRs under review. VE personnel provided a general description of the waste stream that was consistent with RPT-TRUW-83, Revision 1A, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1). EPA verified continuing qualification of one VE operator.

Visual Examination Findings and Concerns

EPA did not identify any findings or concerns associated with VE procedures and processes during this inspection.

Visual Examination Summary

EPA determined that VE data continue to be generated in accordance with an approved procedure by qualified personnel.

Changes to Visual Examination Tiering

There are no changes to the VE T1 and T2 assignments made during the baseline inspection as a result of this inspection.

7.0 SUMMARY OF RESULTS AND CONCLUSIONS

Findings and Concerns

EPA did not identify any findings or concerns associated with AK, NDA, RTR, or VE during this inspection.

Approval

Based on EPA's inspection completed November 17–18, 2010, the EPA inspection team determined that the AMWTP waste characterization program activities continue to function in accordance with the baseline approval.

Tiering Changes

There are no changes to the AK, NDA, RTR, or VE T1 and T2 assignments made during the baseline inspection as a result of this inspection.

Table 7. Tiering of Transuranic Waste Characterization Processes Implemented by the Advanced Mixed Waste Treatment Project (Based on March 28–30, 2006, Baseline Inspection, Revised February 2011)

Process Elements	AMWTP T1 Changes	AMWTP T2 Changes[a]
AK including Load Management	Any new waste category Changes to WDS algorithms specific to load management	Notification to EPA upon the following: - Changes in load management status of approved waste stream(s) - Availability of WSPFs, including updates or additions to waste stream(s) within an approved waste category - Changes[b] to site procedures requiring approvals by CBFO and other changes as discussed in Section 8.1 of the baseline report
NDA	New equipment or physical modifications to approved equipment[c] Changes to approved calibration range for approved equipment	Notification to EPA upon completion of changes to software for approved equipment, operating range(s), and site procedures that require CBFO approval and other changes as discussed in Section 8.2 of the baseline report
RTR	There are no T1 changes at this time	Notification to EPA upon the following: - Implementation of new equipment - Modification[c] to approved equipment - Changes to site procedures requiring CBFO approvals and other changes as discussed in Section 8.3 of the baseline report
VE	Performance of VE by a different vendor	Notification to EPA upon the following: - Addition of new waste category - Addition of new procedure or site equipment identifier - Changes to site procedures requiring CBFO approvals and other changes as discussed in Section 8.4 of the baseline report
WWIS/WDS	There are no T1 changes at this time	Notification to EPA upon changes to site procedures requiring CBFO approvals and other changes as discussed in Section 8.5 of the baseline report

[a] Upon receiving EPA approval, AMWTP will report all T2 changes to EPA at the end of each fiscal year quarter. Note: EPA may request specific T2 change items before the end of a fiscal quarter.
[b] "Substantive changes" means changes with the potential to impact the site's waste characterization activities or documentation thereof, excluding changes that are solely related to ES&H, nuclear safety, RCRA or are editorial in nature.
[c] Modifications to approved equipment include all changes with the potential to affect NDA and/or RTR data relative to waste isolation and exclude minor changes, such as the addition of safety-related equipment.

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

September 10, 2010

Mr. James Cooper, Acting Deputy Manager
U. S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Waste Stream Profile Form BN510.1, Supercompacted Debris Waste

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the subject Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN510.1, Supercompacted Debris Waste and has concluded that the WSPF is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the WSPF as submitted. Using the methods approved for AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have questions on this matter, please contact me at (575) 234-7372.

Sincerely,

Donald C. Gadbury, Director
Office of the National TRU Program

cc:

G. Basabilvazo, CBFO	*ED
C. Gadbury, CBFO	ED
S. McCauslin, CBFO	ED
D. Miehls, CBFO	ED
M. Navarrete, CBFO	ED
K. Watson, CBFO	ED
P. Gilbert, LANL	ED
S. Lott, LANL	ED
G. Lyshik, LANL	ED
CBFO, M&RC	

*ED denotes electronic distribution

CBFO:NTP:DCG:GS:10-1521:UFC 5900.00

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN510.1

Generator site name: Advanced Mixed Waste Treatment Project **Technical contact:** Eric Schweinsberg

Generator site EPA ID: ID4890008952 **Technical contact phone number:** (208)557-6425

Date of Audit report approval by NMED: 4/29/2005 (Revised 5/3/2005), 6/16/06, 1/18/08, 1/9/09, 1/8/2010

Title, version number, and date of documents used for WAP certification:

Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev 19, 6/30/2010

Quality Assurance Project Plan, MP-TRUW-8.2, Rev 13, 6/30/10

CCP Transuranic Authorized Method for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 11, 6/4/2009

Did your facility generate this waste? ☒Yes ☐No If no, provide the name and EPA ID of the original generator:

Waste Stream Information[1]

WIPP ID: IN-BN510.1 [3] **Summary Category Group:** S5000

Waste Matrix Code Group: Heterogeneous Debris Waste **Waste Stream Name:** Supercompacted Debris Waste

Description from the WTWBIR: BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste. [3]

Defense TRU Waste: (ref 1) ☒Yes ☐No **Check One:** ☒CH ☐RH

Number of SWBs 105 **Number of Drums** 16,000 **Number of Canisters** 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary Report, Table 5

List applicable EPA Hazardous Waste Numbers:[2] D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009

Applicable TRUCON Content Codes: ID121

Acceptable Knowledge Information[1]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: Reference No. 2

Facility mission description: Reference No.3

Description of operations that generate waste: References No.1 and 3

Waste identification/categorization schemes: Reference Nos. 1, 3, 4, and 5

Types and quantities of waste generated: Reference No. 1 and 3

Correlation of waste streams generated from the same building and process, as appropriate: Reference Nos. 1 and 3

Waste certification procedures: Reference No. 7

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: Reference Nos. 1and 3

Waste stream volume and time period of generation: Reference No. 1

Waste generating process description for each building: Reference Nos. 1 and 3

Process flow diagrams: Reference Nos. 1 and 3

Material inputs or other information identifying chemical/radionuclide content and physical waste form: Ref. Nos. 1, 3, 4, 5, and 6

Waste Material Parameter Weight Estimates per unit of waste Reference No. 1

Which Defense Activity generated the waste: (check one)

☒	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☐	Defense research and development
☐	Defense nuclear waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation

Process design documents:	N/A
Standard operating procedures:	Reference No. 13
Safety Analysis Reports:	Reference No. 14
Waste packaging logs:	N/A
Test plans/research project reports:	N/A
Site databases:	Reference No 15
Information from site personnel:	N/A
Standard industry documents:	N/A
Previous analytical data:	Reference Nos. 16, 17, 18, and 19
Material safety data sheets:	Reference No. 1, 16, 17, 18, 19, and 20
Sampling and analysis data from comparable/surrogate Waste:	N/A
Laboratory notebooks:	N/A

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography:	Reference No. 8
Visual Examination:	Reference Nos. 9 and 10

Headspace Gas Analysis

VOCs:	Reference No. 11
Flammable:	Reference No. 12
Other gases (specify):	N/A

Homogeneous Solids/Soils/Gravel Sample Analysis

Total metals:	N/A
PCBs:	N/A
VOCs:	N/A
Nonhalogenated VOCs:	N/A
Semi-VOCs:	N/A
Other (specify):	N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
	Steve Carpenter SPM	9.10.10

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs), attach signed Characterization Information Summary documenting this determination.

(3) The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report (ATWIR) waste streams: IN-BN510, RLPFP-01, RL325-01, and RL231Z-01. The ATWIR waste stream ID "IN-BN510.1" and the waste stream description "BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste" will be added in the annual update of the ATWIR to be issued in 2011.

WASTE STREAM PROFILE CONTINUATION SHEET

Reference List:

1. RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Rev. 0, September, 2010
2. BNFL-5232-52-0101, Site Plan of the Advanced Mixed Waste Treatment Facility, Rev. 0, April 1999
3. RPT-TRUW-06, AMWTP Baseline AK for Newly-generated Waste, Rev. 12, August 16, 2010
4. RPT-TRUW-12, AMWTP Waste Stream Designations, Rev. 14, August 2, 2010
5. RPT-TRUW-05, Waste Matrix Code Reference Manual, Rev. 24, June 16, 2010
6. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Rev. 16, August 12, 2010
7. MP-TRUW-8.5, TRU Waste Certification, Rev. 25, December10, 2009
8. INST-OI-12, Real Time Radiography Operations (Drum), Rev. 44, June 30, 2010
9. INST-OI-34, Non-Facility Visual Examination Operations, Rev. 22, June 30, 2010
10. INST-FOI-17, Facility Visual Examination Operations, Rev. 19, June 30, 2010
11. INST-OI-43, HGAS Sampling and Analysis Operations, Rev.18, April 7, 2010
12. DOE/WIPP 06-3345, Waste Isolation Pilot Plant Flammable Gas Analysis, Rev. 3.2, May 22, 2009
13. INST-FOI-20, Supercompactor and Post-Compaction Operations, Rev. 30, March 4, 2010
14. RPT-DSA-02, Documented Safety Analysis, Rev. 6, December 2, 2009
15. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS).
16. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), Rev. 6, September 11, 2008
17. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant, Rev. 3, August 19, 2010
18. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory, Rev. 5, July 18, 2007
19. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste-Mound Plant Waste, Rev. 6, August 21, 2008
20. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, Rev. 1, June 21, 2010
21. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, Rev. 19, 6/30/2010
22. MP-TRUW-8.2, Quality Assurance Project Plan, Rev. 13, 6/30/2010

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90 % Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	☒	☐	☐	
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	☐	☐	☒	Central Characterization Project (CCP) will evaluate containers on an individual basis through transportation headspace gas and WIPP Data System (WDS).
6. Have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	WAP solid sampling not required for this S5000 waste stream.

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
8. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
9. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
11. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-1, for the lot?	☒	☐	☐	
12. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in the QAPjP, Sections B3-2 through B3-9, for the lot?	☒	☐	☐	WAP solid sampling not required for this S5000 waste stream.
13. Have the program required quantitation limit (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
14. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
16. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
17. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	
18. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

Site Project Manager	Signature	Steve Carpenter Printed Name	9.10.10 Date
2nd Site Project Manager	George Byram Signature	George Byram Printed Name	9-10-10 Date

AMWTP Advanced Mixed Waste Treatment Project	Characterization Information Summary Report	Form-1598, Rev. 6 Effective: 09/04/09 Page 1 of 13

Implementing Document: MP-TRUW-8.14

WSPF Number: BN510.1 Lot Number: Boxline 1

SPM

Printed Name: Steve Carpenter Signature: [signature] Date: 9,10,10

2nd SPM

Printed Name: George Byram Signature: George B Date: 9-10-10

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN510.1 Lot Number: Boxline 1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN510.1 Supercompacted Debris Waste as required by MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP).[21, 22] In addition, AMWTP has conducted characterization testing and analysis using visual examination (VE), headspace gas sampling and analysis, and radioassay.

Justification for Selection of Radiography and/or VE as an appropriate method for characterizing the waste

The boxline waste is characterized using VE and the direct feed waste is characterized by RTR or VE. The supercompactor feed waste is amenable to using either real time radiography (RTR) or VE. Both methods are equally capable of providing qualified personnel the means to examine the waste and meet the data quality objectives (DQOs). VE is the appropriate method for characterizing boxline waste because it can be accomplished and recorded per the QAPjP (MP-TRUW-8.2) during sorting, size reduction, and repackaging into 55 gallon drums. Radiography is the appropriate method the direct feed line because it can be readily accomplished per the QAPjP (MP-TRUW-8.2) on direct feed drums. However, where dense or otherwise impenetrable objects and/or lead shielding that may create a

condition or configuration where examination using radiography will not yield acceptable DQOs, only direct visual examination is appropriate.
This Characterization Information Summary (CIS) presents the headspace gas analytical data from fourteen containers. These data meet the necessary characterization requirements for S5000 debris waste. The headspace gas sampling data from these fourteen containers is summarized in Tables 1A and 1B. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 presents the RTR/VE summary of prohibited items. Table 7 presents the correlation between the container numbers and the headspace gas sample numbers.

The Site Project Manager (SPM) signature certifies that through AK, testing and/or analysis that the waste included in this waste stream is not corrosive, ignitable, reactive, or incompatible with the Treatment, Storage, and Disposal Facility (TSDF) and does not contain prohibited liquids. The AK Summary for this waste stream contains specific information about the corrosivity, reactivity, and ignitability of the waste stream and is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this profile.

Data Results

Headspace gas sampling was performed on all fourteen containers included in Boxline Lot 1 for BN510.1 waste stream. The statistical evaluation of the analytical data collected for BN510.1, Boxline Lot 1 is presented in Table 1. Table 5 lists the correlation of container numbers to characterization data packages. Table 7 lists the correlation of container number to headspace gas sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for each volatile compound and to resolve the assignment of EPA HWNs for the BN510.1 waste stream. Per Section B2-2a of MP-TRUW-8.2, Quality Assurance Project Plan, the AMWTP used the data to calculate the UCL_{90} values for the waste stream and assign EPA HWNs as appropriate.

HWNs are assigned based on AK. HWNs assigned by AK are retained for the waste stream even if the headspace gas sampling analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). No sampling UCL_{90} results are above the PRQL values for constituents associated with the toxicity characteristic HWNs (Table 1). The HWN assignment for this waste stream includes:

- Toxicity characteristic metals – D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010, (selenium), and D011 (silver).
- Toxicity characteristic organics – D022 (chloroform), D027 (1,4- dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).
- F-Listed HWNs for spent solvents used for cleaning and degreasing , and in laboratory operations – F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F002 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F004 (cresols and nitrobenzene); and F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone, pyridine, and toluene).
- F-Listed HWNs from electroplating operations – F006, F007 and F009 waste generated as a result of contact with electroplating waste.

Headspace sampling results support AK. No additional EPA HWNs are required.

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 1A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [e]	14	0	None	1.20	1.20	0	[c]		10	
Methanol	14	0	None	34.5	34.5	0	[c]		100	
Ethyl ether	14	0	None	1.00	1.00	0	[c]		10	
1,1,2-Trichloro-1,2,2-trifluoroethane	14	0	None	1.15	1.15	0	[c]		10	F001, F002 [d]
1,1-Dichloroethylene	14	0	None	1.05	1.05	0	[c]		10	D029 [d]
Acetone	14	0	None	10.5	10.5	0	[c]		100	
Methylene chloride	14	9	Natural log	4.61	1.52	1.43	2.03	2.30	10	F001, F002 [d]
trans-1,2-Dichloroethylene	14	0	None	1.25	1.25	0	[c]		10	
1,1-Dichloroethane	14	0	None	1.25	1.25	0	[c]		10	
cis-1,2-Dichloroethylene	14	0	None	1.40	1.40	0	[c]		10	
Methyl ethyl ketone	14	0	None	12.0	12.0	0	[c]		100	F005 [d]
Chloroform	14	1	Natural log	1.25	0.435	0.236	0.519	2.30	10	D022 [d]
1,1,1-Trichloroethane	14	1	Natural log	1.39	0.719	0.192	0.788	2.30	10	F001, F002 [d]
Carbon tetrachloride	14	0	None	3.00	3.00	0	[c]		10	F001 [d]
Benzene	14	0	None	1.10	1.10	0	[c]		10	F005 [d]
1,2-Dichloroethane	14	0	None	2.10	2.10	0	[c]		10	D028 [d]
Butanol	14	0	None	30.0	30.0	0	[c]		100	
Trichloroethylene	14	1	None	7.50	1.65	1.68	2.26		10	F001, F002 [d]
Methyl isobutyl ketone	14	0	None	18.5	18.5	0	[c]		100	
Toluene	14	0	None	0.950	0.950	0	[c]		10	F005 [d]
Tetrachloroethylene	14	0	None	1.05	1.05	0	[c]		10	F001, F002 [d]
Chlorobenzene	14	0	None	1.05	1.05	0	[c]		10	F002 [d]
Ethyl benzene	14	0	None	1.15	1.15	0	[c]		10	
m- & p-Xylene	14	0	None	1.15	1.15	0	[c]		10	
o-Xylene	14	0	None	1.15	1.15	0	[c]		10	
Bromoform	14	0	None	1.55	1.55	0	[c]		10	
1,1,2,2-Tetrachloroethane	14	0	None	1.30	1.30	0	[c]		10	
Cyclohexane [f]	14	0	None	1.30	1.30	0	[c]		10	
Carbon disulfide [e]	14	0	None	1.25	1.25	0	[c]		10	F005 [d]
1,2,4-Trimethylbenzene [f]	14	0	None	1.35	1.35	0	[c]		10	
1,3,5-Trimethylbenzene [f]	14	0	None	1.35	1.35	0	[c]		10	

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, and UCL_{90}.

c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

d. The HWNs for these constituents have been applied based on acceptable knowledge. No additional HWNs were added as a result of headspace gas sampling

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: J. Kettel Signature: [signature] Date: 9/9/10

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
Cyclotetrasiloxane, octamethyl-	110	13	14	93	14	93
Trichlorofluoromethane	87	1	14	7.1	14	7.1

Notes:

Octamethylcyclotetrasiloxane is not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: M. Johnson Signature: [signature] Date: 9/9/10

Verification of % Detected Calculation:

Printed Name: J. Kettel Signature: [signature] Date: 9/9/10

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package.

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10376274	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379527	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379532	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379533	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379536	N/A	N/A	ASY10-01905	VEB10-00906	N/A	N/A
10379541	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379598	N/A	N/A	ASY10-01905	VEB10-00906	N/A	N/A
BN10376278	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379487	N/A	N/A	ASY10-01906	VEB10-00906	N/A	N/A
10379560	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
10379577	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379583	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379592	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379593	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379751	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
BN10376279	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379440	N/A	N/A	ASY10-01893	VEB10-00903	N/A	N/A
10379530	N/A	N/A	ASY10-01906	VEB10-00906	N/A	N/A
10379568	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379569	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
10379571	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379573	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
BN10376281	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379563	N/A	N/A	ASY10-01907	VEB10-00910	N/A	N/A
10379578	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379581	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379737	N/A	N/A	ASY10-01907	VEB10-00911	N/A	N/A
10379743	N/A	N/A	ASY10-01907	VEB10-00911	N/A	N/A
10379746	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
BN10376282	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379105	N/A	N/A	ASY10-01896	VEB10-00907	N/A	N/A
10379543	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379551	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379552	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379601	N/A	N/A	ASY10-01897	VEB10-00908	N/A	N/A

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package (continued).

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10379513	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379492	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379547	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379553	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379554	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
BN10379514	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379356	N/A	N/A	ASY10-01885	VEB10-00899	N/A	N/A
10379371	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379439	N/A	N/A	ASY10-01893	VEB10-00903	N/A	N/A
10379481	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379499	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379502	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
BN10379515	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379314	N/A	N/A	ASY10-01885	VEB10-00897	N/A	N/A
10379484	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379501	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379537	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379556	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
BN10379516	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379312	N/A	N/A	ASY10-01885	VEB10-00897	N/A	N/A
10379365	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379370	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379503	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
BN10379517	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379490	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379491	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379498	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379548	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379588	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379599	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
BN10379518	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379488	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379534	N/A	N/A	ASY10-01897	VEB10-00905	N/A	N/A
10379538	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379542	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379595	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379596	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package (continued).

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10379521	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379500	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379544	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379546	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379550	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379589	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379597	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
BN10379523	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379441	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379486	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379489	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379549	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379557	N/A	N/A	ASY10-01896	VEB10-00904	N/A	N/A
BN10379713	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379528	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379561	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379567	N/A	N/A	ASY10-01907	VEB10-00910	N/A	N/A
10379586	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379742	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379744	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A

a. Container numbers are listed in a sequence with the 100-gallon container first, then subsequently listed are the corresponding 55-gallon containers that were supercompacted to pucks and placed in the 100-gallon container.
b. WAP solid sampling is not required for S5000 waste

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items.

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10376274	N/A	Completed [d]
10379527	N/A	Completed
10379532	N/A	Completed
10379533	N/A	Completed
10379536	N/A	Completed
10379541	N/A	Completed
10379598	N/A	Completed
BN10376278	N/A	Completed [d]
10379487	N/A	Completed
10379560	N/A	Completed
10379577	N/A	Completed
10379583	N/A	Completed
10379592	N/A	Completed
10379593	N/A	Completed
10379751	N/A	Completed
BN10376279	N/A	Completed [d]
10379440	N/A	Completed
10379530	N/A	Completed
10379568	N/A	Completed
10379569	N/A	Completed
10379571	N/A	Completed
10379573	N/A	Completed
BN10376281	N/A	Completed [d]
10379563	N/A	Completed
10379578	N/A	Completed
10379581	N/A	Completed
10379737	N/A	Completed
10379743	N/A	Completed
10379746	N/A	Completed
BN10376282	N/A	Completed [d]
10379105	N/A	Completed
10379543	N/A	Completed
10379551	N/A	Completed
10379552	N/A	Completed
10379601	N/A	Completed

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items (continued).

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10379513	N/A	Completed [d]
10379492	N/A	Completed
10379547	N/A	Completed
10379553	N/A	Completed
10379554	N/A	Completed
BN10379514	N/A	Completed [d]
10379356	N/A	Completed
10379371	N/A	Completed
10379439	N/A	Completed
10379481	N/A	Completed
10379499	N/A	Completed
10379502	N/A	Completed
BN10379515	N/A	Completed [d]
10379314	N/A	Completed
10379484	N/A	Completed
10379501	N/A	Completed
10379537	N/A	Completed
10379556	N/A	Completed
BN10379516	N/A	Completed [d]
10379312	N/A	Completed
10379365	N/A	Completed
10379370	N/A	Completed
10379503	N/A	Completed
BN10379517	N/A	Completed [d]
10379490	N/A	Completed
10379491	N/A	Completed
10379498	N/A	Completed
10379548	N/A	Completed
10379588	N/A	Completed
10379599	N/A	Completed
BN10379518	N/A	Completed [d]
10379488	N/A	Completed
10379534	N/A	Completed
10379538	N/A	Completed
10379542	N/A	Completed
10379595	N/A	Completed
10379596	N/A	Completed

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items (continued).

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10379521	N/A	Completed [d]
10379500	N/A	Completed
10379544	N/A	Completed
10379546	N/A	Completed
10379550	N/A	Completed
10379589	N/A	Completed
10379597	N/A	Completed
BN10379523	N/A	Completed [d]
10379441	N/A	Completed
10379486	N/A	Completed
10379489	N/A	Completed
10379549	N/A	Completed
10379557	N/A	Completed
BN10379713	N/A	Completed [d]
10379528	N/A	Completed
10379561	N/A	Completed
10379567	N/A	Completed
10379586	N/A	Completed
10379742	N/A	Completed
10379744	N/A	Completed

a. Container numbers are listed in a sequence with the 100-gallon container first, then subsequently listed are the corresponding 55-gallon containers that were supercompacted to pucks and placed in the 100-gallon container.
b. RTR was not performed on any of the containers in Boxline Lot 1.
c. See Table 5 for the associated VE data packages. None of the identified containers contain prohibited items as defined by Section B-1c of the AMWTP Quality Assurance Project Plan QAPjP, MP-TRUW-8.2.
d. VE is performed on the 55-gallon containers prior to supercompaction and placement of the pucks in the 100-gallon containers; therefore, verification of no prohibited items for the contents of the 100-gallon container has been completed.

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 7. Correlation of container numbers to sample numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s) [a]
BN10376274	57658	N/A
BN10376278	57662	N/A
BN10376279	57659	N/A
BN10376281	57661	N/A
BN10376282	57670	N/A
BN10379513	57669	N/A
BN10379514	57667	N/A
BN10379515	57664	N/A
BN10379516	57663	N/A
BN10379517	57665	N/A
BN10379518	57666	N/A
BN10379521	57668	N/A
BN10379523	57671	N/A
BN10379713	57660	N/A

a. WAP solid sampling is not required for S5000 waste

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [c, d, e]	Comments
Chloromethane [f]	14	0	None	1.20	1.20	0			10		No samples above MDL
Methanol	14	0	None	34.5	34.5	0			100		No samples above MDL
Ethyl ether	14	0	None	1.00	1.00	0			10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	14	0	None	1.15	1.15	0			10		HWNs F001/F002 applied
1,1-Dichloroethylene	14	0	None	1.05	1.05	0			10		HWN D029 applied
Acetone	14	0	None	10.5	10.5	0			100		No samples above MDL
Methylene chloride [g]	14	9	Natural log	4.61	1.52	1.43	2.03	2.30	10	10	HWNs F001/F002 applied
trans-1,2-Dichloroethylene	14	0	None	1.25	1.25	0			10		No samples above MDL
1,1-Dichloroethane	14	0	None	1.25	1.25	0			10		No samples above MDL
cis-1,2-Dichloroethylene	14	0	None	1.40	1.40	0			10		No samples above MDL
Methyl ethyl ketone	14	0	None	12.0	12.0	0			100		HWN F005 applied
Chloroform	14	1	Natural log	1.25	0.435	0.236	0.519	2.30	10	10	HWN D022 applied
1,1,1-Trichloroethane	14	1	Natural log	1.39	0.719	0.192	0.788	2.30	10	10	HWNs F001/F002 applied
Carbon tetrachloride	14	0	None	3.00	3.00	0			10		HWN F001 applied
Benzene	14	0	None	1.10	1.10	0			10		HWN F005 applied
1,2-Dichloroethane	14	0	None	2.10	2.10	0			10		HWN D028 applied
Butanol	14	0	None	30.0	30.0	0			100		No samples above MDL
Trichloroethylene	14	1	None	7.50	1.65	1.68	2.26		10		HWNs F001/F002 applied
Methyl isobutyl ketone	14	0	None	18.5	18.5	0			100		No samples above MDL
Toluene	14	0	None	0.950	0.950	0			10		HWN F005 applied
Tetrachloroethylene	14	0	None	1.05	1.05	0			10		HWN F001/F002 applied
Chlorobenzene	14	0	None	1.05	1.05	0			10		HWN F002 applied
Ethyl benzene	14	0	None	1.15	1.15	0			10		No samples above MDL
m- & p-Xylene	14	0	None	1.15	1.15	0			10		No samples above MDL

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [c, d, e]	Comments
o-Xylene	14	0	None	1.15	1.15	0			10		No samples above MDL
Bromoform	14	0	None	1.55	1.55	0			10		No samples above MDL
1,1,2,2-Tetrachloroethane	14	0	None	1.30	1.30	0			10		No samples above MDL
Cyclohexane [g]	14	0	None	1.30	1.30	0			10		No samples above MDL
Carbon disulfide [f]	14	0	None	1.25	1.25	0			10		HWN F005 applied
1,2,4-Trimethylbenzene [g]	14	0	None	1.35	1.35	0			10		No samples above MDL
1,3,5-Trimethylbenzene [g]	14	0	None	1.35	1.35	0			10		No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{95} is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and UCL_{95}.

c. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

d. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10.

e. The required number of samples for VOCs listed in Table IV.D.1 of the WIPP Hazardous Waste Facility Permit was calculated using equation A-8 in MP-TRUW-8.25.

f. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

g. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-83, Rev. 3

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11583.)
Steve Carpenter
Acceptable Knowledge Manager

09/17/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/10/2010	All	DCR-9081. Initial issue.
1	01/12/11	Various	DCR-9747. References modified to accommodate reference changes within AK baseline document for Hanford waste. Revised to incorporate WIPP WAP permit renewal changes. Editorial corrections
2	01/31/12	Various	DCR-10508. Added changes approved by CBFO in Change Notice 1 to BN510.1 waste stream profile. Incorporated BLUESHEET-077.
3	09/17/12	5, A1, A2	DCR-11583. Added changes approved by CBFO in Change Notice 2 to BN510.1 waste stream profile.

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ACRONYMS

AK	acceptable knowledge
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
BC	Battelle Columbus (prefix)
BN	AMWTP (prefix)
CCP	Central Characterization Project
CH	contact-handled
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CWS	Chemical Warfare Service
D&D	decommissioning and dismantling
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DU	depleted uranium
DWPG	drummed waste packaging glovebox
EDMS	electronic document management system
EPA	U.S. Environmental Protection Agency
EU	enriched uranium
HEPA	high efficiency particulate air
HENC	High-Efficiency Passive Neutron Counter
HWMA	Hazardous Waste Management Act
HSG	headspace gas
HWN	hazardous waste number
IDC	Item Description Code
INL	Idaho National Laboratory
LLD	lower limit of detection
LSA	low specific activity
MD	Mound Plant (prefix)
MEK	methyl ethyl ketone
MPFPD	Mixed Plutonium Finishing Plant Debris
NDA	non-destructive assay
PCB	polychlorinated biphenyl
PFP	plutonium finishing plant
PK	process knowledge
PMC	plutonium-molybdenum cermet
POS	Plant Optimization System

PPE	personal protective equipment
PPO	pressed plutonium oxide
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (prefix)
RL	Richland, Washington Hanford Site (prefix)
RLMPFPCD	Richland Mixed Plutonium Finishing Plant Comprehensive Debris
RTG	radioisotopic thermoelectric generators
RTR	real-time radiography
SCW	special case waste
SDOP	six-drum overpack box
SWB	standard waste box
TRU	transuranic
TRUCON	TRU waste content codes
TSCA	Toxic Substance Control Act
VE	visual examination
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WETP	WIPP experimental test program
WG Pu	weapons-grade plutonium
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMP	waste material parameter
WSPF	Waste Stream Profile Form

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN510.1

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Supercompacted Debris Waste

1.2.2 Point of Generation

Advanced Mixed Waste Treatment Facility (AMWTF), Building Waste Management Facility (WMF)-676

1.2.3 Waste Stream Volume (Newly Generated)

Projected Volumes:

16,000 100-gallon drums (3,330 m^3)[2]

105 Standard Waste Boxes (SWBs) (198 m^3)[2]

Fifty percent of the debris waste feedstock is estimated to contain greater than 100 nanocuries per gram (nCi/g) transuranic (TRU) alpha activity and 50% contains less than 100 nCi/g TRU alpha activity.[14]

1.2.4 Generation Dates and Rate of Generation

August 2010 – December 2018

The average generation rate is estimated to be 120 m^3 per month.[28]

1.2.5 TRUCON Codes

ID121[3]

1.2.6 Waste Isolation Pilot Plant Waste Stream ID

Waste Stream ID: IN-BN510.1[a]

1.2.7 Summary Category Group

S5000 – Debris Waste[4]

1.2.8 Waste Matrix Code Group

Heterogeneous Debris Waste

1.2.9 Waste Matrix Code

S5490 – Unknown/Other Heterogeneous Debris Category

The unknown/other-heterogeneous Waste Matrix Code (WMC) includes waste that is consistent with the definition for the Heterogeneous Debris (S5400), but does not meet the criteria for assignment into the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.[4] The waste stream consists of supercompacted debris waste.

1.2.10 Description from the ATWIR

The Annual Transuranic Waste Inventory Report (ATWIR) description for waste stream BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste.[28] a

1.2.11 Defense Determination for AMWTP Waste

The supercompacted debris waste stream (BN510.1) generated at the Advanced Mixed Waste Treatment Project (AMWTP) is a result of compaction of waste generated at the Rocky Flats (RF), Mound (MD), Battelle Columbus (BC), Hanford (RL), and AMWTP (BN). The debris wastes identified as feedstock to the AMWTP Supercompactor were generated from defense-related processes or activities at the five U.S. Department of Energy (DOE) sites as follows:

- The transuranic (TRU) debris wastes generated at RF and shipped to the Idaho National Laboratory (INL) were generated through defense program activities, or commingled with non-defense program waste that cannot be segregated. Furthermore, there is no historical record or evidence of spent nuclear fuel or high-level waste ever having been handled at the RF facility.[7, 19]

a. The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report waste streams: IN-BN510, RLPFP-01, RL325-01, and RL231Z-01. [28]

- The majority of the MD debris waste feedstock was generated during defense-related operations conducted at the MD for a variety of customers, including Lawrence Livermore National Laboratory, Hanford, Oak Ridge National Laboratory, and the Space Program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the U.S. Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by MD was the Space Nuclear Auxiliary Power system, which was sponsored by the DOD. Operations at the facility included processing and recovering plutonium, developing reactor fuels, conducting reactor fuel waste studies, and recovery of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the MD debris waste feedstock is the result of commingling of wastes from both defense-related and domestic activities.[8, 20]

- Debris waste feedstock shipped from BC to the INL was generated during decommissioning and dismantling (D&D) of the JN-3 (Research Reactor Building) and other facilities. Defense-related operations were conducted at BC in support of Army, Navy, and Air Force programs. These operations included weapons-related activities and defense research into plutonium materials properties and development, plutonium metallurgy, actinide joining, and weapons production and assembly. Processing of test shot samples, development of ^{238}Pu heat sources for spacecraft for DOD, and some specialized work for Los Alamos were conducted in the JN-4 Plutonium Laboratory.[9, 21, 22, 23]

- The debris waste feedstock generated at RL and shipped to the AMWTP was generated during nuclear materials production, nuclear waste and materials by-products management, and defense research and development (R&D) activities conducted at RL facilities. Due to the nature of the work performed at RL analytical facilities, defense-related activities were carried out concurrent with non-defense projects and the wastes were commingled at the point of generation. Segregation of waste into defense and non-defense portions is not feasible. The RL debris waste may contain debris waste that has been determined to be waste that is incidental to reprocessing of spent nuclear fuel. The debris waste is not spent nuclear fuel or high-level waste.[29]

- The waste generated at the AMWTF is the result of contact with defense related TRU debris waste feedstock during treatment, characterization, maintenance, repackaging, and management.[6]

In accordance with interim guidance, defense wastes are identified as those wastes generated during work involving only defense activities, or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The TRU wastes included in the BN510.1 Waste Stream Profile Form (WSPF) meet this definition.[24, 25]

1.3 Waste Stream Description

The newly generated debris waste stream (BN510.1) is generated from supercompaction of 55-gallon containers of debris waste. The supercompacted debris waste (i.e., BN510.1) is generated from a single process (i.e., supercompaction). The supercompacted debris waste

(i.e., BN510.1) has a common physical form that contains similar hazardous constituents and is generated from a single process or activity (Table 1). The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of hazardous waste numbers (HWNs) to the Supercompactor feedstock from Hanford debris waste.[29,31] A list of authorized debris waste feedstock (by original generator and item description code [IDC]) is presented in Appendix A, Supercompactor Debris Waste Feedstock.[31] A description of the processes that generated the supercompacted debris waste is presented in Section 1.4.4.

Table 1. Physical waste form description for BN510.1.

ATWIR Number	IDC	Waste Matrix Code (WMC)	Description
IN-BN510.1	BN-550	S5490	Debris waste from multiple debris waste feedstock sources that have been supercompacted into pucks and packaged into 100-gallon drums.[a]

a. A list of debris waste feedstock IDCs is presented in Appendix A of this report.

Supercompacted debris waste consists of various combustible and noncombustible debris materials that originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).[6]

The BN510.1 supercompacted debris waste stream includes waste from Hanford Richland Mixed Plutonium Finishing Plant Comprehensive Debris (RLMPFPCD) stream and the following previously approved Waste Isolation Pilot Plant (WIPP)-WSPFs: [29, 31, 37]

- AMWTP BN510 [31, 37]
- Hanford RLM231ZD.001 [29, 37]
- Hanford RLM325D.001 [29, 37]
- Hanford RLMPDT.001 [Mixed Plutonium Finishing Plant Debris (MPFPD)]. [29, 37]

Supercompacted debris waste includes: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete packaged in 55-gallon drums, supercompacted, and packaged into 100-gallon product drums. Supercompacted debris may contain small amounts of non-debris waste such as absorbed liquids, soil, dirt, sand, absorbent, or homogeneous solids. Non-debris waste will be less than 50% by volume in each 100-gallon drum of compacted debris.[7, 8, 9, 29]

1.4 Process Description

1.4.1 Areas of Operation

The BN510.1 waste stream is generated by supercompaction of debris waste feedstock at the AMWTF in Building WMF-676. The debris waste feedstock is introduced into the supercompactor as any of the following:

- Direct feed (in original 55-gallon drums from the generator site)
- From the drummed waste packaging glovebox (DWPG) where drummed waste is sorted and repackaged into new 55-gallon drums
- From the waste treatment boxline(s) where boxed waste is sorted, size-reduced, and repackaged into 55-gallon drums.

The boxed waste includes six-drum overpacks (SDOPs) containing up to six 55- or 85- gallon drums). The SDOPs are of two types: 1) one type is packaged with characterized debris drums for processing in AMWTF. These contain drums with IDCs confirmed by real-time radiography (RTR) to be acceptable feedstock waste; 2) the other type is packaged with drums that are not characterized but are labeled with historical acceptable knowledge (AK) information that indicates acceptable feedstock waste.

The supercompactor, a glovebox with a 2,000-ton capacity compactor, size-reduces 55-gallon waste drums to roughly one-fifth their normal size. The supercompacted drums (pucks) are then packaged into 100-gallon containers (puck drums).

1.4.2 Process Flow Diagram

Figure 1 presents a flow diagram illustrating the generation and processing of AMWTP supercompacted debris waste.

1.4.3 Waste Generating Process

The AMWTP waste generation process is supercompaction of individual 55-gallon drums of debris waste feedstock into pucks (the final waste form). Debris waste feedstock contained in 55-gallon drums is characterized and validated through radioassay and RTR/visual examination (VE) to verify contents and then sent directly to the supercompactor for processing.[11, 32, 33, 34, 35]

Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG. Boxes of waste, including SDOPs, are introduced into a boxline for sorting and repackaging into 55-gallon drums. The SDOPs with uncharacterized drums undergo RTR to confirm the waste is >50% debris in each drum. The drum contents are then visually examined in the boxline trough to confirm the waste is approved feed stock. The other boxed wastes undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed

in the boxline or special-case waste (SCW) glovebox. After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55-gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor.

Supercompaction is the treatment for unprotected sharp objects and sealed containers greater than four liters that do not contain prohibited liquids. Because there are no layers of confinement following supercompaction, it is also the treatment for excess layers of confinement. After compaction, the drum pucks are loaded into 100-gallon drums (IDC BN-550).[10] No additional chemicals or waste constituents are added to the supercompacted debris waste as a result of this process.

Debris waste generated during repackaging and VE is also included in the Supercompactor feedstock. This facility-generated waste is visually examined.[11]

The plant optimization system (POS) is used to optimize processing drums through the Supercompactor to produce 100-gallon drums (containing compacted drum pucks) to meet the WIPP Waste Acceptance Criteria (WAC).[5, 10, 27]

1.4.3.1 Liquid Waste Generation

Any liquids that may be generated as a consequence of supercompaction are removed from the Supercompactor sump, absorbed, packaged, and dispositioned.[10, 11, 30] This liquid waste is not included in the supercompacted debris waste stream (BN510.1) and is managed as a separate waste.

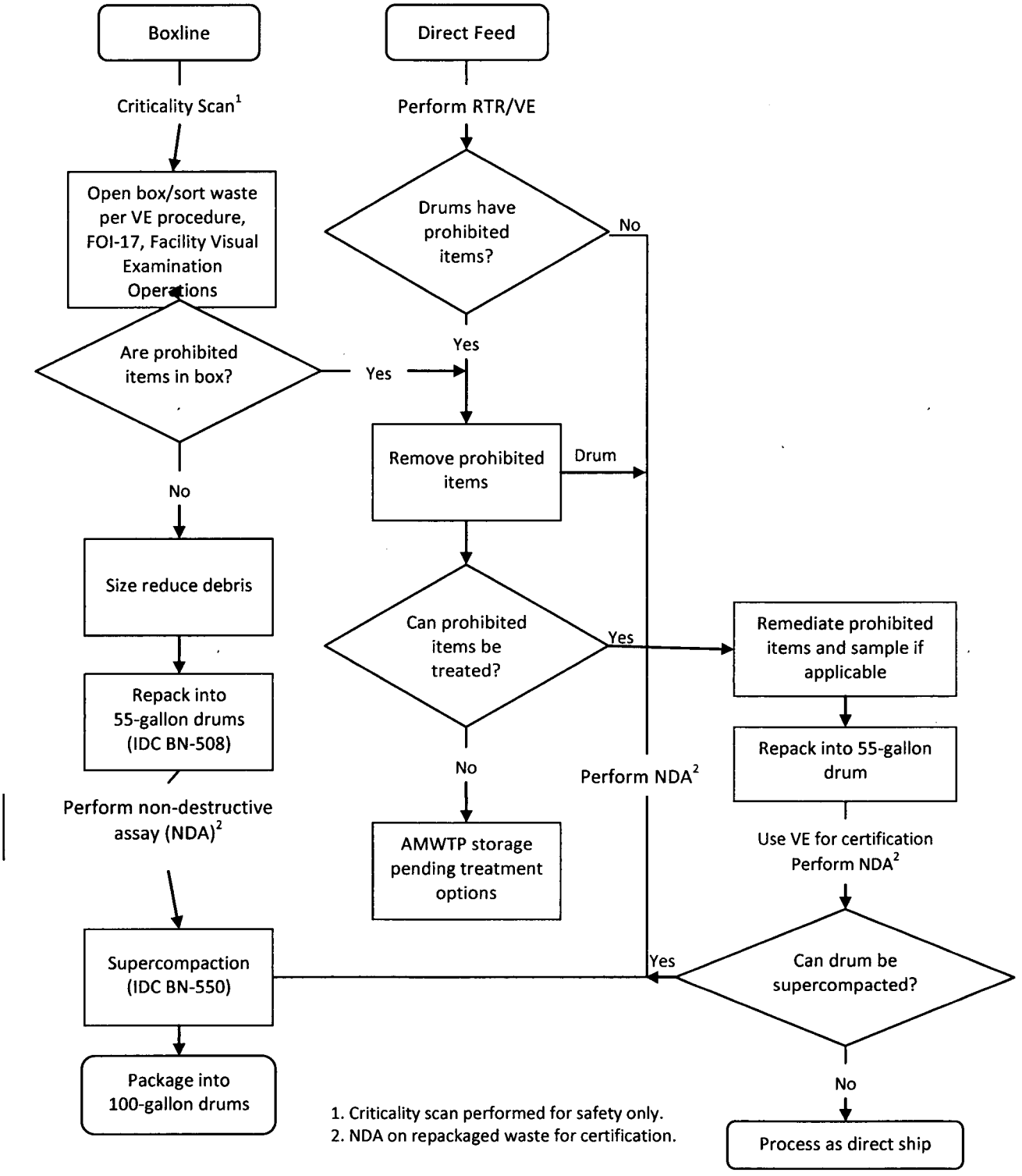

Figure 1. General flowchart for supercompacted debris waste generation and processing at the AMWTP.

1.4.4 Material Inputs

The heterogeneous debris waste feedstock to the Supercompactor originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).

The AMWTP retrievably-stored debris waste feedstock was generated at the RF, MD, and BC. The debris waste feedstock was generated during plutonium pit production; depleted uranium component fabrication; enriched uranium processing; support operations including radionuclide recovery, waste treatment, maintenance, laboratory analysis, and machining of non-nuclear weapon components; R&D; special order work; fabrication of ^{238}Pu heat sources and manufacture of radioisotopic thermoelectric generators; D&D activities; and materials development.[7, 8, 9]

The RL debris waste feedstock shipped to the AMWTP was generated during plutonium production and fabrication; radiochemical processing and plutonium metallurgy laboratory activities; R&D; D&D technology development; and maintenance, cleanout, stabilization, and D&D activities.[29]

The BN debris waste feedstock is generated as a result of AMWTP waste facility maintenance operations, treatment (i.e., supercompaction, absorption of prohibited liquids, and removal of prohibited items), characterization, and general container management activities.[6]

The processes that generated debris wastes are listed below:

- RF
  - Plutonium metal and plutonium-containing materials manufacture, recovery, and treatment[7]
  - Plutonium production support operations including maintenance, laboratory activities, and R&D[7]
  - Non-routine events including renovations, spills, fires, and decommissioning[7]
  - Construction, demolition, and D&D operations.[7]
- MD
  - D&D of the Mound Plant Facility[8]
  - Pressed plutonium oxide (PPO) sphere and plutonium-molybdenum cermet (PMC) production[8]
  - Plutonium and other isotopic recovery[8]
  - Plutonium manufacture support such as laboratory activities and R&D[8]
  - Facility maintenance.[8]

BC

- Research into the metallurgical and ceramic properties of plutonium and its alloys[9]
- Plutonium processing[9]
- Development of nuclear fuels[9]
- D&D of the BC facilities.[9]

- RL
  - Plutonium Finishing Plant production, maintenance, cleanout, stabilization, and D&D[29]
    - RLMPDT.001 (MPFPD)[29]
    - RLMPFPCD[29]
  - Building 325 Radiochemical Processing Laboratory activities (RLM325D.001)[29,]
  - Building 231-Z cleanout operations/activities, metallurgy R&D, plutonium fabrication, and D&D technology development (RLM231ZD.001).[29]

- BN
  - Characterization activities[6]
  - Repackaging activities[6]
  - Waste treatment activities including supercompaction, absorption of prohibited liquids, and removal of prohibited items [6]
  - Facility operations including waste management and maintenance.[6]

The debris waste feedstock received and stored at the AMWTP is packaged in 55- or 85-gallon drums and a variety of boxes, bins, and crates. These boxes, bins, and crates are constructed of metal or fiberglass-reinforced plywood. The types of supercompactor debris waste feedstock containers are as follows:

- Direct feed 55-gallon drums without rigid liners identified by generator (RF, MD, BC, BN) assigned IDCs
- Direct feed 55-gallon drums with rigid liners identified by generator (RF, MD, BC) assigned IDCs
- Repackaged RF, MD, BC, RL and BN debris waste from the boxline or DWPG in 55-gallon drums.

The first two bulleted types of debris waste feedstock containers retain their generator assigned IDCs until compaction.[1]

The Acceptable Knowledge Baseline Document for AMWTP Waste, RPT-TRUW-06,[6] was compiled to provide the AK baseline report for the AMWTP newly generated wastes in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.[13] RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant; RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Waste-Mound Plant Waste; RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory; and RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, are the AMWTP baseline documents for the RF, MD, BC, and RL facilities, respectively.[7, 8, 9, 29]

Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II®, Petroset IIG®, or PIG® absorbents may be added to the waste by AMWTP to absorb prohibited liquids within debris waste.[38, 39, 42, 48, 49, 50]

The flow of the AMWTP AK documentation is presented in Figure 2.

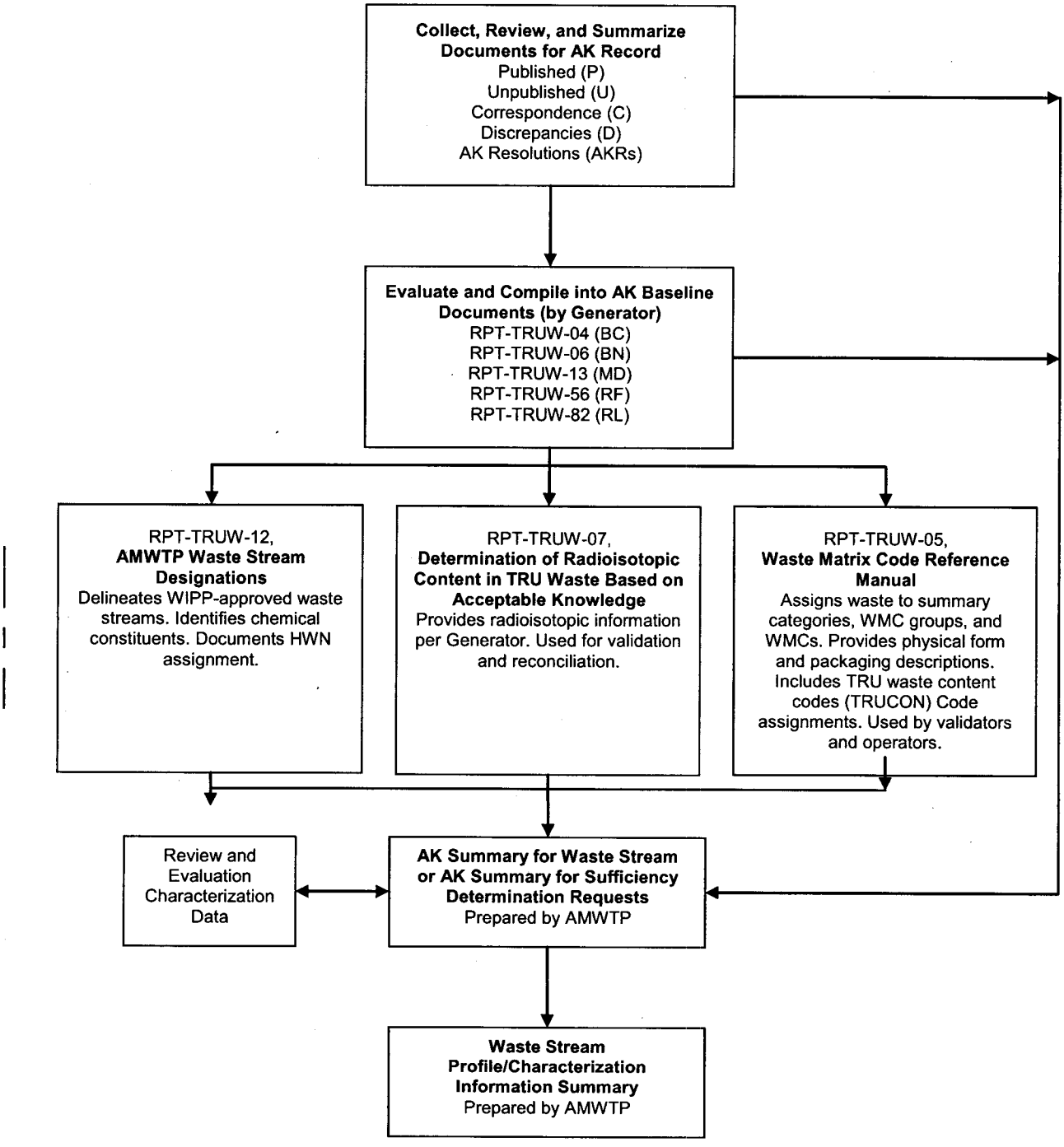

Figure 2. Document hierarchy and information flow for AK.

1.4.5 Waste Material Parameters

The original waste material parameter (WMP) weight percentages for the BN510.1 waste stream estimate were based on the visual examination (VE) data for 100-gallon product drums generated from 2005 through 2009. WMP data for 22,399 containers with completed RTR/VE data from the BN510 waste stream were obtained from the AMWTP Waste Tracking System database for containers examined prior to January 1, 2010. This population represented approximately 54% of the estimated volume of supercompacted waste (i.e., 22,399 out of 41,600 drums projected for BN510 and BN510.1 waste streams). The updated estimate is based on the VE data from 3,426 drums of BN510.1 supercompacted waste visually examined prior to September 12, 2011. The estimated WMP weights (by percent) for the BN510.1 waste stream, excluding 100-gallon drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13. The updated estimated WMP weight parameters are representative of the BN510.1 waste stream and are summarized in Table 2.[12, 13, 46]

Table 2. Waste material parameters for supercompacted debris waste.

Waste Material Parameters	Estimated Percent WMP weight/unit waste
Iron-based Metals/Alloys	79
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	1
Cellulosics	12
Rubber	<1
Plastics (waste materials)	7
Inorganic Matrix	<1
Organic Matrix	0
Soils/Gravel	<1

1.5 AK Sufficiency Determination

No AK sufficiency determinations apply to this waste stream.

1.6 Prohibited Items

The following items are prohibited in waste containers shipped to Waste Isolation Pilot Plant (WIPP) as documented in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. [5, 27]

- Liquid waste and prohibited observable liquids
- Sealed containers greater than 4 liters
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (Hazardous Waste Numbers [HWNs] D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8 of MP-TRUW-8.2, unless specifically approved though a Class 3 permit modification.[27]

Debris waste feedstock containers that are identified as containing prohibited items during RTR or VE are treated (to absorb prohibited liquids or to remove prohibited items) or are rejected, as appropriate. None of the supercompacted debris drums shipped to WIPP will contain prohibited items.

Boxline(s) are used to VE and repackage the boxed debris waste into 55-gallon drums. Debris waste feedstock treated or examined in the DWPG, and waste from maintenance and cleanup activities, is either examined by RTR or visually examined. The 55-gallon drums are non-destructive assayed. These drums of debris waste feedstock are then supercompacted and the pucks packaged into a 100-gallon product drum (IDC BN-550).[10, 11]

Prohibited items that can be treated to remove the prohibited characteristic are managed as newly generated waste. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents) to render the waste acceptable prior to shipment.[38, 39, 42, 48, 49, 50] Newly generated waste is characterized and assigned to an appropriate waste stream. [5, 27] In the event the treatment renders a debris waste form that can be compacted, it is included in BN510.1 as IDC BN-508.

1.7 Resource Conservation and Recovery Act Determination

The BN510.1 waste is (and has been) subject to the State of Idaho Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) requirements (e.g., 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, and 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities) and is currently being managed under the AMWTP RCRA permitting requirements until it is shipped offsite [44,45]

1.7.1 EPA Hazardous Waste Numbers

Supercompacted debris is characterized as mixed TRU waste. The HWNs assigned to the authorized supercompacted debris waste feedstock include HWNs associated with the debris waste feedstock as originally compiled in the AK baseline documents.[6, 7, 8, 9, 29]

Toxicity characteristic HWNs applied to the supercompacted debris waste are:

D004 (arsenic)], D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), D011 (silver) D022 (chloroform), D027 (1,4-dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).

Listed HWNs applied to this waste stream are:

F001: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and, trichlorofluoromethane;

F002: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene , chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane;

F004: cresols and nitrobenzene;

F005: 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone (MEK), pyridine, and toluene; and

F006, F007, and F009: electroplating waste.

The HWNs assigned to the BN wastes generated in the facility as a result of handling and processing feedstock waste are derived from the compilation of all EPA HWNs assigned to the authorized debris waste feedstock from the contributing generator sites (Table 3).
[6, 7, 8, 9, 29, 40, 41, 43]

Table 3. HWN assignment by generator site.

Generator Site/Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Rocky Flats[7]																					
Isotope recovery [b]	•	•	•	•	•	•	•	•													
Laboratory reagents, research	•	•	•	•	•	•	•	•	•											• [a]	
Degreasing, decontamination																	• [a]	• [a]			
Cleaning, spill clean up																				• [a]	
Electroplating																					• [a]
Based on AK/HSG											•	•									
Mound Plant[8]																					
PPO & PMC production and isotope recovery [b]	•	•	•	•	•	•	•	•													
Cleaning and degreasing																	• [c]	• [c]		• [c]	
Electroplating																					• [c]
Based on AK/HSG									•			•									

Table 3 (continued)

Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Battelle Columbus [9]																					
Metallurgical research		•	•	•	•	•		•													
Cleaning and degreasing																	•[d]	•[d]		•[d]	
Hanford [29, 40, 41, 43]																					
PFP plutonium metal production operations and glovebox activities including maintenance, clean out, D&D and stabilization:																					
• RLMPDT.001 (MPFPD)	•	•	•	•	•	•	•	•					•								
• RLMPFPCD	•	•	•	•	•	•	•	•	•				•				•[e]	•[e]	•[e]	•[e]	
Radiochemistry Processing Laboratory operations and maintenance (RLM325D.001)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[e]	•[e]	•[e]	•[e]	
Metallurgy operations, cleanout, and D&D (RLM231ZD.001)			•	•	•	•											•[e]	•[e]		•[e]	

Table 3 (continued)

Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Derived-From Rule F001	Derived-From Rule F002	Derived-From Rule F004	Derived-From Rule F005	Derived-From Rule F006 F007 F009
AMWTP[7, 8, 9, 29, 31, 40, 41, 43]																					
Newly generated waste from composited feedstock (i.e., supercompaction operations),	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[f]	•[f]	•[f]	•[f]	•[f]

a. RF – F001 =, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, tetrachloroethylene and trichloroethylene; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, tetrachloroethylene, and trichloroethylene; and F005 = 2-ethoxyethanol, benzene, carbon disulfide, methyl ethyl ketone, and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

b. Process used to recover radioisotopes (e.g., plutonium, americium, neptunium) which caused precipitation of metals as well as the radionuclides.

c. MD - F001 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, and methylene chloride; F002 =1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, and methylene chloride; F005 = benzene, carbon disulfide, MEK, and toluene. F007 and F009 HWNs are assigned due to electroplating waste contamination.

d. BC – F001= methylene chloride and trichloroethylene; F002 = methylene chloride and trichloroethylene; and F005 = benzene, MEK, and toluene.

e. RL – F001=1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; and F005 = 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene. Listed HWN constituents identified in footnote [e] are the summation from referenced AK and process knowledge (PK) documents.

f. BN (product drum)– F001= 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane; 1,2-dichlorobenzene, chlorobenzene, methylene chloride; tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; F005 = 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

1.7.2 Hazardous Determination

1.7.2.1 Hazardous Waste Management

The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1] The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on RCRA mixture and/or derived-from rules.[1, 6]

The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]

1.7.2.2 Ignitability

The waste materials in this waste stream do not meet the 40 CFR 261.21, Characteristic of Ignitabiity, definition of ignitability. Ignitable wastes are prohibited from entering the Supercompactor. The supercompacted debris waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The waste materials in this waste stream are not compressed gas and do not contain compressed gas. The waste does not meet the U.S. Department of Transportation definition of an oxidizer as defined in 49 CFR 173, Shippers – General Requirements for Shipments and Packagings. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001).

1.7.2.3 Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22, Characteristic of Corrosivity, definition of corrosivity. The supercompacted debris waste is not liquid waste and does not contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP. [38, 39,42, 48, 49, 50] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

1.7.2.4 Reactivity

The waste materials in this waste stream do not meet the 40 CFR 261.23, Characteristic of Reactivity, definition of reactivity. Reactive wastes are prohibited from entering the

supercompactor. Supercompacted debris is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The BN510.1 waste stream is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173. Although the waste contains wastes that are assigned F006, F007, and F009 listed HWNs that are associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. This non-reactive position is based on AMWTP AK documents that debris waste being used as feedstock is a non-reactive RCRA waste. This waste stream does not exhibit the characteristic of reactivity (D003).

1.7.2.5 Toxicity

The supercompacted debris waste stream contains RCRA toxicity constituents associated with toxicity characteristic metals and organics. See Table 3 for process-related activities associated with the HWNs.

The RCRA toxicity characteristic metals and organics assigned to this waste stream are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride).[1, 6, 7, 8, 9, 18, 29, 31, 40, 41, 43]

The RCRA toxicity characteristic metal HWNs: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver) were identified based on AK documentation associated with RF, MD, BC, BN and RL feedstock for the BN510.1 WSPF. The D004, D005, D006, D007, D008, D009, D010, and D011 HWNs are assigned to the supercompacted debris waste stream. [1, 6, 7, 8, 9, 29, 31, 40, 41, 43]

The HWN D022 (chloroform) was assigned based on AK documentation associated with RF, MD, and RL feedstock to the BN510.1 WSPF. The associated toxicity characteristic HWN D022 is assigned to the supercompacted debris waste stream.[29, 31, 40, 41]

The HWNs D027 (1,4-dichlorobenzene); D030 (2,4–dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The associated

toxicity characteristic HWNs D027, D030, D034, D037 and D043 are assigned to the supercompacted debris waste stream.[29, 40, 41]

The HWNs D028 (1,2-dichloroethane) and D029 (1,1-dichloroethylene) were assigned in the AK documentation associated with RF and RL feedstock to the BN510.1 WSPF. The D028 and D029 HWNs are assigned to the supercompacted debris waste stream.[18, 29, 31, 41]

1.7.2.6 Listed Waste

F-Listed HWNs. The supercompacted debris waste stream contains constituents associated with RCRA-listed waste HWNs. See Table 3 for process-related activities associated with the HWNs.

The BN510.1 supercompacted debris waste stream is assigned the F-listed HWNs: F001, F002, F004, F005, F006, F007, and F009. These F-Listed HWNs were historically assigned to feedstock waste by the original generator of the waste, for spent solvents used for cleaning, degreasing, and laboratory operations, and from electroplating operations. [1, 6, 7, 16, 29, 40, 41, 43]

The HWNs: F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) and F002 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. In addition, the F002 hazardous waste constituents 1,2-dichlorobenzene, chlorobenzene were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWNs F001 and F002.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Non-halogenated F003 solvent constituents (e.g., acetone, cyclohexanone, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butly alcohol, and xylenes) were identified in the AK and PK record as contaminants associated with the supercompactor debris waste feedstock. The BN510.1 waste stream does not exhibit the characteristic of ignitability. Therefore the F003 HWN is not assigned to the supercompacted debris waste stream.[1]

The HWN F004 (cresols and nitrobenzene) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The resultant supercompacted debris waste retains the listed HWNs assigned to the supercompactor feedstock based on current regulatory requirements (i.e., the RCRA derived-from rule). Therefore, supercompacted debris waste stream is assigned the EPA HWN F004.[29, 40, 41]

The HWN F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine, and toluene) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWN F005.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The HWNs F006, F007 and F009 were assigned based on AK documentation associated with RF feedstock and HWNs F007 and F009 were also assigned based on AK documentation associated with MD feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste is assigned the F006, F007, and F009 EPA HWNs.[1, 6, 7, 16]

P-, U- and K- Listed HWNs. The feedstock debris wastes in this waste stream are not discarded, unused, commercial chemical products, off-specification species, or manufacturing intermediates and do not contain spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33, Discarded Commercial Chemical Products, off-Specification Species, Container Residues, and Spill Residues thereof . In addition, the waste materials in this waste stream were not mixed with, or derived from, the treatment, storage, or disposal of P- or U-listed waste. As a result, P- or U-listed HWNs are not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Although hydrofluoric acid was identified as a chemical contaminant associated with the supercompactor debris waste feedstock, only spent forms of hydrofluoric acid would have contaminated the feedstock debris waste. Based on this information, the U134 HWN is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Based on a review of AK, it was determined that the BN510.1 waste stream will contain less than one percent beryllium by weight. Beryllium is a contaminant associated with this waste. The source of the beryllium is not associated with a powdered form and is not associated with unused commercial chemical product, an off-specification species, or a container residue, and does not contain a spill residue thereof. The P015 HWN for beryllium powder is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The waste materials within this waste stream are not hazardous waste from specific sources listed in 40 CFR 261.32, Hazardous Wastes from Specific Sources, (i.e., K-listed hazardous waste) and they have not been mixed with; derived from the treatment, storage, or disposal of K-listed wastes; and do not contain spill residues thereof. The waste materials in this waste stream are not assigned K-listed HWNs. [1, 6, 7, 8, 9, 29, 40, 41, 43]

Toxic Substances Control Act (TSCA) Regulated Contaminants. Polychlorinated biphenyl items with PCB concentrations equal to or exceeding 50 parts per million are not expected in the BN510.1 waste stream.

Drums of debris waste feedstock identified during RTR/VE as containing PCB items are segregated or sent to DWPG or SCW for item removal.[1, 17, 30, 31] PCB items identified in boxed debris are removed during boxline operations. PCB items removed from debris waste feedstock drums and boxes are packaged as newly generated waste and are not authorized as supercompactor debris waste feedstock.

Asbestos has been identified in some of the debris feedstock waste. Any containers identified as containing regulated types or quantities (e.g., greater than 1% of friable asbestos)

will be labeled, as required, in accordance with TSCA and Occupational Safety and Health Administration regulations.

Other Applicable Waste Streams. The AMWTP BN510 waste stream is pertinent to the BN510.1 waste stream. The IDCs identified within Appendix A includes IDCs previously identified within the BN510 WIPP-approved WSPF. The EPA HWNs assigned to the BN510 WSPF included D004 through D011, D022, D028, D029, F001, F002, F005, F006, F007, and F009.[31] The EPA HWNs assigned to BN510.1 include D004 through D011, D022, D027, D028, D029, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009. The addition of the D027, D034, D037, D043 and F004 HWNs is due to AK associated with the inclusion of RL debris waste into the supercompactor feedstock.[29, 40, 41]

1.8 Radionuclides

The radionuclides of concern for BN510.1 are ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are not expected to be present in measurable quantities in debris waste feedstock from RF except for IDC RF-480 due to disposal of isotopic sealed source material. Cesium-137 and computed ^{90}Sr are anticipated radionuclides for IDC RF-480 feedstock and may be detected during NDA. Cesium-137 and ^{90}Sr were identified as potentially present in MD, BC, and RL debris waste. [7, 8, 9, 14, 29]

At a minimum, the ratios of the two most prevalent radionuclides in the isotopic mix are compared to confirm existing AK data in compliance with contact-handled (CH)-WAC requirements. The two most prevalent radionuclides expected in the majority of AMWTP supercompacted debris waste product drums are ^{239}Pu and ^{240}Pu. This is based on a review of product drums included in the BN510 WSPF; however, the prevalent radioisotopes in some product drums of supercompacted debris waste may be a combination of ^{239}Pu and a different second TRU or uranium isotope due to commingling of wastes.

Table 4 identifies the predominant radionuclides and the principle source of those radionuclides for each of the original generators and for the supercompacted debris wastes.[7, 8, 9, 14, 29] For waste containers that have multiple generators and therefore a mixture of weapons grade plutonium (WG Pu), enriched uranium (EU), depleted uranium (DU), heat source isotopes, and fuel grade plutonium, a combination of any two of the common isotopes identified may be detected as the most prevalent. Radioassay data are reviewed and assessed by AMWTP NDA personnel as described in the RPT-TRUW-03, Drum Assay Technical Review Report.[15]

The radioisotopic content for each AMWTP supercompacted debris waste 100-gallon product drum will be calculated based on the aggregate of the NDA results for each of the compacted debris waste feedstock drums contained therein. The POS is used to ensure that each payload container does not exceed WAC weight or dose limits and complies with the required TRU activity (greater than 100 nCi/g). The direct feed 55-gallon drums will contain at least one TRU radionuclide greater than the lower limit of detection (LLD). The 100-gallon product drums that contain puck(s) with TRU radionuclides at less than LLD from the boxline feed, as determined by 55-gallon drum assay, are assayed using the Super HENC (high energy neutron counter) for final TRU determination.

Table 4. Predominant radionuclides expected in debris wastes by generator site.

Generator Site	Principal Plutonium Source	Predominant Radionuclides by Activity
RF	WG	^{239}Pu, ^{240}Pu
RF	WG, DU, EU	^{239}Pu (^{235}U or ^{238}U)
MD	WG	^{239}Pu, ^{240}Pu
MD	Heat source	^{238}Pu, ^{239}Pu
BC	WG	^{239}Pu, ^{240}Pu
RL	Combination WG Pu, fuels-grade Pu	^{239}Pu (^{241}Pu or ^{241}Am)
BN	WG (RF waste)	^{239}Pu, ^{240}Pu
BN	Combination WG Pu, heat source Pu	^{238}Pu, ^{239}Pu
BN	Combination WG Pu, heat source Pu, uranium, fuels-grade Pu	^{239}Pu (^{240}Pu, ^{241}Pu, ^{238}Pu, ^{241}Am, ^{235}U or ^{238}U)

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

BN510.1 consists of supercompacted drums of debris waste (pucks) placed directly into 100-gallon product drums. There are no inner packagings or layers of confinement associated with the 100-gallon product drums. There is a filtered lid on the 100-gallon drums. If 100-gallon drums become damaged, they are packaged into SWBs for shipment to WIPP.

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas (HSG) sampling and analysis is performed when required by the WIPP-Waste Acceptance Plan and/or CH-TRAMPAC. At a minimum, the HSG analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 parts per million flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[26]

3.0 REFERENCES

NOTE: *Advanced Mixed Waste Treatment Project documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

1. RPT-TRUW-12, AMWTP Waste Stream Designations
2. MLJ-004-10, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream, September 1, 2010. [C850A]
3. DOE/WIPP 01-3194, CH-TRU Waste Content Codes (CH-TRUCON)
4. DOE/LLW-217, DOE Waste Treatability Group Guidance, 1995. [P670A]
5. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste
6. RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste
7. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant
8. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste
9. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory
10. INST-FOI-20, Supercompactor and Post-Compaction Operations
11. INST-FOI-17, Facility Visual Examination Operations
12. MLJ-02-10, Memorandum to File, Waste Material Parameter (WMP) Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream, March 10, 2010. [C851A]
13. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation
14. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge
15. RPT-TRUW-03, Drum Assay Technical Review Report
16. Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, May 5, 1994-March 5 2001. [P052A]
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19. Correspondence from DOE Carlsbad Area Office to J.M. Roberson, RFFO, and J.M. Wilcynski, INEEL, Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), May 20, 1997. [C191A]

20. Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, February 1993. [P380A]

21. Interview of J.B. Williamson, BCL, regarding Historical Operations Conducted in JN-4, September 2000. [C258A]

22. Interview of David Freas, BCL, regarding Historical Operations in Building JN-4, September 2000. [C259A]

23. Interview of William Pardue, BCL, regarding Historical Operations in Building JN-4, October 2000. [C260A]

24. DOE, Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant, 1997. [P203A]

25. Correspondence from Frank Marcinowski to EM-13 (Stan Wolf, 301-903-7962), Process for TRU Waste Defense Determination, February 2005. [C329A]

26. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), Central Characterization Project [P672A]

27. MP-TRUW-8.2, Quality Assurance Project Plan

28. DOE/TRU-11-3425, Annual Transuranic Waste Inventory Report - 2011, U.S. Department of Energy, Carlsbad Field Office, Rev. 0. [P1374A]

29. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP

30. INST-FOI-23, Special Case Waste Operations

31. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

32. INST-OI-12, Real-Time Radiography Operations (Drum)

33. INST-OI-34, Non-Facility Visual Examination Operations

34. INST-FOI-01, In-Plant Drum Assay Operations

35. INST-OI-14, Drum Assay Operations

36. RPT-TRUW-05, Waste Matrix Code Reference Manual

37. Correspondence from the EPA to Donald C. Cadbury, National TRU Program CBFO, June 10, 2010. [C869S]

38. Material Safety Data Sheet, Micro-Cel®E, Celite Corporation, January 17, 2007 [P808S]

39. Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005, and November 11, 2008 [P881S]

40. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]

41. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]

42. Material Safety Data Sheets for Petroset II and Petroset IIG, Fluid Tech, Inc. June 8, 1998, and March14, 2006. [P657S]

43. CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4, 2010 [P855A]

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48. Material Safety Data Sheets for Universal PIG® Absorbents (MSD-014) New Pig Corp., October 10, 2011. [P1376S]

49. Material Safety Data Sheets for Oil-Only PIG® Absorbents (MSD-016) New Pig Corp., August 3, 2011. [P1377S]

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51. 49 CFR 173, Shippers – General Requirements for Shipments and Packagings

Appendix A – Supercompactor Debris Waste Feedstock

The following table lists the authorized debris waste feedstock by original generator and IDC.[7, 8, 9, 29, 36]

Waste Type	Site	IDC	Description
COMBUSTIBLES	RF	010	Paper & Rags
	RF	020	Wood & Benelex
	RF	030	Plastic
	RF	040	Rubber
	RF	33A	WIPP Experimental Test Program (WETP) Bin Program-Combustibles A (IDCs 335, 336, 337 and 339)
	RF	33B	WETP Bin Program – Combustibles B (IDCs 330, 337, and 339)
	RF	302	Benelex® and Plexiglas®
	RF	330	Paper and Rags-Dry
	RF	336	Paper and Rags-Moist
	RF	337	Plastic, Teflon®, Washables, PVC
	RF	339	Leaded Rubber Gloves and Aprons
	RF	430	Unleached Ion Column Resin
	RF	431	Leached Resin
	RF	460	Washables, Rubber, Plastic
	RF	463	Leaded Rubber Gloves and Aprons
	RF	464	Benelex® and Plexiglas®
	RF	833	Plastics, TRU Mixed
	RF	831	Dry Combustibles
	RF	832	Wet Combustibles
	RF	900	Low specific activity (LSA) Paper, Plastics, Etc.
	RF	970	Wood
FILTERS	RF	328	Ful-Flo® Incinerator Filters
	RF	335	Absolute 8 × 8 Filters
	RF	338	Insulation and Chemical Warfare Service (CWS) Filter Media
	RF	360	Insulation
	RF	376	Cemented Insulation & Filter Media

Waste Type	Site	IDC	Description
	RF	490	High efficiency particulate air Filters and CWS Filters
	RF	491	Plenum Prefilters
GRAPHITE	RF	070	Graphite
	RF	300	Graphite Molds
	RF	301	Graphite Cores
	RF	303	Scarfed Graphite Chunks
	RF	310	Graphite Scarfings
	RF	312	Coarse Graphite
HETEROGENEOUS	BC	201	Non-combustible solids
	BC	202	Combustible Solids-Paper/Cloth
	BN	508	AMWTP Newly Generated Debris
	BN	510	Supercompacted Debris
	BN	550	Supercompacted Debris (BN510.1)
	MD	801	Rags, Paper, Wood, etc.
	MD	802	Dry Box Gloves & O-Rings
	MD	803	Metal, Equipment, Pipe, Valves, etc.
	MD	804	Plastic, Tygon®, Mani-Boots, etc.
	MD	805	Asbestos Filters
	MD	810	Glass, Flasks, Sample Vials, Etc.
	MD	813	Glass Filters and Fiberglass
	MD	814	Graphite Waste
	MD	824	Equipment Boxes, Non-combustible
	MD	825	Equipment Drums, Non-combustible
	MD	826	Equipment Boxes, Combustible
	MD	827	Equipment Drums, Combustible
	MD	838	<10 nCi/g Non-combustible
	MD	847	LSA <100 nCi/g Combustible
	MD	848	LSA <100 nCi/g Non-combustible
	RF	241	Americium Process Residue
	RF	372	Grit
	RF	374	Blacktop, Concrete, Dirt, and Sand
	RF	750	Pits 11 and 12 Debris
	RF	760	Pad 1 Cells 1 and 2 RF Debris
	RF	950	LSA Metal, Glass, etc.

Waste Type	Site	IDC	Description
	RF	960	Concrete, Asphalt, etc.
	RL	712	Hanford Plutonium Finishing Plant Debris
	RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
	RL	716	Hanford 231-Z Building Debris
INORGANIC NON-METAL	RF	060	Glass
	RF	440	Glass
	RF	441	Raschig Rings, Unleached
	RF	442	Raschig Rings, Leached
	RF	44A	WETP Bin Program – Glass (IDCs 440 and 442)
	RF	368	Magnesium Oxide Crucibles
	RF	370	LECO Crucibles
	RF	371	Fire Brick
	RF	377	Coarse Fire Brick
	RF	391	Crucibles & Sand
	RF	392	Sand, Slag, and Crucible
LEAD/CADMIUM METAL	RF	488	Glovebox Parts w/Lead
UNCATEGORIZED METAL	RF	050	Metal Scrap
	RF	48A	WETP Bin Program – Metals (IDCs 480 and 481)
	RF	320	Heavy Non-special Source Metal
	RF	321	Lead
	RF	416	Zinc Magnesium Alloy Metals
	RF	480	Scrap Metal (Non SS)
	RF	481	Leached Metals (Non SS)

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BN510.1.R0

AK Source Document / Rev. Number : RPT-TRUW-83, Rev. 0

HWN	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X					X	✔
F002	X					X	✔
F003							✔
F004	X					X	✔
F005	X					X	✔
F006	X					X	✔
F007	X					X	✔
F009	X					X	✔
D004	X					X	✔
D005	X					X	✔
D006	X					X	✔
D007	X					X	✔
D008	X					X	✔
D009	X					X	✔
D010	X					X	✔
D011	X					X	✔
D022	X					X	✔
D027	X					X	✔
D028	X					X	✔
D029	X					X	✔
D030	X					X	✔
D034	X					X	✔
D037	X					X	✔
D043	X					X	✔

AK Expert: Tim Venneman Date: 9-2-10
Print/Sign

Site Project Manager: Steve Capanta Date: 9.21.10
Print/Sign

Implementing Document: MP-TRUW-8.13

Waste Stream or Waste Type Description: Supercompacted debris

Waste Stream or IDC Number: BN510.1

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C018A, C048A, C053A, C067A, C072A, C074A, C082A, C087A, C102A, C155A, C162A, C170A, C171A, C182A, C184A, C185A, C254A, C289A, C295A, C296A, C299A, C320A, C322A, C344A, C351A, C358A, C375A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C478A, C486A, C488A, C490A, C491A, C522A, C533A, C789S, C869S, C872A, C884A, C885A, C889A, C891A, C892A, C897A, C904A, C913A, C916A, C920A, C921A, C924A, C928A, C932A, C934A, D007A, D023A, D029A, D030A, D061A, D085A, P001A, P006A, P012A, P014A, P016A, P024A, P035A, P037A, P038A, P049A, P052A, P058A, P060A, P061A, P062A, P067A, P076A, P079A, P082A, P083A, P090A, P097A, P098A, P1000A, P1001A, P1002A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1016A, P1017A, P1019A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1029A, P1031A, P1033A, P1034A, P1036A, P1037A, P1039A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1056A, P1058A, P109A, P113A, P117A, P127A, P153A, P164A, P167A, P198A, P221A, P222A, P223A, P224A, P225A, P319A, P328A, P333A, P335A, P336A, P345A, P347A, P350A, P351A, P352A, P357A, P368A, P369A, P370A, P380A, P381A, P385A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P507A, P509A,

Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P525A, P526A, P527A, P540A, P544A, P545A, P546A, P550A, P551A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P733S, P736A, P744A, P746A, P816A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P928A, P932A, P936A, P941A, P950A, P953A, P954A, P957A, P964A, P965A, P966A, P969A, P972A, P974A, P975A, P976A, P977A, P978A, P979A, P981A, P982A, P983A, P984A, P985A, P986A, P987A, P988A, P990A, P991A, P993A, P995A, P996A, P997A, P998A, P999A, U013A, U032A, U043A, U047A, U052A, U056A, U059A, U069A, U077A, U126A, U139A, U141A, U145A, U146A, U148A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U198A, U202A, U203A, U204A, U207A, U244A, U248A, U256A, U261A, U267A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste stream volume and time period of generation.	WS2	C048A, C072A, C118A, C254A, C289A, C294A, C295A, C296A, C322A, C348A, C359A, C372A, C375A, C379A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C499A, C507A, C522A, C526A, C534A, C535A, C542S, C543S, C620A, C850A, C851A, C855A, C856A, C861A, C869S, C887A, C889A, C891A, C892A, C895A, C904A, C912A, C913A, C915A, C916A, C919A, C920A, C924A, C931A, C934A, D029A, D030A, D040A, D061A, P024A, P052A, P061A, P090A, P1000A, P1004A, P1007A, P1008A, P1009A, P1012A, P1014A, P1015A, P1016A, P1020A, P1022A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1031A, P1033A, P1034A, P1036A, P1039A, P1046A, P1051A, P1057A, P1058A, P113A, P127A, P153A, P164A, P205A, P221A, P222A, P223A, P224A, P225A, P237A, P246A, P318A, P319A, P328A, P333A, P354A, P357A, P364A, P365A, P368A, P380A, P400A, P417A, P418A, P442A, P443A, P461A, P462A, P469A, P482A, P486A, P487A, P498A, P499A, P501A, P505A, P506A, P507A, P509A, P511A, P517A, P519A, P522A, P523A, P524A, P567A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P671S, P717A, P743A, P744A, P746A, P826A, P838A, P853A, P854A, P855A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P954A, P958A, P960A, P963A, P964A, P972A, P976A, P978A, P981A, P983A, P985A, P986A, P990A, P997A, P998A, P999A, U022A, U059A, U069A, U122A, U126A, U127A, U139A, U141A, U142A, U146A, U148A, U154A, U159A, U166A, U187A, U197A, U198A, U202A, U207A, U218A, U235S, U248A, U249A, U255A, U257A, U258A, U261A, U264A, U266A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C005A, C008A, C014A, C018A, C050A, C053A, C061A, C082A, C087A, C100A, C171A, C175A, C180A, C181A, C184A, C185A, C254A, C257A, C258A, C260A, C444A, C458A, C466A, C473A, C481A, C872A, C879A, C880A, C888A, C894A, C897A, C904A, C912A, C925A, C926A, C934A, D037A, D080A, P001A, P012A, P014A, P015A, P016A, P024A, P035A, P037A, P038A, P039A, P049A, P052A, P053A, P055A, P056A, P058A, P059A, P060A, P061A, P062A, P067A, P070A, P076A, P078A, P079A, P081A, P082A, P083A, P092A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1014A, P1015A, P1018A, P1019A, P1022A, P1023A, P1024A, P1025A, P1026A, P1028A, P1029A, P103A, P1047A, P104A, P1050A, P1051A, P1052A, P1056A, P1057A, P1058A, P106A, P109A, P110A, P114A, P117A, P124A, P163A, P164A, P167A, P175A, P205A, P221A, P222A, P223A, P224A, P225A, P282A, P319A, P335A, P341A, P345A, P347A, P352A, P357A, P368A, P369A, P380A, P400A, P403A, P404A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P482A, P483A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P504A, P505A, P507A, P511A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P526A, P527A, P546A, P558A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P743A, P744A, P746A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P904A, P913A, P922A, P936A, P941A, P944A, P947A, P948A, P949A, P950A, P955A, P957A, P958A, P959A, P962A, P964A, P970A, P972A, P973A, P974A, P975A, P977A, P979A, P980A, P982A, P985A, P986A, P987A, P988A, P989A, P990A, P993A, P995A, P996A, P997A, P998A, P999A, U011A, U015A, U022A, U047A, U052A, U056A, U073A, U077A, U086A, U091A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U244A, U256A, U265A, U266A

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C027A, C041A, C050A, C051A, C060A, C063A, C064A, C070A, C072A, C078A, C078A, C081A, C083A, C084A, C086A, C090A, C091A, C093A, C094A, C095A, C096A, C099A, C100A, C101A, C102A, C105A, C107A, C119A, C123A, C155A, C162A, C178A, C179A, C181A, C184A, C186A, C187A, C198A, C205A, C245A, C246A, C251A, C253A, C255A, C257A, C258A, C259A, C260A, C261A, C262A, C263A, C269A, C322A, C342A, C344A, C349A, C350A, C354A, C356A, C359A, C373A, C375A, C385A, C409A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C486A, C488A, C489A, C490A, C493A, C496A, C505A, C533A, C546S, C871A, C872A, C889A, C890A, C891A, C892A, C898A, C900A, C901A, C902A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C925A, C926A, C927A, C937A, C940A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D061A, D070A, D076A, D082A, D083A, D084A, P002A, P006A, P015A, P016A, P021A, P024A, P033A, P035A, P037A, P038A, P052A, P053A, P056A, P060A, P061A, P062A, P067A, P068A, P076A, P078A, P079A, P081A, P083A, P091A, P092A, P094A, P098A, P1003A, P1004A, P1005A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1034A, P1036A, P1039A, P1047A, P1048A, P1052A, P106A, P108A, P109A, P113A, P114A, P151A, P163A, P164A, P205A, P207A, P214A, P215A, P221A, P222A, P223A, P224A, P225A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P319A, P324A, P328A, P334A, P335A, P336A, P337A, P341A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P359A, P365A, P368A, P369A, P380A, P393A, P400A, P401A, P403A, P404A, P405A, P406A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P457A, P458A, P461A, P462A, P463A, P469A, P475A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P497A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P509A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P527A, P532A, P534A, P539A, P545A, P546A, P552A, P591A, P592A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P657S, P660A, P667A, P717A,

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	P744A, P752A, P808S, P853A, P854A, P855A, P857A, P867S, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P896A, P900A, P902A, P903A, P904A, P905A, P908A, P913A, P914A, P915A, P916A, P917A, P918A, P919A, P920A, P921A, P922A, P925A, P926A, P930A, P931A, P935A, P937A, P947A, P948A, P949A, P950A, P951A, P958A, P960A, P961A, P963A, P965A, P972A, P973A, P974A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P989A, P990A, P991A, P993A, P994A, P995A, P998A, U005A, U013A, U019A, U020A, U022A, U030A, U032A, U043A, U047A, U062A, U086A, U097A, U113A, U126A, U132A, U140A, U141A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U192A, U195A, U197A, U202A, U204A, U205A, U208A, U218A, U244A, U247A, U248A, U251A, U252A, U253A, U255A, U257A, U263A, U265A, U266A

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C005A, C007A, C015A, C018A, C022A, C051A, C063A, C066A, C089A, C090A, C103A, C104A, C120A, C184A, C186A, C187A, C204A, C254A, C255A, C257A, C258A, C280A, C289A, C293A, C294A, C295A, C296A, C299A, C313A, C315A, C316A, C319A, C323A, C330A, C332A, C335A, C337A, C348A, C349A, C350A, C370A, C373A, C375A, C376A, C378A, C379A, C383A, C409A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C478A, C479A, C481A, C485A, C486A, C489A, C490A, C491A, C496A, C499A, C504A, C505A, C515A, C520A, C521A, C526A, C530A, C531A, C533A, C534A, C546S, C550S, C566S, C789S, C834A, C840S, C841S, C851A, C869S, C871A, C872A, C873A, C880A, C883A, C885A, C886A, C891A, C892A, C893A, C895A, C896A, C897A, C904A, C905A, C907A, C911A, C912A, C913A, C915A, C916A, C917A, C918A, C921A, C924A, C929A, D022A, D042A, D049A, D061A, D079A, D085A, P001A, P006A, P008A, P009A, P012A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P032A, P035A, P037A, P038A, P039A, P043A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P063A, P064A, P076A, P083A, P090A, P094A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1010A, P1011A, P1013A, P1014A, P1016A, P1017A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1033A, P1036A, P1039A, P1040A, P1041A, P1046A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1055A, P1056A, P113A, P116A, P117A, P141A, P154A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P282A, P283A, P305A, P306A, P316A, P319A, P328A, P333A, P334A, P335A, P336A, P342A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P365A, P368A, P370A, P372A, P380A, P381A, P384A, P385A, P393A, P399A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P465A, P469A, P475A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A,

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	P636A, P637A, P638A, P649A, P650A, P654S, P657S, P660A, P667A, P670A, P717A, P736A, P744A, P746A, P752A, P816A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P906A, P911A, P914A, P915A, P916A, P917A, P918A, P919A, P921A, P922A, P931A, P947A, P948A, P957A, P963A, P964A, P968A, P969A, P970A, P971A, P972A, P973A, P974A, P977A, P978A, P979A, P980A, P981A, P982A, P983A, P985A, P986A, P989A, P991A, P993A, P995A, P996A, P997A, U004A, U009A, U022A, U028A, U097A, U113A, U126A, U139A, U141A, U145A, U146A, U153A, U154A, U156A, U157A, U159A, U166A, U175A, U176A, U184A, U187A, U189A, U190A, U191A, U192A, U195A, U197A, U198A, U204A, U205A, U206A, U207A, U208A, U218A, U219S, U230A, U243A, U244A, U246A, U247A, U248A, U250A, U252A, U255A, U263A, U266A

Generator site TRU waste stream (WS) - specific information		
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C021A, C048A, C060A, C064A, C070A, C076A, C078A, C079A, C081A, C083A, C084A, C091A, C093A, C094A, C095A, C096A, C099A, C101A, C102A, C107A, C117A, C119A, C123A, C192A, C199A, C205A, C245A, C253A, C255A, C257A, C258A, C260A, C261A, C262A, C263A, C299A, C313A, C320A, C354A, C458A, C481A, C493A, C509A, C566S, C607A, C840S, C841S, C883A, C889A, C890A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C921A, C924A, C926A, C927A, C932A, C936A, C939A, C940A, D005A, D008A, D009A, D013A, D014A, D015A, D016A, D017A, D018A, D020A, D024A, D025A, D027A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D064A, D070A, D076A, D077A, D078A, D081A, D082A, P009A, P012A, P013A, P015A, P016A, P017A, P021A, P022A, P023A, P035A, P038A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P062A, P067A, P079A, P080A, P094A, P1003A, P1012A, P1013A, P1015A, P1016A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1039A, P1045A, P1047A, P1052A, P108A, P114A, P151A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P239A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P316A, P324A, P334A, P335A, P336A, P337A, P351A, P356A, P357A, P365A, P368A, P380A, P393A, P400A, P417A, P418A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P486A, P487A, P489A, P490A, P491A, P492A, P503A, P505A, P506A, P509A, P512A, P517A, P519A, P520A, P527A, P532A, P539A, P592A, P594A, P599A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P717A, P733S, P743A, P744A, P756A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P892A, P893A, P894A, P914A, P915A, P916A, P917A, P918A, P924A, P930A, P931A, P948A, P949A, P950A, P957A, P958A, P959A, P964A, P972A, P977A, P978A, P979A, P980A, P981A, P983A, P984A, P986A, P994A, U005A, U011A, U015A, U020A, U022A, U030A, U046A, U059A, U060A, U062A, U082A, U085A, U086A, U087A, U088A, U089A, U090A, U097A, U102A, U103A, U113A, U142A, U184A, U185A, U190A, U192A, U199A, U205A, U206A, U208A, U218A, U244A, U249A, U254A, U255A, U263A, U265A

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C072A, C130A, C134A, C137A, C174A, C180A, C184A, C210A, C221A, C255A, C256A, C281A, C285A, C291A, C338A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C373A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C453A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C489A, C490A, C491A, C494A, C505A, C506A, C508A, C517A, C523A, C551A, C552S, C566S, C840S, C841S, C867S, C871A, C874A, C884A, C889A, C891A, C892A, C893A, C894A, C895A, C896A, C899A, C903A, C905A, C910A, C911A, C912A, C913A, C915A, C917A, C919A, C920A, C921A, C922A, C923A, C925A, C932A, C938A, D022A, D051A, D079A, P016A, P024A, P035A, P038A, P053A, P056A, P061A, P062A, P067A, P076A, P078A, P079A, P081A, P083A, P090A, P092A, P094A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1006A, P1007A, P1008A, P1009A, P1010A, P1012A, P1013A, P1014A, P1015A, P1018A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1029A, P1033A, P1034A, P1035A, P1036A, P1040A, P1046A, P1047A, P1048A, P104A, P1051A, P1052A, P1054A, P1057A, P1058A, P115A, P117A, P155A, P156A, P163A, P164A, P189A, P190A, P194A, P195A, P198A, P221A, P222A, P223A, P224A, P227A, P230A, P231A, P232A, P233A, P234A, P235A, P236A, P240A, P282A, P283A, P294A, P295A, P305A, P306A, P307A, P319A, P322A, P348A, P349A, P353A, P354A, P355A, P357A, P368A, P380A, P381A, P385A, P398A, P400A, P417A, P418A, P423A, P435S, P442A, P443A, P448A, P449A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P467A, P469A, P472A, P482A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P594A, P604A, P610A, P611A, P621A, P622A, P632A, P633A, P635A, P636A, P637A, P638A,

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	P649A, P650A, P660A, P743A, P744A, P745A, P759S, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P913A, P928A, P929A, P936A, P937A, P939A, P949A, P950A, P954A, P957A, P958A, P960A, P961A, P963A, P964A, P965A, P969A, P970A, P972A, P973A, P974A, P975A, P977A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P987A, P988A, P989A, P990A, P991A, P993A, P994A, P996A, P998A, P999A, U022A, U047A, U073A, U126A, U137A, U139A, U141A, U142A, U147A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U166A, U168A, U169A, U170A, U172A, U173A, U184A, U185A, U187A, U189A, U190A, U192A, U195A, U198A, U199A, U202A, U203A, U205A, U208A, U235S, U243A, U244A, U247A, U248A, U249A, U250A, U251A, U252A, U253A, U255A, U257A, U259A, U260A, U262A, U263A, U264A, U265A, U266A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C196A, C199A, C214A, C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C511A, C516A, C530A, C531A, C532A, C568S, C613S, C614S, C615S, C616S, D035A, D070A, P001A, P012A, P013A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P053A, P063A, P215A, P221A, P222A, P223A, P224A, P225A, P237A, P319A, P356A, P357A, P358A, P368A, P370A, P372A, P385A, P399A, P400A, P403A, P405A, P412A, P417A, P418A, P442A, P443A, P461A, P462A, P465A, P486A, P487A, P492A, P525A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P733S, P744A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, U113A, U126A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: William J. Erhardt — Print/Sign — Date: 9-21-10

Site Project Manager: Steve Carpenter — Print/Sign — Date: 9.21.10

LDR NOTIFICATION- IDC BN510.1

WASTE STREAM BN510.1

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	D022	September 19, 1996
	D027	September 19, 1996
	D028	September 19, 1996
	D029	September 19, 1996
	D030	September 19, 1996
	D034	September 19, 1996
	D037	September 19, 1996
	D043	September 19, 1996
	F001	Nov 8, 1986
	F002	Nov 8, 1986
	F004	Nov 8, 1986
	F005	Nov 8, 1986
	F006	July 8, 1989
	F007	July 8, 1989
	F009	July 8, 1989

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

September 9, 2010 C-2010-0320

Mr. Rick Chavez
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Submittal of Waste Stream Profile BN510.1 - ET-054-10

Dear Mr. Chavez:

This letter accompanies the Waste Stream Profile BN510.1, *Supercompacted Debris Waste*, and RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*, for your review and approval. We believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

TEV/ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
Marc Italiano, CBFO
James M. Jackson, BBWI
Talley W. Jenkins, Jr., DOE-ID
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Wesley A. Skaar, BBWI
Matthew E. Storms, BBWI
J. R. Strobiel, CBFO
Jerry L. Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

September 10, 2010 C-2010-0325

Mr. Rick Chavez
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Re-Submittal of Waste Stream Profile BN510.1 - ET-056-10

Dear Mr. Chavez:

This letter accompanies the Waste Stream Profile BN510.1, *Supercompacted Debris Waste*, and RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*, for your review and approval. Your comments have been resolved and we believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Steve Carpenter at 208-680-1127.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
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Wesley A. Skaar, BBWI
Matthew E. Storms, BBWI
J. R. Stroblel, CBFO
Jerry L. Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-12, Rev. 18

AMWTP Waste Stream Designations

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-10324.)
James Jackson
TRU Programs Manager

08/31/11
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/27/03	All	DCR-2378-1. Create RPT-12 from EDF-199
1	11/20/03	Various	DCR-2528. Update TRUCONs, add newly created IDC 512 and applicable data, add EPA HWN F003.
2	03/07/05	All	DCR-4022. Revise paragraph following flowchart; edit for clarification.
3	07/12/05	All	DCR-4229. Incorporate IDC information to be consistent with RPT-TRUW-05, Waste Matrix Code Reference Manual.
4	09/13/05	Table 1, Figure 1	DCR-4477. Update Table 1 and Figure 1 to be consistent with RPT-TRUW-05.
5	11/30/05	All	DCR-4666. Incorporate information concerning PCB items shippable to WIPP, characterization data for approved WSPFs, and identification of new waste streams.
6	03/06/06	All	DCR-4822. Incorporate new approved profile, CCP waste streams, retrieval, and to address newly generated waste.
7	07/11/06	All	DCR-4874. Reflect a streamlined approach to using certain project scoping documents (RPTs 05, 06, 07 and 12).
8	08/15/06	Various	DCR-5224. Document recent PCB contamination incidents.
9	07/17/07	All	DCR-6155. Incorporate revision log; annual update to reflect current operations prior to audit.
10	8/27/08	All	DCR-6333. Re-write. Remove MLLW IDCs from Appendix B.
11	07/01/09	Table 6b, Page 41	DCR-7530. Rewrite.
12	08/04/09	Various	DCR-8505. Revise document to include new IDCs to support operations (Add IDCs BN-528, BN-529, BN-536, BN-537). Changed IDC description on BN-520 and BN-521 to be consistent with recent changes noted in RPT-TRUW-05. Update PCB information to include new IDCs managed as PCB waste. Deleted MLLW BN IDCs (i.e., BN-607 through BN-617). Provided clarification.

Revision Number	Date Approved	Pages Affected	Description of Revision
13	03/09/10	Various	DCR-8588. Deleted IN-151 and AW-151 from Appendix A they do not exist in WTS. Remove MX-142 WIPP WSPF HWNs to correct prior cut and paste error. Corrected Section 3.0 (#5 AMWTP Newly Generated IDCs) on page 19 to include BN-501, BN-511, IC-526, IC-603, and BN-616 as PCB regulated. Added IDCs: IC-527, BN-513, BN-514, BN-515, BN-522, BN-538, RF-749, RF-753, RF-754. Clarified PCB language on Appendix A Notes. Changed IDC description in Table A-1 for RF-095, RF-995, RF-337, BN-501, BN-507, BN-509, BN-511, IC-526 and IC-603. Clarified newly generated waste Section 8. Added Notes 20, 21, 22, and 23 in Table A-1 to clarify HWNs and applicable hazardous constituents assignment. Added references for CCP AK summaries. Insert new information relating to recent WIPP approval of BN222 WSP (i.e., RF IDCs: 292, 696/807b, 818 and 820). Made editorial changes.
14	08/02/10	Various	DCR-9295. Table 1: Changed IDC Description for IDC RF-374. Section 7.0: Provided additional clarification within Section 7.0 relating to HWDs. Figure 3: Replaced boxes for IDC RF-832 and MD-330 with RF-336 and RF-330, and corrected WMC S5330 to S5300. Section 9.0: Added references 96–114. Table A-1: Add new IDCs: GV-222, BN-518, BN-538, BN-550, IC-150, IC-151, IW-526, IW-527, IW-603, LL-212, LL-213, LL-221, RL-712, RL-714, and RL-716. Changed Waste Description for IDCs: BN-520, BN 521, AW-160, AW-164, AW-165, AW-167, NT 211, NT-212, NT-213, RF-374. Added new constituents for IDCs: BN-507, BN-514, BN-520, AW-165, AW-167, IC-526, IC-527, IC-603, SD-704, RF-760. Deleted IDCs: AW-142. Added footnotes 24, 25, and 26. Added missing IDC RF-303. Table A-2: Added new generator site codes: GV, LL, and RL.

Revision Number	Date Approved	Pages Affected	Description of Revision
15	11/03/10	Text and Appendix A	DCR-9523. Modified BN-508 HWNs to accommodate new BN510.1 WSPF list of HWNs and applicable references. Deleted Note 26 from BN-520. Deleted Note 25 from BN-508. Deleted Note 25 from BN-521. Deleted Note 26 as a reference to Appendix A. Added information on beryllium in Appendix A for supercompacted-related IDCs. Changed Section 7.1 to include RPT-TRUW-83 and BN510.1 WSPF and to clarify that BN510 feedstock inventory will not be included into BN510.1 WSPF. Added BN510.1 information to Table 4. Section 8.0: last paragraph add BN510.1 and references. Deleted footnote f. References: added reference #s 115 and 116.
16	03/03/11	2, 6, 10, 15, 16, A107 – A110	DCR 9720: Modified language to incorporate new WIPP definition of a waste stream, Add three new IDCs to WSPFs BNINW216 and one IDC to BN004 as a result of WIPP approval of change notices (i.e., RF-741, RF-742 and RF-744). Added IDCs: BN-534, IC-157 and IW-525. Updated Appendix A. Modified notes to Appendix A as needed. General editorial changes.
17	07/19/11	Various	DCR-10076. General grammar/editorial changes. Added IDCs: BN-550, RL-712, RL-714 and RL-716 to Table 1. Added new PCB IDCs BN-523 and IW-526 to PCB section. Deleted Section 7.2, AMWTP Retrieved Wastes/Repackaged Retrieved Wastes, including Figure 3, Example of the delineation scheme for supercompacted waste stream. Added References 123 through 143. Appendix A: Deleted blank rows. Moved ID/AW, BW and BX to alphabetic listing. Added IC-525 (P/U listed HWNs) and IC-602 (P/U listed HWNs). Added proposed (forthcoming) IDCs BN-523, BN-524 and BN-600. Added IDCs: AE-254, BN-519, BN-539, BN-607 through BN-617, IC-021, IC-152, IC-156, and IC -601. Added off-site cored waste IDCs LA-002, LA-003, LA-005, LA-006, LB-229, OR-250, RL-715, RL-720, SL-223, SL-224, SL-227, SR-251, SR-252, SR-253 and SR-835. Deleted IDCs: AW-156, AW-157, IW-525 and IW-602. Added hazardous constituents and HWNs as applicable.

Revision Number	Date Approved	Pages Affected	Description of Revision
18	8/31/11	Various	Added BN600 WSPF information. Added new PCB IDCs (IW-526, BN-526, BN-597, BN-603 and BN-598) Added New references 145 through 150 Added new IDCs to Appendix A (AE-230, AW-225, BN-525, BN-526, BN-527, BN-597, BN-598, BN-599, BN-602, BN-603 and SR-842. Added references to IW-526, IW-527 and IW-603 Added Note 25

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ACRONYMS

AE	Argonne National Laboratory-East (generator site code)
AK	acceptable knowledge
AKE	Acceptable Knowledge Expert
AKR	Acceptable Knowledge Resolution
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
ARP	Accelerated Retrieval Project
AW	Argonne National Laboratory-West (generator site code)
B&W	Babcock &Wilcox
BC	Battelle Columbus (generator site code)
BL	Bettis Atomic Power Laboratory (generator site code)
BN	AMWTP (generator site code)
BNFL	British Nuclear Fuels Limited
BW	Babcock & Wilcox (generator site code)
BX	Bendix-Grand Junction Operation Office (generator site code)
CAS	Chemical Abstract Service
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFA	Central Facilities Area
CFR	Code of Federal Regulations
CIS	Characterization Information Summary
CPP	Chemical Processing Plant
DOE	United States Department of Energy
EDF	engineering design file
EDMS	Electronic Document Management System
EPA	Environmental Protection Agency
ESS&H	Environmental, Security, Safety, and Health
FFCAct	Federal Facilities Compliance Act
GEN	generator
HGAS	headspace gas sampling
HWD	hazardous waste determination
HWMA	Hazardous Waste Management Act
HWN	Hazardous Waste Number
IC	INL Idaho Nuclear Technology and Engineering Center (formerly called Chemical Processing Plant; generator site code)
IDC	Item Description Code
IF	INL Central Facilities Area (generator site code)
IN	INL Naval Reactor Facility (generator site code)

INL	Idaho National Laboratory
IR	INL Reactor Technology Complex (formerly called Test Reactor Area; generator site code)
IW	INL Radioactive Waste Management Complex (generator site code)
JH	J. C. Haynes (generator site code)
LL	Lawrence Livermore National Laboratory (generator site code)
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
MD	Mound Laboratories (generator site code)
MFC	Materials Fuel Complex
MLLW	mixed low-level waste
MO	Monsanto-Dayton Laboratory (generator site code)
MX	^{241}Am waste from a smoke detector manufacturing company in Mexico (generator site code)
NDA	nondestructive assay
NRF	Naval Reactor Facility
NT	Nevada Test Site (generator site code)
NNSS	Nevada National Security Site
OASIS	Organic and Sludge Immobilization System
PCB	polychlorinated biphenyl
PK	process knowledge
PPE	personal protective equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (generator site code)
RH	remote handled
RL	Richland, Washington Hanford Site (generator site code)
RTR	real-time radiography
RWMC	Radioactive Waste Management Complex
SCG	Summary Category Group
SD	INL Subsurface Disposal Area (generator site code)
SDA	Subsurface Disposal Area
TBD	to be determined
TCA	1,1,1-trichloroethane
TCE	trichloroethylene
TRA	Test Reactor Area
TRU	transuranic
TSA	Transuranic Storage Area
TSCA	Toxic Substances Control Act
UCL_{90}	90% Upper Confidence Level

VE	visual examination
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMCG	Waste Matrix Code Group
WSP	Waste Stream Profile
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System

1.0 INTRODUCTION

The Advanced Mixed Waste Treatment Project (AMWTP) retrieves, characterizes, and packages transuranic (TRU) wastes for disposal at the Waste Isolation Pilot Plant (WIPP). The United States Department of Energy (DOE) originally identified an estimated 65,000 cubic meters that require characterization for disposal at WIPP. The majority of the waste received was originally generated at the following DOE facilities: Battelle Columbus, Bettis Atomic Power Laboratory, Mound Laboratories, and Rocky Flats Plant. The generator identification acronyms used for the Item Description Codes (IDCs) associated with these facilities are: BC, BL, MD, and RF, respectively. Additional wastes that comprise a portion of the current inventory and/or are to be received and managed in support of DOE TRU programs include, but are not limited to: Argonne National Laboratory-East (ANL-E), Argonne National Laboratory-West (ANL-W) / Idaho National Laboratory (INL) Materials Fuel Complex (MFC), Bendix-Grand Junction Operation Office, Hanford, INL Subsurface Disposal Area (SDA), INL Test Reactor Area (TRA), INL Central Facilities Area (CFA), INL Radioactive Waste Management Complex (RWMC), INL Chemical Processing Plant (CPP), INL Naval Reactor Facility (NRF), Monsanto-Dayton Laboratory, Nevada National Security Site (NNSS), Lawrence Livermore National Laboratory (LLNL), J. C. Haynesa, 241Am wastes from a smoke detector manufacturing company in Mexico, and wastes from Babcock and Wilcox (B&W). Generator identification acronyms associated with these facilities are: AE, AW, BX, RL, SD, IR, IF, IW, IC, IN, MO, NT, LL, JH, MX, and BW. Table A-2 provides a list of generator identification acronyms used for the IDCs associated with these facilities.

In addition, the AMWTP generates TRU-contaminated newly generated waste (i.e., BN) as a result of retrieval, characterization, storage, processing/treatment, and/or repackaging. AMWTP newly generated wastes are assigned the BN acronym in order to identify the generator of the wastes as AMWTP. This acronym previously reflected wastes generated during management by BNFL Inc., the initial operations contractor at AMWTP. The use of the current BN acronym does not reflect a particular contractor waste, but rather reflects AMWTP newly generated waste.

This report includes, but is not limited to, waste classification schemes, the identification of WIPP assigned Hazardous Waste Numbers (HWNs), and the identification of waste material (by IDCs associated with WIPP-approved Waste Stream Profile Forms [WSPFs]) covered under the current AMWTP scope of work or those developed by AMWTP's designee (e.g., Central Characterization Project [CCP]).

Appendix A summarizes hazardous waste constituents for TRU IDCs with the exception of non-INL off-site waste that is received for coring only. The information in Appendix A may be subject to change when additional acceptable knowledge (AK)/process knowledge (PK), or additional characterization is obtained, and will be revised as necessary to reflect finalized HWNs and/or changes to waste stream designations for TRU waste. At a minimum, all accessible and retrievably stored TRU wastes are managed as mixed waste unless final characterization results reflect a non-hazardous status.

Wastes destined for shipment to disposal facilities other than the WIPP are not covered by this document (e.g., low-level waste [LLW] or mixed low-level waste [MLLW] waste streams). Waste that cannot be disposed at WIPP are characterized and profiled by AMWTP organizations other than the AMWTP TRU program. Wastes not destined for disposal at WIPP are not subject to WIPP characterization requirements.

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a. An Ohio businessman that irradiated diamonds with ^{241}Am.

LLW/MLLW characterization and profile development are conducted through applicable Offsite LLW/MLLW Disposition Project requirements and in accordance with the receiving facility's offsite Waste Stream Profile (WSP) approval processes. Final LLW/MLLW characterization results may differ from those of the TRU waste program due to differences in the offsite receiving facility's waste acceptance criteria (WAC) and/or whether the waste undergoes AMWTP waste processing/treatment prior to offsite shipment. An overview of the LLW/MLLW characterization process (including associated characterization information) is presented in RPT-LLW-12, Characterization Approach for Offsite LLW/MLLW Disposition Project Waste Streams.[107]

AMWTP TRU waste streams are proposed based on compilation of AK data. The compiled AK data for a proposed TRU waste stream are reviewed and evaluated to determine, at a minimum, the generating location, generating process(es) (including AMWTP waste processing, sorting, segregating, and packaging activities, if applicable) or activity, physical form, chemical constituents/properties, radiological concentrations, and assignment of HWNs.[10]

The general characterization scheme associated with TRU waste includes:

- Assignment/confirmation of IDCs associated with containerized wastes
- Assignment/confirmation of wastes into one of three summary category groups (SCGs) (S3000 Homogeneous Solids, S4000 Soil/Gravel, and S5000 Debris Wastes)
- Assignment/confirmation of wastes into appropriate Waste Matrix Code Groups (WMCGs) and Waste Matrix Codes (WMCs)
- Delineation of wastes into TRU waste streams for WIPP characterization
- Characterization of waste using AK
- Augmentation of AK characterization with sampling and analysis and real-time radiography (RTR) or visual examination (VE), as applicable
- Tracking HWNs associated with WIPP-approved WSPFs.

TRU waste destined for disposal at WIPP is characterized on a waste stream basis as described by the WIPP Waste Analysis Plan (WAP) and the AMWTP implementing documents MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan.[52, 98, 99] A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

All of the wastes targeted for disposal at WIPP must be generated by processes associated with the national nuclear weapons program and meet the definition of defense-related waste. All waste transported to WIPP for disposal are determined to be defense-related wastes prior to development of a WIPP WSPF and undergo Carlsbad Field Office (CBFO) WSPF approval prior to shipment.

Figure 1, Document hierarchy and information flow for AK, is a flowchart outlining the general tracking and summarization of AK documents into the AK record.

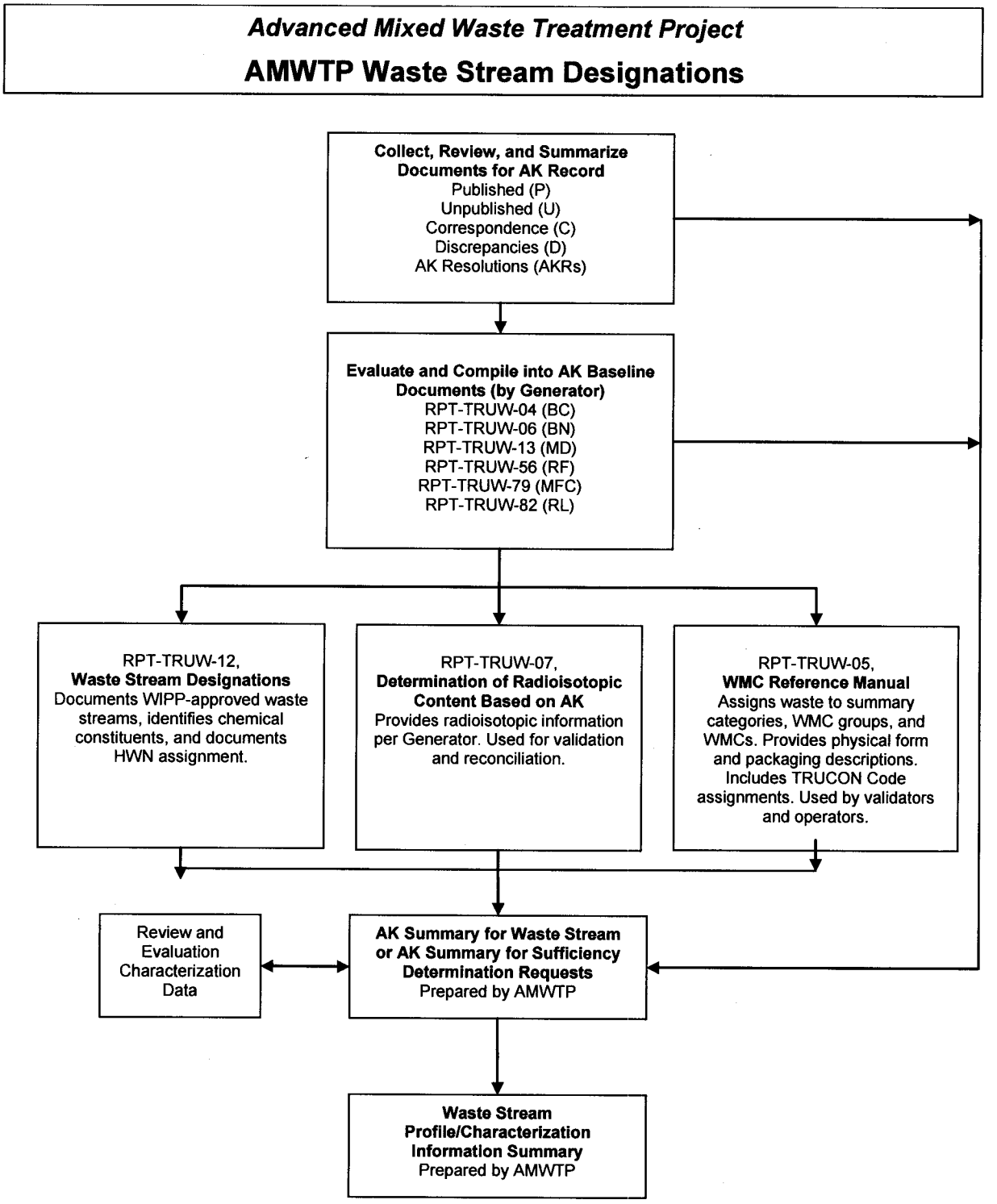

Figure 1. Document hierarchy and information flow for AK.

The following sections of this report address current AMWTP WSPFs. The sections are organized by SCGs with an additional Section 7.0 to present the approach to the AMWTP newly generated waste.

- Section 4.0, AMWTP Retrieved Homogeneous Solid Waste (SCG S3000)
- Section 5.0, AMWTP Retrieved Soil/Gravel Waste (SCG S4000)
- Section 6.0, AMWTP Retrieved Debris Waste (SCG S5000)
- Section 7.0, AMWTP Newly Generated Waste.

Wastes (i.e., IDCs) not addressed in current AMWTP or CCP WIPP-approved WSPFs are evaluated for inclusion into proposed WIPP WSPFs on a case-by-case basis as AK is reviewed, verified, and/or developed. Some wastes currently in storage may not be eligible for WIPP profiling by the AMWTP or CCP at this time, because one or more of the following restrictions apply:

- The waste does not currently have a defense waste determination.
- The waste is categorized as remote handled (RH).
- The waste contains classified materials.
- The waste is LLW/MLLW.
- The AK for the waste is insufficient or has not been summarized.

Appendix A provides available AK and WIPP characterization information about chemical constituents and HWN assignments (i.e., generator, WIPP) for TRU wastes currently stored/treated at the AMWTP. This appendix is based on referenced documents and is used along with other constituent information contained in the AMWTP Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) facility operating record to support safe storage/treatment of TRU waste.

The following sources of information and characterization activities are used to identify applicable hazardous constituents, chemical properties, and/or HWNs assigned to waste IDCs prior to and during WIPP profile development:

1. Waste generator information
2. AK source documents
3. WIPP characterization results (i.e., RTR/VE, headspace gas sampling [HGAS], and solid sampling)
4. Treatment activities (e.g., supercompaction, liquid absorption).

In some cases, due to the conservative nature of the original HWN assignment by the original generator location, or when the waste undergoes AMWTP treatment to remove a characteristic prior to shipment to WIPP, HWNs initially assigned may not be retained. For example, wastes with a D001,

D002, D003, or F003 HWN originally assigned by a generator may not apply to the final waste form being shipped to WIPP due to treatment/removal of characteristic properties prior to shipment. These types of exceptions are documented in AK Discrepancy Reports, Acceptable Knowledge Resolutions (AKRs), and/or AK summaries, as applicable. Justification for not retaining a HWN is documented according to MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.[108] Assignment of the final WIPP HWNs does not take place until the WIPP WSPF is approved by WIPP personnel. WIPP hazardous waste constituents and HWNs are updated within this document after the AMWTP receives WIPP-approval for the submitted WSPF.

LLW/MLLW and newly generated waste destined for disposal at non-WIPP facilities are characterized prior to off-site shipment by the Offsite LLW/MLLW Disposition Project based on the receiving facility's WAC. Although information in this document may support hazardous waste determinations (HWDs) and characterization of LLW/MLLW, the final characterization results for purposes of LLW/MLLW off-site shipments are documented in applicable Offsite LLW/MLLW Disposition Project documents.

HWDs for newly generated secondary TRU waste are performed and maintained by AMWTP Waste Services and incorporated into the AK record prior to profiling. All applicable records are maintained within the AMWTP facility operating record.

2.0 ASSIGNMENT OF SCGs, WMCGs, AND WMCs

The requirement for grouping waste materials generated from a single process or activity and that have common physical form and contain similar hazardous constituents is provided in the WIPP WAP, which is Attachment C to the WIPP Hazardous Waste Facility Permit.[52]

Wastes are delineated prior to WIPP profiling based on AK and placed into one of three broad physical form categories. The three broad physical form categories are referred to as SCGs. The three SCGs are:

1. Homogeneous Solids (S3000)
2. Soils/Gravel (S4000)
3. Debris Wastes (S5000).

If a waste does not contain at least 50% by volume of a SCG the waste is characterized based on the summary category constituting the greatest volume of waste.

2.1 S3000 – Homogeneous Solids

SCG S3000 is composed of waste that is primarily homogeneous solids. Homogeneous solids are defined as solid materials, excluding soil, that do not meet the New Mexico Environment Department criteria for classification as debris (as noted below). The waste within this SCG includes, but is not limited to, inorganic process residues, inorganic sludge, salt waste, and pyrochemical salt waste. Other waste streams are included in this SCG based on the specific waste stream types and final waste form. This SCG is expected to contain toxic metals and spent solvents. This SCG includes wastes that are at least 50% by volume homogeneous solids.

2.2 S4000 – Soils/Gravel

SCG S4000 is defined as waste that is composed primarily of soil and/or gravel. This SCG includes waste streams that are at least 50% by volume soil/gravel. This SCG is expected to contain spent solvents and toxic metals.

2.3 S5000 – Debris Wastes

SCG S5000 is defined as heterogeneous waste that is at least 50% by volume debris. Debris means solid material exceeding a 2.36 inch (60 millimeter) particle size that is intended for disposal and that is:

1. A manufactured object
2. Plant or animal matter
3. Natural geologic material.

Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object, and if it is not a particle of S3000 or S4000 material.

The waste in this SCG includes, but is not limited to glass, rubber, cellulosic, ceramic, wood, paper/rags, graphite, metal, and plastic debris waste. This SCG may contain spent solvents and toxic metals.

2.4 Approach for Assigning IDCs, WMCGs, and WMCs

The overall general approach for assigning IDCs, WMCGs, and WMCs is discussed below.

Each TRU waste stream consists of one or more wastes that are initially identified by a generating facility's IDCs. An AMWTP generator site-specific IDC contains a two digit character alpha prefix, which identifies the generator of the waste and a three digit numerical code. The IDC identifies a specific type of waste generated at a specific facility. Where an IDC was not assigned to waste by the original generator (e.g., pre-71 wastes from RF), the AMWTP assigns an IDC beginning with a two character alpha prefix reflecting the original generating site and a unique three digit numerical code (e.g., RF-741).

The wastes are grouped under a WMCG based on the bulk physical/chemical form that is expected in the SCG (i.e., solidified inorganic, solidified organic, salt waste for S3000[b]; soils for S4000; and lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal for S5000). Examples of WMCGs are depicted in Figure 2.

b. The S3000 SCG is further divided by subgroups that identify general properties of a group of waste (e.g., the S3000 SCG organic subgroup includes solidified organic WMCs and the S3000 inorganic SCG subgroup includes solidified inorganic and salt WMCs).

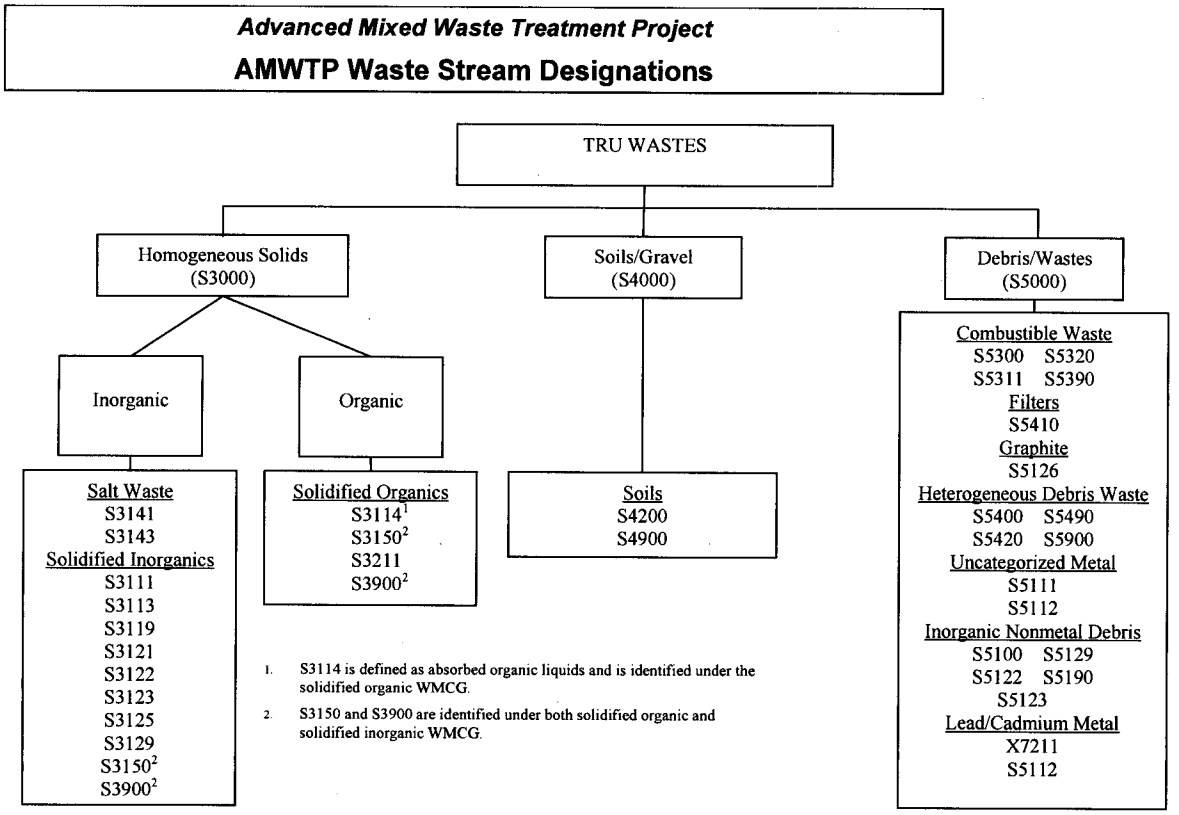

Figure 2. WMC assignment/grouping diagram.

AMWTP Waste Stream Designations

The WIPP Permit requires that the WMC assignment be based on the majority of waste in the waste container. The WMC is used to identify the expected waste matrix (physical form) that makes up the majority of the waste material in each container. WMCs were developed by DOE in response to the Federal Facilities Compliance Act (FFCAct)[54] as a method to aid in categorizing DOE TRU mixed waste streams into a series of five-character alphanumeric codes and descriptors that represent different physical/chemical matrices (e.g., S3121, Homogeneous Solids, Wastewater Treatment Sludge). The first position is a letter that denotes the physical form of the waste (L for liquid, S for solid, etc.). The next position denotes whether the waste is homogeneous, soil, or debris (S3000 is homogeneous solids waste, S4000 is soil/gravel, and S5000 is debris waste), and the last three positions denote more specific categories (e.g., specific type of homogeneous solids [sludge, salt, etc.], soil/gravel, or debris [plastic, light metal, etc.]). The DOE guidance document DOE Waste Treatability Group Guidance aids generating facilities in assigning WMCs to WIPP wastes.[53]

For example, based on the waste description for IDC RF-004, the SCG, WMCG, and WMC can be developed. The IDC RF-004 is described as a solidified inorganic sludge and meets the definition of a homogeneous solid. The waste associated with IDC RF-004 is classified under the Homogeneous Solids (S3000) SCG. The homogeneous solid SCG is split into two subgroups: (1) inorganic, and (2) organic.

The inorganic subgroup (S3100) contains two WMCGs: (1) solidified inorganics (e.g., WMCs S3111, S3113, etc.), and (2) salt wastes (e.g., WMCs S3141 and S3143).

The organic subgroup only contains the solidified organic WMCG (e.g., WMCs S3114, S3150, S3211, etc.).[c]

Based on the above, the waste associated with IDC RF-004 is placed into the inorganic subgroup and further placed within the solidified inorganic WMCG. Waste associated with IDC RF-004 is assigned a WMC of S3150 based on the DOE treatability guide.[53]

Wastes with a WMC of S9000 and/or an IDC of UN-000 or PC-000 are classified as having an undetermined waste form classification and are further classified as "RCRA unknowns" per the AMWTP HWMA/RCRA permit.[15] Containers identified with this WMC and/or IDC are characterized using AK and RTR/VE data and assigned an appropriate WMC and IDC. Until a final WMC and IDC are assigned, the wastes are subjected to special handling and notification requirements as required by the AMWTP HWMA/RCRA permit (see discussion below, Section 3.0).

Waste descriptions and physical form assignments are verified by RTR or VE. RTR and VE are also used to identify the presence of prohibited items/conditions within the waste.

The delineation of waste streams based on assigned SCG, WMCG, and WMC with due consideration of the physical form, process/activity that generated the waste, treatment employed (if applicable), and applicable HWNs allows waste stream management and disposition to be as efficient as possible.

The TRU Program's list of SCGs, WMCGs, WMCs, and IDCs for TRU wastes that have been included in AMWTP WIPP-approved Direct Ship WSPFs or are feed to the supercompacted WSPF are presented in Table 1.

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c. Both S3100 and S3200 alphanumeric designations for WMCs are associated with the solidified organic WMCGs (S3200). This is unique to solidified organic WMCG.

Table 1. AMWTP WMCG and WMC classification for waste included in WIPP-approved WSPFs.

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
S3000 Homogeneous Solids					
S3100 Inorganic Homogeneous Solids					
Solidified Inorganics	S3113	Inorganic Particulate Absorbents	MD	834	High Level Acid
			MD	835	High Level Caustic
	S3121	Wastewater Treatment Sludges	MD	836	High Level Sludge/Cement
			RF	001	First Stage Sludge
			RF	002	Second Stage Sludge
			RF	007	Building 374 Dry Sludge
			RF	741	Pits 11 and 12 First Stage Sludge
			RF	742	Pits 11 and 12 Second Stage Sludge
	S3150	Solidified Homogeneous Solids	RF	004	Special Setups
			RF	744	Pits 11 and 12 Special Setups
			RF	800	First Stage Sludge-Cemented
			RF	802	Solidified Laboratory Waste
			RF	803	Solidified DCP Sludge
			RF	696 / 807b[b (1)]	Cemented Incinerator Sludge (Bldg 771 generated prior to March 21, 1987)
			RF	292	Cemented Sludge
			RF	818	Cemented Incinerator Ash
			RF	820	Cemented Soot
S3200 Organic Homogeneous Solids					
Solidified Organics	S3114[a]	Absorbed Organic Liquids	RF	003[h]	Organic Setups, Oil Solids
	S3150	Solidified Homogeneous Solids	RF	700[i]	OASIS Waste
			RF	801[i]	Solidified Organics
S4000 Soil/Gravel					
No WIPP approved WSPFs					

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
S5000 Debris Waste					
Heterogeneous Debris Waste	S5490	Unknown/Other Heterogeneous Debris	BC	201	Non-combustible Solids
			BC	202	Combustible Solids–Paper/Cloth
			RF	372	Grit
			RF	374[d]	Blacktop, Concrete, And Construction Rubble
			BN	508	AMWTP Newly Generated Debris
			BN	510	Supercompacted Debris
			BN	550	Supercompacted Debris (BN510.1)
			BN	600	AMWTP WMF-676 PCB Contaminated Debris (BN600)
			MD	801	Rags, Paper, Wood, etc.
			MD	802	Dry Box Gloves and O-rings
			MD	803	Metal, Equipment, Pipe, Valves, etc.
			MD	804	Plastic, Tygon, Mani-Boots, etc.
			MD	805	Asbestos Filters
			MD	810	Glass Flasks, Sample Vials, etc.
			MD	813	Glass Filters and Fiberglass
			MD	814	Graphite Waste
			MD	824	Equipment Boxes, Non-combustible
			MD	825	Equipment Drums, Non-combustible
			MD	826	Equipment Boxes, Combustible
			MD	827	Equipment Drums, Combustible
			MD	838	<10 nCi/g Non-combustible
			MD	847	LSA <100 nCi/g Combustible
			MD	848	LSA <100 nCi/g Non-combustible
			RF	950	LSA Metals, Glass, etc.

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
Heterogeneous Debris Waste	S5400	Unknown/Other Heterogeneous Debris	RF	960	Concrete, Asphalt, etc.
			RL	712	Hanford Plutonium Finishing Plant Debris
			RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
			RL	716	Hanford 231-Z Building Debris
Filters	S5410	Composite Filters	RF	328	Ful-Flo Incinerator Filters
			RF	335	Absolute 8 × 8 Filters
			RF	338	Insulation and CWS Filter Media
			RF	360	Insulation
			RF	376	Cemented Insulation and Filter Media
			RF	490	HEPA Filters and CWS Filters
			RF	491	Plenum Prefilters
Combustible Waste	S5300	Organic Debris	RF	302	Benelex and Plexiglas
			RF	33A	WETP Bin Program – Combustibles A
			RF	33B	WETP Bin Program – Combustibles B
			RF	330[e]	Paper and Rags – Dry
			RF	336[e]	Paper and Rags – Moist
			RF	337[e]	Plastics, Teflon, Washables, PVC
			RF	464	Benelex and Plexiglas
			RF	831	Dry Combustibles
			RF	832	Wet Combustibles
			RF	833	Plastics, TRU Mixed
	S5311	Leaded Gloves/Aprons	RF	339	Leaded Rubber Gloves and Aprons
			RF	463	Leaded Rubber Gloves and Aprons
	S5320	Wood Debris	RF	970	Wood

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
Combustible Waste	S5390	Unknown/Other Organic Debris	RF	460	Washables, Rubber, Plastic
			RF	900	LSA Paper, Plastic, etc.
Graphite	S5126	Graphite Debris	RF	300[f]	Graphite Molds
			RF	301[f]	Graphite Cores
			RF	303[f]	Scarfed Graphite Chunks
			RF	310[f]	Graphite Scarfings
			RF	312[f]	Coarse Graphite
Inorganic Nonmetal Debris	S5100[g]	Inorganic Debris	RF	441[g]	Raschig Rings, Unleached
			RF	442[g]	Raschig Rings, Leached
	S5122	Glass debris	RF	440	Glass
			RF	44A	WETP Bin Program – Glass
	S5123	Ceramic/brick debris	RF	371	Fire Brick
			RF	377	Coarse Fire Brick
	S5190	Unknown/Other Inorganic Debris	RF	368	Magnesium Oxide Crucibles
			RF	370	Leco Crucibles
			RF	391	Crucibles and Sand
			RF	392	Sand, Slag, and Crucibles
Lead/Cadmium Metal	S5112	Metal Debris With Lead	RF	488	Glovebox Parts w/Lead
Uncategorized Metal	S5111	Metal Debris without Lead or Cadmium	RF	416	Zinc Magnesium Alloy Metals
	S5112	Unknown/Other Metal Debris	RF	320	Heavy Non-special Source Metal
			RF	321	Lead
			RF	480	Non-special Source Metal
			RF	481	Leached Non-special Source Metal
			RF	48A	WETP Bin Program – Metal

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description

a. S3114 is the WMC for solidified organics. WMC assigned is dependent upon the ratio of organics and inorganic absorbent. The waste would be assigned to S3200 if organic component is >50%.

b. The INL 3,100 m^3 Project assigned IDC RF-696 to IDC RF-807b waste to eliminate some of the confusion that resulted from one IDC being associated with two different waste streams. IDC RF-807a continues to be IDC RF-807.

c. Generator sites/areas are identified in this table as follows: BC = Battelle Columbus, BN = AMWTP, RF = Rocky Flats Plant, BL = Bettis Laboratories, MD = Mound Laboratories and RL= Hanford.

d. IDC RF-374, Blacktop, Concrete, And Construction Rubble, has two WMCs (for IDC RF-374 and RF-374a/697). IDC determination is based on the majority of waste in the containers:

>50% vol. dirt or gravel is WMC S4200 (which is assigned IDC RF-697 versus RF-374a to differentiate in the database)
>50% vol. debris (IDC RF-374 - concrete, blacktop, metal, combustibles, plastics, gloves, etc.) is WMC S5490.

e. Part of CCP profile ID-RF-S5300A, RFETS Combustibles and Plastics Stored at INL.[50]

f. Part of CCP profile ID-RF-S5126, TRU Mixed Graphite Debris.[49]

g. Part of CCP profile ID-RF-S5100, Rocky Flats Raschig Rings Stored at the INL.[48]

h. Part of CCP profile ID-RF-S3114, Organic Setups.[46]

i. Part of CCP profile ID-RF-S3150A, Organic and Sludge Immobilization System Waste.[47]

3.0 AMWTP WASTE STREAMS

Determining the appropriate waste stream SCG, WMCG, WMC, IDC, and HWNs is based on AK. AK is the initial characterization method used at the AMWTP. AK is used to describe and define the waste stream and to initially characterize wastes by IDC. Initially, the AMWTP classifies each IDC, rather than individual containers, and assigns SCGs, WMCGs, and WMCs based on guidance established in the DOE Waste Treatability Group Guidance document and the WIPP-WAP.[52, 53]

AMWTP waste streams are developed based on the physical form of the waste, waste generation process or activity, and hazardous constituents. AMWTP WIPP-approved waste streams and associated waste stream numbers for TRU waste streams are presented in Sections 4.0, 6.0, and 7.0. One or more IDCs may be grouped into a waste stream.

AMWTP waste streams are developed in the following general manner:

1. AK is gathered, and a thorough review of documentation is conducted to determine SCG, WMCG, WMC, and, where applicable, initial HWNs and/or hazardous constituents (see Section 2.0).

2. Wastes are assigned an applicable SCG, WMCG, WMC, and IDC (see RPT-TRUW-05, Waste Matrix Code Reference Manual).[109]

3. Wastes to be profiled together are verified: to have been generated from a single process or activity, to have common physical form, and to contain similar hazardous constituents.

4. RTR or VE and radioassay data are collected to estimate the waste material paramaters

5. Wastes are further characterized using HGAS or solid sampling to obtain analytical data as necessary per applicable requirements.

6. Wastes are verified for compliance with compatibility requirements.

7. Wastes are packaged in compliance with applicable regulations.

8. Wastes are verified to meet facility-specific WIPP-WAC and WIPP-WAP requirements.

Once a waste stream assignment of TRU waste is complete, the IDC(s), SCG, WMCG, and HWNs are documented within the AMWTP or CPP AK summary and associated WSP package and submitted to WIPP for approval.

Wastes profiled by the AMWTP are assigned a BN prefix to the WSP number. For example, the AMWTP waste stream containing special setups (IDCs RF-004 and RF-802) is numbered BN004 and the AMWTP waste stream containing leaded rubber gloves (IDCs RF-339 and RF-463) is numbered BN252. For waste streams that were previously characterized by the INL, the waste stream number is BN plus the previous WSPF number (e.g., BNINW216) [d].

Polychlorinated biphenyls (PCBs) identified during collection and compilation of AK are potential contaminants for some BN, IW, RF and BC wastes generated or stored at the INL. There is evidence that some IDCs have PCBs due to treatment of oils containing PCBs or because the waste contains PCB oil filled equipment.

Any retrieved waste container associated with an IDC may contain a PCB electrical item such as a light ballast or contain oil filled electrical equipment. IDCs are evaluated to determine whether the entire waste stream requires classification as PCB or whether a case-by-case evaluation is appropriate.

The following TRU IDCs managed at the AMWTP are classified in their entirety as being PCB: BC-203, RF-003, BN-501, BN-511, BN-520, BN-523, IC-526, IW-526, BN-526, BN-528, BN-536, BN-BN-597, BN-598, BN-600, IC-603, IW-603, BN-604, BN-605, BN-616, RF-743, and RF-746.

Containers within the following IDCs may be PCB contaminated and will require an AMWTP case-by-case evaluation: IW-176, IW-177, IW-178, IW-179, SD-704, SD-705, SD-706, RF-998, and RF-999.[e]

If any other IDC is found to contain a small electrical item (such as fluorescent light ballasts) or other potential PCB item/material, the item and the associated container also undergo evaluation on a case-by case basis for Toxic Substances Control Act (TSCA) applicability. For example, one container of IDC RF-480 (Non-special Source Metal) was found to contain large oil filled PCB capacitors. The waste in this container is classified as PCB; however, the IDC RF-480 remains non-PCB.

Undefined wastes are designated UN-00A (undefined homogeneous solids), UN-00B (undefined debris), UN-00C (undefined soil), or UN-00D (undefined liquid). These types of IDCs have known physical forms, but determination of the generator and/or historical information is required. They are temporary IDCs until the final determination is made.

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d. Wastes profiled by CCP are assigned unique WSPF numbers in accordance with CCP procedures.

e. MLLW with the potential to be PCB regulated are identified in RPT-TRUW-05.

Unknown wastes are designated as IDCs UN-000 or PC-000.

Undefined and unknown IDCs are also evaluated for PCBs on a case-by-case basis. When intact PCB items are found they are typically removed and managed as PCB waste. Where removal is not achievable, or in the case of a breached PCB item, the container is managed as PCB waste.

AMWTP newly generated waste may be designated as PCB waste. Newly generated TRU IDCs are developed by TRU programs. The assignment of a PCB IDC to containers of newly generated secondary waste is performed by the AMWTP Waste Services Group and after interaction with operations and TRU program personnel. PCB determinations for newly generated waste are performed on a case-by-case basis.

Unless tested to verify the actual concentration of PCBs within known or suspected PCB waste streams, the AMWTP handles the known or suspected TRU PCB waste streams as being greater than 500 parts per million (ppm). This requirement is specified with the WIPP PCB disposal authorization and 40 Code of Federal Regulations (CFR) 761.50(a)(5), Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, Subpart D-Storage and Disposal, Applicability and 40 CFR 761.50. Drums that contain regulated PCB waste are managed and shipped in accordance with applicable regulatory requirements, the WIPP WAC,[12] and the WIPP PCB disposal authorization. The following information provides the overall AMWTP approach to PCB classification:

1. IDC RF-003 (Organic Setups, Oil Solids): Waste known to contain PCBs. Unless tested to verify actual concentration, IDC RF-003 is considered to have greater than 500 ppm PCB contamination.

2. Battelle Columbus Laboratories (BC): Based on AK, IDC BC-203 contains waste oils drained from various equipment pieces that are a potential source of PCBs of unknown concentrations. These waste oils were absorbed in Oil-Dri in one-gallon paint cans. An estimated 20 cans were placed in IDC BC-203 waste containers. Due to the limited number of drums in this IDC, the IDC is classified as PCB. No other BC IDCs have been identified by AK as having the potential for PCB contamination. Unless tested to verify actual PCB concentration, IDC BC-203 is considered to have greater than 500 ppm PCB contamination.

3. IDC RF-480 (Non-special Source Metal): AK records indicate that one or more containers contain PCB-contaminated equipment. PCB-containing items such as capacitors/ballast have been found in boxed waste of IDC RF-480. The overall number of PCB-items found to date is extremely small in relation to the overall volume of waste within IDC RF-480 and as a result IDC RF-480 is only considered a PCB waste stream on a case-by-case container basis.[59]

4. IDCs UN-000, UN-00A, UN-00B, UN-00C, and UN-00D: IDCs identified with a UN designator will be evaluated for PCB potential through the normal processes of RTR/VE, AK evaluation, and applicable IDC assignment. Through these actions and applicable IDC assignment the AMWTP will determine the presence or absence of PCBs for waste management purposes. In the case of organic sludge wastes, sampling and analysis may be required to make a final determination of PCB content.

5. AMWTP Newly Generated IDCs: AMWTP newly generated waste may be designated as PCB contaminated if it is equal to or greater than 50 ppm. Current IDCs identified as PCB waste include: BN-501 (AMWTP PCB Soil), BN-511 (PCB Organic Homogeneous Solids), BN-520

(TRU PCB Secondary Debris Generated from Offsite Waste), BN-523 (Pad 1 Cells 1 and 2 PCB Debris), BN-526 (Lab PCB Debris Waste (not P/U-listed), BN-528 (TRU PCB Liquids Generated During Retrieval), BN-536 (TRU Empty Containers with PCBs), BN-597 (P/U-listed Lab PCB Debris Waste), BN-598 (P/U-listed Lab PCB Homogeneous Solids Waste), BN-600 (WMF-676 PCB Contaminated Debris), BN-604 (TSCA/PCB Debris), and BN-605 (Absorbed Liquids TSCA/PCB).

6. Additional newly generated PCB-regulated IDCs associated with retrieved waste may be identified by TRU programs and provided to Waste Services on a case-by-case basis. Further discussions relating to newly generated waste can be found in Section 7.0.

7. IDCs RF-743 (Pits 11 & 12 Organic Setups) and RF-746 (Pits 11 & 12 Pad 903 Oil Drums): This waste was generated at Rocky Flats prior to 1972 and was retrieved from Pits 11 and 12, and is comprised of waste that was originally generated from the response to leaking drums stored on the RF Pad 903. These IDCs are currently managed as PCB regulated.

8. IDCs SD-704 (SDA Homogeneous Solids), SD-705 (SDA Heterogeneous Debris), and SD-706 (SDA Soil): SD-704 and SD-706 generated by the Accelerated Retrieval Project (ARP) that may be managed at the AMWTP for coring, headspace sampling, or assay. Some containers may contain PCBs and will require a CCP evaluation on a case-by-case basis.

9. IW-176 (RWMC Homogeneous Solids), IW-177 (RWMC Heterogeneous Debris), IW-178 (RWMC Soil), IW-179 (Early Waste Retrieval Bins), RF-998 (Pits 11 & 12 Cargos and Bins [without Roaster Oxide]), and RF-999 (Pits 11 & 12 Cargos and Bins with Roaster Oxide): These waste IDCs are from a variety of sources. Some of the containers within these IDCs may contain PCBs and will require an AMWTP case-by-case evaluation to determine the final PCB status prior to treatment and/or off-site management.

10. Laboratory waste [e.g., IC-526/IW-526/BN-526/BN-597, (Laboratory PCB Debris Waste) and BN-603/BN-598 (Laboratory Homogenous Solids Waste)] may be PCB contaminated. The laboratory provides analytical support to the AMWTP. Containers within these IDCs are classified as PCB.

11. Offsite/non-AMWTP (e.g., , SL-224, RL-720, etc.) PCB wastes are evaluated through their applicable offsite/non-AMWTP profile and supporting PK/AK documents for RCRA/TSCA applicability prior to receipt at the AMWTP.

Offsite (e.g., Hanford, etc.) and non-AMWTP (e.g., Idaho Nuclear Technology and Engineering Center, etc.) waste may be processed either as supercompaction feedstock (i.e., if non-PCB) or may be shipped directly to WIPP as direct-ship profiles. RCRA hazardous waste determinations/constituents (i.e., 40 CFR 262.11) and other applicable records (off-site waste profiles, process knowledge documentation) associated with Offsite/non-AMWTP waste are maintained by the AMWTP off-site waste coordinator and in the AMWTP facility operating record.

Hazardous waste determinations and initial characterization for newly generated AMWTP wastes are documented in accordance with MP-WM&M-13.9, Waste Characterization and Waste Services Management.[63] Newly generated waste containers undergo non-destructive assay (NDA) to determine if the waste is a TRU WIPP-candidate or a LLW/MLLW candidate waste. Containers of newly generated

TRU waste are assigned an applicable IDC, placed into an appropriate waste stream prior to WIPP profiling, and are subjected to sampling and analyses as required by the WIPP WAP.[f] An in-depth discussion of newly generated waste is provided in Section 7.0.

Applicable HWNs and/or hazardous waste constituents are identified for each TRU IDC using AK prior to WIPP profiling. The HWNs and chemical constituents initially associated with the TRU IDCs in this report were obtained from one or more of the following:

1. Engineering Design File (EDF)-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste[19]
2. Offsite generator documents prior to acceptance at the AMWTP (e.g., AMWTP offsite WSPFs)
3. AK documents received directly from the generator
4. AMWTP operating records.

HWNs are evaluated and assigned through an initial AK evaluation. This information is augmented by RTR/VE, HGAS, or solid sampling and analysis. Radioassay is also conducted on the waste prior to management and subsequent shipment. Radioassay results are presented in RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge.[110]

Generator-assigned characteristic HWNs (e.g., F003, D001, D002) may differ from the final HWNs assigned in WIPP profiles. The removal of generator-assigned HWNs associated with ignitable and corrosive properties may be due to treatment for the characteristic property (e.g., absorption, compacting) and/or repackaging (e.g., removal of prohibited items) prior to shipment.

4.0 AMWTP RETRIEVED HOMOGENEOUS SOLID WASTE

4.1 AMWTP S3000 Wastes

Homogeneous solid wastes that have been profiled by AMWTP and approved by WIPP are presented in Table 2 under the subheading, *The following are AMWTP's WIPP-approved homogeneous solid WSPFs*. The table also includes WIPP-approved WSPFs submitted by CCP on AMWTP's behalf. The associated AMWTP-authorized CCP profiles that have been approved by WIPP are presented in Table 2 under the subheading, *The following are AMWTP-authorized CCP homogeneous solid WSPFs*.

Characterization of WIPP-eligible homogeneous solid waste is comprised of AK information and augmentation of AK as applicable (e.g., characterization through intrusive sampling and analysis, RTR/VE, and radioassay). Homogeneous solid samples are collected to augment HWNs as assigned by AK for all TRU S3000 wastes to be disposed of at WIPP. All sampling activities are performed in accordance with approved methods (i.e., coring or other U.S. Environmental Protection Agency [EPA] approved sampling methods and WIPP Permit requirements).

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f. Containers of waste that are determined to be non-TRU waste are managed by the Offsite LLW/MLLW Disposition Project. The MLLW Disposition Project performs final characterization and profile development based on the applicable offsite facility requirements.

CCP has profiled waste at the direction of AMWTP. AMWTP-authorized CCP WSPs (e.g., ID-RF-S3114 and ID-RF-S3150) and the CCP AK summary (i.e., CCP-AK-INL-005, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory, Waste Streams: ID-RF-S3114 and ID-RF-S3150-A) were developed for direct-shipment to WIPP. The AMWTP-authorized CCP WSPs include RF organic sludge waste from the Grease Plant (IDC RF-003) and from the Organic and Sludge Immobilization System (OASIS) (IDCs RF-700 and 801).[46, 47, 112] These WSPF and AK summaries include the assignment of applicable SCG, WMC, WMCG, and HWNs and are based on CCP AK procedures. Copies of the CCP documents are located in the AMWTPs Electronic Document Management System (EDMS).

Table 2. Homogeneous solids waste streams (S3000).

BN WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
The following are AMWTP's WIPP-approved homogeneous solid WSPFs					
BNINW216[57]	First/Second Stage Sludge	001	First Stage Sludge	RF	S3121
		002	Second Stage Sludge	RF	S3121
		741	Pits 11 and 12 First Stage Sludge	RF	S3121
		742	Pits 11 and 12 Second Stage Sludge	RF	S3121
		800	First Stage Sludge-Cemented	RF	S3150
BNINW218[58]	Building 374 Sludge (approved)	007	Building 374 Dry Sludge	RF	S3121
		803	Solidified DCP Sludge	RF	S3150
		807a	Bypass Sludge (after 3/21/87)	RF	S3121
BN004[45]	Special Setups	004	Special Setups	RF	S3150
		744	Pits 11 and 12 Special Setups	RF	S3150
		802	Solidified Laboratory Waste	RF	—
BN835 (approved)[36]	Solidified Acid/Caustic	834	High Level Acid	MD	S3113
		835	High Level Caustic	MD	—
BN836[56]	Cemented Sludge	836	High Level Sludge/Cement	MD	S3121
BN222[95]	Solidified Plutonium Recovery Incinerator Waste	292	Cemented Sludge	RF	S3150
		696/ 807b	Cemented Incinerator Sludge (Bldg 771 generated prior to March 21, 1987)	RF	—
		818	Cemented Incinerator Ash	RF	—
		820	Cemented Soot	RF	—
The following are AMWTP-authorized CCP homogeneous solid WSPFs					

AMWTP Waste Stream Designations

BN WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
ID-RF-S3114 (by CCP)[46]	Organic Setups	003	Organic Setups, Oil Solids	RF	S3114
ID-RF-3150A (by CCP)[47]	Organic and Sludge Immobilization System Waste	700	OASIS Waste	RF	S3150
		801	Solidified Organics	RF	—

5.0 AMWTP RETRIEVED SOIL/GRAVEL WASTE

Containers primarily consisting of soil/gravel waste that are not TRU waste are ineligible for disposal at WIPP and will be segregated from the TRU soil/gravel waste and managed in accordance with applicable program requirements (e.g., Offsite LLW/MLLW Disposition Project requirements).

Soil/gravel waste is either retrieved waste or newly generated waste. Soil/gravel generated by removal of the soil berm and/or overburden soils is newly generated waste. Newly generated primary and secondary TRU waste are assigned HWNs through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs. TRU soil/gravel to be disposed of at WIPP will be characterized by the TRU Programs and sampled in accordance with WIPP WAP requirements. Newly generated S4000 waste is addressed in Section 7.0.

Soil/gravel waste determined to be TRU waste and eligible for disposal at WIPP are managed by the TRU Program and will be shipped to WIPP upon WIPP-approval of the applicable WSPF. Currently, there are no WIPP-approved WSPFs for AMWTP soil/gravel waste.

Characterization of WIPP-eligible TRU contaminated soil/gravel waste is the same as that for WIPP-eligible TRU contaminated homogeneous solid waste. Characterization is comprised of AK information and augmentation of AK (e.g., characterization through intrusive sampling and analysis or RTR/VE) as applicable. Soil/gravel samples are collected to augment HWNs as assigned by AK for all TRU S4000 wastes to be disposed of at WIPP. All sampling activities are in accordance with approved methods (i.e., coring or other EPA approved sampling methods and WIPP Permit requirements).

6.0 AMWTP RETRIEVED DEBRIS WASTE

6.1 AMWTP S5000 Wastes

Retrieved (i.e., not AMWTP newly generated waste) debris wastes profiled by AMWTP and approved by WIPP are presented in Table 3 under the subheading; *The following are AMWTP's WIPP-approved direct shipped heterogeneous debris WSPFs.* The table also includes WIPP-approved WSPFs submitted by CCP on AMWTP's behalf. The associated AMWTP-authorized CCP WIPP-approved profiles that are presented in Table 3 under the subheading; *The following are AMWTP-authorized CCP WIPP-approved heterogeneous debris WSPFs.*

With the exception of CCP WSPFs developed at the direction of AMWTP, debris waste streams identified in Table 3 were developed and characterized individually by the AMWTP using AMWTP procedures for direct-shipment to WIPP. CCP WSPFs arebased on CCP AK procedures.

Waste stream profiles ID-RF-S5126, ID-RF-S5100-A, and ID-RF-S5300-A and associated AK summaries (CCP-AK-INL-002, Central Characterization Project Acceptable Knowledge Summary Report for the Idaho National Laboratory Rocky Flats Transuranic Graphite Debris Waste Stream: ID-RF-S5126; CCP-AK-INL-006, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Raschig Rings Stored at the Idaho National Laboratory, Waste Stream: ID-RF-S5100-A; and CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory, Waste Stream ID-RF-S5300-A) were written by the CCP at AMWTP's direction and include the following IDCs: RF-300, 301, 303, 310,

and 312 (Graphite), RF-441 and 442 (Raschig Rings), and RF-330, 336, and 337 (Combustibles and Plastics), respectively.[48, 49, 50, 64, 113, 114]

Table 3. Retrieved debris waste streams (S5000).

WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
The following are AMWTP's WIPP-approved direct shipped heterogeneous debris WSPFs					
BN161[44]	Firebrick Debris	371	Fire Brick	RF	S5123
		377	Coarse Fire Brick	RF	
BN211[38]	Filter Debris Waste	328	Ful-Flo Incinerator Filters	RF	S5410
		335	Absolute 8 × 8 Filters	RF	
		338	Insulation and CWS Filter Media	RF	
		360	Insulation	RF	
		376	Cemented Insulation and Filter Media	RF	
		490	HEPA Filters and CWS Filters	RF	
BN243[40]	Glass	440	Glass	RF	S5122
BN252[41]	Leaded Rubber	339	Leaded Rubber Gloves and Aprons	RF	S5311
		463	Leaded Rubber Gloves and Aprons	RF	
BN296[39]	Non-Special Source Metal	320	Heavy Non-special Source Metal	RF	S5112
		321	Lead	RF	
		480	Non-special Source Metal	RF	
		481	Leached Non-special Source Metal	RF	
BN304[42]	Mound Debris	801	Rags, Paper, Wood, etc.	MD	S5490
		802	Dry Box Gloves and O-Rings	MD	
		803	Metal, Equipment, Pipe, Valves, etc.	MD	
		804	Plastic, Tygon, Mani-Boots, etc.	MD	
		805	Asbestos Filters	MD	
		810	Glass, Flasks, Sample Vials, etc.	MD	
		813	Glass Filters and Fiberglass	MD	
		814	Graphite Waste	MD	
		825	Equipment Drums, Non-combustible	MD	

Table 3. (continued).

WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
BN304[42]	Mound Debris	827	Equipment Drums, Combustible	MD	
		848	LSA <100 nCi/g Non-combustible	MD	
The following are AMWTP-authorized CCP WIPP-approved direct shipped heterogeneous debris WSPFs					
ID-RF-S5126 (by CCP)[49]	TRU Mixed Graphite Debris	300	Graphite Molds	RF	S5126
		301	Graphite Cores	RF	
		303	Scarfed Graphite Chunks	RF	
		310	Graphite Scarfings	RF	
		312	Coarse Graphite	RF	
ID-RF-S5100-A (by CCP)[48]	Rocky Flats Raschig Rings Stored at the INL	441	Raschig Rings, Unleached	RF	S5100
		442	Raschig Rings, Leached	RF	
ID-RF-S5300-A (by CCP)[50]	RFETS Combustibles and Plastics Stored at INL	330	Paper and Rags-Dry	RF	S5300
		336	Paper and Rags-Moist	RF	
		337	Plastics, Teflon, Washables, PVC	RF	

7.0 AMWTP NEWLY GENERATED WASTE

The IDCs identified by the generator acronym "BN" represent newly generated AMWTP wastes. The term newly generated waste (including newly generated secondary waste) as outlined in this document is for WIPP designation only. See the HWMA/RCRA permit for the definition of newly generated waste for purposes of compliance with the HWMA/RCRA.

Newly generated waste can either be newly generated primary wastes or newly generated secondary waste.[55]

Newly generated primary waste includes retrieved legacy waste within an intact original container where historical information is inadequate and whose contents can only be verified by RTR/VE at the SCG level and newly generated loose/uncontainerized legacy waste (e.g., RF, MD, BC, etc).

Newly generated secondary waste includes wastes that are generated during waste management activities associated with the parent waste streams, and wastes generated from maintenance operations, characterization activities, and/or treatment activities (e.g., supercompaction squeezants).

Newly generated primary and secondary TRU waste have HWNs assigned through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs (i.e., Form-1086, AMWTP Waste Characterization Checklist).

AMWTP Waste Services assigns HWNs and develops AMWTP HWDs (i.e., Form-1086) for LLW/MLLW (i.e., personal protective equipment [PPE], filters, soil, swipes, squeezants, maintenance waste).

The assignment of IDCs to newly generated secondary waste is based on the as generated waste form with consideration given to the generating process, hazardous constituents (or PCB status), and applicable Waste Services and AK information generated.

Currently there are no WIPP-approved WSPFs for newly generated S3000/S4000 wastes.

Newly generated primary and secondary waste associated with legacy waste sources will, at a minimum, carry the EPA HWNs that were assigned to the source and/or parent container(s) unless a case-by-case justification is noted in the AK and/or Facility Operating Record (as applicable).

Final hazardous/radioactive waste determinations are determined for all non-WIPP wastes prior to offsite shipment under the Offsite LLW/MLLW Disposition Project. LLW/MLLW determinations are compared to facility-specific WAC prior to shipment to ensure compliance with the facility/unit-specific WAC.

7.1 AMWTP Debris Waste

The list of authorized supercompactor feedstock debris IDCs is presented in RPTs-TRUW-30 and TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510 and BN510.1, respectively).[94] The BN510 waste stream is utilized for shipment of BN-510 inventory and can no longer accept feedstock debris for supercompaction. Feedstock debris can only be supercompacted for creating BN-550 inventory for waste stream BN510.1. The WIPP-approved supercompacted debris waste WSPF consists of multiple feedstock TRU debris wastes that were designated for the same treatment process based on AK, HWNs, physical form, compatibility, and amenability to the treatment. RTR/VE and applicable HGAS and analysis are used to augment AK information for supercompacted TRU waste. CBFO approval must be obtained prior to supercompacting any container with an IDC that is not currently listed in Appendix A of RPT-TRUW-83. The IDC must also be included in Appendix A of RPT-TRUW-83 prior to supercompaction.[94]

The WMC assigned to the WIPP-approved supercompacted waste stream is S5490, Unknown/Other Heterogeneous Debris (see RPT-TRUW-30,and RPT-TRUW-83). The WMC number S5490 is defined as follows:

> *This unknown/other-detailed category includes waste that is consistent with the definition for the Heterogeneous Debris (S5400) summary category, but is insufficiently characterized to enable more definitive assignment into any of the S5410, S5420, S5450, or S5460 specific-detailed categories and does not meet the criteria for assignment into any of the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.*

Table 4. Table 4 identifies the AMWTP WIPP-Approved Newly Generated S5000 WSPF.

WSP	IDC	Waste Stream and IDC Description	Gen IDC Prefix	WMC
BN510	510	Supercompacted Debris	BN	S5490
BN510.1	550	Supercompacted Debris	BN	S5490
BN600	600	AMWTP WMF-676 PCB Contaminated Debris(BN600)	BN	S5490

Process flow diagrams of newly generated waste to the supercompactor are illustrated in RPT-TRUW-06. [55]

8.0 SUMMARY

All TRU waste managed by the AMWTP will be assigned an IDC, SCG, WMCG, WMC, and be identified within a WIPP-approved WSPF prior to shipment to WIPP.

Waste that is designated for shipment to WIPP is grouped into waste streams based on generation process or activity, material, physical form, and hazardous constituents. The AMWTP groups TRU homogeneous solid, soil/gravel, and debris wastes into distinct waste streams, as applicable. If waste previously identified within a distinct waste stream is determined to be outside that waste stream's parameters approved by WIPP, the waste will be evaluated and if appropriate a new WSPF will be developed and submitted to WIPP for approval.

HWN assignments and PCB status for retrieved TRU waste streams are initially based on preliminary AK information. These HWN/PCB assignments are based on a review of all applicable AK (including prior HWNs/PCB assignments by the generator). The final list of HWNs and PCB status assigned to a WIPP waste stream are based on the final AK determinations and are further augmented by subsequent applicable characterization data (e.g., RTR/VE, HGAS, or solid sampling results).

AMWTP generated TRU waste will be dispositioned as newly generated waste within an existing WSPF or within a new WSPF, as applicable. Newly generated TRU waste will be characterized using established AMWTP techniques (as noted below) and based on WIPP RCRA permit requirements for the applicable SCG.

HWN assignments and PCB status for newly generated TRU waste streams are initially assigned through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs.

The final WIPP HWNs and WIPP PCB status associated with newly generated waste are assigned based on a review of all applicable AK (including prior HWNs assigned by Waste Services/Offsite Waste Coordinator) and augmented by applicable characterization data (e.g., RTR/VE, HGAS, and/or solid sampling results) prior to WIPP profiling.

9.0 REFERENCES

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4. WM-F1-82-021, Content Code Assessments for the INEL Contact-Handled Stored Transuranic Wastes, T.L. Clements, Jr. [P024A]

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6. EGG-WM-6503, TRU Waste Sampling Program: Volume I - Waste Characterization, T.L. Clements, Jr. and D.E. Kudera, Idaho National Engineering Laboratory [P015A]

7. EDF-RWMC-759, Argonne National Laboratory-East Remote-Handled Waste, W. M. Heileson, EG&G Idaho, Inc. [P309A]

8. INEL-95/0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste, Idaho National Engineering Laboratory [P016A]

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10. U.S. Code of Federal Regulations, Title 40, Environmental Protection Agency, Part 261, Identification and Listing of Hazardous Waste

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12. DOE/WIPP-02-3122, Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant

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14. EDF-RWMC-452, Retrieval and Disposition of United States Americium from Mexico, J.D. Wells [P314A]

15. ID4890008952, AMWTP HWMA/RCRA Permit

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17. RWMC-942, INEL/INT-97-00214, Disagreement with the Assignment of EPA Hazardous Waste Numbers by the Acceptable Knowledge Document, INEL 96/0280 [P239A]

18. EDF-RWMC-1048, Characterization of Wastes Generated at Argonne National Laboratory-West with IDCs of 161, 162, and 163, Idaho National Engineering and Environmental Laboratory [P312A]

19. EDF-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste, Idaho National Engineering and Environmental Laboratory [P361A]

20. EDF-RWMC-1062, Characterization of Wastes Generated at Mound Laboratory with IDCs of 825, 847, and 848, LMITCO [P313A]

21. RWMC-1043, INEEL/INT-98-01210, Characterization of Wastes Used in the 1991 through 1993 SWEPP Certified Waste Sampling Program [P237A]

22. Waste Stream Profile Form INW276.004-Graphite, transmittal letter (CCN 00-013770) to Jerry Wells, US DOE, dated September 26, 2000, and WSPF Update for WIPP Operating Record, dated February 19, 2003 [P212A]

23. Waste Stream Profile Form INW247.001 Raschig Rings and transmittal Letter (CCN 15439) to Jerry Wells, US DOE, November 13, 2000 [P214A]

24. Waste Stream Profile Form INW216.001-First/Second Stage Sludge, transmittal letter (CCN 21151) to Jerry Wells, U.S. DOE, dated May 24, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003 [P217A]

25. Waste Stream Profile Form INW218.001-Building 374 Sludge, transmittal Letter (CCN 23889) to Jerry Wells, U.S. DOE, dated July 19, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003 [P218A]

26. Waste Stream Profile Form INW222.001-Miscellaneous Cemented Sludges, Transmittal Letter (CCN 31196) to Jerry L. Wells, U.S. DOE, and WSPF Update for WIPP Operating Record (2/19/03) [P288A]

27. Waste Stream Profile Form INW296.001 Non-Special Source Metals / (Light Metals), transmittal letter (CCN 00-014770) to Jerry Wells, US DOE, dated October 23, 2000, and WSPF Update for WIPP Operation Record, not dated [P213A]

28. Waste Stream Profile Form INW243.001 – Glass (except Raschig Rings), transmittal letter (CCN 19871) to Jerry Wells, US DOE, dated March 26, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003 [P215A]

29. EDF-2944, Engineering Design File Waste Stream Summary Sheet–Plastics, Idaho National Engineering and Environmental Laboratory [P283A]

30. Waste Stream Profile Form INW198.001-Plastics and transmittal Letter (CCN 29583) to Jeff Cotton, Westinghouse TRU Solutions LLC [P285A]

31. Waste Stream Profile Form INW211.001-Filters and Insulation, transmittal letter (CCN 21154) to Jerry Wells, US DOE, dated April 26, 2001, and WSPF Update for WIPP Operating Record, not dated [P216A]

32. RMWC Form-267, Idaho National Engineering and Environmental Laboratory (INEEL) Acceptable Knowledge (AK) Final Evaluation Checklist for WSPF INW161.001 Fire Brick/Coarse Fire Brick [U102A]

33. Waste Stream Profile Form INW252.001-Leaded Rubber Gloves and Aprons transmittal Letter (CCN 36785) from Thomas Monk to Jerry Wells dated October 15, 2002; and EDF-2981, Waste Stream Summary Sheet–Leaded Rubber Gloves and Aprons [P305A]

34. RWMC Form-267, Idaho National Engineering and Environmental Laboratory (INEEL) Acceptable Knowledge (AK) Final Evaluation Checklist WSPF INW252.001 Leaded Rubber Gloves and Aprons [U103A]

35. Waste Stream Profile Form INW161.001 Fire Brick/Coarse Fire Brick; Transmittal Letter (CCN 35971) to Jerry Wells dated September 20, 2002; and EDF-3019, Engineering Design File Waste Stream Summary Sheet–Fire Brick/Coarse Fire Brick [P306A]

36. Waste Stream Profile Package, BN835, Solidified Acid/Caustic Waste [P437A]

37. Waste Stream Profile Package, BN510 Supercompacted Debris Waste [P439A]

38. Waste Stream Profile Package, BN211 Filter Debris Waste [P461A]

39. Waste Stream Profile Package, BN296 Non-Special Source Metal [P462A]

40. Waste Stream Profile Package, BN243 Glass Debris Waste [P486A]

41. Waste Stream Profile Package, BN252 Leaded Rubber Debris Waste [P487A]

42. Waste Stream Profile Package, BN304 Mound Debris Waste [P604A]

43. Discrepancy Report D046A – Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Item Description Codes (IDCs): RF-432 and RF-822 Wastes [D046A]

44. Waste Stream Profile Package BN161, Firebrick Debris Waste [P610A]

45. Waste Stream Profile Package BN004, Special Setups Waste [P609A]

46. Central Characterization Project Waste Stream Profile Form, Waste Stream Profile Number ID-RF-S3114, Organic Setups [P666A]

47. Central Characterization Project Waste Stream Profile Form, Waste Stream Profile Number ID-RF-S3150-A, Organic and Sludge Immobilization System Waste [P665A]

48. Central Characterization Project Waste Stream Profile Form, Waste Stream Profile Number ID-RF-S5100-A, Rocky Flats Raschig Rings Stored at the INL [P638A]

49. Central Characterization Project Waste Stream Profile Form, Waste Stream Profile Number ID-RF-S5126, TRU Mixed Graphite Debris [P636A]

50. Central Characterization Project Waste Stream Profile Form, Waste Stream Profile Number ID-RF-S5300-A, RFETS Combustibles and Plastics Stored at INL [P637A]

51. CCP-AK-INL-001, Central Characterization Project Acceptable Knowledge Summary Report for Waste Retrieved from Designated Areas Within the Subsurface Disposal Area at the Idaho National Laboratory [P647A]

52. NM4890139088-TSDF, Waste Analysis Plan (WIPP WAP), Attachment B to WIPP Hazardous Waste Facility Permit

53. DOE/LLW-217, DOE Waste Treatability Group Guidance, Rev. 0, January 1995 [P670A]

54. Federal Facilities Compliance Act of 1992, Public Law No. 102-386, October 6, 1992

55. RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste

56. Waste Stream Profile Package BN836, Cemented Sludge Waste Stream Profile Package [P646A]

57. Waste Stream Profile Package BNINW216, First/Second Stage Sludge [P402A]

58. Waste Stream Profile Package BNINW218, Building 374 Sludge [P420A]

59. AKR-06-380, Large PCB Items Found in Box of IDC RF 480

60. Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-SDA-DEBRIS, Heterogeneous Debris from the Subsurface Disposal Area [P661A]

61. WM-F1-81-015, Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification, Excerpts Re: Battelle Columbus, September 1981 [P356A]

62. Discrepancy Report D043A – Assessment of Hazardous Waste Numbers Assigned to Item Description Codes (IDCs): RF292, RF371, RF377 and RF807 Wastes [D043A]

63. MP-WM&M-13.9, Waste Characterization and Waste Services Management

64. CCP-AK-INL-002, Central Characterization Project Acceptable Knowledge Summary Report for the Idaho National Laboratory Rocky Flats Transuranic Graphite Debris Waste Stream: ID-RF-S5126, Revision 2, October 20, 2005 [P632A]

65. EDF-1175, Engineering Design File Waste Stream Summary Sheet–Graphite, Idaho National Engineering and Environmental Laboratory [P221A]

66. Discrepancy Report D064A –Discrepancy report to resolving the assignment of F039 to AMWTP RF Waste IDCs [D064A]

67. E-mail to Steve Carpenter from James B. Zovi, Re: AMWTP Macro Rejects – PFNW [C568S]

68. IWTS Material Profile No. 2815A: CH-MLLW Generated at HFEF – WCA [P711A]

69. IWTS Material Profile No. 2815: MLLW generated at HFEF-WCA [P728A]

70. CCP-PK-NTS-001, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lawrence Livermore National Laboratory Waste, Waste Streams: NTLLNL-S5400 and NTLLNL-S3900, Revision 1, November 21, 2008 [P748A]

71. CCP-PK-NTS-003, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lawrence Berkeley National Laboratory Waste, Waste Streams: NTLBL-S5400 and NTLBL-S3900, Revision 0, November 6, 2008 [P749A]

72. Discrepancy Report D073A - Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Description Code (IDCs): RF-292 and 807b [D073A]

73. Discrepancy Report D063A - Advanced Mixed Waste Treatment Project (AMWTP), Rocky Flats Environmental Technology Site (RFETS) and Idaho National Laboratory's (INL) Accelerated Retrieval Project (ARP) Subsurface Disposal Area (SDA) hazardous waste determinations (HWDs)/Hazardous waste numbers (HWNs) for roaster oxide [D063A]

74. Telephone Conversation with Robert J. Hudson, retired RWMC RCT on February 26, 2009 Re: Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"[C617A]

75. Correspondence from AMWTP Environmental Compliance and Regulatory Affairs, Re: Assignment of New IDCs for Squeezants, March 19, 2009 [C629A]

76. Correspondence from AMWTP Environmental, Safety, Security, and Health Organization, IDCs, April 16, 2009 [C821A]

77. CCP-PK-NTS-005, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lynchburg Research Center Debris Waste, Waste Stream: NTLRC-S5400, Revision 0, December 11, 2008 [P784A]

78. CCP-PK-NTS-006, Central Characterization Project Process Knowledge Summary Report for Stored Contact-Handled Transuranic Debris Waste Generated by EG&G Energy Measurements, Inc. at the North Las Vegas Facility, Waste Stream NTS-EG&G-HET, Revision 0, April 9, 2009 [P790A]

79. CCP-PK-NTS-007, Central Characterization Project Process Knowledge Summary Report for Tonopah Test Range/Roller Coaster Project Contact-Handled Transuranic Waste, Waste Stream: NTS-TTR-HET, Revision 0, April 9, 2009 [P791A]

80. CCP-PK-NTS-4, Central Characterization Project Process Knowledge Summary Report for Contact-Handled Transuranic Debris Waste from Decontaminating Rocky Flats Classified Waste at the Nevada Test Site, Waste Stream: NT-RF-DECON, Revision 0, April 15, 2009 [P792A]

81. CCP-PK-NTS-008, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lawrence Livermore and Lawrence Berkeley National Laboratory Waste, Waste Stream: NTLLLBL-S5400, Revision 0, April 15, 2009 [P793A]

82. CCP-PK-NTS-009, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Inhalation Toxicology Research Institute Waste, Waste Stream: NTS-ITRI-S5310, Revision 0, April 17, 2009 [P794A]

83. CCP-PK-NTS-010, Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Visual Examination and Repackaging Building Decon and Maintenance Waste, Waste Stream: NTVERB-S5400, Revision 0, April 17, 2009 [P795A]

84. CCP-AK-INL-009, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lawrence Livermore National Laboratory Waste, Waste Streams: ID-NTLLNL-S5400 and ID-NTLLNL-S3900, Revision 0, November 19, 2008 [P785A]

85. CCP-AK-INL-015, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lawrence Livermore and Lawrence Berkeley National Laboratory Waste, Waste Stream: ID-NTLLLBL-S5400, Revision 0, August 6, 2009 [P821A]

86. CCP-AK-INL-013, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site EG&G Energy Measurements, Inc. (North Las Vegas Facility) Debris Waste, Waste Stream: ID-NTS-EG&G-HET, Revision 1, September 15, 2009 [P809A]

87. CCP-AK-INL-011, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lynchburg Research Center Debris Waste, Waste Stream: ID-NTLRC-S5400, Revision 0, August 13, 2009 [P818A]

88. CCP-AK-INL-012, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Contact-Handled Transuranic Debris Waste from Decontaminating Rocky Flats Classified Waste at the Nevada Test Site, Waste Stream: ID-NT-RF-DECON, Revision 0, August 04, 2009 [P819A]

89. CCP-AK-INL-014, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Tonopah Test Range/Roller Coaster Project Contact-Handled Transuranic Waste, Waste Stream: ID-NTS-TTR-HET, Revision 0, July 15, 2009 [P820A]

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91. CCP-AK-INL-016, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Inhalation Toxicology Research Institute Waste, Waste Stream: ID-NTS-ITRI-S5310, Revision 0, July 27, 2009 [P822A]

92. CCP-AK-INL-017, Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Visual Examination and Repackaging Building Decon and Maintenance Waste, Waste Stream: ID-NTVERB-S5400, Revision 0, August 6, 2009 [P823A]

93. AKR-05-235, Potential Presence of Hexachlorobenzene in the Supercompated Debris Waste (BN 510)

94. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

95. RPT-TRUW-77, Acceptable Knowledge Summary for Solidified Plutonium Recovery Incinerator Waste (BN222)

96. CKA-001-10, Correspondence from Carolyn Abbott, AKE, Re: Pad 1, Cells 1 and 2 Waste, March 17, 2010 [C855A]

97. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP

98. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, Advanced Mixed Waste Treatment Project

99. MP-TRUW-8.2, Quality Assurance Project Plan

100. AMWTP Form-1900, DOE CH-TRU Waste Profile for LL-W019-S3900, Lawrence Livermore National Laboratory Solidified Inorganics and Solidified Organics (LL-212) [P870A]

101. AMWTP Form-1900, DOE CH-TRU Waste Profile for LL-M001-S5400, Lawrence Livermore National Laboratory Heterogeneous Debris (LL-213) [P871A]

102. AMWTP Form-1900, DOE CH-TRU Waste Profile for LL-T004-S3141, Lawrence Livermore National Laboratory Salts (LL-221) [P872A]

103. AMWTP Form-1900, DOE CH-TRU Waste Profile for GEVNC.02, GEVNC Hot Cell 4 Debris (IDC GV-222) [P869A]

104. INL/EXT-10-17600, Process Knowledge Summary Report for Materials and Fuels Complex Contact-Handled Transuranic Debris Waste [P842A]

105. RPT-TRUW-79, Acceptable Knowledge Document for Materials Fuel Complex (MFC) Waste

106. RPT-670, CH2M-WG Idaho Process Knowledge Summary Report for CH TRU Waste and Mixed Low-Level Waste Generated at INTEC and RWMC Analytical Laboratories in Support of AMWTP Sampling Activities [P891A]

107. RPT-LLW-12, Characterization Approach for Offsite LLW/MLLW Disposition Project Waste Streams

108. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

109. RPT-TRUW-05, Waste Matrix Code Reference Manual

110. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge

111. TREE-1286, Initial Drum Retrieval Final Report, K. B. McKinley and J. D. McKinney, Idaho National Engineering Laboratory [P652S]

112. CCP-AK-INL-005, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory, Waste Streams: ID-RF-S3114 and ID-RF-S3150-A, Revision 1, January 4, 2006 [P634A]

113. CCP-AK-INL-006, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Raschig Rings Stored at the Idaho National Laboratory, Waste Stream: ID-RF-S5100-A, Revision 1, October 20, 2005 [P635A]

114. CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory, Waste Stream ID-RF-S5300-A, Revision 1, October 6, 2005 [P633A]

115. RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

116. Waste Stream Profile Package, BN510.1 Supercompacted Debris Waste. [P1030A]

117. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]

118. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]

119. CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4 2010 [P855A]

120. SR-W026-221F-HOM, AMWTP Form 1900, December 1, 2010 [P1134A]

121. CCP-AK-SRS-3, Central Characgerization Project Acceptable Knowledge Summary Report for Savannah River Site, Waste streams SR-W026-221F, Rev. 9, April 26, 2010 [P1135A]

122. AMWTP Waste Services Letter to File RE: Absorbed Supercompactor Squeezants (IDCs BN-507 and BN-514), HWN 061604-01, January 31, 2011. [C953A]

123. AMWTP Waste Services Letter to File RE: HWD 040811-01, WMF-676 PCB Contaminated Debris (BN-600), [C1018A]

124. Response to Request for Additional Information on Environmental Protection Agency (EPA) Hazardous Waste "P" and "U" Codes relative to B374 Operations, August 29, 2001.[C948S]

125. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S5-001, INTEC Waste Drum INTC050203, January 9, 2008. [P1260A]

126. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S3-001, INTEC Waste Drum INTC0500032, January 21, 2008. [P1261A]

127. Interoffice memorandum, Summary of Retrieval Acceptable Knowledge for Pad R, Cell 1 Waste, CKA-OOI-09, May 21, 2009. [C618A]

128. AMWTP Form-1687 Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids (LA-002). [P769A]

129. AMWTP Form-1687 Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids (LA-003). [P770A]

130. AMWTP Form-1900, AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-55 Mixed Tranuranic Waste, LA-MIN04-S.001 (IDC LA-005). [P1224A]

131. AMWTP Form-1900, DOE CH-TRU Waste Profile for LANL-CIN01.001, Los Alamos National Laboratory Solidified Inorganics (LA-006). [P1145A]

132. AMWTP Form-1900, DOE CH-TRU Waste Profile for nuclear Fuel Services Contact-Handld Transuranic Waste Soil Stored at Oak Ridge national Laboratory (OR-250). [P772A]

133. AMWTP Form-1687 NON-AMWTP Generator Waste Profile for Hanford PFP Absorbed Plutonium Nitrate Solutions RLPUNIT (RL-715).[P774A]

134. AMWTP Form-1587 NON-AMWTP Generator Waste Profile for Hanford Grouted KE Basin North Loadout Pit Sludge (RL-720). [P776A]

135. AMWTP Form-1900 DOE CH-TRU WASTE PROFILE For Mound Plant Solidified Acid/Caustic Waste Stored at the Savannah River Site (SR-835). [P778A]

136. AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-AGNS-HOM, Barnwell Solidified Inorganic Waste stored at Savannah River Site (IDC SR-251). [P1152A]

137. AMWTP Form-1900, DOE CH-TRU Waste Profile for Savannah River Site, Building 221F, Absorbed Waste (IDC SR-252). [P1134S]

138. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-HOM-C, Mound Site Inorganic Particulates Stored at Savannah River Site (SR-253). [P1153A]

139. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SA-T001-S5400, Lovelace Respiratory Research Institute Heterogeneous Debris Stored at Sandia National Laboratories (SL-223) [P1146A]

140. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-HFC-S5400, Sandia National Laboratories Hot Cell Facility Heterogeneous Debris (SL-224) [P1148A]

141. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SOURCES-S5400, Radioactive Sources from Sandia National Laboratory (SL-227) [P1150A]

142. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHHM-PK, Argonne CH Homogeneous Solids (AE-254) [P1154A]

143. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for LBNL-S5400, Lawrence Berkeley Mixed Heterogeneous Debris (LB-229) [P1313A]

144. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for NRD.1, Nuclear Radiation Development Mixed Heterogeneous Debris (ND-228) [P1312A]

145. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-ICP-MFC-Gloves, EFL Lead Gloves (AW-225), March 14, 2011 [P1143A]

146. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-PCB-S5490, Laboratory PCB Debris (IW-526), February 8, 2010 [P1162A]

147. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S5490, Laboratory Non-PCB Debris (IW-527), February 8, 2010 [P1163A]

148. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S3900, Laboratory Homogeneous Solids (IW-603), February 8, 2010 [P1165A]

149. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-SOIL, Mound Site Soil/Debris Stored at SRS (SR-842), Rev. 0, May 19, 2011 [P1314A]

150. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHDM-PK, Argonne CH Debris (AE-230), July 19, 2011 [P1154A]

Appendix A

Chemical Constitutents and HWNs Identified in TRU Waste

Appendix A
Chemical Constituents and HWNs Identified in TRU Waste

Appendix A information is used to support the AMWTP HWMA/RCRA permit development relating to TRU waste storage and management and is used to track HWN assignments relating to WIPP-approved WSPFs.

Appendix A summarizes hazardous waste constituents for TRU IDCs with the exception of water received by the AMWTP Offsite Waste Program (see Notes 9 and 19). AMWTP TRU wastes as well as TRU wastes received for WIPP profiling by AMWTP or CCP, are listed in Table A-1 by generator and IDC (i.e., columns 1 and 2, respectively). A brief waste description is noted in column 3. The chemical constituents or potential properties for individual IDCs are identified in column 4[g]. Related Chemical Abstract Service (CAS) numbers are tabulated in column 5.

Potential hazardous constituents that may be found within an applicable IDC (and associated source document reference numbers) are noted in column 6. Information within column 6 reflects unconfirmed information relating to potential EPA hazardous constituent (e.g., listed or characteristic) or potential EPA hazardous characteristic property. Potential hazardous constituents associated with AMWTP legacy wastes do not necessarily reflect generator-assigned HWNs or final WIPP-assigned HWNs. These potential hazardous constituents were identified based on information provided by the AMWTP Waste Services organization, or historical reviews of referenced AK documents, or information provided by non AMWTP waste generators. The identification of potential hazardous constituents is for purposes of supporting safe storage. The initial identification of potential hazardous constituents occurs prior to AMWTP AK/characterization activities relating to HWN assignment, including the statistically derived 90% Upper Confidence Level (UCL_{90}) value determination. The identification of current and future potential hazardous constituents and/or potential properties will be based on one or more of the following:

- New AK information
- New information provided by the generator
- New HWNs assigned by AK
- New HWNs identified as a result of AMWTP characterization activities performed to augment AK.

Generator-assigned and WIPP-approved EPA HWNs are presented in columns 7 and 8, respectively. The "Initial Gen Assigned HWN" column (column 7) contains the HWNs originally assigned by the waste generator, if available. The "WIPP WSPF Approved HWN" column (column 8) contains HWNs assigned through the WIPP characterization process and documented in the applicable WIPP-approved WSPF. The HWNs assigned for WIPP disposal pertain only to those containers certified for WIPP disposal.

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g. IDCs listed in Appendix A are subject to change. HWNs and constituents associated with off-site wastes are available through the Offsite Waste Program Coordiantor. The final list of HWNs and constituents will be identified prior to the time of WIPP profiling.

HI (historical interpretation), WG (waste generator), AK (acceptable knowledge), and WS (waste stream) noted in Table A-1 header reflect applicable sources of information based on waste generator supplied information, AK, and WSPF characterization results, respectively.

The AK source document references associated with hazardous constituent/HWN are noted in the applicable columns as X-^{y}. The abbreviations for generator sites and areas are listed in Table A-2.

Table A-1. Chemical constituents and HWNs identified in TRU waste.

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
AE, AE	100	GENERAL PLANT WASTE	ethyl ether	60-29-7	X-[1, 4, 5]	—	—
			nitrates	—	X-[1, 4, 5]	—	—
AE, AE	101	CUT UP GLOVEBOXES	lead	7439-92-1	X-[1, 5]	—	—
AE, AE	102	ABSORBED LIQUIDS	TBD	—	TBD	—	—
AE, AE	104	ALPHA HOT CELL WASTE	lead	7439-92-1	X-[1, 5, 7]	—	—
			sodium	7440-23-5	X-[1]	See Note 8	—
AE, AE	105	EMPTY BOTTLES AND ABSORBENT	TBD	—	TBD	—	—
AE, AE	106	SPECIAL SOURCE MATERIAL	TBD	—	TBD	—	—
AE, AE	107	RH WASTE	lead	7439-92-1	X-[7]	—	—
AE, AE	110	RESEARCH GENERATED WASTE	acetone	67-64-1	X-[5]	—	—
			arsenic	7440-38-2	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
AE, AE	111	SOLIDIFIED WET SLUDGE	arsenic	7440-38-2	X-[5]	—	—
			barium	7440-39-3	X-[5]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
AE, AE	120	D AND D WASTE COMPACTABLE AND COMBUSTIBLE SOLIDS	TBD	—	TBD	—	—
AE, AE	121	TRU ORGANIC SOLID WASTE	TBD	—	TBD	—	—
AE, AE	230	ARGONNE CH HOMOGENEOUS SOLIDS	See Notes 9 and 19[150]	See Note 9[150]	See Note 9[150]		
AE, AE	254	ARGONNE CH HOMOGENEOUS SOLIDS	See Notes 9 and 19[142]	See Note 9[142]	See Note 9[142]		
BC, BC	201	NON-COMBUSTIBLE SOLIDS	lead	7439-92-1	X-[1, 4]	—	—
BC, BC	202	COMBUSTIBLE SOLIDS-PAPER/CLOTH	TBD	—	TBD	—	—
BC, BC	203	PAPER, CLOTH, METALS, GLASS	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[61]	—	—
BC, BC	204	SOLIDIFIED SOLUTIONS	TBD	—	TBD	—	—
BL, BL	010	RAGS, GLOVES, POLY	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			lead	7439-92-1	X-[1]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
BL, BL	012	MISCELLANEOUS SOURCES	TBD	—	TBD	—	—
BL, BL	015	NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[3]	—	—
BL, BL	020	NON-COMPRESSIBLE, NON-COMBUSTIBLE	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
			nitrates	—	X-[1]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[3, 4, 5]	See Notes 2 and 3	—
BL, BL	030	SOLIDIFIED GRINDING SLUDGE	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
BL, BL	040	SOLIDIFIED BINARY SCRAP POWDER	lead (shielding only)	7439-92-1	X-[1, 3, 4]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[3, 4]	See Notes 2 and 3	—
BL, BL	050	SOLIDIFIED SOLUTIONS	TBD	—	TBD	—	—
BL, BL	081	METAL SAMPLES FISSILE	TBD	—	TBD	—	—
BL, BL	338	RWMC LEAD SHIELDED OVERPACK: EMPTY	lead	7439-92-1	X-[1]	D008	—
BW, BW	515	PLASTICS, PAPER, CLOTH, ETC.	TBD	—	TBD	—	—
BW, BW	516	STEEL, AL, ELECTRICAL DEVICES-HANDHELD	TBD	—	TBD	—	—
BW, BW	517	HEAVY METALS, STEEL, AL, BRASS	TBD	—	TBD	—	—
BX, BX	111	MISCELLANEOUS SOURCE MATERIAL	TBD	—	TBD	—	—
GV, GV	222	GE VNC HOT CELL DEBRIS WASTE	See notes 9 and 19		See Note 9[103]	See Note 19[103]	
ID, AW	150	LABORATORY WASTE	lead	7439-92-1	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1]	See Notes 2 and 3	—
ID, AW	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
ID, AW	153	COMBUSTIBLE LAB WASTE	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
			lead (shielding only)	7439-92-1	X-[1, 5]	D008	—
ID, AW	154	SAMPLE FUEL	lead (shielding only)	7439-92-1	X-[1, 4, 5]	D008	—
ID, AW	155	TRU SCRAP	TBD	—	TBD	—	—

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ID, AW	160	AL/CL DEBRIS WASTE (See Note 19)	TBD	—	TBD	—	—
ID, AW	161	ACL GLASSWARE, PAPER, POLY, AND MISCELLANEOUS	none identified	—	X-[18]	—	—
ID, AW	162	ANL-W FMF EFL ZR-U-PU FUEL CASTING	none identified	—	X-[18]	—	—
ID, AW	163	ANL-W ACL COLD-LINE ABSORBED LIQUID AND DEBRIS	none identified	—	X-[18]	—	—
ID, AW	164	ANL-W HRA/WCA DEBRIS (See Note 19)	arsenic	7440-38-2	X-[68, 69]	D004	—
			barium	7440-39-3	X-[68, 69]	D005	—
			beryllium (not beryllium powder)	7440-41-7	X-[68, 69]	—	—
			cadmium	7440-43-9	X-[68, 69]	D006	—
			chromium	7440-47-3	X-[68, 69]	D007	—
			lead	7439-92-1	X-[68, 69]	D008	—
			mercury	7439-97-6	X-[68, 69]	D009	—
			selenium	7782-49-2	X-[68, 69]	D010	—
			silver	7440-22-4	X-[68, 69]	D011	—
			ignitable	N/A	X-[68, 69]	D001 See Note 2	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[68, 69]	—	—
			1,1,2-trichloroethane	79-00-5	X-[68, 69]	—	—
			1,4-dichlorobenzene	106-46-7	X-[68, 69]	—	—
			1,2-dichloroethane	107-06-2	X-[68, 69]	—	—
			1,1-dichlorethylene	156-60-5	X-[68, 69]	—	—
			2,4-dinitrotoluene	121-14-2	X-[68, 69]	—	—
			2-ethoxyethanol	110-80-5	X-[68, 69]	—	—
			2-nitropropane	79-46-9	X-[68, 69]	—	—
			acetone	67-64-1	X-[68, 69]	F003 See Note 2	—
			benzene	71-43-2	X-[68, 69]	D018	—
			carbon disulfide	75-15-0	X-[68, 69]	—	—
			carbon tetrachloride	56-23-5	X-[68, 69]	—	—
			chlorobenzene	108-90-7	X-[68, 69]	—	—
			chloroform (trichloromethane)	67-66-3	X-[68, 69]	—	—
			cresols	1319-77-3	X-[68, 69]	—	—
			cyanide	57-12-5	X-[68, 69]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl acetate (acetic acid)	141-78-6	X-[68, 69]	—	—
ID, AW	164	ANL-W HRA/WCA DEBRIS (See Note 19) (Continued)	ethyl benzene	100-41-4	X-[68, 69]	—	—
			ethyl ether	60-29-7	X-[68, 69]	—	—
			hexachlorobenzene	118-74-1	X-[68, 69]	—	—
			hexachloroethane	67-72-1	X-[68, 69]	—	—
			methanol	67-56-1	X-[68, 69]	—	—
			methylene chloride	75-09-2	X-[68, 69]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[68, 69]	—	—
			methyl isobutyl ketone	108-10-1	X-[68, 69]	—	—
			n-butyl alcohol (butanol)	71-36-3	X-[68, 69]	—	—
			pentachlorophenol	87-86-5	X-[68, 69]	—	—
			pyridine	110-86-1	X-[68, 69]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[68, 69]	—	—
			toluene	108-88-3	X-[68, 69]	—	—
			trichloromonofluoromethane	75-69-4	X-[68, 69]	—	—
			vinyl chloride	75-01-4	X-[68, 69]	—	—
ID, AW	165	ASH STABLIZATION & GGE DEBRIS (See Note 19)	arsenic	7440-38-2	X-[68]	D004[68, 105]	—
			barium	7440-39-3	X-[68, 105]	D005[68, 105]	—
			beryllium (not beryllium powder)	7440-41-7	X-[68, 105]	—	—
			cadmium	7440-43-9	X-[68, 105]	D006[68, 105]	—
			chromium	7440-47-3	X-[68, 105]	D007[68, 105]	—
			lead	7439-92-1	X-[68, 105]	D008[68, 105]	—
			mercury	7439-97-6	X-[68, 105]	D009[68, 105]	—
			selenium	7782-49-2	X-[68, 105]	D010[68, 105]	—
			silver	7440-22-4	X-[68, 105]	D011[68, 105]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[68, 105]	F001/F002[68, 105]	—
			xylene	1330-20-7	X-[68, 105]	F003 (See Note 2)[68, 105]	—
			toluene	108-88-3	X-[68, 105]	F005[68, 105]	—
ID, AW	167	MFC CH-TRU HETEROGENOUS DEBRIS (See Note 19)	cadmium	7440-43-9	X-[104]	D006[104]	—
			chromium	7440-47-3	X-[104]	D007[104]	—
			lead	7439-92-1	X-[104]	D008[104]	—

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			silver	7440-22-4	X-[104]	D011[104]	—
ID, AW	225	EFL LEAD GLOVES	See Notes 9 and 19[145]	See Notes 9[145]	See Notes 9[145]		
ID, BN	500	NEWLY GENERATED DEBRIS (NOT BN-508)	See Note 15	—	See Note 15	See Note 15	—
ID, BN	501	AMWTP PCB SOIL	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 17	See Note 17	—
ID, BN	505	INORGANIC HOMOGENEOUS SOLIDS	See Note 17	—	See Note 17	See Note 17	—
ID, BN	507	ABSORBED AQUEOUS SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37,122]	F001/F002[37,75, 97, 115,122]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37,122]	F001[97, 115,122]	—
			1,2-dichloroethane	107-06-2	X-[37,122]	D028[37, 75, 115,122]	—
			1,2-dichlorobenzene	95-50-1	X-[37,122]	F002[97, 115,122]	—
			1,1-dichloroethylene	75-35-4	X-[37,122]	D029[37, 75, 115,122]	—
			1,4-dichlorobenzene	106-46-7	X-[97,122]	D027[97, 115,122]	—
			2,4-dinitrotoluene	121-14-2	X-[97,122]	D030[97, 115,122]	—
			2-ethoxyethanol	110-80-5	X-[97,122]	F005[97, 115,122]	—
			2-nitropropane	79-46-9	X-[97,122]	F005[97, 115,122]	—
			acetone	67-64-1	X-[37,122]	See Note 2	—
			arsenic	7440-38-2	X-[37,122]	D004[37, 75, 97,122]	—
			asbestos	1332-21-4	X-[37,122]	N/A	—
			barium	7440-39-3	X-[37,122]	D005[37, 75, 97, 115,122]	—
			benzene	71-43-2	X-[37,122]	F005[37, 75, 97, 115,122]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37,122]	N/A[37, 97, 115,122]	
			cadmium	7440-43-9	X-[37,122]	D006[37, 75, 97, 115,122]	—
			carbon disulfide	75-15-0	X-[37,122]	F005[37, 97, 115,122]	—
			carbon tetrachloride	56-23-5	X-[37,122]	F001[37, 75, 97, 115,122]	—
			chlorobenzene	108-90-7	X-[97,122]	F002[97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37,122]	D022[37, 75, 115,122]	—
			chromium	7440-47-3	X-[37,122]	D007[37, 75, 97, 115,122]	—
			cyanide cleaning bath solutions	—	X-[37,122]	F009[37, 75, 115,122]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cyanide plating bath solutions	—	X-[37,122]	F007[37, 75, 115,122]	—
ID, BN	507	ABSORBED AQUEOUS SQUEEZANTS (Continued)	cresols	—	X-[97,122]	F004 [97, 115,122]	—
			electroplating sludges	—	X-[37,122]	F006[37, 75, 115,122]	—
			hexachlorobenzene	118-74-1	X-[37, 93,122]	N/A	—
			hexachloroethane	67-72-1	X-[97,122]	D034[97, 115,122]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[50, 97,122]	F005[97, 115,122]	—
			lead	7439-92-1	X-[37,122]	D008[37, 75, 97, 115,122]	—
			mercury	7439-97-6	X-[37,122]	D009[37, 75, 97, 115,122]	—
			methanol	67-56-1	X-[37,122]	See Note 2	—
			methylene chloride	75-09-2	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37,122]	F005[37, 75, 97, 115,122]	—
			nitrobenzene	98-95-3	X-[97,122]	F004[97, 115,122]	—
			pentachlorophenol	87-86-5	X-[97,122]	D037[97, 115,122]	—
			pyridine	110-86-1	X-[97,122]	F005[97, 115,122]	—
			selenium	7782-49-2	X-[37,122]	D010[37, 75, 115,122]	—
			silver	7440-22-4	X-[37,122]	D011[37, 75, 115,122]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			toluene	108-88-3	X-[37,122]	F005[37, 75, 97, 115,122]	—
			trichloroethylene (TCE)	79-01-6	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			trichlorofluoromethane	75-69-4	X-[97,122]	F001/F002 [97, 115,122]	—
			vinyl chloride	75-01-4	X-[97,122]	D043[97, 115,122]	—
			xylene	1330-20-7	X-[37,122]	See Note 2	—
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97, 115]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97, 115]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 115]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS (Continued)	1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 115]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 97, 115]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 97, 115]	—
			benzene	71-43-2	X-[37]	F005[37, 97, 115]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 97, 115]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 115]	—
			chlorobenzene	108-90-7	X-[97]	F002 [97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 115]	—
			Chromium	7440-47-3	X-[37]	D007[37, 97, 115]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 115]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 115]	—
			cresols	—	X-[97]	F004[97, 115]	
			electroplating sludges	—	X-[37]	F006[37]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	
			lead	7439-92-1	X-[37]	D008[37, 97, 115]	—
			mercury	7439-97-6	X-[37]	D009[37, 97, 115]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97, 115]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97, 115]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS (Continued)	nitrobenzene	98-95-3	X-[97]	F004[97, 115]	
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	
			pyridine	110-86-1	X-[97]	F005[97, 115]	
			selenium	7782-49-2	X-[37]	D010[37, 115]	—
			silver	7440-22-4	X-[37]	D011[37, 115]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97, 115]	—
			toluene	108-88-3	X-[37]	F005[37, 97, 115]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97, 115]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	509	ABSORBED ORGANIC LIQUIDS (EXCLUDING SQUEEZANTS)	See Note 23	—	See Note 23	See Note 23	—
ID, BN	510	SUPERCOMPACTED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37]	F001/F002[37]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37]	F001/F002[37]
			1,2-dichloroethane	107-06-2	X-[37]	D028[37]	D028[37]
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37]	D029[37]
			acetone	67-64-1	X-[37]	See Note 2	N/A
			arsenic	7440-38-2	X-[37]	D004[37]	D004[37]
			asbestos	1332-21-4	X-[37]	N/A	N/A
			barium	7440-39-3	X-[37]	D005[37]	D005[37]
			benzene	71-43-2	X-[37]	F005[37]	F005[37]
			cadmium	7440-43-9	X-[37]	D006[37]	D006[37]
			carbon disulfide	75-15-0	X-[37]	F005[37]	F005[37]
			carbon tetrachloride	56-23-5	X-[37]	F001[37]	F001[37]
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37]	D022[37]
			chromium	7440-47-3	X-[37]	D007[37]	D007[37]
			cyanide cleaning bath solutions	—	X-[37]	F009[37]	F009[37]
			cyanide plating bath solutions	—	X-[37]	F007[37]	F007[37]
			electroplating sludges	—	X-[37]	F006[37]	F006[37]
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	N/A[93]

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ID, BN	510	SUPERCOMPACTED DEBRIS (Continued)	lead	7439-92-1	X-[37]	D008[37]	D008[37]
			mercury	7439-97-6	X-[37]	D009[37]	D009[37]
			methanol	67-56-1	X-[37]	See Note 2	N/A
			methylene chloride	75-09-2	X-[37]	F002[37]	F002[37]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37]	F005[37]
			selenium	7782-49-2	X-[37]	D010[37]	D010[37]
			silver	7440-22-4	X-[37]	D011[37]	D011[37]
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37]	F001/F002[37]
			toluene	108-88-3	X-[37]	F005[37]	F005[37]
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37]	F001/F002[37]
			xylene	1330-20-7	X-[37]	See Note 2	N/A
ID, BN	511	PCB ORGANIC HOMOGENEOUS SOLIDS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 14 and 17	See Notes 14 and 17	—
ID, BN	513	NON-PCB ORGANIC HOMOGENEOUS SOLIDS	See Note 17	—	See Note 17	See Note 175	—
ID, BN	514	ABSORBED ORGANIC SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37,75, 97]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37,75, 97]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 75]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 75]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97]	—
			2-nitropropane	79-46-9	X-[97]	F005[97]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 75, 97]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 75, 97]	—
			benzene	71-43-2	X-[37]	F005[37, 75, 97]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 75, 97]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97]	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	514	ABSORBED ORGANIC SQUEEZANTS (continued)	carbon tetrachloride	56-23-5	X-[37]	F001[37, 75, 97]	—
			chlorobenzene	108-90-7	X-[97]	F002[97]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 75]	—
			chromium	7440-47-3	X-[37]	D007[37, 75, 97]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 75]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 75]	—
			cresols	—	X-[97]	F004[97]	—
			electroplating sludges	—	X-[37]	F006[37, 75]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[50, 97]	F005[97]	—
			lead	7439-92-1	X-[37]	D008[37, 75, 97]	—
			mercury	7439-97-6	X-[37]	D009[37, 75, 97]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 75, 97]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 75, 97]	—
			nitrobenzene	98-95-3	X-[97]	F004[97]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97]	—
			pyridine	110-86-1	X-[97]	F005[97]	—
			selenium	7782-49-2	X-[37]	D010[37, 75]	—
			silver	7440-22-4	X-[37]	D011[37, 75]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 75, 97]	—
			toluene	108-88-3	X-[37]	F005[37, 75, 97]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 75, 97]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97]	—
			vinyl chloride	75-01-4	X-[97]	D043[97]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	515	ABSORBED AQUEOUS LIQUIDS (EXCLUDING SQUEEZANTS)	See Note 16	—	See Note 16	See Note 16	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	518	TRU SUPERCOMPACTOR SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37,75, 97, 115]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37,75, 97, 115]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 75, 115]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 75, 115]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	—
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 75, 97, 115]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 75, 97, 115]	—
			benzene	71-43-2	X-[37]	F005[37, 75, 97, 115]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 75, 97, 115]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 75, 97, 115]	—
			chlorobenzene	108-90-7	X-[97]	F002[97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 75, 115]	—
			chromium	7440-47-3	X-[37]	D007[37, 75, 97, 115]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 75, 115]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 75, 115]	—
			cresols	—	X-[97]	F004[97, 115]	—
			electroplating sludges	—	X-[37]	F006[37, 75, 115]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	518	TRU SUPERCOMPACTOR SQUEEZANTS (Continued)	lead	7439-92-1	X-[37]	D008[37, 75, 97]	—
			mercury	7439-97-6	X-[37]	D009[37, 75, 97, 115]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 75, 97, 115]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 75, 97, 115]	—
			nitrobenzene	98-95-3	X-[97]	F004[97, 115]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	—
			pyridine	110-86-1	X-[97]	F005[97, 115]	—
			selenium	7782-49-2	X-[37]	D010[37, 75, 115]	—
			silver	7440-22-4	X-[37]	D011[37, 75, 115]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 75, 97, 115]	—
			toluene	108-88-3	X-[37]	F005[37, 75, 97, 115]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 75, 97, 115]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	—
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	519	TRU SDOP to SUPERCOMPACTOR	Temporary IDC for transport only. See IDC BN-550		See IDC BN-550	See IDC BN-550	
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5)	arsenic	7440-38-2	X-[76]	D004[76]	—
			barium	7440-39-3	X-[76]	D005[76]	—
			cadmium	7440-43-9	X-[76]	D006[76]	—
			chromium	7440-47-3	X-[76]	D007[76]	—
			lead	7439-92-1	X-[76]	D008[76]	—
			mercury	7439-97-6	X-[76]	D009/U151[76, 120, 121]	—
			selenium	7782-49-2	X-[76]	D010[76]	—
			silver	7440-22-4	X-[76]	D011[76]	—
			benzene	71-43-2	X-[76]	D018[76]	—
			beryllium (not beryllium powder)	7440-41-7	X-[76]	N/A	
			carbon tetrachloride	56-23-5	X-[76]	D019[76]	—
			chloroform (trichloromethane)	67-66-3	X-[76]	D022[76]	—
			cresol	1319-77-3	X-[76]	D026[76]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	1,4-dichlorobenzene	106-46-7	X-[76]	D027[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	D028[76]	—
			1,1-dichlorethylene	156-60-5	X-[76]	D029[76]	—
			2,4-dinitrotoluene	121-14-2	X-[76]	D030[76]	—
			hexachlorobenzene	118-74-1	X-[76]	D032[76]	—
			hexachlorobutadiene	87-68-3	X-[76]	D033[76]	—
			hexachloroethane	67-72-1	X-[76]	D034[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	D035[76]	—
			nitrobenzene	98-95-3	X-[76]	D036[76]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[76]	N/A[76]	—
			pentachlorophenol	87-86-5	X-[76]	D037[76]	—
			pyridine	110-86-1	X-[76]	D038[76]	—
			vinyl chloride	75-01-4	X-[76]	D043[76]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[76]	F001/F002[76]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[76]	F001/F002[76]	—
			carbon tetrachloride	56-23-5	X-[76]	F001/F002[76]	—
			methylene chloride	75-09-2	X-[76]	F001/F002[76]	—
			tetrachloroethylene (perclene)	127-18-4	X-[76]	F001/F002[76]	—
			trichloroethylene (TCE)	79-01-6	X-[76]	F001/F002[76]	—
			trichlorofluoromethane	75-69-4	X-[76]	F001/F002[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	F002[76]	—
			1,1,2-trichloroethane	79-00-5	X-[76]	F002[76]	—
			chlorobenzene	108-90-7	X-[76]	F002[76]	—
			methylene chloride	75-09-2	X-[76]	F002[76]	—
			cresol	1319-77-3	X-[76]	F004[76]	—
			nitrobenzene	98-95-3	X-[76]	F004[76]	—
			2-ethoxyethanol	110-80-5	X-[76]	F005[76]	—
			2-nitropropane	79-46-9	X-[76]	F005[76]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[76]	F005[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	F005[76]	—
			pyridine	110-86-1	X-[76]	F005[76]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	toluene	108-88-3	X-[76]	F005[76]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[76]	F009[76]	—
			cyanide plating bath solutions	—	X-[76]	F007[76]	—
			electroplating sludges	—	X-[76]	F006[76]	—
ID, BN	521	TRU SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5)	arsenic	7440-38-2	X-[76]	D004[76]	—
			barium	7440-39-3	X-[76]	D005[76]	—
			cadmium	7440-43-9	X-[76]	D006[76]	—
			chromium	7440-47-3	X-[76]	D007[76]	—
			lead	7439-92-1	X-[76]	D008[76]	—
			mercury	7439-97-6	X-[76]	D009/U151[76, 120, 121]	—
			selenium	7782-49-2	X-[76]	D010[76]	—
			silver	7440-22-4	X-[76]	D011[76]	—
			benzene	71-43-2	X-[76]	D018[76]	—
			beryllium (not beryllium powder)	7440-41-7	X-[76]	N/A	
			carbon tetrachloride	56-23-5	X-[76]	D019[76]	—
			chloroform (trichloromethane)	67-66-3	X-[76]	D022[76]	—
			cresol	1319-77-3	X-[76]	D026[76]	—
			1,4-dichlorobenzene	106-46-7	X-[76]	D027[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	D028[76]	—
			1,1-dichlorethylene	156-60-5	X-[76]	D029[76]	—
			2,4-dinitrotoluene	121-14-2	X-[76]	D030[76]	—
			hexachlorobenzene	118-74-1	X-[76]	D032[76]	—
			hexachlorobutadiene	87-68-3	X-[76]	D033[76]	—
			hexachloroethane	67-72-1	X-[76]	D034[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	D035[76]	—
			nitrobenzene	98-95-3	X-[76]	D036[76]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[76]	N/A[76]	—
			pentachlorophenol	87-86-5	X-[76]	D037[76]	—
			pyridine	110-86-1	X-[76]	D038[76]	—
			vinyl chloride	75-01-4	X-[76]	D043[76]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[76]	F001/F002[76]	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	521	TRU SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[76]	F001/F002[76]	—
			carbon tetrachloride	56-23-5	X-[76]	F001/F002[76]	—
			methylene chloride	75-09-2	X-[76]	F001/F002[76]	—
			tetrachloroethylene (perclene)	127-18-4	X-[76]	F001/F002[76]	—
			trichloroethylene (TCE)	79-01-6	X-[76]	F001/F002[76]	—
			trichlorofluoromethane	75-69-4	X-[76]	F001/F002[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	F002[76]	—
			1,1,2-trichloroethane	79-00-5	X-[76]	F002[76]	—
			chlorobenzene	108-90-7	X-[76]	F002[76]	—
			methylene chloride	75-09-2	X-[76]	F002[76]	—
			cresol	1319-77-3	X-[76]	F004[76]	—
			nitrobenzene	98-95-3	X-[76]	F004[76]	—
			2-ethoxyethanol	110-80-5	X-[76]	F005[76]	—
			2-nitropropane	79-46-9	X-[76]	F005[76]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[76]	F005[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	F005[76]	—
			pyridine	110-86-1	X-[76]	F005[76]	—
			toluene	108-88-3	X-[76]	F005[76]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[76]	F009[76]	—
			cyanide plating bath solutions	—	X-[76]	F007[76]	—
			electroplating sludges	—	X-[76]	F006[76]	—
ID, BN	522	AMWTP NON-PCB SOIL	—	—	See Note 16	See Note 16	—
ID, BN	523	PAD 1 CELLS 1 AND 2 PCB DEBRIS	See Note 17		See Note 17	See Note 17	
			polychlorinated-biphenyls (PCBs)	1336-36-3	PK	None	
			beryllium (not beryllium powder)	7440-41-7	PK	None	
ID, BN	524	PAD 1 CELLS 1 AND 2 NON-PCB DEBRIS	See Note 17		See Note 17	See Note 17	
			beryllium (not beryllium powder)	7440-41-7	PK	None	
ID, BN	525	P/U-LISTED LAB NON-PCB DEBRIS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	526	LAB PCB DEBRIS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	527	LAB NON-PCB DEBRIS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	528	TRU PCB LIQUIDS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 15	See Note 15	—
ID, BN	529	TRU non-PCB LIQUIDS	See Note 15	—	See Note 15	See Note 15	—
ID, BN	534	ORGANIC LIQUID FROM MAINTENANCE ACTIVITIES	See note 15		See Note 15	See note 15	
ID, BN	536	TRU EMPTY CONTAINERS WITH PCBS	polychlorinated-biphenyls (PCBs)	1336-36-3	PK	None	—
ID, BN	537	TRU EMPTY CONTAINERS	None identified	—	N/A	None	—
ID, BN	538	OVERSIZED DEBRIS ITEMS FROM SUPERCOMPACTOR FACILITY (See Note 22)	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97]	—
			2-nitropropane	79-46-9	X-[97]	F005[97]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 97]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 97]	—
			benzene	71-43-2	X-[37]	F005[37, 97]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A	
			cadmium	7440-43-9	X-[37]	D006[37, 97]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 97]	—
			chlorobenzene	108-90-7	X-[97]	F002[97]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37]	—
			chromium	7440-47-3	X-[37]	D007[37, 97]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37]	—
			cyanide plating bath solutions	—	X-[37]	F007[37]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cresols	—	X-[97]	F004[97]	—
			electroplating sludges	—	X-[37]	F006[37]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97]	—
			lead	7439-92-1	X-[37]	D008[37, 97]	—
ID, BN	538	OVERSIZED DEBRIS ITEMS FROM SUPERCOMPACTOR FACILITY (See Note 22) (Continued)	mercury	7439-97-6	X-[37]	D009[37, 97]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97]	—
			nitrobenzene	98-95-3	X-[97]	F004[97]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97]	—
			pyridine	110-86-1	X-[97]	F005[97]	—
			Selenium	7782-49-2	X-[37]	D010[37]	—
			Silver	7440-22-4	X-[37]	D011[37]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97]	—
			Toluene	108-88-3	X-[37]	F005[37, 97]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97]	—
			vinyl chloride	75-01-4	X-[97]	D043[97]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	539	TRU RADIOACTIVE ONLY DEBRIS WASTE	N/A	N/A	PK	None	
ID, BN	550	SUPERCOMPACTED DEBRIS (BN510.1)	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	F001[97, 116]
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 115]	D028[37, 116]
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	F002[97, 116]
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 115]	D029[37, 116]
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	D027[97, 116]
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	D030[97, 116]
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	F005[97, 116]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	F005[97, 116]
			acetone	67-64-1	X-[37]	See Note 2	See Note 2
			arsenic	7440-38-2	X-[37]	D004[37, 97, 115]	D004[37, 97, 116]
			asbestos	1332-21-4	X-[37]	N/A	N/A
			barium	7440-39-3	X-[37]	D005[37, 97, 115]	D005[37, 97, 116]
ID, BN	550	SUPERCOMPACTED DEBRIS (BN510.1) (Continued)	benzene	71-43-2	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	N/A
			cadmium	7440-43-9	X-[37]	D006[37, 97, 115]	D006[37, 97, 116]
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 115]	F001[37, 116]
			chlorobenzene	108-90-7	X-[97]	F002[97, 115]	F002[97, 116]
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 115]	D022[37, 116]
			chromium	7440-47-3	X-[37]	D007[37, 97, 115]	D007[37, 97, 116]
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 115]	F009[37, 116]
			cyanide plating bath solutions	—	X-[37]	F007[37, 115]	F007[37, 116]
			cresols	—	X-[97]	F004[97, 115]	F004[97, 116]
			electroplating sludges	—	X-[37]	F006[37, 115]	F006[37, 116]
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	N/A
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	D034[97, 116]
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	F005[97, 116]
			lead	7439-92-1	X-[37]	D008[37, 97, 115]	D008[37, 97, 116]
			mercury	7439-97-6	X-[37]	D009[37, 97, 115]	D009[37, 97, 116]
			methanol	67-56-1	X-[37]	See Note 2	See Note 2
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			nitrobenzene	98-95-3	X-[97]	F004[97, 115]	F004[97, 116]
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	D037[97, 116]
			pyridine	110-86-1	X-[97]	F005[97, 115]	F005[97, 116]
			selenium	7782-49-2	X-[37]	D010[37, 115]	D010[37, 116]
			silver	7440-22-4	X-[37]	D011[37, 115]	D011[37, 116]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97]
			toluene	108-88-3	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	F001/F002[97, 116]
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	D043[97, 116]
			xylene	1330-20-7	X-[37]	See Note 2	See Note 2
ID, BN	597	P/U-LISTED LAB PCB DEBRIS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	598	P/U-LISTED LAB PCB HOMOGENEOUS SOLIDS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	599	LAB NON- PCB HOMOGENOUS SOLIDS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	600	WMF-676 PCB CONTAMINATED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[115, 123]	F001[46, 115, 123]	
			1,2-dichloroethane	107-06-2	X-[115, 123]	D028[46, 115, 123]	
			1,2-dichlorobenzene	95-50-1	X-[46, 115, 123]	F002[46, 115, 123]	
			1,1-dichloroethylene	75-35-4	X-[46, 115, 123]	D029[46, 115, 123]	
			1,4-dichlorobenzene	106-46-7	X-[46, 115, 123]	D027[46, 115, 123]	
			2,4-dinitrotoluene	121-14-2	X-[46, 115, 123]	D030[46, 115, 123]	
			2-ethoxyethanol	110-80-5	X-[46, 115, 123]	F005[46, 115, 123]	
			2-nitropropane	79-46-9	X-[115, 123]	F005[46, 115, 123]	
			acetone	67-64-1	X-[46, 115]	See Note 2	
			arsenic	7440-38-2	X-[115, 123]	D004[115, 123]	
			asbestos	1332-21-4	N/A[123]	N/A	
			barium	7440-39-3	X-[115, 123]	D005[115, 123]	
			benzene	71-43-2	X-[46, 115, 123]	F005[46, 115, 123]	
			beryllium (not beryllium powder)	7440-41-7	X-[46, 115, 123]	N/A[46, 115, 123]	
			cadmium	7440-43-9	X-[115, 123]	D006[46, 115, 123]	
			carbon disulfide	75-15-0	X-[46, 115, 123]	F005[46, 115, 123]	
			carbon tetrachloride	56-23-5	X-[46, 115, 123]	F001[46, 115, 123]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			chlorobenzene	108-90-7	X-[46, 115, 123]	F002 [46, 115, 123]	
			chloroform (trichloromethane)	67-66-3	X-[46, 115, 123]	D022[46, 115, 123]	
			chromium	7440-47-3	X-[115, 123]	D007[115, 123]	
			cyanide cleaning bath solutions	—	X-[115, 123]	F009[46, 115, 123]	
			cyanide plating bath solutions	—	X-[115, 123]	F007[46, 115, 123]	
			cyclohexane	110-82-7	X-[46, 115, 123]	See Note 2	
			cresols	—	X-[46, 115, 123]	F004[46, 115, 123]	
			electroplating sludges	—	X-[115, 123]	F006[46, 115, 123]	
			ethyl benzene	100-41-4	X-[46, 115,	See Note 2	
			ethyl ether		X-[46, 115,	See Note 2	
			hexachlorobenzene	118-74-1	X-[46, 123]	D032[46, 123]	
			hexachloroethane	67-72-1	X-[46, 115, 123]	D034[46, 115, 123]	
			hexane		X-[123]	N/A	
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[115,	N/A	
			isobutanol (isobutyl alcohol)	78-83-1	X-[115, 123]	F005 [115, 123]	
			lead	7439-92-1	X-[115, 123]	D008[115, 123]	
			mercury	7439-97-6	X-[115, 123]	D009[115, 123]	
			methanol	67-56-1	X-[46, 115]	See Note 2	
			methylene chloride	75-09-2	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 115, 123]	F005[46, 115, 123]	
			methyl isobutal ketone		X-[115]	N/A	
			n-butyl alcohol (butanol)	71-36-3	X-[46, 115]	See Note 2	
			nitrobenzene	98-95-3	X-[46, 115, 123]	F004[46, 115, 123]	
			pentachlorophenol	87-86-5	X-[46, 115, 123]	D037[46, 115, 123]	
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[46]	N/A	
			pyridine	110-86-1	X-[46, 115, 123]	F005[46, 115, 123]	
			selenium	7782-49-2	X-[115, 123]	D010[115, 123]	
			silver	7440-22-4	X-[115, 123]	D011[115, 123]	
			tetrachloroethylene (perclene)	127-18-4	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			toluene	108-88-3	X-[46, 115, 123]	F005[46, 115, 123]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			trichlorofluoromethane	75-69-4	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			vinyl chloride	75-01-4	X-[46, 115, 123]	D043[46, 115, 123]	
			xylene	1330-20-7	X-[46, 115, 123]	See Note 2	
ID, BN	602	P/U-LISTED LAB NON-PCB HOMOGENEOUS SOLIDS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	603	LAB PCB HOMOGENOUS SOLIDS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	604	DEBRIS TSCA/PCB	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 15 and 17	See Notes 15 and 17	—
ID, BN	605	ABSORBED LIQUIDS TSCA/PCB	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 14 and 15	See Note 14 and 15	—
ID, BN	607	FIRST/SECOND STAGE SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	608	SPECIAL SETUPS LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	609	BUILDING 374 SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	610	MISC. HOMOGENEOUS SOLID LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	611	SEWAGE AND POND SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	612	CAUSTIC WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	613	ACID WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	614	CEMENTED SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	615	OASIS WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	616	ORGANIC SETUPS PCB LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	617	SOLIDIFIED SOLUTIONS LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, IC	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	PK	D008	
ID, IC	150	LABORATORY WASTE	arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	
			cadmium	7440-43-9	X-[106]	D006[106]	
			chromium	7440-47-3	X-[106]	D007[106]	
			lead	7439-92-1	X-[106]	D008106	
			mercury	7439-97-6	X-[106]	D009106	
			selenium	7782-49-2	X-[106]	D010106	
			silver	7440-22-4	X-[106]	D011106	
			benzene	71-43-2	X-[106]	D018106	
			carbon tetrachloride	56-23-5	X-[106]	D019/F001106	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	
			cresol	1319-77-3	X-[106]	D026[106]	
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	
			hexachloroethane	67-72-1	X-[106]	D034[106]	
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	
			pentachlorophenol	87-86-5	X-[106]	D037[106]	
			pyridine	110-86-1	X-[106]	D038[106]	
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	
			vinyl chloride	75-01-4	X-[106]	D043[106]	
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	
			methylene chloride	75-09-2	X-[106]	F002[106]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	
			toluene	108-88-3	X-[106]	F005[106]	
			electroplating sludges	—	X-[106]	F006[106]	
			cyanide plating bath solutions	—	X-[106]	F007[106]	
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	— F009[106]	
ID, IC	151	SOLIDIFIED FUEL SLUDGE	See Note 16	—	See Note 16	—	—
ID, IC	152	PU NEUTRON SOURCES	TBD		TBD	TBD	
ID, IC	156	CHEM CELL RIP-OUT (UNK)	TBD		TBD	TBD	
ID, IC	157	MISCELLANEOUS RADIONUCLIDE SOURCES	See Note 16	—	See Note 16	See Note 16	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, IC	525	INTEC LABORATORY DEBRIS WASTE (P/U-LISTED)	See IDC IC-602		X-[124, 125, 126]	See IDC IC-602	
ID, IC	526	LABORATORY PCB DEBRIS WASTE (See Note 5)	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106]	N/A	—
			arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID, IC	527	LABORATORY NON-PCB DEBRIS WASTE (See Note 5)	arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106]51	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID,IC	601	ALPHA LOW LEVEL LAB. WIPP ANALYTICAL WASTE	See IC-150		See IC-150	See IC-150	See IC-150
ID,IC	602	LABORATORY HOMOGENEOUS SOLIDS WASTE (P/U-LISTED)	arsenic	7440-38-2	X-[124, 125, 126]	D004[125, 126]	
			barium	7440-39-3	X-[124, 125, 126]	D005[125, 126]	
			cadmium	7440-43-9	X-[124, 125, 126]	D006[125, 126]	
			chromium	7440-47-3	X-[124, 125, 126]	D007[125, 126]	
			lead	7439-92-1	X-[124, 125, 126]	D008[125, 126]	
			mercury	7439-97-6	X-[124, 125, 126]	D009[125, 126]	
			selenium	7782-49-2	X-[124, 125, 126]	D010[125, 126]	
			silver	7440-22-4	X-[124, 125, 126]	D011[125, 126]	
			chloroform (trichloromethane)	67-66-3	X-[124, 125, 126]	D022[125, 126]	
			cresol	1319-77-3	X-[124, 125, 126]	D026[125, 126]	
			1,4-dichlorobenzene	106-46-7	X-[124, 125, 126]	D027[125, 126]	
			1,2-dichloroethane	107-06-2	X-[124, 125, 126]	D028[125, 126]	
			1,1-dichloroethylene	156-60-5	X-[124, 125, 126]	D029[125, 126]	
			2,4-dinitrotoluene	121-14-2	X-[124, 125, 126]	D030[125, 126]	
			hexachlorobenzene	118-74-1	X-[124, 125, 126]	D032[125, 126]	
			hexachloroethane	67-72-1	X-[124, 125, 126]	D034[125, 126]	
			nitrobenzene	98-95-3	X-[124, 125, 126]	D036[125, 126]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			pentachlorophenol	87-86-5	X-[124, 125, 126]	D037[125, 126]	
			vinyl chloride	75-01-4	X-[124, 125, 126]	D043[125, 126]	
			tetrachloroethylene (perclene)	127-18-4	X-[124, 125, 126]	F001/F002[125, 126]	
			trichloroethylene	79-01-6	X-[124, 125, 126]	F001/F002[125, 126]	
			methylene chloride	75-09-2	X-[124, 125, 126]	F001/F002[125, 126]	
			1,1,1-trichloroethane (TCA)	71-55-6	X-[124, 125, 126]	F001/F002[125, 126]	
			carbon tetrachloride	56-23-5	X-[124, 125, 126]	F001/F002[125, 126]	
			tetrachloroethylene (perclene)	127-18-4	X-[124, 125, 126]	F002[125, 126]	
			chlorobenzene	108-90-7	X-[124, 125, 126]	F002[125, 126]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[124, 125, 126]	F002[125, 126]	
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[124, 125, 126]	F002[125, 126]	
			trichlorofluoromethane	75-69-4	X-[124, 125, 126]	F002[125, 126]	
			1,1,2-trichloroethane	79-00-5	X-[124, 125, 126]	F002[125, 126]	
			cresols	—	X-[124, 125, 126]	F004[125, 126]	
			nitrobenzene	98-95-3	X-[124, 125, 126]	F004[125, 126]	
			toluene	108-88-3	X-[124, 125, 126]	F005[125, 126]	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[124, 125, 126]	F005[125, 126]	
			carbon disulfide	75-15-0	X-[124, 125, 126]	F005[125, 126]	
			isobutanol (isobutanol)	78-83-1	X-[124, 125, 126]	F005[125, 126]	
			pyridine	110-86-1	X-[124, 125, 126]	F005[125, 126]	
			benzene	71-43-2	X-[124, 125, 126]	F005[125, 126]	
			2-ethoxyethanol	110-80-5	X-[124, 125, 126]	F005[125, 126]	
			2-nitropropane	79-46-9	X-[124, 125, 126]	F005[125, 126]	
			electroplating sludges	—	X-[124, 125, 126]	F006[125, 126]	
			cyanide plating bath solutions	—	X-[124, 125, 126]	F007[125, 126]	
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[124, 125, 126]	F009[125, 126]	
			cyanides	N/A	X-[124, 125, 126]	P030[125, 126]	
			potassium cyanide	151-50-8	X-[124, 125, 126]	P098[125, 126]	
			potassium silver cyanide	506-61-6	X-[124, 125, 126]	P099[125, 126]	
			sodium cyanide	143-33-9	X-[124, 125, 126]	P106[125, 126]	
			acetonitrile	75-05-8	X-[124, 125, 126]	U003[125, 126]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			dimethyl sulfite	77-78-1	X-[124, 125, 126]	U103[125, 126]	
			1-4,-dioxane	123-91-1	X-[124, 125, 126]	U108[125, 126]	
ID, IC	603	LABORATORY HOMOGENEOUS SOLIDS WASTE (See Note 5)	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106]	N/A	—
			arsenic	7440-38-2	See Note 19	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID, IF	150	LABORATORY WASTE	lead	7439-92-1	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1]	See Notes 2 and 3	—
ID, IF	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IN	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IN	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
ID, IN	153	COMBUSTIBLE LAB WASTE	beryllium (not beryllium powder)	7440-41-7	X-[1, 4]	—	—
			lead (shielding only)	7439-92-1	X-[1]	D008	—
ID, IN	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IR	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IR	150	LABORATORY WASTE	lead	7439-92-1	X-[5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	—	—
ID, IR	154	SAMPLE FUEL	lead (shielding only)	7439-92-1	X-[1, 4]	—	—
ID, IR	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IR	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IT	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IT	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1]	—	—

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ID, IT	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IT	175	DRCT SCRAP METAL WASTE FROM TAN	TBD	—	TBD	—	—
ID, IW	005	EVAPORATOR SALTS-RETRIEVED RF TRU	nitrates	—	X-[4]	—	—
ID, IW	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IW	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IW	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IW	176	RWMC HOMOGENEOUS SOLIDS	See Note 16	—	See Note 16	See Note 16	—
ID, IW	177	RWMC HETEROGENOUS DEBRIS	See Note 16	1336-36-3	See Note 16	See Note 16	—
ID, IW	178	RWMC SOIL	See Note 16	1336-36-3	See Note 16	See Note 16	—
ID, IW	179	EARLY WASTE RETRIEVAL BINS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 18	See Note 16	—
ID, IW	337	PLASTIC, TEFLON, WASHABLES, PVC, RETRIEVED RF TRU	See Note 16	—	See Note 16	—	—
ID, IW	526	LABORATORY PCB DEBRIS WASTE	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106,146]	N/A	—
			arsenic	7440-38-2	X-[106,146]	D004[106,146]	—
			barium	7440-39-3	X-[106,146]	D005[106,146]	—
			cadmium	7440-43-9	X-[106,146]	D006[106,146]	—
			chromium	7440-47-3	X-[106,146]	D007[106,146]	—
			lead	7439-92-1	X-[106,146]	D008[106,146,146]	—
			mercury	7439-97-6	X-[106,146]	D009[106,146]	—
			selenium	7782-49-2	X-[106,146]	D010[106,146]	—
			silver	7440-22-4	X-[106,146]	D011[106,146]	—
			benzene	71-43-2	X-[106,146]	D018[106,146]	—
			carbon tetrachloride	56-23-5	X-[106,146]	D019/F001[106,146]	—
			chlorobenzene	108-90-7	X-[106,146]	D021/F002[106,146]	—
			chloroform (trichloromethane)	67-66-3	X-[106,146]	D022[106,146]	—
			cresol	1319-77-3	X-[106,146]	D026[106,146]	—
			1,4-dichlorobenzene	106-46-7	X-[106,146]	D027[106,146,146]	—
			1,2-dichloroethane	107-06-2	X-[106, 51,146]	D028[106,146]	—

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			1,1-dichloroethylene	156-60-5	X-[106,146]	D029[106,146]	—
			2,4-dinitrotoluene	121-14-2	X-[106,146]	D030[106,146]	—
			hexachlorobenzene	118-74-1	X-[106,146]	D032[106,146]	—
			hexachlorobutadiene	87-68-3	X-[106,146]	D033[106,146]	—
			hexachloroethane	67-72-1	X-[106,146]	D034[106,146]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106,146]	D035/F005[106,146]	—
			nitrobenzene	98-95-3	X-[106,146]	D036/F004[106,146]	—
			pentachlorophenol	87-86-5	X-[106,146]	D037[106,146]	—
			pyridine	110-86-1	X-[106,146]	D038[106,146]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106,146]	D039[106,146]	—
			trichloroethylene	79-01-6	X-[106,146]	D040/F002[106,146]	—
			vinyl chloride	75-01-4	X-[106,146]	D043[106,146]	—
			1,2-dichlorobenzene	95-50-1	X-[106,146]	F002[106,146]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106,146]	F002[106,146]	—
			methylene chloride	75-09-2	X-[106,146]	F002[106,146]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106,146]	F002[106,146]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106,146]	F002[106,146]	—
			trichlorofluoromethane	75-69-4	X-[106,146]	F002[106,146]	—
			1,1,2-trichloroethane	79-00-5	X-[106,146]	F002[106,146]	—
			toluene	108-88-3	X-[106,146]	F005[106,146]	—
			electroplating sludges	—	X-[106,146]	F006[106,146]	—
			cyanide plating bath solutions	—	X-[106,146]	F007[106,146]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106,146]	F009[106,146]	—
ID, IW	527	LABORATORY NON-PCB DEBRIS WASTE (See Note 19)	arsenic	7440-38-2	X-[106 147]	D004[106 ,147]	—
			barium	7440-39-3	X-[106 147]	D005[106 147]	—
			cadmium	7440-43-9	X-[106 147]	D006[106 147]	—
			chromium	7440-47-3	X-[106 147]	D007[106 147]	—

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			lead	7439-92-1	X-[106 147]	D008[106 147]	—
			mercury	7439-97-6	X-[106 147]	D009[106 147]	—
			selenium	7782-49-2	X-[106 147]	D010[106 147]	—
			silver	7440-22-4	X-[106 147]	D011[106 147]	—
			benzene	71-43-2	X-[106 147]	D018[106 147]	—
			carbon tetrachloride	56-23-5	X-[106 147]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106 147]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106 147]	D022[106 147]	—
			cresol	1319-77-3	X-[106 147]	D026[106 147]	—
			1,4-dichlorobenzene	106-46-7	X-[106 147]	D027[106 147]	—
			1,2-dichloroethane	107-06-2	X-[106, 51 147]	D028[106 147]	—
			1,1-dichloroethylene	156-60-5	X-[106 147]	D029[106 147]	—
			2,4-dinitrotoluene	121-14-2	X-[106 147]	D030[106 147]	—
			hexachlorobenzene	118-74-1	X-[106 147]	D032[106 147]	—
			hexachlorobutadiene	87-68-3	X-[106 147]	D033[106 147]	—
			hexachloroethane	67-72-1	X-[106 147]	D034[106 147]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106 147]	D035/F005[106 147]	—
			nitrobenzene	98-95-3	X-[106 147]	D036/F004[106 147]	—
			pentachlorophenol	87-86-5	X-[106 147]	D037[106 147]	—
			pyridine	110-86-1	X-[106 147]	D038[106 147]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106 147]	D039[106 147]	—
			trichloroethylene	79-01-6	X-[106 147]	D040/F002[106 147]	—
			vinyl chloride	75-01-4	X-[106 147]	D043[106 147]	—
			1,2-dichlorobenzene	95-50-1	X-[106 147]	F002[106 147]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106 147]	F002[106 147]	—
			methylene chloride	75-09-2	X-[106 147]	F002[106 147]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106 147]	F002[106 147]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106 147]	F002[106 147]	—
			trichlorofluoromethane	75-69-4	X-[106 147]	F002[106 147]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloroethane	79-00-5	X-[106 147]	F002[106 147]	—
			toluene	108-88-3	X-[106 147]	F005[106 147]	—
			electroplating sludges	—	X-[106 147]	F006[106 147]	—
			cyanide plating bath solutions	—	X-[106 147]	F007[106 147]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106 147]	F009[106 147]	—
ID, IW	603	LABORATORY HOMOGENOUS SOLIDS WASTE	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106,148]	N/A	—
			arsenic	7440-38-2	X-[106,148]	D004[106,148]	—
			barium	7440-39-3	X-[106,148]	D005[106,148]	—
			cadmium	7440-43-9	X-[106,148]	D006[106,148]	—
			chromium	7440-47-3	X-[106,148]	D007[106,148]	—
			lead	7439-92-1	X-[106,148]	D008[106,148]	—
			mercury	7439-97-6	X-[106,148]	D009[106,148]	—
			selenium	7782-49-2	X-[106,148]	D010[106,148]	—
			silver	7440-22-4	X-[106,148]	D011[106,148]	—
			benzene	71-43-2	X-[106,148]	D018[106,148]	—
			carbon tetrachloride	56-23-5	X-[106,148]	D019/F001[106,148]	—
			chlorobenzene	108-90-7	X-[106,148]	D021/F002[106,148]	—
			chloroform (trichloromethane)	67-66-3	X-[106,148]	D022[106,148]	—
			cresol	1319-77-3	X-[106,148]	D026[106,148]	—
			1,4-dichlorobenzene	106-46-7	X-[106,148]	D027[106,148]	—
			1,2-dichloroethane	107-06-2	X-[106, 51,148]	D028[106,148]	—
			1,1-dichloroethylene	156-60-5	X-[106,148]	D029[106,148]	—
			2,4-dinitrotoluene	121-14-2	X-[106,148]	D030[106,148]	—
			hexachlorobenzene	118-74-1	X-[106,148]	D032[106,148]	—
			hexachlorobutadiene	87-68-3	X-[106,148]	D033[106,148]	—
			hexachloroethane	67-72-1	X-[106,148]	D034[106,148]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106,148]	D035/F005[106,148]	—
			nitrobenzene	98-95-3	X-[106,148]	D036/F004[106,148]	—
			pentachlorophenol	87-86-5	X-[106,148]	D037[106,148]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			pyridine	110-86-1	X-[106,148]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106,148]	D039[106]	—
			trichloroethylene	79-01-6	X-[106,148]	D040/F002[106,148]	—
			vinyl chloride	75-01-4	X-[106,148]	D043[106,148]	—
			1,2-dichlorobenzene	95-50-1	X-[106,148]	F002[106,148]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106,148]	F002[106,148]	—
			methylene chloride	75-09-2	X-[106,148]	F002[106,148]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106,148]	F002[106,148]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106,148]	F002[106,148]	—
			trichlorofluoromethane	75-69-4	X-[106,148]	F002[106,148]	—
			1,1,2-trichloroethane	79-00-5	X-[106,148]	F002[106,148]	—
			toluene	108-88-3	X-[106,148]	F005[106,148]	—
			electroplating sludges	—	X-[106,148]	F006[106,148]	—
			cyanide plating bath solutions	—	X-[106,148]	F007[106,148]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106,148]	F009[106,148]	—
ID, SD	704	SDA HOMOGENEOUS SOLIDS	See Notes 9 and 19[51]	56-23-5	See Note 9[51]	See Note 19[51]	F001[51]
ID, SD	705	SDA HETEROGENEOUS DEBRIS	See Notes 9 and 19[51]		See Note 9[51]	See Note 19[51]	
ID, SD	706	SDA SOIL	See Notes 9 and 19[51]		See Note 9[51]	See Note 19[51]	
JH, JH	826	COMBUSTIBLE EQUIPMENT BOXES AND FLOOR SWEEPINGS	none identified	—	X-[13]	—	—
JH, JH	827	SOLID TRASH AND DRY LAB. MATERIAL	lead	7439-92-1	X-[13]	—	—
LB, LB	229	LBNL MIXED HETEROGENEOUS DEBRIS	See Notes 9 and 19[143]		See Note 9[143]	See Note 19[143]	
LL, LA	002	TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY	See Notes 9 and 19[128]		See Note 9[128]	See Note 19[128]	
LL, LA	003	SOLIDIFIED INORGANICS	See Notes 9 and 19[129]		See Note 9[129]	See Note 19[129]	
LL, LA	005	LANL MIXED SALT WASTE	See Notes 9 and 19[130]		See Note 9[130]	See Note 19[130]	
LL, LA	006	CEMENTED TRU WASTE	See Notes 9 and 19[131]		See Note 9[131]	See Note 19[131]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
LL, LL	212	LLNL SOLIDIFIED SLUDGE AND LIQUIDS	See Notes 9 and 19		See Note 9[100]	See Note 19[100]	
LL, LL	213	HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[101]	See Note 19[101]	
LL, LL	221	LLNL PYROCHEMICAL SALT WASTE	See Notes 9and 19		See Note 9[102]	See Note 19[102]	
MD, MD	801	RAGS, PAPER, WOOD, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			arsenic	7440-38-2	X-[42]	—	D004[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead (if MD-802 present in the waste container)	7439-92-1	X-[4, 42]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if 812 present in the container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	802	DRY BOX GLOVES AND O-RINGS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			arsenic	7440-38-2	X-[42]	—	D004[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[1, 4, 5]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-812 present in the waste container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
MD, MD	803	METAL, EQUIPMENT, PIPE, VALVES, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (if MD-805 present in the waste container)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 present in the waste container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

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MD, MD	804	PLASTIC, TYGON, MANI-BOOTS, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead (if MD-802 is present in the waste container)	7439-92-1	X-[4]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-812 present in the waste container)	—	X-[4]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	805	ASBESTOS FILTERS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]

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			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos	1332-21-4	X-4, 5	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	N/A	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 is present in the waste container)	—	X-[1, 4, 5, 42]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4, 42]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	810	GLASS FLASKS, SAMPLE VIALS, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]

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			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (from MD-805)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 is present in the waste container)	—	X-[1]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	811	EVAPORATOR AND DISSOLVER SLUDGE	asbestos (if MD-805 is present in the waste container)	1332-21-4	X-[4]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5]	—	—
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	—

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			nitrates (MD-811 may be present in containers of MD-803, 805, 810, and 813)	—	X-[1, 4, 5]	—	—
MD, MD	812	SPENT ION EXCHANGE RESIN	nitrates (MD-812 may be present in containers of MD-801, 802, and 804)	—	X-[4, 5]	—	—
MD, MD	813	GLASS FILTERS AND FIBERGLASS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (from MD-805)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 present in the waste container)	—	X-[1, 4, 42]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	814	GRAPHITE WASTE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (also from MD-832)	7439-97-6	X-[1, 4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	815	CLASSIFIED PARTS	See Note 24	—	See Note 24	—	—
MD, MD	824	EQUIPMENT BOXES NON-COMBUSTIBLE	asbestos (from MD-805)	1332-21-4	X-[4]	—	—

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			barium	7440-39-3	X-[5]	—	—
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—
			selenium	7782-49-2	X-[5]	—	—
			silver	7440-22-4	X-[5]	—	—
MD, MD	825	EQUIPMENT DRUMS NON-COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[20]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[20]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[20]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	—	—
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[20]	—	D008[42]
			mercury	7439-97-6	X-[20]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[20]	—	D010[42]
			silver	7440-22-4	X-[20]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	826	EQUIPMENT BOXES, COMBUSTIBLE	asbestos (if MD-805 present in the waste container)	1332-21-4	X-[4]	—	—
			mercury (if MD-832 present in the waste container)	7439-97-6	X-[4, 5]	—	—
MD, MD	827	EQUIPMENT DRUMS, COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[5]	—	D008[42]
			mercury	7439-97-6	X-[5]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
MD, MD	832	CONTAMINATED MERCURY	mercury	7439-97-6	X-[1, 4, 5]	—	—
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4]	—	—
MD, MD	834	HIGH LEVEL ACID	nitrates	—	X-[1, 5, 36]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[4]	See Note 2	N/A
			1,1,1-trichloroethane (TCA)	71-55-6	X-[36]	—	F001/F002[36]
			asbestos	1332-21-4	X-[36]	N/A	N/A
			acetone	67-64-1	X-[36]	See Note 2	N/A
			beryllium (not beryllium powder)	7440-41-7	X-[36]	—	—
			chromium	7440-47-3	X-[36]	—	D007[36]
			lead	7439-92-1	X-[36]	—	D008[36]
			mercury	7439-97-6	X-[1]	—	D009[36]
			methanol	67-56-1	X-[36]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[36]	—	F001[36]
			trichloroethylene (TCE)	79-01-6	X-[36]	—	F001/F002[36]
			xylene	1330-20-7	X-[36]	See Note 2	N/A
MD, MD	835	HIGH LEVEL CAUSTIC	potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4, 5]	See Note 2	N/A
			1,1,1-trichloroethane (TCA)	71-55-6	X-[36]	—	F001/F002[36]
			chromium	7440-47-3	X-[36]	—	D007[36]
			asbestos	1332-21-4	X-[36]	N/A	N/A
			acetone	67-64-1	X-[36]	See Note 2	N/A
			beryllium (not beryllium powder)	7440-41-7	X-[36]	N/A	N/A
			lead	7439-92-1	X-[36]	—	D008[36]
			mercury	7439-97-6	X-[36]	—	D009[36]
			methanol	67-56-1	X-[36]	See Note 2	N/A
			nitrates	—	X-[36]	N/A	N/A
			carbon tetrachloride	56-23-5	X-[36]	—	F001[36]
			trichloroethylene (TCE)	79-01-6	X-[36]	—	F001/F002[36]
			xylene	1330-20-7	X-[36]	See Note 2	N/A
MD, MD	836	HIGH LEVEL SLUDGE/CEMENT	1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	F002[56]
			acetone	67-64-1	X-[5, 56]	See Note 2	N/A

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			arsenic	7440-38-2	X-[56]	—	D004[56]
			barium	7440-39-3	X-[56]	—	D005[56]
			benzene	71-43-2	X-[56]	—	F005[56]
			beryllium (not beryllium powder)	7440-41-7	X-[5]	N/A	N/A
			cadmium	7440-43-9	X-[5]	—	D006[56]
			chromium	7440-47-3	X-[5]	—	D007[56]
			lead	7439-92-1	X-[5]	—	D008[56]
			mercury	7439-97-6	X-[5]	—	D009[56]
			methanol	67-56-1	X-[5, 56]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	See Note 2	N/A
			nitrates	—	X-[56]	N/A	N/A
			selenium	7782-49-2	X-[5]	—	D010[56]
			silver	7440-22-4	X-[5]	—	D011[56]
			tetrachloroethylene (perclene)	127-18-4	X-[56]	—	F001/F002[56]
			toluene	108-88-3	X-[56]	—	F005[56]
			trichloroethylene (TCE)	79-01-6	X-[5, 56]	—	F001/F002[56]
			xylene	1330-20-7	X-[56]	See Note 2	N/A
MD, MD	838	<10 NCI/G NON-COMBUSTIBLE (UNK)	See Note 24	—	See Note 24	See Note 24	—
MD, MD	842	CONTAMINATED SOIL	cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Notes 2 and 3	—
			selenium	7782-49-2	X-[5]	—	—
			silver	7440-22-4	X-[5]	—	—
MD, MD	847	LSA <100 NCI/G COMBUSTIBLE	mercury	7439-97-6	X-[20]	—	—
			nitrates (from MD-812)	—	X-[20]	—	—
			lead	7439-92-1	X-[20]	—	—
MD, MD	848	LSA <100 NCI/G NON-COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]

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			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos	1332-21-4	X-[42]	N/A	N/A
			barium	7440-39-3	X-[20]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[20]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[20]	—	D007[42]
			cyanide	57-12-5	X-[42]	N/A	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[20]	—	D008[42]
			mercury	7439-97-6	X-[20]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates	—	X-[42, 20]	See Note 2	N/A
			potential corrosive if liquids exceed the WIPP-WAC limit	—	X-[20]	See Note 2	N/A
			selenium	7782-49-2	X-[20]	—	D010[42]
			silver	7440-22-4	X-[20]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MO, MO	530	COMPACTED WASTE	none identified	—	X-[11]	—	—
MO, MO	535	COMPACTED WASTE/LEAD	lead	7439-92-1	X-[11]	—	—
MO, MO	540	NON-COMPACTED WASTE	lead	7439-92-1	X-[11]	—	—
			2-methoxyethanol	109-86-4	X-[11]	—	—
			ether	60-29-7	X-[11]	—	—

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			dichlorodifluorourethane	—	X-[11]	—	—
			polyphenylisocyanate	—	X-[11]	—	—
MO, MO	545	WEP SHIELDED WASTE	styrene	100-42-5	X-[11]	—	—
MO, MO	550	SOLIDIFIED OIL	none identified	—	X-[11]	—	—
MX, MX	142	SCRAP PROCESSING EQUIPMENT	lead	7439-92-1	X-[14]	—	—
			nitrates	—	X-[14]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[14]	See Notes 2 and 3	—
			barium	7440-39-3	X-[5, 9]	—	—
			benzene	71-43-2	X-[8, 9, 16]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	—	—
			cadmium	7440-43-9	X-[1, 5, 8, 9, 16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 9]	F001	—
			chlorobenzene	108-90-7	X-[16]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5, 9]	—	—
			chromium	7440-47-3	X-[5, 8, 16]	—	—
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	—
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	—
			electroplating sludges	—	X-[9, 16]	F006[16]	—
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	—
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	—
			lead	7439-92-1	X-[1, 4, 5, 8, 9, 16]	D008[16]	—
			mercury	7439-97-6	X-[4, 5, 9, 16]	—	—
			methanol	67-56-1	X-[1, 5, 16]	F003[16] See Note 2	—
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 9, 16]	F002[16]	—
			nitrate	—	X-[4, 6, 16, 57]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	—
			selenium	7782-49-2	X-[9, 16]	—	—

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			silver	7440-22-4	X-[5, 8, 9, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5, 8, 16]	F001[16]	—
			toluene	108-88-3	X-[8, 9, 16, 24]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 9, 16]	F001[16]	—
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16] See Note 2	—
ND, ND	228	NRD MIXED HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[144]	See Note 19[144]	
NT, NT	210	NTS BERKELEY SOLIDIFIED LIQUIDS	See Notes 9 and 19		See Note 9[71, 90]	See Note 19[71, 90]	
NT, NT	211	NTS LAWRENCE BERKELEY HETEROGENEOUS DEBRIS (See	See Notes 9 and 19		See Note 9[71, 90]	See Note 19[71, 90]	
NT, NT	212	NTS LAWRENCE LIVERMORE NATIONAL LABORATORY (LLNL) SOLIDIFIED SLUDGE AND LIQUIDS	See Notes 9 and 19		See Note 9[70, 84]	See Note 19[70, 84]	
NT, NT	213	NTS LLNL HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[70, 84]	See Note 19[70, 84]	
NT, NT	214	NTS LYNCHBURG HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[77]	See Note 19[87]	
NT, NT	215	NTS EG&G HETEROGENEOUS DEBRIS)	See Notes 9 and 19		See Note 9[78, 86]	See Note 19[78, 86]	
NT, NT	216	NTS ROLLER COASTER DEBRIS	See Notes 9 and 19		See Note 9[79]	See Note 19[79, 89]	
NT, NT	217	NTS RF DECON DEBRIS	See Notes 9 and 19		See Note 9[80]	See Note 19[80, 88]	
NT, NT	218	NTS LIVERMORE AND BERKELEY COMBINED DEBRIS	See Notes 9 and 19		See Note 9[81, 85]	See Note 19[81, 85]	
NT, NT	219	NTS ITRI DEBRIS	See Notes 9 and 19		See Note 9[81, 85]	See Note 19[81, 85]	
NT, NT	220	NTS DECON AND MAINTENANCE DEBRIS	See Notes 9 and 19		See Note 9-[83, 92]	See Note 19[83, 92]	
OR, OR	250	OR-NFS-CH-SOIL	See Notes 9 and 19[132]		See Note 9[132]-	See Note 19[132]	
RF, RF	010	PAPER & RAGS (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	020	WOOD & BENELEX (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	030	PLASTIC (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	040	RUBBER (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	050	METAL SCRAP (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	060	GLASS (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	070	GRAPHITE (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	080	EQUIPMENT (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	001	FIRST STAGE SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 8, 16]	F002[16]	F002[24, 57]
			1,1,2,2-trichloroethane	79-00-5	X-[16, 24]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5, 24, 57]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	F003[57] See Notes 1 and 2
			arsenic	7440-38-2	X-[9, 16]	—	D004[24, 57]
			barium	7440-39-3	X-[5, 9]	—	D005[24, 57]
			benzene	71-43-2	X-[8, 9, 16]	—	F005[24, 57]
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	N/A	N/A
			cadmium	7440-43-9	X-[1, 5, 8, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 9]	F001	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[5, 9]	—	D022[57]
			chromium	7440-47-3	X-[5, 8, 16]	—	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A
			lead	7439-92-1	X-[1, 4, 5, 8, 9, 16]	D008[16]	D008[24, 57]
			mercury	7439-97-6	X-[4, 5, 9, 16]	—	D009[24, 57]
			methanol	67-56-1	X-[1, 5, 16]	F003[16]	F003[57] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 8, 9, 16, 6]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[4, 6, 16, 57]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	—	D010[24, 57]
			silver	7440-22-4	X-[5, 8, 9, 16]	—	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 8, 16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[8, 9, 16, 24]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16]	F003[57] See Notes 1 and 2
RF, RF	002	SECOND STAGE SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	F002[16]	F002[24, 57]
			1,1,2,2-trichloroethane	79-00-5	X-[16, 24]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5, 24, 57]	F003[16] See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	F003[57] See Notes 1 and 2
			arsenic	7440-38-2	X-[9, 16]	—	D004[24, 57]
			barium	7440-39-3	X-[5, 9, 16]	—	D005[24, 57]
			benzene	71-43-2	X-[9, 16]	—	F005[24, 57]
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	N/A	N/A
			cadmium	7440-43-9	X-[1, 5, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[1, 5, 9, 16]	F001[16]	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[5, 9, 16]	—	D022[57]
			chromium	7440-47-3	X-[1, 5, 9, 16]	—	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			lead	7439-92-1	X-[1, 4, 5, 9, 16]	D008[16]	D008[24, 57]
			lithium (discharged batteries)	7439-93-2	X-[4, 16, 24, 57]	See Note 2	N/A
			mercury	7439-97-6	X-[1, 4, 5, 9, 16]	D009[16]	D009[24, 57]
			methanol	67-56-1	X-[1, 5, 16]	F003[16]	F003[57] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 6, 9, 16]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[4, 6, 16, 57]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	—	D010[24, 57]
			silver	7440-22-4	X-[5, 9, 16]	—	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[9, 16]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 9, 16]	F001[16]	F001/F002[24, 57]
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16]	F003[57] See Notes 1 and 2
RF, RF	003	ORGANIC SETUPS, OIL SOLIDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 4, 5, 6, 8, 16]	F001[16]	F001/F002[46]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16]	F002[16]	F002[46]
			1,1-dichloroethylene	75-35-4	X-[16]	D029[16]	D029[46]
			1,2-dichlorobenzene	95-50-1	X-[46]	—	F002[46]
			1,2-dichloroethane	107-06-2	X-[16]	D028[16]	D028[46]
			1,4-dichlorobenzene	106-46-7	X-[46]	—	D027[46]
			2-ethoxyethanol	110-80-5	X-[46]	—	F005[46]
			2,4-dinitrotoluene	121-14-2	X-[46]	—	D030[46]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			benzene	71-43-2	X-[46]	—	F005[46]
			beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5, 16]	N/A	N/A
			butanol	71-36-3	X-[46]	See Note 2	N/A
			carbon disulfide	75-15-0	X-[46]	—	F005[46]

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			carbon tetrachloride	56-23-5	X-[4, 5, 6, 8, 16]	F001[16]	F001[46]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[46]
			cresol	1319-77-3	X-[46]	—	D026[46]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[46]	—	D032[46]
			hexachloroethane	67-72-1	X-[16]	D034[16]	D034[46]
			methanol	67-56-1	X-[5]	F00316 See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46]	—	F005[46]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[16]	F002[46]
			nitrobenzene	98-95-3	X-[1, 4, 5, 16]	—	D036[46]
			nitrates	—	X-[6]	See Note 2	N/A
			pentachlorophenol	87-86-5	X-[46]	—	D037[46]
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[1, 4 ,5, 16, 46]	N/A	N/A
			pyridine	110-86-1	X-[46]	—	F005[46]
			tetrachloroethylene (perclene)	127-18-4	X-[1, 4, 5, 6, 8, 16]	F001[16]	F002[46]
			trichlorofluoromethane	75-69-4	X-[46]	—	F001/F002[46]
			toluene	108-88-3	X-[16]	—	F005[46]
			trichloroethylene (TCE)	79-01-6	X-[1, 4, 5, 6, 8, 16]	F001[16]	F002[46]
			xylene	1330-20-7	X-[16]	F003[16] See Note 2	N/A
RF, RF	004	SPECIAL SETUPS	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	F001[16]	F001/F002[45]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 16]	F002[16]	F001/F002[45]
			1,1-dichloroethylene	75-35-4	X-[5]	—	D029[45]
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A
			acetone	67-64-1	X-[45]	See Note 2	N/A
			benzene	71-43-2	X-[5, 16]	—	F005[45]
			cadmium	7440-43-9	X-[1, 5]	—	D006[45]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16]	F001[45]
			chromium	7440-47-3	X-[16]	—	D007[45]
			cyanide	57-12-5	X-[16, 45]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[5, 16, 45]	F003[16] See Note 2	N/A
			ethyl ether	60-29-7	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5]	D008	D008[45]
			methanol	67-56-1	X-[1, 5, 16, 45]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5]	—	F002[45]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[45]	—	F005[45]
			nitrates		X-[16, 45]	—	—
			silver	7440-22-4	X-[45]	—	D011[45]
			toluene	108-88-3	X-[5, 16]	—	F005[45]
			tetrachloroethylene (perclene)	127-18-4	X-[5]	—	F001/F002[45]
			trichloroethylene (TCE)	79-01-6	X-[6, 16]	F001[16]	F001/F002[45]
			xylene	1330-20-7	X-[1, 5, 16]	F003[16] See Note 2	N/A
			electroplating sludges	—	X-[45]	—	F006[45]
			cyanide plating bath solutions	—	X-[45]	—	F007[45]
			cyanide cleaning bath solutions	—	X-[45]	—	F009[45]
RF, RF	005	EVAPORATOR SALTS	nitrates	—	X-[4, 5]	—	—
			possible ignitable if deemed an oxidizer	—	X-[1, 5]	—	—
RF, RF	007	BUILDING 374 DRY SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[16]	N/A	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 8, 16]	F002[16]	F001[25]
			1,2-dichloroethylene	540-59-0	X-[5, 16]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A
			acetone	67-64-1	X-[16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[5, 16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-[5, 25]	N/A	N/A
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			cadmium	7440-43-9	X-[1, 5, 16]	D006[16]	D006[25]
			carbon tetrachloride	56-23-5	X-[5, 6, 8, 16]	F001[16]	F001[25]
			chromium	7440-47-3	X-[1, 5, 8, 16]	—	D007[25]

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			electroplating sludges	—	X-[16]	F006[16]	F006[25]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[25]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[25]
			ethyl benzene	100-41-4	X-[5, 16]	See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			hexane	110-54-3	X-[25]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	D008[25]
			mercury	7439-97-6	X-[5, 16]	—	D009[25]
			methanol	67-56-1	X-[1, 5, 16, 25]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 8, 16]	F002[16]	F002[25]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 8]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			styrene	100-42-5	X-[16]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	F001[16]	F001[25]
			toluene	108-88-3	X-[5, 16]	—	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[25]
			xylene	1330-20-7	X-[1, 5, 16, 25]	See Note 2	N/A
RF, RF	090	DIRT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			1-butanol	71-36-3	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			methanol	67-56-1	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
			nitrates	—	X-[1, 5]	—	—
			nitrobenzene	98-95-3	X-[1, 5]	—	—

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			tetrachloroethylene (perclene)	127-18-4	X-[1, 5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1, 5]	—	—
			xylene	1330-20-7	X-[1, 5]	—	—
RF, RF	095	SEWER SLUDGE	See Note 16	—	See Note 16	See Note 16	—
RF, RF	241	AMERICIUM PROCESS RESIDUE	lead	7439-92-1	X-[1, 4, 5, 16]	D008[16]	—
			methylene chloride	75-09-2	X-[1, 5]	F002[5]	—
			nitrates	—	X-[1, 4, 16]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5, 16]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5, 16]	See Note 2 and 3	—
			xylene	1330-20-7	X-[1, 5]	F003[5] See Note 2	—
RF, RF	290	FILTER SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			1-butanol	71-36-3	X-[1, 5]	—	—
			cadmium	7440-43-9	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			lead	7439-92-1	X-[1, 5]	—	—
			methanol	67-56-1	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2 and 3	—
			xylene	1330-20-7	X-[1, 5]	See Note 2	—
RF, RF	292	CEMENTED SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	—	F001/F002[26, 95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F001/F002[26, 95]
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A[95]
			acetone	67-64-1	X-[16]	See Note 2	N/A[26, 95] See Notes 1 and 2
			arsenic	7440-38-2	X-[16]	—	D004[26, 95]
			barium	7440-39-3	X-[16]	—	D005[26, 95]

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			benzene	71-43-2	X-[5, 16]	—	F005[26, 95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[1, 5, 16]	—	D006[26, 95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[26, 95]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[26, 95]
			chromium	7440-47-3	X-[8, 16]	—	D007[26, 95]
			cyanide cleaning bath solutions	—	X-[16]	See Note 11	F009[26, 95]
			cyanide plating bath solutions	—	X-[16]	See Note 11	F007[26, 95]
			electroplating sludges	—	X-[16]	See Note 11	F006[26, 95]
			lead	7439-92-1	X-[1, 5, 8, 16]	—	D008[26, 95]
			mercury	7439-97-6	X-[8, 16]	—	D009[26, 95]
			methanol	67-56-1	X-[1, 5, 16]	See Note 2	N/A[26, 95] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[26, 95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[95]	—	F005[95]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[26, 95]
			silver	7440-22-4	X-[8, 16]	—	D011[26, 95]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 26]	—	F001/F002[26, 95]
			toluene	108-88-3	X-[5, 8, 16, 26]	—	F005[26, 95]
			trichloroethylene (TCE)	79-01-6	X-[5, 16, 26]	—	F001/F002[26, 95]
			xylene	1330-20-7	X-[1, 16, 26]	See Note 2	N/A[26, 95] See Notes 1 and 2
RF, RF	300	GRAPHITE MOLDS (Only drums with prefix 0012) -	1,1,1-trichloroethane (TCA)	71-55-6	X-[65]	See Note 7	See Note 7
RF, RF	300	GRAPHITE MOLDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[5, 16]	—	D029[22, 49]
			1,2-dichloroethylene	540-59-0	X-[5]	See Note 2	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	—	F002[22, 49]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methylene chloride	75-09-2	X-[5, 16]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[22, 49]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			methanol	67-56-1	X-[5]	See Note 2	N/A
			nitrates	—	X-[8]	—	—
			toluene	108-88-3	X-[5, 16, 64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[22, 49, 64]	—	F002[22, 49, 64]
			xylene	1330-20-7	X-[5]	See Note 2	N/A
RF, RF	301	GRAPHITE CORES	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			methylene chloride	75-09-2	X-[22, 49, 64]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[22, 49]	—	F001[22, 49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			toluene	108-88-3	X-[64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[49, 64]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	302	BENELEX AND PLEXIGLAS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			carbon tetrachloride	56-23-5	X-[5, 6, 8]	F001[5]	—
			isopropanol	67-63-0	X-[8]	—	—
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	—	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[5]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	—	F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			methylene chloride	75-09-2	X-[5, 16]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[22, 49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			toluene	108-88-3	X-[5, 16, 64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F002[22, 49, 64]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	F002[22, 49]
RF, RF	303	SCARFED GRAPHITE CHUNKS	1,1,1-trichloroethane (TCA)	71-55-6	X-[49, 64]	—	F001/F002[49, 64]
			1,1-dichloroethylene	75-35-4	X-[49]	—	D029[49]
			methylene chloride	75-09-2	X-[49, 64]	—	F002[49, 64]
			carbon tetrachloride	56-23-5	X-[49]	—	F001[49]
			lead	7439-92-1	X-[49, 64]	—	D008[49, 64]
			toluene	108-88-3	X-[49]	—	F005[49]
			trichloroethylene (TCE)	79-01-6	X-[49, 64]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	310	GRAPHITE SCARFINGS	1,1,1-trichloroethane (TCA)	71-55-6	X-[49, 64]	—	F001/F002[49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[49]
			methylene chloride	75-09-2	X-[49, 64]	—	F002[49, 64]
			carbon tetrachloride	56-23-5	X-[49]	—	F001[49]
			lead	7439-92-1	X-[16]	—	D008[49, 64]
			toluene	108-88-3	X-[49]	—	F005[49]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	311	GRAPHITE HEELS	nitrates	—	X-[1]	—	—
RF, RF	312	COARSE GRAPHITE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			methylene chloride	75-09-2	X-[5, 6, 16]	—	F002[22, 49, 64]
			toluene	108-88-3	X-[16]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F002[22, 49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	F002[49]
			xylene	1330-20-7	X-[5]	See Note 2	N/A
RF, RF	320	HEAVY NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[39]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6]	F001[5]	F001/F002[39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	F001[5]	F001/F002[39]
			1,2-dichloroethane	107-06-2	X-[39]	—	D028[39]
			acetone	67-64-1	X-[39]	See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			arsenic	7440-38-2	X-[39]	—	D004[39]
			barium	7440-39-3	X-[39]	—	D005[39]
			benzene	71-43-2	X-[39]	—	F005[39]
			cadmium	7440-43-9	X-[39]	—	D006[39]
			carbon disulfide	75-15-0	X-[39]	—	F005[39]
			carbon tetrachloride	56-23-5	X-[5]	F001[5]	F001[39]
			chloroform (trichloromethane)	67-66-3	X-[5]	D022[5]	D022[39]
			chromium	7440-47-3	X-[39]	—	D007[39]
			cyanide cleaning bath solutions	—	X-[39]	—	F009[39]
			cyanide plating bath solutions	—	X-[39]	—	F007[39]
			electroplating sludges	—	X-[39]	—	F006[39]
			lead	7439-92-1	X-[1, 2, 5, 6, 8, 16]	D008[5]	D008[39]
			mercury	7439-97-6	X-[6, 16]	—	D009[39]
			methanol	67-56-1	X-[39]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[5]	F002[5]	F002[39]
			selenium	7782-49-2	X-[39]	—	D010[39]
			silver	7440-22-4	X-[39]	—	D011[39]
			tetrachloroethylene (perclene)	127-18-4	X-[39]	F001[5]	F001/F002[39]
			toluene	108-88-3	X-[5]	F005[5]	F005[39]
			trichloroethylene (TCE)	79-01-6	X-[5]	—	F001/F002[39]
			xylene	1330-20-7	X-[39]	See Note 2	N/A
RF, RF	321	LEAD	1,1-dichloroethylene	75-35-4	X-[39]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[39]	—	F001/F002[39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[39]	—	F001/F002[39]
			1,2-dichloroethane	107-06-2	X-[39]	—	D028[39]
			acetone	67-64-1	X-[39]	See Note 2	N/A
			arsenic	7440-38-2	X-[39]	—	D004[39]
			barium	7440-39-3	X-[8]	—	D005[39]
			benzene	71-43-2	X-[39]	—	F005[39]
			beryllium (not beryllium powder)	7440-41-7	X-[39]	N/A	N/A
			cadmium	7440-43-9	X-[39]	—	D006[39]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon disulfide	75-15-0	X-[39]	—	F005[39]
			carbon tetrachloride	56-23-5	X-[39]	—	F001[39]
			chloroform (trichloromethane)	67-66-3	X-[39]	—	D022[39]
			chromium	7440-47-3	X-8	—	D007[39]
			cyanide cleaning bath solutions	—	X-[39]	—	F009[39]
			cyanide plating bath solutions	—	X-[39]	—	F007[39]
			electroplating sludges	—	X-[39]	—	F006[39]
			lead	7439-92-1	X-[2, 8, 16]	D008[2, 8, 16]	D008[39]
			mercury	7439-97-6	—	—	D009[39]
			methanol	67-56-1	X-[39]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[39]	—	F002[39]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[8]	See Note 2	N/A
			selenium	7782-49-2	X-[39]	—	D010[39]
			silver	7440-22-4	X-[39]	—	D011[39]
			tetrachloroethylene (perclene)	127-18-4	X-[39]	—	F001/F002[39]
			toluene	108-88-3	X-[39]	—	F005[39]
			trichloroethylene (TCE)	79-01-6	X-[39]	—	F001/F002[39]
			xylene	1330-20-7	X-[39]	See Note 2	N/A
RF, RF	328	FUL-FLO INCINERATOR FILTERS	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	—	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F001/F002[38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[16]	N/A	N/A
			barium	7440-39-3	X-[16]	—	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[38]
			chromium	7440-47-3	X-[16]	—	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	See Note 6	—	See Note 6[38]
			cyanide plating bath solutions	—	See Note 6	—	See Note 6[38]
			electroplating sludges	—	See Note 6	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X[38]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[38]
			nitrates	—	X-[16]	N/A	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[38]
			toluene	108-88-3	X-[16]	—	F005[38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[38]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
RF, RF	330	PAPER AND RAGS - DRY	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16]	F001/F002[28, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 16]	F002	F001/F002[28, 50]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[5, 8]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]

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			acetone	67-64-1	X-[16]	F003[28] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[50]	—	D005[50]
			benzene	71-43-2	X-[16]	—	F005[28, 50]
			beryllium (not beryllium powder)	7440-41-7	X-[16]	N/A	N/A
			cadmium	7440-43-9	X-[16]	—	D006[28, 50]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[28, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16]	F001[28, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[28, 50]
			chromium	7440-47-3	X-[16]	—	D007[28, 50]
			cyanide cleaning bath solutions	—	X-[16]	—	F009[28, 50]
			cyanide plating bath solutions	—	X-[16]	—	F007[28, 50]
			cyclohexane	110-82-7	X-[16, 8]	See Note 2	N/A
			electroplating sludges	—	X-[16]	—	F006[28, 50]
			ethyl benzene	100-41-4	X-[5, 16, 8]	See Note 2	N/A
			isobutanol (isobutanol)	78-83-1	X-[50]	—	F005[50]
			lead	7439-92-1	X-[5, 6, 16]	—	D008[28, 50]
			methanol	67-56-1	X-[5, 16]	F003[28] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 16]	F002[16]	F002[28, 50]
			mercury	7439-97-6	X-[16]	—	D009[28, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			nitrates	—	X-[16]	N/A	N/A
			pyridine	110-86-1	X-[50]	—	F005[50]
			polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	N/A	N/A
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	—	D011[28, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 50]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[5, 8]	—	F005[28, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[28, 50]
			xylene	1330-20-7	X-[5, 16, 8]	F003[28] See Note 2	N/A
RF, RF	335	ABSOLUTE 8×8 FILTERS	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 8, 16]	F001[16]	F001/F002[31, 38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 8, 16]	F002[16]	F001/F002[31, 38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[5, 16]	See Note 2	N/A
			arsenic	7440-38-2	X-[8]	—	D004[38]
			asbestos	1332-21-4	X-[1, 4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[31, 38]
			benzene	71-43-2	X-[5, 16]	—	F005[31, 38]
			cadmium	7440-43-9	X-[8]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 8, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[31, 38]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[31, 38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[8, 16]	F009[16]	F009[31, 38]
			cyanide plating bath solutions	—	X-[8, 16]	F007[16]	F007[31, 38]
			electroplating sludges	—	X-[8, 16]	F006[16]	F006[31, 38]
			ethyl benzene	100-41-4	X-[16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[8, 16]	—	D008[31, 38]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]

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			nitrates (only for waste generated in building 374 after 1984)	—	X-[1, 5, 16, 31]	See Note 2	N/A
			potential corrosive if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[8]	—	D010[38]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[31, 38]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[16, 31]	See Note 2	N/A
RF, RF	336	PAPER AND RAGS - MOIST	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 8, 16]	F001[16]	F001/F002[28, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16]	F002[16]	F001/F002[28, 50]
			1,2-dichloroethane	107-06-2	X-[50]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[5]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]
			acetone	67-64-1	X-[5, 16, 28]	F003[16] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[50]	—	D005[50]
			benzene	71-43-2	X-[16]	—	F005[28, 50]
			cadmium	7440-43-9	X-[16]	D006[16]	D006[28, 50]
			carbon disulfide	75-15-0	X-[16]	—	F005[28, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 7]	F001[16]	F001[28, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[28, 50]
			chromium	7440-47-3	X-[16]	D007[16]	D007[28, 50]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[28, 50]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[28, 50]
			electroplating sludges	—	X-[16]	F006[16]	F006[28, 50]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			Isobutanol (isobutyl alcohol)	78-83-1	X-[50]	—	F005[50]
			lead	7439-92-1	X-[5, 6, 16]	D008[16]	D008[28, 50]
			methanol	67-56-1	X-[16, 28]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 16]	F002[16]	F002[28, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			mercury	7439-97-6	X-[16]	D009[16]	D009[28, 50]
			pyridine	110-86-1	X-[50]	—	F005[50]
			nitrates (only for waste generated prior to 1975)	—	X-[1, 4, 5, 6, 16, 28]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit in waste packaged before 1974	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	D011[16]	D011[28, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 50]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[28, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[28, 50]
			xylene	1330-20-7	X-[5, 16, 28]	F003[16] See Note 2	N/A
RF, RF	337	PLASTIC, TEFLON, WASHABLES, PVC	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16, 29]	F001/F002[30, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16, 50]	F002[16, 29]	F001/F002[30]
			1,2-dichloroethane	107-06-2	X-[50]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[50]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]
			acetone	67-64-1	X-[5, 16]	F003[16, 29] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[30, 50]	—	D005[30, 50]
			benzene	71-43-2	X-[16]	—	F005[30, 50]
			cadmium	7440-43-9	X-[16]	D006[16, 29]	D006[30, 50]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon disulfide	75-15-0	X-[30, 50]	—	F005[30, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16, 29]	F001[30, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[30, 50]
			chromium	7440-47-3	X-[16]	D007[16, 29]	D007[30, 50]
			cyanide cleaning bath solutions	—	X-[16]	F009[16, 29]	F009[30, 50]
			cyanide plating bath solutions	—	X-[16]	F007[16, 29]	F007[30, 50]
			cyclohexane	110-82-7	X[30, 50]	See Note 2	N/A
			electroplating sludges	—	X-[16]	F006[16, 29]	F006[30, 50]
			Isobutanol (isobutyl alcohol)	78-83-1	X-[30, 50]	—	F005[30, 50]
			lead	7439-92-1	X-[5, 6, 16]	D008[16, 29]	D008[30, 50]
			methanol	67-56-1	X-[5, 16]	F003[16, 29] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 16]	F002	F002[30, 50]
			mercury	7439-97-6	X-[16]	D009[16, 29]	D009[30, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			nitrates (only for waste generated prior to 1974)	—	X-[30]	See Note 2	N/A
			pyridine	110-86-1	X-[50]	—	F005[50]
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	D011[16, 29]	D011[30, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[30, 50]
			toluene	108-88-3	X-[5, 16]	—	F005[30, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[16, 29]	F001/F002[30, 50]
			xylene	1330-20-7	X-[5, 16]	F003[16, 29] See Note 2	N/A
RF, RF	338	INSULATION AND CWS FILTER MEDIA	1,1-dichloroethylene	75-35-4	X-[5, 38]	—	D029
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16]	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16]	F001/F002[38]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	N/A
			asbestos	1332-21-4	X-[1, 4, 5, 16]	N/A	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			barium	7440-39-3	X-[16]	D005[16]	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[38]
			chromium	7440-47-3	X-[16]	D007[16]	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[38]	—	See Note 6[38]
			cyanide plating bath solutions	—	X-[38]	—	See Note 6[38]
			electroplating sludges	—	X-[38]	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	D008[16]	D008[38]
			mercury	7439-97-6	X-[16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[2, 5, 16]	F002[16]	F002[38]
			nitrates	—	X-[1, 5, 16]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit in waste packaged before 1974	—	X-[5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	D011[16]	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[38]
			toluene	108-88-3	X-[5, 16]	—	F005[38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[38]
			xylene	1330-20-7	X-[38]	See Note 2	N/A
RF, RF	339	LEADED RUBBER GLOVES AND APRONS	1,1-dichloroethylene	75-35-4	X-[5, 6, 16]	—	D029[33, 41]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16, 34]	F001[16]	F001/F002[33, 41]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 8, 16, 34]	F001[16]	F001/F002[33, 41]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[41]
			acetone	67-64-1	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			benzene	71-43-2	X-[5, 34]	—	F005[33, 41]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[41]
			carbon tetrachloride	56-23-5	X-[6, 8, 16, 34]	F001[16]	F001[33, 41]
			chloroform (trichloromethane)	67-66-3	X-[5, 16, 34]	D022[16]	D022[33, 41]
			cyclohexane	110-82-7	X-[34]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16, 34]	—	F009[33, 41]
			cyanide plating bath solutions	—	X-[16, 34]	—	F007[33, 41]
			electroplating sludges	—	X-[16, 34]	—	F006[33, 41]
			ethanol	64-17-5	X-[41]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			isopropanol	67-63-0	X-[41]	See Note 2	N/A
			lead	7439-92-1	X-[1, 2, 6, 8, 16, 34]	D008[16]	D008[33, 41]
			nitrate	10099-74-8	X-[17, 33, 34]	N/A	N/A
			methanol	67-56-1	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			methyl chloride (chloromethane)	74-87-3	X-[33, 34]	—	F001/F002[33, 41]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[41]	—	F005[41]
			methylene chloride	75-09-2	X-[5, 6, 8, 16, 34]	F002[16]	F002[33, 41]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[41]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 34]	F001[16]	F001/F002[33, 41]
			toluene	108-88-3	X-[5, 8, 16, 34]	F005[16]	F005[33, 41]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[6, 8, 16, 34]	—	F001/F002[33, 41]
			xylene	1330-20-7	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			zinc	7440-66-6	X-[41]	—	—
RF, RF	33A	WETP BIN PROGRAM - COMBUSTIBLES A (RF IDCs 335, 336, 337, and 339)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			barium	7440-39-3	X-[21]	—	—
			cadmium	7440-43-9	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chloroform (trichloromethane)	67-66-3	X-[21]	—	—
			chromium	7440-47-3	X-[21]	—	—
			cyanide	57-12-5	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane	110-82-7	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			potential corrosives if liquids exceed the WIPP WAC limit in waste packaged before 1974	—	X-[21]	See Notes 2 and 3	—
			silver	7440-22-4	X-[21]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	33B	WETP BIN PROGRAM - COMBUSTIBLES B (RF IDCs 330, 337, and 339)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			cadmium	7440-43-9	X-[21]	—	—

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			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chloroform (trichloromethane)	67-66-3	X-[21]	—	—
			chromium	7440-47-3	X-[21]	—	—
			cis-1,2-dichloroethylene	156-59-2	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane	110-82-7	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			ethyl benzene	100-41-4	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			silver	7440-22-4	X-[21]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trans-1,2-dichloroethylene	156-60-5	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	360	INSULATION	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 16]	—	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F002/F002[38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[16]	—	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[38]
			chromium	7440-47-3	X-[16]	—	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	See Note 6	—	See Note 6[38]
			cyanide plating bath solutions	—	See Note 6	—	See Note 6[38]
			electroplating sludges	—	See Note 6	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X-[16]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[38]
			nitrates	—	X-[1, 5, 16]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP WAC limit in waste packaged before 1974	—	X-[5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002
			toluene	108-88-3	X-[16]	—	F005[38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[38]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
RF, RF	361	INSULATION HEEL	nitrates	—	X-[1]	—	—
RF, RF	368	MAGNESIUM OXIDE CRUCIBLES	calcium	7440-70-2	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	370	LECO CRUCIBLE	chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[6]	—	—
RF, RF	371	FIRE BRICK	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16, 32]	—	F001/F002[35, 44]

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			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 32]	—	F001/F002[35, 44]
			acetone	67-64-1	X-[16, 32, 44]	F003[35] See Note 2	N/A
			arsenic	7440-38-2	X-[8, 16, 32]	—	D004[35, 44]
			asbestos	1332-21-4	X-[6, 32, 35]	—	—
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[44]
			1,1-dichloroethylene	75-35-4	X-[44]	—	D029[44]
			barium	7440-39-3	X-[8, 16, 32]	—	D005[35, 44]
			benzene	71-43-2	X-[5, 16, 32]	—	F005[35, 44]
			carbon disulfide	75-15-0	—	—	F005[44]
			cadmium	7440-43-9	X-[8, 16, 32]	—	D006[35, 44]
			carbon tetrachloride	56-23-5	X-[5, 16, 32]	—	F001[35, 44]
			chloroform (trichloromethane)	67-66-3	X-[32]	—	D022[44]
			chromium	7440-47-3	X-[8, 16, 32]	—	D007[35, 44]
			cyanide cleaning bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			cyanide plating bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			electroplating sludges	—	X-[32, 35, 44, 62]	See Note 21	N/A
			lead	7439-92-1	X-[8, 16, 32]	—	D008[35]
			mercury	7439-97-6	X-[8, 16, 32]	—	D009[35]
			methanol	67-56-1	X-[5, 16, 32, 44]	F003[35] See Note 2	N/A
			methylene chloride	75-09-2	X-[5, 6, 8, 16, 32]	—	F002[35]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[44]	—	F005[44]
			nitrates	—	X-[8, 32, 35]	—	—
			selenium	7782-49-2	X-[8, 16, 32]	—	D010[35, 44]
			silver	7440-22-4	X-[8, 16, 32]	—	D011[35, 44]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 32]	—	F001/F002[35]
			toluene	108-88-3	X-[5, 16, 32]	—	F005[35, 44]
			trichloroethylene (TCE)	79-01-6	X-[6, 8, 16, 32]	—	F001/F002[35, 44]
			xylene	1330-20-7	X-[5, 16, 32, 44]	F003[35] See Note 2	N/A
RF, RF	372	GRIT	beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chromium	7440-47-3	X-[16]	D007[16]	—
RF, RF	374a / 697	DIRT **NOTE:** For purpose of data management within the Waste Tracking System (WTS), a surrogate IDC (RF-697) is being used to uniquely identify the IDC RF-374a subpopulation for soil. Drum labeling and Waste Data System (WDS) data transfer will reflect IDC RF-697 to align with the AK and the WSPF.	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 16]	F002[16]	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			1-butanol	71-36-3	X-[1]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[1, 16]	F001[16]	—
			chromium	7440-47-3	X-[16]	—	—
			cyanide	57-12-5	X-[16]	—	—
			cyanide cleaning bath solutions	—	X-[16]	—	—
			cyanide plating bath solutions	—	X-[16]	—	—
			electroplating sludges	—	X-[16]	—	—
			ethyl benzene	100-41-4	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[1]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 2, 16]	F002[16]	—
			nitrobenzene	98-95-3	X-[1]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1, 16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1, 16]	—	—
			xylene	1330-20-7	X-[1, 16]	—	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	374	BLACKTOP, CONCRETE, AND CONSTRUCTION RUBBLE	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 5, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			acetone	67-64-1	X-[5, 16]	—	—
			arsenic	7440-38-2	X-[8, 16]	—	—
			barium	7440-39-3	X-[8, 16]	—	—
			benzene	71-43-2	X-[5, 16]	—	—
			cadmium	7440-43-9	X-[8, 16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[16]	—
			chromium	7440-47-3	X-[8, 16]	—	—
			cyanide	57-12-5	X-[16]	—	—
			cyanide cleaning bath solutions	—	X-[8, 16]	—	—
			cyanide plating bath solutions	—	X-[8, 16]	—	—
			electroplating sludges	—	X-[8, 16]	—	—
			ethyl benzene	100-41-4	X-[5, 16]	—	—
			lead	7439-92-1	X-[8, 16]	—	—
			mercury	7439-97-6	X-[8, 16]	—	—
			methanol	67-56-1	X-[5]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[2, 5, 16]	F002	—
			multi-source leachate (F039)	—	X-[8, 66]	—	—
			nitrobenzene	98-95-3	X-[1, 5, 8]	—	—
			selenium	7782-49-2	X-[8, 16]	—	—
			silver	7440-22-4	X-[8, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	375	OIL-DRI (Residues from incinerator)	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16] See Note 4	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16] See Note 4	—
			1-butanol	71-36-3	X-[16]	—	—
			2-ethoxyethanol	110-80-5	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon disulfide	75-15-0	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16] See Note 4	—
			chlorobenzene	108-90-7	X-[16]	—	—
			chloroform (trichloromethane)	67-66-3	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			ethyl benzene	100-41-4	X-[16]	—	—
			ethyl ether	60-29-7	X-[16]	—	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 5, 16]	F002[16] See Note 4	—
			methyl isobutyl ketone	108-10-1	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	376	CEMENTED INSULATION AND	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
		FILTER MEDIA	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16]	F001/F002[31, 38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16]	F001/F002[31]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[16, 31, 38]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 8, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	—	D005[31, 38]
			benzene	71-43-2	X-[16]	—	F005[31, 38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[31, 38]
			chromium	7440-47-3	X-[16]	—	D007[31, 38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	—	F009[31, 38]
			cyanide plating bath solutions	—	X-[16]	—	F007[31, 38]
			electroplating sludges	—	X-[16]	—	F006[31, 38]
			ethyl benzene	100-41-4	X-[5, 16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[16, 8]	—	D008[31, 38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]
			nitrates	—	X-[1, 5, 8, 16, 31]	—	—
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[31, 38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[5, 16, 31, 38]	See Note 2	N/A
RF, RF	377	COARSE FIRE BRICK	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[32, 35, 44]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[32, 35, 44]
			1,2-dichloroethane	107-06-2	X-[44]	—	D028[44]
			1,1-dichloroethylene	75-35-4	X-[44]	—	D029[44]
			acetone	67-64-1	—	F003[35] See Note 2	N/A
			arsenic	7440-38-2	X-[8, 16]	—	D004[32, 35, 44]
			asbestos	1332-21-4	X-[35]	—	—
			barium	7440-39-3	X-[8, 16]	—	D005[32, 35, 44]
			benzene	71-43-2	X-[16]	—	F005[32, 35, 44]
			cadmium	7440-43-9	X-[8, 16]	—	D006[32, 35, 44]
			carbon disulfide	75-15-0	X-[44]	—	F005[44]
			carbon tetrachloride	56-23-5	X-[35, 44]	—	F001[35, 44]
			chloroform (trichloromethane)	67-66-3	X-[44]	—	D022[44]
			chromium	7440-47-3	X-[8, 16]	—	D007[32, 35, 44]
			cyanide cleaning bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			cyanide plating bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			electroplating sludges	—	X-[32, 35, 44, 62]	See Note 21	N/A
			lead	7439-92-1	X-[8, 16]	—	D008[32, 35, 44]
			mercury	7439-97-6	X-[8, 16]	—	D009[32, 35, 44]
			methanol	67-56-1	X-[16, 32, 44]	F003[35] See Note 2	N/A
			methylene chloride	75-09-2	X-[16]	—	F002[32, 35, 44]
			nitrates	—	X-[35]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[32, 35, 44]
			silver	7440-22-4	X-[8, 16]	—	D011[32, 35, 44]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[32, 35, 44]
			toluene	108-88-3	X-[8, 16]	—	F005[32, 35, 44]
			trichloroethylene (TCE)	79-01-6	X-[6, 16]	—	F001/F002[32, 35, 44]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			xylene	1330-20-7	X-[16, 32, 44]	F003[35] See Note 2	N/A
RF, RF	391	CRUCIBLES AND SAND	magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	392	SAND, SLAG, AND CRUCIBLE	calcium	7440-70-2	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	393	SAND, SLAG, AND CRUCIBLE HEELS	calcium	7440-70-2	X-[16]	See Note 8	—
			chromium	7440-47-3	X-[8, 16]	—	—
			methylene chloride	75-09-2	—	—	—
			nitrates	—	X-[1, 8, 16]	—	—
RF, RF	409	MOLTEN SALT – 30% UNPULVERIZED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	—
			1,2-dichloroethane	107-06-2	X-[5, 6, 8]	—	—
			lead	7439-92-1	X-[8]	—	—
			mercury	7439-97-6	X-[1]	—	—
			methylene chloride	75-09-2	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			toluene	108-88-3	X-[5]	—	—
RF, RF	410	MOLTEN SALT – 30% PULVERIZED	mercury	7439-97-6	X-[1, 9]	—	—
RF, RF	411	ELECTROREFINING SALT	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16]	—	—
			benzene	71-43-2	X-[5]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	—	—
			arsenic	7440-38-2	X-[8]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			barium	7440-39-3	X-[8]	—	—
			cadmium	7440-43-9	X-[8]	—	—
			chromium	7440-47-3	X-[8, 16]	—	—
			calcium	7440-70-2	X-[16]	—	—
			lead	7439-92-1	X-[8]	—	—
			mercury	7439-97-6	X-[8]	—	—
			selenium	7782-49-2	X-[8]	—	—
			silver	7440-22-4	X-[8]	—	—
			potassium	7440-09-7	X-[8, 16]	See Note 8	—
			magnesium	7439-95-4	X-[1, 16]	See Note 8	—
			sodium	7440-23-5	X-[8, 16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			methylene chloride	75-09-2	X-[5, 8]	—	—
			toluene	108-88-3	X-[5, 8]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	412	GIBSON SALTS	potential corrosive if wet	—	X-[4]	See Note 2	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[4, 16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
RF, RF	414	DIRECT OXIDE REDUCTION SALT	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[8, 16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			ethyl benzene	100-41-4	X-[5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			toluene	108-88-3	X-[5]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	416	ZINC MAGNESIUM ALLOY METALS	carbon tetrachloride	56-23-5	X-[9, 16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
RF, RF	420	ASH, INCINERATOR (VIRGIN)	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	D004[16]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	D006[16]	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			lead	7439-92-1	X-[16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			selenium	7782-49-2	X-[16]	D010[16]	—
			silver	7440-22-4	X-[16]	D011[16]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	421	ASH HEELS	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	D004[16]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			lead	7439-92-1	X-[16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			nitrates	—	X-[1]	—	—
			selenium	7782-49-2	X-[16]	D010[16]	—
			silver	7440-22-4	X-[16]	D011[16]	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	422	SOOT	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[8, 16]	D004[16]	—
			barium	7440-39-3	X-[8, 16]	D005[16]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[8, 16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[8, 16]	D007[16]	—
			lead	7439-92-1	X-[8, 16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[8, 16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			selenium	7782-49-2	X-[8, 16]	D010[16]	—
			silver	7440-22-4	X-[8, 16]	D011[16]	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	425	FLUID BED ASH	chromium	7440-47-3	X-[16]	D007	—
			methanol	67-56-1	X-[16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			barium (not TCLP)	7440-39-3	X-[16]	—	—
			cadmium (not TCLP)	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			lead (not TCLP)	7439-92-1	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[9, 16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	430	ION COLUMN UNLEACHED RESIN	nitrates	—	X-[1, 4, 5]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5]	—	—
RF, RF	431	LEACHED RESIN	nitrates	—	X-[1, 9]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5]	—	—
RF, RF	432	RESIN, LEACHED AND CEMENTED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5, 16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			benzene	71-43-2	X-[5]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5, 43]	—	—
			1,2-dichloroethane	107-06-2	X-[5, 43]	—	—
			1,1-dichloroethylene	75-35-4	X-[16, 43]	—	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			carbon tetrachloride	56-23-5	X-[5, 6, 8]	F001[5]	—
			ethyl benzene	100-41-4	X-[5]	—	—
			isopropanol	67-63-0	X-[8]	—	—
			lead	7439-92-1	X-[5, 16]	D008[16]	—
			methylene chloride	75-09-2	X-[5, 6, 8]	F002[5]	—
			nitrates	—	X-[1, 6, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1]	—	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[5]	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	440	GLASS	1,1-dichloroethylene	75-35-4	X-[5, 6]	—	D029[40]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5]	F001/F002[28, 40]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 6, 16]	F002[16]	F001/F002[28, 40]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[40]
			acetone	67-64-1	X-[5, 16, 28, 40]	See Note 2	—
			barium	7440-39-3	X-[16]	D005[16]	D005[28, 40]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			benzene	71-43-2	X-[5, 16]	—	F005[28, 40]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[28, 40]
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[5]	F001[28, 40]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[5]	D022[28, 40]
			cyclohexane (ignitable liquid)	110-82-7	X-[6, 8, 16, 28]	See Note 2	N/A
			ethanol	64-17-5	X-[28, 40]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			isooctane	26635-64-3	X-[28]	See Note 2	N/A
			isopropanol	67-63-0	X-[28, 40]	See Note 2	N/A
			lead	7439-92-1	X-[5, 16]	D008[5, 16]	D008[28, 40]
			magnesium	7439-95-4	X-[40]	See Notes 2 and 8	—
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[28, 40]
			methanol	67-56-1	X-[5, 16, 28]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[40]	—	F005[40]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[5]	F002[28, 40]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 40]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 40]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[28, 40]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[28, 40]
			xylene	1330-20-7	X-[5, 16, 28]	See Note 2	N/A
			zinc	7440-66-6	X-[40]	N/A	N/A
RF, RF	441	RASCHIG RINGS, UNLEACHED	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	—	F001/F002[23, 48]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F002[23, 48]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 16]	—	F001[23, 48]
			chloroform (trichloromethane)	67-66-3	X-[48]	—	D022[48]
			lead	7439-92-1	X-[5, 16]	D008[16]	D008[23, 48]
			mercury	7439-97-6	X-[16]	—	D009[48]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methanol	67-56-1	X-[5, 16, 23]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[48]	—	F005[48]
			methylene chloride	75-09-2	X-[48]	—	F002[48]
			nitrates	—	X-[5, 8]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 23]	—	F002[48]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16, 23]	—	F002[48]
RF, RF	442	RASCHIG RINGS, LEACHED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16]	F001[21] See Note 4	F001/F002[23, 48]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	—	F002[23]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[21] See Note 4	F001[23, 48]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[48]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[5, 16]	D008[21]	D008[23, 48]
			mercury	7439-97-6	X-[16]	—	D009[48]
			methanol	67-56-1	X-[5, 23]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[48]	—	F005[48]
			methylene chloride	75-09-2	X-[5, 6, 8]	F002[21] See Note 4	F002[48]
			nitrates	—	X-[1, 5, 8]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[23]	—	F002[48]
			trichloroethylene (TCE)	79-01-6	X-[5, 23]	—	F002[48]
RF, RF	44A	WETP BIN PROGRAM - GLASS (RF IDCs 440 and 442)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			barium	7440-39-3	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cyclohexane (ignitable liquid)	110-82-7	X-[21]	See Notes 2 and 3	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21]	—
			potential corrosives if liquids exceed the WIPP WAC limit	—	X-[21]	See Notes 2 and 3	—
			toluene	108-88-3	X-[21]	See Note 4	—
			trichloroethylene (TCE)	79-01-6	X-[21]	See Note 4	—
RF, RF	460	WASHABLES, RUBBER, PLASTIC	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
RF, RF	463	LEADED RUBBER GLOVES AND APRONS	1,1-dichloroethylene	75-35-4	X-[41]	—	D029[41]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	F001/F002[41]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[41]	—	F001/F002[41]
			1,2-dichloroethane	107-06-2	X-[41]	—	D028[41]
			benzene	71-43-2	X-[41]	—	F005[41]
			carbon disulfide	75-15-0	X-[41]	—	F005[41]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[41]
			chloroform (trichloromethane)	67-66-3	X-[41]	—	D022[41]
			cyanide cleaning bath solutions	—	X-[41]	—	F009[41]
			cyanide plating bath solutions	—	X-[41]	—	F007[41]
			electroplating sludges	—	X-[41]	—	F006[41]
			ethanol	64-17-5	X-[41]	See Note 2	N/A
			isopropanol	67-63-0	X-[41]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5]	D008[1]	D008[41]
			magnesium	7439-95-4	X-[41]	See Note 2 and 8	N/A
			methanol	67-56-1	X-[41]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[41]	—	F005[41]

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			methylene chloride	75-09-2	X-[5]	—	F002[41]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[41]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[41]	—	F001/F002[41]
			toluene	108-88-3	X-[41]	—	F005[41]
			trichloroethylene (TCE)	79-01-6	X-[5]	—	F001/F002[41]
			xylene	1330-20-7	X-[41]	See Note 2	N/A
			zinc	7440-66-6	X-[41]	—	—
RF, RF	464	BENELEX AND PLEXIGLASS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	—	—
			barium	7440-39-3	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[5]	—	—
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	—
RF, RF	480	NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[5, 6, 8]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 6, 16,	F001[21] See Note 4	F001/F002[27, 39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 6, 8, 16]	F002[21] See Note 4	F001/F002[27, 39]
			1,2-dichloroethane	107-06-2	X-[5, 6, 8, 16]	D028[16, 21]	D028[27]
			1-butanol	71-36-3	X-[5]	—	See Note 2
			acetone	67-64-1	X-[5, 16]	F003[16]	F003[27] See Notes 1 and 2
			asbestos	1332-21-4	X-[6, 39]	N/A	N/A
			arsenic	7440-38-2	X-[8, 21, 27]	—	D004[39]
			barium	7440-39-3	X-[8, 21, 27]	—	D005[39]
			benzene	71-43-2	X-[5, 16]	—	F005[27, 39]
			beryllium (not beryllium powder)	7440-41-7	X-[39]	—	—
			cadmium	7440-43-9	X-[8, 16, 21]	D006[16]	D006[27, 39]
			carbon disulfide	75-15-0	X-[16]	—	F005[27, 39]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 6, 8, 16]	F001[16]	F001/F002[27, 39]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[39]

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			chromium	7440-47-3	X-[8, 16, 21]	D007[16]	D007[27, 39]
			cyanide	57-12-5	X-[27, 39]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[8, 16, 21]	F009[16]	F009[27, 39]
			cyanide plating bath solutions	—	X-[8, 16, 21]	F007[16]	F007[27, 39]
			cyclohexane (ignitable liquid)	110-82-7	X-[16, 21]	See Note 2	N/A
			electroplating sludges	—	X-[8, 16, 21]	F006[16]	F006[27, 39]
			ethyl benzene	100-41-4	X-[5, 8, 16]	See Note 2	N/A
			lead	7439-92-1	X-[1, 2, 5, 8, 16, 21]	D008[16, 21]	D008[27, 39]
			mercury	7439-97-6	X-[8, 16, 21]	D009[16]	D009[27, 39]
			methane	74-82-8	X-[8]	See Note 2	N/A
			methanol	67-56-1	X-[5, 6, 16]	F003[16]	F003[27] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 2, 5, 6, 8, 16]	F002[16]	F002[27, 39]
			nitrates	—	X-[6]	See Note 2	N/A
			potential ignitable if liquid present	—	X-[8]	See Note 2	N/A
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[6, 16, 39]	N/A	N/A
			selenium	7782-49-2	X-[8, 21, 27]	—	D010[39]
			silver	7440-22-4	X-[8, 21, 16]	D011[16]	D011[27, 39]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[27, 39]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[27, 39]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[16]	F001/F002[27, 39]
			xylenes (m, p, & o)	1330-20-7	X-[5, 8, 16, 39]	F003[16, 27]	F003[27] See Notes 1 and 2
RF, RF	481	LEACHED NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[5]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	F001/F002[27, 39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 6, 8, 16]	F002[16]	F001/F002[27, 39]
			1,2-dichloroethane	107-06-2	X-[5, 6, 16]	D028[16]	D028[27]

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			acetone	67-64-1	X-[16]	—	F003[27] See Notes 1 and 2
			arsenic	7440-38-2	X-[27]	—	D004[39]
			barium	7440-39-3	X-[27]	—	D005[39]
			benzene	71-43-2	X-[16]	—	F005[27, 39]
			cadmium	7440-43-9	X-[16]	D006[16]	D006[27, 39]
			carbon disulfide	75-15-0	X-[16]	—	F005[27, 39]
			carbon tetrachloride	56-23-5	X-[5, 6, 8, 16]	F001[16]	F001[27, 39]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[39]
			chromium	7440-47-3	X-[16]	D007[16]	D007[27, 39]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[27, 39]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[27, 39]
			electroplating sludges	—	X-[16]	F006[16]	F006[27, 39]
			ethyl benzene	100-41-4	X-[5, 16]	See Note 2	N/A
			lead	7439-92-1	X-[1, 6, 16]	D008[16]	D008[27, 39]
			mercury	7439-97-6	X-[16]	D009[16]	D009[27, 39]
			methanol	67-56-1	X-[16]	—	F003[27] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[16]	F002[39]
			selenium	7782-49-2	X-[27]	—	D010[39]
			silver	7440-22-4	X-[16]	D011[16]	D011[27, 39]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[27, 39]
			toluene	108-88-3	X-[5, 16]	—	F005[27, 39]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[27, 39]
			xylenes (m, p, & o)	1330-20-7	X-[5, 16, 39]	See Note 2	F003[27] See Notes 1 and 2
RF, RF	488	GLOVEBOX PARTS W/LEAD	lead	7439-92-1	X-[2, 8]	D008	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	48A	WETP BIN PROGRAM - METAL (RF IDCs 480 and 481)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			1,1-dichloroethylene	75-35-4	X-[21]	—	—
			1,2-dichloroethane	107-06-2	X-[21]	D028[21]	—
			arsenic	7440-38-2	X-[21]	—	—
			barium	7440-39-3	X-[21]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[39]	—	—
			cadmium	7440-43-9	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chromium	7440-47-3	X-[21]	—	—
			cyanide	57-12-5	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane (ignitable liquid)	110-82-7	X-[21]	See Notes 2 and 3	—
			dichloroethylene	25323-30-2	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			ethyl benzene	100-41-4	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009	—
			methane	74-82-8	X-[21]	—	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			selenium	7782-49-2	X-[21]	—	—
			silver	7440-22-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	490	HEPA FILTERS AND CWS FILTERS	1,1-dichloroethylene	75-35-4	—	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001	F001/F002[31, 38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002	F001/F002[31, 38]
			1,2-dichloroethane	107-06-2	X-5	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[5, 16, 31, 38]	See Note 2	N/A
			arsenic	7440-38-2	X-[8]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[31, 38]
			benzene	71-43-2	X-[16, 31]	—	F005[31, 38]
			beryllium (not beryllium powder)	7440-41-7	X-[38]	—	—
			cadmium	7440-43-9	X-[8]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	F005[16]	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[16]	D022[16]	D022[31, 38]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[31, 38]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[31, 38]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[31, 38]
			electroplating sludges	—	X-[16]	F006[16]	F006[31, 38]
			ethyl benzene	100-41-4	X-[16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[31, 38]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]
			nitrates (only for waste generated in Bldg 374 after 1984)	—	X-[1, 5, 16, 31]	See Note 2	N/A
			Polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	N/A	N/A
			selenium	7782-49-2	X-[8]	—	D010[38]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[31, 38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[5, 16, 31, 38]	See Note 2	N/A
RF, RF	491	PLENUM PREFILTERS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2]	F001[2]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			carbon tetrachloride	56-23-5	X-[2]	F001[2]	—
			methylene chloride	75-09-2	X-[2]	F002[2]	—
RF, RF	700	OASIS WASTE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	F001[5]	F001/F002[46, 47]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002[5]	F002[46, 47]
			1,2-dichloroethane	107-06-2	X-[46, 47]	—	D028[46, 47]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[46, 47]
			2,4-dinitrotoluene	121-14-2	X-[16]	—	D030[46, 47]
			2-ethoxyethanol	110-80-5	X-[46, 47]	—	F005[46, 47]
			acetone	67-64-1	X-[16]	See Note 2	N/A
			benzene	71-43-2	X-[46, 47]	—	F005[46, 47]
			carbon disulfide	75-15-0	X-[46, 47]	—	F005[46, 47]
			carbon tetrachloride	56-23-5	X-[8, 16]	F001[5]	F001[46, 47]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[5]	D022[46, 47]
			chlorobenzene	108-90-7	X-[46, 47]	—	F002[46, 47]
			hexachlorobenzene	118-74-1	X-[16]	—	D032[46, 47]
			hexachloroethane	67-72-1	X-[16]	—	D034[46, 47]
			methanol	67-56-1	X-[47]	See Note 2	N/A
			methylene chloride	75-09-2	X-[16]	—	F002[46, 47]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 47]	—	F005[46, 47]
			nitrobenzene	98-95-3	X-[16]	—	D036[46, 47]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F002[46, 47]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F002[46, 47]
			toluene	108-88-3	X-[46, 47]	—	F005[46, 47]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			vinyl chloride	75-01-4	X-[16]	—	D043[46, 47]
			xylene	1330-20-7	X-[5, 16]	F003[5] See Note 2	N/A
RF, RF	741	PITS 11 & 12 FIRST STAGE SLUDGE	See RF-001	See RF-001	See RF-001 [127]	See RF-001	See RF-001
RF, RF	742	PITS 11 & 12 SECOND STAGE SLUDGE	See RF-002	See RF-002	See RF-002 [127]	See RF-002	See RF-002
RF, RF	743	PITS 11 & 12 ORGANIC SETUPS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 14 [127]	See Note 14	—
RF, RF	744	PITS 11 & 12 SPECIAL SETUPS	See RF-004	See RF-004	See RF-004 [127]	See RF-004	See RF-004
RF, RF	745	PITS 11 & 12 EVAPORATOR SALTS	See Note 16	—	See Note 13 [127]	See Note 13	—
RF, RF	746	PITS 11 & 12 903 PAD OIL DRUMS	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[46] See Note 14 [127]	See Note 14	—
RF, RF	747	PITS 11 & 12 MISCELLANEOUS SLUDGE (from RF facility)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	748	PITS 11 & 12 NON-DEBRIS WASTE (from non-RF facilities)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	749	PITS 11 AND 12 SEWER SLUDGE	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	750	PITS 11 & 12 DEBRIS (from RF facility)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	751	PITS 11 & 12 ROASTER OXIDE	uranium metal	—	See Note 12 [127]	See Note 12	—
RF, RF	752	PITS 11 & 12 DEBRIS WASTE (from non-RF facilities)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	753	PITS 11 & 12 LEGACY DIRT	—	—	See Note 16	See Note 16	—
RF, RF	754	PITS 11 & 12 LEGACY DIRT FROM NON-RF FACILITIES	—	—	See Note 16	See Note 16	—
RF, RF	760	PAD 1 CELLS 1 AND 2 RFP DEBRIS See Note 15	See Note 16		See Note 16	See Note 16	—
RF, RF	800	FIRST STAGE SLUDGE – CEMENTED	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 16]	F002[16]	F002[24, 57]
			1-butanol	71-36-3	X-[2, 24, 57]	See Note 2	N/A
			acetone	67-64-1	X-[16]	—	F003[57] See Note 2
			arsenic	7440-38-2	X-[9, 16]	D004[16]	D004[24, 57]
			barium	7440-39-3	X-[9, 16]	D005[16]	D005[24, 57]
			benzene	71-43-2	X-[8, 9, 16]	F005[16]	F005[57]
			beryllium (not beryllium powder)	7440-41-7	X-[57]	N/A	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cadmium	7440-43-9	X-[2, 8, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[2, 8, 9, 16]	F001[16]	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[9, 16]	—	D022[24, 57]
			chromium	7440-47-3	X-[8, 9, 16]	D007[16]	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A
			lead	7439-92-1	X-[2, 9, 16]	D008[16]	D008[24, 57]
			mercury	7439-97-6	X-[9, 16]	D009[16]	D009[24, 57]
			methanol	67-56-1	X-[2, 16]	—	F003[57] See Note 2
			methylene chloride	75-09-2	X-[2, 8, 9, 16]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[16, 57]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	D010[16]	D010[24, 57]
			silver	7440-22-4	X-[8, 9, 16]	D011[16]	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[8, 9, 16]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[8, 9, 16]	—	F001/F002[24, 57]
			xylene	1330-20-7	X-[2, 8, 9, 16]	—	F003[57] See Note 2
RF, RF	801	SOLIDIFIED ORGANICS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8, 16]	F001[16]	F001/F002[46, 47]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8, 16]	F002[16]	F002[46, 47]
			1,2-dichloroethane	107-06-2	X-[46, 47]	D028[16]	D028[46, 47]
			1,1-dichloroethylene	75-35-4	X-[16]	D029[16]	D029[46, 47]
			2,4-dinitrotoluene	121-14-2	X-[16]	D030[16]	D030[46, 47]
			acetone	67-64-1	X-[16, 46]	F003[16] See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[2, 8, 16]	F001[16]	F001[46, 47]
			benzene	71-43-2	X-[46, 47]	—	F005[46, 47]
			beryllium (not beryllium powder)	7440-41-7	X-[46]	N/A	N/A
			carbon disulfide	75-15-0	X-[46, 47]	—	F005[46, 47]
			chloroform (trichloromethane)	67-66-3	X-[16]	D022[16]	D022[46, 47]
			chlorobenzene	108-90-7	X-[46, 47]	—	F002[46, 47]
			hexachlorobenzene	118-74-1	X-[16]	D032[16]	D032[46, 47]
			hexachloroethane	67-72-1	X-[16]	D034[16]	D034[46, 47]
			methanol	67-56-1	X-[16, 46, 47]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[8, 16]	F002[16]	F002[46, 47]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 47]	—	F005[46, 47]
			nitrobenzene	98-95-3	X-[16]	D036[16]	D036[46, 47]
			tetrachloroethylene (perclene)	127-18-4	X-[8, 16]	F002[16]	F002[46, 47]
			toluene	108-88-3	X-[8]	—	F005[46, 47]
			trichloroethylene (TCE)	79-01-6	X-[8, 16]	F002[16]	F002[46, 47]
			vinyl chloride	75-01-4	X-[16]	D043[16]	D043[46, 47]
			xylene	1330-20-7	X-[16]	F003[16] See Note 2	N/A
RF, RF	802	SOLIDIFIED LABORATORY WASTE	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[45]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[45]
			1,1-dichloroethylene	75-35-4	X-[45]	—	D029[45]
			benzene	71-43-2	X-[45]	—	F005[45]
			cadmium	7440-43-9	X-[45]	—	D006[45]
			carbon tetrachloride	56-23-5	X-[16]	—	F001[45]
			chromium	7440-47-3	X-[16]	—	D007[45]
			cyanide	57-12-5	X-[16, 45]	See Note 2	N/A
			cyclohexane (if waste contains free liquids)	110-82-7	X-[45]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[16, 45]	See Note 2	N/A
			lead	7439-92-1	—	—	D008[45]

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			methanol	67-56-1	X-[16, 45]	See Note 2	—
			methylene chloride	75-09-2	X-[45]	—	F002[45]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[45]	—	F005[45]
			silver	7440-22-4	X-[8]	—	D011[45]
			tetrachloroethylene (perclene)	127-18-4	X-[45]	—	F001/F002[45]
			toluene	108-88-3	X-[16]	—	F005[45]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[45]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[45]	—	F009[45]
			cyanide plating bath solutions	—	X-[45]	—	F007[45]
			electroplating sludges	—	X-[45]	—	F006[45]
RF, RF	803	SOLIDIFIED DCP SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[8, 16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2]	F001[25]
			1-butanol	71-36-3	X-[16, 25]	F003[2] See Note 2	N/A
			acetone	67-64-1	X-[16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-25	N/A	N/A
			1-butanol	71-36-3	X-[2, 16]	See Note 2	N/A
			cadmium	7440-43-9	X-[2, 16]	D006[2]	D006[25]
			carbon tetrachloride	56-23-5	X-[2, 8, 16]	F001[2]	F001[25]
			chromium	7440-47-3	X-[8, 16]	—	D007[25]
			chloroform (trichloromethane)	67-66-3	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	F009[2]	F009[25]
			cyanide plating bath solutions	—	X-[16]	F007[2]	F007[25]
			electroplating sludges	—	X-[16]	F006[2]	F006[25]
			ethyl benzene	100-41-4	X-[2, 16]	F003[2] See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			lead	7439-92-1	X-[2, 16]	D008[2]	D008[25]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			mercury	7439-97-6	X-[16]	—	D009[25]
			methanol	67-56-1	X-[2, 16, 25]	F003[2] See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[2, 8, 16]	F002[2]	F002[25]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[8]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001[25]
			toluene	108-88-3	X-[2, 8, 16]	F005[2]	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[25]
			xylene	1330-20-7	X-[2, 16, 25]	F003[2] See Note 2	N/A
RF, RF	806	SOLIDIFIED PROCESS SOLIDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 16]	F001[2]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			1-butanol	71-36-3	X-[2]	F003[2] See Note 2	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[2, 16]	F001[2]	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[2, 16]	D008[2]	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[2, 16]	F003 See Note 2	—
			methylene chloride	75-09-2	X-[2, 16]	F002[2]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[2, 16]	F003[2] See Note 2	N/A
RF, RF	807a	BYPASS SLUDGE (After 3/21/87)	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 16]	F001[2]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[8, 16]	N/A	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 16]	F002[2]	F001[25]
			trans-1,3-dichloropropene	542-75-6	X-[8, 16]	N/A	N/A
			1-butanol	71-36-3	X-[2, 16]	F003[2] See Note 2	N/A
			acetone	67-64-1	X-[8, 16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[8, 16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-[25]	N/A	N/A
			cadmium	7440-43-9	X-[2, 16]	D006[2]	D006[25]
			carbon tetrachloride	56-23-5	X-[2, 16]	F001[2]	F001[25]
			chromium	7440-47-3	X-[8, 16]	—	D007[25]
			cyanide	57-12-5	X-[8]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[25]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[25]
			electroplating sludges	—	X-[16]	F006[16]	F006[25]
			ethyl benzene	100-41-4	X-[2, 8, 16]	F0032 See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			lead	7439-92-1	X-[2, 16]	D008[2]	D008[25]
			mercury	7439-97-6	X-[16]	—	D009[25]
			methanol	67-56-1	X-[2, 16, 25]	F0032 See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[8, 16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[2, 16]	F002[2]	F002[25]
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	F001[16]	F001[25]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[2, 8, 16]	F005[2]	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[8, 16]	—	F001/F002[25]
			xylene	1330-20-7	X-[2, 8, 16, 25]	F0032 See Note 2	N/A
RF, RF	807b/ 696	CEMENTED INCINERATOR SLUDGE (Bldg 771 generated prior to March 21, 1987) **NOTE:** For purpose of data management within WTS, a surrogate IDC (RF-696) is being used to uniquely identify the IDC RF-807b subpopulation. Drum labeling and WDS data transfer will reflect IDC RF-696 to align with the AK and the WSPF.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[26, 95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[26, 95]
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[16]	—	N/A[26, 95] See Notes 1 and 2
			arsenic	7440-38-2	X-[16]	—	D004[26, 95]
			barium	7440-39-3	X-[16]	—	D005[26, 95]
			benzene	71-43-2	X-[16]	—	F005[26, 95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[16]	—	D006[26, 95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	—	F001[26, 95]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[26, 95]
			chromium	7440-47-3	X-[16]	—	D007[26, 95]
			cyanide cleaning bath solutions	—	X-[26, 72]	—	F009[26, 95] See Note 11
			cyanide plating bath solutions	—	X-[26, 72]	—	F007[26, 95] See Note 11
			electroplating sludges	—	X-[26, 72]	—	F006[26, 95] See Note 11
			lead	7439-92-1	X-[16]	—	D008[26, 95]
			mercury	7439-97-6	X-[16]	—	D009[26, 95]
			methanol	67-56-1	X-[16, 26]	—	N/A[26, 95] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[95]	—	F005[95]
			methylene chloride	75-09-2	X-[16]	—	F002[26, 95]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN [WS, AK]
			selenium	7782-49-2	X-[16]	—	D010[26, 95]
			silver	7440-22-4	X-[16]	—	D011[26, 95]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[26, 95]
			toluene	108-88-3	X-[16]	—	F005[26, 95]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[26, 95]
			xylene	1330-20-7	X-[16, 26]	—	N/A[26, 95] See Notes 1 and 2
RF, RF	817	CEMENTED SS AND C HEELS	chromium	7440-47-3	X-[8, 16]	D007[8, 16]	—
			nitrates	—	X-[8]	—	—
RF, RF	818	CEMENTED INCINERATOR ASH	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	F001/F002
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002[16]	F001/F002
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[8, 16]	See Note 2	N/A[95]
			benzene	71-43-2	X-[16]	—	F005[95]
			arsenic	7440-38-2	X-[8, 16]	—	D004[95]
			barium	7440-39-3	X-[8, 16]	—	D005[95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[8, 16]	—	D006[95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	F001[16]	F001[95]
			chromium	7440-47-3	X-[8, 16]	—	D007[95]
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[95]
			mercury	7439-97-6	X-[8, 16]	—	D009[95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[95]
			methanol	67-56-1	X-[8, 16]	See Note 2	N/A[95]
			methylene chloride	75-09-2	X-[8, 16]	F002[16]	F002[95]
			selenium	7782-49-2	X-[8, 16]	—	D010[95]
			silver	7440-22-4	X-[8, 16]	—	D011[95]
			tetrachloroethylene (perclene)	127-18-4	X-95	—	F001/F002[95]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[8, 16]	—	F005[95]
			trichloroethylene (TCE)	79-01-6	—	—	F001/F002[95]
			xylene	1330-20-7	X-[8, 16]	See Note 2	N/A[95]
RF, RF	820	CEMENTED SOOT	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	F001/F002[95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002[16]	F001/F002[95]
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[8, 16]	See Note 2	N/A[95]
			arsenic	7440-38-2	X-[8, 16]	D004[16]	D005[95]
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[95]
			benzene	71-43-2	X-[16]	—	F005[95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	N/A	N/A[95]
			cadmium	7440-43-9	X-[8, 16]	D006[16]	D006[95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	F001[16]	F005[95]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[95]
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[95]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[95]
			methanol	67-56-1	X-[8, 16]	See Note 2	N/A[95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[95]
			methylene chloride	75-09-2	X-[8, 16]	F002	F002[95]
			selenium	7782-49-2	X-[8, 16]	D010[16]	D010[95]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[95]
			tetrachloroethylene (perclene)	127-18-4	X-[95]	—	F001/F002[95]
			toluene	108-88-3	X-[8, 16]	—	F005[95]
			trichloroethylene (TCE)	79-01-6	X-[95]	—	F001/F002[95]
			xylene	1330-20-7	X-[8, 16]	See Note 2	N/A[95]
RF, RF	822	CEMENTED RESINS	chloroform (trichloromethane)	67-66-3	X-[19, 43]	—	—
			1,2-dichloroethane	107-06-2	X-[43]	—	—
			1,1-dichloroethylene	75-35-4	X-[19, 43]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			nitrates	—	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	823	CEMENTED MISCELLANEOUS SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[8]	F002[8]	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[8, 16]	F001[8]	—
			chromium	7440-47-3	X-[8, 16]	—	—
			lead	7439-92-1	X-[16]	D008[8]	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[8, 16]	F003[8] See Note 2	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[8, 16]	F002[8]	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[8, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[8, 16]	F003[8] See Note 2	—
RF, RF	831	DRY COMBUSTIBLES	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2, 8]	—
			1,1-dichloroethylene	75-35-4	X-[8]	—	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			cyclohexane	110-82-7	X-[8]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[8]	—	—
			methylene chloride	75-09-2	X-[2, 8]	F002[2, 8]	—
			toluene	108-88-3	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	832	WET COMBUSTIBLES	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2,2-tetrachloroethane	79-34-5	X-[8]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			1,2,4-trimethylbenzene	95-63-6	X-[8]	—	—
			benzene	71-43-2	X-[8]	—	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			chloroform (trichloromethane)	67-66-3	X-[8]	—	—
			cyclohexane	110-82-7	X-[8]	—	—
			ethyl benzene	100-41-4	X-[8]	—	—
			methane	74-82-8	X-[8]	—	—
			methylene chloride	75-09-2	X-[2, 8]	F002[2, 8]	—
			toluene	108-88-3	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	833	PLASTICS, TRU MIXED	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2, 8]	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			Chloroform (trichloromethane)	67-66-3	X-[8]	—	—
			cyclohexane	110-82-7	X-[8]	—	—
			methylene chloride	75-09-2	X-[2]	F002[2]	—
			toluene	108-88-3	X-[8]	—	—
			trichloroethylene (TCE)	79-01-6	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	900	LSA PAPER, PLASTIC, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			1,1-dichloroethylene	75-35-4	X-[16]	—	—

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			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[5]	D008	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[5, 16]	F002	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 16]	F001	—
			xylene	1330-20-7	X-[5]	F003 See Note 2	—
RF, RF	950	LSA METAL, GLASS, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[1, 4, 5, 16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			Polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	—	—
			selenium	7782-49-2	X-[16]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	960	CONCRETE, ASPHALT, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			nitrates	—	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	970	WOOD	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001	—
			lead	7439-92-1	X-[5]	D008	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 16]	F002	—
			polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 16]	F001	—
			xylene	1330-20-7	X-[5]	F003 See Note 2	—
RF, RF	976	BUILDING 776 PROCESS SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	F002	—
			1,2-dichloroethylene	540-59-0	X-[5]	—	—
			1-butanol	71-36-3	X-[1]	F003 See Note 2	—
			cadmium	7440-43-9	X-[1, 5]	D006	—
			carbon tetrachloride	56-23-5	X-[1, 5]	F001	—
			chloroform (trichloromethane)	67-66-3	X-[5]	D022	—
			chromium	7440-47-3	X-[5]	D007	—
			lead	7439-92-1	X-[5]	D008	—
			mercury	7439-97-6	X-[5]	—	—
			methanol	67-56-1	X-[1]	F003 See Note 2	—
			methylene chloride	75-09-2	X-[1]	F002	—
			tetrachloroethylene (perclene)	127-18-4	X-[5]	F001	—
			trans-1,2-dichloroethylene	156-60-5	—	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	F001	—
			xylene	1330-20-7	X-[1]	F003 See Note 2	—
RF, RF	978	LAUNDRY SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			1-butanol	71-36-3	X-[5]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methanol	67-56-1	X-[5]	—	—
			methylene chloride	75-09-2	X-[5]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	980	EQUIPMENT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1,5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1,5]	—	—
			carbon tetrachloride	56-23-5	X-[1,5]	—	—
			lead	7439-92-1	X-[1,5]	—	—
			methylene chloride	75-09-2	X-[1,5]	—	—
RF, RF	990	DIRT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1,5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1,5]	—	—
			1-butanol	71-36-3	X-[1,5]	—	—
			carbon tetrachloride	56-23-5	X-[1,5]	—	—
			methanol	67-56-1	X-[1,5]	See Note 2	—
			methylene chloride	75-09-2	X-[1]	—	—
			nitrobenzene	98-95-3	X-[1,5]	—	—
			nitrates	—	X-[1,5]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1,5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1,5]	—	—
			xylene	1330-20-7	X-[1,5]	—	—
RF, RF	995	SEWER SLUDGE	—	See Note 16	See Note 16	See Note 16	—
RF, RF	998	PITS 11 & 12 CARGOS AND BINS (WITHOUT ROASTER OXIDE)	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 10 [127]	See Note 10	—
RF, RF	999	PITS 11 & 12 CARGOS AND BINS WITH ROASTER OXIDE	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 10 [127]	See Note 10	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RL, RL	712	HANFORD PLUTONIUM FINISHING PLANT DEBRIS (i.e., MFPDD)	arsenic	7440-38-2	X-[97,117]	D004[97,117]	—
			barium	7440-39-3	X-[97,117]	D005[97,117]	—
			cadmium	7440-43-9	X-[97,117]	D006[97,117]	—
			chromium	7440-47-3	X-[97,117]	D007[97,117]	—
			lead	7439-92-1	X-[97,117]	D008[97,117]	—
			mercury	7439-97-6	X-[97,117]	D009[97,117]	—
			selenium	7782-49-2	X-[97,117]	D010[97,117]	—
			silver	7440-22-4	X-[97,117]	D011[97,117]	—
			chloroform (trichloromethane)	67-66-3	X-[97,117]	D022[97,117]	—
			2,4-dinitrotoluene	121-14-2	X-[97,117]	D030[97,117]	—
			carbon tetrachloride	56-23-5	X-[97,117]	F001[97,117]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97,117]	F001/F002[97, 117]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97,117]	F001/F002[97, 117]	—
			methylene chloride	75-09-2	X-[97,117]	F001/F002[97,117]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97,117]	F001/F002[97,117]	—
			trichlorofluoromethane	75-69-4	X-[97,117]	F001/F002[97,117]	—
			trichloroethylene (TCE)	79-01-6	X-[97,117]	F001/F002[97,117]	—
			nitrobenzene	98-95-3	X-[97,117]	F004[97,117]	—
			benzene	71-43-2	X-[97,117]	F005[97,117]	—
			carbon disulfide	75-15-0	X-[97,117]	F005[97, 117]	—
			pyridine	110-86-1	X-[97,117]	F005[97,117]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97,117]	F005[97,117]	—
			toluene	108-88-3	X-[97,117]	F005[97,117]	—
RL, RL	714	HANFORD RADIOCHEMICAL PROCESSING LAB 325 BLDG DEBRIS (i.e., RLM325D.001)	arsenic	7440-38-2	X-[97, 118]	D004[97, 118]	—
			barium	7440-39-3	X-[97, 118]	D005[97, 118]	—
			cadmium	7440-43-9	X-[97, 118]	D006[97, 118]	—
			chromium	7440-47-3	X-[97, 118]	D007[97, 118]	—
			lead	7439-92-1	X-[97, 118]	D008[97, 118]	—
			mercury	7439-97-6	X-[97, 118]	D009[97, 118]	—
			selenium	7782-49-2	X-[97, 118]	D010[97, 118]	—
			silver	7440-22-4	X-[97, 118]	D011[97, 118]	—
			chloroform (trichloromethane)	67-66-3	X-[97, 118]	D022[97, 118]	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WC]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,4-dichlorobenzene	106-46-7	X-[97, 118]	D027[97, 118]	—
			1,2-dichloroethane	107-06-2	X-[97, 118]	D028[97, 118]	—
			1,2-dichlorobenzene	95-50-1	X-[97, 118]	F002[97, 118]	—
			1,1-dichloroethylene	75-35-4	X-[97, 118]	D029[97, 118]	—
			2,4-dinitrotoluene	121-14-2	X-[97, 118]	D030[97, 118]	—
			hexachloroethane	67-72-1	X-[97, 118]	D034[97, 118]	—
			pentachlorophenol	87-86-5	X-[97, 118]	D037[97, 118]	—
			vinyl chloride	75-01-4	X-[97, 118]	D043[97, 118]	—
			carbon tetrachloride	56-23-5	X-[97, 118]	F001[97, 118]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97, 118]	F001/F002[97, 118]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97, 118]	F001/F002[97, 118]	—
			1,1,2,2-tetrachloro-1,2-difluoroethane	79-34-5	X-[97, 118]	F001[97, 118]	—
			methylene chloride	75-09-2	X-[97, 118]	F001/F002[97, 118]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97, 118]	F001/F002[97, 118]	—
			chlorobenzene	108-90-7	X-[97, 118]	F002[97, 118]	—
			cresol	1319-77-3	X-[97, 118]	F004[97, 118]	—
			nitrobenzene	98-95-3	X-[97, 118]	F004[97, 118]	—
			2-nitropropane	79-46-9	—	F005[97, 118]	—
			benzene	71-43-2	X-[97, 118]	F005[97, 118]	—
			Isobutyl alcohol (isobutanol)	78-83-1	X-[97, 118]	F005[97, 118]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97, 118]	F005[97, 118]	—
			pyridine	110-86-1	X-[97, 118]	F005[97, 118]	—
			toluene	108-88-3	X-[97, 118]	F005[97, 118]	—
RL, RL	715	HANFORD HOMOGENEOUS SOLID WASTE	See Note 9 and 19[133]		See Note 9[133]	See Note 19[133]	
RL, RL	716	HANFORD 231-Z BUILDING DEBRIS (i.e., RLM321ZD.001)	cadmium	7440-43-9	X-[97, 119] See Note 9	D006[97, 119]	—
			chromium	7440-47-3	X-[97, 119]	D007[97, 119]	—
			lead	7439-92-1	X-[97, 119]	D008[97, 119]	—
			mercury	7439-97-6	X-[97, 119]	D009[97, 119]	—
			carbon tetrachloride	56-23-5	X-[97, 119]	F001[97, 119]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97, 119]	F001/F002[97, 119]	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97, 119]	F001/F002[97, 119]	—
			methylene chloride	75-09-2	X-[97, 119]	F001/F002[97, 119]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97, 119]	F001/F002[97, 119]	—
			trichloroethylene (TCE)	79-01-6	X-[97, 119]	F001/F002[97, 119]	—
			benzene	71-43-2	X-[97, 119]	F005[97, 119]	—
			carbon disulfide	75-15-0	X-[97, 119]	F005[97, 119]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97, 119]	F005[97, 119]	—
RL, RL	720	HANFORD KE BASIN NORTH LOADOUT PIT SLUDGE	See Note 9 and 19[134]		See Note 9[134]	See Note 19[134]	
SL, SL	223	SNL LRRI HETEROGENEOUS DEBRIS	See Note 9 and 19[139]		See Note 9[139]	See Note 19[139]	
SL, SL	224	SNL HFC HETEROGENEOUS DEBRIS	See Note 9 and 19[140]		See Note 9[140]	See Note 19[140]	
SL, SL	227	SANDIA SOURCES	See Note 9 and 19[141]		See Note 9[141]	See Note 19[141]	xx
SR, SR	251	SRS BARNWELL SOLIDIFIED INORGANIC WASTE	See Note 9 and 19[136]		See Note 9[136]	See Note 19[136]	
SR, SR	252	SRS F-CANYON AND FB-LINE ABSORBED WASTES	See Note 9 and 19[137]		See Note 9[137]	See Note 19[137]	
SR, SR	253	SRS MOUND SITE INORGANIC PARTICULATES	See Note 9 and 19[138]		See Note 9[138]	See Note 19[138]	
SR, SR	835	SRS HIGH LEVEL CAUSTIC	See Note 9 and 19[135]		See Note 9[135]	See Note 19[135]	
SR, SR	842	SRS Mound Site Soil/Debris	See Note 9 and 19		See Note 9	See Note 19	

NOTE 1: *The 3100 m^3 Project conservatively assigned the F003 HWN to RF-292 and RF-696 within the WIPP-approved 3,100 m^3 Project WSP for this waste stream (i.e., ININW222). All HWNs previously assigned that are associated with the corrosivity (i.e., D002) and/or ignitability (i.e., D001/F003) characteristics will not exhibit that characteristic at the time of shipment to WIPP.*

NOTE 2: *A potential WIPP-prohibited characteristic HWN is associated with the hazardous constituent. The constituent was identified through historical generator information (i.e., AK). If applicable, prior to shipment, wastes with prohibited items/properties (e.g., the potential to exhibit the characteristic of ignitability, reactivity, and/or corrosivity undergo treatment and/or removal of the prohibited items/properties prior to shipment.*

NOTE 3: *Containers of waste remaining in storage at the TSA that have excess liquids will retain the applicable characteristic code (as indicated) until treatment takes place.*

NOTE 4: *General statement within AK records reflects that the waste may contain a constituent associated with F001, F002, or F005 (i.e., specific contaminant may not be identified).*

NOTE 5: *Waste is subject to peridodic change due to routine reciept of off-site waste. See off-site waste coordinator and AMWTP HWD for current list of HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
NOTE 6:	*These HWNs do not apply to this IDC; however, because the F006, F007, and F009 HWNs do apply to RF-376 and RF-490 filters and these wastes are included in BN211 approved WSPF, all filters shipped under the approved BN211 WSPF are assigned the F006, F007, and F009 HWNs at the time of shipment.*						
NOTE 7:	*The waste is currently being shipped by CCP. See CCP WSPF. The HWNs associated with RF-300 are the same as those assigned to RF-graphite waste.*						
NOTE 8:	*According to AK documentation the original generator did not assign a D001, D002, or D003 HWN (i.e., the waste was not classified by the generator as an ignitable, corrosive, or reactive waste).*						
NOTE 9:	*The constituents associated with AMWTP storage requirements.are identified in the AMWTP off-site waste profile supporting documentation*						
NOTE 10:	*This is an IDC assigned to the overpack containers (i.e., bins/cargo containers only) and is used to support AMWTP operations. The IDC reflects that the overpack containers include inner containers of legacy debris and non-debris wastes that have a high or low probability of roaster oxide (RF-999 [roaster oxide designator] and RF-998 roaster oxide not designated). The inner containers were retrieved from the INL SDA pits 11 and 12 during the timeframe 1974–1979. The bins and/or cargo containers may contain waste packaged within 30-gallon, 55-gallon, and/or 83-gallon drums. Inner containers removed from these bins/cargos will be assigned their appropriate IDC based on their physical form and container information. The inner waste containers may contain a variety of waste IDCs (e.g., RF-741, RF-742, RF-743, RF-744, RF-745, RF-750, and RF-751). One container noted during the April 1978 retrieval activities identified a container labeled with cyanidmide (**NOTE:** this container had a one month lag time from time of discovery to subsequent management of waste).[111] If the RF IDC cannot be assigned, UN-000, UN-00A, UN-00B, UN-00C or UN-00D may be assigned. Temporarily assigned HWNs are the same as RF wastes currently stored at the AMWTP and the BN510 list of HWNs.*						
NOTE 11:	*This HWN was assigned by the INL 3,100 m^3 Project due to the presence of Ful-Flo filters within RF-292.*						
NOTE 12:	*Roaster oxide has been determined to be non-hazardous if at the time of retrieval the container is intact. If the container is breached an evaluation of applicable EPA HWNs will be performed. HWNs will be assigned to breached containers on a case-by-case basis and will be based on the type and source of waste within close proximity of the parent container.[73]*						
NOTE 13:	*Temporarily-assigned HWNs are the same as those corresponding to post 1970 IDCs(i.e., RF-745 = RF-005). AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 14:	*Temporarily-assigned HWNs are the same as those associated with RF-003. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling. The waste is assumed to be PCB regulated.*						
NOTE 15:	*Temporarily- assigned HWNs are all BN510.1 list of HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 16:	*Temporarily-assigned HWNs are all BN-510 HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 17:	*Temporarily-assigned HWNs are the HWNs associated with ARP waste. (See IDC SD-704), to address non-RF waste that may be present in the AMWTP storage that are similar to the waste being retrieved from ARP, (e.g., INL sites). AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling*						
NOTE 18:	*IDC IW-179 is assigned to the overpack containers (bins) only and is used to support AMWTP operations. These bins contain inner containers of legacy waste from the Early Waste Retrieval Project. The waste was retrieved from the SDA during 1976-1978. The waste was originally generated prior to 1964 and subsequently disposed of in the RWMC SDA. The inner containers include 55- gallon, 83-gallon, and Tri-walls. The inner containers will be assigned applicable IDCs (e.g., IW-176, IW-177, or IW-178) when unpacked. If physical form is not identifiable the UN-000 is assigned. Eight drums retrieved during the the Early Waste Retrieval Project were labeled "Cluster fragmentation bombs" during the early retrieval activities; however, the drums were later evaluated and it was determined that they did not not contain "bombs" prior to placement on Pad R.[74] Temporarily assigned HWNs are the same RF HWNs associated with RF wastes currently stored at the AMWTP and the BN510 list of HWNs. Final list of HWNs will be determined at the time of inclusion into a WSP. Waste within the bins is subject to a case-by-case evaluation for PCBs.*						

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
NOTE 19:	*See specific AMWTP off-site WSP for HWNs.*						
NOTE 20:	*Some containers within this IDC are classified as PCB and some are non-PCB. PCB status is determined based on information from CCP.*						
NOTE 21:	*The combustion/incineration of cyanide plating waste has not been confirmed by AMWTP AK. Prior profiling of the same waste by RF (i.e. the original generator) did not result in assignment of F006, F007, or F009 HWNs.[9, 63]*						
NOTE 22:	*Hazardous waste numbers and constituents are the same as BN-508.*						
NOTE 23:	*Temporarily-assigned HWNs same as RF-700 and RF-801*						
NOTE 24:	*Temporarily assigned HWNs the same as MD-848*						
NOTE 25:	See RPT-670 (P891A).						
TBD	Waste identified as TBD have not had HWN assigned.						
WG	Waste Generator's assignment of HWNs.						
HI	Hazardous constituent information relating to potential EPA hazardous constituent (e.g., listed or characteristic) or potential EPA hazardous characteristic property. The information is unconfirmed and was obtained from an interpretation of previously identified historical documents. Potential hazardous constituents do not necessarily reflect generator-assigned or final WIPP-assigned HWNs. These hazardous constituents were identified based on historical reviews of previously identified AK documents for purposes of supporting safe storage. The initial identification of potential hazardous constituents occurred prior to AMWTP AK/characterization confirmation and HWN assignment.						
AK	Confirmed AK information used to assign HWNs to an AMWTP waste stream, including any conservative HWN assignment that has been confirmed by AK. Previously assigned HWNs may be deleted due to a waste no longer exhibiting a characteristic property (e.g., D001, D002, F003, etc.) based on AMWTP treatment of a characteristic HWN or rejection of a prohibited item prior to shipment to WIPP, and/or confirmation test results.						
WS	WIPP-approved WSPF assigned HWNs.						
PC	Potential characterization. Unless otherwise noted, wastes with no generator assigned HWNs are considered to be a mixed waste and carry all the HWNs associated with the WMCG associated with the IDC for storage. Applicable WIPP HWNs will be assigned at the time of WIPP profiling.						

Table A-2. Generator site and area acronyms used in Table A-1.

Gen Site	Area	Description
AE	—	Argonne National Laboratory-East
BC	—	Battelle Columbus Laboratory
BL	—	Bettis Atomic Power Laboratory
BW	—	Babcock and Wilcox
BX	—	Bendix-Grand Junction Operation Office (M&O Contractor)
GV	—	General Electric Vallecitos Nuclear Center
ID	AW	INL Materials and Fuels Complex (formerly called ANL-West)
ID	BN	INL Advanced Mixed Waste Treatment Facility (formerly called BNFL)
ID	IA	INL Auxiliary Reactor Area
ID	IC	INL Idaho Nuclear Technology and Engineering Center (formerly called Chemical Processing Plant)
ID	IF	INL Central Facilities Area
ID	IN	INL Naval Reactor Facility
ID	IP	INL Power Burst Facility
ID	IR	INL Reactor Technology Complex (formerly called Test Reactor Area)
ID	IT	INL Test Area North
ID	IW	INL Radioactive Waste Management Complex
ID	SD	INL Subsurface Disposal Area
JH	—	J. C. Haynes, Ohio businessman who irradiated diamonds with ^{241}Am
LA	—	Los Alamos National Laboratory
LB	—	Lawrence Berkeley National Laboratory
LL	—	Lawrence Livermore National Laboratory
MD	—	Mound Laboratory
MO	—	Monsanto-Dayton Laboratory
MX	—	^{241}Am waste from a smoke detector manufacturing company in Mexico
ND	—	Nuclear Radiation Development, LLC
NT	—	Nevada Test Site
OR	—	Oak Ridge National Laboratory
RF	—	Rocky Flats Plant
RL	—	Hanford
SL	—	Sandia National Laboratories
SR	—	Savannah River Site

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

FOR IN... ONLY

Date: July 7, 2011

To: Eric Schweinsberg
Site Project Manager

From: Steve Carpenter SC
Acceptable Knowledge Manager/Alternate Site Project Manager

Subject: Solids Sampling Plan for BNINW216-Lot 21 - SPC-006-11

This memorandum contains the sampling plan for waste stream BNINW216, Lot 21. The sampling results will be submitted in a formal report at a later date.

1. POPULATION DEFINITION

The BNINW216, Lot 21 drum population was identified as 859 containers. Drums were sequentially ordered by the Advanced Mixed Waste Treatment Project (AMWTP) assigned drum number. Attachment 1 provides the sequential listing of the drums within the BNINW216, Lot 21.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream will not exceed five. This estimation was based upon the final required number of samples identified in multiple AMWTP sampling reports for this waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of five samples is required to support characterization of BNINW216, Lot 21. Ten drums were selected and available for coring. Random numbers were generated for the lot population as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. The list was sorted by random number in ascending order. At a minimum, the first five random numbers on the list that have acceptable containers associated with them will be cored.

4. CONFIRMATION OF THE SAMPLE SIZE

Final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant will be determined when the required sampling is completed. The observed sample n* will be checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. If the observed sample n* estimate results in greater than 20 percent more samples than originally calculated, the revised sample estimate will be selected and analyzed. This determination is iterative and will continue until the difference between *n* and the previous sample determination is less than 20 percent. A sampling report presenting this information will be developed after sampling is complete.

5. CONTAINERS SELECTED

Attachment 1 includes the random numbers that were generated in accordance with MP-TRUW-8.25. The random numbers on this form were used to identify AMWTP containers for coring. Table 1 below identifies the containers that were selected for coring. Nonconformance reports will be issued as appropriate against the containers that require substitution to ensure that these containers are appropriately characterized.

Table 1 – Selected Containers

Selected for Coring	Random Number	Sequential Number	AMWTP Number	Historical ID
1	0.001991	676	10368487	IDRF074218765
2	0.002836	175	10338202	IDRFOP074215974
3	0.003448	67	10301140	IDRFOP074110317
4	0.004155	647	10367418	IDRF074216725
5	0.004608	502	10363704	IDRF074218440
c1	0.005016	618	10366684	IDRFOP074218593
c2	0.005298	86	10308035	IDRFOP074216087
c3	0.009013	763	10370385	IDRF074218994
c4	0.010681	125	10317211	IDRFOP074201083
c5	0.010719	830	10371968	IDRFOP074218701

If you have any questions or comments, please contact me at 557-6323.

SPC/MLJ/at

Attachments
1. Container List for BNINW216, Lot 21
2. Randomly Selected Container Report

cc: Angel Aguinaga
Rod Arbon
George Byram
Mike Brugger
Elvin Dumas
Caralea Hinkle-Daniel
Jim Jackson
Micky Johnson
Jason Kettel
Nancy Kirk
Jason Lance
Dave Preston
Karlan Richards
Lyle Ryman
Clint Sisson
Wes Skaar
Matt Storms
Travis Thompson
Kiki Torres
LJ Walker
AMWTP Correspondence Control

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.022423	1	10024431	IDRFOP074115272
	0.329885	2	10032636	IDRFOP074115948
	0.545488	3	10032637	IDRFOP074115982
	0.262910	4	10065340	IDRFOP074216794
	0.055270	5	10085467	IDRFOP074110818
	0.364726	6	10088785	IDRFOP074110813
	0.213760	7	10109208	IDRF074223260
	0.670085	8	10109434	IDRF074223368
	0.268494	9	10130518	IDRF074114955A
	0.882089	10	10133151	IDRF074224081A
	0.183619	11	10133155	IDRF074114886
	0.486938	12	10135797	IDRF074220943
	0.623171	13	10136946	IDRF074224153A
	0.766069	14	10140254	IDRFOP074215506
	0.257185	15	10140428	IDRFOP074109990
	0.589639	16	10140429	IDRFOP0741100X2
	0.997876	17	10140433	IDRFOP074215538
	0.782807	18	10140589	IDRFOP074108989
	0.664045	19	10140597	IDRFOP074110035
	0.455732	20	10140623	IDRFOP007419991
	0.738317	21	10140631	IDRFOP074215577
	0.627922	22	10140636	IDRFOP074215552
	0.526706	23	10140938	IDRFOP074215572
	0.619347	24	10145257	IDRFOP007419997
	0.818189	25	10145294	IDRFOP074215529
	0.420690	26	10145307	IDRFOP074105100
	0.217851	27	10145315	IDRFOP074110005
	0.424234	28	10145325	IDRFOP074201554
	0.334931	29	10145504	IDRFOP074215574
	0.411933	30	10145521	IDRFOP074223518
	0.991881	31	10145527	IDRFOP074215547
	0.035533	32	10145594	IDRFOP074215569
	0.288778	33	10145595	IDRFOP074215486
	0.892666	34	10151673	IDRF074220140
	0.954306	35	10157220	IDRFOP074111869
	0.055522	36	10162641	IDRFOP074215582
	0.367058	37	10166862	IDRFOP074112728
	0.141134	38	10170262	IDRF074221242A
	0.719953	39	10174063	IDRFOP074116189
	0.954694	40	10177681	IDRFOP074216749

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.017808	41	10177749	IDRFOP074110618
	0.595094	42	10177844	IDRFOP074110512
	0.874732	43	10177937	IDRFOP074216984
	0.466684	44	10184600	IDRFOP074215649
	0.034116	45	10184783	IDRF074220032
	0.493219	46	10190529	IDRFOP074110705
	0.442100	47	10195872	IDRFOP074110764
	0.497070	48	10202081	IDRFOP074110563
	0.404642	49	10207310	IDRFOP074111578
	0.917865	50	10229706	IDRFOP074222262
	0.194501	51	10242767	IDRF074112293A
	0.561328	52	10291504	IDRFOP074216096
	0.500039	53	10291508	IDRFOP074216098
	0.182400	54	10291515	IDRFOP074216318
	0.131890	55	10291521	IDRFOP074110276
	0.751745	56	10295858	IDRFOP074108069
	0.969395	57	10295859	IDRFOP074216262
	0.407925	58	10299815	IDRFOP074110349
	0.991048	59	10299818	IDRFOP074216092
	0.231312	60	10299820	IDRFOP074110275
	0.840828	61	10299832	IDRFOP074216088
	0.240407	62	10299848	IDRFOP074110352
	0.878524	63	10300364	IDRFOP074210319
	0.364037	64	10301110	IDRFOP074216187
	0.742423	65	10301122	IDRFOP074216191
	0.525997	66	10301124	IDRFOP074216192
3	0.003448	67	10301140	IDRFOP074110317
	0.949654	68	10301141	IDRFOP074110263
	0.636239	69	10301142	IDRFOP074110252
	0.841992	70	10301145	IDRFOP074110270
	0.072044	71	10301146	IDRFOP74110265A
	0.165207	72	10302503	IDRFOP074110198
	0.876346	73	10303155	IDRFOP074216089
	0.938789	74	10303179	IDRFOP07411013X
	0.189792	75	10303954	IDRFOP07413X203
	0.527904	76	10303976	IDRFOP074110201
	0.407616	77	10303999	IDRFOP074110206
	0.602569	78	10304010	IDRFOP074216188
	0.159936	79	10304089	IDRFOP074110205
	0.589778	80	10305164	IDRFOP074216186

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.273300	81	10305170	IDRFOP07411X316
	0.673115	82	10305446	IDRFOP074110271
	0.726136	83	10305466	IDRFOP074215789
	0.555436	84	10307575	IDRFOP074216091
	0.116283	85	10308023	IDRFOP074215797
C2	0.005298	86	10308035	IDRFOP074216087
	0.217405	87	10308226	IDRFOP074215708
	0.593531	88	10308497	IDRFOP074216085
	0.806217	89	10308705	IDRFOP074216280
	0.976094	90	10308717	IDRFOP074110342
	0.712835	91	10308719	IDRFOP074216267
	0.163912	92	10308723	IDRFOP074216274
	0.258333	93	10308806	IDRFOP074216316
	0.129700	94	10308810	IDRFOP074216300
	0.705647	95	10308813	IDRFOP074216344
	0.235129	96	10308961	IDRFOP074110343
	0.579269	97	10308987	IDRF074110350
	0.955605	98	10309117	IDRFOP074110347
	0.876245	99	10309145	IDRFOP074216282
	0.893480	100	10309155	IDRFOP074216284
	0.247431	101	10311322	IDRFOP074110253
	0.496850	102	10311323	IDRFOP074110362
	0.528676	103	10311324	IDRFOP074110344
	0.835900	104	10311325	IDRFOP074110387
	0.357466	105	10311326	IDRFOP074110401
	0.966162	106	10311327	IDRFOP074110272
	0.622189	107	10311419	IDRFOP074216197
	0.739172	108	10311510	IDRFOP074110386
	0.312297	109	10311723	IDRFOP074110226
	0.208412	110	10311725	IDRFOP074110254
	0.078212	111	10311727	IDRFOP074110255
	0.833103	112	10311735	IDRFOP074110156
	0.921100	113	10311799	IDRFOP074216224
	0.918506	114	10313840	IDRFOP074215952
	0.047102	115	10313858	IDRFOP07421599X
	0.164503	116	10314262	IDRFOP074215946
	0.359931	117	10314754	IDRFOP074216293
	0.316779	118	10314759	IDRFOP074110373
	0.409032	119	10314760	IDRFOP074216261
	0.536270	120	10314811	IDRFOP074110354

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.096164	121	10314970	IDRFOP074110376
	0.899177	122	10314972	IDRFOP074110379
	0.085431	123	10316829	IDRFOP074215321
	0.887300	124	10316850	IDRFOP074111006
C4	0.010681	125	10317211	IDRFOP074201083
	0.468822	126	10318820	IDRFOP74215617A
	0.723314	127	10318841	IDRFOP074110115
	0.323402	128	10319032	IDRFOP074110040
	0.396319	129	10319065	IDRFOP074110059
	0.802744	130	10319507	IDRFOP074215183
	0.145671	131	10319515	IDRFOP074215696
	0.538582	132	10320616	IDRFOP074219XXX
	0.982666	133	10322648	IDRFOP074215556
	0.859047	134	10323539	IDRFOP074215631
	0.985330	135	10324460	IDRFOP074100007
	0.936705	136	10325444	IDRFOP074200156
	0.059086	137	10325713	IDRFOP074215859
	0.891162	138	10326223	IDRFOP074110105
	0.490434	139	10326229	IDRFOP074110140
	0.566718	140	10326237	IDRFOP074215983
	0.470547	141	10326798	IDRFOP074201568
	0.993611	142	10327925	IDRFOP074215610
	0.761072	143	10328623	IDRFOP074215972
	0.517190	144	10328641	IDRFOP074215645
	0.408379	145	10330197	IDRFOP074215829
	0.351980	146	10330375	IDRF074219178
	0.921453	147	10330404	IDRFOP074215488
	0.816135	148	10330407	IDRFOP074109985
	0.747109	149	10330502	IDRFOP74116025A
	0.347697	150	10333508	IDRFOP074217811
	0.914619	151	10333512	IDRFOP074217818
	0.012465	152	10333520	IDRFOP074217810
	0.668674	153	10333577	IDRFOP074111118
	0.980479	154	10333618	IDRFOP074216046
	0.427992	155	10333620	IDRFOP074216042
	0.813827	156	10333864	IDRFOP074215500
	0.243066	157	10333874	IDRFOP074109967
	0.980147	158	10335746	IDRFOP074111095
	0.128535	159	10335910	IDRFOP074218932
	0.607458	160	10336165	IDRFOP074215980

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.106367	161	10336171	IDRFOP074216032
	0.661114	162	10336184	IDRFOP074215979
	0.961803	163	10336186	IDRFOP074216041
	0.454094	164	10336319	IDRFOP074216259
	0.043306	165	10336331	IDRFOP074216031
	0.162295	166	10336335	IDRFOP074216034
	0.396101	167	10336339	IDRFOP074216045
	0.100839	168	10336341	IDRFOP074216050
	0.192844	169	10336351	IDRFOP074216038
	0.494760	170	10336353	IDRFOP074216029
	0.030463	171	10336355	IDRFOP074216030
	0.120509	172	10336361	IDRFOP074110249
	0.165308	173	10338032	IDRFOP074217822
	0.147229	174	10338169	IDRFOP074110313
2	0.002836	175	10338202	IDRFOP074215974
	0.327358	176	10338215	IDRFOP074215943
	0.864920	177	10338259	IDRFOP074217814
	0.804336	178	10338295	IDRFOP074217816
	0.646215	179	10338297	IDRFOP074217826
	0.844753	180	10339174	IDRFOP074111228
	0.055709	181	10339214	IDRFOP074218760
	0.324714	182	10339719	IDRFOP074111150
	0.793760	183	10339723	IDRFOP074111143
	0.765025	184	10339726	IDRFOP074111146
	0.631608	185	10339729	IDRFOP074218779
	0.872859	186	10339730	IDRFOP074218778
	0.562025	187	10339732	IDRFOP074218785
	0.141024	188	10339737	IDRF074218982
	0.234016	189	10340578	IDRFOP074215929
	0.870577	190	10340590	IDRFOP0742159XX
	0.924136	191	10341351	IDRFOP074111226
	0.293891	192	10341357	IDRFOP074219092
	0.023853	193	10341367	IDRFOP74111134B
	0.852771	194	10341483	IDRFOP074219132
	0.496149	195	10342024	IDRF074219011
	0.520942	196	10342716	IDRFOP074111216
	0.245996	197	10342738	IDRFOP074219037
	0.629140	198	10343970	IDRFOP074218464
	0.437512	199	10345560	IDRFOP074110403
	0.074161	200	10345562	IDRFOP074216199

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.296365	201	10345563	IDRFOP074216319
	0.840333	202	10345570	IDRFOP074216343
	0.167658	203	10345573	IDRFOP074110388
	0.295923	204	10345582	IDRFOP074216305
	0.060552	205	10346791	IDRFOP074217815
	0.955878	206	10349302	IDRFOP074215647
	0.238013	207	10350037	IDRFOP074215507
	0.895854	208	10350043	IDRFOP074215578
	0.928347	209	10350092	IDRFOP074108071
	0.211980	210	10350209	IDRF074219010
	0.293548	211	10350211	IDRF074219008
	0.674584	212	10350212	IDRF074219009
	0.878395	213	10350223	IDRF074219012
	0.049004	214	10350224	IDRFOP074219002
	0.364009	215	10350225	IDRF074219006
	0.816666	216	10351698	IDRFOP07420899X
	0.798947	217	10351910	IDRFOP074110136
	0.758021	218	10351916	IDRFOP074215593
	0.524029	219	10352067	IDRF074218357
	0.030899	220	10352124	IDRFOP074215622
	0.401774	221	10352142	IDRFOP074215596
	0.882022	222	10352146	IDRFOP074215601
	0.473645	223	10352328	IDRFOP074218999
	0.129989	224	10352402	IDRFOP074215848
	0.984721	225	10352410	IDRF074111159
	0.388809	226	10352411	IDRF074111161
	0.739085	227	10352412	IDRF074218824
	0.975675	228	10352413	IDRF074218822
	0.796296	229	10352414	IDRF074111160
	0.421765	230	10352416	IDRF074218827
	0.664800	231	10352417	IDRF074218829
	0.729680	232	10352420	IDRF074218697
	0.448793	233	10352424	IDRF074218704
	0.764929	234	10352464	IDRF074218070
	0.611782	235	10352467	IDRF074216578
	0.032941	236	10352468	IDRF074218099
	0.277473	237	10352473	IDRF074218098
	0.383188	238	10352475	IDRF074218054
	0.629295	239	10352476	IDRF074111025
	0.243646	240	10352478	IDRF074111023

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.798680	241	10352480	IDRF074111019
	0.469593	242	10352486	IDRF074218047
	0.553520	243	10352491	IDRF074218030
	0.901850	244	10352495	IDRF074216853
	0.234720	245	10352496	IDRF074111024
	0.191589	246	10352515	IDRFOP074215776
	0.864314	247	10352566	IDRFOP074217856
	0.083833	248	10352588	IDRF074218090
	0.618052	249	10352589	IDRFOP074218708
	0.036871	250	10352590	IDRF074218091
	0.426261	251	10352591	IDRF074218105
	0.341281	252	10352592	IDRF074218107
	0.833617	253	10352594	IDRF074218327
	0.252685	254	10352603	IDRF074218796
	0.632511	255	10352605	IDRF074218799
	0.571811	256	10352607	IDRF074218832
	0.054127	257	10352723	IDRFOP074111099
	0.636592	258	10352726	IDRF074218699
	0.842492	259	10352727	IDRF074218072
	0.538847	260	10352728	IDRFOP074218085
	0.015952	261	10352730	IDRF074218508
	0.425700	262	10352731	IDRF074218517
	0.482869	263	10352732	IDRF074218512
	0.409090	264	10352735	IDRFOP074218702
	0.417919	265	10352743	IDRF074218696
	0.920240	266	10352744	IDRF074218573
	0.541315	267	10352746	IDRFOP074218700
	0.761706	268	10352750	IDRFOP074218846
	0.204325	269	10352853	IDRF074218996
	0.416738	270	10352854	IDRF074218989
	0.678719	271	10352855	IDRF074218997
	0.824585	272	10352856	IDRF074218998
	0.710798	273	10352857	IDRF074218993
	0.669651	274	10352858	IDRF074218995
	0.176218	275	10352859	IDRF074218988
	0.139443	276	10353162	IDRFOP074215887
	0.326857	277	10353163	IDRFOP74115890A
	0.595402	278	10353203	IDRFOP074110039
	0.375709	279	10353250	IDRFOP074215807
	0.810015	280	10353445	IDRFOP074215862

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.947561	281	10353562	IDRFOP074215852
	0.108786	282	10353565	IDRFOP074215855
	0.516270	283	10353566	IDRFOP074215607
	0.298917	284	10353568	IDRFOP074215476
	0.533303	285	10353679	IDRFOP074216185
	0.092381	286	10353948	IDRFOP074219007
	0.398364	287	10355831	IDRFOP074215599
	0.701211	288	10355850	IDRFOP074110154
	0.280649	289	10355878	IDRFOP074215861
	0.086520	290	10356917	IDRF074218710
	0.676770	291	10356918	IDRF074218695
	0.508269	292	10356919	IDRFOP074218507
	0.941920	293	10356923	IDRFOP074218521
	0.316480	294	10356925	IDRFOP074218514
	0.117117	295	10356927	IDRFOP074218516
	0.909837	296	10356929	IDRFOP074218518
	0.449301	297	10356931	IDRFOP074218513
	0.574299	298	10356955	IDRFOP074218957
	0.794371	299	10357102	IDRF074111022
	0.237730	300	10357106	IDRF074111017
	0.307576	301	10357109	IDRF074216726
	0.047978	302	10357114	IDRF074216580
	0.143532	303	10357192	IDRF074218842
	0.863327	304	10357193	IDRFOP074218826
	0.863396	305	10357199	IDRF074218509
	0.520754	306	10357227	IDRFOP074218520
	0.087854	307	10357233	IDRF074216559
	0.274520	308	10357234	IDRF074218375
	0.933004	309	10357235	IDRF074111073
	0.990222	310	10357236	IDRF074218370
	0.404162	311	10357238	IDRF074218479
	0.323373	312	10357241	IDRFOP074215740
	0.837777	313	10357242	IDRF074111091
	0.225875	314	10357246	IDRFOP074218523
	0.355696	315	10357247	IDRF074111089
	0.099877	316	10357248	IDRF074111059
	0.974708	317	10357250	IDRF074218483
	0.784003	318	10357251	IDRF074111090
	0.906362	319	10357255	IDRF074218488
	0.957326	320	10357256	IDRF074218477

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.854739	321	10357259	IDRF074111085
	0.390006	322	10357260	IDRF074218481
	0.949060	323	10357262	IDRF074218492
	0.151425	324	10357267	IDRF074218828
	0.482551	325	10357272	IDRF074218825
	0.123720	326	10357277	IDRFOP074218847
	0.914050	327	10357278	IDRFOP074218821
	0.725746	328	10357358	IDRFOP074111088
	0.149783	329	10357557	IDRF074218049
	0.885148	330	10357558	IDRF074218873
	0.501598	331	10357559	IDRF074218887
	0.905921	332	10357564	IDRF074218830
	0.892923	333	10357565	IDRF074218900
	0.498875	334	10357566	IDRF074218823
	0.380935	335	10357567	IDRF074218904
	0.306501	336	10357568	IDRF074218890
	0.600463	337	10357569	IDRF074218870
	0.912571	338	10357570	IDRF074218893
	0.765859	339	10357571	IDRF074218871
	0.530563	340	10357572	IDRF074218885
	0.406013	341	10357573	IDRF074218896
	0.383101	342	10357574	IDRF074218872
	0.692347	343	10357575	IDRF074218894
	0.777266	344	10357576	IDRF074218340
	0.526796	345	10357577	IDRF074218356
	0.574573	346	10357582	IDRF074218344
	0.978417	347	10357584	IDRF074218335
	0.951870	348	10357595	IDRF074216464
	0.620620	349	10357596	IDRF074218334
	0.667719	350	10357597	IDRF074218351
	0.646261	351	10357598	IDRF074216462
	0.349272	352	10358240	IDRFOP074215702
	0.137766	353	10359229	IDRFOP074218773
	0.946463	354	10359255	IDRFOP074218793
	0.661018	355	10359256	IDRFOP074217916
	0.834495	356	10359257	IDRF074110968
	0.235668	357	10359262	IDRFOP074217835
	0.859544	358	10359289	IDRF074218583
	0.630216	359	10359290	IDRFOP074218592
	0.952371	360	10359292	IDRF074218589

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.243812	361	10359294	IDRF074218333
	0.594006	362	10359299	IDRF074111079
	0.548775	363	10359301	IDRF074216461
	0.601237	364	10359302	IDRF074111072
	0.852600	365	10359303	IDRF074218355
	0.544257	366	10359304	IDRF074216553
	0.252926	367	10359305	IDRF074218330
	0.889430	368	10359306	IDRF074218374
	0.823641	369	10359307	IDRF074111076
	0.944431	370	10359310	IDRF074218358
	0.402560	371	10359311	IDRF074216973
	0.644796	372	10359312	IDRF074218342
	0.056477	373	10359314	IDRF074218595
	0.721818	374	10359439	IDRFOP0741080XX
	0.089734	375	10359482	IDRFOP074218579
	0.510037	376	10359485	IDRF074218546
	0.978469	377	10359489	IDRF074218604
	0.557823	378	10359490	IDRF074218607
	0.814273	379	10359501	IDRF074218606
	0.685809	380	10359706	IDRF074217932
	0.944147	381	10359709	IDRF074110965
	0.488068	382	10359714	IDRFOP074216856
	0.165126	383	10359716	IDRFOP074111008
	0.435060	384	10359720	IDRFOP074217872
	0.631603	385	10359722	IDRFOP074218794
	0.759337	386	10359724	IDRFOP074218790
	0.166334	387	10359726	IDRF074218801
	0.153169	388	10359727	IDRF074218789
	0.433434	389	10359729	IDRF074218808
	0.830488	390	10359730	IDRF074218805
	0.095653	391	10359731	IDRF074218807
	0.993794	392	10359732	IDRFOP074218788
	0.504647	393	10359735	IDRF074218806
	0.730813	394	10359736	IDRF074218791
	0.690764	395	10359737	IDRF074218798
	0.236543	396	10359753	IDRF074218559
	0.377948	397	10359824	IDRFOP074218522
	0.498988	398	10359826	IDRF074218553
	0.505535	399	10359827	IDRF074218550
	0.623163	400	10359828	IDRF074216451

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.867773	401	10359829	IDRF074218530
	0.802149	402	10359832	IDRF074218549
	0.162001	403	10359833	IDRF074218544
	0.976728	404	10359839	IDRFOP074218609
	0.012628	405	10359841	IDRF074218605
	0.487494	406	10359845	IDRF074218645
	0.847255	407	10359846	IDRF074218612
	0.588790	408	10359847	IDRF074218653
	0.434794	409	10359848	IDRF074218657
	0.068026	410	10359849	IDRFOP074218650
	0.310643	411	10359863	IDRFOP074218660
	0.163330	412	10359867	IDRF074218322
	0.255220	413	10359871	IDRF074111031
	0.992532	414	10359934	IDRF074218552
	0.098210	415	10359935	IDRF074218547
	0.306687	416	10359936	IDRFOP074218444
	0.279337	417	10359938	IDRF074218574
	0.678376	418	10359939	IDRFOP074216948
	0.073211	419	10359943	IDRFOP074110955
	0.191113	420	10359946	IDRF074101960
	0.595460	421	10359947	IDRF074217949
	0.667834	422	10359949	IDRF074216727
	0.677011	423	10359950	IDRF074217917
	0.067607	424	10359951	IDRFOP074216728
	0.768035	425	10359953	IDRF074216868
	0.525024	426	10359954	IDRF074110967
	0.838204	427	10359959	IDRFOP074216887
	0.143494	428	10360610	IDRF074111011
	0.719218	429	10360612	IDRF074216574
	0.872577	430	10360613	IDRF074219164
	0.650556	431	10360614	IDRF074219128
	0.817569	432	10360624	IDRF074216927
	0.035300	433	10360625	IDRFOP074110990
	0.030100	434	10360627	IDRF074219173
	0.415212	435	10360629	IDRFOP074219144
	0.291605	436	10360631	IDRFOP074219138
	0.431242	437	10360633	IDRF074219130
	0.376360	438	10360636	IDRF074110959
	0.874948	439	10360640	IDRF074110978
	0.606057	440	10360643	IDRF074110981

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.342962	441	10360645	IDRF074110993
	0.018553	442	10360646	IDRF074216953
	0.852365	443	10360647	IDRFOP074216731
	0.580934	444	10361023	IDRFOP074218654
	0.370128	445	10362255	IDRFOP074218751
	0.532729	446	10362370	IDRFOP074111056
	0.146786	447	10362394	IDRFOP074111066
	0.984857	448	10362397	IDRFOP074218515
	0.943781	449	10362401	IDRFOP074218404
	0.222696	450	10362403	IDRFOP074218578
	0.609413	451	10362404	IDRF074217843
	0.343315	452	10362405	IDRFOP074218426
	0.996615	453	10362406	IDRF074217847
	0.843215	454	10362407	IDRF074110956
	0.102309	455	10362408	IDRFOP074217846
	0.901690	456	10362417	IDRFOP074216567
	0.770105	457	10362418	IDRFOP074217834
	0.848458	458	10362419	IDRFOP074217960
	0.900441	459	10362420	IDRFOP074217957
	0.232300	460	10362423	IDRF074218338
	0.677234	461	10362536	IDRFOP074217931
	0.818679	462	10362549	IDRFOP074217871
	0.492409	463	10362551	IDRFOP074217833
	0.444412	464	10362553	IDRFOP074216849
	0.865273	465	10362555	IDRFOP074217312
	0.990764	466	10362563	IDRFOP074216819
	0.937608	467	10362564	IDRF074111007
	0.534149	468	10362566	IDRFOP074217933
	0.643095	469	10362568	IDRFOP074217978
	0.930287	470	10362591	IDRFOP074110942
	0.112206	471	10362594	IDRFOP074217841
	0.130506	472	10362692	IDRF074217832
	0.418020	473	10362694	IDRFOP074216584
	0.905987	474	10362697	IDRF074219034
	0.358970	475	10362700	IDRF074219022
	0.539138	476	10362701	IDRF074219031
	0.771830	477	10362703	IDRF074219046
	0.356579	478	10362704	IDRF074219097
	0.670603	479	10362741	IDRF074217870
	0.621995	480	10362817	IDRF074218556

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.852010	481	10362820	IDRF074218525
	0.640135	482	10362825	IDRF074218536
	0.289738	483	10362826	IDRF074218539
	0.377266	484	10362827	IDRF074216561
	0.313570	485	10362828	IDRF074218542
	0.046936	486	10362829	IDRF074218529
	0.257859	487	10362830	IDRF074111068
	0.586953	488	10362831	IDRF074111038
	0.101782	489	10362832	IDRF074111053
	0.516763	490	10362833	IDRF074217950
	0.413476	491	10362834	IDRF074217862
	0.674795	492	10362836	IDRF074217893
	0.965836	493	10362840	IDRF074216855
	0.606375	494	10362842	IDRFOP074217851
	0.943268	495	10362849	IDRF074111082
	0.179168	496	10362851	IDRF074111070
	0.562380	497	10362852	IDRF074217873
	0.692784	498	10363697	IDRFOP074217967
	0.549595	499	10363700	IDRF074111081
	0.275836	500	10363701	IDRFOP074218472
	0.264518	501	10363703	IDRF074111044
5	0.004608	502	10363704	IDRF074218440
	0.117217	503	10363705	IDRF074111046
	0.990065	504	10363706	IDRFOP074111042
	0.298596	505	10363708	IDRF074218401
	0.049500	506	10363711	IDRFOP074217961
	0.867730	507	10363714	IDRFOP074218437
	0.310040	508	10363739	IDRFOP074217868
	0.725627	509	10363741	IDRF074216865
	0.269862	510	10363744	IDRFOP074216824
	0.096702	511	10363745	IDRF074217966
	0.963083	512	10363746	IDRF074217956
	0.871021	513	10363763	IDRF074218321
	0.038812	514	10363769	IDRF074218332
	0.400665	515	10363771	IDRF074218354
	0.203612	516	10363772	IDRF074218802
	0.697080	517	10363773	IDRF074218795
	0.103986	518	10363774	IDRF074218804
	0.563075	519	10363775	IDRF074218572
	0.494815	520	10363776	IDRF074111158

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.502597	521	10363777	IDRF074111142
	0.283768	522	10363778	IDRF074218568
	0.883728	523	10363779	IDRF074111157
	0.036339	524	10363782	IDRFOP074218582
	0.205608	525	10363791	IDRF074111104
	0.194630	526	10363793	IDRF074218569
	0.545477	527	10363795	IDRF074218524
	0.306570	528	10363796	IDRFOP074218436
	0.016416	529	10363798	IDRF074218703
	0.431947	530	10363801	IDRF074111064
	0.324441	531	10363804	IDRF074217863
	0.865229	532	10363805	IDRFOP074216854
	0.280759	533	10363806	IDRF074217840
	0.934353	534	10363808	IDRF074216683
	0.697365	535	10363809	IDRFOP074110998
	0.969479	536	10363813	IDRFOP074217848
	0.022752	537	10364628	IDRF074216939
	0.164142	538	10364629	IDRF074216942
	0.655342	539	10364630	IDRF074217838
	0.154345	540	10364631	IDRF074216954
	0.418194	541	10364632	IDRF074216827
	0.750239	542	10364633	IDRFOP074216871
	0.019360	543	10364654	IDRF074216826
	0.399895	544	10364655	IDRF074111005
	0.657194	545	10364660	IDRF074110980
	0.197579	546	10364940	IDRFOP074220682
	0.385725	547	10365062	IDRF074111012
	0.420690	548	10365063	IDRF074111084
	0.525200	549	10365066	IDRFOP074218438
	0.061900	550	10365071	IDRF074218445
	0.926468	551	10365072	IDRF074217844
	0.498229	552	10365073	IDRF074218473
	0.433402	553	10365074	IDRFOP074218435
	0.695845	554	10365076	IDRF074111051
	0.772764	555	10365077	IDRF074216946
	0.195248	556	10365079	IDRF074218709
	0.900925	557	10365086	IDRFOP074217852
	0.447811	558	10365368	IDRF074111069
	0.814851	559	10365369	IDRF074218270
	0.641598	560	10365370	IDRF074218600

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.541557	561	10365388	IDRF074218684
	0.786267	562	10365389	IDRF074218767
	0.299606	563	10365390	IDRF074218685
	0.222593	564	10365391	IDRF074218780
	0.518610	565	10365392	IDRF074218686
	0.505224	566	10365394	IDRF074111015
	0.618499	567	10365396	IDRF074217958
	0.623314	568	10365403	IDRF074111014
	0.840830	569	10365408	IDRF074218560
	0.719023	570	10365409	IDRF074218532
	0.463967	571	10365506	IDRF074218434
	0.374240	572	10365507	IDRF074218443
	0.276049	573	10365508	IDRF074218478
	0.317298	574	10365510	IDRF074218466
	0.354319	575	10365511	IDRF074218474
	0.786903	576	10365512	IDRF074218442
	0.097699	577	10365513	IDRF074218432
	0.637970	578	10365514	IDRFOP074111092
	0.512875	579	10365516	IDRFOP074218446
	0.299260	580	10365518	IDRF074218459
	0.538290	581	10365520	IDRFOP074218439
	0.373225	582	10365524	IDRF074218469
	0.020055	583	10365531	IDRF074218433
	0.684484	584	10365534	IDRFOP074217790
	0.098190	585	10365537	IDRF074217889
	0.251395	586	10365540	IDRFOP074218782
	0.749977	587	10365542	IDRF074218777
	0.766469	588	10365543	IDRFOP074218797
	0.434360	589	10366212	IDRF074216843
	0.606672	590	10366234	IDRF074111083
	0.232366	591	10366354	IDRF074218817
	0.727351	592	10366355	IDRF074218812
	0.313011	593	10366356	IDRF074218809
	0.588671	594	10366358	IDRF074218810
	0.799376	595	10366359	IDRF074218811
	0.128362	596	10366532	IDRF074218814
	0.519394	597	10366535	IDRF074218813
	0.321642	598	10366537	IDRFOP074216463
	0.718971	599	10366539	IDRFOP074218329
	0.925874	600	10366588	IDRF074219111

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.484408	601	10366590	IDRF074219109
	0.927734	602	10366591	IDRF074219107
	0.229134	603	10366592	IDRF074219119
	0.044577	604	10366593	IDRF074219118
	0.846406	605	10366594	IDRF074219108
	0.133128	606	10366595	IDRF074219090
	0.200556	607	10366596	IDRF074219103
	0.515095	608	10366597	IDRF074219112
	0.827657	609	10366598	IDRF074219117
	0.724713	610	10366599	IDRFOP074219089
	0.963517	611	10366601	IDRF074219105
	0.567568	612	10366602	IDRF074219091
	0.821337	613	10366603	IDRF074219121
	0.095692	614	10366604	IDRF074219122
	0.724193	615	10366605	IDRF074219110
	0.084173	616	10366606	IDRF074219120
	0.212377	617	10366634	IDRF074218787
C1	0.005016	618	10366684	IDRFOP074218593
	0.329251	619	10366686	IDRFOP074218594
	0.461944	620	10366692	IDRF074216384
	0.717851	621	10366694	IDRF074218585
	0.685222	622	10366959	IDRF074111098
	0.677810	623	10366962	IDRF074218597
	0.964487	624	10366969	IDRF074218602
	0.878475	625	10366973	IDRFOP074218590
	0.206048	626	10366975	IDRFOP074218599
	0.978032	627	10366981	IDRF074218586
	0.485112	628	10366982	IDRF074218598
	0.499520	629	10366983	IDRF074218591
	0.895252	630	10366985	IDRF074218106
	0.427631	631	10366986	IDRF074218108
	0.316331	632	10366987	IDRF074218120
	0.847432	633	10366990	IDRF074218820
	0.390783	634	10366993	IDRF074218603
	0.671726	635	10366994	IDRFOP074218601
	0.927733	636	10366995	IDRF074218296
	0.350787	637	10366997	IDRFOP074218596
	0.721817	638	10367021	IDRF074218786
	0.091475	639	10367042	IDRF074218545
	0.502614	640	10367147	IDRFOP074218561

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.817115	641	10367208	IDRFOP074216460
	0.937658	642	10367213	IDRF074218309
	0.923907	643	10367388	IDRF074218729
	0.154345	644	10367396	IDRF074111016
	0.412227	645	10367402	IDRFOP074217972
	0.920423	646	10367409	IDRF074111013
4	0.004155	647	10367418	IDRF074216725
	0.311605	648	10367426	IDRF074111010
	0.566467	649	10367619	IDRF074218739
	0.291145	650	10367624	IDRF074218343
	0.702691	651	10367987	IDRF074216551
	0.290892	652	10367992	IDRF074218326
	0.135729	653	10367996	IDRF074218755
	0.543128	654	10368021	IDRF074218743
	0.888100	655	10368080	IDRF074218680
	0.473745	656	10368081	IDRF074218669
	0.579483	657	10368096	IDRFOP074218681
	0.462529	658	10368099	IDRF074218133
	0.159214	659	10368137	IDRF074218771
	0.339717	660	10368140	IDRF074218774
	0.573918	661	10368143	IDRF074218738
	0.830359	662	10368145	IDRF074218741
	0.803175	663	10368150	IDRF074218763
	0.088912	664	10368201	IDRF074218746
	0.405978	665	10368202	IDRFOP074218752
	0.226919	666	10368204	IDRF074218748
	0.701138	667	10368205	IDRF074218747
	0.803959	668	10368207	IDRFOP074218749
	0.243287	669	10368209	IDRFOP074218735
	0.817996	670	10368212	IDRF074218754
	0.521256	671	10368213	IDRFOP074218670
	0.227013	672	10368215	IDRF074218217
	0.100153	673	10368250	IDRF074218756
	0.919111	674	10368484	IDRF074218761
	0.867401	675	10368486	IDRF074218768
1	0.001991	676	10368487	IDRF074218765
	0.419550	677	10368516	IDRFOP074218273
	0.454869	678	10368518	IDRFOP074218301
	0.698476	679	10368530	IDRFOP074218319
	0.590870	680	10368536	IDRF074111063

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.018143	681	10368538	IDRF074218302
	0.160940	682	10368540	IDRF074218368
	0.589198	683	10368541	IDRF074111058
	0.337239	684	10368542	IDRF074111067
	0.591183	685	10368543	IDRF074111065
	0.846408	686	10368546	IDRF074216558
	0.070839	687	10368549	IDRF074218128
	0.755028	688	10368551	IDRF074218272
	0.165781	689	10368645	IDRFOP074218666
	0.604318	690	10368647	IDRF074218671
	0.360458	691	10368649	IDRF074218169
	0.799553	692	10368664	IDRFOP074216459
	0.569154	693	10368666	IDRF074218190
	0.481623	694	10368668	IDRF074216458
	0.999951	695	10368669	IDRF074111045
	0.870504	696	10368670	IDRF074218136
	0.121493	697	10368672	IDRFOP074111037
	0.893126	698	10368674	IDRF074218155
	0.742023	699	10368675	IDRF074218141
	0.898721	700	10368683	IDRF074218121
	0.520106	701	10368685	IDRF074216842
	0.772353	702	10368687	IDRF074216825
	0.464501	703	10368692	IDRFOP074218131
	0.813283	704	10368694	IDRF074218124
	0.129649	705	10368699	IDRFOP074111033
	0.395253	706	10368746	IDRF074111036
	0.659113	707	10368787	IDRF074218097
	0.956409	708	10368796	IDRF074111027
	0.513552	709	10368799	IDRF074218117
	0.410378	710	10368801	IDRF074218307
	0.657703	711	10368802	IDRF074111062
	0.888524	712	10368803	IDRF074216352
	0.943404	713	10368804	IDRF074218310
	0.457018	714	10368805	IDRFOP074218346
	0.127703	715	10368806	IDRF074218299
	0.558412	716	10368807	IDRF074216566
	0.058737	717	10368810	IDRFOP074218267
	0.699400	718	10368811	IDRFOP074218306
	0.060313	719	10368814	IDRF074218289
	0.077259	720	10368815	IDRF074218268

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.818025	721	10368816	IDRFOP074218317
	0.634172	722	10368818	IDRF074218692
	0.992643	723	10368819	IDRF074218647
	0.304307	724	10368822	IDRF074218693
	0.189946	725	10368823	IDRF074218659
	0.247369	726	10368827	IDRF074218372
	0.396903	727	10368828	IDRF074218399
	0.104647	728	10368829	IDRF074218397
	0.668061	729	10368830	IDRF074216555
	0.304675	730	10368831	IDRF074218376
	0.328810	731	10368832	IDRF074218350
	0.464885	732	10368833	IDRFOP074218371
	0.271589	733	10368834	IDRF074218365
	0.171611	734	10368837	IDRF074218360
	0.076686	735	10368838	IDRF074218364
	0.338130	736	10368839	IDRF074111074
	0.623725	737	10368840	IDRF074111078
	0.422469	738	10368841	IDRF074218173
	0.300432	739	10368842	IDRF074218139
	0.095966	740	10368847	IDRF074218216
	0.741910	741	10368889	IDRF074218154
	0.501626	742	10368890	IDRF074218262
	0.279582	743	10368891	IDRFOP074216552
	0.874004	744	10368893	IDRF074218164
	0.241088	745	10368921	IDRFOP074216918
	0.690571	746	10370321	IDRFOP074216658
	0.776245	747	10370324	IDRFOP074216586
	0.433890	748	10370335	IDRFOP074218954
	0.481822	749	10370339	IDRF074111018
	0.502912	750	10370342	IDRF074218052
	0.517602	751	10370343	IDRF074216861
	0.486577	752	10370344	IDRF074216864
	0.342971	753	10370348	IDRF074216579
	0.570785	754	10370352	IDRF074216557
	0.618325	755	10370374	IDRF074218166
	0.317115	756	10370375	IDRF074218148
	0.679407	757	10370376	IDRF074111041
	0.314831	758	10370377	IDRF074218168
	0.334421	759	10370378	IDRFOP074218764
	0.176500	760	10370381	IDRF074218991

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.440184	761	10370383	IDRF074218990
	0.065333	762	10370384	IDRF074218762
C3	0.009013	763	10370385	IDRF074218994
	0.836028	764	10370390	IDRF074218955
	0.543946	765	10370391	IDRF074218992
	0.384228	766	10370396	IDRF074219015
	0.752887	767	10370398	IDRF074219013
	0.235324	768	10370417	IDRF074219003
	0.619916	769	10370420	IDRF074111106
	0.546895	770	10370422	IDRF074218818
	0.723930	771	10370423	IDRF074218819
	0.036230	772	10370425	IDRF074218960
	0.666512	773	10370426	IDRF074218958
	0.828096	774	10370427	IDRF074218966
	0.748440	775	10370428	IDRF074218875
	0.928837	776	10370429	IDRF074218959
	0.326293	777	10370431	IDRF074218031
	0.703694	778	10370438	IDRF074216820
	0.639068	779	10370439	IDRF074216875
	0.730032	780	10370440	IDRF074216922
	0.797465	781	10370441	IDRF074216457
	0.781770	782	10370442	IDRF074216949
	0.606879	783	10370443	IDRF074111004
	0.521544	784	10370444	IDRF074218050
	0.713842	785	10370448	IDRF074111009
	0.785944	786	10370455	IDRFOP074217935
	0.675073	787	10370458	IDRFOP074216821
	0.375654	788	10370459	IDRFOP074216829
	0.934941	789	10370461	IDRF074111087
	0.059752	790	10370468	IDRF074111152
	0.639445	791	10370477	IDRFOP074216610
	0.593486	792	10370480	IDRFOP074216577
	0.326765	793	10370482	IDRFOP074217959
	0.893154	794	10370484	IDRF074216850
	0.584093	795	10370486	IDRFOP074216560
	0.485630	796	10370496	IDRFOP074111026
	0.538553	797	10370511	IDRF074218348
	0.200374	798	10370593	IDRF074218745
	0.518376	799	10370594	IDRF074218742
	0.863674	800	10371552	IDRFOP074218937

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.253760	801	10371560	IDRF074218939
	0.421139	802	10371595	IDRFOP074218315
	0.805887	803	10371597	IDRF074218380
	0.130886	804	10371599	IDRF074218295
	0.552864	805	10371600	IDRF074218249
	0.146770	806	10371610	IDRFOP074111034
	0.728462	807	10371624	IDRFOP074217462
	0.575808	808	10371814	IDRFOP074218570
	0.706167	809	10371815	IDRFOP074218143
	0.405824	810	10371816	IDRFOP074111055
	0.189295	811	10371817	IDRF074111029
	0.548368	812	10371818	IDRF074218140
	0.373320	813	10371819	IDRFOP074218142
	0.609728	814	10371821	IDRFOP074218151
	0.737915	815	10371825	IDRF074218869
	0.356899	816	10371827	IDRF074218898
	0.857738	817	10371828	IDRF074218855
	0.837114	818	10371829	IDRF074218851
	0.920369	819	10371830	IDRF074218859
	0.533972	820	10371831	IDRF074218839
	0.499831	821	10371834	IDRF074218934
	0.931754	822	10371835	IDRF074218915
	0.294422	823	10371843	IDRFOP074218362
	0.055318	824	10371850	IDRF074111048
	0.729972	825	10371851	IDRF074111057
	0.335144	826	10371856	IDRF074111052
	0.936966	827	10371945	IDRFOP074218891
	0.914224	828	10371965	IDRFOP074219014
	0.583870	829	10371966	IDRFOP074216665
C5	0.010719	830	10371968	IDRFOP074218701
	0.761159	831	10371969	IDRFOP074218961
	0.837658	832	10371970	IDRFOP074219005
	0.982408	833	10371971	IDRFOP074218519
	0.910291	834	10371972	IDRFOP074216594
	0.449468	835	10371973	IDRFOP074216830
	0.393873	836	10371974	IDRFOP074111020
	0.790114	837	10372024	IDRFOP074218470
	0.675000	838	10372026	IDRFOP074218377
	0.515572	839	10372028	IDRFOP074218557
	0.912097	840	10372137	IDRFOP074217866

Container List for BNINW216, Lot 21

Selected for Coring	Random Number	Sequential Number	CONTAINER ID	HISTORICAL ID
	0.153144	841	10372138	IDRFOP074218576
	0.654923	842	10372140	IDRFOP074218792
	0.672926	843	10372141	IDRFOP074218800
	0.881704	844	10372266	IDRFOP074218314
	0.116308	845	10372267	IDRFOP074218663
	0.833814	846	10372269	IDRFOP074218611
	0.352507	847	10372285	IDRFOP074110944
	0.362065	848	10378204	IDRFOP074111021
	0.671469	849	10378205	IDRFOP074218707
	0.152029	850	10378206	IDRFOP074218487
	0.994993	851	10378207	IDRFOP074218480
	0.528394	852	10378208	IDRFOP074218482
	0.773020	853	10378209	IDRFOP074111060
	0.735198	854	10378211	IDRFOP074218341
	0.798390	855	10378882	IDRFOP074219004
	0.477490	856	10378884	IDRFOP074218055
	0.602985	857	10378886	IDRFOP074218732
	0.579344	858	10400557	IDRFOP074217895
	0.242523	859	10408631	IDRFOP074216679

AMWTP Advanced Mixed Waste Treatment Project	Randomly Selected Container Report	Form-1196, Rev. 5 Effective: 09/26/07 Page 1 of 1

Implementing Document: MP-TRUW-8.25

Waste Stream Lot: BNINW216, Lot 21

Population Size of Waste Stream Lot: 859

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☒ Solids or ☐ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 5

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature 7.7.11 Date

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: August 4, 2011

To: Eric Schweinsberg
Site Project Manager

From: Steve Carpenter
Acceptable Knowledge Manager/Alternate Site Project Manager

Subject: Addendum to Solids Sampling Plan for BNINW216-Lot 21 - SPC-007-11

The purpose of this memorandum is to document the disposition of container 10363704 with historical ID IDRF074218440. Container 10363704 is the fifth container selected for coring (reference memorandum SPC-006-11, Solids Sampling Plan for BNINW216 – Lot 21).

Due to poor container integrity, this container was overpacked into a 85-gallon container for proper storage. The 85-gallon drum is assigned AMWTP Number 10415515 with historical ID IDRFOP074218440. Table 1 below has been updated to reflect the AMWTP container number and Historical ID for the overpack condition. The container list for BNINW216, Lot 21 will also be updated in the formal report of sampling results.

Table 1 – Selected Containers

Selected for Coring	Random Number	Sequential Number	AMWTP Number	Historical ID
1	0.001991	676	10368487	IDRF074218765
2	0.002836	175	10338202	IDRFOP074215974
3	0.003448	67	10301140	IDRFOP074110317
4	0.004155	647	10367418	IDRF074216725
5	0.004608	502	10415515	IDRFOP074218440
c1	0.005016	618	10366684	IDRFOP074218593
c2	0.005298	86	10308035	IDRFOP074216087
c3	0.009013	763	10370385	IDRF074218994
c4	0.010681	125	10317211	IDRFOP074201083
c5	0.010719	830	10371968	IDRFOP074218701

SPC/MLJ/at

cc: Rod Arbon
George Byram
Elvin Dumas
Caralea Hinkle-Daniel
Jim Jackson
Micky Johnson
Jason Kettel
Nancy Kirk
Jason Lance
Stormie McCurdy
John Nicklas
Dave Preston
Karlan Richards
Lyle Ryman
Clint Sisson
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: August 15, 2011

To: Eric Schweinsberg
Site Project Manager

From: Steve Carpenter
Acceptable Knowledge Manager/Alternate Site Project Manager

Subject: Addendum to Solids Sampling Plan for BNINW216-Lot 21 - SPC-008-11

The purpose of this memorandum is to document the disposition of container 10367418 with historical ID IDRF074216725. Container 10367418 is the fourth container selected for coring (reference memorandum SPC-006-11, Solids Sampling Plan for BNINW216 – Lot 21).

Due to poor container integrity, this container was overpacked into a 85-gallon container for proper storage. The 85-gallon drum is assigned AMWTP Number 10417359 with historical ID IDRFOP074216725. Table 1 below has been updated to reflect the AMWTP container number and Historical ID for the overpack condition. The container list for BNINW216, Lot 21 will also be updated in the formal report of sampling results.

Table 1 – Selected Containers

Selected for Coring	Random Number	Sequential Number	AMWTP Number	Historical ID
1	0.001991	676	10368487	IDRF074218765
2	0.002836	175	10338202	IDRFOP074215974
3	0.003448	67	10301140	IDRFOP074110317
4	0.004155	647	10417359	IDRFOP074216725
5	0.004608	502	10415515	IDRFOP074218440
c1	0.005016	618	10366684	IDRFOP074218593
c2	0.005298	86	10308035	IDRFOP074216087
c3	0.009013	763	10370385	IDRF074218994
c4	0.010681	125	10317211	IDRFOP074201083
c5	0.010719	830	10371968	IDRFOP074218701

SPC/MLJ/at

cc: Rod Arbon
George Byram
Elvin Dumas
Caralea Hinkle-Daniel
Jim Jackson
Micky Johnson
Jason Kettel
Nancy Kirk
Jason Lance
Stormie McCurdy
John Nicklas
Dave Preston
Karlan Richards
Lyle Ryman
Clint Sisson
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-90, Rev. 0

Sampling Report for BNINW216, Lot 21

Advanced Mixed Waste Treatment Project

FOR INFORMATION ONLY

(Signature on file. See DCR-10431)

James Jackson

TRU Programs Manager

09/21/11

Date

Sampling Report for BNINW216, Lot 21

Purpose

The purpose of this sampling report is to provide the solid sampling characterization data from the core sampling of randomly selected containers from Lot 21 of waste stream BNINW216 in accordance with Section C2-1a of MP-TRUW-8.2, Quality Assurance Project Plan, and under a program approved by the New Mexico Environment Department (NMED).

Introduction

This waste stream is First and Second Stage Sludge from the Rocky Flats Plant. The 859 containers that make up BNINW216 Lot 21 are listed in Attachment B. These containers were retrieved from the Transuranic Storage Area–Retrieval Enclosure (TSA–RE) or the accessible storage buildings (i.e., Type II storage modules).

Selection Process

Ten random numbers were generated to ensure a sufficient number of candidates were available to provide a minimum of five containers for coring. The ten candidate drums were selected for coring using a simple random selection method in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis. AMWTP memorandum SPC-006-11, Solids Sampling Plan for BNINW216 – Lot 21, presents the evaluation for the required number of samples, Form-1196 (Randomly Selected Container Report), the list of randomly selected containers, and the list of containers retrieved and assigned to Lot 21. There are two addendums to the sampling plan to document the changes in the AMWTP container numbers as a result of overpacking two containers (reference memorandums SPC-007-11, Addendum to Solids Sampling Plan for BNINW216-Lot 21 and SPC-008-11, Addendum to Solids Sampling Plan for BNINW216-Lot 21). Drums were sequentially ordered by the AMWTP assigned drum number and are listed in Attachment B.

The sampling was conducted by AMWTP using procedure INST-OI-16, Drum Coring Operations. The first five viable random selected containers were sampled (i.e., 1, 2, 3, 4, and 5). The selection order attributed to the random number, associated AMWTP container number, and the historical container identification number for the first five randomly selected containers are presented in Table 1.

Table 1. BNINW216, Lot 21 containers randomly selected for coring.

Selection Order	AMWTP Container Number	Historical ID
1	10368487	IDRF074218765
2	10338202	IDRFOP074215974
3	10301140	IDRFOP074110317
4	10417359	IDRFOP074216725
5	10415515	IDRFOP074218440

The evaluation to determine the required number of samples for Lot 21 is presented in Attachment A. The required number of samples was calculated for each analyte in accordance with MP-TRUW-8.25. The required number was met at five samples.

Data Results

The statistical evaluation of the analytical data collected for BNINW216, Lot 21, is presented in Tables 2, 3A, 3B, 4A, and 4B. Table 5 lists the correlation of container numbers to solids analysis data packages. Table 7 lists the correlation of container number to solids sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA hazardous waste numbers (HWNs) for the BNINW216 waste stream. Per Section C2-1a of MP-TRUW-8.2 the AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section C2-2a and assign EPA HWNs as appropriate.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if solid sampling analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL) values. Cadmium, chromium, and lead UCL_{90} results for Lot 21 were above the PRQL values for metals associated with toxicity characteristic HWNs (Table 2). No solid sampling UCL_{90} results for Lot 21 were above the PRQL values for volatile organic compounds (VOCs) (Table 3A) or for semi-volatile organic compounds (SVOCs) (Table 4A).

Lot 21 analyses included evaluation of SVOC target compounds bis(2-ethylhexyl)phthalate and fluoranthene (Table 4A). Bis(2-ethylhexyl)phthalate and fluoranthene were identified as tentatively identified compounds (TICs) in over 25% of the samples analyzed in BNINW216, Lot 1, and were added to the target analyte list as required by the MP-TRUW-8.2. The SVOC data from these compounds did not result in the assignment of additional HWNs to the First and Second Stage Sludge waste stream based on the results from Lot 1.

In conclusion, the originally assigned HWNs from the BNINW216 Waste Stream Profile Form are retained and no additional HWNs are required. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, and D022, and listed HWNs F001, F002, F003, F005, F006, F007, and F009.

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: **BNINW216**

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	Solid sampled containers only in BNINW216 lot 21
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	Solid sampled containers only in BNINW216 lot 21
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	WAP headspace gas sampling not required for S3000 waste.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	

WSPF No.: BNINW216

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed prior to entering the headspace gas data into WDS
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	Solid sampling lot only.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	Solid sampling QAOs only.
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	Solid sampling lot only.

WSPF No.: BNINW216

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	Solid sampling lot only.
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Nancy Kirk	Signature on file	09/21/2011
Site Project Manager	Printed Name	Signature	Date
2nd Site Project Manager	Sean Caniff	Signature on file	09/21/2011
	Printed Name	Signature	Date

WSPF Number: BNINW216 Lot Number: 21

SPM

Printed Name: Nancy Kirk Signature: Signature on file Date: 09/21/2011

2nd SPM

Printed Name: Sean Caniff Signature: Signature on file Date: 09/21/2011

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

WSPF Number BNINW216 Lot Number 21

Table 2. Metals Summary Data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number [c]
Arsenic [d]	5	5	Natural log	3.33	1.61	1.15	2.39	4.61	100	D004 [e]
Barium [d]	5	5	Natural log	5.01	3.86	0.928	4.50	7.60	2000	D005 [e]
Cadmium [d]	5	5	Natural log	7.55	4.28	3.03	6.36	3.00	20	D006 [f]
Chromium	5	5	None	390	302	158	411	-	100	D007 [f]
Lead [d]	5	5	Natural log	8.48	6.10	1.37	7.04	4.61	100	D008 [f]
Mercury [d]	5	4	Natural log	2.83	-0.815	2.97	1.22	1.39	4	D009 [e]
Selenium	5	2	None	2.00	0.990	0.651	1.44	-	20	D010 [e]
Silver [d]	5	4	Natural log	3.95	1.31	2.95	3.33	4.61	100	D011 [e]
Antimony [d]	5	1	Natural log	0.742	-0.694	0.803	-0.144	4.61	100	N/A [h]
Beryllium	5	5	None	440	241	158	349	-	100	N/A [g, h]
Nickel	5	5	None	300	176	147	277	-	100	N/A [h]
Thallium [d]	5	1	Natural log	-0.223	-0.780	0.311	-0.567	4.61	100	N/A [h]
Vanadium	5	5	None	31.0	17.4	9.94	24.3	-	100	N/A [h]
Zinc	5	5	None	290	208	67.6	254	-	100	N/A [h]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. Spent stripping, cleaning, and plating operations in which cyanides and chromium were used are included in this waste stream; therefore, EPA HWNs F006, F007, and F009 are applied based on AK for the waste stream.

d. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

e. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{90} results for the assigned compounds are not above the PRQL.

f. These HWNs, assigned by AK, were confirmed by characterization and are retained for this waste stream.

g. P015 for beryllium as defined in 40 CFR 261 and addressed in RPT-TRUW-09 is not assigned to the waste. The reported values are all less than 1% for beryllium.

h. There are no associated toxicity characteristic HWNs with these analytes.

Did the data support EPA hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 3A. Total VOC Summary Data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,1-Dichloroethylene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
trans-1,2-Dichloroethylene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,1,1-Trichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	F001/ F002 [e]
1,1,2,2-Tetrachloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	F002 [e]
1,1,2-Trichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,2-Dichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Acetone [c]	5	1	Natural log	1.63	-0.135	0.987	0.542	4.61	100	F003 [e]
Benzene	5	0	None	0.195	0.180	0.010	[d]	-	10	F005 [e]
Bromoform	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Butanol [c]	5	1	Natural log	2.10	-0.040	1.20	0.782	4.61	100	N/A
Carbon disulfide	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Carbon tetrachloride	5	0	None	0.195	0.180	0.010	[d]	-	10	F001 [e]
Chlorobenzene	5	0	None	0.195	0.180	0.010	[d]	-	10	F002 [e]
Chloroform	5	0	None	0.195	0.180	0.010	[d]	-	10	D022 [e]
Ethyl benzene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Ethyl ether	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Isobutanol	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Methanol [c]	5	2	Natural log	3.43	1.13	1.47	2.14	4.61	100	F003 [e]
Methyl ethyl ketone	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Methylene chloride	5	0	None	0.295	0.271	0.015	[d]	-	10	F001/ F002 [e]
Pyridine	5	0	None	1.80	1.70	0.061	[d]	-	100	N/A
o-Xylene	5	0	None	0.195	0.180	0.010	[d]	-	10	F003 [e]
m- & p-Xylene	5	0	None	0.390	0.361	0.019	[d]	-	10	F003 [e]
Tetrachloroethylene	5	3	None	2.20	0.969	0.845	1.55	-	10	F001/ F002 [e]
Toluene	5	0	None	0.195	0.180	0.010	[d]	-	10	F005 [e]
Trichloroethylene [c]	5	3	Natural log	1.03	-0.741	1.14	0.038	2.30	10	F001/ F002 [e]
Trichlorofluoromethane	5	0	None	0.295	0.271	0.015	[d]	-	10	N/A
Vinyl chloride	5	0	None	0.195	0.180	0.010	[d]	-	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. The maximum, mean, SD, UCL_{90} and PRQL for these analytes are presented as transformed values.

d. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

e. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{90} results for the assigned compounds are not above the associated PRQL.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 3B. Total VOC Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Calculations performed by:

Printed Name: N/A Signature: N/A Date: N/A

Verification of % Detected Calculation:

Printed Name: N/A Signature: N/A Date: N/A

WSPF Number BNINW216 Lot Number 21

Table 4A. Total SVOC Summary Data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
1,4-Dichlorobenzene	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
2,4-Dinitrophenol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
2,4-Dinitrotoluene	5	0	None	0.100	0.099	0.003	[d]	-	2.6	N/A
bis(2-Ethylhexyl)phthalate [c, e]	5	4	Natural log	2.77	-0.208	1.84	1.06	3.69	40	N/A
Fluoranthene [c, f]	5	2	Natural log	0.693	-1.31	1.42	-0.338	3.69	40	N/A
Hexachlorobenzene	5	0	None	0.100	0.099	0.003	[d]	-	2.6	N/A
Hexachloroethane	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
o-Cresol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
m- & p-Cresol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
Nitrobenzene	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
Pentachlorophenol [c]	5	1	Natural log	0.742	-1.70	1.37	-0.766	3.69	40	N/A
Phenol [g]	5	3	None	0.560	0.344	0.226	0.499	-	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. The maximum, mean, SD, UCL_{90}, and PRQL for this analyte are presented as transformed values.

d. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

e. Bis(2-ethylhexyl)phthalate was detected as a TIC in BNINW216, Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. The CAS # for bis(2-ethylhexyl)phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNINW216, Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNINW218 Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by MP-TRUW-8.2. Phenol is not an analyte for the BNINW216 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 4B. Total SVOC Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Pentachlorobiphenyl	0.55	1	5	20%	1	107	0.9%
2,4-Dichlorophenol	0.68	1	5	20%	1	107	0.9%

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Calculations performed by:

Printed Name: Nancy Kirk Signature: Signature on file Date: 09/21/2011

Verification of % Detected Calculation:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10301140	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10338202	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10368487	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10415515	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10417359	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M

NOTE: ***These containers are being used for solid sampling data only in this Sampling Report. RTR or VE and RA will be performed on these containers and validated prior to certification for shipment to WIPP. WAP HSG is not required to be performed on these containers of homogeneous solids.***

WSPF Number: BNINW216 Lot Number: 21

Table 7. Correlation of Container Numbers to Sample Numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s)
10301140	N/A	10417903, 10417904, 10417907
10338202	N/A	10417610, 10417611, 10417614
10368487	N/A	10417125, 10417127, 10417131
10415515	N/A	10418481, 10418482, 10418485
10417359	N/A	10418318, 10418319, 10418322

NOTE: *WAP HSG is not required to be performed on these containers of homogeneous solids.*

Attachment A
Evaluation of Required Number of Samples. BNINW216 Lot 21

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
Arsenic [h]	5	5	Natural log	3.33	1.61	1.15	2.39	4.61	100	d	HWN D004 applied
Barium [h]	5	5	Natural log	5.01	3.86	0.928	4.50	7.60	2000	d	HWN D005 applied
Cadmium [h]	5	5	Natural log	7.55	4.28	3.03	6.36	3.00	20	d	HWN D006 applied
Chromium	5	5	None	390	302	158	411	-	100	d	HWN D007 applied
Lead [h]	5	5	Natural log	8.48	6.10	1.37	7.04	4.61	100	d	HWN D008 applied
Mercury [h]	5	4	Natural log	2.83	-0.815	2.97	1.22	1.39	4	d	HWN D009 applied
Selenium	5	2	None	2.00	0.990	0.651	1.44	-	20	d	HWN D010 applied
Silver [h]	5	4	Natural log	3.95	1.31	2.95	3.33	4.61	100	d	HWN D011 applied
Antimony [h]	5	1	Natural log	0.742	-0.694	0.803	-0.144	4.61	100	e	No associated HWN
Beryllium	5	5	None	440	241	158	349	-	100	5	HWN not required to be applied [i]
Nickel	5	5	None	300	176	147	277	-	100	e	No associated HWN
Thallium [h]	5	1	Natural log	-0.223	-0.780	0.311	-0.567	4.61	100	e	No associated HWN
Vanadium	5	5	None	31.0	17.4	9.94	24.3	-	100	e	No associated HWN
Zinc	5	5	None	290	208	67.6	254	-	100	e	No associated HWN
1,1-Dichloroethene (1,1-Dichloroethylene)	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,1,1-Trichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F001/F002 applied
1,1,2,2-Tetrachloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F002 applied
1,1,2-Trichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,2-Dichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Acetone [h]	5	1	Natural log	1.63	-0.135	0.987	0.542	4.61	100	d	HWN F003 applied

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
Benzene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F005 applied
Bromoform	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Butanol [h]	5	1	Natural log	2.10	-0.040	1.20	0.782	4.61	100	5	HWN not required to be applied [j]
Carbon disulfide	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Carbon tetrachloride	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F001 applied
Chlorobenzene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F002 applied
Chloroform	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN D022 applied
Ethyl benzene	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Ethyl ether	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Isobutanol	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Methanol [h]	5	2	Natural log	3.43	1.13	1.47	2.14	4.61	100	d	HWN F003 applied
Methyl ethyl ketone	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Methylene chloride	5	0	None	0.295	0.271	0.015	-	-	10	d, f	HWN F001/F002 applied
Pyridine	5	0	None	1.80	1.70	0.061	-	-	100	f	No samples above MDL
o-Xylene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F003 applied
m- & p-Xylene	5	0	None	0.390	0.361	0.019	-	-	10	d, f	HWN F003 applied
Tetrachloroethene (Tetrachloroethylene)	5	3	None	2.20	0.969	0.845	1.55	-	10	d	HWNs F001/F002 applied
Toluene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F005 applied
Trichloroethene [h] (Trichloroethylene)	5	3	Natural log	1.03	-0.741	1.14	0.038	2.30	10	d	HWNs F001/F002 applied
Trichlorofluoromethane	5	0	None	0.295	0.271	0.015	-	-	10	f	No samples above MDL
Vinyl chloride	5	0	None	0.195	0.180	0.010	-	-	4	f	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
2,4-Dinitrophenol	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
2,4-Dinitrotoluene	5	0	None	0.100	0.099	0.003	-	-	2.6	f	No samples above MDL
bis(2-Ethylhexyl) phthalate [h, k]	5	4	Natural log	2.77	-0.208	1.84	1.06	3.69	40	5	HWN not required to be applied [j]
Fluoranthene [h, l]	5	2	Natural log	0.693	-1.31	1.42	-0.338	3.69	40	5	HWN not required to be applied [j]
Hexachlorobenzene	5	0	None	0.100	0.099	0.003	-	-	2.6	f	No samples above MDL
Hexachloroethane	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
2-Methylphenol (o-Cresol)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
Nitrobenzene	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
Pentachlorophenol [h]	5	1	Natural log	0.742	-1.70	1.37	-0.766	3.69	40	5	HWN not required to be applied [j]
Phenol [m]	5	3	None	0.560	0.344	0.226	0.499	-	40	5	HWN not required to be applied [j]

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} for the analyte is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, UCL_{90}, and PRQL.

c. Spent stripping, cleaning, and plating solutions from electroplating operations in which cyanides and chromium were used are included in this waste stream; therefore, EPA HWNs F006, F007, and F009 are applied, based on AK.

d. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not assigned (i.e., it only applies to those cases where a site intends to establish that the constituent is below the regulatory threshold and the associated EPA HWN does not apply). If the EPA HWN has been assigned, the required number "n" is not reported.

e. If there is no HWN associated with an analyte, then that analyte will not be used to define the number of required samples.

f. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

g. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

h. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.

i. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-09 is not assigned to the waste. The reported values were all less than 1% for beryllium.

j. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} result for the waste stream and lot is below the PRQL and the required number "n" has been met.

k. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. Bis(2-Ethylhexyl) phthalate is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

l. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. Fluoranthene is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

m. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by MP-TRUW-8.2. Phenol is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2

Attachment B - Container List BNINW216, Lot 21

AMWTP ID	Historical ID
10024431	IDRFOP074115272
10032636	IDRFOP074115948
10032637	IDRFOP074115982
10065340	IDRFOP074216794
10085467	IDRFOP074110818
10088785	IDRFOP074110813
10109208	IDRF074223260
10109434	IDRF074223368
10130518	IDRF074114955A
10133151	IDRF074224081A
10133155	IDRF074114886
10135797	IDRF074220943
10136946	IDRF074224153A
10140254	IDRFOP074215506
10140428	IDRFOP074109990
10140429	IDRFOP0741100X2
10140433	IDRFOP074215538
10140589	IDRFOP074108989
10140597	IDRFOP074110035
10140623	IDRFOP007419991
10140631	IDRFOP074215577
10140636	IDRFOP074215552
10140938	IDRFOP074215572
10145257	IDRFOP007419997
10145294	IDRFOP074215529
10145307	IDRFOP074105100
10145315	IDRFOP074110005
10145325	IDRFOP074201554
10145504	IDRFOP074215574
10145521	IDRFOP074223518
10145527	IDRFOP074215547
10145594	IDRFOP074215569
10145595	IDRFOP074215486
10151673	IDRF074220140
10157220	IDRFOP074111869
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10170262	IDRF074221242A
10174063	IDRFOP074116189
10177681	IDRFOP074216749
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10177844	IDRFOP074110512
10177937	IDRFOP074216984
10184600	IDRFOP074215649

AMWTP ID	Historical ID
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10299832	IDRFOP074216088
10299848	IDRFOP074110352
10300364	IDRFOP074210319
10301110	IDRFOP074216187
10301122	IDRFOP074216191
10301124	IDRFOP074216192
10301140	IDRFOP074110317
10301141	IDRFOP074110263
10301142	IDRFOP074110252
10301145	IDRFOP074110270
10301146	IDRFOP74110265A
10302503	IDRFOP074110198
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10303179	IDRFOP07411013X
10303954	IDRFOP07413X203
10303976	IDRFOP074110201
10303999	IDRFOP074110206
10304010	IDRFOP074216188
10304089	IDRFOP074110205
10305164	IDRFOP074216186
10305170	IDRFOP07411X316
10305446	IDRFOP074110271
10305466	IDRFOP074215789
10307575	IDRFOP074216091
10308023	IDRFOP074215797
10308035	IDRFOP074216087
10308226	IDRFOP074215708
10308497	IDRFOP074216085

AMWTP ID	Historical ID
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10308961	IDRFOP074110343
10308987	IDRF074110350
10309117	IDRFOP074110347
10309145	IDRFOP074216282
10309155	IDRFOP074216284
10311322	IDRFOP074110253
10311323	IDRFOP074110362
10311324	IDRFOP074110344
10311325	IDRFOP074110387
10311326	IDRFOP074110401
10311327	IDRFOP074110272
10311419	IDRFOP074216197
10311510	IDRFOP074110386
10311723	IDRFOP074110226
10311725	IDRFOP074110254
10311727	IDRFOP074110255
10311735	IDRFOP074110156
10311799	IDRFOP074216224
10313840	IDRFOP074215952
10313858	IDRFOP07421599X
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10314754	IDRFOP074216293
10314759	IDRFOP074110373
10314760	IDRFOP074216261
10314811	IDRFOP074110354
10314970	IDRFOP074110376
10314972	IDRFOP074110379
10316829	IDRFOP074215321
10316850	IDRFOP074111006
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10318820	IDRFOP74215617A
10318841	IDRFOP074110115
10319032	IDRFOP074110040
10319065	IDRFOP074110059
10319507	IDRFOP074215183
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10323539	IDRFOP074215631

AMWTP ID	Historical ID
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10325444	IDRFOP074200156
10325713	IDRFOP074215859
10326223	IDRFOP074110105
10326229	IDRFOP074110140
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10326798	IDRFOP074201568
10327925	IDRFOP074215610
10328623	IDRFOP074215972
10328641	IDRFOP074215645
10330197	IDRFOP074215829
10330375	IDRF074219178
10330404	IDRFOP074215488
10330407	IDRFOP074109985
10330502	IDRFOP74116025A
10333508	IDRFOP074217811
10333512	IDRFOP074217818
10333520	IDRFOP074217810
10333577	IDRFOP074111118
10333618	IDRFOP074216046
10333620	IDRFOP074216042
10333864	IDRFOP074215500
10333874	IDRFOP074109967
10335746	IDRFOP074111095
10335910	IDRFOP074218932
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10336184	IDRFOP074215979
10336186	IDRFOP074216041
10336319	IDRFOP074216259
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10336335	IDRFOP074216034
10336339	IDRFOP074216045
10336341	IDRFOP074216050
10336351	IDRFOP074216038
10336353	IDRFOP074216029
10336355	IDRFOP074216030
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10338202	IDRFOP074215974
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10338295	IDRFOP074217816
10338297	IDRFOP074217826
10339174	IDRFOP074111228

AMWTP ID	Historical ID
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10339732	IDRFOP074218785
10339737	IDRF074218982
10340578	IDRFOP074215929
10340590	IDRFOP0742159XX
10341351	IDRFOP074111226
10341357	IDRFOP074219092
10341367	IDRFOP74111134B
10341483	IDRFOP074219132
10342024	IDRF074219011
10342716	IDRFOP074111216
10342738	IDRFOP074219037
10343970	IDRFOP074218464
10345560	IDRFOP074110403
10345562	IDRFOP074216199
10345563	IDRFOP074216319
10345570	IDRFOP074216343
10345573	IDRFOP074110388
10345582	IDRFOP074216305
10346791	IDRFOP074217815
10349302	IDRFOP074215647
10350037	IDRFOP074215507
10350043	IDRFOP074215578
10350092	IDRFOP074108071
10350209	IDRF074219010
10350211	IDRF074219008
10350212	IDRF074219009
10350223	IDRF074219012
10350224	IDRFOP074219002
10350225	IDRF074219006
10351698	IDRFOP07420899X
10351910	IDRFOP074110136
10351916	IDRFOP074215593
10352067	IDRF074218357
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10352142	IDRFOP074215596
10352146	IDRFOP074215601
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10352402	IDRFOP074215848
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AMWTP ID	Historical ID
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10352424	IDRF074218704
10352464	IDRF074218070
10352467	IDRF074216578
10352468	IDRF074218099
10352473	IDRF074218098
10352475	IDRF074218054
10352476	IDRF074111025
10352478	IDRF074111023
10352480	IDRF074111019
10352486	IDRF074218047
10352491	IDRF074218030
10352495	IDRF074216853
10352496	IDRF074111024
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10352566	IDRFOP074217856
10352588	IDRF074218090
10352589	IDRFOP074218708
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10352591	IDRF074218105
10352592	IDRF074218107
10352594	IDRF074218327
10352603	IDRF074218796
10352605	IDRF074218799
10352607	IDRF074218832
10352723	IDRFOP074111099
10352726	IDRF074218699
10352727	IDRF074218072
10352728	IDRFOP074218085
10352730	IDRF074218508
10352731	IDRF074218517
10352732	IDRF074218512
10352735	IDRFOP074218702
10352743	IDRF074218696
10352744	IDRF074218573
10352746	IDRFOP074218700
10352750	IDRFOP074218846
10352853	IDRF074218996
10352854	IDRF074218989
10352855	IDRF074218997
10352856	IDRF074218998

AMWTP ID	Historical ID
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10352858	IDRF074218995
10352859	IDRF074218988
10353162	IDRFOP074215887
10353163	IDRFOP74115890A
10353203	IDRFOP074110039
10353250	IDRFOP074215807
10353445	IDRFOP074215862
10353562	IDRFOP074215852
10353565	IDRFOP074215855
10353566	IDRFOP074215607
10353568	IDRFOP074215476
10353679	IDRFOP074216185
10353948	IDRFOP074219007
10355831	IDRFOP074215599
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10355878	IDRFOP074215861
10356917	IDRF074218710
10356918	IDRF074218695
10356919	IDRFOP074218507
10356923	IDRFOP074218521
10356925	IDRFOP074218514
10356927	IDRFOP074218516
10356929	IDRFOP074218518
10356931	IDRFOP074218513
10356955	IDRFOP074218957
10357102	IDRF074111022
10357106	IDRF074111017
10357109	IDRF074216726
10357114	IDRF074216580
10357192	IDRF074218842
10357193	IDRFOP074218826
10357199	IDRF074218509
10357227	IDRFOP074218520
10357233	IDRF074216559
10357234	IDRF074218375
10357235	IDRF074111073
10357236	IDRF074218370
10357238	IDRF074218479
10357241	IDRFOP074215740
10357242	IDRF074111091
10357246	IDRFOP074218523
10357247	IDRF074111089
10357248	IDRF074111059
10357250	IDRF074218483
10357251	IDRF074111090

AMWTP ID	Historical ID
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10357259	IDRF074111085
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10357262	IDRF074218492
10357267	IDRF074218828
10357272	IDRF074218825
10357277	IDRFOP074218847
10357278	IDRFOP074218821
10357358	IDRFOP074111088
10357557	IDRF074218049
10357558	IDRF074218873
10357559	IDRF074218887
10357564	IDRF074218830
10357565	IDRF074218900
10357566	IDRF074218823
10357567	IDRF074218904
10357568	IDRF074218890
10357569	IDRF074218870
10357570	IDRF074218893
10357571	IDRF074218871
10357572	IDRF074218885
10357573	IDRF074218896
10357574	IDRF074218872
10357575	IDRF074218894
10357576	IDRF074218340
10357577	IDRF074218356
10357582	IDRF074218344
10357584	IDRF074218335
10357595	IDRF074216464
10357596	IDRF074218334
10357597	IDRF074218351
10357598	IDRF074216462
10358240	IDRFOP074215702
10359229	IDRFOP074218773
10359255	IDRFOP074218793
10359256	IDRFOP074217916
10359257	IDRF074110968
10359262	IDRFOP074217835
10359289	IDRF074218583
10359290	IDRFOP074218592
10359292	IDRF074218589
10359294	IDRF074218333
10359299	IDRF074111079
10359301	IDRF074216461
10359302	IDRF074111072

AMWTP ID	Historical ID
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10359306	IDRF074218374
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10359311	IDRF074216973
10359312	IDRF074218342
10359314	IDRF074218595
10359439	IDRFOP0741080XX
10359482	IDRFOP074218579
10359485	IDRF074218546
10359489	IDRF074218604
10359490	IDRF074218607
10359501	IDRF074218606
10359706	IDRF074217932
10359709	IDRF074110965
10359714	IDRFOP074216856
10359716	IDRFOP074111008
10359720	IDRFOP074217872
10359722	IDRFOP074218794
10359724	IDRFOP074218790
10359726	IDRF074218801
10359727	IDRF074218789
10359729	IDRF074218808
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10359731	IDRF074218807
10359732	IDRFOP074218788
10359735	IDRF074218806
10359736	IDRF074218791
10359737	IDRF074218798
10359753	IDRF074218559
10359824	IDRFOP074218522
10359826	IDRF074218553
10359827	IDRF074218550
10359828	IDRF074216451
10359829	IDRF074218530
10359832	IDRF074218549
10359833	IDRF074218544
10359839	IDRFOP074218609
10359841	IDRF074218605
10359845	IDRF074218645
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10359848	IDRF074218657
10359849	IDRFOP074218650

AMWTP ID	Historical ID
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10359871	IDRF074111031
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10359936	IDRFOP074218444
10359938	IDRF074218574
10359939	IDRFOP074216948
10359943	IDRFOP074110955
10359946	IDRF074101960
10359947	IDRF074217949
10359949	IDRF074216727
10359950	IDRF074217917
10359951	IDRFOP074216728
10359953	IDRF074216868
10359954	IDRF074110967
10359959	IDRFOP074216887
10360610	IDRF074111011
10360612	IDRF074216574
10360613	IDRF074219164
10360614	IDRF074219128
10360624	IDRF074216927
10360625	IDRFOP074110990
10360627	IDRF074219173
10360629	IDRFOP074219144
10360631	IDRFOP074219138
10360633	IDRF074219130
10360636	IDRF074110959
10360640	IDRF074110978
10360643	IDRF074110981
10360645	IDRF074110993
10360646	IDRF074216953
10360647	IDRFOP074216731
10361023	IDRFOP074218654
10362255	IDRFOP074218751
10362370	IDRFOP074111056
10362394	IDRFOP074111066
10362397	IDRFOP074218515
10362401	IDRFOP074218404
10362403	IDRFOP074218578
10362404	IDRF074217843
10362405	IDRFOP074218426
10362406	IDRF074217847
10362407	IDRF074110956
10362408	IDRFOP074217846
10362417	IDRFOP074216567

AMWTP ID	Historical ID
10362418	IDRFOP074217834
10362419	IDRFOP074217960
10362420	IDRFOP074217957
10362423	IDRF074218338
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10362549	IDRFOP074217871
10362551	IDRFOP074217833
10362553	IDRFOP074216849
10362555	IDRFOP074217312
10362563	IDRFOP074216819
10362564	IDRF074111007
10362566	IDRFOP074217933
10362568	IDRFOP074217978
10362591	IDRFOP074110942
10362594	IDRFOP074217841
10362692	IDRF074217832
10362694	IDRFOP074216584
10362697	IDRF074219034
10362700	IDRF074219022
10362701	IDRF074219031
10362703	IDRF074219046
10362704	IDRF074219097
10362741	IDRF074217870
10362817	IDRF074218556
10362820	IDRF074218525
10362825	IDRF074218536
10362826	IDRF074218539
10362827	IDRF074216561
10362828	IDRF074218542
10362829	IDRF074218529
10362830	IDRF074111068
10362831	IDRF074111038
10362832	IDRF074111053
10362833	IDRF074217950
10362834	IDRF074217862
10362836	IDRF074217893
10362840	IDRF074216855
10362842	IDRFOP074217851
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10362852	IDRF074217873
10363697	IDRFOP074217967
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10363703	IDRF074111044

AMWTP ID	Historical ID
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10363714	IDRFOP074218437
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10363745	IDRF074217966
10363746	IDRF074217956
10363763	IDRF074218321
10363769	IDRF074218332
10363771	IDRF074218354
10363772	IDRF074218802
10363773	IDRF074218795
10363774	IDRF074218804
10363775	IDRF074218572
10363776	IDRF074111158
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10363778	IDRF074218568
10363779	IDRF074111157
10363782	IDRFOP074218582
10363791	IDRF074111104
10363793	IDRF074218569
10363795	IDRF074218524
10363796	IDRFOP074218436
10363798	IDRF074218703
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10363805	IDRFOP074216854
10363806	IDRF074217840
10363808	IDRF074216683
10363809	IDRFOP074110998
10363813	IDRFOP074217848
10364628	IDRF074216939
10364629	IDRF074216942
10364630	IDRF074217838
10364631	IDRF074216954
10364632	IDRF074216827
10364633	IDRFOP074216871
10364654	IDRF074216826
10364655	IDRF074111005
10364660	IDRF074110980

AMWTP ID	Historical ID
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10365063	IDRF074111084
10365066	IDRFOP074218438
10365071	IDRF074218445
10365072	IDRF074217844
10365073	IDRF074218473
10365074	IDRFOP074218435
10365076	IDRF074111051
10365077	IDRF074216946
10365079	IDRF074218709
10365086	IDRFOP074217852
10365368	IDRF074111069
10365369	IDRF074218270
10365370	IDRF074218600
10365388	IDRF074218684
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10365391	IDRF074218780
10365392	IDRF074218686
10365394	IDRF074111015
10365396	IDRF074217958
10365403	IDRF074111014
10365408	IDRF074218560
10365409	IDRF074218532
10365506	IDRF074218434
10365507	IDRF074218443
10365508	IDRF074218478
10365510	IDRF074218466
10365511	IDRF074218474
10365512	IDRF074218442
10365513	IDRF074218432
10365514	IDRFOP074111092
10365516	IDRFOP074218446
10365518	IDRF074218459
10365520	IDRFOP074218439
10365524	IDRF074218469
10365531	IDRF074218433
10365534	IDRFOP074217790
10365537	IDRF074217889
10365540	IDRFOP074218782
10365542	IDRF074218777
10365543	IDRFOP074218797
10366212	IDRF074216843
10366234	IDRF074111083
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AMWTP ID	Historical ID
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10366537	IDRFOP074216463
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10366591	IDRF074219107
10366592	IDRF074219119
10366593	IDRF074219118
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10366598	IDRF074219117
10366599	IDRFOP074219089
10366601	IDRF074219105
10366602	IDRF074219091
10366603	IDRF074219121
10366604	IDRF074219122
10366605	IDRF074219110
10366606	IDRF074219120
10366634	IDRF074218787
10366684	IDRFOP074218593
10366686	IDRFOP074218594
10366692	IDRF074216384
10366694	IDRF074218585
10366959	IDRF074111098
10366962	IDRF074218597
10366969	IDRF074218602
10366973	IDRFOP074218590
10366975	IDRFOP074218599
10366981	IDRF074218586
10366982	IDRF074218598
10366983	IDRF074218591
10366985	IDRF074218106
10366986	IDRF074218108
10366987	IDRF074218120
10366990	IDRF074218820
10366993	IDRF074218603
10366994	IDRFOP074218601
10366995	IDRF074218296
10366997	IDRFOP074218596

AMWTP ID	Historical ID
10367021	IDRF074218786
10367042	IDRF074218545
10367147	IDRFOP074218561
10367208	IDRFOP074216460
10367213	IDRF074218309
10367388	IDRF074218729
10367396	IDRF074111016
10367402	IDRFOP074217972
10367409	IDRF074111013
10367418 overpacked into 10417359[(b)]	IDRF074216725 overpacked into IDRFOP074216725
10367426	IDRF074111010
10367619	IDRF074218739
10367624	IDRF074218343
10367987	IDRF074216551
10367992	IDRF074218326
10367996	IDRF074218755
10368021	IDRF074218743
10368080	IDRF074218680
10368081	IDRF074218669
10368096	IDRFOP074218681
10368099	IDRF074218133
10368137	IDRF074218771
10368140	IDRF074218774
10368143	IDRF074218738
10368145	IDRF074218741
10368150	IDRF074218763
10368201	IDRF074218746
10368202	IDRFOP074218752
10368204	IDRF074218748
10368205	IDRF074218747
10368207	IDRFOP074218749
10368209	IDRFOP074218735
10368212	IDRF074218754
10368213	IDRFOP074218670
10368215	IDRF074218217
10368250	IDRF074218756
10368484	IDRF074218761
10368486	IDRF074218768
10368487	IDRF074218765
10368516	IDRFOP074218273
10368518	IDRFOP074218301
10368530	IDRFOP074218319
10368536	IDRF074111063
10368538	IDRF074218302

AMWTP ID	Historical ID
10368540	IDRF074218368
10368541	IDRF074111058
10368542	IDRF074111067
10368543	IDRF074111065
10368546	IDRF074216558
10368549	IDRF074218128
10368551	IDRF074218272
10368645	IDRFOP074218666
10368647	IDRF074218671
10368649	IDRF074218169
10368664	IDRFOP074216459
10368666	IDRF074218190
10368668	IDRF074216458
10368669	IDRF074111045
10368670	IDRF074218136
10368672	IDRFOP074111037
10368674	IDRF074218155
10368675	IDRF074218141
10368683	IDRF074218121
10368685	IDRF074216842
10368687	IDRF074216825
10368692	IDRFOP074218131
10368694	IDRF074218124
10368699	IDRFOP074111033
10368746	IDRF074111036
10368787	IDRF074218097
10368796	IDRF074111027
10368799	IDRF074218117
10368801	IDRF074218307
10368802	IDRF074111062
10368803	IDRF074216352
10368804	IDRF074218310
10368805	IDRFOP074218346
10368806	IDRF074218299
10368807	IDRF074216566
10368810	IDRFOP074218267
10368811	IDRFOP074218306
10368814	IDRF074218289
10368815	IDRF074218268
10368816	IDRFOP074218317
10368818	IDRF074218692
10368819	IDRF074218647
10368822	IDRF074218693
10368823	IDRF074218659
10368827	IDRF074218372
10368828	IDRF074218399

AMWTP ID	Historical ID
10368829	IDRF074218397
10368830	IDRF074216555
10368831	IDRF074218376
10368832	IDRF074218350
10368833	IDRFOP074218371
10368834	IDRF074218365
10368837	IDRF074218360
10368838	IDRF074218364
10368839	IDRF074111074
10368840	IDRF074111078
10368841	IDRF074218173
10368842	IDRF074218139
10368847	IDRF074218216
10368889	IDRF074218154
10368890	IDRF074218262
10368891	IDRFOP074216552
10368893	IDRF074218164
10368921	IDRFOP074216918
10370321	IDRFOP074216658
10370324	IDRFOP074216586
10370335	IDRFOP074218954
10370339	IDRF074111018
10370342	IDRF074218052
10370343	IDRF074216861
10370344	IDRF074216864
10370348	IDRF074216579
10370352	IDRF074216557
10370374	IDRF074218166
10370375	IDRF074218148
10370376	IDRF074111041
10370377	IDRF074218168
10370378	IDRFOP074218764
10370381	IDRF074218991
10370383	IDRF074218990
10370384	IDRF074218762
10370385	IDRF074218994
10370390	IDRF074218955
10370391	IDRF074218992
10370396	IDRF074219015
10370398	IDRF074219013
10370417	IDRF074219003
10370420	IDRF074111106
10370422	IDRF074218818
10370423	IDRF074218819
10370425	IDRF074218960
10370426	IDRF074218958

AMWTP ID	Historical ID
10370427	IDRF074218966
10370428	IDRF074218875
10370429	IDRF074218959
10370431	IDRF074218031
10370438	IDRF074216820
10370439	IDRF074216875
10370440	IDRF074216922
10370441	IDRF074216457
10370442	IDRF074216949
10370443	IDRF074111004
10370444	IDRF074218050
10370448	IDRF074111009
10370455	IDRFOP074217935
10370458	IDRFOP074216821
10370459	IDRFOP074216829
10370461	IDRF074111087
10370468	IDRF074111152
10370477	IDRFOP074216610
10370480	IDRFOP074216577
10370482	IDRFOP074217959
10370484	IDRF074216850
10370486	IDRFOP074216560
10370496	IDRFOP074111026
10370511	IDRF074218348
10370593	IDRF074218745
10370594	IDRF074218742
10371552	IDRFOP074218937
10371560	IDRF074218939
10371595	IDRFOP074218315
10371597	IDRF074218380
10371599	IDRF074218295
10371600	IDRF074218249
10371610	IDRFOP074111034
10371624	IDRFOP074217462
10371814	IDRFOP074218570
10371815	IDRFOP074218143
10371816	IDRFOP074111055
10371817	IDRF074111029
10371818	IDRF074218140
10371819	IDRFOP074218142
10371821	IDRFOP074218151
10371825	IDRF074218869
10371827	IDRF074218898
10371828	IDRF074218855
10371829	IDRF074218851
10371830	IDRF074218859

AMWTP ID	Historical ID
10371831	IDRF074218839
10371834	IDRF074218934
10371835	IDRF074218915
10371843	IDRFOP074218362
10371850	IDRF074111048
10371851	IDRF074111057
10371856	IDRF074111052
10371945	IDRFOP074218891
10371965	IDRFOP074219014
10371966	IDRFOP074216665
10371968	IDRFOP074218701
10371969	IDRFOP074218961
10371970	IDRFOP074219005
10371971	IDRFOP074218519
10371972	IDRFOP074216594
10371973	IDRFOP074216830
10371974	IDRFOP074111020
10372024	IDRFOP074218470
10372026	IDRFOP074218377
10372028	IDRFOP074218557
10372137	IDRFOP074217866
10372138	IDRFOP074218576
10372140	IDRFOP074218792
10372141	IDRFOP074218800
10372266	IDRFOP074218314
10372267	IDRFOP074218663
10372269	IDRFOP074218611
10372285	IDRFOP074110944
10378204	IDRFOP074111021
10378205	IDRFOP074218707
10378206	IDRFOP074218487
10378207	IDRFOP074218480
10378208	IDRFOP074218482
10378209	IDRFOP074111060
10378211	IDRFOP074218341
10378882	IDRFOP074219004
10378884	IDRFOP074218055
10378886	IDRFOP074218732
10400557	IDRFOP074217895
10408631	IDRFOP074216679

FOR INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-90, Rev. 0

Sampling Report for BNINW216, Lot 21

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-10431)

James Jackson

TRU Programs Manager

09/21/11

Date

Sampling Report for BNINW216, Lot 21

Purpose

The purpose of this sampling report is to provide the solid sampling characterization data from the core sampling of randomly selected containers from Lot 21 of waste stream BNINW216 in accordance with Section C2-1a of MP-TRUW-8.2, Quality Assurance Project Plan, and under a program approved by the New Mexico Environment Department (NMED).

Introduction

This waste stream is First and Second Stage Sludge from the Rocky Flats Plant. The 859 containers that make up BNINW216 Lot 21 are listed in Attachment B. These containers were retrieved from the Transuranic Storage Area–Retrieval Enclosure (TSA–RE) or the accessible storage buildings (i.e., Type II storage modules).

Selection Process

Ten random numbers were generated to ensure a sufficient number of candidates were available to provide a minimum of five containers for coring. The ten candidate drums were selected for coring using a simple random selection method in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis. AMWTP memorandum SPC-006-11, Solids Sampling Plan for BNINW216 – Lot 21, presents the evaluation for the required number of samples, Form-1196 (Randomly Selected Container Report), the list of randomly selected containers, and the list of containers retrieved and assigned to Lot 21. There are two addendums to the sampling plan to document the changes in the AMWTP container numbers as a result of overpacking two containers (reference memorandums SPC-007-11, Addendum to Solids Sampling Plan for BNINW216-Lot 21 and SPC-008-11, Addendum to Solids Sampling Plan for BNINW216-Lot 21). Drums were sequentially ordered by the AMWTP assigned drum number and are listed in Attachment B.

The sampling was conducted by AMWTP using procedure INST-OI-16, Drum Coring Operations. The first five viable random selected containers were sampled (i.e., 1, 2, 3, 4, and 5). The selection order attributed to the random number, associated AMWTP container number, and the historical container identification number for the first five randomly selected containers are presented in Table 1.

Table 1. BNINW216, Lot 21 containers randomly selected for coring.

Selection Order	AMWTP Container Number	Historical ID
1	10368487	IDRF074218765
2	10338202	IDRFOP074215974
3	10301140	IDRFOP074110317
4	10417359	IDRFOP074216725
5	10415515	IDRFOP074218440

The evaluation to determine the required number of samples for Lot 21 is presented in Attachment A. The required number of samples was calculated for each analyte in accordance with MP-TRUW-8.25. The required number was met at five samples.

Data Results

The statistical evaluation of the analytical data collected for BNINW216, Lot 21, is presented in Tables 2, 3A, 3B, 4A, and 4B. Table 5 lists the correlation of container numbers to solids analysis data packages. Table 7 lists the correlation of container number to solids sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA hazardous waste numbers (HWNs) for the BNINW216 waste stream. Per Section C2-1a of MP-TRUW-8.2 the AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section C2-2a and assign EPA HWNs as appropriate.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if solid sampling analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL) values. Cadmium, chromium, and lead UCL_{90} results for Lot 21 were above the PRQL values for metals associated with toxicity characteristic HWNs (Table 2). No solid sampling UCL_{90} results for Lot 21 were above the PRQL values for volatile organic compounds (VOCs) (Table 3A) or for semi-volatile organic compounds (SVOCs) (Table 4A).

Lot 21 analyses included evaluation of SVOC target compounds bis(2-ethylhexyl)phthalate and fluoranthene (Table 4A). Bis(2-ethylhexyl)phthalate and fluoranthene were identified as tentatively identified compounds (TICs) in over 25% of the samples analyzed in BNINW216, Lot 1, and were added to the target analyte list as required by the MP-TRUW-8.2. The SVOC data from these compounds did not result in the assignment of additional HWNs to the First and Second Stage Sludge waste stream based on the results from Lot 1.

In conclusion, the originally assigned HWNs from the BNINW216 Waste Stream Profile Form are retained and no additional HWNs are required. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, and D022, and listed HWNs F001, F002, F003, F005, F006, F007, and F009.

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: **BNINW216**

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	Solid sampled containers only in BNINW216 lot 21
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	Solid sampled containers only in BNINW216 lot 21
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	WAP headspace gas sampling not required for S3000 waste.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	

WSPF No.: BNINW216

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed prior to entering the headspace gas data into WDS
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	Solid sampling lot only.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	Solid sampling QAOs only.
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	Solid sampling lot only.

WSPF No.: BNINW216

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	Solid sampling lot only.
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	This is a solid sampling lot. The only applicable batches are solid sampling and analytical results.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed Name	Signature	Date
Site Project Manager	Nancy Kirk	Signature on file	09/21/2011
2nd Site Project Manager	Sean Caniff	Signature on file	09/21/2011

WSPF Number: BNINW216 Lot Number: 21

SPM

Printed Name: Nancy Kirk Signature: Signature on file Date: 09/21/2011

2nd SPM

Printed Name: Sean Caniff Signature: Signature on file Date: 09/21/2011

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

WSPF Number BNINW216 Lot Number 21

Table 2. Metals Summary Data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number [c]
Arsenic [d]	5	5	Natural log	3.33	1.61	1.15	2.39	4.61	100	D004 [e]
Barium [d]	5	5	Natural log	5.01	3.86	0.928	4.50	7.60	2000	D005 [e]
Cadmium [d]	5	5	Natural log	7.55	4.28	3.03	6.36	3.00	20	D006 [f]
Chromium	5	5	None	390	302	158	411	-	100	D007 [f]
Lead [d]	5	5	Natural log	8.48	6.10	1.37	7.04	4.61	100	D008 [f]
Mercury [d]	5	4	Natural log	2.83	-0.815	2.97	1.22	1.39	4	D009 [e]
Selenium	5	2	None	2.00	0.990	0.651	1.44	-	20	D010 [e]
Silver [d]	5	4	Natural log	3.95	1.31	2.95	3.33	4.61	100	D011 [e]
Antimony [d]	5	1	Natural log	0.742	-0.694	0.803	-0.144	4.61	100	N/A [h]
Beryllium	5	5	None	440	241	158	349	-	100	N/A [g, h]
Nickel	5	5	None	300	176	147	277	-	100	N/A [h]
Thallium [d]	5	1	Natural log	-0.223	-0.780	0.311	-0.567	4.61	100	N/A [h]
Vanadium	5	5	None	31.0	17.4	9.94	24.3	-	100	N/A [h]
Zinc	5	5	None	290	208	67.6	254	-	100	N/A [h]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. Spent stripping, cleaning, and plating operations in which cyanides and chromium were used are included in this waste stream; therefore, EPA HWNs F006, F007, and F009 are applied based on AK for the waste stream.

d. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

e. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{90} results for the assigned compounds are not above the PRQL.

f. These HWNs, assigned by AK, were confirmed by characterization and are retained for this waste stream.

g. P015 for beryllium as defined in 40 CFR 261 and addressed in RPT-TRUW-09 is not assigned to the waste. The reported values are all less than 1% for beryllium.

h. There are no associated toxicity characteristic HWNs with these analytes.

Did the data support EPA hazardous Waste Numbers assigned by AK? Yes X No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 3A. Total VOC Summary Data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,1-Dichloroethylene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
trans-1,2-Dichloroethylene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,1,1-Trichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	F001/ F002 [e]
1,1,2,2-Tetrachloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	F002 [e]
1,1,2-Trichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
1,2-Dichloroethane	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Acetone [c]	5	1	Natural log	1.63	-0.135	0.987	0.542	4.61	100	F003 [e]
Benzene	5	0	None	0.195	0.180	0.010	[d]	-	10	F005 [e]
Bromoform	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Butanol [c]	5	1	Natural log	2.10	-0.040	1.20	0.782	4.61	100	N/A
Carbon disulfide	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Carbon tetrachloride	5	0	None	0.195	0.180	0.010	[d]	-	10	F001 [e]
Chlorobenzene	5	0	None	0.195	0.180	0.010	[d]	-	10	F002 [e]
Chloroform	5	0	None	0.195	0.180	0.010	[d]	-	10	D022 [e]
Ethyl benzene	5	0	None	0.195	0.180	0.010	[d]	-	10	N/A
Ethyl ether	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Isobutanol	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Methanol [c]	5	2	Natural log	3.43	1.13	1.47	2.14	4.61	100	F003 [e]
Methyl ethyl ketone	5	0	None	0.600	0.560	0.022	[d]	-	100	N/A
Methylene chloride	5	0	None	0.295	0.271	0.015	[d]	-	10	F001/ F002 [e]
Pyridine	5	0	None	1.80	1.70	0.061	[d]	-	100	N/A
o-Xylene	5	0	None	0.195	0.180	0.010	[d]	-	10	F003 [e]
m- & p-Xylene	5	0	None	0.390	0.361	0.019	[d]	-	10	F003 [e]
Tetrachloroethylene	5	3	None	2.20	0.969	0.845	1.55	-	10	F001/ F002 [e]
Toluene	5	0	None	0.195	0.180	0.010	[d]	-	10	F005 [e]
Trichloroethylene [c]	5	3	Natural log	1.03	-0.741	1.14	0.038	2.30	10	F001/ F002 [e]
Trichlorofluoromethane	5	0	None	0.295	0.271	0.015	[d]	-	10	N/A
Vinyl chloride	5	0	None	0.195	0.180	0.010	[d]	-	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. The maximum, mean, SD, UCL_{90} and PRQL for these analytes are presented as transformed values.

d. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

e. These HWNs, assigned by AK, are applied to the waste stream even though UCL_{90} results for the assigned compounds are not above the associated PRQL.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 3B. Total VOC Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Calculations performed by:

Printed Name: N/A Signature: N/A Date: N/A

Verification of % Detected Calculation:

Printed Name: N/A Signature: N/A Date: N/A

WSPF Number BNINW216 Lot Number 21

Table 4A. Total SVOC Summary Data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA Number
1,2-Dichlorobenzene (ortho-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
1,4-Dichlorobenzene	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
2,4-Dinitrophenol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
2,4-Dinitrotoluene	5	0	None	0.100	0.099	0.003	[d]	-	2.6	N/A
bis(2-Ethylhexyl)phthalate [c, e]	5	4	Natural log	2.77	-0.208	1.84	1.06	3.69	40	N/A
Fluoranthene [c, f]	5	2	Natural log	0.693	-1.31	1.42	-0.338	3.69	40	N/A
Hexachlorobenzene	5	0	None	0.100	0.099	0.003	[d]	-	2.6	N/A
Hexachloroethane	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
o-Cresol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
m- & p-Cresol	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
Nitrobenzene	5	0	None	0.100	0.099	0.003	[d]	-	40	N/A
Pentachlorophenol [c]	5	1	Natural log	0.742	-1.70	1.37	-0.766	3.69	40	N/A
Phenol [g]	5	3	None	0.560	0.344	0.226	0.499	-	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. The maximum, mean, SD, UCL_{90}, and PRQL for this analyte are presented as transformed values.

d. All measurements are below detection; therefore, the UCL_{90} for the lot is not calculated.

e. Bis(2-ethylhexyl)phthalate was detected as a TIC in BNINW216, Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. The CAS # for bis(2-ethylhexyl)phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNINW216, Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNINW218 Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by MP-TRUW-8.2. Phenol is not an analyte for the BNINW216 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No ____

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Statistics performed by:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 4B. Total SVOC Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Pentachlorobiphenyl	0.55	1	5	20%	1	107	0.9%
2,4-Dichlorophenol	0.68	1	5	20%	1	107	0.9%

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Number(s): N/A

Calculations performed by:

Printed Name: Nancy Kirk Signature: Signature on file Date: 09/21/2011

Verification of % Detected Calculation:

Printed Name: Jason Kettel Signature: Signature on file Date: 09/21/2011

WSPF Number BNINW216 Lot Number 21

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10301140	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10338202	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10368487	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10415515	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M
10417359	N/A	N/A	N/A	N/A	SSC11-00004	ALD11024S ALD11024V ALD11024N ALD11024M

NOTE: ***These containers are being used for solid sampling data only in this Sampling Report. RTR or VE and RA will be performed on these containers and validated prior to certification for shipment to WIPP. WAP HSG is not required to be performed on these containers of homogeneous solids.***

WSPF Number: BNINW216 Lot Number: 21

Table 7. Correlation of Container Numbers to Sample Numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s)
10301140	N/A	10417903, 10417904, 10417907
10338202	N/A	10417610, 10417611, 10417614
10368487	N/A	10417125, 10417127, 10417131
10415515	N/A	10418481, 10418482, 10418485
10417359	N/A	10418318, 10418319, 10418322

NOTE: *WAP HSG is not required to be performed on these containers of homogeneous solids.*

Attachment A
Evaluation of Required Number of Samples. BNINW216 Lot 21

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
Arsenic [h]	5	5	Natural log	3.33	1.61	1.15	2.39	4.61	100	d	HWN D004 applied
Barium [h]	5	5	Natural log	5.01	3.86	0.928	4.50	7.60	2000	d	HWN D005 applied
Cadmium [h]	5	5	Natural log	7.55	4.28	3.03	6.36	3.00	20	d	HWN D006 applied
Chromium	5	5	None	390	302	158	411	-	100	d	HWN D007 applied
Lead [h]	5	5	Natural log	8.48	6.10	1.37	7.04	4.61	100	d	HWN D008 applied
Mercury [h]	5	4	Natural log	2.83	-0.815	2.97	1.22	1.39	4	d	HWN D009 applied
Selenium	5	2	None	2.00	0.990	0.651	1.44	-	20	d	HWN D010 applied
Silver [h]	5	4	Natural log	3.95	1.31	2.95	3.33	4.61	100	d	HWN D011 applied
Antimony [h]	5	1	Natural log	0.742	-0.694	0.803	-0.144	4.61	100	e	No associated HWN
Beryllium	5	5	None	440	241	158	349	-	100	5	HWN not required to be applied [i]
Nickel	5	5	None	300	176	147	277	-	100	e	No associated HWN
Thallium [h]	5	1	Natural log	-0.223	-0.780	0.311	-0.567	4.61	100	e	No associated HWN
Vanadium	5	5	None	31.0	17.4	9.94	24.3	-	100	e	No associated HWN
Zinc	5	5	None	290	208	67.6	254	-	100	e	No associated HWN
1,1-Dichloroethene (1,1-Dichloroethylene)	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,1,1-Trichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F001/F002 applied
1,1,2,2-Tetrachloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F002 applied
1,1,2-Trichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
1,2-Dichloroethane	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Acetone [h]	5	1	Natural log	1.63	-0.135	0.987	0.542	4.61	100	d	HWN F003 applied

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
Benzene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F005 applied
Bromoform	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Butanol [h]	5	1	Natural log	2.10	-0.040	1.20	0.782	4.61	100	5 [i]	HWN not required to be applied [j]
Carbon disulfide	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Carbon tetrachloride	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F001 applied
Chlorobenzene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F002 applied
Chloroform	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN D022 applied
Ethyl benzene	5	0	None	0.195	0.180	0.010	-	-	10	f	No samples above MDL
Ethyl ether	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Isobutanol	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Methanol [h]	5	2	Natural log	3.43	1.13	1.47	2.14	4.61	100	d	HWN F003 applied
Methyl ethyl ketone	5	0	None	0.600	0.560	0.022	-	-	100	f	No samples above MDL
Methylene chloride	5	0	None	0.295	0.271	0.015	-	-	10	d, f	HWN F001/F002 applied
Pyridine	5	0	None	1.80	1.70	0.061	-	-	100	f	No samples above MDL
o-Xylene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F003 applied
m- & p-Xylene	5	0	None	0.390	0.361	0.019	-	-	10	d, f	HWN F003 applied
Tetrachloroethene (Tetrachloroethylene)	5	3	None	2.20	0.969	0.845	1.55	-	10	d	HWNs F001/F002 applied
Toluene	5	0	None	0.195	0.180	0.010	-	-	10	d, f	HWN F005 applied
Trichloroethene [h] (Trichloroethylene)	5	3	Natural log	1.03	-0.741	1.14	0.038	2.30	10	d	HWNs F001/F002 applied
Trichlorofluoromethane	5	0	None	0.295	0.271	0.015	-	-	10	f	No samples above MDL
Vinyl chloride	5	0	None	0.195	0.180	0.010	-	-	4	f	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
2,4-Dinitrophenol	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [g]	Comments [c]
2,4-Dinitrotoluene	5	0	None	0.100	0.099	0.003	-	-	2.6	f	No samples above MDL
bis(2-Ethylhexyl) phthalate [h, k]	5	4	Natural log	2.77	-0.208	1.84	1.06	3.69	40	5	HWN not required to be applied [j]
Fluoranthene [h, l]	5	2	Natural log	0.693	-1.31	1.42	-0.338	3.69	40	5	HWN not required to be applied [j]
Hexachlorobenzene	5	0	None	0.100	0.099	0.003	-	-	2.6	f	No samples above MDL
Hexachloroethane	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
2-Methylphenol (o-Cresol)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
Nitrobenzene	5	0	None	0.100	0.099	0.003	-	-	40	f	No samples above MDL
Pentachlorophenol [h]	5	1	Natural log	0.742	-1.70	1.37	-0.766	3.69	40	5	HWN not required to be applied [j]
Phenol [m]	5	3	None	0.560	0.344	0.226	0.499	-	40	5	HWN not required to be applied [j]

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} for the analyte is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, UCL_{90}, and PRQL.

c. Spent stripping, cleaning, and plating solutions from electroplating operations in which cyanides and chromium were used are included in this waste stream; therefore, EPA HWNs F006, F007, and F009 are applied, based on AK.

d. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not assigned (i.e., it only applies to those cases where a site intends to establish that the constituent is below the regulatory threshold and the associated EPA HWN does not apply). If the EPA HWN has been assigned, the required number "n" is not reported.

e. If there is no HWN associated with an analyte, then that analyte will not be used to define the number of required samples.

f. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

g. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

h. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.

i. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-09 is not assigned to the waste. The reported values were all less than 1% for beryllium.

j. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} result for the waste stream and lot is below the PRQL and the required number "n" has been met.

k. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. Bis(2-Ethylhexyl) phthalate is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

l. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by MP-TRUW-8.2. Fluoranthene is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

m. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by MP-TRUW-8.2. Phenol is not a target analyte for the BN222 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2

Attachment B - Container List BNINW216, Lot 21

AMWTP ID	Historical ID
10024431	IDRFOP074115272
10032636	IDRFOP074115948
10032637	IDRFOP074115982
10065340	IDRFOP074216794
10085467	IDRFOP074110818
10088785	IDRFOP074110813
10109208	IDRF074223260
10109434	IDRF074223368
10130518	IDRF074114955A
10133151	IDRF074224081A
10133155	IDRF074114886
10135797	IDRF074220943
10136946	IDRF074224153A
10140254	IDRFOP074215506
10140428	IDRFOP074109990
10140429	IDRFOP0741100X2
10140433	IDRFOP074215538
10140589	IDRFOP074108989
10140597	IDRFOP074110035
10140623	IDRFOP007419991
10140631	IDRFOP074215577
10140636	IDRFOP074215552
10140938	IDRFOP074215572
10145257	IDRFOP007419997
10145294	IDRFOP074215529
10145307	IDRFOP074105100
10145315	IDRFOP074110005
10145325	IDRFOP074201554
10145504	IDRFOP074215574
10145521	IDRFOP074223518
10145527	IDRFOP074215547
10145594	IDRFOP074215569
10145595	IDRFOP074215486
10151673	IDRF074220140
10157220	IDRFOP074111869
10162641	IDRFOP074215582
10166862	IDRFOP074112728
10170262	IDRF074221242A
10174063	IDRFOP074116189
10177681	IDRFOP074216749
10177749	IDRFOP074110618
10177844	IDRFOP074110512
10177937	IDRFOP074216984
10184600	IDRFOP074215649

AMWTP ID	Historical ID
10184783	IDRF074220032
10190529	IDRFOP074110705
10195872	IDRFOP074110764
10202081	IDRFOP074110563
10207310	IDRFOP074111578
10229706	IDRFOP074222262
10242767	IDRF074112293A
10291504	IDRFOP074216096
10291508	IDRFOP074216098
10291515	IDRFOP074216318
10291521	IDRFOP074110276
10295858	IDRFOP074108069
10295859	IDRFOP074216262
10299815	IDRFOP074110349
10299818	IDRFOP074216092
10299820	IDRFOP074110275
10299832	IDRFOP074216088
10299848	IDRFOP074110352
10300364	IDRFOP074210319
10301110	IDRFOP074216187
10301122	IDRFOP074216191
10301124	IDRFOP074216192
10301140	IDRFOP074110317
10301141	IDRFOP074110263
10301142	IDRFOP074110252
10301145	IDRFOP074110270
10301146	IDRFOP74110265A
10302503	IDRFOP074110198
10303155	IDRFOP074216089
10303179	IDRFOP07411013X
10303954	IDRFOP07413X203
10303976	IDRFOP074110201
10303999	IDRFOP074110206
10304010	IDRFOP074216188
10304089	IDRFOP074110205
10305164	IDRFOP074216186
10305170	IDRFOP07411X316
10305446	IDRFOP074110271
10305466	IDRFOP074215789
10307575	IDRFOP074216091
10308023	IDRFOP074215797
10308035	IDRFOP074216087
10308226	IDRFOP074215708
10308497	IDRFOP074216085

AMWTP ID	Historical ID
10308705	IDRFOP074216280
10308717	IDRFOP074110342
10308719	IDRFOP074216267
10308723	IDRFOP074216274
10308806	IDRFOP074216316
10308810	IDRFOP074216300
10308813	IDRFOP074216344
10308961	IDRFOP074110343
10308987	IDRF074110350
10309117	IDRFOP074110347
10309145	IDRFOP074216282
10309155	IDRFOP074216284
10311322	IDRFOP074110253
10311323	IDRFOP074110362
10311324	IDRFOP074110344
10311325	IDRFOP074110387
10311326	IDRFOP074110401
10311327	IDRFOP074110272
10311419	IDRFOP074216197
10311510	IDRFOP074110386
10311723	IDRFOP074110226
10311725	IDRFOP074110254
10311727	IDRFOP074110255
10311735	IDRFOP074110156
10311799	IDRFOP074216224
10313840	IDRFOP074215952
10313858	IDRFOP07421599X
10314262	IDRFOP074215946
10314754	IDRFOP074216293
10314759	IDRFOP074110373
10314760	IDRFOP074216261
10314811	IDRFOP074110354
10314970	IDRFOP074110376
10314972	IDRFOP074110379
10316829	IDRFOP074215321
10316850	IDRFOP074111006
10317211	IDRFOP074201083
10318820	IDRFOP74215617A
10318841	IDRFOP074110115
10319032	IDRFOP074110040
10319065	IDRFOP074110059
10319507	IDRFOP074215183
10319515	IDRFOP074215696
10320616	IDRFOP074219XXX
10322648	IDRFOP074215556
10323539	IDRFOP074215631

AMWTP ID	Historical ID
10324460	IDRFOP074100007
10325444	IDRFOP074200156
10325713	IDRFOP074215859
10326223	IDRFOP074110105
10326229	IDRFOP074110140
10326237	IDRFOP074215983
10326798	IDRFOP074201568
10327925	IDRFOP074215610
10328623	IDRFOP074215972
10328641	IDRFOP074215645
10330197	IDRFOP074215829
10330375	IDRF074219178
10330404	IDRFOP074215488
10330407	IDRFOP074109985
10330502	IDRFOP74116025A
10333508	IDRFOP074217811
10333512	IDRFOP074217818
10333520	IDRFOP074217810
10333577	IDRFOP074111118
10333618	IDRFOP074216046
10333620	IDRFOP074216042
10333864	IDRFOP074215500
10333874	IDRFOP074109967
10335746	IDRFOP074111095
10335910	IDRFOP074218932
10336165	IDRFOP074215980
10336171	IDRFOP074216032
10336184	IDRFOP074215979
10336186	IDRFOP074216041
10336319	IDRFOP074216259
10336331	IDRFOP074216031
10336335	IDRFOP074216034
10336339	IDRFOP074216045
10336341	IDRFOP074216050
10336351	IDRFOP074216038
10336353	IDRFOP074216029
10336355	IDRFOP074216030
10336361	IDRFOP074110249
10338032	IDRFOP074217822
10338169	IDRFOP074110313
10338202	IDRFOP074215974
10338215	IDRFOP074215943
10338259	IDRFOP074217814
10338295	IDRFOP074217816
10338297	IDRFOP074217826
10339174	IDRFOP074111228

AMWTP ID	Historical ID
10339214	IDRFOP074218760
10339719	IDRFOP074111150
10339723	IDRFOP074111143
10339726	IDRFOP074111146
10339729	IDRFOP074218779
10339730	IDRFOP074218778
10339732	IDRFOP074218785
10339737	IDRF074218982
10340578	IDRFOP074215929
10340590	IDRFOP0742159XX
10341351	IDRFOP074111226
10341357	IDRFOP074219092
10341367	IDRFOP74111134B
10341483	IDRFOP074219132
10342024	IDRF074219011
10342716	IDRFOP074111216
10342738	IDRFOP074219037
10343970	IDRFOP074218464
10345560	IDRFOP074110403
10345562	IDRFOP074216199
10345563	IDRFOP074216319
10345570	IDRFOP074216343
10345573	IDRFOP074110388
10345582	IDRFOP074216305
10346791	IDRFOP074217815
10349302	IDRFOP074215647
10350037	IDRFOP074215507
10350043	IDRFOP074215578
10350092	IDRFOP074108071
10350209	IDRF074219010
10350211	IDRF074219008
10350212	IDRF074219009
10350223	IDRF074219012
10350224	IDRFOP074219002
10350225	IDRF074219006
10351698	IDRFOP07420899X
10351910	IDRFOP074110136
10351916	IDRFOP074215593
10352067	IDRF074218357
10352124	IDRFOP074215622
10352142	IDRFOP074215596
10352146	IDRFOP074215601
10352328	IDRFOP074218999
10352402	IDRFOP074215848
10352410	IDRF074111159
10352411	IDRF074111161

AMWTP ID	Historical ID
10352412	IDRF074218824
10352413	IDRF074218822
10352414	IDRF074111160
10352416	IDRF074218827
10352417	IDRF074218829
10352420	IDRF074218697
10352424	IDRF074218704
10352464	IDRF074218070
10352467	IDRF074216578
10352468	IDRF074218099
10352473	IDRF074218098
10352475	IDRF074218054
10352476	IDRF074111025
10352478	IDRF074111023
10352480	IDRF074111019
10352486	IDRF074218047
10352491	IDRF074218030
10352495	IDRF074216853
10352496	IDRF074111024
10352515	IDRFOP074215776
10352566	IDRFOP074217856
10352588	IDRF074218090
10352589	IDRFOP074218708
10352590	IDRF074218091
10352591	IDRF074218105
10352592	IDRF074218107
10352594	IDRF074218327
10352603	IDRF074218796
10352605	IDRF074218799
10352607	IDRF074218832
10352723	IDRFOP074111099
10352726	IDRF074218699
10352727	IDRF074218072
10352728	IDRFOP074218085
10352730	IDRF074218508
10352731	IDRF074218517
10352732	IDRF074218512
10352735	IDRFOP074218702
10352743	IDRF074218696
10352744	IDRF074218573
10352746	IDRFOP074218700
10352750	IDRFOP074218846
10352853	IDRF074218996
10352854	IDRF074218989
10352855	IDRF074218997
10352856	IDRF074218998

AMWTP ID	Historical ID
10352857	IDRF074218993
10352858	IDRF074218995
10352859	IDRF074218988
10353162	IDRFOP074215887
10353163	IDRFOP74115890A
10353203	IDRFOP074110039
10353250	IDRFOP074215807
10353445	IDRFOP074215862
10353562	IDRFOP074215852
10353565	IDRFOP074215855
10353566	IDRFOP074215607
10353568	IDRFOP074215476
10353679	IDRFOP074216185
10353948	IDRFOP074219007
10355831	IDRFOP074215599
10355850	IDRFOP074110154
10355878	IDRFOP074215861
10356917	IDRF074218710
10356918	IDRF074218695
10356919	IDRFOP074218507
10356923	IDRFOP074218521
10356925	IDRFOP074218514
10356927	IDRFOP074218516
10356929	IDRFOP074218518
10356931	IDRFOP074218513
10356955	IDRFOP074218957
10357102	IDRF074111022
10357106	IDRF074111017
10357109	IDRF074216726
10357114	IDRF074216580
10357192	IDRF074218842
10357193	IDRFOP074218826
10357199	IDRF074218509
10357227	IDRFOP074218520
10357233	IDRF074216559
10357234	IDRF074218375
10357235	IDRF074111073
10357236	IDRF074218370
10357238	IDRF074218479
10357241	IDRFOP074215740
10357242	IDRF074111091
10357246	IDRFOP074218523
10357247	IDRF074111089
10357248	IDRF074111059
10357250	IDRF074218483
10357251	IDRF074111090

AMWTP ID	Historical ID
10357255	IDRF074218488
10357256	IDRF074218477
10357259	IDRF074111085
10357260	IDRF074218481
10357262	IDRF074218492
10357267	IDRF074218828
10357272	IDRF074218825
10357277	IDRFOP074218847
10357278	IDRFOP074218821
10357358	IDRFOP074111088
10357557	IDRF074218049
10357558	IDRF074218873
10357559	IDRF074218887
10357564	IDRF074218830
10357565	IDRF074218900
10357566	IDRF074218823
10357567	IDRF074218904
10357568	IDRF074218890
10357569	IDRF074218870
10357570	IDRF074218893
10357571	IDRF074218871
10357572	IDRF074218885
10357573	IDRF074218896
10357574	IDRF074218872
10357575	IDRF074218894
10357576	IDRF074218340
10357577	IDRF074218356
10357582	IDRF074218344
10357584	IDRF074218335
10357595	IDRF074216464
10357596	IDRF074218334
10357597	IDRF074218351
10357598	IDRF074216462
10358240	IDRFOP074215702
10359229	IDRFOP074218773
10359255	IDRFOP074218793
10359256	IDRFOP074217916
10359257	IDRF074110968
10359262	IDRFOP074217835
10359289	IDRF074218583
10359290	IDRFOP074218592
10359292	IDRF074218589
10359294	IDRF074218333
10359299	IDRF074111079
10359301	IDRF074216461
10359302	IDRF074111072

AMWTP ID	Historical ID
10359303	IDRF074218355
10359304	IDRF074216553
10359305	IDRF074218330
10359306	IDRF074218374
10359307	IDRF074111076
10359310	IDRF074218358
10359311	IDRF074216973
10359312	IDRF074218342
10359314	IDRF074218595
10359439	IDRFOP0741080XX
10359482	IDRFOP074218579
10359485	IDRF074218546
10359489	IDRF074218604
10359490	IDRF074218607
10359501	IDRF074218606
10359706	IDRF074217932
10359709	IDRF074110965
10359714	IDRFOP074216856
10359716	IDRFOP074111008
10359720	IDRFOP074217872
10359722	IDRFOP074218794
10359724	IDRFOP074218790
10359726	IDRF074218801
10359727	IDRF074218789
10359729	IDRF074218808
10359730	IDRF074218805
10359731	IDRF074218807
10359732	IDRFOP074218788
10359735	IDRF074218806
10359736	IDRF074218791
10359737	IDRF074218798
10359753	IDRF074218559
10359824	IDRFOP074218522
10359826	IDRF074218553
10359827	IDRF074218550
10359828	IDRF074216451
10359829	IDRF074218530
10359832	IDRF074218549
10359833	IDRF074218544
10359839	IDRFOP074218609
10359841	IDRF074218605
10359845	IDRF074218645
10359846	IDRF074218612
10359847	IDRF074218653
10359848	IDRF074218657
10359849	IDRFOP074218650

AMWTP ID	Historical ID
10359863	IDRFOP074218660
10359867	IDRF074218322
10359871	IDRF074111031
10359934	IDRF074218552
10359935	IDRF074218547
10359936	IDRFOP074218444
10359938	IDRF074218574
10359939	IDRFOP074216948
10359943	IDRFOP074110955
10359946	IDRF074101960
10359947	IDRF074217949
10359949	IDRF074216727
10359950	IDRF074217917
10359951	IDRFOP074216728
10359953	IDRF074216868
10359954	IDRF074110967
10359959	IDRFOP074216887
10360610	IDRF074111011
10360612	IDRF074216574
10360613	IDRF074219164
10360614	IDRF074219128
10360624	IDRF074216927
10360625	IDRFOP074110990
10360627	IDRF074219173
10360629	IDRFOP074219144
10360631	IDRFOP074219138
10360633	IDRF074219130
10360636	IDRF074110959
10360640	IDRF074110978
10360643	IDRF074110981
10360645	IDRF074110993
10360646	IDRF074216953
10360647	IDRFOP074216731
10361023	IDRFOP074218654
10362255	IDRFOP074218751
10362370	IDRFOP074111056
10362394	IDRFOP074111066
10362397	IDRFOP074218515
10362401	IDRFOP074218404
10362403	IDRFOP074218578
10362404	IDRF074217843
10362405	IDRFOP074218426
10362406	IDRF074217847
10362407	IDRF074110956
10362408	IDRFOP074217846
10362417	IDRFOP074216567

AMWTP ID	Historical ID
10362418	IDRFOP074217834
10362419	IDRFOP074217960
10362420	IDRFOP074217957
10362423	IDRF074218338
10362536	IDRFOP074217931
10362549	IDRFOP074217871
10362551	IDRFOP074217833
10362553	IDRFOP074216849
10362555	IDRFOP074217312
10362563	IDRFOP074216819
10362564	IDRF074111007
10362566	IDRFOP074217933
10362568	IDRFOP074217978
10362591	IDRFOP074110942
10362594	IDRFOP074217841
10362692	IDRF074217832
10362694	IDRFOP074216584
10362697	IDRF074219034
10362700	IDRF074219022
10362701	IDRF074219031
10362703	IDRF074219046
10362704	IDRF074219097
10362741	IDRF074217870
10362817	IDRF074218556
10362820	IDRF074218525
10362825	IDRF074218536
10362826	IDRF074218539
10362827	IDRF074216561
10362828	IDRF074218542
10362829	IDRF074218529
10362830	IDRF074111068
10362831	IDRF074111038
10362832	IDRF074111053
10362833	IDRF074217950
10362834	IDRF074217862
10362836	IDRF074217893
10362840	IDRF074216855
10362842	IDRFOP074217851
10362849	IDRF074111082
10362851	IDRF074111070
10362852	IDRF074217873
10363697	IDRFOP074217967
10363700	IDRF074111081
10363701	IDRFOP074218472
10363703	IDRF074111044

AMWTP ID	Historical ID
10363704 overpacked into 10415515[(a)]	IDRF074218440 overpacked into IDRFOP074218440
10363705	IDRF074111046
10363706	IDRFOP074111042
10363708	IDRF074218401
10363711	IDRFOP074217961
10363714	IDRFOP074218437
10363739	IDRFOP074217868
10363741	IDRF074216865
10363744	IDRFOP074216824
10363745	IDRF074217966
10363746	IDRF074217956
10363763	IDRF074218321
10363769	IDRF074218332
10363771	IDRF074218354
10363772	IDRF074218802
10363773	IDRF074218795
10363774	IDRF074218804
10363775	IDRF074218572
10363776	IDRF074111158
10363777	IDRF074111142
10363778	IDRF074218568
10363779	IDRF074111157
10363782	IDRFOP074218582
10363791	IDRF074111104
10363793	IDRF074218569
10363795	IDRF074218524
10363796	IDRFOP074218436
10363798	IDRF074218703
10363801	IDRF074111064
10363804	IDRF074217863
10363805	IDRFOP074216854
10363806	IDRF074217840
10363808	IDRF074216683
10363809	IDRFOP074110998
10363813	IDRFOP074217848
10364628	IDRF074216939
10364629	IDRF074216942
10364630	IDRF074217838
10364631	IDRF074216954
10364632	IDRF074216827
10364633	IDRFOP074216871
10364654	IDRF074216826
10364655	IDRF074111005
10364660	IDRF074110980

AMWTP ID	Historical ID
10364940	IDRFOP074220682
10365062	IDRF074111012
10365063	IDRF074111084
10365066	IDRFOP074218438
10365071	IDRF074218445
10365072	IDRF074217844
10365073	IDRF074218473
10365074	IDRFOP074218435
10365076	IDRF074111051
10365077	IDRF074216946
10365079	IDRF074218709
10365086	IDRFOP074217852
10365368	IDRF074111069
10365369	IDRF074218270
10365370	IDRF074218600
10365388	IDRF074218684
10365389	IDRF074218767
10365390	IDRF074218685
10365391	IDRF074218780
10365392	IDRF074218686
10365394	IDRF074111015
10365396	IDRF074217958
10365403	IDRF074111014
10365408	IDRF074218560
10365409	IDRF074218532
10365506	IDRF074218434
10365507	IDRF074218443
10365508	IDRF074218478
10365510	IDRF074218466
10365511	IDRF074218474
10365512	IDRF074218442
10365513	IDRF074218432
10365514	IDRFOP074111092
10365516	IDRFOP074218446
10365518	IDRF074218459
10365520	IDRFOP074218439
10365524	IDRF074218469
10365531	IDRF074218433
10365534	IDRFOP074217790
10365537	IDRF074217889
10365540	IDRFOP074218782
10365542	IDRF074218777
10365543	IDRFOP074218797
10366212	IDRF074216843
10366234	IDRF074111083
10366354	IDRF074218817

AMWTP ID	Historical ID
10366355	IDRF074218812
10366356	IDRF074218809
10366358	IDRF074218810
10366359	IDRF074218811
10366532	IDRF074218814
10366535	IDRF074218813
10366537	IDRFOP074216463
10366539	IDRFOP074218329
10366588	IDRF074219111
10366590	IDRF074219109
10366591	IDRF074219107
10366592	IDRF074219119
10366593	IDRF074219118
10366594	IDRF074219108
10366595	IDRF074219090
10366596	IDRF074219103
10366597	IDRF074219112
10366598	IDRF074219117
10366599	IDRFOP074219089
10366601	IDRF074219105
10366602	IDRF074219091
10366603	IDRF074219121
10366604	IDRF074219122
10366605	IDRF074219110
10366606	IDRF074219120
10366634	IDRF074218787
10366684	IDRFOP074218593
10366686	IDRFOP074218594
10366692	IDRF074216384
10366694	IDRF074218585
10366959	IDRF074111098
10366962	IDRF074218597
10366969	IDRF074218602
10366973	IDRFOP074218590
10366975	IDRFOP074218599
10366981	IDRF074218586
10366982	IDRF074218598
10366983	IDRF074218591
10366985	IDRF074218106
10366986	IDRF074218108
10366987	IDRF074218120
10366990	IDRF074218820
10366993	IDRF074218603
10366994	IDRFOP074218601
10366995	IDRF074218296
10366997	IDRFOP074218596

AMWTP ID	Historical ID
10367021	IDRF074218786
10367042	IDRF074218545
10367147	IDRFOP074218561
10367208	IDRFOP074216460
10367213	IDRF074218309
10367388	IDRF074218729
10367396	IDRF074111016
10367402	IDRFOP074217972
10367409	IDRF074111013
10367418 overpacked into 10417359[(b)]	IDRF074216725 overpacked into IDRFOP074216725
10367426	IDRF074111010
10367619	IDRF074218739
10367624	IDRF074218343
10367987	IDRF074216551
10367992	IDRF074218326
10367996	IDRF074218755
10368021	IDRF074218743
10368080	IDRF074218680
10368081	IDRF074218669
10368096	IDRFOP074218681
10368099	IDRF074218133
10368137	IDRF074218771
10368140	IDRF074218774
10368143	IDRF074218738
10368145	IDRF074218741
10368150	IDRF074218763
10368201	IDRF074218746
10368202	IDRFOP074218752
10368204	IDRF074218748
10368205	IDRF074218747
10368207	IDRFOP074218749
10368209	IDRFOP074218735
10368212	IDRF074218754
10368213	IDRFOP074218670
10368215	IDRF074218217
10368250	IDRF074218756
10368484	IDRF074218761
10368486	IDRF074218768
10368487	IDRF074218765
10368516	IDRFOP074218273
10368518	IDRFOP074218301
10368530	IDRFOP074218319
10368536	IDRF074111063
10368538	IDRF074218302

AMWTP ID	Historical ID
10368540	IDRF074218368
10368541	IDRF074111058
10368542	IDRF074111067
10368543	IDRF074111065
10368546	IDRF074216558
10368549	IDRF074218128
10368551	IDRF074218272
10368645	IDRFOP074218666
10368647	IDRF074218671
10368649	IDRF074218169
10368664	IDRFOP074216459
10368666	IDRF074218190
10368668	IDRF074216458
10368669	IDRF074111045
10368670	IDRF074218136
10368672	IDRFOP074111037
10368674	IDRF074218155
10368675	IDRF074218141
10368683	IDRF074218121
10368685	IDRF074216842
10368687	IDRF074216825
10368692	IDRFOP074218131
10368694	IDRF074218124
10368699	IDRFOP074111033
10368746	IDRF074111036
10368787	IDRF074218097
10368796	IDRF074111027
10368799	IDRF074218117
10368801	IDRF074218307
10368802	IDRF074111062
10368803	IDRF074216352
10368804	IDRF074218310
10368805	IDRFOP074218346
10368806	IDRF074218299
10368807	IDRF074216566
10368810	IDRFOP074218267
10368811	IDRFOP074218306
10368814	IDRF074218289
10368815	IDRF074218268
10368816	IDRFOP074218317
10368818	IDRF074218692
10368819	IDRF074218647
10368822	IDRF074218693
10368823	IDRF074218659
10368827	IDRF074218372
10368828	IDRF074218399

AMWTP ID	Historical ID
10368829	IDRF074218397
10368830	IDRF074216555
10368831	IDRF074218376
10368832	IDRF074218350
10368833	IDRFOP074218371
10368834	IDRF074218365
10368837	IDRF074218360
10368838	IDRF074218364
10368839	IDRF074111074
10368840	IDRF074111078
10368841	IDRF074218173
10368842	IDRF074218139
10368847	IDRF074218216
10368889	IDRF074218154
10368890	IDRF074218262
10368891	IDRFOP074216552
10368893	IDRF074218164
10368921	IDRFOP074216918
10370321	IDRFOP074216658
10370324	IDRFOP074216586
10370335	IDRFOP074218954
10370339	IDRF074111018
10370342	IDRF074218052
10370343	IDRF074216861
10370344	IDRF074216864
10370348	IDRF074216579
10370352	IDRF074216557
10370374	IDRF074218166
10370375	IDRF074218148
10370376	IDRF074111041
10370377	IDRF074218168
10370378	IDRFOP074218764
10370381	IDRF074218991
10370383	IDRF074218990
10370384	IDRF074218762
10370385	IDRF074218994
10370390	IDRF074218955
10370391	IDRF074218992
10370396	IDRF074219015
10370398	IDRF074219013
10370417	IDRF074219003
10370420	IDRF074111106
10370422	IDRF074218818
10370423	IDRF074218819
10370425	IDRF074218960
10370426	IDRF074218958

AMWTP ID	Historical ID
10370427	IDRF074218966
10370428	IDRF074218875
10370429	IDRF074218959
10370431	IDRF074218031
10370438	IDRF074216820
10370439	IDRF074216875
10370440	IDRF074216922
10370441	IDRF074216457
10370442	IDRF074216949
10370443	IDRF074111004
10370444	IDRF074218050
10370448	IDRF074111009
10370455	IDRFOP074217935
10370458	IDRFOP074216821
10370459	IDRFOP074216829
10370461	IDRF074111087
10370468	IDRF074111152
10370477	IDRFOP074216610
10370480	IDRFOP074216577
10370482	IDRFOP074217959
10370484	IDRF074216850
10370486	IDRFOP074216560
10370496	IDRFOP074111026
10370511	IDRF074218348
10370593	IDRF074218745
10370594	IDRF074218742
10371552	IDRFOP074218937
10371560	IDRF074218939
10371595	IDRFOP074218315
10371597	IDRF074218380
10371599	IDRF074218295
10371600	IDRF074218249
10371610	IDRFOP074111034
10371624	IDRFOP074217462
10371814	IDRFOP074218570
10371815	IDRFOP074218143
10371816	IDRFOP074111055
10371817	IDRF074111029
10371818	IDRF074218140
10371819	IDRFOP074218142
10371821	IDRFOP074218151
10371825	IDRF074218869
10371827	IDRF074218898
10371828	IDRF074218855
10371829	IDRF074218851
10371830	IDRF074218859

AMWTP ID	Historical ID
10371831	IDRF074218839
10371834	IDRF074218934
10371835	IDRF074218915
10371843	IDRFOP074218362
10371850	IDRF074111048
10371851	IDRF074111057
10371856	IDRF074111052
10371945	IDRFOP074218891
10371965	IDRFOP074219014
10371966	IDRFOP074216665
10371968	IDRFOP074218701
10371969	IDRFOP074218961
10371970	IDRFOP074219005
10371971	IDRFOP074218519
10371972	IDRFOP074216594
10371973	IDRFOP074216830
10371974	IDRFOP074111020
10372024	IDRFOP074218470
10372026	IDRFOP074218377
10372028	IDRFOP074218557
10372137	IDRFOP074217866
10372138	IDRFOP074218576
10372140	IDRFOP074218792
10372141	IDRFOP074218800
10372266	IDRFOP074218314
10372267	IDRFOP074218663
10372269	IDRFOP074218611
10372285	IDRFOP074110944
10378204	IDRFOP074111021
10378205	IDRFOP074218707
10378206	IDRFOP074218487
10378207	IDRFOP074218480
10378208	IDRFOP074218482
10378209	IDRFOP074111060
10378211	IDRFOP074218341
10378882	IDRFOP074219004
10378884	IDRFOP074218055
10378886	IDRFOP074218732
10400557	IDRFOP074217895
10408631	IDRFOP074216679

Idaho Treatment Group

INTEROFFICE MEMORANDUM

RECORD
CMC 09/19/2012

FOR INFORMATION ONLY

To: Sue Peterman
TRU Programs Manager

From: Steve Carpenter
Acceptable Knowledge/Alternate Site Project Manager

Date: January 5, 2012

Subject: Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2 - SPC-001-12

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 population was defined with a minimum of 3,000 and a maximum of 4,000 containers (reference Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2, SPC-015-10 and the Addendum SPC-004-11). Container selection and sampling were completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identified additional BN510.1 Boxline containers. The container numbers within these Reconciliation periodic reports were sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 2 container list. Attachment 1 provides the final sequential listing of random numbers and the containers identified for BN510.1 Boxline Lot 2 with a maximum container population of 4,000.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 2. Ten random numbers and ten contingency random numbers were generated for the maximum population as specified in MP-TRUW-8.25. Sequential numbers were assigned to the random numbers in the order that they were generated. The list was sorted by the random number in ascending order. The first ten random numbers on the list that have acceptable containers associated with them were headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant were monitored as containers qualified for the required sample (n) and are determined when the required sampling is completed. The observed sample n^* is checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2, (including a Characterization Information Summary Report) presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Table 1 identifies the final candidate containers for BN510.1 Boxline Lot 2 with sequence numbers for a maximum population size of 4,000 containers. Table 1 also documents the selection of additional container sequence numbers to serve as contingency samples if needed. The selected random numbers, identified in Table 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot was updated periodically with the containers that were provided by the Reconciliation Group since the initial sample selection memorandum. Selected containers were set aside. Containers confirmed as a sample "n" container, were headspace gas sampled. Table 1 below identifies the selected containers that were selected for headspace gas sampling. Containers 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 from the maximum population were sampled. These are the first 10 randomly selected containers for a population of 4,000 containers that were available for Lot 2.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	1	0.000020	2399	BN10406800
2	2	0.000259	1761	BN10400134
3	3	0.000601	2572	BN10408764
4	4	0.000725	1603	BN10398725
	5	0.000935	3979	BN10429587
5	6	0.001189	2969	BN10413998
6	7	0.001990	161	BN10381425
	8	0.002274	3446	BN10421829
7	9	0.002567	304	BN10382812
8	10	0.002629	1410	BN10396291
9	c1	0.002780	720	BN10388108
10	c2	0.002870	2757	BN10410445
c1	c3	0.003005	1670	BN10399250
	c4	0.003077	3248	BN10418907
c2	c5	0.003159	1013	BN10391867
c3	c6	0.003191	2061	BN10403257
c4	c7	0.003580	963	BN10391073
	c8	0.003686	3008	BN10414714
c5	c9	0.003965	2423	BN10407048
c6	c10	0.004778	968	BN10391078
c7		0.004884	1353	BN10395482
c8		0.005970	739	BN10388302
c9		0.006080	2769	BN10410497
		0.006325	3087	BN10416157
c10		0.006729	2543	BN10408364

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments
1. Container list for BN510.1 Boxline, Lot 2
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Caralea Hinkle-Daniel
Dave Haar
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 2

Minimum Population = 3,000
Maximum Population = 4,000

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.312263	1	BN10376273
		0.567552	2	BN10376276
		0.770726	3	BN10376277
		0.394933	4	BN10376280
		0.871194	5	BN10376283
		0.563289	6	BN10377054
		0.199676	7	BN10379696
		0.269744	8	BN10379697
		0.934024	9	BN10379698
		0.218199	10	BN10379699
		0.393658	11	BN10379700
		0.327281	12	BN10379701
		0.160871	13	BN10379702
		0.205505	14	BN10379703
		0.709447	15	BN10379704
		0.373267	16	BN10379705
		0.818819	17	BN10379706
		0.751591	18	BN10379707
		0.174123	19	BN10379708
		0.845460	20	BN10379709
		0.406343	21	BN10379710
		0.520202	22	BN10379711
		0.145230	23	BN10379712
		0.579569	24	BN10379714
		0.106722	25	BN10379715
		0.279754	26	BN10379716
		0.850679	27	BN10379717
		0.688057	28	BN10379718
		0.352543	29	BN10379719
		0.606054	30	BN10379878
		0.284771	31	BN10379879
		0.683335	32	BN10379880
		0.997004	33	BN10379881
		0.509745	34	BN10379882
		0.289015	35	BN10379883
		0.567839	36	BN10379884
		0.111163	37	BN10379885

		0.289258	38	BN10379886
		0.379822	39	BN10379887
		0.621682	40	BN10379888
		0.295879	41	BN10379889
		0.471384	42	BN10380003
		0.955423	43	BN10380004
		0.635179	44	BN10380005
		0.289851	45	BN10380006
		0.123618	46	BN10380007
		0.438455	47	BN10380008
		0.959959	48	BN10380009
		0.977243	49	BN10380010
		0.750582	50	BN10380011
		0.659341	51	BN10380012
		0.751979	52	BN10380013
		0.477742	53	BN10380014
		0.627569	54	BN10380166
		0.776025	55	BN10380167
		0.509103	56	BN10380168
		0.384857	57	BN10380169
		0.850547	58	BN10380170
		0.905508	59	BN10380171
		0.135829	60	BN10380172
		0.882162	61	BN10380173
		0.607771	62	BN10380174
		0.284801	63	BN10380175
		0.406865	64	BN10380176
		0.520801	65	BN10380177
		0.312732	66	BN10380229
		0.015975	67	BN10380230
		0.117376	68	BN10380231
		0.350256	69	BN10380232
		0.850695	70	BN10380233
		0.240964	71	BN10380234
		0.779452	72	BN10380235
		0.130369	73	BN10380236
		0.498680	74	BN10380237
		0.128348	75	BN10380238
		0.007127	76	BN10380239
		0.855215	77	BN10380240
		0.074676	78	BN10380324
		0.737017	79	BN10380325
		0.859309	80	BN10380326
		0.241231	81	BN10380327
		0.330095	82	BN10380328

		0.285043	83	BN10380329
		0.971511	84	BN10380330
		0.244693	85	BN10380331
		0.479072	86	BN10380332
		0.493215	87	BN10380333
		0.711101	88	BN10380334
		0.807761	89	BN10380335
		0.529711	90	BN10380591
		0.579307	91	BN10380592
		0.489164	92	BN10380593
		0.207582	93	BN10380594
		0.040526	94	BN10380595
		0.214172	95	BN10380596
		0.807275	96	BN10380597
		0.094812	97	BN10380598
		0.647551	98	BN10380599
		0.319030	99	BN10380600
		0.469070	100	BN10380601
		0.580002	101	BN10380602
		0.416910	102	BN10380720
		0.801420	103	BN10380721
		0.247657	104	BN10380722
		0.503360	105	BN10380723
		0.067786	106	BN10380724
		0.611331	107	BN10380725
		0.137919	108	BN10380726
		0.480752	109	BN10380727
		0.643188	110	BN10380728
		0.389038	111	BN10380729
		0.769613	112	BN10380730
		0.595021	113	BN10380731
		0.237856	114	BN10380732
		0.292306	115	BN10380733
		0.158301	116	BN10380734
		0.964926	117	BN10380735
		0.081211	118	BN10380736
		0.803077	119	BN10380738
		0.214511	120	BN10380739
		0.353777	121	BN10380740
		0.391599	122	BN10380741
		0.490487	123	BN10380742
		0.869024	124	BN10380743
		0.397342	125	BN10380919
		0.330124	126	BN10380920
		0.609766	127	BN10380921

		0.926826	128	BN10380922
		0.816996	129	BN10380923
		0.252831	130	BN10380924
		0.824771	131	BN10380925
		0.497918	132	BN10380926
		0.102095	133	BN10380927
		0.046526	134	BN10380928
		0.129837	135	BN10380929
		0.482297	136	BN10380930
		0.013850	137	BN10380965
		0.913570	138	BN10380966
		0.184101	139	BN10380967
		0.887004	140	BN10380968
		0.850305	141	BN10380969
		0.119430	142	BN10380970
		0.454124	143	BN10380971
		0.287971	144	BN10380972
		0.738911	145	BN10380973
		0.321577	146	BN10380974
		0.188425	147	BN10380975
		0.891432	148	BN10380976
		0.549067	149	BN10381309
		0.800776	150	BN10381310
		0.872760	151	BN10381311
		0.413024	152	BN10381312
		0.330592	153	BN10381313
		0.991056	154	BN10381314
		0.605148	155	BN10381315
		0.826142	156	BN10381316
		0.893495	157	BN10381317
		0.734204	158	BN10381318
		0.037170	159	BN10381319
		0.760949	160	BN10381320
6	7	0.001990	161	BN10381425
		0.865134	162	BN10381426
		0.788024	163	BN10381428
		0.532309	164	BN10381431
		0.368421	165	BN10381432
		0.382138	166	BN10381421
		0.902907	167	BN10381422
		0.877269	168	BN10381423
		0.367489	169	BN10381424
		0.870085	170	BN10381427
		0.620110	171	BN10381429
		0.085747	172	BN10381430

		0.803750	173	BN10381434
		0.138727	174	BN10381435
		0.452731	175	BN10381436
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		0.369586	177	BN10381438
		0.548246	178	BN10381439
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		0.839494	183	BN10381444
		0.457930	184	BN10381445
		0.488773	185	BN10381573
		0.441054	186	BN10381574
		0.531719	187	BN10381579
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		0.376832	195	BN10381564
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		0.715083	200	BN10381582
		0.558907	201	BN10381583
		0.297658	202	BN10381584
		0.962939	203	BN10381586
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		0.426605	259	BN10382363
		0.639896	260	BN10382364
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		0.780968	262	BN10382366

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		0.887428	265	BN10382369
		0.676042	266	BN10382370
		0.804947	267	BN10382371
		0.949218	268	BN10382372
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		0.226448	270	BN10382463
		0.516070	271	BN10382464
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		0.808650	273	BN10382466
		0.977551	274	BN10382467
		0.206792	275	BN10382468
		0.925723	276	BN10382471
		0.843609	277	BN10382461
		0.250036	278	BN10382469
		0.420102	279	BN10382470
		0.984568	280	BN10382472
		0.820343	281	BN10382541
		0.543379	282	BN10382542
		0.407166	283	BN10382543
		0.563654	284	BN10382544
		0.539267	285	BN10382545
		0.859837	286	BN10382546
		0.365059	287	BN10382547
		0.976659	288	BN10382548
		0.944149	289	BN10382549
		0.525491	290	BN10382550
		0.885343	291	BN10382551
		0.863893	292	BN10382552
		0.566409	293	BN10382801
		0.158121	294	BN10382802
		0.259228	295	BN10382803
		0.429905	296	BN10382804
		0.547573	297	BN10382806
		0.600230	298	BN10382805
		0.981965	299	BN10382807
		0.934422	300	BN10382808
		0.654877	301	BN10382809
		0.892993	302	BN10382810
		0.760092	303	BN10382811
7	9	0.002567	304	BN10382812
		0.903771	305	BN10382889
		0.579750	306	BN10382890
		0.421442	307	BN10382891

		0.073182	308	BN10382892
		0.198881	309	BN10382893
		0.289787	310	BN10382894
		0.214947	311	BN10382895
		0.707055	312	BN10382896
		0.220069	313	BN10382897
		0.575256	314	BN10382898
		0.609821	315	BN10382899
		0.429212	316	BN10382900
		0.304856	317	BN10382904
		0.808193	318	BN10382905
		0.277702	319	BN10382906
		0.302060	320	BN10382907
		0.736279	321	BN10382908
		0.045849	322	BN10382909
		0.136244	323	BN10382910
		0.233960	324	BN10382911
		0.625577	325	BN10382912
		0.241076	326	BN10382913
		0.100294	327	BN10382914
		0.486524	328	BN10382915
		0.013977	329	BN10383283
		0.185434	330	BN10383284
		0.704921	331	BN10383285
		0.232555	332	BN10383286
		0.071506	333	BN10383287
		0.589634	334	BN10383288
		0.209816	335	BN10383289
		0.572826	336	BN10383290
		0.751657	337	BN10383291
		0.861422	338	BN10383292
		0.236796	339	BN10383293
		0.961403	340	BN10383294
		0.031983	341	BN10383296
		0.379631	342	BN10383297
		0.193817	343	BN10383298
		0.595994	344	BN10383299
		0.051880	345	BN10383300
		0.934435	346	BN10383301
		0.263528	347	BN10383302
		0.653798	348	BN10383303
		0.992018	349	BN10383306
		0.281560	350	BN10383307
		0.055413	351	BN10383308
		0.129462	352	BN10383309

		0.037452	353	BN10383515
		0.276312	354	BN10383516
		0.484363	355	BN10383517
		0.023263	356	BN10383518
		0.369855	357	BN10383519
		0.719508	358	BN10383521
		0.860452	359	BN10383522
		0.745415	360	BN10383523
		0.383392	361	BN10383524
		0.896386	362	BN10383525
		0.469611	363	BN10383526
		0.322253	364	BN10383528
		0.364394	365	BN10383529
		0.677830	366	BN10383530
		0.834406	367	BN10383531
		0.683722	368	BN10383532
		0.942626	369	BN10383533
		0.816868	370	BN10383534
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		0.158738	3763	BN10426918
		0.926695	3764	BN10426920
		0.452505	3765	BN10426921
		0.016321	3766	BN10426922
		0.946973	3767	BN10426923
		0.817060	3768	BN10426924
		0.273590	3769	BN10426925
		0.550287	3770	BN10426977
		0.393638	3771	BN10426978
		0.941064	3772	BN10426979

		0.671879	3773	BN10426980
		0.400888	3774	BN10426981
		0.587272	3775	BN10426982
		0.699797	3776	BN10426984
		0.174564	3777	BN10426985
		0.269783	3778	BN10426987
		0.618682	3779	BN10426988
		0.295618	3780	BN10426989
		0.554134	3781	BN10338478
		0.412219	3782	BN10338480
		0.094932	3783	BN10338481
		0.439699	3784	BN10426986
		0.306738	3785	BN10427219
		0.088345	3786	BN10427220
		0.719109	3787	BN10427221
		0.299243	3788	BN10427222
		0.349222	3789	BN10427223
		0.928181	3790	BN10427224
		0.361500	3791	BN10427225
		0.285245	3792	BN10427226
		0.079483	3793	BN10427500
		0.745288	3794	BN10427501
		0.906501	3795	BN10427502
		0.339087	3796	BN10427503
		0.927588	3797	BN10427504
		0.490637	3798	BN10427505
		0.358627	3799	BN10427506
		0.259561	3800	BN10427507
		0.312461	3801	BN10427595
		0.537859	3802	BN10427596
		0.376267	3803	BN10427597
		0.132218	3804	BN10427668
		0.542812	3805	BN10427669
		0.504830	3806	BN10427672
		0.256430	3807	BN10427673
		0.017925	3808	BN10427674
		0.128521	3809	BN10427675
		0.030758	3810	BN10427677
		0.632268	3811	BN10427678
		0.071748	3812	BN10427767
		0.017117	3813	BN10427769
		0.352115	3814	BN10427774
		0.503562	3815	BN10427763
		0.863634	3816	BN10427765
		0.284850	3817	BN10427768

		0.168686	3818	BN10427777
		0.749630	3819	BN10427779
		0.723047	3820	BN10427781
		0.842282	3821	BN10427782
		0.429607	3822	BN10427783
		0.157820	3823	BN10427785
		0.399666	3824	BN10427786
		0.196970	3825	BN10427946
		0.081441	3826	BN10427947
		0.489520	3827	BN10427949
		0.566006	3828	BN10427950
		0.766134	3829	BN10427951
		0.798030	3830	BN10427952
		0.665377	3831	BN10427955
		0.416293	3832	BN10427957
		0.890122	3833	BN10427961
		0.096844	3834	BN10427962
		0.234970	3835	BN10427963
		0.692241	3836	BN10427964
		0.521473	3837	BN10427965
		0.193157	3838	BN10427967
		0.817471	3839	BN10427968
		0.058868	3840	BN10428016
		0.541321	3841	BN10428017
		0.201227	3842	BN10428019
		0.497949	3843	BN10428020
		0.523808	3844	BN10428090
		0.203646	3845	BN10428091
		0.880943	3846	BN10428092
		0.210739	3847	BN10428093
		0.111554	3848	BN10428094
		0.215248	3849	BN10428095
		0.594539	3850	BN10428096
		0.871359	3851	BN10428097
		0.316055	3852	BN10428098
		0.357527	3853	BN10428099
		0.285527	3854	BN10428100
		0.219291	3855	BN10428101
		0.348375	3856	BN10428141
		0.387850	3857	BN10428142
		0.355602	3858	BN10428143
		0.112605	3859	BN10428144
		0.313706	3860	BN10428145
		0.467626	3861	BN10428146
		0.322576	3862	BN10428147

		0.512414	3863	BN10428148
		0.769945	3864	BN10428149
		0.634097	3865	BN10428150
		0.736239	3866	BN10428151
		0.325831	3867	BN10428152
		0.610492	3868	BN10428257
		0.385599	3869	BN10428259
		0.829384	3870	BN10428261
		0.524180	3871	BN10428262
		0.668848	3872	BN10428263
		0.466219	3873	BN10428264
		0.016736	3874	BN10428254
		0.219295	3875	BN10428255
		0.709938	3876	BN10428256
		0.241362	3877	BN10428258
		0.884921	3878	BN10428260
		0.703589	3879	BN10428427
		0.887176	3880	BN10428430
		0.009716	3881	BN10428431
		0.638128	3882	BN10428432
		0.244126	3883	BN10428433
		0.488361	3884	BN10428434
		0.787205	3885	BN10428435
		0.386928	3886	BN10428436
		0.881633	3887	BN10428437
		0.007831	3888	BN10428534
		0.707675	3889	BN10428535
		0.667110	3890	BN10427498
		0.024874	3891	BN10427499
		0.884071	3892	BN10428426
		0.494636	3893	BN10428526
		0.361092	3894	BN10428527
		0.919303	3895	BN10428528
		0.528915	3896	BN10428529
		0.365703	3897	BN10428530
		0.288835	3898	BN10428531
		0.969951	3899	BN10428532
		0.335603	3900	BN10428533
		0.679866	3901	BN10428536
		0.632248	3902	BN10428560
		0.496108	3903	BN10428561
		0.672183	3904	BN10428562
		0.947960	3905	BN10428563
		0.620583	3906	BN10428565
		0.709144	3907	BN10428566

		0.120106	3908	BN10428567
		0.516690	3909	BN10428568
		0.380354	3910	BN10428569
		0.045693	3911	BN10428570
		0.142144	3912	BN10428571
		0.112545	3913	BN10428658
		0.306368	3914	BN10428659
		0.373979	3915	BN10428660
		0.736259	3916	BN10428663
		0.617255	3917	BN10428662
		0.245968	3918	BN10428664
		0.771349	3919	BN10428666
		0.235597	3920	BN10428667
		0.108215	3921	BN10428895
		0.594250	3922	BN10428896
		0.291087	3923	BN10428897
		0.243471	3924	BN10428898
		0.740437	3925	BN10428899
		0.454344	3926	BN10428900
		0.118719	3927	BN10428901
		0.030109	3928	BN10428902
		0.561145	3929	BN10428903
		0.958027	3930	BN10428904
		0.242426	3931	BN10428905
		0.141786	3932	BN10428906
		0.049732	3933	BN10428998
		0.962102	3934	BN10429118
		0.773900	3935	BN10429119
		0.670454	3936	BN10429120
		0.671623	3937	BN10429121
		0.137042	3938	BN10429122
		0.437871	3939	BN10429123
		0.118557	3940	BN10429124
		0.837823	3941	BN10429162
		0.544972	3942	BN10429163
		0.476737	3943	BN10429166
		0.876334	3944	BN10429167
		0.865783	3945	BN10429168
		0.419473	3946	BN10429170
		0.447270	3947	BN10429171
		0.907525	3948	BN10429197
		0.719029	3949	BN10429200
		0.644205	3950	BN10429201
		0.309118	3951	BN10429204
		0.771992	3952	BN10429205

		0.363041	3953	BN10429206
		0.221610	3954	BN10429207
		0.856339	3955	BN10429335
		0.326508	3956	BN10429336
		0.479987	3957	BN10429338
		0.520523	3958	BN10429340
		0.457588	3959	BN10429341
		0.749581	3960	BN10429343
		0.226317	3961	BN10429344
		0.073002	3962	BN10429345
		0.893233	3963	BN10429346
		0.402408	3964	BN10429473
		0.613751	3965	BN10429474
		0.780132	3966	BN10429475
		0.376752	3967	BN10429476
		0.163154	3968	BN10429477
		0.141411	3969	BN10429479
		0.290930	3970	BN10429480
		0.761407	3971	BN10429481
		0.483480	3972	BN10429482
		0.897426	3973	BN10429484
		0.375803	3974	BN10429582
		0.128790	3975	BN10429583
		0.357541	3976	BN10429584
		0.337768	3977	BN10429585
		0.384808	3978	BN10429586
	5	0.000935	3979	BN10429587
		0.207383	3980	BN10429588
		0.072136	3981	BN10429589
		0.067907	3982	BN10429590
		0.593282	3983	BN10429591
		0.891747	3984	BN10429593
		0.317230	3985	BN10429633
		0.603283	3986	BN10429634
		0.069859	3987	BN10429635
		0.816694	3988	BN10429636
		0.052367	3989	BN10429637
		0.517626	3990	BN10429638
		0.169986	3991	BN10429639
		0.797250	3992	BN10429640
		0.439005	3993	BN10429641
		0.464924	3994	BN10429642
		0.204211	3995	BN10429643
		0.985608	3996	BN10429644
		0.705165	3997	BN10429762

		0.818570	3998	BN10429763
		0.569333	3999	BN10429764
		0.675137	4000	BN10429765

AMWTP Advanced Mixed Waste Treatment Project	Randomly Selected Container Report	Form-1196, Rev. 5 Effective: 09/26/07 Page 1 of 1

Implementing Document: MP-TRUW-8.25

Waste Stream Lot: BN510.1 Boxline Lot 2

Population Size of Waste Stream Lot: 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature 12.12 Date

Idaho Treatment Group

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To: Sue Peterman
TRU Programs Manager

FOR INFORMATION ONLY

RECORD
CMC 01/16/2012

From: Steve Carpenter SC
Acceptable Knowledge/Alternate Site Project Manager

Date: January 9, 2012

Re: Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3 – SPC-002-12

This memorandum contains the subsequent headspace gas random sample selection candidates for waste stream BN510.1 Boxline Lot 3. The final subsequent headspace gas random sample selection memorandum will be submitted upon identification of all containers in the waste stream lot.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 3 population is defined with a minimum of 2,400 and a maximum of 4,000 containers. Container selection and sampling will be completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling Analysis*. Periodic reports will be generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identifies additional BN510.1 boxline containers that have been generated since the selection memo. The container numbers within the Reconciliation periodic reports will be sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 3 container list. Attachment 1 provides a listing of containers by sequential numbers. The final container listing for BN510.1 Boxline Lot 3 will be generated after either the minimum or maximum container populations are reached.

The AMWTP TRU Program Manager may reduce the size of the BN510.1 Boxline Lot 3. In the case where the population is less than 2,400 containers, the AMWTP TRU Program Manager will ensure that the containers selected for sampling are sufficient to characterize the waste stream. If containers originally identified for sampling are not generated, containers in the population not already sampled and shipped will be used to randomly select the remaining required number of containers to be sampled.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream lot will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 3. Ten containers will be selected and available for headspace gas sampling. Random numbers will be generated for the lot population as specified in MP-TRUW-8.25. Sequential numbers will be assigned random numbers in the order that they were generated. The list will be sorted by the random number in ascending order. At a minimum, the first ten random numbers on the list, from the final population, that have acceptable containers associated with them will be headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant will be performed as containers qualify for the required sample (n) and determined when the required sampling is completed. The observed sample n^* will be checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A sampling report presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Attachment 1 identifies the initial candidate containers for BN510.1 Boxline Lot 3. The selected random numbers and contingency random numbers, identified in Attachment 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot will be updated periodically with the containers provided by the Reconciliation Group. Selected containers will be set aside. Containers confirmed as a sample (n) container, will be headspace gas sampled. Table 1 below identifies the selected random numbers and random contingency. Nonconformance reports will be issued as appropriate against the containers that require substitution to ensure that these containers are appropriately characterized.

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	
2	3	0.002097027	1044	
3	4	0.002528466	436	
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	
	9	0.003626498	3863	
	10	0.004061868	3294	
8	C1	0.004168875	579	
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments

1. Container List for BN510.1 Boxline, Lot 3
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 3

Minimum Population = 2,400
Maximum Population = 4,000

Selected Minimum Pop.	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.44961053	1	BN10429766
		0.57930168	2	BN10429767
		0.94553686	3	BN10429768
		0.16864582	4	BN10429769
		0.14578049	5	BN10429770
		0.85340558	6	BN10429771
		0.70819678	7	BN10429773
		0.26782434	8	BN10429844
		0.84808269	9	BN10429845
		0.87499601	10	BN10429846
		0.5161643	11	BN10429847
		0.68566252	12	BN10429848
		0.30462207	13	BN10429849
		0.75084563	14	BN10429850
		0.81176208	15	BN10429851
		0.08750119	16	BN10429852
		0.19612618	17	BN10429853
		0.47980093	18	BN10429854
		0.06715434	19	BN10429855
		0.75507742	20	BN10429985
		0.87312739	21	BN10429986
		0.78087451	22	BN10429987
		0.72840607	23	BN10429988
		0.9587114	24	BN10429989
		0.93974598	25	BN10429990
		0.36651717	26	BN10429991
		0.01599271	27	BN10429992
		0.06794842	28	BN10430046
		0.03335898	29	BN10430056
		0.65055064	30	
		0.260013	31	
		0.6185905	32	
		0.46053685	33	
		0.29861499	34	
		0.822144	35	
		0.97056575	36	
		0.73276838	37	
		0.40092478	38	
		0.96859328	39	
		0.444199	40	
		0.46553625	41	
		0.09463902	42	
		0.46803888	43	
		0.07591143	44	
		0.65838204	45	
		0.28921897	46	
		0.35685404	47	
		0.23783536	48	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.603617	49	
		0.03788705	50	
		0.15243544	51	
		0.21342936	52	
		0.71056966	53	
		0.21136323	54	
		0.74793657	55	
		0.18192411	56	
		0.91369545	57	
		0.74521496	58	
		0.83412714	59	
		0.52396202	60	
		0.0596082	61	
		0.11338912	62	
		0.64674775	63	
		0.62412906	64	
		0.49667793	65	
		0.18787862	66	
		0.66016326	67	
		0.33578444	68	
		0.34055136	69	
		0.83143621	70	
		0.30420431	71	
		0.9067279	72	
		0.74159806	73	
		0.69325716	74	
		0.62883559	75	
		0.4205253	76	
		0.42966387	77	
		0.83042719	78	
		0.27085476	79	
		0.35648155	80	
		0.20405544	81	
		0.04542122	82	
		0.39965453	83	
		0.09203514	84	
		0.21851488	85	
		0.55430681	86	
		0.5599386	87	
		0.32941037	88	
		0.57399225	89	
		0.91628268	90	
		0.58849702	91	
		0.15001272	92	
		0.82794461	93	
		0.38487895	94	
		0.68347537	95	
		0.92359075	96	
		0.52767974	97	
		0.67165485	98	
		0.7543007	99	
		0.94251998	100	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.577634	101	
		0.18641534	102	
		0.88908883	103	
		0.01275273	104	
		0.6652153	105	
		0.03368352	106	
		0.84212635	107	
		0.67621026	108	
1	2	0.00206785	109	
		0.04381898	110	
		0.05808201	111	
		0.80653143	112	
		0.65666393	113	
		0.62072937	114	
		0.77090593	115	
		0.25390474	116	
		0.8997522	117	
		0.53578116	118	
		0.53388139	119	
		0.93604499	120	
		0.06615361	121	
		0.37183377	122	
		0.55928983	123	
		0.30973716	124	
		0.61540227	125	
		0.78725548	126	
		0.15293963	127	
		0.49122705	128	
		0.54821334	129	
		0.14984083	130	
		0.93310521	131	
7	8	0.00333858	132	
		0.28989277	133	
		0.45914133	134	
		0.14456234	135	
		0.57210176	136	
		0.204236	137	
		0.67000304	138	
		0.85884983	139	
		0.11214262	140	
		0.50485179	141	
		0.9888514	142	
		0.6057719	143	
		0.73395841	144	
		0.94732964	145	
		0.48363648	146	
		0.86396018	147	
		0.21275821	148	
		0.80874258	149	
		0.27179657	150	
		0.65197586	151	
		0.59330089	152	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.58943605	153	
		0.56291359	154	
		0.97499086	155	
		0.94061114	156	
		0.76955308	157	
		0.23790668	158	
		0.30791334	159	
		0.39892722	160	
		0.02794978	161	
		0.23873478	162	
		0.21969889	163	
		0.67893367	164	
		0.97084851	165	
		0.16201381	166	
		0.6046876	167	
		0.07778461	168	
		0.8441472	169	
		0.35506008	170	
		0.25114727	171	
		0.15253789	172	
		0.56813748	173	
		0.22717404	174	
		0.3350687	175	
		0.43272149	176	
		0.03423586	177	
		0.11453265	178	
		0.5963251	179	
		0.94899795	180	
		0.38067952	181	
		0.04354604	182	
		0.79837885	183	
		0.76412791	184	
		0.5856722	185	
		0.2779023	186	
		0.03335045	187	
		0.41250451	188	
		0.55113959	189	
		0.59357837	190	
		0.18827101	191	
		0.27727168	192	
		0.75436117	193	
		0.2895075	194	
		0.53924767	195	
		0.30263503	196	
		0.79447913	197	
		0.50580022	198	
		0.71257152	199	
		0.83609912	200	
		0.01897065	201	
		0.22743216	202	
		0.18306162	203	
		0.44093278	204	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55418229	205	
		0.97671744	206	
		0.24095978	207	
		0.3280798	208	
		0.58399193	209	
		0.507784	210	
		0.80793457	211	
		0.1252063	212	
		0.29199264	213	
		0.86541238	214	
		0.27031464	215	
		0.91376964	216	
		0.83938045	217	
		0.47505368	218	
		0.25014991	219	
		0.22819935	220	
		0.18244498	221	
		0.27635301	222	
		0.86247014	223	
		0.77752312	224	
		0.92013822	225	
		0.13635228	226	
		0.18614961	227	
		0.9252214	228	
		0.82805393	229	
		0.874686	230	
		0.59404723	231	
		0.90198558	232	
		0.31807033	233	
		0.99653958	234	
		0.42092645	235	
		0.61135354	236	
		0.89033926	237	
		0.06380212	238	
		0.63518329	239	
		0.66922309	240	
		0.53059127	241	
		0.10956023	242	
		0.3642236	243	
		0.5524196	244	
		0.1961307	245	
		0.3413316	246	
		0.53952268	247	
		0.9522015	248	
		0.05215245	249	
		0.32453857	250	
		0.27717977	251	
		0.70276298	252	
		0.31269357	253	
		0.46020108	254	
		0.96971578	255	
		0.6707212	256	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.17673568	257	
		0.58985449	258	
		0.90068009	259	
		0.59356286	260	
		0.51127781	261	
		0.67890742	262	
		0.83888298	263	
		0.57532835	264	
		0.64879191	265	
		0.97755083	266	
		0.61238207	267	
		0.0201351	268	
		0.32417139	269	
		0.63035214	270	
		0.56112649	271	
		0.57351809	272	
		0.7378014	273	
		0.87013704	274	
		0.88777839	275	
		0.30218835	276	
		0.26452334	277	
		0.62163844	278	
		0.53861572	279	
		0.9821855	280	
		0.12937308	281	
		0.2698108	282	
		0.65984469	283	
		0.58178831	284	
		0.6684138	285	
		0.42405583	286	
		0.28627515	287	
		0.90495591	288	
		0.15098513	289	
		0.34190845	290	
		0.79858822	291	
		0.82430688	292	
		0.52020421	293	
		0.92907297	294	
		0.42556852	295	
		0.19855126	296	
		0.278706	297	
		0.6518017	298	
		0.25347157	299	
		0.65069806	300	
		0.12156415	301	
		0.98475052	302	
		0.56412075	303	
		0.65202519	304	
		0.38443259	305	
		0.54159357	306	
		0.69434343	307	
		0.72089871	308	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.50498854	309	
		0.54654055	310	
		0.57705414	311	
		0.38371498	312	
		0.95748882	313	
		0.15943928	314	
		0.58411179	315	
		0.92976452	316	
		0.1810721	317	
		0.40653417	318	
		0.51462423	319	
		0.23656958	320	
		0.29490037	321	
		0.47133898	322	
		0.54610302	323	
		0.13749584	324	
		0.82361549	325	
		0.06404795	326	
		0.74298384	327	
		0.70550827	328	
		0.6623158	329	
		0.23435559	330	
		0.70191698	331	
		0.0167767	332	
		0.7691549	333	
		0.46578582	334	
		0.20864608	335	
		0.31254898	336	
		0.32597613	337	
		0.79909057	338	
		0.05052673	339	
		0.27033723	340	
		0.48520241	341	
		0.27195941	342	
		0.29173583	343	
		0.32424643	344	
		0.85475206	345	
		0.70246751	346	
		0.7767464	347	
		0.91084446	348	
		0.10190975	349	
		0.20910077	350	
		0.34268557	351	
		0.44226747	352	
		0.03726463	353	
		0.18993869	354	
		0.99593061	355	
		0.56130747	356	
		0.7221347	357	
		0.25157888	358	
		0.8221431	359	
		0.56915278	360	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64690931	361	
		0.75960784	362	
		0.65843568	363	
		0.91661617	364	
		0.77632236	365	
		0.11256819	366	
		0.74746784	367	
		0.98783291	368	
		0.81110586	369	
		0.78730967	370	
		0.54980838	371	
		0.71090959	372	
		0.17376119	373	
		0.83780558	374	
		0.72566838	375	
		0.34819883	376	
		0.29956363	377	
		0.36590762	378	
		0.49811762	379	
		0.42490494	380	
		0.21339213	381	
		0.37161766	382	
		0.82844054	383	
		0.18027282	384	
		0.60395549	385	
		0.52438617	386	
		0.9983971	387	
		0.17068078	388	
		0.62340772	389	
		0.91128121	390	
		0.97450829	391	
		0.23016175	392	
		0.38836732	393	
		0.21384609	394	
		0.40784166	395	
		0.70412951	396	
		0.19645217	397	
		0.79365798	398	
		0.25218142	399	
		0.75326875	400	
		0.66920647	401	
		0.93633501	402	
		0.19464985	403	
		0.13538777	404	
		0.2453149	405	
		0.51570553	406	
		0.26071764	407	
		0.4857179	408	
		0.93458327	409	
		0.72642377	410	
		0.69882556	411	
		0.19811856	412	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31928015	413	
		0.90310989	414	
		0.27328689	415	
		0.17795643	416	
		0.22856966	417	
		0.76857635	418	
		0.81447264	419	
		0.15161988	420	
		0.96473667	421	
		0.74179102	422	
		0.14812352	423	
		0.88032122	424	
		0.8099142	425	
		0.59888469	426	
		0.78206444	427	
		0.61878962	428	
		0.79297285	429	
		0.29619366	430	
		0.75582816	431	
		0.57162218	432	
		0.70967036	433	
		0.0211292	434	
		0.34993965	435	
3	4	0.00252847	436	
		0.12046022	437	
		0.95804219	438	
		0.48884515	439	
		0.92638355	440	
		0.05017275	441	
		0.73921543	442	
		0.42565825	443	
		0.31133657	444	
		0.71308312	445	
		0.45621086	446	
		0.02723668	447	
		0.03380388	448	
		0.0245653	449	
		0.96065065	450	
		0.56621643	451	
		0.9670225	452	
		0.86783636	453	
		0.52877845	454	
		0.76669866	455	
		0.63016247	456	
		0.77649983	457	
		0.40807728	458	
		0.16687215	459	
		0.46784344	460	
		0.91313387	461	
		0.31078107	462	
		0.51844426	463	
		0.90149495	464	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73639585	465	
		0.52915012	466	
		0.24440544	467	
		0.79124049	468	
		0.53113217	469	
		0.45518918	470	
		0.72325671	471	
		0.97084242	472	
		0.46695701	473	
		0.13793062	474	
		0.60698766	475	
		0.57718708	476	
		0.91432502	477	
		0.14074639	478	
		0.92073245	479	
		0.26233204	480	
		0.63183267	481	
		0.99459547	482	
		0.07886519	483	
		0.50959889	484	
		0.51689981	485	
		0.23018147	486	
		0.60911475	487	
		0.05781777	488	
		0.12425645	489	
		0.65229891	490	
		0.09702213	491	
		0.62681321	492	
		0.28880537	493	
		0.22202804	494	
		0.37538193	495	
		0.96575297	496	
		0.90212953	497	
		0.53819341	498	
		0.49855111	499	
		0.09548543	500	
		0.03532865	501	
		0.42816791	502	
		0.67745952	503	
		0.04593083	504	
		0.70678958	505	
		0.71047176	506	
		0.84263034	507	
		0.85031348	508	
		0.8050347	509	
		0.35334937	510	
		0.23080083	511	
		0.20818361	512	
		0.97996838	513	
		0.3424679	514	
		0.70162947	515	
		0.37604957	516	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.56246266	517	
		0.0806392	518	
		0.17770945	519	
		0.53391806	520	
		0.54144996	521	
		0.320664	522	
		0.9818243	523	
		0.46155111	524	
		0.74658476	525	
		0.85239126	526	
		0.20680626	527	
		0.5977697	528	
		0.71201308	529	
		0.90706582	530	
		0.03860619	531	
		0.97177136	532	
		0.47984623	533	
		0.5877673	534	
		0.28267456	535	
		0.34812333	536	
		0.59306421	537	
		0.98072145	538	
		0.16864761	539	
		0.97428428	540	
		0.60903945	541	
		0.0144332	542	
		0.24328088	543	
		0.28083984	544	
		0.40715965	545	
		0.77314353	546	
		0.14451462	547	
		0.85951791	548	
		0.89307806	549	
		0.71608079	550	
		0.55596805	551	
		0.52808274	552	
		0.57403787	553	
		0.45659786	554	
		0.97967655	555	
		0.91456922	556	
		0.39891782	557	
		0.7557061	558	
		0.83984439	559	
		0.16410349	560	
		0.30470086	561	
		0.44652177	562	
		0.54048615	563	
		0.13431381	564	
		0.38677136	565	
		0.52075933	566	
		0.06778891	567	
		0.60948413	568	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53946388	569	
		0.71520799	570	
		0.23734526	571	
		0.15908531	572	
		0.48797003	573	
		0.51160012	574	
		0.86673684	575	
		0.32959011	576	
		0.59362059	577	
		0.48846297	578	
8	C1	0.00416887	579	
		0.19012345	580	
		0.11640234	581	
		0.35849484	582	
		0.42169346	583	
		0.33461434	584	
		0.38797575	585	
		0.42201916	586	
		0.74977244	587	
		0.60036535	588	
		0.07084193	589	
		0.18292861	590	
		0.98061852	591	
		0.82230016	592	
		0.39617994	593	
		0.02203395	594	
		0.57138656	595	
		0.85344045	596	
		0.77497395	597	
		0.45607362	598	
		0.03028913	599	
		0.97084033	600	
		0.58564738	601	
		0.04700016	602	
		0.6772045	603	
		0.52662494	604	
		0.29652829	605	
		0.84753929	606	
		0.41374743	607	
		0.38023744	608	
		0.37075261	609	
		0.66411807	610	
		0.26112009	611	
		0.98064214	612	
		0.91566079	613	
		0.04973986	614	
		0.69625211	615	
		0.85334328	616	
		0.93337388	617	
		0.66683655	618	
		0.53851515	619	
		0.20152379	620	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18161677	621	
		0.18571329	622	
		0.2114824	623	
		0.11552931	624	
		0.29452122	625	
		0.93520428	626	
		0.53032104	627	
		0.39045759	628	
		0.50855294	629	
		0.86214147	630	
		0.40027464	631	
		0.88237524	632	
		0.72064932	633	
		0.32151851	634	
		0.13149453	635	
		0.58979728	636	
		0.90085604	637	
		0.52624064	638	
		0.04638652	639	
		0.82922859	640	
		0.12333225	641	
		0.22693434	642	
		0.76409573	643	
		0.7145501	644	
		0.23432657	645	
		0.93533834	646	
		0.90163134	647	
		0.97871467	648	
		0.10756463	649	
		0.87811969	650	
		0.94504874	651	
		0.74732613	652	
		0.15378354	653	
		0.87945951	654	
		0.65049841	655	
		0.36124887	656	
		0.01203216	657	
		0.18318953	658	
		0.09002524	659	
		0.63140322	660	
		0.61746937	661	
		0.92967613	662	
		0.09483215	663	
		0.17547795	664	
		0.7888428	665	
		0.80347948	666	
		0.64476507	667	
		0.09449254	668	
		0.14617972	669	
		0.13371673	670	
		0.42705766	671	
		0.5761637	672	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18075605	673	
		0.4396773	674	
		0.88225664	675	
		0.44248027	676	
		0.55619507	677	
		0.14589571	678	
		0.01563995	679	
		0.21860949	680	
		0.30244145	681	
		0.31631444	682	
		0.20108941	683	
		0.25554224	684	
		0.58239748	685	
		0.03946508	686	
		0.85034165	687	
		0.78871933	688	
		0.15679674	689	
		0.13689008	690	
		0.34016233	691	
		0.85960972	692	
		0.57608965	693	
		0.09759402	694	
		0.74805124	695	
		0.4492634	696	
		0.95797816	697	
		0.7638196	698	
		0.64365969	699	
		0.64571949	700	
		0.59433686	701	
		0.08472983	702	
		0.93746631	703	
		0.46474329	704	
		0.76854747	705	
		0.10052351	706	
		0.94233949	707	
		0.15501241	708	
		0.33327564	709	
		0.11974644	710	
		0.59362595	711	
		0.06437781	712	
		0.07431163	713	
		0.56106594	714	
		0.28417295	715	
		0.4861889	716	
		0.58651664	717	
		0.09091835	718	
		0.53622391	719	
		0.48431691	720	
		0.47097067	721	
		0.89131915	722	
		0.14793645	723	
		0.21635354	724	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.46678505	725	
		0.1362522	726	
		0.61210493	727	
		0.87493131	728	
		0.32487733	729	
		0.62867293	730	
		0.09646085	731	
		0.55796114	732	
		0.51511672	733	
		0.1942396	734	
		0.38038577	735	
		0.94494135	736	
		0.22410544	737	
		0.29842861	738	
		0.65768226	739	
		0.74844642	740	
		0.28502113	741	
		0.63742743	742	
		0.28750848	743	
		0.52973344	744	
		0.63187193	745	
		0.29292178	746	
		0.3305456	747	
		0.10019116	748	
		0.45827267	749	
		0.71343733	750	
		0.95457699	751	
		0.28117348	752	
		0.7728985	753	
		0.21628733	754	
		0.39051701	755	
		0.79690152	756	
		0.97110126	757	
		0.62224992	758	
		0.38601215	759	
		0.60037154	760	
		0.68068897	761	
		0.67177556	762	
		0.23965083	763	
		0.60683208	764	
		0.30128073	765	
		0.58441939	766	
		0.67101279	767	
		0.35057206	768	
		0.05290817	769	
		0.67191465	770	
		0.22196896	771	
		0.9672525	772	
		0.89060915	773	
		0.95384393	774	
		0.31324993	775	
		0.48413593	776	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19315423	777	
		0.91543818	778	
		0.99825973	779	
		0.07790483	780	
		0.28938271	781	
		0.33846088	782	
		0.13472946	783	
		0.97780281	784	
		0.18581784	785	
		0.41860433	786	
		0.91749162	787	
		0.323374	788	
		0.8413337	789	
		0.20278119	790	
		0.94336681	791	
		0.22728112	792	
		0.21898409	793	
		0.11545943	794	
		0.55251227	795	
		0.38020644	796	
		0.72115155	797	
		0.32463318	798	
		0.10171116	799	
		0.29680628	800	
		0.70843228	801	
		0.76309209	802	
		0.15940313	803	
		0.40915116	804	
		0.36391472	805	
		0.94627736	806	
		0.11248395	807	
		0.58199437	808	
		0.18468547	809	
		0.09375494	810	
		0.4132169	811	
		0.03504936	812	
		0.45719272	813	
		0.6448787	814	
		0.43211979	815	
		0.23198721	816	
		0.12807361	817	
		0.63942254	818	
		0.43950689	819	
		0.48287267	820	
		0.20034038	821	
		0.79381414	822	
		0.30016609	823	
		0.96724658	824	
		0.64223051	825	
		0.04728157	826	
		0.52788018	827	
		0.12994951	828	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64834434	829	
		0.83288916	830	
		0.26782936	831	
		0.99522004	832	
		0.3677366	833	
		0.73840554	834	
		0.70221451	835	
		0.52285263	836	
		0.63568866	837	
		0.33523843	838	
		0.20004506	839	
		0.44134512	840	
		0.96614434	841	
		0.29293494	842	
		0.5787681	843	
		0.94409358	844	
		0.00915194	845	
		0.05981305	846	
		0.14574388	847	
		0.34772044	848	
		0.44263006	849	
		0.51286441	850	
		0.572406	851	
		0.20844574	852	
		0.23644045	853	
		0.34258538	854	
		0.49569084	855	
		0.9073296	856	
		0.7155047	857	
		0.91502528	858	
		0.25846294	859	
		0.65150577	860	
		0.49537268	861	
		0.95464099	862	
		0.98626044	863	
		0.27766088	864	
		0.80308652	865	
		0.95884298	866	
		0.06560592	867	
		0.98553928	868	
		0.22315413	869	
		0.2367601	870	
		0.17503295	871	
		0.74544461	872	
		0.66024965	873	
		0.33751503	874	
		0.98248688	875	
		0.5401248	876	
		0.33347962	877	
		0.1733835	878	
		0.08403261	879	
		0.29819446	880	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97419387	881	
		0.05632946	882	
		0.74566702	883	
		0.66191772	884	
		0.76995278	885	
		0.21108537	886	
		0.76314086	887	
		0.61782246	888	
		0.42042093	889	
		0.20610666	890	
		0.94783213	891	
		0.10795403	892	
		0.95411863	893	
		0.06861511	894	
		0.4788462	895	
		0.18511333	896	
		0.3263025	897	
		0.91194408	898	
		0.76312827	899	
		0.72239747	900	
		0.31179969	901	
		0.1379207	902	
		0.05511441	903	
		0.17890096	904	
		0.03197637	905	
		0.91208748	906	
		0.69404284	907	
		0.24986698	908	
		0.78256731	909	
		0.86943107	910	
		0.83013411	911	
		0.80696296	912	
		0.98502403	913	
		0.12777362	914	
		0.7822075	915	
		0.98616248	916	
		0.65038816	917	
		0.7920312	918	
		0.19195583	919	
		0.15078346	920	
		0.80062441	921	
		0.96201717	922	
		0.36765666	923	
		0.12943267	924	
		0.48508991	925	
		0.19029758	926	
		0.06894041	927	
		0.75378505	928	
		0.54049172	929	
		0.88105288	930	
		0.44655908	931	
		0.21812021	932	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.88485653	933	
		0.4826945	934	
		0.50769076	935	
		0.78694787	936	
		0.30299804	937	
		0.09095481	938	
		0.38128119	939	
		0.13721578	940	
		0.24075643	941	
		0.36194784	942	
		0.82273876	943	
		0.98123756	944	
		0.04647382	945	
		0.73949702	946	
		0.39480686	947	
		0.08709554	948	
C6		0.00667747	949	
		0.36652174	950	
		0.19405891	951	
		0.21348482	952	
		0.63650565	953	
		0.71337666	954	
		0.11387473	955	
		0.13005294	956	
		0.34110022	957	
		0.70025152	958	
		0.15057247	959	
		0.46517226	960	
		0.97098861	961	
		0.48909154	962	
		0.36410473	963	
		0.02015242	964	
		0.01285222	965	
		0.39213532	966	
		0.83339145	967	
		0.27311887	968	
		0.87556167	969	
		0.65122728	970	
		0.60184892	971	
		0.07472003	972	
		0.85993223	973	
		0.99912234	974	
		0.2583392	975	
		0.95340016	976	
		0.13160221	977	
		0.85150863	978	
		0.46736756	979	
		0.35732584	980	
		0.85466014	981	
		0.28547236	982	
C1	C7	0.00581343	983	
		0.91142368	984	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47745858	985	
		0.12889445	986	
		0.31235596	987	
		0.94165612	988	
		0.1108212	989	
		0.76614305	990	
		0.62117295	991	
		0.51763494	992	
		0.01546199	993	
		0.54912274	994	
		0.57002842	995	
		0.33836107	996	
		0.83653953	997	
		0.31767715	998	
		0.88765013	999	
		0.45408612	1000	
		0.2898	1001	
		0.74438552	1002	
		0.27991129	1003	
		0.47713278	1004	
		0.42307254	1005	
		0.95285267	1006	
		0.35851733	1007	
		0.44832708	1008	
		0.56087784	1009	
		0.52220892	1010	
		0.64426595	1011	
		0.76933177	1012	
		0.3920119	1013	
		0.97033336	1014	
		0.4725732	1015	
		0.66973993	1016	
		0.04000135	1017	
		0.34197596	1018	
		0.42163795	1019	
		0.66896049	1020	
		0.98029141	1021	
		0.83187061	1022	
		0.79008876	1023	
		0.82908214	1024	
		0.5753702	1025	
		0.53465088	1026	
		0.5685641	1027	
		0.61533668	1028	
		0.76002922	1029	
		0.38882505	1030	
		0.09642237	1031	
		0.74881269	1032	
		0.20177985	1033	
10	C5	0.00541701	1034	
		0.17741042	1035	
		0.6799087	1036	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.37379607	1037	
		0.98316077	1038	
		0.04432666	1039	
		0.47695915	1040	
		0.8515431	1041	
		0.06690842	1042	
		0.2484429	1043	
2	3	0.00209703	1044	
		0.63007791	1045	
		0.53742855	1046	
		0.03521524	1047	
		0.8174056	1048	
		0.96059069	1049	
		0.9464773	1050	
		0.06933002	1051	
		0.16661572	1052	
		0.77973243	1053	
		0.17011847	1054	
		0.47428413	1055	
		0.31785223	1056	
		0.21402714	1057	
		0.61987366	1058	
		0.47096829	1059	
		0.91056098	1060	
		0.21919046	1061	
		0.19818459	1062	
		0.02903294	1063	
		0.14347913	1064	
		0.06529671	1065	
		0.08418091	1066	
		0.14485008	1067	
		0.10008815	1068	
		0.40954991	1069	
		0.63703232	1070	
		0.34761374	1071	
		0.56399258	1072	
		0.54669626	1073	
		0.35448501	1074	
		0.47391589	1075	
		0.89505371	1076	
		0.83090771	1077	
		0.12433535	1078	
		0.12946357	1079	
		0.52844501	1080	
		0.72347714	1081	
		0.84050636	1082	
		0.65410842	1083	
		0.47391726	1084	
		0.36526967	1085	
		0.80446582	1086	
		0.27472611	1087	
		0.48578903	1088	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.6576506	1089	
		0.69972523	1090	
		0.74758866	1091	
		0.27991107	1092	
		0.16910795	1093	
		0.2121923	1094	
C8		0.00737049	1095	
		0.21337083	1096	
		0.6232689	1097	
		0.68340771	1098	
		0.31294819	1099	
		0.11337704	1100	
		0.15380038	1101	
		0.65907966	1102	
		0.46511051	1103	
		0.06893036	1104	
		0.76770579	1105	
		0.33894078	1106	
		0.0606044	1107	
		0.74895527	1108	
		0.21019588	1109	
		0.31809575	1110	
		0.14864767	1111	
		0.96856918	1112	
		0.59731427	1113	
		0.97945733	1114	
		0.02179903	1115	
		0.36010723	1116	
		0.80992025	1117	
		0.01389985	1118	
		0.96031406	1119	
		0.24672918	1120	
		0.3920675	1121	
		0.25355139	1122	
		0.80884103	1123	
		0.93651281	1124	
		0.11023621	1125	
		0.2507095	1126	
		0.71276022	1127	
C7		0.00703115	1128	
		0.61338777	1129	
		0.49702562	1130	
		0.32317609	1131	
		0.74576656	1132	
		0.14865906	1133	
		0.37794588	1134	
		0.32796799	1135	
		0.54398147	1136	
		0.56786951	1137	
		0.93384013	1138	
		0.62666976	1139	
		0.49827402	1140	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.84005363	1141	
		0.61490969	1142	
		0.49420155	1143	
		0.47018295	1144	
		0.64627926	1145	
		0.32062911	1146	
		0.59144747	1147	
		0.92933096	1148	
		0.83148568	1149	
		0.47710823	1150	
		0.71744227	1151	
		0.3292334	1152	
		0.38759164	1153	
		0.33993023	1154	
		0.90927634	1155	
		0.69598662	1156	
		0.93660035	1157	
		0.94725628	1158	
		0.83743171	1159	
		0.17082257	1160	
		0.7078545	1161	
		0.90343631	1162	
		0.32316498	1163	
		0.24504955	1164	
		0.77107881	1165	
		0.57193388	1166	
		0.5017698	1167	
		0.50770765	1168	
		0.4198839	1169	
		0.70709191	1170	
		0.59111171	1171	
		0.80954572	1172	
		0.23261906	1173	
		0.39545667	1174	
		0.22487042	1175	
		0.50282691	1176	
		0.45504401	1177	
		0.72238126	1178	
		0.66049877	1179	
		0.20096171	1180	
		0.66296315	1181	
		0.44656454	1182	
		0.12928109	1183	
		0.09007082	1184	
		0.49833299	1185	
		0.78938467	1186	
		0.66995598	1187	
		0.05989262	1188	
		0.7882271	1189	
		0.77131022	1190	
		0.69896992	1191	
		0.4012483	1192	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76733144	1193	
		0.07565446	1194	
		0.6524029	1195	
		0.25588861	1196	
		0.21367516	1197	
		0.08015695	1198	
		0.6879374	1199	
		0.01431896	1200	
		0.8827897	1201	
		0.67657505	1202	
		0.80103918	1203	
		0.99165206	1204	
		0.25604465	1205	
		0.33576159	1206	
		0.54440567	1207	
		0.7130397	1208	
		0.12870417	1209	
		0.48698784	1210	
		0.0778413	1211	
		0.96908333	1212	
		0.24673016	1213	
		0.21205264	1214	
		0.34121589	1215	
		0.53670412	1216	
		0.08316983	1217	
		0.11287765	1218	
		0.37842756	1219	
		0.57879433	1220	
		0.47187952	1221	
		0.79889191	1222	
		0.36996297	1223	
		0.05793239	1224	
		0.62807256	1225	
		0.53107868	1226	
		0.07160101	1227	
		0.22374399	1228	
		0.89941496	1229	
		0.4322625	1230	
		0.9756016	1231	
		0.16225726	1232	
		0.59122959	1233	
		0.7169035	1234	
		0.26413559	1235	
		0.75797646	1236	
		0.55329914	1237	
		0.83311864	1238	
		0.74737312	1239	
		0.90585402	1240	
		0.4410047	1241	
		0.27110861	1242	
		0.15041071	1243	
		0.70233466	1244	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.63888267	1245	
		0.93589799	1246	
		0.45651024	1247	
		0.62959154	1248	
		0.43379081	1249	
		0.62949388	1250	
		0.0190725	1251	
		0.52192704	1252	
		0.05605988	1253	
		0.42010484	1254	
		0.94584348	1255	
		0.69009542	1256	
		0.56024932	1257	
		0.82498533	1258	
		0.08908253	1259	
		0.44448058	1260	
		0.34595371	1261	
		0.94458049	1262	
		0.48537254	1263	
		0.41400297	1264	
		0.41888852	1265	
		0.49720515	1266	
		0.28745657	1267	
		0.72284949	1268	
		0.91981144	1269	
		0.36313538	1270	
		0.99238183	1271	
		0.21417278	1272	
		0.71091444	1273	
		0.62099499	1274	
		0.25299141	1275	
		0.09539299	1276	
		0.36371793	1277	
		0.54734173	1278	
		0.72962065	1279	
		0.04121617	1280	
		0.91239902	1281	
		0.66049107	1282	
		0.1394379	1283	
		0.35687058	1284	
		0.53003686	1285	
		0.69820909	1286	
		0.53770196	1287	
		0.42915929	1288	
		0.54313443	1289	
		0.7439162	1290	
		0.54165298	1291	
		0.5086339	1292	
		0.36005337	1293	
		0.28613743	1294	
		0.3955657	1295	
		0.72910386	1296	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.71345631	1297	
		0.87959806	1298	
		0.36161908	1299	
		0.48804671	1300	
		0.16543402	1301	
		0.3131298	1302	
		0.86795528	1303	
		0.50177257	1304	
		0.10703045	1305	
		0.17684346	1306	
		0.63499549	1307	
		0.95346741	1308	
		0.91058551	1309	
		0.15471037	1310	
		0.81638464	1311	
		0.53501736	1312	
		0.8815431	1313	
		0.77507844	1314	
		0.5029548	1315	
		0.83001677	1316	
		0.21465888	1317	
		0.33260536	1318	
		0.62978647	1319	
		0.8332468	1320	
		0.57301539	1321	
		0.9685965	1322	
		0.37206835	1323	
		0.60261507	1324	
		0.16122082	1325	
		0.8590722	1326	
		0.69728264	1327	
		0.29272158	1328	
		0.83915721	1329	
		0.67958705	1330	
		0.67315451	1331	
		0.62976318	1332	
		0.94000857	1333	
		0.27911914	1334	
		0.98988443	1335	
		0.24872431	1336	
		0.07457963	1337	
		0.84685483	1338	
		0.81144814	1339	
		0.21929248	1340	
		0.2014923	1341	
		0.54550248	1342	
		0.83666595	1343	
		0.29919787	1344	
		0.16424991	1345	
		0.81046026	1346	
		0.69507812	1347	
		0.40870076	1348	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.91376929	1349	
		0.4766798	1350	
		0.34075129	1351	
		0.92277352	1352	
		0.04757599	1353	
		0.70620712	1354	
		0.89823083	1355	
		0.41839707	1356	
		0.78088319	1357	
		0.84038756	1358	
		0.69125408	1359	
		0.52239099	1360	
		0.72130932	1361	
		0.28704072	1362	
		0.38815961	1363	
		0.29369737	1364	
		0.43991003	1365	
		0.7183417	1366	
		0.21155779	1367	
		0.51039817	1368	
4	5	0.00253195	1369	
		0.4822261	1370	
		0.69044074	1371	
		0.33743473	1372	
		0.89804319	1373	
		0.2178654	1374	
		0.09689603	1375	
		0.10998095	1376	
		0.33939127	1377	
		0.47044478	1378	
		0.84018043	1379	
		0.60037833	1380	
		0.27713149	1381	
		0.03422532	1382	
		0.41650962	1383	
		0.54172469	1384	
		0.55919853	1385	
		0.31388979	1386	
		0.21634621	1387	
		0.33818962	1388	
		0.81690604	1389	
		0.20683151	1390	
		0.85610117	1391	
		0.57017717	1392	
		0.49958321	1393	
		0.31686115	1394	
		0.23527777	1395	
		0.31447565	1396	
		0.60776528	1397	
		0.85337889	1398	
		0.39133482	1399	
		0.11877925	1400	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97208827	1401	
		0.09599566	1402	
		0.76991659	1403	
		0.41472002	1404	
		0.50274162	1405	
		0.34109062	1406	
		0.98110748	1407	
		0.96612387	1408	
		0.36634939	1409	
		0.20357592	1410	
		0.59352964	1411	
		0.25219535	1412	
		0.39435993	1413	
		0.79903859	1414	
		0.01994383	1415	
		0.19800288	1416	
		0.09283735	1417	
		0.16698787	1418	
		0.23744113	1419	
		0.52614102	1420	
		0.58896012	1421	
		0.24539341	1422	
		0.86802443	1423	
		0.9350959	1424	
		0.30480567	1425	
		0.41567334	1426	
		0.65234939	1427	
		0.66331356	1428	
		0.71464253	1429	
		0.46197174	1430	
		0.92691256	1431	
		0.97208832	1432	
		0.49908295	1433	
		0.74083379	1434	
		0.59260838	1435	
		0.33935375	1436	
		0.4349695	1437	
		0.68628518	1438	
		0.18229914	1439	
		0.74952824	1440	
		0.87708354	1441	
		0.32889032	1442	
		0.91496326	1443	
		0.83647037	1444	
		0.23001441	1445	
		0.70355605	1446	
		0.1317414	1447	
		0.83895352	1448	
		0.93696543	1449	
		0.71256406	1450	
		0.45713554	1451	
		0.9781367	1452	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.81330059	1453	
		0.37991884	1454	
		0.38398305	1455	
		0.50262863	1456	
		0.52145391	1457	
		0.9252449	1458	
		0.14839089	1459	
		0.01929965	1460	
		0.20521785	1461	
		0.25922522	1462	
		0.05676048	1463	
		0.48675927	1464	
		0.09012128	1465	
		0.38505027	1466	
		0.58365057	1467	
		0.835061	1468	
		0.81506075	1469	
		0.71819293	1470	
		0.69626855	1471	
		0.29877856	1472	
		0.72163073	1473	
		0.66614113	1474	
		0.4261221	1475	
		0.6517153	1476	
		0.02101582	1477	
		0.22575576	1478	
		0.13052162	1479	
		0.05789419	1480	
		0.52721993	1481	
		0.88890126	1482	
		0.43737649	1483	
		0.41603182	1484	
		0.21850834	1485	
		0.92312367	1486	
		0.53411509	1487	
		0.44990205	1488	
		0.21062224	1489	
		0.0981981	1490	
		0.04169638	1491	
		0.47203385	1492	
		0.62291595	1493	
		0.92189651	1494	
		0.54810582	1495	
		0.93131732	1496	
		0.74763138	1497	
		0.77472431	1498	
		0.63034541	1499	
		0.01141913	1500	
		0.59421781	1501	
		0.67528225	1502	
		0.69295694	1503	
		0.68087426	1504	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76259408	1505	
		0.82120595	1506	
		0.30538372	1507	
		0.83196323	1508	
		0.65404786	1509	
		0.50367601	1510	
		0.68259245	1511	
		0.49081598	1512	
		0.09368377	1513	
		0.53566825	1514	
		0.42912815	1515	
		0.88789585	1516	
		0.32300006	1517	
		0.33710505	1518	
		0.84542167	1519	
		0.76366378	1520	
		0.61093636	1521	
		0.38595016	1522	
		0.49199925	1523	
		0.68681017	1524	
		0.21509486	1525	
		0.0389738	1526	
		0.84635678	1527	
		0.48077901	1528	
		0.91064125	1529	
		0.7154107	1530	
		0.41807246	1531	
		0.66777197	1532	
		0.79054642	1533	
		0.11945504	1534	
		0.13680743	1535	
		0.27586632	1536	
		0.08796317	1537	
		0.70524093	1538	
		0.22100846	1539	
		0.93060938	1540	
		0.80387341	1541	
		0.64558656	1542	
		0.01142014	1543	
		0.47442184	1544	
		0.17094715	1545	
		0.41745781	1546	
		0.92767859	1547	
		0.93927929	1548	
		0.01425703	1549	
		0.48884631	1550	
		0.21288746	1551	
		0.29351816	1552	
		0.86340345	1553	
		0.96010426	1554	
		0.61717631	1555	
		0.80018202	1556	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75814798	1557	
		0.78311531	1558	
		0.65292943	1559	
		0.93722436	1560	
		0.40775579	1561	
		0.15947537	1562	
		0.12088259	1563	
		0.92515959	1564	
		0.9303991	1565	
		0.2225404	1566	
		0.45928992	1567	
		0.59972607	1568	
		0.7029491	1569	
		0.89426612	1570	
		0.38053646	1571	
		0.36413286	1572	
		0.48625132	1573	
		0.70571832	1574	
		0.30447416	1575	
		0.3662313	1576	
		0.67308107	1577	
		0.80218466	1578	
		0.46259965	1579	
C9		0.00816246	1580	
		0.12926466	1581	
		0.74620628	1582	
		0.0345193	1583	
		0.59375621	1584	
		0.02413858	1585	
		0.65868388	1586	
		0.76048477	1587	
		0.32147535	1588	
		0.3269079	1589	
		0.11964059	1590	
		0.92253204	1591	
		0.3072326	1592	
		0.02051759	1593	
		0.93980904	1594	
		0.63299895	1595	
		0.34316858	1596	
		0.50407558	1597	
		0.49613844	1598	
		0.9218059	1599	
		0.84695804	1600	
		0.71934241	1601	
		0.01293314	1602	
		0.72033128	1603	
		0.49565664	1604	
		0.97952628	1605	
		0.49498034	1606	
		0.4996934	1607	
		0.87672279	1608	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.38247323	1609	
		0.99745468	1610	
		0.6899717	1611	
		0.19776026	1612	
		0.11577338	1613	
		0.6767614	1614	
		0.25733982	1615	
		0.81196606	1616	
		0.02183033	1617	
		0.28374541	1618	
		0.57250916	1619	
		0.02345918	1620	
		0.56613117	1621	
		0.80488393	1622	
		0.24390572	1623	
		0.99925778	1624	
		0.81149574	1625	
		0.51167207	1626	
		0.43569437	1627	
		0.52552912	1628	
		0.98751974	1629	
		0.41873131	1630	
		0.57511594	1631	
		0.29299963	1632	
		0.45349037	1633	
		0.48347042	1634	
		0.91391529	1635	
		0.94571818	1636	
		0.83005367	1637	
		0.36538242	1638	
		0.60177213	1639	
		0.33535482	1640	
		0.22578292	1641	
		0.18691119	1642	
		0.39489986	1643	
		0.18179054	1644	
		0.93071207	1645	
		0.0108097	1646	
		0.81180621	1647	
		0.6432785	1648	
		0.96874287	1649	
		0.26584778	1650	
		0.71001649	1651	
		0.78721161	1652	
		0.06320387	1653	
		0.22546154	1654	
		0.77465066	1655	
		0.97042685	1656	
		0.61078968	1657	
		0.76237348	1658	
		0.4398428	1659	
		0.39022616	1660	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.10209111	1661	
		0.26599053	1662	
		0.13644363	1663	
		0.75616375	1664	
		0.97841574	1665	
		0.666528	1666	
		0.0864844	1667	
		0.5900732	1668	
		0.45800061	1669	
		0.05885226	1670	
		0.72958709	1671	
		0.70497087	1672	
		0.96782744	1673	
		0.72958003	1674	
		0.78067352	1675	
		0.38851242	1676	
		0.87394513	1677	
		0.55314328	1678	
		0.46811784	1679	
		0.83359671	1680	
		0.76482367	1681	
		0.05401582	1682	
		0.02556161	1683	
		0.69243233	1684	
		0.54666355	1685	
		0.05666357	1686	
		0.99952849	1687	
		0.01782163	1688	
		0.56473459	1689	
		0.87193262	1690	
		0.42810867	1691	
		0.20931133	1692	
		0.90836962	1693	
		0.73704706	1694	
		0.48975789	1695	
C4		0.00607367	1696	
		0.69749394	1697	
		0.98868863	1698	
		0.21781644	1699	
		0.50639083	1700	
		0.57087753	1701	
		0.6847112	1702	
		0.17039344	1703	
		0.40479544	1704	
		0.80908379	1705	
		0.07917961	1706	
		0.95978461	1707	
		0.42449552	1708	
		0.44222671	1709	
		0.34361019	1710	
		0.0371488	1711	
		0.19579102	1712	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52768384	1713	
		0.27319282	1714	
		0.4720311	1715	
		0.05807292	1716	
		0.77234261	1717	
		0.08222709	1718	
		0.74970073	1719	
		0.6071946	1720	
		0.04968365	1721	
		0.9168815	1722	
		0.06063604	1723	
		0.62117726	1724	
		0.83730589	1725	
		0.69209271	1726	
		0.18331351	1727	
		0.84175432	1728	
		0.78065506	1729	
		0.63946261	1730	
		0.83292618	1731	
		0.52460868	1732	
		0.73828717	1733	
		0.64415743	1734	
		0.12795388	1735	
		0.73914867	1736	
		0.20000492	1737	
		0.68940688	1738	
		0.30466668	1739	
		0.10421145	1740	
		0.12752603	1741	
		0.72000019	1742	
		0.61236238	1743	
		0.41872153	1744	
		0.50139276	1745	
		0.35464849	1746	
		0.1314306	1747	
		0.31413456	1748	
		0.73607349	1749	
		0.03019021	1750	
		0.30949515	1751	
		0.76141254	1752	
		0.29180515	1753	
		0.66355513	1754	
		0.44039707	1755	
		0.42259592	1756	
		0.19765173	1757	
		0.7905131	1758	
		0.03236796	1759	
		0.44145136	1760	
		0.83887197	1761	
		0.17476458	1762	
		0.08019559	1763	
		0.09834901	1764	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.02651376	1765	
		0.17790848	1766	
		0.83857612	1767	
		0.80415392	1768	
		0.48017546	1769	
		0.76305168	1770	
		0.04293328	1771	
		0.39910532	1772	
		0.61500978	1773	
		0.88991022	1774	
		0.12746722	1775	
		0.51636859	1776	
		0.47033733	1777	
		0.23805294	1778	
		0.13946655	1779	
		0.02138207	1780	
		0.93982714	1781	
		0.58884276	1782	
		0.75974188	1783	
		0.17691755	1784	
		0.99742638	1785	
		0.46403426	1786	
		0.29897976	1787	
		0.54683001	1788	
		0.55031902	1789	
5	6	0.00270493	1790	
		0.59961895	1791	
		0.15491567	1792	
		0.35526272	1793	
		0.35641322	1794	
		0.12423397	1795	
		0.02774984	1796	
		0.63331205	1797	
		0.92354556	1798	
		0.87984427	1799	
		0.07693537	1800	
		0.14045801	1801	
		0.68805269	1802	
		0.26748399	1803	
		0.15627921	1804	
		0.08355631	1805	
		0.95507833	1806	
		0.55274375	1807	
		0.25880303	1808	
		0.97659125	1809	
		0.0608323	1810	
		0.76857044	1811	
		0.29969971	1812	
		0.87353281	1813	
		0.43890761	1814	
		0.7599815	1815	
		0.15227454	1816	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19162114	1817	
		0.82379769	1818	
		0.72426077	1819	
		0.86449243	1820	
		0.95605394	1821	
		0.89732354	1822	
		0.92162274	1823	
		0.75172843	1824	
		0.23557888	1825	
		0.6484977	1826	
		0.60444199	1827	
		0.38177592	1828	
9	C2	0.00420876	1829	
		0.80807121	1830	
		0.31366093	1831	
		0.05324793	1832	
		0.86331944	1833	
		0.22100532	1834	
		0.72358601	1835	
		0.59786619	1836	
		0.21564726	1837	
		0.10813205	1838	
		0.39240346	1839	
		0.75021064	1840	
		0.97047813	1841	
		0.63770483	1842	
		0.97556153	1843	
		0.23852203	1844	
		0.62633126	1845	
		0.7913691	1846	
		0.99063534	1847	
		0.41843186	1848	
		0.33424042	1849	
		0.64869304	1850	
		0.71835847	1851	
		0.24774113	1852	
		0.15376265	1853	
		0.32518006	1854	
		0.97907291	1855	
		0.34544313	1856	
		0.5175263	1857	
		0.35037975	1858	
		0.28583054	1859	
		0.85244032	1860	
		0.74041993	1861	
		0.20316348	1862	
		0.77399329	1863	
		0.87371141	1864	
		0.85940979	1865	
		0.04748537	1866	
		0.16648035	1867	
		0.02462666	1868	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75277384	1869	
		0.00831522	1870	
		0.23015027	1871	
		0.98396212	1872	
		0.3588123	1873	
		0.08817186	1874	
		0.64438443	1875	
		0.60136759	1876	
		0.39842118	1877	
		0.59105198	1878	
		0.16431294	1879	
		0.84930508	1880	
		0.28622832	1881	
		0.32528869	1882	
		0.76426296	1883	
		0.53124885	1884	
		0.64634578	1885	
		0.89517318	1886	
		0.80377879	1887	
		0.09688757	1888	
		0.54922356	1889	
		0.7736844	1890	
		0.11079809	1891	
		0.09341702	1892	
		0.94755489	1893	
		0.25370886	1894	
		0.48371187	1895	
		0.60184359	1896	
		0.75100336	1897	
		0.93947995	1898	
		0.72777562	1899	
		0.53082568	1900	
		0.80196849	1901	
		0.52369816	1902	
		0.40958354	1903	
		0.6141218	1904	
		0.34084033	1905	
		0.62356903	1906	
		0.73503867	1907	
		0.76912477	1908	
		0.27927827	1909	
		0.0429997	1910	
		0.44656401	1911	
		0.61928143	1912	
		0.45974791	1913	
		0.45374735	1914	
		0.51350302	1915	
		0.25701612	1916	
		0.33167562	1917	
		0.72330157	1918	
		0.98247998	1919	
		0.82354468	1920	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.99937238	1921	
		0.52236779	1922	
		0.59390968	1923	
		0.32597122	1924	
		0.20459893	1925	
		0.280375	1926	
		0.68089969	1927	
		0.37639659	1928	
		0.67362164	1929	
		0.28274007	1930	
		0.08630467	1931	
		0.98089178	1932	
		0.37766234	1933	
		0.62725767	1934	
		0.64639802	1935	
		0.01425422	1936	
		0.36838223	1937	
		0.59843179	1938	
		0.18785052	1939	
		0.01271804	1940	
		0.86268601	1941	
		0.10001025	1942	
		0.29065364	1943	
		0.66214259	1944	
		0.71648044	1945	
		0.30028979	1946	
		0.78685522	1947	
		0.43315613	1948	
		0.48613831	1949	
		0.94731889	1950	
		0.9686658	1951	
		0.64366531	1952	
		0.2886582	1953	
		0.50575876	1954	
		0.28251286	1955	
		0.49537195	1956	
		0.09333014	1957	
		0.78191496	1958	
		0.24334098	1959	
		0.56531651	1960	
		0.20968723	1961	
		0.46985844	1962	
		0.7984539	1963	
		0.31963352	1964	
		0.01500875	1965	
		0.97315581	1966	
		0.59378502	1967	
		0.2619407	1968	
		0.12258504	1969	
		0.05588679	1970	
		0.0485401	1971	
		0.65840481	1972	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.5838885	1973	
		0.30365831	1974	
		0.65835957	1975	
		0.57906773	1976	
		0.51309334	1977	
		0.31825594	1978	
		0.52954218	1979	
		0.15869061	1980	
		0.35602672	1981	
		0.3375115	1982	
		0.99705718	1983	
		0.53621872	1984	
		0.85058769	1985	
		0.67002883	1986	
		0.21129104	1987	
		0.14649493	1988	
		0.39020248	1989	
		0.16284178	1990	
		0.83306806	1991	
C10		0.00821735	1992	
		0.78971285	1993	
		0.78034593	1994	
		0.46827487	1995	
		0.06241847	1996	
		0.73310729	1997	
		0.72738588	1998	
		0.47606426	1999	
		0.11329635	2000	
		0.55797225	2001	
		0.17863528	2002	
		0.35825291	2003	
		0.79686497	2004	
		0.08724327	2005	
		0.80744675	2006	
		0.39910801	2007	
		0.38263308	2008	
		0.93944638	2009	
		0.52373917	2010	
		0.77188053	2011	
		0.43937014	2012	
		0.41990833	2013	
		0.47612587	2014	
		0.65659572	2015	
		0.6385261	2016	
		0.30137145	2017	
		0.47901986	2018	
		0.02006625	2019	
		0.80050683	2020	
		0.97326022	2021	
		0.99898332	2022	
C2	C8	0.00590758	2023	
		0.33407207	2024	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32795634	2025	
		0.13223725	2026	
		0.90204974	2027	
		0.55775212	2028	
		0.28422347	2029	
		0.84503956	2030	
		0.58023965	2031	
		0.50520627	2032	
		0.67521409	2033	
		0.15277757	2034	
		0.81036709	2035	
		0.53100969	2036	
		0.44256588	2037	
		0.26090013	2038	
		0.52667557	2039	
		0.71240057	2040	
		0.56568889	2041	
		0.59278607	2042	
		0.97452048	2043	
		0.55029904	2044	
		0.45305276	2045	
		0.53315818	2046	
		0.71859486	2047	
		0.46955199	2048	
		0.58195873	2049	
		0.44543398	2050	
		0.19320145	2051	
		0.23250339	2052	
		0.06638428	2053	
		0.96231658	2054	
		0.01956614	2055	
		0.24715633	2056	
		0.69291275	2057	
		0.51811441	2058	
		0.6031599	2059	
		0.85339945	2060	
		0.51198765	2061	
		0.31178722	2062	
		0.7426702	2063	
		0.39766823	2064	
		0.48908391	2065	
		0.153115	2066	
		0.64533889	2067	
		0.66885131	2068	
		0.41622493	2069	
		0.23635732	2070	
		0.39548785	2071	
		0.52076211	2072	
		0.84590525	2073	
		0.26400463	2074	
		0.30835653	2075	
		0.16776789	2076	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.57177675	2077	
		0.17797385	2078	
		0.32937133	2079	
		0.56125116	2080	
		0.56074203	2081	
		0.90538603	2082	
		0.81349933	2083	
		0.3745434	2084	
		0.37370473	2085	
		0.14102031	2086	
		0.46838302	2087	
		0.73183589	2088	
		0.35972927	2089	
		0.76998435	2090	
		0.56505011	2091	
		0.82499386	2092	
		0.79163055	2093	
		0.72767823	2094	
		0.71361088	2095	
		0.25047596	2096	
		0.0643495	2097	
		0.31123184	2098	
		0.72291549	2099	
		0.28459292	2100	
		0.62278681	2101	
		0.19237098	2102	
		0.65304537	2103	
		0.23972356	2104	
		0.44946739	2105	
		0.91025205	2106	
		0.71387249	2107	
		0.31149527	2108	
		0.2251348	2109	
		0.6482239	2110	
		0.97253569	2111	
		0.93629601	2112	
		0.16405622	2113	
		0.04823058	2114	
		0.50136101	2115	
		0.43917556	2116	
		0.3888675	2117	
		0.71082601	2118	
		0.58200435	2119	
		0.59827044	2120	
		0.36102497	2121	
		0.56294763	2122	
		0.3230792	2123	
		0.92507514	2124	
		0.82102048	2125	
		0.77439919	2126	
		0.95257357	2127	
		0.88860529	2128	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61397179	2129	
		0.44235015	2130	
		0.59502704	2131	
		0.72043944	2132	
		0.25940122	2133	
		0.57924316	2134	
		0.81400577	2135	
		0.28762866	2136	
		0.36813456	2137	
		0.94258169	2138	
		0.38980897	2139	
		0.84061763	2140	
		0.48623096	2141	
		0.07635672	2142	
		0.05617473	2143	
		0.77369064	2144	
		0.30381927	2145	
		0.9988668	2146	
		0.46430918	2147	
		0.95420779	2148	
		0.45798306	2149	
		0.35421824	2150	
		0.44494429	2151	
		0.82626435	2152	
		0.28425355	2153	
		0.5820833	2154	
C3	C10	0.00605446	2155	
		0.757153	2156	
		0.81568309	2157	
		0.85672358	2158	
		0.71022344	2159	
		0.23392692	2160	
		0.28199792	2161	
		0.76801946	2162	
		0.47606155	2163	
		0.59138205	2164	
		0.72579465	2165	
		0.6975133	2166	
		0.87363628	2167	
		0.48512619	2168	
		0.37777863	2169	
		0.09764349	2170	
		0.89000195	2171	
		0.59193591	2172	
		0.69048867	2173	
		0.14142661	2174	
		0.50875965	2175	
		0.93919655	2176	
		0.81526044	2177	
		0.78395025	2178	
		0.98301096	2179	
		0.79484722	2180	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.92168298	2181	
6	7	0.00301624	2182	
		0.88133375	2183	
		0.98859107	2184	
		0.82367843	2185	
		0.51252154	2186	
		0.30683101	2187	
		0.58894536	2188	
		0.9522499	2189	
		0.82658634	2190	
		0.4795889	2191	
		0.64377375	2192	
		0.67194432	2193	
		0.73036826	2194	
		0.19198896	2195	
		0.0918651	2196	
		0.4892125	2197	
		0.4018638	2198	
		0.4615277	2199	
		0.73031495	2200	
		0.96147221	2201	
		0.90078366	2202	
		0.64771196	2203	
		0.63485839	2204	
		0.59809049	2205	
		0.49005374	2206	
		0.981683	2207	
		0.92625549	2208	
		0.21110459	2209	
		0.69256682	2210	
		0.30555002	2211	
		0.48930913	2212	
		0.19745105	2213	
		0.46002718	2214	
		0.14598672	2215	
		0.56928239	2216	
		0.52257971	2217	
		0.3091643	2218	
		0.48480116	2219	
		0.82762199	2220	
		0.4518679	2221	
		0.74483482	2222	
		0.88555761	2223	
		0.49268209	2224	
		0.15707909	2225	
		0.33264429	2226	
		0.32523533	2227	
		0.88460813	2228	
		0.7991386	2229	
		0.8297646	2230	
		0.91989349	2231	
		0.19699806	2232	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.11736832	2233	
		0.24894874	2234	
		0.28915822	2235	
		0.07857772	2236	
		0.91558931	2237	
C5		0.00619021	2238	
		0.32190573	2239	
		0.68975699	2240	
		0.72041699	2241	
		0.76888221	2242	
		0.76768809	2243	
		0.94560827	2244	
		0.66871996	2245	
		0.03161427	2246	
		0.1499699	2247	
		0.3374151	2248	
		0.40066918	2249	
		0.96941557	2250	
		0.74457193	2251	
		0.38355452	2252	
		0.31479486	2253	
		0.56348533	2254	
		0.15442942	2255	
		0.26190023	2256	
		0.07428236	2257	
		0.47605265	2258	
		0.96180312	2259	
		0.11284416	2260	
		0.91296676	2261	
		0.6364855	2262	
		0.42898015	2263	
		0.44645013	2264	
		0.1153235	2265	
		0.70409568	2266	
		0.29345546	2267	
		0.24128665	2268	
		0.66841217	2269	
		0.02807858	2270	
		0.09555696	2271	
		0.55021687	2272	
		0.44161211	2273	
		0.88103636	2274	
		0.19852424	2275	
		0.97220637	2276	
		0.80524957	2277	
		0.36756781	2278	
		0.84372441	2279	
		0.07477912	2280	
		0.24136222	2281	
		0.54160585	2282	
		0.36528841	2283	
		0.98245197	2284	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30776127	2285	
		0.6807318	2286	
		0.27175471	2287	
		0.97066299	2288	
		0.68379181	2289	
		0.58973393	2290	
		0.11997861	2291	
		0.27315608	2292	
		0.49018077	2293	
		0.3233722	2294	
		0.23243969	2295	
		0.74914592	2296	
		0.81430576	2297	
		0.54747537	2298	
		0.77479261	2299	
		0.64669048	2300	
		0.89876294	2301	
		0.79453923	2302	
		0.48970054	2303	
		0.38060764	2304	
		0.74404245	2305	
		0.50416907	2306	
		0.7383154	2307	
		0.49435106	2308	
		0.36857648	2309	
		0.41986721	2310	
		0.42314495	2311	
		0.36184354	2312	
		0.1074157	2313	
		0.37998327	2314	
		0.46539478	2315	
		0.68987266	2316	
		0.01281459	2317	
		0.04515233	2318	
		0.95799922	2319	
		0.74514088	2320	
		0.34070657	2321	
		0.13105681	2322	
		0.71884131	2323	
		0.59080029	2324	
		0.83316563	2325	
		0.23413552	2326	
		0.49720758	2327	
		0.13863934	2328	
		0.26430425	2329	
		0.4397412	2330	
		0.63899423	2331	
		0.79331201	2332	
		0.33805779	2333	
		0.27646768	2334	
		0.33178561	2335	
		0.14319833	2336	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.23560276	2337	
		0.97147976	2338	
		0.94641713	2339	
		0.45883848	2340	
		0.560439	2341	
		0.0924527	2342	
		0.37481611	2343	
		0.46657785	2344	
		0.65200854	2345	
		0.98327952	2346	
		0.80161123	2347	
		0.57392613	2348	
		0.07574107	2349	
		0.9969538	2350	
		0.17258508	2351	
		0.42108949	2352	
		0.55902665	2353	
		0.08787336	2354	
		0.76284609	2355	
		0.12509323	2356	
		0.05500506	2357	
		0.65602327	2358	
		0.08256154	2359	
		0.15465029	2360	
		0.64509026	2361	
		0.30039216	2362	
		0.81290402	2363	
		0.61448581	2364	
		0.38917302	2365	
		0.90866457	2366	
		0.22690182	2367	
		0.35502047	2368	
		0.22447363	2369	
		0.31592038	2370	
		0.52230333	2371	
		0.34065484	2372	
		0.43198851	2373	
		0.45408699	2374	
		0.65985669	2375	
		0.05683687	2376	
		0.69912123	2377	
		0.0165671	2378	
		0.76927702	2379	
		0.42332824	2380	
		0.14992557	2381	
		0.66573185	2382	
		0.53392639	2383	
		0.17086761	2384	
		0.54848117	2385	
		0.92355992	2386	
		0.64901637	2387	
		0.59062945	2388	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7614985	2389	
		0.7951376	2390	
		0.3406973	2391	
		0.36604723	2392	
		0.32021936	2393	
		0.0558592	2394	
		0.96851298	2395	
		0.78232598	2396	
		0.44007836	2397	
		0.90104205	2398	
		0.71536926	2399	
		0.57347118	2400	
		0.2117435	2401	
		0.70391341	2402	
		0.8913779	2403	
		0.26294873	2404	
		0.72769021	2405	
		0.48440429	2406	
		0.64339916	2407	
		0.62668109	2408	
		0.68543003	2409	
		0.3489976	2410	
		0.8230914	2411	
		0.8494614	2412	
		0.06925937	2413	
		0.91675779	2414	
		0.1995463	2415	
		0.09494047	2416	
		0.67918043	2417	
		0.47871058	2418	
		0.77827417	2419	
		0.33131026	2420	
		0.96575946	2421	
		0.71542835	2422	
		0.63261962	2423	
		0.818884	2424	
		0.52973868	2425	
		0.05551063	2426	
		0.44665784	2427	
		0.02753565	2428	
		0.438096	2429	
		0.44373414	2430	
	C4	0.0047364	2431	
		0.45679308	2432	
		0.69287253	2433	
		0.74153934	2434	
		0.3135299	2435	
		0.32022307	2436	
		0.45662861	2437	
		0.72468926	2438	
		0.83824627	2439	
		0.27299058	2440	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75588322	2441	
		0.32502457	2442	
		0.80519179	2443	
		0.85238931	2444	
		0.24537217	2445	
		0.87813642	2446	
		0.89740062	2447	
		0.44600338	2448	
		0.47552077	2449	
		0.02752373	2450	
		0.12705632	2451	
		0.42193479	2452	
		0.74142252	2453	
		0.58591465	2454	
		0.08865331	2455	
		0.82499875	2456	
		0.28859297	2457	
		0.5766366	2458	
		0.86594569	2459	
		0.24791238	2460	
		0.83236897	2461	
		0.55042099	2462	
		0.55853458	2463	
		0.93824215	2464	
		0.79024915	2465	
		0.94318041	2466	
		0.12781551	2467	
		0.26378945	2468	
		0.67826083	2469	
		0.0780538	2470	
		0.12691667	2471	
		0.45769324	2472	
		0.97167277	2473	
		0.90442516	2474	
		0.20332903	2475	
		0.09625359	2476	
		0.8025034	2477	
		0.88832426	2478	
		0.2341294	2479	
		0.66230523	2480	
		0.0960114	2481	
		0.78522232	2482	
		0.39380173	2483	
		0.20699873	2484	
		0.91720416	2485	
		0.94559241	2486	
		0.73722028	2487	
		0.72371585	2488	
		0.67582704	2489	
		0.03335265	2490	
		0.4293335	2491	
		0.2370042	2492	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53288096	2493	
		0.27644588	2494	
		0.5221261	2495	
		0.6326745	2496	
		0.22452812	2497	
		0.20790951	2498	
		0.02197751	2499	
		0.89355775	2500	
		0.91429843	2501	
		0.53573416	2502	
		0.75643717	2503	
		0.0628314	2504	
		0.78733016	2505	
		0.1412121	2506	
		0.92558199	2507	
		0.70320935	2508	
		0.35283269	2509	
		0.85890931	2510	
		0.3901903	2511	
		0.0145184	2512	
		0.36056904	2513	
		0.55194684	2514	
		0.82588566	2515	
		0.5338877	2516	
		0.34390626	2517	
		0.71106021	2518	
		0.31849174	2519	
		0.17801482	2520	
		0.29777951	2521	
		0.77997953	2522	
		0.66933893	2523	
		0.37211523	2524	
		0.0957463	2525	
		0.58618094	2526	
		0.9319913	2527	
		0.40787711	2528	
		0.60787567	2529	
		0.16398861	2530	
		0.18153654	2531	
		0.99675932	2532	
		0.78987957	2533	
		0.33032491	2534	
		0.75144517	2535	
		0.98279409	2536	
		0.2876313	2537	
		0.44371214	2538	
		0.67074824	2539	
		0.69065834	2540	
		0.35057197	2541	
		0.31051345	2542	
		0.38611752	2543	
		0.91238492	2544	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73170395	2545	
		0.44982985	2546	
		0.56401851	2547	
		0.23736003	2548	
		0.20724307	2549	
		0.77120779	2550	
		0.10896801	2551	
		0.44331852	2552	
		0.4593368	2553	
		0.91425503	2554	
		0.81135189	2555	
		0.46807877	2556	
		0.03843423	2557	
		0.03493984	2558	
		0.29192058	2559	
		0.54964548	2560	
		0.7375133	2561	
		0.71981846	2562	
		0.04643683	2563	
		0.57649164	2564	
		0.20989036	2565	
		0.67234415	2566	
		0.92097028	2567	
		0.19818761	2568	
		0.07214511	2569	
		0.58542583	2570	
		0.23802996	2571	
		0.25821848	2572	
		0.11787121	2573	
		0.99764326	2574	
		0.90644528	2575	
		0.53223786	2576	
		0.64659074	2577	
		0.08805871	2578	
		0.82681064	2579	
		0.28336669	2580	
		0.90297201	2581	
		0.34504392	2582	
		0.55546169	2583	
		0.81827516	2584	
		0.69633083	2585	
		0.32014104	2586	
		0.65348327	2587	
		0.30751981	2588	
		0.07015524	2589	
		0.86044627	2590	
		0.39148483	2591	
		0.52504022	2592	
		0.03715098	2593	
		0.70822478	2594	
		0.09829014	2595	
		0.91691511	2596	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.48932299	2597	
		0.71893461	2598	
		0.8652058	2599	
		0.93437188	2600	
		0.81780987	2601	
		0.63750997	2602	
		0.89194507	2603	
		0.83097845	2604	
		0.25768556	2605	
		0.92409051	2606	
		0.0772029	2607	
		0.7310651	2608	
		0.1990716	2609	
		0.608739	2610	
		0.90983932	2611	
		0.21344561	2612	
		0.86447499	2613	
		0.58905154	2614	
		0.68871564	2615	
		0.31189394	2616	
		0.88675411	2617	
		0.8742628	2618	
		0.16742195	2619	
		0.6826457	2620	
		0.79123212	2621	
		0.47043832	2622	
		0.43145996	2623	
		0.94041753	2624	
		0.93434539	2625	
		0.80861037	2626	
		0.60001239	2627	
		0.98938791	2628	
		0.23634813	2629	
		0.79821965	2630	
		0.97866483	2631	
		0.74365577	2632	
		0.3699983	2633	
		0.13266648	2634	
		0.45872957	2635	
		0.99045648	2636	
		0.30252657	2637	
		0.66170163	2638	
		0.11879707	2639	
		0.46130624	2640	
		0.67970807	2641	
		0.45058253	2642	
		0.23463586	2643	
		0.2496918	2644	
		0.5654139	2645	
		0.56281433	2646	
		0.13191591	2647	
		0.51087899	2648	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.43731589	2649	
		0.88269184	2650	
		0.27351869	2651	
		0.34533223	2652	
		0.02861974	2653	
		0.02800328	2654	
		0.5980699	2655	
		0.48293952	2656	
		0.4020327	2657	
		0.83869221	2658	
		0.23201277	2659	
		0.12421676	2660	
		0.70969336	2661	
		0.36881189	2662	
		0.33604782	2663	
		0.64859507	2664	
		0.26339335	2665	
		0.69676374	2666	
		0.70104573	2667	
		0.51666922	2668	
		0.21373131	2669	
		0.64319474	2670	
		0.36554019	2671	
		0.87312891	2672	
		0.84324833	2673	
		0.75208137	2674	
		0.98077235	2675	
		0.50282912	2676	
		0.2005007	2677	
		0.12517858	2678	
		0.25012694	2679	
		0.41423525	2680	
		0.15907731	2681	
		0.76149596	2682	
		0.74753244	2683	
		0.16300146	2684	
		0.99319449	2685	
		0.75744372	2686	
		0.41993043	2687	
		0.79407675	2688	
		0.18140837	2689	
		0.83310473	2690	
		0.26094313	2691	
		0.22541426	2692	
		0.18867839	2693	
		0.50505494	2694	
		0.04601817	2695	
		0.35500209	2696	
		0.88630471	2697	
		0.83548418	2698	
		0.85460995	2699	
		0.34766645	2700	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.15866892	2701	
		0.17564277	2702	
		0.2158169	2703	
		0.81121855	2704	
		0.48865573	2705	
		0.21362238	2706	
		0.96761699	2707	
		0.30283487	2708	
		0.2112282	2709	
		0.8439537	2710	
		0.21412514	2711	
		0.81849063	2712	
		0.99049125	2713	
		0.03947202	2714	
		0.51807498	2715	
		0.28605961	2716	
		0.57231504	2717	
		0.09324267	2718	
		0.4965258	2719	
		0.24420793	2720	
		0.66326501	2721	
		0.71593075	2722	
		0.7459985	2723	
		0.22940074	2724	
		0.11691681	2725	
		0.04241426	2726	
		0.85252067	2727	
		0.06239362	2728	
		0.04924003	2729	
		0.5598817	2730	
		0.24850457	2731	
		0.89197184	2732	
		0.34569166	2733	
		0.19296615	2734	
		0.65941123	2735	
		0.55944746	2736	
		0.90715601	2737	
		0.4121371	2738	
		0.57183917	2739	
		0.59040763	2740	
		0.88560126	2741	
		0.3059601	2742	
		0.84381035	2743	
		0.47989988	2744	
		0.58535796	2745	
		0.23683113	2746	
		0.29824144	2747	
		0.71390813	2748	
		0.1916631	2749	
		0.09482602	2750	
		0.63448545	2751	
		0.60486605	2752	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47940664	2753	
		0.79991553	2754	
		0.40017857	2755	
		0.46091884	2756	
		0.23422131	2757	
		0.53830075	2758	
		0.309782	2759	
		0.11949728	2760	
		0.34004898	2761	
		0.70900552	2762	
		0.37846862	2763	
		0.09037697	2764	
		0.99318957	2765	
		0.55018651	2766	
		0.7881685	2767	
		0.13149427	2768	
		0.32613137	2769	
		0.20451511	2770	
		0.31553286	2771	
		0.0868122	2772	
		0.55512825	2773	
		0.87716355	2774	
		0.05540241	2775	
		0.30892949	2776	
		0.44707888	2777	
		0.39053342	2778	
		0.59371853	2779	
		0.65240283	2780	
		0.09072255	2781	
		0.81579671	2782	
		0.01026417	2783	
		0.91652534	2784	
		0.70588334	2785	
		0.63467125	2786	
		0.96379299	2787	
		0.3561376	2788	
		0.88867677	2789	
		0.05529779	2790	
		0.68881062	2791	
		0.79532896	2792	
		0.44436119	2793	
		0.72963311	2794	
		0.34259082	2795	
		0.87341812	2796	
		0.33117424	2797	
		0.68065615	2798	
		0.68127229	2799	
		0.82031257	2800	
		0.75502242	2801	
	C6	0.00547389	2802	
		0.60614136	2803	
		0.67820035	2804	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52507693	2805	
		0.1157868	2806	
		0.32337783	2807	
		0.06737105	2808	
		0.30083622	2809	
		0.66978758	2810	
		0.28974623	2811	
		0.30604712	2812	
		0.48904556	2813	
		0.11084055	2814	
		0.82699978	2815	
		0.52692888	2816	
		0.73028342	2817	
		0.84012269	2818	
		0.55269039	2819	
		0.81272626	2820	
		0.40420671	2821	
		0.39508478	2822	
		0.56874296	2823	
		0.57688802	2824	
		0.68638913	2825	
		0.25623076	2826	
		0.90049054	2827	
		0.72940448	2828	
		0.7274673	2829	
		0.79389415	2830	
		0.62142627	2831	
		0.38661702	2832	
		0.98810606	2833	
		0.8326072	2834	
		0.26191056	2835	
		0.19621872	2836	
		0.98689334	2837	
		0.1403711	2838	
		0.84876049	2839	
		0.4555812	2840	
		0.80682365	2841	
		0.40765072	2842	
		0.84204195	2843	
		0.35414104	2844	
		0.1081462	2845	
		0.49709978	2846	
		0.1020997	2847	
		0.35129849	2848	
		0.02263173	2849	
		0.63454377	2850	
		0.11678395	2851	
		0.68444699	2852	
		0.53860215	2853	
		0.80070392	2854	
		0.68949955	2855	
		0.82875768	2856	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55522104	2857	
		0.26842659	2858	
		0.54607703	2859	
		0.72247882	2860	
		0.2266599	2861	
		0.28432393	2862	
		0.4635332	2863	
		0.17198308	2864	
		0.08740443	2865	
		0.15834914	2866	
		0.20593448	2867	
		0.40719689	2868	
		0.75274432	2869	
		0.29960013	2870	
		0.79703216	2871	
		0.50953298	2872	
		0.45813352	2873	
		0.09695337	2874	
		0.03653088	2875	
		0.19865355	2876	
		0.9262575	2877	
		0.77167126	2878	
		0.21773531	2879	
		0.05344338	2880	
		0.91352374	2881	
		0.77878379	2882	
		0.47296121	2883	
		0.72272663	2884	
		0.44747951	2885	
		0.57785252	2886	
		0.79317188	2887	
		0.47425255	2888	
		0.11817191	2889	
		0.32872206	2890	
		0.31826331	2891	
		0.81313882	2892	
		0.35815521	2893	
		0.94190719	2894	
		0.20823411	2895	
		0.72707053	2896	
		0.21163101	2897	
		0.49203768	2898	
		0.48483062	2899	
		0.78779913	2900	
		0.37916407	2901	
		0.09973949	2902	
		0.97277929	2903	
		0.58205587	2904	
		0.47995507	2905	
		0.80266899	2906	
		0.04560089	2907	
		0.77529794	2908	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30735868	2909	
		0.48951955	2910	
		0.82012591	2911	
		0.2176364	2912	
		0.42302858	2913	
		0.82979235	2914	
		0.51179919	2915	
		0.13645923	2916	
		0.29059498	2917	
		0.45651267	2918	
		0.70080452	2919	
		0.27628977	2920	
		0.90095771	2921	
		0.36475921	2922	
		0.22631982	2923	
		0.93617358	2924	
		0.83174661	2925	
		0.39215757	2926	
		0.30905762	2927	
		0.43680954	2928	
		0.85478136	2929	
		0.89608502	2930	
		0.09162821	2931	
		0.65797495	2932	
		0.27063646	2933	
		0.36318234	2934	
		0.89565319	2935	
		0.02757494	2936	
		0.59966124	2937	
		0.47630178	2938	
		0.05063951	2939	
		0.79332474	2940	
		0.70969977	2941	
		0.40967308	2942	
		0.81266132	2943	
		0.70801457	2944	
		0.1411859	2945	
		0.3313206	2946	
		0.88110564	2947	
		0.49787782	2948	
		0.93636385	2949	
		0.81477104	2950	
		0.40456693	2951	
		0.65973382	2952	
		0.48211064	2953	
		0.04563482	2954	
		0.60735757	2955	
		0.84597649	2956	
		0.94423755	2957	
		0.889001	2958	
		0.54370281	2959	
		0.65223241	2960	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.66493834	2961	
		0.64111407	2962	
		0.72499319	2963	
		0.20098152	2964	
		0.69792181	2965	
		0.72308793	2966	
		0.36194376	2967	
		0.24275291	2968	
		0.78118482	2969	
		0.44661687	2970	
		0.83119885	2971	
		0.14423064	2972	
		0.48804716	2973	
		0.75639517	2974	
		0.43611176	2975	
		0.4582023	2976	
		0.06691858	2977	
		0.30809183	2978	
		0.23746788	2979	
		0.1745311	2980	
		0.41023001	2981	
		0.73027997	2982	
		0.99088152	2983	
		0.55633873	2984	
		0.52140077	2985	
		0.92395106	2986	
		0.2354426	2987	
		0.89782088	2988	
		0.27105376	2989	
		0.01433016	2990	
		0.52305839	2991	
		0.23862349	2992	
		0.27351329	2993	
		0.401552	2994	
		0.77161193	2995	
		0.20371248	2996	
		0.97278566	2997	
		0.61333708	2998	
		0.51839916	2999	
		0.80841727	3000	
		0.72575025	3001	
		0.22654027	3002	
		0.2560457	3003	
		0.64135508	3004	
		0.10511189	3005	
		0.97857468	3006	
		0.62643179	3007	
		0.93237807	3008	
		0.29851743	3009	
		0.3805991	3010	
		0.2981209	3011	
		0.89012095	3012	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.27565947	3013	
		0.46806939	3014	
		0.24877343	3015	
		0.46384356	3016	
		0.68850642	3017	
		0.00809124	3018	
		0.55645983	3019	
		0.70646154	3020	
		0.11048337	3021	
		0.83408169	3022	
		0.93858096	3023	
		0.36660324	3024	
		0.69837727	3025	
		0.11189632	3026	
		0.62054426	3027	
		0.69809715	3028	
		0.83440621	3029	
		0.6005003	3030	
		0.74937164	3031	
		0.9977705	3032	
		0.05026903	3033	
		0.53319325	3034	
		0.50020819	3035	
		0.64628449	3036	
		0.83456443	3037	
		0.16866094	3038	
		0.77649563	3039	
		0.53907058	3040	
		0.39269052	3041	
		0.74732943	3042	
		0.39541945	3043	
		0.66114493	3044	
		0.16848836	3045	
		0.34367071	3046	
		0.41165698	3047	
		0.55606043	3048	
		0.08801732	3049	
		0.04452454	3050	
		0.21074807	3051	
		0.4861899	3052	
		0.48055206	3053	
		0.28998535	3054	
		0.30273561	3055	
		0.53952096	3056	
		0.57604599	3057	
		0.84566082	3058	
		0.1742941	3059	
		0.59517335	3060	
		0.32772686	3061	
		0.07533817	3062	
		0.52553756	3063	
		0.151614	3064	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.34253106	3065	
		0.90929265	3066	
		0.1652253	3067	
		0.18327814	3068	
		0.24885995	3069	
		0.18836916	3070	
		0.03373627	3071	
		0.51221274	3072	
		0.89806941	3073	
		0.01459143	3074	
		0.06423765	3075	
		0.12900282	3076	
		0.4153969	3077	
		0.9131243	3078	
		0.40818248	3079	
		0.20305042	3080	
		0.3939076	3081	
		0.86965705	3082	
		0.51214429	3083	
		0.33668769	3084	
		0.43773902	3085	
		0.91629666	3086	
		0.26374716	3087	
		0.77043302	3088	
		0.31438285	3089	
		0.26224594	3090	
		0.464582	3091	
		0.92678397	3092	
		0.92709781	3093	
		0.95856354	3094	
		0.75139517	3095	
		0.1466922	3096	
		0.38405628	3097	
		0.28934177	3098	
		0.73116008	3099	
		0.68724979	3100	
		0.40585498	3101	
		0.88606882	3102	
		0.58868624	3103	
		0.86311208	3104	
		0.22688174	3105	
		0.95993146	3106	
		0.14535582	3107	
		0.85797321	3108	
		0.87619462	3109	
		0.26708468	3110	
		0.14373344	3111	
		0.67332274	3112	
		0.423732	3113	
		0.36729833	3114	
		0.89956818	3115	
		0.8779758	3116	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55158135	3117	
		0.89600415	3118	
		0.1017725	3119	
		0.94439748	3120	
		0.56798899	3121	
		0.03327358	3122	
		0.58738273	3123	
		0.2878904	3124	
		0.8510583	3125	
		0.57452112	3126	
		0.34259698	3127	
		0.22278383	3128	
		0.14822714	3129	
		0.33782654	3130	
		0.17971338	3131	
		0.83673842	3132	
		0.33424101	3133	
		0.87473594	3134	
		0.74272101	3135	
		0.87021283	3136	
		0.23692765	3137	
		0.54600577	3138	
		0.11739931	3139	
		0.75269246	3140	
		0.57194978	3141	
		0.66898698	3142	
		0.65025961	3143	
		0.11885711	3144	
		0.35059146	3145	
		0.25206851	3146	
		0.70079442	3147	
		0.44147261	3148	
		0.74992923	3149	
		0.63648097	3150	
		0.94843593	3151	
		0.63470239	3152	
		0.294583	3153	
		0.63520166	3154	
		0.88789473	3155	
		0.34369962	3156	
		0.23535879	3157	
		0.22043388	3158	
		0.44436393	3159	
		0.52893056	3160	
		0.54364244	3161	
		0.7500053	3162	
		0.43205555	3163	
		0.65959815	3164	
		0.39250308	3165	
		0.96477305	3166	
		0.83553217	3167	
		0.04426851	3168	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.29551656	3169	
		0.89412649	3170	
		0.38188138	3171	
		0.70308948	3172	
		0.29979826	3173	
		0.67546062	3174	
		0.76753257	3175	
		0.86973817	3176	
		0.89172205	3177	
	C3	0.00440666	3178	
		0.27529107	3179	
		0.64823377	3180	
		0.91536221	3181	
		0.43244059	3182	
		0.10820092	3183	
		0.88083979	3184	
		0.1034922	3185	
		0.93900774	3186	
		0.07779688	3187	
		0.54756578	3188	
		0.81080424	3189	
		0.62212826	3190	
		0.9795345	3191	
		0.38812732	3192	
		0.58299573	3193	
		0.87190747	3194	
		0.70466702	3195	
		0.30063694	3196	
		0.12866411	3197	
		0.76951303	3198	
		0.58814417	3199	
		0.64941834	3200	
		0.56461948	3201	
		0.80271553	3202	
		0.78038149	3203	
		0.81829569	3204	
		0.5973553	3205	
		0.55762924	3206	
		0.75874359	3207	
		0.99794791	3208	
		0.62945926	3209	
		0.59511337	3210	
		0.92145169	3211	
		0.31979184	3212	
		0.14726072	3213	
		0.61639601	3214	
		0.25799213	3215	
		0.05013722	3216	
		0.33922555	3217	
		0.78572001	3218	
		0.12832396	3219	
		0.57460155	3220	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.41169551	3221	
		0.57115697	3222	
		0.64848284	3223	
		0.26680773	3224	
		0.05161179	3225	
		0.71704108	3226	
		0.14629569	3227	
		0.2653843	3228	
		0.45604316	3229	
		0.41545179	3230	
		0.50927834	3231	
		0.91841484	3232	
		0.3683719	3233	
		0.85247095	3234	
		0.28159718	3235	
		0.66599547	3236	
		0.10302147	3237	
		0.84930771	3238	
		0.46555795	3239	
		0.9320039	3240	
		0.97708228	3241	
		0.56794826	3242	
		0.29552806	3243	
		0.69243971	3244	
		0.93978919	3245	
		0.69623401	3246	
		0.4503364	3247	
		0.34153082	3248	
		0.46703046	3249	
		0.94844962	3250	
		0.52105161	3251	
		0.80563458	3252	
		0.39505215	3253	
		0.24180267	3254	
		0.67735056	3255	
		0.51161881	3256	
		0.16167833	3257	
		0.42213209	3258	
		0.43531525	3259	
		0.56774622	3260	
		0.55604769	3261	
		0.99488744	3262	
		0.65046619	3263	
		0.98650704	3264	
		0.86764488	3265	
		0.55433421	3266	
		0.67099686	3267	
		0.44122363	3268	
		0.93246011	3269	
		0.59636283	3270	
		0.39715236	3271	
		0.6984924	3272	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.21516069	3273	
		0.37761619	3274	
		0.58714411	3275	
		0.01750158	3276	
		0.54035601	3277	
		0.19334757	3278	
		0.34790417	3279	
		0.9912441	3280	
		0.01395446	3281	
		0.55585515	3282	
		0.15382187	3283	
		0.07401933	3284	
		0.01890174	3285	
		0.72728852	3286	
		0.87776818	3287	
		0.74433633	3288	
		0.05683562	3289	
		0.72269172	3290	
		0.9075743	3291	
		0.52567802	3292	
		0.33729211	3293	
	10	0.00406187	3294	
		0.50222619	3295	
		0.74057162	3296	
		0.31881916	3297	
		0.97048707	3298	
		0.88121764	3299	
		0.46414949	3300	
		0.51397452	3301	
		0.55207657	3302	
		0.14455833	3303	
		0.52766702	3304	
		0.76776488	3305	
		0.49474221	3306	
		0.3957261	3307	
		0.46874352	3308	
		0.36719992	3309	
		0.60193092	3310	
		0.21881513	3311	
		0.12253873	3312	
		0.33932611	3313	
		0.66755075	3314	
		0.62697648	3315	
		0.03767	3316	
		0.98110822	3317	
		0.85721163	3318	
		0.64553168	3319	
		0.43482329	3320	
		0.34077738	3321	
		0.0871197	3322	
		0.9420697	3323	
		0.1340752	3324	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61805743	3325	
		0.7355913	3326	
		0.25359927	3327	
		0.0471895	3328	
		0.92793398	3329	
		0.5068829	3330	
		0.90336681	3331	
		0.12729062	3332	
		0.38008394	3333	
		0.31391538	3334	
		0.72717557	3335	
		0.52817938	3336	
		0.11371982	3337	
		0.37889679	3338	
		0.88252166	3339	
		0.88074696	3340	
		0.20318007	3341	
		0.4824982	3342	
		0.2024603	3343	
		0.35235015	3344	
		0.06202549	3345	
		0.29695369	3346	
		0.68559845	3347	
		0.83391596	3348	
		0.45213893	3349	
		0.79431556	3350	
		0.30873937	3351	
		0.27567633	3352	
		0.49415441	3353	
		0.95743158	3354	
		0.45662806	3355	
		0.05336767	3356	
		0.20051753	3357	
		0.52996093	3358	
		0.77402721	3359	
		0.04092716	3360	
		0.84588	3361	
		0.48710504	3362	
		0.78706288	3363	
		0.18010416	3364	
		0.35825565	3365	
		0.2125417	3366	
		0.92911125	3367	
		0.49340895	3368	
		0.748386	3369	
		0.65296857	3370	
		0.03929514	3371	
		0.87435904	3372	
		0.27092264	3373	
		0.67587899	3374	
		0.26617942	3375	
		0.96626794	3376	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.78458962	3377	
		0.27295571	3378	
		0.18039468	3379	
		0.91714955	3380	
		0.94920445	3381	
		0.19103711	3382	
		0.96771905	3383	
		0.88679945	3384	
		0.69956103	3385	
		0.1700117	3386	
		0.29492136	3387	
		0.76715037	3388	
		0.96132259	3389	
		0.74856177	3390	
		0.59988515	3391	
		0.08292325	3392	
		0.7704305	3393	
		0.41893594	3394	
		0.75257615	3395	
		0.2033782	3396	
		0.34479357	3397	
		0.40322643	3398	
		0.90342648	3399	
		0.30847925	3400	
		0.89176351	3401	
		0.57917631	3402	
		0.67343074	3403	
		0.13436956	3404	
		0.09256279	3405	
		0.0389947	3406	
		0.75176982	3407	
		0.6089337	3408	
		0.45248373	3409	
		0.21159236	3410	
		0.03777263	3411	
		0.15247407	3412	
		0.84038492	3413	
		0.28828014	3414	
		0.35812158	3415	
		0.95723238	3416	
		0.461685	3417	
		0.09422089	3418	
		0.55244733	3419	
		0.1094819	3420	
		0.88160578	3421	
		0.8031362	3422	
		0.53858302	3423	
		0.58471875	3424	
		0.34396944	3425	
		0.29049195	3426	
		0.45520596	3427	
		0.7361108	3428	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.59876502	3429	
		0.53847502	3430	
		0.43467429	3431	
		0.83160946	3432	
		0.05152309	3433	
		0.38533871	3434	
		0.10878648	3435	
		0.27598752	3436	
		0.18377271	3437	
		0.2392246	3438	
		0.72778046	3439	
		0.89466988	3440	
		0.05493187	3441	
		0.27500933	3442	
		0.81777308	3443	
		0.11146993	3444	
		0.3376569	3445	
		0.62173365	3446	
		0.65232455	3447	
		0.21463155	3448	
		0.26001318	3449	
		0.74688889	3450	
		0.36136854	3451	
		0.27862911	3452	
		0.99359184	3453	
		0.75056505	3454	
		0.78799463	3455	
		0.08311107	3456	
		0.18237551	3457	
		0.5092366	3458	
		0.36252358	3459	
		0.7275974	3460	
		0.79611245	3461	
		0.32368887	3462	
		0.37724594	3463	
		0.48697087	3464	
		0.16629257	3465	
		0.56115096	3466	
		0.25887237	3467	
		0.97665039	3468	
		0.05849579	3469	
		0.26169076	3470	
		0.16879604	3471	
		0.78334041	3472	
		0.84822591	3473	
		0.59280346	3474	
		0.18660995	3475	
		0.03865192	3476	
		0.06164833	3477	
		0.27520964	3478	
		0.34556203	3479	
		0.68846491	3480	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.05245581	3481	
		0.06755482	3482	
		0.04376885	3483	
		0.84288634	3484	
		0.16092106	3485	
		0.25054499	3486	
		0.19301729	3487	
		0.57727826	3488	
		0.11070003	3489	
		0.51828725	3490	
		0.80199472	3491	
		0.67635011	3492	
		0.29396686	3493	
		0.23621939	3494	
		0.53026319	3495	
		0.18320568	3496	
		0.67846665	3497	
		0.31929503	3498	
		0.5972405	3499	
		0.08700821	3500	
		0.92739924	3501	
		0.13776707	3502	
		0.05699549	3503	
		0.52494399	3504	
		0.94337077	3505	
		0.38483268	3506	
		0.58461655	3507	
		0.2073897	3508	
		0.06439141	3509	
		0.2957508	3510	
		0.22541638	3511	
		0.81196165	3512	
		0.06759142	3513	
		0.501932	3514	
		0.22455341	3515	
		0.76830206	3516	
		0.86010105	3517	
		0.54571557	3518	
		0.67365641	3519	
		0.95984968	3520	
		0.24860613	3521	
		0.17829027	3522	
		0.22556322	3523	
		0.87900745	3524	
		0.57782864	3525	
		0.76120476	3526	
		0.45162157	3527	
		0.40053605	3528	
		0.87957555	3529	
		0.42447539	3530	
		0.85940644	3531	
		0.27656407	3532	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.2914243	3533	
		0.86304444	3534	
		0.23430834	3535	
		0.30964326	3536	
		0.20642107	3537	
		0.81078101	3538	
		0.86609036	3539	
		0.27355406	3540	
		0.63586937	3541	
		0.4332891	3542	
		0.28303563	3543	
		0.68867014	3544	
		0.93754187	3545	
		0.90470819	3546	
		0.36006741	3547	
		0.02246609	3548	
		0.94597047	3549	
		0.79714615	3550	
		0.81617338	3551	
		0.4308031	3552	
		0.79497219	3553	
		0.92458226	3554	
		0.56822936	3555	
		0.82327377	3556	
		0.30843937	3557	
		0.48942993	3558	
		0.33157337	3559	
		0.72602799	3560	
		0.94984916	3561	
		0.48323738	3562	
		0.69765392	3563	
		0.79940403	3564	
		0.56452405	3565	
		0.6721519	3566	
		0.5705243	3567	
		0.65185747	3568	
		0.60770807	3569	
		0.16521276	3570	
		0.76765041	3571	
		0.33638112	3572	
		0.412619	3573	
		0.78420464	3574	
		0.09150019	3575	
		0.366547	3576	
		0.57858177	3577	
		0.63593947	3578	
		0.59802653	3579	
		0.10208001	3580	
		0.62689519	3581	
		0.76797571	3582	
		0.41849292	3583	
		0.0293356	3584	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.1544074	3585	
		0.54689012	3586	
		0.39574005	3587	
		0.37492696	3588	
		0.06753874	3589	
		0.3821629	3590	
		0.02772475	3591	
		0.359136	3592	
		0.95254835	3593	
		0.44747689	3594	
		0.59434256	3595	
		0.50622433	3596	
		0.56409039	3597	
		0.16483203	3598	
		0.29501722	3599	
		0.43716193	3600	
		0.09423197	3601	
		0.7051404	3602	
		0.74870651	3603	
		0.76844513	3604	
		0.91651181	3605	
		0.12598618	3606	
		0.89440659	3607	
		0.7052325	3608	
		0.46997704	3609	
		0.74533229	3610	
		0.50072715	3611	
		0.47719228	3612	
		0.55779637	3613	
		0.67825735	3614	
		0.51226227	3615	
		0.59545273	3616	
	C9	0.00591241	3617	
		0.51732141	3618	
		0.24959674	3619	
		0.38663991	3620	
		0.58243416	3621	
		0.42593051	3622	
		0.88845348	3623	
		0.18521246	3624	
		0.56794162	3625	
		0.98551751	3626	
		0.77059623	3627	
		0.09295328	3628	
		0.2082594	3629	
		0.81880116	3630	
		0.05831134	3631	
		0.68638517	3632	
		0.12001561	3633	
		0.01282097	3634	
		0.33379795	3635	
		0.92197131	3636	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.51946997	3637	
		0.45107712	3638	
		0.76177447	3639	
		0.81782982	3640	
		0.0777488	3641	
		0.34051131	3642	
		0.62896373	3643	
		0.86477433	3644	
		0.36983181	3645	
		0.94996266	3646	
		0.98319438	3647	
		0.03259718	3648	
		0.80626791	3649	
		0.14257428	3650	
		0.9145532	3651	
		0.64862021	3652	
		0.82957102	3653	
		0.53064779	3654	
		0.30531641	3655	
		0.1605117	3656	
		0.8940098	3657	
		0.2724904	3658	
		0.56130358	3659	
		0.09222319	3660	
		0.80250184	3661	
		0.90697127	3662	
		0.33528134	3663	
		0.37676948	3664	
		0.64212247	3665	
		0.03878268	3666	
		0.15703437	3667	
		0.58118642	3668	
		0.06236538	3669	
		0.2908503	3670	
		0.49680196	3671	
		0.78787331	3672	
		0.43682863	3673	
		0.54321814	3674	
		0.9787502	3675	
		0.57203624	3676	
		0.88041055	3677	
		0.12674946	3678	
		0.50747225	3679	
		0.76286059	3680	
		0.89222471	3681	
		0.87394056	3682	
		0.70674725	3683	
		0.94080827	3684	
		0.5535005	3685	
		0.10216274	3686	
		0.47084767	3687	
		0.50904384	3688	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53586907	3689	
		0.19612465	3690	
		0.81336222	3691	
		0.49967926	3692	
		0.87378594	3693	
		0.66052424	3694	
	1	0.0016047	3695	
		0.03584658	3696	
		0.59271112	3697	
		0.22188451	3698	
		0.58280557	3699	
		0.22163626	3700	
		0.08279708	3701	
		0.04042356	3702	
		0.39889778	3703	
		0.28587777	3704	
		0.53038673	3705	
		0.17006184	3706	
		0.97646508	3707	
		0.73730851	3708	
		0.2287015	3709	
		0.53869562	3710	
		0.74511374	3711	
		0.5442312	3712	
		0.21236746	3713	
		0.41579854	3714	
		0.25115617	3715	
		0.19221282	3716	
		0.285589	3717	
		0.24520413	3718	
		0.68173516	3719	
		0.08921851	3720	
		0.1672582	3721	
		0.57844242	3722	
		0.19023237	3723	
		0.81489198	3724	
		0.38398127	3725	
		0.57575529	3726	
		0.39288597	3727	
		0.48379325	3728	
		0.49774505	3729	
		0.94043477	3730	
		0.34920138	3731	
		0.75051707	3732	
		0.79668151	3733	
		0.3032382	3734	
		0.29666638	3735	
		0.12998008	3736	
		0.1955727	3737	
		0.2088491	3738	
		0.87884733	3739	
		0.83465643	3740	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.13798826	3741	
		0.68737857	3742	
		0.00610255	3743	
		0.68465267	3744	
		0.19526055	3745	
		0.44583275	3746	
		0.86014011	3747	
		0.77831131	3748	
		0.91813657	3749	
		0.0567078	3750	
		0.62985843	3751	
		0.04365572	3752	
		0.12895217	3753	
		0.50466834	3754	
		0.52836213	3755	
		0.64946387	3756	
		0.06779647	3757	
		0.71054936	3758	
		0.24693201	3759	
		0.42964635	3760	
		0.77321495	3761	
		0.47704066	3762	
		0.94276316	3763	
		0.94228369	3764	
		0.47447981	3765	
		0.72333341	3766	
		0.88829577	3767	
		0.08216809	3768	
		0.42172035	3769	
		0.5830969	3770	
		0.37107684	3771	
		0.35583958	3772	
		0.03859487	3773	
		0.39230072	3774	
		0.94175995	3775	
		0.27523117	3776	
		0.46873876	3777	
		0.55724871	3778	
		0.94132422	3779	
		0.76934976	3780	
		0.30842669	3781	
		0.6651458	3782	
		0.14770172	3783	
		0.35167856	3784	
		0.60200649	3785	
		0.42515231	3786	
		0.69352376	3787	
		0.442058	3788	
		0.35764942	3789	
		0.93718139	3790	
		0.3542975	3791	
		0.45920737	3792	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7162012	3793	
		0.24654389	3794	
		0.02012979	3795	
		0.36804737	3796	
		0.36171649	3797	
		0.35441414	3798	
		0.90858505	3799	
		0.50691481	3800	
		0.92869782	3801	
		0.99285255	3802	
		0.34290428	3803	
		0.91408954	3804	
		0.67889745	3805	
		0.03196407	3806	
		0.35268651	3807	
		0.73930383	3808	
		0.37621642	3809	
		0.77671132	3810	
		0.24897946	3811	
		0.81308205	3812	
		0.44043652	3813	
		0.02413601	3814	
		0.4626201	3815	
		0.28162015	3816	
		0.26227893	3817	
		0.97578812	3818	
		0.37242227	3819	
		0.23073543	3820	
		0.44313671	3821	
		0.27385471	3822	
		0.84868197	3823	
		0.11517972	3824	
		0.44900236	3825	
		0.68776859	3826	
		0.769786	3827	
		0.40336579	3828	
		0.0099511	3829	
		0.70322439	3830	
		0.52854579	3831	
		0.4165271	3832	
		0.66626215	3833	
		0.81789579	3834	
		0.68002321	3835	
		0.4138838	3836	
		0.5097642	3837	
		0.89823814	3838	
		0.28344561	3839	
		0.67854919	3840	
		0.97019442	3841	
		0.218998	3842	
		0.77989434	3843	
		0.06310512	3844	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31662802	3845	
		0.4443766	3846	
		0.36621931	3847	
		0.10060263	3848	
		0.22417292	3849	
		0.65162322	3850	
		0.85064726	3851	
		0.56591635	3852	
		0.94463298	3853	
		0.28516738	3854	
		0.25200313	3855	
		0.22168574	3856	
		0.04518524	3857	
		0.04099928	3858	
		0.19917726	3859	
		0.78030669	3860	
		0.48065324	3861	
		0.42631878	3862	
	9	0.0036265	3863	
		0.58723584	3864	
		0.22534015	3865	
		0.109647	3866	
		0.79180297	3867	
		0.42507036	3868	
		0.74277435	3869	
		0.18483569	3870	
		0.16112945	3871	
		0.45960065	3872	
		0.12268824	3873	
		0.94958612	3874	
		0.45852138	3875	
		0.72959375	3876	
		0.55910863	3877	
		0.60897824	3878	
		0.69385602	3879	
		0.31871409	3880	
		0.25506801	3881	
		0.22183875	3882	
		0.68932557	3883	
		0.62086968	3884	
		0.24118029	3885	
		0.56915835	3886	
		0.01119862	3887	
		0.21608665	3888	
		0.53516228	3889	
		0.9647399	3890	
		0.55411051	3891	
		0.34633432	3892	
		0.51999044	3893	
		0.33734559	3894	
		0.35970469	3895	
		0.97856977	3896	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32854282	3897	
		0.91507781	3898	
		0.04510475	3899	
		0.28431711	3900	
		0.74411707	3901	
		0.32790588	3902	
		0.51286614	3903	
		0.18329244	3904	
		0.76848296	3905	
		0.27061901	3906	
		0.09964973	3907	
		0.02078376	3908	
		0.25695479	3909	
		0.50665061	3910	
		0.08473523	3911	
		0.87372247	3912	
		0.14214782	3913	
		0.49901941	3914	
		0.17246946	3915	
		0.57125965	3916	
		0.45449021	3917	
		0.04732803	3918	
		0.16473922	3919	
		0.33454331	3920	
		0.89991579	3921	
		0.341538	3922	
		0.51943432	3923	
		0.2041854	3924	
		0.21762871	3925	
		0.94484137	3926	
		0.67561074	3927	
		0.45955111	3928	
		0.63388751	3929	
		0.21509566	3930	
		0.6823966	3931	
		0.63339437	3932	
		0.40719987	3933	
		0.11928836	3934	
		0.41453127	3935	
		0.60010624	3936	
		0.27124163	3937	
		0.85208317	3938	
		0.23797999	3939	
		0.06199801	3940	
		0.74746413	3941	
		0.92771665	3942	
		0.02330923	3943	
		0.69960742	3944	
		0.22039289	3945	
		0.52919273	3946	
		0.43074483	3947	
		0.24421137	3948	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.89614218	3949	
		0.27489096	3950	
		0.78716036	3951	
		0.48814261	3952	
		0.06628242	3953	
		0.63319295	3954	
		0.61156256	3955	
		0.62109962	3956	
		0.34527464	3957	
		0.59762907	3958	
		0.78970358	3959	
		0.15676431	3960	
		0.1741499	3961	
		0.88334194	3962	
		0.5406021	3963	
		0.61308963	3964	
		0.17967053	3965	
		.0.2117157	3966	
		0.47751567	3967	
		0.1496899	3968	
		0.97019907	3969	
		0.41131947	3970	
		0.08845274	3971	
		0.13013439	3972	
		0.74104503	3973	
		0.47312522	3974	
		0.98249609	3975	
		0.45619943	3976	
		0.99625133	3977	
		0.26430325	3978	
		0.92505246	3979	
		0.84263926	3980	
		0.77073244	3981	
		0.48831609	3982	
		0.81093507	3983	
		0.82021329	3984	
		0.08369643	3985	
		0.63391868	3986	
		0.08003177	3987	
		0.60591649	3988	
		0.28246203	3989	
		0.41226001	3990	
		0.70435345	3991	
		0.470686	3992	
		0.07836683	3993	
		0.03360085	3994	
		0.85262375	3995	
		0.75198068	3996	
		0.95115581	3997	
		0.75437844	3998	
		0.04565188	3999	
		0.19027711	4000	

Waste Stream Lot: BN510.1 Boxline Lot 3

Population Size of Waste Stream Lot: 2,400 to 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature

1.3.12

Date

FOR INFORMATION ONLY

Idaho Treatment Group

RECORD
CMC 09/19/2012

INTEROFFICE MEMORANDUM

To: Sue Peterman, TRU Programs Manager

From: Steve Carpenter, Alternate Site Project Manager/Acceptable Knowledge Manager

Date: February 1, 2012

Subject: Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2 – SPC-007-12

This memorandum contains the Headspace Gas Sampling Report for the BN510.1 Boxline Lot 2.

The purpose of this sampling report is to provide the sampling characterization data from the headspace gas sampling of randomly selected containers from the BN510.1 Boxline Lot 2, the second lot from an indeterminate waste stream, in accordance with MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. The Reconciliation with Data Quality Objectives and Characterization Information Summary Report are included as Attachments 1 and 2.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 drum population is identified as 4,000 containers. Ten containers within this population have been selected for sampling as defined in MP-TRUW-8.25. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's Reconciliation Group that identified BN510.1 Boxline containers. The container numbers within the Reconciliation reports were sorted in ascending order by container ID and added to the BN510.1 Boxline Lot 2 container list. A list of the containers is included in the final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (n) for characterization of this waste stream would not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 2. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for

sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 3,000 containers to provide the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 2 is documented in memo SPC-015-10 and SPC-004-11. The list of containers and their corresponding sequential and random numbers are included in the final subsequent headspace gas random sample selection memorandum, SPC-001-12.

4. CONFIRMATION OF THE SAMPLE SIZE

The observed sample n* has been checked against the estimate for the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. The observed sample n* estimate did not result in greater than 20 percent more samples than originally estimated. Final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant have been determined. No assignment or assessment added analytes or an associated Environmental Protection Agency hazardous waste number.

5. CONTAINERS SELECTED

Ten containers were selected for headspace gas sampling in accordance with MP-TRUW-8.25. No substitutions were required. Table 1 below identifies the selected containers.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	0.000020	2399	BN10406800
2	0.000259	1761	BN10400134
3	0.000601	2572	BN10408764
4	0.000725	1603	BN10398725
5	0.000935	3979	BN10429587
6	0.001189	2969	BN10413998
7	0.001990	161	BN10381425
8	0.002274	3446	BN10421829
9	0.002567	304	BN10382812
10	0.002629	1410	BN10396291

If you have any questions or comments, please contact me at 557-6323.

SPC/nk

Attachments
1. Reconciliation with Data Quality Objectives
2. Characterization Information Summary Report

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Nancy Kirk
Jason Lance
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☒	☐	☐	
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.

WSPF No.: **BN510.1 Lot 2**

Data Quality Objective	Yes	No	N/A	Comment
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in	☒	☐	☐	

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?				
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	Applicable only to headspace gas sampling batch data reports.
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the CIS.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	Nancy Kirk	Nancy Kirk	2/1/2012
2nd Site Project Manager	Wes Skaar	Wes Skaar	2/1/2012

WSPF Number: BN510.1 Lot Number: 2

SPM

Printed Name: **Nancy Kirk** Signature: Nancy Kirk Date: **2/1/2012**

2nd SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **2/1/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN510.1 Lot Number: 2

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Selection Process:

The evaluation to determine the required number of samples for BN510.1 Boxline Lot 2 is presented in Attachment A. The required number of samples was calculated for each analyte from Table 4.4.1 of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Permit with reported detections and two or more applicable samples. Applicable samples are all samples that are not diluted non-detects. The required number of samples (*n*) was determined using Appendix A of MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

The BN510.1 Boxline Lot 2 maximum drum population is identified as 4,000 containers. Ten containers within this population were selected for sampling as defined in MP-TRUW-8.25. The final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12 includes the list of randomly selected containers, the list of containers assigned to BN510.1 Boxline Lot 2, and the Randomly Selected Container Report, Form-1196.

The sampling was conducted by AMWTP using procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. The ten randomly selected containers were sampled and met the required number of samples.

Data Results:

The statistical evaluation of the analytical data collected for BN510.1 Boxline Lot 2 was performed in accordance with MP-TRUW-8.25 and is presented in Table 1A. Tentatively Identified Compounds (TICs) that were detected in this lot are detailed in Table 1B. Table 5 lists the correlation of container numbers to headspace gas analysis data packages. Table 7 lists the correlation of container numbers to headspace gas sample numbers. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA HWNs for the BN510.1 waste stream.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). The headspace sampling UCL_{90} results for 1,1,1-Trichloroethane and tolulene were above their associated PRQL values and support the assignment of HWNs F001/F002 and F005 by AK for these analytes (Table 1A).

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

WSPF Number: BN510.1 Lot Number: 2

Table 1A. Headspace Gas Summary Data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10	-
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100	-
Ethyl ether	10	0	None	0.800	0.656	0.186	b	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	b	-	10	D029 [d]
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100	-
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	b	-	10	
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10	
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	b	-	100	F005 [d]
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	F001/F002 [g]
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	b	-	10	F001 [d]
Benzene	10	0	None	0.950	0.860	0.077	b	-	10	F005 [d]
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	b	-	10	D028 [d]
Butanol	10	0	None	14.0	12.8	1.55	b	-	100	-
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100	-
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	F005 [g]
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	b	-	10	F001/F002 [d]
Chlorobenzene	10	0	None	1.05	0.780	0.232	b	-	10	-
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10	-
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10	-
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10	-
Bromoform	10	0	None	1.00	0.940	0.052	b	-	10	-
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	b	-	10	-
Cyclohexane [c, f]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10	-
Carbon disulfide [e]	10	0	None	0.700	0.660	0.052	b	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	10	0	None	3.05	1.76	1.11	b	-	10	-
1,3,5-Trimethylbenzene [f]	10	0	None	2.50	1.48	0.878	b	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

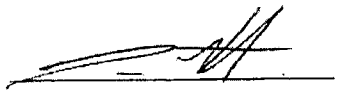
f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

g. These HWNs, assigned by AK, were confirmed by characterization and are retained for this waste stream.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: Jason Kettel Signature:  Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 1B. Headspace Gas Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	6	10	60	19	24	79.2
Trichlorofluoromethane	87	0	10	0	1	24	4.2
Isopropyl alcohol	98	1	10	10	1	24	4.2
1,2-Dichloropropane	110	1	10	10	1	24	4.2

Note: Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: Nancy Kirk Signature: Nancy Kirk Date: 2/1/2012

Verification of % Detected Calculation:

Printed Name: Jason Kettel Signature: [signature] Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
BN10406800	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10400134	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10408764	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10398725	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10429587	HS112-00002	N/A	N/A	N/A	N/A	N/A
BN10413998	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10381425	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10421829	HS111-00023	N/A	N/A	N/A	N/A	N/A
BN10382812	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10396291	HS111-00009	N/A	N/A	N/A	N/A	N/A

Note: These containers are being used for headspace sampling data only in this CIS Report. RTR or VE and RA will be performed for these containers and validated prior to certification for shipment to WIPP.

WSPF Number: BN510.1 Lot Number: 2

Table 7. Correlation of Container Numbers to Sample Numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s)
BN10406800	HS111_00009B-10	N/A
BN10400134	HS111_00009B-03	N/A
BN10408764	HS111_00018B-01	N/A
BN10398725	HS111_00009B-06	N/A
BN10429587	HS112_00002B-01	N/A
BN10413998	HS111_00018B-05	N/A
BN10381425	HS111_00004B-07	N/A
BN10421829	HS111_00023B-03	N/A
BN10382812	HS111_00004B-06	N/A
BN10396291	HS111_00009B-07	N/A

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 2

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
Chloromethane [c]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10		HWN not required to be applied [d]
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100		HWN not required to be applied [d]
Ethyl ether	10	0	None	0.800	0.656	0.186	-	-	10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10		HWNs F001/F002 applied
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	-	-	10		HWN D029 applied
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100		HWN not required to be applied [d]
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	10	HWN F002 applied
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	-	-	10		No samples above MDL
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10		HWN not required to be applied [d]
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	-	-	100		HWN F005 applied
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	10	HWN D022 applied
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	10	HWNs F001/F002 applied
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	-	-	10		HWN F001 applied
Benzene	10	0	None	0.950	0.860	0.077	-	-	10		HWN F005 applied
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	-	-	10		HWN D028 applied
Butanol	10	0	None	14.0	12.8	1.55	-	-	100		No samples above MDL
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10		HWNs F001/F002 applied
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100		HWN not required to be applied [d]
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	10	HWN F005 applied
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	-	-	10		HWN F001/F002 applied
Chlorobenzene	10	0	None	1.05	0.780	0.232	-	-	10		No samples above MDL
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10		HWN not required to be applied [d]

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10		HWN not required to be applied [d]
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10		HWN not required to be applied [d]
Bromoform	10	0	None	1.00	0.940	0.052	-	-	10		No samples above MDL
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	-	-	10		No samples above MDL
Cyclohexane [c]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10		HWN not required to be applied [d]
Carbon disulfide	10	0	None	0.700	0.660	0.052	-	-	10		HWN F005 applied
1,2,4-Trimethylbenzene	10	0	None	3.05	1.76	1.11	-	-	10		No samples above MDL
1,3,5-Trimethylbenzene	10	0	None	2.50	1.48	0.878	-	-	10		No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} is not calculated.
b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and UCL_{90}.
c. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.
d. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} is below the PRQL.
e. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.
f. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10

Idaho Treatment Group

RECORD
CMC 05/03/2012

INTEROFFICE MEMORANDUM

To: Steve Carpenter
Alternate Site Project Manager/Acceptable Knowledge Manager

From: Nancy Kirk NDK
Acceptable Knowledge Expert

FOR INFORMATION ONLY

Date: May 3, 2012

Re: Preliminary Statistics of Headspace Gas Sampling for BN510.1 Waste Stream – NDK-001-12

The purpose of this memorandum is to summarize the preliminary statistical results for the headspace gas sampling data of the BN510.1 waste stream that have been sampled to date (Reference Attachments 1 and 2). The preliminary statistical results include headspace gas sampling data associated with the randomly selected and contingency containers from BN510.1 Boxline Lots 1, 2 and 3 that have been sampled as of April 5, 2012.

1. POPULATION DEFINITION

The BN510.1 waste stream currently consists of three boxline lots for a maximum population of 8,014 containers. No lots have been established for BN510.1 Lined Direct Feed (LDF) containers. Fourteen containers were assigned to BN510.1 Boxline Lot 1 as documented in memorandum SPC-014-10, *Headspace Gas Random Selection Memorandum for BN510.1 Boxline Lot 1*. The maximum of 4,000 containers was assigned to BN510.1 Boxline Lot 2 as documented in memorandum SPC-001-12, *Final Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2 and SPC-004-11, *Addendum to Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2. A maximum of 4,000 containers is identified for BN510.1 Boxline Lot 3 as documented in memorandum SPC-002-12, *Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3*. Periodic reports are generated by the Advanced Mixed Waste Treatment Project's (AMWTP) Reconciliation Group to identify candidate containers for BN510.1 Boxline Lot 3. The container numbers within each reconciliation report are sorted in ascending order by the container number and added to the Lot 3 container list. A final subsequent headspace gas random sample selection memorandum will be issued documenting this list of containers when Lot 3 is completed. A headspace gas sampling report memorandum will also be issued summarizing the characterization data for the waste stream upon completion of sampling for Lot 3.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (*n*) for characterization of this waste stream would not exceed ten for BN510.1 Boxline Lot 3. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 3. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 2,400 containers. This provides the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 3 is documented in memo SPC-002-12. The list of containers and their corresponding sequential and random numbers will be included in the final subsequent headspace gas random sample selection memorandum.

4. CONTAINERS SELECTED

As of April 5, 2012, 43 containers (including fourteen from Boxline Lot 1) have been sampled in accordance with procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. All fourteen containers (100%) that were sampled and analyzed from BN510.1 Boxline Lot 1 are identified in memorandum SPC-014-10. The twenty-five containers that were randomly selected and sampled from BN510.1 Boxline Lot 2 are identified in memorandum SPC-001-12. The headspace sampling data from BN510.1 Boxline Lot 2 are summarized in memorandum SPC-001-12, *Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2*. The containers that have been sampled to date from BN510.1 Boxline Lot 3 are identified in Table 1.

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	BN10430658
2	3	0.002097027	1044	
3	4	0.002528466	436	BN10433911
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	BN10430910
	9	0.003626498	3863	
	10	0.004061868	3294	
8	C1	0.004168875	579	BN10435873
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

5. DATA RESULTS

The statistical evaluation of the analytical data collected for BN510.1 waste stream was performed in accordance with MP-TRUW-8.25 and is summarized in Tables 1A and 2A in Attachments 1 and 2, respectively. Attachment 1 includes all data collected to date for both randomly selected containers and randomly selected contingency containers from Lots 1, 2

and 3. Attachment 2 includes only the data collected to date for the randomly selected containers from Lots 1, 2 and 3. Tentatively Identified Compounds (TICs) that were detected in the waste stream are detailed in Tables 1B and 2B in Attachments 1 and 2, respectively. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for each constituent and to assign and/or confirm EPA HWNs for the BN510.1 waste stream. HWNs were assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). None of the headspace sampling UCL_{90} results were above their associated PRQL.

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

If you have any questions or comments, please contact me at 557-6447.

NDK/nk

Attachments

1. Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
2. Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

cc: George Byram
Caralea Hinkle-Daniel
Wes Skaar
AMWTP Correspondence Control

Attachment 1 - Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
May 3, 2012
NDK-02-12

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	43	8	Natural log	2.21	0.256	0.631	0.381	2.30	10	-
Methanol	43	2	None	42.0	26.3	9.65	28.2	-	100	-
Ethyl ether	43	0	None	1.00	0.771	0.212	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	43	4	Natural log	3.43	0.016	0.867	0.188	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	43	0	None	1.05	0.878	0.294	[b]	-	10	D029 [d]
Acetone [c]	43	7	Natural log	5.39	2.57	0.742	2.72	4.61	100	-
Methylene chloride [c]	43	28	Natural log	6.36	1.78	2.04	2.19	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	43	0	None	1.25	0.947	0.219	[b]	-	10	
1,1-Dichloroethane [c]	43	3	Natural log	0.993	-0.087	0.366	-0.014	2.30	10	
Methyl ethyl ketone	43	0	None	12.0	8.58	2.43	[b]	-	100	F005 [d]
Chloroform [c]	43	5	Natural log	4.37	0.161	0.797	0.319	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	43	14	Natural log	5.89	0.978	1.18	1.21	2.30	10	F001/F002 [d]
Carbon tetrachloride [c]	43	4	Natural log	5.97	0.687	0.984	0.882	2.30	10	F001 [d]
Benzene [c]	43	3	Natural log	0.875	-0.019	0.260	0.033	2.30	10	F005 [d]
1,2-Dichloroethane	43	0	None	2.10	1.43	0.508	[b]	-	10	D028 [d]
Butanol	43	0	None	30.0	18.9	8.07	[b]	-	100	-
Trichloroethylene [c]	43	17	Natural log	4.14	0.763	1.15	0.991	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	43	1	Natural log	4.03	2.52	0.403	2.60	4.61	100	-
Toluene [c]	43	25	Natural log	4.48	1.24	1.36	1.51	2.30	10	F005 [d]
Tetrachloroethylene [c]	43	3	Natural log	2.56	-0.028	0.466	0.064	2.30	10	F001/F002 [d]
Chlorobenzene	43	0	None	1.05	0.865	0.216	[b]	-	10	-
Ethyl benzene [c]	43	5	Natural log	2.10	0.200	0.492	0.297	2.30	10	-
m&p-Xylene [c]	43	8	Natural log	3.09	0.442	0.831	0.607	2.30	10	-
o-Xylene [c]	43	4	Natural log	2.71	0.267	0.586	0.383	2.30	10	-
Bromoform	43	0	None	1.55	1.13	0.301	[b]	-	10	-
1,1,2,2-Tetrachloroethane	43	0	None	1.85	1.31	0.328	[b]	-	10	-
Cyclohexane [c, f]	43	2	Natural log	2.29	0.163	0.391	0.240	2.30	10	-
Carbon disulfide [c]	43	0	None	1.25	0.852	0.282	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	43	0	None	3.05	1.60	0.842	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	43	0	None	2.50	1.42	0.653	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	30	43	69.8
Trichlorofluoromethane	2000	4	43	9.3
Ethane, bromo-	31	1	43	2.3
Isopropyl alcohol	98	1	43	2.3
1,2-Dichloropropane	110	1	43	2.3
1,1-Dimethylthanol	370	2	43	4.7

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Attachment 2 - Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)
May 1, 2012
NDK-002-12

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	27	3	Natural log	1.79	0.136	0.454	0.251	2.30	10	-
Methanol	27	1	None	42.0	28.4	9.67	30.9	-	100	-
Ethyl ether	27	0	None	1.00	0.826	0.218	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	27	1	Natural log	3.22	-0.020	0.794	0.181	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	27	0	None	1.05	0.910	0.273	[b]	-	10	D029 [d]
Acetone [c]	27	3	Natural log	5.39	2.56	0.803	2.76	4.61	100	-
Methylene chloride [c]	27	16	Natural log	6.36	1.46	1.89	1.94	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	27	0	None	1.25	1.04	0.227	[b]	-	10	
1,1-Dichloroethane [c]	27	2	Natural log	0.993	0.042	0.371	0.136	2.30	10	
Methyl ethyl ketone	27	0	None	12.0	9.57	2.59	[b]	-	100	F005 [d]
Chloroform [c]	27	3	Natural log	1.25	0.146	0.453	0.261	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	27	7	Natural log	5.89	1.03	1.25	1.35	2.30	10	F001/F002 [d]
Carbon tetrachloride	27	0	None	3.00	2.14	0.920	[b]	-	10	F001 [d]
Benzene	27	0	None	1.10	0.983	0.134	[b]	-	10	F005 [d]
1,2-Dichloroethane	27	0	None	2.10	1.61	0.541	[b]	-	10	D028 [d]
Butanol	27	0	None	30.0	22.2	8.53	[b]	-	100	-
Trichloroethylene [c]	27	8	Natural log	3.43	0.670	1.08	0.942	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	27	1	Natural log	4.03	2.68	0.425	2.79	4.61	100	-
Toluene [c]	27	13	Natural log	4.48	0.962	1.34	1.30	2.30	10	F005 [d]
Tetrachloroethylene	27	0	None	1.05	0.937	0.129	[b]	-	10	F001/F002 [d]
Chlorobenzene	27	0	None	1.05	0.931	0.192	[b]	-	10	-
Ethyl benzene [c]	27	2	Natural log	2.10	0.178	0.446	0.291	2.30	10	-
m&p-Xylene [c]	27	3	Natural log	3.09	0.364	0.785	0.563	2.30	10	-
o-Xylene [c]	27	2	Natural log	2.71	0.296	0.641	0.458	2.30	10	-
Bromoform	27	0	None	1.55	1.25	0.323	[b]	-	10	-
1,1,2,2-Tetrachloroethane	27	0	None	1.85	1.32	0.283	[b]	-	10	-
Cyclohexane [e, f]	27	2	Natural log	2.29	0.258	0.465	0.376	2.30	10	-
Carbon disulfide [e]	27	0	None	1.25	0.963	0.305	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	27	0	None	3.05	1.59	0.742	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	27	0	None	2.50	1.45	0.561	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP..

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	21	27	77.8
Trichlorofluoromethane	87	1	27	3.7
Isopropyl Alcohol	98	1	27	3.7
1,2-Dichloropropane	110	2	27	7.4

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

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Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE REPORT

Surveillance No.: 68686

Title: Level 1 Data Generation & Validation Quarterly - HGAS Batch Data Report

Originator: Ryman, Lyle	**Assigned Actionee:** Ryman, Lyle
Date Opened: 01/31/12	**Date Due:** 03/30/12
Risk Level: Low	**Responsible Manager:** Susan Peterman
Functional Area: TRU Programs	**Surveilled Organization:** Waste Programs

Surveillance Area: Data Generation Characterization and Validation

Scope of Surveillance:

Review a randomly selected AMWTP TRU Programs HGAS batch data report that has been processed through SPM level of validation. Evaluate the quality of the data generated by the Head Space Gas Sampling operators and validated by the Independent Technical Reviewer.

Scheduled By: Lyle Ryman	**Scheduled Date:** 02/01/12
Rescheduled By:	**Rescheduled Date:**

SURVEILLANCE PLAN

Surveillance Method: Other - Identified in Plan

Source/Requirements Documents:

MP-TRUW-8.2, *Quality Assurance Project Plan*
INST-OI-43, HGAS Sampling and Analysis Operations
MP-TRUW-8.8, *Level I Data Validation*

Surveillance Plan:

Evaluate batch data report HS112-00002 and associated records for compliance with data generation level review, validation, and verification procedures. Ensure all applicable data generation, reductions, and reviews were evaluated for technical adequacy, accuracy, completeness, and suitability for intended use.

Methods to perform the surveillance:

- Interview personnel
- Review records and documents
- Observe demonstrations of data validation reviews

SURVEILLANCE RESULTS

Surveillance Summary:

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Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE REPORT

Surveillance No.: 68686

Surveillance results indicate the quality of the data generated and reduced by the headspace gas sampling operator-chemist and validated by the Independent Technical Reviewer (ITR) are compliant with TRU Program requirements. However, conditions which limit the accuracy of the electronic batch data report have been identified and are provided for management evaluation. Conclusions are based upon demonstrations, personnel interviews, and comparison reviews of BDR HS112-00002 (electronic and hardcopy) with equivalent WTS screenshots and associated records. Records and documents evaluated include the following:

WTS *634 Characterization Temperature* chart (start date: Jan. 11, 2012 through Jan. 18, 2012
WTS *HSGS Headspace Gas Batch HS112-00002* BDR (electronic and hardcopy)
Method Detection Limits/Method Performance Sample (MDL/MPS) Folder for instrument identification number Z-221-001-A, Method VOCGAS.M
hgas.ini (configuration file for HGAS Sampling System)
AMWTP Training Records and Information Network (TRAIN) database
Certificate of Analysis for BFB/IS, OCS, CCV H2/CH4, and VOC standards
HSGS Headspace Gas Batch HS112-00002 Daily Checks Report
HSGS Headspace Gas Batch HS112-00002 Batch Log
HGas Retention Time Windows (RTWs) IC1_120111AA
Hydrogen/Methane RT Window Determination IC1_120111AA
WTS *Headspace Gas Batch HS112-00002 Drum Age Criteria (DAC) Report*

Personnel interviewed/contacted during this surveillance are as follows:
Cesar Rojas-HSG Chemist/HGAS Lead/ HGAS Subject Matter Expert/ITR
HSG Sampling Operation-Chemist (HOC) demonstrated the Data Generation validation process by emulating data processing, data review, and batch data report building of HS112-00002. The simulation included the review of randomly selected raw data (i.e. shift 1 and shift 2 calibration and standardization as well as BN10429587 (original/dilution data) to ensure accurate integration and quantitation. Additionally, a comparison review of this data with equivalent WTS screenshots and the program requirements defined in EDMS procedures INST-OI-43 and MP-TRUW-8.8 was performed to ensure accurate transfer of the data to WTS and to assure data usability criteria QAOs and acceptance criteria QAOs were met.

ITR demonstrated the Level I data validation process by simulating the review of HS112-00002 with EDMS document MP-TRUW-8.8 readily available for reference. The demonstration included a review of randomly selected raw data (i.e. shift 1 and shift 2 calibrations and standardization as well as BN10429587 to ensure accurate integration and quantitation). Comparison reviews of this data with relevant WTS screenshots were also performed to ensure technical adequacy, completeness, accuracy, and suitability for intended use of the headspace gas data. This review was performed with respect to requirements identified in MP-TRUW-8.8.

Based on the results of this surveillance, the quality of the data generated by the headspace gas sampling operator-chemist and validated by the ITR satisfies procedural requirements defined in the implementing procedures. However, conditions which limit the accuracy of the electronic batch data report have been identified. These conditions are provided for management evaluation.

CAQ(s) Identified?: Yes	**CAR or NCR No.** N/A
Conditions Adverse to Quality:	

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AMWTP SURVEILLANCE REPORT

Surveillance No.: 68686

Requirement: CBFO QAPD Rev. 11 section 1.5.2, Generating QA Records, "QA records shall be legible, accurate, and completed appropriate to the work."

Finding 1: HS112-00002 batch data report contains erroneous information:

a. Hardcopy of the WTS *Drum Age Criteria (DAC) Report* lists cancelled procedure INST-OI-13, *Drum Vent/Headspace Gas Sample Operations*, as an implementing document. The cancellation date of this procedure was effective April 19, 2008.

b. WTS *HSGS Data Generation Checklist* lists "BNFL, Inc." in the header. Two prime contractors have been selected to perform waste processing at the AMWTP since BNFL.

c. WTS *Cover Sheet & Case Narrative* report incorrectly identifies the Waste Stream for containers BN10429587 and BN10430658 as "Debris Wastes". Waste Stream name is actually "Supercompacted Debris Waste".

d. *BFB Shift 2* report shows the dilution data for BN10430658 as "012DR.F.D"; however, the drum sample report for this container lists an incomplete dilution file as "012". Additionally, the drum sample report does not show the Multiplier value or the dilution factor for the reanalysis of Methylene chloride.

CAR 69994 has been initiated to resolve the finding.

Strengths:

Chemist knowledge and use of procedures.

Observations/Recommendations:

Observation:

1. Method Detection Limits/Method Performance Sample (MDL/MPS) analyses were completed in BDR HS111-00003. The hardcopy report is kept in a locked fire proof file cabinet in Building 678. Recommend this BDR be scanned into EDMS to reduce the potential of damage or loss and to enhance retrievability. *Note: Verified MDL and MPS are current for instrument Z-22-001A.*

Action Item 69995 was initiated to ensure BDR HS111-00003 is scanned into EDMS.

Effectiveness Evaluation:

Results of the evaluation determined corrective actions are needed to increase awareness of reporting data accurately and completely and to enhance the quality of the batch data reports.

Preliminary surveillance conclusions were discussed March, 15, 2012 with TRU Programs Manager Sue Peterman and March 20, 2012 with Headspace Gas Chemist Cesar Rojas. Final conclusions were communicated to TRU Programs management April 4, 2012.

Performed By: Lyle Ryman	**Performed Date:** 03/26/12
Additional Action Complete By:	**Additional Action Complete Date:**

QA MANAGER - SURVEILLANCE REVIEW

1. Are all Conditions Adverse to Quality properly identified?	Yes
2. Are all Conditions Adverse to Quality reported on a CAR or NCR?	Yes
3. Are follow up actions identified for any Recommendations?	Yes

QA Manager Review Comments:

QA Manager completed and approval of CAR and AI being created.
This surveillance is available for management review.

Additional Action Required By:	**Additional Action Required Date:**
QA Manager Review/Closed By: Edward Vokoun	**QA Manager Review/Closed Date:** 04/05/12
QA Manager Cancelled By:	**QA Manager Cancelled Date:**

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 68686

Title: Level 1 Data Generation & Validation Quarterly - HGAS Batch Data Report

Assigned Actionee: Ryman, Lyle	**Responsible Manager:** Susan Peterman
Surveilled Organization: Waste Programs	**Functional Area:** TRU Programs

Surveillance Area: Data Generation Characterization and Validation

Scope of Surveillance:

Review a randomly selected AMWTP TRU Programs HGAS batch data report that has been processed through SPM level of validation. Evaluate the quality of the data generated by the Head Space Gas Sampling operators and validated by the Independent Technical Reviewer.

SPECIFIC ATTRIBUTES

Item No. 1. Line of Inquiry: **Results:** SAT

Verify vent and sample collection prerequisites are completed in accordance with procedure.

- Equilibration met
- Appropriate DAC
- Correct vent date
- Punctured liner lids

MP-TRUW-8.8 rev. 31, section 3.4
INST-OI-43 rev. 20 sections 3.1, 4.4, Appendix E
MP-TRUW-8.2 rev. 15, Sec. C1-1, C3-2, Table C3-12

Item No. 2. Line of Inquiry: **Results:** SAT

Verify the data was generated in a technically correct manner and reported using the current procedure revision and in accordance with the method and instrument used:

- Hand entries reviewed for transcription errors (equilibration time, DAC calculations, drum age, etc.)
- Records are complete
- Proper use of data qualifying flags
- Traceable standards
- Concentration units and significant figures
- Proper baseline and integrations are correct for identified peaks
- Acceptable demonstration of precision, accuracy, and MDLs (within last 6 months)
- Acceptable QAOs

MP-TRUW-8.8 rev. 31, section 3.4, Appendices B and C
MP-TRUW-8.2 rev. 15, Sec. C1-1, C1-1b, C3-1, C3-5, C3-10(a)(1), Tables C3-2, C3-3, C3-13, and C3-14
INST-OI-43 rev. 20 sections 3.1, 4.4, 4.5, and 4.8

Item No. 3. Line of Inquiry: **Results:** UNSAT

Verify the batch data report is complete and all concerns and comments were reworked and documented in accordance with procedure.
MP-TRUW-8.8 rev. 31, section 3.4.1, Appendix B
INST-OI-43 rev. 20 section 4.8 and Appendix A
MP-TRUW-8.2 rev. 15, section C3-10, C3-12, Table C3-12

Requirement: CBFO QAPD Rev. 11 section 1.5.2, Generating QA Records, "QA records shall be legible, accurate, and completed appropriate to the work."
Finding 1: HS112-00002 batch data report contains erroneous information:

Item No. 4. Line of Inquiry: **Results:** SAT

Verify sample acceptance criteria were met for all samples (quality control and container) in accordance with procedure:

- BFB data review
- Initial and continuing calibration verification
- On-line control sample
- Blank samples
- Duplicate samples
- Retention times
- Internal standard areas
- Sample spectra
- Tentatively identified compounds

MP-TRUW-8.8 rev. 31, section 3.4, Appendix B
INST-OI-43 rev. 20 sections 4.2, 4.4, 4.8, Table 4, Appendices A, B, and F
MP-TRUW-8.2 rev. 15, Sec. C3-1, C3-2, C3-10a(1), C3-13 Tables C1-3, C3-3 and C3-5

Item No. 5. Line of Inquiry: **Results:** SAT

Verify NCRs were initiated for nonconforming conditions:

- Adverse conditions (equipment problems, QC failure)
- DAO or QAO failures
- Response and retention time failure
- Drum age criteria failure
- PDR failures for sample/sample duplicate
- Blank values greater than 3 times the MDL
- Concentrations exceeding the calibration range

INST-OI-43 rev. 20, steps 3.1.15, and 4.8.4.25
MP-TRUW-8.8 rev. 31, section 3.4.3.3, 3.4.4.5, 3.4.5.7.6, 3.4.8.6, 3.4.8.8, and 3.4.10
MP-TRUW-8.2 rev. 15 section C3-2

NCRs were not required.

Item No. 6. Line of Inquiry: **Results:** SAT

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AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 68686

Verify tentatively identified compounds were quantified and reported in accordance with procedure.
MP-TRUW-8.8 rev. 31, section 3.4
INST-OI-43 rev. 20 section 4.8
MP-TRUW-8.2 rev. 15, Sec. C3-1, C3-10

Item No. 7. Line of Inquiry: **Results:** SAT

Confirm the following:

- Operator, Operator Chemist, and ITR training qualifications are current.
- ICAL (initial calibration) is current and valid for the GC/MS.
- PDP is current and valid at the time the batch was sampled and the data generated.
- Traceable standards are used and not beyond expiration dates.
- MDL determinations are within six months prior to batch sampling.
- Sample canister and leak checking have been completed after assembly after equipment cleaning, and equipment is leak checked prior to and after sample collection.
- Pressures are carefully regulated and documented when cleaning and during sampling and that the M&TE equipment used to measure pressures and temperatures have valid and unexpired calibrations and are calibrated using NIST, or equivalent standards.

MP-TRUW-8.8 rev. 31, sections 3.4.5.2, 3.4.8.15

Item No. 8. Line of Inquiry: **Results:**

Item No. 9. Line of Inquiry: **Results:**

Item No. 10. Line of Inquiry: **Results:**

Item No. 11. Line of Inquiry: **Results:**

Item No. 12. Line of Inquiry: **Results:**

Item No. 13. Line of Inquiry: **Results:**

Item No. 14. Line of Inquiry: **Results:**

Item No. 15. Line of Inquiry: **Results:**

Performed By: Lyle Ryman | **Performed Date:** 03/26/12

AMWTP
Advanced Mixed Waste Treatment Project

CORRECTIVE ACTION REPORT

CAR No: 69994

Title: HGAS Batch Data Report Deficiencies Identified in QA surveillance 68686

Category: WIPP Data	**Date Opened:** 04/05/12
Originator: Ryman, Lyle	**Source Type:** Surveillance

Source Type Doc. No.

68686

Requirement Violated:

CBFO QAPD Rev. 11 section 1.5.2

Finding #:

Description of CAR:

Final conclusion of QA oversight surveillance 68686 determined the processes implemented by AMWTP for review and reporting of headspace gas BDRs require improvement actions to prevent conditions adverse to quality.

Requirement: CBFO QAPD Rev. 11 section 1.5.2, Generating QA Records, "QA records shall be legible, accurate, and completed appropriate to the work."
Finding 1: HS112-00002 batch data report contains erroneous information:
a. Hardcopy of the WTS *Drum Age Criteria (DAC) Report* lists cancelled procedure INST-OI-13, *Drum Vent/Headspace Gas Sample Operations*, as an implementing document. The cancellation date of this procedure was effective April 19, 2008.
b. WTS *HSGS Data Generation Checklist* lists "BNFL, Inc." in the header. Two prime contractors have been selected to perform waste processing at the AMWTP since BNFL.
c. WTS *Cover Sheet & Case Narrative* report incorrectly identifies the Waste Stream for containers BN10429587 and BN10430658 as "Debris Wastes". Waste Stream name is actually "Supercompacted Debris Waste".
d. *BFB Shift 2* report shows the dilution data for BN10430658 as "012DR.F.D"; however, the drum sample report for this container lists an incomplete dilution file as "012". Additionally, the drum sample report does not show the Multiplier value or the dilution factor for the reanalysis of Methylene chloride.

Manager Review By: Angie Morse	**Manager Review Date:** 04/15/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**Stop Work Order:** No
ORPS Reportable: No	**ORPS Category:** NA
ORPS No.: N/A	**WIPP Submittal Req'd?** No
	Significant : No
PAAA Applicable: Yes	**NTS Report Number:**
PAAA Reportable: No	**NTS Report Date:**

PAAA Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No

AMWTP
Advanced Mixed Waste Treatment Project

CORRECTIVE ACTION REPORT

CAR No: 69994

10 CFR 851Safety/Health: No	**PO Number:**
	Responsible Department: Waste Programs
	Functional Area: TRU Programs
	Disposition Due Date: 06/14/12
QA Mgr Rev Sign By: Lyle Ryman	**QA Mgr Rev Sign Date:** 04/30/12
Con OPs Category: Other	**Date Due:** 07/30/12
	Responsible Manager: Peterman, Susan
Is Formal Root Cause Analysis Required: No	**Assigned Actionee:** Brugger, Louis
Level A Cause Code: A2 - Equipment/Material Problem	**Contributing Cause Level A:**
Level B Cause Code: B2 - Periodic/Corrective Maintenance LTA	**Contributing Cause Level B:**
Level C Cause Code: C04 - Equipment History LTA	**Contributing Cause Level C:**

Corrective Action Plan:

After doing the 'User Acceptance Test' , the request changes made from QA worked properly.
Here is is the list of the requests and its solutions.

a. Hardcopy of the WTS *Drum Age Criteria (DAC) Report* lists cancelled procedure INST-OI-13, *Drum Vent/Headspace Gas Sample Operations*, as an implementing document. The cancellation date of this procedure was effective April 19, 2008.

Solution: In the Drum Age Criteria (DAC) Report list was cancelled expired procedure INST-OI-13 from the WTS form.
b. WTS *HSGS Data Generation Checklist* lists "BNFL, Inc." in the header. Two prime contractors have been selected to perform waste processing at the AMWTP since BNFL.
Solution: "BNFL , Inc" header has been removed from the HSGS Data Generation checklist report.

c. WTS *Cover Sheet & Case Narrative* report incorrectly identifies the Waste Stream for containers BN10429587 and BN10430658 as "Debris Wastes". Waste Stream name is actually "Supercompacted Debris Waste".
Solution: The "Waste Stream" heading and field was removed from the HSG Cover sheet & Case Narrative report
d. Dilution files show the correct file number, to add the DR part in 012DR.F.D, will require extensive software changes.

These changes were addressed by SCR 4360.

UPDATE: It has been determined that the dilution factor and multiplier are not required by WIPP as part of the BDR content and are considered additional information for the User. Consequently, Item d. in the Description of CAR is NA to the corrective action and disposition. Recommend closure after appropriate review of existing data in the CAP. MB 07/25/12
QA comment: LR 073012: Agree with the disposition to revise the BDR. For CAR closure, SCR 4360 must be implemented to address items a,b, and c. Note regarding Item d.: BDR shows the correct dilution file for BN10430658; however, it does notshow the file extension "DR" for the dilution of methylene chloride. Additionally, the drum sample report does not show the multiplier for the dilution. It has been determined that the dilution factor and multiplier are not required by WIPP as part of the BDR content and are considered additional information for the User. Since the information is extraneous and does not impact data quality, Waste Programs management determined no changes will be made to the BDR.

Mgr Disp App By: Louis Brugger	**Mgr Disp App Date:** 07/10/12
QA Add'l Disp. Req'd By: Lyle Ryman	**QA Add'l Disp. Req'd Date:** 07/13/12

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CORRECTIVE ACTION REPORT

CAR No: 69994

Mgr Add'l. Disp App By: Louis Brugger	**Mgr Add'l. Disp App Date:** 07/25/12
QA Mgr Rev Disp Sign By: Lyle Ryman	**QA Mgr Rev Disp Sign Date:** 07/30/12

CAP Complete Comments:

SCR 4360 has been implemented.
QA closure comment: Corrective actions taken are complete and acceptable for CAR closure. Reference attached supporting documentation CAR69994 SCR6360_OE.pdf. LR073012

Action Complete By: Louis Brugger	**Action Complete Date:** 07/30/12
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Lyle Ryman	**QA Verification Comp Date:** 07/30/12

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE REPORT

Surveillance No.: 71536

Title: 2nd Quarter Level 1 Data Generation & Validation review - RTR Characterization Batch report

Originator: Sharp, Michelle	**Assigned Actionee:** Sharp, Michelle
Date Opened: 06/30/12	**Date Due:** 08/17/12
Risk Level: Low	**Responsible Manager:** Susan Peterman
Functional Area: TRU Programs	**Surveilled Organization:** Waste Programs

Surveillance Area: Data Generation Characterization and Validation

Scope of Surveillance:

Randomly select a Real Time Radiography Batch Data Report to evaluate the performance of the data generation level review, validation, and verification to the procedural requirements.

Scheduled By: Michelle Sharp	**Scheduled Date:** 06/30/12
Rescheduled By:	**Rescheduled Date:**

SURVEILLANCE PLAN

Surveillance Method: Other - Identified in Plan

Source/Requirements Documents:

MP-TRUW-8.8 Rev 31
INST-OI-12 Rev 47 FC3

Surveillance Plan:

Evaluate batch data report RTR12-00054 for compliance with data generation level review, validation and verification procedures. See attached Surveillance checklist for specific evaluation criteria.
Surveillance methods used were review of records and documents and interviews with personnel.

SURVEILLANCE RESULTS

Surveillance Summary:

This surveillance was performed April 26th through May 17th and evaluated the adequacy of batch RTR12-00054 in implementing requirements from MP-TRUW-8.8, Rev 31and INST-OI-12,Revs. 47 FC 3. Note: The batch was generated and validated using MP-TRUW-8.8, Rev 31 however MP-TRUW-8.8, Rev 32 was issued 4/26/12 and was used to develop the surveillance checklist. The revision had no impact on the criteria evaluated in this surveillance.
All review objectives on the surveillance checklist were satisfactory. All personnel performing activities in the batch had current qualifications; verified in the TRAIN reporting system . eSoms (electronic log entries) and the video of radiography exams on R: drive were used to verify imaging system checks were completed on 4/3/12 and 4/4/12. Nonconformance reports were appropriately generated for sealed containers, excessive liquids, an incomplete scan, IDC changes, containerized liquids and a liner lid not punctured. One container was demoted from the ITR for rework by the Operator. All rework was successfully completed.
Personnel contacted during the review were
Kathy Birch -RTR Subject Matter Expert; Kenny Burnside, Site Project Manger; and Denny Gasper, RTR ITR.

CAQ(s) Identified?: No	**CAR or NCR No.** N/A

Conditions Adverse to Quality:

None

Strengths:

The ISMS principle of Feedback is built into the Batch Data Reporting with the ITR demoting the batch for the RTR operator to make appropriate corrections.
The personnel interviewed were very knowledgeable and professional.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE REPORT

Surveillance No.: 71536

Observations/Recommendations:

None

Effectiveness Evaluation:

The evaluation of batch data report RTR12-00056 confirms implementation of data generation level review, validation and verification is compliant and effective.

Performed By: Michelle Sharp	**Performed Date:** 06/30/12
Additional Action Complete By:	**Additional Action Complete Date:**

QA MANAGER - SURVEILLANCE REVIEW

1. Are all Conditions Adverse to Quality properly identified?	NA
2. Are all Conditions Adverse to Quality reported on a CAR or NCR?	NA
3. Are follow up actions identified for any Recommendations?	No

QA Manager Review Comments:

There were no observaion or findings of conditions adverse to quality identified from this review.

Additional Action Required By:	**Additional Action Required Date:**
QA Manager Review/Closed By: Edward Vokoun	**QA Manager Review/Closed Date:** 08/17/12
QA Manager Cancelled By:	**QA Manager Cancelled Date:**

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 71536

Title: 2nd Quarter Level 1 Data Generation & Validation review - RTR Characterization Batch report

Assigned Actionee: Sharp, Michelle	**Responsible Manager:** Susan Peterman
Surveilled Organization: Waste Programs	**Functional Area:** TRU Programs

Surveillance Area: Data Generation Characterization and Validation

Scope of Surveillance:

Randomly select a Real Time Radiography Batch Data Report to evaluate the performance of the data generation level review, validation, and verification to the procedural requirements.

SPECIFIC ATTRIBUTES

Item No. 1. Line of Inquiry: **Results:** SAT

Verify there are no more than 20 containers in the batch.

MP-TRUW-8.8 Section 3.1

Item No. 2. Line of Inquiry: **Results:** SAT

Verify nonconformance reports (NCR) were issued to document the identification of prohibited/nonconforming items (DQOs, QAOs, non-punctured liners; unverifiable punctures of liners; changes in the liner puncture status; PCBs in debris waste; PCBs with liquid present; lead lined, taped and/or impenetrable objects preventing full examinations, batteries containing liquid, containerized Hg >1", significant differences between original and replicate examinations or, between original and independent observations, shielding that limits surface dose readings, etc.)

MP-TRUW-8.8, Sections 2.0, 3.1
INST-OI-12, Sections 3.1, 4.7

Item No. 3. Line of Inquiry: **Results:** SAT

Verify the batch data report and QA documentation is complete and consists of the following, as applicable:

- RTR batch coversheet
- Table of Contents
- Completed RTR Analysis Report
- Replicate Scan and Comparison
- Independent Observation
- ITR checklist
- Documentation of all issues, concerns, comments, and rework requirements, if applicable
- Associated NCRs (referenced in WTS)
- Audio/Video recording references
- BDR consists of ≤ 20 containers
- BDR includes a valid IQI

MP-TRUW-8.8 Appendix C, Section 3.1
INST-OI-12 Sections 4.6, 4.7

Item No. 4. Line of Inquiry: **Results:** SAT

Ensure each RTR operator was qualified at the time of the radiography event.
MP-TRUW-8.8, Section 3.1
INST-OI-12 Sections 3.2.1, 4.6, 4.7

Item No. 5. Line of Inquiry: **Results:** SAT

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 71636

Verify the following were performed and documented in accordance with procedure for each waste container in the BDR:

- Data generated in a technically correct manner
- Correct procedure and revision were used
- Audio/video recording references
- Completed radiography data analysis
- E-signature history was reviewed
- Physical form matched the waste stream description and WMC
- Packaging waste + net weight = Gross weight
- All waste material items are assigned to correct waste material parameters
- Description of rigid liners and layers of confinement are properly documented
- Presence/absence of prohibited items are properly documented
- Compliance with preheat requirements, if applicable
- Volumes/weights were reported correctly and in proper units/significant figures

MP-TRUW-8.8 Sections 2.0, 3.1
INST-OI-12 Sections 3.1, 4.4, 4.6, 4.7

Item No. 6. Line of Inquiry: **Results:** SAT

Verify the RTR replicate and independent observation examinations were performed and documented in accordance to procedure. Verify the following for each examination:

- Frequency and independence of examinations
- Original/replicate significant differences
- Operator qualifications
- Documentation
- Validity
- NCRs, if applicable

MP-TRUW-8.8 Sections 3.1
INST-OI-12 Sections 4.6, 4.7

Item No. 7. Line of Inquiry: **Results:** SAT

Verify the RTR quality assurance objectives performed and documented in accordance to procedure.

- Precision
- Accuracy
- Completeness
- Comparability

MP-TRUW-8.8 Sections 3.1
INST-OI-12 Sections 4.3, 4.6, 4.7

Item No. 8. Line of Inquiry: **Results:** SAT

Verify the precision of imaging system check was performed daily, prior to use and recorded on Forms-1374 or eSOMS equivalent, and 1578.

INST-OI-12 Section 4.3

Item No. 9. Line of Inquiry: **Results:** SAT

Verify the physical form of the waste is consistent with the IDC, WMC, summary category and waste stream description in accordance with approved AK documents.

MP-TRUW-8.8 Sections 3.1
INST-OI-12 Section 4.7

Item No. 10. Line of Inquiry: **Results:**

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AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 71536

Item No. 11. Line of Inquiry:	**Results:**
Item No. 12. Line of Inquiry:	**Results:**
Item No. 13. Line of Inquiry:	**Results:**
Item No. 14. Line of Inquiry:	**Results:**
Item No. 15. Line of Inquiry:	**Results:**

Performed By: Michelle Sharp	**Performed Date:** 06/30/12

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE REPORT

Surveillance No.: 72733

Title: TRU Programs - 3rd Quarter Level 1 Data Generation and Validation Batch Review - VEB Batch

Originator: Morse, Angie	**Assigned Actionee:** Robison, Camille
Date Opened: 09/24/12	**Date Due:** 09/28/12
Risk Level: Low	**Responsible Manager:** Susan Peterman
Functional Area: TRU Programs	**Surveilled Organization:** Waste Programs

Surveillance Area: Characterization Data Generation and Validation

Scope of Surveillance:

Perform the 3rd Quarter Level 1 Characterization Data Generation and Validation for a randomly selected boxline VE (VEB) batch. Surveillance is review of a batch data report only.

Scheduled By: Angie Morse	**Scheduled Date:** 09/24/12
Rescheduled By:	**Rescheduled Date:**

SURVEILLANCE PLAN

Surveillance Method: Record(s)/Document(s) Review

Source/Requirements Documents:

MP-TRUW-8.8, Level 1 Data Validation, Rev. 32

Surveillance Plan:

Review batch data report VEB12-00832 in accordance with MP-TRUW-8.8, Level I Data Validation. See surveillance checklist for specific criteria examined during course of surveillance.

SURVEILLANCE RESULTS

Surveillance Summary:

Batch VEB12-00832 was selected for Level I Validation review. Each container in the BDR was reviewed per MP-TRUW-8.8 (see Surveillance Checklist for specific criteria reviewed). This surveillance determined that the Level I Validation was performed satisfactorily.

CAQ(s) Identified?: No	**CAR or NCR No.** N/A

Conditions Adverse to Quality:

None.

Strengths:

The Level I Validation has been performed in accordance with the procedure.

Observations/Recommendations:

None.

Effectiveness Evaluation:

MP-TRUW-8.8, Level I Data Validation, is clear and concise in the requirements an Independent Technical Reviewer is expected/required to adhere to when performing Level I Validation duties. ITRs are following the procedure as written, which ensures that any validation performed is done correctly and all pertinent information is recorded and reported. The procedure is implemented effectively as is evident by no observed conditions adverse to quality and no previously reported issues for the VE process.

Performed By: Camille Robison	**Performed Date:** 09/25/12
Additional Action Complete By:	**Additional Action Complete Date:**

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AMWTP SURVEILLANCE REPORT

Surveillance No.: 72733

QA MANAGER - SURVEILLANCE REVIEW

1. Are all Conditions Adverse to Quality properly identified?	NA
2. Are all Conditions Adverse to Quality reported on a CAR or NCR?	NA
3. Are follow up actions identified for any Recommendations?	NA

QA Manager Review Comments:

Surveillance reviewed and discussed with auditor.
No Conditions Adverse to quality found nor recommendation to provide a this time.

Additional Action Required By:	**Additional Action Required Date:**
QA Manager Review/Closed By: Edward Vokoun	**QA Manager Review/Closed Date:** 09/26/12
QA Manager Cancelled By:	**QA Manager Cancelled Date:**

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 72733

Title: TRU Programs - 3rd Quarter Level 1 Data Generation and Validation Batch Review - VEB Batch

Assigned Actionee: Robison, Camille	**Responsible Manager:** Susan Peterman
Surveilled Organization: Waste Programs	**Functional Area:** TRU Programs

Surveillance Area: Characterization Data Generation and Validation

Scope of Surveillance:

Perform the 3rd Quarter Level 1 Characterization Data Generation and Validation for a randomly selected boxline VE (VEB) batch. Surveillance is review of a batch data report only.

SPECIFIC ATTRIBUTES

Item No. 1. Line of Inquiry: **Results:** SAT

Verify that all the BDR and QA documentation are complete in accordance with the procedure by verifying the following: VE Batch Coversheet, VE Analysis Reports, Associated NCRs. MP-TRUW-8.8 Step 3.2.4.2

Item No. 2. Line of Inquiry: **Results:** SAT

Verify that there are no more than 20 containers in the batch. MP-TRUW-8.8 Step 3.2.4.3

Item No. 3. Line of Inquiry: **Results:** SAT

Verify that each VE Operator was qualified at the time of the VE event. MP-TRUW-8.8 Step 3.2.4.4

Item No. 4. Line of Inquiry: **Results:** SAT

Verify that a VE data form was completed for each container in the batch. MP-TRUW-8.8 Step 3.2.4.5

Item No. 5. Line of Inquiry: **Results:** SAT

Verify correct procedure revision was documented in the BDR. Verify the E-signature history was reviewed. Verify the physical form matched the waste stream description, WMC, and IDC. Verify the presence or absence of prohibited items has been properly identified (and subsequent NCRs generated). MP-TRUW-8.8 Step 3.2.4.8

Item No. 6. Line of Inquiry: **Results:** SAT

Verify the descriptions of rigid liners and layers of confinement have been documented. Verify the DAC has been reviewed for accuracy and completeness. MP-TRUW-8.8 Step 3.2.4.9

Item No. 7. Line of Inquiry: **Results:** SAT

Verify the VE QAOs (precision, accuracy, completeness, comparability). MP-TRUW-8.8 Step 3.2.4.10

Item No. 8. Line of Inquiry: **Results:** SAT

Verify each data form is signed by a qualified VE operators per the procedure being used. MP-TRUW-8.8 Step 3.2.4.11

Item No. 9. Line of Inquiry: **Results:** NOT OBSERVED

Verify that all required NCRs have been generated. MP-TRUW-8.8 Step 3.2.4.15

Item No. 10. Line of Inquiry: **Results:** NOT OBSERVED

Verify that any required rework was clearly identified. MP-TRUW-8.8 Step 3.2.4.16

Item No. 11. Line of Inquiry: **Results:**

Item No. 12. Line of Inquiry: **Results:**

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AMWTP SURVEILLANCE CHECKLIST

Surveillance Checklist No.: 72733

Item No. 13. Line of Inquiry:	**Results:**
Item No. 14. Line of Inquiry:	**Results:**
Item No. 15. Line of Inquiry:	**Results:**
Performed By: Camille Robison	**Performed Date:** 09/25/12

GEN9

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NONCONFORMANCE REPORT

NCR No.: 67075
PARENT:

Title: Incomplete data reporting

Category: WIPP Data	**Affected Item Type:** Container ID
Affected Item: BN10407430, 10006091	
Originator: Storms, Matthew	**Date Opened:** 11/30/11
Source Type: As Found Condition	**ORPS Reportable:** No
Source Type Doc. No.	
ORPS No.:	**ORPS Category:** NA
Finding #:	
Requirement Violated: MP-TRUW-8.11 section 3.2 and MP-TRUW-8.5 section3.3 and 3.4	
Shipment No. IN1100510	**Payload No.** 95492
Equipment ID: Z-213-101	**PO Number:**
Batch No. VVE04-00021	
Container ID: BN10407430, 10006091	
Tag Applied: No	**No. of Tags:**

Description of Condition:

Container 10006091 lacks appropriate quality record documentation for data affecting activities performed during visual exam activities on July 25, 2004. Container 10006091 was characterized as part of RTR03-00154, ASY03-00464 and VVE04-00021. The drum was reconciled as part of BN218.36. The container was certified partially to the RTR analysis and partially to VE activities due to the absence of RVU documentation. RVU documentation was not possible at the time of generation but was an established process at the time of reconciliation. The container has been overpacked into BN10407430 in preparation for shipment and disposal to WIPP. This NCR is being generated to ensure documentation of the final configuration of the container is performed. Please refer to CAR 67066 to address programmatic CAQs related to this container.

Manager Review By: Matthew Storms	**Manager Review Date:** 12/01/11
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** Yes
Stop Work Order: No	**Is CAR Req'd?** Yes
HSS-OE Applicable: Yes	**NTS Report Number:**
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** WIPP VE-Miscert
	Responsible Department: Waste Programs
	Functional Area: Characterization
	Disposition Due Date: 12/26/11

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Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 67075

PARENT:

QA Mgr Rev Sign By: Lyle Ryman	**QA Mgr Rev Sign Date:** 12/05/11
	Date Due: 01/24/12
Disposition: Use As Is	**Responsible Manager:** Schweinsberg, Eric
	Assigned Actionee:
Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? NO	**USQ Screen No.:**
Root Cause Analysis: No	
Level A Cause Code: A3 - Human Performance LTA	**Contributing Cause Level A:** A5 - Communications LTA
Level B Cause Code: B2 - Rule Based Error	**Contributing Cause Level B:** B4 - Verbal Communication LTA
Level C Cause Code: C04 - Previous Rule Use Success Reinforced Continued Rule Use	**Contributing Cause Level C:** C01 - Communication Between Work Groups LTA

Disposition Description:

Certification will continue for container 10006091 based on the validated data from batches RTR03-00154, ASY03-00464 and VVE04-00021.

discrepancies exist between the quality record and the final drum configuration. One, certifying to the RTR record of two rs of confinement will result in a more conservatively certified drum for shipping compliance. The previous TRUCON code assignment of ID211L will still stand. Two, the waste material parameter differences of 2.26 more Kg of plastic to the waste matrix does not deviate from expectations in Acceptable Knowledge Summary for Building 374 Bypass Sludge (RPT-TRUW-15).

Compliance considerations exist for the following certification data points: FGAS analysis (CCP WDS data points), TAAC calculation, Characterization equipment designation.

FGAS sampling data quality with respect to all CCP required WDS data entry is still correct. Flammable gas analysis was performed by CCP according to the proper closure and vent dates (July 25th 2004) during their BDR development. CCP utilized the most conservative DAC of 155 days under sampling scenario 3. This DAC was met by over 5 years. The filter (NF19SD) was installed on June 9th 2010, by CCP operators. Filter information was later updated to WTS later with CCP form TP-082. The shipping category will not be affected based on all the facts. No CCP data points will change.

The corresponding TAAC, which is dependent on the net waste weight, would not change its status of being greater than 100nCi/g (TRU Waste). Calculations would suggest the container would go from 105 to 104 nCi/g. No other radiologic calculations would be affected.

The WDS equipment method designation will remain as 9RR1 in WDS. The VVE validated that no further characterization information could be derived from the process and that no discrepancies were identified between the RTR and VVE comparison. The VVE was limited and was not intended to fully characterize the container.

The Reconciliation Lot BNINW 218.36 Characterization Information Summary will require a revision to the narrative referencing NCR 67075 explaining the situation of container 10006091.

QA concurs with disposition. The revised Reconciliation Lot BNINW 218.36 Characterization Information Summary shall be provided in supporting documentation to support completion/closure of this NCR. A. Morse 12-15-2011

Mgr Disp App By: Matthew Storms	**Mgr Disp App Date:** 12/14/11
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By: Angie Morse	**QA Mgr Rev Disp Sign Date:** 12/14/11

CAP Complete Comments:

Revision 3 of BNINW218.36 has been attached as OE. This completes the required action for closure of this NCR. WSkaar 2/23/12

QA closure comment: Corrective actions taken are acceptable for NCR closure. LR022312

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 67075

PARENT:

Action Complete By: Wesley Skaar	**Action Complete Date:** 02/23/12
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Lyle Ryman	**QA Verification Comp Date:** 02/23/12

From:	Schweinsberg, Eric
To:	Schweinsberg, Eric; "Fesmire, Court"; "wipp.notify@wipp.ws"; "dennis.miehls@wipp.ws";
cc:	Byram, George; Skaar, Wes; Wells, Jerry L; Storms, Matthew; Tedford, Gina; Peterman, Susan M.; Morse, Angie ; Ryman, Lyle; Carpenter, Steve;
Subject:	RE: [NCR]
Date:	Monday, December 05, 2011 4:40:32 PM
Attachments:	NCR 67075.pdf

Dennis/Court– attached is NCR 67075 for CBFO notification in accordance with Section C3-13 of the WIPP Hazardous Waste Permit. Please contact me if you have any questions.

E.P. Schweinsberg

SPM - TRU Programs

AMWTP Idaho Operations

208-351-9247 (Cell)

208-557-6425 (Work)

208-557-6561 (Fax)

"Information Only"

RECORD
JLH 2/23/12

AMWTP Advanced Mixed Waste Treatment Project	**Reconciliation with Data Quality Objectives**	Form-1597 Rev. 6 Effective: 07/28/11 @1500HRS Page 1 of 3

Implementing Document: MP-TRUW-8.11

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BNINW218.36 R3

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	Random solid sampling and analysis is performed in accordance with MP-Truw-8.2. Headspace gas sampling is not required for this waste stream.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	

WSPF No.: BNINW218.36 R3

Data Quality Objective	Yes	No	N/A	Comment
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☐	☐	☒	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BNINW218.36 R3

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	**Wes Skaar**	Wes Skaar	**2/22/2012**
2nd Site Project Manager	**George Byram**	George Byram	**2/22/2012**

AMWTP Advanced Mixed Waste Treatment Project	**Characterization Information Summary Report**	Form-1598 Rev. 8 Effective: 02/04/11 Page 1 of 4

Implementing Document: MP-TRUW-8.14

WSPF Number: BNINW218 Lot Number: 36 R3

SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **2/22/2012**

2nd SPM

Printed Name: **George Byram** Signature: George Byram Date: **2/22/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BNINW218 Lot Number: 36 R3

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Reconciliation was performed on validated drum file containers obtained from waste stream BNINW218, Revision 1, Building 374 Sludge from the Rocky Flats Environmental Technology Site (RFETS). This Reconciliation Lot BNINW218.36 Rev 3 consists of 69 drums of mixed transuranic waste. Each drum file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Table 5 for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2. The total metal, VOC, SVOC analytical results and container data are found in the Characterization Information Summary from waste stream BNINW218, Lot 1, Revision 1, Lot 2, and/or Lot 3.

Containers 10005950, 10007068 and 10007499 are being removed from this reconciliation lot due to the inability to upload the ASY data to the Certification WCDEF form. Upon resolution of the issue, the containers will be included as part of a new reconciliation lot. Secondary SPM review of this revision is unnecessary, as only the above noted containers were removed and no other data was added or changed.

Revision 2 was necessary for inclusion of the second verification for the removal of containers 10005950, 10007068 and 10007499 per QA request in association with CAR 57571.

Revision 3 is required per NCR 67075, describing the situation for container 10006091 in which an RVU will not be required for certification of this waste.

WSPF Number: BNINW218 Lot Number: 36 R3

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
10000055	N/A	RTR03-00026	ASY03-00281	N/A	N/A	N/A
10000059	N/A	RTR03-00017	ASY03-00172	N/A	N/A	N/A
10000067	N/A	RTR03-00013	ASY03-00304	N/A	N/A	N/A
10000080	N/A	RTR03-00065	ASY03-00173	N/A	N/A	N/A
10000109	N/A	RTR06-00518	ASY03-00278	N/A	N/A	N/A
10000141	N/A	RTR03-00010	ASY03-00172	N/A	N/A	N/A
10000164	N/A	RTR03-00063	ASY03-00304	N/A	N/A	N/A
10000173	N/A	RTR06-00518	ASY03-00158	N/A	N/A	N/A
10000179	N/A	RTR03-00060	ASY03-00147	N/A	N/A	N/A
10000221	N/A	RTR03-00065	ASY03-00172	N/A	N/A	N/A
10000355	N/A	RTR03-00018	ASY03-00173	N/A	N/A	N/A
10000397	N/A	RTR03-00029	ASY04-00254	N/A	N/A	N/A
10000496	N/A	RTR03-00041	ASY05-00383	N/A	N/A	N/A
10000644	N/A	RTR03-00040	ASY03-00304	N/A	N/A	N/A
10003198	N/A	RTR03-00055	ASY04-00225	N/A	N/A	N/A
10003220	N/A	RTR03-00055	ASY03-00318	N/A	N/A	N/A
10003337	N/A	RTR03-00054	ASY04-00256	N/A	N/A	N/A
10003384	N/A	RTR03-00052	ASY04-00260	N/A	N/A	N/A
10003454	N/A	RTR03-00052	ASY03-00320	N/A	N/A	N/A
10003458	N/A	RTR03-00051	ASY04-00255	N/A	N/A	N/A
10003476	N/A	RTR03-00053	ASY03-00361	N/A	N/A	N/A
10003571	N/A	RTR03-00121	ASY03-00468	N/A	N/A	N/A
10003726	N/A	RTR03-00129	ASY03-00463	N/A	N/A	N/A
10003859	N/A	RTR03-00123	ASY03-00467	N/A	N/A	N/A
10003871	N/A	RTR03-00134	ASY04-00024	N/A	N/A	N/A
10003916	N/A	RTR03-00106	ASY04-00276	N/A	N/A	N/A
10003999	N/A	RTR03-00125	ASY04-00130	N/A	N/A	N/A
10004064	N/A	RTR03-00094	ASY04-00083	N/A	N/A	N/A
10004326	N/A	RTR03-00085	ASY03-00366	N/A	N/A	N/A
10004439	N/A	RTR03-00086	ASY04-00269	N/A	N/A	N/A
10004591	N/A	RTR03-00085	ASY03-00465	N/A	N/A	N/A
10004616	N/A	RTR03-00168	ASY04-00120	N/A	N/A	N/A
10004721	N/A	RTR03-00168	ASY04-00075	N/A	N/A	N/A
10004724	N/A	RTR03-00168	ASY04-00119	N/A	N/A	N/A
10004734	N/A	RTR03-00166	ASY04-00079	N/A	N/A	N/A

WSPF Number: BNINW218 Lot Number: 36 R3

10004759	N/A	RTR03-00167	ASY04-00078	N/A	N/A	N/A
10004776	N/A	RTR03-00177	ASY04-00083	N/A	N/A	N/A
10004779	N/A	RTR03-00165	ASY03-00473	N/A	N/A	N/A
10004794	N/A	RTR03-00173	ASY04-00024	N/A	N/A	N/A
10005017	N/A	RTR03-00162	ASY04-00768	N/A	N/A	N/A
10005137	N/A	RTR03-00167	ASY04-00274	N/A	N/A	N/A
10005491	N/A	RTR03-00159	ASY04-00176	N/A	N/A	N/A
10005533	N/A	RTR03-00158	ASY04-00029	N/A	N/A	N/A
10005599	N/A	RTR03-00160	ASY04-00238	N/A	N/A	N/A
10005918	N/A	RTR03-00154	ASY03-00486	N/A	N/A	N/A
10006091	N/A	RTR03-00154	ASY03-00464	N/A	N/A	N/A
10006438	N/A	RTR03-00162	ASY04-00236	N/A	N/A	N/A
10006465	N/A	RTR03-00183	ASY04-00021	N/A	N/A	N/A
10006663	N/A	RTR03-00181	ASY04-00224	N/A	N/A	N/A
10006711	N/A	RTR03-00185	ASY04-00021	N/A	N/A	N/A
10006727	N/A	RTR03-00173	ASY04-00024	N/A	N/A	N/A
10006809	N/A	RTR03-00176	ASY03-00482	N/A	N/A	N/A
10006852	N/A	RTR03-00173	ASY04-00021	N/A	N/A	N/A
10007028	N/A	RTR03-00175	ASY04-00083	N/A	N/A	N/A
10007271	N/A	RTR04-00010	ASY04-00246	N/A	N/A	N/A
10007275	N/A	RTR04-00010	ASY04-00276	N/A	N/A	N/A
10007355	N/A	RTR03-00198	ASY04-00014	N/A	N/A	N/A
10007369	N/A	RTR03-00195	ASY04-00209	N/A	N/A	N/A
10007493	N/A	RTR03-00196	ASY04-00015	N/A	N/A	N/A
10007758	N/A	RTR03-00194	ASY04-00025	N/A	N/A	N/A
10010524	N/A	RTR04-00035	ASY04-00187	N/A	N/A	N/A
10011770	N/A	RTR04-00058	ASY04-00264	N/A	N/A	N/A
10013215	N/A	RTR04-00068	ASY04-00208	N/A	N/A	N/A
10016408	N/A	RTR04-00443	ASY04-00895	N/A	N/A	N/A
10213566	N/A	RTR08-00180	ASY08-02050	N/A	N/A	N/A
10213569	N/A	RTR08-00178	ASY08-02049	N/A	N/A	N/A
10213572	N/A	RTR08-00179	ASY08-02048	N/A	N/A	N/A
10251605	N/A	RTR08-00179	ASY08-02050	N/A	N/A	N/A
10251608	N/A	RTR08-00180	ASY08-02048	N/A	N/A	N/A

Note: Footnotes will be added as applicable.

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No: 70341
PARENT:

Title: TDOP Payloads Built Utilizing S3114 Containers Characterized With Non-Approved VE Method ID

Category: WIPP Data	**Affected Item Type:** Payload ID
Affected Item: TDOP Payloads	
Originator: Lance, Jason	**Date Opened:** 04/24/12
Source Type: CBFO-WIPP	**ORPS Reportable:**
Source Type Doc. No.	
ORPS No.:	**ORPS Category:**
Finding #:	
Requirement Violated: New method IDs will not be entered into the production database (WDS) unless there is a CBFO certification let	
Shipment No.	**Payload No.** BN10427288, BN10427290, BN
Equipment ID:	**PO Number:**
Batch No.	
Container ID: BN10427288, BN10427290, BN10427291, BN10427292, BN10427293, BN10427294, BN10427295, BN10427296, BN10427297	
Tag Applied: No	**No. of Tags:**

Description of Condition:

Waste Stream S3114 containers were treated in the AMWTF with a Visual Exam (VE) performed. The method ID for the VE, 9VE11, was not yet approved for certification of waste by CBFO however the method ID was entered into the WDS database. Although a surveillance had been performed and the process was included in the AMWTP re-certification audit, the final audit report had not yet been approved by NMED and consequently a revised certification letter had not been issued by CBFO to include the method in the approved certification. Since the method ID had mistakenly been entered into WDS containers utilizing this characterization method were allowed to be certified for shipment to WIPP. The error was discovered during CBFO confirmation of shipment IN120089. An extent of condition has concluded that 9 TDOPs have been built to date which include one or more containers that had undergone treatment in the AMWTF and utilized method ID 9VE11. No containers have been shipped to WIPP.
This NCR is initiated to ensure that these 9 built TDOP payloads are not mistakenly shipped to WIPP prior to final approval of method ID a9VE11 and receipt of the revised certification letter. Note that CCP holds the certification authority for the S3114 waste stream and CBFO has issued CAR 12-021 to address the corrective action.

Manager Review By: Susan Peterman	**Manager Review Date:** 04/26/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** Yes
Stop Work Order: No	**Is CAR Req'd?** No
HSS-OE Applicable: No	**NTS Report Number:**
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** No
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** Other
	Responsible Department: Waste Programs
	Functional Area:

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 70341

PARENT:

	TRU Programs
	Disposition Due Date: 05/21/12
QA Mgr Rev Sign By: Gary Labruyere	**QA Mgr Rev Sign Date:** 04/30/12
	Date Due: 05/24/12
Disposition: Use As Is	**Responsible Manager:** Peterman, Susan
	Assigned Actionee: Ne Smith, Richard
Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? NO	**USQ Screen No.:**
Root Cause Analysis: No	
Level A Cause Code: A4 - Management Problem	**Contributing Cause Level A:**
Level B Cause Code: B1 - Management Methods LTA	**Contributing Cause Level B:**
Level C Cause Code: C08 - Corrective Action Response to Known/Repetative Problem was Untimely	**Contributing Cause Level C:**

Disposition Description:

Letter of 5/24/12, subject: Advanced Mixed Waste Treatment Project - Recertification Audit A-12-03 from CBFO authorizes the AMWTP to VE S3000 CH homogeneous soilids IAW INST-FOI-22 Rev. 0. Therefore the drums completed by this process are acceptable for continued certification for shipment to WIPP. Copy of letter attached.

Mgr Disp App By: Richard Ne Smith	**Mgr Disp App Date:** 05/24/12
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By: Terry Cook	**QA Mgr Rev Disp Sign Date:** 05/24/12

CAP Complete Comments:

Letter of 5/24/12, subject: Advanced Mixed Waste Treatment Project - Recertification Audit A-12-03 from CBFO authorizes the AMWTP to VE S3000 CH homogeneous soilids IAW INST-FOI-22 Rev. 0. Therefore the drums completed by this process are acceptable for continued certification for shipment to WIPP. Copy of letter attached.

QA concurs with the proposed disposition. T. Cook 5/24/12
QA Verification: Verified Letter of 5/24/12, subject: Advanced Mixed Waste Treatment Project - Recertification Audit A-12-03 from CBFO authorizes the AMWTP to perfrom RTR of S3000 CH homogeneous soilids and S5000 debris, is attached in the supporting documentation. No further action required. T. Cook 5/24/12.

Action Complete By: Wesley Skaar	**Action Complete Date:** 05/24/12
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 08/08/12

Byram, George

From: Byram, George
Sent: Monday, April 30, 2012 7:51 AM
To: 'wipp.notify@wipp.ws'
Cc: Peterman, Susan M.; Schweinsberg, Eric; 'Skaar, Wes'; Morse, Angie ; Fesmire Courtland; Lance, Jason P.
Subject: [NCR] 70431
Attachments: NCR 70341.pdf

Attached is NCR 70341 for CBFO notification in accordance with the WIPP Hazardous Waste Permit. Please contact me if you have any questions.

George Byram
TRU Programs
AMWTP Idaho Operations
2008-557-6319
208-521-3390

DOE F 1325.8

United States Government **Department of Energy**

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: MAY 24 2012

REPLY TO ATTN OF: CBFO:NTP:NC:GL:12-0483:UFC 2300.00

SUBJECT: Advanced Mixed Waste Treatment Project – Recertification Audit A-12-03

TO: William (Bill) Lattin, DOE-ID

The Carlsbad Field Office (CBFO) completed the annual recertification Audit A-12-03 of the Advanced Mixed Waste Treatment Project's (AMWTP) transuranic (TRU) waste program deployed at the Idaho National Laboratory conducted on November 1-3, 2011. The CBFO evaluated the adequacy, implementation, and effectiveness of the AMWTP TRU waste characterization, and certification activities for contact-handled (CH) (S3000) homogeneous solids and (S5000) debris waste. In addition, the CBFO conducted Surveillance S-11-30 of the AMWTP Visual Examination (VE) of Summary Category Group (SCG) S3000 homogeneous solids waste in accordance with AMWTP procedure INST-FOI-22, Revision 0. The characterization, certification, and quality assurance activities were determined to be adequate, satisfactorily implemented, and effective.

The audit team determined that the AMWTP TRU program was in compliance with the "Waste Analysis Plan" (WAP) of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP), the Quality Assurance Program Document (QAPD), and the Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP WAC). The audit team determined that the procedures/documents were effectively implemented.

Based on the results of the CBFO Audits/Surveillances (See Attachment 1), and conditions and limitations provided by the New Mexico Environment Department (NMED) and the U.S. Environmental Protection Agency (EPA), the CBFO is authorizing AMWTP to perform VE of S3000 homogeneous solids waste in accordance with AMWTP procedure INST-FOI-22, Revision 0, and to continue authority at the AMWTP for characterization and certification activities for CH homogeneous solids (S3000) and CH debris (S5000) wastes as identified in Table 1, Page 4 of this memorandum.

TRU waste characterization and certification activities, using significantly revised or new processes, procedures, or systems must be evaluated by the CBFO prior to their implementation. Included in this memo are the following attachments:

- *Attachment 1* describes the certification program status;
- *Attachment 2* contains the list of processes/equipment from Table 1 of this memorandum certified at the site;
- *Attachment 3* contains the list of certified procedures/documents; and
- *Attachment 4* describes specific waste characterization process elements that must be reported to the EPA. These process elements are identified as Tier 1 changes and Tier 2 changes. The AMWTP shall not ship for disposal at WIPP any wastes affected by a Tier 1 process element change without prior CBFO approval, and AMWTP shall report Tier 2 changes to CBFO on a quarterly basis.

Jose R. Franco, Manager
Carlsbad Field Office

Attachments (4)

CBFO:NTP:NC:GL:12-0483:UFC 2300.00

cc: w/attachments

E. Ziemianski, CBFO	*ED
G. Basabilvazo, CBFO	ED
J. R. Stroble, CBFO	ED
R. Unger, CBFO	ED
N. Castaneda, CBFO	ED
W. Mackie, CBFO	ED
T. Morgan, CBFO	ED
M. Pinzel, CBFO	ED
C. Fesmire, CBFO	ED
S. McCauslin, CBFO	ED
E. Feltcorn, EPA	ED
R. Joglekar, EPA	ED
T. Peake, EPA	ED
S. Holmes, NMED	ED
J. Kieling, NMED	ED
T. Kliphuis, NMED	ED
J. Wells, DOE-ID	ED
E. Schweinsberg, AMWTP	ED
D. Haar, ITG	ED
S. Peterman, ITG	ED
C. Chester, WTS	ED
K. Guillermo, WTS	ED
C. Kirkes, WTS	ED
C. Luoma, WTS	ED
M. Pearcy, WTS	ED
D. Ploetz, WTS	ED
R. Reeves, WTS	ED
M. Sensibaugh, WTS	ED
M. Strum, WTS	ED
J. Vernon, WTS	ED
R. Allen, CTAC	ED
J. Harvill, CTAC	ED
D. Sellmer, CTAC	ED
P. Gilbert, LANL-CO	ED
G. Lyshik, LANL-CO	ED
S. Pearcy, Stoller	ED

WIPP Operating Record
CBFO M&RC
*ED denotes electronic distribution

Information Only

AMWTP Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No. 71448
PARENT

Title: RTR12-00062 Original and replicate container difference

Category: WIPP Data	**Affected Item Type:** Characterization Batch
Affected Item: 10094548	
Originator: Byram, George	**Date Opened:** 06/20/12
Source Type: As Found Condition	**ORPS Reportable:**
Source Type Doc. No.	
ORPS No.:	**ORPS Category:**
Finding #:	
Requirement Violated: TRUW-8.8	
Shipment No.	**Payload No.**
Equipment ID:	**PO Number:**
Batch No. RTR12-00062	
Container ID: 10094548	
Tag Applied:	**No. of Tags:**

Description of Condition:

During RTR of container 10094548, prohibited impenetrable dense objects were identified by the replicate operator; however this condition was not identified by the original operator. During Independent Technical Review, the ITR noted the discrepancy but the discrepancy was not resolved.

Manager Review By: Eric Schweinsberg	**Manager Review Date:** 06/20/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** Yes
Stop Work Order: No	**Is CAR Req'd?** No
HSS-OE Applicable: Yes	**NTS Report Number:** N/A
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** WIPP Batch-RTR
	Responsible Department: Waste Programs
	Functional Area: TRU Programs
	Disposition Due Date: 07/16/12
QA Mgr Rev Sign By: Camille Robison	**QA Mgr Rev Sign Date:** 06/25/12
	Date Due: 07/31/12
Disposition: Rework	**Responsible Manager:** Peterman, Susan

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 71445
PARENT:

	Assigned Actionee:
Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? NO	**USQ Screen No.:** N/A
Root Cause Analysis: No	
Level A Cause Code: A3 - Human Performance LTA	**Contributing Cause Level A:**
Level B Cause Code: B4 - Work Practices LTA	**Contributing Cause Level B:**
Level C Cause Code: C01 - Individual's Capability to Perform Work LTA	**Contributing Cause Level C:**

Disposition Description:

For closure of this NCR the following actions will be required:
1) Demote RTR12-00062 to ITR,
2) Review fill factor and impenetrable object differences between the original and replicate scans for container 10094548,
2A) If noted differences between the original and replicate scans are not data quality affecting, the differences will be outlined in the batch,
or
2B) If noted differences between the original and replicate scans are data quality affecting, nonreporting of the batch and re-RTR of the containers will be required. GTB 6/25/12

Disposition update: The attached manual batch (RTR12-00062), to be submitted to CCP for level II validation in support of their certification of ARP box 10438603, will require manual update. This update will be performed mannully only and no additional WTS changes will be performed. The update will include the following:

A) Review fill factor differences between the original and replicate scans for container 10094548 and make corrections as necessary,

B) Review impenetrable object differences between the original and replicate scans for container 10094548 and make corrections as necessary,

C) Add additional batch comments on Form—1491 as necessary,

D) Scan the updated manual BDR and attached to this NCR as objective evidence. GTB 8/1/12

Mgr Disp App By: George Byram	**Mgr Disp App Date:** 07/23/12
QA Add'l Disp. Req'd By: Terry Cook	**QA Add'l Disp. Req'd Date:** 08/01/12
Mgr Add'l. Disp App By: George Byram	**Mgr Add'l. Disp App Date:** 08/01/12
QA Mgr Rev Disp Sign By: Camille Robison	**QA Mgr Rev Disp Sign Date:** 08/02/12

CAP Complete Comments:

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 71445
PARENT:

Batch RTR12-00062 has been demoted to ITR for review of fill factor and impenetrable object differences between the original and replicate scans. The differences have been determined to not be data quality affecting, and the differences have been outlined as required in the batch comments. Required actions have been completed and this NCR is recommended for closure. GTB 7/26/12

QA Verification: The items required by the approved CAP have been completed. No further action is required. C. Robison 07-30-12

Per the request of the SPM, this NCR is being reopened and rejected back for disposition update. Additional action is required. T. Cook 8/01/12

ITR Update: Replicate SWB 10438603 was reviewed by RTR Operator and updated fill factor and impenetrable dense object fields. The form -1491 as been enclosed in the manual BDR. DKL 8/3/12
Batch RTR12-00062 has been demoted to ITR for review of fill factor and impenetrable object differences between the original and replicate scans. The differences have been corrected by the replicate operator. The ITR has reviewed the checklist and added Form-1491 to the Batch Data Report. The corrected BDR is attached as RTR12-00062 R 1. Required actions have been completed and this NCR is recommended for closure. W Skaar 8/3/12

QA Verification: The items required by the revised approved CAP have been completed. No further action is required. C. Robison 08-06-12

Action Complete By: Wesley Skaar	**Action Complete Date:** 08/03/12
QA Add'l Action Req'd By: Terry Cook	**QA Add'l Action Req'd Date:** 08/01/12
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 08/08/12

From: Byram, George
Sent: Thursday, June 21, 2012 5:58 AM
To: 'wipp.notify@wipp.ws'
Cc: Peterman, Susan M.; Schweinsberg, Eric; 'Skaar, Wes'; Morse, Angie ; Fesmire Courtland; Birch, Kathy; LaBruyere, Gary A.
Subject: [NCR] 71445

Attachments: AMWTP_NCR.PDF
Attached is NCR 71445 for CBFO notification in accordance with the WIPP Hazardous Waste Permit. Please contact me if you have any questions.

George Byram
TRU Programs
AMWTP Idaho Operations
2008-557-6319
208-521-3390

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 73050
PARENT:

Title: Container with roll up data issues

Category: WIPP Data	**Affected Item Type:** Container ID
Affected Item: BN10448144	
Originator: Ryman, Lyle	**Date Opened:** 10/11/12
Source Type: As Found Condition	**ORPS Reportable:**
Source Type Doc. No. SCR 4415	
ORPS No.:	**ORPS Category:**
Finding #:	
Requirement Violated: MP-TRUW-8.11 Rev. 24, Section 3.1; MP-TRUW-8.5 Rev. 28, Section 3.2	
Shipment No. N/A	**Payload No.** IN120262
Equipment ID: N/A	**PO Number:**
Batch No. N/A	
Container ID: BN10448144	"Information Only"
Tag Applied:	**No. of Tags:**

Description of Condition:

SCR 4032, for SWB Roll-up Data, requirement 7 states: "When an Assayed container is unpacked the latest valid assay from the outer container shall be associated with the newly unpacked inner container including the isotopes from that assay, if no valid assay exists for the inner container being unpacked."
There are six 83/55 over-packs where both the outer and the inner container have a valid assay that have been overpacked into DL-SWBs via the overpack rollup process. SCR 4032 does not address, nor were requirements provided, if there were cases where both the outer and inner container had valid assays. It appears that when both containers have a valid assay, the 55 gallon container data is what is included in the roll-up instead of the 83 gallon.
SCR 4415 has been initiated to correct the rollup process.
The most recent roll up data is to be reviewed during data reconciliation, in accordance with MP-TRUW-8.11. The roll up data used for container BN10448144, identified on completed CIS report BNIN216.278 and in payload IN120262, utilized the data from the 55 gallon inner container (10009473) instead of the more recent valid data associated with the 83 gallon container.
NCR 73050 is resolve the condition related to container BN10448144. CAR 73071 was initiated to address the programmatic issues associated with this container.

Manager Review By: Edward Vokoun	**Manager Review Date:** 10/11/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** Yes
Stop Work Order: No	**Is CAR Req'd?** Yes
HSS-OE Applicable: Yes	**NTS Report Number:**
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** WIPP Program
	Responsible Department: Waste Programs

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 73050
PARENT:

	Functional Area: TRU Programs
	Disposition Due Date: 11/01/12
QA Mgr Rev Sign By: Lyle Ryman	**QA Mgr Rev Sign Date:** 10/11/12
	Date Due: 10/12/12
Disposition: Rework	**Responsible Manager:** Peterman, Susan
	Assigned Actionee:
Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? NO	**USQ Screen No.:**
Root Cause Analysis: No	
Level A Cause Code: A1 - Design/Engineering Problem	**Contributing Cause Level A:**
Level B Cause Code: B2 - Design Output LTA	**Contributing Cause Level B:**
Level C Cause Code: C01 - Design Output Scope LTA	**Contributing Cause Level C:**

Disposition Description:

All of the overpack drums associated with the inner 55-gallon drums in this SWB were characterized (RTR and ASY) and the data validated. In addition inner 55-gallon drum 10009473, from overpack 10020746, also had validated characterization data. Upon overpack in the SWB, the WTS rollup schema incorrectly pulled the 55-gallon assay data for drum 10009473 rather than that of overpack drum.10020746.

To resolve this issue the following actions will be required:
1) Review of the WTS rollup data and Waste Container Data Entry Form (WCDEF) for this SWB; as well as calculated summation data for this SWB using data from inner drum 10009473, and overpack drums 10244068, 1028308 and 10177988,
2) Determination that the rollup, WCDEF and summation data are in aggreement,
3) Review of the rollup RTR data for this SWB to ensure only data associated with the 83-gallon overpack drums was included,
4) Revision of reconciliation lot BNINW216.278 to include the characterization data associated with inner drum 10009473.
GTB 10/11/12
QA comment: Agree with the disposition to rework. LR101112

Mgr Disp App By: George Byram	**Mgr Disp App Date:** 10/11/12
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By: Lyle Ryman	**QA Mgr Rev Disp Sign Date:** 10/11/12

CAP Complete Comments:

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 73050
PARENT:

As shown in attachment "NCR_73050_SCR_4415", review of the rollup, WCDEF and Summation data has been completed and all match.

A review of the rollup data for all of the SWBs in which RTR data has been rolled up was performed as show in attachment "SWB RTR data rollup review". The review determined that the correct overpack RTR data has been rolled up and assigned to all of the SWBs.

Attachment "BNINW216.278 R1" is the revised reconciliation lot including this SWB and now lists inner 55-gallon drum characterization batch data reports.

All required actions have been completed and this NCR is recommended for closure. GTB 10/11/12

QA closure comment:
Verified WCDEF, WDS, and WTS roll up data are in agreement.
RTR data came from the 83 gallon overpack container.
CIS BNINW216.278 has been revised.
Verified CAR 73071 was initiated.
Corrective actions taken are acceptable for NCR closure. LR10112

Action Complete By: George Byram	**Action Complete Date:** 10/11/12
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Lyle Ryman	**QA Verification Comp Date:** 10/11/12

	SWB	83	55
1	BN10448144	10020746	10009473
2	BN10451402	10182405	10021711
3	BN10450013	10045971	10022521
4	BN10457132	10099669	10082014
5	BN10450010	10231186	10120591
6	BN10450012	10206160	10195132
7	BN10451405	10357684	10200296

From: Schweinsberg, Eric
Sent: Monday, October 15, 2012 9:23 AM
To: 'wipp.notify@wipp.ws'
Cc: Peterman, Susan M.; Morse, Angie ; 'Fesmire, Court'; Byram, George; Skaar, Wes; Storms, Matthew; Tedford, Gina
Subject: [NCR] 73050

Attached is NCR 73050 for CBFO notification in accordance with the WIPP Hazardous Waste Permit. Please contact me if you have any questions.

NCR 73050 closed (2).pdf

E.P. Schweinsberg
SPM - TRU Programs
AMWTP Idaho Operations
208-351-9247 (Cell)
208-557-6425 (Work)
208-557-6561 (Fax)

TestTrack | Class I/II SCRs

Class I/II SCR Number: 4415

System: WTS

Component/Area: 841 - WTS (General)

Status: USQ Evaluation, assigned to Anderson, Jade M
Software Class: Class II

Priority: High

Title: SWB rollup using wrong analysis

Affected Files/ Build Revs: wts_fnc_get_latest_assay.sql
Software Requirements:
Affected Documents: NA
CAR(s): NA
SCS/FMP: FMP 1219 attached
Build/Patch:

Records
Reported by: Cook, Dale M **Date Found:** 10/5/2012

Problem Description:
cookdm, 10/5/2012
POC Matt Storms, Dale Cook
Matt Storms: "It is now obvious to me that when I calculate the 83 gallon container numbers independently it does not match what the WCDEF and the Rollup have calculated. The Rollup, WCDEF and Summation all match right now if I utilize the 55 gallon container values."

The problem becomes apparent in the SWB rollup process, where the values used in the rollup come from the earlier assay of the 55 gallon container instead of the more recent assay from the 83.

Investigation:
The current behavior is incorrect. The problem problem manifests itself when both the inner and outer container have a valid assay. The function that is supposed to return the correct analysis ID (fnc_get_latest_assay) improperly excludes the linked assay of the 83 when the 55 has a valid assay as well. The function must be changed to use the more recent of the two assays when a linked assay result is found.

SCS4415r2.docx attached. This work will be performed as a correction to the modifications performed under FMP 1219.

sms / 10-11-2012 SCG Meeting Approved as High Projected Build Date 11/28/2012

Work History:
Test Descriptions and Results:
Attachments: FMP 1219.pdf
SCS-4415.docx

Workflow Events:

Assign To: Cook, Dale M **Investigated By:** Cook, Dale M **Date:** 10/5/2012 12:10 PM
Notes: Investigated.

Assign To: Anderson, Jade M **SCS Complete By:** Cook, Dale M **Date:** 10/5/2012 3:15 PM

SCS Result: FMP NOT Required - See Attached SCS

Notes: SCS Complete, no FMP required. I've attached an email from Eric Schweinsberg stating no TRU programs concern.

Assign To: Cook, Dale M **Back to Invstgn By:** Cook, Dale M **Date:** 10/8/2012 1:44 PM

Notes: New SCS, attach FMP 1219

Assign To: Cook, Dale M **Investigated By:** Cook, Dale M **Date:** 10/8/2012 1:46 PM

Notes: Ready for SCS

Assign To: Anderson, Jade M **SCS Complete By:** Cook, Dale M **Date:** 10/8/2012 1:53 PM

SCS Result: FMP Approved - See Attached FMP

Notes: This SCR corrects a defect in the software originally covered by FMP 1219, which is attached.

Created By: Cook, Dale M
Date Created: 10/5/2012 12:11 PM
Creation Method: Add window
Modified By: Sampson, Susan M
Date Modified: 10/11/2012 6:34 AM

Ryman, Lyle

From: Cook, Dale
Sent: Thursday, October 11, 2012 9:11 AM
To: Ryman, Lyle
Subject: RE: Roll up data issues
Attachments: AffectedContainers.xlsx

Both are affected by the issue addressed in 4415.

I've attached a list of the 7 affected SWBs and the 83/55 overpacks that have the issue.

---dale

From: Ryman, Lyle
Sent: Thursday, October 11, 2012 8:33 AM
To: Cook, Dale
Subject: FW: Roll up data issues
Importance: High

Dale

Are containers BN10448144 and BN10450010 associated with SCR 4415? One of these drums is in today's shipment so, if you could, please let me know as soon as possible.

Lyle Ryman
QA Specialist
WMF-678
208-557-6421

From: Skaar, Wes
Sent: Thursday, October 11, 2012 6:57 AM
To: Ryman, Lyle
Cc: Byram, George; Peterman, Susan M.; Schweinsberg, Eric
Subject: RE: Roll up data issues

Lyle
Attached are the CIS for BNINW216.278 and BNINW216.279. Containers BN10448144 and BN10450010 are two of the SWBs with roll up issues. If you have any questions let me know.

From: Ryman, Lyle
Sent: Thursday, October 11, 2012 6:01 AM
To: Skaar, Wes; Byram, George
Cc: Schweinsberg, Eric; Peterman, Susan M.; Morse, Angie
Subject: Roll up data issues
Importance: High

Wes/George

SDCR 2693 was issued for roll up data issues. Please provide me a list of CIS reports containing SWBs. If they have not been entered into EDMS, please attach copies. I need the information as soon as possible.

Thanks, in advance, for the help.

Lyle Ryman
QA Specialist
WMF-678
208-557-6421

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BNINW216.278 R1

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	Random solid sampling and analysis is performed in accordance with MP-Truw-8.2. Headspace gas sampling is not required for this waste stream.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	

WSPF No.: BNINW216.278 R1

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☐	☐	☒	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BNINW216.278 R1

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	**Wes Skaar**	Wes Skaar	**10/11/2012**
2nd Site Project Manager	**Sean Caniff**	Sean P. Caniff	**10/11/2012**

WSPF Number: BNINW216 Lot Number: 278 R1

SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **10/11/2012**

2nd SPM

Printed Name: **Sean Caniff** **Signature:** Sean P. Caniff **Date:** **10/11/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BNINW216 Lot Number: 278 R1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Reconciliation was performed on validated drum file containers obtained from waste stream BNINW216, Revision 1, First/Second Stage Sludge from the Rocky Flats Environmental Technology Site (RFETS). This Reconciliation Lot BNINW216.278 consists of 9 SWB containers of mixed transuranic waste. Each container file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Table 5 for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2. The total metal, VOC, SVOC analytical results and container data are found in the Characterization Information Summary from waste stream BNINW216, Lot 1, Revision 1, Lot 3, Lot 4, Lot 5, Lot 6, Lot 7, Lot 8, Lot 9, lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15, Lot 17, Lot 18 Lot 19, Lot 20 and/or Lot 21.

The revision was necessary for addition of characterization data for container 10009473 in SWB BN10448144.

WSPF Number: BNINW216 Lot Number: 278 R1

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
BN10447363	N/A	N/A	N/A	N/A	N/A	N/A
10007113 (10007114)	N/A	RTR04-00081	ASY10-02300	N/A	N/A	N/A
10390370 (10015040)	N/A	RTR10-00168	ASY10-01806	N/A	N/A	N/A
10390368 (10012886)	N/A	RTR04-00085	ASY04-00268	N/A	N/A	N/A
10340496 (10340497)	N/A	RTR11-00138	ASY11-00831	N/A	N/A	N/A
BN10447364	N/A	N/A	N/A	N/A	N/A	N/A
10338294 (10338293)	N/A	RTR11-00138	ASY11-00831	N/A	N/A	N/A
10339155 (10339154)	N/A	RTR10-00071	ASY10-00606	N/A	N/A	N/A
10370483 (10370482)	N/A	RTR11-00284	ASY11-01730	N/A	N/A	N/A
10339728 (10339726)	N/A	RTR10-00064	ASY10-00615	N/A	N/A	N/A
BN10447366	N/A	N/A	N/A	N/A	N/A	N/A
10363783 (10363782)	N/A	RTR11-00259	ASY11-01545	N/A	N/A	N/A
10363810 (10363809)	N/A	RTR11-00208	ASY11-01284	N/A	N/A	N/A
10342966 (10342965)	N/A	RTR11-00138	ASY11-00831	N/A	N/A	N/A
10364635 (10364633)	N/A	RTR11-00259	ASY11-01545	N/A	N/A	N/A
BN10447367	N/A	N/A	N/A	N/A	N/A	N/A
10339219 (10339220)	N/A	RTR11-00136	ASY11-00832	N/A	N/A	N/A
10340490 (10340491)	N/A	RTR11-00136	ASY11-00837	N/A	N/A	N/A
10339207 (10339208)	N/A	RTR11-00138	ASY11-00837	N/A	N/A	N/A
10341334 (10341333)	N/A	RTR11-00136	ASY11-00831	N/A	N/A	N/A
BN10448144	N/A	N/A	N/A	N/A	N/A	N/A
10244069 (10244068)	N/A	RTR10-00241	ASY10-02369	N/A	N/A	N/A
10009473	N/A	RTR04-00035	ASY04-00150	N/A	N/A	N/A
(10020746)	N/A	RTR10-00178	ASY10-01898	N/A	N/A	N/A
10390385 (10028308)	N/A	RTR10-00174	ASY10-02059	N/A	N/A	N/A
10177989	N/A	RTR10-00060	ASY10-00433	N/A	N/A	N/A

WSPF Number: BNINW216 Lot Number: 278 R1

(10177988)						
BN10448145	N/A	N/A	N/A	N/A	N/A	N/A
10021220 (10021219)	N/A	RTR10-00126	ASY10-01315	N/A	N/A	N/A
10029617 (10029618)	N/A	RTR10-00126	ASY10-02403	N/A	N/A	N/A
10032713 (10032636)	N/A	RTR10-00174	ASY10-01904	N/A	N/A	N/A
10368817 (10368816)	N/A	RTR11-00259	ASY11-01538	N/A	N/A	N/A
BN10448146	N/A	N/A	N/A	N/A	N/A	N/A
10177983 (10177982)	N/A	RTR11-00189	ASY11-01190	N/A	N/A	N/A
10342968 (10342967)	N/A	RTR11-00135	ASY11-00838	N/A	N/A	N/A
10366600 (10366599)	N/A	RTR11-00262	ASY11-01567	N/A	N/A	N/A
10352069 (10378211)	N/A	RTR10-00174	ASY10-02221	N/A	N/A	N/A
BN10448148	N/A	N/A	N/A	N/A	N/A	N/A
10032702 (10032637)	N/A	RTR10-00241	ASY10-02376	N/A	N/A	N/A
10366976 (10366975)	N/A	RTR11-00230	ASY11-01440	N/A	N/A	N/A
10368812 (10368811)	N/A	RTR11-00292	ASY11-01768	N/A	N/A	N/A
10368553 (10371816)	N/A	RTR11-00292	ASY11-01768	N/A	N/A	N/A
BN10450017	N/A	N/A	N/A	N/A	N/A	N/A
10344214 (10344213)	N/A	RTR11-00148	ASY11-00883	N/A	N/A	N/A
10366996 (10366994)	N/A	RTR11-00228	ASY11-01440	N/A	N/A	N/A
10368203 (10368202)	N/A	RTR11-00292	ASY11-01768	N/A	N/A	N/A
10368673 (10368672)	N/A	RTR11-00259	ASY11-01545	N/A	N/A	N/A

Note: The characterization data for the unpacked 83 / 85 gallon container and applicable data for the inner container is listed in Table 5. The empty overpack container is listed in parenthesis.

Ryman, Lyle

From: Schweinsberg, Eric
Sent: Thursday, October 11, 2012 3:49 PM
To: Ryman, Lyle; Peterman, Susan M.
Cc: Byram, George; Skaar, Wes
Subject: Re: TrackWise: TrackWise Notification:Doc #73050 - Container with roll up data issues: Responsible Manager Changed

Lyle - this will be a reportable NCR. I will take care of it next week. Thx

---

From: Ryman, Lyle
Sent: Thursday, October 11, 2012 03:34 PM
To: Peterman, Susan M.; Schweinsberg, Eric
Cc: Byram, George; Skaar, Wes
Subject: FW: TrackWise: TrackWise Notification:Doc #73050 - Container with roll up data issues: Responsible Manager Changed

Sue/Eric

Please provide an e-mail of the TRU Program SPM evaluation for NCR 73050 regarding the reportability to CBFO as soon as possible (yes or no). The evaluation is needed before NCR closure. It involves the container in today's shipment IN120262.

Lyle Ryman
QA Specialist
WMF-678
208-557-6421

From: Lyle Ryman [mailto:RYMALW@amwtp.inl.gov]
Sent: Thursday, October 11, 2012 3:04 PM
To: Peterman, Susan M.; Ryman, Lyle
Subject: TrackWise: TrackWise Notification:Doc #73050 - Container with roll up data issues: Responsible Manager Changed

The Responsible Manager for AMWTP-1 NCR - 73050 has been changed to SusanPeterman

Byram, George

From: Cook, Dale
Sent: Thursday, October 11, 2012 3:44 PM
To: Byram, George
Subject: SWB Rollup of RTR data

George,

Based on a query that I have developed to compare all of the inner containers in Direct Load SWBs that have rollup data with the 83 gallon container RTR data from the prior overpack, I can find no case where the 55 gallon container RTR data was used – it always uses the 83 gallon RTR analysis.

---dale

Report Statistics

Report Version:	**2.1**
WDS Instance:	**prd05.wipp.carlsbad.nm.us**
Generated on:	**October 08, 2012 08:02 AM**
Generated by:	**STORMS, MATTHEW**
Total Pages:	**9**

Selection Criteria

Container Number: **BN10448144**

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Current Location Site: IN
Generator Site: RF
Destination Site ID: WI

Certification Program ID: BN
Shipping Program ID: BN

Neutron Dose Rate (mrem/hr): 0.5
Beta Gamma Dose Rate (mrem/hr): 1.5
Total Dose Rate (mrem/hr): 2.0

FGE (g): 5.123E00
FGE Uncertainty (g): 8.392E-01

Gross Weight (kg): 1208.55
Gross Weight Uncert (kg): 1.20

Decay Heat (W): 4.13E-01
Decay Heat Uncertainty (W): 1.344E-01

Shipment Data

Payload ID: **96380** Assembly ID: IN120877 Payload Complete? Y
Shipment Number: IN120262 Send Date: Receipt Date:
Shipment Status: PENDING SHIPMENT DATA APPROVAL

Certification Data Values

Waste Stream Profile Code: BNINW216
Waste Type Code: MTRU
IDC Code: 001
Waste Matrix Code: S3121
WAC Revision Number: 7.2
Fill Factor (%): 45.00
Waste Stream BIR ID: IN-BNINW216
Waste Stream MWIR ID: IN-BNINW216

TRU Alpha Activity (Ci): 1.226E01
TRU Alpha Activity Uncertainty (Ci): 3.978E00
TRU Alpha Activity Concentration (Ci/g): 1.566E-05
PU-239 Equivalent Activity (PE-Ci): 1.227E01
Alpha Surface Contamination (dpm/cm^2): 19.0
Beta/Gamma Surface Contamination (dpm/cm^2): 199.0

Transportation Data Values

Closure Date: 07/25/2012
Vent Date: 07/25/2012
Process Knowledge? N

TRUCON Code: ID211V
Shipping Category: 1001600062
Aspiration Method: N

Shipment Purpose: DISPOSAL
Machine Compacted? N
Liner Exists? N
Liner Hole Size(mm):
Liner Lid Present?
Layers of Packaging 2
Aqueous Material? Y

Gas Generation Data Values

Measured FGGR (mol/s)	Measured TGRR (mol/s)	Truncated FGGR Test (Y/N)	Truncated FGGR Test Period (days)

Filters

Filter Model Number	Filter Diffusivity (mol/s/ml)	Quantity	Install Date

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

PCB Waste? N
PCB Mass (kg):
PCB Concentration (ppm):
PCB Out of Service Date:
Be Present? N
Be <= 1% by weight?
Be mass <= 100kg?
Separation OK?
Packing Fraction (compaction level): non-compacted

Filters

Filter Model Number	Filter Diffusivity (mol/s/ml)	Quantity	Install Date
NF19SD	1.85E-05	4	07/25/2012

Certification Comments

Radionuclides

Radionuclide	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)
AM-241	1.196E01	3.977E00	3.479E00	1.158E00
CS-137	<LLD	<LLD	<LLD	<LLD
NP-237	8.931E-05	2.659E-05	1.265E-01	3.777E-02
PU-238	1.710E-02	7.123E-03	9.885E-04	4.113E-04
PU-239	2.347E-01	4.820E-02	3.746E00	7.701E-01
PU-240	4.914E-02	1.088E-02	2.143E-01	4.750E-02
PU-241	5.017E-01	1.227E-01	4.829E-03	1.181E-03
PU-242	8.327E-06	2.308E-06	2.096E-03	5.810E-04
SR-90	<LLD	<LLD	<LLD	<LLD
U-233	<LLD	<LLD	<LLD	<LLD
U-234	2.673E-05	9.275E-06	4.248E-03	1.474E-03
U-235	4.411E-06	1.132E-06	2.014E00	5.171E-01

Container: BN10448144
Type: 2 - SWB

Current Status:
Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Radionuclides

Radionuclide	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)
U-238	6.740E-05	2.399E-05	1.980E02	7.049E01

Samples

Labor Code	Sample ID	Sample Type Code	Sample Type Description	Sample Date	Layer Sampled
C8	BN10448144	HGVO-T	HEADSPACE GAS VOC	09/18/2012	0

Unique Samples

CAS Number	Analyte Description	Concentration (ppm)	Analysis Date	Analysis Method	Reporting Flags
100-41-4	ETHYL BENZENE	0.87	09/18/2012	14HG5	U
107-06-2	1,2-DICHLOROETHANE	1.22	09/18/2012	14HG5	U
108-10-1	METHYL ISOBUTYL KETONE	1.88	09/18/2012	14HG5	U
108-67-8	1,3,5-TRIMETHYLBENZENE	0.99	09/18/2012	14HG5	U
108-88-3	TOLUENE	2.24	09/18/2012	14HG5	NA
108-90-7	CHLOROBENZENE	0.63	09/18/2012	14HG5	U
108383/106423	M,P-XYLENE	0.42	09/18/2012	14HG5	U
110-82-7	CYCLOHEXANE	1.79	09/18/2012	14HG5	U
156-59-2	CIS-1,2-DICHLOROETHYLENE	0.2	09/18/2012	14HG5	U
60-29-7	ETHYL ETHER	0.77	09/18/2012	14HG5	U
67-56-1	METHANOL	12.64	09/18/2012	14HG5	U
67-64-1	ACETONE	4.88	09/18/2012	14HG5	U
71-36-3	BUTANOL	0.76	09/18/2012	14HG5	U
71-43-2	BENZENE	0.31	09/18/2012	14HG5	U

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Samples

Labor Code	Sample ID	Sample Type Code	Sample Type Description	Sample Date	Layer Sampled
C8	BN10448144	HGVO-T	HEADSPACE GAS VOC	09/18/2012	0

Unique Samples

CAS Number	Analyte Description	Concentration (ppm)	Analysis Date	Analysis Method	Reporting Flags
75-34-3	1,1-DICHLOROETHANE	5.83	09/18/2012	14HG5	NA
75-35-4	1,1-DICHLOROETHYLENE	1.21	09/18/2012	14HG5	U
78-93-3	METHYL ETHYL KETONE	1.8	09/18/2012	14HG5	U
95-47-6	O-XYLENE	0.54	09/18/2012	14HG5	U
95-63-6	1,2,4-TRIMETHYLBENZENE	1.23	09/18/2012	14HG5	U

Labor Code	Sample ID	Sample Type Code	Sample Type Description	Sample Date	Layer Sampled
C8	H-BN10448144	HGHM-T	HEADSPACE GAS HYDROGEN AND METHANE	09/18/2012	0

Unique Samples

CAS Number	Analyte Description	Concentration (ppm)	Analysis Date	Analysis Method	Reporting Flags
1333-74-0	HYDROGEN	145.64	09/18/2012	14HG5	NA
74-82-8	METHANE	3.641	09/18/2012	14HG5	U

Material Parameters

Material Parameter	Description	Weight (kg)
9	SOLIDIFIED INORGANIC MATERIAL	783.07
13	STEEL CONTAINER MATERIALS	397.35

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Material Parameters

Material Parameter	Description	Weight (kg)
14	PLASTIC/LINERS CONTAINER MATERIALS	28.12
	Waste Weight:	783.07
	Packaging Weight:	425.47
	Total Material Weight:	1208.54

Hazardous Codes

Hazardous Code	Description
D004	ARSENIC
D005	BARIUM
D006	CADMIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D010	SELENIUM
D011	SILVER
D022	CHLOROFORM
F001	SPENT HALOGENATED SOLVENTS
F002	SPENT HALOGENATED SOLVENTS
F003	SPENT NON-HALOGENATED SOLVENTS
F005	SPENT NON-HALOGENATED SOLVENTS
F006	WASTEWATER TREATMENT SLUDGE
F007	SPENT CYANIDE PLATING BATH

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Hazardous Codes

Hazardous Code	Description
F009	SPENT STRIPPING SOLUTION

Assay Methods

Labor Code	Assay Method	Description	Assay Date
BN	9DA1	Z-211-102: CANBERRA DRUM ASSAY	02/20/2010
BN	9DA2	Z-211-103: CANBERRA DRUM ASSAY	10/09/2010

Non-Destructive Examination (NDE)

Labor Code	NDE Method	Description	Examination Date
BN	9RR2	RTR SYSTEM (Z-213-106)	10/30/2010

Edit Limit Check Results

Evaluation Date: 10/03/2012 13:16:46 Overall Status: PASS

Evaluation Code	Status	Return Code	Detailed Description
DI_CERT_ALL	PASS		
DI_CERT_BE	PASS		
DI_CERT_CERT	PASS		
DI_CERT_CHARZ	PASS		
DI_CERT_ED	PASS		
DI_CERT_EPA	PASS		
DI_CERT_PCB	PASS		
DI_CERT_PERC	PASS		
DI_CERT_TRAMPAC	PASS		

Container: BN10448144
Type: 2 - SWB

Container Status

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

Edit Limit Check Results

Evaluation Date: 10/03/2012 13:16:46 Overall Status: PASS

Evaluation Code	Status
DSA	PASS
WAC	PASS
WAP_CERT	PASS

TRAMPAC Evaluation Results

Evaluation Date: 10/03/2012 13:16:47 Overall Status: PASS

Evaluation Code	Status	Return Code	Detailed Description
CE_ACT	PASS		
CE_ALL	PASS		
CE_ASP	PASS		
CE_DDH	PASS		
CE_FGE	PASS		
CE_FIL	PASS		
CE_GVE	PASS		
CE_RDR	PASS		
CE_TRU	PASS		
CE_WGT	PASS		

Container: BN10448144
Type: 2 - SWB

Extended Status: APPROVED CERT IN PENDING SHIPMENT
Container Status: CERTIFICATION DATA APPROVED
Certification Date: 10/03/2012
Waste Handling Code: CH
Disposal Date:

TRAMPAC Evaluation Results
Evaluation Date: 10/03/2012 13:16:47 Overall Status: PASS

Details

Matrix Depleted Shipping Category:		Compliance Method:	MEASUREMENT
Decay Heat Limit (w):	0.4863326612903226	FGE Limit (g):	325
FGGR (mol/s):	8.804815713404258E-9	FGGR Limit (mol/s):	8.064516129032259E-8
Volume Model:	3	Required Aspiration Time (days):	
Total Headspace VOCs (ppm):	40.21		
Packaging Configuration:	PE_ASSIGNED	DAC Scenario:	
Closure Time (days):		Minimum Closure Time Applied (days):	
Sample-Vent Time (days):	55	Min Sample-Vent Time Applied (days):	22
TFGVC in ICL (mol fr):		MLEL (mol fr):	0.05

History

Event Date/Time	Event Description	Reason
09/10/2012 09:13:08	INSERT DATA INTO THE DATABASE	
10/03/2012 13:16:47	SUCCESSFUL SUBMISSION FOR CERT	
10/03/2012 13:52:54	APPROVED FOR CERT	
10/03/2012 16:17:42	ASSIGNED TO PAYLOAD	

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10448144 **WIPP Label:** BN10448144

DATA DESCRIPTION	WDS ENTRY
Shipper Site ID	BN
Waste Stream Profile	BNINW216
WIPP Container Type	2
WAC Revision Number	7.2
Certification Site ID	BN
Waste Handling Code	CH
Waste Stream BIR	IN-BNINW216
MWIR	IN-BNINW216
Generator Site ID	RF
IDC	001
Waste Matrix Code	S3121
TRUCON Code	ID211V
TRU Alpha Activity (Ci)	1.23E+01
TRU Alpha Activity Error (Ci)	3.98E+00
TRU Alpha Activity Concentration (nCi/g)	15661.979
TRU Alpha Activity Concentration Error (nCi/g)	5082.727
Pu239 Fissile Gram Equivalent (FGE)	5.12E+00
Pu239 Fissile Gram Equivalent Error (FGE)	8.39E-01
Pu239 Equivalent Activity (PE-Ci)	1.23E+01
Decay Heat (W)	4.13E-01
Decay Heat Error (W)	1.34E-01
Layers of Packaging	2
Fill Factor (%)	45
Liner Exists	N
Liner Hole Diameter (mm)	NA
Liner Lid Present	NA
Process Knowledge Exists	N
PCB Concentration (ppm)	NA
PCB Waste	N
PCB Out of Service Date	N/A
PCB Mass	NA
Total Gas Generation Rate (mol/s)	N/A
Hydrogen/Methane Generation Rate (mol/s)	N/A
Gas Generation Test Completion Date	N/A
Gross Weight (kg)	1208.55
Gross Weight Error (kg)	1.20
Alpha Surface Contamination (dpm/100 cm2)	19
Beta Gamma Surface Contamination (dpm/100cm2)	199
Neutron Dose Rate (mrem/hr)	.50
Beta Gamma Dose Rate (mrem/hr)	1.50
Aqueous Material	Y
Machine Compacted	N
1/2" Separation Criteria Met for Compacted Waste	NA
Beryllium Mass <= 100 kg	NA
Beryllium <= 1% by Weight	NA
	Beryllium Present	N

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10448144 **WIPP Label:** BN10448144

RADIONUCLIDES INFORMATION

Radionuclide	Activity (Ci)	Activity Error (Ci)	Mass (g)	Mass Error (g)
PU-238	1.710E-02	7.123E-03	9.885E-04	4.113E-04
PU-239	2.347E-01	4.820E-02	3.746E+00	7.701E-01
PU-240	4.914E-02	1.088E-02	2.143E-01	4.750E-02
PU-241	5.017E-01	1.227E-01	4.829E-03	1.181E-03
PU-242	8.327E-06	2.308E-06	2.096E-03	5.810E-04
AM-241	1.196E+01	3.977E+00	3.479E+00	1.158E+00
NP-237	8.931E-05	2.659E-05	1.265E-01	3.777E-02
U-235	4.411E-06	1.132E-06	2.014E+00	5.171E-01
CS-137	.000E+00	.000E+00	.000E+00	.000E+00
U-233	.000E+00	.000E+00	.000E+00	.000E+00
U-238	6.740E-05	2.399E-05	1.980E+02	7.049E+01
U-234	2.673E-05	9.275E-06	4.248E-03	1.474E-03
SR-90	.000E+00	.000E+00	.000E+00	.000E+00

WASTE MATERIAL PARAMETERS

Waste Material Parameter	Description	Material Weight (Kg)
1	Iron-based Metals/Alloys	.00
2	Aluminum-based Metals/Alloys	.00
3	Other metals	.00
4	Other Inorganic Materials	.00
5	(EXPIRED)	.00
6	Cellulosics	.00
7	Rubber	.00
8	Plastic (Waste Materials)	.00
9	Inorganic matrix	783.07
10	Organic matrix	.00
11	(EXPIRED)	.00
12	Soils/gravel	.00
13	Steel (packaging materials)	397.35
14	Plastic (packaging materials)	28.12
15	Cellulosics Packaging	.00
	Total:	1208.54

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10448144 **WIPP Label:** BN10448144

ASSAY METHODS

Assay Method	Assay Method Date
9DA1	20-FEB-2010
9DA2	09-OCT-2010

CHARACTERIZATION METHODS

Characterization Method	Characterization Method Date
9RR2	30-OCT-2010

HAZARDOUS CODES

Hazardous Code(s)								
	D004	D005	D006	D007	D008	D009	D010	D011
	D022	F001	F002	F003	F005	F006	F007	F009

COMMENTS

Comment Type	WIPP Comment
N/A	N/A

ADDITIONAL CERTIFICATION DATA (not Submitted to WDS)

Requirement	Acceptance Criterion	Compliance
Payload Container meets 7A, Type A requirements based on manufacturers specifications.	Payload Container Weight <= the Manufacturers DOT 7A Certified Weight Limit	Y
Unique Container ID, Radioactive and/or Hazard labels	Container Identification/Labeling	Y
Prohibited Liquids	Prohibited	Y
Sealed Containers	No sealed containers > 4 L	Y
Chemical Compatibility	Chemicals allowed by the TRAMPAC	Y
Residual Liquids containing Polychlorinated Biphenyl	Prohibited	Y
Nonradionuclide Pyrophorics	Prohibited	Y
Explosives, Corrosives and Compressed Gases	Prohibited	Y
Non Mixed Hazardous Waste	Prohibited	Y
Sharp/Heavy items blocked or braced	Necessary to provide puncture protection for payload containers	Y
Confinement Layers	Bags closured by approved methods	Y
RCRA Data	Waste Stream Profile Form Approval Date	17-SEP-2004

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Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10448144

WIPP Label: BN10448144

Container Review Statement

I have reviewed the data for this waste container and it is complete and accurate to the best of my knowledge.

Completed By: _____ Signature _____ Date

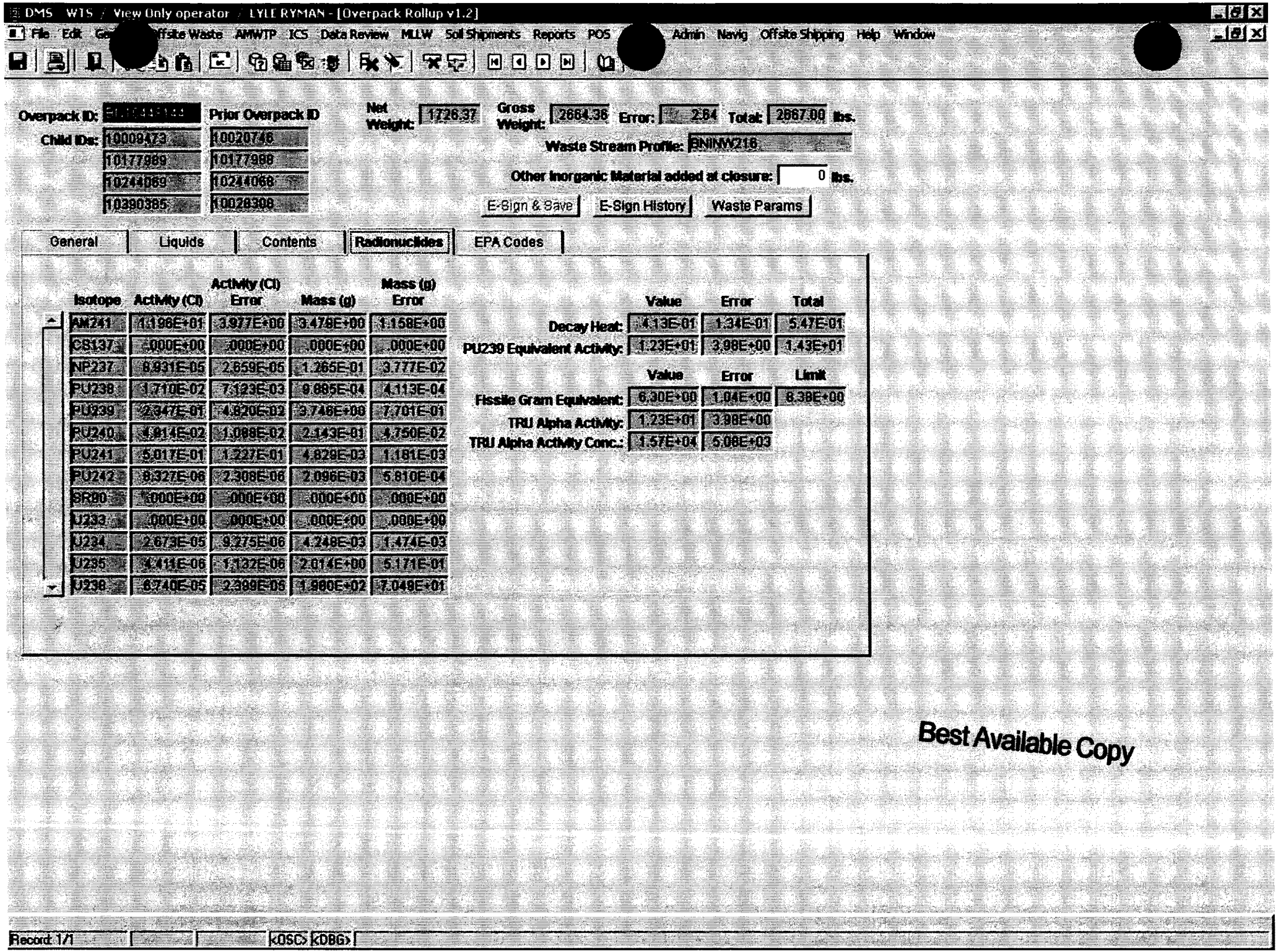
Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

_____ Printed Name
Waste Certification Official

_____ Signature

_____ Date



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Advanced Mixed Waste Treatment Project

CORRECTIVE ACTION REPORT

CAR No: 73071

Title: SWB Data Roll-Up Issues - Original SCR 4032

Category: WIPP Data	**Date Opened:** 10/11/12
Originator: Morse, Angie	**Source Type:** As Found Condition

Source Type Doc. No.

Requirement Violated:

MP-TRUW-8.11

Finding #:

Description of CAR:

SCR 4032, for SWB Roll-up Data, requirement 7 states: "When an Assayed container is unpacked the latest valid assay from the outer container shall be associated with the newly unpacked inner container including the isotopes from that assay, if no valid assay exists for the inner container being unpacked."

There are six 83/55 over-packs where both the outer and the inner container have a valid assay that have been overpacked into DL-SWBs via the overpack rollup process. SCR 4032 does not address, nor were requirements provided, if there were cases where both the outer and inner container had valid assays. It appears that when both containers have a valid assay, the 55 gallon container data is what is included in the roll-up instead of the 83 gallon.

SCR 4415 has been initiated to correct the rollup process.

Manager Review By:	**Manager Review Date:**
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid:	**Stop Work Order:**
ORPS Reportable:	**ORPS Category:**
ORPS No.:	**WIPP Submittal Req'd?**
	Significant :
PAAA Applicable:	**NTS Report Number:**
PAAA Reportable:	**NTS Report Date:**

PAAA Regulations

10 CFR 820:	**10 CFR 830 Subpart A:**
10 CFR 830 Subpart B:	**10 CFR 835 Rad Protection:**
10 CFR 851Safety/Health:	**PO Number:**
	Responsible Department:
	Functional Area:
	Disposition Due Date:
QA Mgr Rev Sign By:	**QA Mgr Rev Sign Date:**

AMWTP
Advanced Mixed Waste Treatment Project

CORRECTIVE ACTION REPORT

CAR No: 73071

Con OPs Category:	Date Due:
	Responsible Manager:
Is Formal Root Cause Analysis Required:	Assigned Actionee:
Level A Cause Code:	Contributing Cause Level A:
Level B Cause Code:	Contributing Cause Level B:
Level C Cause Code:	Contributing Cause Level C:
Corrective Action Plan:	
Mgr Disp App By:	Mgr Disp App Date:
QA Add'l Disp. Req'd By:	QA Add'l Disp. Req'd Date:
Mgr Add'l. Disp App By:	Mgr Add'l. Disp App Date:
QA Mgr Rev Disp Sign By:	QA Mgr Rev Disp Sign Date:
CAP Complete Comments:	
Action Complete By:	Action Complete Date:
QA Add'l Action Req'd By:	QA Add'l Action Req'd Date:
Add'l Action Complete By:	Add'l Action Complete Date:
QA Verification Complete By:	QA Verification Comp Date:

GEN10

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No: 68515
PARENT:

Title: Supercompactor Glovebox Glass Cracked by Tipping Material

Category: Other	**Affected Item Type:** Equipment ID
Affected Item: Supercompactor Glovebox Glass	
Originator: Morse, Angie	**Date Opened:** 01/25/12
Source Type: As Found Condition	**ORPS Reportable:** No
Source Type Doc. No.	
ORPS No.:	**ORPS Category:**
Finding #:	
Requirement Violated: MP-Q&SI-5.4, Identification of Nonconforming Conditions	
Shipment No.	**Payload No.**
Equipment ID: Z-410-283	**PO Number:**
Batch No.	
Container ID:	
Tag Applied:	**No. of Tags:**

Description of Condition:

During crit cleanout of the supercompactor glovebox, a metal bar tipped and fell against a window in the Supercompactor resulting in a cracked window which was discovered approximately 5:00 am on Sunday January 22. Report FF-MM-12-003, for fact finding held on 01-24-2012 shall be provided in supporting documentation.

In accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, material, components, equipment, data, and waste containers that do not conform to requirements shall be controlled to prevent their inadvertent use.

When necessary, items may be conditionally released for use, repaired or used as is, with appropriate justification, limitations, and appropriate approvals, for further processing or installation. Use as Is, Repair, or Conditional Use disposition associated with facility configuration must be approved by the responsible manager and the QA manager and must include a technical justification. Any affected design documents must be identified for revision.

All Use-As-Is, Repair or Conditional Use disposition which propose a change to existing facility, system, equipment configuration, or operation processes must be evaluated through the USQ process.

Manager Review By: Angie Morse	**Manager Review Date:** 01/25/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** No
Stop Work Order: No	**Is CAR Req'd?** No
HSS-OE Applicable: Yes	**NTS Report Number:** N/A
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 68515
PARENT:

10 CFR 851Safety/Health: No	**Quality (Type Material):** Class 3 Equipment
	Responsible Department: Plant Manager
	Functional Area: Engineering
	Disposition Due Date: 02/15/12
QA Mgr Rev Sign By: Paul Minor	**QA Mgr Rev Sign Date:** 01/25/12
	Date Due: 01/25/12
Disposition: Use As Is	**Responsible Manager:** Warnecke, Ronald
	Assigned Actionee: Todd, Ronald
Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? YES	**USQ Screen No.:** USQER-68525 and USQD-68451
Root Cause Analysis: No	
Level A Cause Code: A2 - Equipment/Material Problem	**Contributing Cause Level A:**
Level B Cause Code: B4 - Material Control LTA	**Contributing Cause Level B:**
Level C Cause Code: C01 - Material Handling LTA	**Contributing Cause Level C:**

Disposition Description:

The damaged window remains sufficiently intact to maintain glovebox confinement, but has the potential to further degrade with use. It will be supplemented with a temporary external containment device to provide additional protection in the event of a window failure, which has been installed per TPC-0216. This has been evaluated in EDF-0512 to be adequate for continued use, with monitoring, until the window can be replaced.
If the window continues to deteriorate, additional evaluation will be required. Weekly inspections are identified in the TPC.
Paul Minor 01/25/12, This disposition accepts the current condition for Use-as-is based on the installation of the containment device (Work Order# 396618) as evaluated in the EDF-0512. Weekly inspections are required to be performed in accordance with TPC-0216. As required by TPC-0216 if the inspections indicate the interior glass pane is no longer adequate, Supercompactor operation is to stop and the condition re-evaluated.

Mgr Disp App By: Ronald Todd	**Mgr Disp App Date:** 01/25/12
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By: Paul Minor	**QA Mgr Rev Disp Sign Date:** 01/25/12

CAP Complete Comments:

Paul Minor 01/25/12, Use-as-is disposition justification has been accepted as stated above. No further action is required for closure.

Action Complete By: Paul Minor	**Action Complete Date:** 01/25/12
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By: Paul Minor	**QA Verification Comp Date:** 01/25/12

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP USQ EVALUATOR REVIEW

USQ Evaluator Review Number: 68525

USQ Evaluator Review Title:	Use-As-Is Disposition of NCR-68515 for Broken Window on Supercompactor Glovebox
Originator: Todd, Ronald	**Date Opened:** 01/25/12
Change Type: NCR	**Change Number:** NCR-68515
Building Number: WMF 676	
Safety Significant SSC(s): NA	
Change Description: A window on the Supercompator Glovebox Suite (Infeed Glovebox) was cracked by a light curtain guard during a crit cleanout. EDF-0512 and TPC-0216 were written to allow a temporary cover to be installed over the window to act as a secondary containment in the event that the window further degrades and become breached. This USQ is to evaluate the NCR (68515) written for this window and the Use-As-Is disposition to it.	

USQ EVALUATOR REVIEW

The proposed change has been reviewed in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process and guidance found in GDE-NSPC-01. Unreviewed Safety Question Process Guide relative for the AMWTP Safety Basis as defined in LST-NSPC-01 Nuclear Safety Basis Documents for USQ Evaluator Review

USQ PROCESS SCREENING CRITERIA

USQ-S-001: Are the changes purely minor in nature and do not affect technical content?	NO
USQ-S-002: Are the changes to informational and non-implementing documents (i.e, documents which have no affect on operations, equipment, or credited institutional programs?	NO
USQ-S-003: Are the changes to documents that are unrelated to operations, equipment and programs within the scope of the current safety basis (e.g. non-AMWTP documents)?	NO
USQ-S-004: Are the changes being made common commercial practices that are routinely accepted by industry AND application/installation is in a non-nuclear/non-radiological environment (i.e. changing a fixture for fluorescent light in control room of facility)?	NO
USQ-S-005: Are the changes being made part of the process of upgrading the DSA in response to the implementation of new requirements or the use of new or different analytical tools during the upgrade process?	NO
USQ-S-006: Are the changes to operational software and data that cannot affect the acquisition, derivation, storage, transfer, reference, comparison, tracking or manipulation of FGE data?	NO
USQ-S-007: Are changes to queries and reports that are prepared strictly for informational and non-implementing purposes?	NO
USQ-S-008: Is this an installation of an item that is an exact replacement (that is, the same manufacturer, same model number, etc.) or has been determined by engineering to be a like-for-like replacement per the process of INST-CD&M-11.1.3, Approved Equivalent Parts (i.e. the replacement part meets all previously established design criteria)?	NO

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AMWTP USQ EVALUATOR REVIEW

USQ Evaluator Review Number: 68525

USQ-S-009: Is this a change that would require DOE approval? NO

These Include:

- Changes to a nuclear facility, whether temporary or permanent, for which AMWTP management has already made a decision to request DOE approval for the proposed change.
- Changes that introduce a technology that is new to the facility and unevaluated by the safety basis since the proposed change must be submitted to DOE for approval.
- Changes that are beyond that required to perform day to day operations and as such, based on mutual understanding and agreement between AMWTP and DOE, are required to be submitted to DOE for approval.
- Changes that result in a major modification for which a Preliminary Documented Safety Analysis (PDSA) must be prepared and submitted to DOE for approval.
- Changes to a requirement in the TSRs or the addition of a new TSR requirement since the TSR document is required to be approved by DOE in these cases.

SCREENING RESULTS

A **USQ DOES NOT EXIST** based on the applicability of a USQ screening criterion listed in Appendix A of MP-NSPC-3.2?	SCREENING CRITERIA DO NOT APPLY - USQD NEEDED
A **USQ DOES NOT EXIST** based on the results of a PREVIOUSLY APPROVED USQ Determination?	A USQ DOES NOT EXIST

USQD/New USQD Number: 68451

JUSTIFICATION:

The installation and use of the Supercompactor with the Infeed Glovebox window cracked was analyzed under EDF-0512 and authorized under TPC-0216. This change was analyzed under USQ Determination 68451 and has shown that a USQ does NOT exist.

APPROVALS

USQ Evaluator:	Ronald Todd	**USQ Evaluate Date:**	01/25/12
USQ Reviewer:	Kurt Zorn	**USQ Review Date:**	01/25/12
USQ Approver:	Clint Sisson	**USQ Approve Date:**	01/25/12

Signature authority may be delegated to a USQ qualified individual verbally or written. The individual delegated to sign for another USQ qualified individual may also sign for one of the remaining roles. This action is documented in the Delegation of Approval field.

Delegation of Approval:

AMWTP
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AMWTP USQ DETERMINATION

USQD Number: 68451

USQ Determination Title:	TPC-0216, Install Temporary Polycarbonate Panel on Supercompactor Glovebox
Originator: Stoneberg, Ken	**Date Opened:** 01/23/12
Change Type: TEMPORARY PHYSICAL CHANGE	**Change Number:** TPC-0216
USQ Evaluator Review No: (68450) ~~68575~~ ok => for TPC	**Discovery Screen No:** NA
Building Number: WMF 676	
Safety Significant SSC(s): CIDAS	

Change Description: As a precautionary measure to control the spread of contamination, a sheet of polycarbonate laminate will be bolted to the existing frame of the north side of the Supercompactor glovebox infeed glovebox. The existing glovebox window was damaged during a cleanout evolution. This added panel will be a temporary installation until a new window is procured and delivered.

TECHNICAL REFERENCES

Technical References Include: EDFs, NSTB's, Criticality Safety Analyses, Reports, Correspondence, etc.

Technical References: The documents listed in LST-NSPC-01, Nuclear Safety Basis Documents for USQ Evaluator Review, Rev. 10.

USQ DETERMINATION

The following USQ Determination Questions in Parts 1 through 3 are addressed relative to the AMWTP Safety Basis as defined by LST-NSPC-01, Nuclear Safety Documents for USQ Evaluator Review

USQ DETERMINATION - PART 1

PREVIOUSLY EVALUATED ACCIDENTS AND MALFUNCTIONS IN THE DOCUMENTED SAFETY ANALYSIS

1. Could this proposed change increase the **PROBABILITY** of an accident previously evaluated in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

The postulated DSA accidents pertinent to this proposed change are those associated with a loss of confinement resulting in the spread of radiological and hazardous contamination (ID# 176, ID# 265), as well as those associated with a glovebox fire (ID# 230, ID# 333). Depending on the initiator, these types of accidents range from anticipated to extremely unlikely in the DSA.

Loss of confinement

The temporary installation of the polycarbonate laminate panel is meant to reduce the likelihood of a contamination spread if the existing glovebox window is damaged further or fails (due to physical contact, vibration, or ventilation upsets). In addition, the panel will be installed using standard industry practices as per Engineering design and the Configuration Management safety management program (see EDF-0512 attachment). The Radiological Control safety management program will ensure that periodic contamination monitoring of the glovebox area is performed and that appropriate actions will be taken upon any contamination discovery.

Fires

A permanent glovebox window replacement using the proposed polycarbonate laminate panel would not meet NFPA-801 requirements for gloveboxes. However, the laminate panel is to be temporarily installed. The AMWTP Fire Marshall has approved the installation of the polycarbonate laminate panel with the existing broken window. Only the inner layer of the existing window is broken while the outer layer is intact. In this state, the intent of NFPA-801 is complied with. Therefore, a fire in the glovebox would not be expected to impact the temporary laminate panel. Under the defense in depth Fire Protection safety management program, inspections will be conducted on the existing window to determine its adequacy. If a total breach in the existing window is noticed, continued operations inside the glovebox will be ceased as a Fire Safety compensatory measure.

This temporary change cannot increase the PROBABILITY of an accident previously evaluated in the documented safety analysis.

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2. Could this proposed change increase the **CONSEQUENCES** of an accident previously evaluated in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

Loss of confinement
A loss of confinement event involving the material inside the Supercompactor glovebox is bounded by design basis accident ID#200, which analyzes the loss of confinement and the spread of contamination due to a total loss of power event in the AMWTF. The material at risk assumed for this accident is far greater than that available in the Supercompactor glovebox. Other source term factors for this accident (damage ratio, airborne release fraction, etc.) would not be increased by the installation (or failure) of the new polycarbonate laminate panel. The Radiological Control safety management program will ensure that periodic contamination monitoring of the glovebox area is performed and that appropriate actions will be taken upon any contamination discovery.
Fires
A release of contamination due to a fire inside a glovebox is a low consequence event in the DSA and is bounded by the source term analysis calculated for the fire event scenario that occurs in the TSA-RE (ID# 5). The amount of waste material that would actually be involved in a fire in the Supercompactor glovebox is significantly less than that assumed in the TSA-RE fire. Since the existing window will provide an adequate barrier that will protect the laminate panel from a fire, the panel will not propagate the fire. As stated above, compensatory measures will be in place as per the Fire Protection, Radiological Control, and Configuration Management programs to ensure that the glovebox integrity continues to meet NFPA code requirements for glovebox operations.
This temporary change cannot increase the CONSEQUENCES of an accident previously evaluated in the documented safety analysis.

3. Could this proposed change increase the **PROBABILITY** of a malfunction of equipment important to safety previously described in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

The addition of any potential shielding materials to the Supercompactor glovebox introduces the potential to attenuate the gamma rays produced during an accidental criticality, deleteriously affecting the ability of Criticality Incident Detection and Alarm System (CIDAS) to detect an accidental criticality. CIDAS is identified as Safety Significant in safety basis documentation. However, review of detector placement as described in *RPT-NFCS-06, Adequacy of Criticality Detection System Detectors and Evacuation Zone Determinations (NE-002)* and identified in 54-9007_04.dwg, *WMF-676 Critical Incident Layout First Floor Plan* indicates that (because the shielding does not interrupt line-of-sight from incident to any detector) the installation of additional shielding on the affected window cannot impinge upon the fit form or function of any credited CIDAS detector.
This temporary change cannot increase the PROBABILITY of a malfunction of equipment important to safety previously evaluated in the documented safety analysis.

4. Could this proposed change increase the **CONSEQUENCES** of a malfunction of equipment important to safety previously described in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

As stated above, the installation of the laminate panel will not affect the criticality accident detection capability of the CIDAS. The credited safety function of the CIDAS is therefore, unaffected and personnel in the plant will be notified immediately to evacuate in the event of a criticality event in the Supercompactor glovebox.
This temporary change cannot increase the CONSEQUENCES of a malfunction of equipment important to safety previously evaluated in the documented safety analysis.

USQ DETERMINATION - PART 2

5. Could the proposed change **CREATE THE POSSIBILITY OF AN ACCIDENT OF A DIFFERENT TYPE** than any previously evaluated in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

A new type of accident cannot be envisioned by the installation of the polycarbonate laminate panel. The AMWTP safety management programs will ensure that the installation is performed safely and compliantly and that the glovebox integrity is maintained for continue glovebox operation.
This temporary change cannot create the POSSIBILITY of an accident of a different type than any previously evaluated in the documented safety analysis.

6. Could the proposed change **CREATE THE POSSIBILITY OF A MALFUNCTION OF EQUIPMENT IMPORTANT TO SAFETY OF A DIFFERENT TYPE** than any previously evaluated in the documented safety analysis? **NO**

WHY - (Explanation of technical basis for answer):

The addition of any potential shielding materials to the Supercompactor glovebox introduces the potential to attenuate the gamma rays produced during an accidental criticality, deleteriously affecting the ability of Criticality Incident Detection and Alarm System (CIDAS) to detect an accidental criticality. CIDAS is identified as Safety Significant in safety basis documentation. However, review of detector placement as described in *RPT-NFCS-06, Adequacy of Criticality Detection System Detectors and Evacuation Zone Determinations (NE-002)* and identified in 54-9007_04.dwg, *WMF-676 Critical Incident Layout First Floor Plan* indicates that (because the shielding does not interrupt line-of-sight from incident to any detector) the installation of additional shielding on the affected window cannot impinge upon the fit form or function of any credited CIDAS detector. No new or other CIDAS failure modes can be envisaged.
This temporary change cannot create the POSSIBILITY of a malfunction of equipment important to safety of a different type than any previously evaluated in the documented safety analysis.

USQ DETERMINATION - PART 3 (Reduction of a Margin of Safety)

7. Could the proposed change reduce the margin of safety? **NO**

WHY - (Explanation of technical basis for answer):

The AMWTP Safety Basis does not define any specific margins of safety. Implicit margins of safety are inherent in numerous defense in depth safety management programs. With SMP defense in depth compensatory measures in place, there will be assurance that the installation is performed safely and compliantly and that the integrity of the glovebox will be maintained to allow for continued glovebox operations. Therefore, any implicit defense in depth safety margins will be protected.
This temporary change will not REDUCE the Margin of Safety.

USQ DETERMINATION REVIEW RESULTS SUMMARY

BASED ON REVIEW OF THE ANSWERS IN USQ DETERMINATION PART 1, PART 2 and PART 3. IF ANY ANSWER TO ANY QUESTION IS "YES", THE DETERMINATION IS POSITIVE.

This issue was processed as a PROPOSED CHANGE:	YES
The determination was NEGATIVE (a USQ DOES NOT exist):	YES
The determination was POSITIVE (a USQ DOES exist):	NO
This issue was processed as part of the PISA PROCESS:	NO
The determination was NEGATIVE (an actual inadequacy of the safety analysis DOES NOT exist:	NA
The determination was POSITIVE (an actual inadequacy of the safety analysis DOES exist:	NA
A USQ EXISTS based on conflicts with a requirement or condition of approval in the current Safety Evaluation Report(s):	No

NOTE: If a USQ exists a revision or amendment to the safety basis MUST be completed and approved by DOE.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP USQ DETERMINATION

USQD Number: 68451

DESCRIPTIVE UPDATE IDENTIFICATION

Change appears to conflict with safety basis facility description. NO

The need for descriptive update to the safety basis will be considered during the next safety basis annual update. No immediate action is required. Detail of change is provided below.

Descriptive Update Information:

A descriptive update to the DSA is not needed as this is a temporary installation.

APPROVALS

USQ Evaluator:	Ken Stoneberg	**USQ Evaluate Date:**	01/24/12
USQ Reviewer:	Richard Moore	**USQ Review Date:**	01/24/12
USQ Approver:	Clint Sisson	**USQ Approve Date:**	01/24/12

Signature authority may be delegated to a USQ qualified individual verbally or written. The individual delegated to sign for another USQ qualified individual may also sign for one of the remaining roles. This action is documented in the Delegation of Approval field.

Delegation of Approval:

EDF No.: EDF-0512	Revision No.:00	FMP No. (*if any*):
Title: Use of Supercompactor with Cracked Window	**Building/System No.: 410**	

Summary:

The Supercompactor glovebox currently has a cracked glass window pane. This window is currently maintaining the integrity of the glovebox, but the reliability of the cracked window for further use is questionable, and cannot be determined in detail. To ensure the integrity of the glovebox in the event of failure, a plastic cover panel will be installed over top of the damaged window. This will both protect the window from external damage, and provide containment in the event of window failure.

With the additional panel in place, the glovebox integrity should be adequate to allow continued use of the Supercompactor. There will be minor operational risks associated with loose glass if the window deteriorates further, but these can be minimized through proper work practices.

References:

"Information Only"

1. AMWTP Sketch MSK-53-10855
2. AMWTP Drawing 53-10466
3. Roark's Formulas for Stress and Strain, Seventh Edition, page 502.

Originator: Quin Blackburn	Signature	Date: 1/23/2012
Technical Review: KARL KOLBET	Signature	Date: 1/23/2012

Additional Reviewers: (by title)

Operations TREATMENT MANAGER Print Title	Signature	Date 1-23-12
Radiological Controls Facility Rad Supervisor Print Title	Signature	Date 1/23/12
IS/IH Project Lead Print Title	Signature	Date 1-23-12

Distribution List:

Approval:

Printed Name: Ron Todd

Printed Title: Eng. Mngr. R. Todd

Signature	Date 1-23-12

Scope:

On the morning of January 22, during routine glovebox operations on the supercompactor glovebox, one of the protective bars used to guard the light curtain fell toward the glovebox and impacted one of the glovebox windows, causing a large crack. This document will evaluate the integrity of the glovebox with this damage, and determine needs for continued use of the supercompactor with the cracked window.

Analysis:

The glovebox window that was cracked consists of safety glass, which is two sheets of glass laminated together with a sheet of plastic in between, for a total thickness of 1/2". On evaluation, the cracking appears to occur only on the inside sheet of glass. The outer sheet has some minor damage, but has no visible cracks through the glass. Based on this condition, the confinement integrity of the glovebox remains intact.

With the significant cracking of the inside sheet of glass, no reliable evaluation can be made of the structural integrity of the glass in this condition. While the outer sheet of glass appears to remain intact, the overall damage could potentially reduce the overall strength by more than half, dependent on the location of the cracks within the stress pattern. A detailed stress analysis would be required to determine the remaining strength, and the approximation of the damage to the glass would render that analysis questionable.

Under normal operating conditions, the window is exposed to a pressure force based on the negative ventilation of the glovebox. This force is nominally about -1.0 inches of water, for a total force on the window of about 36 pounds (evenly distributed). The window currently remains exposed to this force, with no indication of propagating cracks. Significant changes in pressure in the glovebox could cause additional damage to the window, but these types of excursions are rare. The gloves mounted throughout the glovebox also provide damping against pressure excursions, as they are far more flexible than the glovebox windows.

In addition to the ventilation loads, the windows can be exposed to mechanical stresses from activities outside the glovebox, or due to glovebox shaking during compaction. Activities outside the glovebox that would impact the windows primarily include use of the gloveports and accidental impacts such as the one that caused the initial window damage. Both of these stresses can be avoided by providing mechanical protection to the window through the use of a durable cover. A cover would both eliminate the possibility of personnel attempting to use the gloveports, and it would prevent inadvertent contact.

The window could also be exposed to stresses caused by shaking of the glovebox during compaction. If the supercompactor continues to be used, this shaking cannot be avoided, although it may be limited by strict control of feed drums. These vibrations are not directional in nature, and would not be specifically targeted at the damaged window, but could cause further degradation of the already damaged window glass.

Protective Panel

To provide protection to the window, and as a secondary containment, a protective panel can be manufactured and installed outside of the damaged window. The panel will consist of 3/4" clear Lexgard MP-750 laminate plastic, with two additional layers of the same material used as standoffs to hold the sheet clear of the gloveports. This cover will be attached to the glovebox utilizing the standoffs provided for mounting of shield glass outside the clear glass window. A built-up layer of weather stripping gasket will be used to seal the plastic to the frame that currently holds the glass window, with the thickness of the gasket used to accommodate the heads of the bolts holding the window. See sketch MSK-53-10855 (Reference 1) for fabrication details. This panel is designed to match the panel fabricated from drawing 53-10466 (Reference 2), which was used following damage to windows previously.

If the glass window or gloveports were to fail or leak, the outer cover panel could be exposed to the glovebox depression of -1.0 inches of water, up to a design maximum pressure of -3.0 inches of water (.108 psi). With an exposed surface of 48" x 15", this results in a maximum stress on the panel of only 31 psi (Reference 3). The Lexgard material has a minimum flexural strength of 13,500 psi (Attachment 1), indicating that there will be negligible stress and deflection cause by the ventilation loads. The panel components are sealed together with silicone adhesive, and are gasketed to the glovebox frame, such that the panel should provide a sealed containment in lieu of the damaged window.

The added panel mounts outside of the existing window frame, such that it depends on the edges of the window and the gasket on the window to form a part of the seal between the added panel and the glovebox. If the glass window were to fail such that it either damaged the gasket or no longer supported it, then a leak path could form. This failure mode is unlikely, as the compression of the gasket will tend to reinforce the edges of the glass, but it may be possible. To allow for this possibility, cargo tape will be applied from the protective panel to the glovebox wall, which will provide an additional level of protection for minor leaks in that gap.

Continued Use

With the additional protective panel properly installed over the window, there is minimal risk of contamination spread outside the glovebox due to continued use of the supercompactor. If the glass window were to fail, the added panel would provide the necessary containment. Within the glovebox, the pressure differential on the window is not sufficient to cause any thrown projectiles. The primary impact of a failed window at that point would be the cleanup required, though this should be minimized due to the construction of the safety glass in the window. Dealing with numerous shards of glass in the glovebox would pose a greater cleanup challenge and a greater risk to the technicians performing the work than if the window remains in one piece. However, it remains within normal operating procedures and the risks can be mitigated through proper work practices and PPE. Application of adhesive tape to the inside of the window would minimize the loose glass resulting from a window failure.

If the supercompactor is used in this condition, the window should be monitored to recognize if it continues to deteriorate. That will allow for rapid cleanup of any loose pieces, and for inspection of the integrity of the outer panel (smoke check) if it becomes the primary containment.

Summary:

The supercompactor glovebox has a cracked window that is currently maintaining integrity, but which is of questionable reliability under further loading. With a cover panel built per reference 1 installed outside of the window, the integrity of the glovebox can be maintained even if the glass window were to fail completely.

If the supercompactor is used in this condition, tape should be applied to the inside of the window to minimize loose pieces in the event of a failure. The window should be also monitored to identify changing conditions, such that they can be evaluated prior to creating any unforeseen problems.

Attachments (*If any*):

1. Lexgard MP750 Laminate Data Sheet

Global Security Glazing

LEXGARD® LAMINATES

LEXGARD® MP750 Laminate

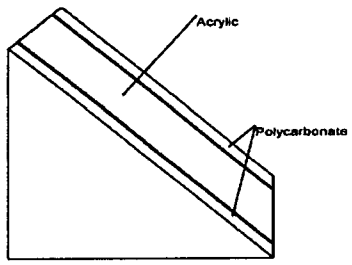
Product Datasheet

Description

LEXGARD® MP750 laminate is a three-ply polycarbonate and acrylic laminate primarily developed for security protection. LEXGARD® MP750 laminate combines dependable ballistic protection and exceptional abrasion resistance.

Typical Property Values

Property	Value
Gauge/Tolerance	.750" ±8%
Weight	4.6 lbs per sq. ft
Shading Coefficient	1.04 Clear
U-Factor	.71
% Light Transmission (Average Gardner Value)	87 Clear



LEXGARD® Laminates MP750

Specifications

LEXGARD® MP750 Laminate:

Three-ply, clear, extruded polycarbonate and acrylic sheet of the following construction:

- 1/8" Polycarbonate sheet with an abrasion resistant surface
- Polyurethane interlayer
- ½" Acrylic sheet
- Polyurethane interlayer
- 1/8" Polycarbonate sheet with an abrasion resistant surface

Available Colors	Clear (112) Bronze (5109) Grey (713) Green (31035)
Standard Sheet Sizes (in inches)	48 X 48 48 X 60 48 X 72 48 X 96 60 X 96 72 X 96

Material shall have a flexural strength not less than 13,500 psi (ASTM D790); 87% light transmission (ASTM D1003). Material shall be a total thickness of .750 ±8%. Material shall have an abrasion resistant surface to improve service life performance, and must conform with ICBO, BOCA, and SBCCI Model Building Codes as an Approved Light Transmitting Plastic with a C2 (CC22) flammability performance level.

Ballistic Ratings

Recognized by Underwriters Laboratories as providing Level 1 (9mm) protection per UL Standard 752.

Glazing Information

Structural security metal framing rated to the appropriate bullet resistant level is suggested.

A minimum edge engagement of one (1) inch is recommended with allowances for material expansion. (Larger lites may require deeper engagements.)

The use of compatible sealant or gasket material is recommended, with flexible material on both sides of the laminate.

Do not use PVC gasket material.

Do not use setting blocks made from PVC, EPDM, or neoprene rubber materials. Santoprene* rubber should be suggested. If these other rubber products are required, a protective barrier material should be used between the rubber setting block and the LEXGARD® sheet edge.

* Santoprene is a registered trademark of Exxon Mobil Corporation

LEXGARD® is a registered trademark of LEXGARD® Laminates LLC

Global Security Glazing, 616 Selfield Road, Selma, AL, 36703, 1-800-640-6541.

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Requester Section (Completed by system engineer or designee)

Affected System: 410

Is this Class III or NQ equipment?	☒ Yes ☐ No	If No, **STOP**, TPC not allowed.
Will change affect WIPP, DEQ, or FTS data quality?	☐ Yes ☒ No	If Yes, **STOP**, TPC not allowed.

Reason for TPC:

Temporary measure to protect confinement area from possible breach due to broken glass in super compactor until permanent fix is accomplished.

TPC description:

Install Supercompactor Broken Window Containment Device (Drawing MSK-53-10855) onto broken infeed glovebox window, north side until permanent replacement window can be fixed.

Detailed description of TPC:

During a criticality clean out over the weekend, a long piece of metal tubing fell into one of the glass ports in the north side of the infeed glovebox. This shattered the inside layer of that safety glass. Although a breach in the confinement area was not identified, precautionary measures will include installing a Supercompactor Broken Window Containment Device, drawing MSK-53-10855. This consists of a 3/4" sheet of MP-750 Lexguard that will be bolted onto the existing frame in a manner to inhibit any potential contaimination from escaping should the inside layer of the safety glass break further. This extra shielding will be removed once the new window and frame have been procured and delivered. Re: EDF-0512

Plant conditions necessary to implement TPC:

Supercompactor must be shut down from operation,

Post-installation test instructions:

N/A

Special controls required to operate with TPC:

•Use of Lexguard MP-750 is acceptable for use on the outside of the glove box (broken glass laminate window still in place) for a period of not more than 90 days from January 23, 2012
•The Lexguard MP-750 panel is only used on the broken window panel
•Weekly inspections will be conducted by Fire Protection, ISIH and Engineering (or their designees) to verify that the interior glass pane is still adequately in place
•If inspections indicate the interior glass pane is no longer adequate, use of the supercompactor will stop and the condition re-evaluated. Operations may start again only if the condition (with controls as necessary) is deemed acceptable

Plant conditions necessary to remove TPC:

Replacement window must be present prior to removal of TPC. Supercompactor must be shut down from operations, rad con present to verify no contamination on replacement window. TPC will be removed as part of installation of replacement window.

Post-removal test instructions:

Testing will be covered by window replacement instructions

"Information Only"

Requester:	Scott Shurtliff (Print)	Scott Shurtliff (Signature)	1-24-12 (Date)

Review Section (Completed by Engineering manager/designee)

(Reviewer verifies technical accuracy of proposed TPC.)

Reviewer:	Quin Blackburn (Print)	Quin Blackburn (Signature)	1/24/2012 (Date)

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Criticality Safety Review (Completed by Criticality Safety Engineer [CSE] or Criticality Safety Officer [CSO])

CSE/CSO: R.L. Moore (Print) _____ (Signature) 1/24/12 (Date)

USQ Evaluation ER-6845D U600-6845I

To be completed by a USQ evaluator in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.
(Check only one box that applies)

☑ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** *This TPC cannot be implemented as long as a USQ exists.*

USQ Evaluator: KEN STONEBELT (Print) _____ (Signature) 1/24/12 (Date)

Installation Approval Section (Completed by plant shift manager)

Requester, Review, USQ Screen, and Criticality Safety Review Sections complete, operations procedures have been evaluated for necessary changes, required conditions set, and TPC installation approved.

Approver: Brett Stacey (Print) _____ (Signature) 01/24/12 (Date)

Installation Section (completed by installer) — Work Control Document # _____ WO # _____

Detailed Description of TPC Installation: *(Exact location of the TPC [terminal number, wire number/color, valve number, damper number, etc.], how TPC implemented [lifted leads, jumper, fuses removed, valve blocked, damper blocked, etc.], how TPC is marked/labeled [orange tie wrap with TPC number written on tab is typical], both ends marked if not visible at same time, color of jumper used, exposed leads properly insulated, etc.)*

TPC installed as directed in Requester Section and described above.

Installer: _____ (Print) _____ (Signature) _____ (Date)

Verified TPC installed as directed in Requester Section and described above.

Verifier: _____ (Print) _____ (Signature) _____ (Date)

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Post-Installation Testing Section (Completed by qualified technician)

Post-installation tests, as directed in Requester Section above, completed satisfactorily (return Form-1508 to shift supervisor when tests are complete).

Qualified Technician: _____ (Print) _____ (Signature) _____ (Date)

Record Control (Completed by shift supervisor)

Copy of this form and attachments forwarded to EDC.

Shift Supervisor: _____ (Print) _____ (Signature) _____ (Date)

Removal of Approval Section (Completed by plant shift manager)

Required conditions set and TPC removal approved.

Approver: _____ (Print) _____ (Signature) _____ (Date)

Removal Section (Completed by remover)

Detailed description of TPC Removal: *(Exact location of restoration [terminal number, wire number/color, valve number, damper number, etc.], how equipment restored [replaced leads, removed jumper, installed fuses, valve un-blocked, damper un-blocked, etc.], insulation removed from exposed leads, etc.)*

TPC removed as directed in Requester Section and described above.

Remover: _____ (Print) _____ (Signature) _____ (Date)

Verified TPC removed as directed in Requester Section and described above.

Verifier: _____ (Print) _____ (Signature) _____ (Date)

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Post-Removal Testing Section (Completed by Qualified Technician)

Post-removal tests, as directed in Requester Section above, completed satisfactorily (return Form-1508 to shift supervisor when tests are complete).

Qualified Technician: _____ Print _____ Signature _____ Date

Final Closeout Section (Completed by plant shift manager)

Form reviewed, all equipment returned to normal, TPC index updated (forward to EDC upon completion).

Plant Shift Manager: _____ Print _____ Signature _____ Date

TPC Reviewed and TPC Still Necessary (Cycle 1)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Notify Production manager and Engineering manager when nearing end of 28-day cycle.

If DSA has been revised since initial evaluation, re-perform USQ Evaluation, otherwise use previous review/determination numbers signifying USQ still valid.

USQ Evaluation Evaluator Review No.: _____ Determination No.: _____

☐ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** ***This TPC cannot be implemented as long as a USQ exists.***

USQ Evaluator _____ Print _____ Signature _____ Date

TPC has been reviewed, USQ is still valid, and continued operation >28 days with TPC installed is authorized.
(Both signatures below are required to continue with Cycle 2.)

Production Manager: _____ Print _____ Signature _____ Date

Engineering Manager: _____ Print _____ Signature _____ Date

TPC Reviewed and TPC Still Necessary (Cycle 2)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Notify Production Manager and Engineering Manager when nearing end of 28-day cycle.

If DSA has been revised since last evaluation, re-perform USQ Evaluation, otherwise use previous review/determination numbers signifying USQ is still valid.

USQ Evaluation Evaluator Review No.: _____ Determination No.: _____

☐ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** ***This TPC cannot be implemented as long as a USQ exists.***

USQ Evaluator _____ Print _____ Signature _____ Date

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

TPC has been reviewed, USQ is still valid, and continued operation >28 days with TPC installed is authorized.
(Both signatures below are required to continue with Cycle 3.)

	Print	Signature	Date
Production Manager:			
Engineering Manager:			

TPC Reviewed and TPC Still Necessary (Cycle 3)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Notify Production manager and Engineering manager when nearing end of 28-day cycle.

If DSA has been revised since last evaluation, re-perform USQ Evaluation, otherwise use previous review/determination numbers signifying USQ is still valid.

USQ Evaluation Evaluator Review No.: _____ Determination No.: _____

☐ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **Note: This TPC cannot be implemented as long as a USQ exists.**

	Print	Signature	Date
USQ Evaluator			

Justification that TPC Still Necessary (beyond three cycles) *If extra space is needed an 8-1/2 × 11 in. sheet of paper may be used for continuation, provided that it indicates the TPC #, the applicable section, and is attached to the original Form-1508.*

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls TPC – 0216

TPC has been reviewed, USQ is still valid, and continued operation >three 28-day cycles with TPC installed is recommended.

Production Manager:	Print	Signature	Date
Engineering Manager:	Print	Signature	Date

Plant Manager Authorization

TPC has been reviewed and continued operation >three 28-day cycles with TPC installed is authorized.

Plant Manager:	Print	Signature	Date

Work Order#: 396618 Asset #: Z-410-283

AMWTP Advanced Mixed Waste Treatment Project

Idaho Treatment Group

Work Order

Record #: 396618

Install Outer Containment device over supercompactor broke window

NOTE: This a temporary repair of the broken window (permanent repairs will be performed at a later date).

The containment device consists of several different components. The primary containment device component is LEXGARD (1 single cover and 2 stand-off cut-outs). The other components consist of gasket material, hardware, silicone. The work (cutting, drilling) on the LEXGARD material, and gasket material can be performed under OPS-EXEMPT-002.

SCOPE: Manufacture the containment device, remove interferences to allow installation, and install the containment device.

MASTER

Equipment: Z-410-283 Supercompactor Glovebox

Location: WMF676-141B Supercompaction Room 141B (Zone 2)

Planner: James Reynolds **Phone:**

Engineer: Quin Blackburn **Phone:** **Workgroup:** M-MAINT

Priority: 1 **Target Comp Date:** 3/25/2012 **Reported On:** 1/22/2012

Type: CM **Status:** SCHED **Requestor Name:** Rob Hamilton

PM #: **PM Attachment(s):** N/A **Requestor Phone:** 557-2695

Job Plan #: **Job Plan Attachment(s):** N/A **M.S.A.:**

Job Completed By: Landon Burmester (Name) _____ (Signature) 1/24/12 (Date)

Functional Verification (FV) Required?: Y [X] N [ ] **If Yes, FV Completed Successfully?:** Y [X] N [ ]

Post-Maintenance Test (PMT) Required?: Y [ ] N [X] **If Yes, PMT Completed Successfully?:** Y [ ] N [ ]

FV/PMT N/A [ ] **Justification:** _____

Technician Acceptance: Michael Lopez (Name) _____ (Signature) 01/25/12 (Date)

TSO/TPC Removed?: Y [ ] N [ ] N/A [ ]

Equipment Returned to Service?: Y [ ] N [ ] N/A [ ] _____ (Time)

Operations PSM/SS Concurrence: Michael Lopez (Name) _____ (Signature) 01/25/12 (Date)

WG Supervisor Review: Antone Comuntzis (Name) _____ (Signature) Form 1752 Attached: Y [ ] N [ ]

Planner Review and MH Updated: _____ (Name) _____ (Signature) _____ (Date)

Follow-up WO?: Y [ ] N [X] WO# _____ **MCR Required?:** Y [ ] N [X] MCR# _____

System Engineer/WGS Closure Review is Accomplished by Electronic Signature

Work Order#: 396618 Asset #: Z-410-283

Job Notes:

[redacted]wn performed on 01/22/12 by: Planner-James Reynolds, SSWC-Devoy Goff, ISIH-Daniel Newberry, SE-Quinn Blackburn, QC-Paul Minor, WG-[redacted]mith, Bryan Storer, Wayne Lewis, Marty Deeg, Steve Talbot.

Hazards/Mitigations/PPE and Training

See attached Work Control Permit: ☒ AMOW ☐ RPTW ☐ PTW # N-0689 LOTO # N/A

Mark Applicable Work Control Document

N/A if OPS Exempt or Admin Exempt

N/A if OPS Exempt or Admin Exempt

Special Tools and Equipment

—

Materials/Parts

Qty	Item#	Description	Bin Number

Initial Conditions and Prerequisites

Precautions and Limitations

CAUTION: Be aware of pinch-points, sharp edges.

1): Mechanical Maintenance to perform the work unless other-wise noted.

2): Co-ordinate with Rad-Safety.

3) [redacted]ilize proper lifting techniques when installing the containment material.

[redacted]e ladder safety.

Prerequisites

1): Obtain proper work authorization.

2): Manufacturer containment device per DWG's MSK-53-10855, 117802. (OPS-EXEMPT-002)

3): Co-ordinate with Operations.

Modification Check

System Engineer Quin Blackburn has reviewed this work for plant configuration changes and has determined that no FMP is required.

Job Plan

Step #	Description
10	Ensure that the pre-requisites have been met.
	NOTE: Steps 40 - 70 can be repeated if needed to allow for the proper installation of the containment device.
20	SE to ensure that the containment device has been manufactured per DWG¿s MSK-53-10855, x117802 and is ready to install.
	SE (sign / date) [signature] 1-24-12
30	Stage the components of the containment device by the work area.
[redacted]	NOTE: For step 40 ensure that any device that is removed / relocated is secured or placed in a secure location.

40 Remove / relocate any interference (components / sensor) that may inhibit the proper installation of the containment device.

Apply silicone sealant to seams on window frame to ensure a smooth surface for gasket sealing.

NOTE: For step 60 ensure that the minimum post compression thickness of the gasket is met (.5 inches).

60 Install the containment device per DWG MSK-53-10855.

75 CAUTION - Use care when applying tape to not shock or apply excessive pressure to window.

Operations - Apply tape to inside of cracked window in the area of impact.

80 SE to ensure that the containment device is installed per DWG MSK-53-10855.

Ensure FTS reader is not blocked by installation of tape to inside of glass.

SE (sign / date) 1/25/2012

NOTE: For step 90 the SS will verify that the containment device encompasses the broken window area and no other temporary repairs (broken window area) is required for resumption of Operation.

90 FV - Operations: SS to perform a visual inspection of the containment device.

SS (sign / date) 01/25/12

100 Dispose of any excess material under the direction of RAD Safety and Waste Services.

110 Document any comments / findings on the work order.

120 Route the work order for closure.

130

Closeout

1. The job site has been returned to its pre-job condition.

- [x] Work is complete.
- [x] Tools, equipment, unused materials, debris, litter and spare parts have been cleaned up and returned to their normal storage locations.
- [x] Waste generated during the performance of this job has been disposed of in accordance with Section VII, Waste Stream Packaging.
- [x] CMMS Work Order Record of Hours Expended Page is filled out.
- [x] CMMS Work Order Parts/Consumables Used Page is filled out.
- [x] CMMS Work Order Job Comments Page is filled out.
- [x] Work Order is up to date, and has all necessary signatures.

Signature: _____ S# 87437 Date: 1/25/12
Workgroup Supervisor

2. Perform Post-Job Review per MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews.

Signature: _____ S# 87437 Date: 1/25/12
Workgroup Supervisor

Work Order#: 396618 Asset #: Z-410-283

LABOR HOURS

Craft/Person on Job	Qty.	Date	Hours Spent Getting SSWC Authorization	Hours Spent Performing / Supporting Work	Hours Spent Performing PMT and Close-Out
☒ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____	2	1/24/12	2	1	.5
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					
☐ MM ☐ RT ☐ ISIH ☐ ENG ☐ Other ☐ EM ☐ LL ☐ OPS ☐ ENV _____					

Work Order#: 396618 Asset #: Z-410-283

PARTS/CONSUMABLES USED

Maximo Item #	Qty.	Description

REVISION/CHANGE LOG (log any changes made to an approved CM work order)

Planner	Date	Revision/Change Summary
		PLANNER SSWC SE MGNT
		PLANNER SSWC SE MGNT
		PLANNER SSWC SE MGNT

Special Tools Used (not previously identified):

N/A

MTE Used:

MTE No.	Cal Due Date
N/A	

Work Order#: 396618 **Asset #:** Z-410-283

W ility Review (Check One)

- [x] 1. Work was easy to perform safely with the steps provided.
- [ ] 2. Too much instruction but work could be performed safely.
- [ ] 3. Not enough instruction or unclear instruction, but work could still be performed safely.
- [ ] 4. Work could not be performed as written and there was a step back.
- [ ] 5. Work instructions could have lead to unsafe conditions and there was a step back.

Comments:

Signature: [signature] S# 109522 Date: 1/25/12
Worker

Job Comments

Document as-found and as-left conditions; incomplete/uncompleted items; discrepancies; unexpected, unusual, abnormal, unplanned, or unexplained conditions; equipment responses and surrounding circumstances; and relevant indications or alarms, etc. to ensure preservation of evidence and allow for subsequent analysis.

holes lined up Good Gasket was smashed to .5 of [illegible] men all went together well 1/24/12
[initials]

AMWTP Advanced Mixed Waste Treatment Project	**Temporary Physical Change Record**	Form-1508 Rev. 5 Effective: 01/28/11 Page 1 of 6

Implementing Document: INST-CD&M-11.1.4

MAR 2 2 2012

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls	TPC – 0216	
Requester Section (Completed by system engineer or designee)		
Affected System: 410		
Is this Class III or NQ equipment?	☒ Yes ☐ No	If No, **STOP**, TPC not allowed.
Will change affect WIPP, DEQ, or FTS data quality?	☐ Yes ☒ No	If Yes, **STOP**, TPC not allowed.

Reason for TPC:

Temporary measure to protect confinement area from possible breach due to broken glass in super compactor until permanent fix is accomplished.

TPC description:

Install Supercompactor Broken Window Containment Device (Drawing MSK-53-10855) onto broken infeed glovebox window, north side until permanent replacement window can be fixed.

Detailed description of TPC:

During a criticality clean out over the weekend, a long piece of metal tubing fell into one of the glass ports in the north side of the infeed glovebox. This shattered the inside layer of that safety glass. Although a breach in the confinement area was not identified, precautionary measures will include installing a Supercompactor Broken Window Containment Device, drawing MSK-53-10855. This consists of a 3/4" sheet of MP-750 Lexguard that will be bolted onto the existing frame in a manner to inhibit any potential contaimination from escaping should the inside layer of the safety glass break further. This extra shielding will be removed once the new window and frame have been procured and delivered. Re: EDF-0512

Plant conditions necessary to implement TPC:

Supercompactor must be shut down from operation,

Post-installation test instructions:

N/A

Special controls required to operate with TPC:

•Use of Lexguard MP-750 is acceptable for use on the outside of the glove box (broken glass laminate window still in place) for a period of not more than 90 days from January 23, 2012
•The Lexguard MP-750 panel is only used on the broken window panel
•Weekly inspections will be conducted by Fire Protection, ISIH and Engineering (or their designees) to verify that the interior glass pane is still adequately in place
•If inspections indicate the interior glass pane is no longer adequate, use of the supercompactor will stop and the condition re-evaluated. Operations may start again only if the condition (with controls as necessary) is deemed acceptable

Plant conditions necessary to remove TPC:

Replacement window must be present prior to removal of TPC. Supercompactor must be shut down from operations, rad con present to verify no contamination on replacement window. TPC will be removed as part of installation of replacement window.

Post-removal test instructions:

Testing will be covered by window replacement instructions

Requester:	Scott Shurtliff (Print)	Scott Shurtliff (Signature)	1-24-12 (Date)

Review Section (Completed by Engineering manager/designee)

(Reviewer verifies technical accuracy of proposed TPC.)

Reviewer:	Kevin Blackburn (Print)	Kevin Blackburn (Signature)	1/24/2012 (Date)

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Criticality Safety Review (Completed by Criticality Safety Engineer [CSE] or Criticality Safety Officer [CSO])

CSE/CSO: R L Moore (Print) _____ (Signature) 1/24/12 (Date)

USQ Evaluation ER-0545.0 USQD-0545.1

To be completed by a USQ evaluator in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.
(Check only one box that applies)

☑ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** *This TPC cannot be implemented as long as a USQ exists.*

USQ Evaluator: Ken Stoddard (Print) _____ (Signature) 1/24/12 (Date)

Installation Approval Section (Completed by plant shift manager)

Requester, Review, USQ Screen, and Criticality Safety Review Sections complete, operations procedures have been evaluated for necessary changes, required conditions set, and TPC installation approved.

Approver: Brett Stacey (Print) _____ (Signature) 01/24/12 (Date)

Installation Section (completed by installer) — Work Control Document # 0699 — WO # 396618

Detailed Description of TPC Installation: *(Exact location of the TPC [terminal number, wire number/color, valve number, damper number, etc.], how TPC implemented [lifted leads, jumper, fuses removed, valve blocked, damper blocked, etc.], how TPC is marked/labeled [orange tie wrap with TPC number written on tab is typical], both ends marked if not visible at same time, color of jumper used, exposed leads properly insulated, etc.)*

Installed Temporary Lexan window cover over broken window on the North west side of SuperCompactor, Just west of the mold press. Installed with allread bolts, rubber seal, and sealicon.

TPC installed as directed in Requester Section and described above.

Installer: Jim Burmester (Print) _____ (Signature) 1/25/12 (Date)

Verified TPC installed as directed in Requester Section and described above.

Verifier: Tanner Linder (Print) _____ (Signature) 1/25/12 (Date)

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Post-Installation Testing Section (Completed by qualified technician)

Post-installation tests, as directed in Requester Section above, completed satisfactorily (return Form-1508 to shift supervisor when tests are complete)

Qualified Technician: Michael Lokes (Print) — (Signature) — 01/25/12 (Date)

Record Control (Completed by shift supervisor)

Copy of this form and attachments forwarded to EDC.

Shift Supervisor: Michael Fogarty (Print) — (Signature) — 01/25/12 (Date)

Removal of Approval Section (Completed by plant shift manager)

Required conditions set and TPC removal approved.

Approver: Joel Lokes (Print) — (Signature) — 03/1/12 (Date)

Removal Section (Completed by remover)

Detailed description of TPC Removal: *(Exact location of restoration [terminal number, wire number/color, valve number, damper number, etc.], how equipment restored [replaced leads, removed jumper, installed fuses, valve un-blocked, damper un-blocked, etc.], insulation removed from exposed leads, etc.)*

Removed 12 1/4 in studs and removed temporary window with Rad support set temporary window note

TPC removed as directed in Requester Section and described above.

Remover: DALE SAMUELSON (Print) — (Signature) — 3-1-12 (Date)

Verified TPC removed as directed in Requester Section and described above.

Verifier: Antonio Comuntzis (Print) — (Signature) — 3-1-12 (Date)

Implementing Document: INST-CD&M-11.1.4

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

Post-Removal Testing Section (Completed by Qualified Technician)

Post-removal tests, as directed in Requester Section above, completed satisfactorily (return Form-1508 to shift supervisor when tests are complete).

Qualified Technician: KARL KOLBET (Print) — (Signature) — 3/3/12 (Date)

Final Closeout Section (Completed by plant shift manager)

Form reviewed, all equipment returned to normal, TPC index updated (forward to EDC upon completion).

Plant Shift Manager: Michael Fogarty (Print) — (Signature) — 03/07/12 (Date)

TPC Reviewed and TPC Still Necessary (Cycle 1)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
						02/26/12	02-27-12 CJ	02/27/12	02-28-12 CJ			02/26/12	
02/27/12		02/28/12		02/01/12		02/02/12	02/02/12	02/03/12	02/03/12	02/04/12		02/05/12	
02/06/12		02/07/12		02/08/12		02/09/12	02-10-12 CJ	02/10/12	02-11-12 CJ	02/11/12	02-12-12 CJ	02/12/12	02-13-12 CJ
02/13/12		02/14/12		02/15/12		02/16/12	02/16/12	02/17/12	02/17/12	02/18/12	02/19/12	02/19/12	02/19/12

* Notify Production Manager and Engineering Manager when nearing end of 28-day cycle.

If DSA has been revised since initial evaluation, re-perform USQ Evaluation, otherwise use previous review determination numbers signifying USQ still valid.

USQ Evaluation 68450 W 2/12/12 Evaluator Review No.: 68450 Determination No.: 68451

☒ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.

☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** *This TPC **cannot** be **implemented** as long as a USQ exists.*

USQ Evaluator: B. Wagner (Print) — (Signature) — 02/18/2012 (Date)

TPC has been reviewed, USQ is still valid, and continued operation >28 days with TPC installed is authorized.
(Both signatures below are required to continue with Cycle 2.)

Production Manager: Brett Stacy (Print) — (Signature) — 02/20/12 (Date)

Engineering Manager: Ron Todd (Print) — (Signature) — 2-20-12 (Date)

TPC Reviewed and TPC Still Necessary (Cycle 2)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
02/29/12		03/01/12		03/02/12		03/03/12	03/03/12	03/04/12		03/05/12	03-06-12 CJ	03/06/12	03-07-12 CJ
03/07/12	03-08-12 CJ	03/08/12	03-09-12 CJ										
*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Notify Production Manager and Engineering Manager when nearing end of 28-day cycle.

If DSA has been revised since last evaluation, re-perform USQ Evaluation, otherwise use previous review determination numbers signifying USQ is still valid

USQ Evaluation Evaluator Review No.: ____ Determination No.: ____

☐ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.

☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **NOTE:** *This TPC **cannot** be **implemented** as long as a USQ exists.*

USQ Evaluator: ____ (Print) — ____ (Signature) — ____ (Date)

Best Available Copy

Implementing Document: INST-CD&M-11.1.4

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

TPC has been reviewed, USQ is still valid, and continued operation >28 days with TPC installed is authorized.
(Both signatures below are required to continue with Cycle 3.)

Production Manager: Print _____ Signature _____ Date _____

Engineering Manager: Print _____ Signature _____ Date _____

TPC Reviewed and TPC Still Necessary (Cycle 3)

Plant shift manager (PSM) review shiftly, initial, and date below.

Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday	
Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids	Days	Mids
*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Notify Production manager and Engineering manager when nearing end of 28-day cycle.

If DSA has been revised since last evaluation, re-perform USQ Evaluation, otherwise use previous review determination numbers signifying USQ is still valid

USQ Evaluation Evaluator Review No.: _____ Determination No.: _____

☐ A USQ **DOES NOT EXIST** based upon the results of an approved USQ evaluator review or USQ determination.
☐ A USQ **EXISTS** based upon the results of an approved USQ determination. **Note: This TPC cannot be implemented as long as a USQ exists.**

USQ Evaluator Print _____ Signature _____ Date _____

Justification that TPC Still Necessary (beyond three cycles) *If extra space is needed an 8-1/2 × 11 in. sheet of paper may be used for continuation, provided that it indicates the TPC #, the applicable section, and is attached to the original Form-1508.*

Implementing Document: INST-CD&M-11.1.4

TPC # Obtain number from Engineering Document Control (EDC). After normal hours: \\Amws0025\Enterprise\Design Engineering\After Hour Engineering Document Numbers.xls — TPC – 0216

TPC has been reviewed. USQ is still valid, and continued operation >three 28-day cycles with TPC installed is recommended.

Production Manager:	Print	Signature	Date
Engineering Manager:	Print	Signature	Date

Plant Manager Authorization

TPC has been reviewed and continued operation >three 28-day cycles with TPC installed is authorized.

Plant Manager:	Print	Signature	Date

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 71820
PARENT:

Title: Cargo container wnku071749-3 does not meet DOT IP-2 standards

Category: LLW-NTS	**Affected Item Type:** Container ID
Affected Item: Cargo container WNKU071749-3 and FBXU141009-9	
Originator: Schuldt, Gaylen	**Date Opened:** 07/26/12
Source Type: As Found Condition	**ORPS Reportable:** No
Source Type Doc. No.	
ORPS No.:	**ORPS Category:** NA
Finding #:	
Requirement Violated: 49CFR 173.411	
Shipment No.	**Payload No.**
Equipment ID:	**PO Number:**
Batch No.	
Container ID: WNKU071749-3, FBXU141009-9	
Tag Applied: Yes	**No. of Tags:** 2

Description of Condition:
Door seals are torn and pieces are missing.

Manager Review By: Shannon Flores	**Manager Review Date:** 08/02/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** No
Stop Work Order: No	**Is CAR Req'd?** No
HSS-OE Applicable: Yes	**NTS Report Number:** N/A
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** No
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** MLLW/LLW
"Information Only"	**Responsible Department:** Plant Manager
	Functional Area: Packaging & Shipping
	Disposition Due Date: 08/22/12
QA Mgr Rev Sign By: Paul Minor	**QA Mgr Rev Sign Date:** 08/13/12
	Date Due: 12/31/12
Disposition: Repair	**Responsible Manager:** Biorn, Scott
	Assigned Actionee: Flores, Shannon

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 71820

PARENT:

Conditional Use: No	**Conditional Use Expiration Date:**
USQ Screen Req'd? NO	**USQ Screen No.:**
Root Cause Analysis: No	
Level A Cause Code: A2 - Equipment/Material Problem	**Contributing Cause Level A:**
Level B Cause Code: B4 - Material Control LTA	**Contributing Cause Level B:**
Level C Cause Code: C01 - Material Handling LTA	**Contributing Cause Level C:**

Disposition Description:

replace torn door seals using appropriate work control. Once seals are replaced, perform pre-use inspection and light test before use.

Mgr Disp App By: Shannon Flores	**Mgr Disp App Date:** 09/25/12
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By:	**QA Mgr Rev Disp Sign Date:**

P Complete Comments:

Action Complete By:	**Action Complete Date:**
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By:	**QA Verification Comp Date:**

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 72480
PARENT:

Title: RTR Operator Potential Missed Prohibited Item

Category: WIPP Data	**Affected Item Type:** Container ID
Affected Item: 10312126	
Originator: Robison, Camille	**Date Opened:** 09/11/12
Source Type: As Found Condition	**ORPS Reportable:** No
Source Type Doc. No.	
ORPS No.:	**ORPS Category:** NA
Finding #:	
Requirement Violated: INST-OI-12 Rev. 49 Steps 4.10.36 - 4.10.38	
Shipment No.	**Payload No.**
Equipment ID:	**PO Number:**
Batch No. RTR11-00441	
Container ID: 10312126	
Tag Applied:	**No. of Tags:**

Description of Condition:

Container 10312126 was characterized in RTR11-00441. The container has a lead TID. Lead is not allowed in the waste stream container 10312126 is in. An NCR for prohibited items should have been generated. CCP identified the condition on 08-24-12 and generated an NCR. NCR-INL-0435-12 is attached in the supporting documentation.

QA Comment: NCR 72480 is cancelled. Discussions with TRU Programs SPM identified that CCP AK shall resolve issue for CCP's S3114 Waste Stream. Container is currently in CCP's inventory and being maintained accordingly. A. Morse 10-08-12

Manager Review By:	**Manager Review Date:**
QA Closed-Cancelled By: Angie Morse	**QA Closed-Cancelled Date:** 10/07/12

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid:	**WIPP Submittal Req'd?**
Stop Work Order:	**Is CAR Req'd?**
HSS-OE Applicable:	**NTS Report Number:**
HSS-OE Reportable:	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820:	**10 CFR 830 Subpart A:**
10 CFR 830 Subpart B:	**10 CFR 835 Rad Protection:**
10 CFR 851Safety/Health:	**Quality (Type Material):**
"Information Only"	**Responsible Department:**
	Functional Area:
	Disposition Due Date:
QA Mgr Rev Sign By:	**QA Mgr Rev Sign Date:**

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No.: 72480

PARENT:

	Date Due:
Disposition:	Responsible Manager:
	Assigned Actionee:
Conditional Use:	Conditional Use Expiration Date:
USQ Screen Req'd?	USQ Screen No.:
Root Cause Analysis:	
Level A Cause Code:	Contributing Cause Level A:
Level B Cause Code:	Contributing Cause Level B:
Level C Cause Code:	Contributing Cause Level C:
Disposition Description:	
Mgr Disp App By:	Mgr Disp App Date:
QA Add'l Disp. Req'd By:	QA Add'l Disp. Req'd Date:
Mgr Add'l. Disp App By:	Mgr Add'l. Disp App Date:
QA Mgr Rev Disp Sign By:	QA Mgr Rev Disp Sign Date:
CAP Complete Comments:	
Action Complete By:	Action Complete Date:
QA Add'l Action Req'd By:	QA Add'l Action Req'd Date:
Add'l Action Complete By:	Add'l Action Complete Date:
QA Verification Complete By:	QA Verification Comp Date:

Attachment 1 – CCP Nonconformance Report (NCR)

NCR No. NCR-INL-0435-12	Revision 0	
1. Lot No./Heat No. or Serial No. (as applicable): N/A	2. Process (e.g., NDA, HSG, NDE, VE, Other): NDE	3. Batch Data Report #(s): RTR11-00441
4. Order/Work Order/Job Control Number (as applicable): N/A	5. PO # (as applicable): N/A	Container #(s): 10312126
	6. Supplier (as applicable): N/A	

DESCRIPTION OF NONCONFORMANCE

7. (a) NCR Description: ☐ < 100 nCi/g ☒ Prohibited Item ☐ E-Flag ☐ Receipt Inspection ☐ Transportation ☐ WWIS/WDS ☐ Other

7. (b) Description of Nonconformance Required Condition (Implementing Procedure, Revision, Section, & Text):

Section C-3c of CCP-PO-001, Revision 20, states "That is, if radiography and/or VE indicate that the waste does not match the waste stream description produced by AK characterization, a nonconformance report (NCR) is completed and the inconsistency resolved as specified in Section C4 (Q5), and the NCR will be dispositioned as specified in Section C3-13."

7. (c) Actual Condition

Lead Tamper Indicating Device identified on locking ring bolt of inner 55-gallon drum overpacked in 10312126. Lead is not allowed in the S3114 waste stream.

8. NCR Originator (Print name, sign, and date)	9. CCP QA Engineer or Designee Validation (Print name, sign, and date)
Jim Vernon 8-24-12	T. Mueller T. MUELLER 8-24-12

9a. Does the identified condition have the potential to impact AK? ☒ YES ☐ NO ☐ INDETERMINATE
If YES or INDETERMINATE, then apply Trend Code L in Block 12.

9b. Have the CCP HOLD TAGS associated with the NCR been applied? ☒ YES ☐ NO If no is marked, provide an explanation.

10. Significant Condition? (If Yes, List CAR)	11. Recurring Condition?
☐ YES ☒ NO	☐ YES ☒ NO (If YES, List NCRs/CARs)
12. Trend Code: L	13. Responsible Manager: Jim Vernon

Attachment 1 – CCP Nonconformance Report (NCR) (Continued)

NCR No. NCR-INL-0435-12	Revision 0
INTERIM DISPOSITION	
14. Interim Disposition (Check One) ☐ N/A (See Final Disposition) ☒ Hold ☐ Conditional Accept ☐ Conditional Use ☐ Sort ☐ Reinspect/Retest ☐ Remediate (a) Instructions for Completion of the Interim Disposition: AKE is to perform an AK re-evaluation in accordance with CCP-TP-005.	
INTERIM DISPOSITION APPROVALS	
15 .Responsible Manager/Individual (Print, sign, and date) Jim Vermon 8-24-12	16. CCP QA Engineer or Designee (Print, sign and date) T. MUELLER 8-24-12
Additional Approvals: (Print, sign and date)	Additional Approvals: (Print, sign and date)
COMPLETION OF INTERIM DISPOSITION	
17. Interim Disposition Complete Responsible Manager/Individual: (Print, sign and date)	
18. Interim Disposition Verified CCP QA Engineer: (Print, sign and date)	

Attachment 1 – CCP Nonconformance Report (NCR) (Continued)

NCR No. NCR-INL-0435-12	Revision 0
FINAL DISPOSITION	
19. Final Disposition (Check One) ☐ Use-As-Is ☐ Reject ☐ Repair ☐ Rework ☐ Scrap	
(a) Technical Justification (Required for Use-As-Is and Repair dispositions, Enter N/A for Reject, Scrap, or Rework dispositions.)	
(b) Instructions for Completion (Required for Reject, Repair, Rework and Scrap – Enter N/A for Use-As-Is).	
(c) Corrective Actions (Actions to Prevent Recurrence – Required for Repair and Rework; Enter N/A for Use-As-Is-, Reject, and Scrap).	
FINAL DISPOSITION APPROVALS	
20. Responsible Manager/Individual: (Print, sign, and date)	21. CCP QA Engineer or Designee: (Print, sign, and date)
Additional Approvals: (Print, sign, and date)	Additional Approvals: (Print, sign, and date)
CLOSURE	
22. Final Disposition Complete Responsible Manager/Individual: (Print, sign, and date)	
23. Attachments:	
24. (a) HOLD TAG removal has been validated and reconciled for all nonconforming items on the NCR. ☐ (b) Check if not applicable (N/A) and provide an explanation here or on a continuation sheet. ☐	
25. Final Disposition Verified – NCR Closed	CCP QA Engineer: (Print, sign, and date)

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - HSG

NCR # 38207

Title: HGAS Characterization

Originator: Cook, Terry	**Date Opened:** 03/06/08
Responsible Dept: Plant Manager	**Batch #:** HS205-00305
Container ID: 10018462	**Tag Applied:** No

Characterization Problem: Failed Sample Event

Originator Sign By: Terry Cook	**Originator Sign Date:** 03/06/08

Production Comments: **Approved Remediation:**

QA Update: Originally identified on NCR-19552, which is being administratively closed by AMWTP QA. .NCR-38207 has been initiated to track completion of resampling container once treatment for prohibited items is complete. T. Cook 3-06-08

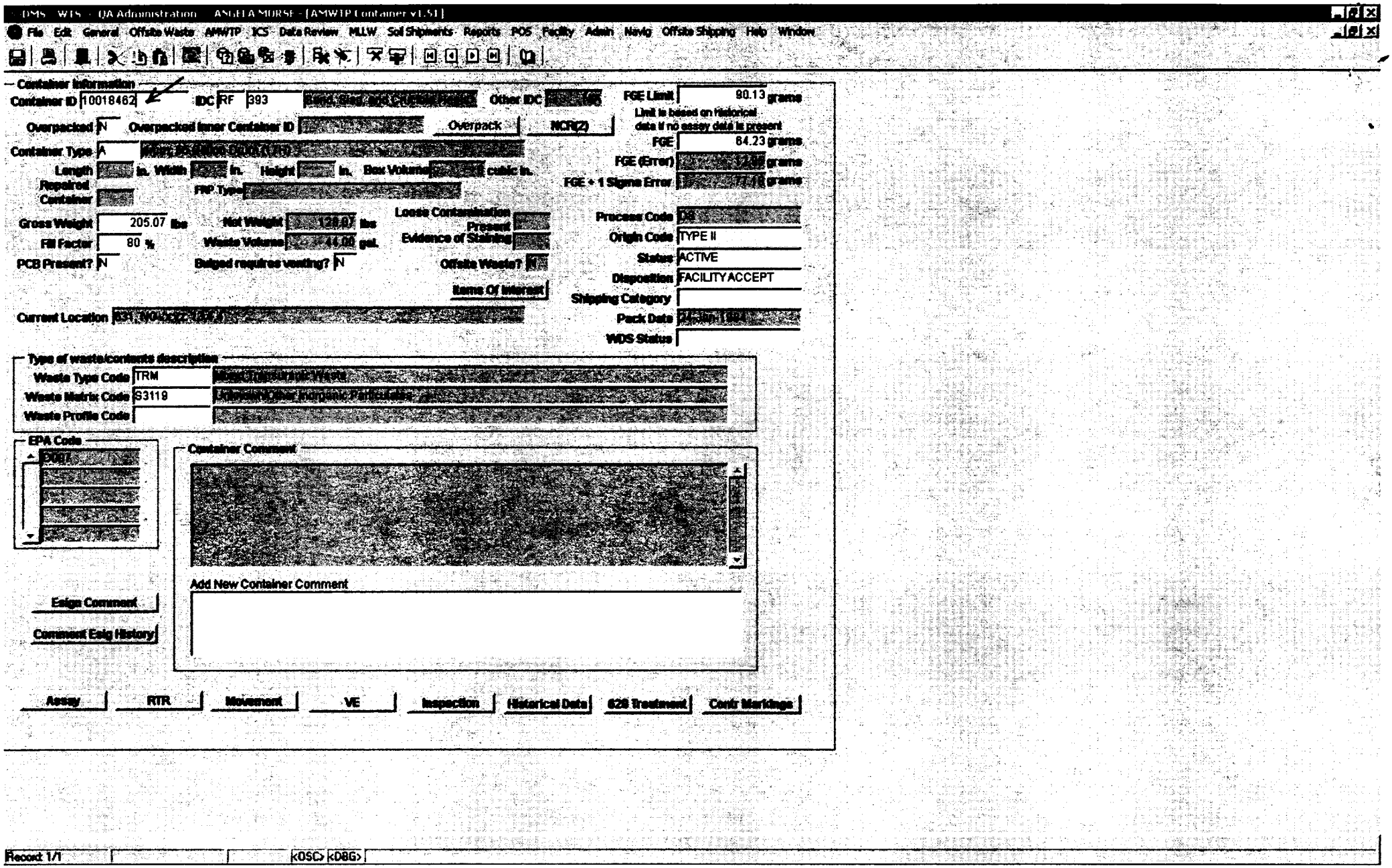
Performed By:	**Performed Date:**

Waste Programs Evaluation/Verification:

SPM Verification Complete By:	**SPM Verification Complete Date:**
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By:	**QA Verification Comp Date:**



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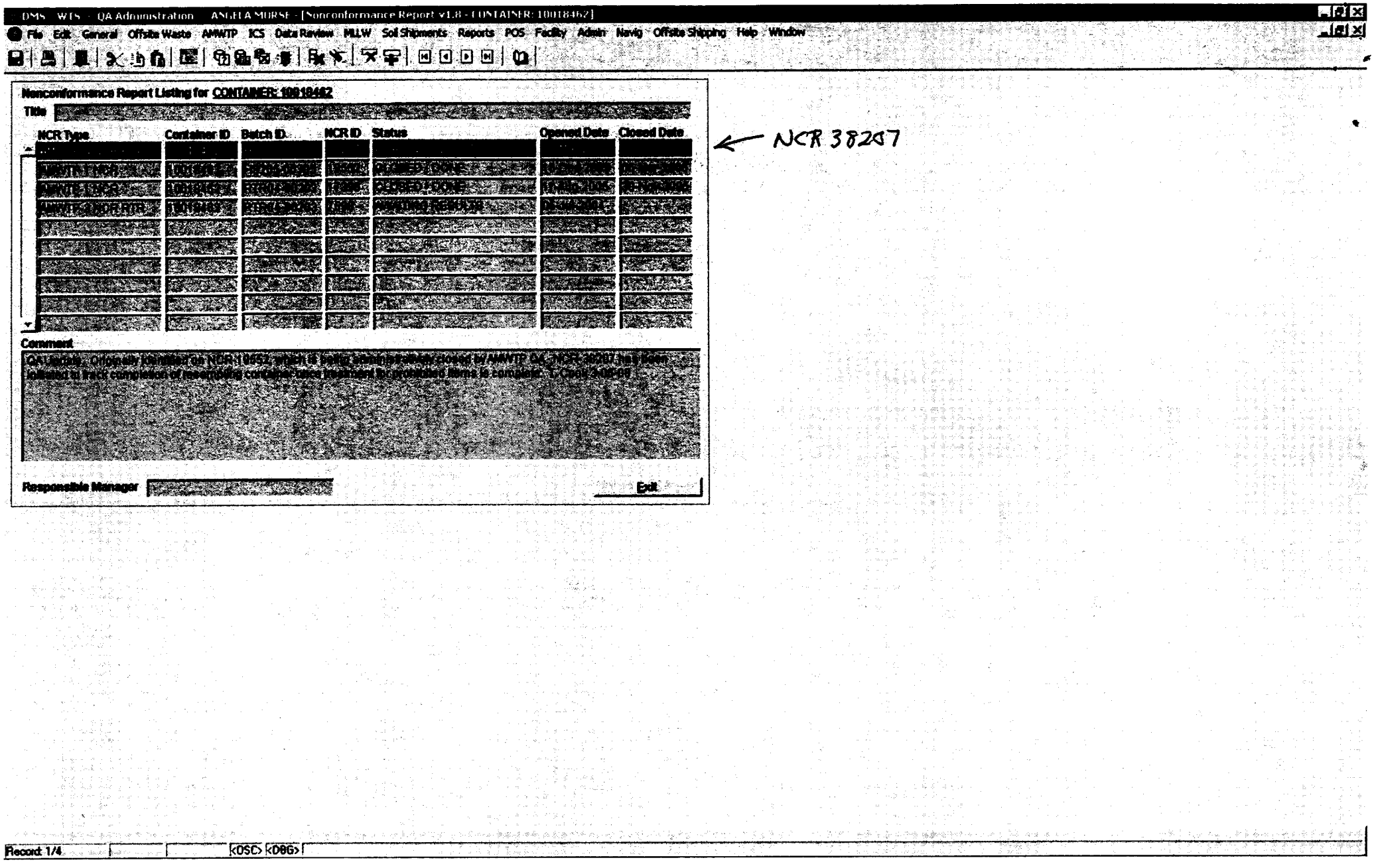

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - ASSAY

NCR #: 66282

Title: Assay Characterization

Originator: Fetzer, Pamela	**Date Opened:** 10/13/11
Responsible Dept: Plant Manager	**Batch #:** N/A
Container ID: 10392223	**Tag Applied:** Yes

Characterization Problem: Non-Report

Originator Sign By: Pamela Fetzer	**Originator Sign Date:** 10/13/11

Production Comments: **Approved Remediation:** **Re-Characterization**

This NCR has been generated as required per Type-1 NCR 41583 for re assay of this container. pff 10/13/2011
This container is a repackage for 10132981 which is listed in NCR 41583. pff 10/13/11

Performed By: George Byram	**Performed Date:** 07/05/12

Waste Programs Evaluation/Verification:

This NCR was generated per Type-1 NCR 41583. Drum 10132981 was repackaged into container 10392223, and the repackaged container has been successfully assayed as part of ASY11-00361. All required actions have been completed and this NCR is recommended for closure. GTB 7/5/12

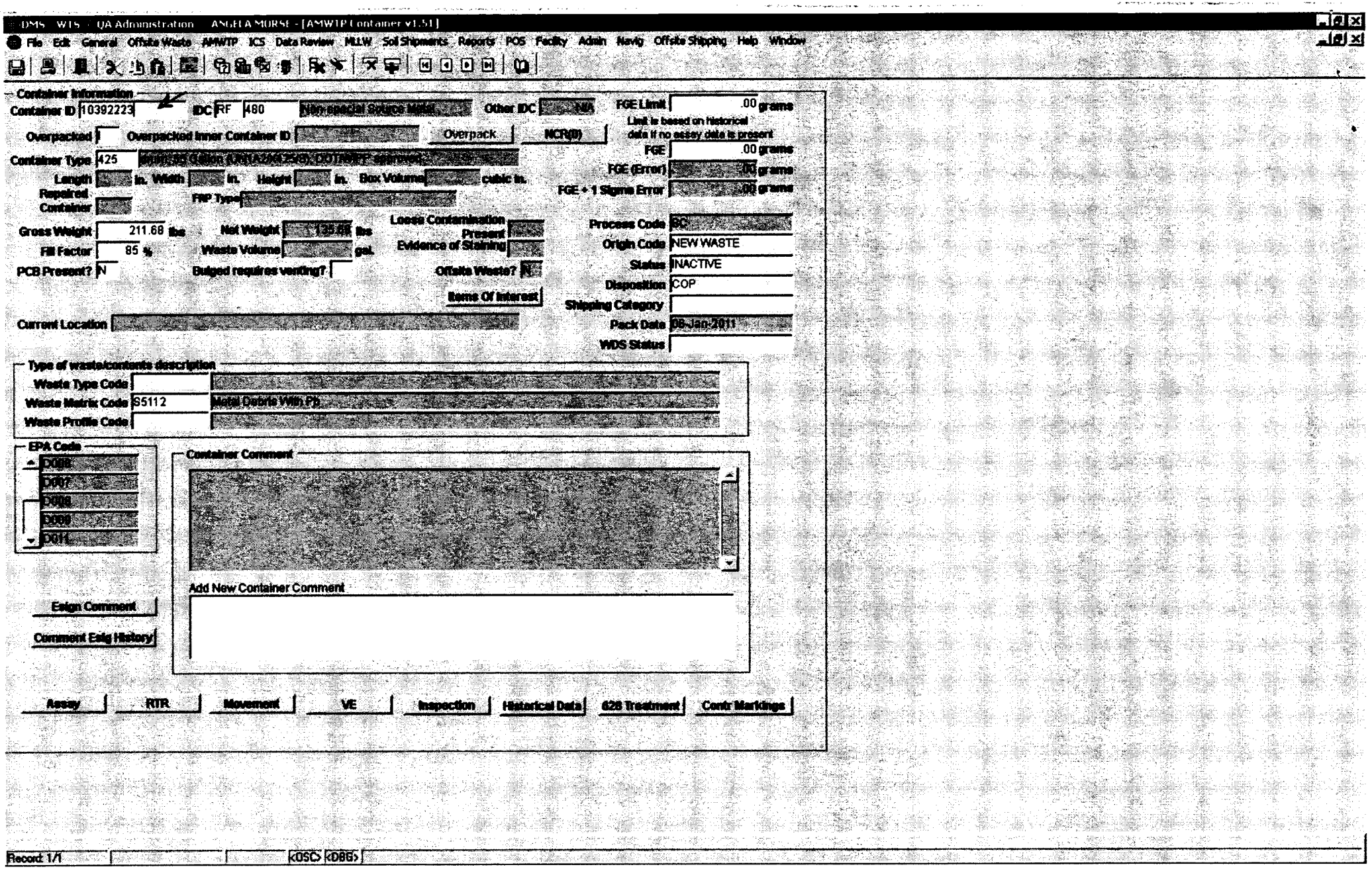
SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 07/05/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA Closure Comment: Verified in WTS that container 10132981 was repackaged into container 10392223 and that container 10392223 was successfully assayed as part of ASY11-00361. No further action is required. This NCR is closed. C. Robison 07-05-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 07/05/12

"Information Only"



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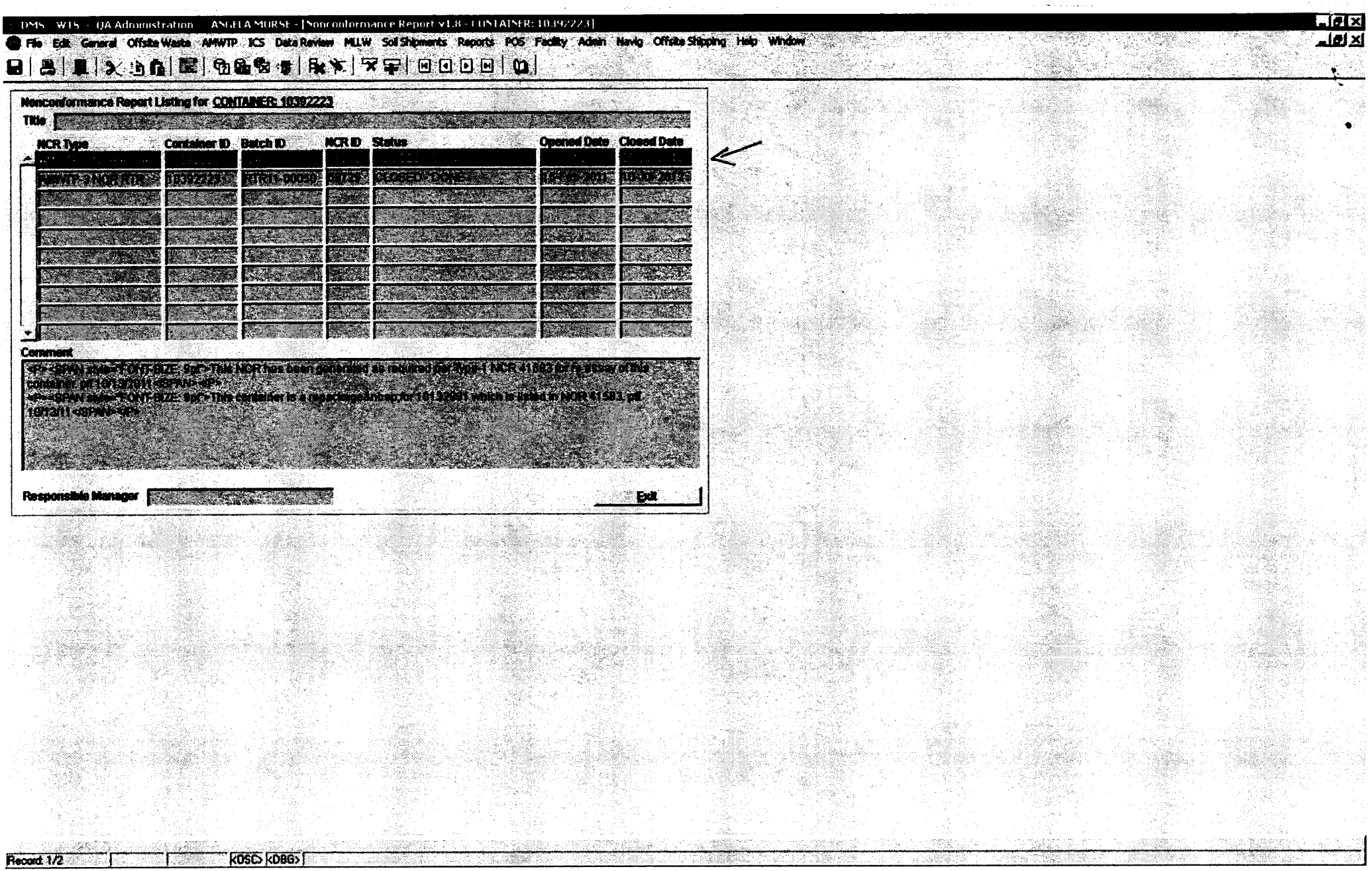

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 71804

Title: AK Characterization

Originator: Hinkle-Daniel, Caralea	**Date Opened:** 07/25/12
Responsible Dept: Waste Programs	**Batch #:** RTR11-00398
Container ID: 10311091	**Tag Applied:** No

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Caralea Hinkle-Daniel	**Originator Sign Date:** 07/25/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

This container was inspected and identified as a RF container and assigned a historic IDC of RF-750. During RTR the container IDC was assigned as RF-750, the IDC should be RF-751. To ensure the associated issue is resolved prior to disposition of this waste, IDC change is necessary. For closure of this NCR the IDC must be changed to RF-751. The RTR data associated with this container has been validated and to facilitate this IDC change an RVU will be required. CHD 7/25/12

AK concurs with the recommended IDC, RF-751, for container 10311091. No AKR or NCR is necessary. CHD 7/30/12

Performed By: Caralea Hinkle-Daniel	**Performed Date:** 07/30/12

Waste Programs Evaluation/Verification:

SPM Verification Complete By:	**SPM Verification Complete Date:**
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

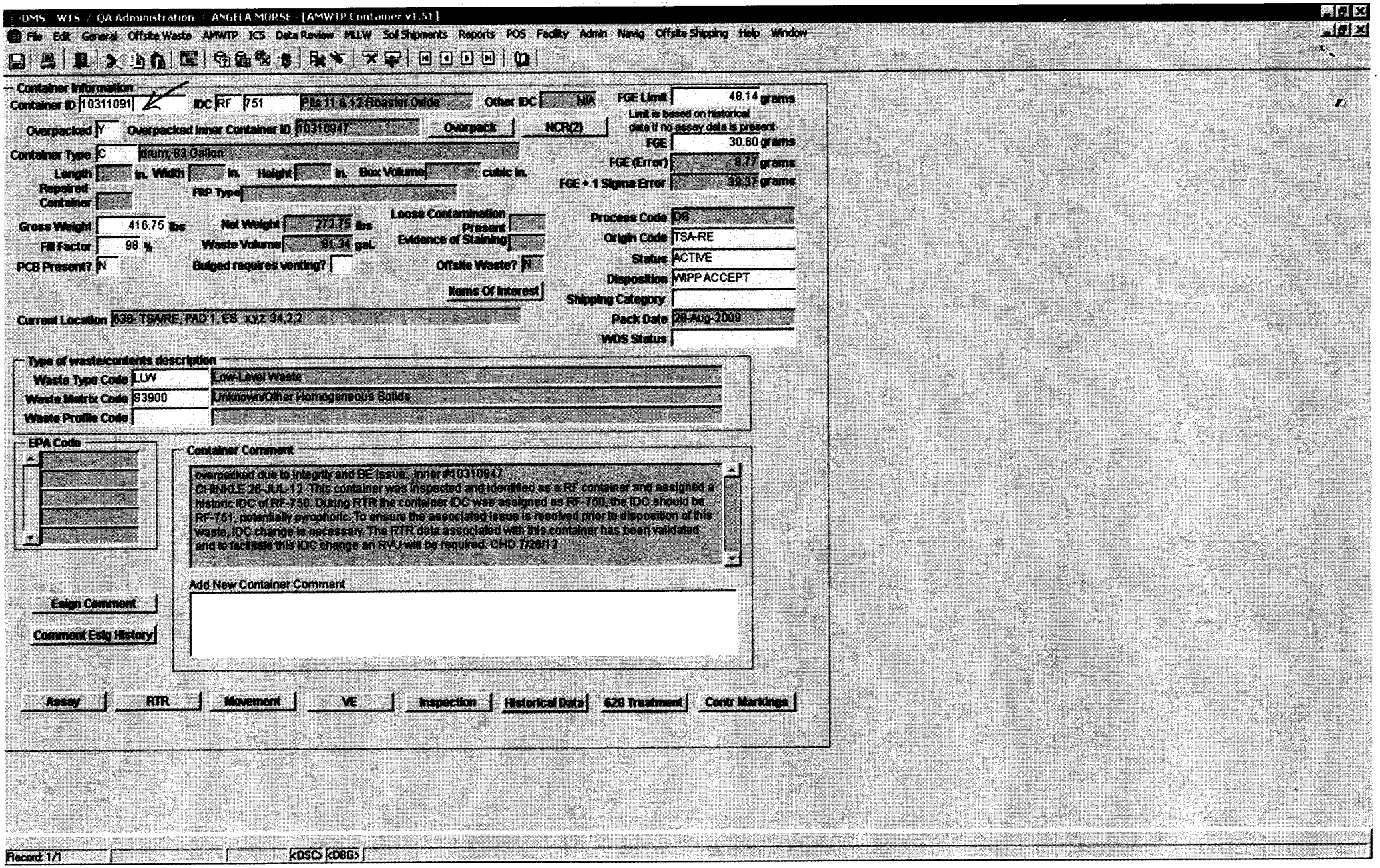
QA Closure Comments:

This container was inspected and identified as a RF container and assigned a historic IDC of RF-750. During RTR the container IDC was assigned as RF-750, the IDC should be RF-751. To ensure the associated issue is resolved prior to disposition of this waste, IDC change is necessary. For closure of this NCR the IDC must be changed to RF-751. The RTR data associated with this container has been validated and to facilitate this IDC change an RVU will be required. CHD 7/25/12

RVU performed to change IDC to RF-751 per NCR 71804RG 7/26/12

AK concurs with the recommended IDC, RF-751, for container 10311091. No AKR or NCR is necessary. CHD 7/30/12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By:	**QA Verification Comp Date:**



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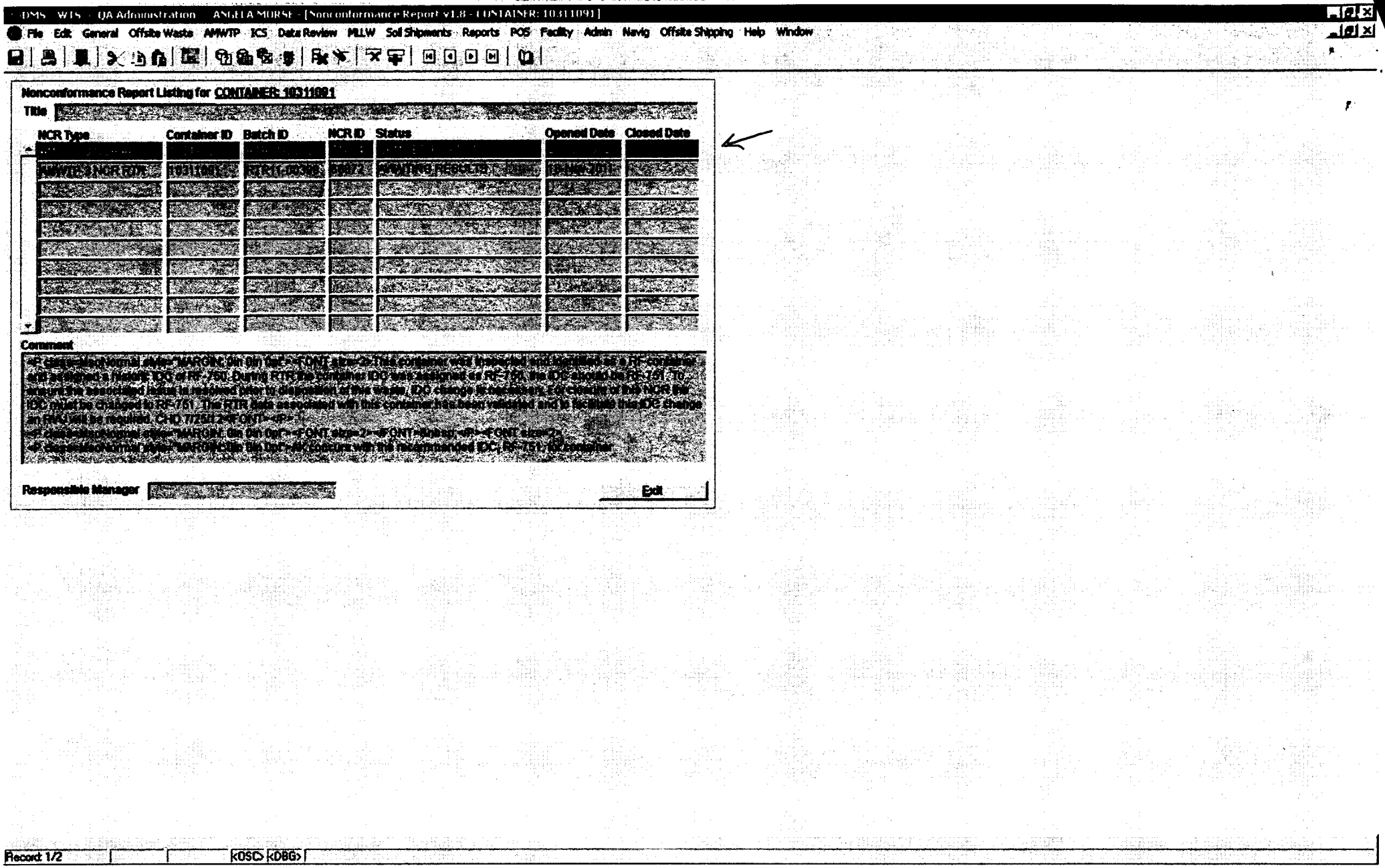

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT
CCP Reject Container

NCR #: 72751

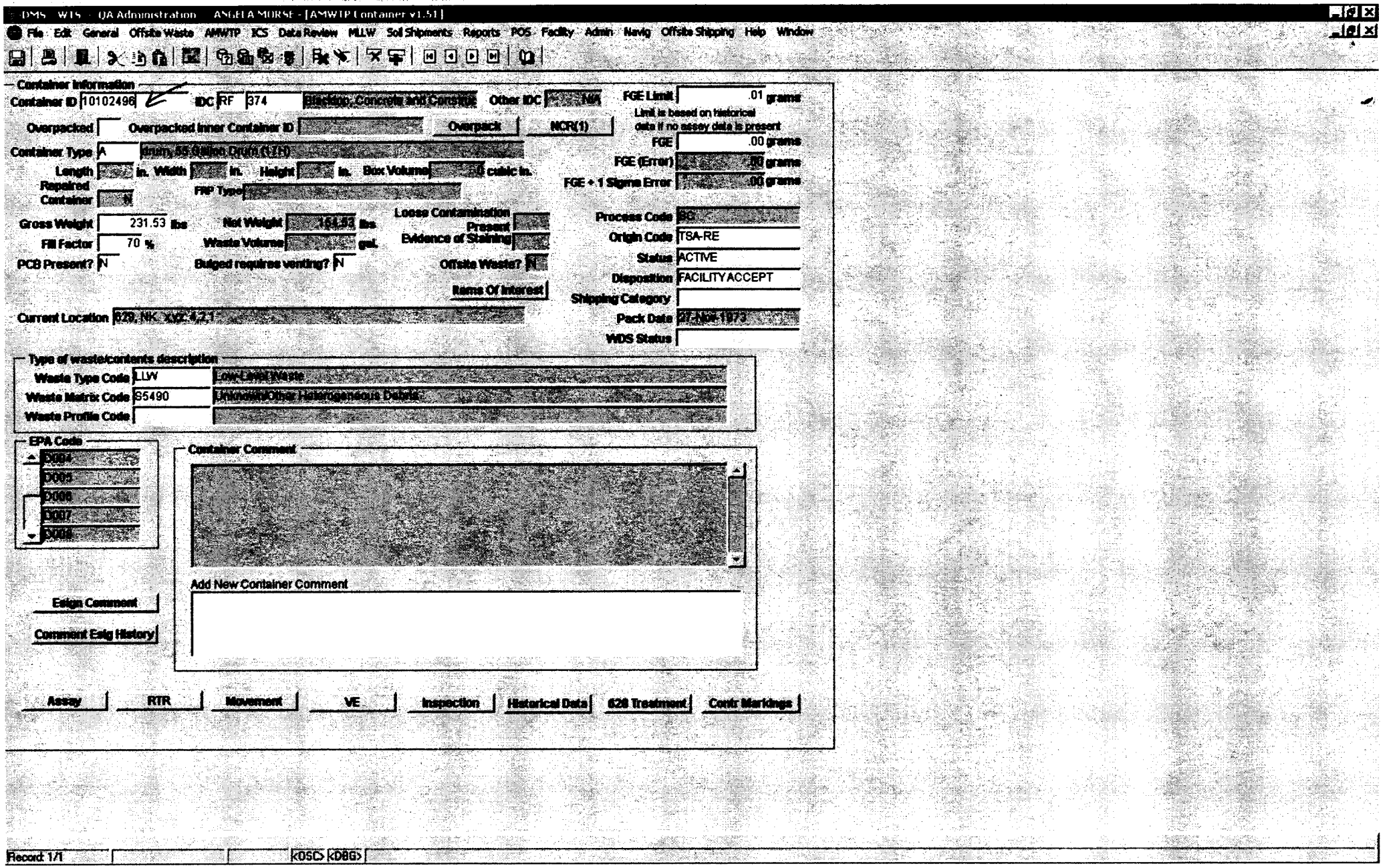
CCP Container: CCP Container	
Originator: Robison, Camille	**Date Opened:** 09/25/12
	Responsible Dept: Plant Manager
Container ID: 10102496	**Tag Applied:**
CCP Characterization: Failed CCP RTR Cert. Scan	
Originator Sign By: Camille Robison	**Originator Sign Date:** 09/25/12

Production Comments:

Approved Remediation:

CCP RTR NCR was opened on 09-13-2012 and identified 4 tbsp. of pourable liquid in bag pockets at 28". CCP NCR INL-0364-12 is provided in supporting documentation for review/information. C. Robison 09-25-12

Performed By:	**Performed Date:**
Waste Programs Evaluation/Verification:	
SPM Verification:	**SPM Verification Date:**
MLLW/LLW Verification:	**MLLW/LLW Verification Date:**
QA Closure Comments:	
QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By:	**QA Verification Comp Date:**



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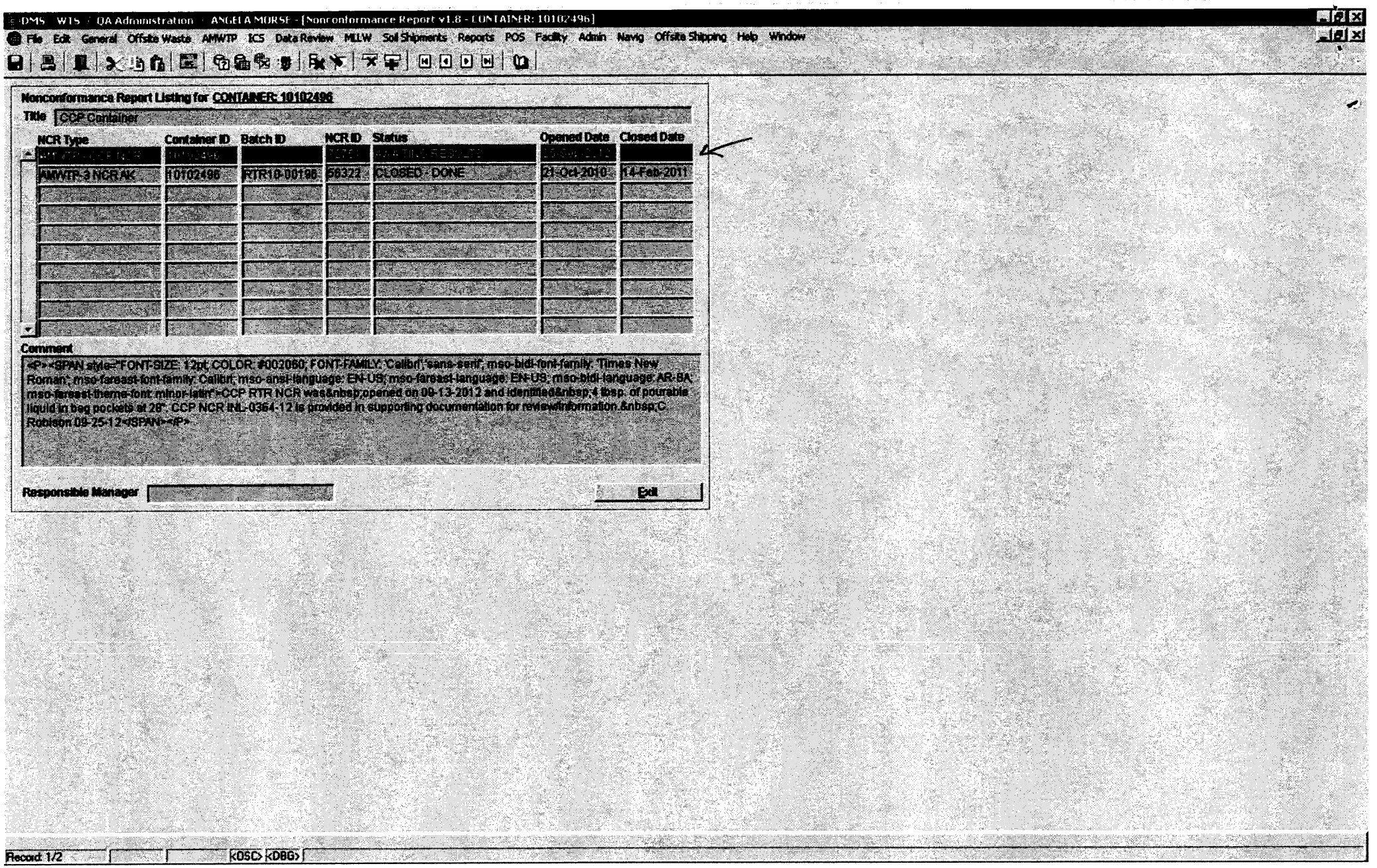

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 72081

Title: RTR Characterization

Originator: Kearn, Kent	**Date Opened:** 08/13/12
Responsible Dept: Plant Manager	**Batch #:** NA
Container ID: 10140537	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Kent Kearn	**Originator Sign Date:** 08/13/12

Production Comments: **Approved Remediation:** **SDOP**

30 gallon drum.

Performed By: George Byram	**Performed Date:** 09/25/12

Waste Programs Evaluation/Verification:

SPM Verification: For this waste, WIPP characterization will be performed during boxline processing via SDOP. The container will be processed in an uncharacterized SDOP in which the loaded box will undergo both RTR and ASY to ensure AMWTF requirements are met. Per TRUW-8.45, the completed and signed Form-2091 shall be used as objective evidence for closing of open NCRs associated with the planned SDOP. Additionally, TRUW-8.45 requires that all NCRs be closed prior to providing the completed Form-2091 to operations for assembly of the SDOP. This container has been included on Form-2091, F-654-12 (see Attached). Actions required for closure of this NCR are complete. GTB 9/25/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/25/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:

1) Container 10140537 has a historical IDC of RF-750, which meets debris feedstock requirements.
2) Historical gross weight (if available) of the SDOP does not exceed 6,000 lb.
3) Form-2091 is complete, correct, and attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.

Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. T. Cook 9/25/12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Terry Cook	**QA Verification Comp Date:** 09/25/12

"Information Only"

AMWTP Advanced Mixed Waste Treatment Project	**Uncharacterized Debris SDOP Assembly Form**	Form-2091 Rev. 1 Effective: 05/08/12 Page 1 of 1

Implementing Document: MP-TRUW-8.45

Debris SDOP Form Number: SAF-654-12

SDOP AMWTP Box ID: _____ SPM Initial and Date: _____

1.	AMWTP Drum ID	10264258		2.	AMWTP Drum ID	10264257	
	Container Size	83	(gal)		Container Size	83	(gal)
	Historic IDC	RF750			Historic IDC	RF750	
	Historic Gross Weight (if available)	204.0	(lb)		Historic Gross Weight (if available)	242.0	(lb)
3.	AMWTP Drum ID	10336247		4.	AMWTP Drum ID	10264254	
	Container Size	83	(gal)		Container Size	83	(gal)
	Historic IDC	RF750			Historic IDC	RF750	
	Historic Gross Weight (if available)	198.45	(lb)		Historic Gross Weight (if available)	256.0	(lb)
5.	AMWTP Drum ID	10245608		6.	AMWTP Drum ID	10140537	
	Container Size	83	(gal)		Container Size	83	(gal)
	Historic IDC	RF750			Historic IDC	RF750	
	Historic Gross Weight (if available)	234.0	(lb)		Historic Gross Weight (if available)	224.91	(lb)

Are there any open NCRs against the inner drums of this SDOP? Yes ☒ No ☐

NCR Quick Search complete.
AMWTP NCR(s) to be dispositioned and closed by this form 54540, 72081, 72661

Total of inner container historic weights: 1359.36 (lb) + **Box tare weight estimate**: 360 (lb) (if available)

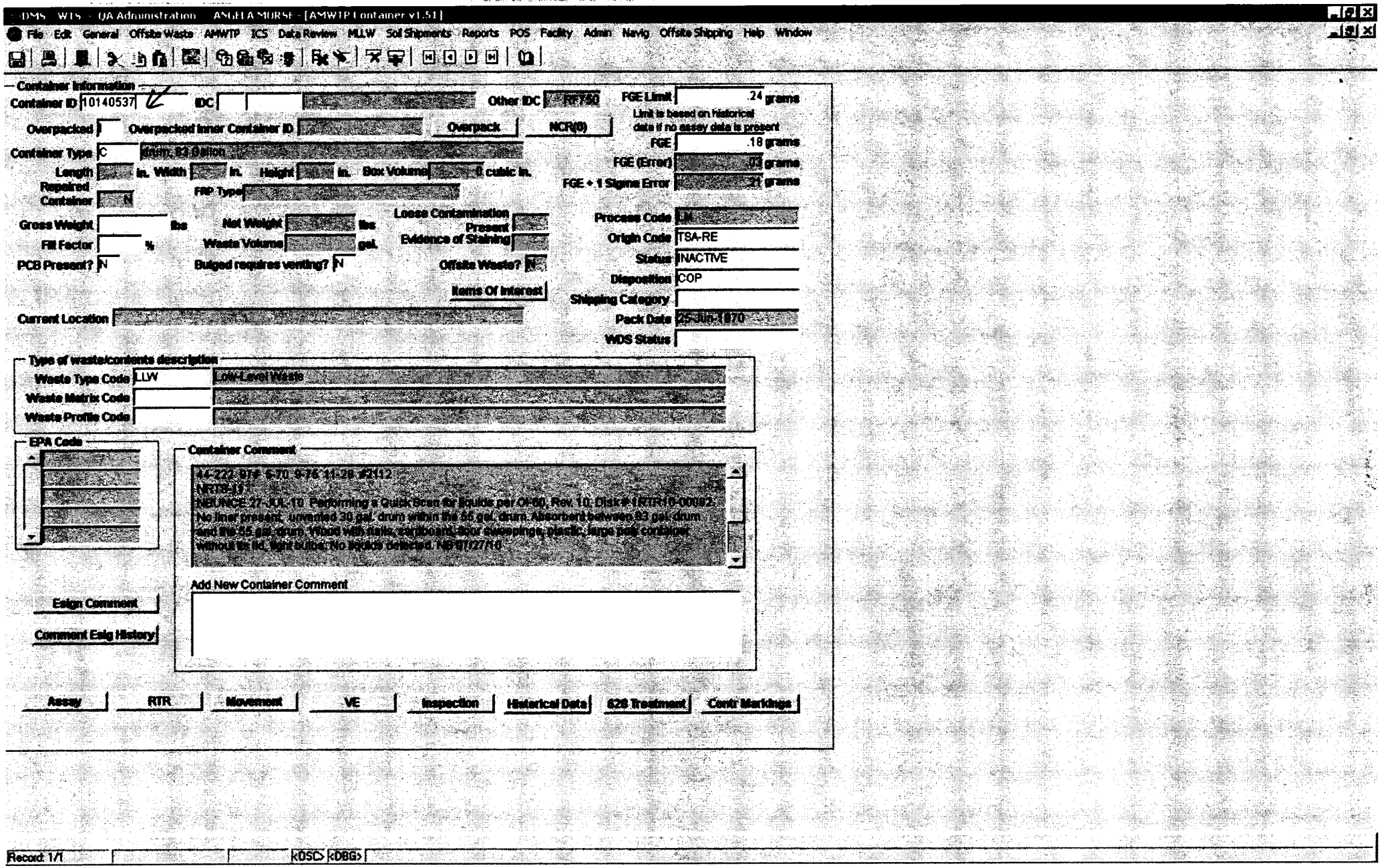
= Total box gross weight (if available): 1719.36 (lb)

Comments:

Two SPM signatures required to verify that information provided on this form is complete and accurate.

SPM (or designee) signature: _____ Date: 9/19/12

SPM (or designee) signature: _____ Date: 9/19/12



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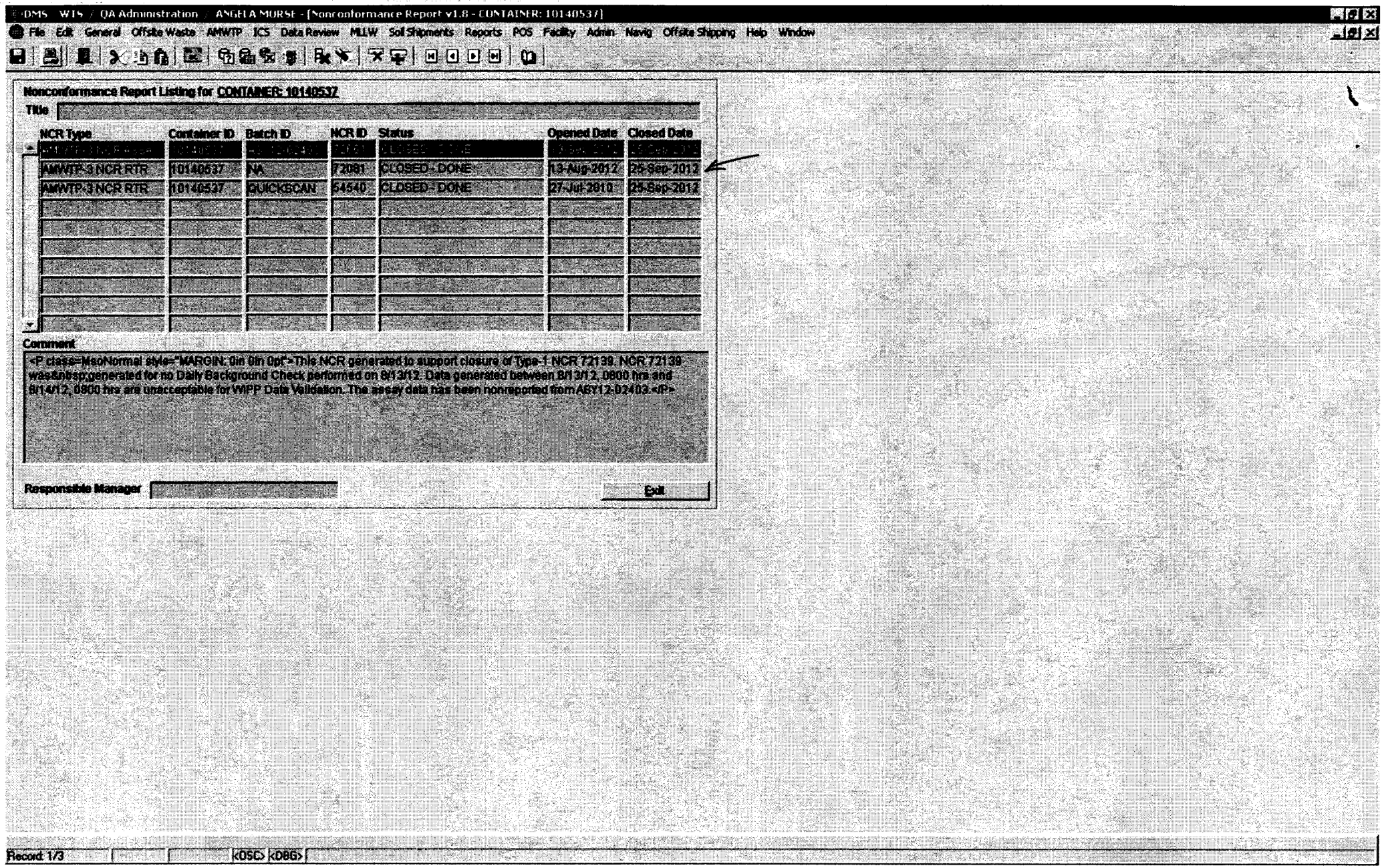

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - ASSAY

NCR #: 72283

Title: Assay Characterization	
Originator: Byram, George	**Date Opened:** 08/27/12
Responsible Dept: Plant Manager	**Batch #:** NA
Container ID: 10135245	**Tag Applied:** No
Characterization Problem: Non-Report	
Originator Sign By: George Byram	**Originator Sign Date:** 08/27/12

Production Comments: **Approved Remediation:** **SDOP**

This container was affected by the failed check drum DCAL9999 on assay 102, (NCR 53299). The condition was originally identified as part of NCR 53300. NCR 72283 has been generated to ensure reassay of the drum is completed, and to support closure of NCR 53300. GTB 8/27/12

Performed By: George Byram	**Performed Date:** 09/06/12

Waste Programs Evaluation/Verification:

SPM Verification: For this waste, WIPP characterization will be performed during boxline processing via SDOP. The container will be processed in an uncharacterized SDOP in which the loaded box will undergo both RTR and ASY to ensure AMWTF requirements are met. Per TRUW-8.45, the completed and signed Form-2091 shall be used as objective evidence for closing of [illegible]n NCRs associated with the planned SDOP. Additionally, TRUW-8.45 requires that all NCRs be closed prior to providing [illegible] completed Form-2091 to operations for assembly of the SDOP. This container has been included on Form-2091, SAF-646-12 (see Attached). Actions required for closure of this NCR are complete. GTB 9/5/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/06/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:

1) Container 10135245 has an IDC/Historical IDC of RF-441, which meets debris feedstock requirements.
2) Gross Weight/Historical Gross Weight (if available) of the SDOP does not exceed 6,000 lb.
3) Form-2091 is complete, correct, and attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.

Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 09-06-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/06/12

"Information Only"

AMWTP Advanced Mixed Waste Treatment Project	**Uncharacterized Debris SDOP Assembly Form**	Form-2091 Rev. 1 Effective: 05/08/12 Page 1 of 1

Implementing Document: MP-TRUW-8.45

Debris SDOP Form Number: SAF-646-12

SDOP AMWTP Box ID: _____ SPM Initial and Date: _____

1.	AMWTP Drum ID	10159734		2.	AMWTP Drum ID	10127592	
	Container Size	55	(gal)		Container Size	55	(gal)
	Historic IDC	RF-336			Historic IDC	RF-900	
	Historic Gross Weight (if available)	183.02	(lb)		Historic Gross Weight (if available)	165.38	(lb)
3.	AMWTP Drum ID	10104548		4.	AMWTP Drum ID	10132505	
	Container Size	55	(gal)		Container Size	55	(gal)
	Historic IDC	RF-336			Historic IDC	RF-336	
	Historic Gross Weight (if available)	141.12	(lb)		Historic Gross Weight (if available)	251.37	(lb)
5.	AMWTP Drum ID	10135245		6.	AMWTP Drum ID	10166345	
	Container Size	55	(gal)		Container Size	55	(gal)
	Historic IDC	RF-441			Historic IDC	RF-336	
	Historic Gross Weight (if available)	196.25	(lb)		Historic Gross Weight (if available)	145.53	(lb)

Are there any open NCRs against the inner drums of this SDOP? Yes ☒ No ☐

NCR Quick Search complete.
AMWTP NCR(s) to be dispositioned and closed by this form 72283

Total of inner container historic weights: 1082.67 (lb) + **Box tare weight estimate**: 360 (lb) (if available)

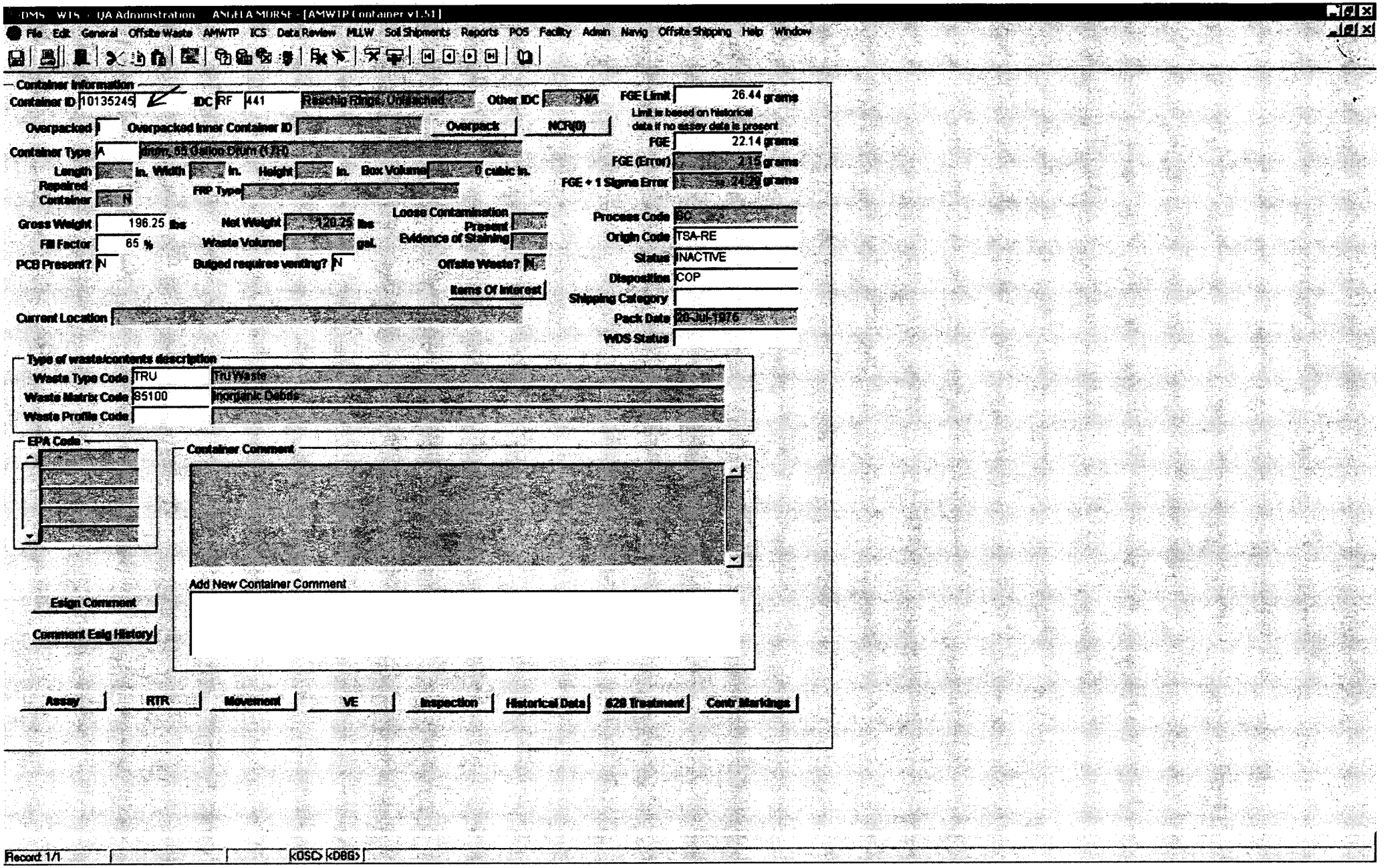
= Total box gross weight (if available): 1442.67 (lb)

Comments:

Two SPM signatures required to verify that information provided on this form is complete and accurate.

SPM (or designee) signature: _____ Date: 9/6/12

SPM (or designee) signature: _____ Date: 9/6/2012



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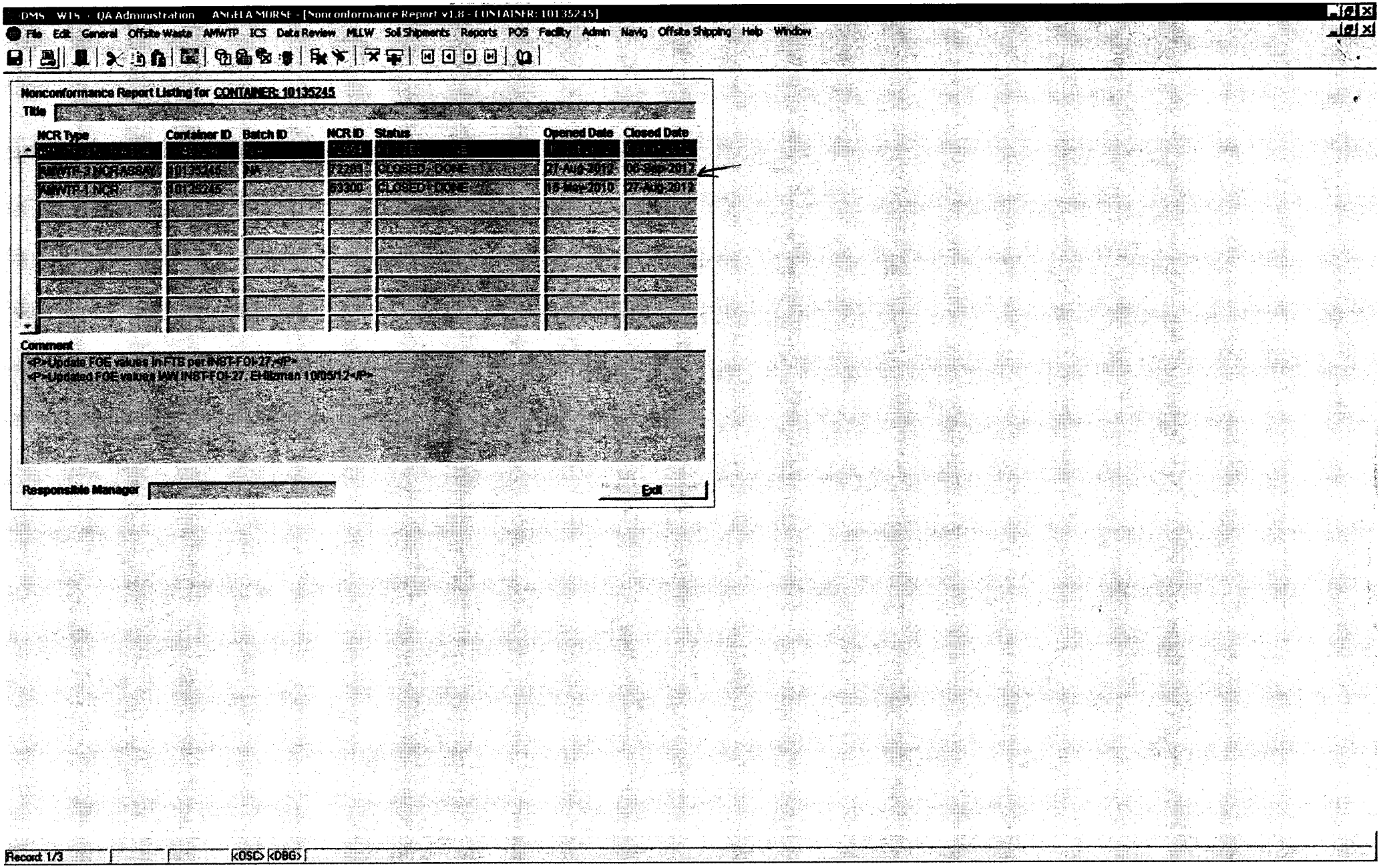

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AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 72461

Title: RTR Characterization

Originator: Byram, George	**Date Opened:** 09/10/12
Responsible Dept: Plant Manager	**Batch #:** RTR09-00075
Container ID: 10303965	**Tag Applied:** No

Characterization Problem:

Originator Sign By: George Byram	**Originator Sign Date:** 09/10/12

Production Comments: **Approved Remediation:** **Re-Characterization**

This container is being non-reported from RTR09-00075. The container will require full characterization (ASY and RTR) to facilitate treatment of this less than LLD waste. GTB 9/10/12

Container recharacterized as part of RTR12-00120. GTB 9/17/12 12>>

Performed By: George Byram	**Performed Date:** 09/17/12

Waste Programs Evaluation/Verification:

This container has been recharacterized as part of RTR12-00120. This NCR is recommended for closure with no additional action required. GTB 9/17/12>

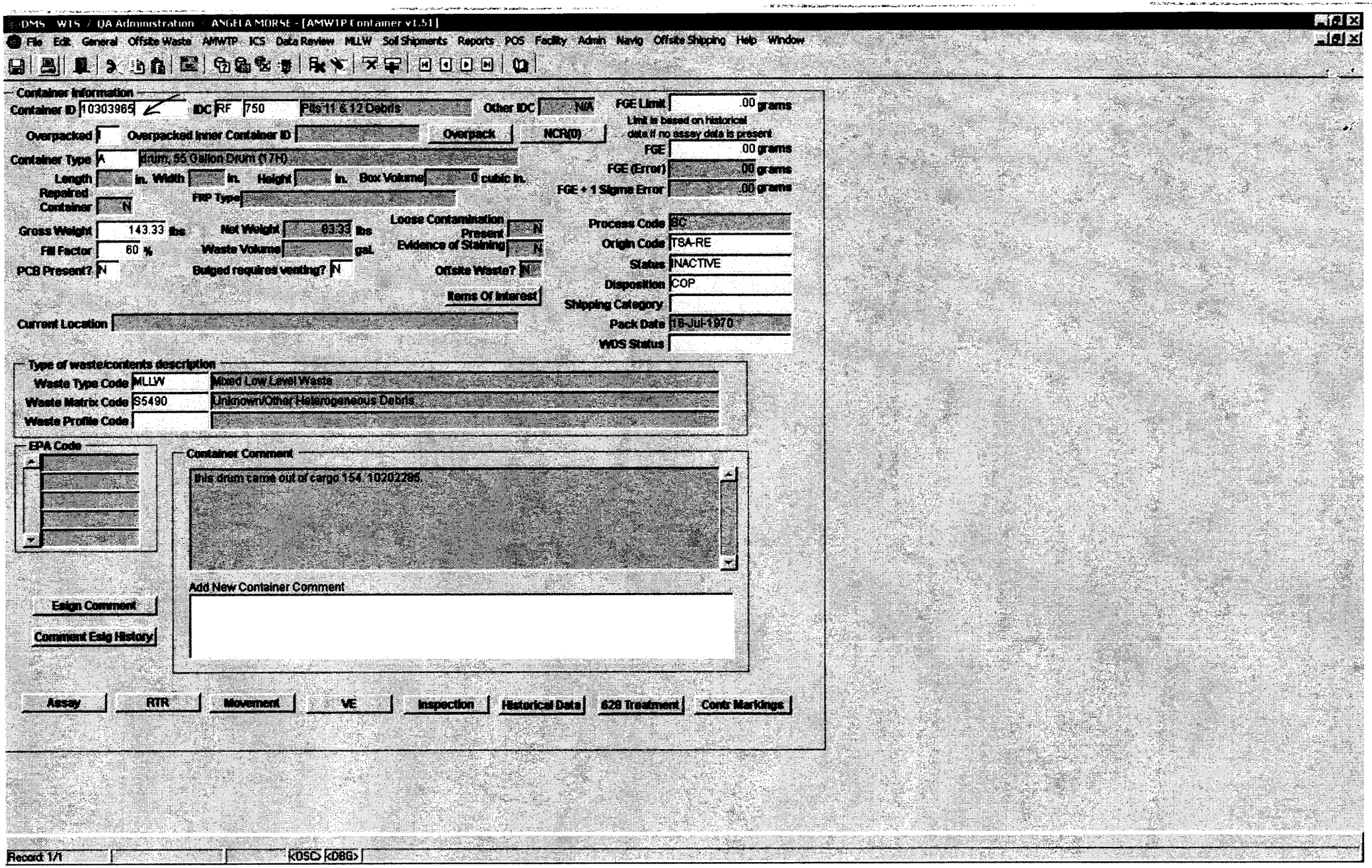
SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/17/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA Closure Comment: Verified in WTS that container 10303965 has been non-reported from RTR09-00075 and recharacterized as part of RTR12-00120. No further action from this NCR is required. C. Robison 09-17-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/17/12

"Information Only"



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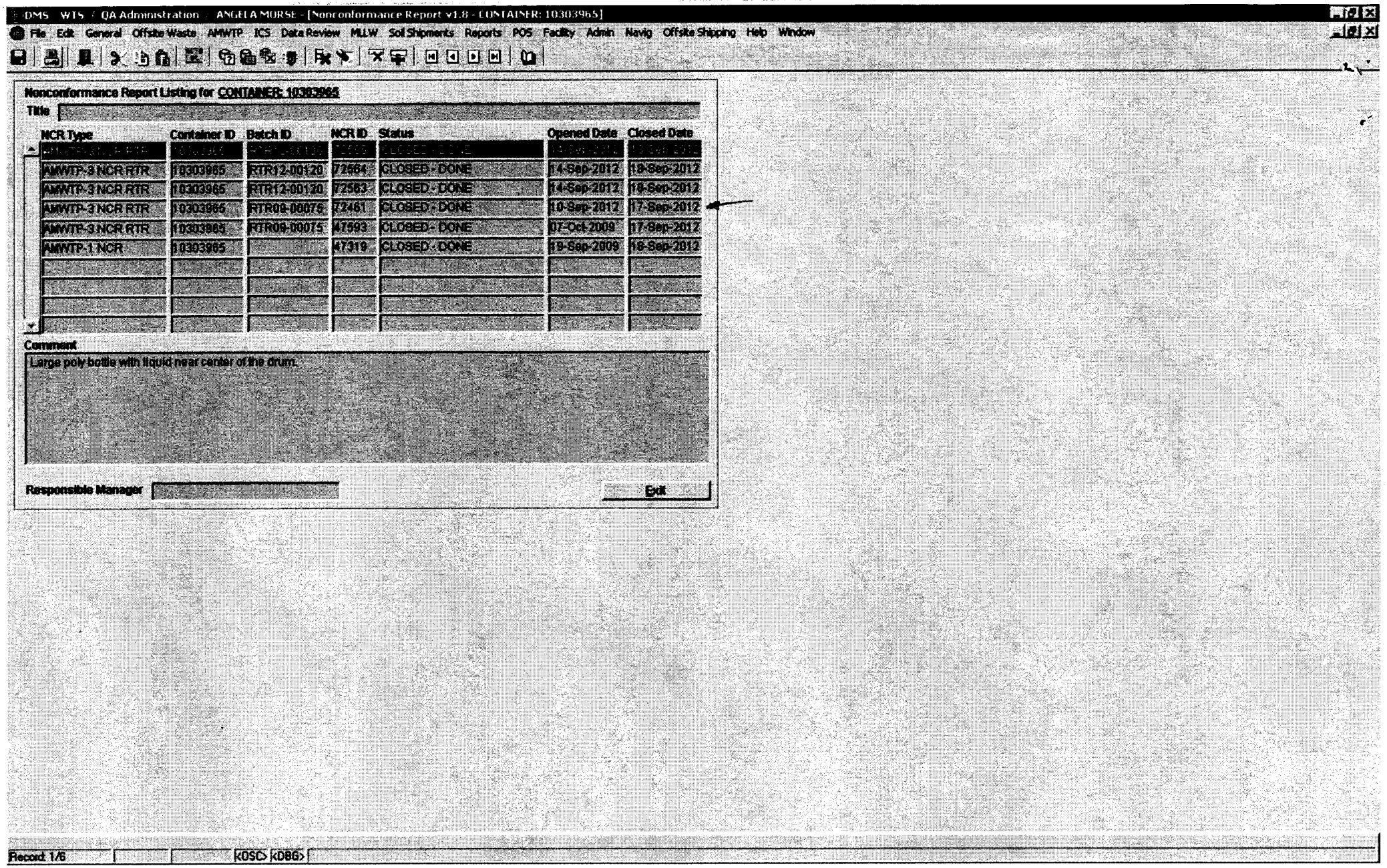

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AMWTP
Advanced Mixed Waste Treatment Project

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 07-Feb-2012
Time: 16:17

Container ID: BN10432952

GEN12

Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Type: 23 100-Gallon Drum
WAC Revision: 7.2
Waste Stream Profile Code: BN510.1
TRUCON: ID121CD
Gross Weight (kg): 417.77
Layers of Packaging: 0

WSPF Approval Date: 10-SEP-2010
Waste Matrix Code: S5490
Gross Weight Error (kg): 1.34
Fill Factor (%): 48

Radionuclide Composition

Isotope	Activity (Ci)	Activity Uncertainty (Ci)	Mass (g)	Mass Uncertainty (g)
AM241	1.1283E-01	1.7434E-02	3.2514E-02	5.0240E-03
CS137	4.5892E-08	1.3188E-08	5.2200E-10	1.5000E-10
NP237	1.7184E-06	3.6147E-07	2.4100E-03	5.0696E-04
PU238	1.4732E-02	5.4972E-03	8.5158E-04	3.1775E-04
PU239	7.8671E-01	9.5013E-02	1.2507E+01	1.5105E+00
PU240	1.5723E-01	2.2060E-02	6.8359E-01	9.5913E-02
PU241	9.7779E-01	1.7307E-01	9.4018E-03	1.6641E-03
PU242	1.7421E-05	6.4707E-06	4.3882E-03	1.6299E-03
SR90	5.0481E-08	5.7393E-08	3.6600E-10	4.1600E-10
U233	<LLD	<LLD	<LLD	<LLD
U234	4.1555E-07	2.1674E-07	6.5752E-05	3.4294E-05
U235	1.3395E-07	3.0910E-08	6.1163E-02	1.4114E-02
U238	<LLD	<LLD	<LLD	<LLD

PU239 Fissile Gram Equivalent (FGE): 1.26E+01
Decay Heat (Watts): 3.36E-02
TRU Alpha Activity (Ci): 1.07E+00
TRU Alpha Activity Conc. (nCi/g): 2.97E+03
PU239 Equiv. Activity (PE-Ci): 1.09E+00
Beta/Gamma Dose Rate (mR/hr): 0.10
Neutron Dose Rate (mR/hr): 0.10
Sealed Containers > 4 Liters: No
Prohibited Liquids: No
Pressurized Containers (compressed gases): No
Beryllium Present: No
Beryllium Mass <= 100 kg: NA
Beryllium <= 1 % by Weight: NA
Machine Compacted: Yes

PU239 Fissile Gram Equivalent Error (FGE): 1.51E+00
Decay Heat Error (Watts): 3.09E-03
TRU Alpha Activity Error (Ci): 9.92E-02
TRU Alpha Activity Conc. Error (nCi/g): 2.75E+02
Alpha Contamination (dpm/cm2): 19
Beta/Gamma Contamination (dpm/cm2): 199
Pyrophoric Materials < 1%: Yes
Chemical Compatibility: Yes
Explosives: No
Corrosives: No
Polychlorinated Biphenyl (PCB) Conc (ppm): NA
PCB Waste: No
PCB Mass (kg): NA
PCB out of Service Date: N/A
Aqueous Material: No
1/2" Separation Criteria Met for Compacted Waste: Yes

WIPP Comments

Comment Type	Comment
Hazardous Waste Codes:	*D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009*
Container IDs in the Overpack/Puck Drum:	*10432863, 10432772, 10432770, 10432786, 10432787*

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 07-Feb-2012
Time: 16:17

Container ID: BN10432952
Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Review Statement

I have reviewed the data for this waste Container and it is complete and accurate to the best of my Knowledge.

Completed By: KAYE RYMAN / 07-FEB-2012 04:02:01

Signature Date

Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for known violations.

Matthew Storms / / 2-20-2012

Printed Name Signature Date

AMWTP
Advanced Mixed Waste Treatment Project

OSM

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 16-Oct-2012
Time: 13:25

Container ID: BN10463815
Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Type: 23 100-Gallon Drum
WAC Revision: 7.2
Waste Stream Profile Code: BN510.1
TRUCON: ID121CD
Gross Weight (kg): 434.77
Layers of Packaging: 0
WSPF Approval Date: 10-SEP-2010
Waste Matrix Code: S5490
Gross Weight Error (kg): 1.47
Fill Factor (%): 55

Radionuclide Composition

Isotope	Activity (Ci)	Activity Uncertainty (Ci)	Mass (g)	Mass Uncertainty (g)
AM241	4.7036E-03	1.0474E-03	1.3555E-03	3.0185E-04
CS137	2.0119E-08	4.4800E-09	2.2900E-10	5.1000E-11
NP237	7.9332E-07	2.3540E-07	1.1126E-03	3.3014E-04
PU238	6.0344E-04	1.0482E-03	3.4880E-05	6.0590E-05
PU239	7.7970E-02	7.5424E-03	1.2396E+00	1.1991E-01
PU240	1.0690E-02	1.3241E-03	4.6477E-02	5.7568E-03
PU241	7.9077E-02	1.4158E-02	7.6035E-04	1.3614E-04
PU242	8.7909E-07	1.5664E-07	2.2143E-04	3.9456E-05
SR90	2.2131E-08	2.4837E-08	1.6000E-10	1.8000E-10
U233	<LLD	<LLD	<LLD	<LLD
U234	<LLD	<LLD	<LLD	<LLD
U235	<LLD	<LLD	<LLD	<LLD
U238	<LLD	<LLD	<LLD	<LLD

PU239 Fissile Gram Equivalent (FGE): 1.24E+00
PU239 Fissile Gram Equivalent Error (FGE): 1.20E-01
Decay Heat (Watts): 2.93E-03
Decay Heat Error (Watts): 2.42E-04
TRU Alpha Activity (Ci): 9.40E-02
TRU Alpha Activity Error (Ci): 7.80E-03
TRU Alpha Activity Conc. (nCi/g): 2.49E+02
TRU Alpha Activity Conc. Error (nCi/g): 2.06E+01
PU239 Equiv. Activity (PE-Ci): 9.55E-02
Alpha Contamination (dpm/cm2): 19
Beta/Gamma Dose Rate (mR/hr): 0.10
Beta/Gamma Contamination (dpm/cm2): 199
Neutron Dose Rate (mR/hr): 0.10
Pyrophoric Materials < 1%: Yes
Sealed Containers > 4 Liters: No
Chemical Compatibility: Yes
Prohibited Liquids: No
Explosives: No
Pressurized Containers (compressed gases): No
Corrosives: No
Beryllium Present: No
Polychlorinated Biphenyl (PCB) Conc (ppm): NA
Beryllium Mass <= 100 kg: NA
PCB Waste: No
Beryllium <= 1 % by Weight: NA
PCB Mass (kg): NA
PCB out of Service Date: N/A
Aqueous Material: No
Machine Compacted: Yes
1/2" Separation Criteria Met for Compacted Waste: Yes

WIPP Comments

Comment Type	Comment
Hazardous Waste Codes:	*D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009*
Container IDs in the Overpack/Puck Drum:	*10463689, 10463703, 10463696, 10463700, 10463692, 10463691*

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 16-Oct-2012
Time: 13:26

Container ID: BN10463815
Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Review Statement

I have reviewed the data for this waste Container and it is complete and accurate to the best of my Knowledge.

Completed By: STORMIE MCCURDY / 16-OCT-2012 01:10:28

Signature Date

Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for known violations.

Printed Name / Signature / Date

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 19-Jul-2012
Time: 13:16

Container ID: BN10449002
Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Type: 23 100-Gallon Drum
WAC Revision: 7.2
Waste Stream Profile Code: BN510.1
TRUCON: ID121CD
Gross Weight (kg): 423.77
Layers of Packaging: 0

WSPF Approval Date: 10-SEP-2010
Waste Matrix Code: S5490
Gross Weight Error (kg): 1.20
Fill Factor (%): 59

Radionuclide Composition

Isotope	Activity (Ci)	Activity Uncertainty (Ci)	Mass (g)	Mass Uncertainty (g)
AM241	4.3698E-02	6.1715E-03	1.2593E-02	1.7785E-03
CS137	<LLD	<LLD	<LLD	<LLD
NP237	1.7005E-05	2.7281E-06	2.3849E-02	3.8261E-03
PU238	6.5327E-03	9.1897E-04	3.7761E-04	5.3119E-05
PU239	1.4353E-01	1.9884E-02	2.2819E+00	3.1612E-01
PU240	2.6627E-02	3.6630E-03	1.1577E-01	1.5926E-02
PU241	2.0312E-01	2.8208E-02	1.9531E-03	2.7123E-04
PU242	2.5104E-06	3.4265E-07	6.3237E-04	8.6312E-05
SR90	<LLD	<LLD	<LLD	<LLD
U233	<LLD	<LLD	<LLD	<LLD
U234	2.5021E-05	1.5626E-05	3.9590E-03	2.4726E-03
U235	3.8431E-06	9.7290E-07	1.7548E+00	4.4424E-01
U238	<LLD	<LLD	<LLD	<LLD

PU239 Fissile Gram Equivalent (FGE): 3.42E+00
Decay Heat (Watts): 6.96E-03
TRU Alpha Activity (Ci): 2.20E-01
TRU Alpha Activity Conc. (nCi/g): 6.00E+02
PU239 Equiv. Activity (PE-Ci): 2.24E-01
Beta/Gamma Dose Rate (mR/hr): 0.10
Neutron Dose Rate (mR/hr): 0.10
Sealed Containers > 4 Liters: No
Prohibited Liquids: No
Pressurized Containers (compressed gases): No
Beryllium Present: No
Beryllium Mass <= 100 kg: NA
Beryllium <= 1 % by Weight: NA
Machine Compacted: Yes

PU239 Fissile Gram Equivalent Error (FGE): 4.26E-01
Decay Heat Error (Watts): 6.61E-04
TRU Alpha Activity Error (Ci): 2.12E-02
TRU Alpha Activity Conc. Error (nCi/g): 5.76E+01
Alpha Contamination (dpm/cm2): 19
Beta/Gamma Contamination (dpm/cm2): 199
Pyrophoric Materials < 1%: Yes
Chemical Compatibility: Yes
Explosives: No
Corrosives: No
Polychlorinated Biphenyl (PCB) Conc (ppm): NA
PCB Waste: No
PCB Mass (kg): NA
PCB out of Service Date: N/A
Aqueous Material: No
1/2" Separation Criteria Met for Compacted Waste: Yes

WIPP Comments

Comment Type	Comment
Hazardous Waste Codes:	*D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009*
Container IDs in the Overpack/Puck Drum:	*10448990, 10449035, 10449179, 10448759*

AMWTP CH-TRU WASTE CERTIFICATION DOCUMENT

Date: 19-Jul-2012
Time: 13:16

Container ID: BN10449002
Generator Site ID/IDC: BN 550 **IDC Description:** Supercompacted Debris (BN510.1)

Container Review Statement

I have reviewed the data for this waste Container and it is complete and accurate to the best of my Knowledge.

Completed By: KAYE RYMAN / 19-JUL-2012 01:07:06

Signature Date

Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for known violations.

Matthew Storms / [signature] / 7-25-12

Printed Name Signature Date

AMWTP Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10376540 **WIPP Label:** BN10376540

DATA DESCRIPTION	WDS ENTRY
Shipper Site ID	BN
Waste Stream Profile	BNINW216
WIPP Container Type	2
WAC Revision Number	7.2
Certification Site ID	BN
Waste Handling Code	CH
Waste Stream BIR	IN-BNINW216
MWIR	IN-BNINW216
Generator Site ID	RF
IDC	001
Waste Matrix Code	S3121
TRUCON Code	ID211W
TRU Alpha Activity (Ci)	4.28E+01
TRU Alpha Activity Error (Ci)	5.81E+00
TRU Alpha Activity Concentration (nCi/g)	41635.735
TRU Alpha Activity Concentration Error (nCi/g)	5668.022
Pu239 Fissile Gram Equivalent (FGE)	3.90E+01
Pu239 Fissile Gram Equivalent Error (FGE)	4.88E+00
Pu239 Equivalent Activity (PE-Ci)	4.29E+01
Decay Heat (W)	1.42E+00
Decay Heat Error (W)	1.94E-01
Layers of Packaging	1
Fill Factor (%)	85
Liner Exists	N
Liner Hole Diameter (mm)	NA
Liner Lid Present	NA
Process Knowledge Exists	N
PCB Concentration (ppm)	NA
PCB Waste	N
PCB Out of Service Date	N/A
PCB Mass	NA
Total Gas Generation Rate (mol/s)	N/A
Hydrogen/Methane Generation Rate (mol/s)	N/A
Gas Generation Test Completion Date	N/A
Gross Weight (kg)	1317.25
Gross Weight Error (kg)	4.54
Alpha Surface Contamination (dpm/100 cm2)	19
Beta Gamma Surface Contamination (dpm/100cm2)	199
Neutron Dose Rate (mrem/hr)	1.00
Beta Gamma Dose Rate (mrem/hr)	.50
Aqueous Material	Y
Machine Compacted	N
1/2" Separation Criteria Met for Compacted Waste	NA
Beryllium Mass <= 100 kg: NA	Beryllium <= 1% by Weight: NA
	Beryllium Present: N

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10376540 **WIPP Label:** BN10376540

RADIONUCLIDES INFORMATION

Radionuclide	Activity (Ci)	Activity Error (Ci)	Mass (g)	Mass Error (g)
PU-238	6.884E-02	2.832E-02	3.979E-03	1.637E-03
PU-239	2.242E+00	3.028E-01	3.564E+01	4.815E+00
PU-240	4.986E-01	5.327E-02	2.168E+00	2.316E-01
PU-241	6.818E+00	1.561E+00	6.556E-02	1.501E-02
PU-242	6.469E-05	3.383E-05	1.630E-02	8.522E-03
AM-241	3.995E+01	5.797E+00	1.151E+01	1.671E+00
NP-237	2.802E-04	4.220E-05	3.930E-01	5.918E-02
U-235	9.942E-06	2.672E-06	4.540E+00	1.220E+00
CS-137	.000E+00	.000E+00	.000E+00	.000E+00
U-233	.000E+00	.000E+00	.000E+00	.000E+00
U-238	2.693E-03	7.551E-04	7.920E+03	2.221E+03
U-234	3.141E-04	8.442E-05	4.970E-02	1.336E-02
SR-90	.000E+00	.000E+00	.000E+00	.000E+00
U-232	1.320E-05	2.651E-06	6.113E-07	1.227E-07

WASTE MATERIAL PARAMETERS

Waste Material Parameter	Description	Material Weight (Kg)
1	Iron-based Metals/Alloys	107.05
2	Aluminum-based Metals/Alloys	.00
3	Other metals	.00
4	Other Inorganic Materials	.00
5	(EXPIRED)	.00
6	Cellulosics	.00
7	Rubber	.00
8	Plastic (Waste Materials)	15.42
9	Inorganic matrix	904.47
10	Organic matrix	.00
11	(EXPIRED)	.00
12	Soils/gravel	.00
13	Steel (packaging materials)	290.30
14	Plastic (packaging materials)	.00
15	Cellulosics Packaging	.00
	Total:	1317.24

AMWTP Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10376540 **WIPP Label:** BN10376540

ASSAY METHODS

Assay Method	Assay Method Date
14SHC1	30-SEP-2010

CHARACTERIZATION METHODS

Characterization Method	Characterization Method Date
9RR1	12-NOV-2010

HAZARDOUS CODES

Hazardous Code(s)								
	D004	D005	D006	D007	D008	D009	D010	D011
	D022	F001	F002	F003	F005	F006	F007	F009

COMMENTS

Comment Type	WIPP Comment
N/A	N/A

ADDITIONAL CERTIFICATION DATA (not Submitted to WDS)

Requirement	Acceptance Criterion	Compliance
Payload Container meets 7A, Type A requirements based on manufacturers specifications.	Payload Container Weight <= the Manufacturers DOT 7A Certified Weight Limit	Y
Unique Container ID, Radioactive and/or Hazard labels	Container Identification/Labeling	Y
Prohibited Liquids	Prohibited	Y
Sealed Containers	No sealed containers > 4 L	Y
Chemical Compatibility	Chemicals allowed by the TRAMPAC	Y
Residual Liquids containing Polychlorinated Biphenyl	Prohibited	Y
Nonradionuclide Pyrophorics	Prohibited	Y
Explosives, Corrosives and Compressed Gases	Prohibited	Y
Non Mixed Hazardous Waste	Prohibited	Y
Sharp/Heavy items blocked or braced	Necessary to provide puncture protection for payload containers	Y
Confinement Layers	Bags closured by approved methods	Y
RCRA Data	Waste Stream Profile Form Approval Date	17-SEP-2004

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: BN10376540 **WIPP Label:** BN10376540

Container Review Statement

I have reviewed the data for this waste container and it is complete and accurate to the best of my knowledge.

Completed By: _____ (Signature) 7-10-12 (Date)

Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Matthew Storms (Printed Name, Waste Certification Official) _____ (Signature) 9-10-2012 (Date)

AMWTP Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: 10107499 **WIPP Label:** BN10107499

DATA DESCRIPTION	WDS ENTRY
Shipper Site ID	BN
Waste Stream Profile	BNINW216
WIPP Container Type	19
WAC Revision Number	7.2
Certification Site ID	BN
Waste Handling Code	CH
Waste Stream BIR	IN-BNINW216
MWIR	IN-BNINW216
Generator Site ID	RF
IDC	001
Waste Matrix Code	S3121
TRUCON Code	ID211G
TRU Alpha Activity (Ci)	8.26E+00
TRU Alpha Activity Error (Ci)	3.53E+00
TRU Alpha Activity Concentration (nCi/g)	32195.136
TRU Alpha Activity Concentration Error (nCi/g)	13763.191
Pu239 Fissile Gram Equivalent (FGE)	2.73E+00
Pu239 Fissile Gram Equivalent Error (FGE)	1.18E+00
Pu239 Equivalent Activity (PE-Ci)	8.27E+00
Decay Heat (W)	2.76E-01
Decay Heat Error (W)	1.18E-01
Layers of Packaging	0
Fill Factor (%)	100
Liner Exists	Y
Liner Hole Diameter (mm)	7.62
Liner Lid Present	Y
Process Knowledge Exists	N
PCB Concentration (ppm)	NA
PCB Waste	N
PCB Out of Service Date	N/A
PCB Mass	NA
Total Gas Generation Rate (mol/s)	N/A
Hydrogen/Methane Generation Rate (mol/s)	N/A
Gas Generation Test Completion Date	N/A
Gross Weight (kg)	290.61
Gross Weight Error (kg)	.60
Alpha Surface Contamination (dpm/100 cm2)	19
Beta Gamma Surface Contamination (dpm/100cm2)	199
Neutron Dose Rate (mrem/hr)	1.00
Beta Gamma Dose Rate (mrem/hr)	20.00
Aqueous Material	Y
Machine Compacted	N
1/2" Separation Criteria Met for Compacted Waste	NA
Beryllium Mass <= 100 kg	NA
Beryllium <= 1% by Weight	NA
	Beryllium Present	N

AMWTP Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: 10107499 **WIPP Label:** BN10107499

RADIONUCLIDES INFORMATION

Radionuclide	Activity (Ci)	Activity Error (Ci)	Mass (g)	Mass Error (g)
PU-238	4.884E-03	2.874E-03	2.823E-04	1.661E-04
PU-239	1.679E-01	7.393E-02	2.670E+00	1.175E+00
PU-240	3.732E-02	1.673E-02	1.623E-01	7.273E-02
PU-241	3.655E-01	1.745E-01	3.514E-03	1.678E-03
PU-242	4.847E-06	3.271E-06	1.221E-03	8.240E-04
AM-241	8.051E+00	3.531E+00	2.320E+00	1.017E+00
NP-237	8.905E-05	3.907E-05	1.249E-01	5.480E-02
U-235	.000E+00	.000E+00	.000E+00	.000E+00
CS-137	.000E+00	.000E+00	.000E+00	.000E+00
U-233	.000E+00	.000E+00	.000E+00	.000E+00
U-238	.000E+00	.000E+00	.000E+00	.000E+00
U-234	.000E+00	.000E+00	.000E+00	.000E+00
SR-90	.000E+00	.000E+00	.000E+00	.000E+00

WASTE MATERIAL PARAMETERS

Waste Material Parameter	Description	Material Weight (Kg)
1	Iron-based Metals/Alloys	.17
2	Aluminum-based Metals/Alloys	.00
3	Other metals	.00
4	Other Inorganic Materials	12.93
5	(EXPIRED)	.00
6	Cellulosics	.11
7	Rubber	.23
8	Plastic (Waste Materials)	.62
9	Inorganic matrix	242.54
10	Organic matrix	.00
11	(EXPIRED)	.00
12	Soils/gravel	.00
13	Steel (packaging materials)	26.76
14	Plastic (packaging materials)	7.26
15	Cellulosics Packaging	.00
	Total:	290.62

AMWTP Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: 10107499 **WIPP Label:** BN10107499

ASSAY METHODS

Assay Method	Assay Method Date
9DA2	07-JUL-2006

CHARACTERIZATION METHODS

Characterization Method	Characterization Method Date
9RR2	07-JUL-2006

HAZARDOUS CODES

Hazardous Code(s)								
	D004	D005	D006	D007	D008	D009	D010	D011
	D022	F001	F002	F003	F005	F006	F007	F009

COMMENTS

Comment Type	WIPP Comment
N/A	N/A

ADDITIONAL CERTIFICATION DATA (not Submitted to WDS)

Requirement	Acceptance Criterion	Compliance
Payload Container meets 7A, Type A requirements based on manufacturers specifications.	Payload Container Weight <= the Manufacturers DOT 7A Certified Weight Limit	Y
Unique Container ID, Radioactive and/or Hazard labels	Container Identification/Labeling	Y
Prohibited Liquids	Prohibited	Y
Sealed Containers	No sealed containers > 4 L	Y
Chemical Compatibility	Chemicals allowed by the TRAMPAC	Y
Residual Liquids containing Polychlorinated Biphenyl	Prohibited	Y
Nonradionuclide Pyrophorics	Prohibited	Y
Explosives, Corrosives and Compressed Gases	Prohibited	Y
Non Mixed Hazardous Waste	Prohibited	Y
Sharp/Heavy items blocked or braced	Necessary to provide puncture protection for payload containers	Y
Confinement Layers	Bags closured by approved methods	Y
RCRA Data	Waste Stream Profile Form Approval Date	17-SEP-2004

AMWTP
Advanced Mixed Waste Treatment Project

WDS Certification Data Entry Form

Container ID: 10107499 **WIPP Label:** BN10107499

Container Review Statement

I have reviewed the data for this waste container and it is complete and accurate to the best of my knowledge.

Completed By: _____ (Signature) 8-13-12 (Date)

Container Certification Statement and WDS Data Submittal

I hereby certify that I have reviewed the data for this waste container and that it is complete and accurate to the best of my knowledge. I have determined that it meets the requirements stated in the current revision of the CH-WAC. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Stormie McCurdy (Printed Name) Waste Certification Official _____ (Signature) 8/21/12 (Date)

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile	AMWTP Form 1195 Rev. 1 Effective Date: 03/28/2003 MP-TRUW-8.14 Page 1 of 3

WIPP WASTE STREAM PROFILE FORM

Record 06 10-13-04

Waste Stream Profile Number: BNFW216, Rev. 1

Generator site name: Advanced Mixed Waste Treatment Project

Technical contact: Eric Schweisberg

Generator site EPA ID: ID4890008952

Technical contact phone number: (208) 557-7164

Date of Audit report approval by NMED: 12/23/2003

Title, version number, and date of documents used for WAP certification:

Certification Plan for INEEL CH-TRU Waste, MP-TRUW-8.1, Revision 3, 12/16/03, Revision 4 3/4/04, Revision 5 8/18/04
TRUPACT-II Authorized Methods for Payload Control, MP-TRUW-8.3, Revision 1, 2/6/03, Revision 2 3/29/04
Quality Assurance Project Plan, MP-TRUW-8.2, Revision 2, 3/31/03, Revision 3 8/19/04

Did your facility generate this waste? ☐Yes ☒No If no, provide the name and EPA ID of the original generator:
Rocky Flats Environmental Technology Site, CO7890010526

Waste Stream Information[1]

WIPP ID: IN-W216.875, IN-W216.98, IN-W216.99, IN-W228.101, IN-W228.102, IN-W228.103, IN-W228.883

Summary Category Group: S3000

Waste Matrix Code Group: Homogeneous Solids – S3100 – Inorganic

Waste Stream Name: First/Second Stage Sludge

Description from the WTWBIR: See First/Second Stage Sludge AMWTP Waste Stream Summary, BNFL-5232-RPT-TRUW-09, Rev. 2

Defense TRU Waste: (*Ref. 9*) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs: 0[5] Number of Drums: 21,304 Number of Canisters: 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[3] D004, D005, D006, D007, D008, D009, D010, D011, D022, F001, F002, F003, F005, F006, F007, and F009
See Reference List, No. 8, Section 1.6

Applicable TRUCON Content Codes: ID111A, ID111C, ID211A, ID211C, ID111D, ID211D

Acceptable Knowledge Information[4]

(For the following, enter supporting documentation used (i.e., references and dates))

Required Program Information

Map of site: Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280, Rev. 3 AMWTP Number P368A, Section 3, Figure 3-1; DWG-5232-52-0101 Site Plan of the Advanced Mixed Waste Treatment Facility

Facility mission description: P368A, Rev. 3, Section 3.1; AMWTP TRU Waste Management Acceptable Knowledge Elements, RPT-TRUW-06, Rev. 1, 11/2003

Description of operations that generate waste: P368A, Rev. 3, Section 3.1

Waste identification/categorization schemes: Advanced Mixed Waste Treatment Project Waste Stream Designations, BNFL-5232-RPT-TRUW-12, Rev. 1, 11/2003

Types and quantities of waste generated: P368A, Rev. 3, Section 23; AMWTP TRU Waste Management Acceptable Knowledge Elements, RPT-TRUW-06, Rev. 1; RWMC EDF-837, Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC), 8/24/95; Container Inventory Report for WMF-629 thru WMF-633, 12/24/02 (U122A)

Correlation of waste streams generated from the same building and process, as appropriate: P368A, Rev. 3

Waste certification procedures: TRU Waste Certification, MP-TRUW-8.5, Rev. 5, 3/28/03; Rev. 6, 4/27/04; Rev. 7, 7/12/04; Rev. 8, 8/4/04; Rev. 9, 8/12/04

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: First/Second Stage Sludge AMWTP Waste Stream Summary, BNFL-5232-RPT-TRUW-09, Rev. 2

Waste stream volume and time period of generation: BNFL-5232-RPT-TRUW-09, Rev. 2

Waste generating process description for each building: BNFL-5232-RPT-TRUW-09, Rev. 2

Process flow diagrams: BNFL-5232-RPT-TRUW-09, Rev. 2

Material inputs or other information identifying chemical/radionuclide content and physical waste form:

First/Second Stage Sludge AMWTP Waste Stream Summary

Which Defense Activity generated the waste: (check one)

- ☒ Weapons activities including defense inertial confinement fusion
- ☐ Naval Reactors development
- ☐ Verification and control technology
- ☐ Defense research and development
- ☐ Defense nuclear waste and material by products management
- ☐ Defense nuclear material production
- ☐ Defense nuclear waste and materials security and safeguards and security investigations

Supplemental Documentation See P368A, Rev. 3

Process design documents: See P368A, Rev. 3

Standard operating procedures: See P368A, Rev. 3

Safety Analysis Reports: See P368A, Rev. 3

Waste packaging logs: See P368A, Rev. 3

Test plans/research project reports: See P368A, Rev. 3

Site databases: See P368A, Rev. 3

Information from site personnel: See P368A, Rev. 3

Standard industry documents: See P368A, Rev. 3

Previous analytical data: See P368A, Rev. 3

Material safety data sheets: See P368A, Rev. 3

Sampling and analysis data from comparable/surrogate Waste: See P368A, Rev. 3

Laboratory notebooks: See P368A, Rev. 3

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography: RTR Operations, INST-OI-12, Rev. 10 5/2/03, Rev. 11 5/8/03, Rev. 15 9/25/03, Rev. 16 1/13/04, Rev. 17 2/19/04, Rev. 18 7/15/04, Rev. 18 FC-1 9/4/04

Visual Examination: *Visual Examination Operating Procedures and Data Reporting, INST-OI-34 Rev. 6, 8/13/03, Rev. 6 FC-1, 8/24/04, Rev. 7, 6/23/04, Rev. 8, 7/15/04, Rev. 9, 8/9/04. Visual examinations have been conducted on 50 containers from the SJ000 summary category group to support establishment of the AMWTP site specific microcertification rate. None of the containers presented in this WSPF have been selected for visual examination by AMWTP. All containers of SJ000 processed through RTR will be eligible for selection in the ongoing visual examination program.*

Headspace Gas Analysis

VOCs: Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 16, 11/5/03, Rev. 16 FC-1, 11/17/03, Rev. 17 12/11/03, Rev. 18, 2/4/04, Rev. 19, 7/12/04

Flammable: Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 16, 11/5/03, Rev. 16 FC-1, 11/17/03, Rev. 17 12/11/03, Rev. 18, 2/4/04, Rev. 19, 7/12/04

Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis[3]

Total metals: ACMM-8909, Microwave Assisted Digestion of Homogeneous Solids, Rev. 3, 7/11/00, ACMM-2900, Determination of Trace Elements by ICP Atomic Emission Spectrometry, Rev. 4[4], 8/1/00, ACMM-7802, Determination of Mercury by Cold-Vapor Fluorescence Spectrophotometry, Rev. 8 4/5/00.

PCBs: N/A

VOCs: ACMM-9260, VOCs by Gas Chromatography/Mass Spectrometry, Rev. 3, 8/11/00

Nonhalogenated VOCs: ACMM-9441, Determination of Nonhalogenated Volatile Organics by Gas Chromatography, Rev. 4, 8/10/00

Semi-VOCs: ACMM-9270, SVOCs by Gas Chromatography/Mass Spectrometry, Rev. 1, 8/17/00 ACMM-9500, Sample Preparation for SVOCs and PCBs, Rev. 2, 8/1/00

Other (specify): MP-TRUW-8.25, RCRA Statistical Sampling, Rev. 6 5/01/03, Rev. 7, 8/19/04

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg — Eric P. Schweinsberg, SPM — 9/17/04

Signature of Site Project Manager | Printed Name and Title | Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

(3) Homogeneous Solids sample analysis data collected and analyzed under a certified program authorized by memorandum CBFO:NTP:KWW:VW:01-1022:UPC:5822 from Dr. Inez R. Triay to Ms. Beverly Cook, titled INEEL Certification Authority for Transportation and Characterization of Homogeneous Solid (S3000) Waste, dated May 18, 2001. This applies only to the data set generated in this WSPF. Future data sets will be sampled and analyzed under current certification programs.

(4) ACMM-2900 is no longer a certified procedure used by the INEEL. This procedure was used at the time that the solids data was analyzed. Any future analysis conducted in support of ongoing lot characterization will utilize ACMM-2901.

(5) Standard Waste Boxes (SWBs) are not part of the current AMWTP inventory. However, it is possible that drums will be loaded into SWBs for shipment, therefore the SWB TRUCONs (ID11C and ID21C) have been included as available TRUCONs.

RECORD
CMC 09/19/2012

AMWTP Advanced Mixed Waste Treatment Project

Reconciliation with Data Quality Objectives

Implementing Document: MP-TRUW-8.11

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BNINW216.277 R1

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	Random solid sampling and analysis is performed in accordance with MP-Truw-8.2. Headspace gas sampling is not required for this waste stream.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	

WSPF No.: BNINW216.277 R1

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☐	☐	☒	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BNINW216.277 R1

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	Wes Skaar	Wes Skaar	9/19/2012
2nd Site Project Manager	Nancy Kirk	Nancy Kirk	9/19/2012

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form	AMWTP Form-1198, Rev. 4 Effective Date: 1/24/07 MP-TRUW-8.14 Page 1 of 3

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN510.1
Generator site name: Advanced Mixed Waste Treatment Project
Technical contact: Eric Schweinsberg
Generator site EPA ID: ID4890008952
Technical contact phone number: (208)557-6425
Date of Audit report approval by NMED: 4/29/2005 (Revised 5/3/2005), 6/16/06, 1/18/08, 1/9/09, 1/8/2010
Title, version number, and date of documents used for WAP certification:
Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev 19, 6/30/2010
Quality Assurance Project Plan, MP-TRUW-8.2, Rev 13, 6/30/10
CCP Transuranic Authorized Method for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 11, 6/4/2009
Did your facility generate this waste? ☒Yes ☐No If no, provide the name and EPA ID of the original generator:

Waste Stream Information[1]

WIPP ID: IN-BN510.1 [3] Summary Category Group: S5000
Waste Matrix Code Group: Heterogeneous Debris Waste Waste Stream Name: Supercompacted Debris Waste
Description from the WTWBIR: BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste. [3]
Defense TRU Waste: (ref 1) ☒Yes ☐No Check One: ☒CH ☐RH
Number of SWBs 105 Number of Drums 16,000 Number of Canisters 0
Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary Report, Table 5
List applicable EPA Hazardous Waste Numbers:[2] D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009

Applicable TRUCON Content Codes: ID121

Acceptable Knowledge Information[1]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: Reference No. 2
Facility mission description: Reference No.3
Description of operations that generate waste: References No.1 and 3
Waste identification/categorization schemes: Reference Nos. 1, 3, 4, and 5
Types and quantities of waste generated: Reference No. 1 and 3
Correlation of waste streams generated from the same building and process, as appropriate: Reference Nos. 1 and 3
Waste certification procedures: Reference No. 7

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: Reference Nos. 1and 3
Waste stream volume and time period of generation: Reference No. 1
Waste generating process description for each building: Reference Nos. 1 and 3
Process flow diagrams: Reference Nos. 1 and 3
Material inputs or other information identifying chemical/radionuclide content and physical waste form: Ref. Nos. 1, 3, 4, 5, and 6
Waste Material Parameter Weight Estimates per unit of waste Reference No. 1

Which Defense Activity generated the waste: (check one)

☒	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☐	Defense research and development
☐	Defense nuclear waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation

Process design documents:	N/A
Standard operating procedures:	Reference No. 13
Safety Analysis Reports:	Reference No. 14
Waste packaging logs:	N/A
Test plans/research project reports:	N/A
Site databases:	Reference No 15
Information from site personnel:	N/A
Standard industry documents:	N/A
Previous analytical data:	Reference Nos. 16, 17, 18, and 19
Material safety data sheets:	Reference No. 1, 16, 17, 18, 19, and 20
Sampling and analysis data from comparable/surrogate Waste:	N/A
Laboratory notebooks:	N/A

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography:	Reference No. 8
Visual Examination:	Reference Nos. 9 and 10
Headspace Gas Analysis	
VOCs:	Reference No. 11
Flammable:	Reference No. 12
Other gases (specify):	N/A
Homogeneous Solids/Soils/Gravel Sample Analysis	
Total metals:	N/A
PCBs:	N/A
VOCs:	N/A
Nonhalogenated VOCs:	N/A
Semi-VOCs:	N/A
Other (specify):	N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Steve Carpenter SPM Printed Name and Title	9,10,10 Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs), attach signed Characterization Information Summary documenting this determination.

(3) The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report (ATWIR) waste streams: *IN-BN510, RLPFP-01, RL325-01,* and *RL231Z-01.* The ATWIR waste stream ID "IN-BN510.1" and the waste stream description "BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste" will be added in the annual update of the ATWIR to be issued in 2011.

WASTE STREAM PROFILE CONTINUATION SHEET

Reference List:

1. RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Rev. 0, September, 2010
2. BNFL-5232-52-0101, Site Plan of the Advanced Mixed Waste Treatment Facility, Rev. 0, April 1999
3. RPT-TRUW-06, AMWTP Baseline AK for Newly-generated Waste, Rev. 12, August 16, 2010
4. RPT-TRUW-12, AMWTP Waste Stream Designations, Rev. 14, August 2, 2010
5. RPT-TRUW-05, Waste Matrix Code Reference Manual, Rev. 24, June 16, 2010
6. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Rev. 16, August 12, 2010
7. MP-TRUW-8.5, TRU Waste Certification, Rev. 25, December10, 2009
8. INST-OI-12, Real Time Radiography Operations (Drum), Rev. 44, June 30, 2010
9. INST-OI-34, Non-Facility Visual Examination Operations, Rev. 22, June 30, 2010
10. INST-FOI-17, Facility Visual Examination Operations, Rev. 19, June 30, 2010
11. INST-OI-43, HGAS Sampling and Analysis Operations, Rev.18, April 7, 2010
12. DOE/WIPP 06-3345, Waste Isolation Pilot Plant Flammable Gas Analysis, Rev. 3.2, May 22, 2009
13. INST-FOI-20, Supercompactor and Post-Compaction Operations, Rev. 30, March 4, 2010
14. RPT-DSA-02, Documented Safety Analysis, Rev. 6, December 2, 2009
15. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS).
16. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), Rev. 6, September 11, 2008
17. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant, Rev. 3, August 19, 2010
18. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory, Rev. 5, July 18, 2007
19. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste-Mound Plant Waste, Rev. 6, August 21, 2008
20. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, Rev. 1, June 21, 2010
21. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, Rev. 19, 6/30/2010
22. MP-TRUW-8.2, Quality Assurance Project Plan, Rev. 13, 6/30/2010

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation with Data Quality Objectives

Date: 16-OCT-2012
Time: 02:03:57 PM

Lot Number: BN510.1.0113

	Data Quality Objective	Answer	Comment
1	Have all containers in the lot been assigned an appropriate Waste Matrix Code?	YES	
2	Have waste material parameter weights been established for each container in the lot?	YES	
3	Does each waste container of waste contain TRU radioactive waste?	YES	
4	Have mean concentrations, UCL90 values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	YES	
5	For solid sampling, have mean concentrations, UCL90 values for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	N/A	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.
6	Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	YES	
7	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	YES	
8	Can the waste stream be classified as hazardous or nonhazardous at the UCL90?	YES	
9	Was an appropriate packaging configuration and DAC applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	N/A	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10	Have all TICs been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	N/A	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11	Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Sections C3-2 through C3-9, for the lot?	YES	
12	Have the PRQLs for all analyses been met for the lot?	YES	
13	Was an Open NCR search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	YES	
14	Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	YES	
15	Were all batches identified in the WSPF or reconciliation lot complete through SPM signature release? List any batches identified as not complete through validation.	YES	
16	Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	NO	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17	Is there an approved AK Sufficiency Determination for this waste stream?	NO	

Site Project Manager: SEAN CANIFF

Date: 07-FEB-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation Narrative Report

Date: 16-OCT-2012
Time: 02:05:04 PM

Lot Number: BN510.1.0113

Narrative Comments

Reconciliation was performed on validated drum file containers obtained from waste stream BN510.1, Revision 0, Supercompacted Debris Waste from the Advanced Mixed Waste Treatment Project. This Reconciliation Lot BN510.1.0113 consists of 51 containers of mixed transuranic waste. Each container file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Batch Correlation Tab for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Quality Assurance Project Plan, MP-TRUW-8.2.

Statistics were performed on the analytical results from the headspace gas random sample in accordance with MP-TRUW-8.25. The analytical results and container data are found in the Characterization Information Summary report, BN510.1 Boxline Lot 1 and 2. In addition, a continuing evaluation is performed for BN510.1 Boxline Lot 3 as containers are being populated into the lots and random sampling occurs.

Site Project Manager: SEAN CANIFF **Date:** 07-FEB-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation with Data Quality Objectives

Date: 16-OCT-2012
Time: 01:04:27 PM

Lot Number: BN510.1.0174

	Data Quality Objective	Answer	Comment
1	Have all containers in the lot been assigned an appropriate Waste Matrix Code?	YES	
2	Have waste material parameter weights been established for each container in the lot?	YES	
3	Does each waste container of waste contain TRU radioactive waste?	YES	
4	Have mean concentrations, UCL90 values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	YES	
5	For solid sampling, have mean concentrations, UCL90 values for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	N/A	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.
6	Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	YES	
7	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	YES	
8	Can the waste stream be classified as hazardous or nonhazardous at the UCL90?	YES	
9	Was an appropriate packaging configuration and DAC applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	N/A	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10	Have all TICs been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	N/A	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11	Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Sections C3-2 through C3-9, for the lot?	YES	
12	Have the PRQLs for all analyses been met for the lot?	YES	
13	Was an Open NCR search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	YES	
14	Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	YES	
15	Were all batches identified in the WSPF or reconciliation lot complete through SPM signature release? List any batches identified as not complete through validation.	YES	
16	Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	NO	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17	Is there an approved AK Sufficiency Determination for this waste stream?	NO	

Site Project Manager: SEAN CANIFF

Date: 15-OCT-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation Narrative Report

Date: 16-OCT-2012
Time: 01:07:12 PM

Lot Number: BN510.1.0174

Narrative Comments

Reconciliation was performed on validated drum file containers obtained from waste stream BN510.1, Revision 0, Supercompacted Debris Waste from the Advanced Mixed Waste Treatment Project. This Reconciliation Lot BN510.1.0174 consists of 45 containers of mixed transuranic waste. Each container file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Batch Correlation Tab for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Quality Assurance Project Plan, MP-TRUW-8.2.

Statistics were performed on the analytical results from the headspace gas random sample in accordance with MP-TRUW-8.25. The analytical results and container data are found in the Characterization Information Summary report, BN510 Boxline Lot 1 through 6, BN510 LDF lots 1 through 4 and BN510.1 Boxline Lot 1and Lot 2. In addition, a continuing evaluation is performed for BN510.1 Boxline Lot 3 as containers are being populated into the lots and random sampling occurs.

Site Project Manager: SEAN CANIFF **Date:** 15-OCT-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation with Data Quality Objectives

Date: 16-OCT-2012
Time: 02:10:46 PM

Lot Number: BN510.1.0151

	Data Quality Objective	Answer	Comment
1	Have all containers in the lot been assigned an appropriate Waste Matrix Code?	YES	
2	Have waste material parameter weights been established for each container in the lot?	YES	
3	Does each waste container of waste contain TRU radioactive waste?	YES	
4	Have mean concentrations, UCL90 values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	YES	
5	For solid sampling, have mean concentrations, UCL90 values for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	N/A	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.
6	Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	YES	
7	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	YES	
8	Can the waste stream be classified as hazardous or nonhazardous at the UCL90?	YES	
9	Was an appropriate packaging configuration and DAC applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	N/A	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10	Have all TICs been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	N/A	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11	Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Sections C3-2 through C3-9, for the lot?	YES	
12	Have the PRQLs for all analyses been met for the lot?	YES	
13	Was an Open NCR search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	YES	
14	Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	YES	
15	Were all batches identified in the WSPF or reconciliation lot complete through SPM signature release? List any batches identified as not complete through validation.	YES	
16	Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	NO	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17	Is there an approved AK Sufficiency Determination for this waste stream?	NO	

Site Project Manager: SEAN CANIFF

Date: 19-JUL-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation Narrative Report

Date: 16-OCT-2012
Time: 02:11:51 PM

Lot Number: BN510.1.0151

Narrative Comments

Reconciliation was performed on validated drum file containers obtained from waste stream BN510.1, Revision 0, Supercompacted Debris Waste from the Advanced Mixed Waste Treatment Project. This Reconciliation Lot BN510.1.0151 consists of 73 containers of mixed transuranic waste. Each container file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See batch correlationTab for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Quality Assurance Project Plan, MP-TRUW-8.2.

Statistics were performed on the analytical results from the headspace gas random sample in accordance with MP-TRUW-8.25. The analytical results and container data are found in the Characterization Information Summary report, BN510 Boxline Lot 1 through 6 and BN510 LDF lots 1 through 4 and BN510.1 Boxline Lot 1and Lot 2. In addition, a continuing evaluation is performed for BN510.1 Boxline Lot 3 as containers are being populated into the lots and random sampling occurs.

Site Project Manager: SEAN CANIFF **Date:** 19-JUL-12

AMWTP
Advanced Mixed Waste Treatment Project

Reconciliation Batch Correlation Table

Date: 16-OCT-2012
Time: 02:12:26 PM

Lot Number: BN510.1.0151

Container ID	Headspace Gas WAP Batch	RTR Batch	Assay Batch	Visual Examination Batch	Solid Sampling Batch	Solid Analytical Batch
BN10434526	N/A	N/A	N/A	N/A	N/A	N/A
10434378	N/A	N/A	ASY12-00541	VEB12-00147	N/A	N/A
10434545	N/A	N/A	ASY12-00557	VEB12-00152	N/A	N/A
10434547	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
10434559	N/A	N/A	ASY12-00551	VEB12-00151	N/A	N/A
10434563	N/A	N/A	ASY12-00551	VEB12-00150	N/A	N/A
10434593	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
BN10434527	N/A	N/A	N/A	N/A	N/A	N/A
10434608	N/A	N/A	ASY12-00554	VEB12-00151	N/A	N/A
10434630	N/A	N/A	ASY12-00558	VEB12-00152	N/A	N/A
10434632	N/A	N/A	ASY12-00558	VEB12-00152	N/A	N/A
10434634	N/A	N/A	ASY12-00556	VEB12-00152	N/A	N/A
BN10434528	N/A	N/A	N/A	N/A	N/A	N/A
10434558	N/A	N/A	ASY12-00556	VEB12-00152	N/A	N/A
10434565	N/A	N/A	ASY12-00556	VEB12-00152	N/A	N/A
10434594	N/A	N/A	ASY12-00554	VEB12-00151	N/A	N/A
10434598	N/A	N/A	ASY12-00556	VEB12-00152	N/A	N/A
10434628	N/A	N/A	ASY12-00556	VEB12-00152	N/A	N/A
BN10434529	N/A	N/A	N/A	N/A	N/A	N/A
10434549	N/A	N/A	ASY12-00551	VEB12-00151	N/A	N/A
10434553	N/A	N/A	ASY12-00551	VEB12-00150	N/A	N/A
10434573	N/A	N/A	ASY12-00552	VEB12-00150	N/A	N/A
10434574	N/A	N/A	ASY12-00552	VEB12-00150	N/A	N/A
BN10434530	N/A	N/A	N/A	N/A	N/A	N/A
10434412	N/A	N/A	ASY12-00551	VEB12-00148	N/A	N/A
10434470	N/A	N/A	ASY12-00549	VEB12-00149	N/A	N/A
10434472	N/A	N/A	ASY12-00551	VEB12-00149	N/A	N/A
10434548	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
10434552	N/A	N/A	ASY12-00551	VEB12-00150	N/A	N/A
10434569	N/A	N/A	ASY12-00549	VEB12-00150	N/A	N/A
BN10434531	N/A	N/A	N/A	N/A	N/A	N/A
10434540	N/A	N/A	ASY12-00558	VEB12-00152	N/A	N/A
10434551	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
10434557	N/A	N/A	ASY12-00551	VEB12-00151	N/A	N/A
10434604	N/A	N/A	ASY12-00554	VEB12-00151	N/A	N/A
10434667	N/A	N/A	ASY12-00555	VEB12-00153	N/A	N/A
BN10434532	N/A	N/A	N/A	N/A	N/A	N/A
10434146	N/A	N/A	ASY12-00541	VEB12-00147	N/A	N/A
10434316	N/A	N/A	ASY12-00549	VEB12-00149	N/A	N/A
10434477	N/A	N/A	ASY12-00551	VEB12-00150	N/A	N/A
10434481	N/A	N/A	ASY12-00549	VEB12-00149	N/A	N/A
10434546	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
10434550	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
BN10434533	N/A	N/A	N/A	N/A	N/A	N/A
10434317	N/A	N/A	ASY12-00551	VEB12-00149	N/A	N/A
10434469	N/A	N/A	ASY12-00551	VEB12-00149	N/A	N/A
10434480	N/A	N/A	ASY12-00551	VEB12-00149	N/A	N/A
10434554	N/A	N/A	ASY12-00552	VEB12-00151	N/A	N/A
10434555	N/A	N/A	ASY12-00551	VEB12-00151	N/A	N/A
10434560	N/A	N/A	ASY12-00552	VEB12-00150	N/A	N/A
BN10434535	N/A	N/A	N/A	N/A	N/A	N/A
10434353	N/A	N/A	ASY12-00558	VEB12-00152	N/A	N/A
10434603	N/A	N/A	ASY12-00554	VEB12-00151	N/A	N/A
10434629	N/A	N/A	ASY12-00558	VEB12-00153	N/A	N/A
10434659	N/A	N/A	ASY12-00558	VEB12-00153	N/A	N/A
BN10434537	N/A	N/A	N/A	N/A	N/A	N/A
10434544	N/A	N/A	ASY12-00558	VEB12-00152	N/A	N/A

AMWTP
Advanced Mixed Waste Treatment Project

Records Management

Advanced Mixed Waste Treatment Project

INFORMATION ONLY

Approved:

(Signature on file. See DCR-11544.)
Angie Morse
Quality Engineer

09/12/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/1/02	All	Initial issue. DCR-1089.
1	01/09/03	All	DCR-1676. Reflects process and editorial changes as a result of TrackWise™ Action Item #1549 & 1550.
2	02/21/03	8, 10, 17	DCR 2030. To incorporate text changes and references per CBFO document review. Update all CBFO QAPD references.
3	04/09/2003	All	DCR-2174. Process changes were required due to record keeping deficiencies identified during a WIPP Transportation Audit; the changes clarify record management requirements to ensure full compliance with CBFO 94 1012 *Quality Assurance Program Document*.
4	10/22/04	All	DCR-2861. Update definitions, storage requirements, and editorial corrections (i.e., formatting and style corrections).
5	2/13/06	All	DCR-4307. Reformat to MP format, total re-write of procedure for better flow of process and requirements identification.
6	06/28/06	Various	DCR-5095. Adequately and appropriately clarify WAP reference requirements within procedure. Editorial/formatting change for consistency to MP-DOCS-18.4, Form-1728, MP-DOCS-18.3.
7	08/23/2006	Pg. 9/Pg. 11	DCR-5257. Minor change to correct reference and fix grammar that had been changed in error during previous revision.
8	11/7/06	Various	DCR-5312. Revisions to incorporate 311 permit modification requirement changes, to update rolldown requirements, to incorporate changes to DOE/CBFO-94-1012, and to include some editorial/formatting changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
9	6/28/07	Throughout	DCR-5867-2. Reorganized procedure to better portray process flow and improvements. Enhanced Vital Records and Special Processed/Electronic Records to implement DOE order requirements. Restructured and combined appendix tables to better capture designations and dispositions and removed references to SCI due to no longer using for long term storage.
10	7/9/07	Various	DCR-6205. Minor change to correct headers and erroneous Appendix C citation.
11	01/02/08	Various	DCR-6441. Revised and consolidated record types and implemented the WIPP HWFP modification. Clarified instructions for validating QA records. Also added examples of page numbering.
12	06/02/08	Various	DCR-7132. Revised roles and responsibilities for Records Custodian to strengthen the direction they are given and reorganized Section 3.3 to better capture process flow.
13	11/25/08	Appendix B	DCR-7650. Revised to differentiate Non-Permanent WIPP, Facility Operating Records, and those that fall into both categories. Various clarifications throughout.
14	09/13/11	Various	DCR-10355. Revised to incorporate Form-2034; to capture new record types; to create new record categorizations and disposition types for ACL Lab records; and various editorial changes as documented on the DCR.
15	09/12/12	Various	DCR-11544. Updated to incorporate ACL record retention and disposition. Incorporated DOCS-BLUESHEET-05 and ITG-BLUESHEET-120.

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Appendix A - Examples of Typical QA Records A1

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AMWTP MANAGEMENT PROCEDURE		
MP-DOCS-18.2, Rev. 15	Issued: 09/12/12	Effective: 09/13/12
Records Management		

1.0 PURPOSE/SCOPE

This procedure establishes the responsibilities, requirements, and processes for managing and storing records and Quality Assurance *(QA) records* (see def.) generated at the Advanced Mixed Waste Treatment Project (AMWTP). This procedure applies to all AMWTP personnel who engage in the record management process.

In addition to specific requirements cited, this entire document implements requirements from the QAPP-01, AMWTP Quality Assurance Program Plan; NQA-1 1989, ASME Nuclear Standards Quality Assurance Requirements for Nuclear Facility Applications; U.S. Department of Energy (DOE) Order 243.1, Records Management Program; 36 CFR 1228, Disposition of Federal Records; and 10 CFR 71.1, Communications and Records.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Records Officer (RO) and/or *Records Management Center* (RMC; see def.) Specialists	• Develops, coordinates, and directs the AMWTP records management program and procedures in accordance with applicable laws, regulations, and policies. **(DOE/CBFO-94-1012)** • Provides expertise and consulting services to organizational *Record Custodian* (see def.). • Maintain and coordinate activities within AMWTP RMC.
Managers	• Ensures that records management requirements/processes are implemented by their respective organizations. **(DOE/CBFO-94-1012)** • Appoints Records Custodians. • Performs *validation* (see def.) of QA records or assigns employee (designee) to perform validations. **(DOE/CBFO-94-1012)**

Performer	Responsibilities
Record Custodian (RC)	• Receives, stores, indexes, and/or submits records. Serves as the resource person for the respective organization. • Consults with the RO when record requirements are unclear. • Establishes and maintains controls for temporary storage in *Satellite File Location (SFLs;* see def.). • Implements records management requirements and processes. • Submits completed records to the AMWTP RMC.
Quality Assurance (QA)Department	• Performs independent annual assessment to ensure adequacy of process and implementation.
Employees	• Provides reasonable protection for *in-process records* (see def.). • Submits completed records to their organizational RC. • Validates records as assigned by management.

3.0 PROCEDURE

3.1 Records Management Program

3.1.1 RO: Establish a records management program that contains, at a minimum:

A. Procedures for the receipt and inspection of incoming records

B. Verification that QA records received are in agreement with the transmittal document

C. Instructions for legibility of records

D. Completed verifications via transmittal, receipt log entry, or equivalent process

E. Maintenance and processing of records at the RMCs

F. Method for submittal of completed records to the storage facility without unnecessary delay.

(DOE/CBFO-94-1012)

3.2 Appointing Records Custodians

3.2.1 Managers: Appoint RC(s) to coordinate and manage organizational records.

3.2.2 Send written notification (e-mail is sufficient) to the RO when an RC for a specific organization has been appointed.

(DOE/CBFO-94-1012)

3.2.3 RC: Complete required custodian training 0AWT1089 as requested by the RO.

3.2.4 RCs: Obtain assistance from the RO with implementation of record management requirements.

(DOE/CBFO-94-1012)

3.2.5 RO: Update approved list of RCs.

3.2.5.1 Ensure list is available on the approved AMWTP home page (EDMS Records search page).

3.2.5.2 Coordinate with the training organization to ensure that all appointed RCs have been trained.

(QAPP-01)

3.3 General Requirements

3.3.1 RO/RCs: Organize and implement a system of controls for receipt and storage, which include, as a minimum:

A. Maintenance of in-process records at the SFL or with the record generators out in the field

B. Provisions to permit a current and accurate assessment of the status of QA records

C. Method(s) for identifying the records that have been received.

(DOE/CBFO-94-1012)

3.4 Records Storage

NOTE 1: *Records may be stored using an electronic format as long as the documents are readily available to obtain a printed hard copy.*

(AMWTP HWMA/RCRA Permit)

NOTE 2: *Documents that will become records are identified in the Records section of implementing procedures. Personnel may refer to Appendix A, Examples of Typical QA Records, and Appendix B, Record Categories, Classification, Disposition, and Retention Matrix (including whether a record is WIPP related).*

3.4.1 All Employees: Provide reasonable protection for in-process records (such as for processing, review, or use) intended to become QA records from damage or loss until the records are submitted to the RC (including documents generated during field operations).

(DOE/CBFO-94-1012)

3.4.1.1 In-process records may be filed in metal cabinets under the following conditions:

- The record has not been validated as a QA record.
- The record can be *easily duplicated* (see def.) if damaged or lost.
- The record is stored in a metal cabinet located inside a building equipped with a fire sprinkler system.

3.4.2 Store QA records separately from non-QA records.

(DOE/CBFO-94-1012)

3.4.2.1 Submit all records to an RC when completed or no longer needed.

NOTE: *Due to sensitivity of the records, Security, Finance & Accounting and Human Resources are exempt from the 18 months requirement.*

3.4.3 Managers: When a record is being stored in an electronic system (i.e., Maximo, Costpoint, Trackwise, eSOMS, Adept, WTS, etc.) and is not scheduled to be submitted to Records Management, complete Form-2034, Electronic System Record Storage, Record Identification Form, and submit to Records Management.

3.4.4 RCs: If a record is needed for current business or regulatory purposes, temporarily store in SFLs until no longer needed, up to a maximum of 18 months.

(DOE/CBFO-94-1012)

3.4.4.1 Store inactive or completed QA records in a 1-hour fire rated container bearing a UL label (or equivalent) certifying one-hour fire protection.

(DOE/CBFO-94-1012)

3.4.5 RMC Specialists/RCs: Establish and maintain controlled access to storage cabinets to prevent loss, damage, or unauthorized removal of records.

(DOE/CBFO-94-1012)

3.4.5.1 Post the list of authorized personnel who are permitted access to records.

3.4.5.2 Escort personnel whose names do not appear on the access authorization list while they are accessing and reviewing records.

NOTE: *Retrieving a record for a limited amount of time (e.g., to make a copy) does not require check-in/check-out if the record is immediately returned.*

3.4.5.3 Establish a check-in/check-out system for traceability of records removed from cabinets.

3.4.5.4 Establish an index of completed SFL stored records.

3.4.6 RCs: On a routine basis, submit *inactive records* (see def.) or completed records to an RMC per Sections 3.5 and 3.6.

3.5 Record Validation and Verification

NOTE 1: *Appendix A provides a listing of those types of records that are generally considered as QA records and should be used as a guide in making the determination.*

NOTE 2: *Transuranic Waste Characterization required program QA Records are listed in Appendix B.*

NOTE 3: *Individual records are considered validated if stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated. If the nature of the record (such as magnetic tape, etc.) precludes stamping, initialing, or signing, other means of validation by knowledgeable personnel is allowed.*

(DOE/CBFO-94-1012)

NOTE 4: *Appendix A contains QA Record and examples.*

3.5.1 All Employees: Before submitting any record to a RC, determine whether the record is a QA record.

3.5.1.1 If the record is a QA record, make sure it is validated before it is submitted to the RC.

3.5.1.2 Manager or Assigned Validator: Validate QA records in accordance with the instructions on Form-1044, Record Transmittal and sign the form.

(DOE/CBFO-94-1012)

3.6 Indexing and Submittal

3.6.1 RCs: Remove all staples, paper clips, binder clips, file tabs, and sticky notes.

3.6.2 Separate records using colored paper or equivalent process when submitting more than one record and complete Page 2 of Form-1044.

NOTE: *If records are submitted in a scanned PDF format, the PDF software page numbering is sufficient.*

3.6.3 Number all pages of the record if submitted in hard copy form (e.g., 1 of 6 or 1/6).

3.6.4 Using Appendix B, categorize records as Waste Isolation Pilot Plant (WIPP), Facility Operating Records (FOR), *Vital Records* (see def.), or Miscellaneous Other Records, and record on the Form-1044.

3.6.4.1 Classify WIPP QA Records as *Lifetime* (see def.) or *Nonpermanent* (see def.).

(DOE/CBFO-94-1012)

3.6.5 Enter information onto Form-1044.

3.6.6 Ensure the record is complete (i.e., all attachments, enclosures, and pages are included).

NOTE: *Rather than using e-mail, scanned electronic records may be placed in \\Amws0025\enterprise\Records Check-in followed up by a notification to the Records Management e-mail address.*

3.6.7 Transmit hardcopy or scanned electronic records (preferred), and completed Form-1044, to the RMC.

3.6.8 RMC Specialist: Verify receipt of the record and ensure the record identified matches the provided description.

(DOE/CBFO-94-1012)

3.6.9 Enter records received on Form-1044 into the *approved records management system* (see def.).

(DOE/CBFO-94-1012)

3.6.10 When processing the records, verify the correct categorization, classification, and disposition code are used on the Form-1044.

3.6.10.1 Ensure categorization, classification, and disposition is appropriately entered on the index and into the approved records management system.

(DOE/CBFO-94-1012)

3.6.11 Sign in the applicable area on Form-1044.

3.6.12 Store completed records in RMC or transfer to long term storage, per Section 3.8 as appropriate.

3.7 Record Corrections/Changes

NOTE 1: *This section applies to all in-process, inactive, and submitted records.*

NOTE 2: *Superseded records are considered corrections and are handled accordingly.*

3.7.1 All Employees: If correction or change to a record is required, ensure the correction(s) and/or change(s) are completed in the following manner:

3.7.1.1 Use black or blue ink only and refrain from using highlighters when handwriting on records.

3.7.1.2 Place a single line through the incorrect information, ensuring the prior entry remains legible and initial and date.

3.7.1.3 If entire page is superseded, draw line from corner to corner and place new page behind.

(DOE/CBFO-94-1012)

NOTE: *The Training Department may use correspondence to indicate duplication of record.*

3.7.1.4 Stamp newly generated record "Duplicate Original" if the original record is lost or destroyed.

(DOE/CBFO-94-1012)

3.7.1.5 Do not correct records with correction fluids or tapes.

(DOE/CBFO-94-1012)

3.7.2 If supplemental information needs to be appended to an existing record, retrieve record per Section 3.11 (if necessary) and add to original record.

3.7.2.1 Update any applicable indexes or record tracking systems.

3.8 Long Term QA Record Storage

NOTE: *This entire section is applicable ONLY to RMC Specialists.*

3.8.1 Storage Facility

NOTE 1: *The AMWTP approved long term storage facility is the Idaho National Laboratory (INL) Records Storage Facility (IRSF), which houses records for the entire INL.*

NOTE 2: *The IRSF has been reviewed and approved by competent personnel in the field of Fire Protection and Quality Assurance to verify adequacy of protection of contents in order to meet National Archives and Records Administration (NARA; see def.) and NQA-1 requirements.*

(DOE/CBFO-94-1012; DOE O 243.1)

3.8.1.1 When long term storage is necessary, store and maintain AMWTP QA records at the IRSF records storage facility.

(DOE/CBFO-94-1012)

3.8.1.2 If the storage requirements above or in Section 3.4 cannot be met, then ensure duplicate records are created for *dual record storage* (see def.).

3.8.1.2.1 Dual store lifetime and nonpermanent WIPP records.

3.8.1.2.2 Store each record (the original and copy) at separate facilities that are sufficiently remote from each other to eliminate the chance of exposure to a simultaneous hazard.

3.8.1.2.3 When one of the separate storage methods is a scanned image, ensure the scanned image file is saved to a server that is backed up.

(DOE/CBFO-94-1012)

3.8.2 Box Accountability During Transit to Long-Term Storage

(DOE/CBFO-94-1012)

3.8.2.1 RMC Specialists: Generate a list of boxes ready for long term storage and forward list to IRSF point-of-contact.

3.8.2.2 Delivery Personnel: Confirm possession of the boxes listed, by signature and date on the list, prior to leaving the RMC.

3.8.2.3 RMC Specialists: Instruct IRSF personnel to confirm receipt of boxes delivered and return confirmation of receipt by e-mail to the RMC.

3.8.2.4 When confirmation is received, then transmit electronic index(s) for the box shipment to IRSF for the storage facility's use in box inventory and tracking.

3.9 Vital Records

NOTE: *PLN-PAIT-003, Disaster Recovery Plan, describes and outlines the AMWTP disaster recovery plan for business continuity which includes recovery of the electronic systems used for storing vital records.*

3.9.1 All Employees: Ensure that vital records (as identified in Appendix B) are compiled, maintained, updated, protected, and retrievable.

(DOE O 243.2)

3.10 Special Processed/Electronic Records

3.10.1 All Employees: Do not use electronic systems that are not regularly backed up and controlled (e.g., instant messaging) for conducting official business.

(DOE O 243.1)

3.10.2 Submit special processed records to the RMC to ensure adequate protection of special processed records to preclude damage from moisture, temperature, rodent infestation, excessive light, electromagnetic fields, or stacking, as appropriate for the type of record being stored. Special processed records include:

- Radiographs
- Photographs and negatives
- Microfilm
- Magnetic media.

(DOE/CBFO-94-1012)

3.10.3 RMC Specialists: Store and control records requiring special processing and control, such as software and related documentation or information on high-density media or optical disks, or hardware and software required to maintain and access records in fire rated cabinets in the RMC to ensure that the records are useable.

(DOE/CBFO-94-1012)

3.11 Records Retrieval

NOTE 1: *The approved records management system will provide for the accurate and efficient electronic retrieval of records without undue delay upon request.*

NOTE 2: *Retrieval of records generated prior to 2005, such as correspondence, transmittals, drawings, reports, calculations, etc., will require additional retrieval time.*

3.11.1 RCs: If an archived record needs to be retrieved, submit Form-1799, Records Request Form, or equivalent e-mail, to Records Management providing as much detail as possible to enable an adequate search.

3.11.2 RMC: Request the record from storage documenting Box #, date, time, on Form-1799/equivalent.

3.11.3 RC: Sign for the record, providing paper trail of chain of custody.

3.11.4 RMC: Hold Form-1799/equivalent until records are returned to the RMC.

(DOE/CBFO-94-1012)

NOTE: *Employee emergency/weekend access for retrieval of records from IRSF may be obtained by making prior arrangements with the RO or designee.*

3.11.5 RMC Specialists: Coordinate with the long term storage facility for retrieval of requested record.

3.11.5.1 If a copy is requested, provide a copy marked "information only" and return original to storage.

3.11.5.2 If the original is requested, check the record out to the requester.

3.11.5.3 RCs: When the record is no longer needed, return to the RMC to be placed back into storage.

3.12 Records Destruction

3.12.1 In cases of conflicting requirements concerning records retention or destruction, use the most stringent requirement to determine the final disposition.

(DOE/CBFO-94-1012)

3.12.2 RMC Specialists: Destroy QA Records ONLY IF the following conditions are met:

- The appropriately assigned NARA authorized disposition specifies destruction as depicted in Appendix B
- Regulatory requirements are satisfied
- Operational status permits the disposal of such records
- The related contractual requirements have been satisfied.

(DOE/CBFO-94-1012)

3.13 Records Management Evaluation

3.13.1 QA Department: Evaluate the records system at least annually to ensure that it is effective.

3.13.2 Document the evaluation ensuring the following as a minimum:

A. Indexed records are available and are in their proper location with the files

B. Control system is adequate

C. Storage areas are in good condition

D. Records and documents are not deteriorating due to improper storage practices or rough handling.

(DOE/CBFO-94-1012)

4.0 DEFINITIONS

Approved records management system. A networked, records database and indexing system that allows users to meet Department of Energy's (DOE) inventory requirements including record retention times, location of records and the ability to retrieve records.

Disposition authority. A standardized alphanumeric code assigned by the Idaho Department of Energy utilizing the National Archives and Records Administration. The code indicates the final actions to be taken by the Records Management Center regarding the filing, transferring, and storage of completed records.

Dual record storage. The act of storing duplicate copies of a record in separate facilities or containers that are located sufficiently remote from one another to eliminate the chance of exposure to a simultaneous hazard. Dual record storage is required when a single record storage facility is not available.

Easily duplicated. Ability to promptly recreate incomplete, damaged, or lost record.

Electronic record storage system. Any electronic system or database identified as storing completed records on a long-term basis.

Inactive record. Record that is no longer necessary to conduct the current business of an office and can be archived.

In-process record. Record that is incomplete, in use, and necessary to conduct current business and not validated as a QA record. Validated QA records received at the RMC are considered in-process until they are fully processed for long term storage.

Lifetime QA record. Quality records which would be of significant value in demonstrating capability for safe operation; maintaining, reworking, repairing, replacing, or modifying an item; determining the cause of an accident or malfunction of an item; provide required baseline data for in-service inspection. Subject to being turned over to CBFO at the project's end.

(DOE/CBFO-94-1012)

National Archives and Records Administration. An independent agency that establishes policies and procedures for managing records of the federal government and exercises final authority for approving the disposition of government records.

Nonpermanent QA record. Records that do not meet the requirements for Lifetime QA records, but provide objective evidence that the QA Program has been properly executed. Nonpermanent records have a value for a specific, limited time and as authorized by the National Archives and Records Administration disposition code, can be destroyed after that time. These records could be turned over to CBFO at project's end, or could be turned over to local DOE office.

QA record. A completed record or any authenticated portion of a record that provides objective evidence for the quality of items or activities. A QA record is a subset of records that require special controls. They may be original or reproducible copies, unless otherwise required, and shall be legible, accurate, and completed appropriate to the work accomplished. WIPP QA records are either classified as Lifetime or Nonpermanent (described separately within this section) and require validation.

(CBFO-94-1012)

Record custodian. Persons assigned to accept, accumulate, maintain, control, and temporarily store records for a given organization or functional area. Act as liaisons between the organization and the RMCs and are responsible for submitting completed and inactive records to an RMC.

Records Management Center. A central location for the coordination of AMWTP records and records processing activities. The site RMC is located in WMF-678, the EDF/Training RMC is located in EDF Room 116.

Satellite File Location. Designated area in the field or organizational locations where in-process records are accumulated, maintained, controlled, and temporarily stored by designated RCs until transferred to an RMC.

Validate/Validation/Validated QA Record. A certification as to the content of the record by those individuals with knowledge of the related facts, whether by direct personal knowledge or through the direct reports of others. Validation should not be confused with any subsequent reviews of the contents or an administrative check for completeness. Validated QA records are documents otherwise qualifying as records that have been stamped, initialed, or signed and dated by authorized personnel, or otherwise validated. Handwritten signatures are not required if the document is clearly identified as a statement by the reporting individual or organization.

Vital Records. Emergency operating records and legal and financial rights records required during and after an emergency or as part of the recovery from a disaster.

5.0 REFERENCES

(1) 10 CFR 71.1, Communications and Records

(2) 36 CFR 1228, Disposition of Federal Records

(3) DOE/CBFO-94-1012, Quality Assurance Program Document

(4) DOE Order 243.1, Records Management Program

(5) DOE Order 243.2, Vital Records

(6) AMWTP HWMA/RCRA Permit

(7) NQA-1 1989, ASME Nuclear Standards Quality Assurance Requirements for Nuclear Facility Applications

(8) PLN-PAIT-003, Disaster Recovery Plan

(9) QAPP-01, AMWTP Quality Assurance Program Plan

(10) Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan, Attachment B, NM4890139088-TSDF, New Mexico Environment Department, Santa Fe, New Mexico.

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-DOCS-18.2, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Form-1044, Record Transmittal	Same as record(s) being transmitted
Form-1799, Records Request Form	Destroy when records are returned to the RMC.
Form-2034, Electronic System Record Storage Record Identification Form	Dependent on the system and records being stored within the system.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Examples of Typical QA Records

Appendix B – Record Categories, Classification, Disposition, and Retention Matrix

Appendix A - Examples of Typical QA Records

Designating every document as a *QA record* (see def.) hinders storage and retrieval of useful information. To provide an effective QA Records Management Program, all departments shall review those documents generated and determine which documents furnish evidence of "quality" activities. Disposition of these records shall be in accordance with Appendix B. Examples of QA records could include, but are not limited to, the following:

Administrative Records

- Records that document organizational structures or charters in order to show sufficient evidence that level of responsibility and authority has been established and documented.
- Acting manager notifications.

Quality Assurance

- Quality Assurance plans, procedures, manual, controlled documents
- Audit plans and reports
- Supplier evaluations
- Corrective Action Reports - Non-conformance, cause analysis, corrective action plans, deficiency reports
- Surveillances, Assessments, Management Assessments, Evaluations.

Design/Commissioning Documents

- Design specification and amendments
- Approved design change requests
- Design deviations and non-conformances
- Design Reports, Drawings, Criteria, Calculations and records of checks, procedures, system descriptions, process, and instrumentation diagrams, equipment qualification/acceptance documentation
- Reports of engineering surveillance of field activities.

Pre-Operational and Startup Records

- Component checkout test reports
- Proof of pressure test reports
- System operation test reports
- Final system adjustment data
- Initial plant – loading data
- Start-up and test procedures and results
- In-service inspection reports
- Inspection, repair, and replacement of principal items of structure systems, and components
- Periodic checks, inspections, and calibrations performed to verify that surveillance requirements are being met.

Operation & Maintenance Records

- Measuring and Test Equipment Records, Calibration Records, Review Records, Out Of Tolerance Evaluations, and Deviation Reports
- Maintenance and in-service inspection records
- Modification to controlled documents, and work orders
- Training and Qualification Records, Classroom, On-the-Job, Seminars, Testing, and Certifications
- Operating procedures
- Operating logs
- Calibration procedures and data
- Occurrence Reporting and Processing System Database.

Procurement Records

- Procurement specifications
- Purchase orders (un-priced) and amendments
- Procurement procedures
- Purchase's pre-award quality assurance surveys
- Supplier's quality assurance program manuals
- Source surveillance data plans
- Audit and surveillance reports
- Subcontracts
- Changes and modifications
- Receiving records
- Vendor data and supplier nonconformance reports.

Safety and Environmental Records

- Safety Analysis Reports (SARs)
- Environmental monitoring documentation
- Log and summary of recordable, occupational injuries and illnesses
- Soil and ground water data
- Waste management and shipment burial data
- Data complied on unplanned spills or leaks
- Records of radioactive gaseous waste discharge to atmosphere and radioactive liquid waste discharge to surface or ground water
- Radiation detection instrument calibration records
- Guides or procedures
- Safety management records
- Records pertaining to the operation of a hazardous waste treatment, storage, or disposal facility, including plans for inspection.

Appendix B -
Record Categories, Classification, Disposition, and Retention Matrix

QA records, as applicable, will be retained to the *disposition authority* (see def.) delineated in this Appendix for the duration of the project, or until transferred to DOE.

(AMWTP QAPP)(DOE/CBFO-94-1012)

Records relevant to an enforcement action under the WIPP Hazardous Waste Permit, regardless of assigned disposition, will be maintained until the New Mexico Environment Department (NMED) determines that they are no longer needed for enforcement action.

(DOE/CBFO-94-1012)

NOTE 1: *When a record falls into more than one category and disposition, apply the most stringent classification and disposition.*

NOTE 2: *Lists may not be all inclusive but will provide guidance. Records that are not specifically listed will be analyzed by the RMC for appropriate category and classification.*

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Lifetime WIPP Records • Field Sampling Data Forms • Field and Laboratory Chain of Custody Forms • Test Facility and Laboratory Batch Data Reports • Waste Stream Characterization Package • Sampling Plans • Data Reduction, Validation, and Reporting Documentation • Acceptable Knowledge Documentation • Waste Stream Profile Form • Characterization Information Summaries (Certified Drum Files) • DMS/WTS System Data • Correspondence related to any of the above.	QA	**ENV1-J-1** When complete, submit to RMC. Retain for **life of the project plus six years** or transfer to the WIPP Records Archive Facility at end of project/program. **(DOE/CBFO-94-1012)**

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Nonpermanent WIPP Records • Gas Canister Tags • Methods Performance/Demonstration Program Documentation • Sampling Equipment Certifications • Calculations and related Software Change Control (WIPP-related systems) • Analytical raw data • Procurement Documentation, including Vendor Data (WIPP-related) and vendor acceptance test plans • Approved Vendor List • WIPP-related procedures (all revs) • Audio/Video recordings (RTR, VE, etc.) • Correspondence related to any of the above.	**QA** Projects shall retain QA records for a minimum of ten years from the date of record generation. If the site ceases to operate, records shall be transferred before site closure. **(DOE/CBFO-94-1012)** Records, usually in the form of completed Forms, contain information specific to owner/operator of hazardous waste sites, which must be recorded, as it becomes available. These records document an activity, product, or service that has a positive or negative impact to the air, water, land, natural resources, vegetation, wildlife or surrounding population. **(MP-EC&P-7.17)** The generator shall maintain records for time periods equivalent to on-site records retention requirements, but not less than three years (or for time periods designated by other regulatory authorities). **(NTS WAC)**	**ENV1-J-1** Submit to RMC for long term storage. Destroy 10 years after submittal or transfer to the WIPP Records Archive Facility at end of project/program.
(Both) FOR / Nonpermanent WIPP Records • Nonconformance Documentation • QA Assessments and Surveillances • CA/Trackwise, Audit, Investigation, HSS-OE, and Root Cause Analysis Documentation (includes ORPS) Fact Findings and NCRs • Employee Training/Qualification Records, Classroom, On-the-Job, Testing, Certifications, and Rosters • QAPjP (all revisions) • M&TE calibration, Out of Tolerance, and Deviation Reports • Technical implementing proc (all revs) • Correspondence related to any of the above.		**ENV2-a-1-a** Submit to RMC for long term storage. Destroy 5 years after **LIFE of FACILITY** or transfer to WIPP Records Archive Facility or DOE-ID Records Storage Facility, as appropriate, at end of project/program.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Facility Operating Records (FOR) /RCRA • All (TRU, MLLW, LLW Offsite) Waste Receipt & Shipping Records • DOT related records • SWB Direct Load Packages • RadCon & Env Sample and Chain-of-Custody Records • Maintenance/In-Service Inspections and Work Orders • Operating Logs (retained in eSOMS) and Round Sheets • RCRA Inspection Records & Schedules • Environmental Determinations/Hazardous Waste Determinations • ORR, RA, MSA, and Start-up Implementation Documentation, Notification, & Objective Evidence • Authorization Basis (DSA & Permit) Implementation Documentation/OE • USQ Screens/Determinations • Engineering Documentation (As-Built Drawings, EDFs, FMPs, etc.) • Security Visitor Traffic Logs • Completed Emergency/Contingency/Spill Response Documentation • All Permit Documentation (includes modifications and applications) • Waste Minimization Documentation, including Shipment/Disposal Records (ex. Used Oil) • HEPA Filter Documentation & Reports • TSCA/PCB Documentation • MSDSs still in use (Vital Record) • Correspondence related to any of the above. **Analytical Chemistry Laboratory Facility Operating Records, including** • Facility (LTHC3) radionuclide inventory forms • Facility radionuclide inventory tracking logbook • Facility radionuclide inventory verifications • WMF-TR-14 facility daily round sheets • ACL briefing checklists • Time-sensitive chemical inspections	**QA** Records in the form of completed Forms (usually) that contain information specific to owner/operator of hazardous waste sites that must be recorded, as it becomes available. These records document an activity, product, or service that has a positive or negative impact to the air, water, land, natural resources, vegetation, wildlife or surrounding population. **(MP-EC&P-7.17)** The generator shall maintain records for time periods equivalent to on-site records retention requirements, but not less than three years (or for time periods designated by other regulatory authorities). **(NTS WAC)**	**ENV2-a-1-a** Submit to RMC for long term storage. Destroy 5 years after **LIFE of FACILITY**

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Vital Records • Emergency Plans and Procedures (EDMS Documents) • Orders of succession (EDMS Records) • Delegations of authority (EDMS Records) • Corporate payroll, finance, and budget information (Costpoint and Deltek) • Personnel (HR) and Benefits information (Costpoint) • Contracts and agreements (Maximo, EDMS Documents) • Legal and financial rights information • Obligations that impose financial risk (Maximo) • Documentation for electronic systems that manage above records (EDMS Documents)	The record designation is dependent on the actual record. Refer to the other categories and/or Appendix A to determine if a QA record. Vital records are emergency operating records that may be required during and after an emergency or as part of the recovery from a disaster. These records must be available as needed at or in the vicinity of emergency operating centers. Most AMWTP Vital records are within electronic systems as noted. **(DOE Order 243.2)**	Disposition is dependent on the actual record. Refer to one of the other categories for the disposition code and retention instructions.
Misc. Other Records The QA record designation for this entire category is dependent on the actual record. Using Appendix A as a guide, these records may or may not be QA records. * Denotes contractor-owned records.		
Employee/Personnel Files (From initial date of employment to date of separation) (SENSITIVE Vital Records) • Medical (includes fit tests, audio tests, drug screens, etc.) * • Human Resources * • Security • Union Grievance & Arbitration * • Correspondence related to any of the above		**A1-1.1** Cut off at time of separation Destroy 75 years after separation (if Security) or turned over to outgoing contractor during contract transition/project end.
• Records that relate to organization, staffing, procedures, and communications; • General e-mail correspondence not retained as with other disposition codes • Meeting minutes documenting routine activities. • Administrative reports relating to routine, daily business functions, recurring transactions, or activities. • Required employee communications, including routing slips and sign-off sheets used by management to communicate important information. • Organizational Delegations of Authority (Vital Record) • Office Systems Services Records related to service of telephone, pager, fax, and copy machine. • Operations Operator Aids and Aid Log/Index • Timely Orders/Short Term Instructions/Temporary Physical Change Records • MSDS's (No Longer Used) • Checklists used to ensure/document completion of work activities. • Correspondence related to any of the above		**A23-1-a** Submit to RMC Destroy 2 years after no longer needed.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Physical Security Records – • PSO Monthly Report • Alarm Operability Checklist • Security daily key issue log and Alarm Station Logs • Camera Guides and Passes • Key Receipt, Lost Reports, and Accountability Logs		**A18-1.1-a** Submit to RMC when no longer needed. Destroy 4 years after submittal.
• Administrative/non-Operational document case files. • Objective evidence demonstrating implementation of management improvement programs with a focus on streamlining operations, providing cost effectiveness, improving customer satisfaction, and continuing improvement of work processes or products, ex., 6-Sigma or Cost Savings Initiatives, ISMS, ISO14001, VPP. • Lessons Learned case files • Training/Course Materials (superseded) • Ergonomic Assessments and Building Ergonomic Walkdowns • Business system change control (excludes software change packages for WIPP-related systems) • Systems/Network Access Requests • Container Movement Forms (internal to the AMWTP) • Pre- and Post- Job Reviews • Tailgate and Required Reading rosters • Drill guides/scenarios (superseded) • Budget records; supplies and office services and equipment requests and receipts; and the use of office space and utilities (Vital Records) • Information used to track organization budget expenditures. • Payroll and Time/Attendance records (Vital Record) • Media clearing and sanitizing records • Property Management -managing, tracking, controlling, and excess or sale of Government furnished property (capital and non-capital (includes application for licensing and license, equipment history files for utilization of property items, manufacturer's statement of origin, equipment repair estimates, repair orders and billings, inspection reports, and move orders). • Correspondence related to any of the above.		**A16-1.2** Submit to RMC when complete, superseded, or obsolete. Destroy 5 years after submittal.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Analytical Chemistry Laboratory (ACL) Records – • Laboratory quality trend reports • Staff signature lists • Analytical M&TE Out-of-tolerance notifications • Analytical software QA change/verification documentation • Chemical standard and reagent preparation records • Vendor chemical standard certificates of analysis/certificates of calibration • Instrument calibration and calibration verification data • Instrument quality control data • Control charts for analytical QC parameters • Performance evaluation program reports and data • Raw analytical data • Laboratory copies of analytical test reports • Analytical logbooks • Instrument quality control data • Method performance demonstration data • Analyst performance demonstration data • Sample management/custody/disposition records • Instrument/equipment maintenance records		**ENV5-d** Submit to RMC when complete, superseded, or obsolete. Destroy 10 years after submittal.
• Prime Contracts Information and associated files consisting of negotiated, signed contract(s) with the DOE and their contractors. Related documentation includes, but is not strictly limited to, background records, records depicting work scope, benefits, correspondence, cost/pricing, incentive fee provisions, regulatory compliance policies, and other contractual agreements; modifications; provisions; clauses; articles; and other such correlated documentation, e.g., Records generated by or in behalf of organizations or contractors documenting requests to and responses from DOE resulting in exemptions, waivers, or deviations from the parameters set forth by DOE. • All agreements between the Department and other signatory authorities. Agreements executed by DOE, contractor and the requesting Federal, State, local, tribal, domestic, or private organizations. Agreements stipulate contract length, provisions, articles, clauses, and other related matters. Files include subcontract agreements signed between contractor and subcontractors to perform a specific work scope in support of the larger contract. • Labor Management/Union related records agreements. • Correspondence related to any of the above.		**N1-434-95-5-a-1** Submit to RMC when no longer needed. Destroy 10 years after contract termination.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
• Non-WIPP related procurement files including contract, statement of work, requisitions, purchase orders, lease, bond, surety records, and related correspondence and papers pertaining to award administration, receipt, receiving acceptance inspection for payment for equipment, services, and acquisition of property **> $100,000 and construction contracts exceeding $2,000,000**. • Finance & Accounting/Travel Authorization Records (Vital) regardless of dollar value.		**A3-3-a-1-a** Submit to RMC after final payment, Destroy 6 years and 3 months after final payment.
• Non-WIPP related procurement and P-Card files including contract, statement of work, Requisitions, purchase orders, lease, bond, surety records, and related correspondence and papers pertaining to award administration, receipt, receiving acceptance inspection for payment for equipment, services, and acquisition of property **< $100,000 and construction contracts below $2,000, 000**.		**A3-3-a-1-b** Submit to RMC after final payment. . Destroy 3 years after final payment.
• Request for proposal (RFP)/Purchase Orders/Subcontract **FOR QUALITY SIGNIFICANT PROCUREMENTS** - Facility/equipment procurement packages exceeding $100,000 and construction exceeding $2,000, 000. Vendor trip reports/review meeting minutes, bid package/abstract evaluation, design review package/comments/resolutions for quality systems, structures, and components.		**A18-35-b** Submit to RMC after final payment. Destroy upon permanent removal of item from service or upon permanent termination of items use, unless the document will be applicable to a replacement item.
• Corporate-specific records (not related to DOE Contract Scope of Work) * • Unallowable financial records * • Legal records and litigation files * • Employee Human Resource files • Corporate-specific correspondence *		**Flagged in EDMS** Retain in RMC until contract end, then turn over to the outgoing contractor during transition.

GEN15

AMWTP Advanced Mixed Waste Treatment Project	Job Analysis Task Listing	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 1 of 6

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK PLAN

FOR

Site Project Manager Designee

At

AWMTP

Date: 1-19-10

Revision: 1

Instructional Analyst: Dave Butler

Ralph Hartline Training Manager/Supervisor Print/Type Name	REVIEW Training Manager/Supervisor Signature	48595 S No.	2/2/10 Date
Eric Schweinsberg Line Manager/Supervisor Print/Type Name	APPROVAL Line Manager/Supervisor Signature	86737 S No.	2/2/10 Date

Submitted By: _____ Date: _____

REV. / MODIFICATION RECORD

Change Number	Affected Pages	Description of Change	Management Approval	Date
0	All	Initial Issue	B. Eschenbaum	2-27-07
1	All	Reformat checklist to reflect changes to checklists, update required reading list.	J. Jackson	

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures

   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences

   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance

   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

AMWTP Advanced Mixed Waste Treatment Project	**Job Analysis Task Listing**	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 4 of 6

The participants involved in creating the Job Analysis Task List include:

Print Name: Dave Butler Signature: Dave Butler Emp No.: 103532 Date: 1-28-10
Job Title: Training Specialist Phone No.: 557-0979

Print Name: George Byram Signature: George Byram Emp No.: 479608 Date: 1-31-10
Job Title: SPM Designee Phone No.: 557-6319

Print Name: Jason Lance Signature: Jason Lance Emp No.: 103080 Date: 2/2/10
Job Title: SPM Designee Phone No.: 557-6370

Print Name: _____ Signature: _____ Emp No.: _____ Date: _____
Job Title: _____ Phone No.: _____

Print Name: _____ Signature: _____ Emp No.: _____ Date: _____
Job Title: _____ Phone No.: _____

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Job Title: _____ Phone No.: _____

Print Name: _____ Signature: _____ Emp No.: _____ Date: _____
Job Title: _____ Phone No.: _____

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
Job Analysis Chronology: Dave Butler (Training Specialist) met with E. Schweinsberg (TRU Programs Manager) on 1-13-10 to discuss the changes needed for the Job Task List. D. Butler met with George Byrum and Jason Lance (SPMs) during the week of Jan. 25th – 28th, 2010.					
A.	**Data Validation**				
1.	Perform Validation of RTR batch data reports			X	
2.	Perform Validation of Radioassay batch data reports			X	
3.	Perform Validation of HGAS batch data reports			X	
4.	Perform Validation of VE batch data reports			X	
5.	Perform Validation of Coring batch data reports			X	
6.	Perform Validation of SHENC batch data reports			X	
7.	Perform Validation of ALD batch data reports			X	
B.	**Data Reconciliation**				
1.	Perform SPM Data Reconciliation			X	
C.	**Software**				
1.	Access WTS and locate screens for completion of work			X	
2.	Access and navigate the Trackwise System for NCR creation and NCR closure.			X	
3.	Access spreadsheet for tracking completed validation and NCRs closed.			X	
E.	**Nonconformance Reports**				
1.	Process nonconformance reports			X	
2.	Complete discrepancy resolution			X	
3.	Perform SPM Correction Action verification.			X	
D.	**Knowledge:**				
1.	TRU Programs Overview, Waste Analysis Plan, WIPP Waste Acceptance Criteria, Conduct of Operations.			X	
2.	Waste Stream Profiles			X	
3.	EPA Hazardous Waste Numbers			X	
4.	Tentavely Identified Compounds			X	

*NT = No Training PT = Pre-train T = Train OT = Over Train

Attachment 2

TASK NUMBER	TASK STATEMENT	TASK SELECTION NT	PT	T	OT

*NT = No Training PT = Pre-train T = Train OT = Over Train

AMWTP - Employee Training History

Employee: [redacted] (000102910)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-82	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	10/27/11
RPT-TRUW-82	2	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	03/30/11
RPT-TRUW-82	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	07/07/10
RPT-TRUW-82	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	05/13/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/12/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/02/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	03/30/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/27/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	09/15/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	02/03/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/24/10
RPT-TRUW-89	0	ACCEPTABLE KNOWLEDGE BASELINE FOR ARGONNE NATIONAL	05/14/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/04/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCAKE01A	ACCEPTABLE KNOWLEDGE EXPERT	04/20/10	04/20/12
AMWRAD01	RAD WORKER 1	04/21/10	05/21/12
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/15/10	07/15/12
AMWHAZ	HAZWOPER QUAL	07/27/10	07/27/11
AMWHAZ	HAZWOPER QUAL	07/28/10	07/28/11
AMWHAZ	HAZWOPER QUAL	07/13/11	07/13/12
QCTECHSP	TECH VERIFICATION SPEC I & II	03/13/12	03/13/14
AMWRAD01	RAD WORKER 1	04/17/12	04/17/14
QCAKE01A	ACCEPTABLE KNOWLEDGE EXPERT	04/26/12	04/26/14
AMWHAZ	HAZWOPER QUAL	07/09/12	07/09/13
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/12/12	07/12/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	04/20/10	
AF1020	INDIVIDUAL TRAINING PLAN	04/20/10	
AFTASKLC	TASK LIST CONTROLLER	05/26/10	
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	07/15/10	
AF1020	INDIVIDUAL TRAINING PLAN	07/15/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/17/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	01/18/12	
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	07/12/12	
AF1020	INDIVIDUAL TRAINING PLAN	07/12/12	

AMWTP - Employee Training History

Employee: KIRK, NANCY (000102910)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-82	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	10/27/11
RPT-TRUW-82	2	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	03/30/11
RPT-TRUW-82	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	07/07/10
RPT-TRUW-82	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	05/13/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/12/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/02/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	03/30/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/27/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	09/15/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	02/03/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/24/10
RPT-TRUW-89	0	ACCEPTABLE KNOWLEDGE BASELINE FOR ARGONNE NATIONAL	05/14/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/04/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCAKE01A	ACCEPTABLE KNOWLEDGE EXPERT	04/20/10	04/20/12
AMWRAD01	RAD WORKER 1	04/21/10	05/21/12
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/15/10	07/15/12
AMWHAZ	HAZWOPER QUAL	07/27/10	07/27/11
AMWHAZ	HAZWOPER QUAL	07/28/10	07/28/11
AMWHAZ	HAZWOPER QUAL	07/13/11	07/13/12
QCTECHSP	TECH VERIFICATION SPEC I & II	03/13/12	03/13/14
AMWRAD01	RAD WORKER 1	04/17/12	04/17/14
QCAKE01A	ACCEPTABLE KNOWLEDGE EXPERT	04/26/12	04/26/14
AMWHAZ	HAZWOPER QUAL	07/09/12	07/09/13
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/12/12	07/12/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	04/20/10	
AF1020	INDIVIDUAL TRAINING PLAN	04/20/10	
AFTASKLC	TASK LIST CONTROLLER	05/26/10	
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	07/15/10	
AF1020	INDIVIDUAL TRAINING PLAN	07/15/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/17/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	01/18/12	
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	07/12/12	
AF1020	INDIVIDUAL TRAINING PLAN	07/12/12	

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	SM Peterman		7/12/12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		7-5-12
	Print Name	Signature	Date

QC R

R

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 10291C

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
George Byram	George Byram	GB
Sal Peterman	Sal Peterman	SAP

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date: 8/31/12

Employee's Manager

7/12/12
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	7-15-10		7-5-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Nancy Kirk S# 102910

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	George B	7/12/12
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	George B	7/12/12
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	George B	7/12/12
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	George B	7/12/12
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	George B	7/12/12

Employee Name Nancy Kirk S# 102910

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	George B	7/12/12
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	George B	7/12/12
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	George B	7/12/12
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	George B	7/12/12
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	George B	7/12/12

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Nancy Kirk S# 102910

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number N/A	D	N/A
• Radioassay batch number AS112-C164C	D	George Bu 7/12/12
• HGAS batch number HS112-00002	D	George Bu 7/12/12
• VE batch number VEB12-CC551	D	George Bu 7/12/12
• Core Sampling batch number ALD11 024M	D	George R 7/12/12
• Core Analysis batch number N/A	D	N/A
• Data Reconciliation Lot number GNSIC.1.0146	D	George Bu 7/12/12
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	George Bu 7/12/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly.

In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

SPM Designee Lead	George Dr	7/12/12
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager *	Eric Schweinsberg E. TORRES		7/15/10 8/24/10
	Print Name	Signature	Date

* I discussed this signature block with Eric S. on 8/24/10 and instructed him to include "per telcon". ET 8/24/10.

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler	Dave Butler	6/23/10
	Print Name	Signature	Date

TRAINING DEPT.
JUL 15 2010

Qualification Checklist Approval Section Initials

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
George Byram	George Byram	GB
Eric Schweinsberg	Eric Schweinsberg	EJS
E. TORRES	E. TORRES	ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date: 7/15/10
RAJ 8/24/10

Employee's Manager

7/15/10
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	7-10-08	Dave Bell	6-23-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	FB Geary Bu	7/15/10
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	FB Geary Bu	7/15/10
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	FB Geary Bu	7/15/10
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	FB Geary Bu	7/15/10
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	FB Geary Bu	7/15/10

Employee Name Nancy Kirk S# 102910

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	FB George Bu	7/15/10
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	George Bu FB	7/15/10
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	George Bu FB	7/15/10
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	FB G R	7/15/10
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	G R FB	7/15/10

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR1000122	D	[signature] 7/15/10
• Radioassay batch number ASY10-01334	D	[signature] 7/15/10
• HGAS batch number HS110-00009	D	[signature] 7/15/10
• VE batch number VEB10-00730	D	[signature] 7/15/10
• Core Sampling batch number SSC08-00006	D	[signature] 7/15/10
• Core Analysis batch number ALD10015M	D	[signature] 7/15/10
• Data Reconciliation Lot number BNS10,0757	D	[signature] 7/15/10
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	[signature] 7/15/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nancy Kirk S# 102910

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**	
After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly. In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.		
SPM Designee Lead Title	Signature	7/15/10 Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: CANIFF, SEAN (000104394)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-12	16	AMWTP WASTE STREAM DESIGNATIONS	04/22/11
RPT-TRUW-12	15	AMWTP WASTE STREAM DESIGNATIONS	11/16/10
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/16/10
RPT-TRUW-13	7	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	10/11/12
RPT-TRUW-13	6	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/16/10
RPT-TRUW-15	11	ACCEPTABLE KNOWLEDGE SUMMARY FOR BUILDING 374 SLUD	10/11/12
RPT-TRUW-15	10	ACCEPTABLE KNOWLEDGE SUMMARY FOR BUILDING 374 SLUD	08/16/10
RPT-TRUW-19	REF	POPULATION DETERMINATION FOR WASTE STREAM PROFILES	03/29/12
RPT-TRUW-19	2	POPULATION DETERMINATION FOR WASTE STREAM PROFILES	08/16/10
RPT-TRUW-23	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED ACID/C	10/11/12
RPT-TRUW-23	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED ACID/C	08/16/10
RPT-TRUW-30	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	08/12/10
RPT-TRUW-56	5	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	10/11/12
RPT-TRUW-56	4	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	11/29/11
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/19/10
RPT-TRUW-56	2	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/16/10
RPT-TRUW-58	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	10/11/12
RPT-TRUW-58	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/16/10
RPT-TRUW-59	4	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/11/12
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/04/10
RPT-TRUW-59	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/16/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	10/11/12
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/16/10
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	10/11/12
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/16/10
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	10/11/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/25/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/08/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/02/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	05/10/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/14/10
RPT-TRUW-86	3	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/11/12
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	11/29/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	04/22/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/24/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/03/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	05/16/11	05/16/13
QCTECHSP	TECH VERIFICATION SPEC I & II	02/22/12	02/22/14
AMWHAZ	HAZWOPER QUAL	03/07/12	03/07/13

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	E. TORRES		5/16/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		5/17/11
	Print Name	Signature	Date

MAY 17 2011

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Sean Caniff S# 104394

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Dave MARQUARDT		
Cesar Rojas	Rojas	CR
Nancy Kirk		NK
Wes Skaar		WS
George Byram		B
Eric Schweinsberg		ES
ENRIQUE TORRES		ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date:

Employee's Manager

5/16/11
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	5/18/09		2/17/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	Wes Shaar	4-26-11
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	Wes Shaar	4-26-11
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	Wes Shaar	4-26-11
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	Wes Shaar	4-26-11
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	Wes Shaar	4-26-11

Employee Name Sean Caniff S# 104394

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	Wes Shaar	4-26-11
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	Wes Shaar	4-26-11
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	Wes Shaar	4-26-11
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaar	4-26-11
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	Wes Shaar	4-2611

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR11-00096	D	
• Radioassay batch number ASY11-00828	D	
• HGAS batch number N/A	D	
• VE batch number ~~RTR~~ ASPC VEB11-00311	D	
• Core Sampling batch number SSC10-00002	D	
• Core Analysis batch number N/A	D	
• Data Reconciliation Lot number BNS10.1.0044	D	
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly.

In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

SPM Designee Lead		5/16/11
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: STYHL, NICHOLAS (000077582)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-59	4	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/14/12
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/11/10
RPT-TRUW-59	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/09/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/14/12
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/09/10
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/14/12
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/09/10
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/14/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/25/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/10/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/14/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	06/13/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/11/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	11/15/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	06/13/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/23/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/10/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	11/23/09	11/23/10
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	01/11/10	01/11/12
QPOT03A0	REAL TIME RADIOGRAPHY	05/13/10	05/13/12
QPITR03A	LEVEL 1 VALIDATION ITR	09/27/10	11/27/12
AMWHAZ	HAZWOPER QUAL	11/29/10	11/29/11
AMWRAD01	RAD WORKER 1	04/28/11	05/28/13
AMWHAZ	HAZWOPER QUAL	12/12/11	12/12/12
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	01/10/12	01/10/14
QCTECHSP	TECH VERIFICATION SPEC I & II	01/11/12	01/11/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	09/07/10	
AFVISACU	VISUAL ACUTIY EXAMINATION	01/31/11	01/31/12
AFINSTR	CLASSROOM INSTRUCTOR QUALIFICATION RECORD	03/24/11	03/24/14
AFRTRSWB	RTR BI ANNUAL SWB	05/12/11	11/12/11
AFRTRDRU	RTR BI ANNUAL DRUM	12/20/11	06/20/12
AFVISACU	VISUAL ACUTIY EXAMINATION	01/05/12	01/05/13
AF1018	EMPLOYEE POSITION DESCRIPTION	01/19/12	
AFRTRDRU	RTR BI ANNUAL DRUM	05/09/12	11/09/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Nick Stahl S# 77582

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	SM Peterman	SM Pete	1/10/12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Ted Simmons		1-[illegible]-12
	Print Name	Signature	Date

JAN 1 : 201[illegible]

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

JAN 1 2 [illegible]

QC

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Nick Stiehl S# 77582

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nick Stykl S# 77582

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Ted Simmons		TS
Wes Skaar		WS
SM Peterman		SMP

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Nick Stykl S# 77582

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date:

Employee's Manager

1/10/12
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	1-11-12		1-2-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nick Stahl **S#** 77582

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents		OJT Instructor / SPM Designee Lead Signature	Date
7/2011	3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	Wes Shaar	1-10-12 WS ~~1-10-12~~ 1-10-12
AMR 6/2011	3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	Wes Shaar	1-10-12
12/2009	3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	Wes Shaar	1-10-12
CHKU 3&7 7/2011	3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	Wes Shaar	1-10-12
	3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	Wes Shaar	1-10-12

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Nick Stiglich S# 77582

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	Wes Shaw	1-10-12
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	Wes Shaw	1-10-12
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	Wes Shaw	1-10-12
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaw	1-10-12
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	Wes Shaw	1-10-12

CHR 57571 57569 → 8/23/11

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Nick Stahl S# 77582

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR11-00349 WS 4/15	D	Wes Shaar 1-10-12
• Radioassay batch number ASY1-02673	D	Wes Shaar 1-10-12
• HGAS batch number NA	D	Wes Shaar 1-9-12
• VE batch number VEB11-0009	D	Wes Shaar 1-10-12
• Core Sampling batch number NA	D	Wes Shaar 1-9-12
• Core Analysis batch number NA	D	Wes Shaar 1-9-12
• Data Reconciliation Lot number BNINW2160092	D	Wes Shaar 1-10-12
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	Wes Shaar 1-10-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Nick Stahl S# 77582

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly.

In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

SPM Designee Lead	Wes Shaar	1-10-12
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: [redacted] (000074620)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/15/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/14/12
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/14/12
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/14/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	10/19/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/09/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/02/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	07/21/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/19/10
RPT-TRUW-86	3	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/11/12
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	11/16/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	06/14/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/19/10
RPT-TSR-03	12	TECHNICAL SAFETY REQUIREMENTS	10/10/12
RPT-TSR-03	10	TECHNICAL SAFETY REQUIREMENTS	06/14/11
RPT-TSR-03	9	TECHNICAL SAFETY REQUIREMENTS	10/15/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/03/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	02/08/10	02/08/11
QCASYITR	NONDESTRUCTIVE ASSAY ITR	10/14/10	10/14/12
AMWHAZ	HAZWOPER QUAL	01/20/11	01/20/12
QCSPM01A	**SITE PROJECT MANAGER DESIGNEE**	**02/17/11**	**02/17/13**
AMWHAZ	HAZWOPER QUAL	01/10/12	01/10/13
QCTECHSP	TECH VERIFICATION SPEC I & II	01/17/12	01/17/14
QCNDAETR	NON-DESTRUCTIVE ASSAY ETR/ITR	09/19/12	09/19/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	08/21/10	
AWPRO001	AMWTP RCRA AUXILIARY WORKER TRAINING PROFILE	11/17/10	
AF1020	INDIVIDUAL TRAINING PLAN	11/17/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	01/30/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGOPS0000511	LLW/MLLW Disposition Program Mockup	01/04/12
TGSAF0000004	September Safety Pause	09/13/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Site Project Manager Designee

Qualification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:			
TRU Programs Manager	E-TORRES		2/17/11
Manager Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :			
	Dave Butler		2/18/10
	Print Name	Signature	Date

FEB 22 2011

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg		2/2/10
	Print Name	Signature	Date
Training Manager Approval	Ralph Hartline		2/2/10
	Print Name	Signature	Date

QC 2-22-11 KM

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial issue of checklist.	2/27/07
1	All	Reformat to new format; update Task Analysis.	E. Schweinsberg

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Kenny Burnside	K B	KB
Nancy Kirk	Nancy Kirk	NDK
Dave Marquardt	D Marquardt	DM
Nick Stykl	Nick Stykl	NS
Wes Skaar	Wes Skaar	WS
Eric Schweinsberg	Eric Schweinsberg	ES
E-TORRES	E Torres	ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

1.0 **Scope**
This qualification checklist has been developed in order to train and qualify individuals to perform the duties of a Site Project Manager Designee at AMWTP. Once qualified, the employee must complete this checklist again after 24 months to maintain qualified status. The employee may be disqualified for any or all of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 **Prerequisites**
Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.
The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training. Employee's Manager — Date: 10/14/10

	Date Requirement Was Completed	**Signature** (Training Specialist or SS)	**Date**
2.1 None	N/A	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by an SPM Designee Lead or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT3101, TRU Programs Overview or 0AWT3105	7-15-03	0
3.1.2 0AWT3108, Waste Analysis Plan (WAP) or 0AWT3105	6-3-05	0
3.1.3 0AWT3111, WIPP Waste Acceptance Criteria or 0AWT3105	4-6-06	0
3.1.4 0AWT4101 or 0AWT4102, Conduct of Operations	4-13-04	0

Training Representative or SPM Designee Lead verify initial training courses are complete:	Dave Botha Signature	2/18/10 Date

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	Wes Shaar	12-11-10
3.3.2 MP-TRUW-8.2, Quality Assurance Project Plan	Wes Shaar	12-11-10
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	Wes Shaar	12-11-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.4 MP-TRUW-8.5, TRU Waste Certification	Wes Shaar	12-11-10
3.3.5 MP-TRUW-8.8, Level I Data Validation	Wes Shaar	12-11-10
3.3.6 MP-TRUW-8.9, Level II Data Validation	Wes Shaar	12-11-10
3.3.7 MP-TRUW-8.11, Data Reconciliation	Wes Shaar	12-19-10
3.3.8 MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation	Wes Shaar	12-19-10
3.3.9 MP-TRUW-8.14, Preparation of Waste Stream Profile Forms	Wes Shaar	12-11-10
3.3.10 MP-TRUW-8.25, Random Selection of containers for Headspace Gas and Solids Sampling and Analysis	Wes Shaar	12-11-10
3.3.11 MP-TRUW-8.44, Direct Load Standard Waste Box Planning	Wes Shaar	12-11-10
3.3.12 MP-TRUW-8.45, Six-Drum Overpack (SDOP) Process and Planning	Wes Shaar	12-19-10
3.3.13 INST-TRUW-8.13.1, TRU Program Site Project Office Process	Wes Shaar	12-19-10
3.3.14 INST-TRUW-8.13.2, Unknown Waste Process	Wes Shaar	12-19-10
3.3.15 RPT-TRUW-04, Acceptable Knowledge Document for the Batelle Columbus Laboratories Building JN-4	Wes Shaar	12-11-10
3.3.16 RPT-TRUW-05, Waste Matrix Code Reference Manual	Wes Shaar	12-11-10
3.3.17 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste	Wes Shaar	12-11-10
3.3.18 RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge	Wes Shaar	12-11-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Benny Burside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.19 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge (BNINW216)	Wes Shaar	12-11-10
3.3.20 RPT-TRUW-12, AMWTP Waste Stream Designations	Wes Shaar	12-19-10
3.3.21 RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste	Wes Shaar	WS 12-11-10 ~~12-10-10~~ 12-11-10
3.3.22 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)	Wes Shaar	12-19-10
3.3.23 RPT-TRUW-19, Population Determination for Waste Stream Profiles BNINW216 and BNINW218	Wes Shaar	12-19-10
3.3.24 RPT-TRUW-23, Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)	Wes Shaar	12-19-10
3.3.25 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510) Report 83	Wes Shaar	12-11-10
3.3.26 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant	Wes Shaar	WS 12-11-10 ~~12-10-10~~ 12-11-10
3.3.27 RPT-TRUW-58, Acceptable Knowledge Document for INL Stored Transuranic Waste – Sample Returns	Wes Shaar	WS 12-11-10 ~~12-10-10~~ 12-11-10
3.3.28 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004)	Wes Shaar	12-19-10
3.3.29 RPT-TRUW-60, Acceptable Knowledge Document for INL Stored Waste – Bettis Atomic Power Laboratory	Wes Shaar	12-19-10

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Kenny Burnside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.30 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836)	Wes Shaar	12-19-10
3.3.31 NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1- B6	Wes Shaar	12-19-10
3.3.32 DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaar	12-19-10
3.3.33 DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP)	Wes Shaar	12-19-10

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	Wes Shaar	12-27-10
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.5 Discuss how initial waste streams and waste stream lots are defined for Characterization.	Wes Shaar	11-17-10
3.4.6 Discuss the preparation of waste stream profile forms and waste stream Characterization Information Summary Reports.	Wes Shaar	11-17-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.7 Discuss Headspace Gas and Solid Sampling analysis for appropriate assignment of EPA Hazardous Waste Numbers.	Wes Shaw	12-27-10
3.4.8 Discuss identification and reporting of Tentatively Identified Compounds.	Wes Shaw	12-27-10

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee has completed the objective and is ready to be evaluated per MP-RTQP-14.13. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 Data Validation			
4.1.1 Demonstrate working knowledge and ability to validate one of each of the following SPM Designee batch types and one data reconciliation lot by performance checkout:	P		[illegible] 12-27-10
• RTR batch number: RTR10-00169	P		[illegible] 10-20-10
• Radioassay batch number: ASY10-02305	P		Nancy D. Kent 10/19/10
• HGAS batch number: HGS10-00020			[illegible] 10/20/10
• VE batch number: VEB10-01089	P		[illegible] 11-8-10
• Core Sampling batch number: SSC10-00002	P		[illegible] 11/17/10
• Core Analysis batch number: ALD07045V	S		Wes Shaw 10/23/10
• Data Reconciliation Lot number: BN835.82	P		

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Keary Burnside S# K 74620 KB 2/18/10

	P S D	OJT Initials	Evaluator Signature & date
4.1.2 Demonstrate the ability to perform validation of SHENC batch data reports.	P	WS	Wes Shaar 12-19-10
4.1.3 Demonstrate the ability to perform validation of ALD batch data reports.	P	WS	Wes Shaar 12-19-10
4.2 Data Reconciliation			
4.2.1 Discuss the Data Reconciliation process.	D	WS	Wes Shaar 12-11-10
4.2.2 Demonstrate the ability to perform SPM Data Reconciliation.	P	WS	Wes Shaar 12-11-10
4.3 Software			
4.3.1 Demonstrate the ability to access WTS and locate screens for completion of SPM work.	P	WS	~~12-1~~ Wes Shaar WS 12-19-10 12-19-10
4.3.2 Demonstrate the ability to access and navigate the Trackwise System from NCR creation to verification of NCR closure.	P	WS	Wes Shaar 12-14-10
4.3.3 Demonstrate the ability to access a spreadsheet for tracking completed validation and NCRs closed.	P	WS	Wes Shaar 12-19-10
4.4 Nonconformance Reports			
4.4.1 Discuss how a Nonconformance is processed, including discrepancy resolution and reporting.	D	WS	Wes Shaar 12-19-10
4.4.2 Demonstrate the ability to process nonconformance reports.	P	WS	Wes Shaar 12-19-10
4.4.3 Demonstrate the ability to perform SPM correction action verification.	P	WS	Wes Shaar 12-19-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Bunch S# 74620

5.0	**Emergency / Abnormal Conditions-** ***None Required***

6.0	**Examinations-** ***None Required***

7.0	**Recommendation for Qualification**	
After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.		
SPM Designee Lead Title	Wes Shaw Signature	12-1-10 Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: ROJAS, CESAR (000103628)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/05/10
RPT-TRUW-59	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/12/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	10/12/12
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/12/10
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	10/12/12
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/12/10
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	10/12/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/25/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/12/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/16/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	07/08/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/05/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	11/22/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	03/24/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/25/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/10/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	03/29/10	03/29/11
QCHGCITR	HGAS ITR CHECKLIST	03/30/10	03/30/12
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	06/17/10	07/17/12
AMWHAZ	HAZWOPER QUAL	04/06/11	04/06/12
AMWRAD02	RAD WORKER 2	06/23/11	07/23/13
QPOT02C0	HGAS SAMPLING AND ANALYSIS	08/09/11	08/09/13
QCTECHSP	TECH VERIFICATION SPEC I & II	02/23/12	02/23/14
QCHGCITR	HGAS ITR CHECKLIST	03/29/12	03/29/14
AMWHAZ	HAZWOPER QUAL	04/05/12	04/05/13
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/11/12	07/11/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO003	AMWTP RCRA INCIDENTAL WORKER TP	03/30/10	
AF1020	INDIVIDUAL TRAINING PLAN	03/30/10	
AFTASKLC	TASK LIST CONTROLLER	05/26/10	
AWPRO003	AMWTP RCRA INCIDENTAL WORKER TP	06/24/10	
AF1020	INDIVIDUAL TRAINING PLAN	06/24/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	09/07/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	02/06/12	

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Cesar Rojas S# 103628

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	S M Peterman	S M Peterman	7/11/12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler	Dave Butler	6/13/12
	Print Name	Signature	Date

JUL 10 2012

QC 7/23/12

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Cesar Rojas S# 103628

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Cesar Rojas S# 103628

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
George Byram	George Byram	B
Ed Peterman	Ed Peterman	EAP

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Ceser Rojas S# 103628

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date: 7/17/12

Employee's Manager

7/11/12
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	6-17-10		6/13/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Cesar Rojo S# 103628

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	George Bu	7/11/12
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	George Bu	7/11/12
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	George Bu	7/11/12
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	George Bu	7/11/12
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	George Bu	7/11/12

Employee Name Cesar Rojo S# 103628

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	George Bu	7/11/12
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	George Bu	7/11/12
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	George Bu	7/11/12
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	George Byrn	7/11/12
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	George Bu	7/11/12

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Cesar Rojo S# 103628

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number N/A	D	N/A
• Radioassay batch number ASY12-01633	D	George Dyer 7/11/12
• HGAS batch number HS12-00005 (JTP)	D	George Dyer 7/11/12
• VE batch number VEB12-00488	D	George Dyer 7/11/12
• Core Sampling batch number N/A	D	N/A
• Core Analysis batch number ALD11024N	D	George Dyer 7/11/12
• Data Reconciliation Lot number N/A	D	N/A
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	George Dyer 7/14/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Cesar Rojas S# 103628

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly.

In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

SPM Designee Lead	George Bu	7/11/12
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: FETZER, PAMELA (000085557)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-07	16	DETERMINATION OF RADIOISOTOPIC CONTENT IN TRU WAST	09/29/10
RPT-TRUW-07	15	DETERMINATION OF RADIOISOTOPIC CONTENT IN TRU WAST	03/01/10
RPT-TRUW-09	8	ACCEPTABLE KNOWLEDGE SUMMARY FOR FIRST/SECOND STAG	08/20/12
RPT-TRUW-09	7	ACCEPTABLE KNOWLEDGE SUMMARY FOR FIRST/SECOND STAG	09/30/10
RPT-TRUW-12	18	AMWTP WASTE STREAM DESIGNATIONS	09/08/11
RPT-TRUW-12	17	AMWTP WASTE STREAM DESIGNATIONS	08/26/11
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/10/10
RPT-TRUW-12	13	AMWTP WASTE STREAM DESIGNATIONS	04/09/10
RPT-TRUW-13	7	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/20/12
RPT-TRUW-15	11	ACCEPTABLE KNOWLEDGE SUMMARY FOR BUILDING 374 SLUD	08/20/12
RPT-TRUW-19	REF	POPULATION DETERMINATION FOR WASTE STREAM PROFILES	08/20/12
RPT-TRUW-23	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED ACID/C	08/20/12
RPT-TRUW-56	5	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/20/12
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	09/29/10
RPT-TRUW-58	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/20/12
RPT-TRUW-59	4	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/20/12
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	09/30/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/20/12
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/20/12
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	10/11/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	03/01/10
RPT-TRUW-79	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR MATERIALS AND FU	08/10/10
RPT-TRUW-82	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	07/12/10
RPT-TRUW-82	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	05/12/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/11/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	08/26/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/28/10
RPT-TRUW-86	3	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/11/12
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/05/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	09/29/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/05/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	02/24/10	02/24/11
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	05/03/10	05/03/12
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	03/21/11	03/21/13
AMWHAZ	HAZWOPER QUAL	09/22/11	09/22/12
QCAKE01A	ACCEPTABLE KNOWLEDGE EXPERT	10/20/11	10/20/13
AMWRAD02	RAD WORKER 2	08/08/12	08/08/14
AMWHAZ	HAZWOPER QUAL	09/18/12	09/18/13

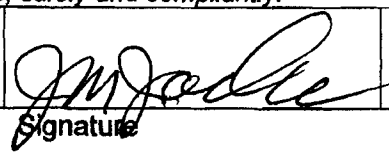
AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Pam Fetzer S# 85557

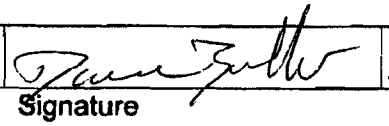
Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	J. M. JACKSON Print Name	 Signature	3/21/11 Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler Print Name	 Signature	3/21/11 Date

TRAINING DEPT.

MAR 22 2011

Initials

Qualification Checklist Approval Section			
Line Manager Approval	Eric Schweinsberg Print Name	Signature on file Signature	6/16/10 Date
Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	6/16/10 Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Pam Fetzer S# 085557

Revision History			
Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record				
Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name PAM FETZER S# 085557

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
George Byram	George Byr	GB
DAVE MARQUARDT		
PAM FETZER		PMF
Eric Schweinsberg		EJS
J. M. JACKSON		JMJ

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name PAM FETZER S# 085557

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date: 4-11-11

Employee's Manager

3/21/11
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	5/3/10		3/21/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Pam Fetzer S# 085557

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	George B	3/21/11 3/20 3/21/11
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	George Byr	3/21/11
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	George Byrn	3/21/11
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	George By	3/21/11
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	George By	3/21/11

Employee Name Pam Fetzer S# 085551

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	George Bu	3/21/11
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	George Bu	3/21/11
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	George Bu	3/21/11
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	George Bu	3/21/11
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	George Bu	3/21/11

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Pam Fetter S# 085557

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR10-00045 (9) MH 3/21/11	D	3-21-11
• Radioassay batch number AS709-02296	D	3-21-11
• HGAS batch number N/A	D	N/A
• VE batch number VE311-00270	D	3-21-11
• Core Sampling batch number N/A	D	N/A
• Core Analysis batch number N/A	D	N/A
• Data Reconciliation Lot number N/A	D	N/A
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	3-21-11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Pam Fetzer S# 085557

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**	
After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly. In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.		
SPM Designee Lead	Gary R	3/21/11
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP - Employee Training History

Employee: BYRAM, GEORGE (000067808)

Date Range: 10/16/2009 to 10/16/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-52	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR FIREBRICK DEBRIS	08/08/10
RPT-TRUW-53	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR MOUND DEBRIS WAST	08/08/10
RPT-TRUW-56	4	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	01/06/12
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/19/10
RPT-TRUW-56	2	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/08/10
RPT-TRUW-58	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/08/10
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/03/10
RPT-TRUW-59	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/08/10
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/08/10
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/08/10
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/23/10
RPT-TRUW-82	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	08/23/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/02/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/01/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	05/01/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/03/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	01/06/12
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	03/07/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/23/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/07/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCBLO001	BBWI LIAISON OFFICERS (BLO)	01/12/10	01/12/11
QCBLO001	BBWI LIAISON OFFICERS (BLO)	12/09/10	12/09/11
AMWHAZ	HAZWOPER QUAL	12/09/10	12/09/11
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	01/11/11	01/11/13
AMWRAD01	RAD WORKER 1	01/17/11	02/17/13
QCBLO001	BBWI LIAISON OFFICERS (BLO)	12/13/11	12/13/12
QCTECHSP	TECH VERIFICATION SPEC I & II	01/11/12	01/11/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AFTASKLC	TASK LIST CONTROLLER	05/24/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	09/07/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	01/19/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000006	SPMD counseling for Action Item 54760 (CAR 54520)	09/28/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name George Byram S# 67808

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	E. TORRES		1/11/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		1-10-2011
	Print Name	Signature	Date

TRAINING DEPT.
JAN 11 2011
Initials KM

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

QC 1-13-11 KM

AMWTP	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name George Byram S# 67808

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name George Bynam S# 67808

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
George Bynam	George Bynam	GB
Dave Butler	Dave Butler	DB
Wes Skaar	Wes Skaar	WS
Eric Schweinsberg	Eric Schweinsberg	ES
E. TORRES	E. TORRES	ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name George Bynum S# 67808

1.0 **Scope**
This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP. The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date. The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 **Prerequisites**
Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.
The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training. Checklist completion target date: 1-30-11 Employee's Manager 1/11/11 Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	1-12-09	Dave Bullock	1-10-11

Employee Name George Byram S# *67808

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	Wes Shaar	1-11-11
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	Wes Shaar	1-11-11
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	Wes Shaar	1-11-11
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	Wes Shaar	1-11-11
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	Wes Shaar	1-11-11

Employee Name George Bygum S# 67808

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	Wes Shaar	1-11-11
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	Wes Shaar	1-11-11
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	Wes Shaar	1-11-11
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaar	1-11-11
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	Wes Shaar	1-11-11

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

Employee Name George Byram S# 67808

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR10-00290	D	Wes Shaar 1-11-11
• Radioassay batch number ASY10-02490	D	Wes Shaar 1-11-11
• HGAS batch number N/A	D	N/A
• VE batch number VEB10-01167	D	Wes Shaar 1-11-11
• Core Sampling batch number N/A	D	N/A
• Core Analysis batch number N/A	D	N/A
• Data Reconciliation Lot number N/A	D	N/A
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	Wes Shaar 1-11-11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name George Byram S# 67808

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**	
After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly. In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.		
SPM Designee Lead Title	Wes Shear Signature	1-11-11 Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS AND TASK-TO-TRAIN MATRIX

FOR

Visual Examiner

At

AMWTP

Date: September 2012

Revision: 4

Instructional Analyst: D. Butler

REVIEW

Todd Golberg	Signature on File	10/2/2012
Training Manager/Supervisor Print/Type Name	Training Manager/Supervisor Signature	Date

APPROVAL

Sue Peterman	Signature on File	10/2/2012
Line Manager/Supervisor Print/Type Name	Line Manager/Supervisor Signature	Date

MODIFICATION RECORD

Revision Number	Affected Pages	Submitted By	Description of Change	Management Approval	Date

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.
6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures
   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences
   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance
   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

NOTE: *The task to training portion of the form can be completed after the job analysis is complete and the design process has begun. Consider completing these sections of the form when developing a new or revised training program that will likely have multiple instructional settings or when it appears that tasks will need to be linked to different types of instructional materials.*

9. Setting—Choose the code that best fits the type of training setting of each identified task:
   - CR – Classroom
   - OJT – On-the-job Training
   - LAB – Laboratory
   - RR – Required Read
   - CBT – Computer Based Training

10. Course or Qualification No.: Include applicable number, if available.

The participants involved in creating the Job Analysis Task List include:

Print Name:	Dave Butler	Signature:	Signature on file	Emp No.:	103532	Date:	9/24/2012
Job Title:	Training Specialist	Phone No.:	557-0979				
Print Name:	Mike Brugger	Signature:	Signature on file	Emp No.:	103053	Date:	10/2/2012
Job Title:	VE E SME	Phone No.:	557-6494				
Print Name:	David J. Preston	Signature:	Signature on file	Emp No.:	86584	Date:	9/24/2012
Job Title:	VEE Lead	Phone No.:	557-0927				
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					

Job: Visual Examination

Duty Area: AMWTP Operational Areas

		Task to Training									
		Task Selection				Setting					
Task Number	Task Statement	NT	PT	T	OT	CR	OJT	LAB	RR	CBT	Course or Qual No.
A	**Visual Examination General Knowledge IAW FOI-17 and OI-34**										
1.	Generate (enter) examination-related data into WTS.				X	X	X				0AWT3142, 0AWT3143, QPVE0001
2.	Verify (concur with) examination-related data entered into WTS.				X	X	X				0AWT3142, 0AWT3143, QPVE0001
3.	Locate waste material parameters and descriptions			X		X	X				0AWT3141, QPVE0001
4.	Identify closure method and layers of confinement.				X	X	X				0AWT3142, QPVE0001
5.	Locate Waste Matrix Codes and IDC's.			X		X	X				0AWT3142, QPVE0001
6.	Initiate and update Nonconformance Reports (NCRs) using Trackwise.			X						X	0AWT4138C
7.	Obtain generator site waste characterization information.			X		X	X				0AWT4132, QPVE0001
8.	Ensure DQO's are met.				X	X	X				0AWT4132, 0AWT3143, QPVE0001
9.	Operate audio/video equipment.			X			X				QPVE0001
10.	Identify packaging configuations.				X	X	X				0AWT3142, QPVE0001
11.	Assign waste to the proper Waste Material Parameters.				X	X	X				0AWT3142, QPVE0001
12.	Perform volume and weight conversions using procedural exhibits.				X	X	X				0AWT3142, QPVE0001
13.	Assign IDC and Waste Matrix Code during VE process.				X	X	X				0AWT3142, QPVE0001
14.	Identify path forward for prohibited and nonconforming items and associated NCRs.				X	X	X				0AWT3142, QPVE0001
15.	Identify common and conditional waste items through VE or video				X	X	X				0AWT3142, QPVE0001
16.	Identify packaging and waste materials.				X	X	X				0AWT3142, QPVE0001

Task Number	Task Statement	Task Selection				Setting					Course or Qual No.
		NT	PT	T	OT	CR	OJT	LAB	RR	CBT	
17.	Identify prohibited and suspect items through VE or video.				X	X	X				0AWT3142, QPVE0001
18.	Identify secondary waste items through VE or video.			X		X	X				0AWT3142, QPVE0001
19.	Assign IDC's for newly generated secondary waste and compacted waste.				X	X	X				0AWT3142, QPVE0001
20.	Estimate volumes and nominal densities of waste.				X	X	X				0AWT3142, QPVE0001
21.	Identify waste per DEQ requirements.			X		X	X				0AWT3142, QPVE0001
22.	Identify waste per NTS WAC requirements.			X		X	X				0AWT3142, QPVE0001
23.	Identify rigid liner types and status/condition.				X	X	X				0AWT3142, QPVE0001
24.	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.				X	X	X				0AWT3142, QPVE0001
25.	Identify when VE is an appropriate characterization method.			X		X	X				0AWT3142, 0AWT3143, QPVE0001
B.	**Newly Generated Waste VE**										
1.	Perform Newly Generated Waste (NGW) package VE.				X	X	X				0AWT3142, 0AWT3143, QPVE0001
2.	Perform Newly Generated Waste Closure VE.				X	X	X				0AWT3142, 0AWT3143, QPVE0001
C.	**Visual Examination of Legacy Waste Containers**										
1.	Perform VE of Legacy waste.				X	X	X				0AWT3142, 0AWT3143, QPVE0001
D.	**Visual Examination (Boxlines)**										
1.	Perform Boxline VE (BiD).				X	X	X				0AWT3142, 0AWT3143 QPVE0001,
2.	Peform Boxline VE (DiD) volume estimates and nominal densities.				X	X	X				0AWT3142, 0AWT3143 QPVE0001,
E.	**RTR/VE Update (RVU)**										
1.	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).				X		X				QPVE0001
2.	Perform RVU for the final configuration of a Coring Drum.				X		X				QPVE0001
3.	Perform RVU for the final configuration of a Treatment Drum.				X		X				QPVE0001

4.	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.				X		X				QPVE0001

NT = No Formal Training PT = Pre-train T = Train OT = Over Train CBT = Computer Based Training

CR = Classroom OJT = On-The-Job Training LAB = Laboratory RR = Required Reading

AMWTP Advanced Mixed Waste Treatment Project	Job Analysis Task Listing	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 1 of 6

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK PLAN

FOR
Visual Examination Expert (VEE)

At
AMWTP

Date: 06/14/10

Revision: 1

Instructional Analyst: D. Butler

REVIEW

Ralph Hartline		48593	6/24/10
Training Manager/Supervisor Print/Type Name	Training Manager/Supervisor Signature	S No.	Date

APPROVAL

D.J. Preston		86584	6-15-10
Line Manager/Supervisor Print/Type Name	Line Manager/Supervisor Signature	S No.	Date

Job Analysis Task Listing

Submitted By: D. Preston   Date: 06/14/2010

MODIFICATION RECORD				
Change Number	Affected Pages	Description of Change	Management Approval	Date
0	ALL	Initial Issue for VEE Lead.	D. Preston	5/28/08
1	All	Update task list and review for applicability.	D. Preston for Jim Jackson	6-22-10

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures

   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences

   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance

   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

AMWTP Advanced Mixed Waste Treatment Project	Job Analysis Task Listing	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 4 of 6

The participants involved in creating the Job Analysis Task List include:

Print Name:	L.M. Brugger	Signature:		Emp No.:	103053	Date:	6-14-10
Job Title:	VEE Tech. Lead/SME	Phone No.:	7032				
Print Name:	Dave Butler	Signature:		Emp No.:	103532	Date:	6-14-2010
Job Title:	Training Specialist	Phone No.:	557-0979				
Print Name:	Dave Preston	Signature:		Emp No.:	086584	Date:	6-14-10
Job Title:	VEE Lead	Phone No.:	7242				
Print Name:	L TUALICK-R	Signature:		Emp No.:	901454	Date:	6-14-2010
Job Title:	VEE	Phone No.:	7323				
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
Job Analysis Chronology: Document meetings held and accomplishments of the meetings:					
A.	**VE Expert Performance Tasks at AMWTP**				
1.	Provide direction and implementation of floor level VE.			X	
2.	Locate waste material parameters and descriptions.			X	
3.	Identify closure method and layers of confinement.			X	
4.	Identify filter models.			X	
5.	Identify rigid liner types and status/condition.			X	
6.	Identify drum configurations.			X	
7.	Identify packaging and waste materials.			X	
8.	Estimate Volume and Nominal Densities.			X	
9.	Identify Common and Conditional Waste Items through Video or VE.			X	
10.	Identify Prohibited, Suspect, or Inconclusive items through Video or VE.			X	
11.	Assign Waste to Waste Material Parameter Categories.			X	
12.	Assign Waste Matrix Codes.			X	
13.	Identify IDCs for Newly Generated Secondary or Compacted Waste through Video or VE.			X	
14.	Perform Volume and Weight Conversions.			X	
15.	Generate (enter) and verify (concur with) examination-related data in WTS.			X	
16.	Operate Audio/Visual recording equipment.	X			
17.	Verify that Data Qualitiy Objectives are consistent with requirements.			X	
18.	Identify conditions where a complete VE cannot be performed.			X	
19.	Evaluate mixed waste compared to the Acceptable Knowledge (AK) information to confirm or supplement the established AK.	X			
B.	**Duty Area: AMWTP; WMF-634, -676**				
20.	Manipulate or supervise the manipulation of waste material.	X			
21.	Oversee glovebox operations.	X			
22.	Perform classroom and OJT instruction.	X			
23.	Sign onto AMOWs.	X			
24.	Perform Trackwise activities.			X	
25.	Enter RTR control room to observe RTR screen and provide opinion on physical appearance of waste under x-ray.	X			
26.	Enter drum coring room to observe VE operation and provide opinion o all aspects of the Visual Exam.	X			
27.	Provide opinion on off-normals (i.e. breached container waste item identification) in WMF-628, 634, 636, and 676.	X			
28.	Enter the Boxline at the controls area to observe VE operation and provide opinion on all aspects of the Visual Examination.	X			
29.	Observe DWPG VE operations from the observation windows.	X			

30.	Enter WMF-628 to observe drum treatment and RVU data generation and provide opinion on all aspects of drum treatment/liquid absorption.	X			
31.	Change/override data in WTS.			X	

*NT = No Training PT = Pre-train T = Train OT = Over Train

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name _____ S# 100175

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	J. M. JACKSON		7/11/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	J. M. JACKSON		7/11/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	P. REDDISH		7/4/11
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

JUL 12 2011

QC

JUL 11 2011

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name _____ S# 100175

Revision History			
Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3BA	5All	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 3; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

Employee Name _____ S# 100175

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
D. REDDITT		
		CM
L.T. WALKER		
J. M. JACKSON		

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name [signature] S# 100175

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

[signature] Employee's Production Manager 7/11/11 Date

		Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1	Completion of VE qualification (QPVE0001).	8/1/07	[signature]	7/4/11

Employee Name [signature] S# 100175

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17.	[signature]	7-11-11

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	[signature]	7-11-11
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	[signature]	7-11-11

Employee Name Danny Gagon S# 100175

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	P(S)	D. Wark 7-11-11
4.2	Verify (concur with) examination-related data entered into WTS.	P(S)	D. Wark 7-11-11
4.3	Identify closure methods and layers of confinement.	P(S)	D. Wark 7-11-11
4.4	Discuss how to ensure DQOs are met.	D	D. Wark 7-11-11
4.5	Identify packaging configurations.	P(S)	D. Wark 7-11-11
4.6	Assign proper Waste Material Parameters to waste.	P(S)	D. Wark 7-11-11
4.7	Perform weight and volume conversions using procedural aids.	P(S)	D. Wark 7-11-11
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	P(S)	D. Wark 7-11-11
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P(S)	D. Wark 7-11-11
4.10	Identify common and conditional waste items through VE or video.	P(S)	D. Wark 7-11-11

Employee Name [signature] S# 100175

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P(S)	[signature] 7-11-11
4.12	Identify prohibited and suspect items through VE or video.	P(S)	[signature] 7-11-11
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P(S)	[signature] 7-11-11
4.14	Estimate volumes and nominal densities of waste.	P(S)	[signature] 7-11-11
4.15	Identify rigid liner types and their status and condition.	P(S)	[signature] 7-11-11
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P(S)	[signature] 7-11-11
4.17	Perform Newly Generated Waste (NGW) package VE.	P(S)	[signature] 7-11-11
4.18	Perform Newly Generated Waste Closure VE.	P(S)	[signature] 7-11-11
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P(S)	[signature] 7-11-11
4.20	Perform Boxline VE (BiD).	P(S)	[signature] 7-11-11
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P(S)	[signature] 7-11-11
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P(S)	[signature] 7-11-11
4.23	Perform RVU for the final configuration of a Coring Drum.	P(S)	[signature] 7-11-11
4.24	Perform RVU for the final configuration of a Treatment Drum.	P(S)	[signature] 7-11-11

Employee Name _____ S# 100175

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P S	7-11-11

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S D		7/4/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S D		7/4/11
5.3	Dropped waste container (MP-EC&P-12.9)	S D		7/4/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S D		7/4/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S D		7/4/11
5.6	Spill / Contamination Release (INST-OI-88)	S D		7/4/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S D		7/4/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S D		7/4/11
5.9	Loss of Commercial Power (AOI-04)	S D		7/4/11
5.10	Evacuation (EP&C-12.7)	S D		7/4/11
5.11	Take Cover (EP&C-12.7)	S D		7/4/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name _____ S# 100175

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert		7-11-11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

Idaho Treatment Group

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To: Distribution

From: S. M. Peterman, TRU Waste Programs Manager

Date: October 8, 2011

Re: Advanced Mixed Waste Treatment Project Visual Examination Expert Designees – SMP-01-11

In accordance with the Waste Analysis Plan of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit Section C1-4, the Advanced Mixed Waste Treatment Project (AMWTP) has designated the following individuals as Visual Examination Experts (VEEs) to provide overall direction and implementation of the visual examination activities on a daily basis:

- Lawrence J. Walker
- Denny Gasper
- Mark Sorensen
- Ron Grise
- Louis "Mike" Brugger
- Dave Preston

The VEE selection was in accordance with AMWTP's qualification and training requirements specified in MP-RTQP-14.1, Preparation and Administration of Individual Training Plans, and MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP). If you have any questions or comments, then please contact me at 208-557-6383.

smp

Distribution

David H. Haar
Louis M. Brugger
George Byram
Steve Carpenter
Elvin Dumas
Ted Griffith
Jeremy Hampton
Jim Jackson
AMWTP Correspondence Control
Mike Parrish
Dave Preston
Wes Skaar
Charles Stepzinski
Gina Tedford
L. J. Walker

AMWTP - Employee Training History

Employee: [redacted] (000100175)

Date Range: 10/16/2009 to 10/16/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
PD-LLW-03	2	OFFSITE LLW/MLLW DISPOSITION PROJECT DESCRIPTION	02/27/12
POL-024	REF	AMWTP Migratory Bird Policy	06/26/10
POL-026	0	PERSONAL CELL PHONE/ELECTRONIC EQUIPMENT POLICY	09/30/10
QAPP-01	12	QUALITY ASSURANCE PROGRAM PLAN	03/26/11
QAPP-01	11	QUALITY ASSURANCE PROGRAM PLAN	03/08/11
RPT-Q&SI-01	13	WIPP PROCEDURE LIST	08/10/10
RPT-TRUW-03	8	DRUM ASSAY TECHNICAL REVIEW REPORT	07/03/12
RPT-TRUW-05	30	WASTE MATRIX CODE REFERENCE MANUAL	10/06/12
RPT-TRUW-05	29	WASTE MATRIX CODE REFERENCE MANUAL	03/05/12
RPT-TRUW-05	27	WASTE MATRIX CODE REFERENCE MANUAL	06/09/11
RPT-TRUW-05	26	WASTE MATRIX CODE REFERENCE MANUAL	04/28/11
RPT-TRUW-05	25	WASTE MATRIX CODE REFERENCE MANUAL	12/10/10
RPT-TRUW-05	24	WASTE MATRIX CODE REFERENCE MANUAL	06/25/10
RPT-TRUW-05	23	WASTE MATRIX CODE REFERENCE MANUAL	12/07/09
RPT-TRUW-06	13	ACCEPTABLE KNOWLEDGE BASELINE DOCUMENT FOR AMWTP W	08/04/11
RPT-TRUW-06	12	AMWTP BASELINE AK FOR NEWLY GENERATED WASTE	08/25/10
RPT-TRUW-12	17	AMWTP WASTE STREAM DESIGNATIONS	08/04/11
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/04/10
RPT-TRUW-12	13	AMWTP WASTE STREAM DESIGNATIONS	03/16/10
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/19/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/20/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/10/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	05/04/10	05/04/11
AMWRAD02	RAD WORKER 2	07/21/10	08/21/12
QPOT03A0	REAL TIME RADIOGRAPHY	02/14/11	02/14/13
AMWHAZ	HAZWOPER QUAL	04/28/11	04/28/12
QCVEE001	VISUAL EXAMINATION EXPERT	06/02/11	06/02/13
QPVE0001	VISUAL EXAMINER	07/11/11	07/11/13
QPITR03A	LEVEL 1 VALIDATION ITR	07/28/11	07/28/13
QCITR0VE	LEVEL 1 VALIDATION ITR VE	03/22/12	03/22/14
QCITRRTR	LEVEL I VAL ITR REV FOR RTR	03/22/12	03/22/14
AMWHAZ	HAZWOPER QUAL	04/06/12	04/06/13
QCTECHSP	TECH VERIFICATION SPEC I & II	05/01/12	05/01/14
AMWRAD02	RAD WORKER 2	07/12/12	07/12/14
QCASYITR	NONDESTRUCTIVE ASSAY ITR	08/27/12	08/27/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	08/10/10	

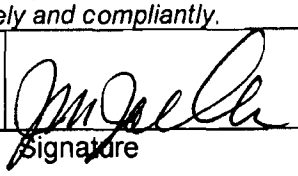
AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

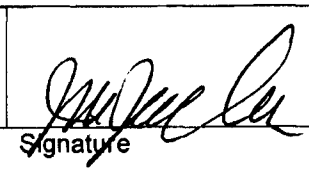
Employee Name Denny Gasper S# 100175

Visual Examination Expert

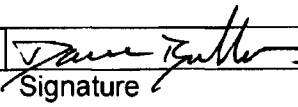
Qualification Package Number: QCVEE001

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **Level I Validation Manager** Manager Title	J.M. JACKSON Print Name	 Signature	6/2/11 Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	J.M. JACKSON Print Name/Title	 Signature	6/2/11 Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler Print Name	 Signature	3-2-2011 Date

JUN 02 2011

Qualification Package Approval Section

Initials

Line Manager Approval	Jim Jackson Print Name	Signature on file Signature	6/22/10 Date

Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	6/30/10 Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Gasper S# 100175

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	ALL	Initial Issue.	5-28-08
1	ALL	Made editorial corrections. Update to new format. Implemented Training/Evaluation Standard as applicable.	6-30-10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Denny Gasper S# 100175

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler		DB
Dave Preston		DP
J. M. JACKSON		JMJ

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Gasper S# 100175

1.0 Scope

The VEE will be familiar with the waste generating processes that have taken place at the AMWTP and will also be familiar with all types of waste being characterized at the AMWTP. The VEE is responsible for direction and implementation of the VE at the AMWTP. This individual is selected based on experience and training in the types of waste being characterized, and receives training in the same elements as the VE personnel with both formal training and OJT. Qualification of a VEE is based on familiarity with waste generating processes and familiarity with the types of waste being characterized.

The VEE will access HWMA/RCRA areas to provide direction to Visual Examiners and Operations Management concerning Visual Examination (VE) events and has the authority to set task lists and disposition codes in WTS. The VEE will also perform classroom and OJT instruction/performance assessment.

The QCVE0001 qualification is valid for 24 months afterwhich a requalification package must be completed to maintain qualified VEE status.

The VEE may be disqualified if any of the following conditions exist: Extended absence, identified training expires, failure to maintain Hazwoper Refresher training, performance deficiencies. Refer to MP-RTQP-14.4, Personnel Qualification and Certification.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of a VEE Lead.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification checklist.

Level I Validation Manager — Date 6/2/11

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Denny Gasper S# 100175

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the VEE SME, VEE Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	6-28-07	Initial / 0
3.1.2 0AW T3141, Visual Examination Indoctrination	6-19-07	Initial / 0
3.1.3 0AW T3142, Visual Examination	6-20-07	Initial / 0
3.1.4 0AW T3143, WTS & DQOs	6-22-07	Initial / 0

Training Representative or a qualified **VEE Lead** verify initial training courses are complete:	Signature	Date: 3-2-2011

Sign-off by the VEE Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 **Required Reading: Operating Instructions**	**VEE Lead or SME**	**Date**
3.2.1 INST-OI-16 Drum Coring (For familiarity)	David J Preston	6/2/11
3.2.2 INST-OI-73 Manual Drum Coring *(For familiarity)*	David J Preston	6/2/11
3.2.3 INST-OI-12 RTR Ops (Drum) (Initial – for familiarity)	David J Preston	4/18/11
3.2.4 INST-OI-41 RTR Ops (Box) (For familiarity)	David J Preston	4/18/11

Employee Name Denny Harper S# 100175

3.2 **Required Reading: Operating Instructions**	VEE Lead or SME	Date
3.2.5 INST-OI-60 RTR Ops (Quick Scan) *(For familiarity)*	David J Preston	4/18/11
3.2.6 INST-OI-81 RTR Ops (WIPP Cert for Boxes) *(For familiarity)*	David J Preston	4/18/11
3.2.7 INST-FOI-21, Drummed Waste Handling Operations *(For familiarity)*	David J Preston	5/5/11
3.2.8 INST-FOI-23 SCW Ops. (For familiarity)	David J Preston	5/5/11
3.2.9 INST-FOI-25 SCW PAM Ops (For familiarity)	David J Preston	5/5/11
3.2.10 INST-FOI-16 Box Line Ops (For familiarity)	David J Preston	4/18/11
3.2.11 INST OI-11 Waste Container Handling *(For familiarity)*	David J Preston	4/18/11
3.2.12 INST-OI-23 Soil Removal Ops *(For familiarity)*	David J Preston	5/5/11
3.2.13 INST-OI-24, Waste Packaging	David J Preston	5/5/11
3.2.14 INST-OI-68 Drum Treatment Facility Ops *(For familiarity)*	David J Preston	4/18/11
3.2.15 INST-OI-34 Non-Facility Visual Examination Ops	David J Preston	4/18/11
3.2.16 INST-FOI-17 Facility Visual Examination Ops	David J Preston	4/18/11
3.2.17 INST-OI-75, Container-in-Container Sampling *(For familiarity)*	David J Preston	4/18/11

Employee Name Denny Gasper S# 100175

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.1 RPT-DSA-02, for Operations Chapters 4 & 5	David J Preston	5/10/11
3.3.2 MP-Q&SI-5.3, Corrective Action	David J Preston	5/10/11
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	David J Preston	5/10/11
3.3.4 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	David J Preston	4/18/11
3.3.5 MP-TRUW-8.2; Quality Assurance Project Plan (QAPjP)	David J Preston	4/18/11
3.3.6 MP-TRUW-8.5, TRU Waste Certification *(For familiarity)*	David J Preston	4/18/11
3.3.7 MP-TRUW-8.8, Level I Validation	David J Preston	4/18/11
3.3.8 MP-TRUW-8.13, Collection, Review, Confirmation, & Management of AK Documentation *(For familiarity)*	David J Preston	5/10/11
3.3.9 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory *(For familiarity)*	David J Preston	4/18/11
3.3.10 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual	David J Preston	4/18/11
3.3.11 RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements *(For familiarity)*	David J Preston	4/18/11
3.3.12 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge *(For familiarity)*	David J Preston	5/10/11
3.3.13 RPT-TRUW -12, AMWTP Waste Stream Designations	David J Preston	4/18/11

Employee Name Denny Gasper S# 100175

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.14 RPT-TRUW-13, Acceptable knowledge document for INL stored transuranic waste-Mound Plant Waste *(For familiarity)*	David J Dexter	4/18/11
3.3.15 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge *(For familiarity)*	David J Dexter	4/18/11
3.3.16 RPT-TRUW-23, Acceptable Knowledge Summary for solidified Acid/Caustic Waste (BN835) *(For familiarity)*	David J Dexter	4/18/11
3.3.17 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompactor Debris Waste (BN510)	David J Dexter	4/18/11
3.3.18 RPT-TRUW-44, Acceptable Knowledge Summary for Non Special Metal (BN296) *(For familiarity)*	David J Dexter	5/10/11
3.3.19 RPT-TRUW-46, Acceptable Knowledge Summary for Glass Debris Waste (BN243) *(For familiarity)*	David J Dexter	5/10/11
3.3.20 RPT-TRUW-48, Acceptable Knowledge Summary for Leaded Rubber Debris Waste (BN252) *(For familiarity)*	David J Dexter	5/10/11
3.3.21 RPT-TRUW-52, Acceptable Knowledge Summary for Firebrick Debris Waste (BN161) *(For familiarity)*	David J Dexter	5/10/11
3.3.22 RPT-TRUW-53, Acceptable Knowledge Summary for Mound Debris Waste (BN304) *(For familiarity)*	David J Dexter	5/10/11
3.3.23 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Dexter	4/18/11

Employee Name Denny Gasper S# 100175

3.3 **Required Reading: Other Documents**	**VEE Lead or SME**	**Date**
3.3.24 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004) *(For familiarity)*	David J Preston	6/2/11
3.3.25 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836) *(For familiarity)*	David J Preston	6/2/11
3.3.26 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)	David J Preston	6/2/11
3.3.27 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria *(For familiarity)*	David J Preston	6/2/11
3.3.28 INEL-96/0280, Acceptable Knowledge (AK) Document for INEEL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Preston	6/2/11
3.3.29 NM4890139088, WIPP Hazardous Waste Permit Waste Analysis Plan *(Review changes – for impacts on VE)*	David J Preston	6/2/11
3.3.30 DOE/WIPP-02-3122, Contact-Handled Waste Acceptance Criteria for the Waste Isolation Pilot Plant (CH-WAC) *(Review changes – for impacts on VE)*	David J Preston	6/2/11
3.3.31 DOE/CBFO-94-1012, Quality Assurance Program Document *(Initial – for familiarity)*	David J Preston	6/2/11
3.3.32 40 CFR 260 to 265, and 268, RCRA Regulations associated with solid and hazardous waste determinations *(For familiarity)*	David J Preston	6/2/11

Employee Name Denny Gasper S# 100175

Sign-off by the VEE Lead or SME indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 **Knowledge:**	**VEE Lead or SME**	**Date**
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	David J Preston	5/19/11
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	David J Preston	5/19/11
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	David J Preston	5/19/11
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	David J Preston	5/19/11
3.4.5 Discuss Criticality Safety and how it applies to tasks covered in this qualification checklist.	David J Preston	5/19/11
3.4.6 Discuss the overall responsibilities of the VEE.	David J Preston	5/19/11

Employee Name Denny Gasper S# 100175

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle all that apply.

Initials by the VEE indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	VEE Initials	Evaluator Signature & date
4.1 VEE Performance Objectives			
4.1.1 Discuss and locate waste material parameters and descriptions.	(D)	DP	David J Dexter 5/19/11
4.1.2 Discuss and identify closure method and layers of confinement through video or VE.	(P) S	DP	David J Dexter 5/19/11
4.1.3 Identify filter models.	(P) S	DP	David J Dexter 5/19/11
4.1.4 Identify rigid liner types and status/condition.	(P) S	DP	David J Dexter 5/19/11
4.1.5 Discuss and identify waste drum configurations through video or VE.	(P) S	DP	David J Dexter 5/19/11
4.1.6 Discuss and identify packaging and waste materials through video or VE.	(P) S	DP	David J Dexter 5/19/11
4.1.7 Discuss and estimate Volumes and Nominal Densities through video or VE.	(P) S	DP	David J Dexter 6/2/11
4.1.8 Identify common and conditional items in waste through video or VE.	(P) S	DP	David J Dexter 5/19/11
4.1.9 Identify prohibited, suspect, or inconclusive items in waste through video or VE.	(P) S	DP	David J Dexter 5/19/11

Employee Name Denny Gasper S# 100175

	P S D	VEE Initials	Evaluator Signature & date
4.1.10 Discuss and assign waste to waste material parameter categories.	(P)S	DMP	David J Acosta 6/2/11
4.1.11 Discuss and assign Waste Matrix Codes.	(P)S	DMP	David J Acosta 6/2/11
4.1.12 Identify and discuss IDCs for newly generated secondary waste and compacted waste.	P(S)	DMP	David J Acosta 6/2/11
4.1.13 Perform volume and weight conversions.	P(S)	DMP	David J Acosta 6/2/11
4.1.14 Generate (enter) and verify (concur with) examination-related data in WTS.	(P)S	DMP	David J Acosta 5/19/11
4.1.15 Discuss Audio/Video equipment available, and the requirements associated with their use.	(D)	DMP	David J Acosta 6/2/11
4.1.16 Define Data Quality Objectives (DQOs) for the VE program.	(D)	DMP	David J Acosta 5/19/11
4.1.17 Discuss conditions where a complete VE cannot be performed.	(D)	DMP	David J Acosta 5/19/11
4.1.18 Discuss integration of RTR/VE Update (RVU) with the original analysis and the Batch Data Report.	(D)	DMP	David J Acosta 5/19/11
4.1.19 Discuss the Data Review and Validation Process.	(D)	DMP	David J Acosta 5/19/11
4.1.20 Discuss the actions to be taken if assistance is required by operations to identify material in a breached container event in buildings WMF-628, 634, 635, and 676.	(D)	DMP	David J Acosta 6/2/11
4.1.21 Demonstrate the ability to perform Trackwise activities.	(P)	DMP	David J Acosta 5/19/11

Employee Name Denny Gasper S# 100175

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the VEE Lead or SME indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot simulate or discuss the task without coaching, terminate the Performance Assessment.

		S D	VEE Lead or SME	Evaluator Signature	Date
5.1	Discuss the conditions under which a VEE would need to change or override data in WTS.	S (D)	DPP	David J Preston	6/2/11
5.2	Evacuation (MP-EP&C-12.7)	(S) D	DPP	David J Preston	6/2/11
5.3	Take Cover (MP-EP&C-12.7)	(S) D	DPP	David J Preston	6/2/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Cusper S# 100175

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO EXAM REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert Lead or SME acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the individual recommending qualification of the candidate has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
VEE Lead or SME Title	David J Preston Signature	6/2/11 Date

Upon satisfactory completion of this qualification package, the Level I Validation Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3C**

Employee Name Ron Grise S# 103914

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Pete Hingston	Peter Hingston	3/22/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Pete Hingston	Peter Hingston	3/22/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Ted Simmons		2-15-11
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

QC 3/28/11 CR

...NG DEPT.
MAR 23 2011
Initials CR

Employee Name Ronald Grise S# 103914

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3BA	5All	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 3; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Ronald Grise S# 103914

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Ted Simmons		
Shane Haney		
P. Hingston	Peter Hingston	PH

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AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Ronald Grise S# 103914

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training ***and is current*** on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 2/15/11

		Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1	Completion of VE qualification (QPVE0001).	~~3/13/10~~ ~~2/25/08~~ 03/16/09 TS 2/15/11		2/15/11

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Employee Name Ronald Grise S# 103914

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17.	[signature]	3-18-11

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	[signature]	3-18-11
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	[signature]	3-18-11

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Employee Name Ronald Grise S# 103914

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	(P) S	Mack 3-18-11
4.2	Verify (concur with) examination-related data entered into WTS.	(P) S	Mack 3-18-11
4.3	Identify closure methods and layers of confinement.	P (S)	Mack 3-18-11
4.4	Discuss how to ensure DQOs are met.	(D)	Mack 3-18-11
4.5	Identify packaging configurations.	P (S)	Mack 3-18-11
4.6	Assign proper Waste Material Parameters to waste.	(P) S	Mack 3-18-11
4.7	Perform weight and volume conversions using procedural aids.	P (S)	Mack 3-18-11
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	(P) S	Mack 3-18-11
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P (S)	Mack 3-18-11
4.10	Identify common and conditional waste items through VE or video.	P (S)	Mack 3-18-11

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AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Ronald Grise S# 103914

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P S	Y Jurack 3-18-11
4.12	Identify prohibited and suspect items through VE or video.	P S	Y Jurack 3-18-11
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P S	Y Jurack 3-18-11
4.14	Estimate volumes and nominal densities of waste.	P S	Y Jurack 3-18-11
4.15	Identify rigid liner types and their status and condition.	P S	Y Jurack 3-18-11
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P S	Y Jurack 3-18-11
4.17	Perform Newly Generated Waste (NGW) package VE.	P S	Y Jurack 3-18-11
4.18	Perform Newly Generated Waste Closure VE.	P S	Y Jurack 3-18-11
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P S	Y Jurack 3-18-11
4.20	Perform Boxline VE (BiD).	P S	Y Jurack 3-18-11
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P S	Y Jurack 3-18-11
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P S	Y Jurack 3-18-11
4.23	Perform RVU for the final configuration of a Coring Drum.	P S	Y Jurack 3-18-11
4.24	Perform RVU for the final configuration of a Treatment Drum.	P S	Y Jurack 3-18-11

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AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Ronald Grise S# 103914

VE Over-Train Performance Objectives		**P S D**	**Evaluator Signature & date**
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P/S	[signature] 3-8

5.0	***Emergency / Abnormal Conditions***
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.	

		P S D	**SS Signature** Mod. 3C	**Date**
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)	[signature]	03/[illegible]/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)	[signature]	03/[illegible]/11
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)	[signature]	03/17/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)	[signature]	03/17/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)	[signature]	03/17/11
5.6	Spill / Contamination Release (INST-OI-88)	S(D)	[signature]	03/17/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)	[signature]	03/17/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)	[signature]	03/17/11
5.9	Loss of Commercial Power (AOI-04)	S(D)	[signature]	03/17/11
5.10	Evacuation (EP&C-12.7)	S(D)	[signature]	03/17/11
5.11	Take Cover (EP&C-12.7)	S(D)	[signature]	03/17/11

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Employee Name Ronald Grise S# 103914

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert		3-17-11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

Idaho Treatment Group

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To: Distribution

From: S. M. Peterman, TRU Waste Programs Manager

Date: October 8, 2011

Re: Advanced Mixed Waste Treatment Project Visual Examination Expert Designees – SMP-01-11

In accordance with the Waste Analysis Plan of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit Section C1-4, the Advanced Mixed Waste Treatment Project (AMWTP) has designated the following individuals as Visual Examination Experts (VEEs) to provide overall direction and implementation of the visual examination activities on a daily basis:

- Lawrence J. Walker
- Denny Gasper
- Mark Sorensen
- Ron Grise
- Louis "Mike" Brugger
- Dave Preston

The VEE selection was in accordance with AMWTP's qualification and training requirements specified in MP-RTQP-14.1, Preparation and Administration of Individual Training Plans, and MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP). If you have any questions or comments, then please contact me at 208-557-6383.

smp

Distribution

David H. Haar
Louis M. Brugger
George Byram
Steve Carpenter
Elvin Dumas
Ted Griffith
Jeremy Hampton
Jim Jackson
AMWTP Correspondence Control
Mike Parrish
Dave Preston
Wes Skaar
Charles Stepzinski
Gina Tedford
L. J. Walker

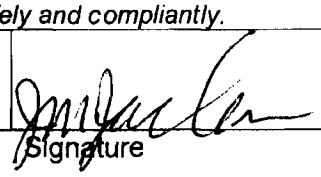
AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

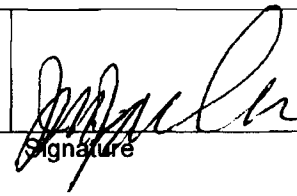
Employee Name Ron Grise S# 103914

Visual Examination Expert

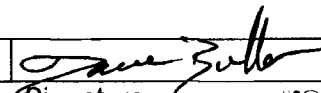
Qualification Package Number: QCVEE001

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **Level I Validation Manager** Manager Title	J. M. JACKSON Print Name	 Signature	05/12/11 Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	J. M. JACKSON Print Name/Title	 Signature	5/12/11 Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler Print Name	 Signature	12-15-10 Date

TRAINING DEPT.
MAY 12 2011

Qualification Package Approval Section

Line Manager Approval	Jim Jackson Print Name	Signature on file Signature	6/22/10 Date

Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	6/30/10 Date

Employee Name Ron Grise S# 103914

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	ALL	Initial Issue.	5-28-08
1	ALL	Made editorial corrections. Update to new format. Implemented Training/Evaluation Standard as applicable.	6-30-10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Ron Grise S# 103914

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
David J. Preston	David J Preston	DJP
J.M. JACKSON	J.M. Jackson	JMJ
Eric Schweinsberg	Eric Schweinsberg	ERS

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Ron Grise S# 103914

1.0 Scope

The VEE will be familiar with the waste generating processes that have taken place at the AMWTP and will also be familiar with all types of waste being characterized at the AMWTP. The VEE is responsible for direction and implementation of the VE at the AMWTP. This individual is selected based on experience and training in the types of waste being characterized, and receives training in the same elements as the VE personnel with both formal training and OJT. Qualification of a VEE is based on familiarity with waste generating processes and familiarity with the types of waste being characterized.

The VEE will access HWMA/RCRA areas to provide direction to Visual Examiners and Operations Management concerning Visual Examination (VE) events and has the authority to set task lists and disposition codes in WTS. The VEE will also perform classroom and OJT instruction/performance assessment.

The QCVE0001 qualification is valid for 24 months afterwhich a requalification package must be completed to maintain qualified VEE status.

The VEE may be disqualified if any of the following conditions exist: Extended absence, identified training expires, failure to maintain Hazwoper Refresher training, performance deficiencies. Refer to MP-RTQP-14.4, Personnel Qualification and Certification.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of a VEE Lead.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification checklist.

Level I Validation Manager — Date: 05/12/11

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Ron Grise S# 103914

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the VEE SME, VEE Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	3-1-10	Initial / 0
3.1.2 0AW T3141, Visual Examination Indoctrination	5-21-07	Initial / 0
3.1.3 0AW T3142, Visual Examination	5-22-07	Initial / 0
3.1.4 0AW T3143, WTS & DQOs	5-24-07	Initial / 0

Training Representative or a qualified **VEE Lead** verify initial training courses are complete:	Signature	12-15-10 Date

Sign-off by the VEE Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 **Required Reading: Operating Instructions**	**VEE Lead or SME**	**Date**
3.2.1 INST-OI-16 Drum Coring (For familiarity)	David J Preston	4/11/11
3.2.2 INST-OI-73 Manual Drum Coring *(For familiarity)*	David J Preston	4/11/11
3.2.3 INST-OI-12 RTR Ops (Drum) (Initial – for familiarity)	David J Preston	4/11/11
3.2.4 INST-OI-41 RTR Ops (Box) (For familiarity)	David J Preston	4/11/11

Employee Name Ron Grise S# 103914

3.2 **Required Reading: Operating Instructions**	VEE Lead or SME	Date
3.2.5 INST-OI-60 RTR Ops (Quick Scan) *(For familiarity)*	David J Preston	4/11/11
3.2.6 INST-OI-81 RTR Ops (WIPP Cert for Boxes) *(For familiarity)*	David J Preston	4/11/11
3.2.7 INST-FOI-21, Drummed Waste Handling Operations *(For familiarity)*	David J Preston	4/11/11
3.2.8 INST-FOI-23 SCW Ops. (For familiarity)	David J Preston	4/11/11
3.2.9 INST-FOI-25 SCW PAM Ops (For familiarity)	David J Preston	4/11/11
3.2.10 INST-FOI-16 Box Line Ops (For familiarity)	David J Preston	4/11/11
3.2.11 INST OI-11 Waste Container Handling *(For familiarity)*	David J Preston	4/11/11
3.2.12 INST-OI-23 Soil Removal Ops *(For familiarity)*	David J Preston	4/11/11
3.2.13 INST-OI-24, Waste Packaging	David J Preston	4/11/11
3.2.14 INST-OI-68 Drum Treatment Facility Ops *(For familiarity)*	David J Preston	4/25/11
3.2.15 INST-OI-34 Non-Facility Visual Examination Ops	David J Preston	4/25/11
3.2.16 INST-FOI-17 Facility Visual Examination Ops	David J Preston	4/25/11
3.2.17 INST-OI-75, Container-in-Container Sampling *(For familiarity)*	David J Preston	4/25/11

Employee Name Ron Grise S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.1 RPT-DSA-02, for Operations Chapters 4 & 5	David J Preston	4/25/11
3.3.2 MP-Q&SI-5.3, Corrective Action	David J Preston	4/25/11
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	David J Preston	4/25/11
3.3.4 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	David J Preston	4/25/11
3.3.5 MP-TRUW-8.2; Quality Assurance Project Plan (QAPjP)	David J Preston	4/25/11
3.3.6 MP-TRUW-8.5, TRU Waste Certification *(For familiarity)*	David J Preston	5/3/11
3.3.7 MP-TRUW-8.8, Level I Validation	David J Preston	5/3/11
3.3.8 MP-TRUW-8.13, Collection, Review, Confirmation, & Management of AK Documentation *(For familiarity)*	David J Preston	5/3/11
3.3.9 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory *(For familiarity)*	David J Preston	5/3/11
3.3.10 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual	David J Preston	4/11/11
3.3.11 RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements *(For familiarity)*	David J Preston	5/3/11
3.3.12 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge *(For familiarity)*	David J Preston	5/3/11
3.3.13 RPT-TRUW -12, AMWTP Waste Stream Designations	David J Preston	5/3/11

Employee Name Ron Grise S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.14 RPT-TRUW-13, Acceptable knowledge document for INL stored transuranic waste-Mound Plant Waste *(For familiarity)*	David J Deaton	5/2/11
3.3.15 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge *(For familiarity)*	David J Deaton	5/2/11
3.3.16 RPT-TRUW-23, Acceptable Knowledge Summary for solidified Acid/Caustic Waste (BN835) *(For familiarity)*	David J Deaton	5/2/11
3.3.17 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompactor Debris Waste (BN510)	David J Deaton	5/2/11
3.3.18 RPT-TRUW-44, Acceptable Knowledge Summary for Non Special Metal (BN296) *(For familiarity)*	David J Deaton	5/2/11
3.3.19 RPT-TRUW-46, Acceptable Knowledge Summary for Glass Debris Waste (BN243) *(For familiarity)*	David J Deaton	5/2/11
3.3.20 RPT-TRUW-48, Acceptable Knowledge Summary for Leaded Rubber Debris Waste (BN252) *(For familiarity)*	David J Deaton	5/2/11
3.3.21 RPT-TRUW-52, Acceptable Knowledge Summary for Firebrick Debris Waste (BN161) *(For familiarity)*	David J Deaton	5/2/11
3.3.22 RPT-TRUW-53, Acceptable Knowledge Summary for Mound Debris Waste (BN304) *(For familiarity)*	David J Deaton	5/2/11
3.3.23 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Deaton	5/2/11

Employee Name Ron Grise S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.24 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004) *(For familiarity)*	David J Preston	5/9/11
3.3.25 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836) *(For familiarity)*	David J Preston	5/9/11
3.3.26 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)	David J Preston	5/9/11
3.3.27 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria *(For familiarity)*	David J Preston	5/9/11
3.3.28 INEL-96/0280, Acceptable Knowledge (AK) Document for INEEL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Preston	5/9/11
3.3.29 NM4890139088, WIPP Hazardous Waste Permit Waste Analysis Plan *(Review changes – for impacts on VE)*	David J Preston	5/9/11
3.3.30 DOE/WIPP-02-3122, Contact-Handled Waste Acceptance Criteria for the Waste Isolation Pilot Plant (CH-WAC) *(Review changes – for impacts on VE)*	David J Preston	5/9/11
3.3.31 DOE/CBFO-94-1012, Quality Assurance Program Document *(Initial – for familiarity)*	David J Preston	5/9/11
3.3.32 40 CFR 260 to 265, and 268, RCRA Regulations associated with solid and hazardous waste determinations *(For familiarity)*	David J Preston	5/9/11

Employee Name Ron Grise S# 103914

Sign-off by the VEE Lead or SME indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 **Knowledge:**	**VEE Lead or SME**	**Date**
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	David J Dexter	5/11/11 DJD 5/11/11
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 DJD 5/11/11
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 DJD 5/11/11
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 RP 5/11/11
3.4.5 Discuss Criticality Safety and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 DJD 5/11/11
3.4.6 Discuss the overall responsibilities of the VEE.	David J Dexter	5/11/11

Employee Name Ron Grise S# 103914

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle all that apply.

Initials by the VEE indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	VEE Initials	Evaluator Signature & date
4.1 VEE Performance Objectives			
4.1.1 Discuss and locate waste material parameters and descriptions.	(D)		David J Preston 4/11/11
4.1.2 Discuss and identify closure method and layers of confinement through video or VE.	(P) S		David J Preston 4/11/11
4.1.3 Identify filter models.	(P) S		David J Preston 4/11/11
4.1.4 Identify rigid liner types and status/condition.	(P) S		David J Preston 4/11/11
4.1.5 Discuss and identify waste drum configurations through video or VE.	P (S)		David J Preston 4/11/11
4.1.6 Discuss and identify packaging and waste materials through video or VE.	P (S)		David J Preston 4/11/11
4.1.7 Discuss and estimate Volumes and Nominal Densities through video or VE.	(P) S		David J Preston 4/11/11
4.1.8 Identify common and conditional items in waste through video or VE.	P (S)		David J Preston 4/11/11
4.1.9 Identify prohibited, suspect, or inconclusive items in waste through video or VE.	P (S)		David J Preston 4/11/11

Employee Name Ron Grise S# 103914

	PSD	VEE Initials	Evaluator Signature & date
4.1.10 Discuss and assign waste to waste material parameter categories.	(P)S	RMP	David J Preston 5/12/11
4.1.11 Discuss and assign Waste Matrix Codes.	(P)S	RMP	David J Preston 5/12/11
4.1.12 Identify and discuss IDCs for newly generated secondary waste and compacted waste.	(P)S	RMP	David J Preston 5/12/11
4.1.13 Perform volume and weight conversions.	(P)S	RMP	David J Preston 5/12/11
4.1.14 Generate (enter) and verify (concur with) examination-related data in WTS.	(P)S	RMP	David J Preston 5/12/11
4.1.15 Discuss Audio/Video equipment available, and the requirements associated with their use.	(D)	RMP	David J Preston 4/12/11
4.1.16 Define Data Quality Objectives (DQOs) for the VE program.	(D)	RMP	David J Preston 5/12/11
4.1.17 Discuss conditions where a complete VE cannot be performed.	(D)	RMP	David J Preston 5/12/11
4.1.18 Discuss integration of RTR/VE Update (RVU) with the original analysis and the Batch Data Report.	(D)	RMP	David J Preston 5/12/11
4.1.19 Discuss the Data Review and Validation Process.	(D)	RMP	David J Preston 5/12/11
4.1.20 Discuss the actions to be taken if assistance is required by operations to identify material in a breached container event in buildings WMF-628, 634, 635, and 676.	(D)	RMP	David J Preston 5/12/11
4.1.21 Demonstrate the ability to perform Trackwise activities.	(P)	RMP	David J Preston 5/12/11

Employee Name Ron Grise S# 103914

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the VEE Lead or SME indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot simulate or discuss the task without coaching, terminate the Performance Assessment.

		S D	VEE Lead or SME	Evaluator Signature	Date
5.1	Discuss the conditions under which a VEE would need to change or override data in WTS.	S (D)	DMP	David J Grise	5/12/11
5.2	Evacuation (MP-EP&C-12.7)	S (D)	DMP	David J Grise	5/12/11
5.3	Take Cover (MP-EP&C-12.7)	S (D)	DMP	David J Grise	5/12/11 DMP 5/12/11

Employee Name Ron Grise S# 103914

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO EXAM REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert Lead or SME acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the individual recommending qualification of the candidate has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
VEE Lead or SME Title	David J Preston Signature	5/12/11 Date

Upon satisfactory completion of this qualification package, the Level I Validation Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK PLAN

FOR
Head Space Gas Analysis
QPOT2C

At
AMWTP

Date: 2-16-10

Revision: 3

Instructional Analyst: D. Butler

Ralph Hartline Training Manager/Supervisor Print/Type Name	REVIEW Training Manager/Supervisor Signature	48593 S No.	4/29/10 Date
Clinton E Sisson ~~B. Werner~~ CES 4/29/10 Line Manager/Supervisor Print/Type Name	APPROVAL C Sisson Line Manager/Supervisor Signature	64651 S No.	4/29/10 Date

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures

   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences

   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance

   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

Submitted By: _____ Date: _____

MODIFICATION RECORD

Change Number	Affected Pages	Description of Change	Management Approval	Date

AMWTP Advanced Mixed Waste Treatment Project	**Job Analysis Task Listing**	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 4 of 6

The participants involved in creating the Job Analysis Task List include:

Print Name:	D. Butler	Signature:	Dave Butler	Emp No.:	103532	Date:	2-16-2010
Job Title:	Training Specialist	Phone No.:	557-0979				
Print Name:	Seth Oldham	Signature:	E. Seth Oldham	Emp No.:	065893	Date:	02/18/10
Job Title:	HGAS Operator	Phone No.:	557-7181				
Print Name:	Dan Beebe	Signature:	Dan J. Beebe	Emp No.:	103534	Date:	02/18/2010
Job Title:	HGAS Operator	Phone No.:	557-7289				
Print Name:	Mitch Johnson	Signature:	Mitch Johnson	Emp No.:	103832	Date:	2/16/2010
Job Title:	HGAS SME	Phone No.:	557-6417				
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
Job Analysis Chronology: Document meetings held and accomplishments of the meetings:					
A.	**HGAS Knowledge**				
1.	GC/MS			X	
2.	Familiarity with HGAS definitions			X	
3.	Hazards, Precautions, & Limitations			X	
B.	**Identify HGAS Candidates**				
1.	Obtain WTS Headspace Gas Reports			X	
2.	Verify Drum Equilibrium			X	
3.	Verify diffusivity of filter			X	
4.	Determine packaging configuration			X	
5.	Verify DAC requirements are met			X	
6.	Complete Form 1449			X	
C.	**Pre Operational Checks**				
1.	Verify availability of tools, supplies, and forms			X	
2.	Perform Method Detection Limit (MDL)			X	
3.	Change out Standard gas, if applicable, and document in logs			X	
4.	Change out the Helium and /or Nitrogen bottles as needed and document in logs			X	
D.	**Initial Calibration**				
1.	Load calibration standards using Standard gases and Liquid VOC standard.			X	
2.	Initiate the automated analysis of the initial Calibration batch.			X	
E.	**HGAS Operations**				
1.	Load Shift 0 (zero)			X	
2.	Load Shift 1 (one) (BFB, CCAL, LCS, Field Blank, Equipment Blank)			X	
3.	Analyze and Evaluate Shift 1 (Shift 1 comprised of QC Samples)			X	
4.	Use / View Consonant Enhanced reports			X	
5.	Load Shift 2 (BFB, CCAL, LCS, Drum Sampling, Drum Duplicate)			X	
6.	Perform Real Time Equipment Blank as necessary			X	
7.	Perfrom a Leak Check			X	
8.	Perfrom sample draw			X	
9.	Replace and replenish consumable items/materials	X			
10.	Perform radiological surveys			X	

*NT = No Training PT = Pre-train T = Train OT = Over Train

Attachment 2X

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
11.	Complete Radiological Survey Form and file			X	
12.	Analyze HGAS Shift 2 Samples when sampling is complete			X	
13.	Waste disposal and PSD TSR				X
14.	Initiate a new batch			X	
F.	**WTS Entries**				
1.	Complete Form 1595 (electronically)			X	
2.	Complete Form 1449 (electronically)			X	
3.	Update the WTS Filter screen as needed.			X	
G.	**Abnormals and Infrequent Operations**				
1.	Abort / Reset HGAS operation				X
2.	Plugged needle				X
3.	CCAL Failure				X
4.	Non-samplable filters				X
5.	Failed QC Samples				X
6.	Failed BFB Tune Check				X

*NT = No Training PT = Pre-train T = Train OT = Over Train

AMWTP - Employee Training History

Employee: KETTEL, JASON (000104114)

Date Range: 10/16/2009 to 10/16/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	02/10/10
RPT-TRUW-79	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR MATERIALS AND FU	08/12/10
RPT-TRUW-82	2	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	03/30/11
RPT-TRUW-82	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	08/12/10
RPT-TRUW-82	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR HANFORD DEBRIS W	05/27/10
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	03/30/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/06/10
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	02/04/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/06/10
RPT-TRUW-88	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR AMWTP WMF-676 PCB	10/15/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/04/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	03/25/10	03/25/11
QCHGCITR	HGAS ITR CHECKLIST	06/01/10	06/01/12
AMWHAZ	HAZWOPER QUAL	03/30/11	03/30/12
QPOT02C0	HGAS SAMPLING AND ANALYSIS	06/22/11	06/22/13
AMWRAD02	RAD WORKER 2	10/18/11	10/18/13
AMWHAZ	HAZWOPER QUAL	04/11/12	04/11/13
QCHGCITR	HGAS ITR CHECKLIST	05/30/12	05/30/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	09/09/10	
AWPRO003	AMWTP RCRA INCIDENTAL WORKER TP	01/20/11	
AF1020	INDIVIDUAL TRAINING PLAN	01/20/11	
AF1018	EMPLOYEE POSITION DESCRIPTION	01/19/12	

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TGTRU0000002	AK IDC Change Notification process	03/09/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	**QPOT2C** **Rev 3**

Employee Name Jason ~~Kettle~~ KETTEL JK 05/24/10 S# 104114

Head Space Gas Sampling

Requalification Package Number: QPOT2C

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Requalification granted by: Characterization Prod. Mgr.	Jeremy Szabo		06/22/11
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.			
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☒	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		5-24-11
	Print Name	Signature	Date

TRA... DEPT.
JUN 23 2011
Initials

Requalification Package Approval Section

Line Manager Approval	B. Warner	Signature on file	4/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	4/29/10
	Print Name	Signature	Date

Employee Name Jason Kettel S# 10711

Revision History			
Revision Number	Affected Pages	Description of Change	Date
0	All	Insufficient information	2/1/05
1	All	No information found	-
2	All	New format	7/23/05
3	All	New format; new JTAL.	4/29/10

Modification Record				
Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Jason Ketter S# 10400

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Jason Ketel		JK
Mitch Johnson	Mitch Johnson	MJ
Aaron Buckstein	Aaron Buckstein	AB
Jaremy Szabo	Jaremy Szabo	JMS
Rod E. Urban	Rod E. Urban	RU

Employee Name Jason Kettel S# 104114

1.0 Scope

This requalification package has been developed in order to over-train individuals with regards to infrequent HGAS operations located in WMF-634. The HGAS unit measures the amount of gas located in the top of the waste container to verify that WIPP WAC headspace gas criteria are met. The trainee has 6 months from the time of issue to complete this requalification package. If the package has not been completed within the 6 month time period than a new requalification may be issued as directed by line management.

This requalification package is valid for a period of 24 months, after which a requalification package must be completed again.

Individuals may be disqualified from this qualification for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing **Head Space Gas Sampling** operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 06/22/11

	Date Requirement Was Completed	**Signature** (Training Specialist or SS)	**Date**
2.1 ***HGAS qualification (QPOT2C)***	6-11-2009		5/24/11

Employee Name Jason Cotter S# 10[illegible]4

3.0	**Initial & Continuing Training / Knowledge / Required Reading**

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 ***Training Courses (Indicate Courses that are Recurring):***	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	0

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 ***Required Reading: Operating Instructions***	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-43, Headspace Gas Sampling and Analysis Operations	[signature]	6/7/2011

3.3 ***Required Reading: Other Documents***	OJT Instructor / SS Signature	Date
3.3.1 None	N/A	N/A

Employee Name Jason Ketter S# 10411

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 ***Knowledge:***	OJT Instructor / SS Signature	Date
3.4.1 Discuss System Knowledge and Applicable Systems and how they apply to tasks covered in this qualification package. • Compressor • HGAS Electrical system • HGAS gas distribution system		6/7/2011

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 ***HGAS Infrequent Operations***			
4.1.1 Simulate the appropriate action to an Abort/Reset of the HGAS operation.	S	MJ	6/7/2011
4.1.2 Simulate the actions to be taken in the event the needle becomes plugged.	S	MJ	6/7/2011
4.1.3 Discuss the actions to be taken in the event of a CCAL failure.	D	MJ	6/7/2011

Employee Name Jason Kettel S# 10[illegible]

		P S D	OJT Initials	Evaluator Signature & date
4.1.4	Discuss what should be done if non-samplable filters are encountered.	D	MJ	[signature] 6/7/2011
4.1.5	Simulate or discuss what should be done in the event of a failed QC sample.	S D	MJ	[signature] 6/7/2011
4.1.6	Discuss the actions to be taken in the event of a failed BFB tune check.	D	MJ	[signature] 6/7/2011
4.1.7	Discuss proper waste disposal and the associated TSRs.	D	MJ	[signature] 6/7/2011

Employee Name Jason Ketter S# 10414

5.0 **Emergency / Abnormal Conditions**
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		PSD	OJT Initials	Evaluator Signature	Date
5.1	Fire / Alarm	S/D	AB		06/24/11
5.2	Location of fire extinguishers / fire alarm boxes (Procedure)	S/D	AB		06/24/11
5.3	Dropped waste container (OI-11)	S/D	AB		06/24/11
5.4	Breached Container (OI-84)	S/D	AB		06/24/11
5.5	CAM Alarm	S/D	AB		06/24/11
5.6	Spill / Contamination Release (OI-88)	S/D	AB		06/24/11
5.7	Injured Person	S/D	AB		06/24/11
5.8	Loss of ventilation/air system (INST-OI-27, INST-OI-33)	S/D	AB		06/24/11
5.9	Loss of Commercial Power (INST-OI-26)	S/D	AB		06/24/11
5.10	Evacuation (MP-EP&C-12.7)	S/D	AB		06/24/11
5.11	Take Cover (MP-EP&C-12.7)	S/D	AB		06/24/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	QPOT2C Rev 3

Employee Name Jason Kettel S# 10[illegible]

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)
Written Exam (80% required to pass) Exam #: 1 Score: 86 % *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	Dave Fr[illegible]	6-21-2011
	Exam Proctor Signature	Date

7.0 **Recommendation for Requalification**
After discussion with the candidate concerning this job scope, the Characterization Shift Supervisor acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

Characterization SS	[signature]	06/21/11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Requalification to the trainee on the front cover of this requalification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* ***Head Space Gas Operator***	QP-OT-2-C **Rev 1**

Employee Name JASON KETTEL Employee S# 10411

Head Space Gas Sampling

Comprehensive Qualification Examination #1

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* ***Head Space Gas Operator***	QP-OT-2-C **Rev 1**

1.0 Examinee Information

This exam consists of 21 questions; 17 correct answers (80 %) are required for a passing score.

Exam administered by: _____ (signature)

Exam graded by: _____ (signature) 86 % (score)

Review of exam/questions missed acknowledged by examinee _____ (signature)

EXAMINATION INSTRUCTIONS

1. Print your name in the blank provided on each sheet.

2. Each question is worth one point.

3. Partial credit may be given. Answer each question as completely as possible. Partial credit will not be given on single answer multiple choice questions or true/false questions.

4. Circle the letter preceding the correct answer to each multiple choice or True/False question. Write all fill-in answers clearly. Mark all answers on the exam in black or blue ink only.

5. Multiple choice questions have only one correct answer.

6. References **MAY BE USED** during the examination as directed by proctor.

7. ***Talk only with the proctor (administrator) if you need clarification of a question. The proctor is not permitted to provide you with an answer or evaluate the accuracy of your answer.***

8. ***Cheating will not be tolerated. Anyone caught or suspected of cheating will be removed from the area and management notified. An individual caught cheating is subject to disciplinary action including discharge.***

9. Turn in your finished exam which will be graded and reviewed by you and the instructor. If you fail the exam, your signature and date are required in the box above. Remedial training may be required.

10. Sign and date below, which indicates you have read, understood, and will comply with the above instructions.

Name: _____ **Date:** 06/21/11
Signature (see Examination Instruction #10 above)

1. When performing daily checks according to procedure at the HGAS duty station an operator must perform all <u>but one</u> of the following.
   a) Ensure Helium and Nitrogen has adequate bottle and line pressure.
   b) Ensure Humidifier water level is at or above the top edge of the plastic mounting block.
   c) Check plant air pressure.
   d) Ensure drums staged for HGAS have reached their thermal equilibration.

2. Verify thermal equilibration for drums by:
   a) Print out WTS temperature graph of WMF-634.
   b) Consult the Head Space Gas Report and check the duration of a drum's position within WMF-634.
   c) Track drum to HGAS location in WTS before initiating sampling evolution.
   d) All of the above should be performed to prevent rework.

3. When determining the Drum Age Criteria for a drum, all of the following are officially recognized ventings **EXCEPT**:
   a) HGAS sampling event.
   b) Drum Coring event.
   c) Re-lidding event.
   d) Liquid Absorption event.

4. If any control flags appear during a routine Real-Time Equipment Blank you should:
   a) Press Abort/Reset and re-initiate another RTEB.
   b) Press Abort/Reset and call a chemist to evaluate.
   c) Press Abort/Reset and recalibrate the (icClean).
   d) Continue on with the Clean check and see if it passes.

5. If you accidentally sample OCS gas for your shift one EB quality control check, you must:
   a) Press Abort/Reset and re-initiate another EB.
   b) Press Recover and re-initiate another EB.
   c) Notify a chemist.
   d) Re-initiate the EB and rename the file.

6. HGAS can sample which scenario drums?
   a) Type one and two.
   b) Type two and three.
   c) Type one and three.
   d) Type two only

7. The proper criteria for V.O.C.'s passing a CCAL is:
   a) Analytes are less than 30% D.
   b) Analytes are less than or equal to 30% D.
   c) Analytes are less than or equal to 25%.
   d) Analytes have a 70 to 130 %R.

8. When performing a BFB tune check, you should:
   a) Verify the automatic background scan passes.
   b) Verify the automatic background scan and peak scan pass.
   c) Verify the automatic background, peak or three-point average scan pass.
   d) Verify the automatic background corrected, peak or five-point average scan pass.

9. A drum has one BNFL short plug filter and two NFT-020 filters, what statement below is true?
   a) This container has been through DVS and is therefore considered vented.
   b) RTR analysis from the Head Space Gas Report could tell you if it is vented.
   c) As long as it has been 30 days since the DVS, it is vented.
   d) As long as it has been 36 days since WMF-615, it is vented.

10. When conducting a Limited Radiological Survey, <u>all but one</u> of the following must be completed:
    a) Surgeon's gloves or equivalent should be worn when performing surveys.
    b) Swipes must be counted using an alpha/beta swipe counter.
    c) Surveys must documented on form-1129, Radiological Survey Report and Map
    d) Monitor to release equipment, other than personal items, from contamination areas.

11. A drum has two NFT-020 filters in it and it has been 29 days since its last visit to WMF-615. The DAC: (DAC tables may be used as a reference for this question)
    a) has already been met.
    b) will be met in One day
    c) will be met in Seven days.
    d) can not be met with this information.

12. The purpose of Shift Zero is to:
    a) Verify system cleanliness.
    b) Recalibrate the Clean Method.
    c) Recalibrate the VOCGAS Method.
    d) Verify manifold cleanliness.

13. Ideally, the 1st BFB clock requires the operator to:
    a) Sample the entire batch within 12 hours.
    b) Analyze the entire batch within 12 hours.
    c) Load and analyze the batch within 12 hours.
    d) Both A and B sequentially.

14. Ideally, the 2nd BFB clock requires the operator to:
    a) Load entire batch within 12 hours.
    b) Analyze entire batch within 12 hours.
    c) Load and analyze batch within 12 hours.
    d) Both A and B sequentially.

15. Replacing the filters on drums requires an operator to:
    a) Fill out form-1600 Filter Insertion Operations Checklist.
    b) Fill out form-1603 Filter Insertion Record.
    c) Update the new filter details in the WTS Filter Events Update Screen.
    d) Update the new and old filter details in the WTS Filter Events Update Screen.

16. In order to confirm all samples were delivered successfully to the GC/MS in Analysis.vi an operator would:
    a) Verify color indicator for all sample bottles is blue in Analysis.vi.
    b) Verify GC/MS is in BAKE.M mode.
    c) Verify last command in Analysis.vi is "En".
    d) Verify all of the above.

17. The current allowable removable contamination level is:
    a) .3 dpm.
    b) 5 dpm.
    c) 20 dpm.
    d) 25 dpm.

18. An S5000 drum has had a BNFL short standard filter in it for 60 days. It receives a NFT-020 filter in it. This drum can be sampled:
    a) Immediately.
    b) in 30 days.
    c) in 32 days.
    d) in 36 days.

19. When performing shift zero, an operator loads what gas?
    a) 0.075% Hydrogen/Methane gas standard.
    b) 1.0% Hydrogen/Methane gas standard.
    c) Nitrogen gas.
    d) No gas is loaded.

20. In the event of a failed CCAL on shift 2, a chemist may require you to:
    a) Re-clean bottle 1.
    b) Re-clean bottle 2.
    c) Re-clean bottle 3.
    d) Re-clean bottle 4.

21. Which two quality control checks test your sampling equipment and ambient air?
    a) icClean and icCal.
    b) icCal and OCS.
    c) OCS and FB.
    d) FB and EB.

AMWTP - Employee Training History

Employee: KETTEL, JASON (000104114)

Date Range: 10/17/2009 to 10/17/2012

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QCHGCITR	**HGAS ITR CHECKLIST**	**05/30/12**	**05/30/14**

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AF1018	EMPLOYEE POSITION DESCRIPTION	01/19/12	

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TGTRN0000040	Leadership Connection: Ethics	07/18/11
TGTRU0000002	AK IDC Change Notification process	03/09/11

AMWTP - Employee Training History

Employee: [redacted] (000104114)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
INST-OI-16	32	DRUM CORING OPERATIONS	04/12/10
INST-OI-23	27	SOIL REMOVAL OPERATIONS	10/13/10
INST-OI-24	22	PACKAGING RADIOACTIVE WASTE	06/27/11
INST-OI-24	21	WASTE PACKAGING	03/14/11
INST-OI-24	20	WASTE PACKAGING	09/06/10
INST-OI-34	26	NON-FACILITY VISUAL EXAMINATION OPERATIONS	11/10/11
INST-OI-34	25	NON-FACILITY VISUAL EXAMINATION OPERATIONS	11/01/11
INST-OI-34	24	NON-FACILITY VISUAL EXAMINATION OPERATIONS	02/04/11
INST-OI-34	23	NON-FACILITY VISUAL EXAMINATION OPERATIONS	01/11/11
INST-OI-34	22	NON-FACILITY VISUAL EXAMINATION OPERATIONS	08/12/10
INST-OI-41	14	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	05/05/11
INST-OI-41	13 FC-1	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	08/12/10
INST-OI-41	12	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	12/08/09
INST-OI-43	**22**	**HGAS SAMPLING AND ANALYSIS OPERATIONS**	**09/18/12**
INST-OI-43	21	HGAS SAMPLING AND ANALYSIS OPERATIONS	07/12/12
INST-OI-43	20	HGAS SAMPLING AND ANALYSIS OPERATIONS	01/11/11
INST-OI-43	19	HGAS SAMPLING AND ANALYSIS OPERATIONS	10/21/10
INST-OI-43	18 FC-1	HGAS SAMPLING AND ANALYSIS OPERATIONS	08/24/10
INST-OI-43	18 FC-1	HGAS SAMPLING AND ANALYSIS OPERATIONS	08/18/10
INST-OI-43	18	HGAS SAMPLING AND ANALYSIS OPERATIONS	04/12/10
INST-OI-43	17 FC-1	HGAS SAMPLING AND ANALYSIS OPERATIONS	11/24/09
INST-OI-60	11	REAL-TIME RADIOGRAPHY QUICK SCAN	04/21/11
INST-OI-60	10 FC-1	REAL-TIME RADIOGRAPHY QUICK SCAN	08/12/10
INST-OI-60	9	REAL-TIME RADIOGRAPHY QUICK SCAN	12/08/09
INST-OI-62	11	NON-AMWTP MIXED/RADIOACTIVE WASTE RECEIPT	05/05/11
INST-OI-62	10	NON-AMWTP MIXED/RADIOACTIVE WASTE RECEIPT	11/02/10
INST-OI-62	9	NON-AMWTP MIXED/RADIOACTIVE WASTE RECEIPT	10/05/10
INST-OI-62	8	NON-AMWTP MIXED/RADIOACTIVE WASTE RECEIPT	02/22/10
INST-OI-64	13	RETRIEVAL PAD R WASTE CONTAINER EXTRACTION	03/18/10
INST-OI-64	12 FC-1	RETRIEVAL PAD R WASTE CONTAINER EXTRACTION	11/19/09
INST-OI-65	7	STANDARD WASTE BOX DIRECT LOADING	06/27/11
INST-OI-65	6	STANDARD WASTE BOX DIRECT LOADING	03/14/11
INST-OI-65	5 FC-2	STANDARD WASTE BOX DIRECT LOADING	10/13/10
INST-OI-68	22 FC-2	DRUM TREATMENT FACILITY OPERATIONS	11/02/11
INST-OI-68	22 FC-2	DRUM TREATMENT FACILITY OPERATIONS	11/02/11
INST-OI-68	21 FC-2	DRUM TREATMENT FACILITY OPERATIONS	06/14/11
INST-OI-68	20 FC-1	DRUM TREATMENT FACILITY OPERATIONS	04/21/11
INST-OI-68	19	DRUM TREATMENT FACILITY OPERATIONS	04/13/11
INST-OI-68	18 FC-2	DRUM TREATMENT FACILITY OPERATIONS	02/04/11
INST-OI-68	17 FC-1	DRUM TREATMENT FACILITY OPERATIONS	01/11/11
INST-OI-68	16 FC-1	DRUM TREATMENT FACILITY OPERATIONS	08/12/10
INST-OI-68	15	DRUM TREATMENT FACILITY OPERATIONS	02/10/10
INST-OI-68	14 FC-2	DRUM TREATMENT FACILITY OPERATIONS	01/04/10
INST-OI-68	13 FC-1	DRUM TREATMENT FACILITY OPERATIONS	12/09/09
INST-OI-68	12	DRUM TREATMENT FACILITY OPERATIONS	11/23/09
INST-OI-73	10 FC-1	MANUAL DRUM CORING OPERATIONS	11/02/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist* *Headspace Gas Independent Technical Reviewer*	**QCHGCITR** **Rev 7**

Employee Name Jason Kettel S# 104114

Requalification for HSGAS ITR

Qualification Checklist Number: QCHGCITR

Qualification granted by:	Eric Schweinsberg FOR SUE POTEMRA		5/30/12
Manager Title	TRU Programs Manager Print Name	Signature	Date

Required Attachments: Check box if attached	None

Qual Pack Issued By :	Ted Simmons		5-14-12
	Print Name	Signature	Date

TRAINING DEPT.

MAY 30 2012

Qualification Checklist Approval Section Initials KM

Line Manager Approval	J.M. Jackson	Signature on file	06/02/2009
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	07/30/2009
	Print Name	Signature	Date

QC 5-31

Employee Name JASON KETTEL S# 104114

Revision History

Revision Number	Affected Pages	Description of Change	Date
1	3	In item 2, added...or SPM review. (due to 311 mod elimination of TSQA position)	3/14/07
2		Revised ability requirements to align with current scope, removed reference to TSQA position.	Not found
2-6	-	Not used.	N/A
7		To match initial.	6/2/09

Mod. 7A

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
7A	3	Changed language in section 2.0 and 2.1 to clarify that individual need not be current in qual. to work on requalification checklist (only needs to have completed the initial qualification); separated modification and revision tables and added larger signature page; added sections 6.0 and 7.0 to match format of new qualifications.	Jim Jackson (Signature on file)	4/5/10
7B	5	Remove OJT signature requirement in section 4.0 because this is a technical position. As a requal. Checklist only an evaluator's signature is required.	Jim Jackson (Signature on file)	4/8/10
7C	4	Add requirement to section 2.0 that the individual be current in QPOT2C (HGAS) qualification as a prereq. to completing this checklist.	Jim Jackson (Signature on file)	10/04/10
7D	5	Item 4.1: Allow SPM to sign as Evaluator; Change all references to Level I Validation Mgr. to SPM.	G Byram for S.Perterman (Signature on file)	3/29/12

* Manager signature required for modifications.

Employee Name Jason Ketter S# 104114

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Mod. 7A

Name (Printed)	Signature	Initials
Ted Simmons		TS
Cesar Rojo		CR
Eric Schweinsberg		EPS

1.0 **Scope**
This re-qualification package was developed to standardize the minimum knowledge and ability that are required for an individual to perform the duties of Headspace Gas Independent Technical Reviewer in accordance with MP-TRU-8.8, Level I Validation and the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP). Once obtained, this requalification is valid for two years after which a requalification checklist must once again be completed to maintain qualified status.

Employee Name Jason Kettel S# 104114

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Mod. 7D ~~Level I Validation Manager~~SPM 5/30/12 Date

		Date Requirement Was Completed	**Signature** (Training Rep. or Level 1 Validation Manager)	**Date**
Mod. 7A				
2.1	Initial HGAS ITR Qualification (QCHGCITR)	6-1-10		5-14-12
2.2	Current QPOT2C, Head Space Gas Sampling, qualification.	6-22-11		5-14-12
Mod. 7C				

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the Level I Validation Manager or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
None	N/A	N/A

3.2 Knowledge:	OJT Instructor / SS Signature	Date
None	N/A	N/A

3.3 Required Reading:	OJT Instructor / SS Signature	Date
None	N/A	N/A

Employee Name Jason Ketter S# 10411

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.
Initials by the OJT Instructor indicate that the Trainee has completed the objective and is ready to be evaluated per MP-RTQP-14.13. It is noted that a successful practice cannot count as a successful OJT evaluation.
Sign-off by the ~~evaluator~~ SPM indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	~~Evaluator~~ SPM Signature & date
4.1 Verification of proficiency by completion of one ITR batch checklist approved through the SPM review within the last year. Batch # H3112-00002	(P)	Mod. 7D 5/30/12

5.0 **Emergency / Abnormal Conditions** (None)

6.0 **Examinations** (None required for requalification)

Mod. 7A

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the ~~Level I Validation Manager~~SPM acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. Mod. 7D

In addition, the HGAS Lead/SME has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

~~Level I Validation Manager~~SPM		5/30/12
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this requalification checklist.

AMWTP - Employee Training History

Employee: [redacted]

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	10/05/10
RPT-TRUW-59	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	08/12/10
RPT-TRUW-60	1	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	10/12/12
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	08/12/10
RPT-TRUW-63	6	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	10/12/12
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	08/12/10
RPT-TRUW-77	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	10/12/12
RPT-TRUW-77	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SOLIDIFIED PLUTON	08/25/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/12/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/16/12
RPT-TRUW-83	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	07/08/11
RPT-TRUW-83	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	10/05/10
RPT-TRUW-86	2	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	11/22/11
RPT-TRUW-86	1	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	03/24/11
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	08/25/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/10/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	03/29/10	03/29/11
QCHGCITR	**HGAS ITR CHECKLIST**	**03/30/10**	**03/30/12**
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	06/17/10	07/17/12
AMWHAZ	HAZWOPER QUAL	04/06/11	04/06/12
AMWRAD02	RAD WORKER 2	06/23/11	07/23/13
QPOT02C0	HGAS SAMPLING AND ANALYSIS	08/09/11	08/09/13
QCTECHSP	TECH VERIFICATION SPEC I & II	02/23/12	02/23/14
QCHGCITR	HGAS ITR CHECKLIST	03/29/12	03/29/14
AMWHAZ	HAZWOPER QUAL	04/05/12	04/05/13
QCSPM01A	SITE PROJECT MANAGER DESIGNEE	07/11/12	07/11/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO003	AMWTP RCRA INCIDENTAL WORKER TP	03/30/10	
AF1020	INDIVIDUAL TRAINING PLAN	03/30/10	
AFTASKLC	TASK LIST CONTROLLER	05/26/10	
AWPRO003	AMWTP RCRA INCIDENTAL WORKER TP	06/24/10	
AF1020	INDIVIDUAL TRAINING PLAN	06/24/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	09/07/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	02/06/12	

AMWTP - Employee Training History

Employee: ROJAS, CESAR (000103628)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
FORM-1401	8	SITE PROJECT MANAGER SOLID SAMPLING CHECKLIST	08/11/10
FORM-1491	1	BATCH DATA REPORT SUPPLEMENTAL COMMENT FORM	08/11/10
FORM-1597	6	RECONCILIATION WITH DATA QUALITY OBJECTIVES	09/07/11
FORM-1597	5	RECONCILIATION WITH DATA QUALITY OBJECTIVES	06/30/11
FORM-1597	4	RECONCILIATION WITH DATA QUALITY OBJECTIVES	03/24/11
FORM-1598	8	CHARACTERIZATION INFORMATION SUMMARY REPORT	03/24/11
FORM-1609	2	SPM ANALYSIS OF HOMOGENOUS SOLIDS AND SOILS/GRAVEL	08/11/10
FORM-1859	2	SITE PROJECT MANAGER - SMALL CONTAINER SAMPLING CH	01/06/11
FORM-1862	3	CHARACTERIZED DEBRIS SDOP ASSEMBLY FORM	08/28/12
FORM-1862	2	SDOP ASSEMBLY FORM	09/07/11
INST-COPS-9.20.1	1	LOCKOUT/TAGOUT	10/17/11
INST-FOI-01	25	IN-PLANT DRUM ASSAY OPERATIONS	10/10/12
INST-FOI-01	22	IN-PLANT DRUM ASSAY OPERATIONS	11/15/11
INST-FOI-01	21	IN-PLANT DRUM ASSAY OPERATIONS	05/17/11
INST-FOI-01	19	IN-PLANT DRUM ASSAY OPERATIONS	08/11/10
INST-FOI-17	25	FACILITY VISUAL EXAMINATION OPERATIONS	07/19/12
INST-FOI-17	24	FACILITY VISUAL EXAMINATION OPERATIONS	02/02/12
INST-FOI-17	23	FACILITY VISUAL EXAMINATION OPERATIONS	09/07/11
INST-FOI-17	22 FC-2	FACILITY VISUAL EXAMINATION OPERATIONS	07/05/11
INST-FOI-17	22 FC-2	FACILITY VISUAL EXAMINATION OPERATIONS	06/30/11
INST-FOI-17	19	FACILITY VISUAL EXAMINATION OPERATIONS	08/11/10
INST-FOI-20	36	SUPERCOMPACTOR AND POST-COMPACTION OPERATIONS	10/11/12
INST-FOI-20	34 FC-1	SUPERCOMPACTOR AND POST-COMPACTION OPERATIONS	09/07/11
INST-FOI-20	33	SUPERCOMPACTOR AND POST-COMPACTION OPERATIONS	03/24/11
INST-FOI-20	31	SUPERCOMPACTOR AND POST-COMPACTION OPERATIONS	11/04/10
INST-FOI-20	30 FC-2	SUPERCOMPACTOR AND POST-COMPACTION OPERATIONS	08/18/10
INST-OI-12	49	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	10/12/12
INST-OI-12	47	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	09/07/11
INST-OI-12	46	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	03/24/11
INST-OI-12	45 FC-1	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	10/05/10
INST-OI-12	44 FC-1	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	08/12/10
INST-OI-14	31	DRUM ASSAY OPERATIONS	10/12/12
INST-OI-14	28	DRUM ASSAY OPERATIONS	02/02/12
INST-OI-14	27	DRUM ASSAY OPERATIONS	09/07/11
INST-OI-14	26	DRUM ASSAY OPERATIONS	07/05/11
INST-OI-14	25	DRUM ASSAY OPERATIONS	08/12/10
INST-OI-34	27	NON-FACILITY VISUAL EXAMINATION OPERATIONS	01/17/12
INST-OI-34	26	NON-FACILITY VISUAL EXAMINATION OPERATIONS	11/17/11
INST-OI-34	25	NON-FACILITY VISUAL EXAMINATION OPERATIONS	09/07/11
INST-OI-34	24 FC-1	NON-FACILITY VISUAL EXAMINATION OPERATIONS	03/24/11
INST-OI-34	22	NON-FACILITY VISUAL EXAMINATION OPERATIONS	08/12/10
INST-OI-41	17	REAL-TIME RADIOGRAPHY OPERATIONS (BOX)	10/12/12
INST-OI-41	14	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	07/08/11
INST-OI-41	13 FC-1	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	08/12/10
INST-OI-43	**22**	**HGAS SAMPLING AND ANALYSIS OPERATIONS**	**10/12/12**
INST-OI-43	20	HGAS SAMPLING AND ANALYSIS OPERATIONS	03/24/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	**QPOT2C** **Rev 3**

Employee Name Cesar Rojas S# 103628

Head Space Gas Sampling

Requalification Package Number: QPOT2C

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Requalification granted by: Characterization Prod. Mgr.	Jeremy Szabo		08/09/11
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Eric Schweinsberg		8/9/11
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☒	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		5-24-11
	Print Name	Signature	Date

TRAINING DEPT.
AUG 09 2011

Requalification Package Approval Section

Initials KM

Line Manager Approval	B. Warner	Signature on file	4/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	4/29/10
	Print Name	Signature	Date

Employee Name Cesar Rojas S# 103628

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Insufficient information	2/1/05
1	All	No information found	-
2	All	New format	7/23/05
3	All	New format; new JTAL.	4/29/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Cesar Rojas S# 103628

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Mitch Johnson	Mitch Johnson	MJ
Aaron Bielski	Aaron Bielski	AB
B. Warner	B. Warner	BW
Jeremy Szabo	Jeremy Szabo	JS
Eric Schweinsberg	Eric Schweinsberg	ES

Employee Name Cesar Rojas S# 103628

1.0 Scope

This requalification package has been developed in order to over-train individuals with regards to infrequent HGAS operations located in WMF-634. The HGAS unit measures the amount of gas located in the top of the waste container to verify that WIPP WAC headspace gas criteria are met. The trainee has 6 months from the time of issue to complete this requalification package. If the package has not been completed within the 6 month time period than a new requalification may be issued as directed by line management.

This requalification package is valid for a period of 24 months, after which a requalification package must be completed again.

Individuals may be disqualified from this qualification for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performning **Head Space Gas Sampling** operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager 06/29/11 Date

	Date Requirement Was Completed	**Signature** (Training Specialist or SS)	**Date**
2.1 ***HGAS qualification (QPOT2C)***	6-11-2009		5/24/11

Employee Name Cesar Rojas S# 103628

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 ***Training Courses (Indicate Courses that are Recurring):***	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	0

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 ***Required Reading: Operating Instructions***	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-43, Headspace Gas Sampling and Analysis Operations		4/7/2014

3.3 ***Required Reading: Other Documents***	OJT Instructor / SS Signature	Date
3.3.1 None	N/A	N/A

Employee Name Cesar Rojas S# 103628

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 ***Knowledge:***	OJT Instructor / SS Signature	Date
3.4.1 Discuss System Knowledge and Applicable Systems and how they apply to tasks covered in this qualification package. • Compressor • HGAS Electrical system • HGAS gas distribution system	MWJ	6/7/2011

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 ***HGAS Infrequent Operations***			
4.1.1 Simulate the appropriate action to an Abort/Reset of the HGAS operation.	S	MWJ	Mike Johnson 6/7/2011
4.1.2 Simulate the actions to be taken in the event the needle becomes plugged.	S	MWJ	Mike Johnson 6/7/2011
4.1.3 Discuss the actions to be taken in the event of a CCAL failure.	D	MWJ	Mike Johnson 6/7/2011

Employee Name Cesar Rojas S# 103628

		PSD	OJT Initials	Evaluator Signature & date
4.1.4	Discuss what should be done if non-samplable filters are encountered.	D	MJ	Mdstjohnson 6/7/2011
4.1.5	Simulate or discuss what should be done in the event of a failed QC sample.	S D	MJ	Mdstjohnson 6/7/2011
4.1.6	Discuss the actions to be taken in the event of a failed BFB tune check.	D	MJ	Mdstjohnson 6/7/2011
4.1.7	Discuss proper waste disposal and the associated TSRs.	D	MJ	Mdstjohnson 6/7/2011

Employee Name Cesar Rojos S# 103628

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		PSD	OJT Initials	Evaluator Signature	Date
5.1	Fire / Alarm	S(D)	AJ		06/21/11
5.2	Location of fire extinguishers / fire alarm boxes (Procedure)	S(D)	AJ		06/21/11
5.3	Dropped waste container (OI-11)	S(D)	AJ		06/21/11
5.4	Breached Container (OI-84)	S(D)	AJ		06/21/11
5.5	CAM Alarm	S(D)	AJ		06/21/11
5.6	Spill / Contamination Release (OI-88)	S(D)	AJ		06/21/11
5.7	Injured Person	S(D)	AJ		06/21/11
5.8	Loss of ventilation/air system (INST-OI-27, INST-OI-33)	S(D)	AJ		06/21/11
5.9	Loss of Commercial Power (INST-OI-26)	S(D)	AJ		06/21/11
5.10	Evacuation (MP-EP&C-12.7)	S(D)	AJ		06/21/11
5.11	Take Cover (MP-EP&C-12.7)	S(D)	AJ		06/21/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	QPOT2C Rev 3

Employee Name Cesar Rojas S# 103628

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 1 Score: 95% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	Dave Bu Exam Proctor Signature	6-29-2011 Date

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Characterization Shift Supervisor acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Characterization SS Title	 Signature	06/21/11 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Requalification to the trainee on the front cover of this requalification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist Headspace Gas Independent Technical Reviewer*	**QCHGCITR** **Rev 7**

Employee Name Cesar Rojas S# 103628

Requalification for HSGAS ITR

Qualification Checklist Number: QCHGCITR

Qualification granted by:	George Byrum for Sue Peterman	George B	3/29/12
Manager Title	TRU Programs Manager Print Name	Signature	Date

Required Attachments: Check box if attached	None

Qual Pack Issued By :	Ted Simmons		3-26-12
	Print Name	Signature	Date

Qualification Checklist Approval Section

Line Manager Approval	J.M. Jackson	Signature on file	06/02/2009
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	07/30/2009
	Print Name	Signature	Date

QL 13

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist Headspace Gas Independent Technical Reviewer*	**QCHGCITR** **Rev 7**

Employee Name Cesar Rojas S# 103628

Revision History

Revision Number	Affected Pages	Description of Change	Date
1	3	In item 2, added...or SPM review. (due to 311 mod elimination of TSQA position)	3/14/07
2		Revised ability requirements to align with current scope, removed reference to TSQA position.	Not found
2-6	-	Not used.	N/A
7		To match initial.	6/2/09

Mod. 7A

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
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7B	5	Remove OJT signature requirement in section 4.0 because this is a technical position. As a requal. Checklist only an evaluator's signature is required.	Jim Jackson	4/8/10
7C	4	Add requirement to section 2.0 that the individual be current in QPOT2C (HGAS) qualification as a prereq. to completing this checklist.	Jim Jackson	10/04/10
7D	5	Item 4.1: Allow SPM to sign as Evaluator; Change all references to Level I Validation Mgr. to SPM.	George Sun per Sue Peterman	3/29/12

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist* *Headspace Gas Independent Technical Reviewer*	**QCHGCITR** **Rev 7**

Employee Name Cesar Rojas S# 103628

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Mod. 7A

Name (Printed)	Signature	Initials
Ted Simmons		TS
Dave Butler		DB
George Byram		B

1.0 **Scope**
This re-qualification package was developed to standardize the minimum knowledge and ability that are required for an individual to perform the duties of Headspace Gas Independent Technical Reviewer in accordance with MP-TRU-8.8, Level I Validation and the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP). Once obtained, this requalification is valid for two years after which a requalification checklist must once again be completed to maintain qualified status.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist* *Headspace Gas Independent Technical Reviewer*	**QCHGCITR** **Rev 7**

Employee Name Cesar Rojas S# 103628

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Mod. 7D George B — ~~Level I Validation Manager~~SPM — 3/29/12 Date

Mod. 7A		Date Requirement Was Completed	**Signature** (Training Rep. or Level 1 Validation Manager)	**Date**
2.1	Initial HGAS ITR Qualification (QCHGCITR)	3-30-10	Dave Butler	3-20-12
2.2 Mod. 7C	Current QPOT2C, Head Space Gas Sampling, qualification.	8-9-11	Dave Butler	3-20-12

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the Level I Validation Manager or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
None	N/A	N/A

3.2 Knowledge:	OJT Instructor / SS Signature	Date
None	N/A	N/A

3.3 Required Reading:	OJT Instructor / SS Signature	Date
None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *Requalification Checklist* *Headspace Gas Independent Technical Reviewer*	QCHGCITR Rev 7

Employee Name Cesar Rojas S# 103628

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.
Initials by the OJT Instructor indicate that the Trainee has completed the objective and is ready to be evaluated per MP-RTQP-14.13. It is noted that a successful practice cannot count as a successful OJT evaluation.
Sign-off by the ~~evaluator~~ SPM indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	~~Evaluator~~ SPM Signature & date
4.1 Verification of proficiency by completion of one ITR batch checklist approved through the SPM review within the last year. Batch # HS111-00012	P	Mod. 7D George Burr 3/29/12

5.0 **Emergency / Abnormal Conditions** (None)

6.0 **Examinations** (None required for requalification)

Mod. 7A

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the ~~Level I Validation Manager~~SPM acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Mod. 7D

In addition, the HGAS Lead/SME has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

~~Level I Validation Manager~~SPM	George Burr	3/29/12
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this requalification checklist.

AMWTP - Employee Training History

Employee: OLDHAM, EDWIN (000065893)

Date Range: 10/17/2009 to 10/17/2012

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QPOT03A0	REAL TIME RADIOGRAPHY	04/11/11	04/11/13
QPOT02C0	HGAS SAMPLING AND ANALYSIS	08/30/11	08/30/13
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	08/30/11	08/30/13
AMWHAZ	HAZWOPER QUAL	10/03/11	10/03/12
QCRADOTI	LIMITED RADIOLOGICAL SURVEYS	11/30/11	11/30/13
QPOT2D00	DRUM VENT FILTER INSTALLATION	02/09/12	02/09/14
QPOT07D0	STORAGE & WASTE MOVEMENT	02/09/12	02/09/14
QCNMSU2A	NUC MATERIAL SEALED RS USER	09/12/12	09/12/14
AMWHAZ	HAZWOPER QUAL	09/13/12	09/13/13

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AMWTOWPE	TOW TRACTOR	01/04/10	01/04/11
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	01/09/10	01/09/11
AFQP009	ADDENDUM FOR QPOT3A REV 10 RTR	06/24/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/26/10	
AFQP020	ADDENDUM FOR STORAGE & WASTE MOVEMENT REV 5	10/28/10	
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	12/27/10	12/27/11
AMWTOWPE	TOW TRACTOR	12/27/10	12/27/11
AFRTRSWB	RTR BI ANNUAL SWB	02/21/11	08/21/11
AFVISACU	VISUAL ACUTIY EXAMINATION	07/31/11	07/31/12
AFQP031	ADDENDUM FOR WMF-634 DRUM VENT SYSTEM	10/11/11	
AFRTRDRU	RTR BI ANNUAL DRUM	11/21/11	05/21/12
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	11/30/11	11/30/12
AMWTOWPE	TOW TRACTOR	11/30/11	11/30/12
AFRTRDRU	RTR BI ANNUAL DRUM	05/08/12	11/08/12
AFQRTR11	ADDENDUM FOR QPOT3A RTR OPERATIONS	06/25/12	
AFVISACU	VISUAL ACUTIY EXAMINATION	07/02/12	07/02/13
AFQP044	ADDENDUM FOR STORAGE & WASTE MOVEMENT	09/05/12	
AFQP047	ADDENDUM REAL TIME RADIOGRAPHY	10/01/12	
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	10/09/12	
AF1018	EMPLOYEE POSITION DESCRIPTION	10/09/12	
AF1020	INDIVIDUAL TRAINING PLAN	10/09/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000052	Safety Expectations for 2012	01/02/12
TGISIH0000013	PPE Expiration	03/10/11
TGMAIN0000085	Rigging Equipment Storage and Care	08/29/12
TGOPS0000014	Review Field Change 1 to procedures OI-12 R44, OI-41 R13, OI-60 R10, OI-81 R6	08/19/10
TGOPS0000015	INST-OI-45 R11 FC1 and R12	08/19/10
TGOPS0000069	Brief Characterization RTR operators on INST-OI-12 Rev 44 FC-3. AI 55556	09/15/10

AMWTP - Employee Training History

Employee: [redacted] (000065893)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
AMOW-N-0751	0	WMF 636, TSA/RE / FLOOR SWEEPER OPERATIONS	08/12/12
AMOW-N-0753	0	WMF-634 WASTE HANDLING AND CHARACTERIZATION OPERAT	09/06/12
AMOW-N-0754	0	AMWTP REMOVAL AND/OR REPLACEMENT OF DRUM FILTERS	09/06/12
AMOW-N-0757	0	WMF-636 RCE/ICE	10/06/12
AMOW-N-0760	0	WMF-634 WASTE HANDLING AND CHARACTERIZATION OPERAT	09/14/12
AMOW-N-0761	0	PROPANE FUELING STATION T-683-001 AND COMPONENTS,	10/06/12
AMOW-N-0762	0	WMF-TR-14 GENERAL ACCESS AND LABORATORY ACTIVITIES	10/06/12
AMOW-N-0763	0	AMWTP NON-OPERATIONAL MAINTENANCE TASKS	10/06/12
AMOW-N-0764	0	AMWTP ENVIRONMENTAL ROUTINE SURVEYS, SURVEILLANCES	10/06/12
AMOW-N-0765	0	WMF-610 HIGH BAY, NORTH AND SOUTH WEATHER ENCLOSUR	10/15/12
BNFL-5232-RPT-OPS-025	0	GLOVE INSPECTION AND CHANGE FREQUENCIES FOR AMWTP	09/01/11
EMPLN-091511	Ref	All Emplyee Evacuation, Shelter and Accountability	09/15/11
FORM-1129	7	RADIOLOGICAL SURVEY REPORT AND MAP	05/08/12
GDE-COPS-01	1	CONDUCT OF OPERATIONS POCKET GUIDE	09/05/12
INST-OI-104	2	PROPANE DISPENSING STATION OPERATIONS	09/05/12
INST-OI-104	0	PROPANE DISPENSING STATION OPERATIONS	10/23/10
INST-OI-11	46	WASTE CONTAINER HANDLING	05/25/12
INST-OI-11	45 FC-1	WASTE CONTAINER HANDLING	03/13/12
INST-OI-11	45	WASTE CONTAINER HANDLING	01/25/12
INST-OI-11	43	WASTE CONTAINER HANDLING	08/05/11
INST-OI-11	39	WASTE CONTAINER HANDLING	07/01/10
INST-OI-12	48	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	07/03/12
INST-OI-12	43 FC-4	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	07/01/10
INST-OI-24	23	PACKAGING RADIOACTIVE WASTE	04/05/12
INST-OI-41	16	REAL-TIME RADIOGRAPHY OPERATIONS (BOX)	07/03/12
INST-OI-41	15	REAL-TIME RADIOGRAPHY OPERATIONS (BOX)	03/22/12
INST-OI-41	14	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	03/15/12
INST-OI-41	13	REAL TIME RADIOGRAPHY OPERATIONS (BOX)	07/01/10
INST-OI-43	**22**	**HGAS SAMPLING AND ANALYSIS OPERATIONS**	**09/21/12**
INST-OI-43	20	HGAS SAMPLING AND ANALYSIS OPERATIONS	06/28/11
INST-OI-43	19	HGAS SAMPLING AND ANALYSIS OPERATIONS	10/29/10
INST-OI-43	18 FC-1	HGAS SAMPLING AND ANALYSIS OPERATIONS	08/24/10
INST-OI-45	16 FC-1	DRUM FILTER INSTALLATION	02/02/12
INST-OI-60	10	REAL-TIME RADIOGRAPHY QUICK SCAN	07/01/10
INST-OI-81	9	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	07/03/12
INST-OI-81	6	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	07/01/10
INST-OI-84	9	WASTE CONTAINER REPAIR AND OVERPACK	02/28/12
INST-OI-84	8	WASTE CONTAINER REPAIR AND OVERPACK	08/05/11
INST-OI-93	3	INVERTING BOXES	09/05/12
INST-OI-98	1	PACKAGING NON-RADIOACTIVE WASTE	09/05/12
INST-OI-98	0	PACKAGING NON-RADIOACTIVE WASTE	03/08/11
INST-OI-99	6 FC-1	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	10/15/12
INST-OI-99	6 FC-1	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	10/14/12
INST-OI-99	00	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	05/31/10
INST-RS&C-6.2.1	23	RADIOLOGICAL INSTRUMENTATION	11/30/11
INST-RS&C-6.2.1	21	RADIOLOGICAL INSTRUMENTATION	11/30/09

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	**QPOT2C** **Rev 3**

Employee Name GOLDHAM S# 65893

Head Space Gas Sampling

Requalification Package Number: QPOT2C

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Requalification granted by: Characterization Prod. Mgr.	B. Warner		08/30/11
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	B. Warner		08/30/11
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☒	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	CMIDGYETTE		09/06/11
	Print Name	Signature	Date

Requalification Package Approval Section AUG 30 2011

Line Manager Approval	B. Warner	Signature on file	4/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	4/29/10
	Print Name	Signature	Date

AUG 30 2011

Employee Name Edwin Seth Oldham S# 65893

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Insufficient information	2/1/05
1	All	No information found	-
2	All	New format	7/23/05
3	All	New format; new JTAL.	4/29/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name SOLDHAM S# 65893

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
CMIDGYETTE	C Midgyette	CM
Seth Oldham	E. Seth Oldham	ESO
Chelsi Beard	Chelsi Beard	CLB
Quinton Messick		QM
B. Warner	B Warner	BW

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Head Space Gas Sampling (HGAS)*	**QPOT2C** **Rev 3**

Employee Name $OLDHAM S# 65893

1.0 **Scope**
This requalification package has been developed in order to over-train individuals with regards to infrequent HGAS operations located in WMF-634. The HGAS unit measures the amount of gas located in the top of the waste container to verify that WIPP WAC headspace gas criteria are met. The trainee has 6 months from the time of issue to complete this requalification package. If the package has not been completed within the 6 month time period than a new requalification may be issued as directed by line management. This requalification package is valid for a period of 24 months, after which a requalification package must be completed again. Individuals may be disqualified from this qualification for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 **Prerequisites**
Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.
The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1). The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing **Head Space Gas Sampling** operations. The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope. The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package. Midgyette FOR JB WARNER — Employee's Production Manager — 07/06/11 — Date

	Date Requirement Was Completed	**Signature** (Training Specialist or SS)	**Date**
2.1 ***HGAS qualification (QPOT2C)***	09/08/09	Midgyette	07/06/11

Employee Name GOLDHAM S# 65893

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 ***Training Courses (Indicate Courses that are Recurring):***	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None 07/06/11 cH	N/A	0

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 ***Required Reading: Operating Instructions***	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-43, Headspace Gas Sampling and Analysis Operations		08/15/11

3.3 ***Required Reading: Other Documents***	OJT Instructor / SS Signature	Date
3.3.1 None 07/06/11 cH	N/A	N/A

Employee Name Edwin Seth Oldham S# 65893

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 ***Knowledge:***	OJT Instructor / SS Signature	Date
3.4.1 Discuss System Knowledge and Applicable Systems and how they apply to tasks covered in this qualification package. • Compressor • HGAS Electrical system • HGAS gas distribution system	Chetai Brad	08/13/11

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 ***HGAS Infrequent Operations***			
4.1.1 Simulate the appropriate action to an Abort/Reset of the HGAS operation.	(S)	CBr	Chetai Brad 08/14/11
4.1.2 Simulate the actions to be taken in the event the needle becomes plugged.	(S)	CBr	Chetai Brad 08/14/11
4.1.3 Discuss the actions to be taken in the event of a CCAL failure.	(D)	CBr	Chetai Brad 08/13/11

Employee Name Edwin Seth Oldham S# 65893

	P S D	OJT Initials	Evaluator Signature & date
4.1.4 Discuss what should be done if non-samplable filters are encountered.	(D)	CB	Chelsi Byrd 08/13/11
4.1.5 Simulate or discuss what should be done in the event of a failed QC sample.	S (D)	CB	ChelsiByrd 08/13/11
4.1.6 Discuss the actions to be taken in the event of a failed BFB tune check.	(D)	CB	ChelsiByrd 08/14/11
4.1.7 Discuss proper waste disposal and the associated TSRs.	(D)	CB	ChelsiByrd 08/14/11

Employee Name Edwin Seth Oldham S# 65893

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT/On-shift Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Initials	Evaluator Signature	Date
5.1	Fire / Alarm	S/(D)	CBS	Chelsi Brand	08/15/11
5.2	Location of fire extinguishers / fire alarm boxes (Procedure)	S/(D)	CBS	Chelsi Brand	08/15/11
5.3	Dropped waste container (OI-11)	S/(D)	CBS	Chelsi Brand	08/15/11
5.4	Breached Container (OI-84)	S/(D)	CBS	Chelsi Brand	08/15/11
5.5	CAM Alarm	S/(D)	CBS	Chelsi Brand	08/15/11
5.6	Spill / Contamination Release (OI-88)	S/(D)	CBS	Chelsi Brand	08/15/11
5.7	Injured Person	S/(D)	CBS	Chelsi Brand	08/15/11
5.8	Loss of ventilation/air system (INST-OI-27, INST-OI-33)	S/(D)	CBS	Chelsi Brand	08/15/11
5.9	Loss of Commercial Power (INST-OI-26)	S/(D)	CBS	Chelsi Brand	08/15/11
5.10	Evacuation (MP-EP&C-12.7)	S/(D)	CBS	Chelsi Brand	08/15/11
5.11	Take Cover (MP-EP&C-12.7)	S/(D)	CBS	Chelsi Brand	08/15/11

Employee Name Edwin Seth Oldham S# 65893

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 2 Score: 100% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	Exam Proctor Signature	08/16/11 Date

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Characterization Shift Supervisor acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Characterization SS Title	Signature	08/16/11 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Requalification to the trainee on the front cover of this requalification package.

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK LISTING

FOR

Solid Sampling/Coring

At

AMWTP/WMF-634

Date: 7/1/2012

Revision: 6

Instructional Analyst: D. Butler

Todd Golberg Training Manager/Supervisor Print/Type Name	REVIEW Training Manager/Supervisor Signature	114532 S No.	8/8/12 Date
C. Stepzinski Line Manager/Supervisor Print/Type Name	APPROVAL Line Manager/Supervisor Signature	901611 S No.	08/08/2012 Date

AMWTP Advanced Mixed Waste Treatment Project	# Job Analysis Task Listing	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 2 of 8

Submitted By: P. Reddish Date: 5/19/11

MODIFICATION RECORD

Change Number	Affected Pages	Description of Change	Management Approval	Date
0	ALL	Initial Job Analysis for Solid Sampling, this analysis incorporates the qualification package QP-OT-4-A Drum Coring	D. Preston	4/16/08
1	All	Input job tasks relating to the operation of the hoist in WMF-634 Coring room.	C. Sisson	9/23/08
2	2, 4 – 8	Presentation Clean-up. Added Duty Area: Packet Assay Operations	Dave Preston	12/30/08
3	None	Changed rev. # to 3 to match rev. # of Qual. package. No new tasks added.	B. Warner	9/16/09
4	Various	Added Safety Basis Related Items	B. Warner	6/09/10
5	Various	Added FTS Operations	B. Warner	6/7/11
6	All	Update to qual. as a result of revised procedures and new DSA.	C. Stepzinski	8/8/12

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures

   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences

   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance

   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

AMWTP Advanced Mixed Waste Treatment Project	Job Analysis Task Listing	FORM-1244 Rev. 2 MP-RTQP-14.6 Effective Date: 10/01/05 Page 4 of 8

The participants involved in creating the Job Analysis Task List include:

Print Name:	Dave Butler	Signature:	Dave Butler	Emp No.:	103532	Date: 8-1-12
Job Title:	Training Specialist	Phone No.:	557-0970			
Print Name:	David Preston	Signature:	David J Preston	Emp No.:	86584	Date: 8-8-12
Job Title:	Solid Sampling Lead	Phone No.:	557-0927			
Print Name:	Angel Aguinaga	Signature:		Emp No.:	101549	Date: 8-8-12
Job Title:	Coring SME	Phone No.:	557-6707			
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		Emp No.:		Date:
Job Title:		Phone No.:				

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
Job Analysis Chronology: Document meetings held and accomplishments of the meetings:					
	Duty area A: Safety Related				
1.	Identify material hazards contained within waste containers.	X			
2.	Safely respond to evidence of reactive, ignitable, or corrosives in waste.	X			
3.	Safely respond to evidence of pyrophoric/pyrotechnic material in waste.	X			
4.	Respond safely and efficiently to abnormal or emergency conditions. (OI-16, OI-73, OI-75)				X
5.	Perform sampling operations in compliance with Specific Administrative Control 5.2.7, Drum Venting				X
6.	Perform check of alternative method for hazardous energy control (light curtains, interlock systems)				X
	Duty Area B: General Common Tasks				
1.	Verify Zone 2 and 3 Ventilation SAT Status. (OI-16, OI-73, OI-75)				X
2.	Inspect Sampling Equipment and Tools for Acceptability (incl. refrigerator). (OI-16, OI-73, OI-75)				X
3.	Inspect DCSRS for Operability and record on form-1699. (OI-16, OI-73, OI-75)			X	
4.	Inspect Drum/Container for Acceptability. (OI-16, OI-73, OI-75)			X	
5.	Verify WTS/FTS operability. (OI-16, OI-73, OI-75)			X	
6.	Verify HMI and Motor Control System Operability. (OI-16, OI-73)			X	
7.	Perform NCR Review. (OI-16, OI-73, OI-75)			X	
8.	Verify Containment Enclosure Status. (OI-16, OI-73, OI-75)			X	
9.	Prepare Room, Equipment, and Glovebox for DCSRS Operations. (OI-16, OI-73, OI-75)			X	
10.	Conduct Performance Check on Electronic Balances and documented on form-1215 and form-1599. (OI-16, OI-73, OI-75)			X	
11.	Dissasemble and reassemble glovebox dust vacuum.			X	
12.	Verify Criticality Working Controls for Glovebox dust Vacuum.			X	
13.	Inspect Overhead hoist.			X	
14.	Operate Overhead hoist to import and export waste containers.			X	
15.	Transfer and Import Drum. (OI-16, OI-73, OI-75)				X
16.	Perform Docking and Lid/Filter Removal. (OI-16, OI-73, OI-75)			X	
17.	Perform Proper Usage of the ICS Conveyor Within the Coring Room. (OI-16, OI-73, OI-75)			X	
18.	Perform WTS Data Entries. (OI-16, OI-73, OI-75)			X	
19.	Perform FTS operations. (FOI-27)			X	
20.	Prepare Drum for Sample Extraction. (OI-16, OI-73, OI-75)				X
21.	Place items into SAA and record information on Form-1346, -1375 (OI-16, OI-73, OI-75)			X	

*NT = No Training PT = Pre-train T = Train OT = Over Train

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
	Duty Area C: Automated & Manual Drum Coring				
1.	Prepare the Proper Core Bit/Barrel Assembly for the Sample Matrix and record information on form-1599. (OI-16)				X
2.	Perform HMI Data Entries. (OI-16, OI-73)				X
3.	Core and/or Visually Examine Drum (if needed) and record information on form-1599. (OI-16, OI-73)				X
4.	Prepare Drum Core for Sample Collection. (OI-16, OI-73)				X
5.	Perform Core Sampling Activities and record information on form-1599. (OI-16, OI-73)				X
	Duty Area D: Manual Drum Coring (Unique Tasks)				
1.	Install Laser Pointer. (OI-73)			X	
2.	Mark Sampling Location. (OI-73)			X	
3.	Remove Laser Pointer. (OI-73)			X	
4.	Perform Manual Core. (OI-73)			X	
	Duty Area E: Container Grab Sampling (Unique Tasks)				
1.	Inspect Interior Glovebox Hoist for Operability. (OI-75)			X	
2.	Remove and Number Containers in Source Container. (OI-75)			X	
3.	Separate Selected Container (random sample number from WTS). (OI-75)			X	
4.	Place Sample Material in the Pan. (OI-75)			X	
5.	Distribute Sample Material in the pan. (OI-75)			X	
6.	Size Reduce Sample Material. (OI-75)			X	
7.	Identify/Select Random Quadrant Selected in WTS. (OI-75)			X	
	Duty Area F: Prep				
1.	Prepare, Collect, and Weigh Samples. (OI-16, OI-73, OI-75)				X
2.	Label Sample Vials. (OI-16, OI-73, OI-75)			X	
3.	Affix Tamper Seal to Sample Vials. (OI-16, OI-73, OI-75)			X	
	Duty Area G: Package, Remove, Transfer				
1.	Package Samples. (OI-16, OI-73, OI-75)				X
2.	Remove Samples from Glovebox. (OI-16, OI-73, OI-75)				X
3.	Complete All Required Document and WTS entries (incl. CoC). (OI-16, OI-73, OI-75)				X
4.	Transport Samples to the Refrigerator, Place Inside, and Secure. (OI-16, OI-73, OI-75)			X	
5.	Document Refrigerator Data on form-1585 or form-1602. (OI-16, OI-73, OI-75)				X

*NT = No Training PT = Pre-train T = Train OT = Over Train

Attachment 1: Continuation Page

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
6	Return Excess Sample Material to Source Container. (OI-16, OI-73, OI-75)			X	
7	Clean Work Area/Glovebox. (OI-16, OI-73, OI-75)			X	
8	Package and Remove Waste from Glovebox. (OI-16, OI-73, OI-75)			X	
	Duty Area H: Drum Export & Clean-up				
1.	Export (undock) Drum. (OI-16, OI-73, OI-75)				X
2.	Close and Transfer Drum. (OI-16, OI-73, OI-75)			X	
	Duty Area I: Infrequent Operations				
1.	Recover from an E-Stop Condition. (OI-16, OI-73)			X	
2.	Recover from a Tripped Light Curtain. (OI-16, OI-73)			X	
3.	Recover from a Drill Motor Over-Torque Condition. (OI-16)			X	
4.	Recover from a Drill Stop Condition. (OI-16, OI-73)			X	
5.	Recover from a Lodged Coring Drill Bit. (OI-16)			X	
6.	Recover from a Loss of Zone 2 Ventilation. (OI-16, OI-73, OI-75)			X	
7.	Recover from a Loss of Zone 3 Ventilation. (OI-16, OI-73, OI-75)			X	
8.	Recover from a Loss of containment during drum import/export activities.			X	
9.	Recover from a 'No Heartbeat' Condition on the Local FTS Control Box. (OI-16, OI-73, OI-75)			X	
10.	Recover from an Alarm on the Local FTS Control Box. (OI-16, OI-73, OI-75)			X	
11.	Prepare Rusted Drum for Import to the Glovebox. (OI-16, OI-73, OI-75)			X	
12.	Change Bag and Glove. (OI-16, OI-73, OI-75)			X	
13.	Cancel a Sampling Evolution. (OI-16, OI-73, OI-75)			X	
14.	Recover from a Cancelled Sample Evolution (Primary Core, Co-located Core, Initial Grab, and Field Duplicate Grab Samples). (OI-16, OI-73, OI-75)			X	
	Duty Area J: Packet Assay Operations				
1.	Perform Start-Up			X	
2.	Perform Energy Calibration and Resolution Check – 7-Day (OI-17)			X	
3.	Perform Background and Standardization Check – Start-Up (OI-17)			X	
4.	Perform Background and Standardization Check – Per Shift (OI-17)			X	
5.	Perform Assay (OI-17)			X	
6.	Enter Packet Assay data into WTS.			X	
7.	Disposition Waste in Accordance with OI-16 (OI-17)			X	
8.	Perform Shutdown (O-17)			X	
9.	Complete Form-1346, Satellite Accumulation Area (SAA) Inventory Log Sheet			X	
10.	Complete Form-1375, Container Fissile Gram Inventory Log 200 FGE Limit (Drum) 325 FGE Limit (Box)			X	
*	*See Addendum to Task Analysis List*				

*NT = No Training PT = Pre-train T = Train OT = Over Train

Addendum to Job Analysis Task List:
The tasks associated with successful performance of Solids Sampling (Drum Coring and Container Sampling) are driven by external regulatory requirements pertaining to the identification, collection, packaging and Chain of Custody documentation. These requirements are specified and enforced by CBFO and the State of New Mexico, the AMWTP QAPjP, OI-16, Automated Drum Coring, OI-73, Manual Drum Coring Operations, and the OI-75, Container-in-Container Sampling procedures. For the purposes of the Job Analysis Task List, those tasks can be categorized into the following Duty Areas and fundamental tasks:

Safety Related:

The ability to read and comprehend procedural steps.
*The knowledge and ability to recognize waste that is incompatible with backfill, seal and panel enclosure material, shipping container material, or other wastes.
*The knowledge and ability to recognize reactive, ignitable, and corrosive waste, or evidence of their presence in waste materials.
*The knowledge and ability to recognize evidence of the presence of pyrophoric/pyrotechnic material in the waste.
The knowledge and ability to respond safely and efficiently to safety-related events and conditions at the AMWTP.

Regulation Related:

The ability to read and comprehend procedural steps.
The ability to read and comprehend requirements as provided in the QAPjP.
The ability to successfully complete the required training for the Solid Sampler Qualification.
The knowledge and ability to accurately generate and verify Data Quality Objectives associated with Solids Sampling (Drum Coring/Container-in-Container Sampling).

Physical tasks associated with the Solid Sampling qualification package involve:

The ability to prepare a waste container for sampling.
The ability to identify an acceptable sample location and obtain acceptable sample material.
The ability to accurately enter data into the WTS.
The ability to operate automated sampling equipment and software.
The ability to safely use manual sampling tools.
The ability to safely use material handling equipment when moving, relocating drums.
The ability to work 'in-the-gloves' when necessary, under the observation and guidance of Operations Technicians (qualified in solids sampling activities), if the individual is not glovebox qualified or a qualified Operations Technician.
The physical tasks are categorically reduced to light-to-moderate physical activity involving the following:

- Operation of electro-mechanical sampling equipment,
- Safe use of laser equipment,
- Safe use of manual sampling tools,
- Data input into the HMI and WTS,
- Safe operation of material handling equipment,
- Normal glovebox activities and,
- Movement of samples and waste materials.

* This knowledge/skill set is derived from the qualification packages for Visual Examination.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *SOLID SAMPLING*	**QPSS0001** **Rev 5**

Employee Name Angel Aguirreza S# 101542

SOLID SAMPLING

Re-Qualification Package Number: QSS0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:			
Characterization Production Mgr.	B. Warner		08/29/12
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	B. Warner		08/29/12
	Print Name of applicable Mgr.	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐ (If used)

Qual Pack Issued By :	Ted Simmons		5-22-12
	Print Name	Signature	Date

Re-Qualification Package Approval Section

Characterization Production Manager Approval:	Brian Warner	Signature on File	6/7/11
	Print Name	Signature	Date

Training Manager Approval:	Ralph Hartline	Signature on File	6/8/11
	Print Name	Signature	Date

AUG 29 12

QCB

Employee Name Angel. Aguinaga S# 101549

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	No Rev. 0 for the requalification package was developed.	None
1	All	Initial Issue of QP-SS-0001 requalification package. Designated rev. 1 to match current rev. of Qual. Package.	09/23/08
2	All	Revised to match initial qual.	01/13/09
3	All	Revised to match initial qual.	10/8/09
4	Various	Added Safety Basis Related Items	6/09/10
5	All	Revised to match initial qual.	6/7/11

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
5A	4	Add HOISTRIG checklist to section 2.0	C. Stepzinski (Signature on File)	11/10/11

* Manager signature required for modifications.

Employee Name Angel Aguiñaga S# 101549

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Ted Simmons		TS
Angel Aguiñaga		
David J. Preston		
RaNae Taylor		
Aaron Buckskin		
SM Petermeier		
B. Warner		

Employee Name Angel Aquinaga S# 101549

1.0 Scope

This re-qualification package is for those individuals that perform Solids Sampling Operations in WMF-634. This qualification trains the individual on the checks, limitations, and requirements to run Automated Drum Coring, Manual Drum Coring, and Container Sampling methods at the AMWTP and applies to activities in the Drum Coring Room

This qualification is valid for two years. A re-qualification package must be completed every two years after initial qualification.

Employee's manager will assign a target completion date that this qualification checklist must be completed by, not to exceed six months. If the checklist is not completed by assigned completion date, the manager will determine the appropriate course of action to be taken.

Individuals may be disqualified from this job scope for any of the following, but not limited to: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this re-qualification package.

The employee has completed all recurring training *and is current* on the applicable qualifications / checklists listed on the ITP to support this requalification package.

Manager Assigned Completion Date: 9/15/12

Employee's Production Manager — Date: 5/29/12

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 QPSS0001– Solid Sampler Qualification.	~~3-27-10~~ 6-1-10 5-22-12		5-22-12
2.2 Current HOISTRIG- Hoisting and Rigging checklist	3-27-10		5-22-12

Mod 5A

Best Available Copy

Employee Name Angel Aguirre S# 101549

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 **Training Courses (Indicate Courses that are Recurring):**	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT2375, Safety Basis Continuing Training for Non-Facility Ops	12-17-11	Recurring / 24 months
3.1.2 0AWT2382, Drum Coring Ops TSR	10-20-11	Recurring / 24 months

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 **Required Reading: Operating Instructions**	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-16; Drum Coring	David J Aguirre	8/15/12
3.2.2 INST-OI-17; Packet Assay	David J Aguirre	8/15/12
3.2.3 INST-OI-73; Manual Drum Coring	David J Aguirre	8/15/12
3.2.4 INST-OI-75; Container-in-Container Sampling	David J Aguirre	8/15/12
3.2.5 INST-OI-88, Spill/Leak Response and Cleanup	David J Aguirre	8/15/12
3.2.6 RPT-NFCS-05; Criticality Safety Analysis for Drum Contents Handling at the AMWTP (EDF-0050)	David J Aguirre	8/15/12
3.2.7 RPT-NFCS-08; Criticality Safety Analysis for AMWTP Retrieval Operations (NE-007)	David J Aguirre	8/15/12
3.2.8 MP-CMNT-10.22, Production Lifting Activities	David J Aguirre	8/15/12

3.3 **Knowledge**	OJT Instructor / SS Signature	Date
3.3.1 Discuss the Safety Basis (DSA, TSR, USQ, SER and how it applies to tasks covered in this qualification package.	David J Aguirre	8/28/12

Employee Name Angel-Aguinaga S# 101549

3.3 **Knowledge**	OJT Instructor / SS Signature	Date
3.3.2 Discuss Criticality Safety and how it applies to tasks covered in this qualification package.	David J Deaton	8/15/12
3.3.3 Criticality Working Requirements (CWRs)	David J Deaton	8/15/12
3.3.4 Technical Safety Requirements (TSR's)	David J Deaton	8/15/12
3.3.5 Discuss any lessons learned relating to Solids Sampling activities at AMWTP in the past two years. (list which Lessons Learned were discussed) NCS exempt waste and disposition pathway. Vacuum Contents handling	David J Deaton	8/15/12

Employee Name Angel Aguinaga S# 101549

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated by the OJT per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Initials	Evaluator Signature & date
4.1	Verify Zone 2 and 3 Ventilation SAT status.	(P)	DP	David J Deaton 8/23/12
4.2	Inspect Sampling Equipment and Tools for Acceptability (incl. refrigerator).	(P)	DP	David J Deaton 8/27/12
4.3	Prepare the proper core bit/barrel assembly for the Sample Matrix and record the information on form-1599.	(P)	DP	David J Deaton 8/27/12
4.4	Core and /or visually examine drum (if needed) and record the information on form-1599.	(P)	DP	David J Deaton 8/28/12
4.5	Perform Core Sampling Activities and record the information on form-1599.	(P)	DP	David J Deaton 8/28/12
4.6	Demonstrate the ability to transfer and import a drum.	(P)	DP	David J Deaton 8/27/12
4.7	Prepare a drum for Sample Extraction.	(P) S	DP	David J Deaton 8/28/12
4.8	Demonstrate the ability to perform HMI Data entries.	P (S)	DP	David J Deaton 8/23/12
4.9	Prepare a drum core sample collection.	(P)	DP	David J Deaton 8/28/12
4.10	Demonstrate the ability to prepare, collect, and weigh samples.	(P)	DP	David J Deaton 8/28/12

Employee Name Angel Aguinaga S# 101549

	P S D	OJT Initials	Evaluator Signature & date
4.11 Demonstrate the ability to package samples.	(P)	DP	David J Preston 8/28/12
4.12 Demonstrate the ability to remove samples from the glove box.	(P)	DP	David J Preston 8/27/12
4.13 Demonstrate the ability to complete all required documents and WTS entries.	(P)	DP	David J Preston 8/28/12
4.14 Document Refrigerator data on form-1585 or form-1602.	(P)	DP	David J Preston 8/27/12
4.15 Demonstrate the ability to export (undock) a drum.	(P)	DP	David J Preston 8/27/12
4.16 Discuss performance of sampling operations in compliance with Specific Administrative Control 5.2.7, Drum Venting	(D)	DP	David J Preston 8/28/12

Employee Name Angel Aguinaga S# 101549

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP--14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature	Date
5.1 Fire / Alarm (INST-FOI-14, INST-AOI-10)	S (D)	DP	David J Dexter	8/28/12
5.2 Location of fire extinguishers / fire alarm boxes	S (D)	DP	David J Dexter	8/28/12
5.3 Dropped waste container (INST-FOI-26)	S (D)	DP	David J Dexter	8/28/12
5.4 Breached Container (INST-FOI-19, INST-FOI-26)	S (D)	DP	David J Dexter	8/28/12
5.5 CAM Alarm	S (D)	DP	David J Dexter	8/28/12
5.6 Spill / Contamination Release (MP-EC&P-7.10, INST-FOI-14, INST-FOI-19, INST-FOI-26)	S (D)	DP	David J Dexter	8/28/12
5.7 Injured Person	S (D)	DP	David J Dexter	8/28/12
5.8 Loss of ventilation/air system (INST-FOI-14)	S (D)	DP	David J Dexter	8/28/12
5.9 Loss of Commercial Power	S (D)	DP	David J Dexter	8/28/12
5.10 Evacuation (MP-EP&C-12.7)	S (D)	DP	David J Dexter	8/28/12
5.11 Take Cover (MP-EP&C-12.7)	S (D)	DP	David J Dexter	8/28/12

Employee Name Angel-Aguinaga S# 101549

6.0 Examinations (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 90%

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached)

Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	RaNae Taylor Exam Proctor Signature	8/29/12 Date

7.0 Recommendation for Requalification

After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

Ann Buckskin Shift Supervisor	 Signature	08/29/12 Date

Upon satisfactory completion of this qualification package, the Production Manager may grant Requalification to the trainee on the front cover of this requalification package.

AMWTP - Employee Training History

Employee: PRESTON, DAVID (000086584)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
AMOW-F-0361	0	LINDSAY BLVD AMWTP BOXLINE MOCKUP	08/22/12
AMOW-N-0623	0	WMF-634 TRAINING, WASTE HANDLING, CHARACTERIZATION	09/03/10
AMOW-N-0628	0	WMF-634 Drum Coring Operations	09/03/10
AMOW-N-0635	0	AMWTP GENERAL ACCESS	11/10/10
AMOW-N-0637	0	WMF-635 Drum Re-Overpack Facility (DRF)	11/17/10
AMOW-N-0638	0	WMF-628 DRUM TREATMENT FACILITY	11/17/10
AMOW-N-0700	0	AMWTP GENERAL ACCESS	12/19/11
AMOW-N-0704	0	WMF-635 Drum Re-Overpack Facility (DRF)	12/19/11
AMOW-N-0705	0	WMF-TR-14 GENERAL ACCESS AND LABORATORY ACTIVITIES	01/03/12
AMOW-N-0708	0	WMF-634 Drum Coring Operations	12/19/11
AMOW-N-0709	0	WMF-628 DRUM TREATMENT FACILITY OPERATIONS	12/19/11
AMOW-N-0748	0	WMF-629, WMF-630, WMF-631, WMF-632, WMF-633 TYPE I	10/09/12
AMOW-N-0750	0	AMWTP WAREHOUSE OPERATIONS (TO INCLUDE IF WAREHOUS	08/21/12
CCP-PO-003	12	CCP TRANSURANIC AUTHORIZED METHODS FOR PAYLOAD CON	06/20/12
CCP-PO-003	11	CCP TRANSURANIC AUTHORIZED METHODS FOR PAYLOAD CON	08/09/10
EMPLN-091511	Ref	All Emplyee Evacuation, Shelter and Accountability	09/20/11
INST-FOI-17	25	FACILITY VISUAL EXAMINATION OPERATIONS	09/26/12
INST-FOI-17	24	FACILITY VISUAL EXAMINATION OPERATIONS	06/19/12
INST-FOI-17	19	FACILITY VISUAL EXAMINATION OPERATIONS	07/27/10
INST-OI-12	47 FC-3	REAL-TIME RADIOGRAPHY OPERATIONS (DRUM)	03/07/12
INST-OI-16	40	DRUM CORING OPERATIONS	09/25/12
INST-OI-16	39	DRUM CORING OPERATIONS	04/02/12
INST-OI-16	37	DRUM CORING OPERATIONS	07/14/11
INST-OI-16	34	DRUM CORING OPERATIONS	07/27/10
INST-OI-24	23	PACKAGING RADIOACTIVE WASTE	04/02/12
INST-OI-34	27	NON-FACILITY VISUAL EXAMINATION OPERATIONS	06/19/12
INST-OI-34	22	NON-FACILITY VISUAL EXAMINATION OPERATIONS	07/27/10
INST-OI-73	13	MANUAL DRUM CORING OPERATIONS	09/25/12
INST-OI-73	12	MANUAL DRUM CORING OPERATIONS	04/02/12
INST-OI-73	7	MANUAL DRUM CORING OPERATIONS	07/28/10
INST-OI-75	11	CONTAINER-IN-CONTAINER SAMPLING	09/25/12
INST-OI-75	10	CONTAINER-IN-CONTAINER SAMPLING	04/02/12
INST-OI-75	7	CONTAINER-IN-CONTAINER SAMPLING	07/14/11
INST-OI-75	4	CONTAINER-IN-CONTAINER SAMPLING	07/28/10
MP-ADMN-1.12	2	TIME AND ATTENDANCE REPORTING	02/25/10
MP-COPS-9.7	13	CONTROL OF EQUIPMENT AND SYSTEMS STATUS	03/03/10
MP-PCMT-15.23	4	FLEET MANAGEMENT	02/29/12
MP-Q&SI-5.3	12	CORRECTIVE ACTION	09/26/12
MP-Q&SI-5.3	11	CORRECTIVE ACTION	03/27/12
MP-Q&SI-5.4	21	IDENTIFICATION OF NONCONFORMING CONDITIONS	09/26/12
MP-Q&SI-5.4	20	IDENTIFICATION OF NONCONFORMING CONDITIONS	04/02/12
MP-Q&SI-5.4	19	IDENTIFICATION OF NONCONFORMING CONDITIONS	08/11/10
MP-RTQP-14.13	7	PERFORMANCE ASSESSMENTS	06/01/10
MP-TRUW-8.1	22	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	09/25/12
MP-TRUW-8.1	21	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	03/27/12
MP-TRUW-8.1	19	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	08/04/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Solid Sampling*	**QPSS0001** **Rev. 4**

Employee Name Dave Preston S# 86584

SOLID SAMPLING

Qualification Package Number: QPSS0001

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:			
Characterization Production Manager	Print Name	Signature	Date
	Eric Schweinsberg		9/15/11

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.			
Title	Print Name	Signature	Date
	Eric Schweinsberg		9/15/11

Required Attachments: Check box if attached	Written Exam	Remedial Form
	☒	☐ (If used)

Qual Pack Issued By :			
	Print Name	Signature	Date
	Dave Butler	Dave Butler	7-12-11

Qualification Package Approval Section

SEP 20 2011

Line Manager Approval	B. Warner	Signature on file	06/09/2010
	Print Name	Signature	Date
Training Manager Approval	R. Hartline	Signature on file	06/09/2010
	Print Name	Signature	Date

QC 10-21-11 KM

Employee Name Dave Preston S# 86584

Revision History

Revision Number	Affected Pages	Description of Change	Date
0		No Rev. 0 for the requalification package was developed.	None
1	All	Initial Issue of QP-SS-0001 requalification package. Designated rev. 1 to match current rev. of Qual. Package.	09/23/08
2	All	Revised to match initial qual.	01/13/09
3	All	Revised to match initial qual.	10/8/09
4	Various	Added Safety Basis Related Items	6/09/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Dave Preston S# 86584

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Angel Aquinaga	Angel Aquinaga	AA
Rod Arbon	Rod Arbon	RA
Eric Schweinsberg	Eric Schweinsberg	ES

Employee Name Dave Preston S# 86584

1.0 Scope

This requalification package contains the re-training requirements necessary to re-qualify and perform Solids Sampling in the areas of Automated Drum Coring, Manual Drum Coring, and Container Sampling methods at the AMWTP and applies to activities in the Drum Coring Room located in WMF-634.

The employee's manager will assign a target date for completion of this checklist not to exceed six months. The manager may decide the path forward if the individual has not completed the checklist by the target date.

A requalification package must be completed every 24 months in order to stay qualified in this job scope.

A trainee may be disqualified from this job scope for extended absences, identified training expires, failure of recurring proficiency/performance exams, or for performance deficiencies, etc

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Solid Sampling operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Completion target date: 9/15/11 Employee's Production Manager 9/15/11 Date

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 Solid Sampler Qualification, QP-SS-0001.	8-6-09	Dave Fuller	7-12-11

Best Available Copy

Employee Name Dave Preston S# 86584

3.0 Initial & Continuing Training / Knowledge / Required Reading

The continuing training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	7/12/11	24 Months
3.1.2 AWT 2382, Drum Coring Ops TSR	7/12/11	24 Months

Training Representative or SS verify initial training courses are complete:	Dave Bell Signature	9/15/11 Date

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-16; Drum Coring		7/20/11
3.2.2 INST-OI-17; Packet Assay		7/20/11
3.2.3 INST-OI-73; Manual Drum Coring		7-21-11
3.2.4 INST-OI-75; Container-in-Container Sampling		7-21-11

Employee Name Dave Preston S# 86584

3.2 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.2.5 NFCS-05; Criticality Safety Analysis for Drum Contents Handling at the AMWTP (EDF-0050)		8-3-11
3.2.6 NFCS-08; Criticality Safety Analysis for AMWTP Retrieval Operations (NE-007)		8-3-11
3.2.7 MP-CMNT-10.22, Production Lifting Activities		8-3-11
3.2.8 INST-OI-88, Spill/Leak Response and Cleanup		8-3-11

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.3 Knowledge:	OJT Instructor / SS Signature	Date
3.3.1 Discuss the Safety Basis (DSA, TSR, USQ, SER and how it applies to tasks covered in this qualification package.		9-8-11
3.3.2 Discuss Criticality Safety and how it applies to tasks covered in this qualification package.		8/11/11
3.3.3 Criticality Working Requirements (CWRs)		8/11/11
3.3.4 Technical Specification Requirements (TSR's)		8/11/11

Employee Name Dave Preston S# 86584

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	Evaluator Signature & date
4.1 Solid Sampling Operations		
4.1.1 Verify Zone 2 and 3 Ventilation SAT status.	(P)	9-7-11
4.1.2 Inspect Sampling Equipment and Tools for Acceptability (incl. refrigerator).	(P)	9-7-11
4.1.3 Prepare the proper core bit/barrel assembly for the Sample Matrix and record the information on form-1599.	(P)	9-7-11
4.1.4 Core and /or visually examine drum (if needed) and record the information on form-1599.	(P)	9-7-11
4.1.5 Perform Core Sampling Activities and record the information on form-1599.	(P)	9-7-11
4.1.6 Demonstrate the ability to transfer and import a drum.	(P)	9-7-11
4.1.7 Prepare a drum for Sample Extraction.	(P)	9-7-11

All perForms were simulated per Ralph Heathline Training Manager.

Employee Name Dave Preston S# 86584

	P S D	Evaluator Signature & date
4.1.8 Demonstrate the ability to perform HMI Data entries.	P	9-7-11
4.1.9 Prepare a drum core sample collection.	P	9-7-11
4.1.10 Demonstrate the ability to prepare, collect, and weigh samples.	P	9-7-11
4.1.11 Demonstrate the ability to package samples.	P	9-7-11
4.1.12 Demonstrate the ability to remove samples from the glovebox.	P	9-7-11
4.1.13 Demonstrate the ability to complete all required documents and WTS entries.	P	9-7-11
4.1.14 Document Refrigerator data on form-1585 or form-1602.	P	9-7-11
4.1.15 Demonstrate the ability to export (undock) a drum.	P	9-7-11
4.1.16 Discuss performance of sampling operations in compliance with Specific Administrative Control 5.2.7, Drum Venting	D	9-7-11

Employee Name Dave Preston S# 86584

5.0 **Emergency / Abnormal Conditions**
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		S D	Evaluator Signature	Date
5.1	Discuss how a loss of the building air systems may affect coring/solid sampling operations.	(D)		8-3-11
5.2	Discuss the precautions and limitations of the HVAC systems in building WMF-634.	(D)		8-3-11
5.3	Discuss the actions to be taken if a container is breached in building WMF-634.	(D)		8-3-11
5.4	Discuss the actions to be taken in the event of a dropped container in building WMF-634.	(D)		8-3-11
5.5	Discuss the actions to be taken in the event of an Air Monitor alarm in buildings WMF-634.	(D)		8-3-11
5.6	Respond to a loss of electrical power in buildings WMF-634.	S (D)		8-3-11
5.7	Respond to a spill/contamination release in buildings WMF-634.	S (D)		8-3-11

Employee Name Dave Preston S# 86584

	S D	Evaluator Signature	Date
5.8 Respond to a fire alarm	S (D)		8-3-11
5.9 Respond to an Evacuation alarm	S (D)		8-3-11
5.10 Respond to a Take Cover alarm	S (D)		8-3-11
5.11 Respond to a medical emergency	S (D)		8-3-11
5.12 Respond to a Criticality alarm	S (D)		8-3-11
5.13 Respond to an incidence of personal contamination	S (D)		8-3-11
5.14 Respond to a contaminated/injured person	S (D)		8-3-11
5.15 Location of fire extinguishers / fire alarm boxes	S (D)		8-3-11

Employee Name Dave Preston S# 86584

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 1 Score: 97% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	Dave Bell Exam Proctor Signature	9-15-2011 Date

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Site Proj. Mgr Title	Signature	9/15/11 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP - Employee Training History

Employee: SIMONSON, JAY (000087632)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
INST-OI-60	10	REAL-TIME RADIOGRAPHY QUICK SCAN	06/30/10
INST-OI-60	9 FC-2	REAL-TIME RADIOGRAPHY QUICK SCAN	05/13/10
INST-OI-60	9	REAL-TIME RADIOGRAPHY QUICK SCAN	12/03/09
INST-OI-68	23 FC-1	DRUM TREATMENT FACILITY OPERATIONS	07/17/12
INST-OI-73	12 FC-2	MANUAL DRUM CORING OPERATIONS	04/17/12
INST-OI-73	10	MANUAL DRUM CORING OPERATIONS	08/01/11
INST-OI-73	9	MANUAL DRUM CORING OPERATIONS	03/17/11
INST-OI-73	8	MANUAL DRUM CORING OPERATIONS	12/13/10
INST-OI-73	7	MANUAL DRUM CORING OPERATIONS	06/30/10
INST-OI-73	6 FC-1	MANUAL DRUM CORING OPERATIONS	05/13/10
INST-OI-73	6	MANUAL DRUM CORING OPERATIONS	04/01/10
INST-OI-75	10 FC-3	CONTAINER-IN-CONTAINER SAMPLING	04/17/12
INST-OI-75	8 FC-2	CONTAINER-IN-CONTAINER SAMPLING	09/10/11
INST-OI-75	8 FC-1	CONTAINER-IN-CONTAINER SAMPLING	09/03/11
INST-OI-75	8 FC-1	CONTAINER-IN-CONTAINER SAMPLING	08/26/11
INST-OI-75	8	CONTAINER-IN-CONTAINER SAMPLING	07/24/11
INST-OI-75	7	CONTAINER-IN-CONTAINER SAMPLING	03/01/11
INST-OI-75	6	CONTAINER-IN-CONTAINER SAMPLING	12/13/10
INST-OI-75	5	CONTAINER-IN-CONTAINER SAMPLING	10/17/10
INST-OI-75	4 FC-1	CONTAINER-IN-CONTAINER SAMPLING	09/13/10
INST-OI-75	4	CONTAINER-IN-CONTAINER SAMPLING	06/30/10
INST-OI-75	3 FC-1	CONTAINER-IN-CONTAINER SAMPLING	05/13/10
INST-OI-75	3	CONTAINER-IN-CONTAINER SAMPLING	01/02/10
INST-OI-81	8	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	06/23/11
INST-OI-81	7	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	12/31/10
INST-OI-81	6 FC-1	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	08/08/10
INST-OI-81	6	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	06/30/10
INST-OI-81	5 FC-3	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	06/27/10
INST-OI-81	5 FC-2	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	05/13/10
INST-OI-81	5 FC-1	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	05/04/10
INST-OI-81	5	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	03/09/10
INST-OI-81	4	REAL-TIME RADIOGRAPHY OPERATIONS (FOR WIPP CERTIFI	12/03/09
INST-OI-88	3	SPILL / LEAK RESPONSE AND CLEANUP	06/06/11
INST-OI-99	5 FC-2	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	06/28/12
INST-OI-99	3	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	01/15/12
INST-OI-99	1 FC-2	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	10/05/10
INST-OI-99	1	REAL-TIME RADIOGRAPHY QUICK SCAN - RTR-1001	06/30/10
INST-TRUW-8.13.1	14	TRU PROGRAM SITE PROJECT OFFICE PROCESS	02/29/12
INST-TRUW-8.13.1	13	TRU PROGRAM SITE PROJECT OFFICE PROCESS	09/05/11
INST-TRUW-8.13.1	12	TRU PROGRAM SITE PROJECT OFFICE PROCESS	01/27/11
INST-TRUW-8.13.1	11	TRU PROGRAM SITE PROJECT OFFICE PROCESS	12/31/10
INST-TRUW-8.13.1	9	TRU PROGRAM SITE PROJECT OFFICE PROCESS	11/27/10
INST-TRUW-8.13.1	8	TRU PROGRAM SITE PROJECT OFFICE PROCESS	07/21/10
INST-TRUW-8.13.1	7	TRU PROGRAM SITE PROJECT OFFICE PROCESS	03/09/10
MP-ADMN-1.12	2	TIME AND ATTENDANCE REPORTING	03/08/10
MP-CMNT-10.22	4	PRODUCTION LIFTING ACTIVITIES	06/06/11

AMWTP - Employee Training History

Employee: INGLE, NICHOLAS (000107617)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
AMOW-N-0732	0	WMF-635 Drum Re-Overpack Facility (DRF)	09/05/12
AMOW-N-0737	0	WMF-629, WMF-630, WMF-631, WMF-632, WMF-633 TYPE I	05/15/12
AMOW-N-0738	0	WMF-629, WMF-630, WMF-631, WMF-632, WMF-633 TYPE I	05/25/12
AMOW-N-0739	0	WMF-628 Waste Handling/HENC Operations	05/25/12
AMOW-N-0741	0	WMF-610 HIGH BAY, NORTH AND SOUTH WEATHER ENCLOSUR	05/25/12
AMOW-N-0743	0	WMF-629, WMF-630, WMF-631, WMF-632, WMF-633 TYPE I	07/02/12
AMOW-N-0746	0	WMF 636, TSA/RE Operations	07/04/12
AMOW-N-0748	0	WMF-629, WMF-630, WMF-631, WMF-632, WMF-633 TYPE I	07/18/12
AMOW-N-0750	0	AMWTP WAREHOUSE OPERATIONS (TO INCLUDE IF WAREHOUS	08/06/12
AMOW-N-0751	0	WMF 636, TSA/RE / FLOOR SWEEPER OPERATIONS	08/12/12
AMOW-N-0753	0	WMF-634 WASTE HANDLING AND CHARACTERIZATION OPERAT	09/07/12
AMOW-N-0754	0	AMWTP REMOVAL AND/OR REPLACEMENT OF DRUM FILTERS	09/07/12
AMOW-N-0760	0	WMF-634 WASTE HANDLING AND CHARACTERIZATION OPERAT	09/14/12
EMPLN-091511	Ref	All Emplyee Evacuation, Shelter and Accountability	09/18/11
INST-FOI-17	19	FACILITY VISUAL EXAMINATION OPERATIONS	08/14/10
INST-OI-11	41	WASTE CONTAINER HANDLING	02/06/11
INST-OI-11	37	WASTE CONTAINER HANDLING	02/03/10
INST-OI-16	40	DRUM CORING OPERATIONS	08/27/12
INST-OI-17	14 FC-1	DCSRS PACKET ASSAY SYSTEM OPERATIONS	08/27/12
INST-OI-24	20 FC-2	WASTE PACKAGING	09/17/10
INST-OI-24	20	WASTE PACKAGING	09/07/10
INST-OI-24	19	WASTE PACKAGING	02/03/10
INST-OI-33	12	CHARACTERIZATION FACILITY HVAC SYSTEMS OPERATIONS	03/18/10
INST-OI-34	22	NON-FACILITY VISUAL EXAMINATION OPERATIONS	08/17/10
INST-OI-34	21	NON-FACILITY VISUAL EXAMINATION OPERATIONS	02/03/10
INST-OI-68	18 FC-2	DRUM TREATMENT FACILITY OPERATIONS	02/06/11
INST-OI-68	18	DRUM TREATMENT FACILITY OPERATIONS	01/29/11
INST-OI-68	16 FC-4	DRUM TREATMENT FACILITY OPERATIONS	12/12/10
INST-OI-68	16 FC-3	DRUM TREATMENT FACILITY OPERATIONS	09/17/10
INST-OI-68	14 FC-2	DRUM TREATMENT FACILITY OPERATIONS	02/03/10
INST-OI-73	13	MANUAL DRUM CORING OPERATIONS	08/27/12
INST-OI-75	11	CONTAINER-IN-CONTAINER SAMPLING	08/27/12
INST-OI-84	9	WASTE CONTAINER REPAIR AND OVERPACK	02/28/12
INST-OI-84	4	WASTE CONTAINER REPAIR AND OVERPACK	02/03/10
INST-OI-88	4	SPILL / LEAK RESPONSE AND CLEANUP	08/27/12
INST-OI-91	10	DRUM RE-OVERPACKING FACILITY OPERATIONS	07/10/12
INST-RS&C-6.2.1	23	RADIOLOGICAL INSTRUMENTATION	11/30/11
INST-RS&C-6.22.1	16	RADIOLOGICAL SURVEYS	11/30/11
MP-ADMN-1.12	2	TIME AND ATTENDANCE REPORTING	07/21/10
MP-CMNT-10.22	4	PRODUCTION LIFTING ACTIVITIES	08/27/12
MP-CMNT-10.8	11	HOISTING AND RIGGING	08/30/12
MP-COPS-9.7	13	CONTROL OF EQUIPMENT AND SYSTEMS STATUS	02/27/10
MP-ISIH-2.41	13	MOTORIZED VEHICLES AND HEAVY EQUIPMENT	10/11/10
MP-PCMT-15.23	4	FLEET MANAGEMENT	02/26/12
MP-RS&C-6.14	8	CONTROL OF RADIOACTIVE CONTAMINATION, MATERIALS, A	11/30/11
MP-RS&C-6.22	10	RADIOLOGICAL SURVEY PROGRAM	11/30/11

Employee Name D SUMNERS S# 87631

3.0 Initial & Continuing Training / Knowledge / Required Reading

The continuing training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	07/19/10	24 Months
3.1.2 AWT 2382, Drum Coring Ops TSR	10/14/10	24 Months

Training Representative or SS verify initial training courses are complete:	Signature	Date
	C Hodgette	10/14/10

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-16; Drum Coring	D J Preston	11/16/10
3.2.2 INST-OI-17; Packet Assay	D J Preston	11/16/10
3.2.3 INST-OI-73; Manual Drum Coring	D J Preston	11/16/10
3.2.4 INST-OI-75; Container-in-Container Sampling	D J Preston	11/16/10

Employee Name M Freeman S# 10160[illegible]

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 **Training Courses (Indicate Courses that are Recurring):**	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT2375, Safety Basis Continuing Training for Non-Facility Ops	5/30/11	Recurring / 24 months
3.1.2 0AWT2382, Drum Coring Ops TSR	1/31/11	Recurring / 24 months

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 **Required Reading: Operating Instructions**	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-16; Drum Coring		3-13-12
3.2.2 INST-OI-17; Packet Assay		3-13-12
3.2.3 INST-OI-73; Manual Drum Coring		3-13-12
3.2.4 INST-OI-75; Container-in-Container Sampling		3-13-12
3.2.5 INST-OI-88, Spill/Leak Response and Cleanup	David J Keeton	4/23/12
3.2.6 RPT-NFCS-05; Criticality Safety Analysis for Drum Contents Handling at the AMWTP (EDF-0050)	David J Keeton	4/23/12
3.2.7 RPT-NFCS-08; Criticality Safety Analysis for AMWTP Retrieval Operations (NE-007)	David J Keeton	4/23/12
3.2.8 MP-CMNT-10.22, Production Lifting Activities	David J Keeton	4/23/12

3.3 **Knowledge**	OJT Instructor / SS Signature	Date
3.3.1 Discuss the Safety Basis (DSA, TSR, USQ, SER and how it applies to tasks covered in this qualification package.		3-13-12

Employee Name A ESCOBAR S# 107620

3.0 Initial & Continuing Training / Knowledge / Required Reading

The continuing training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	06/30/11	24 Months
3.1.2 AWT 2382, Drum Coring Ops TSR	06/30/11	24 Months

Training Representative or SS verify initial training courses are complete:	Signature	Date
	Midgyette	06/30/11

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 INST-OI-16; Drum Coring		06/24/11
3.2.2 INST-OI-17; Packet Assay		06/24/11
3.2.3 INST-OI-73; Manual Drum Coring		06/24/11
3.2.4 INST-OI-75; Container-in-Container Sampling		06/24/11

GEN16

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ID4890008952	1	(575) 885-6883	001600433 GBF

GENERATOR

5. Generator's Name and Mailing Address
IDAHO NATIONAL LABORATORY FOR U.S. DEPT. OF ENERGY
850 ENERGY DRIVE
IDAHO FALLS ID 83401
Generator's Phone: (208)557-6607

Generator's Site Address (if different than mailing address)
AMWTP
HIGHWAY 20 AND VAN BUREN BLVD
SCOVILLE ID 83415

6. Transporter 1 Company Name
VISIONARY SOLUTIONS, LLC
U.S. EPA ID Number
NMR000013086

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
WASHINGTON TRU SOLUTIONS FOR THE U.S. DOE
30 MILES E. OF CARLSBAD ON JAL HIGHWAY
EDDY COUNTY NM 88221
Facility's Phone: (575)234-8457
U.S. EPA ID Number
NM4890139088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
RQ	1. WASTE RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE, 7, UN3328, PU-239, PU-240, AM-241, SOLID, OXIDE, 0.03671 TBq, RADIOACTIVE YELLOW-II, T.I. 0.2, C.S.I. 0.0, USA/9218/B(U)F-96, TRUPACT # 163	1	CM	2890	K	F001	F002	F005
						D022	D026	D027
	2. PCB Container #, BN10427286, Sludge, PCB Out of Service Date 06/21/2010, PCB Weight 1795.4 kg							
RQ	3. 2. WASTE RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE, 7, UN3328, PU-239, AM-241, PU-240, SOLID, OXIDE, 0.0174 TBq, RADIOACTIVE YELLOW-II, T.I. 0.2, C.S.I. 0.0, USA/9218/B(U)F-96, TRUPACT # 159	1	CM	2741	K	F001	F002	F005
						D022	D026	D027
	4. PCB Container #, BN10427292, Sludge, PCB Out of Service Date 05/07/2011, PCB Weight 1626 kg							

14. Special Handling Instructions and Additional Information
RETURN SIGNED ORIGINALS WITHIN 30 DAYS TO GENERATOR ATTN: RACHELLE HUBLER
REF. SHIPMENT # IN120134 TRACTOR - V - 01 TRAILER - 368
GROSS WEIGHT IN LBS: TP# 163 = 19,182 TP# 159 = 18,786
PREPARED UNDER CONTRACT # DE-EM0001467
ERI PROVIDER - WIPP CMR

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Richard A. NeSmith
Signature: Richard A NeSmith
Month 05 Day 31 Year 12

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JAMES H. SMIGIELSKI
Signature:
Month 05 Day 31 Year 12
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H132		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name:
Signature:
Month 06 Day 02 Year 12

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ID4890008952	1	(575) 885-6883	001600458 GBF

GENERATOR

5. Generator's Name and Mailing Address
IDAHO NATIONAL LABORATORY FOR U.S. DEPT. OF ENERGY
850 ENERGY DRIVE
IDAHO FALLS ID 83401
Generator's Phone: (208)557-6607

Generator's Site Address (if different than mailing address)
AMWTP
HIGHWAY 20 AND VAN BUREN BLVD
SCOVILLE ID 83415

6. Transporter 1 Company Name
CAST SPECIALTY TRANSPORTATION INC.
U.S. EPA ID Number
COR000206722

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
WASHINGTON TRU SOLUTIONS FOR THE U.S. DOE
30 MILES E. OF CARLSBAD ON JAL HIGHWAY
EDDY COUNTY NM 88221
Facility's Phone: (575)234-8457
U.S. EPA ID Number
NM4890139088

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
RQ	1. WASTE RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE, 7, UN3328, PU-239, PU-238, PU-240, AM-241, SOLID, OXIDE, 0.03695 TBq, RADIOACTIVE YELLOW-II, T.I. 0.2, C.S.I. 0.0, USA/9218/B(U)F-96, TRUPACT# 170	1	CM	2170	K	F001 D004	F002 D005	F005 D008
RQ	2. WASTE RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE, 7, UN3328, PU-238, PU-239, SOLID, OXIDE, 0.8462 TBq, RADIOACTIVE YELLOW-II, T.I. 0.2, C.S.I. 0.0, USA/9218/B(U)F-96, TRUPACT# 131	1	CM	1951	K	F001 D004	F002 D005	F005 D008
RQ	3. WASTE RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE, 7, UN3328, PU-238, PU-239, AM-241, SOLID, OXIDE, 0.1002 TBq, RADIOACTIVE YELLOW-II, T.I. 0.2, C.S.I. 0.0, USA/9279/B(U)F-96, TRUPACT# 508	1	CM	1162	K	F001 D004	F002 D005	F005 D008
	4.							

14. Special Handling Instructions and Additional Information
RETURN SIGNED ORIGINALS WITHIN 30 DAYS TO GENERATOR ATTN: RACHELLE HUBLER
REF. SHIPMENT # IN120159 TRACTOR - C-28 TRAILER - 331
GROSS WEIGHT IN LBS: TP# 170 = 17,789 TP# 131 = 17,180 TP# 508 = 13,420
PREPARED UNDER CONTRACT # DE-EM0001467 ERI PROVIDER IS WIPP CMR

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Lowney Nate
Signature: Lowney Nate
Month 06 Day 21 Year 12

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: D. DUANE BRAY
Signature: D. Duane Bray
Month 06 Day 21 Year 12
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H132	H132	

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Andy Cooper
Signature:
Month 06 Day 22 Year 12

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

FOR INFORMATION ONLY

SOL1

RECORD
CMC 09/04/2012

SSG12-00004
BATCH DATA REPORT

Report Date: September 4, 2012.

Narrative:

This report provides test results and documentation for the Solid Sampling examination of the following containers using INST-OI-75:

10441660, 10441655, 10441656.

No Solid Sampling Nonconformance Reports are associated with this Batch Data Report.

Position	Signature	Date
AMWTP Site Project Manager		9/4/12

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SSG12-00004

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Chain(s) of Custody
Refrigerator Temperature Logsheet (Form-1585) and/or Characterization Round Sheet (Form-1602)
Analytical Balance Calibration Check Sheet (Form-1215)
Solid Waste Sampling Checklist(s) (Form-1599)
Independent Technical Reviewer Small Container Sampling Checklist(s) (Form-1858)
Site Project Manager Small Container Sampling Checklist(s) (Form-1859)
Batch Data Report Supplemental Comment Form (Form-1491)

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Offsite Waste Shipment

Date: 25-Jul-2012

Time: 11:12

Shipping No. SRIN12001 **Manifest No.** 001077627GBF

Proposed Shipment Date 02-MAY-12 **Manifest Receipt Date** 05-MAY-12

Repsonsible Project SRS **# of Containers** 22

Historical Id	Container ID	Container Type	Historical IDC	Treatment Path	Waste Profile Name	Inspection Date	Fingerprint Required	Fingerprint Complete
FCA080002	10441526	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
FCA080004	10441524	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	Yes	05/23/12
FCA080010	10441525	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
FCAN06025	10441527	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005609	10441521	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005610	10441523	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005622	10441522	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SDD076208	10441657	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076213	10441659	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076214	10441655	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076215	10441656	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076220	10441658	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076224	10441660	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076237	10441661	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SR222365	10441520	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	No	
SR524351	10441519	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	Yes	05/23/12
SR611110	10441518	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	Yes	05/23/12
SRSB01225			-				No	
SRSB01226			-				No	
SRSB01227			-				No	
SRSB01228			-				No	
SRSB01229			-				No	

***** End of Offsite Waste Shipment Report *****

660003

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:16

Batch Type Solid Sampling Grab
Batch Report No. SSG12-00004
Batch Id SSG12-00004
Open Date 26-JUL-12 14:58:10
Close Date 30-JUL-12 08:32:28
Batch Status CLOSED
Test Facility Idaho AMWTP
Equipment Id Z-250-801 634-Coring

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10441660	SR-258	674	26-JUL-12 15:34:17	Original	P	MICHAEL KREMIN
10441660	SR-258	675	26-JUL-12 15:34:17	Replicate / Duplicate	P	MICHAEL KREMIN
10441655	SR-258	676	28-JUL-12 10:18:02	Original	P	MICHAEL KREMIN
10441656	SR-258	677	29-JUL-12 13:10:57	Original	P	ABEL ESCOBAR

660004

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:16

SSG12-00004

**********Batch Comments**********

Written By	Date	Comment
DSUMNERS	30-JUL-12 08:32:29	closed per direction
DSUMNERS	30-JUL-12 08:32:29	WMF-634 Coring Room. WMC S-3220

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:16

SSG12-00004

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2294406	DSUMNERS	30-JUL-2012 08:32:29	closed per direction

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:16

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Package Sampled

Event ID 674
Event Date 26-JUL-12 15:34:17
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75
Procedure Revision ID 11

Equipment Used

Serial Number	Part Type

No. of Packages in Container 4
Random Package Selected for Sample 1

Matrix Physical Description S3220. Dark brown sand like moist material.
Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291486	MKREMIN	26-JUL-2012 15:19:40	Saving Data
2291511	MKREMIN	26-JUL-2012 15:35:37	Saving Data

Grab Sample

Event ID 674
Sample Date 26-JUL-12 15:40:42
Taken By MICHAEL KREMIN
Sample Requested PVOC
Randomly Selected Quadrant 1
Grab Sample Comment

Sample ID 10451603
Quadrant Sampled 1

Weight 2.75 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Quadrant Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291519	MKREMIN	26-JUL-2012 15:41:13	Saving Data
2292023	MKREMIN	27-JUL-2012 09:30:26	
2292118	MKREMIN	27-JUL-2012 10:28:01	

000007

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674 | Sample ID 10451604 | Weight 2.68 gms
Sample Date 26-JUL-12 15:41:58 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291524	MKREMIN	26-JUL-2012 15:43:42	Saving Data

Grab Sample

Event ID 674 | Sample ID 10451605 | Weight 12.16 gms
Sample Date 26-JUL-12 15:42:25 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC-HydrazineSample

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291532	MKREMIN	26-JUL-2012 15:46:03	Saving Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674 | Sample ID 10451606 | Weight 12.37 gms
Sample Date 26-JUL-12 15:44:28 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: NHVOC-Formaldahyde Sample
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291533	MKREMIN	26-JUL-2012 15:47:59	Saving Data

Grab Sample

Event ID 674 | Sample ID 10451607 | Weight 2.90 gms
Sample Date 26-JUL-12 15:46:19 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment: Spare-1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291535	MKREMIN	26-JUL-2012 15:49:43	Saving Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674 | Sample ID 10451608 | Weight 2.83 gms
Sample Date 26-JUL-12 15:48:59 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
Spare-2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291536	MKREMIN	26-JUL-2012 15:51:09	Saving Data

Grab Sample

Event ID 674 | Sample ID 10451609 | Weight 37.18 gms
Sample Date 26-JUL-12 15:51:22 | Volume 125 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 1 | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291537	MKREMIN	26-JUL-2012 15:52:52	Saving Data

660010

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674 | Sample ID 10451622 | Weight 2.98 gms
Sample Date 26-JUL-12 16:30:23 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291620	MKREMIN	26-JUL-2012 17:32:20	Sampling for [primary] [completed

Grab Sample

Event ID 674 | Sample ID 10451623 | Weight 2.82 gms
Sample Date 26-JUL-12 16:31:57 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment: Trip Blank 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291624	MKREMIN	26-JUL-2012 17:34:42	Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674 | Sample ID 10451624 | Weight 2.74 gms
Sample Date 26-JUL-12 16:32:51 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip Blank 3

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291628	MKREMIN	26-JUL-2012 17:38:57	Data

Grab Sample

Event ID 674 | Sample ID 10451625 | Weight 12.38 gms
Sample Date 26-JUL-12 16:33:18 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip Blank 4

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291629	MKREMIN	26-JUL-2012 17:40:41	Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:17

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 674
Sample ID 10451626
Weight 12.18 gms
Sample Date 26-JUL-12 16:34:57
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant
Quadrant Sampled 0
Quadrant Comment

Grab Sample Comment
Trip Blank 5

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date		Comment
2291630	MKREMIN	26-JUL-2012 17:42:15	Data	

660013

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Package Sampled

Event ID 675
Equipment Procedure ID INST-OI-75
Procedure Revision ID 11
Event Date 26-JUL-12 15:34:17
Taken By MICHAEL KREMIN
Sample Type Field Duplicate

Equipment Used

Serial Number	Part Type

No. of Packages in Container 4
Matrix Physical Description S3220. Dark brown sand like moist material.
Random Package Selected for Sample 1
Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291539	MKREMIN	26-JUL-2012 15:55:30	Saving Data
2291563	MKREMIN	26-JUL-2012 16:10:33	Saving Data

Grab Sample

Event ID 675
Sample ID 10451611
Weight 2.70 gms
Sample Date 26-JUL-12 15:56:32
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested PVOC
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 1
Grab Sample Comment
PVOC 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291541	MKREMIN	26-JUL-2012 15:59:56	Saving Data
2292041	MKREMIN	27-JUL-2012 09:46:35	.
2292119	MKREMIN	27-JUL-2012 10:29:45	.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451612 | Weight 2.55 gms
Sample Date 26-JUL-12 15:57:29 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
PVOC 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291544	MKREMIN	26-JUL-2012 16:02:13	Saving Data

Grab Sample

Event ID 675 | Sample ID 10451613 | Weight 2.68 gms
Sample Date 26-JUL-12 15:59:35 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
PVOC 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291546	MKREMIN	26-JUL-2012 16:03:57	Saving Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451614 | Weight 2.92 gms
Sample Date 26-JUL-12 16:00:11 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291553	MKREMIN	26-JUL-2012 16:05:32	Saving Data

Grab Sample

Event ID 675 | Sample ID 10451615 | Weight 2.74 gms
Sample Date 26-JUL-12 16:01:48 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291557	MKREMIN	26-JUL-2012 16:07:07	Saving Data

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Aug-2012
Time: 09:29

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451616 | Weight 2.66 gms
Sample Date 26-JUL-12 16:03:20 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2322670	MKREMIN	30-AUG-2012 09:25:49	e-sig not populating on BDR reesigned to implement fix
2322671	DPRESTON	30-AUG-2012 09:25:50	

Grab Sample

Event ID 675 | Sample ID 10451617 | Weight 12.20 gms
Sample Date 26-JUL-12 16:05:49 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC Hydrazine Sample
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291564	MKREMIN	26-JUL-2012 16:12:21	Saving Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report SUPERCEDED

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451616 | Weight 2.66 gms
Sample Date 26-JUL-12 16:03:20 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment

Grab Sample

Event ID 675 | Sample ID 10451617 | Weight 12.20 gms
Sample Date 26-JUL-12 16:05:49 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
NHVOC Hydrazine Sample
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291564	MKREMIN	26-JUL-2012 16:12:21	Saving Data

SUPERCEDED

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 **Sample ID** 10451618 **Weight** 12.13 gms
Sample Date 26-JUL-12 16:07:37 **Volume** 20 ml.
Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested NHVOC
Randomly Selected Quadrant **Quadrant Sampled** 1 **Quadrant Comment**

Grab Sample Comment
NHVOC Formaldehyde Sample

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291567	MKREMIN	26-JUL-2012 16:14:49	Saving Data

Grab Sample

Event ID 675 **Sample ID** 10451619 **Weight** 2.71 gms
Sample Date 26-JUL-12 16:08:02 **Volume** 20 ml.
Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SPARE
Randomly Selected Quadrant **Quadrant Sampled** 1 **Quadrant Comment**

Grab Sample Comment
Spare 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291568	MKREMIN	26-JUL-2012 16:16:12	Saving Data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:18

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451620 | Weight 2.72 gms
Sample Date 26-JUL-12 16:10:29 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
Spare 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291573	MKREMIN	26-JUL-2012 16:19:10	Saving Data

Grab Sample

Event ID 675 | Sample ID 10451621 | Weight 36.33 gms
Sample Date 26-JUL-12 16:13:52 | Volume 125 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant | Quadrant Sampled 1 | Quadrant Comment
Grab Sample Comment
SVOC-Metals
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291577	MKREMIN	26-JUL-2012 16:21:25	Saving Data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451627 | Weight 2.66 gms
Sample Date 26-JUL-12 16:36:04 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip blank 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291631	MKREMIN	26-JUL-2012 17:46:40	Data

Grab Sample

Event ID 675 | Sample ID 10451628 | Weight 2.82 gms
Sample Date 26-JUL-12 16:37:06 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment

Grab Sample Comment
Trip Blank 2

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291632	MKREMIN	26-JUL-2012 17:48:19	Data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID 675 | Sample ID 10451629 | Weight 2.55 gms
Sample Date 26-JUL-12 16:38:45 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291635	MKREMIN	26-JUL-2012 17:50:02 Data	

Grab Sample

Event ID 675 | Sample ID 10451630 | Weight 12.16 gms
Sample Date 26-JUL-12 16:39:32 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment: Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2291636	MKREMIN	26-JUL-2012 17:51:36 Data	

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441660	SR-258	S3220	425

Grab Sample

Event ID	675	**Sample ID**	10451631	**Weight**	12.23 gms
Sample Date	26-JUL-12 16:40:57			**Volume**	20 ml.
Taken By	MICHAEL KREMIN	**Custody Seal Attached**	Y	**Preserved to 4 Degrees C**	Y
Sample Requested	TRIP BLANK				
Randomly Selected Quadrant		**Quadrant Sampled**	0	**Quadrant Comment**	

Grab Sample Comment
Trip Blank 5

Cancel Date	By	Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2291637	MKREMIN	26-JUL-2012 17:53:10	data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:19

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Package Sampled

Event ID 676
Event Date 28-JUL-12 10:18:02
Taken By MICHAEL KREMIN
Sample Type Initial Grab Sample

Equipment Procedure ID INST-OI-75 Procedure Revision ID 11

Equipment Used

Serial Number	Part Type

No. of Packages in Container 5
Random Package Selected for Sample 5

Matrix Physical Description S3220 Redish in color dry dirt like texture with areas of white mixture small amount of gravel mixed throughout.

Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292468	MKREMIN	27-JUL-2012 18:00:02	.
2292469	MKREMIN	27-JUL-2012 18:00:32	.
2292808	MKREMIN	28-JUL-2012 10:27:50	.

Grab Sample

Event ID 676
Sample Date 28-JUL-12 10:30:34
Taken By MICHAEL KREMIN
Sample Requested PVOC

Sample ID 10451862
Weight 2.61 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Randomly Selected Quadrant 2
Quadrant Sampled 2

Quadrant Comment

Grab Sample Comment

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292809	MKREMIN	28-JUL-2012 10:33:16	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:19

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676 | Sample ID 10451863 | Weight 2.88 gms
Sample Date 28-JUL-12 10:32:48 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2292810	MKREMIN	28-JUL-2012 10:35:25	

Grab Sample

Event ID 676 | Sample ID 10451864 | Weight 12.32 gms
Sample Date 28-JUL-12 10:34:57 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
NHVOC Hydrazine
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2292811	MKREMIN	28-JUL-2012 10:38:07	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676 | Sample ID 10451865 | Weight 12.18 gms
Sample Date 28-JUL-12 10:36:26 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
NHVOC Formaldehyde
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292814	MKREMIN	28-JUL-2012 10:40:09	

Grab Sample

Event ID 676 | Sample ID 10451866 | Weight 2.89 gms
Sample Date 28-JUL-12 10:38:24 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 2 | Quadrant Sampled 2 | Quadrant Comment
Grab Sample Comment
SPARE 1
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292815	MKREMIN	28-JUL-2012 10:41:55	

Small Container Sample Batch Data Report

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676 **Sample ID** 10451867 **Weight** 2.71 gms

Sample Date 28-JUL-12 10:40:13 **Volume** 20 ml.

Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested SPARE

Randomly Selected Quadrant 2 **Quadrant Sampled** 2 **Quadrant Comment**

Grab Sample Comment
SPARE 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292818	MKREMIN	28-JUL-2012 10:43:25	

Grab Sample

Event ID 676 **Sample ID** 10451868 **Weight** 37.99 gms

Sample Date 28-JUL-12 10:44:42 **Volume** 125 ml.

Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested SVOC, METALS

Randomly Selected Quadrant 2 **Quadrant Sampled** 2 **Quadrant Comment**

Grab Sample Comment

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292823	MKREMIN	28-JUL-2012 10:46:30	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676 **Sample ID** 10451902 **Weight** 2.71 gms
Sample Date 28-JUL-12 10:51:28 **Volume** 20 ml.
Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant **Quadrant Sampled** 0 **Quadrant Comment**
Grab Sample Comment
trip blank 2
Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2292869	MKREMIN	28-JUL-2012 11:18:12	

Grab Sample

Event ID 676 **Sample ID** 10451903 **Weight** 2.64 gms
Sample Date 28-JUL-12 10:50:59 **Volume** 20 ml.
Taken By MICHAEL KREMIN **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant **Quadrant Sampled** 0 **Quadrant Comment**
Grab Sample Comment
Trip Blank 1
Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2292864	MKREMIN	28-JUL-2012 11:11:54	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676 | Sample ID 10451904 | Weight 2.85 gms
Sample Date 28-JUL-12 10:52:39 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment
trip blank 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292870	MKREMIN	28-JUL-2012 11:19:50	

Grab Sample

Event ID 676 | Sample ID 10451905 | Weight 12.25 gms
Sample Date 28-JUL-12 10:53:17 | Volume 20 ml.
Taken By MICHAEL KREMIN | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant | Quadrant Sampled 0 | Quadrant Comment
Grab Sample Comment
Trip Blank 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292871	MKREMIN	28-JUL-2012 11:21:53	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:20

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441655	SR-258	S3220	425

Grab Sample

Event ID 676
Sample ID 10451906
Weight 12.37 gms
Sample Date 28-JUL-12 10:54:17
Volume 20 ml.
Taken By MICHAEL KREMIN
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant
Quadrant Sampled 0
Quadrant Comment

Grab Sample Comment
Trip Blank 5

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2292872	MKREMIN	28-JUL-2012 11:23:23	
2292916	MKREMIN	28-JUL-2012 13:22:51	
2293067	MKREMIN	28-JUL-2012 17:35:23	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:20

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Package Sampled

Event ID 677
Equipment Procedure ID INST-OI-75
Procedure Revision ID 11
Event Date 29-JUL-12 13:10:57
Taken By ABEL ESCOBAR
Sample Type Initial Grab Sample

Equipment Used

Serial Number	Part Type

No. of Packages in Container 6
Matrix Physical Description Waste Matrix Code S3220 Red, brown in color with chunks of black mixed in, dry dirt/gravel like consistency.
Random Package Selected for Sample 5
Package Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293698	AESCOBAR	29-JUL-2012 12:04:09	
2293717	AESCOBAR	29-JUL-2012 13:17:20	

Grab Sample

Event ID 677
Sample ID 10452118
Weight 2.61 gms
Sample Date 29-JUL-12 13:23:17
Volume 20 ml.
Taken By ABEL ESCOBAR
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested PVOC
Quadrant Comment
Randomly Selected Quadrant 4
Quadrant Sampled 4
Grab Sample Comment
PVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293718	AESCOBAR	29-JUL-2012 13:26:54	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:20

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677 | Sample ID 10452119 | Weight 2.88 gms
Sample Date 29-JUL-12 13:25:51 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: NHVOC
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293720	AESCOBAR	29-JUL-2012 13:32:13	

Grab Sample

Event ID 677 | Sample ID 10452120 | Weight 12.45 gms
Sample Date 29-JUL-12 13:28:52 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: Hydrazine
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293731	AESCOBAR	29-JUL-2012 13:38:15	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:21

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677 | Sample ID 10452121 | Weight 12.11 gms
Sample Date 29-JUL-12 13:33:03 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC | Quadrant Comment
Randomly Selected Quadrant 4 | Quadrant Sampled 4

Grab Sample Comment
Formaldehyde

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293735	AESCOBAR	29-JUL-2012 13:41:34	

Grab Sample

Event ID 677 | Sample ID 10452122 | Weight 2.62 gms
Sample Date 29-JUL-12 13:34:46 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE | Quadrant Comment
Randomly Selected Quadrant 4 | Quadrant Sampled 4

Grab Sample Comment
SPARE 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293738	AESCOBAR	29-JUL-2012 13:45:01	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:21

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677 | Sample ID 10452123 | Weight 2.88 gms
Sample Date 29-JUL-12 13:35:19 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: SPARE 2
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293739	AESCOBAR	29-JUL-2012 13:46:29	

Grab Sample

Event ID 677 | Sample ID 10452124 | Weight 36.40 gms
Sample Date 29-JUL-12 13:40:47 | Volume 125 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Randomly Selected Quadrant 4 | Quadrant Sampled 4 | Quadrant Comment
Grab Sample Comment: SVOC METALS
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
11x17 Grid Pan	92268369	122111-01	11-414	1110827-01
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293743	AESCOBAR	29-JUL-2012 13:49:13	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677 Sample ID 10452125 Weight 2.99 gms
Sample Date 29-JUL-12 14:00:02 Volume 20 ml.
Taken By ABEL ESCOBAR Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
TRIP BLANK 1
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293754	AESCOBAR	29-JUL-2012 14:02:52	
2293764	AESCOBAR	29-JUL-2012 14:19:17	

Grab Sample

Event ID 677 Sample ID 10452126 Weight 2.76 gms
Sample Date 29-JUL-12 14:01:07 Volume 20 ml.
Taken By ABEL ESCOBAR Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Randomly Selected Quadrant Quadrant Sampled 0 Quadrant Comment
Grab Sample Comment
TRIP BLANK 2
Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293756	AESCOBAR	29-JUL-2012 14:05:57	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677 | Sample ID 10452127 | Weight 2.60 gms
Sample Date 29-JUL-12 14:03:15 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment
TRIP BLANK 3
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293758	AESCOBAR	29-JUL-2012 14:08:38	

Grab Sample

Event ID 677 | Sample ID 10452128 | Weight 12.38 gms
Sample Date 29-JUL-12 14:05:58 | Volume 20 ml.
Taken By ABEL ESCOBAR | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK | Quadrant Comment
Randomly Selected Quadrant | Quadrant Sampled 0
Grab Sample Comment
TRIP BLANK 4
Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2293759	AESCOBAR	29-JUL-2012 14:10:54	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Small Container Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:21

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSG12-00004	10441656	SR-258	S3220	425

Grab Sample

Event ID 677
Sample ID 10452129
Weight 12.40 gms
Sample Date 29-JUL-12 14:07:10
Volume 20 ml.
Taken By ABEL ESCOBAR
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Quadrant Comment
Randomly Selected Quadrant
Quadrant Sampled 0

Grab Sample Comment
TRIP BLANK 5

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2293760	AESCOBAR	29-JUL-2012 14:11:59	
2293820	AESCOBAR	29-JUL-2012 15:57:50	
2293843	AESCOBAR	29-JUL-2012 16:12:30	

******End of Core Analysis Report******

ALD LOG # 1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 07:49
COC No.: 0000556

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441660	SR-258	10451603	26-Jul-2012	15:40	20 / ml	2.75 / gms	PVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451604	26-Jul-2012	15:41	20 / ml	2.68 / gms	NHVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451605	26-Jul-2012	15:42	20 / ml	12.16 / gms	NHVOC	Michael Kremin	NHVOC-HydrazineSample	
SSG12-00004	10441660	SR-258	10451606	26-Jul-2012	15:44	20 / ml	12.37 / gms	NHVOC	Michael Kremin	NHVOC-Formaldahyde Sample	
SSG12-00004	10441660	SR-258	10451607	26-Jul-2012	15:46	20 / ml	2.90 / gms	SPARE	Michael Kremin	Spare-1	
SSG12-00004	10441660	SR-258	10451608	26-Jul-2012	15:48	20 / ml	2.83 / gms	SPARE	Michael Kremin	Spare-2	
SSG12-00004	10441660	SR-258	10451609	26-Jul-2012	15:51	125 / ml	37.18 / gms	SVOC, METALS	Michael Kremin		
SSG12-00004	10441660	SR-258	10451622	26-Jul-2012	16:30	20 / ml	2.98 / gms	TRIP BLANK	Michael Kremin	Trip Blank 1	
SSG12-00004	10441660	SR-258	10451623	26-Jul-2012	16:31	20 / ml	2.82 / gms	TRIP BLANK	Michael Kremin	Trip Blank 2	
SSG12-00004	10441660	SR-258	10451624	26-Jul-2012	16:32	20 / ml	2.74 / gms	TRIP BLANK	Michael Kremin	Trip Blank 3	
SSG12-00004	10441660	SR-258	10451625	26-Jul-2012	16:33	20 / ml	12.38 / gms	TRIP BLANK	Michael Kremin	Trip Blank 4	
SSG12-00004	10441660	SR-258	10451626	26-Jul-2012	16:34	20 / ml	12.18 / gms	TRIP BLANK	Michael Kremin	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:35:47	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:35:47	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:18:28	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:18:28	
Relinquished By	David Preston	David J Preston	06-AUG-12 0754	FGE of parent drum used for transfer to the lab. On Site Transfer DJ Preston 8/6/12
Received By	Patty Tullock	Patty Tullock	06-Aug-12 1015	Transfer container: 2 TID 550753

SSG12-00004

600037

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ALD LOG #
1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 07:49
COC No.: 0000556
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Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000004

660038

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ALD LOG # 1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 07:58
COC No.: 0000557

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441660	SR-258	10451611	26-Jul-2012	15:56	20 / ml	2.70 / gms	PVOC	Michael Kremin	PVOC 1	
SSG12-00004	10441660	SR-258	10451612	26-Jul-2012	15:57	20 / ml	2.55 / gms	PVOC	Michael Kremin	PVOC 2	
SSG12-00004	10441660	SR-258	10451613	26-Jul-2012	15:59	20 / ml	2.68 / gms	PVOC	Michael Kremin	PVOC 3	
SSG12-00004	10441660	SR-258	10451614	26-Jul-2012	16:00	20 / ml	2.92 / gms	NHVOC	Michael Kremin	NHVOC 1	
SSG12-00004	10441660	SR-258	10451615	26-Jul-2012	16:01	20 / ml	2.74 / gms	NHVOC	Michael Kremin	NHVOC 2	
SSG12-00004	10441660	SR-258	10451616	26-Jul-2012	16:03	20 / ml	2.66 / gms	NHVOC	Michael Kremin	NHVOC 3	
SSG12-00004	10441660	SR-258	10451617	26-Jul-2012	16:05	20 / ml	12.20 / gms	NHVOC	Michael Kremin	NHVOC Hydrazine Sample	
SSG12-00004	10441660	SR-258	10451618	26-Jul-2012	16:07	20 / ml	12.13 / gms	NHVOC	Michael Kremin	NHVOC Formaldehyde Sample	
SSG12-00004	10441660	SR-258	10451619	26-Jul-2012	16:08	20 / ml	2.71 / gms	SPARE	Michael Kremin	Spare 1	
SSG12-00004	10441660	SR-258	10451620	26-Jul-2012	16:10	20 / ml	2.72 / gms	SPARE	Michael Kremin	Spare 2	
SSG12-00004	10441660	SR-258	10451621	26-Jul-2012	16:13	125 / ml	36.33 / gms	SVOC, METALS	Michael Kremin	SVOC-Metals	
SSG12-00004	10441660	SR-258	10451627	26-Jul-2012	16:36	20 / ml	2.66 / gms	TRIP BLANK	Michael Kremin	Trip blank 1	
SSG12-00004	10441660	SR-258	10451628	26-Jul-2012	16:37	20 / ml	2.82 / gms	TRIP BLANK	Michael Kremin	Trip Blank 2	
SSG12-00004	10441660	SR-258	10451629	26-Jul-2012	16:38	20 / ml	2.55 / gms	TRIP BLANK	Michael Kremin	Trip Blank 3	
SSG12-00004	10441660	SR-258	10451630	26-Jul-2012	16:39	20 / ml	12.16 / gms	TRIP BLANK	Michael Kremin	Trip Blank 4	
SSG12-00004	10441660	SR-258	10451631	26-Jul-2012	16:40	20 / ml	12.23 / gms	TRIP BLANK	Michael Kremin	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:34:17	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:34:17	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:22:50	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:22:50	
Relinquished By	David Preston	David J Preston	06-AUG-12 0804	FFE of parent drum used for transfer to the lab. On Site Transfer. David Preston 8/6/12
Received By	Patty Tulloch	Patty Tulloch	06-Aug-12 1015	Transfer Container ID : 3 TID 550748

SSG12-00004

000039

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ALD LOG #
1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 07:58
COC No.: 0000557
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Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000004

000040

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ALD LOG # 1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 08:08
COC No.: 0000558

Shipping Location: AMWTP **Analytical Location:** Analytical Chemistry Lab **Sampling Location:** WMF-634 Coring Glove Box **Sample Matrix:** Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441655	SR-258	10451862	28-Jul-2012	10:30	20 / ml	2.61 / gms	PVOC	Michael Kremin		
SSG12-00004	10441655	SR-258	10451863	28-Jul-2012	10:32	20 / ml	2.88 / gms	NHVOC	Michael Kremin		
SSG12-00004	10441655	SR-258	10451864	28-Jul-2012	10:34	20 / ml	12.32 / gms	NHVOC	Michael Kremin	NHVOC Hydrazine	
SSG12-00004	10441655	SR-258	10451865	28-Jul-2012	10:36	20 / ml	12.18 / gms	NHVOC	Michael Kremin	NHVOC Formaldehyde	
SSG12-00004	10441655	SR-258	10451866	28-Jul-2012	10:38	20 / ml	2.89 / gms	SPARE	Michael Kremin	SPARE 1	
SSG12-00004	10441655	SR-258	10451867	28-Jul-2012	10:40	20 / ml	2.71 / gms	SPARE	Michael Kremin	SPARE 2	
SSG12-00004	10441655	SR-258	10451868	28-Jul-2012	10:44	125 / ml	37.99 / gms	SVOC, METALS	Michael Kremin		
SSG12-00004	10441655	SR-258	10451903	28-Jul-2012	10:50	20 / ml	2.64 / gms	TRIP BLANK	Michael Kremin	Trip Blank 1	
SSG12-00004	10441655	SR-258	10451902	28-Jul-2012	10:51	20 / ml	2.71 / gms	TRIP BLANK	Michael Kremin	trip blank 2	
SSG12-00004	10441655	SR-258	10451904	28-Jul-2012	10:52	20 / ml	2.85 / gms	TRIP BLANK	Michael Kremin	trip blank 3	
SSG12-00004	10441655	SR-258	10451905	28-Jul-2012	10:53	20 / ml	12.25 / gms	TRIP BLANK	Michael Kremin	Trip Blank 4	
SSG12-00004	10441655	SR-258	10451906	28-Jul-2012	10:54	20 / ml	12.37 / gms	TRIP BLANK	Michael Kremin	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:30:56	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:30:56	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:30:54	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:30:54	
Relinquished By	David Preston	David J Preston	06-AUG-12 0814	FGE value of parent drum used for transfer to lab. On Site Transfer. Transfer Container 4
Received By	Patty Tullock	Patty Tullock	06-Aug-12 1015	TID : 550787 David J Preston 8/6/12

SSG12-00004

600041

COPY OF IN-PROCESS RECORD

ALD LOG #
1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 08:08
COC No.: 0000558
Page 2 of 2

Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000041

000042

COPY OF IN-PROCESS RECORD

ALD LOG # 1208061

AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 08:17
COC No.: 0000559
Page 1 of 2

Shipping Location: AMWTP **Analytical Location:** Analytical Chemistry Lab **Sampling Location:** WMF-634 Coring Glove Box **Sample Matrix:** Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441656	SR-258	10452118	29-Jul-2012	13:23	20 / ml	2.61 / gms	PVOC	Abel Escobar	PVOC	
SSG12-00004	10441656	SR-258	10452119	29-Jul-2012	13:25	20 / ml	2.88 / gms	NHVOC	Abel Escobar	NHVOC	
SSG12-00004	10441656	SR-258	10452120	29-Jul-2012	13:28	20 / ml	12.45 / gms	NHVOC	Abel Escobar	Hydrazine	
SSG12-00004	10441656	SR-258	10452121	29-Jul-2012	13:33	20 / ml	12.11 / gms	NHVOC	Abel Escobar	Formaldehyde	
SSG12-00004	10441656	SR-258	10452122	29-Jul-2012	13:34	20 / ml	2.62 / gms	SPARE	Abel Escobar	SPARE 1	
SSG12-00004	10441656	SR-258	10452123	29-Jul-2012	13:35	20 / ml	2.88 / gms	SPARE	Abel Escobar	SPARE 2	
SSG12-00004	10441656	SR-258	10452124	29-Jul-2012	13:40	125 / ml	36.40 / gms	SVOC, METALS	Abel Escobar	SVOC METALS	
SSG12-00004	10441656	SR-258	10452125	29-Jul-2012	14:00	20 / ml	2.99 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 1	
SSG12-00004	10441656	SR-258	10452126	29-Jul-2012	14:01	20 / ml	2.76 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 2	
SSG12-00004	10441656	SR-258	10452127	29-Jul-2012	14:03	20 / ml	2.60 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 3	
SSG12-00004	10441656	SR-258	10452128	29-Jul-2012	14:05	20 / ml	12.38 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 4	
SSG12-00004	10441656	SR-258	10452129	29-Jul-2012	14:07	20 / ml	12.40 / gms	TRIP BLANK	Abel Escobar	TRIP BLANK 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Abel Escobar	Electronically signed in WTS	29-JUL-12 16:29:22	
Received By	Michael Kremin	Electronically signed in WTS	29-JUL-12 16:29:22	
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:29:34	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:29:34	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:35:03	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:35:03	
Relinquished By	David Preston	David J Preston	06-AUG-12 0822	FGE value of parent drum used for transfer to the lab. On Site Transfer David J Preston
Received By	Patty Tullock	Patty Tullock	06-Aug-12 1015	Transfer Container: 5 TID: 550750 8/6/12

SSG12-00004

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AMWTP

ALD LOG # 1208061

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 08:17
COC No.: 0000559
Page 2 of 2

Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

SSG12-000004

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COPY OF IN-PROCESS RECORD

AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
DAVE SUMMERS	06/12/12	1830	3.4°C	3.6°C	3.2°C	Samples in Refrig
DAVE SUMMERS	06/13/12	0745	3.6°C	3.7°C	3.4°C	Samples in Refrig
DAVE SUMMERS	06/13/12	1807	3.5°C	3.7°C	3.4°C	Samples in Refrig
DAVE SUMMERS	06/14/12	0730	3.3°C	3.5°C	3.3°C	Samples in Refrig
DAVE SUMMERS	06/14/12	1830	3.6°C	3.7°C	3.4°C	NO Samples in Refrig
DAVE SUMMERS	06/15/12	0800	3.7°C	3.7°C	3.5°C	NO Samples in Refrig
DAVE SUMMERS	06/15/12	1815	3.5°C	3.9°C	3.4°C	Samples in Refrig
mike Kremin	06/16/12	0740	3.3°C	3.6°C	3.3°C	SAmples IN REFRIG
mike Kremin	06/16/12	1800	3.4°C	5.6°C	3.3°C	Samples In Refrig
Nick Ingle	06/17/12	0805	3.5°C	3.7°C	3.5°C	Samples in Fridge
Nick Ingle	06/17/12	1755	3.4°C	3.6°C	3.3°C	Samples in Fridge
mike Kremin	06/18/12	0716	3.6°C	3.6°C	3.5°C	SAmples In Refrig
Nick Ingle	6/18/12	1630	3.6°C	4.4°C	3.5°C	No samples in fridge
Marcial Trejo	6/19/12	1001	3.9	4.1°C	3.6°C	NO Samples in fridge
Nick Ingle	6/19/12	1800	3.5°C	4.1°C	3.5°C	Samples in Fridge
DAVE SUMMERS	06/20/12	1117	3.4°C	3.6°C	3.3°C	Samples in Refrig
Marcial Trejo	07/20/12	0820	4.0°C	4.5°C	3.8°C	NO Samples in Fridge
mike Kremin	07/20/12	1800	3.9°C	4.1°C	3.5°C	SAmples In Refrig
Abel Escobar	07/21/12	0730	3.7°C	3.9°C	3.7°C	Samples in Fridge
Abel Escobar	07/21/12	1725	9/21/12 ME 3.8.7°C	4.0°C	3.6°C	Samples in Fridge
DAVE SUMMERS	07/22/12	0745	4.0°C	4.3°C	3.6°C	Samples in Refrig
DAVE SUMMERS	07/22/12	1835	3.7°C	4.1°C	3.6°C	Samples in Refrig
DAVE SUMMERS	07/23/12	0730	3.5°C	3.8°C	3.4°C	Samples in Refrig
DAVE SUMMERS	07/23/12	1845	3.6°C	3.8°C	3.5°C	Samples in Refrig
DAVE SUMMERS	07/24/12	0714	3.9°C	3.9°C	3.5°C	Samples in Refrig
DAVE SUMMERS	07/24/12	1825	3.8°C	4.1°C	3.5°C	NO Samples in Refrig

SSG12-000004

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AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
DAVE SUMMERS	07/25/12	0730	4.0°C	4.2°C	3.7°C	NO Samples in Refrig
DAVE SUMMERS	07/25/12	1830	3.9°C	4.1°C	3.6°C	Samples in Refrig
Conley Beeks	07/26/12	0700	4.0°C	4.2°C	3.7°C	Samples in Refrig.
DAVE SUMMERS	07/27/12	0657	3.9°C	4.1°C	3.6°C	NO Samples in Refrig
Nick Ingle	07/27/12	1810	3.6°C	4.3°C	3.4°C	Samples in fridge
Abel Escobar	07/28/12	0735	3.5°C	3.5°C	3.4°C	Samples in fridge
mike Kramer	07/28/12	1800	3.8°C	3.8°C	3.4°C	SAmples in Fridge
Abel Escobar	07/29/12	0733	3.6°C	3.7°C	3.6°C	Samples in fridge
Nick Ingle	07/29/12	1715	3.7°C	3.9°C	3.5°C	Samples in Fridge
DAVE SUMMERS	07/30/12	0730	4.0°C	4.1°C	3.6°C	Samples in Refrig

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SS12-00004

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-[illegible]5
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 **Scale Calibration Expiration Date:** 10/30/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
06/17/12	1033	MTE-158	30.00 +/- .01g	30.00 g	Pass	
06/17/12	1034	MTE-130	50.00 +/- .01g	50.01 g	Pass	
06/17/12	1035	MTE-158 & 130	80.00 +/- .01g	80.00 g	Pass	
06/18/12	0830	MTE-158	30.00 +/- .01g	30.00g	Pass	
06/18/12	0831	MTE-130	50.00 +/- .01g	50.00g	Pass	
06/18/12	0832	MTE-158 & MTE-130	80.00 +/- .01g	80.00g	Pass	
06/19/12	1029	MTE-158	30.00 +/- .01g	30.00g	Pass	
06/19/12	1030	MTE-130	50.00 +/- .01g	50.00g	Pass	
06/19/12	1031	MTE-158 + MTE-130	80.00 +/- .01g	80.00g	Pass	
07/19/12	1730	MTE-158	30.00 +/- .01g	30.01g	Pass	
07/19/12	1731	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/19/12	1732	MTE-158 + MTE-130	80.00 +/- .01g	80.01g	Pass	
07/20/12	0821	MTE-158	30.00 +/- .01g	30.00 +/- 7/20/12 g.	Pass	
07/20/12	0822	MTE-130	50.00 +/- .01g	50.01 g	Pass	
07/20/12	0823	MTE-158-MTE130	80.00 +/- .01g	80.00 g	Pass	
07/21/12	0846	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/21/12	0847	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/21/12	0848	MTE-158+130	80.00 +/- .01g	80.00g	Pass	
07/23/12	1305	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/23/12	1305	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/23/12	1305	MTE-130+158	80.00 +/- .01g	80.00g	Pass	
07/24/12	1406	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/24/12	1400	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/24/12	1400	MTE-158 & 130	80.00 +/- .01g	80.00g	Pass	

SSG12-000047

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 Scale Calibration Expiration Date: 10/30/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
07/26/12	0757	MTE-158	30.00 +/- 0.01g	30.00g	PASS	
07/26/12	0757	MTE-130	50.00 +/- 0.01g	50.00g	PASS	
07/26/12	0757	MTE-158 & 130	80.00 +/- 0.01g	80.00g	PASS	
07/26/12	1015	MTE-158	30.00 +/- 0.01g	30.00	PASS	
07/26/12	1015	MTE-130	50.00 +/- 0.01g	50.00	PASS	
07/26/12	1015	MTE-130+158	80.00 +/- 0.01g	80.00	PASS	
07/27/12	0803	MTE-158	30.00 +/- 0.01g	30.00 g	pass	
07/27/12	0804	MTE-130	50.00 +/- 0.01g	50.00 g	pass	
07/27/12	0805	MTE-130+158	80.00 +/- 0.01g	80.00 g	pass	
07/28/12	0817	MTE-158	30.00 +/- .01g	30.00 g	pass	
07/28/12	0818	MTE-130	50.00 +/- .01g	50.00 g	pass	
07/28/12	0819	MTE-158+130	80.00 +/- .01g	80.00 g	Pass	
7/29/12	0828	MTE-158	30.00 +/- .01g	30.01 g	Pass	
7/29/12	0829	MTE-130	50.00 +/- .01g	50.01 g	Pass	
7/29/12	0831	MTE-158-130	80.00 +/- .01g	80.00 g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
6/11/12	0956	MTE-179	50.00 +/- .01g	50.00g	Pass	
6/11/12	0957	MTE-161	150.00 +/- .01g	150.00g	Pass	
6/11/12	0958	MTE-314	500.00 +/- .01g	500.00g	Pass	
06/12/12	0917	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/12/12	0917	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/12/12	0917	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/13/12	1443	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/13/12	1443	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/13/12	1443	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/15/12	0855	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/15/12	0855	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/15/12	0855	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/17/12	1029	MTE-179	50.00 +/- .01g	50.01 g	Pass	
06/17/12	1030	MTE-161	150.00 +/- .01g	150.00 g	Pass	
06/17/12	1031	MTE-314	500.00 +/- .01g	500.01 g	Pass	
06/18/12	0833	MTE-179	50.00 +/- .01g	50.00g	Pass	
06/18/12	0834	MTE-161	150.00 +/- .01g	150.00g	Pass	
06/19/12	0835	MTE-314	500.00 +/- .01g	500.01g	Pass	
06/19/12	1038	MTE-179	50.00 +/- .01g	50.00g	Pass	
06/19/12	1039	MTE-161	150.00 +/- .01g	150.00g	Pass	
06/19/12	1042	MTE-314	500.00 +/- .01g	500.00g	Pass	
07/19/12	1733	MTE-179	50.00 +/- .01g	50.00g	Pass	
07/19/12	1734	MTE-161	150.00 +/- .01g	150.00g	Pass	
07/19/12	1735	MTE-314	500.00 +/- .01g	500.00g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
07/20/12	0824	MTE-179	50.00 +/- .01g	50.00 g	Pass	
07/20/12	0825	MTE-161	150.00 +/- .01g	150.00 g	Pass	
07/20/12	0826	MTE-314	500.00 +/- .01g	500.00 g	Pass	
07/21/12	0843	MTE-179	50.00 +/- .01g	50.00g	Pass	
07/21/12	0844	MTE-161	150.00 +/- .01g	150.00g	Pass	
07/21/12	0845	MTE-314	500.00 +/- .01g	500.00g	Pass	
07/23/12	1320	MTE-179	50.00 +/- .01g	50.00g	PASS	
07/23/12	1320	MTE-161	150.00 +/- .01g	150.00g	PASS	
07/23/12	1320	MTE-314	500.00 +/- .01g	500.00g	PASS	
07/24/12	0718	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
07/24/12	0718	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
07/24/12	0718	MTE-314	500.00 +/- 0.01G	500.00 G	PASS	
07/25/12	0743	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
07/25/12	0743	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
07/25/12	0743	MTE-314	500.00 +/- 0.01G	500.00 G	PASS	
07/26/12	1005	MTE-179	50.00 +/- 0.01g	50.00 g	PASS	
07/26/12	1005	MTE-161	150.00 +/- 0.01g	150.00 g	PASS	
07/26/12	1005	MTE-314	500.00 +/- 0.01g	500.01 g	PASS	
07/27/12	0751	MTE-179	50.00 +/- 0.01g	50.00 g	Pass	
07/27/12	0751	MTE-161	150.00 +/- 0.01g	150.00 g	Pass	
07/27/12	0751	MTE-314	500.00 +/- 0.01g	500.00 g	Pass	
07/28/12	0820	MTE-179	50.00 +/- 0.01g	50.00 g	Pass	
07/28/12	0820	MTE-161	150.00 +/- 0.01g	150.00 g	Pass	
07/28/12	0820	MTE-314	500.00 +/- 0.01g	500.00 g	Pass	

SG12-00004

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
7/29/12	0825	MTE-179	50.00 +/- .01g	50.01 g	Pass	
7/29/12	0826	MTE-161	150.00 +/- .01g	150.00 g	Pass	
7/29/12	0827	MTE-314	500.00 +/- .01g	500.01 g	Pass	

SSG12-000004

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	07/24/12 07/26/12	0805 1005hrs	Conlet Beebe mike Kenna	Glovebox Inspected visibly clean SAT GloveBox visibly Clean
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	07/26/12 07/27/12	0835 0716	Conlet Beebe mike Kenna	Background & Standardization complete SAT.. BACK GRound and STandardization SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	07/26/12 07/27/12	1015 hrs. 0805	Conlet beebe mike Kenna	scale checks for X-250-002 and X-250-001 complete SAT. checks completed SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	07/26/12 07/27/12	1010 hrs 0805	Conlet Beebe mike Kenna	Sampling and glovebox support equipment clean and SAT.. No deficiencies.
4b. Document any deficiencies in the comments section.						Conlet Beebe Mike Kenna	Inspection completed SAT no Deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/25/12	1810	D Summers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/27/12	1225	mike Kenna	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-000004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	07/26/12	1511	Mike Kramer	N/A GRAB SAMPLING
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	07/26/12	~~1010 hrs~~ CB 07/26/12 1511	Charles Beebe	VISIBLE CLEAN
7b. Were any defective sampling tools identified?	☐	☒	☐	07/26/12	1511	Mike Kramer	NO DEFECTIVE TOOLS
7c. Was the SS and SME notified?	☐	☐	☒	07/26/12	1511	Mike Kramer	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	07/26/12	1511	Mike Kramer	PACKAGING INTACT
7e. Document any deficiencies by ID number in the comments section.						Mike Kramer	NO DEFICIENCIES

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	07/26/12	1515	mike Kemm	N/A GRAB SAMPLING
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					mike Kemm	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	07/26/12	1533	mike Kemm	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	07/26/12	1615	mike Kemm	Verified Completed
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	07/26/12	1531	mike Kemm	N/A GRAB SAMPLING
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	07/26/12	1534	mike Kemm	N/A GRAB SAMPLING

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Batch Number: SSG12-000004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	07/26/12	1536 ~~0956~~ 07/26/12	mike Kramer	INITIAL SAMPLE
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	07/26/12	1536	mike Kramer	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	07/26/12	1615	mike Kramer	Verified complete
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	07/26/12	1615	mike Kramer	Verified complete
14. Have custody seals been signed and dated?	☒	☐	☐	07/26/12	1754	mike Kramer	Verified completed
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	07/27/12	0945	mike Kramer	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	07/27/12	1031	mike Kramer	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	07/27/12	1031	mike Kramer	Verified complete
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	07/27/12	1031	mike Kramer	Verified Locked

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Michael Kreiner (Print Name) [signature] (Signature) 07/27/12 (Date)

Checklist reviewed by SS: Derek Cox (Print Name) [signature] (Signature) 07/30/12 ~~07/27/12~~ 8/7/12 (Date)

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	07/26/12 07/27/12	1545 0808	mike Kramer mike Kramer	Glove Box visibly clean Glovebox visibly clean
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	07/26/12 07/27/12	0830 0716	mike Kramer mike Kramer	checks completed SAT checks completed SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	07/26/12 07/27/12	1015 0805	mike Kramer mike Kramer	checks completed SAT checks completed SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	07/26/12 07/27/12	1545 0808	mike Kramer mike Kramer	Inspection and cleaning completed SAT Glovebox Inspection completed
4b. Document any deficiencies in the comments section.						mike Kramer mike Kramer	No deficiencies No deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/26/12	1546	mike Kramer	Verified
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/27/12	1228	mike Kramer	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	07/26/12	1545	mike Kramer	N/A GRAB SAMPLING
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	07/26/12	1511	mike Kramer	VISIBLY CLEAN
7b. Were any defective sampling tools identified?	☐	☒	☐	07/26/12	1511	mike Kramer	no DEFECTIVE TOOLS
7c. Was the SS and SME notified?	☐	☐	☒	07/26/12	1511	mike Kramer	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	07/26/12	1511	mike Kramer	PACKAGING INTACT
7e. Document any deficiencies by ID number in the comments section.						mike Kramer	no deficiencies

850069

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441660

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	07/26/12	1648	mike Kenny	N/A GRAB SAMPLING
8b. Log the results in the comments section. **N/A for Grab sampling.**						mike Kenny	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	07/26/12	1533	mike Kenny	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	07/26/12	1615	mike Kenny	verified completed
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	07/26/12	1550	mike Kenny	N/A GRAB SAMPLING
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	07/26/12	1550	mike Kenny	N/A GRAB SAMPLING

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 1044660

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☐ Co-located ☐ Resample ☐ Field Duplicate ☒

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	07/26/12	1615	mike Kemer	No Inconsistencies Between Initial and Field Duplicate
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	07/26/12	1615	mike Kemer	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	07/26/12	1620	mike Kemer	Verified
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	07/26/12	1620	mike Kemer	Verified
14. Have custody seals been signed and dated?	☒	☐	☐	07/26/12	1754	mike Kemer	Verified Completed
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	07/27/12	0947	mike Kemer	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	07/27/12	1031	mike Kemer	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	07/27/12	1031	mike Kemer	Verified Completed
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	07/27/12	1031	mike Kemer	Verified Locked

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10411660

Batch Number: SSG12-C0004

Sample Origin:	Automated Core	Manual Core	Container Grab
	☐	☐	☒

Sample Type:	Initial	Co-located	Resample	Field Duplicate
	☐	☐	☐	☒

Additional comments:

	Print Name	Signature	Date
Checklist completed by OT:	Michael Kranz		07/27/12
Checklist reviewed by SS:	Derek Cox		07/30/12 ~~07/27/12~~ DSC 073012

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441653

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	07/23/12 07/25/12	1630 0820	mike Kramer mike Kramer	Inspection completed visibly clean Inspection completed SAT visibly clean
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	07/27/12 07/25/12	0716 0834	mike Kramer mike Kramer	checks completed SAT checks completed SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	07/27/12 07/25/12	0805 0820	mike Kramer Mike Kramer	checks completed SAT checks completed SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	07/29/12	0820	mike Kramer	Inspection completed SAT
4b. Document any deficiencies in the comments section.						mike Kramer	no deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/27/12 07/25/12	1754 0821	mike Kramer mike Kramer	WTS updated verified
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/29/12	1635	mike Kramer	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441655

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	07/28/12	0850	mike Kramer	N/A GRAB SAMPLING
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	07/28/12	0900	mike Kramer	VISIBLY CLEAN
7b. Were any defective sampling tools identified?	☐	☒	☐	07/28/12	0900	mike Kramer	NO DEFECTIVE TOOLS IDENTIFIED
7c. Was the SS and SME notified?	☐	☐	☒	07/28/12	0900	mike Kramer	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	07/28/12	0900	mike Kramer	PACKAGING INTACT
7e. Document any deficiencies by ID number in the comments section.						mike Kramer	NO DEFICIENCIES

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441655

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	07/25/12	0908	mike Kemmer	N/A GRAB SAMPLING
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					Mike Kemmer	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	07/28/12	1018	mike Kemmer	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	07/25/12	1044	mike Kemmer	verified completed
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	07/25/12	1230	mike Kemmer	N/A GRAB Sample
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	07/25/12	1230	mike Kemmer	N/A GRAB Sample

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441655

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	07/27/12	1300	mike Kennon	INITIAL Sample
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	07/28/12	1300	mike Kennon	INITIAL SAMPLE
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	07/27/12	1300	mike Kennon	LABELS Verified completed
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	07/27/12	1300	mike Kennon	LABELS Verified Completed
14. Have custody seals been signed and dated?	☒	☐	☐	07/26/12	1310	mike Kennon	Verified Complete
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	07/26/12	1520	mike Kennon	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	07/26/12	1725	mike Kennon	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	07/26/12	1725	mike Kennon	Verified completed
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	07/26/12	1725	mike Kennon	Verified Locked

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441655

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: Mike Kremus (Print Name) [signature] (Signature) 07/28/12 (Date)

Checklist reviewed by SS: Derek Cox (Print Name) [signature] (Signature) 07/30/12 (Date)

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441656

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	7/29/12	0820	A. Escobar	Glovebox inspection is SAT.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	7/29/12	0818	A. Escobar	Background and standardization has been performed and is SAT.
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	7/29/12	0831	A. Escobar	Electronic balances are SAT.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	7/29/12	0823	A. Escobar	Inspection and cleaning of sampling and glovebox support equipment is complete and SAT.
4b. Document any deficiencies in the comments section.						A. Escobar	No deficiencies are noted.
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	7/29/12	0955	A. Escobar	Filter removal has been updated in WTS.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/30/12	1110	D Summers	WTS filter screen updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441656

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	7/29/12	1145	A. Escobar	Grab sampling
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	7/29/12	1145	A. Escobar	Equipment is visibly clean and verified by certificate.
7b. Were any defective sampling tools identified?	☐	☒	☐	7/29/12	1145	A. Escobar	No defective tools identified.
7c. Was the SS and SME notified?	☐	☐	☒	7/29/12	1145	A. Escobar	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	7/29/12	1145	A. Escobar	Packaging and expendable sampling equipment is intact.
7e. Document any deficiencies by ID number in the comments section.						A. Escobar	No deficiencies noted.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441656

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☐	☐	☒	7/29/12	1151	A. Escobar	Grab sampling
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					A. Escobar	**Formula for a 55-gallon Drum:** Distance from top of drum to waste N/A in. 34.5 - (Distance from the top lip of the drum to waste + 1) = N/A in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	7/29/12	~~1310~~ 7/29/12 AF 1310	A. Escobar	WTS has been updated to reflect the ~~time~~ 7/29/12 1310 time sample was extracted.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	7/29/12	1342	A. Escobar	Sample material in the glovebox has been processed per procedure.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☐	☐	☒	7/29/12	1310	A. Escobar	Grab Sample
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☐	☐	☒	7/29/12	1310	A. Escobar	Grab Sample

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441656 **Sample Origin:** Automated Core ☐ Manual Core ☐ Container Grab ☒

Batch Number: SSG12-00004 **Sample Type:** Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	7/29/12	1319	A. Escobar	Initial Sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	7/29/12	1319	A. Escobar	Initial sample only
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	7/29/12	1336	A. Escobar	Labels have been verified to contain complete information.
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	7/29/12	1340	A. Escobar	Labels have been verified to contain complete information
14. Have custody seals been signed and dated?	☒	☐	☐	7/29/12	1555	A. Escobar	Custody seals have been signed and dated.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	7/29/12	1555	A. Escobar	WTS has been updated to reflect custody seal attached.
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	7/29/12	1610	A. Escobar	WTS has been updated to reflect "Sample Preserved to 4°C".
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	7/29/12	1610	A. Escobar	Trip blanks are prepared and placed in fridge.
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	7/29/12	~~Hold~~ 7/29/12 AE 1610	A. Escobar	Fridge has been verified to be locked until secure.

600070

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441656

Batch Number: SSG12-00004

Sample Origin: Automated Core ☐ Manual Core ☐ Container Grab ☒

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: DAVEN SUMMERS (Print Name) _____ (Signature) 07/30/12 (Date)

Checklist reviewed by SS: Derek Cox (Print Name) _____ (Signature) 07/30/12 (Date)

660071

AMWTP Advanced Mixed Waste Treatment Project	**Independent Technical Reviewer Small Container Sampling Checklist**	Form-1858, Rev. 1 Effective: 05/29/08 Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG12-00004	**Location: Z-250-801 WMF-634**			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the quality assurance (QA) documentation for the Batch Data Reports (BDR) complete and include data reports and quality checklist (QC) results? • Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist (manual review only) • Form-1858, Independent Technical Reviewer Small Container Sampling Checklist (Manual grab sampling review only) • Form-1491, Supplemental Batch Comment Form, as applicable • Associated nonconformance reports (NCRs)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Was each operator qualified at the time of each sampling event?	X			
4. Has the Chain of Custody (COC) been initiated properly filled out and is it complete?	X			
5. Was the E-signature History review performed?	X			
6. Were the samples and field duplicate based on a random selection method?	X			

600072

Testing Batch No.: SSG12-00004	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. • Samples • Refrigeration	X			
8. Was the initial small container sample visually examined?	X			
9. Was the field duplicate visually compared to the first sample and were the results acceptable?	X			
10. Were the correct units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? • Was the sampling tools inspection satisfactory? • Was the sampling equipment protective wrapper intact? • Was the sampling area inspection satisfactory? • Were the sampling tools inspected after unwrapping?	X			
16. Were field duplicate samples collected at a frequency of one per sampling batch, as defined in INST-OI-75, Container-in-Container Sampling?	X			

660073

Testing Batch No.: SSG12-00004	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet data quality objectives (DQOs) or quality assurance objectives (QAOs)? If so, indicate all NCR numbers in the batch comment section.		X		
18. Have the use of INST-OI-75, sampling equipment, and measurement units been consistent?	X			
19. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-75?	X			
20. Was the correct revision of the procedure documented on each analysis report?	X			
21. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
22. Were the rework requirements clearly identified in waste tracking system (WTS) or on the BDR?			X	No rework required.

ITR Print Name: Jay Simonson	ITR Signature: Jay F. Simonson	Date: 26 Aug 2012

AMWTP Advanced Mixed Waste Treatment Project	**Independent Technical Reviewer Small Container Sampling Checklist**	Form-1858, Rev. 1 Effective: 05/29/08 Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSG12-00004, Checklist Rev. 1	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the quality assurance (QA) documentation for the Batch Data Reports (BDR) complete and include data reports and quality checklist (QC) results? • Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist (manual review only) • Form-1858, Independent Technical Reviewer Small Container Sampling Checklist (Manual grab sampling review only) • Form-1491, Supplemental Batch Comment Form, as applicable • Associated nonconformance reports (NCRs)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Was each operator qualified at the time of each sampling event?	X			
4. Has the Chain of Custody (COC) been initiated properly filled out and is it complete?	X			
5. Was the E-signature History review performed?	X			
6. Were the samples and field duplicate based on a random selection method?	X			

600075

Testing Batch No.: SSG12-00004, Checklist Rev. 1	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. • Samples • Refrigeration	X			
8. Was the initial small container sample visually examined?	X			
9. Was the field duplicate visually compared to the first sample and were the results acceptable?	X			
10. Were the correct units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? • Was the sampling tools inspection satisfactory? • Was the sampling equipment protective wrapper intact? • Was the sampling area inspection satisfactory? • Were the sampling tools inspected after unwrapping?	X			
16. Were field duplicate samples collected at a frequency of one per sampling batch, as defined in INST-OI-75, Container-in-Container Sampling?	X			

690076

Testing Batch No.: SSG12-00004, Checklist Rev. 1	Location: Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet data quality objectives (DQOs) or quality assurance objectives (QAOs)? If so, indicate all NCR numbers in the batch comment section.		X		
18. Have the use of INST-OI-75, sampling equipment, and measurement units been consistent?	X			
19. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-75?	X			
20. Was the correct revision of the procedure documented on each analysis report?	X			
21. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
22. Were the rework requirements clearly identified in waste tracking system (WTS) or on the BDR?	X			See Batch Comments.

ITR Print Name: Jay Simonson	ITR Signature: Jay T. Simonson	Date: 31 Aug 2012

AMWTP Advanced Mixed Waste Treatment Project	**Site Project Manager** **Small Container Sampling Checklist**	Form-1859 Rev. 2 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSG12-00004

Question	Response			Requirement	Comment
	YES	NO	N/A		
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives (QAOs) been met? Precision: • Has a field duplicate sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Tools (if required) – Sampling Equipment? Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • Were the containers randomly selected from the container population, the small container randomly selected and the grid location randomly selected prior to obtaining samples? Comparability • Was the correct version of INST-OI-75, Container-in-Container Sampling, used? Representativeness: • Was non-disposable sampling equipment cleaned prior to sampling?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

660078

Batch Data Report #: SSG12-00004

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☐	☒	☐	MP-TRUW-8.2, Table C3-12	Container 10451616 the NHVOC 3 sample esig approval and user ID didn't populate on the BDR.
(4) Was the scale in calibration, and was a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the equipment blanks acceptable? **NOTE:** *The analytical results for the equipment blanks are less than 3 times the minimum detection limit (MDL) for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) and less than 3 times the program required detection limits (PRDLs) for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Were samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(7) Were samples collected within 14 days of the first sample of the batch?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(8) Were samples collected and containerized within one hour? If time was greater than one hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(9) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2 C3-10	

600079

Batch Data Report #: SSG12-00004

Question	Response			Requirement	Comment
	YES	NO	N/A		
(10) Is a physical description of the field duplicate included in the batch data report?	☒	☐	☐	MP-TRUW-8.2 Table C3-12	
(11) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, and random location of sample.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is the location (point of origin) where each sample was taken included in the batch data report (BDR)? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(14) Does the batch data report include a record of the analyses requested and identify the laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

680060

Batch Data Report #: SSG12-00004

Question	Response			Requirement	Comment
	YES	NO	N/A		
(16) Does the data for all containers within this batch meet the following review, validation, and verification requirements? • Proper units (e.g. grams or liters) and significant figures used • The BDR is complete (all pages identified in the BDR and numbered accordingly) • WTS Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • WTS Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist • Form-1858, Independent Reviewer Small Container Sampling Checklist • Form-1491, Supplemental Batch Comment Form, as applicable. • Associated nonconformance reports (NCRs)	☒	☐	☐	MP-TRUW-8.2, C3-10b	
(17) Review all NCRs (open and closed). Can the batch be approved?	☒	☐	☐	MP-TRUW-8.2, C3-13	

660081

Batch Data Report #: SSG12-00004

Question	Response			Requirement	Comment
	YES	NO	N/A		
(18) Were the following inspections performed? • Was the sampling tool inspection satisfactory? • Was the sampling equipment protective wrapping intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(19) Is all data associated with this BDR acceptable for signature release?	☐	☒	☐	MP-TRUW-8.2, C3-10b(2)	Container 10451616 the NHVOC 3 sample esig approval and user ID didn't populate on the BDR. Please review and update as WTS allows.

660082

Comments:

SPM (Print Name): Kenny Burnside SPM Signature /Date: 8/28/12

AMWTP Advanced Mixed Waste Treatment Project	**Site Project Manager** **Small Container Sampling Checklist**	Form-1859 Rev. 2 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSG12-00004 Rev. 1

Question	Response			Requirement	Comment
	YES	NO	N/A		
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives (QAOs) been met? Precision: • Has a field duplicate sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Tools (if required) – Sampling Equipment? Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • Were the containers randomly selected from the container population, the small container randomly selected and the grid location randomly selected prior to obtaining samples? Comparability • Was the correct version of INST-OI-75, Container-in-Container Sampling, used? Representativeness: • Was non-disposable sampling equipment cleaned prior to sampling?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

600063

Batch Data Report #: SSG12-00004 Rev. 1

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(4) Was the scale in calibration, and was a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the equipment blanks acceptable? NOTE: *The analytical results for the equipment blanks are less than 3 times the minimum detection limit (MDL) for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) and less than 3 times the program required detection limits (PRDLs) for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Were samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(7) Were samples collected within 14 days of the first sample of the batch?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	
(8) Were samples collected and containerized within one hour? If time was greater than one hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(9) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2 C3-10	

600084

Batch Data Report #: SSG12-00004 Rev. 1

Question	Response			Requirement	Comment
	YES	NO	N/A		
(10) Is a physical description of the field duplicate included in the batch data report?	☒	☐	☐	MP-TRUW-8.2 Table C3-12	
(11) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, and random location of sample.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is the location (point of origin) where each sample was taken included in the batch data report (BDR)? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(14) Does the batch data report include a record of the analyses requested and identify the laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

680065

Batch Data Report #: SSG12-00004 Rev. 1

Question	Response			Requirement	Comment
	YES	NO	N/A		
(16) Does the data for all containers within this batch meet the following review, validation, and verification requirements? • Proper units (e.g. grams or liters) and significant figures used • The BDR is complete (all pages identified in the BDR and numbered accordingly) • WTS Small Container Sampling Batch Cover Sheet • Table of Contents (manual review only) • WTS Small Container Sampling Analysis Reports • Chain of Custody • Form-1585, Refrigerator Temperature Log Sheet and/or Form-1602, Characterization Round Sheet • Form-1215, Analytical Balance Calibration Check Sheet • Form-1599, AMWTP Solid Sampling Checklist • Form-1858, Independent Reviewer Small Container Sampling Checklist • Form-1491, Supplemental Batch Comment Form, as applicable. • Associated nonconformance reports (NCRs)	☒	☐	☐	MP-TRUW-8.2, C3-10b	
(17) Review all NCRs (open and closed). Can the batch be approved?	☒	☐	☐	MP-TRUW-8.2, C3-13	

Batch Data Report #: SSG12-00004 Rev. 1

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(18) Were the following inspections performed? • Was the sampling tool inspection satisfactory? • Was the sampling equipment protective wrapping intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(19) Is all data associated with this BDR acceptable for signature release?	☒	☐	☐	MP-TRUW-8.2, C3-10b(2)	

Comments:

SPM (Print Name): Kenny Burnside SPM Signature /Date: 9/4/12

680087

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00004

Item	Date	Name	Comments
1.	07/30/12	Davey Sumners Coring Operator	WMF-634 Coring Room. WMC S-3220
2.	07/30/12	Davey Sumners Coring Operator	Closed per direction
3.	08/26/12	Jay Simonson ITR	This batch was validated per MP-TRUW-8.8.
4.	08/26/12	Jay Simonson ITR	Level I validation complete.
5.	08/26/12	Jay Simonson ITR	Promoted to SPM.
6.	08/28/12	Kenny Burnside SPM	Container 10451616 the NHVOC 3 sample e-signature approval and user ID didn't populate on the BDR. Please review and update as applicable. K—B—P 8/29/12 Demote to ITR
7.	08/29/12	Kathy Birth ITR	demoted for e signature
8.	08/30/12	Mike Kremin Coring Operator	Esigned.

0030058

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00003 4 KB 9/4/12

Item	Date	Name	Comments
9.	08/30/12	Kathy Birth ITR	promoted to SPM
10.	08/31/12	Jay Simonson Signature	Jay T. Simonson

690089

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSG12-00004

Item	Date	Name	Comments
1.	9/4/12	Kenny Burnside	Rework Completed. SPM reviewed and approved. K Burnside 9/4/12

000050

SOL2

RECORD
CMC 08/22/2012

SSC12-00004
BATCH DATA REPORT

FOR INFORMATION ONLY

Report Date: August 3, 2012

Narrative:

This report provides test results and documentation for the Solid Sampling examination of the following containers using INST-OI-73:

10441659 and 10441658.

Core sample ID 671, container 10441659, with all associated subsamples, (10450665, 10450666, 10450667, 10450668, 10450669, 10450670, and 10450671) was cancelled on July 20, 2012, due to primary subsamples being associated with Co-located core sample.

NCR 71740 was initiated in connection with this batch for the above condition.

Position	Signature	Date
AMWTP Site Project Manager		8/21/12

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SSC12-00004

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AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Offsite Waste Shipment

Date: 22-May-2012

Time: 15:57

Shipping No. SRIN12001 **Manifest No.** 001077627GBF

Proposed Shipment Date 02-MAY-12 **Manifest Receipt Date** 05-MAY-12

Repsonsible Project SRS **# of Containers** 22

Historical Id	Container ID	Container Type	Historical IDC	Treatment Path	Waste Profile Name	Inspection Date	Fingerprint Required	Fingerprint Complete
FCA080002	10441526	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
FCA080004	10441524	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	Yes	RTR12-00080
FCA080010	10441525	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
FCAN06025	10441527	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005609	10441521	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005610	10441523	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SD00005622	10441522	425	SR-259	CORE	SR-SDD-HOM-B	05/07/2012	No	
SDD076208	10441657	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076213	10441659	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076214	10441655	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076215	10441656	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076220	10441658	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076224	10441660	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SDD076237	10441661	425	SR-258	CORE	SR-SDD-HOM-A	05/08/2012	No	
SR222365	10441520	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	No	
SR524351	10441519	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	Yes	RTR12-00080
SR611110	10441518	425	SR-257	CORE	SR-W027-773A-HOM	05/07/2012	Yes	RTR12-00080
SRSB01225			-				No	
SRSB01226			-				No	
SRSB01227			-				No	
SRSB01228			-				No	
SRSB01229			-				No	

***** End of Offsite Waste Shipment Report *****

60.003

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:08

Batch Type Solid Sampling Coring
Batch Report No. SSC12-00004
Batch Id SSC12-00004
Open Date 19-JUL-12 18:04:28
Close Date 30-JUL-12 08:30:42
Batch Status CLOSED
Test Facility Idaho AMWTP
Equipment Id Z-250-801 634-Coring

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10441659	SR-258	670	20-JUL-12 13:06:28	Original	P	NICHOLAS INGLE
10441659	SR-258	671	20-JUL-12 13:38:02	Replicate / Duplicate	F	NICHOLAS INGLE
10441659	SR-258	672	20-JUL-12 13:38:02	Replicate / Duplicate	P	NICHOLAS INGLE
10441658	SR-258	673	25-JUL-12 08:51:00	Original	P	DAVEY SUMNERS

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:08

**********Batch Comments**********

Written By	Date	Comment
DSUMNERS	30-JUL-12 08:30:43	closed per direction.
DSUMNERS	30-JUL-12 08:30:43	WMF-634, Coring Room. WMC S-3220.

600005

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 30-Jul-2012

Time: 09:08

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2294404	DSUMNERS	30-JUL-2012 08:30:43	closed per direction.

***** End of Batch Report Coversheet Report *****

60006

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:08

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Core Sample

Core Sample ID 670
Core Sample Date 20-JUL-12 13:06:28
Taken By NICHOLAS INGLE
Core Sample Type Initial Core Sample

Core Length 16.00 in.
Core Recovered (%) 86.5
Depth Of Waste 18.5 in.
Core Sector 6
Horizontal Position 22631 mils East

Equipment Procedure ID INST-OI-73 **Procedure Revision ID** 13

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
110206-01-025	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description Undisturbed Light grey to white in color, fine grained consistency, dry material.

Core Sector Comment

Core Sample Comment

Cancel Date **By** **Reason**

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283358	NINGLE	19-JUL-2012 18:06:40	.
2283361	NINGLE	19-JUL-2012 18:12:36	actual coring sector
2283711	NINGLE	20-JUL-2012 09:20:54	equipment
2283808	NINGLE	20-JUL-2012 13:13:01	.

Sub Sample

Core Sample ID 670
Sub Sample ID 10450673
Weight 2.94 gms
Sub Sample Date 20-JUL-12 14:04:48
Volume 20 ml.
Taken By NICHOLAS INGLE
Custody Seal Attached Y **Preserved to 4 Degrees C** Y
Sample Requested PVOC
Required Distance 1.00 in. **Actual Distance** 11.50 in.

Distance From Top Comment
Primary sub sample data inadvertantly entered under co-located core sample tab. Original random generated location was 11.5" which was where the sample was taken.

Sub Sample Comment
PVOC

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	1D031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283899	NINGLE	20-JUL-2012 15:11:17	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 Sub Sample ID 10450674 Weight 2.73 gms

Sub Sample Date 20-JUL-12 14:06:27 Volume 20 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 11.00 in. Distance From Top Comment

Sub Sample Comment
NHVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283903	NINGLE	20-JUL-2012 15:12:15	

Sub Sample

Core Sample ID 670 Sub Sample ID 10450675 Weight 12.08 gms

Sub Sample Date 20-JUL-12 14:08:19 Volume 20 ml.

Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 10.50 in. Distance From Top Comment

Sub Sample Comment
Hydrazine Sample

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283906	NINGLE	20-JUL-2012 15:13:26	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:08

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 **Sub Sample ID** 10450676 **Weight** 12.28 gms
Sub Sample Date 20-JUL-12 14:10:03 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested NHVOC
Required Distance in. **Actual Distance** 10.00 in. **Distance From Top Comment**

Sub Sample Comment
Formaldehyde Sample

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2283907	NINGLE	20-JUL-2012 15:15:26	
2284104	NINGLE	20-JUL-2012 17:50:04	

Sub Sample

Core Sample ID 670 **Sub Sample ID** 10450677 **Weight** 2.94 gms
Sub Sample Date 20-JUL-12 14:11:39 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SPARE
Required Distance in. **Actual Distance** 9.50 in. **Distance From Top Comment**

Sub Sample Comment
Spare 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2283909	NINGLE	20-JUL-2012 15:16:36	

660909

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 Sub Sample ID 10450678 Weight 2.92 gms
Sub Sample Date 20-JUL-12 14:12:51 Volume 20 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested SPARE
Required Distance in. Actual Distance 9.00 in. Distance From Top Comment

Sub Sample Comment
Spare 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283911	NINGLE	20-JUL-2012 15:17:56	

Sub Sample

Core Sample ID 670 Sub Sample ID 10450679 Weight 38.70 gms
Sub Sample Date 20-JUL-12 14:15:08 Volume 125 ml.
Taken By NICHOLAS INGLE Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Required Distance in. Actual Distance 8.00 in. Distance From Top Comment

Sub Sample Comment
SVOC Metals

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283914	NINGLE	20-JUL-2012 15:19:02	

60010

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 **Sub Sample ID** 10450714 **Weight** 2.78 gms

Sub Sample Date 20-JUL-12 16:52:11 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2284017	NINGLE	20-JUL-2012 16:58:32	

Sub Sample

Core Sample ID 670 **Sub Sample ID** 10450715 **Weight** 2.73 gms

Sub Sample Date 20-JUL-12 16:54:00 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2284018	NINGLE	20-JUL-2012 17:00:15	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:09

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 | Sub Sample ID 10450716 | Weight 2.74 gms
Sub Sample Date 20-JUL-12 16:56:35 | Volume 20 ml.
Taken By NICHOLAS INGLE | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. | Actual Distance 0.00 in. | Distance From Top Comment: trip blank

Sub Sample Comment: trip blank 3

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2284025	NINGLE	20-JUL-2012 17:01:37	

Sub Sample

Core Sample ID 670 | Sub Sample ID 10450717 | Weight 12.42 gms
Sub Sample Date 20-JUL-12 16:58:54 | Volume 20 ml.
Taken By NICHOLAS INGLE | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. | Actual Distance 0.00 in. | Distance From Top Comment: trip blank

Sub Sample Comment: trip blank 4

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2284029	NINGLE	20-JUL-2012 17:03:23	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 670 **Sub Sample ID** 10450718 **Weight** 12.39 gms

Sub Sample Date 20-JUL-12 17:00:46 **Volume** 20 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** trip blank

Sub Sample Comment
trip blank 5

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2284034	NINGLE	20-JUL-2012 17:04:49	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:09

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Core Sample

Core Sample ID 671
Equipment Procedure ID INST-OI-73 **Procedure Revision ID** 13
Core Sample Date 20-JUL-12 13:38:02
Taken By NICHOLAS INGLE
Core Sample Type Co-located/Field Duplicate

Core Length 19.00 in.
Core Recovered (%) 102.7
Depth Of Waste 18.5 in.
Core Sector 6
Horizontal Position 26631 mils East

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
110206-01-026	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description Undisturbed Light grey to white in color, fine grained consistency, dry material.

Core Sector Comment

Core Sample Comment

Cancel Date 20-JUL-12 15:35:01 **By** NICHOLAS INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283809	NINGLE	20-JUL-2012 13:22:05	actual sector
2283810	NINGLE	20-JUL-2012 13:23:42	.
2283821	NINGLE	20-JUL-2012 13:50:57	.
2283822	NINGLE	20-JUL-2012 13:52:19	.
2283979	NINGLE	20-JUL-2012 15:36:07	.

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450665 **Weight** 2.94 gms
Sub Sample Date 20-JUL-12 14:04:26 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested PVOC
Required Distance 11.50 in. **Actual Distance** 11.50 in. **Distance From Top Comment**

Sub Sample Comment
PVOC

Cancel Date 20-JUL-12 15:29:11 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2283825	NINGLE	20-JUL-2012 14:06:17	
2283931	NINGLE	20-JUL-2012 15:31:16	

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450666 **Weight** 2.73 gms
Sub Sample Date 20-JUL-12 14:06:28 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested NHVOC
Required Distance in. **Actual Distance** 11.00 in. **Distance From Top Comment**

Sub Sample Comment
NHVOC

Cancel Date 20-JUL-12 15:31:36 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
2283826	NINGLE	20-JUL-2012 14:07:33	
2283933	NINGLE	20-JUL-2012 15:31:54	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450667 **Weight** 12.08 gms
Sub Sample Date 20-JUL-12 14:08:42 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested NHVOC
Required Distance in. **Actual Distance** 10.50 in. **Distance From Top Comment**

Sub Sample Comment
Hydrazine Sample

Cancel Date 20-JUL-12 15:32:04 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283827	NINGLE	20-JUL-2012 14:09:21	
2283935	NINGLE	20-JUL-2012 15:32:22	

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450668 **Weight** 12.28 gms
Sub Sample Date 20-JUL-12 14:10:37 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested NHVOC
Required Distance in. **Actual Distance** 10.00 in. **Distance From Top Comment**

Sub Sample Comment
Formaldehyde Sample

Cancel Date 20-JUL-12 15:32:31 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283828	NINGLE	20-JUL-2012 14:10:52	
2283936	NINGLE	20-JUL-2012 15:32:42	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450669 **Weight** 2.94 gms
Sub Sample Date 20-JUL-12 14:11:04 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested SPARE
Required Distance in. **Actual Distance** 9.50 in. **Distance From Top Comment**

Sub Sample Comment
Spare 1

Cancel Date 20-JUL-12 15:32:53 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283829	NINGLE	20-JUL-2012 14:12:04	
2283938	NINGLE	20-JUL-2012 15:33:03	

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450670 **Weight** 2.92 gms
Sub Sample Date 20-JUL-12 14:12:16 **Volume** 20 ml.
Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N
Sample Requested SPARE
Required Distance in. **Actual Distance** 9.00 in. **Distance From Top Comment**

Sub Sample Comment
Spare 2

Cancel Date 20-JUL-12 15:33:11 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283830	NINGLE	20-JUL-2012 14:13:04	
2283940	NINGLE	20-JUL-2012 15:33:19	

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 671 **Sub Sample ID** 10450671 **Weight** 38.70 gms

Sub Sample Date 20-JUL-12 14:15:52 **Volume** 125 ml.

Taken By NICHOLAS INGLE **Custody Seal Attached** N **Preserved to 4 Degrees C** N

Sample Requested SVOC, METALS

Required Distance in. **Actual Distance** 8.00 in. **Distance From Top Comment**

Sub Sample Comment
SVOC Metals

Cancel Date 20-JUL-12 15:33:28 **By** N INGLE **Reason** Primary sub sample data inadvertantly entered under co-located core sample tab. Co-located sub sample data will be entered under new core sample ID.

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283831	NINGLE	20-JUL-2012 14:15:48	
2283943	NINGLE	20-JUL-2012 15:33:39	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:10

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Core Sample

Core Sample ID 672
Core Sample Date 20-JUL-12 13:38:02
Taken By NICHOLAS INGLE
Core Sample Type Co-located/Field Duplicate

Core Length 19.00 in.
Core Recovered (%) 102.7
Depth Of Waste 18.5 in.
Core Sector 6
Horizontal Position 26631 mils East

Equipment Procedure ID INST-OI-73 **Procedure Revision ID** 13

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
110206-01-027	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description Undisturbed Light grey to white in color, fined grained consisitency, dry material.

Core Sector Comment

Core Sample Comment No inconsistencies noted between initial and colocated core samples

Cancel Date **By** **Reason**

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2283980	NINGLE	20-JUL-2012 15:38:29	.
2284007	NINGLE	20-JUL-2012 16:22:47	.
2284012	NINGLE	20-JUL-2012 16:36:44	.
2286429	DSUMNERS	23-JUL-2012 14:25:01	saving data

Sub Sample

Core Sample ID 672
Sub Sample ID 10451132
Weight 2.96 gms
Sub Sample Date 23-JUL-12 14:33:00
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance 3.00 in.
Actual Distance 3.00 in.
Distance From Top Comment

Sub Sample Comment
pvoc1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320
Teaspoon	93694	J006443	ID031-0169	03-U002899

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286453	DSUMNERS	23-JUL-2012 14:34:38	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:10

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 | Sub Sample ID 10451133 | Weight 2.72 gms
Sub Sample Date 23-JUL-12 14:35:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance in. | Actual Distance 3.50 in. | Distance From Top Comment

Sub Sample Comment
pvoc2

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286461	DSUMNERS	23-JUL-2012 14:36:43	saving data

Sub Sample

Core Sample ID 672 | Sub Sample ID 10451134 | Weight 2.90 gms
Sub Sample Date 23-JUL-12 14:36:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance in. | Actual Distance 4.00 in. | Distance From Top Comment

Sub Sample Comment
pvoc 3

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286465	DSUMNERS	23-JUL-2012 14:38:16	saving data

60020

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 Sub Sample ID 10451135 Weight 2.96 gms
Sub Sample Date 23-JUL-12 14:38:00 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 4.50 in. Distance From Top Comment

Sub Sample Comment
nhvoc1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286468	DSUMNERS	23-JUL-2012 14:39:43	saving data

Sub Sample

Core Sample ID 672 Sub Sample ID 10451136 Weight 2.74 gms
Sub Sample Date 23-JUL-12 14:42:00 Volume 20 ml.
Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. Actual Distance 5.00 in. Distance From Top Comment

Sub Sample Comment
nhvoc 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286469	DSUMNERS	23-JUL-2012 14:42:52	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 Sub Sample ID 10451137 Weight 2.64 gms

Sub Sample Date 23-JUL-12 14:43:00 Volume 20 ml.

Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 5.50 in. Distance From Top Comment

Sub Sample Comment
nhvoc 3

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286470	DSUMNERS	23-JUL-2012 14:44:08	saving data

Sub Sample

Core Sample ID 672 Sub Sample ID 10451138 Weight 12.42 gms

Sub Sample Date 23-JUL-12 14:46:00 Volume 20 ml.

Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 6.00 in. Distance From Top Comment

Sub Sample Comment
NHVOC-Hydrazine

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286471	DSUMNERS	23-JUL-2012 14:47:28	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:10

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 | Sub Sample ID 10451139 | Weight 12.22 gms
Sub Sample Date 23-JUL-12 14:49:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. | Actual Distance 6.50 in. | Distance From Top Comment

Sub Sample Comment
NHVOC-formaldehyde

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286472	DSUMNERS	23-JUL-2012 14:50:20	saving data

Sub Sample

Core Sample ID 672 | Sub Sample ID 10451140 | Weight 2.98 gms
Sub Sample Date 23-JUL-12 14:53:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Required Distance in. | Actual Distance 7.00 in. | Distance From Top Comment

Sub Sample Comment
Spare 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286473	DSUMNERS	23-JUL-2012 14:53:54	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:10

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451141 **Weight** 2.96 gms
Sub Sample Date 23-JUL-12 14:55:00 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SPARE
Required Distance in. **Actual Distance** 7.50 in. **Distance From Top Comment**

Sub Sample Comment
Spare 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286474	DSUMNERS	23-JUL-2012 14:55:46	saving data

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451142 **Weight** 39.68 gms
Sub Sample Date 23-JUL-12 14:59:00 **Volume** 125 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested SVOC, METALS
Required Distance in. **Actual Distance** 8.00 in. **Distance From Top Comment**

Sub Sample Comment
Svoc/Metals

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286475	DSUMNERS	23-JUL-2012 14:59:39	saving data

Good 24

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451146 **Weight** 3.00 gms
Sub Sample Date 23-JUL-12 16:21:41 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
Trip blank 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286510	DSUMNERS	23-JUL-2012 16:22:54	saving data

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451147 **Weight** 2.78 gms
Sub Sample Date 23-JUL-12 16:23:12 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286512	DSUMNERS	23-JUL-2012 16:24:20	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451148 **Weight** 2.92 gms
Sub Sample Date 23-JUL-12 16:25:05 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286514	DSUMNERS	23-JUL-2012 16:26:09	saving data

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451149 **Weight** 12.39 gms
Sub Sample Date 23-JUL-12 16:26:27 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 4

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286515	DSUMNERS	23-JUL-2012 16:27:30	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441659	SR-258	S3220	425

Sub Sample

Core Sample ID 672 **Sub Sample ID** 10451150 **Weight** 12.44 gms

Sub Sample Date 23-JUL-12 16:27:52 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 5

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2286516	DSUMNERS	23-JUL-2012 16:28:54	saving data
2286541	DSUMNERS	23-JUL-2012 17:26:10	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Core Sample

Core Sample ID 673
Equipment Procedure ID INST-OI-73 Procedure Revision ID 13
Core Sample Date 25-JUL-12 08:51:00
Taken By DAVEY SUMNERS
Core Sample Type Initial Core Sample

Core Length 11.00 in.
Core Recovered (%) 59.5
Depth Of Waste 18.5 in.
Core Sector 6
Horizontal Position 25653 mils East

Coring Equipment Used

Serial Number	Part Type
NO BARREL	BARREL
110206-01-028	LINER
NO PUSH ROD	PUSH ROD
NO BIT	DRILL BIT

Physical Description Core sample appears undisturbed and consistent with waste. Material is claylike to spongy in consistency, dark brown and moist.

Core Sector Comment

Core Sample Comment

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2287531	DSUMNERS	24-JUL-2012 13:59:32	saving data
2288658	DSUMNERS	25-JUL-2012 08:59:14	saving data

Sub Sample

Core Sample ID 673
Sub Sample ID 10451387
Weight 2.96 gms
Sub Sample Date 25-JUL-12 10:23:00
Volume 20 ml.
Taken By DAVEY SUMNERS
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested PVOC
Required Distance 2.50 in. Actual Distance 2.50 in.
Distance From Top Comment

Sub Sample Comment
pvoc

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289035	DSUMNERS	25-JUL-2012 10:25:45	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:11

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 | Sub Sample ID 10451388 | Weight 2.94 gms
Sub Sample Date 25-JUL-12 10:25:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. | Actual Distance 3.00 in. | Distance From Top Comment

Sub Sample Comment
nhvoc

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289040	DSUMNERS	25-JUL-2012 10:27:38	saving data

Sub Sample

Core Sample ID 673 | Sub Sample ID 10451389 | Weight 12.35 gms
Sub Sample Date 25-JUL-12 10:29:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. | Actual Distance 3.50 in. | Distance From Top Comment

Sub Sample Comment
NHVOC-Hydrazine

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289045	DSUMNERS	25-JUL-2012 10:30:00	saving data

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Core Sample Batch Data Report

Date: 30-Jul-2012
Time: 09:11

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 | Sub Sample ID 10451390 | Weight 12.35 gms
Sub Sample Date 25-JUL-12 10:33:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested NHVOC
Required Distance in. | Actual Distance 4.00 in. | Distance From Top Comment

Sub Sample Comment
NHVOC-Formaldehyde

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289054	DSUMNERS	25-JUL-2012 10:33:58	saving data

Sub Sample

Core Sample ID 673 | Sub Sample ID 10451391 | Weight 2.79 gms
Sub Sample Date 25-JUL-12 10:35:00 | Volume 20 ml.
Taken By DAVEY SUMNERS | Custody Seal Attached Y | Preserved to 4 Degrees C Y
Sample Requested SPARE
Required Distance in. | Actual Distance 4.50 in. | Distance From Top Comment

Sub Sample Comment
spare 1

Cancel Date | By | Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289056	DSUMNERS	25-JUL-2012 10:36:23	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451392 **Weight** 2.92 gms

Sub Sample Date 25-JUL-12 10:37:00 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested SPARE

Required Distance in. **Actual Distance** 5.00 in. **Distance From Top Comment**

Sub Sample Comment
Spare 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289057	DSUMNERS	25-JUL-2012 10:38:03	saving data

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451393 **Weight** 36.36 gms

Sub Sample Date 25-JUL-12 10:40:00 **Volume** 125 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested SVOC, METALS

Required Distance in. **Actual Distance** 5.50 in. **Distance From Top Comment**

Sub Sample Comment
SVOC/Metals

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	010507	07-961	
Spatula	3693	J009387	ID031-1088	05_12320
Weigh Boat	C-01017-15	PO91005 PANS	ID031-0940	05 12319

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289292	DSUMNERS	25-JUL-2012 10:42:50	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451394 **Weight** 2.92 gms
Sub Sample Date 25-JUL-12 11:16:38 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 1

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289340	DSUMNERS	25-JUL-2012 11:18:14	saving data

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451395 **Weight** 2.99 gms
Sub Sample Date 25-JUL-12 11:18:27 **Volume** 20 ml.
Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y
Sample Requested TRIP BLANK
Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 2

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289343	DSUMNERS	25-JUL-2012 11:20:53	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451396 **Weight** 2.81 gms

Sub Sample Date 25-JUL-12 11:21:14 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 3

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289344	DSUMNERS	25-JUL-2012 11:22:08	saving data

Sub Sample

Core Sample ID 673 **Sub Sample ID** 10451397 **Weight** 12.50 gms

Sub Sample Date 25-JUL-12 11:22:25 **Volume** 20 ml.

Taken By DAVEY SUMNERS **Custody Seal Attached** Y **Preserved to 4 Degrees C** Y

Sample Requested TRIP BLANK

Required Distance in. **Actual Distance** 0.00 in. **Distance From Top Comment** Trip Blank

Sub Sample Comment
trip blank 4

Cancel Date **By** **Reason**

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289346	DSUMNERS	25-JUL-2012 11:23:29	saving data

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC12-00004	10441658	SR-258	S3220	425

Sub Sample

Core Sample ID 673 Sub Sample ID 10451398 Weight 12.48 gms

Sub Sample Date 25-JUL-12 11:23:50 Volume 20 ml.

Taken By DAVEY SUMNERS Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested TRIP BLANK

Required Distance in. Actual Distance 0.00 in. Distance From Top Comment Trip Blank

Sub Sample Comment
trip blank 5

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	051342	12-1246	
Spatula	3693	J009387	ID031-1088	05_12320

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
2289347	DSUMNERS	25-JUL-2012 11:24:50	saving data
2289375	DSUMNERS	25-JUL-2012 11:51:14	saving data

******End of Core Analysis Report******

ALD LOG # 1207241

AMWTP

Chain Of Custody

Print Date: 24-Jul-2012
Print Time: 11:22
COC No.: 0000552
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00004	10441659	SR-258	10450673	20-Jul-2012	14:04	20 / ml	2.94 / gms	PVOC	Nicholas Ingle	PVOC	
SSC12-00004	10441659	SR-258	10450674	20-Jul-2012	14:06	20 / ml	2.73 / gms	NHVOC	Nicholas Ingle	NHVOC	
SSC12-00004	10441659	SR-258	10450675	20-Jul-2012	14:08	20 / ml	12.08 / gms	NHVOC	Nicholas Ingle	Hydrazine Sample	
SSC12-00004	10441659	SR-258	10450676	20-Jul-2012	14:10	20 / ml	12.28 / gms	NHVOC	Nicholas Ingle	Formaldehyde Sample	
SSC12-00004	10441659	SR-258	10450677	20-Jul-2012	14:11	20 / ml	2.94 / gms	SPARE	Nicholas Ingle	Spare 1	
SSC12-00004	10441659	SR-258	10450678	20-Jul-2012	14:12	20 / ml	2.92 / gms	SPARE	Nicholas Ingle	Spare 2	
SSC12-00004	10441659	SR-258	10450679	20-Jul-2012	14:15	125 / ml	38.70 / gms	SVOC, METALS	Nicholas Ingle	SVOC Metals	
SSC12-00004	10441659	SR-258	10450714	20-Jul-2012	16:52	20 / ml	2.78 / gms	TRIP BLANK	Nicholas Ingle	trip blank 1	
SSC12-00004	10441659	SR-258	10450715	20-Jul-2012	16:54	20 / ml	2.73 / gms	TRIP BLANK	Nicholas Ingle	trip blank 2	
SSC12-00004	10441659	SR-258	10450716	20-Jul-2012	16:56	20 / ml	2.74 / gms	TRIP BLANK	Nicholas Ingle	trip blank 3	
SSC12-00004	10441659	SR-258	10450717	20-Jul-2012	16:58	20 / ml	12.42 / gms	TRIP BLANK	Nicholas Ingle	trip blank 4	
SSC12-00004	10441659	SR-258	10450718	20-Jul-2012	17:00	20 / ml	12.39 / gms	TRIP BLANK	Nicholas Ingle	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Nicholas Ingle	Electronically signed in WTS	21-JUL-12 13:27:24	
Received By	David Preston	Electronically signed in WTS	21-JUL-12 13:27:24	
Relinquished By	David Preston	David J Preston	24-JUL-12 11:31	~~On site transfer, Drum #1~~ RW 7-24-12
Received By	Rand Watson	Rand Watson	24-Jul-12 11:31	
Relinquished By	Rand Watson	Rand Watson	24-Jul-12 11:33	On site transfer, Drum #1
Received By	Bill Strong	Bill Strong	7-24-12 1300	TID #550791 Rand Watson 24-Jul-12
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD Document: Log 1207241 CCP-SRS-SDD-HOM-A.iif - Scanned:7/25/2012 7:38:40 AM

ALD LOG # 120724)

AMWTP

Chain Of Custody

Print Date: 24-Jul-2012
Print Time: 11:36
COC No.: 0000553
Page 1 of 2

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00004	10441659	SR-258	10451132	23-Jul-2012	14:33	20 / ml	2.96 / gms	PVOC	Davey Sumners	pvoc1	
SSC12-00004	10441659	SR-258	10451133	23-Jul-2012	14:35	20 / ml	2.72 / gms	PVOC	Davey Sumners	pvoc2	
SSC12-00004	10441659	SR-258	10451134	23-Jul-2012	14:36	20 / ml	2.90 / gms	PVOC	Davey Sumners	pvoc 3	
SSC12-00004	10441659	SR-258	10451135	23-Jul-2012	14:38	20 / ml	2.96 / gms	NHVOC	Davey Sumners	nhvoc1	
SSC12-00004	10441659	SR-258	10451136	23-Jul-2012	14:42	20 / ml	2.74 / gms	NHVOC	Davey Sumners	nhvoc 2	
SSC12-00004	10441659	SR-258	10451137	23-Jul-2012	14:43	20 / ml	2.64 / gms	NHVOC	Davey Sumners	nhvoc 3	
SSC12-00004	10441659	SR-258	10451138	23-Jul-2012	14:46	20 / ml	12.42 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSC12-00004	10441659	SR-258	10451139	23-Jul-2012	14:49	20 / ml	12.22 / gms	NHVOC	Davey Sumners	NHVOC-formaldehyde	
SSC12-00004	10441659	SR-258	10451140	23-Jul-2012	14:53	20 / ml	2.98 / gms	SPARE	Davey Sumners	Spare 1	
SSC12-00004	10441659	SR-258	10451141	23-Jul-2012	14:55	20 / ml	2.96 / gms	SPARE	Davey Sumners	Spare 2	
SSC12-00004	10441659	SR-258	10451142	23-Jul-2012	14:59	125 / ml	39.68 / gms	SVOC, METALS	Davey Sumners	Svoc/Metals	
SSC12-00004	10441659	SR-258	10451146	23-Jul-2012	16:21	20 / ml	3.00 / gms	TRIP BLANK	Davey Sumners	Trip blank 1	
SSC12-00004	10441659	SR-258	10451147	23-Jul-2012	16:23	20 / ml	2.78 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC12-00004	10441659	SR-258	10451148	23-Jul-2012	16:25	20 / ml	2.92 / gms	TRIP BLANK	Davey Sumners	trip blank 3	
SSC12-00004	10441659	SR-258	10451149	23-Jul-2012	16:26	20 / ml	12.39 / gms	TRIP BLANK	Davey Sumners	trip blank 4	
SSC12-00004	10441659	SR-258	10451150	23-Jul-2012	16:27	20 / ml	12.44 / gms	TRIP BLANK	Davey Sumners	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	24-JUL-12 07:33:15	
Received By	David Preston	Electronically signed in WTS	24-JUL-12 07:33:15	
Relinquished By	David Preston	David J. Preston	24-Jul-12 11:46	
Received By	Raud Watson	Raud Watson	24-Jul-12 11:46	

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ALD LOG #
1207241

AMWTP

Chain Of Custody

Print Date: 24-Jul-2012
Print Time: 11:36
COC No.: 0000553
Page 2 of 2

Relinquished By	Land Watson Land Watson	24-Jul-12 11:48	on site transfer, Drum #2
Received By	Bill Strong	7-24-12 1300	TID # 550782, Land Watson 24-Jul-12
Relinquished By			
Received By			
Relinquished By			
Received By			

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ALD LOG # 1207261

AMWTP

Chain Of Custody

Print Date: 26-Jul-2012
Print Time: 08:22
COC No.: 0000554
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00004	10441658	SR-258	10451387	25-Jul-2012	10:23	20 / ml	2.96 / gms	PVOC	Davey Sumners	pvoc	
SSC12-00004	10441658	SR-258	10451388	25-Jul-2012	10:25	20 / ml	2.94 / gms	NHVOC	Davey Sumners	nhvoc	
SSC12-00004	10441658	SR-258	10451389	25-Jul-2012	10:29	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSC12-00004	10441658	SR-258	10451390	25-Jul-2012	10:33	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Formaldehyde	
SSC12-00004	10441658	SR-258	10451391	25-Jul-2012	10:35	20 / ml	2.79 / gms	SPARE	Davey Sumners	spare 1	
SSC12-00004	10441658	SR-258	10451392	25-Jul-2012	10:37	20 / ml	2.92 / gms	SPARE	Davey Sumners	Spare 2	
SSC12-00004	10441658	SR-258	10451393	25-Jul-2012	10:40	125 / ml	36.36 / gms	SVOC, METALS	Davey Sumners	SVOC/Metals	
SSC12-00004	10441658	SR-258	10451394	25-Jul-2012	11:16	20 / ml	2.92 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC12-00004	10441658	SR-258	10451395	25-Jul-2012	11:18	20 / ml	2.99 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC12-00004	10441658	SR-258	10451396	25-Jul-2012	11:21	20 / ml	2.81 / gms	TRIP BLANK	Davey Sumners	trip blank 3	
SSC12-00004	10441658	SR-258	10451397	25-Jul-2012	11:22	20 / ml	12.50 / gms	TRIP BLANK	Davey Sumners	trip blank 4	
SSC12-00004	10441658	SR-258	10451398	25-Jul-2012	11:23	20 / ml	12.48 / gms	TRIP BLANK	Davey Sumners	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	25-JUL-12 15:05:32	
Received By	David Preston	Electronically signed in WTS	25-JUL-12 15:05:32	
Relinquished By	David Preston	David J Preston	26-JUL-12 08:28	Samples transferred to lab based on FGE of parent drum. ON SITE TRANSFER Transfer Container ID: 3 TID 550741 David J Preston 7/26/12
Received By	Patty Tullock	Patty Tullock	26-JUL-12 09:40	
Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

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AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Page 1 of 1

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
DAVE SUMMERS	06/12/12	1630	3.4°C	3.6°C	3.2°C	Samples in Refrig
DAVE SUMMERS	06/13/12	0745	3.6°C	3.7°C	3.4°C	Samples in Refrig
DAVE SUMMERS	06/13/12	1807	3.5°C	3.7°C	3.4°C	Samples in Refrig
DAVE SUMMERS	06/14/12	0730	3.3°C	3.5°C	3.3°C	Samples in Refrig
DAVE SUMMERS	06/14/12	1830	3.6°C	3.7°C	3.4°C	NO Samples in Refrig
DAVE SUMMERS	06/15/12	0800	3.7°C	3.7°C	3.5°C	NO Samples in Refrig
DAVE SUMMERS	06/15/12	1815	3.5°C	3.9°C	3.4°C	Samples in Refrig
mike Kramer	06/16/12	0740	3.3°C	3.6°C	3.3°C	SAMPLES IN REFRIG
mike Kramer	06/16/12	1800	3.4°C	5.6°C	3.3°C	SAMPLES IN REFRIG
Nick Ingle	06/17/12	0805	3.5°C	3.7°C	3.5°C	Samples in Fridge
Nick Ingle	06/17/12	1755	3.4°C	3.6°C	3.3°C	Samples in Fridge
mike Kramer	06/18/12	0716	3.6°C	3.6°C	3.5°C	SAMPLES IN REFRIG
Nick Ingle	6/18/12	1630	3.6°C	4.4°C	3.5°C	No samples in fridge
Marcel Trejo	6/19/12	1001	3.9	4.1°C	3.6°C	NO Samples in fridge
Nick Ingle	6/19/12	1800	3.5°C	4.1°C	3.5°C	Samples in Fridge
DAVE SUMMERS	06/20/12	1117	3.4°C	3.6°C	3.3°C	Samples in Refrig
Marcel Trejo	07/20/12	0820	4.0°C	4.5°C	3.8°C	NO Samples in Fridge
mike Kramer	07/20/12	1800	3.9°C	4.1°C	3.5°C	SAMPLES IN REFRIG
Abel Escobar	07/21/12	0730	3.7°C	3.9°C	3.7°C	Samples in Fridge
Abel Escobar	07/21/12	1725	7/21/12 1745 3.7°C	4.0°C	3.6°C	Samples in Fridge
DAVE SUMMERS	07/22/12	0745	4.0°C	4.3°C	3.6°C	Samples in Refrig
DAVE SUMMERS	07/22/12	1835	3.7°C	4.1°C	3.6°C	Samples in Refrig
DAVE SUMMERS	07/23/12	0730	3.5°C	3.8°C	3.4°C	Samples in Refrig
DAVE SUMMERS	07/23/12	1845	3.6°C	3.8°C	3.5°C	Samples in Refrig
DAVE SUMMERS	07/24/12	0714	3.9°C	3.9°C	3.5°C	Samples in Refrig
DAVE SUMMERS	07/24/12	1825	3.8°C	4.1°C	3.5°C	NO Samples in Refrig

G-10-39

AMWTP
Advanced Mixed Waste Treatment Project

Refrigerator Temperature Logsheet

Form-1585 Rev. 2
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Operator	Date	Time	Current Temperature	High Temperature Since Last Reading	Low Temperature Since Last Reading	Comments
DAVE SUMMERS	07/25/12	0730	4.0°C	4.2°C	3.7°C	NO Samples IN Refrig
DAVE SUMMERS	07/25/12	1830	3.9°C	4.1°C	3.6°C	Samples IN Refrig
Conley Beebe	07/26/12	0700	4.0°C	4.2°C	3.7°C	Samples IN Refrig.
DAVE SUMMERS	07/27/12	0657	3.9°C	4.1°C	3.6°C	NO Samples IN Refrig
Nick Ingle	07/27/12	1810	3.6°C	4.3°C	3.4°C	Samples in fridge
Abel Escobar	07/28/12	0735	3.5°C	3.5°C	3.4°C	Samples in fridge
mike Kramer	07/28/12	1800	3.8°C	3.8°C	3.4°C	SAmples IN Fridge
Abel Escobar	07/29/12	0733	3.6°C	3.7°C	3.6°C	Samples in fridge
Nick Ingle	07/29/12	1715	3.7°C	3.9°C	3.5°C	Samples in Fridge
DAVE SUMMERS	07/30/12	0730	4.0°C	4.1°C	3.6°C	Samples IN Refrig

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-[illegible]5
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 **Scale Calibration Expiration Date:** 10/30/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
06/17/12	1033	MTE-158	30.00 +/- .01g	30.00 g	Pass	
06/17/12	1034	MTE-130	50.00 +/- .01g	50.01 g	Pass	
06/17/12	1035	MTE-158&130	80.00 +/- .01g	80.00 g	Pass	
06/18/12	0830	MTE-158	30.00 +/- .01g	30.00g	Pass	
06/18/12	0831	MTE-130	50.00 +/- .01g	50.00g	Pass	
06/18/12	0832	MTE-158 & MTE-130	80.00 +/- .01g	80.00g	Pass	
06/19/12	1029	MTE-158	30.00 +/- .01g	30.00g	Pass	
06/19/12	1030	MTE-130	50.00 +/- .01g	50.00g	Pass	
06/19/12	1031	MTE-158 + MTE-130	80.00 +/- .01g	80.00g	Pass	
07/19/12	1730	MTE-158	30.00 +/- .01g	30.01g	Pass	
07/19/12	1731	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/19/12	1732	MTE-158 + MTE-130	80.00 +/- .01g	80.01g	Pass	
07/20/12	0821	MTE-158	30.00 +/- .01g	30.00 +/- g 7/20/12 AS	Pass	
07/20/12	0822	MTE-130	50.00 +/- .01g	50.01 g	Pass	
07/20/12	0823	MTE-158-MTE130	80.00 +/- .01g	80.00 g	Pass	
07/21/12	0846	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/21/12	0847	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/21/12	0848	MTE-158+130	80.00 +/- .01g	80.00g	Pass	
07/23/12	1305	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/23/12	1305	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/23/12	1305	MTE-130+158	80.00 +/- .01g	80.00g	Pass	
07/24/12	1406	MTE-158	30.00 +/- .01g	30.00g	Pass	
07/24/12	1400	MTE-130	50.00 +/- .01g	50.00g	Pass	
07/24/12	1400	MTE-158&130	80.00 +/- .01g	80.00g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-001 **Scale Calibration Expiration Date:** 10/30/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
07/26/12	0757	MTE-158	30.00 +/-0.01g	30.00g	PASS	
07/26/12	0757	MTE-130	50.00 +/-0.01g	50.00g	PASS	
07/26/12	0757	MTE-158 & 130	80.00 +/-0.01g	80.00g	PASS	
07/26/12	1015	MTE-158	30.00 +/- 0.01g	30.00	PASS	
07/26/12	1015	MTE-130	50.00 +/- 0.01g	50.00	PASS	
07/26/12	1015	MTE-130 & 158	80.00 +/- 0.01g	80.00	PASS	
07/27/12	0803	MTE-158	30.00 +/-0.01g	30.00 g	pass	
07/27/12	0804	MTE-130	50.00 +/-0.01g	50.00 g	pass	
07/27/12	0805	MTE-130&158	80.00 +/-0.01g	80.00 g	pass	
07/28/12	0817	MTE-158	30.00 +/-.01g	30.00 g	pass	
07/28/12	0818	MTE-130	50.00 +/-.01g	50.00 g	pass	
07/28/12	0819	MTE-158+130	80.00 +/-.01g	80.00 g	pass	
7/29/12	0828	MTE-158	30.00 +/-.01g	30.01 g	Pass	
7/29/12	0829	MTE-130	50.00 +/-.01g	50.01 g	Pass	
7/29/12	0831	MTE-158-130	80.00 +/-.01g	80.00 g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
6/11/12	0956	MTE-179	50.00 +/- .01g	50.00g	Pass	
6/11/12	0957	MTE-161	150.00 +/- .01g	150.00g	Pass	
6/11/12	0958	MTE-314	500.00 +/- .01g	500.00g	Pass	
06/12/12	0917	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/12/12	0917	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/12/12	0917	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/13/12	1443	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/13/12	1443	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/13/12	1443	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/15/12	0855	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
06/15/12	0855	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
06/15/12	0855	MTE-314	500.00 +/- 0.01G	500.00G	PASS	
06/17/12	1029	MTE-179	50.00 +/- .01g	50.01 g	Pass	
06/17/12	1030	MTE-161	150.00 +/- .01g	150.00 g	Pass	
06/17/12	1031	MTE-314	500.00 +/- .01g	500.01 g	Pass	
06/18/12	0833	MTE-179	50.00 +/- .01g	50.00g	Pass	
06/18/12	0834	MTE-161	150.00 +/- .01g	150.00g	Pass	
06/18/12	0835	MTE-314	500.00 +/- .01g	500.01g	Pass	
06/19/12	1038	MTE-179	50.00 +/- .01g	50.00g	Pass	
06/19/12	1039	MTE-161	150.00 +/- .01g	150.00g	Pass	
06/19/12	1042	MTE-314	500.00 +/- .01g	500.00g	Pass	
07/19/12	1733	MTE-179	50.00 +/- .01g	50.00g	Pass	
07/19/12	1734	MTE-161	150.00 +/- .01g	150.00g	Pass	
07/19/12	1735	MTE-314	500.00 +/- .01g	500.00g	Pass	

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AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
07/20/12	0824	MTE-179	50.00 +/- .01g	50.00 g	Pass	
07/20/12	0825	MTE-161	150.00 +/- .01g	150.00 g	Pass	
07/20/12	0826	MTE-314	500.00 +/- .01g	500.00 g	Pass	
07/21/12	0843	MTE-179	50.00 +/- .01g	50.00g	Pass	
07/21/12	0844	MTE-161	150.00 +/- .01g	150.00g	Pass	
07/21/12	0845	MTE-314	500.00 +/- .01g	500.00g	Pass	
07/23/12	1320	MTE-179	50.00 +/- .01g	50.00g	PASS	
07/23/12	1320	MTE-161	150.00 +/- .01g	150.00g	PASS	
07/23/12	1320	MTE-314	500.00 +/- .01g	500.00g	PASS	
07/24/12	0718	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
07/24/12	0718	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
07/24/12	0718	MTE-314	500.00 +/- 0.01G	500.00 G	PASS	
07/25/12	0743	MTE-179	50.00 +/- 0.01G	50.00G	PASS	
07/25/12	0743	MTE-161	150.00 +/- 0.01G	150.00G	PASS	
07/25/12	0743	MTE-314	500.00 +/- 0.01G	500.00 G	PASS	
07/26/12	1005	MTE-179	50.00 +/- 0.01g	50.00 g	PASS	
07/26/12	1005	MTE-161	150.00 +/- 0.01g	150.00 g	PASS	
07/26/12	1005	MTE-314	500.00 +/- 0.01g	500.01 g	PASS	
07/27/12	0751	MTE-179	50.00 +/- 0.01g	50.00 g	Pass	
07/27/12	0751	MTE-161	150.00 +/- 0.01g	150.00 g	Pass	
07/27/12	0751	MTE-314	500.00 +/- 0.01g	500.00 g	Pass	
07/28/12	0820	MTE-179	50.00 +/- 0.01g	50.00 g	Pass	
07/28/12	0820	MTE-161	150.00 +/- 0.01g	150.00 g	Pass	
07/28/12	0820	MTE-314	500.00 +/- 0.01g	500.00 g	Pass	

GW1044

AMWTP
Advanced Mixed Waste Treatment Project

Analytical Balance Calibration Check Sheet

Form-1215
Rev. 4
Effective: 04/08/08

Implementing Document: INST-OI-16, INST-OI-73, & INST-OI-75

Balance ID Number: X-250-002 **Scale Calibration Expiration Date:** 09/01/12

Date	Time	Check Weight ID	Standard Weight +/- Tolerance (0.01 grams)	Observed Weight	Pass/Fail	Comments
7/29/12	0825	MTE-179	50.00 +/- .01g	50.01 g	Pass	
7/29/12	0826	MTE-161	150.00 +/- .01g	150.00 g	Pass	
7/29/12	0827	MTE-314	500.00 +/- .01g	500.01 g	Pass	

GW-1045

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Batch Number: SSC12-00004

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	7/20/12	08 13	N. Ingle	Glovebox inspection SAT.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	7/20/12	09 06	N. Ingle	Performance check SAT.
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	07/20/12	08 27	N. Ingle	Electronic balances SAT.
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	7/20/12	08 13	N. Ingle	Sampling and support equipment SAT.
4b. Document any deficiencies in the comments section.						N. Ingle	No deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	7/20/12	12 35	N. Ingle	WTS updated.
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/24/12	1744	DSummers	WTS updated

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	7/20/12	1230	N. Ingle	~~7/20/12~~ Manual Coring. Core Barrel WILL NOT BE USED for taking Sample.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	7/20/12	1358	N. Ingle	Visibly clean and verified
7b. Were any defective sampling tools identified?	☐	☒	☐	7/20/12	1358	N. Ingle	No defective tools
7c. Was the SS and SME notified?	☐	☐	☒	7/20/12	1358	N. Ingle	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	7/20/12	1358	N. Ingle	Packaging intact.
7e. Document any deficiencies by ID number in the comments section.						N. Ingle	No deficiencies

Continued

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 3 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Batch Number: SSC12-00004

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☒	☐	☐	7/20/12	1250	N. Engle	
8b. Log the results in the comments section. **N/A for Grab sampling.**	☒	☐	☐	7/20/12	1250	N. Engle	**Formula for a 55-gallon Drum:** Distance from top of drum to waste 15 in. 34.5 - (Distance from the top lip of the drum to waste + 1) = 18.5 in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	7/20/12	1306	N. Engle	WTS updated.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	7/20/12	1308	N. Engle	Sample material capped.
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☒	☐	☐	7/20/12	1311	N. Engle	minimal disturbance verified.
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☒	☐	☐	7/20/12	1311	N. Engle	WTS updated.

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	7/20/12	13 14	N. Ingle	Initial sample
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	7/20/12	13 14	N. Ingle	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	7/20/12	14 19	N. Ingle	labels verified
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	7/20/12	14 20	N. Ingle	labels verified.
14. Have custody seals been signed and dated?	☒	☐	☐	7/20/12	17 10	N. Ingle	custody seals signed and dated.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	7/20/12	17 26	N. Ingle	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	7/20/12	17 50	N. Ingle	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	7/20/12	17 51	N. Ingle	Were prepared and placed in storage
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	7/20/12	17 52	N. Ingle	Verified locked and secure

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Batch Number: SSC12-00004

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

	Print Name	Signature	Date
Checklist completed by OT:	Dawn Summers		07/24/12
Checklist reviewed by SS:	Dave Becker		07/24/12

Gw10150

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Batch Number: SSC12-00004

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☒	☐	☐	7/20/12 7/21/12 07/23/12	0813 0810 1335	N. Ingle N. Ingle D Summers	Glovebox inspection SAT. Glovebox inspection SAT. Reverified, condition and cleanliness SAT.
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☒	☐	☐	7/20/12 07/23/12	0906 1340	N. Ingle D Summers	Performance check SAT. Checks SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☒	☐	☐	7/20/12 7/21/12 07/23/12	0827 0848 1320	N. Ingle N. Ingle D Summers	Electronic balances SAT. Electronic balances SAT. Scales SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☒	☐	☐	7/20/12 7/21/12 07/23/12	0813 0810 1335	N. Ingle N. Ingle D Summers	Sampling and support equipment SAT. sampling and support equipment SAT. tools + equipment SAT, NO DEFICIENCIES NOTED.
4b. Document any deficiencies in the comments section.						N. Ingle N. Ingle D Summers	No deficiencies No deficiencies
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☒	☐	☐	7/20/12	1235	N. Ingle	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☒	☐	☐	07/24/12	1744	D Summers	WTS updated

Continued

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 1044 1659

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	7/20/12	13 27	N. Ingle	Manual coring. CORE BARREL will NOT BE USED FOR taking Sample.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	7/20/12 07/23/12	14 22 1345	N. Ingle D Summers	Visibly clean and verified. Visibly clean
7b. Were any defective sampling tools identified?	☐	☒	☐	7/20/12 07/23/12	14 22 1345	N. Ingle D Summers	No defective tools No deficiencies noted
7c. Was the SS and SME notified?	☐	☐	☒	7/20/12 07/23/12	14 22 1345	N. Ingle D Summers	N/A
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	7/20/12 07/23/12	14 22 1345	N. Ingle D Summers	Packaging intact. Packaging intact, NO deficiencies noted.
7e. Document any deficiencies by ID number in the comments section.						N. Ingle D Summers	No deficiencies

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Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☒	☐	☐	7/20/12	1250	N. Ingle	
8b. Log the results in the comments section. **N/A for Grab sampling.**						N. Ingle	**Formula for a 55-gallon Drum:** Distance from top of drum to waste 15 in. 34.5 - (Distance from the top lip of the drum to waste + 1) = 18.5 in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☒	☐	☐	7/20/12	1378	N. Ingle	WTS updated.
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☒	☐	☐	7/20/12	1340	N. Ingle	Sample material capped
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☒	☐	☐	7/20/12	1344	N. Ingle	minimal disturbance verified
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☒	☐	☐	7/20/12	1344	N. Ingle	WTS updated.

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 4 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441659 **Sample Origin:** Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004 **Sample Type:** Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☒	☐	7/20/12 07/23/12	1346 1427	N. Ingle D Summers	No inconsistencies. No inconsistencies noted between initial and co-located core samples.
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	7/20/12 07/23/12	1346 1427	N. Ingle D Summers	N/A
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☑	☐	☐	07/23/12	1500	D Summers	Verified correct and match WTS
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☑	☐	☐	07/23/12	1500	D Summers	
14. Have custody seals been signed and dated?	☑	☐	☐	07/23/12	1500	D Summers	Verified signed and intact.
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☑	☐	☐	07/23/12	1726	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☑	☐	☐	07/23/12	1726	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☑	☐	☐	07/23/12	1722	D Summers	Created, labeled, placed in Refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☑	☐	☐	07/23/12	1730	D Summers	Verified locked and samples secure.

G-0004

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: ~~10~~ 1044659 NT 7/24/12

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00604

Sample Type: Initial ☐ Co-located ☒ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT: DANIEL SUMMERS (Print Name) _____ (Signature) 07/24/12 (Date)

Checklist reviewed by SS: Travis Becker (Print Name) _____ (Signature) 07/24/12 (Date)

G-10155

AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 1 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441658 **Sample Origin:** Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004 **Sample Type:** Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
1. Was the glovebox inspected and cleaned, if necessary, after each sampling event and the cleaning results documented in the comments section prior to processing any additional samples?	☑	☐	☐	07/24/12 07/25/12	1404 0801	D Summers D Summers	glovebox inspection completed SAT NO DEFICIENCIES NOTED glovebox inspection completed SAT Revalified NO DEFICIENCIES NOTED
2. Has a performance check (background and standardization) been completed on the packet assay monitor within this shift?	☑	☐	☐	07/24/12 07/25/12	0745 0740	D Summers D Summers	Checks SAT Checks SAT
3. Have the electronic balances been performance checked each shift prior to any sampling activities and documented on Form-1215?	☑	☐	☐	07/24/12 07/25/12	1400 0757	D Summers D Summers	Checks SAT Checks SAT
4a. Was the inspection and cleaning of sampling and glovebox support equipment completed?	☑	☐	☐	07/24/12 07/25/12	1404 0801	D Summers D Summers	glovebox tools and equipment inspection SAT. NO DEFICIENCIES NOTED.
4b. Document any deficiencies in the comments section.						D Summers	glovebox tools and equipment inspect SAT, NO DEFICIENCIES NOTED.
5a. Have all filters been removed and documented on the WTS Filter Vent History screen?	☑	☐	☐	07/24/12	1813	D Summers	WTS updated
5b. Have all filters been installed and documented on the WTS Filter Vent History screen?	☑	☐	☐	07/25/12	1648	D Summers	WTS updated

Continued

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441658

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
6. Have the reusable coring-bit barrel assemblies been inspected for cleanliness, damage, and free movement of the internal components (as applicable)? **N/A for Grab sampling and Manual Coring.**	☐	☐	☒	07/25/12	0826	D Summers	N/A for manual coring per OI-73. Core Barrel NOT used to take Sample.
7a. Is equipment visibly clean and verified by certificates of cleanliness or analysis?	☒	☐	☐	07/25/12	0830	D Summers	All sampling tools and equipment verified clean and packaging intact. NO Deficiencies noted
7b. Were any defective sampling tools identified?	☐	☒	☐	07/25/12	0830	D Summers	
7c. Was the SS and SME notified?	☐	☐	☒	07/25/12	0830	D Summers	
7d. Was packaging or expendable sampling equipment intact prior to use?	☒	☐	☐	07/25/12	0830	D Summers	
7e. Document any deficiencies by ID number in the comments section.						D Summers	

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441658

Sample Origin: Automated Core ☐ Manual Core ☑ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
8a. Has the calculated depth of the waste and the container ID been recorded prior to each core-sampling event? **N/A for Grab sampling.**	☑	☐	☐	07/25/12	0823	D Summers	
8b. Log the results in the comments section. **N/A for Grab sampling.**	[redacted]					D Summers	**Formula for a 55-gallon Drum:** Distance from top of drum to waste 15 in. 34.5 - (Distance from the top lip of the drum to waste + 1) = 18.5 in. **Formula for a 30-gallon Drum:** Distance from top of drum to waste N/A in. 29.0 - (Distance from the top lip of the drum to waste + 1) = N/A in.
9. Has the sample "Date and By" field been updated on the WTS sampling screen to reflect the correct time the sample was extracted?	☑	☐	☐	07/25/12	0851	D Summers	WTS updated
10. Has the sample material in the glovebox been processed, capped/covered, as appropriate per procedure, to prevent loss of volatile organic compounds (VOCs) prior to closing the final sample vial?	☑	☐	☐	07/25/12	0852	D Summers	Verified cut/capped within threshold limit
11a. Has the minimal disturbance been verified by visually examining the core (e.g., undisturbed, cracked, or pulverized)? **N/A for Grab sample.**	☑	☐	☐	07/25/12	0859	D Summers	Verified undisturbed and documented.
11b. Has this observation been recorded in WTS Core Physical Description comments field? **N/A for Grab sample.**	☑	☐	☐	07/25/12	0859	D Summers	WTS updated

GW-D578

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441658

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Criteria	Yes	No	N/A	Date	Time	Performed By	Comments
12a. Were any inconsistencies in color, texture, or waste type between the initial, resample, and co-located sample identified?	☐	☐	☒	07/25/12	0900	D Summers	Initial sample only
12b. Have inconsistencies, if applicable, been recorded in WTS in the Sample Comments field?	☐	☐	☒	07/25/12	0900	D Summers	
13a. Have sample labels for PVOC, NHVOC, and spare(s) samples been verified to contain complete information?	☒	☐	☐	07/25/12	1045	D Summers	Verified correct and matching WTS
13b. Have sample labels for SVOC/metals samples been verified to contain complete information?	☒	☐	☐	07/25/12	1045	D Summers	
14. Have custody seals been signed and dated?	☒	☐	☐	07/25/12	1045	D Summers	Signed. Verified intact
15. Have sample/subsample screens been updated to reflect that the custody seal is attached?	☒	☐	☐	07/25/12	1151	D Summers	WTS updated
16. Have sample/subsample screens been updated to reflect "Sample Preserved to 4 degrees C" field?	☒	☐	☐	07/25/12	1151	D Summers	WTS updated
17. Have trip blanks been prepared and placed into refrigerated storage?	☒	☐	☐	07/25/12	1147	D Summers	Built and placed in refrig
18. The refrigerated sample storage area has been verified to be locked and secured.	☒	☐	☐	07/25/12	1147	D Summers	Verified locked and secured

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AMWTP Advanced Mixed Waste Treatment Project	AMWTP Solid Sampling Checklist	Form-1599 Rev. 8 Effective: 04/05/12 Page 5 of 5

Implementing Document: INST-OI-16, INST-OI-73, and INST-OI-75

Drum Number: 10441658

Sample Origin: Automated Core ☐ Manual Core ☒ Container Grab ☐

Batch Number: SSC12-00004

Sample Type: Initial ☒ Co-located ☐ Resample ☐ Field Duplicate ☐

Additional comments:

Checklist completed by OT:	Danny Summers Print Name	 Signature	07/25/12 Date
Checklist reviewed by SS:	Dave Becker Print Name	Dave Becker Signature	07/25/12 Date

GW1050

AMWTP Advanced Mixed Waste Treatment Project	Solid Sampling Independent Technical Reviewer Checklist	Form-1421, Rev. 13 Effective: 08/16/07 at 1500 Hrs. Page 1 of 3

Implementing Document: MP-TRUW-8.8

Testing Batch No.: SSC12-00004	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
1. Is the QA documentation for the Batch Data Reports complete and does it include data reports and QC results? o Coring Batch Cover Sheet o Table of Contents (manual review only) o Coring Analysis Reports (manual review only) o Chain of Custody (manual review only) o Refrigerator Temperature Log Sheet (Form-1585) (manual review only) and/or Characterization Round Sheet (Form-1602) o Analytical Balance Calibration Check Sheet (Form-1215) (manual review only) o Solid Waste Sampling Checklist (Form-1599) (manual review only) o Solid Sampling Independent Reviewer Checklist (Form-1421) (manual review only) o Supplemental Batch Comment Form (Form-1491) (manual review only) o Associated NCRs (referenced in WTS)	X			
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	X			
3. Has the Chain of Custody been initiated properly, filled out correctly and completely?	X			
4. Was each Coring Operator qualified at the time of each coring event?	X			
5. Was the E-signature History review performed?	X			
6. Was the core sample and sub-sample collected based on a random selection method using randomly selected horizontal and vertical planes?	X			

Gw0061

Testing Batch No.: SSC12-00004	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? • If any of these conditions have not been met, record the NCR number in the comments section. o Sealing of the liner prior to sampling o Refrigeration of the samples	X			
8. Were the cores visually examined?	X			
9. Was the co-located core visually compared to the first core and were the results acceptable?	X			
10. Were the units and significant figures used for all reported volumes/weights?	X			
11. Has the data been reviewed for transcription errors, as appropriate, and are field records complete?	X			
12. Have all hand calculations been verified and validated correctly?	X			
13. Was the scale in calibration and was a calibration check performed?	X			
14. Was the equipment used traceable to the Certificate of Cleanliness or have equipment blanks been collected from sampling and coring tools, liners, and disposal sampling equipment, as applicable?	X			
15. Were the following inspections performed and verified clean prior to sampling? o Was the coring tool inspection satisfactory? o Was the sampling equipment protective wrapper intact? o Was the sampling area inspection satisfactory? o Were the sampling tools visually clean after unwrapping?	X			
16. Were co-located cores or samples collected at a frequency of one per sampling batch, as defined in INST-OI-16 and/or INST-OI-73?	X			

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Testing Batch No.: SSC12-00004	Location: : Z-250-801 WMF-634			
Criteria	**Yes**	**No**	**NA**	**Comment**
17. Were there any nonconforming conditions identified for containers that contain prohibited items or that failed to meet DQOs or QAOs? If so indicate all NCR numbers in the batch comment section.	X			NCR 71740.
18. For drums that contain smaller containers, has one randomly selected smaller container been sampled, as applicable?			X	No smaller inner containers.
19. Has the use of INST-OI-16 and/or INST-OI-73, sampling equipment, and measurement units been consistent?	X			
20. Was data generated in a technically correct manner in accordance with the correct revision of INST-OI-16, Drum Coring Operations and/or INST-OI-73, Manual Drum Coring Operations?	X			
21. Was the correct revision of the procedure documented on each analysis report?	X			
22. Does the core sample collected have a length ≥ to 50% of the depth of the waste?	X			
23. If core recovery is <50%, has a second core location been randomly selected?			X	
24. Have solid sampling QAOs been met or exceptions documented? • Precision • Accuracy • Completeness • Comparability • Representativeness	X			
25. Were the rework requirements clearly identified in WTS or on the BDR?			X	No rework required.

ITR Print Name: Jay Simonson	ITR Signature: Jay T. Simonson	Date: 08/02/2012

053

AMWTP Advanced Mixed Waste Treatment Project	**Site Project Manager** **Solid Sampling Checklist**	Form-1401 Rev.9 Effective: 12/29/10 Page 1 of 5

Implementing Document: MP-TRUW-8.9

Batch Data Report #: SSC12-00004

Question	Response			Requirement	Comment
	YES	NO	N/A		
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	☒	☐	☐	MP-TRUW-8.2, C3-10b(1)	
(2) Have all applicable Quality Assurance Objectives been met? Precision: • Has a co-located core sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: • Has an equipment blank been collected once per equipment cleaning batch: – Coring Tools – Liners – Sampling Equipment Completeness: • Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? • The containers were randomly selected from the container population and the subsampling location in the core was randomly selected. Comparability: • Was the correct version of INST-OI-16 or INST-OI-73 used?	☒	☐	☐	MP-TRUW-8.2, C1-2 and C3-3	

6.1.054

Batch Data Report #: SSC12-00004

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(2) continued Representativeness: • Were non-disposable coring tools and sampling equipment cleaned prior to sampling? • Has ≥50% of the depth of the waste or the core with the best core recovery been used for sample collection? • Was the waste disturbance minimized verified by visual examination of the core and the documented in the field logbook?	☒	☐	☐		
(3) Do the data reports contain the following information: • The physical location within the container? • Sampling date and time? • The sampler's signature and date? • The sample matrix and type? • The sample number and size? • Identification of the waste matrix code?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(4) Was the scale in calibration, and a calibration check performed?"	☒	☐	☐	MP-TRUW-8.2, C1-2d	
(5) Was the analysis of the blanks acceptable? **NOTE:** *The analytical results for the equipment blanks are less than 3 times the MDL for VOCs and SVOCs and less than 3 times the PRDLs for the metals.*	☒	☐	☐	MP-TRUW-8.2, C1-2b(2)	
(6) Are samples preserved by keeping them at a temperature of 4°C (+/- 2°C)?	☒	☐	☐	MP-TRUW-8.2, Table C1-4	

C1065

Batch Data Report #: SSC12-00004

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(7) Were samples collected within 14 days and is a time given between coring and sub-sampling?	☒	☐	☐	MP-TRUW-8.2, Table C1-4 and C1-2b(1)	
(8) Are there no more than 20 containers in the batch (excluding field QC samples)?	☒	☐	☐	MP-TRUW-8.2, C3-10	
(9) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? **NOTE:** *This ensures that appropriate equipment blanks have been collected for the disposable equipment.*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(10) Are field records present in the batch data report? **NOTE:** *Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling area, inspection of the solids sampling equipment, coring tool test, and random location of sub-sample?*	☒	☐	☐	MP-TRUW-8.2, Table C3- 12	
(11) Is the location (point of origin) where each sample was taken included in the batch data report? **NOTE:** *This would include building and room number (if applicable).*	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(12) Does the batch data report include a record of analysis requested and laboratory?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(13) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	

600956

Batch Data Report #: SSC12-00004

Question	Response YES	Response NO	Response N/A	Requirement	Comment
(14) Is the depth of waste included for each waste container?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(15) Is the time between coring and sub-sampling less than one hour? If time is greater than 1 hour, was capping performed?	☒	☐	☐	MP-TRUW-8.2 C1-2a(2)	
(16) The data for all containers within this batch meet the review, validation, and verification requirements. • Are proper units (e.g. grams or liters) and significant figures used? • Is the BDR complete (all pages identified in the BDR and numbered accordingly)? • WTS Coring Batch Cover Sheet • Table of Contents (manual review only) • WTS Coring Analysis Reports • Chain of Custody • Refrigerator Temperature Log Sheet (Form-1585) and/or Form-1602, Characterization Round Sheet • Analytical Balance Calibration Check Sheet (Form-1215) • Solid Waste Sampling Checklist (Form-1599) • Solid Sampling Independent Reviewer Checklist (Form-1421) • Supplemental Batch Comment Form (Form-1491) • Associated NCRs	☒	☐	☐	MP-TRUW-8.2, C3-10b	

459057

Batch Data Report #: SSC12-00004

Question		Response YES	Response NO	Response N/A	Requirement	Comment
(17)	Review all NCRs (open and closed). Can the batch be approved?	☒	☐	☐	MP-TRUW-8.2, C3-13	
(18)	Were the following inspections performed? • Was the coring tool inspection satisfactory? • Was the sampling equipment protective wrapped intact? • Was the sampling area inspection satisfactory? • Was the equipment inspected after unwrapping?	☒	☐	☐	MP-TRUW-8.2, C1-2B(2)	
(19)	Are the calculation of core recovery and co-located core description included in the batch data report?	☒	☐	☐	MP-TRUW-8.2, Table C3-12	
(20)	All data associated with this BDR is acceptable for signature release?	☒	☐	☐	MP-TRUW-8.2, C3-10b(2)	

Comments:

SPM: Kenny Burnside (Print Name) K Burnside (Signature) 8/16/12 (Date)

Gen058

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 30-Jul-2012

Time: 09:15

*****Batch NCR(s)*****

Batch Type	SSC	Batch ID	SSC12-00004

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10441659	71740	OPEN	21-JUL-12	
10441658	70835	CLOSED	18-MAY-12	24-MAY-12
10441659	70835	CLOSED	18-MAY-12	24-MAY-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSC12-00004

Item	Date	Name	Comments
1.	07/30/12	Davey Sumners Coring Operator	WMF-634, Coring Room. WMC S-3220
2.	07/30/12	Davey Sumners Coring Operator	Closed per direction.
3.	08/02/12	Jay Simonson ITR	This batch was validated per MP-TRUW-8.8.
4.	08/02/12	Jay Simonson ITR	NCR 7140 was initiated due to the primary subsamples initially being associated with the co-located core sample in error.
5.	08/02/12	Jay Simonson ITR	Note: correct NCR is 71740.
6.	08/02/12	Jay Simonson ITR	Level I validation complete.
7.	08/02/12	Jay Simonson ITR	Promoted to SPM.
8.	08/02/12	Jay Simonson Signature	Jay T. Simonson

60070

AMWTP
Advanced Mixed Waste Treatment Project

Batch Data Report Supplemental Comment Form

AMWTP Form-1491, Rev. 1
Implementing Documents: MP-TRUW-8.8 & 8.9
Effective Date: 02/22/06

Batch Number SSC12-00004

Item	Date	Name	Comments
1.	8/16/12	Kenny Burnside	SPM reviewed and approved. K Burnside 8/16/12
2.			
3.			
4.			
5.			N/A KB 8/16/12
6.			
7.			
8.			

Confidential

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AMWTP Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR: NCR-12-0140

PARENT:

Title: Sub-sample data for primary core inadvertently entered under incorrect core sample ID

Category: Work Planning & Control	**Affected Item Type:** Container ID
Affected Item: Drum 10441659	
Originator: Preston, David	**Date Opened:** 07/21/12
Source Type: As Found Condition	**ORPS Reportable:** No
Source Type Doc. No.	
ORPS No.:	**ORPS Category:** NA
Finding #:	
Requirement Violated: OI-73, step 4.11.34.2 (not technically a procedure violation, but operator inattention to detail)	
Shipment No. N/A	**Payload No.** N/A
Equipment ID: Z-250-801	**PO Number:**
Batch No. SSC12-00004	
Container ID: 10441659	
Tag Applied:	**No. of Tags:**

Description of Condition:

On 7/20/12 while performing data entry, an operator inadvertently entered sub-sample data for the the primary core sample (670) under the co-located core sample ID (671). The operator discovered the mistake and promptly reported it to the SME and supervision. The recovery of the situation involved cancelling the primary sub-sample data that was entered under the co-located core sample ID number, and reentering the data under the correct primary core sample ID. While under the co-located core sample ID tab, the vertical distance required by WTS was 11.5 inches. The samples for the primary core were taken starting at 11.5 inches. The samples had already been taken and recorded in WTS once the mistake was discovered. This does not match what is currently recorded in WTS for required distance under the primary core sample ID. The randomly selection vertical required distance for the primary core was 1.0 inches. This is because the operator thought he was on the primary core sample ID tab, when in fact he was on the co-located core sample ID and the samples for the primary core sample were taken using the co-located random vertical distance selection by WTS.
The co-located core sample ID was cancelled and a new one selected to avoid further complication of the situtation. As of this writting, the co-located core sample has been taken but not sampled. The sampling will occur under a new core sample ID (672) and a new sub-sample vertical location. DJP 07/21/12

Manager Review By: Steve Massey	**Manager Review Date:** 07/21/12
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**WIPP Submittal Req'd?** No
Stop Work Order: No	**Is CAR Req'd?** No
HSS-OE Applicable: Yes	**NTS Report Number:**
HSS-OE Reportable: No	**NTS Report Date:**

HSS-OE Regulations

10 CFR 820: No	**10 CFR 830 Subpart A:** Yes
10 CFR 830 Subpart B: No	**10 CFR 835 Rad Protection:** No
10 CFR 851Safety/Health: No	**Quality (Type Material):** WIPP Batch-Core Sample
	Responsible Department: Plant Manager

~~600070~~ 600072

AS 8-21-12

AMWTP
Advanced Mixed Waste Treatment Project

NONCONFORMANCE REPORT

NCR No: [illegible]
PARENT [illegible]

	Functional Area: Operations
	Disposition Due Date: 08/20/12
QA Mgr Rev Sign By: Lyle Ryman	**QA Mgr Rev Sign Date:** 07/30/12
	Date Due:
Disposition:	**Responsible Manager:** Greenwell, Doug
	Assigned Actionee:
Conditional Use:	**Conditional Use Expiration Date:**
USQ Screen Req'd?	**USQ Screen No.:**
Root Cause Analysis:	
Level A Cause Code:	**Contributing Cause Level A:**
Level B Cause Code:	**Contributing Cause Level B:**
Level C Cause Code:	**Contributing Cause Level C:**
Disposition Description:	
Mgr Disp App By:	**Mgr Disp App Date:**
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By:	**QA Mgr Rev Disp Sign Date:**
CAP Complete Comments:	
Action Complete By:	**Action Complete Date:**
QA Add'l Action Req'd By:	**QA Add'l Action Req'd Date:**
Add'l Action Complete By:	**Add'l Action Complete Date:**
QA Verification Complete By:	**QA Verification Comp Date:**

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WS 8-21-12

~~C-1071~~ 60073

Assembly Procedures
Hard Formation Core Barrel

Bearing

1. Slide Upper Thrust Bearing (12) onto Bearing Shaft (13) until resting on shoulder.
2. Slide Bearing Retainer (11), non-threaded end first, onto shaft until resting against already placed thrust bearing.
3. Slide Lower Thrust Bearing (10) onto shaft until resting against Bearing Retainer (11).
4. Thread Flanged Nut (9) onto shaft until contacting thrust bearing and back off ¼ of a turn.
5. Thread Hex Nut (8) onto shaft until tight, approximately 15 ft·lb.
6. Place By-Pass Ball (7) into Inner Tube Connection Split (6) and thread onto assembly. Tighten with pipe wrench.

Head/Inner Tube/Shoe

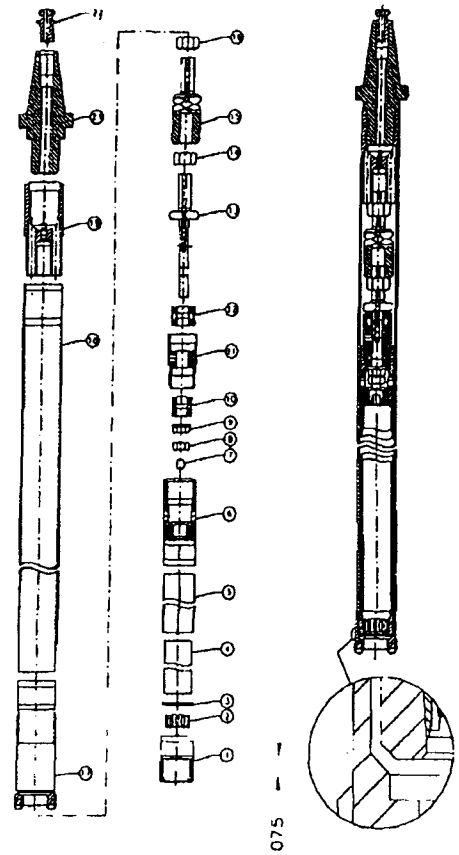
1. Thread Hex Nut (14) midway onto upper end of threaded rod.
2. Thread Bearing Extension Sub (15) onto upper end of threaded rod until contact with hex nut, hand tighten.
3. Thread Hex Nut (16) midway onto upper end of threaded rod.
4. Thread Core Barrel Head (19) onto upper end of threaded rod (15) until contact with hex nut (16), hand tight.
5. Thread taped Inner Tube Split (5) onto Inner Tube Connection Split (6), hand tight.
6. Insert C-Thru Inner Tube Liner (4) into Inner Tube Split (5).
7. Place Retaining Ring (3) on C-Thru Inner Tube Liner (4).
8. Place Core Lifter (2) inside of Inner Tube Shoe (1).
9. Thread shoe/lifter onto Inner Tube Split (5), hand tight.

Outer Barrel Assembly

1. Slip Outer Tube (18) over inner tube assembly. Thread Outer Tube onto Core Barrel Head (19), hand tighten.
2. Thread Core Bit (17) onto Outer Tube (18), hand tight.

Inner Tube Adjustments

1. *The inner tube assembly should be adjusted so* the Inner Tube Shoe (1) has approximately a 0.075 inch standoff from the inner shoulder of the Core Bit (17). The inner tube assembly should rotate free of the core bit.
2. *The adjustment is made at the two Hex Nuts (14 & 16) on the bearing assembly.*
3. Remove Outer Tube (18) from Core Barrel Head (19), exposing bearing assembly.
4. Adjust Hex Nuts (14 or 16).
5. Thread outer tube back onto head and observe standoff (0.075 inches).
6. After the adjustment is made, the hex nuts should be tighten to approximately 15 ft·lb.



Item	Part Number	Description
1	029-713-010	Inner Tube Shoe
2	029-713-011	Hard Formation Core Lifter
3	029-713-009	Inner Tube Liner Retaining Ring
4	029-713-008	Inner Tube C-Thru Liner
5	029-713-007	Inner Tube Split
6	029-713-022	Inner Tube Connector Split
7	006-043-111	By-Pass Ball
8	006-015-176	Hex Nut
9	006-015-139	Flanged Nut
10	025-093-022	Lower Thrust Bearing
11	025-092-018	Bearing Retainer
12	006-093-014	Upper Thrust Bearing
13	029-713-021	Bearing Shaft
14	006-015-192	Hex Nut
15	029-713-029	Bearing Extension Sub
16	006-015-192	Hex Nut
17	020-393-762	Core Bit Hard Formation
18	029-713-005	Outer Tube
19	029-713-004	Core Barrel Head
20	006-014-016	Grease Fitting
21	029-713-003	Drive Head
22	006-999-001	Retention Knob Size 40

Information Only

Assembly Procedures
Parfait Core Barrel

Bearing

1. Slide Upper Thrust Bearing (12) onto Bearing Shaft (13) until resting on shoulder.
2. Slide Bearing Retainer (11), non-threaded end first, onto shaft until resting against already placed thrust bearing.
3. Slide Lower Thrust Bearing (10) onto shaft until resting against Bearing Retainer (11).
4. Thread Flanged Nut (9) onto shaft until contacting thrust bearing and back off ¼ of a turn.
5. Thread Hex Nut (8) onto shaft until tight, approximately 15 ft·lb.
6. Place By-Pass Ball (7) into Inner Tube Connection Split (6) and thread onto assembly. Tighten with pipe wrench.

Head/Inner Tube/Shoe

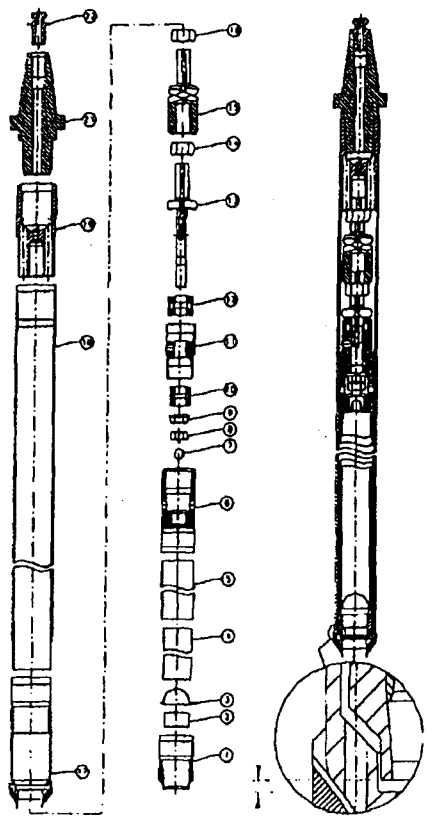
1. Thread Hex Nut (14) midway onto upper end of threaded rod.
2. Thread Bearing Extension Sub (15) onto upper end of threaded rod until contact with hex nut, hand tighten.
3. Thread Hex Nut (16) midway onto upper end of threaded rod.
4. Thread Core Barrel Head (19) onto upper end of threaded rod (15) until contact with hex nut (16), hand tight.
5. Thread taped Inner Tube Split (5) onto Inner Tube Connection Split (6), hand tight.
6. Insert C-Thru Inner Tube Liner (4) into Inner Tube Split (5).
7. Place Teflon Core Lifter (2) and Plastic Basket (3) inside of Inner Tube Shoe (1). Orient basket as shown.
8. Thread shoe/lifter/basket onto Inner Tube Split (5), hand tight.

Outer Barrel Assembly

1. Slip Outer Tube (18) over inner tube assembly. Thread Outer Tube onto Core Barrel Head (19), hand tighten.
2. Thread Core Bit (17) onto Outer Tube (18), hand tight.

Inner Tube Adjustments

1. The inner tube assembly should be adjusted so the Inner Tube Shoe (1) has approximately a 0.075 inch standoff from the inner shoulder of the Core Bit (17). The inner tube assembly should rotate free of the core bit.
2. The adjustment is made at the two Hex Nuts (14 & 16) on the bearing assembly.
3. Remove Outer Tube (18) from Core Barrel Head (19), exposing bearing assembly.
4. Adjust Hex Nuts (14 or 16).
5. Thread outer tube back onto head and observe standoff (0.075 inches).
6. After the adjustment is made, the hex nuts should be tighten to approximately 15 ft·lb.



Item	Part Number	Description
1	029-713-042	Inner Tube Pilot Shoe
2	029-713-034	Core Lifter Blank
3	029-713-012	Plastic Basket
4	029-713-008	Inner Tube C-Thru Liner
5	029-713-007	Inner Tube Split
6	029-713-022	Inner Tube Connector Split
7	006-043-111	By-Pass Ball
8	006-015-178	Hex Nut
9	006-042-139	Flanged Nut
10	025-093-022	Lower Thrust Bearing
11	025-093-015	Bearing Retainer
12	006-093-014	Upper Thrust Bearing
13	029-713-021	Bearing Shaft
14	006-015-192	Hex Nut
15	029-713-029	Bearing Extension Sub
16	006-015-192	Hex Nut
17	020-393-762	Parfait Core Bit
18	029-713-009	Outer Tube
19	029-713-004	Core Barrel Head
20	006-014-016	Grease Fitting
21	029-713-003	Drive Head
22	006-999-001	Retention Knob Size 40

Information Only

Assembly Procedures
Punch Core Barrel

Head/Bearing

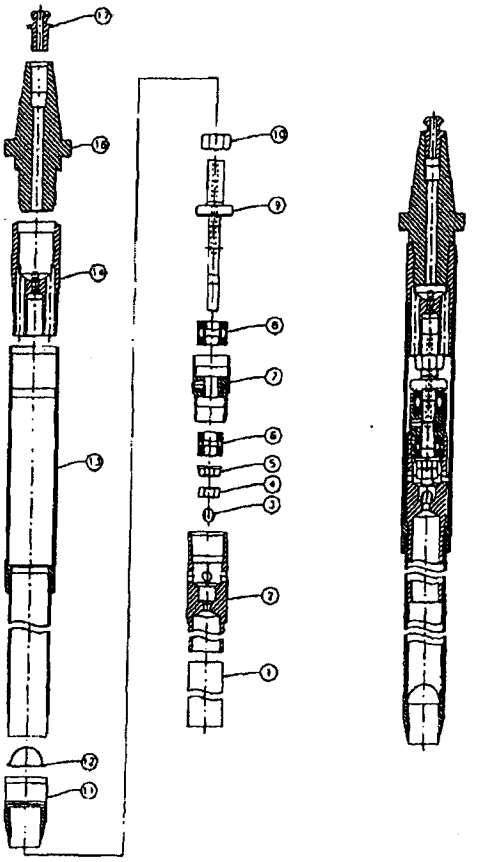
1. Slide Upper Thrust Bearing (8) onto Bearing Shaft (9) until resting on shoulder.
2. Slide Bearing Retainer (7), non-threaded end first, onto shaft until resting against already placed thrust bearing.
3. Slide Lower Thrust Bearing (6) onto shaft until resting against Bearing Retainer (7).
4. Thread Flanged Nut (5) onto shaft until contacting thrust bearing and back off ¼ of a turn.
5. Thread Hex Nut (4) onto shaft until tight, approximately 15 ft·lb.
6. Place By-Pass Ball (3) into C-Thru Liner Connection (2) and thread onto assembly. Tighten with pipe wrench.
7. Thread Hex Nut (10) midway onto upper end of threaded rod.
8. Thread Core Barrel Head (14) onto upper end of threaded rod (9) until contact with hex nut (10), hand tight.

Outer Barrel Assembly

1. Slip Punch Tube (13) over inner tube assembly. Thread Outer Tube onto Core Barrel Head (14), hand tighten.
2. Insert C-Thru Inner Tube Liner (1) into Punch Tube (13).
3. Place Plastic Basket (12) inside Punch Shoe (11). Orient basket as shown.
4. Thread shoe/basket onto Punch Tube (13), hand tight.

Inner Tube Adjustments

1. The inner tube assembly should be adjusted so that the Plastic Basket (12) seats up against the C-Thru Liner. The shoe/basket assembly should screw completely onto the Punch Tube (13).
2. The adjustment is made at the Hex Nut (10) on the bearing assembly.
3. Remove Punch Tube (13) from Core Barrel Head (14), exposing bearing assembly.
4. Adjust Hex Nut (10).
5. Thread outer tube back onto head and observe fit.
6. After the adjustment is made, the hex nut should be tighten to approximately 15 ft·lb.

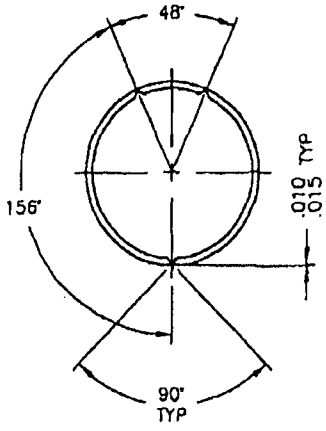


Item	Part Number	Description
1	029-713-008	Inner Tube C-Thru Liner
2	029-713-034	C-Thru Liner Connector
3	029-043-111	By-Pass Ball
4	006-015-175	Hex Nut
5	006-042-139	Flanged Hex Nut
6	025-093-022	Lower Thrust Bearing
7	025-092-016	Bearing Retainer
8	025-093-014	Upper Thrust Bearing
9	029-713-021	Bearing Shaft
10	006-015-192	Hex Nut
11	029-713-020	Punch Shoe
12	029-713-012	Plastic Basket
13	029-713-016	Punch Tube
14	029-713-004	Core Barrel Head
15	006-014-016	Grease Fitting
16	029-713-003	Drive Head
17	006-999-001	Retention Knob Size 40

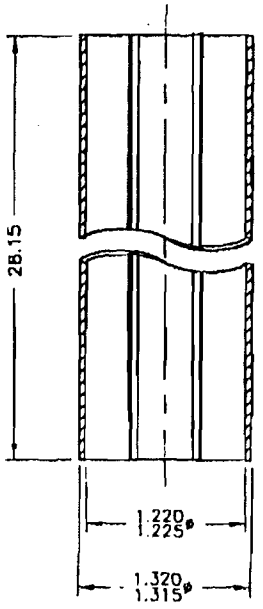
INFORMATION ONLY

REV	DWG NO	SHEET
C	02021501	ART

029-713-008 REV C



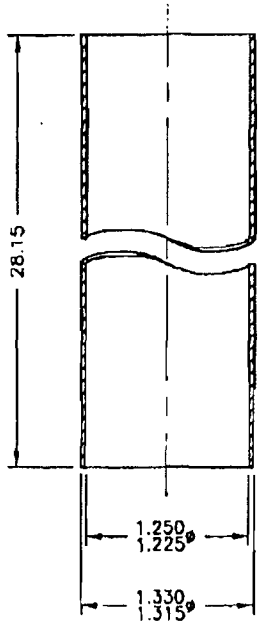
INFORMATION ONLY



MATL SPEC: 004-188-161
POLYCARBONATE TUBE
1.320ø x 1.220ø

N/A	AMERICAN DIAMOND TOOL	
N/A	INNER TUBE LINER POLYCARBONATE BNFL C88L 28.15 OAL	
A.R.THIEDE 7/30/01		
S.CHRISTENSON 7/30/01	SIZE A	DWG NO 029-713-008 REV C
B.L.EDWARDS 7/30/01	SCALE 1:1	WEIGHT .24 LBS SHEET 1 OF 1

029-713-023



MATL SPEC: TEFLON TUBE

	N/A	AMERICAN DIAMOND TOOL, Salt Lake City, Utah
	N/A	INNER TUBE LINER TEFLON BNFL CBBL 28.15 OAL
	A.R.THEDE 11/6/08 S.CHRISTENSEN 11/6/08 B.L.EDWARDS 11/6/08	A — 029-713-023 — REV SCALE 1:1 — WT .24 LBS — SHT 1 OF 1

Information Only

AMERICAN DIAMOND TOOL

Cleaning Procedures
MP10.2 Rev 00

1.0 Purpose

The purpose of this procedure is to set forth guidelines to follow for proper handling of parts during cleaning to ensure that all product is SW-846 Certified Clean.

2.0 Cleaning Procedures

- The parts will be separated by assembly into batches for cleaning.
- Bits, shoes, lifters and baskets will be grouped into batched quantities permitted by dishwasher size. There will be one of each part from a consumable assembly to permit full bagging of assembly following washing.
- Core liners and caps will be separated into 50 count assembly batches and cleaned separately from all other parts.
- An identification number will be established for each batch. The identification number will consist of the date of origin and a two digit number in series (e.g. first batch on date January 01, 2003 would be 010103-01).
- An "Equipment Batch Cleaning and Analysis Identification" sheet will be filled out for each batch. See attached sheet.
- Individual batches will be loaded into a washer for cleaning.
- The same cleaning procedure will used for all batches washed.
- The parts will be washed in an Alconox solution.
- The washer cycle consists of a wash and rinse.
- The parts will handled by clean gloves. A new set of gloves will be used for each wash.
- Parts will be pulled for Equipment Blank collection (Procedure MP10.3 Rev 00)..
- The parts that were used to collect the Equipment Blank (Procedure MP10.3 Rev 00) will be place into the washer along with the other parts to ensure that batches remain grouped together.
- The filled washer will be ran on a dry cycle (approximately 150 deg F).

- The dried parts will be immediately sealed in bags according to assemblies. To ensure that parts are not contaminated, the parts will remain in the clean room and clean towels will used for placement of parts on counter. Clean gloves will be used to handle any parts.

- The core liners will be sealed with the clean caps on both ends and bagged into the 50 count batch assemblies. The core liner bags do require complete sealing.

- All other consumables assemblies (bit, shoe, lifter and basket) require complete sealing of bag.

- The sealed bags will be identified with part and batch numbers.

- The bagged assemblies will be stored by batch in a clean area until analysis confirmation and BNFL has advised accordingly.

Equipment Batch Cleaning and Analysis Identification

Batch No. _____ Cleaning Date _____
BNFL Purchase Order No. _____ Analysis Date _____
Analysis No. _____

Batch Inventory

Quantity	Part Number	Comments/Observations

Analysis Results

Passed (yes/no) _____
Excess Analytes Detected

Analyte	Quantity Detected	Quantity Allowed	Comments

Copy of analyses shall be attached

Information Only

AMERICAN DIAMOND TOOL

Equipment Sampling Blank Procedures
MP10.3 Rev 00

1.0 Purpose

The purpose of this procedure is to set forth a list of steps to follow to ensure that the chemical analyses meet applicable quality requirements.

2.0 Procedure

- This procedure will require the presents of at least one Quality Assurance person. The QA person will both assist and ensure that sampling methods used are in accordance to Equipment Sampling Blank Procedures.

- Following cleaning (Procedure MP10.2 Rev 00), one full assembly will be randomly collected and separated for Equipment Blank collection. The Equipment Blank will be collected immediately after removal from washer.

- The separated samples will be maintained on a clean surface with clean absorbent towels underneath.

- One full assembly consists of one of each type included in a single batch wash.

- Following wash, rinse and drying cycles the sample parts will be only handled with laboratory grade gloves. A new set of gloves will be used for each batch sampling.

- All Equipment Blank procedures will be conducted with gloved hands in a clean room environment.

- At the time of Equipment Blank collection, a "Analysis Request Form/Chain of Custody" document will be filled out which includes; Sample Identification, Sample Date, Sample Time, Sampling Person.

- The Batch Cleaning Number will be used to identify the sample.

- Prior to Equipment Blank collection, all glass wear will be cleaned and rinsed with a HPLC water.

- The samples will be rinsed once with HPLC water, at which time the rinse will be caught in a HPLC cleaned and rinsed container.

- Approximately 2.5 liters will be rinsed across the parts to permit filling of laboratory supplied sample bottles.

- The SW-846 Equipment Blank sample bottles (supplied by laboratory) consist of the following:

  Two 525 one liter bottles with preservative for determination of semivolatiles

  One 358 one-half liter bottle with HNO_3 preservative for determination of metals

  Two 524 forty milliliter VOC bottles with HCl preservative for determination of volatiles.

  Two forty milliliter bottles with no preservative for determination of methanol.

- The 525 and 358 bottles (semivolatiles and metals) will be filled up to the neck.

- The 40 milliliter bottles (volatiles and methanol) will be filled until water bulges at the top. Lid will be replaced to prevent air head space. The bottle will be immediately turned upside down. If any air bubbles float to the top, the lid will be removed and more water sample will be added. This step will be repeated until no air bubbles are present. Any bottles found to contain air head space will be resampled.

- The sample bottle will be properly labeled with Batch Number, Sample Description, Sample Date and Time, Requested Analysis, Preservative Used, and the Samplers Signature.

- All filled sample bottles will be maintained on ice.

- After all samples are loaded into the cooler, a signed custody seal will be placed across the lid sealing the cooler for transport to laboratory.

- All samples must be received at the laboratory with 48 hours of sampling. Any samples received at the laboratory after 48 hours will require resampling of Equipment Blank.

- The Equipment Blank samples on ice, "Analysis Request Form/Chain of Custody" form, and tables listing compounds to be analyzed will be delivered to the lab.

- Upon delivery, the laboratory personnel will complete the "Analysis Request Form/Chain of Custody" form which includes; Relinquished By signature,

Received By signature, date and time, and Sample Receiving Temperature (Ice/No Ice).

- The rinsed parts will be place back in washer with the other HPLC batch rinsed parts for drying. The parts will then be removed at bagged according to Procedure MP10.2 Rev 00.

- A copy of the Analysis Request Form/Chain of Custody" form will remain on file in the clean room until analyses have been completed.

Cleaning Certificates of Analysis (SS-6)

Batch SSG12-00004

Copy 2

FOR INFORMATION
ONLY

I-CHEM™ Brand Products

Division of Chase Scientific Glass, Inc.

CERTIFICATE OF ANALYSIS

PRODUCTION NUMBER: 00051342

Item Number: S326-0020

Item Description: VIAL CLEAR
Group 3 is applicable

This is your Certificate of Analysis for I-CHEM Certified™ product which has been prepared in accordance with I-CHEM Performance-Based Specifications. This product meets or exceeds analyte specifications established in the U.S. EPA "Specification and Guidance for Contaminant-free Sample Containers" for use in Superfund and other hazardous waste programs.

Group 1. Glass and HDPE Sample containers for use in the analysis of Metals

Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)
Aluminum	<80	Calcium (all HDPE)	<100	Magnesium	<100	Selenium	<2
Antimony	<5	Chromium	<10	Manganese	<10	Silver	<5
Arsenic	<2	Cobalt	<10	Mercury	<0.2	Sodium	<5000
Barium	<20	Copper	<5	Nickel	<10	Sodium (all HDPE)	<100
Beryllium	<0.5	Iron	<50	Potassium	<750	Thallium	<5
Cadmium	<1	Lead	<2	Potassium (all HDPE)	<100	Vanadium	<10
Calcium	<500					Zinc	<10

In addition to the above analytes, NALGENE® containers are certified for these analytes:

Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)
Chloride	<100	Fluoride	<20	Nitrite	<50	Sulfate	<100
Cyanide	<10	Nitrate	<20	Paraquat (amber only)	<0.4	Sulfide	<30
Diquat (amber only)	<1.0					Sulfite	<1000

Group 2. Glass Sample Containers for use in the analysis of Semivolatiles and Pesticides/PCBs

Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)
Acenaphthene	<5	Acenaphthylene	<5	Anthracene	<5
Benzo(a)anthracene	<5	Benzo(a)pyrene	<5	Benzo(b)fluoranthene	<5
Benzo(k)Fluoranthene	<5	Benzo(g,h,i)perylene	<5	Benzoic Acid	<20
Benzyl Alcohol	<5	4-Bromophenyl-phenylether	<5	Butylbenzylphthalate	<5
4-Chloroaniline	<5	4-Chloro-3-methylphenol	<5	bis-(2-	<5
·Chloroethyl)ether	<5	bis-(2-Chloroisopropyl)ether	<5	Chloroethoxy)methane	<5
rophenol	<5	4-Chlorophenyl-phenylether	<5	2-Chloronaphthalene	<5
Di-n-butylphthalate	<5	Di-n-octylphthalate	<5	Chrysene	<5
Dibenzofuran	<5	1,2-Dichlorobenzene	<5	Dibenzo(a,h)anthracene	<5
1,3-Dichlorobenzene	<5	3,3'-Dichlorobenzidine	<5	1,4-Dichlorobenzene	<5
Diethylphthalate	<5	Dimethylphthalate	<5	2,4-Dichlorophenol	<5
4,6-Dinitro-2-methylphenol	<20	2,4-Dinitrophenol	<20	2,4-Dinitrotoluene	<5
2,6-Dinitrotoluene	<5	bis-(2-Ethylhexyl)phthalate	<5	Fluoranthene	<5
Fluorene	<5	Hexachlorobenzene	<5	Hexachlorobutadiene	<5
Hexachlorocyclopentadiene	<5	Hexachloroethane	<5	Indeno(1,2,3-cd)pyrene	<5
Isophorone	<5	2-Methylnaphthalene	<5	2-Methylphenol	<5
4-Methylphenol	<5	2-Nitroaniline	<20	3-Nitroaniline	<20
4-Nitroaniline	<20	N-Nitroso-di-n-propylamine	<5	N-Nitrosodimethylamine	<5
N-Nitrosodiphenylamine	<5	Naphthlene	<5	Nitrobenzene	<5
2-Nitrophenol	<5	4-Nitrophenol	<20	Pentachlorophenol	<20
Phenanthrene	<5	Phenol	<5	Pyrene	<5
1,2,4-Trichlorobenzene	<5	2,4,5-Trichlorophenol	<20	2,4,6-Trichlorophenol	<5
Azobenzene	<5	Carbazole	<5	Aldrin	<0.01
4,4-DDD	<0.02	Endosulfan II	<0.02	Alpha-BHC	<0.01
4,4-DDE	<0.02	Endosulfan Sulfate	<0.02	Beta-BHC	<0.01
4,4-DDT	<0.02	Endrin	<0.02	Delta-BHC	<0.01
Dieldrin	<0.02	Endrin Aldehyde	<0.02	Gamma-BHC	<0.01
Endosulfan I	<0.01	Heptachlor	<0.01	Heptachlor Epoxide	<0.01
Methoxychlor	<0.10	Endrin Ketone	<0.02	Alpha-Chlordane	<0.01
Gamma-Chlordane	<0.01	Toxaphene	<0.30	Aroclor-1016	<0.20
Aroclor-1221	<0.20	Aroclor-1232	<0.20	Aroclor-1242	<0.20
Aroclor-1248	<0.20	Aroclor-1254	<0.20	Aroclor-1260	<0.20
Aroclor-1262	<0.20	Aroclor-1268	<0.20		

Group 3. Glass Sample Containers for use inc the analysis of Volatiles

Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)
Acetone	<5	1,3-Dichloropropane	<1	Benzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1	1,2-Dichloropropane	<1
Bromodichloromethane	<1	trans-1,3-Dichloropropene	<1	Bromoform	<1
cis-1,3-Dichloropropene	<1	Bromomethane	<1	1,1-Dichloropropene	<1
2-Butanone	<5	Ethylbenzene	<1	tert-Butylbenzene	<1
Hexachlorobutadiene	<1	sec-Butylbenzene	<1	2-Hexanone	<5
'benzene	<1	Isopropylbenzene	<1	Carbon Disulfide	<1
opyltoluene	<1	Carbon Tetrachloride	<1	4-Methyl-2-pentanone	<5
Chloromethane	<1	Methylene Chloride	<2	Chloroethane	<1
1,1,2,2-Tetrachloroethane	<1	Chloroform	<1	n-Propylbenzene	<1
Dibromochloromethane	<1	Styrene	<1	2 & 4 Chlorotoluene	<1
1,2,3-Trichloropropane	<1	1,2-Dibromo-3-	<1	Tetrachloroethene	<1
1,4-Dichlorobenzene	<1	chloropropane	<1	1,2-Dibromoethane (EDB)	<1
1,1,1-Trichloroethane	<1	Toluene	<1	1,2,4-Trichlorobenzene	<1
Dichlorodifluoromethane	<1	Dibromomethane	<1	1,3-Dichlorobenzene	<1
1,2,3-Trichloropropane	<1	1,1,2-Trichloroethane	<1	Trichloroethene	<1
trans-1,2-Dichloroethene	<1	1,2-Dichlorobenzene	<1	1,2-Dichloroethene	<1
Vinyl Acetate	<5	Trichlorofluoromethane	<1	Bromochloromethane	<1
Xylenes (total)	<1	1,1-Dichloroethane	<1		
Vinyl Chloride	<1	1,3,5-Trimethylbenzene	<1		
		1,1-Dichloroethene	<1		
		1,2,4-Trimethylbenzene	<1		
		cis-1,2-Dichloroethene			

In addition to the above analytes in Group 3, 40 mL and 60 mL vials are certified for:

Compound	Quantitation Limit (µg/L)
Total Organic Carbon	<600

Please keep this certificate for your records and to facilitate any necessary correspondence. If additional information is required, contact our Technical Service Department at (800) 550-4964.

Deborah Robinson
QA Department
90037

Thermo Fisher Scientific
236 Cardiff Valley Road
Rockwood, TN 37854

THIRD PARTY I-CHEM CERTIFIED AUDITED™

Yurt C-9, 10
E-32

Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group B - Metals								
Antimony, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Arsenic, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Barium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Beryllium, Total, ICP	ND	0.001	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Cadmium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Chromium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Lead, Total, ICP	ND	0.07	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Mercury, Total, ICP/MS	0.0003	0.0002	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Nickel, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Selenium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Silver, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Thallium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Vanadium, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Zinc, Total, ICP	0.015	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Group D - Miscellaneous Tests								
Methanol	ND	5	mg/L	EPA 8015M	10/12/2005	13:34	PNM	
Group K - PCB's								
PCB-1221	ND	0.5	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1232	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1242/1016	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1248	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1254	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1260	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
Group N - Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Diphenylhydrazine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4,5-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dimethylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chloronaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylnaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitrophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3, 3'-Dichlorobenzidine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3+4-Methylphenols	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chlorophenyl-phenylether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzoic Acid	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzyl Alcohol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
bis (2-Chloroethoxy) methane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroethyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroisopropyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Ethylhexyl) phthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Butylbenzylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Carbazole	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Chrysene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzofuran	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Diethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dimethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-butylphthalate	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-octylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluorene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobutadiene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorocyclopentadiene	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachloroethane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Isophorone	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Naphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Nitrobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodimethylamine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitroso-di-n-propylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodiphenylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pentachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenanthrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyridine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichlorotrifluoroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromo-3-chloropropane	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromoethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Isopropyltoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Acetone	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Benzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromobenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromodichloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromoform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromomethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Carbon Disulfide	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Carbon tetrachloride	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chlorobenzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloromethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis 1,3-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis-1,2,-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromomethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dichlorodifluoromethane	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethyl Ether	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethylbenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isobutanol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isopropylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Ethyl Ketone (MEK)	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methylene Chloride	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
MTBE	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Naphthalene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butyl Alcohol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Propylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Pyridine	ND	500	ug/L	EPA 8260B	10/13/2005	7:19	RB	
sec-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Styrene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
tert-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Tetrachloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Toluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans 1,3 Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans-1,2-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Trichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Trichlorofluromethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Vinyl chloride	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - m+p	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Ortho	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Total	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter = 1 part per million.
1 ug/L = one microgram per liter = 1 part per billion.

Flag Descriptions

APH = The test was performed past the EPA specified holding time.
I = The analysis experienced a matrix interference which may have affected the results.
J = The result is positive and estimated. The result falls between the Minimum Reporting Limit and the Method Detection Limit.
L = A low bias is suspected.
O = The analysis was performed by an outside contract laboratory.
T = The value was summed by software from other analytes.
SPH = The sample was submitted for analysis past the EPA specified holding time.

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Paul Mattinson
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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801 262 7299 PHONE
801 262 7378 FAX

CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Matthew Bunn
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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Date: 10/24/05

American Diamond Tool
attn: Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

This is the final report for project: 74769
Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Labatory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at www.chemtechford.com.

Dave Gayer
Laboratory Director
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Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: David M Gayer
Dave Gayer, Laboratory Director

PRECLEANED CERTIFIED™

Certificate of Compliance

The enclosed containers have been chemically cleaned by using the specified USEPA cleaning procedures for low level chemical analysis. ESS containers meet and exceed the required detection limits established by theUSEPA in SPECIFICATIONS AND GUIDANCE FOR CONTAMINANT-FREE SAMPLE CONTAINERS.

EXTRACTABLE ORGANIC COMPOUNDS

Analyte	Quantitation Limit (ug/L)
Pesticides / PCBs	
Alpha-BHC	< 0.01
Beta-BHC	< 0.01
Delta-BHC	< 0.01
Gamma-BHC (Lindane)	< 0.01
Heptachlor	< 0.01
Aldrin	< 0.01
Heptachlor Epoxide	< 0.01
Endosulfan I	< 0.01
Dieldrin	< 0.02
4,4'-DDE	< 0.02
Endrin	< 0.02
Endosulfan II	< 0.02
4,4'-DDD	< 0.02
Endosulfan Sulfate	< 0.02
4,4'-DDT	< 0.02
Methoxychlor	< 0.10
Endrin Ketone	< 0.02
Endrin Aldehyde	< 0.02
Alpha-Chlordane	< 0.01
Gamma-Chlordane	< 0.01
Toxaphene	< 1.0
Aroclor-1016	< 0.20
Aroclor-1221	< 0.20
Aroclor-1232	< 0.20
Aroclor-1242	< 0.20
Aroclor-1248	< 0.20
Aroclor-1254	< 0.20
Aroclor-1260	< 0.20
Aroclor-1262	< 0.20
Aroclor-1268	< 0.20
Semivolatiles	
Phenol	< 5
bis-(2-Chloroethyl) ether	< 5
bis-(2-Chloroisopropyl) ether	< 5
2-Chlorophenol	< 5
2-Methylphenol	< 5
2,2'-Oxybis-(1-Chloropropane)	< 5
4-Methylphenol	< 5
N-Nitroso-di-n-propylamine	< 5
Hexachloroethane	< 5
Nitrobenzene	< 5
Isophorone	< 5
2-Nitrophenol	< 5
2,4-Dimethylphenol	< 5
bis-(2-Chloroethoxy) methane	< 5
2,4-Dichlorophenol	< 5
1,2,4-Trichlorobenzene	< 5
Naphthalene	< 5
4-Chloroaniline	< 5
Hexachlorobutadiene	< 5
4-Chloro-3-Methylphenol	< 5
2-Methylnaphthalene	< 5
Hexachlorocyclopentadiene	< 5
2,4,6-Trichlorophenol	< 5
2,4,5-Trichlorophenol	< 20
1,2-Diphenylhydrazene	< 5
Carbazole	< 5
2-Chloronaphthalene	< 5
2-Nitroaniline	< 20
Dimethylphthalate	< 5
Acenaphthylene	< 5
2,6-Dinitrotoluene	< 5
3-Nitroaniline	< 20
Acenaphthene	< 5
2,4-Dinitrophenol	< 20
4-Nitrophenol	< 20
Dibenzofuran	< 5
2,4-Dinitrotoluene	< 5
Diethylphthalate	< 5
4-Chlorophenyl-Phenylether	< 5
Flourene	< 5
4-Nitroaniline	< 20
4,6-Dinitro-2-Methyphenol	< 20
N-Nitrosodiphenylamine	< 5
N-Nitrosodimethylamine	< 5
4-Bromophenyl-Phenylether	< 5
Hexachlorobenzene	< 5
Pentachlorophenol	< 20
Phenanthrene	< 5
Anthracene	< 5
Di-n-Butylphthalate	< 5
Fluoroanthene	< 5
Pyrene	< 5
Butylbenzylphthalate	< 5
1,2'-Dichlorobenzene	< 5
1,3'-Dichlorobenzene	< 5
1,4'-Dichlorobenzene	< 5
3,3'-Dichlorobenzidine	< 5
Benzo[a]anthracene	< 5
Chyrsene	< 5
bis-(2-Ethylhexyl) Phthalate	< 5
Di-n-Octylphthalate	< 5
Benzo[b]flouranthene	< 5
Benzo[k]flouranthene	< 5
Benzo[a]pyrene	< 5
Indeno(1,2,3-cd)pyrene	< 5
Dibenzo[a,h]anthracene	< 5
Benzo[g,h,i]perylene	< 5
Benzoic Acid	< 20
Benzyl Alcohol	< 5

PURGEABLE VOLATILE ORGANIC COMPOUNDS

Analyte	Quantitation Limit (ug/L)
Acetone	< 5
Benzene	< 1
Bromoform	< 1
Bromobenzene	< 1
Bromochloromethane	< 1
Bromodichloromethane	< 1
Bromomethane	< 1
z-Butylbenzene	< 5
n-Butylbenzene	< 1
sec-Butylbenzene	< 1
tert-Butylbenzene	< 1
Carbon Tetrachloride	< 1
Carbon Disulfide	< 1
Chlorobenzene	< 1
Chloroethane	< 1
Chloromethane	< 1
2-Chlorotoluene	< 1
4-Chlorotoluene	< 1
2,4-Chlorotoluene	< 1
Chloroform	< 1
Dibromomethane	< 1
1,2-Dibro 3-Chloropropane	< 1
Dibromochloromethane	< 1
1,2-Dibromoethane (EDB)	< 1
1,2-Dichlorobenzene	< 1
1,3-Dichlorobenzene	< 1
1,4-Dichlorobenzene	< 1
Dichlorodifluoromethane	< 1
1,1-Dichloroethane	< 1
1,2-Dichloroethane	< 1
1,1-Dichloroethene	< 1
cis-1,2-Dichloroethene	< 1
trans-1,2-Dichloroethene	< 1
1,2-Dichloropropane	< 1
1,3-Dichloropropane	< 1
2,2-Dichloropropane	< 1
1,1-Dichloropropene	< 1
cis-1,3-Dichloropropene	< 1
trans-1,3-Dichloropropene	< 1
Ethylbenzene	< 1
2-Hexanone	< 5
Hexachlorobutadiene	< 1
Isopropylbenzene	< 1
4-Isopropyltoluene	< 1
Methylene Chloride	< 2
Naphthalene	< 1
Propylbenzene	< 1
Styrene	< 1
1,1,1,2-Tetrachloroethane	< 1
1,1,2,2-Tetrachloroethane	< 1
Tetrachloroethene	< 1
Toluene	< 1
1,2,3,-Trichlorobenzene	< 1
1,2,4,-Trichlorobenzene	< 1
1,1,1-Trichloroethane	< 1
1,1,2-Trichloroethane	< 1
Trichloroethene	< 1
Trichlorofluoromethane	< 1
Trichlorotrifluoroethane	< 1
1,2,3-Trichloropropane	< 1
1,2,3-Trimethylbenzene	< 1
1,2,4-Trimethylbenzene	< 1
1,3,5-Trimethylbenzene	< 1
Vinyl Acetate	< 5
Vinyl Chloride	< 1
Methyl-Tert-Butyl-Ether	< 1
4-Methyl-2-pentanone	< 5
o-xylene (1)	< 1
m-xylene (1)	< 1
p-xylene (1)	< 1

METALS, CYANIDE, & SULFIDE COMPOUNDS

Analyte	Detection Limit (ug/L)
Aluminum	< 80
Antimony	< 5
Arsenic	< 2
Barium	< 20
Barium (Amber HDPE)	< 50
Beryllium	< 0.5
Cadmium	< 1
Calcium	< 500
Calcium (HDPE)	< 100
Chromium	< 10
Cobalt	< 10
Copper	< 10
Iron	< 50
Lead	< 2
Magnesium	< 100
Manganese	< 10
Mercury	< 0.2
Nickel	< 20
Potassium	< 750
Potassium (HDPE)	< 100
Selenium	< 2
Silver	< 5
Sodium	< 5000
Sodium (HDPE)	< 100
Thallium	< 5
Vanadium	< 10
Zinc	< 10
Zinc (Amber HDPE)	< 500
Cyanide	< 10
Flouride	< 200
Nitrate+Nitrite	< 100

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group B - Metals								
Antimony, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Arsenic, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Barium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Beryllium, Total, ICP	ND	0.001	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Cadmium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Chromium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB.	
Lead, Total, ICP	ND	0.07	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Mercury, Total, ICP/MS	0.0009	0.0002	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Nickel, Total, ICP	0.010	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Selenium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Silver, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Thallium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Vanadium, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Zinc, Total, ICP	0.018	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Group D - Miscellaneous Tests								
Methanol	ND	5	mg/L	EPA 8015M	10/12/2005	13:34	PNM	
Group K - PCB's								
PCB-1221	ND	0.5	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1232	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1242/1016	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1248	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1254	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1260	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
Group N - Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Diphenylhydrazine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4,5-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dimethylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chloronaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylnaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitrophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3, 3'-Dichlorobenzidine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3+4-Methylphenols	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chlorophenyl-phenylether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzoic Acid	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzyl Alcohol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
bis (2-Chloroethoxy) methane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroethyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroisopropyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Ethylhexyl) phthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Butylbenzylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Carbazole	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Chrysene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzofuran	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Diethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dimethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-butylphthalate	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-octylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluorene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobutadiene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorocyclopentadiene	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachloroethane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Isophorone	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Naphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Nitrobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodimethylamine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitroso-di-n-propylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodiphenylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pentachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenanthrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyridine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name: American Diamond Tool
Sample Site: P091005 Pans
Sample ID: 05 12319
System No:
Sample Type: Water

Sample Date: 10/10/2005 12:52 PM
Receipt Date: 10/10/2005 4:20 PM
Sampler: CHRISTENSEN
Sample Source:

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichlorotrifluoroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromo-3-chloropropane	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromoethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Isopropyltoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Acetone	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Benzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromobenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromodichloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromoform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromomethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Carbon Disulfide	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Carbon tetrachloride	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chlorobenzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloromethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis 1,3-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis-1,2,-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromomethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dichlorodifluoromethane	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethyl Ether	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethylbenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isobutanol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isopropylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Ethyl Ketone (MEK)	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methylene Chloride	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
MTBE	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Naphthalene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butyl Alcohol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Propylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Pyridine	ND	500	ug/L	EPA 8260B	10/13/2005	7:19	RB	
sec-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Styrene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
tert-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Tetrachloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Toluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans 1,3 Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans-1,2-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Trichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Trichlorofluromethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Vinyl chloride	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - m+p	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Ortho	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Total	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter = 1 part per million.
1 ug/L = one microgram per liter = 1 part per billion.

Flag Descriptions

APH = The test was performed past the EPA specified holding time.
I = The analysis experienced a matrix interference which may have affected the results.
J = The result is positive and estimated. The result falls between the Minimum Reporting Limit and the Method Detection Limit.
L = A low bias is suspected.
O = The analysis was performed by an outside contract laboratory.
T = The value was summed by software from other analytes.
SPH = The sample was submitted for analysis past the EPA specified holding time.

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Paul Mattinson
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Matthew Burn
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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Fax: 801-262-7378

Date: 10/24/05

American Diamond Tool
attn: Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

This is the final report for project: 74769
Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Labatory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at www.chemtechford.com.

Dave Gayer
Laboratory Director
dave@chemtechford.com

Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: David M Gayer
Dave Gayer, Laboratory Director

1/17/2012

American Diamond Tool

Cleanliness Certification		
Procedures –	Pan	
1. Description	Items supplied by Bechtel for Cleanliness Certification	
2. Parts Inspected	10	
3. Quantity	10	
4. Drawing /Part #	92268369	
5. Dwg Rev.	N/A	
6. Batch No.	122111-01	
7. Batch Qty	10	
8. Serial No.	N/A	

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CHEMTECH-FORD
LABORATORIES

1/16/2012

Work Order: 1110827

American Diamond Tool

Attn: Scott Christensen

925 South 4400 West

Salt Lake City, UT 84104

Client Service Contact: Linda Daniels 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Approved By: Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Metals								
Antimony, Total	ND	0.0005	mg/L	12/30/2011 12:10	MJB	EPA 200.8	7440-36-0	
Arsenic, Total	ND	0.0005	mg/L	12/30/2011 12:10	MJB	EPA 200.8	7440-38-2	
Barium, Total	ND	0.005	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-39-3	
Beryllium, Total	ND	0.001	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-41-7	
Cadmium, Total	ND	0.005	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-43-9	
Chromium, Total	ND	0.005	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-47-3	
Lead, Total	ND	0.02	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7439-92-1	
Mercury, Total	0.0002	0.0002	mg/L	12/30/2011 12:10	MJB	EPA 200.8	7439-97-6	
Nickel, Total	ND	0.005	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-02-0	
Selenium, Total	ND	0.0005	mg/L	12/30/2011 12:10	MJB	EPA 200.8	7782-49-2	
Silver, Total	ND	0.005	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-22-4	
Thallium, Total	ND	0.0005	mg/L	12/30/2011 12:10	MJB	EPA 200.8	7440-28-0	
Vanadium, Total	ND	0.01	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-62-2	
Zinc, Total	ND	0.01	mg/L	1/12/2012 22:56	PNM	EPA 200.7	7440-66-6	
Miscellaneous Organics								
Methanol	ND	5	mg/L	12/23/2011 12:11	MAH	EPA 8015M	67-56-1	
PCBs								
PCB-1260	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	11096-82-5	
PCB-1254	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	11097-69-1	
PCB-1248	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	12672-29-6	
PCB-1242	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	53469-21-9	
PCB-1232	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	11141-16-5	
PCB-1221	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	11104-28-2	
PCB-1016	ND	2.0	ug/L wet	1/4/2012 16:14	MAM	EPA 8082	12674-11-2	

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CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	120-82-1	
1,2-Dichlorobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	95-50-1	
1,2-Diphenylhydrazine	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	122-66-7	
1,3-Dichlorobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	541-73-1	
1,4-Dichlorobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	106-46-7	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	58-90-2	
2,4,5-Trichlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	95-95-4	
2,4,6-Trichlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	88-06-2	
2,4-Dichlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	120-83-2	
2,4-Dimethylphenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	105-67-9	
2,4-Dinitrophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	51-28-5	
2,4-Dinitrotoluene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	121-14-2	
2,6-Dichlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	87-65-0	
2,6-Dinitrotoluene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	606-20-2	
2-Chloronaphthalene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	91-58-7	
2-Chlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	95-57-8	
2-Methylnaphthalene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	91-57-6	
2-Methylphenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	95-48-7	
2-Nitroaniline	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	88-74-4	
2-Nitrophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	88-75-5	
3 & 4-Methylphenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	106-44-5	
3,3'-Dichlorobenzidine	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	91-94-1	
3-Nitroaniline	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	99-09-2	
4-Chloroaniline	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	106-47-8	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	534-52-1	
4-Bromophenyl phenyl ether	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	101-55-3	
4-Chloro-3-methylphenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	59-50-7	
4-Chlorophenyl Phenyl Ether	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	7005-72-3	
4-Nitroaniline	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	100-01-6	
4-Nitrophenol	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	100-02-7	
Acenaphthene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	83-32-9	
Acenaphthylene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	208-96-8	
Aniline	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	62-53-3	
Anthracene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	120-12-7	

6100 South Stratler
Murray, UT 84107
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Semi-Volatile Compounds								
Azobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	103-33-3	
Benzo (a) anthracene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	56-55-3	
Benzo (a) pyrene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	50-32-8	
Benzo (b) fluoranthene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	205-99-2	
Benzo (g,h,i) perylene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	191-24-2	
Benzo (k) fluoranthene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	207-08-9	
Benzoic acid	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	65-85-0	
Benzyl Alcohol	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	100-51-6	
Bis (2-chloroethoxy) Methane	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	111-91-1	
Bis (2-chloroethyl) Ether	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	111-44-4	
Bis (2-chloroisopropyl) Ether	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	108-60-1	
Bis (2-ethylhexyl) Phthalate	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	117-81-7	
Butylbenzyl Phthalate	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	85-68-7	
Carbazole	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	86-74-8	
Chrysene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	218-01-9	
Dibenzo (a,h) anthracene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	53-70-3	
Dibenzofuran	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	132-64-9	
Diethyl phthalate	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	84-66-2	
Dimethyl phthalate	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	131-11-3	
Di-n-butyl phthalate	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	84-74-2	
Di-n-octyl phthalate	ND	50	ug/L	12/28/2011 13:25	MAH	EPA 8270C	117-84-0	
Diphenylamine	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	122-39-4	
Fluoranthene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	206-44-0	
Fluorene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	86-73-7	
Hexachlorobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	118-74-1	
Hexachlorobutadiene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	87-68-3	
Hexachlorocyclopentadiene	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	77-47-4	
Hexachloroethane	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	67-72-1	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	193-39-5	
Isophorone	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	78-59-1	
Naphthalene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	91-20-3	
Nitrobenzene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	98-95-3	
N-Nitrosodimethylamine	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	62-75-9	
N-Nitrosodi-n-propylamine	ND	20	ug/L	12/28/2011 13:25	MAH	EPA 8270C	621-64-7	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Semi-Volatile Compounds								
N-Nitrosodiphenylamine	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	86-30-6	
Pentachlorophenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	87-86-5	
Phenanthrene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	85-01-8	
Phenol	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	108-95-2	
Pyrene	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	129-00-0	
Pyridine	ND	5	ug/L	12/28/2011 13:25	MAH	EPA 8270C	110-86-1	
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	630-20-6	
1,1,1-Trichloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	71-55-6	
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	79-34-5	
1,1,2-Trichloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	79-00-5	
1,1,2-Trichlorotrifluoroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	76-13-1	
1,1-Dichloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-34-3	
1,1-Dichloroethene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-35-4	
1,1-Dichloropropene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	563-58-6	
1,2,3-Trichlorobenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	87-61-6	
1,2,3-Trichloropropane	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	96-18-4	
1,2,4-Trichlorobenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	120-82-1	
1,2,4-Trimethylbenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	95-63-6	
1,2-Dibromo-3-chloropropane	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	96-12-8	
1,2-Dibromoethane (EDB)	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	106-93-4	
1,2-Dichlorobenzene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	95-50-1	
1,2-Dichloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	107-06-2	
1,2-Dichloropropane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	78-87-5	
1,3,5-Trimethylbenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-67-8	
1,3-Dichlorobenzene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	541-73-1	
1,3-Dichloropropane	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	142-28-9	
1,4-Dichlorobenzene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	106-46-7	
2,2-Dichloropropane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	594-20-7	
2-Chlorotoluene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	95-49-8	
2-Nitropropane	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	79-46-9	
4-Chlorotoluene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	106-43-4	
4-Isopropyltoluene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	99-87-6	
Acetone	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	67-64-1	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Volatile Organic Compounds								
Benzene	ND	2.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	71-43-2	
Bromobenzene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-86-1	
Bromochloromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	74-97-5	
Bromodichloromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-27-4	
Bromoform	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-25-2	
Bromomethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	74-83-9	
Carbon Disulfide	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-15-0	
Carbon Tetrachloride	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	56-23-5	
Chlorobenzene	ND	2.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-90-7	
Chloroethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-00-3	
Chloroform	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	67-66-3	
Chloromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	74-87-3	
cis-1,2-Dichloroethene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	156-59-4	
cis-1,3-Dichloropropene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	10061-01-5	
Cyclohexanone	ND	100	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-94-1	
Dibromochloromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	124-48-1	
Dibromomethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	74-95-3	
Dichlorodifluoromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-71-8	
Ethyl Acetate	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	141-78-6	
Ethylbenzene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	100-41-4	
Ethyl Ether	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	60-29-7	
Hexachlorobutadiene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	87-68-3	
Isobutanol	ND	100	ug/L	12/22/2011 15:28	RB	EPA 8260B	78-83-1	
Isopropylbenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	98-82-8	
Methyl Ethyl Ketone	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	78-93-3	
Methyl Isobutyl Ketone	ND	50.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-10-1	
Methylene Chloride	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-09-2	
Methyl-tert-butyl ether (MTBE)	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	1634-04-4	
Naphthalene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	91-20-3	
n-Butyl Alcohol	ND	100	ug/L	12/22/2011 15:28	RB	EPA 8260B	71-36-3	
n-Butylbenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	104-51-8	
Nitrobenzene	ND	100	ug/L	12/22/2011 15:28	RB	EPA 8260B	98-95-3	
n-Propyl Benzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	103-65-1	
p-Isopropyltoluene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	99-87-6	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1110827-01

Name:	**American Diamond Tool**	***Sample Date:***	12/21/2011 12:11 PM
Sample Site:	122111-01	***Receipt Date:***	12/21/2011 2:52 PM
Comments:	ITG	***Sampler:***	Scott Christensen
Sample Matrix:	Water	***Project:***	

Parameter	Sample Result	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	CAS No.	Flag
Volatile Organic Compounds								
sec-Butyl Benzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	135-98-8	
Styrene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	100-42-5	
tert-Butylbenzene	ND	10.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	98-06-6	
Tetrachloroethene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	127-18-4	
Toluene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	108-88-3	
trans-1,2-Dichloroethene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	156-60-5	
trans-1,3-Dichloropropene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	10061-02-6	
Trichloroethene	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	79-01-6	
Trichlorofluoromethane	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-69-4	
Vinyl Chloride	ND	2.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	75-01-4	
Xylenes, total	ND	5.0	ug/L	12/22/2011 15:28	RB	EPA 8260B	1330-20-7	
Pyridine	ND	500	ug/L	12/22/2011 15:28	RB	EPA 8260B	110-86-1	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter or 1 mg/Kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

CHEMTECH-FORD
Laboratories

CHEMTECH-FORD LABORATORIES
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s): 1110827-01 AND -02

Analytical Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by the method(s).

for Rocky Baum 1-13-12

Signature Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by the method(s).

1/13/12

Signature Date

CHEMTECH-FORD LABORATORIES
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s): 1110827-01 AND -02

Analytical Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by the method(s).

Signature _____ Date 1/13/12

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by the method(s).

Signature _____ Date 1-13-12

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: American Diamond Tool
ADDRESS: 9255 4400 W
CITY/STATE/ZIP: Salt Lake City, UT 84104
PHONE #: 801 974 0403 FAX: 801 974 9063
CONTACT: Scott Christensen PROJECT: ITG
EMAIL: schristensen@americandiamondtool.net

BILLING ADDRESS: SAME
BILLING CITY/STATE/ZIP:
PURCHASE ORDER #: 122111-700

TURNAROUND REQUIRED:* standard
*Expedited turnaround subject to additional charge

CHEMTECH-FORD LABORATORIES

___ Mark 'X' here if you want a copy sent to DEQ Division of Drinking Water.

MATRIX
DW = Drinking Water
WW = Wastewater
W = Water
S = Soil
SO = Solid
SL = Sludge
O = Other

ANALYTICAL TESTS REQUESTED

Bacteriological
R = Routine
I = Investigative
TG = Trigger Source
CO = Confirmation

REPEAT
OR = Original Location
UP = Upstream
DN = Downstream

Lab ID #		SAMPLE NAME	SAMPLE DATE	SAMPLE TIME	Drinking Water FACILITY ID	8260	8270	PCB's	Methanol	Metals 200.8	Metals 200.7	Trichloroethene	Fluoranthene	Pyrene	Pyridine	FIELD: Residual Chlorine	Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	E. coli only	Repeat (Fail #)	SYSTEM #
10827																						
-01	1.	~~0107~~ 122111-01	12.21.11	1211		X	X	X	X	X	X	X	X	X	X							
-02	2.	122111-02	12.21.11	1247		X	X	X	X	X	X	X	X	X	X							
	3.																					
	4.																					
	5.																					
	6.																					
	7.																					
	8.																					
	9.																					
	10.																					

Sampled by: [print] Scott Christensen
Sampled by: [signature]

ON ICE NOT ON ICE

Special Instructions: ICE COOLER WAS TAPPED SHUT UPON ARRIVAL - DH 12.21.11

Relinquished by: [signature]	Date/Time 12.21.11 1452	Received by: [signature]	Date/Time 12.21.11 1452
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum). Client agress to pay collection costs and attorney's fees.

CHEMTECH-FORD LABORATORIES

Sample Receipt Checklist

Lab ID #: _____

Delivery Method: (circle one)

UPS FedEX USPS

(Walk-In) Courier Chemtech

Sample(s) sealed: Yes (No)

Appropriate container/preserve: (Yes) / No

Temperature 13 c°

	Lab ID #	Bottle Type	Lot # (preservative)	No. of Subsample(s)	Preserved by client / third party	Preserved in Receiving/Laboratory	Vials submitted with headspace	Sample submitted past hold time	Filtered by client in field
1	01	G1-2	–						
2		M	870						
3		X1-4	–						
4	02	G1-2	–						
5		M	870						
6		W1-4	849						
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Comments:

Bottle Type

Plastic		Glass	
A-	Plastic Unpreserved	D-	625 ($Na_2S_2O_3$)
B-	Miscellaneous Plastic	G-	Glass Unpreserved
C-	Cyanide Qt (NaOH)	H-	HAAs (NH_4Cl)
F-	Sulfide Qt (NaOH/Zn Acetate)	J-	508/515/525 (Na_2SO_3)
M-	Metals Pint (HNO_3)	O-	Oil & Grease (1:1 HCl)
N-	Nutrient Pint (H_2SO_4)	P-	Phenols (H_2SO_4)
R-	Radiological Gallon (HNO_3)	T-	TOC/TOX (H_3PO_4)
S-	Sludge Cups/Tubs	U-	531 (MCAA, $Na_2S_2O_3$)
Q-	Plastic Bags	V-	524/THMs (Ascorbic Acid)
E-	Coliform/Ecoli	W-	8260 (1:1 HCl)
Additional Volumes		X-	Vial Unpreserved
Q- quart	1/2pt- half pint	Y-	624/504 ($Na_2S_2O_3$)
P- pint	1/2- half gallon	Z-	Miscellaneous Glass

Cleaning Certificates of Analysis (SS-6)

Batch SSC12-00004

Copy 2

FOR INFORMATION ONLY

Polycarbonate Liner & Caps
029-713-008

Consumable Parts		
Procedures –	Liners	Liner Caps
1. Raw Material	Professional Plastics, Inc.	Niagara Caps & Plugs Order # 544140 PO # Internet 04/30/06
2. Parts Inspected	Shop Order # 9010	Yes
3. Quantity	30	60
4. Drawing /Part #	029-713-008	006-999-010
5. Dwg Rev.	-	-
6. Batch No.	110206-01	110206-01
7. Batch Qty	30	60

Part # 1102-06-01 thru 030

8-31-11

Aug 31, 2011

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Serving the Intermountain West since 1953

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Murray, UT 84107
Phone: 801-262-7299
Fax: 801-262-7378

Date: 11/09/06

American Diamond Tool
attn: Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

This is the final report for project: 81505
Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Laboratory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at www.chemtechford.com.

Dave Gayer
Laboratory Director
dave@chemtechford.com

Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: David M Gayer
Dave Gayer, Laboratory Director

Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group B - Metals								
Antimony, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	11/6/2006	9:23	MJB	
Arsenic, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	11/6/2006	9:23	MJB	
Barium, Total, ICP	ND	0.005	mg/L	EPA 200.7	11/6/2006	9:57	MJB	
Beryllium, Total, ICP	ND	0.001	mg/L	EPA 200.7	11/6/2006	9:57	MJB	
Cadmium, Total, ICP	ND	0.005	mg/L	EPA 200.7	11/6/2006	9:57	MJB	
Chromium, Total, ICP	ND	0.005	mg/L	EPA 200.7	11/6/2006	9:57	MJB	
Lead, Total, ICP	ND	0.07	mg/L	EPA 200.7	11/6/2006	9:58	MJB	
Mercury, Total, ICP/MS	ND	0.0002	mg/L	EPA 200.8	11/6/2006	9:23	MJB	
Nickel, Total, ICP	ND	0.01	mg/L	EPA 200.7	11/6/2006	9:58	MJB	
Selenium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	11/6/2006	9:24	MJB	
Silver, Total, ICP	ND	0.005	mg/L	EPA 200.7	11/6/2006	9:57	MJB	
Thallium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	11/6/2006	9:24	MJB	
Vanadium, Total, ICP	ND	0.01	mg/L	EPA 200.7	11/6/2006	9:58	MJB	
Zinc, Total, ICP	0.02	0.01	mg/L	EPA 200.7	11/6/2006	9:58	MJB	
Group D - Miscellaneous Tests								
Methanol	ND	5	mg/L	EPA 8015M	11/8/2006	13:17	RB	
Group K - PCB's								
PCB-1221	ND	5	ug/L	EPA 8082	11/7/2006	13:24	MLB	
PCB-1232	ND	2	ug/L	EPA 8082	11/7/2006	13:24	MLB	
PCB-1242/1016	ND	2	ug/L	EPA 8082	11/7/2006	13:24	MLB	
PCB-1248	ND	2	ug/L	EPA 8082	11/7/2006	13:24	MLB	
PCB-1254	ND	2	ug/L	EPA 8082	11/7/2006	13:24	MLB	
PCB-1260	ND	2	ug/L	EPA 8082	11/7/2006	13:24	MLB	
Group N - Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
1,2-Diphenylhydrazine	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,4,5-Trichlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	

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Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,4-Dichlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,4-Dimethylphenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,6-Dichlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Chloronaphthalene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Chlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Methylnaphthalene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Methylphenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Nitroaniline	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
2-Nitrophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
3, 3'-Dichlorobenzidine	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
3+4-Methylphenols	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
3-Nitroaniline	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4-Chloroaniline	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4-Chlorophenyl-phenylether	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4-Nitroaniline	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
4-Nitrophenol	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Acenaphthene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Acenaphthylene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Anthracene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzo (a) anthracene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzo (a) pyrene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzoic Acid	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Benzyl Alcohol	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	

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Certificate of Analysis

Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
bis (2-Chloroethoxy) methane	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
bis (2-Chloroethyl) ether	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
bis (2-Chloroisopropyl) ether	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
bis (2-Ethylhexyl) phthalate	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Butylbenzylphthalate	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Carbazole	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Chrysene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Dibenzofuran	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Diethylphthalate	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Dimethylphthalate	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Di-n-butylphthalate	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Di-n-octylphthalate	ND	50	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Fluoranthene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Fluorene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Hexachlorobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Hexachlorobutadiene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Hexachlorocyclopentadiene	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Hexachloroethane	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Isophorone	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Naphthalene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Nitrobenzene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
n-Nitrosodimethylamine	ND	20	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
n-Nitroso-di-n-propylamine	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
n-Nitrosodiphenylamine	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Pentachlorophenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Phenanthrene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Phenol	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Pyrene	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	
Pyridine	ND	5	ug/L	EPA 8270C	11/6/2006	11:55	RJ	

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Certificate of Analysis

Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1,2-Trichlorotrifluoroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1-Dichloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1-Dichloroethylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,1-Dichloropropene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2-Dibromo-3-chloropropane	ND	100	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2-Dibromoethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2-Dichloroethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,2-Dichloropropane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,3-Dichloropropane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
2-Chlorotoluene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
4-Chlorotoluene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
4-Isopropyltoluene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Acetone	ND	100	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Benzene	ND	2	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Bromobenzene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Bromochloromethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Bromodichloromethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Bromoform	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Bromomethane	ND	20	ug/L	EPA 8260B	11/7/2006	10:23	RB	

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Chemtech-Ford Laboratories
Certificate of Analysis

Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Carbon Disulfide	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Carbon Tetrachloride	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Chlorobenzene	ND	2	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Chloroethane	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Chloroform	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Chloromethane	ND	20	ug/L	EPA 8260B	11/7/2006	10:23	RB	
cis 1,3-Dichloropropylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
cis-1,2,-Dichloroethylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Dibromochloromethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Dibromomethane	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Dichlorodifluoromethane	ND	50	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Ethyl Ether	ND	50	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Ethylbenzene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Isobutanol	ND	100	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Isopropylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Methyl Ethyl Ketone (MEK)	ND	50	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Methylene Chloride	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
MTBE	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Naphthalene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
n-Butyl Alcohol	ND	100	ug/L	EPA 8260B	11/7/2006	10:23	RB	
n-Butylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
n-Propylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Pyridine	ND	500	ug/L	EPA 8260B	11/7/2006	10:23	RB	
sec-Butylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Styrene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
tert-Butylbenzene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Tetrachloroethylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Toluene	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
trans-1,2-Dichloroethylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
trans-1,3 Dichloropropylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	

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Certificate of Analysis

Lab No.: 06 12017
Lab Group No.: 81505

Name:	American Diamond Tool	*Sample Date:*	11/2/2006 12:55 PM
Sample Site:	110206-01	*Receipt Date:*	11/2/2006 2:45 PM
Sample ID:	06 12017	*Sampler:*	SC
System No:		*Sample Source:*	
Sample Type:	Water	*Project:*	Bechtel

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Trichloroethylene	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Trichlorofluromethane	ND	10	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Vinyl chloride	ND	2	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Xylene - m+p	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Xylene - Ortho	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	
Xylene - Total	ND	5	ug/L	EPA 8260B	11/7/2006	10:23	RB	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter = 1 part per million.
1 ug/L = one microgram per liter = 1 part per billion.

Flag Descriptions

APH = The test was performed past the EPA specified holding time.
H = A high bias is suspected.
I = The analysis experienced a matrix interference which may have affected the results.
J = The result is positive and estimated. The result falls between the Minimum Reporting Limit and the Method Detection Limit.
L = A low bias is suspected.
O = The analysis was performed by an outside contract laboratory.
R = The value represents a reanalysis.
SPH = The sample was submitted for analysis past the EPA specified holding time.

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 06 12017

Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Matthew Bunn
Signature

11-9-06
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

11/9/06
Date

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 06 12017

Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature _____ Date 11-9-06

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature _____ Date 11/9/06

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: American Diamond Tool
ADDRESS: 925 S. 4400 W.
CITY/STATE/ZIP: SLC UT 84104
PHONE #: 974 0403 FAX:
CONTACT: Scott C.
PROJECT: Bechtel SYSTEM #:

BILLING ADDRESS: SAME
BILLING CITY/STATE/ZIP:
PURCHASE ORDER #: 110206-700
TURNAROUND REQUIRED:* standard 2 week
*Expedited turnaround subject to additional charge

☐ Mark 'X' here if you want a copy sent to DEQ Division of Drinking Water.

8/505 E-mail Results (PDF and Excel Format) to schristensen@americandiamondtool.net
* Need Statement of Review & Validation

LAB ID#	SAMPLE LOCATION	SAMPLE DATE	SAMPLE TIME	Number of Containers	MATRIX: Drinking Water	Waste Water	Ground Water	Water	Soil	Other Solid	Sludge [Solid]	Sludge [Liquid]	Oil	Solvent	Other: [specify]	ANALYTICAL TESTS REQUESTED: 8270	8260	Methanol	Metals	See Attachment	no attachment
12017	1. 110206-01	11.2.6	12:55													X	X	X	X	X	
	2.																				
	3.																				
	4.																				
	5.																				
	6.																				
	7.																				
	8.																				
	9.																				
	10.																				

Sampled by: [print] Scott Christensen
Sampled by: [signature]
ON ICE / NOT ON ICE

Special Instructions:

Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
	1443 / 11.2.6	Matt Burn	11-2-06
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
			14:45

I-CHEM™
Brand Products
Division of Chase Scientific Glass, Inc.

CERTIFICATE OF ANALYSIS

PRODUCTION NUMBER: 00051342
Item Number: S326-0020
Item Description: VIAL CLEAR
Group 3 is applicable

This is your Certificate of Analysis for I-CHEM Certified™ product which has been prepared in accordance with I-CHEM Performance-Based Specifications. This product meets or exceeds analyte specifications established in the U.S. EPA "Specification and Guidance for Contaminant-free Sample Containers" for use in Superfund and other hazardous waste programs.

Group 1. Glass and HDPE Sample containers for use in the analysis of Metals

Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)
Aluminum	<80	Calcium (all HDPE)	<100	Magnesium	<100	Selenium	<2
Antimony	<5	Chromium	<10	Manganese	<10	Silver	<5
Arsenic	<2	Cobalt	<10	Mercury	<0.2	Sodium	<5000
Barium	<20	Copper	<5	Nickel	<10	Sodium (all HDPE)	<100
Beryllium	<0.5	Iron	<50	Potassium	<750	Thallium	<5
Cadmium	<1	Lead	<2	Potassium (all HDPE)	<100	Vanadium	<10
Calcium	<500					Zinc	<10

In addition to the above analytes, NALGENE® containers are certified for these analytes:

Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)	Analyte	Detection Limit (µg/L)
Chloride	<100	Fluoride	<20	Nitrite	<50	Sulfate	<100
Cyanide	<10	Nitrate	<20	Paraquat (amber only)	<0.4	Sulfide	<30
Diquat (amber only)	<1.0					Sulfite	<1000

Group 2. Glass Sample Containers for use in the analysis of Semivolatiles and Pesticides/PCBs

Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)
Acenaphthene	<5	Acenaphthylene	<5	Anthracene	<5
Benzo(a)anthracene	<5	Benzo(a)pyrene	<5	Benzo(b)fluoranthene	<5
Benzo(k)Fluoranthene	<5	Benzo(g,h,i)perylene	<5	Benzoic Acid	<20
Benzyl Alcohol	<5	4-Bromophenyl-phenylether	<5	Butylbenzylphthalate	<5
4-Chloroaniline	<5	4-Chloro-3-methylphenol	<5	bis-(2-	<5
·Chloroethyl)ether	<5	bis-(2-Chloroisopropyl)ether	<5	Chloroethoxy)methane	<5
·rophenol	<5	4-Chlorophenyl-phenylether	<5	2-Chloronaphthalene	<5
Di-n-butylphthalate	<5	Di-n-octylphthalate	<5	Chrysene	<5
Dibenzofuran	<5	1,2-Dichlorobenzene	<5	Dibenzo(a,h)anthracene	<5
1,3-Dichlorobenzene	<5	3,3'-Dichlorobenzidine	<5	1,4-Dichlorobenzene	<5
Diethylphthalate	<5	Dimethylphthalate	<5	2,4-Dichlorophenol	<5
4,6-Dinitro-2-methylphenol	<20	2,4-Dinitrophenol	<20	2,4-Dinitrotoluene	<5
2,6-Dinitrotoluene	<5	bis-(2-Ethylhexyl)phthalate	<5	Fluoranthene	<5
Fluorene	<5	Hexachlorobenzene	<5	Hexachlorobutadiene	<5
Hexachlorocyclopentadiene	<5	Hexachloroethane	<5	Indeno(1,2,3-cd)pyrene	<5
Isophorone	<5	2-Methylnaphthalene	<5	2-Methylphenol	<5
4-Methylphenol	<5	2-Nitroaniline	<20	3-Nitroaniline	<20
4-Nitroaniline	<20	N-Nitroso-di-n-propylamine	<5	N-Nitrosodimethylamine	<5
N-Nitrosodiphenylamine	<5	Naphthlene	<5	Nitrobenzene	<5
2-Nitrophenol	<5	4-Nitrophenol	<20	Pentachlorophenol	<20
Phenanthrene	<5	Phenol	<5	Pyrene	<5
1,2,4-Trichlorobenzene	<5	2,4,5-Trichlorophenol	<20	2,4,6-Trichlorophenol	<5
Azobenzene	<5	Carbazole	<5	Aldrin	<0.01
4,4-DDD	<0.02	Endosulfan II	<0.02	Alpha-BHC	<0.01
4,4-DDE	<0.02	Endosulfan Sulfate	<0.02	Beta-BHC	<0.01
4,4-DDT	<0.02	Endrin	<0.02	Delta-BHC	<0.01
Dieldrin	<0.02	Endrin Aldehyde	<0.02	Gamma-BHC	<0.01
Endosulfan I	<0.01	Heptachlor	<0.01	Heptachlor Epoxide	<0.01
Methoxychlor	<0.10	Endrin Ketone	<0.02	Alpha-Chlordane	<0.01
Gamma-Chlordane	<0.01	Toxaphene	<0.30	Aroclor-1016	<0.20
Aroclor-1221	<0.20	Aroclor-1232	<0.20	Aroclor-1242	<0.20
Aroclor-1248	<0.20	Aroclor-1254	<0.20	Aroclor-1260	<0.20
Aroclor-1262	<0.20	Aroclor-1268	<0.20		

Group 3. Glass Sample Containers for use inc the analysis of Volatiles

Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)	Compound	Quantitation Limit (µg/L)
Acetone	<5	1,3-Dichloropropane	<1	Benzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1	1,2-Dichloropropane	<1
Bromodichloromethane	<1	trans-1,3-Dichloropropene	<1	Bromoform	<1
cis-1,3-Dichloropropene	<1	Bromomethane	<1	1,1-Dichloropropene	<1
2-Butanone	<5	Ethylbenzene	<1	tert-Butylbenzene	<1
Hexachlorobutadiene	<1	sec-Butylbenzene	<1	2-Hexanone	<5
'benzene	<1	Isopropylbenzene	<1	Carbon Disulfide	<1
.opyltoluene	<1	Carbon Tetrachloride	<1	4-Methyl-2-pentanone	<5
Chloromethane	<1	Methylene Chloride	<2	Chloroethane	<1
1,1,2,2-Tetrachloroethane	<1	Chloroform	<1	n-Propylbenzene	<1
Dibromochloromethane	<1	Styrene	<1	2 & 4 Chlorotoluene	<1
1,2,3-Trichloropropane	<1	1,2-Dibromo-3-	<1	Tetrachloroethene	<1
1,4-Dichlorobenzene	<1	chloropropane	<1	1,2-Dibromoethane (EDB)	<1
1,1,1-Trichloroethane	<1	Toluene	<1	1,2,4-Trichlorobenzene	<1
Dichlorodifluoromethane	<1	Dibromomethane	<1	1,3-Dichlorobenzene	<1
1,2,3-Trichloropropane	<1	1,1,2-Trichloroethane	<1	Trichloroethene	<1
trans-1,2-Dichloroethene	<1	1,2-Dichlorobenzene	<1	1,2-Dichloroethene	<1
Vinyl Acetate	<5	Trichlorofluoromethane	<1	Bromochloromethane	<1
Xylenes (total)	<1	1,1-Dichloroethane	<1		
Vinyl Chloride	<1	1,3,5-Trimethylbenzene	<1		
		1,1-Dichloroethene	<1		
		1,2,4-Trimethylbenzene	<1		
		cis-1,2-Dichloroethene			

In addition to the above analytes in Group 3, 40 mL and 60 mL vials are certified for:

Compound	Quantitation Limit (µg/L)
Total Organic Carbon	<600

Please keep this certificate for your records and to facilitate any necessary correspondence. If additional information is required, contact our Technical Service Department at (800) 550-4964.

Deborah Robinson
QA Department
90037

Thermo Fisher Scientific
236 Cardiff Valley Road
Rockwood, TN 37854

THIRD PARTY AUDITED™ I-CHEM CERTIFIED

Yurt C-9, 10
E-32

Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group B - Metals								
Antimony, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Arsenic, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Barium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Beryllium, Total, ICP	ND	0.001	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Cadmium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Chromium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Lead, Total, ICP	ND	0.07	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Mercury, Total, ICP/MS	0.0003	0.0002	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Nickel, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Selenium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Silver, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Thallium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Vanadium, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Zinc, Total, ICP	0.015	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Group D - Miscellaneous Tests								
Methanol	ND	5	mg/L	EPA 8015M	10/12/2005	13:34	PNM	
Group K - PCB's								
PCB-1221	ND	0.5	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1232	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1242/1016	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1248	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1254	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1260	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
Group N - Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Diphenylhydrazine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4,5-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

6100 South Stratler
Murray, UT 84107
801-262-7299 Office
801-262-7378 Fax

Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dimethylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chloronaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylnaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitrophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3, 3'-Dichlorobenzidine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3+4-Methylphenols	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chlorophenyl-phenylether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzoic Acid	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzyl Alcohol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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801-262-7299 Office
801-262-7378 Fax

Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
bis (2-Chloroethoxy) methane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroethyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroisopropyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Ethylhexyl) phthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Butylbenzylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Carbazole	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Chrysene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzofuran	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Diethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dimethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-butylphthalate	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-octylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluorene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobutadiene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorocyclopentadiene	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachloroethane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Isophorone	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Naphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Nitrobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodimethylamine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitroso-di-n-propylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodiphenylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pentachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenanthrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyridine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Chemtech-Ford Laboratories
Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichlorotrifluoroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromo-3-chloropropane	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromoethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Isopropyltoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Acetone	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Benzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromobenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromodichloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromoform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromomethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	***Sample Date:***	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	***Receipt Date:***	10/10/2005 4:20 PM
Sample ID:	05 12320	***Sampler:***	CHRISTENSEN
System No:		***Sample Source:***	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Carbon Disulfide	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Carbon tetrachloride	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chlorobenzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloromethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis 1,3-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis-1,2,-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromomethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dichlorodifluoromethane	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethyl Ether	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethylbenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isobutanol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isopropylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Ethyl Ketone (MEK)	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methylene Chloride	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
MTBE	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Naphthalene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butyl Alcohol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Propylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Pyridine	ND	500	ug/L	EPA 8260B	10/13/2005	7:19	RB	
sec-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Styrene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
tert-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Tetrachloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Toluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans 1,3 Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans-1,2-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12320
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 1:15 PM
Sample Site:	J009387 SPAT	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12320	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Trichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Trichlorofluromethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Vinyl chloride	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - m+p	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Ortho	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Total	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter = 1 part per million.
1 ug/L = one microgram per liter = 1 part per billion.

Flag Descriptions

APH = The test was performed past the EPA specified holding time.
I = The analysis experienced a matrix interference which may have affected the results.
J = The result is positive and estimated. The result falls between the Minimum Reporting Limit and the Method Detection Limit.
L = A low bias is suspected.
O = The analysis was performed by an outside contract laboratory.
T = The value was summed by software from other analytes.
SPH = The sample was submitted for analysis past the EPA specified holding time.

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Paul Mattinson
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Matthew Burn
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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Phone: 801-262-7299
Fax: 801-262-7378

Date: 10/24/05

American Diamond Tool
attn: Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

This is the final report for project: 74769
Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Labatory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at www.chemtechford.com.

Dave Gayer
Laboratory Director
dave@chemtechford.com

Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: David M Gayer
Dave Gayer, Laboratory Director

Lab No: 03-U002899
Report Date: 4/24/03

American Diamond Tool
Attn. Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

CERTIFICATE OF ANALYSIS

Sample Description: J006443 BX 120 & 132 Spoons
Project: BNFL
Sample Matrix: WASTE WATER
Lab Group No: 59557
Date/Time Sampled: 4/ 7/03 , 14:50
Date/Time Received: 4/ 7/03 , 16:10
Sample Note(s):

Sample received on ice.

PARAMETER / UNITS	RESULT	MRL	DATE ANALYZED	METHOD	ANALYST
INORGANIC PARAMETERS					
Barium (T), as Ba, mg/L	< 0.005	0.005	4/21/03 9:44	EPA 200.7	MJB
Beryllium (T), as Be, mg/L	< 0.001	0.001	4/21/03 9:44	EPA 200.7	MJB
Cadmium (T), as Cd, mg/L	< 0.005	0.005	4/21/03 9:44	EPA 200.7	MJB
Chromium (T), as Cr, mg/L	< 0.005	0.005	4/21/03 9:44	EPA 200.7	MJB
Lead (T), as Pb, mg/L	< 0.07	0.07	4/21/03 9:44	EPA 200.7	MJB
Nickel (T), as Ni, mg/L	< 0.01	0.01	4/21/03 9:44	EPA 200.7	MJB
Silver (T), as Ag, mg/L	< 0.005	0.005	4/21/03 9:44	EPA 200.7	MJB
Vanadium (T), as V, mg/L	< 0.01	0.01	4/21/03 9:44	EPA 200.7	MJB
Zinc (T), as Zn, mg/L	< 0.01	0.01	4/21/03 9:44	EPA 200.7	MJB
Antimony (T) as Sb, mg/L	< 0.0005	0.0005	4/ 9/03 14:31	EPA 200.8	MJB
Arsenic (T), as As, mg/L	< 0.0005	0.0005	4/ 9/03 14:31	EPA 200.8	MJB
Mercury (T), as Hg, mg/L	< 0.0002	0.0002	4/ 9/03 14:31	EPA 200.8	MJB
Selenium (T), as Se, mg/L	< 0.0005	0.0005	4/ 9/03 14:31	EPA 200.8	MJB
Thallium (T) as Tl, mg/L	< 0.0005	0.0005	4/ 9/03 14:31	EPA 200.8	MJB
Temperature, Receiving, C	17		4/ 7/03 16:10	SM 2550B Mod	SPS

MRL = Minimum Reporting Limit

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

Lab No: 03-U002899
Report Date: 4/24/03

American Diamond Tool
Attn. Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

CERTIFICATE OF ANALYSIS

Sample Description: J006443 BX 120 & 132
Project: BNFL
Sample Matrix: WASTE WATER
Lab Group No: 59557
Date/Time Sampled: 4/ 7/03 , 14:50
Date/Time Received: 4/ 7/03 , 16:10
Sample Note(s):

Sample received on ice.

PARAMETER / Units	RESULT	MRL	METHOD
Volatiles			
Analyst: RB Date Analyzed: 4/11/03 Time: 6:31			
Acetone, ug/L	< 100	100	SW846-8260B
Methanol, mg/L	< 5	5	EPA 8015M
Benzene, ug/L	< 2	2	SW846-8260B
Bromoform, ug/L	< 5	5	SW846-8260B
n-Butyl Alcohol, ug/L	< 100	100	SW846-8260B
Carbon Disulfide, ug/L	< 5	5	SW846-8260B
Carbon Tetrachloride, ug/L	< 5	5	SW846-8260B
Chlorobenzene, ug/L	< 2	2	SW846-8260B
Chloroform, ug/L	< 5	5	SW846-8260B
1,2-Dichlorobenzene, ug/L	< 10	10	SW846-8260B
1,4-Dichlorobenzene, ug/L	< 10	10	SW846-8260B
1,2-Dichloroethane, ug/L	< 5	5	SW846-8260B
1,1-Dichloroethene, ug/L	< 5	5	SW846-8260B
trans-1,2-Dichloroethene, ug/L	< 5	5	SW846-8260B
Ethyl Ether, ug/L	< 50	50	SW846-8260B
Ethylbenzene, ug/L	< 5	5	SW846-8260B
Isobutanol, ug/L	< 100	100	SW846-8260B
Methyl Ethyl Ketone, ug/L	< 50	50	SW846-8260B
Methylene Chloride, ug/L	< 10	10	SW846-8260B
Pyridine, ug/L	< 600	600	SW846-8260B
1,1,2,2-Tetrachloroethane, ug/L	< 5	5	SW846-8260B
Tetrachloroethene, ug/L	< 5	5	SW846-8260B
Toluene, ug/L	< 10	10	SW846-8260B
1,1,1-Trichloroethane, ug/L	< 5	5	SW846-8260B
1,1,2-Trichloroethane, ug/L	< 5	5	SW846-8260B
Trichloroethene, ug/L	< 5	5	SW846-8260B

MRL = Minimum Reporting Limit

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
801 262 7299 PHONE
801 262 7378 FAX

Lab No: 03-U002899
Report Date: 4/24/03

American Diamond Tool
Attn. Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

CERTIFICATE OF ANALYSIS

Sample Description: J006443 BX 120 & 132
Project: BNFL
Sample Matrix: WASTE WATER
Lab Group No: 59557
Date/Time Sampled: 4/ 7/03 , 14:50
Date/Time Received: 4/ 7/03 , 16:10
Sample Note(s):

Sample received on ice.

PARAMETER / Units	RESULT	MRL	METHOD
Trichlorofluoromethane, ug/L	< 10	10	SW846-8260B
1,1,2-Trichlorotrifluoroethane, ug/L	< 50	50	SW846-8260B
Vinyl Chloride, ug/L	< 2	2	SW846-8260B
Xylenes, ug/L	< 5	5	SW846-8260B
m & p-Xylene, ug/L	< 5	5	SW846-8260B
o-Xylene, ug/L	< 5	5	SW846-8260B
Pesticides/PCBs			
Analyst: AER Date Analyzed: 4/22/03	Time: 12:44		
Extracted by:AER Date Extracted: 4/14/03	Extraction Method: 3510		
PCB Arochlor 1221, ug/Kg	< 1	1	SW-846 8082
PCB Arochlor 1232, ug/Kg	< 1	1	SW-846 8082
PCB Arochlor 1242/1016, ug/Kg	< 1	1	SW-846 8082
PCB Arochlor 1248, ug/Kg	< 1	1	SW-846 8082
PCB Arochlor 1254, ug/Kg	< 1	1	SW-846 8082
PCB Arochlor 1260, ug/Kg	< 1	1	SW-846 8082
Semi-Volatiles			
Analyst: AER Date Analyzed: 4/23/03	Time: 8:29		
Extracted by: AER Date Extracted: 4/14/03	Extraction Method: 525.2		
1,2-Dichlorobenzene, ug/L	< 5	5	SW 846 8270C
1,4-Dichlorobenzene, ug/L	< 5	5	SW 846 8270C
2,4-Dinitrophenol, ug/L	< 50	50	SW 846 8270C
2,4-Dinitrotoluene, ug/L	< 5	5	SW 846 8270C
Hexachlorobenzene, ug/L	< 5	5	SW 846 8270C
Hexachloroethane, ug/L	< 5	5	SW 846 8270C
2-Methylphenol, ug/L	< 5	5	SW 846 8270C

MRL = Minimum Reporting Limit

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Lab No: 03-U002899
Report Date: 4/24/03

American Diamond Tool
Attn. Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

CERTIFICATE OF ANALYSIS

Sample Description: J006443 BX 120 & 132
Project: BNFL
Sample Matrix: WASTE WATER
Lab Group No: 59557
Date/Time Sampled: 4/ 7/03 , 14:50
Date/Time Received: 4/ 7/03 , 16:10
Sample Note(s):

Sample received on ice.

PARAMETER / Units	RESULT	MRL	METHOD
3- and 4-Methylphenol, ug/L	< 5	5	SW 846 8270C
Nitrobenzene, ug/L	< 5	5	SW 846 8270C
Pentachlorophenol, ug/L	< 5	5	SW 846 8270C
Pyridine, ug/L	< 5	5	SW 846 8270C

MRL = Minimum Reporting Limit

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PRECLEANED CERTIFIED™

Certificate of Compliance

The enclosed containers have been chemically cleaned by using the specified USEPA cleaning procedures for low level chemical analysis. ESS containers meet and exceed the required detection limits established by theUSEPA in SPECIFICATIONS AND GUIDANCE FOR CONTAMINANT-FREE SAMPLE CONTAINERS.

EXTRACTABLE ORGANIC COMPOUNDS

Analyte	Quantitation Limit (ug/L)
Pesticides / PCBs	
Alpha-BHC	< 0.01
Beta-BHC	< 0.01
Delta-BHC	< 0.01
Gamma-BHC (Lindane)	< 0.01
Heptachlor	< 0.01
Aldrin	< 0.01
Heptachlor Epoxide	< 0.01
Endosulfan I	< 0.01
Dieldrin	< 0.02
4,4'-DDE	< 0.02
Endrin	< 0.02
Endosulfan II	< 0.02
4,4'-DDD	< 0.02
Endosulfan Sulfate	< 0.02
4,4'-DDT	< 0.02
Methoxychlor	< 0.10
Endrin Ketone	< 0.02
Endrin Aldehyde	< 0.02
Alpha-Chlordane	< 0.01
Gamma-Chlordane	< 0.01
Toxaphene	< 1.0
Aroclor-1016	< 0.20
Aroclor-1221	< 0.20
Aroclor-1232	< 0.20
Aroclor-1242	< 0.20
Aroclor-1248	< 0.20
Aroclor-1254	< 0.20
Aroclor-1260	< 0.20
Aroclor-1262	< 0.20
Aroclor-1268	< 0.20
Semivolatiles	
Phenol	< 5
bis-(2-Chloroethyl) ether	< 5
bis-(2-Chloroisopropyl) ether	< 5
2-Chlorophenol	< 5
2-Methylphenol	< 5
2,2'-Oxybis-(1-Chloropropane)	< 5
4-Methylphenol	< 5
N-Nitroso-di-n-propylamine	< 5
Hexachloroethane	< 5
Nitrobenzene	< 5
Isophorone	< 5
2-Nitrophenol	< 5
2,4-Dimethylphenol	< 5
bis-(2-Chloroethoxy) methane	< 5
2,4-Dichlorophenol	< 5
1,2,4-Trichlorobenzene	< 5
Naphthalene	< 5
4-Chloroaniline	< 5
Hexachlorobutadiene	< 5
4-Chloro-3-Methylphenol	< 5
2-Methylnaphthalene	< 5
Hexachlorocyclopentadiene	< 5
2,4,6-Trichlorophenol	< 5
2,4,5-Trichlorophenol	< 20
1,2-Diphenylhydrazene	< 5
Carbazole	< 5
2-Chloronaphthalene	< 5
2-Nitroaniline	< 20
Dimethylphthalate	< 5
Acenaphthylene	< 5
2,6-Dinitrotoluene	< 5
3-Nitroaniline	< 20
Acenaphthene	< 5
2,4-Dinitrophenol	< 20
4-Nitrophenol	< 20
Dibenzofuran	< 5
2,4-Dinitrotoluene	< 5
Diethylphthalate	< 5
4-Chlorophenyl-Phenylether	< 5
Flourene	< 5
4-Nitroaniline	< 20
4,6-Dinitro-2-Methyphenol	< 20
N-Nitrosodiphenylamine	< 5
N-Nitrosodimethylamine	< 5
4-Bromophenyl-Phenylether	< 5
Hexachlorobenzene	< 5
Pentachlorophenol	< 20
Phenanthrene	< 5
Anthracene	< 5
Di-n-Butylphthalate	< 5
Fluoroanthene	< 5
Pyrene	< 5
Butylbenzylphthalate	< 5
1,2'-Dichlorobenzene	< 5
1,3'-Dichlorobenzene	< 5
1,4'-Dichlorobenzene	< 5
3,3'-Dichlorobenzidine	< 5
Benzo[a]anthracene	< 5
Chyrsene	< 5
bis-(2-Ethylhexyl) Phthalate	< 5
Di-n-Octylphthalate	< 5
Benzo[b]flouranthene	< 5
Benzo[k]flouranthene	< 5
Benzo[a]pyrene	< 5
Indeno(1,2,3-cd)pyrene	< 5
Dibenzo[a,h]anthracene	< 5
Benzo[g,h,i]perylene	< 5
Benzoic Acid	< 20
Benzyl Alcohol	< 5

PURGEABLE VOLATILE ORGANIC COMPOUNDS

Analyte	Quantitation Limit (ug/L)
Acetone	< 5
Benzene	< 1
Bromoform	< 1
Bromobenzene	< 1
Bromochloromethane	< 1
Bromodichloromethane	< 1
Bromomethane	< 1
z-Butylbenzene	< 5
n-Butylbenzene	< 1
sec-Butylbenzene	< 1
tert-Butylbenzene	< 1
Carbon Tetrachloride	< 1
Carbon Disulfide	< 1
Chlorobenzene	< 1
Chloroethane	< 1
Chloromethane	< 1
2-Chlorotoluene	< 1
4-Chlorotoluene	< 1
2,4-Chlorotoluene	< 1
Chloroform	< 1
Dibromomethane	< 1
1,2-Dibro 3-Chloropropane	< 1
Dibromochloromethane	< 1
1,2-Dibromoethane (EDB)	< 1
1,2-Dichlorobenzene	< 1
1,3-Dichlorobenzene	< 1
1,4-Dichlorobenzene	< 1
Dichlorodifluoromethane	< 1
1,1-Dichloroethane	< 1
1,2-Dichloroethane	< 1
1,1-Dichloroethene	< 1
cis-1,2-Dichloroethene	< 1
trans-1,2-Dichloroethene	< 1
1,2-Dichloropropane	< 1
1,3-Dichloropropane	< 1
2,2-Dichloropropane	< 1
1,1-Dichloropropene	< 1
cis-1,3-Dichloropropene	< 1
trans-1,3-Dichloropropene	< 1
Ethylbenzene	< 1
2-Hexanone	< 5
Hexachlorobutadiene	< 1
Isopropylbenzene	< 1
4-Isopropyltoluene	< 1
Methylene Chloride	< 2
Naphthalene	< 1
Propylbenzene	< 1
Styrene	< 1
1,1,1,2-Tetrachloroethane	< 1
1,1,2,2-Tetrachloroethane	< 1
Tetrachloroethene	< 1
Toluene	< 1
1,2,3,-Trichlorobenzene	< 1
1,2,4,-Trichlorobenzene	< 1
1,1,1-Trichloroethane	< 1
1,1,2-Trichloroethane	< 1
Trichloroethene	< 1
Trichlorofluoromethane	< 1
Trichlorotrifluoroethane	< 1
1,2,3-Trichloropropane	< 1
1,2,3-Trimethylbenzene	< 1
1,2,4-Trimethylbenzene	< 1
1,3,5-Trimethylbenzene	< 1
Vinyl Acetate	< 5
Vinyl Chloride	< 1
Methyl-Tert-Butyl-Ether	< 1
4-Methyl-2-pentanone	< 5
o-xylene	< 1
m-xylene (1)	< 1
p-xylene (1)	< 1

METALS, CYANIDE, & SULFIDE COMPOUNDS

Analyte	Detection Limit (ug/L)
Aluminum	< 80
Antimony	< 5
Arsenic	< 2
Barium	< 20
Barium (Amber HDPE)	< 50
Beryllium	< 0.5
Cadmium	< 1
Calcium	< 500
Calcium (HDPE)	< 200
Chromium	< 10
Cobalt	< 10
Copper	< 10
Iron	< 50
Lead	< 2
Magnesium	< 100
Manganese	< 10
Mercury	< 0.2
Nickel	< 20
Potassium	< 750
Potassium (HDPE)	< 100
Selenium	< 2
Silver	< 5
Sodium	< 5000
Sodium (HDPE)	< 100
Thallium	< 5
Vanadium	< 10
Zinc	< 10
Zinc (Amber HDPE)	< 500
Cyanide	< 10
Flouride	< 200
Nitrate+Nitrite	< 100

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Quality Assurance Manager

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Chemtech-Ford Laboratories

Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group B - Metals								
Antimony, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Arsenic, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Barium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Beryllium, Total, ICP	ND	0.001	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Cadmium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Chromium, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Lead, Total, ICP	ND	0.07	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Mercury, Total, ICP/MS	0.0009	0.0002	mg/L	EPA 200.8	10/14/2005	12:48	MJB	
Nickel, Total, ICP	0.010	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Selenium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Silver, Total, ICP	ND	0.005	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Thallium, Total, ICP/MS	ND	0.0005	mg/L	EPA 200.8	10/14/2005	12:47	MJB	
Vanadium, Total, ICP	ND	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Zinc, Total, ICP	0.018	0.01	mg/L	EPA 200.7	10/12/2005	11:48	MJB	
Group D - Miscellaneous Tests								
Methanol	ND	5	mg/L	EPA 8015M	10/12/2005	13:34	PNM	
Group K - PCB's								
PCB-1221	ND	0.5	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1232	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1242/1016	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1248	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1254	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
PCB-1260	ND	0.2	ug/L	EPA 8082	10/17/2005	9:48	PNM	
Group N - Semi-Volatile Compounds								
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,2-Diphenylhydrazine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,3,4,6-Tetrachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4,5-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	***Sample Date:***	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	***Receipt Date:***	10/10/2005 4:20 PM
Sample ID:	05 12319	***Sampler:***	CHRISTENSEN
System No:		***Sample Source:***	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dimethylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dichlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chloronaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Chlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylnaphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
2-Nitrophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3, 3'-Dichlorobenzidine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3+4-Methylphenols	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
3-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chloroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Chlorophenyl-phenylether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitroaniline	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
4-Nitrophenol	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Acenaphthylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (a) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzoic Acid	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Benzyl Alcohol	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group N - Semi-Volatile Compounds								
bis (2-Chloroethoxy) methane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroethyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Chloroisopropyl) ether	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
bis (2-Ethylhexyl) phthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Butylbenzylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Carbazole	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Chrysene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dibenzofuran	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Diethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Dimethylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-butylphthalate	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Di-n-octylphthalate	ND	50	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluoranthene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Fluorene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorobutadiene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachlorocyclopentadiene	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Hexachloroethane	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Isophorone	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Naphthalene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Nitrobenzene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodimethylamine	ND	20	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitroso-di-n-propylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
n-Nitrosodiphenylamine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pentachlorophenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenanthrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Phenol	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyrene	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	
Pyridine	ND	5	ug/L	EPA 8270C	10/19/2005	6:40	RB	

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Certificate of Analysis

Lab No.: 05 12319
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Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1,2-Trichlorotrifluoroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,1-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromo-3-chloropropane	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dibromoethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloroethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,2-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,3-Dichloropropane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
2-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Chlorotoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
4-Isopropyltoluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Acetone	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Benzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromobenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromodichloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromoform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Bromomethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12319
Lab Group No.: 74769

Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Carbon Disulfide	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Carbon tetrachloride	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chlorobenzene	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloroform	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Chloromethane	ND	20	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis 1,3-Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
cis-1,2,-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromochloromethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dibromomethane	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Dichlorodifluoromethane	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethyl Ether	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Ethylbenzene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isobutanol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Isopropylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Ethyl Ketone (MEK)	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Methylene Chloride	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
MTBE	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Naphthalene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butyl Alcohol	ND	100	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
n-Propylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Pyridine	ND	500	ug/L	EPA 8260B	10/13/2005	7:19	RB	
sec-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Styrene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
tert-Butylbenzene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Tetrachloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Toluene	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans 1,3 Dichloropropene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
trans-1,2-Dichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

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Certificate of Analysis

Lab No.: 05 12319
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Name:	American Diamond Tool	*Sample Date:*	10/10/2005 12:52 PM
Sample Site:	P091005 Pans	*Receipt Date:*	10/10/2005 4:20 PM
Sample ID:	05 12319	*Sampler:*	CHRISTENSEN
System No:		*Sample Source:*	
Sample Type:	Water		

Parameter	Sample Result	Mimimum Reporting Limit	Units	Method	Analysis Date	Analysis Time	Analyst Initials	Flag
Group P - Volatile Organic Compounds								
Trichloroethylene	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Trichlorofluromethane	ND	10	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Vinyl chloride	ND	2	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - m+p	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Ortho	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	
Xylene - Total	ND	5	ug/L	EPA 8260B	10/13/2005	7:19	RB	

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter = 1 part per million.
1 ug/L = one microgram per liter = 1 part per billion.

Flag Descriptions

APH = The test was performed past the EPA specified holding time.
I = The analysis experienced a matrix interference which may have affected the results.
J = The result is positive and estimated. The result falls between the Minimum Reporting Limit and the Method Detection Limit.
L = A low bias is suspected.
O = The analysis was performed by an outside contract laboratory.
T = The value was summed by software from other analytes.
SPH = The sample was submitted for analysis past the EPA specified holding time.

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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 8260B, 8270C, 8015M, 8082

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Paul Mattinson
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

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SALT LAKE CITY UTAH 84107 6905
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CHEMTECH-FORD
STATEMENT OF DATA REVIEW AND VALIDATION

Laboratory Sample No(s).: 12319 - 12322

Method: 200.7, 200.8

Peer Review

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Matthew Burn
Signature

10-24-05
Date

Quality Assurance

I certify that I have reviewed and validated the data which supports the results generated for the samples specified above. All QC samples associated with this analytical run (batch) produced results in the designated recovery ranges required by this method.

Signature

10/24/05
Date

6100 SOUTH STRATLER
SALT LAKE CITY UTAH 84107 6905
~~801 262 7299 PHONE~~
801 262 7378 FAX

Chemtech-Ford Laboratories

Serving the Intermountain West since 1953

CHEMTECH-FORD Laboratories

6100 South Stratler
Murray, UT 84107
Phone: 801-262-7299
Fax: 801-262-7378

Date: 10/24/05

American Diamond Tool
attn: Scott Christensen
925 South 4400 West
Salt Lake City, UT 84104

This is the final report for project: 74769
Individual pages or sections of this report may not be separated when using the information for regulatory compliance.

The analyses presented on this report were performed in accordance with National Environmental Labatory Accreditation Program (NELAP), Section 5.13.

Please feel free to contact us at (801) 262-7299 or (801) 262-7378 (fax) if you have questions or comments regarding this report. Our web site is located at www.chemtechford.com.

Dave Gayer
Laboratory Director
dave@chemtechford.com

Linda Daniels
Customer Representative
linda@chemtechford.com

Approved By: David M Gayer
Dave Gayer, Laboratory Director

SOL9

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MAXIMO ITEM #	DESCRIPTION	BIN or SHELF NUMBER	VENDOR PRT #	COMMENTS
3729	2 inch vinyl tape (yellow, 2 in. by 36 yd.)	Rm 137 X-4 Rack. Yurt B-11, 12, K-14, 15, 20		
3730	6 inch vinyl tape (yellow, 6 in. by 36 yd.)	X-4 Rack. Yurt H-24		
3988	Tyvek Sleevettes (25 per pkg.)	Rm 137 A-Rack, Yurt F-43, 49. Yurt H-43	OA-1894P	
4745	Aero Rubber Band-Grade 1, 6 in. flat length, 1 in. wide, 0.063 wall thickness	Rm 137 X-3 Rack		
4345	Aero Rubber Band-Grade 1, 30.5 in. flat length, 1.5 in. wide, 0.063 wall thickness	Rm 137 Cab 9. Yurt H-38, 39, 40,41		
4672	5 in. Sample Bagging Sleeve, 72 in. long, 12 Mil PVC (DCSRS Only)	Yurt E-44	BOP # 908	
4673	8 in. Bag-out bag, CRL COMPATIBLE, 12 Mil PVC, 96 in. length	Rm 137 X-3 Rack, Yurt E-30, 33	BOP # 902	
4674	12 in. Bag-out Bag, CRL Compatible, 12 Mil PVC, 96 in. length (DCSRS Only)	Yurt E-33	BOP # 903	
4675	15 in. Bag-out Bag, CRL Compatible, 12 Mil PVC, 96 in length (DCSRS Only)	Yurt - 45	BOP # 906	
4676	Drum Lid Disposal Bag for 32.5 in. diameter port, 12 Mil PVC, 72 in. length (DCSRS only)	Yurt E-34, 41, 45, 52	BOP # 901	
4705	Drum Transfer Sleeve, 55-gallon, for 32.5 in. diameter port, 12 Mil PVC, 72 in. length (DCSRS only)	Yurt E-35, 36, M-42	BOP # 844	
10147	Drum Transfer Sleeve, 83/85-gallon, for 32.5 in. diameter port, 12 Mil PVC, 72 in. length (DCSRS only)		BOP # 925	
4715	N-DEX Nitrile powder free gloves (size large) **50 pr. per pkg**	Rm 137 M-2-Top	A-33671-20	
4716	N-DEX Nitrile powder free gloves (size extra-large) **50 pr. per pkg**	Rm 137 M-2-Top	A-33671-30	
4717	WHIRL-PAK Sterile Sample Bags **500 per case**	Rm 137 F-24	A-06499-40	
4718	Sterile Sampling Spoons 1/4 tsp. **200 per case (Require Pre-Cleaning Equipment Blanks)**	Rm 137 D-8	A-06263-10	
4719	Square Weigh Boats **500 per case (Require Pre-Cleaning Equipment Blanks)**	Rm 137 D-7	A-01017-15	
4720	Sterile Sampling Spatulas **100 per case (Require Pre-Cleaning Equipment Blanks)**	Yurt C-9, 10, E-32	A-06262-00	
4721	Vial, **Precleaned to EPA Method 1**, 20 ml. **72/case with C of C**	Rm 137 Cab 6, D-16	BH-99536-20	
4722	Jar, **Precleaned to EPA Method 1**, 125 ml. **24/case with C of C**	Rm 137 D-15	BH-99535-41	
4723	HEPA Filters with gaskets	Rm 137 Cab 6, D-8		
4724	Micro Filter Bags	Rm 137 E-8		
4725	Double Filter Bags	Rm 137 E-8		
4726	Nalgene Wide Mouth Jar - 1000 Ml. - Polymethylpentene	Rm 137 E-7	39066LL	
4728	10 in. by 14 in. plastic bags, 4 Mil, **500/case**	Rm 137 Cab 6	90424KW	
4729	18 in. by 24 in. plastic bags, 4 Mil, **250/case**	Rm 137 X-3 Rack	90452KW	
4730	Pistol Ratchet Shears	Rm 137 D-26	24875A74	
4731	Cardboard Tubes, 4 in OD by 14 in.length, with white litho outside and end caps	WMF-692, Mockup B-5, Yurt L-5		
4732	KIMTEX Wipers, Half-fold Polybag, **500/case**	Rm 137 X-2 Rack	2BV-2007	
4733	Workhorse Manufactured Rags **(150/Drag Box)**	Yurt H-45	2BV-22221	
4734	Band Clamp, T-bolt latch, 3/4 in. wide, 1/4 in. hardware, 300 series stainless. Range 32.25 inches to 32.90 inches ir	Rm 137 D-33		
4735	Band Clamp, T-bolt latch, 3/4 in. wide, 1/4 in. hardware, 300 series stainless. Range 4.40 inches to 4.71 inches in d	Rm 137 D-33		
4736	Hypalon glovebox gloves, 30 Mil, Ambidexterous, size 9 3/4	Rm 137 Floor, X-1, 2 Racks		
4737	Hypalon glovebox gloves, 15 Mil, Ambidexterous, size 9 3/4	Rm 137 X-2 Rack		
4738	8 in. ejectable plug assembly with Buna-N O-rings	Yurt L-5		
4739	8 in. glove support ring with Buna-N O-ring	Rm 137 D-29. Yurt L-6, M-2		
4740	8 in. bag support ring with Buna -N O-rings	Yurt L-1		

4741	12 in. bag support ring with Buna-N O-rings	Yurt I-13		
4742	12 in. locking ring	Rm 137 F-3		
4743	15 in. bag support ring with Buna-N O-rings	Rm 137 D-18. Yurt I-10,12		
4744	15 in. locking ring	Rm 137 F-4		
4747	BIT TIP ASSEMBLY FOR PUNCH CORE BARREL--DRILL BIT **(Require Pre-Cleaning Equipment Blanks)**	Rm 137 CAB-7 Top	029-713-031	
4748	BIT TIP ASSEMBLY FOR CEMENT CORE BARREL WITH A'3 SET CUTTER BIT **(Require Pre-Cleaning Equipme**	Rm 137 CAB-7. Yurt F-27,28	029-713-025	
4749	BIT TIP ASSEMBLY FOR CEMENT CORE BARREL WITH SURFACE SET BIT **(Require Pre-Cleaning Equipment**	Rm 137 CAB-7. Yurt F-29, 30	029-713-026	
4750	BIT TIP ASSEMBLY FOR PARFAIT CORE BARREL WITH SUFACE SET BIT **(Require Pre-Cleaning Equipment**	Rm 137 CAB-7. Yurt F-33, 35, 36	029-713-027	
4751	POLYCARBONATE INNER TUBE LINER WITH CAPS **(Require Pre-Cleaning Equipment Blanks)**	25	029-713-008	
4752	TEFLON INNER TUBE LINER WITH CAPS **(Require Pre-Cleaning Equipment Blanks)**	Yurt F-31	029-713-023	
4753	CEMENT CORE BARREL FOR 3 CUTTER BIT	Coring Vestibule	029-713-001	
4754	CEMENT CORE BARREL FOR SURFACE SET DIAMOND BIT	Yurt A-25	029-713-032	
4755	PARFAIT CORE BARREL FOR SURFACE SET DIAMOND BIT	Yurt A-25	029-713-002	
4756	PUNCH CORE BARREL--DRILL BIT		029-713-019	
5680	CORE TUBE LINER END CAPS - Pkgs of 25 -**(Require Pre-Cleaning Equipment Blanks)**	Rm 137 D-25. Yurt F-22		
5681	BULK PUSH-RODS 3/4 INCH OD BY 6 INCH LENGTH **(Require Pre-Cleaning Equipment Blanks)**	Rm 137 F-13		
6006	Double Sided Tape, 1.5 in. X 150 ft. roll	Yurt H-11,12	BOP	
6025	Glove Cotton Liners (12 pr.per pkg.)	Rm 137 M-2 Middle	312X14D	
6376	DRUM LIDS, 55-GALLON WITH BUNG	Mock-up Floor		
6891	HIGH VACUUM GREASE	Rm 137 B-8, 9	A-79751-30	
6956	EM* ColorpHast Strips	Rm 137 E-1	EM-9590-3	
6957	SEA SAND **(Must be shaked and baked at RML lab prior to use)**	Rm 137 F-11	A-88022-08	
6958	YELLOW CHINA MARKER	Rm 137 E-1	A-09967-04	
6959	Black China Marker	Rm 137 E-1	A-09967-06	
6960	SECURITY SEAL-DO NOT TAMPER 3/8IN.X 100 ft. Roll	Rm 137 F-11	5349	
6961	SECURITY SEAL-DO NOT TAMPER 1 3/8IN.X 6 5/8 IN.	Rm 137 F-11	66673	
6987	8 in. Gloveport Locking Ring	Yurt I-12		
7046	55 GALLON DRUM LID LOCKING RING WITH BOLT AND LOCK NUT	Mock-up Floor		
7079	N-DEX Nitrile powder free gloves (size medium) **50 pr. per pkg**	Rm 137 M-2-Top	A-33671-10	
7086	1000mL Nalgene Beaker	Yurt J-27, 34, 35	A-06001-93	
7105	Tongs	Rm 137 F-13	A-06443-00	
7109	Brush, anti static	Rm 137 F-10	A-46300-21	
7118	56 in by 37 in. plastic bags, 55 gallon, 10 Mil	Yurt K-10, 11	24223LL	
7662	Aquaset II-G absorbant (50 lb bag)	Mock-up A6, 9, 12	Aquaset II-G	
7672	Lightweight PVC Cutters	Rm 137 F-18	3691A51	
7673	Medium Duty Ratchet Action PVC Cutters	Rm 137 F-6	8336A15	
7674	Heavy Duty Ratchet Action PVC Cutters, 17 1/4 in.	None In Stock	8336A12	
7697	Jar, **Precleaned to EPA Method 1**, 500 ml., **12/case with C of C**	Rm 137 D-31, 32, 39	A-99535-52	
7701	Mini DV Tapes / 80-120 min.	Rm 137 F-27	432390060	
7953	Scoop, 24 oz.	Rm 137 F-20	A-07207-04	
8619	Petroset II-G **(50 lb. Bag)**	Mock-up A6	Petroset II-G	
8717	Talcum powder	Rm 137 Y-8 Rack		

8807	16 inch channel lock pliers	Rm 137 D-17		
8824	Tamper proof custody seals	Rm 137 D-28	0006-5000	
8995	VHS Tapes	Yurt H-9		
9541	Roto-Zip Bits	Rm 137 C-38		
15642	Dasco Brick Set Masonry Chisel **(Require Pre-Cleaning Equipment Blanks)**	Yurt	2020337	
15643	11.5 X 17.75 X 2.25 Grid Sample Pan (L-Pan) **(Require Pre-Cleaning Equipment Blanks)**	Yurt	92268369	
15644	9 X 13 Grid Sample Pan (S-Pan) **(Require Pre-Cleaning Equipment Blanks)**	Yurt	68076	

Org: AMWTP

Sampler:KREMIN,M

Sample Desc:_Solids_

Cont ID: 10441519

Sample ID:10456862
Date:26-Aug-12 14:50
Analysis:PVOC

Initials: _____

QC Desi:Initial

FOR INFORMATION ONLY

Org: AMWTP

Sampler:KREMIN,M

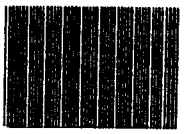
Sample Desc:_Solids_

Cont ID: 10441519

Sample ID:10456862
Date:26-Aug-12 14:50
Analysis:PVOC

Initials: _____

QC Desi:Initial



SOL11

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CUSTODY SEAL

ENVIRONMENTAL SAMPLING SUPPLY
9601 San Leandro St. Oakland, CA 800-233-8425

Date: _____

Signature: _____

ALD LOG # 1206181

AMWTP

Chain Of Custody

Print Date: 18-Jun-2012
Print Time: 08:53
COC No.: 0000547
Page 1 of 2

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00003	10441525	SR-259	10446332	15-Jun-2012	12:03	20 / ml	2.88 / gms	PVOC	Jesse Howard		
SSC12-00003	10441525	SR-259	10446333	15-Jun-2012	12:06	20 / ml	2.80 / gms	NHVOC	Jesse Howard		
SSC12-00003	10441525	SR-259	10446334	15-Jun-2012	12:10	20 / ml	12.45 / gms	NHVOC	Jesse Howard	Hydrazine sample	
SSC12-00003	10441525	SR-259	10446335	15-Jun-2012	12:14	20 / ml	12.43 / gms	NHVOC	Jesse Howard	Formaldahyde sample	
SSC12-00003	10441525	SR-259	10446336	15-Jun-2012	12:17	20 / ml	2.86 / gms	SPARE	Jesse Howard	SPARE 1	
SSC12-00003	10441525	SR-259	10446337	15-Jun-2012	12:19	20 / ml	2.68 / gms	SPARE	Jesse Howard	SPARE 2	
SSC12-00003	10441525	SR-259	10446338	15-Jun-2012	12:19	125 / ml	35.00 / gms	SVOC, METALS	Jesse Howard		
SSC12-00003	10441525	SR-259	10446350	15-Jun-2012	14:33	20 / ml	2.93 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 1	
SSC12-00003	10441525	SR-259	10446351	15-Jun-2012	14:34	20 / ml	2.89 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 2	
SSC12-00003	10441525	SR-259	10446352	15-Jun-2012	14:34	20 / ml	2.98 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 3	
SSC12-00003	10441525	SR-259	10446353	15-Jun-2012	14:35	20 / ml	12.44 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 4	
SSC12-00003	10441525	SR-259	10446354	15-Jun-2012	14:36	20 / ml	12.42 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Jesse Howard	Electronically signed in WTS	15-JUN-12 18:11:08	
Received By	Conley Beebe	Electronically signed in WTS	15-JUN-12 18:11:08	
Relinquished By	Conley Beebe	Electronically signed in WTS	16-JUN-12 07:55:45	
Received By	Michael Kremin	Electronically signed in WTS	16-JUN-12 07:55:45	
Relinquished By	Michael Kremin		18-Jun-12 0904	
Received By	David J. Preston		6/18/12 0904	

FOR INFORMATION ONLY

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ALD LOG #
1206181

AMWTP

Chain Of Custody

Print Date: 18-Jun-2012
Print Time: 08:53
COC No.: 0000547
Page 2 of 2

Relinquished By	David J. Preston	David J Preston	6/18/12	0907	FGE value of parent drum used for transfer to the lab. On Site Transfer Transfer Container # 2 TID # 550715 David J Preston 6/18/12
Received By	Bill Strong		6-18-12	1100	
Relinquished By					
Received By					
Relinquished By					
Received By					

COPY OF IN-PROCESS RECORD

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Print Date: 18-Jun-2012
Print Time: 08:46
COC No.: 0000548
Page 1 of 2

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00003	10441525	SR-259	10446339	15-Jun-2012	12:33	20 / ml	2.86 / gms	PVOC	Jesse Howard	PVOC 1	
SSC12-00003	10441525	SR-259	10446340	15-Jun-2012	12:35	20 / ml	2.84 / gms	PVOC	Jesse Howard	PVOC 2	
SSC12-00003	10441525	SR-259	10446341	15-Jun-2012	12:37	20 / ml	2.74 / gms	PVOC	Jesse Howard	PVOC 3	
SSC12-00003	10441525	SR-259	10446342	15-Jun-2012	12:39	20 / ml	2.80 / gms	NHVOC	Jesse Howard	NHVOC 1	
SSC12-00003	10441525	SR-259	10446343	15-Jun-2012	12:42	20 / ml	3.00 / gms	NHVOC	Jesse Howard	NHVOC 2	
SSC12-00003	10441525	SR-259	10446344	15-Jun-2012	12:43	20 / ml	2.83 / gms	NHVOC	Jesse Howard	NHVOC	
SSC12-00003	10441525	SR-259	10446345	15-Jun-2012	12:47	20 / ml	12.28 / gms	NHVOC	Jesse Howard	Hydrazine sample	
SSC12-00003	10441525	SR-259	10446346	15-Jun-2012	12:51	20 / ml	12.43 / gms	NHVOC	Jesse Howard	Formaldahyde sample	
SSC12-00003	10441525	SR-259	10446347	15-Jun-2012	12:53	20 / ml	2.90 / gms	SPARE	Jesse Howard	SPARE 1	
SSC12-00003	10441525	SR-259	10446348	15-Jun-2012	12:55	20 / ml	2.83 / gms	SPARE	Jesse Howard	SPARE 2	
SSC12-00003	10441525	SR-259	10446349	15-Jun-2012	13:00	125 / ml	39.50 / gms	SVOC, METALS	Jesse Howard		
SSC12-00003	10441525	SR-259	10446355	15-Jun-2012	14:39	20 / ml	2.63 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 1	
SSC12-00003	10441525	SR-259	10446356	15-Jun-2012	14:40	20 / ml	3.00 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 2	
SSC12-00003	10441525	SR-259	10446357	15-Jun-2012	14:41	20 / ml	2.96 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 3	
SSC12-00003	10441525	SR-259	10446358	15-Jun-2012	14:41	20 / ml	12.16 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 4	
SSC12-00003	10441525	SR-259	10446359	15-Jun-2012	14:42	20 / ml	12.40 / gms	TRIP BLANK	Jesse Howard	TRIP BLANK 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Jesse Howard	Electronically signed in WTS	15-JUN-12 18:13:10	
Received By	Conley Beebe	Electronically signed in WTS	15-JUN-12 18:13:10	
Relinquished By	Conley Beebe	Electronically signed in WTS	16-JUN-12 07:53:20	
Received By	Michael Kremin	Electronically signed in WTS	16-JUN-12 07:53:20	
Relinquished By	Michael Kremin		18-June 2012 0852	
Received By	David J. Preston		6/18/12 0852	

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1206181

AMWTP

Chain Of Custody

Print Date: 18-Jun-2012
Print Time: 08:46
COC No.: 0000548
Page 2 of 2

Relinquished By	David J. Preston	David J Preston	6/18/12 0856	FGE value of parent drum used for transfer to the lab. On Site Transfer
Received By	Bill Strong		6-18-12 1100	Transfer Container # 1 TID # 550736 David J Preston 6/18/12
Relinquished By				
Received By				
Relinquished By				
Received By				

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Sample Equipment Cleaning, Preparation of Equipment Blanks, and Component Labeling provided by American Diamond Tool

Statement of Work
Advanced Mixed Waste Treatment Project

Idaho Treatment Group, LLC

Revision: 1

Date: July 25, 2012

FOR INFORMATION ONLY

1. SCOPE

American Diamond Tool (Subcontractor) is requested to perform technical support of Idaho Treatment Group's (Contractor) Coring / Sampling Operations. This work shall include preparing equipment blank samples on disposable plastic sampling tools, cleaning and preparation of equipment blanks on industrial grade items, and shipping these prepared equipment blank samples to Chemtech Ford Analytical Laboratories in Salt Lake City, Utah, for analysis. These items shall include sampling spoons, spatulas, weigh boats, sample grid pans, and chisels.

Contractor has purchased disposable sampling tools that are either, sterile and sealed in individual packages (spoons and spatulas), bulk packaged as standard laboratory grade items (weigh boats), or packaged as industrial grade items (sample grid pans and chisels.)

In addition, Contractor requests that additional labeling be supplied on the coring bit tip packaging as documented in the Technical Requirements/Tasks Section.

2. TECHNICAL REQUIREMENTS/TASKS

Subcontractor processing of disposable plastic sampling equipment shall be as follows:

Equipment blanks shall be performed on a purchased batch basis for this sampling equipment. A purchased batch shall be defined as all spatulas, spoons, and or weighing boats manufactured under the same manufacturers lot number.

Contractor personnel shall select two tools per 100 count per manufacturer's lot number, for those items that are sterile and individually wrapped, or 10 items per 500 count, per manufacturer's lot number, for those that are not purchased sterile or individually wrapped.

Contractor personnel shall generate the Batch Number(s) for each manufacturer's lot. The secondary packaging containing the tools shall be labeled with the Purchase Order (PO) number, and the Contractor batch number.

Contractor personnel shall ship these items to Subcontractor.

Subcontractor shall perform the equipment blank preparation, containerizing, and shipping to the Chemtech Ford Analytical Laboratories in Salt Lake City, Utah, in accordance with Item 1 below.

1. Equipment blanks on disposable plastic sampling equipment shall be prepared as follows:
   - Pre-cleaning shall not be required since these tools are new and never used.
   - Handle each bag labeled with a different Purchase Order number / Batch number as a separate equipment blank preparation event.
   - Do not handle sampling equipment with bare hands. Use a clean pair of surgical gloves.
   - Perform a single rinse of the sampling tool(s) using a sufficient amount of clean water (HPLC) poured over the surface of the tool(s).
   - Collect the laboratory required amount of the rinsate into SW-846 clean containers in accordance with MP 10.3 Rev.00, American Diamond Tool (ADT) Equipment Sampling Blank Procedures.
   - Label the containers using the Contractor batch number (plastic tools only) as the sample number.
   - Package and ship the samples to the laboratory in accordance with ADT MP 10.3 Rev. 00.

   Disposable plastic tools used for equipment blank testing do not have to be returned to Contractor.

Subcontractor processing of Industrial Grade Sampling Equipment (grid pans and chisels) shall be as follows:

- Prior to cleaning the chisels in accordance with MP 10.2 Rev. 00, American Diamond Tool Cleaning Procedures, remove the paint from the chisel head using a grit or bead blasting method, as appropriate.
- Perform cleaning of equipment in accordance with ADT MP 10.2 Rev. 00 with the following clarifications:
  - Subcontractor will establish a batch number in accordance with ADT MP 10.2 Rev. 00
  - Grid pans and chisels shall be cleaned in separate batches and shall not be cleaned with other Contractor or Subcontractor equipment assemblies.
  - Grid pans and chisels shall be individually bagged. The bags shall be labeled with the batch and part number.
  - The part number for the grid pans is 92268369
  - The part number for the chisels is 2020337-G436
  - Serial numbers shall not be required.

Perform equipment blank preparation in accordance with ADT MP 10.3 Rev. 00

Additional labeling requirements for components manufactured by Subcontractor shall be as follows:

Contractor requires that additional labeling be supplied on the coring bit tip packaging. Bags shall be labeled with the manufacturer's part number (core bit tip only), manufacturer's batch number, and a unique part identifier. Contractor Customer requests this part identifier be formatted as follows:

MMDDYY-XX-Suffix

MMDDYY = Month, Day, Year

XX = cleaning batch performed for the day (e.g. 01, 02, etc.)

The suffix is dependent on the number of assemblies in the batch, e.g. 50

Suffix = 001 through 100 for punch bit assemblies.
Suffix = 200 through 299 for Concrete Coring Bit Assemblies with A' Set 3 Cutter.
Suffix = 300 through 399 for Concrete Coring Bit Assemblies with Surface Set Diamond.
Suffix = 400 through 499 for Parfait Coring Bit with Surface Set Diamond.

3. REPORTS, DATA, AND OTHER DELIVERABLES

The Chemtech Ford Analytical Laboratory is required to adhere to the following requirements:

- Receive and log the samples following standard sample receiving protocol, including the completion of a Sample Receiving Checklist, and adhering to chain of custody requirements.
- Analyze the equipment blank samples for the analytes listed in Tables C3-4, C3-6, and C3-8 of the AMWTP MP-TRUW-8.2, Rev. 16, Quality Assurance Project Plan (QAPjP.) Ensure that QAPjP quality control requirements are met.
- Adhere to EPA (1996) SW-846 Holding Time requirements.
- The equipment blank results are considered acceptable if the results indicate no analyte at a concentration greater than three times the Method Detection Limits (MDLs) listed in Table C3-4 and C3-6, or three times the Project Required Detection Limits (PRDLs) listed in Table C3-8 of the QAPjP.

	• The analytical results for these equipment blanks shall be referenced to the Contractor/Subcontractor batch number. • The laboratory is requested to use the Contractor/Subcontractor specified batch number as the sample description (Sample Site). • Submit an analytical data package, complete with data validation confirmation, to Subcontractor, which shall be forwarded to Contractor per the submittal process. • The analytical data package shall include a statement that the analyses were performed in accordance with the National Environmental Accreditation Program, Section 5.13.

ALD LOG # 1207261

AMWTP

Chain Of Custody

Print Date: 26-Jul-2012
Print Time: 08:22
COC No.: 0000554
Page 1 of 1

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00004	10441658	SR-258	10451387	25-Jul-2012	10:23	20 / ml	2.96 / gms	PVOC	Davey Sumners	pvoc	
SSC12-00004	10441658	SR-258	10451388	25-Jul-2012	10:25	20 / ml	2.94 / gms	NHVOC	Davey Sumners	nhvoc	
SSC12-00004	10441658	SR-258	10451389	25-Jul-2012	10:29	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSC12-00004	10441658	SR-258	10451390	25-Jul-2012	10:33	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Formaldehyde	
SSC12-00004	10441658	SR-258	10451391	25-Jul-2012	10:35	20 / ml	2.79 / gms	SPARE	Davey Sumners	spare 1	
SSC12-00004	10441658	SR-258	10451392	25-Jul-2012	10:37	20 / ml	2.92 / gms	SPARE	Davey Sumners	Spare 2	
SSC12-00004	10441658	SR-258	10451393	25-Jul-2012	10:40	125 / ml	36.36 / gms	SVOC, METALS	Davey Sumners	SVOC/Metals	
SSC12-00004	10441658	SR-258	10451394	25-Jul-2012	11:16	20 / ml	2.92 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC12-00004	10441658	SR-258	10451395	25-Jul-2012	11:18	20 / ml	2.99 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC12-00004	10441658	SR-258	10451396	25-Jul-2012	11:21	20 / ml	2.81 / gms	TRIP BLANK	Davey Sumners	trip blank 3	
SSC12-00004	10441658	SR-258	10451397	25-Jul-2012	11:22	20 / ml	12.50 / gms	TRIP BLANK	Davey Sumners	trip blank 4	
SSC12-00004	10441658	SR-258	10451398	25-Jul-2012	11:23	20 / ml	12.48 / gms	TRIP BLANK	Davey Sumners	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	25-JUL-12 15:05:32	
Received By	David Preston	Electronically signed in WTS	25-JUL-12 15:05:32	
Relinquished By	David Preston	David J Preston	26-JUL-12 08:28	Samples transferred to lab based on FGE of parent drum. ON SITE TRANSFER Transfer Container ID: TID 550741 David J Preston 7/26/12
Received By	Patty Tullock	Patty Tullock	26-JUL-12 09:40	
Relinquished By				
Received By				
Relinquished By				
Received By				
Relinquished By				
Received By				

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AMWTP

Chain Of Custody

Print Date: 06-Aug-2012
Print Time: 07:49
COC No.: 0000556
Page 1 of 2

Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441660	SR-258	10451603	26-Jul-2012	15:40	20 / ml	2.75 / gms	PVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451604	26-Jul-2012	15:41	20 / ml	2.68 / gms	NHVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451605	26-Jul-2012	15:42	20 / ml	12.16 / gms	NHVOC	Michael Kremin	NHVOC-HydrazineSample	
SSG12-00004	10441660	SR-258	10451606	26-Jul-2012	15:44	20 / ml	12.37 / gms	NHVOC	Michael Kremin	NHVOC-Formaldahyde Sample	
SSG12-00004	10441660	SR-258	10451607	26-Jul-2012	15:46	20 / ml	2.90 / gms	SPARE	Michael Kremin	Spare-1	
SSG12-00004	10441660	SR-258	10451608	26-Jul-2012	15:48	20 / ml	2.83 / gms	SPARE	Michael Kremin	Spare-2	
SSG12-00004	10441660	SR-258	10451609	26-Jul-2012	15:51	125 / ml	37.18 / gms	SVOC, METALS	Michael Kremin		
SSG12-00004	10441660	SR-258	10451622	26-Jul-2012	16:30	20 / ml	2.98 / gms	TRIP BLANK	Michael Kremin	Trip Blank 1	
SSG12-00004	10441660	SR-258	10451623	26-Jul-2012	16:31	20 / ml	2.82 / gms	TRIP BLANK	Michael Kremin	Trip Blank 2	
SSG12-00004	10441660	SR-258	10451624	26-Jul-2012	16:32	20 / ml	2.74 / gms	TRIP BLANK	Michael Kremin	Trip Blank 3	
SSG12-00004	10441660	SR-258	10451625	26-Jul-2012	16:33	20 / ml	12.38 / gms	TRIP BLANK	Michael Kremin	Trip Blank 4	
SSG12-00004	10441660	SR-258	10451626	26-Jul-2012	16:34	20 / ml	12.18 / gms	TRIP BLANK	Michael Kremin	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:35:47	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:35:47	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:18:28	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:18:28	
Relinquished By	David Preston	David J Preston	06-AUG-12 0754	FCE of parent drum used for transfer to the lab. On Site transfer DJ Preston 8/6/12
Received By	Patty Tullock	Patty Tullock	06-Aug-12 1015	Transfer container: 2 TID 550753

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Print Date: 06-Aug-2012
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ALD LOG # 1207261

AMWTP

Chain Of Custody

Print Date: 26-Jul-2012
Print Time: 08:22
COC No.: 0000554
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Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSC12-00004	10441658	SR-258	10451387	25-Jul-2012	10:23	20 / ml	2.96 / gms	PVOC	Davey Sumners	pvoc	
SSC12-00004	10441658	SR-258	10451388	25-Jul-2012	10:25	20 / ml	2.94 / gms	NHVOC	Davey Sumners	nhvoc	
SSC12-00004	10441658	SR-258	10451389	25-Jul-2012	10:29	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Hydrazine	
SSC12-00004	10441658	SR-258	10451390	25-Jul-2012	10:33	20 / ml	12.35 / gms	NHVOC	Davey Sumners	NHVOC-Formaldehyde	
SSC12-00004	10441658	SR-258	10451391	25-Jul-2012	10:35	20 / ml	2.79 / gms	SPARE	Davey Sumners	spare 1	
SSC12-00004	10441658	SR-258	10451392	25-Jul-2012	10:37	20 / ml	2.92 / gms	SPARE	Davey Sumners	Spare 2	
SSC12-00004	10441658	SR-258	10451393	25-Jul-2012	10:40	125 / ml	36.36 / gms	SVOC, METALS	Davey Sumners	SVOC/Metals	
SSC12-00004	10441658	SR-258	10451394	25-Jul-2012	11:16	20 / ml	2.92 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC12-00004	10441658	SR-258	10451395	25-Jul-2012	11:18	20 / ml	2.99 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC12-00004	10441658	SR-258	10451396	25-Jul-2012	11:21	20 / ml	2.81 / gms	TRIP BLANK	Davey Sumners	trip blank 3	
SSC12-00004	10441658	SR-258	10451397	25-Jul-2012	11:22	20 / ml	12.50 / gms	TRIP BLANK	Davey Sumners	trip blank 4	
SSC12-00004	10441658	SR-258	10451398	25-Jul-2012	11:23	20 / ml	12.48 / gms	TRIP BLANK	Davey Sumners	trip blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners	Electronically signed in WTS	25-JUL-12 15:05:32	
Received By	David Preston	Electronically signed in WTS	25-JUL-12 15:05:32	
Relinquished By	David Preston	David J Preston	26-JUL-12 08:28	Samples transferred to lab based on FGE of parent drum. ON SITE TRANSFER Transfer Container ID: TID 550741 David J Preston 7/26/12
Received By	Patty Tullock	Patty Tullock	26-JUL-12 09:40	
Relinquished By				
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Print Date: 06-Aug-2012
Print Time: 07:49
COC No.: 0000556
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Shipping Location: AMWTP Analytical Location: Analytical Chemistry Lab Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Sample Created by	Comments	Final Disposition
SSG12-00004	10441660	SR-258	10451603	26-Jul-2012	15:40	20 / ml	2.75 / gms	PVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451604	26-Jul-2012	15:41	20 / ml	2.68 / gms	NHVOC	Michael Kremin		
SSG12-00004	10441660	SR-258	10451605	26-Jul-2012	15:42	20 / ml	12.16 / gms	NHVOC	Michael Kremin	NHVOC-HydrazineSample	
SSG12-00004	10441660	SR-258	10451606	26-Jul-2012	15:44	20 / ml	12.37 / gms	NHVOC	Michael Kremin	NHVOC-Formaldahyde Sample	
SSG12-00004	10441660	SR-258	10451607	26-Jul-2012	15:46	20 / ml	2.90 / gms	SPARE	Michael Kremin	Spare-1	
SSG12-00004	10441660	SR-258	10451608	26-Jul-2012	15:48	20 / ml	2.83 / gms	SPARE	Michael Kremin	Spare-2	
SSG12-00004	10441660	SR-258	10451609	26-Jul-2012	15:51	125 / ml	37.18 / gms	SVOC, METALS	Michael Kremin		
SSG12-00004	10441660	SR-258	10451622	26-Jul-2012	16:30	20 / ml	2.98 / gms	TRIP BLANK	Michael Kremin	Trip Blank 1	
SSG12-00004	10441660	SR-258	10451623	26-Jul-2012	16:31	20 / ml	2.82 / gms	TRIP BLANK	Michael Kremin	Trip Blank 2	
SSG12-00004	10441660	SR-258	10451624	26-Jul-2012	16:32	20 / ml	2.74 / gms	TRIP BLANK	Michael Kremin	Trip Blank 3	
SSG12-00004	10441660	SR-258	10451625	26-Jul-2012	16:33	20 / ml	12.38 / gms	TRIP BLANK	Michael Kremin	Trip Blank 4	
SSG12-00004	10441660	SR-258	10451626	26-Jul-2012	16:34	20 / ml	12.18 / gms	TRIP BLANK	Michael Kremin	Trip Blank 5	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Michael Kremin	Electronically signed in WTS	30-JUL-12 09:35:47	
Received By	Davey Sumners	Electronically signed in WTS	30-JUL-12 09:35:47	
Relinquished By	Davey Sumners	Electronically signed in WTS	02-AUG-12 15:18:28	
Received By	David Preston	Electronically signed in WTS	02-AUG-12 15:18:28	
Relinquished By	David Preston	David J Preston	06-AUG-12 0754	FCE of parent drum used for transfer to the lab. On Site transfer DJ Preston 8/6/12
Received By	Patty Tullock	Patty Tullock	06-Aug-12 1015	Transfer container: 2 TID 550753

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AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: July 6, 2010

To: Eric Schweinsberg
Site Project Manager

From: Jason Kettel
Mathematics Subject Matter Expert

Subject: Co-Located Solid Sampling F-Test Results - JHK-002-10

Sampling precision for solid samples is monitored using statistical techniques in compliance with the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP). The Advanced Mixed Waste Treatment Project has implemented the WAP in MP-TRUW-8.2 and MP-TRUW-8.17 which states that, "[u]ntil the necessary numbers of samples are taken (25–30 or more co-located core samples within a [Waste Matrix Code Group] WMCG), F-statistics will be used to verify the sampling process is in control." The F-test is performed on a waste stream basis for WMCG Solidified Inorganics. Due to completion of the analysis of the samples for waste stream BNINW216, Lot 20, an F-test has been performed. The results of the F-test are found in Attachment 1 to this memo. All target analytes for which the test was calculable pass the F-test.

The F-test is not calculable for an analyte in a waste stream if less than two co-located pairs of samples contained that analyte at a quantity above the Method Detection Limit (MDL) or if less than two of the samples that were not co-located contained that analyte at a quantity above the MDL.

Attachment:
1. F-test Results

JHK/at

cc: Steve Carpenter
Elvin Dumas
Tom Fallon
Micky Johnson
Les Miller
Lyle Ryman
AMWTP Correspondence Control

F-Test Results for Co-Located Core Samples Waste Stream: BNINW216	
Analyte	**P/F/NC***
Arsenic	Pass
Barium	**Pass**
Cadmium	Pass
Chromium	**Pass**
Lead	Pass
Mercury	**Pass**
Selenium	Pass
Silver	**Pass**
Antimony	Pass
Beryllium	**Pass**
Nickel	Pass
Thallium	**Pass**
Vanadium	Pass
Zinc	**Pass**
1,1-Dichloroethylene	NC
trans-1,2-Dichloroethylene	**NC**
1,1,1-Trichloroethane	Pass
1,1,2,2-Tetrachloroethane	**NC**
1,1,2-Trichloro-1,2,2-trifluoroethane	NC
1,1,2-Trichloroethane	**NC**
1,2-Dichloroethane	NC
Acetone	**NC**
Benzene	NC
Bromoform	**NC**
Butanol	Pass
Carbon disulfide	**NC**
Carbon tetrachloride	NC
Chlorobenzene	**NC**
Chloroform	NC
Ethyl benzene	**NC**
Ethyl ether	NC
Isobutanol	**NC**
Methanol	Pass
Methyl ethyl ketone	**NC**
Methylene chloride	NC
Pyridine	**NC**
o-Xylene	NC
m- and p-Xylene	**NC**
Tetrachloroethylene	Pass
Toluene	**Pass**
Trichloroethylene	Pass
Trichlorofluoromethane	**NC**
Vinyl chloride	NC
ortho-Dichlorobenzene	**NC**
1,4-Dichlorobenzene	NC
2,4-Dinitrophenol	**NC**
2,4-Dinitrotoluene	NC
bis(2-Ethylhexyl)phthalate	**Pass**
Fluoranthene	Pass
Hexachlorobenzene	**NC**
Hexachloroethane	NC
o-Cresol	**NC**
m- and p-Cresol	NC
Nitrobenzene	**NC**
Pentachlorophenol	NC
Phenol	**Pass**

*NC = Non-Calculable

Idaho Treatment Group

Idaho Treatment Group LLC • 850 Energy Drive., Suite 100 • Idaho Falls, ID 83401 USA • t: +1.208.557-7301 • f: +1.208.557-6534 • www.idahotreatmentgroup.com

To: Elvin Dumas, Quality Assurance Manager
Eric Schweinsberg, Acting Site Project Manager

From: Jason Kettel, Mathematician

Date: October 6, 2011

Re: Co-Located Core Sample Control Charts – JHK-002-11

Sampling precision for coring samples is monitored using statistical techniques in compliance with the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP). The Advanced Mixed Waste Treatment Project has implemented the WAP in MP-TRUW-8.2 and MP-TRUW-8.17 which states that, "Upon collecting 25-30 co-located or field duplicate pairs across all waste streams within a [waste matrix code group] WMCG, [relative percent difference] RPD control charting will be imposed." Statistical RPD control charts have been updated for co-located coring samples for the analytes antimony, arsenic, barium, beryllium, bis(2-ethylhexyl)phthalate, cadmium, chromium, lead, mercury, nickel, selenium, silver, vanadium, and zinc for WMCG Solidified Inorganics due to the completion of core sampling and analysis for BNINW216, Lot 21. Only the most recent ten data points are displayed on the charts. The control chart for analyte thallium has not been updated because it was not detected in either of the co-located pairs analyzed for BNINW216, Lot 21.

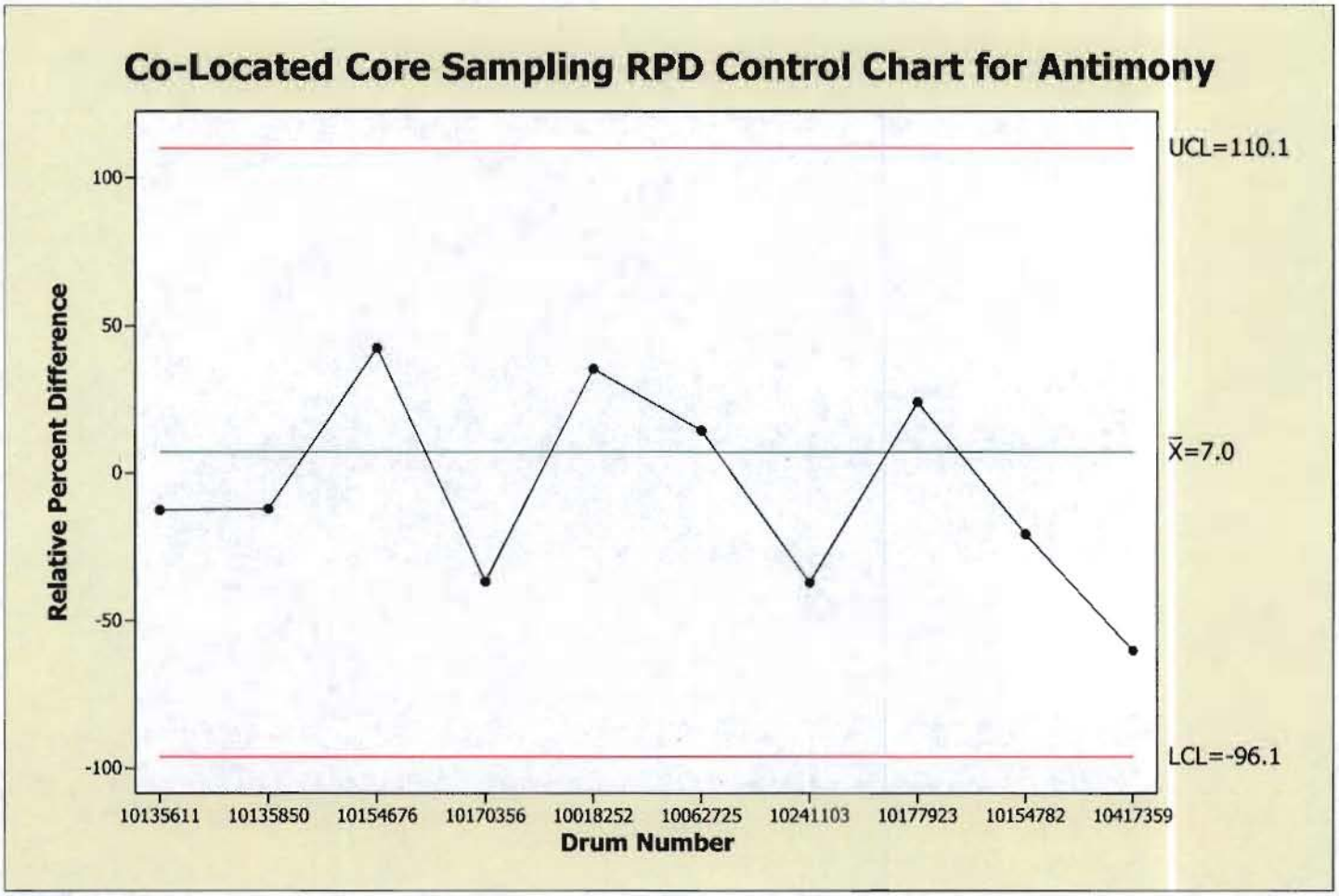
The control charts are found in Attachment 1 to this memo. One data point for the analyte arsenic in a co-located core sample for BNINW216, Lot 21 falls outside the control limits of its chart. MP-TRUW-8.17 states, "If the RPDs of the new cores or field duplicates fall outside the control limits, then this may indicate that some error or inconsistency has occurred during the core sampling, and that the sampling procedure needs to be reviewed for such inconsistencies." It also instructs the Site Project Manager to initiate a nonconformance report if the control limits are exceeded.

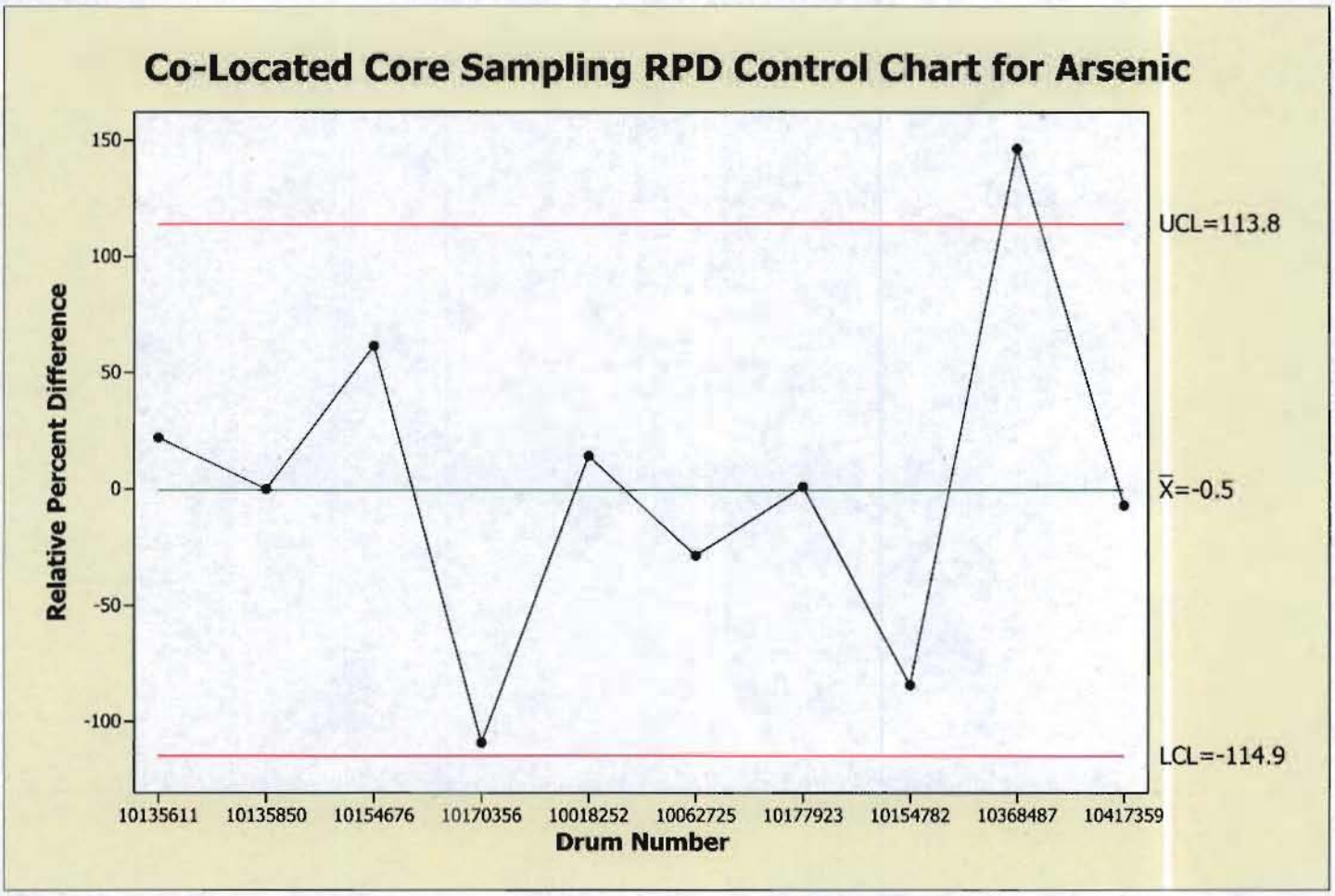
As of this date, no other target analytes of the coring process have been detected in 25-30 co-located core samples. Per the WAP, MP-TRUW-8.2, and MP-TRUW-8.17, F-tests will be performed for these analytes until the 25-30 sample threshold is met.

Attachment
1. Coring RPD Control Charts

JHK/at

cc: Steve Carpenter
Sue Peterman
Dave Preston


Co-Located Core Sampling RPD Control Chart for Antimony
UCL=110.1
$\bar{X}$=7.0
LCL=-96.1
Relative Percent Difference
100
50
0
-50
-100
10135611
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Arsenic
Relative Percent Difference
150
100
50
0
-50
-100
UCL=113.8
X̄=-0.5
LCL=-114.9
10135611
10135850
10154676
10170356
10018252
10062725
10177923
10154782
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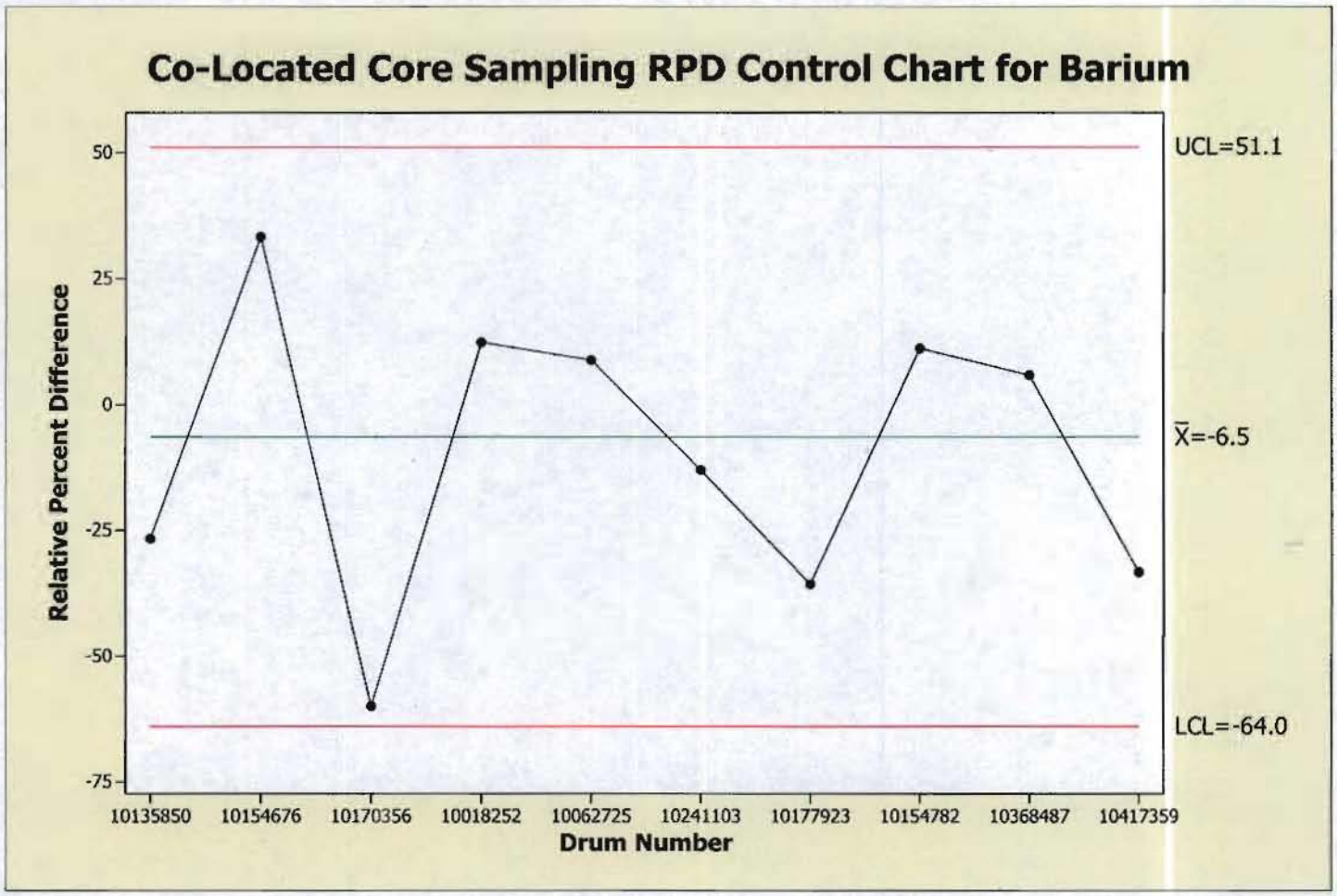
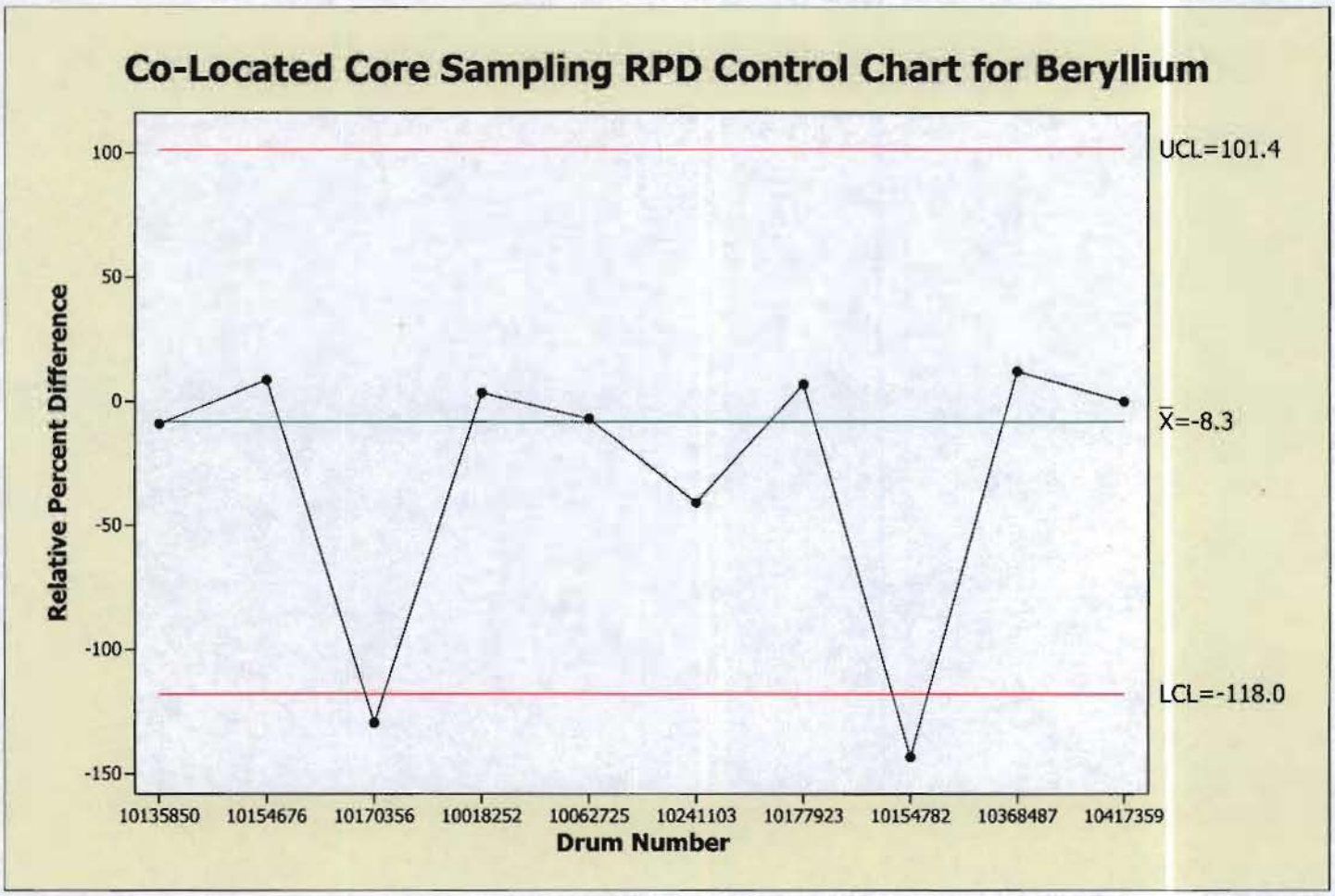
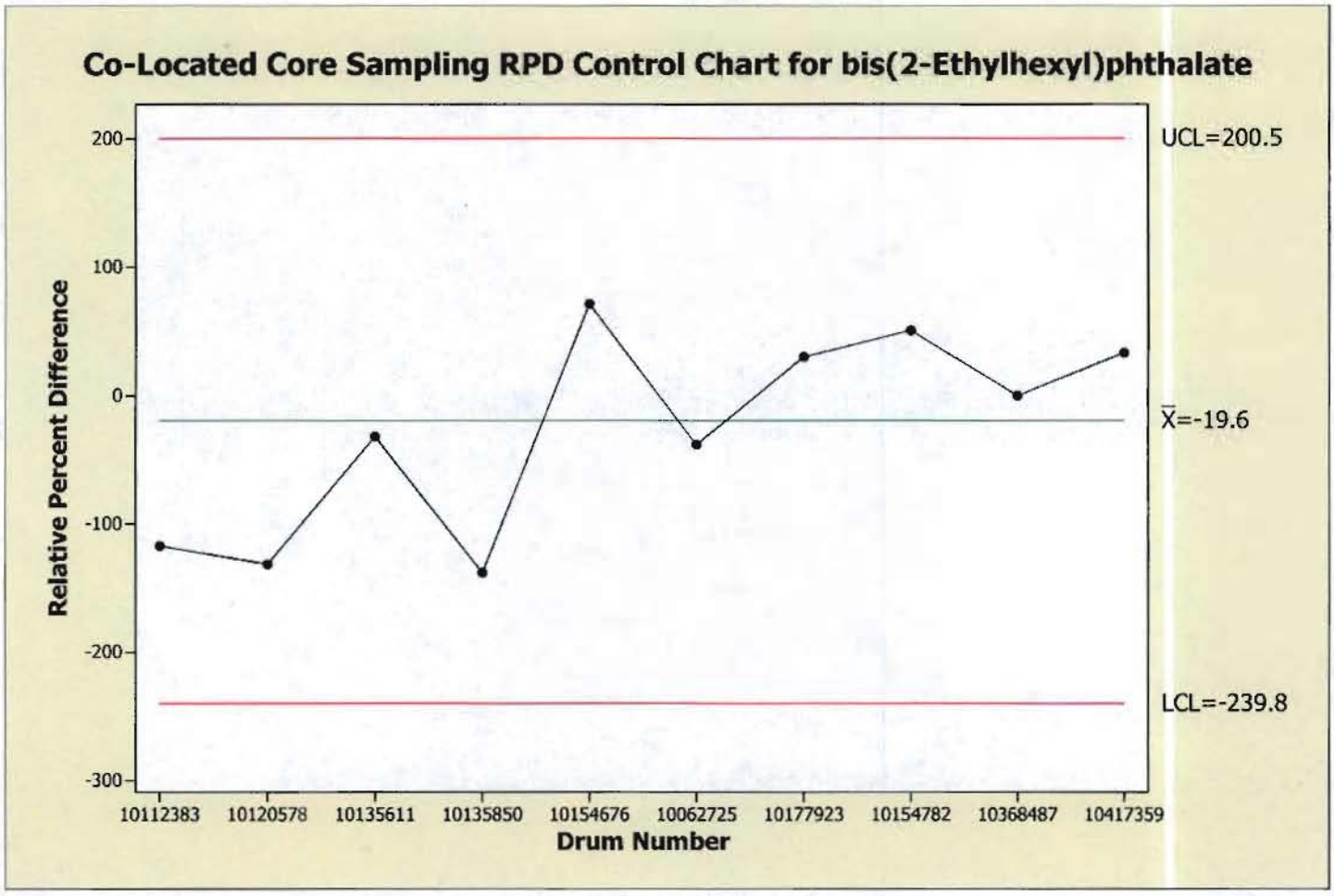
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Barium
Relative Percent Difference
50
25
0
-25
-50
-75
UCL=51.1
X̄=-6.5
LCL=-64.0
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Beryllium
Relative Percent Difference
100
50
0
-50
-100
-150
UCL=101.4
X̄=-8.3
LCL=-118.0
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for bis(2-Ethylhexyl)phthalate
Relative Percent Difference
200
100
0
-100
-200
-300
UCL=200.5
X̄=-19.6
LCL=-239.8
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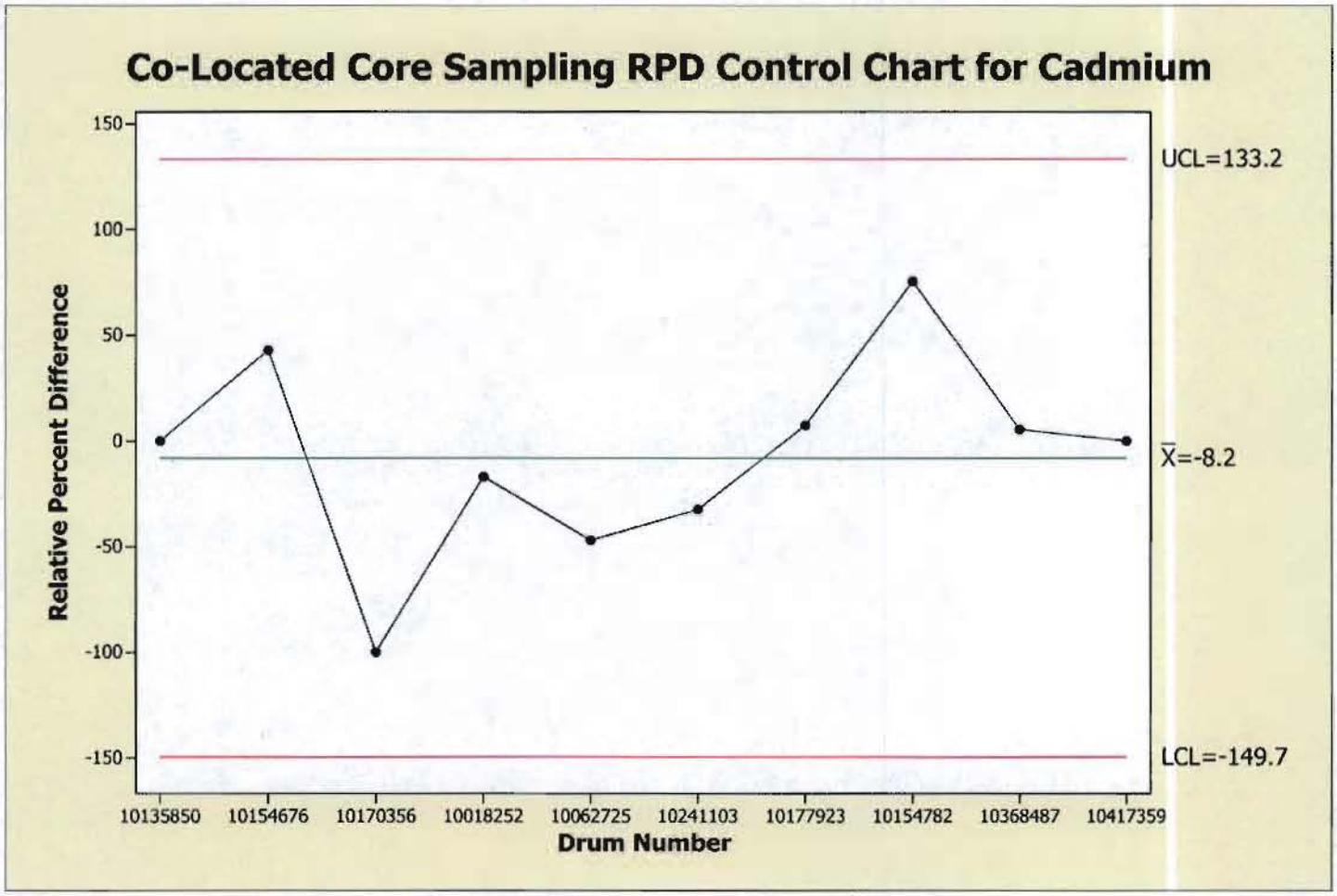
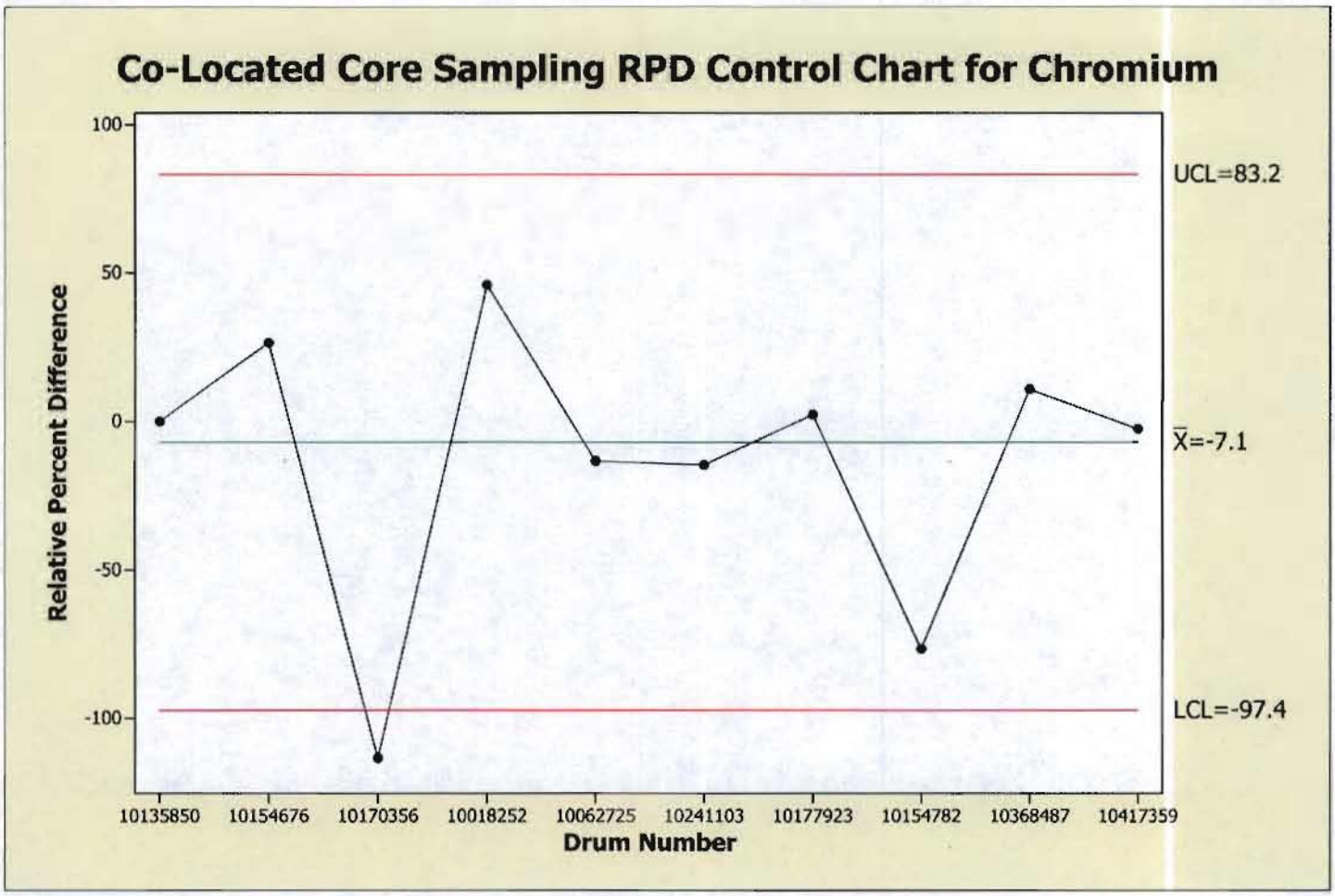
10120578
10135611
10135850
10154676
10062725
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Cadmium
Relative Percent Difference
150
100
50
0
-50
-100
-150
UCL=133.2
X̄=-8.2
LCL=-149.7
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Chromium
Relative Percent Difference
100
50
0
-50
-100
UCL=83.2
X̄=-7.1
LCL=-97.4
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10154676
10170356
10018252
10062725
10241103
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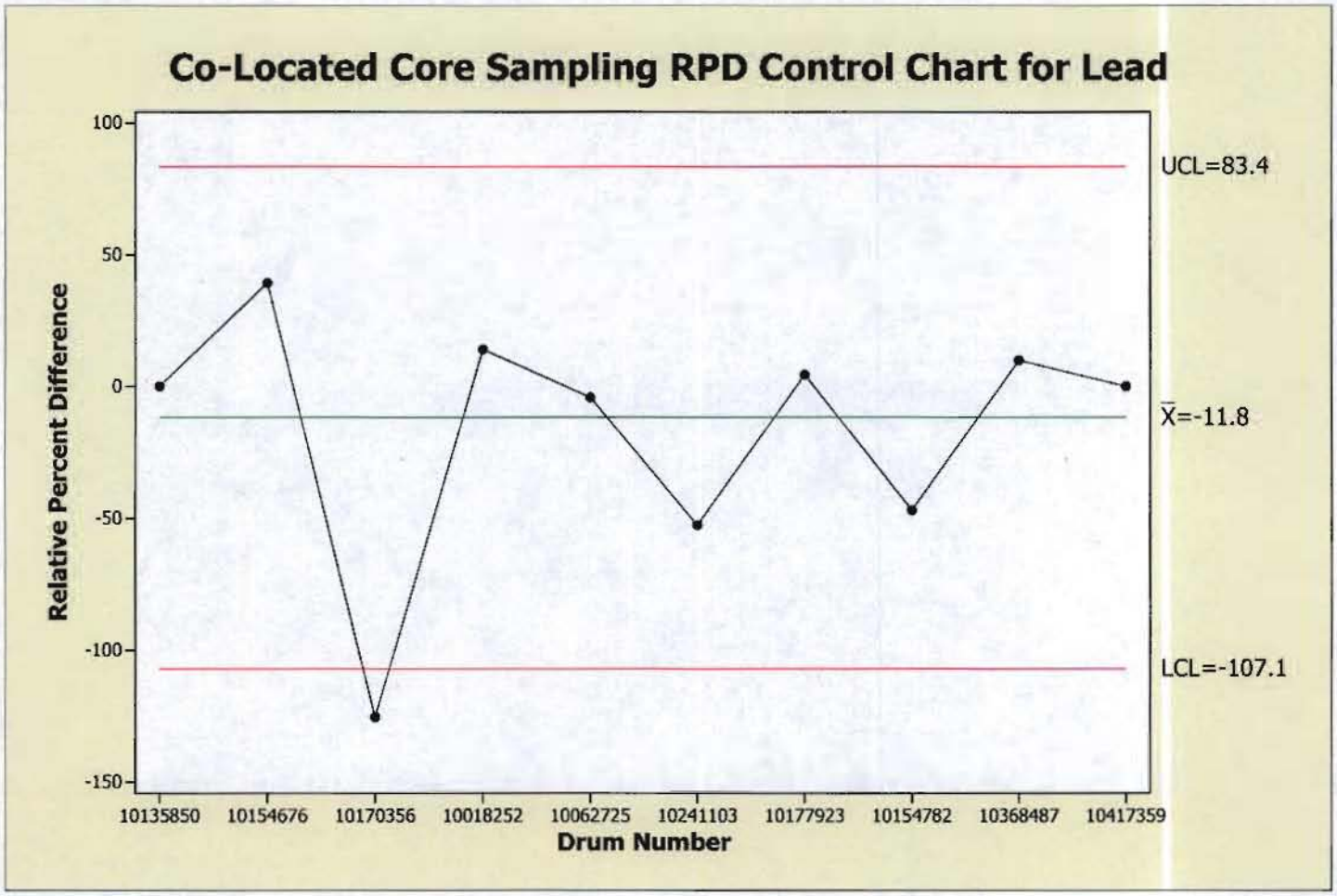
10368487
10417359
Drum Number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LCL=-107.1
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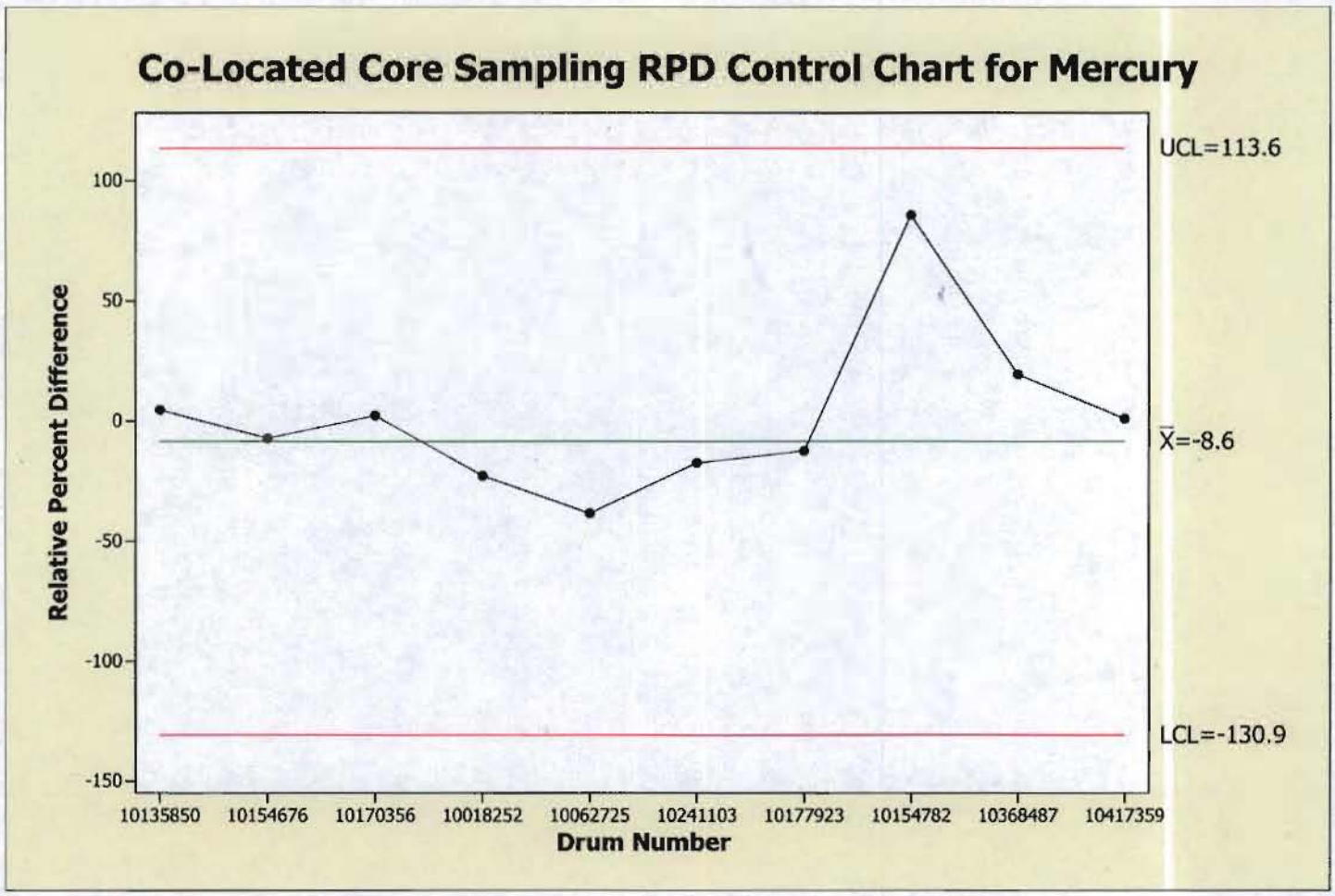
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number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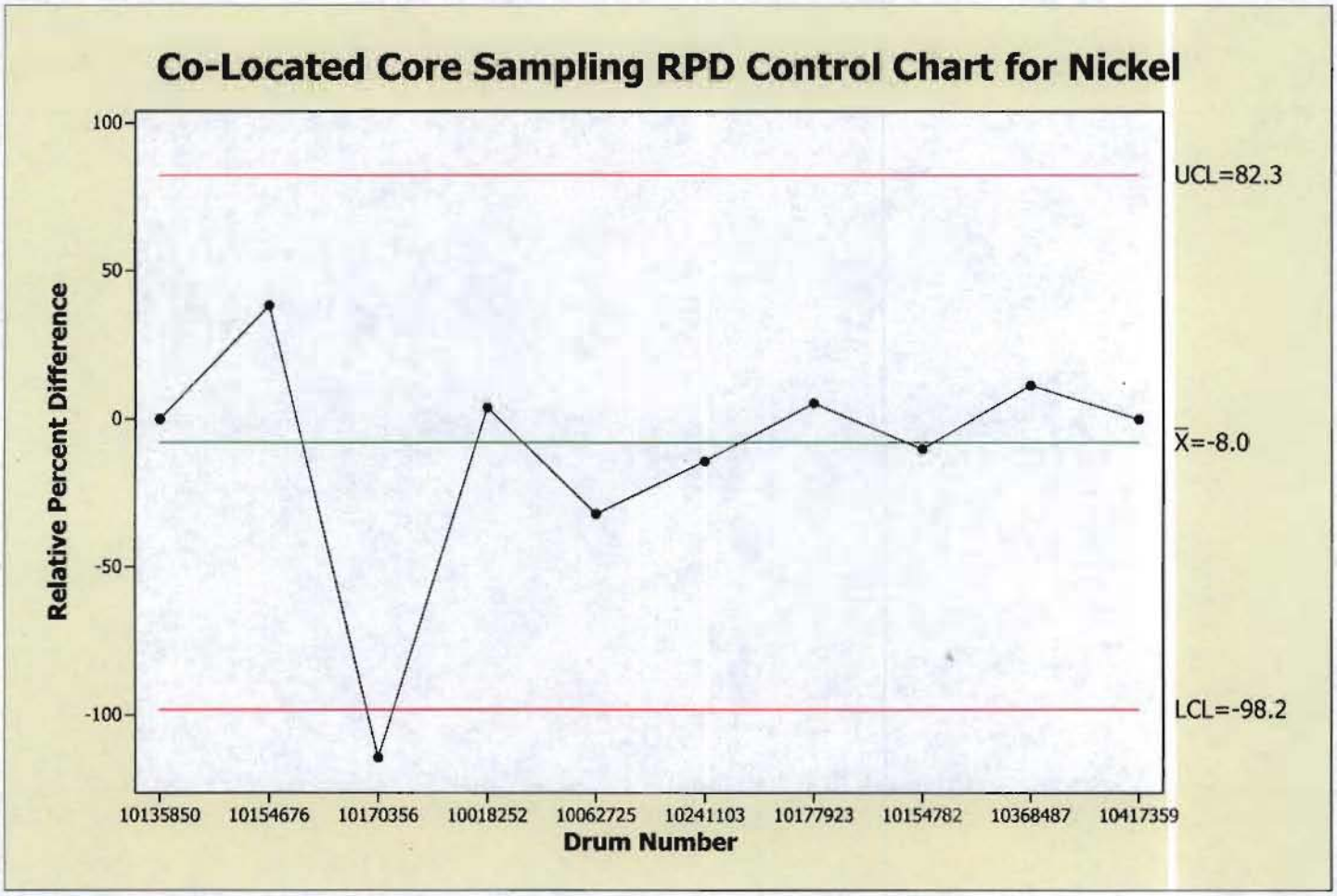
UCL=113.6
X̄=-8.6
LCL=-130.9
Relative Percent Difference
100
50
0
-50
-100
-150
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number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Relative Percent Difference
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50
0
-50
-100
UCL=82.3
X̄=-8.0
LCL=-98.2
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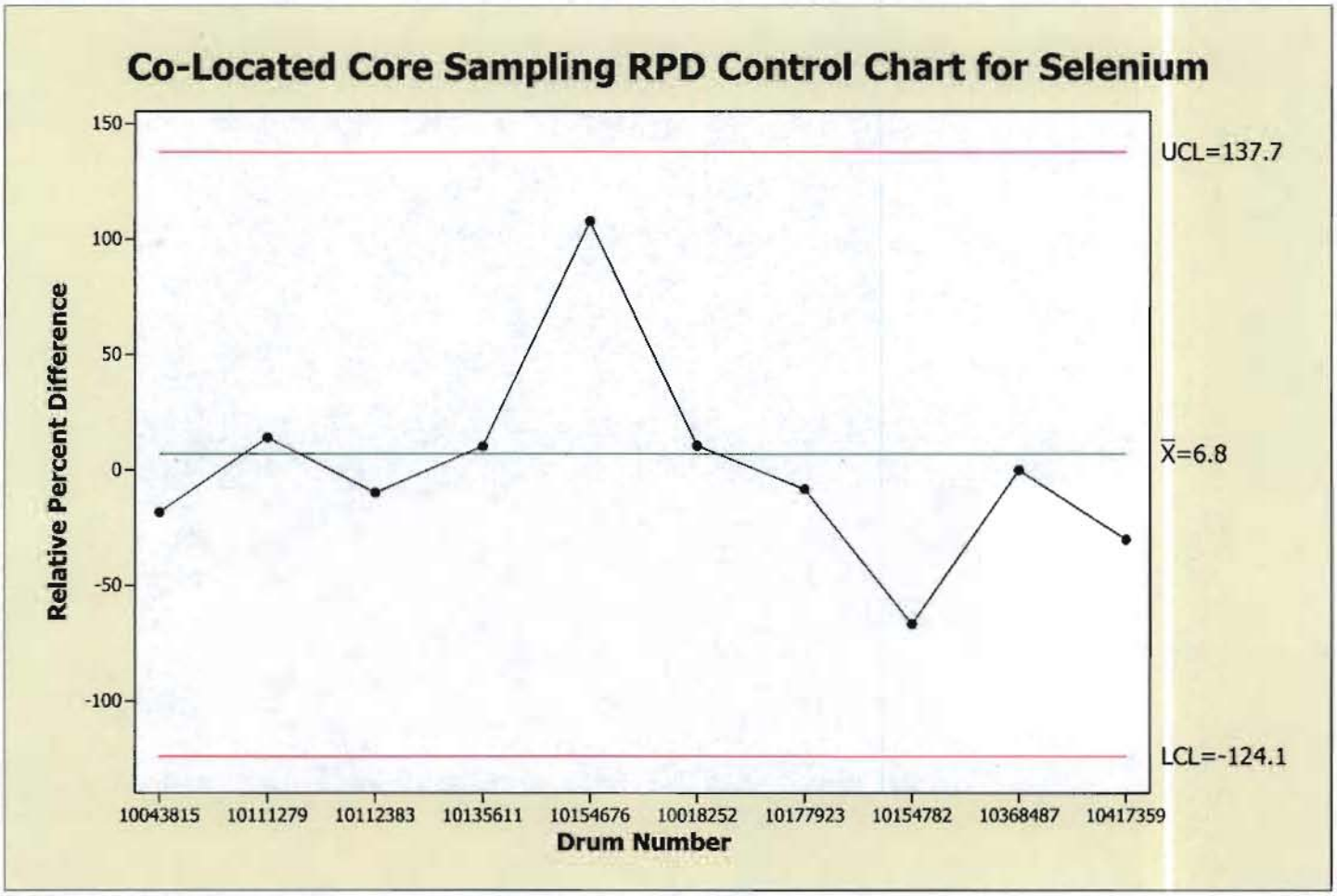
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Selenium
Relative Percent Difference
150
100
50
0
-50
-100
UCL=137.7
X̄=6.8
LCL=-124.1
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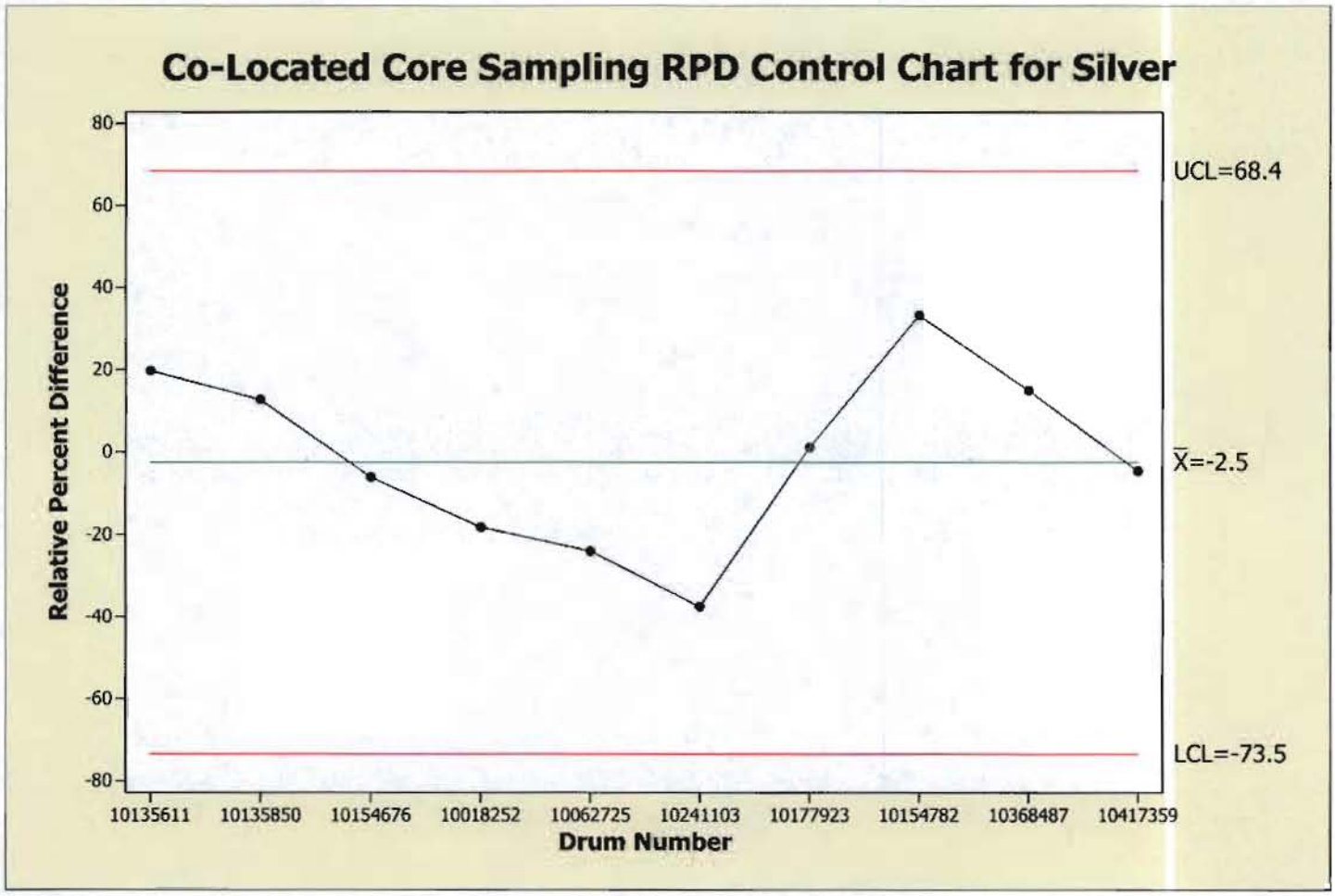
10111279
10112383
10135611
10154676
10018252
10177923
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Silver
Relative Percent Difference
80
60
40
20
0
-20
-40
-60
-80
UCL=68.4
X̄=-2.5
LCL=-73.5
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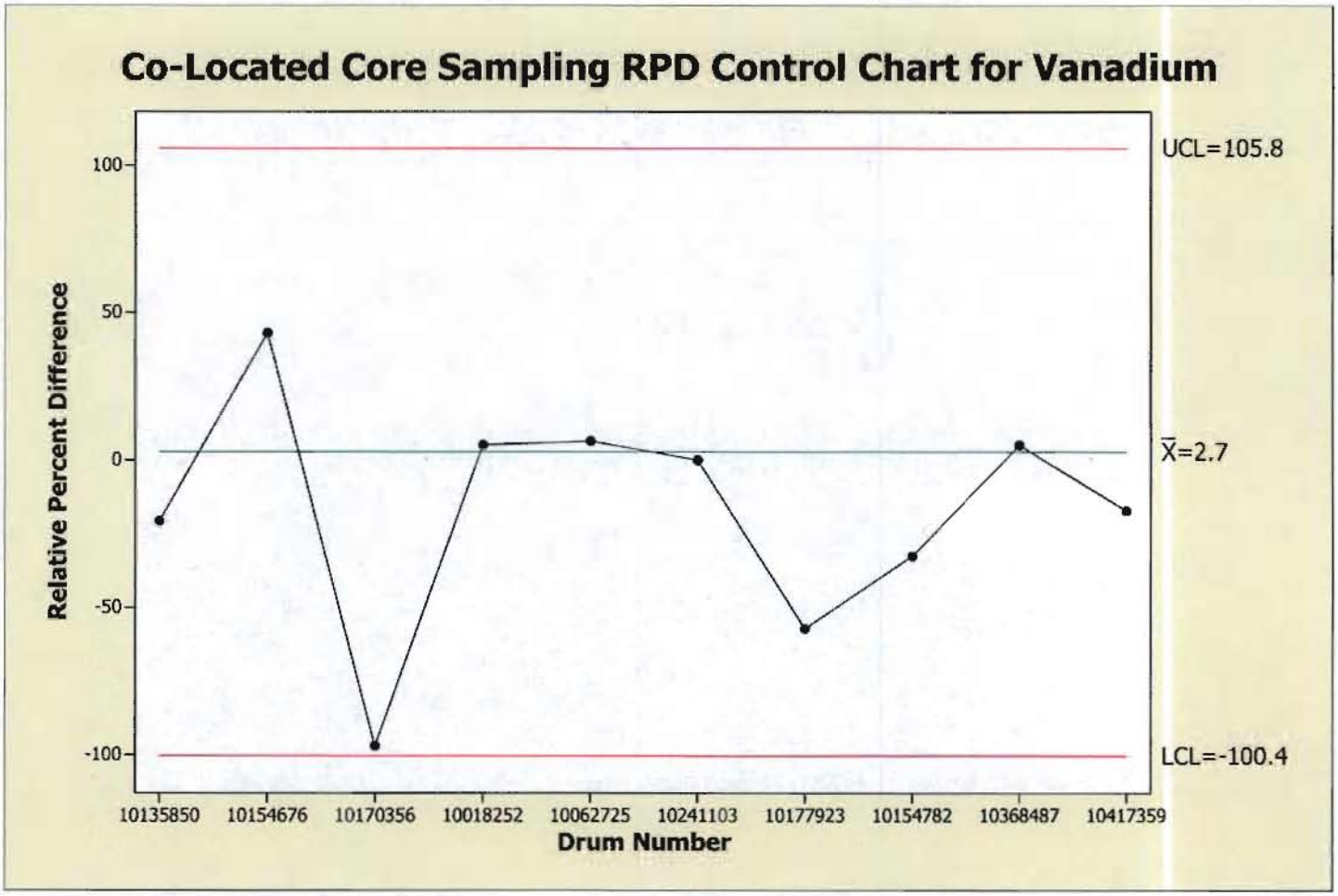
10135850
10154676
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number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Relative Percent Difference
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50
0
-50
-100
UCL=105.8
X̄=2.7
LCL=-100.4
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10170356
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10062725
10241103
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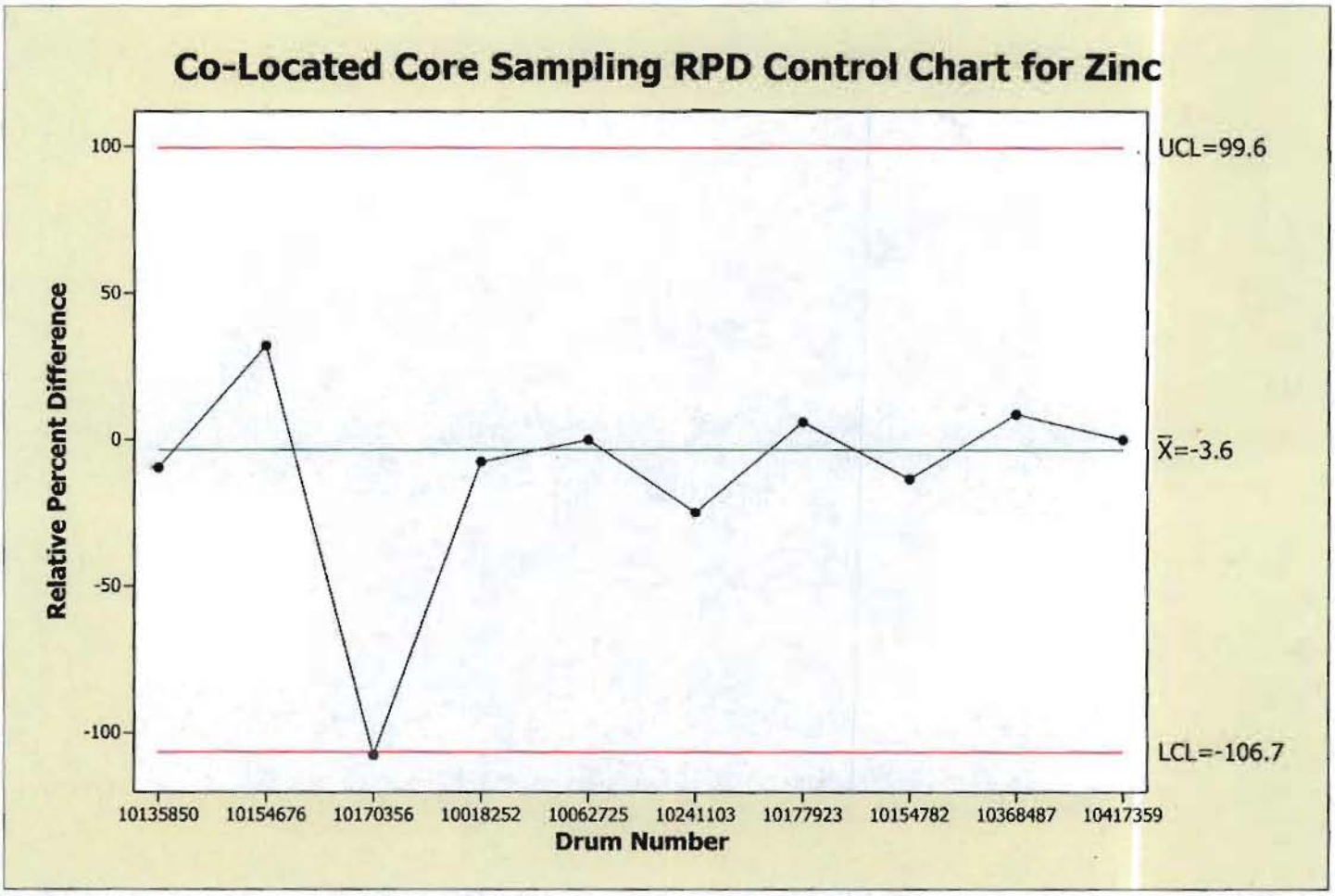
10154782
10368487
10417359
Drum Number


Co-Located Core Sampling RPD Control Chart for Zinc
Relative Percent Difference
100
50
0
-50
-100
UCL=99.6
X̄=-3.6
LCL=-106.7
10135850
10154676
10170356
10018252
10062725
10241103
10177923
10154782
10368487
10417359
Drum Number

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11583.)
Steve Carpenter
Acceptable Knowledge Manager

09/17/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/10/2010	All	DCR-9081. Initial issue.
1	01/12/11	Various	DCR-9747. References modified to accommodate reference changes within AK baseline document for Hanford waste. Revised to incorporate WIPP WAP permit renewal changes. Editorial corrections
2	01/31/12	Various	DCR-10508. Added changes approved by CBFO in Change Notice 1 to BN510.1 waste stream profile. Incorporated BLUESHEET-077.
3	09/17/12	5, A1, A2	DCR-11583. Added changes approved by CBFO in Change Notice 2 to BN510.1 waste stream profile.

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ACRONYMS

AK	acceptable knowledge
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
BC	Battelle Columbus (prefix)
BN	AMWTP (prefix)
CCP	Central Characterization Project
CH	contact-handled
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CWS	Chemical Warfare Service
D&D	decommissioning and dismantling
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DU	depleted uranium
DWPG	drummed waste packaging glovebox
EDMS	electronic document management system
EPA	U.S. Environmental Protection Agency
EU	enriched uranium
HEPA	high efficiency particulate air
HENC	High-Efficiency Passive Neutron Counter
HWMA	Hazardous Waste Management Act
HSG	headspace gas
HWN	hazardous waste number
IDC	Item Description Code
INL	Idaho National Laboratory
LLD	lower limit of detection
LSA	low specific activity
MD	Mound Plant (prefix)
MEK	methyl ethyl ketone
MPFPD	Mixed Plutonium Finishing Plant Debris
NDA	non-destructive assay
PCB	polychlorinated biphenyl
PFP	plutonium finishing plant
PK	process knowledge
PMC	plutonium-molybdenum cermet
POS	Plant Optimization System

PPE	personal protective equipment
PPO	pressed plutonium oxide
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (prefix)
RL	Richland, Washington Hanford Site (prefix)
RLMPFPCD	Richland Mixed Plutonium Finishing Plant Comprehensive Debris
RTG	radioisotopic thermoelectric generators
RTR	real-time radiography
SCW	special case waste
SDOP	six-drum overpack box
SWB	standard waste box
TRU	transuranic
TRUCON	TRU waste content codes
TSCA	Toxic Substance Control Act
VE	visual examination
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WETP	WIPP experimental test program
WG Pu	weapons-grade plutonium
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMP	waste material parameter
WSPF	Waste Stream Profile Form

Advanced Mixed Waste Treatment Project

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN510.1

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Supercompacted Debris Waste

1.2.2 Point of Generation

Advanced Mixed Waste Treatment Facility (AMWTF), Building Waste Management Facility (WMF)-676

1.2.3 Waste Stream Volume (Newly Generated)

Projected Volumes:

16,000 100-gallon drums (3,330 m^3)[2]

105 Standard Waste Boxes (SWBs) (198 m^3)[2]

Fifty percent of the debris waste feedstock is estimated to contain greater than 100 nanocuries per gram (nCi/g) transuranic (TRU) alpha activity and 50% contains less than 100 nCi/g TRU alpha activity.[14]

1.2.4 Generation Dates and Rate of Generation

August 2010 – December 2018

The average generation rate is estimated to be 120 m^3 per month.[28]

1.2.5 TRUCON Codes

ID121[3]

1.2.6 Waste Isolation Pilot Plant Waste Stream ID

Waste Stream ID: IN-BN510.1[a]

1.2.7 Summary Category Group

S5000 – Debris Waste[(4)]

1.2.8 Waste Matrix Code Group

Heterogeneous Debris Waste

1.2.9 Waste Matrix Code

S5490 – Unknown/Other Heterogeneous Debris Category

The unknown/other-heterogeneous Waste Matrix Code (WMC) includes waste that is consistent with the definition for the Heterogeneous Debris (S5400), but does not meet the criteria for assignment into the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.[(4)] The waste stream consists of supercompacted debris waste.

1.2.10 Description from the ATWIR

The Annual Transuranic Waste Inventory Report (ATWIR) description for waste stream BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste.[(28) a]

1.2.11 Defense Determination for AMWTP Waste

The supercompacted debris waste stream (BN510.1) generated at the Advanced Mixed Waste Treatment Project (AMWTP) is a result of compaction of waste generated at the Rocky Flats (RF), Mound (MD), Battelle Columbus (BC), Hanford (RL), and AMWTP (BN). The debris wastes identified as feedstock to the AMWTP Supercompactor were generated from defense-related processes or activities at the five U.S. Department of Energy (DOE) sites as follows:

- The transuranic (TRU) debris wastes generated at RF and shipped to the Idaho National Laboratory (INL) were generated through defense program activities, or commingled with non-defense program waste that cannot be segregated. Furthermore, there is no historical record or evidence of spent nuclear fuel or high-level waste ever having been handled at the RF facility.[(7, 19)]

---

a. The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report waste streams: IN-BN510, RLPFP-01, RL325-01, and RL231Z-01. [(28)]

- The majority of the MD debris waste feedstock was generated during defense-related operations conducted at the MD for a variety of customers, including Lawrence Livermore National Laboratory, Hanford, Oak Ridge National Laboratory, and the Space Program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the U.S. Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by MD was the Space Nuclear Auxiliary Power system, which was sponsored by the DOD. Operations at the facility included processing and recovering plutonium, developing reactor fuels, conducting reactor fuel waste studies, and recovery of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the MD debris waste feedstock is the result of commingling of wastes from both defense-related and domestic activities.[8, 20]

- Debris waste feedstock shipped from BC to the INL was generated during decommissioning and dismantling (D&D) of the JN-3 (Research Reactor Building) and other facilities. Defense-related operations were conducted at BC in support of Army, Navy, and Air Force programs. These operations included weapons-related activities and defense research into plutonium materials properties and development, plutonium metallurgy, actinide joining, and weapons production and assembly. Processing of test shot samples, development of ^{238}Pu heat sources for spacecraft for DOD, and some specialized work for Los Alamos were conducted in the JN-4 Plutonium Laboratory.[9, 21, 22, 23]

- The debris waste feedstock generated at RL and shipped to the AMWTP was generated during nuclear materials production, nuclear waste and materials by-products management, and defense research and development (R&D) activities conducted at RL facilities. Due to the nature of the work performed at RL analytical facilities, defense-related activities were carried out concurrent with non-defense projects and the wastes were commingled at the point of generation. Segregation of waste into defense and non-defense portions is not feasible. The RL debris waste may contain debris waste that has been determined to be waste that is incidental to reprocessing of spent nuclear fuel. The debris waste is not spent nuclear fuel or high-level waste.[29]

- The waste generated at the AMWTF is the result of contact with defense related TRU debris waste feedstock during treatment, characterization, maintenance, repackaging, and management.[6]

In accordance with interim guidance, defense wastes are identified as those wastes generated during work involving only defense activities, or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The TRU wastes included in the BN510.1 Waste Stream Profile Form (WSPF) meet this definition.[24, 25]

1.3 Waste Stream Description

The newly generated debris waste stream (BN510.1) is generated from supercompaction of 55-gallon containers of debris waste. The supercompacted debris waste (i.e., BN510.1) is generated from a single process (i.e., supercompaction). The supercompacted debris waste

(i.e., BN510.1) has a common physical form that contains similar hazardous constituents and is generated from a single process or activity (Table 1). The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of hazardous waste numbers (HWNs) to the Supercompactor feedstock from Hanford debris waste.[29,31] A list of authorized debris waste feedstock (by original generator and item description code [IDC]) is presented in Appendix A, Supercompactor Debris Waste Feedstock.[31] A description of the processes that generated the supercompacted debris waste is presented in Section 1.4.4.

Table 1. Physical waste form description for BN510.1.

ATWIR Number	IDC	Waste Matrix Code (WMC)	Description
IN-BN510.1	BN-550	S5490	Debris waste from multiple debris waste feedstock sources that have been supercompacted into pucks and packaged into 100-gallon drums.[a]

a. A list of debris waste feedstock IDCs is presented in Appendix A of this report.

Supercompacted debris waste consists of various combustible and noncombustible debris materials that originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).[6]

The BN510.1 supercompacted debris waste stream includes waste from Hanford Richland Mixed Plutonium Finishing Plant Comprehensive Debris (RLMPFPCD) stream and the following previously approved Waste Isolation Pilot Plant (WIPP)-WSPFs: [29, 31, 37]

- AMWTP BN510 [31, 37]
- Hanford RLM231ZD.001 [29, 37]
- Hanford RLM325D.001 [29, 37]
- Hanford RLMPDT.001 [Mixed Plutonium Finishing Plant Debris (MPFPD)]. [29, 37]

Supercompacted debris waste includes: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete packaged in 55-gallon drums, supercompacted, and packaged into 100-gallon product drums. Supercompacted debris may contain small amounts of non-debris waste such as absorbed liquids, soil, dirt, sand, absorbent, or homogeneous solids. Non-debris waste will be less than 50% by volume in each 100-gallon drum of compacted debris.[7, 8, 9, 29]

1.4 Process Description

1.4.1 Areas of Operation

The BN510.1 waste stream is generated by supercompaction of debris waste feedstock at the AMWTF in Building WMF-676. The debris waste feedstock is introduced into the supercompactor as any of the following:

- Direct feed (in original 55-gallon drums from the generator site)
- From the drummed waste packaging glovebox (DWPG) where drummed waste is sorted and repackaged into new 55-gallon drums
- From the waste treatment boxline(s) where boxed waste is sorted, size-reduced, and repackaged into 55-gallon drums.

The boxed waste includes six-drum overpacks (SDOPs) containing up to six 55- or 85- gallon drums). The SDOPs are of two types: 1) one type is packaged with characterized debris drums for processing in AMWTF. These contain drums with IDCs confirmed by real-time radiography (RTR) to be acceptable feedstock waste; 2) the other type is packaged with drums that are not characterized but are labeled with historical acceptable knowledge (AK) information that indicates acceptable feedstock waste.

The supercompactor, a glovebox with a 2,000-ton capacity compactor, size-reduces 55-gallon waste drums to roughly one-fifth their normal size. The supercompacted drums (pucks) are then packaged into 100-gallon containers (puck drums).

1.4.2 Process Flow Diagram

Figure 1 presents a flow diagram illustrating the generation and processing of AMWTP supercompacted debris waste.

1.4.3 Waste Generating Process

The AMWTP waste generation process is supercompaction of individual 55-gallon drums of debris waste feedstock into pucks (the final waste form). Debris waste feedstock contained in 55-gallon drums is characterized and validated through radioassay and RTR/visual examination (VE) to verify contents and then sent directly to the supercompactor for processing.[11, 32, 33, 34, 35]

Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG. Boxes of waste, including SDOPs, are introduced into a boxline for sorting and repackaging into 55-gallon drums. The SDOPs with uncharacterized drums undergo RTR to confirm the waste is >50% debris in each drum. The drum contents are then visually examined in the boxline trough to confirm the waste is approved feed stock. The other boxed wastes undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed

in the boxline or special-case waste (SCW) glovebox. After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55-gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor.

Supercompaction is the treatment for unprotected sharp objects and sealed containers greater than four liters that do not contain prohibited liquids. Because there are no layers of confinement following supercompaction, it is also the treatment for excess layers of confinement. After compaction, the drum pucks are loaded into 100-gallon drums (IDC BN-550).[10] No additional chemicals or waste constituents are added to the supercompacted debris waste as a result of this process.

Debris waste generated during repackaging and VE is also included in the Supercompactor feedstock. This facility-generated waste is visually examined.[11]

The plant optimization system (POS) is used to optimize processing drums through the Supercompactor to produce 100-gallon drums (containing compacted drum pucks) to meet the WIPP Waste Acceptance Criteria (WAC).[5, 10, 27]

1.4.3.1 Liquid Waste Generation

Any liquids that may be generated as a consequence of supercompaction are removed from the Supercompactor sump, absorbed, packaged, and dispositioned.[10, 11, 30] This liquid waste is not included in the supercompacted debris waste stream (BN510.1) and is managed as a separate waste.

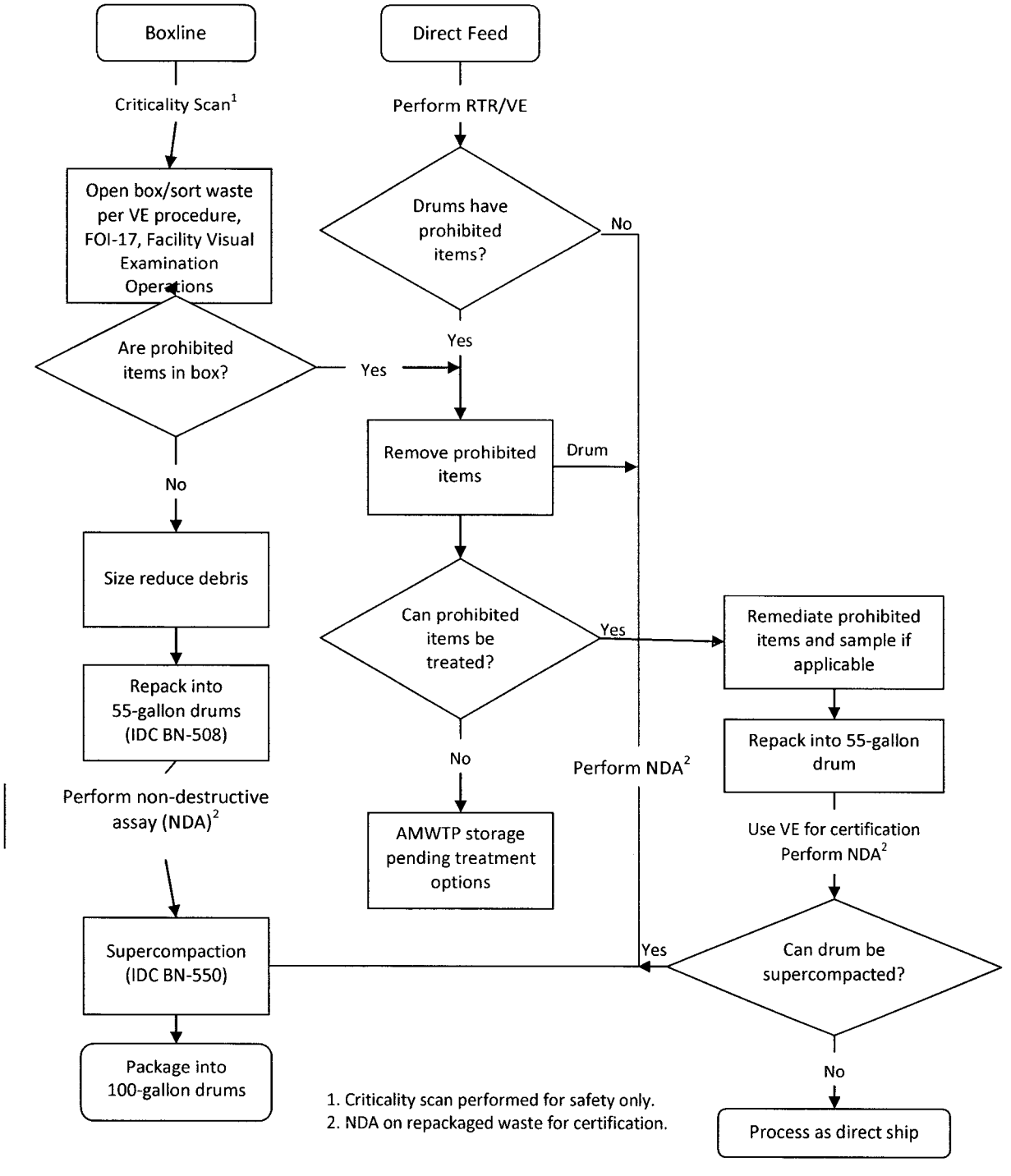

Figure 1. General flowchart for supercompacted debris waste generation and processing at the AMWTP.

1.4.4 Material Inputs

The heterogeneous debris waste feedstock to the Supercompactor originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).

The AMWTP retrievably-stored debris waste feedstock was generated at the RF, MD, and BC. The debris waste feedstock was generated during plutonium pit production; depleted uranium component fabrication; enriched uranium processing; support operations including radionuclide recovery, waste treatment, maintenance, laboratory analysis, and machining of non-nuclear weapon components; R&D; special order work; fabrication of ^{238}Pu heat sources and manufacture of radioisotopic thermoelectric generators; D&D activities; and materials development.[7, 8, 9]

The RL debris waste feedstock shipped to the AMWTP was generated during plutonium production and fabrication; radiochemical processing and plutonium metallurgy laboratory activities; R&D; D&D technology development; and maintenance, cleanout, stabilization, and D&D activities.[29]

The BN debris waste feedstock is generated as a result of AMWTP waste facility maintenance operations, treatment (i.e., supercompaction, absorption of prohibited liquids, and removal of prohibited items), characterization, and general container management activities.[6]

The processes that generated debris wastes are listed below:

- RF
  - Plutonium metal and plutonium-containing materials manufacture, recovery, and treatment[7]
  - Plutonium production support operations including maintenance, laboratory activities, and R&D[7]
  - Non-routine events including renovations, spills, fires, and decommissioning[7]
  - Construction, demolition, and D&D operations.[7]
- MD
  - D&D of the Mound Plant Facility[8]
  - Pressed plutonium oxide (PPO) sphere and plutonium-molybdenum cermet (PMC) production[8]
  - Plutonium and other isotopic recovery[8]
  - Plutonium manufacture support such as laboratory activities and R&D[8]
  - Facility maintenance.[8]

BC

- Research into the metallurgical and ceramic properties of plutonium and its alloys[9]
- Plutonium processing[9]
- Development of nuclear fuels[9]
- D&D of the BC facilities.[9]

- RL
  - Plutonium Finishing Plant production, maintenance, cleanout, stabilization, and D&D[29]
    - RLMPDT.001 (MPFPD)[29]
    - RLMPFPCD[29]
  - Building 325 Radiochemical Processing Laboratory activities (RLM325D.001)[29,]
  - Building 231-Z cleanout operations/activities, metallurgy R&D, plutonium fabrication, and D&D technology development (RLM231ZD.001).[29]

- BN
  - Characterization activities[6]
  - Repackaging activities[6]
  - Waste treatment activities including supercompaction, absorption of prohibited liquids, and removal of prohibited items [6]
  - Facility operations including waste management and maintenance.[6]

The debris waste feedstock received and stored at the AMWTP is packaged in 55- or 85-gallon drums and a variety of boxes, bins, and crates. These boxes, bins, and crates are constructed of metal or fiberglass-reinforced plywood. The types of supercompactor debris waste feedstock containers are as follows:

- Direct feed 55-gallon drums without rigid liners identified by generator (RF, MD, BC, BN) assigned IDCs
- Direct feed 55-gallon drums with rigid liners identified by generator (RF, MD, BC) assigned IDCs
- Repackaged RF, MD, BC, RL and BN debris waste from the boxline or DWPG in 55-gallon drums.

The first two bulleted types of debris waste feedstock containers retain their generator assigned IDCs until compaction.[1]

The Acceptable Knowledge Baseline Document for AMWTP Waste, RPT-TRUW-06,[6] was compiled to provide the AK baseline report for the AMWTP newly generated wastes in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.[13] RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant; RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Waste-Mound Plant Waste; RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory; and RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, are the AMWTP baseline documents for the RF, MD, BC, and RL facilities, respectively.[7, 8, 9, 29]

Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II®, Petroset IIG®, or PIG® absorbents may be added to the waste by AMWTP to absorb prohibited liquids within debris waste.[38, 39, 42, 48, 49, 50]

The flow of the AMWTP AK documentation is presented in Figure 2.

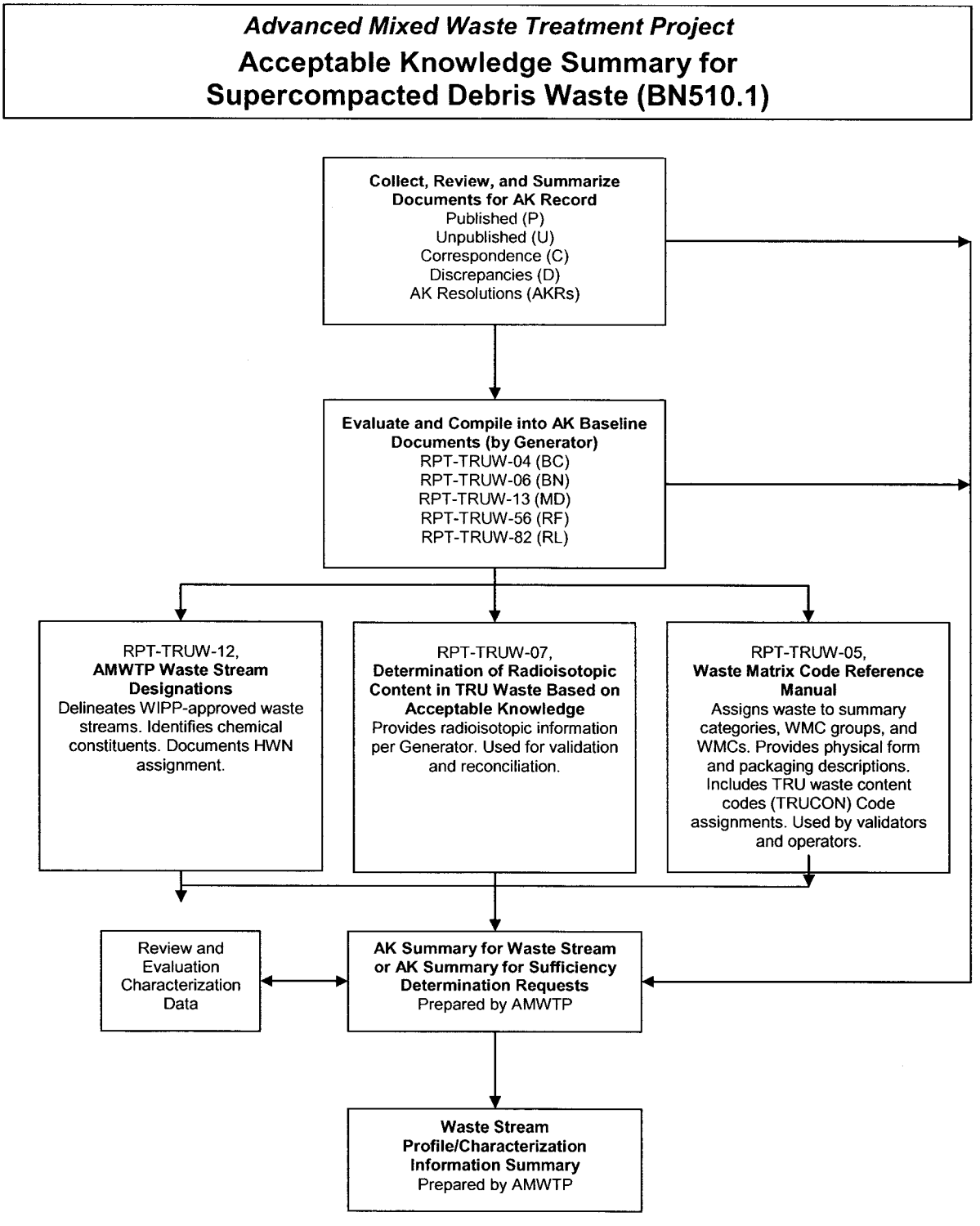

Figure 2. Document hierarchy and information flow for AK.

1.4.5 Waste Material Parameters

The original waste material parameter (WMP) weight percentages for the BN510.1 waste stream estimate were based on the visual examination (VE) data for 100-gallon product drums generated from 2005 through 2009. WMP data for 22,399 containers with completed RTR/VE data from the BN510 waste stream were obtained from the AMWTP Waste Tracking System database for containers examined prior to January 1, 2010. This population represented approximately 54% of the estimated volume of supercompacted waste (i.e., 22,399 out of 41,600 drums projected for BN510 and BN510.1 waste streams). The updated estimate is based on the VE data from 3,426 drums of BN510.1 supercompacted waste visually examined prior to September 12, 2011. The estimated WMP weights (by percent) for the BN510.1 waste stream, excluding 100-gallon drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13. The updated estimated WMP weight parameters are representative of the BN510.1 waste stream and are summarized in Table 2.[12, 13, 46]

Table 2. Waste material parameters for supercompacted debris waste.

Waste Material Parameters	Estimated Percent WMP weight/unit waste
Iron-based Metals/Alloys	79
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	1
Cellulosics	12
Rubber	<1
Plastics (waste materials)	7
Inorganic Matrix	<1
Organic Matrix	0
Soils/Gravel	<1

1.5 AK Sufficiency Determination

No AK sufficiency determinations apply to this waste stream.

1.6 Prohibited Items

The following items are prohibited in waste containers shipped to Waste Isolation Pilot Plant (WIPP) as documented in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. [5, 27]

- Liquid waste and prohibited observable liquids
- Sealed containers greater than 4 liters
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (Hazardous Waste Numbers [HWNs] D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8 of MP-TRUW-8.2, unless specifically approved though a Class 3 permit modification.[27]

Debris waste feedstock containers that are identified as containing prohibited items during RTR or VE are treated (to absorb prohibited liquids or to remove prohibited items) or are rejected, as appropriate. None of the supercompacted debris drums shipped to WIPP will contain prohibited items.

Boxline(s) are used to VE and repackage the boxed debris waste into 55-gallon drums. Debris waste feedstock treated or examined in the DWPG, and waste from maintenance and cleanup activities, is either examined by RTR or visually examined. The 55-gallon drums are non-destructive assayed. These drums of debris waste feedstock are then supercompacted and the pucks packaged into a 100-gallon product drum (IDC BN-550).[10, 11]

Prohibited items that can be treated to remove the prohibited characteristic are managed as newly generated waste. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents) to render the waste acceptable prior to shipment.[38, 39, 42, 48, 49, 50] Newly generated waste is characterized and assigned to an appropriate waste stream. [5, 27] In the event the treatment renders a debris waste form that can be compacted, it is included in BN510.1 as IDC BN-508.

1.7 Resource Conservation and Recovery Act Determination

The BN510.1 waste is (and has been) subject to the State of Idaho Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) requirements (e.g., 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, and 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities) and is currently being managed under the AMWTP RCRA permitting requirements until it is shipped offsite [44,45]

1.7.1 EPA Hazardous Waste Numbers

Supercompacted debris is characterized as mixed TRU waste. The HWNs assigned to the authorized supercompacted debris waste feedstock include HWNs associated with the debris waste feedstock as originally compiled in the AK baseline documents.[6, 7, 8, 9, 29]

Toxicity characteristic HWNs applied to the supercompacted debris waste are:

D004 (arsenic)], D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), D011 (silver) D022 (chloroform), D027 (1,4-dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).

Listed HWNs applied to this waste stream are:

F001: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and, trichlorofluoromethane;

F002: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene , chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane;

F004: cresols and nitrobenzene;

F005: 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone (MEK), pyridine, and toluene; and

F006, F007, and F009: electroplating waste.

The HWNs assigned to the BN wastes generated in the facility as a result of handling and processing feedstock waste are derived from the compilation of all EPA HWNs assigned to the authorized debris waste feedstock from the contributing generator sites (Table 3).
[6, 7, 8, 9, 29, 40, 41, 43]

Table 3. HWN assignment by generator site.

Generator Site/Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Rocky Flats[7]																					
Isotope recovery [b]	•	•	•	•	•	•	•	•													
Laboratory reagents, research	•	•	•	•	•	•	•	•	•											• [a]	
Degreasing, decontamination																	• [a]	• [a]			
Cleaning, spill clean up																				• [a]	
Electroplating																					• [a]
Based on AK/HSG											•	•									
Mound Plant[8]																					
PPO & PMC production and isotope recovery [b]	•	•	•	•	•	•	•	•													
Cleaning and degreasing																	• [c]	• [c]		• [c]	
Electroplating																					• [c]
Based on AK/HSG									•			•									

Table 3 (continued)

Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Battelle Columbus [9]																					
Metallurgical research		•	•	•	•	•		•													
Cleaning and degreasing																	•[d]	•[d]		•[d]	
Hanford[29, 40, 41, 43]																					
PFP plutonium metal production operations and glovebox activities including maintenance, clean out, D&D and stabilization:																					
• RLMPDT.001 (MPFPD)	•	•	•	•	•	•	•	•					•								
• RLMPFPCD	•	•	•	•	•	•	•	•	•				•				•[e]	•[e]	•[e]	•[e]	
Radiochemistry Processing Laboratory operations and maintenance (RLM325D.001)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[e]	•[e]	•[e]	•[e]	
Metallurgy operations, cleanout, and D&D (RLM231ZD.001)			•	•	•	•											•[e]	•[e]		•[e]	

Table 3 (continued)

Activity	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Chloroform	1,4-Dichlorobenzene	1, 2-Dichloroethane	1,1-Dichloroethylene	2,4-Dinitrotoluene	Hexachloroethane	Pentachlorophenol	Vinyl Chloride	Derived-From Rule	Derived-From Rule	Derived-From Rule	Derived-From Rule	Derived-From Rule
	D004	D005	D006	D007	D008	D009	D010	D011	D022	D027	D028	D029	D030	D034	D037	D043	F001	F002	F004	F005	F006 F007 F009
AMWTP[7, 8, 9, 29, 31, 40, 41, 43]																					
Newly generated waste from composited feedstock (i.e., supercompaction operations),	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[f]	•[f]	•[f]	•[f]	•[f]

a. RF – F001 =, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, tetrachloroethylene and trichloroethylene; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, tetrachloroethylene, and trichloroethylene; and F005 = 2-ethoxyethanol, benzene, carbon disulfide, methyl ethyl ketone, and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

b. Process used to recover radioisotopes (e.g., plutonium, americium, neptunium) which caused precipitation of metals as well as the radionuclides.

c. MD - F001 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, and methylene chloride; F002 =1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, and methylene chloride; F005 = benzene, carbon disulfide, MEK, and toluene. F007 and F009 HWNs are assigned due to electroplating waste contamination.

d. BC – F001= methylene chloride and trichloroethylene; F002 = methylene chloride and trichloroethylene; and F005 = benzene, MEK, and toluene.

e. RL – F001=1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; and F005 = 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene. Listed HWN constituents identified in footnote [e] are the summation from referenced AK and process knowledge (PK) documents.

f. BN (product drum)– F001= 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane; 1,2-dichlorobenzene, chlorobenzene, methylene chloride; tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; F005 = 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

1.7.2 Hazardous Determination

1.7.2.1 Hazardous Waste Management

The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1] The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on RCRA mixture and/or derived-from rules.[1, 6]

The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]

1.7.2.2 Ignitability

The waste materials in this waste stream do not meet the 40 CFR 261.21, Characteristic of Ignitabiity, definition of ignitability. Ignitable wastes are prohibited from entering the Supercompactor. The supercompacted debris waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The waste materials in this waste stream are not compressed gas and do not contain compressed gas. The waste does not meet the U.S. Department of Transportation definition of an oxidizer as defined in 49 CFR 173, Shippers – General Requirements for Shipments and Packagings. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001).

1.7.2.3 Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22, Characteristic of Corrosivity, definition of corrosivity. The supercompacted debris waste is not liquid waste and does not contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP. [38, 39,42, 48, 49, 50] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

1.7.2.4 Reactivity

The waste materials in this waste stream do not meet the 40 CFR 261.23, Characteristic of Reactivity, definition of reactivity. Reactive wastes are prohibited from entering the

supercompactor. Supercompacted debris is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The BN510.1 waste stream is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173. Although the waste contains wastes that are assigned F006, F007, and F009 listed HWNs that are associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. This non-reactive position is based on AMWTP AK documents that debris waste being used as feedstock is a non-reactive RCRA waste. This waste stream does not exhibit the characteristic of reactivity (D003).

1.7.2.5 Toxicity

The supercompacted debris waste stream contains RCRA toxicity constituents associated with toxicity characteristic metals and organics. See Table 3 for process-related activities associated with the HWNs.

The RCRA toxicity characteristic metals and organics assigned to this waste stream are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride).[1, 6, 7, 8, 9, 18, 29, 31, 40, 41, 43]

The RCRA toxicity characteristic metal HWNs: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver) were identified based on AK documentation associated with RF, MD, BC, BN and RL feedstock for the BN510.1 WSPF. The D004, D005, D006, D007, D008, D009, D010, and D011 HWNs are assigned to the supercompacted debris waste stream. [1, 6, 7, 8, 9, 29, 31, 40, 41, 43]

The HWN D022 (chloroform) was assigned based on AK documentation associated with RF, MD, and RL feedstock to the BN510.1 WSPF. The associated toxicity characteristic HWN D022 is assigned to the supercompacted debris waste stream.[29, 31, 40, 41]

The HWNs D027 (1,4-dichlorobenzene); D030 (2,4–dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The associated

toxicity characteristic HWNs D027, D030, D034, D037 and D043 are assigned to the supercompacted debris waste stream.[29, 40, 41]

The HWNs D028 (1,2-dichloroethane) and D029 (1,1-dichloroethylene) were assigned in the AK documentation associated with RF and RL feedstock to the BN510.1 WSPF. The D028 and D029 HWNs are assigned to the supercompacted debris waste stream.[18, 29, 31, 41]

1.7.2.6 Listed Waste

F-Listed HWNs. The supercompacted debris waste stream contains constituents associated with RCRA-listed waste HWNs. See Table 3 for process-related activities associated with the HWNs.

The BN510.1 supercompacted debris waste stream is assigned the F-listed HWNs: F001, F002, F004, F005, F006, F007, and F009. These F-Listed HWNs were historically assigned to feedstock waste by the original generator of the waste, for spent solvents used for cleaning, degreasing, and laboratory operations, and from electroplating operations. [1, 6, 7, 16, 29, 40, 41, 43]

The HWNs: F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) and F002 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. In addition, the F002 hazardous waste constituents 1,2-dichlorobenzene, chlorobenzene were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWNs F001 and F002.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Non-halogenated F003 solvent constituents (e.g., acetone, cyclohexanone, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butly alcohol, and xylenes) were identified in the AK and PK record as contaminants associated with the supercompactor debris waste feedstock. The BN510.1 waste stream does not exhibit the characteristic of ignitability. Therefore the F003 HWN is not assigned to the supercompacted debris waste stream.[1]

The HWN F004 (cresols and nitrobenzene) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The resultant supercompacted debris waste retains the listed HWNs assigned to the supercompactor feedstock based on current regulatory requirements (i.e., the RCRA derived-from rule). Therefore, supercompacted debris waste stream is assigned the EPA HWN F004.[29, 40, 41]

The HWN F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine, and toluene) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWN F005.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The HWNs F006, F007 and F009 were assigned based on AK documentation associated with RF feedstock and HWNs F007 and F009 were also assigned based on AK documentation associated with MD feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste is assigned the F006, F007, and F009 EPA HWNs.[1, 6, 7, 16]

P-, U- and K- Listed HWNs. The feedstock debris wastes in this waste stream are not discarded, unused, commercial chemical products, off-specification species, or manufacturing intermediates and do not contain spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33, Discarded Commercial Chemical Products, off-Specification Species, Container Residues, and Spill Residues thereof . In addition, the waste materials in this waste stream were not mixed with, or derived from, the treatment, storage, or disposal of P- or U-listed waste. As a result, P- or U-listed HWNs are not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Although hydrofluoric acid was identified as a chemical contaminant associated with the supercompactor debris waste feedstock, only spent forms of hydrofluoric acid would have contaminated the feedstock debris waste. Based on this information, the U134 HWN is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Based on a review of AK, it was determined that the BN510.1 waste stream will contain less than one percent beryllium by weight. Beryllium is a contaminant associated with this waste. The source of the beryllium is not associated with a powdered form and is not associated with unused commercial chemical product, an off-specification species, or a container residue, and does not contain a spill residue thereof. The P015 HWN for beryllium powder is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The waste materials within this waste stream are not hazardous waste from specific sources listed in 40 CFR 261.32, Hazardous Wastes from Specific Sources, (i.e., K-listed hazardous waste) and they have not been mixed with; derived from the treatment, storage, or disposal of K-listed wastes; and do not contain spill residues thereof. The waste materials in this waste stream are not assigned K-listed HWNs. [1, 6, 7, 8, 9, 29, 40, 41, 43]

Toxic Substances Control Act (TSCA) Regulated Contaminants. Polychlorinated biphenyl items with PCB concentrations equal to or exceeding 50 parts per million are not expected in the BN510.1 waste stream.

Drums of debris waste feedstock identified during RTR/VE as containing PCB items are segregated or sent to DWPG or SCW for item removal.[1, 17, 30, 31] PCB items identified in boxed debris are removed during boxline operations. PCB items removed from debris waste feedstock drums and boxes are packaged as newly generated waste and are not authorized as supercompactor debris waste feedstock.

Asbestos has been identified in some of the debris feedstock waste. Any containers identified as containing regulated types or quantities (e.g., greater than 1% of friable asbestos)

will be labeled, as required, in accordance with TSCA and Occupational Safety and Health Administration regulations.

Other Applicable Waste Streams. The AMWTP BN510 waste stream is pertinent to the BN510.1 waste stream. The IDCs identified within Appendix A includes IDCs previously identified within the BN510 WIPP-approved WSPF. The EPA HWNs assigned to the BN510 WSPF included D004 through D011, D022, D028, D029, F001, F002, F005, F006, F007, and F009.[31] The EPA HWNs assigned to BN510.1 include D004 through D011, D022, D027, D028, D029, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009. The addition of the D027, D034, D037, D043 and F004 HWNs is due to AK associated with the inclusion of RL debris waste into the supercompactor feedstock.[29, 40, 41]

1.8 Radionuclides

The radionuclides of concern for BN510.1 are ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are not expected to be present in measurable quantities in debris waste feedstock from RF except for IDC RF-480 due to disposal of isotopic sealed source material. Cesium-137 and computed ^{90}Sr are anticipated radionuclides for IDC RF-480 feedstock and may be detected during NDA. Cesium-137 and ^{90}Sr were identified as potentially present in MD, BC, and RL debris waste. [7, 8, 9, 14, 29]

At a minimum, the ratios of the two most prevalent radionuclides in the isotopic mix are compared to confirm existing AK data in compliance with contact-handled (CH)-WAC requirements. The two most prevalent radionuclides expected in the majority of AMWTP supercompacted debris waste product drums are ^{239}Pu and ^{240}Pu. This is based on a review of product drums included in the BN510 WSPF; however, the prevalent radioisotopes in some product drums of supercompacted debris waste may be a combination of ^{239}Pu and a different second TRU or uranium isotope due to commingling of wastes.

Table 4 identifies the predominant radionuclides and the principle source of those radionuclides for each of the original generators and for the supercompacted debris wastes.[7, 8, 9, 14, 29] For waste containers that have multiple generators and therefore a mixture of weapons grade plutonium (WG Pu), enriched uranium (EU), depleted uranium (DU), heat source isotopes, and fuel grade plutonium, a combination of any two of the common isotopes identified may be detected as the most prevalent. Radioassay data are reviewed and assessed by AMWTP NDA personnel as described in the RPT-TRUW-03, Drum Assay Technical Review Report.[15]

The radioisotopic content for each AMWTP supercompacted debris waste 100-gallon product drum will be calculated based on the aggregate of the NDA results for each of the compacted debris waste feedstock drums contained therein. The POS is used to ensure that each payload container does not exceed WAC weight or dose limits and complies with the required TRU activity (greater than 100 nCi/g). The direct feed 55-gallon drums will contain at least one TRU radionuclide greater than the lower limit of detection (LLD). The 100-gallon product drums that contain puck(s) with TRU radionuclides at less than LLD from the boxline feed, as determined by 55-gallon drum assay, are assayed using the Super HENC (high energy neutron counter) for final TRU determination.

Table 4. Predominant radionuclides expected in debris wastes by generator site.

Generator Site	Principal Plutonium Source	Predominant Radionuclides by Activity
RF	WG	^{239}Pu, ^{240}Pu
RF	WG, DU, EU	^{239}Pu (^{235}U or ^{238}U)
MD	WG	^{239}Pu, ^{240}Pu
MD	Heat source	^{238}Pu, ^{239}Pu
BC	WG	^{239}Pu, ^{240}Pu
RL	Combination WG Pu, fuels-grade Pu	^{239}Pu (^{241}Pu or ^{241}Am)
BN	WG (RF waste)	^{239}Pu, ^{240}Pu
BN	Combination WG Pu, heat source Pu	^{238}Pu, ^{239}Pu
BN	Combination WG Pu, heat source Pu, uranium, fuels-grade Pu	^{239}Pu (^{240}Pu, ^{241}Pu, ^{238}Pu, ^{241}Am, ^{235}U or ^{238}U)

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

BN510.1 consists of supercompacted drums of debris waste (pucks) placed directly into 100-gallon product drums. There are no inner packagings or layers of confinement associated with the 100-gallon product drums. There is a filtered lid on the 100-gallon drums. If 100-gallon drums become damaged, they are packaged into SWBs for shipment to WIPP.

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas (HSG) sampling and analysis is performed when required by the WIPP-Waste Acceptance Plan and/or CH-TRAMPAC. At a minimum, the HSG analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 parts per million flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[26]

3.0 REFERENCES

NOTE: *Advanced Mixed Waste Treatment Project documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

1. RPT-TRUW-12, AMWTP Waste Stream Designations
2. MLJ-004-10, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream, September 1, 2010. [C850A]
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31. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

32. INST-OI-12, Real-Time Radiography Operations (Drum)

33. INST-OI-34, Non-Facility Visual Examination Operations

34. INST-FOI-01, In-Plant Drum Assay Operations

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Appendix A – Supercompactor Debris Waste Feedstock

The following table lists the authorized debris waste feedstock by original generator and IDC.[7, 8, 9, 29, 36]

Waste Type	Site	IDC	Description
COMBUSTIBLES	RF	010	Paper & Rags
	RF	020	Wood & Benelex
	RF	030	Plastic
	RF	040	Rubber
	RF	33A	WIPP Experimental Test Program (WETP) Bin Program-Combustibles A (IDCs 335, 336, 337 and 339)
	RF	33B	WETP Bin Program – Combustibles B (IDCs 330, 337, and 339)
	RF	302	Benelex® and Plexiglas®
	RF	330	Paper and Rags-Dry
	RF	336	Paper and Rags-Moist
	RF	337	Plastic, Teflon®, Washables, PVC
	RF	339	Leaded Rubber Gloves and Aprons
	RF	430	Unleached Ion Column Resin
	RF	431	Leached Resin
	RF	460	Washables, Rubber, Plastic
	RF	463	Leaded Rubber Gloves and Aprons
	RF	464	Benelex® and Plexiglas®
	RF	833	Plastics, TRU Mixed
	RF	831	Dry Combustibles
	RF	832	Wet Combustibles
	RF	900	Low specific activity (LSA) Paper, Plastics, Etc.
	RF	970	Wood
FILTERS	RF	328	Ful-Flo® Incinerator Filters
	RF	335	Absolute 8 × 8 Filters
	RF	338	Insulation and Chemical Warfare Service (CWS) Filter Media
	RF	360	Insulation
	RF	376	Cemented Insulation & Filter Media

Waste Type	Site	IDC	Description
	RF	490	High efficiency particulate air Filters and CWS Filters
	RF	491	Plenum Prefilters
GRAPHITE	RF	070	Graphite
	RF	300	Graphite Molds
	RF	301	Graphite Cores
	RF	303	Scarfed Graphite Chunks
	RF	310	Graphite Scarfings
	RF	312	Coarse Graphite
HETEROGENEOUS	BC	201	Non-combustible solids
	BC	202	Combustible Solids-Paper/Cloth
	BN	508	AMWTP Newly Generated Debris
	BN	510	Supercompacted Debris
	BN	550	Supercompacted Debris (BN510.1)
	MD	801	Rags, Paper, Wood, etc.
	MD	802	Dry Box Gloves & O-Rings
	MD	803	Metal, Equipment, Pipe, Valves, etc.
	MD	804	Plastic, Tygon®, Mani-Boots, etc.
	MD	805	Asbestos Filters
	MD	810	Glass, Flasks, Sample Vials, Etc.
	MD	813	Glass Filters and Fiberglass
	MD	814	Graphite Waste
	MD	824	Equipment Boxes, Non-combustible
	MD	825	Equipment Drums, Non-combustible
	MD	826	Equipment Boxes, Combustible
	MD	827	Equipment Drums, Combustible
	MD	838	<10 nCi/g Non-combustible
	MD	847	LSA <100 nCi/g Combustible
	MD	848	LSA <100 nCi/g Non-combustible
	RF	241	Americium Process Residue
	RF	372	Grit
	RF	374	Blacktop, Concrete, Dirt, and Sand
	RF	750	Pits 11 and 12 Debris
	RF	760	Pad 1 Cells 1 and 2 RF Debris
	RF	950	LSA Metal, Glass, etc.

Waste Type	Site	IDC	Description
	RF	960	Concrete, Asphalt, etc.
	RL	712	Hanford Plutonium Finishing Plant Debris
	RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
	RL	716	Hanford 231-Z Building Debris
INORGANIC NON-METAL	RF	060	Glass
	RF	440	Glass
	RF	441	Raschig Rings, Unleached
	RF	442	Raschig Rings, Leached
	RF	44A	WETP Bin Program – Glass (IDCs 440 and 442)
	RF	368	Magnesium Oxide Crucibles
	RF	370	LECO Crucibles
	RF	371	Fire Brick
	RF	377	Coarse Fire Brick
	RF	391	Crucibles & Sand
	RF	392	Sand, Slag, and Crucible
LEAD/CADMIUM METAL	RF	488	Glovebox Parts w/Lead
UNCATEGORIZED METAL	RF	050	Metal Scrap
	RF	48A	WETP Bin Program – Metals (IDCs 480 and 481)
	RF	320	Heavy Non-special Source Metal
	RF	321	Lead
	RF	416	Zinc Magnesium Alloy Metals
	RF	480	Scrap Metal (Non SS)
	RF	481	Leached Metals (Non SS)

AMWTP
Advanced Mixed Waste Treatment Project

Acceptable Knowledge Summary for Cemented Sludge (BN836)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11342.)
Susan Peterman
TRU Programs Manager

06/27/12
Date

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ACRONYMS AND ABBREVIATIONS

AK	Acceptable Knowledge
AMWTP	Advanced Mixed Waste Treatment Project
BN	BNFL Inc.
CAO	Carlsbad Area Office
CCP	Central Characterization Project
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CFR	Code of Federal Regulations
D&D	decontamination and decommissioning
DOD	U.S. Department of Defense
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
HWN	hazardous waste number
IDC	item description code
INL	Idaho National Laboratory
MD	Mound
MDL	method detection limit
nCi/g	nanocuries per gram
PCB	polychlorinated biphenyl
ppm	parts per million
PPO	pressed plutonium oxide
PRQL	program-required quantitation limit
RCRA	Resource Conservation and Recovery Act
R&D	research and development
RTG	radioisotopic thermoelectric generator
RTL	regulatory threshold limit
RTR	real-time radiography
TRU	transuranic
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
UCL90	90% upper confidence limit
VE	visual examination
VOCs	Volatile Organic Compounds
WAC	Waste Acceptance Criteria

WD	Waste Disposal [building at Mound]
WDA	WD Annex
WIPP	Waste Isolation Pilot Plant
WIPP-WAP	Waste Isolation Pilot Plant Waste Analysis Plan
WMC	waste matrix code
WMP	waste material parameter

Advanced Mixed Waste Treatment Facility

Acceptable Knowledge Summary for Cemented Sludge (BN836)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN836 [1]

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Cemented Sludge [1]

1.2.2 Point of Generation

Mound (MD) –Waste Disposal (WD) Building. [2, 3]

1.2.3 Waste Stream Volume

4,323 55-gallon drums (908 m^3) – current volume [4]
0 55-gallon drums (0 m^3) – projected volume

The above is an estimate of the number of candidate containers for waste stream BN836. The estimated percentages (by number of containers) of transuranic (TRU) activity are 50% greater than 100 nCi/g and 50% less than 100 nCi/g. [4]

Advanced Mixed Waste Treatment Project (AMWTP) will employ payload management practices in accordance with the Waste Acceptance Criteria (WAC) for waste stream BN836. [5]

1.2.4 Generation Dates

AMWTP stores containers of Mound cemented sludge waste generated from 1974 to 1985. Wastes stored at AMWTP with generation dates (i.e., pack date) later than 1985 are the result of repackaging (e.g., waste characterization activities). [2, 3, 6]

1.2.5 TRUCON Codes

ID111/ID211 [7]

1.2.6 Transuranic Waste Baseline Inventory Report (TWBIR) Information

Waste Stream ID: IN-BN836 (previously identified as IN-W179.158) [8]

1.2.7 Summary Category Group

S3000- Homogeneous Solids [9]

1.2.8 Waste Matrix Code Group

Solidified Inorganics [1, 10]

1.2.9 Waste Matrix Code (WMC)

S3121 – Wastewater Treatment Sludges [1, 9]

Mound cemented sludge waste consists of at least 50 volume percent sludge from a wastewater treatment process that was solidified with cement.

1.2.10 Description from the TWBIR

This waste, generated at the Mound Plant, consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in Portland cement. [8]

1.2.11 AMWTP Defense-Related Determination

Mound wastes were generated during defense-related operations conducted for a variety of customers, including Lawrence Livermore National Laboratory, Hanford Site, Oak Ridge National Laboratory, and the space program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by the Mound Plant was the Space Nuclear Auxiliary Power system which was sponsored by the DOD. Operations at the facility included plutonium processing and recovery, development of reactor fuels, performance of reactor fuel waste studies, and production of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the cemented sludge is the result of commingling of wastes from both defense and domestic related activities. Defense wastes are identified as those wastes generated during work involving only defense activities or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The cemented sludge waste stream, therefore, meets the definition of defense waste from defense nuclear materials production and defense research and development (R&D). [2, 11, 12, 13, 20, 37, 38, 39, 40]

1.3 Waste Stream Description

1.3.1 Description

This waste stream consists of drums containing Mound cemented sludge (Item Description Code [IDC] MD-836). The sludge waste was generated from the treatment of alpha-contaminated wastewaters at the Waste Disposal (WD) Building. The wastewater originated outside process gloveboxes from sources such as floor drains, laboratory sinks, and sumps, as well as the old alpha waste line. The wastewaters were generated from decontamination, laundry, research and analytical operations from several facilities at Mound including the Laundry

(H Building), Plutonium Processing (PP building) /Special Metallurgy (SM building) Complex, Semi-Works (SW building)/Research (R building) Complex, Technical (T building), WD, and the annex on the WD Building (WDA), and Buildings 23, 50, and 51. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing and personnel and contains detergents, cleansers, soaps, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. The sludge was solidified with Portland cement. Florco, a non-hazardous absorbent, may have also been added to this waste stream. [2, 3, 11, 14, 15, 16, 17, 18, 19, 20, 21]

This waste was generated from similar activities and is similar in material, physical form, and hazardous constituents and is a single waste stream. The waste is primarily an inorganic matrix. Individual drums may also contain small amounts of debris including plastic, rubber and paper items. [2, 3, 21, 22] Each container in this waste stream contains at least 50% by volume sludge waste.

1.4 Process Description

1.4.1 Areas of Operation

Mound cemented sludge waste was generated by treating alpha-contaminated wastewater generated from the following operations conducted in H, PP/SM, SW/R, T, WD and WDA Buildings and Buildings 23, 50 and 51: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Laboratory and Research and Development Operations
- Waste Treatment
- Decontamination and Decommissioning (D&D).

1.4.2 Process Flow Diagram

Process flow diagrams for Mound Sludge generating process are provided in Figures 3-6 and 3-8 of RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste. [2] Process flow diagrams of the sludge generating and solidifying processes are also provided in the Mound radioactive waste management site plans and status reports. [14, 15, 16]

1.4.3 Wastewater Generation

The TRU Mound cemented sludge waste stored at the Idaho National Laboratory (INL) was generated from the treatment of alpha-contaminated wastewater collected from various facilities at Mound that housed defense operations related to the design and development of heat sources using ^{238}Pu for spacecraft, generators, and satellites. These operations and facilities included plutonium processing operations, plutonium and other isotope recovery, and other activities supporting these operations including laboratory and R&D operations, maintenance operations, and waste treatment operations. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing, and personnel and contains detergents,

cleansers, soap, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. [2, 3, 11, 18, 19, 20]

The drain systems from all radioactive areas terminated in the WD Building. [53] Alpha-contaminated wastewater was collected from H, PP/SM, SW/R, WD, and WDA Buildings. Alpha-contaminated wastewater was also received from T Building prior to 1976, from the Building 23 sump if it became contaminated, from Building 50 after 1977, and from Building 51 between 1980 and 1983. Floor drains in these buildings, as well as laboratory sink drains, shower water, and sumps contributed to this waste. During the period of time that the waste to be dispositioned by the AMWTP was generated, the primary inputs to the WD included the following: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Wastewater from laundry drains in H Building
- Wastewater from SM/PP complex transferred by pipeline (until 1976)
- Wastewater from SM/PP complex transported by tanker truck (after 1976)
- Wastewater from drains, sumps, showers, and laboratory sinks in SW/R complex
- Wastewater from drains, sumps, and laboratory sinks in WD Building and WDA.

The alpha-contaminated wastewater also includes liquids collected from the old, alpha waste line which was connected to the SW/R complex and the laundry in the H Building. Although these connections were believed to be plugged, a small amount of water from this waste line was received at the WD, mainly after rain. [3, 11]

Demolition of the SM/PP and R Building plutonium processing facilities began in the 1970s; however, the cemented sludge included in this waste stream was generated from 1974 to 1985. These activities included D&D of gloveboxes, conveyor housing, piping, process equipment, and structures. [3, 11, 20, 22] Gloveboxes, process equipment in gloveboxes, and hoods were decontaminated using water, detergent, and hypochlorite. Until 1980, D&D of some of the process equipment used acid solution rinses to recover plutonium. [11] A detergent and paint remover in a high pressure washer was also used to decontaminate building interiors and equipment. [12, 43]

1.4.3.1 SM/PP Complex

Plutonium was processed at the Mound site in the SM Building and PP Building (Building 38), otherwise known as the SM/PP Complex. The primary processes were pressed plutonium oxide (PPO) sphere production and plutonium-molybdenum cermet (PMC) production. The ^{238}Pu was used as the heat source in radioisotopic thermoelectric generators (RTGs), and the RTG units themselves were manufactured at Mound. The alpha-contaminated wastewater that was transferred from the SM/PP complex to the WD included wastewaters from floor drains, shower water, sinks, and a laboratory located in the PP Building. Small quantities of chemicals used in the plutonium production and recovery operations became constituents of the wastewater and include cooling water, trace amounts of alcohols (methanol, ethanol, isopropanol), detergents, shower water, janitorial wastes (wax, wax stripper, and bowl cleaner),

paint, and trace amounts of acetone and trichloroethane. Wastewater from these sources drained into two 500-gallon sumps. The wastewater was transferred to WD via a pipeline until 1976, when the pipeline was sealed and wastewater was pumped from the sumps to a storage tank outside the building. The wastewater was then pumped from the tank to a tanker truck and transported to WD Building for treatment. [3, 11, 18, 19, 20, 44, 48, 49, 50, 51, 62, 63, 64, 65, 70]

A variety of analytical procedures were performed in PP Building laboratory, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. With the exception of liquid scintillation vials, all spent chemicals used in the laboratory were assumed to be radioactively contaminated and were poured down the sink drains into the wastewater system. Scintillation vials and spent cocktail were bagged and sent to Building 23 for dispositioning. Chemicals used in the laboratory included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichloroethane and methanol also were used in the SM/PP complex as a degreaser for metal parts. [3, 11, 19, 20, 22, 43, 45, 49, 50, 51, 52]

1.4.3.2 SW/R Complex

SW, R, and related facilities are considered as the SW/R complex because they are physically joined. Historically, R Building housed tritium recovery, plutonium development work, and analytical support. The SW Building housed tritium recovery and purification; tritium component development, component evaluation, and materials analysis; and research on plutonium actinium, radium, uranium, thorium, and protactinium. During decommissioning, several gloveboxes in the R-140 laboratory area were characterized as TRU waste. Encapsulation was conducted in the R Building and involved welding a machined metal cover over a sphere of PPO spheres. Encapsulation materials included iridium, graphite, tantalum, titanium, hastelloy (an alloy of cobalt, molybdenum, chromium, tungsten, and iron), inconel, platinum-rhodium, and yttrium. Encapsulation operations in the R Building at Mound were conducted until 1979. In addition to encapsulation, several processes in the R Building supported SM/PP production operations, including encapsulation research, shaping and pressing heat sources, and other research. [3, 11, 20]

The SW/R Building complex also included a small laboratory section that handled alpha-emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for R&D, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in WD Building. Chemicals used in the laboratory included carbon tetrachloride, dichloromethane, organophosphate, nitric acid, boric acid, and sulfuric acid. Yearly estimates of waste materials sent to the WD Building from the R Building laboratories included hydrogen peroxide; ammonium hydroxide; and hydrochloric, hydrofluoric, nitric, sulfuric, and lactic acids (approximately 7 pints total); methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene (approximately 5 pints total), and sodium sulfite solution (approximately 1 pint); and 86 lb of various chemicals, including potassium and copper sulfates and carbonates and sodium hydroxide (lime). [3, 11, 12, 18, 19, 20, 29, 44, 45, 46, 47, 48, 52, 63, 64, 65]

1.4.3.3 H Building

The H Building housed the laundry facilities for both uncontaminated (cold) and contaminated (hot) clothing for Mound. All of the water generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank on the "hot side" of the building. The wastewater was pumped to the WD Building alpha wastewater influent tanks. Products used in the H Building included liquid soap that contains ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contains ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. [3, 11, 16]

1.4.3.4 WD and WDA Buildings

WD Building was the central facility for the treatment of radioactive liquid wastes at Mound, and historically included alpha and beta wastewater treatment systems. An addition to WD Building (WDA) was constructed, including the Waste Treatment System (WTS) pipeline, which carried acidic and caustic wastewater from SM and PP to WDA, and began accepting alpha-contaminated wastewater in August 1967. The high-risk portion of the pipeline was not operational until April 1968 and was abandoned in 1974. The WDA alpha-contaminated wastewater treatment was moved to WD, and the WDA alpha influent tanks were converted to use in the beta wastewater treatment system which began treating tritiated wastewater in 1973. Cemented sludge included in this waste stream was generated from 1974 to 1985. [2, 3, 6, 11, 12]

All floor and sink drains in the WD and WDA Buildings were connected to sumps located in the basement of the buildings. Wastewater from the sumps was transferred either by pipeline or by pumping to storage tanks for transfer to the WD alpha influent tanks. There was a small laboratory in WD Building where alpha and beta waste streams were analyzed. This laboratory was not used on a routine basis, but the sink was connected to the WD sumps. Sludge moisture and pH analyses and scintillation counts of influent and effluent wastes were performed. Hazardous compounds used in the WD laboratory included Instagel, which has a xylene base. Spent liquid scintillation cocktail and used scintillation vials, were bagged and dispositioned as mixed waste and sent to Building 23 for storage. The liquid scintillation waste was not sent to INL. [3, 11]

1.4.3.5 Other Buildings

The T Building housed a multitude of research, development, and production programs. The two major radionuclide programs were the polonium and tritium programs. From 1949 to 1973, ^{210}Po programs included a processing and separation program, a fuels R&D program, and a production program with polonium. Decontamination work was done from 1971 through 1973 on the ^{210}Po processing areas. A variety of other activities were performed in the T Building such as nondestructive testing, environmental testing, gamma and mass spectroscopy, calorimetry, neutron activation analysis, and safeguards R&D. Tritium contaminated waste was drummed and sent to the beta contaminated wastewater system. [11, 27]

Building 23 is adjacent to the WD. Drummed radioactive and mixed wastes were stored in Building 23 prior to shipment of the wastes to off-plant disposal facilities. Several floor drains connected to a sump were used to collect any spills or leaks from the stored drums. Liquid wastes in the sump were sampled prior to dispositioning. Nonradioactive or clean material was released to the sanitary sewer system. Contaminated liquid wastes were transported in drums to the WD alpha wastewater influent tanks. [3, 11]

Building 50 housed plutonium operations, including production of heat sources using ^{238}Pu. Building 51 housed an incinerator that was used to burn non-radioactive waste prior to 1974. [11]

1.4.4 Wastewater Treatment Process

The alpha wastewater treatment system in the WD consisted of four influent tanks, two clariflocculators, two sand filters, two bone char columns (after 1977), four effluent storage tanks, two sludge tanks (pits) , and a sludge solidification/drumming unit. All liquid wastes were collected in the influent tanks and sampled for radioactivity and then prepared for treatment. [11, 14, 15, 16]

Chemicals such as activated carbon, calcium chloride, and ferric sulfate; barium chloride aluminum sulfate, and sulfuric acid (before 1976); and sodium hydroxide (after 1975) were added in varying but pre-determined amounts to provide the desired adsorption, phosphate precipitation, flocculation, and scavenging. After 1974, the flocculating agents Nalco C-627 (before 1982) and Nalco N-7173 (after 1981) were also used to improve the quality of the effluent and to reduce the volume of sludge generated. A major portion of the radioisotopes present was retained by the flocculated solids. Each of the four influent tanks was agitated by two mixers to prevent settling of the solids. [11, 14, 15, 16, 19, 20, 23, 53]

The mixture was then pumped into two clariflocculators where the precipitate (sludge) and liquid were separated after the flocculated solids were allowed to settle. Aluminum sulfate (prior to 1976) or sodium hydroxide (after 1976) was added to control the pH between 11.0 and 11.5 and to maximize the precipitation and settling. The supernatant liquid was removed by siphoning the liquid above the settled sludge. Prior to 1977 the supernatant liquid was acidified (using sulfuric acid) and treated with activated carbon and sodium hypochlorite (after 1975 for bacteria control), and then filtered through sand beds prior to being pumped into four effluent tanks. After 1977, the supernatant liquid was treated with activated carbon, filtered through sand beds, neutralized with sulfuric acid to 7.0 to 8.0 pH, and/or passed through a bone char filter (and 1 micron filter after 1979) prior to being pumped into the effluent tanks. If the effluent met the applicable requirements governing discharge of radioactive materials to the environment, it was released to the Great Miami River. If the effluent did not meet the requirements, it was recycled through the process. [11, 14, 15, 16, 19, 23, 53]

The dewatered sludge (approximately 15 to 30 % solids) was then pumped from the clariflocculators into two sludge holding tanks. [20, 24, 25, 26, 44] The principal non-radioactive constituents of the sludge are carbon and ferric hydroxide with minor amounts of calcium

carbonate, calcium phosphate, and calcium oxalate. [26] Prior to 1977, the sludge was treated with caustic soda (sodium hydroxide) to reduce bacterial action. The sludge was sampled on a batch basis to determine activity level prior to solidifying in 55-gallon drums containing 90-mil rigid polyethylene liners. In some cases a drum bag liner may have been used. [11, 14, 15, 16, 21] Two to 2-1/2 bags (about 190 to 240 pounds) of Portland cement were slowly added to approximately 40 gallons of sludge in a waste drum while working the mixer up and down through the sludge-cement mixture and then mixing for about 7 to 10 minutes. After the mixer blades were removed from the drum, unmixed cement was typically added to the top of the sludge-cement mixture. The sludge-cement mixture was allowed to cure overnight before the rigid drum liner lid or drum lid was installed. The drums of cemented sludge typically weigh between 575 and 650 pounds. [20, 22, 24, 25, 26] Based on real-time radiography (RTR) examinations, a bag liner was used in some drums of cemented sludge waste. [21]

1.4.5 Material Inputs

The principal non-radioactive constituents of the sludge (prior to mixing with cement) are carbon and ferric hydroxide with minor amounts of calcium carbonate, calcium phosphate, and calcium oxalate. [26] The chemicals presented in Table 1-1 were used in the Mound plutonium production and recovery, laboratory, R&D, and D&D activities and may have contaminated the alpha-contaminated wastewaters. The chemicals presented in Table 1-2 were used to treat the wastewaters, as well as identified as being in the wastewater (typically in trace amounts) or added to the sludge without treatment (sodium carbonate and sodium chloride). [19, 44] The alpha-contaminated wastewaters were treated in the WD Building, resulting in the cemented sludge waste.

Table 1-1. Chemicals used in Production, Recovery, Laboratory, R&D, and D&D Activities.

Chemical Types	Chemical Compounds
Halogenated solvents used for cleaning/degreasing	Benzene, carbon tetrachloride, methylene chloride, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and trichloroethylene. [2, 11, 12, 29, 45, 50, 51]
Nonhalogenated solvents used for cleaning/degreasing	Acetone, methanol, toluene, and xylene. [3, 11, 12, 18, 19, 20, 29, 45, 48, 49, 50, 51, 52, 62]
Organic solvents used in production processes or laboratories	Acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, dichloromethane, ethanol, methanol, methyl ethyl ketone, methylene chloride, propanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and InstaGel (contains xylenes). [2, 3, 11, 12, 20, 29, 30, 48, 49, 50, 52, 70]
Chemicals used in plutonium processing and recovery operations	Acids (nitric, sulfuric, acetic, hydrochloric, hydrofluoric, and oxalic) ammonium hydroxide, aluminum nitrate, dimethyloxalate ferrous sulfamate, hydroxylamine nitrate, sodium carbonate, sodium hydroxide, and tri-n-octylphosphine (TOPO). [2, 3, 11, 20, 22, 43, 47, 50, 70]
Chemicals used in laboratory operations	Acids (acetic, boric, hydrochloric, hydrofluoric, lactic, nitric, and sulfuric), ammonium hydroxide, carbon tetrachloride, copper sulfate, hydrogen peroxide, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), mineral oil, organophosphate, potassium carbonate, potassium sulfate, sodium hydroxide, sodium sulfite. [2, 3, 11, 20, 22, 29, 52, 70]
Chemicals used in D&D operations	Acid solutions, detergent (e.g., Micro® detergents, nonsolvent based cleaners with no identified RCRA regulated hazardous constituents), hypochlorite, polyurethane foam, RTV rubber, and paint remover (e.g., methylene chloride or methyl ethyl ketone). [11, 12, 20, 31, 32]
Absorbents used in packaging	Florco (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents), Auto-Dri and Dri-Rite (calcium carbonate). [2, 11, 20, 22, 33]

Table 1-2. Chemical Contaminants that may be present in the Cemented Sludge Waste.

Chemical Types	Chemical Compounds
Chemicals used in wastewater treatment processes	Activated carbon, calcium chloride, ferric sulfate, barium chloride, aluminum sulfate, sulfuric acid, sodium hydroxide , sodium hypochlorite, Nalco C-627 and Nalco N-7173 (organic polymers, polyelectrolyte flocculants), and bone char. [14, 15, 16, 17]
Chemicals identified in liquids sent to the wastewater treatment process.	Acetone, acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, oxalic, sulfuric), alcohols (methanol, ethanol, and propanol), ammonia, ammonium bicarbonate and sodium hexamethaphosphate (powdered soap), ammonium hydroxide, asbestos fiber, beryllium, calcium carbonate, caustic soda and lime, chromium, copper sulfate, cyanides, ethylene glycol monobutyl ether and sodium hydroxide (liquid soap), fabric softeners [a], hydrogen peroxide, lead, lithium chloride, mercury, methylene blue, mineral oil, nickel sulfate, paint, potassium bromide, potassium carbonate, potassium pyrosulfate, potassium sulfate, sodium carbonate, sodium chloride, sodium hydroxide, sodium sulfite, trichloroethylene, and zirconium oxide.[11, 18, 19, 20, 44, 63, 64, 65]
Materials used in waste solidification processes	Cement and Florco absorbent (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents). [2, 11, 33]

a. Fabric softeners may include chemicals such as alchohols (e.g, benzyl alcohol, ethanol, isopropyl) alpha-terpineol, benzyl acetate, camphor, chloroform, ethyl acetate, limonene, linalool, and pentane. [55, 56, 57]

1.4.6 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN836, WMP data from 100% of the completed RTR and VE (visual examination) of Mound cemented sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 69% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTPs comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Mound cemented sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, and are summarized in Table 1-3. [34, 58]

Table 1-3. Estimated Waste Material Parameter Weights Per Unit of Waste for Cemented Sludge Waste (BN836).

Waste Material Parameters	Weight per Unit Waste by Percent
Inorganic Matrix	100
Other Inorganic Materials	<1
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	<1
Iron-based Metals	<1
Other metals	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic sludge. (21)

1.5 Prohibited Items

The following items are prohibited at the Waste Isolation Pilot Plant (WIPP) in accordance with Section B-1c of the WIPP Waste Analysis Plan (WIPP-WAP): (10)

- Liquid waste
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristics of ignitability, corrosivity, or reactivity (hazardous waste numbers [HWNs] D001, D002, or D003).
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification. (60)
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2. (60)

- Sealed inner containers greater than four liters.

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities. RTR or VE is performed on each container to verify the absence of prohibited items. [35, 36] Drums with prohibited items are treated or rejected as appropriate. Drums containing prohibited items will not be shipped to WIPP.

1.6 Resource Conservation and Recovery Act (RCRA) Determination

1.6.1 EPA Hazardous Waste Numbers

Mound cemented sludge is characterized as mixed-TRU waste. Toxicity characteristic HWNs assigned to the cemented sludge waste are D004, D005, D006, D007, D008, D009, D010, and D011. Listed HWNs assigned to this waste stream are F001, F002, and F005. [41]

1.6.2 Hazardous Determination

The hazardous waste determination for cemented sludge waste is described in the following subsections.

Ignitability

The materials in this waste stream do not meet the 40 CFR 261.21 definition of *ignitability*. The cemented sludge is not a liquid. Additionally, absorbents (e.g., cement, Florco) were added during packaging of this waste. The waste materials are not compressed gases, nor does the waste contain compressed gases. The waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173 and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. Trace quantities of hypochlorite solutions, hydrogen peroxide, nitric acid, and other potential DOT oxidizers in the wastewater were treated in the WD Building, and trace contamination in the cemented sludge does not meet the definition of a DOT oxidizer. [11, 19, 22, 25, 44] Therefore, this waste stream does not exhibit the characteristic of ignitability (D001).

Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22 definition of *corrosivity*. The cemented sludge waste is not liquid. In addition, absorbents (e.g., cement, Florco) were added during packaging of this waste. [25, 44] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

Reactivity

The materials in this waste stream do not meet the 40 CFR 261.23 definition of *reactivity*. The cemented sludge waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials may contain trace quantities of sulfides

or cyanides but would not generate toxic gas in sufficient quantity to pose a threat to human health or the environment. The materials are neither forbidden explosives nor Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, and the drums do not contain explosive materials. Explosives were produced and tested at Mound Plant, but wastes generated from explosives were managed in waste groups entirely separate from radioactive wastes. [2, 11, 19, 44] Therefore, this waste stream does not exhibit the characteristic of reactivity (D003).

Toxicity

The materials in the cemented sludge waste have been conservatively assigned the toxicity characteristic for metals as defined in 40 CFR 261.24. Based on AK, cemented sludge waste may contain RCRA toxicity constituents due to mixture with toxicity characteristic metals and organics.

AK for cemented sludge waste indicates the presence of toxicity characteristic metals arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011). [11, 28, 29, 66, 67] Based on process descriptions, sources of toxicity characteristic metals were used in the R Building laboratory operations (reference Table 1-1). Arsenic, cadmium, selenium and silver are attributed to chemicals used in laboratory operations. [29] Barium chloride was one of the chemicals used in the WD facility to treat the alpha-contaminated wastewater. [14] The cemented sludge may contain paint contaminated with chromium or lead. [18, 19, 20,44, 63, 64] Mercury was used in analytical and production operations. [11, 20, 28, 29, 48, 52, 67, 68, 69] Chromium and lead were detected in historical sampling of the alpha-contaminated sludge. [18, 19, 20, 28, 44, 63, 64]

Solid samples were analyzed for total metal. Statistics were calculated based on using one-half the method detection limit (MDL) for less than detectable observations with data transformation applied where appropriate. The 90 percent upper confidence limit (UCL_{90}) exceeded the regulatory threshold limit (RTL) for the toxicity characteristic metal barium; consequently, the EPA characteristic HWN D005 assigned by AK is retained for the cemented sludge waste. Although the calculated UCL_{90} did not exceed the associated RTL based on totals for the toxicity characteristic metals arsenic, cadmium, chromium, lead, mercury, selenium and silver, the corresponding EPA characteristic HWNs D004, D006, D007, D008, D009, D010 and D011 are also conservatively assigned to the cemented sludge waste. [41, 66]

> Carbon tetrachloride, chloroform, methyl ethyl ketone, benzene, tetrachloroethylene, and trichloroethylene were identified as chemicals used at Mound for their solvent properties and may be present in the alpha-contaminated wastewater. [2, 3, 11, 12, 29, 45, 48, 51] Carbon tetrachloride, benzene, and trichloroethylene were used for cleaning/degreasing. [2, 3, 11, 12, 29, 45, 51] None of these constituents were detected in the solid sampling; therefore, the toxicity codes for these constituents are not applied.

Listed Waste

F-Listed HWNs

F001, F002, and F005 listed HWNs are conservatively assigned to the Mound cemented sludge waste for spent solvents. [28, 41]

Solid samples were analyzed for volatile organic compounds (VOCs) and semivolatile organic compound constituents and only methanol was detected above the MDL. The calculated UCL_{90} of the mean concentration did not exceed the associated program required quantitation limit (PRQL) for the RCRA characteristic solvents or F-listed solvents. Headspace gas (HGAS) sampling and analysis detected nine VOCs (benzene, 1,1-dichloroethane, trans-1,2-dichloroethylene, methanol, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, and xylene); however, the calculated UCL_{90} did not exceed the associated PRQL for these constituents.

Minor amounts (approximately 5 pints total organics per year) of organics, including trichloroethylene, were disposed of in the alpha-contaminated wastewater. [2, 11, 19, 20] Trace amounts of organics were discharged into a wastewater treatment system regulated by a Clean Water Act point source discharge permit and were eligible for RCRA regulatory exclusions identified in 40 CFR 261.3. Nevertheless, the listed HWNs F00l F002, and F005 were conservatively assigned.

Trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, and methyl ethyl ketone were identified in AK documents as solvents used in cleaning/degreasing and laboratory operations in SM, PP, SW, and R Buildings. [2, 3, 11, 28, 29] 1,1,2-Trichloro-1,2,2-trifluoroethane was used for cleaning/degreasing in other operations. [2, 11, 28, 29] Benzene, tetrachloroethylene, carbon disulfide, and toluene were used as solvents in laboratory and production operations. [2, 11, 29, 48, 52] Paint removers containing methylene chloride or methyl ethyl ketone may have been used in the D&D process. [11, 43] These chemicals were not identified as constituents in the alpha-contaminated wastewater. The wastewater may have been contaminated with trace quantities of these constituents during decontamination operations. EPA HWNs F001, F002, and F005 are conservatively assigned to this waste stream. 1,1,1-Trichloroethane, trichloroethylene, tetrachloroethylene, benzene and toluene were detected in HSG analysis, which support AK. [41]

Acetone, methanol, and xylene (non-chlorinated solvents) were also used as solvents in laboratory and production operations and acetone and methanol were identified as constituents in this wastewater. [11, 18, 19, 20, 28, 29, 44, 48, 49, 50, 51, 52, 62, 63, 64, 65, 70] Cemented sludge is not a liquid waste but may be contaminated with residuals from these solvent operations. If a waste no longer exhibits the characteristic of ignitability, the F003 hazardous waste number can be removed [40 CFR 261.3(g)(1)]. Because the waste is not ignitable, the EPA HWN F003 is not assigned to this waste stream.

Although 2-methyl-2-propanol, (CAS No. 75-65-0) was detected in greater than 25% of the samples for this waste stream, it is not a 40 CFR 261, Appendix VIII listed analyte and will, therefore, not be added as a target analyte for this waste stream.

P-, U- and K-Listed HWNs

Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, only spent forms of hydrofluoric acid would have contaminated the alpha wastewater. [11, 18, 19, 20, 22, 44, 45, 50, 63, 64] This waste stream does not contain and was not derived from an unused commercial product, an off specification species thereof, or a manufacturing intermediate that would be classified as U134 HWN. Based on this information, the U134 HWN does not apply to this waste stream.

Beryllium was identified in AK as a potential contaminant from analysis of weapon components. Typically, less than 50 grams of beryllium waste was generated annually. Based on a review of AK and the solid sampling results, it was determined that the cemented sludge waste contains less than one percent beryllium by weight. [2, 3, 11, 19, 65] If beryllium is present, it is a contaminant of the process and not as an unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code for beryllium, as defined in 40 CFR 261.33, is not assigned to the waste.

The materials in this waste stream are not discarded, unused, commercial chemical products, off-specification species, container residues, or spills thereof (40 CFR 261.33). No P- or U-listed hazardous waste numbers apply to the materials in this waste stream.

The materials in this waste are not hazardous waste from specific sources since they were not generated from any of the processes listed in 40 CFR 261.32. The materials in this waste stream are, therefore, not K-listed hazardous waste.

TSCA Regulated Contaminants

PCBs are not expected to be present in the cemented sludge waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the WAC. [2, 5, 11, 19, 20, 29, 35, 36]

1.7 Radionuclides

The primary radionuclides contained in Mound TRU waste stored at INL are those identified for "heat source" materials (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu). Mound TRU waste is also expected to contain ^{241}Am, ^{235}U, and ^{237}Np, due to ingrowth. Weapons-grade material composed primarily of ^{239}Pu is also expected to be present, as well as small quantities of other isotopes from research activities. Uranium-234 is an expected constituent in aged plutonium. Other radioisotopes that have been measured in Mound wastes are ^{227}Ac, ^{233}U, ^{238}U, ^{137}Cs, and ^{60}Co. Although ^{90}Sr was not detected, it is expected to be present in waste where ^{137}Cs is

observed. The cemented sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [2, 27, 28, 42, 54, 61]

The ratios of the two most prevalent radionuclides in the container are compared to confirm existing AK data in compliance with WAC requirements. The two most prevalent radionuclides anticipated in the cemented sludge waste are ^{238}Pu and ^{239}Pu. [42]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. Some of the rigid liners were lined with a polyethylene drum bag. After being filled with waste, the drum bag, if present, was sealed with tape and the rigid drum liner lid was installed. Based on RTR/VE examination, a cement cap may be present on top of the cemented sludge and the sludge may exhibit variable layers of solidification. Absorbents (such as Florco) may also be present on top of the cemented sludge. Plywood spacers were placed between the rigid liner lid and the drum lid before the drum lid was installed. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate. [21, 24, 25, 26]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for VOCs, hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the HGAS analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HGAS results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [59]

3.0 REFERENCES

NOTE: *References are cited per the style guide provided by AMWTP Document Control. AMWTP documents such as procedures, AK Reports, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Data Management System. Previous revisions are available upon request through Document Services.*

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AK3

AMWTP
Advanced Mixed Waste Treatment Project

RPT-TRUW-06, Rev. 14

Acceptable Knowledge Baseline Document for AMWTP Waste

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-10659.)
Susan Peterman
TRU Programs Manager

07/05/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	06/30/2003	All	DCR-2331. Initial issue
1	11/20/2003	Various	DCR-2527. Added Appendix A and B. Added newly created IDC 512. Update container numbers in Table 5-1. Misc. editorial changes.
2	03/07/2005	Various	DCR-4174. Provide a flowchart of the AMWTP AK documentation process. Add Bettis Atomic Power Laboratory.
3	07/14/2005	Various	DCR-4232. Various changes to make IDC information consistent with other TRU program documents.
4	08/22/2005	Various	DCR-4492. Add subtitle of "Baseline AK for Newly Generated Waste". Misc. editorial changes.
5	03/07/2006	Various	DCR-4523. Reorganized the entire document to enhance usability.
6	04/10/2006	Various	DCR-4873. Delete Appendix C. Appendix D becomes Appendix C. Misc. editorial changes.
7	07/25/2006	Various	DCR-5008. Delete Figure 1. Revise text per CAR 22295. Misc. editorial changes.
8	08/15/2006	Various	DCR-5223. Add material to section 6.1.3 to document recent PCB contamination events. Update references and Table B-1.
9	08/23/07	All	DCR-6308. Add Revision Log. Misc. editorial changes. Total rewrite.
10	8/27/08	App. A & B	DCR-7480. Update appendices to make consistent and correct generation dates.
11	07/13/09	Various	DCR-7529. Add references to footnotes in Table 2a. Reword Page 39 for clarity.
12	08/19/10	All	DCR-9296. Rewrite.
13	07/13/11	All	DCR 9480. Rewrite of entire report to include all AMWTP waste generating processes. Added sections for the various waste groups generated during processing. .
14	07/05/12	Cover page	DCR-10659. Applied ITG Bluesheet-077 and updated document owner.

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ACRONYMS

AE	Argonne National Laboratory–East (generator site code)
AK	acceptable knowledge
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory–East
ANL-W	Argonne National Laboratory–West (aka MFC)
ARA	Auxiliary Reactor Area
ARP	Accelerated Retrieval Project
B&W	Babcock and Wilcox
BBWI	Bechtel, BWXT Idaho, Inc.
BC	Battelle Columbus (prefix)
BL	Bettis Laboratory (generator site code)
BN	BNFL Inc. (generator site code) now used to represent AMWTP
BNFL	British Nuclear Fuels Limited
BOGR	Box Opening Gantry Robot
Brokk®	Remote Controlled Demolition Robot
BW	Babcock and Wilcox (generator site code)
BX	Bendix-Grand Junction Operation Office (generator site code)
CBFO	Carlsbad Field Office
CCP	Central Characterization Program
CFA	Central Facilities Area
CFC	chlorofluorohydrocarbons
CFR	Code of Federal Regulations
CH	Contact Handled
CPP	Chemical Processing Plant (now: INTEC)
D&D	decontamination and decommissioning
DCSRS	Drum Core Sample Retrieval System
DIEG	Drum Import/Export Glovebox
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOHE	Drum Opening Hood Enclosure
DOS	Drum Opening Station
DOT	U.S. Department of Transportation
DRF	Drum Re-overpacking Facility
DRS	Drum Repacking Facility
DTF	Drum Treatment Facility
DU	depleted uranium
DVF	drum vent facility
DVS	Drum Vent System
DWHE	drummed waste handling enclosure
DWPG	drummed waste packaging glovebox

EPA	U.S. Environmental Protection Agency
EU	enriched uranium
EWR	Early Waste Retrieval Project
FGE	fissile gram equivalents
FRP	fiberglass reinforced plywood
FTS	Fuel Tracking System
GC/S	gas chromatography
GC/TCD	gas chromatography thermal conductivity detector
GEV	General Electric - Vallecitos
GEVNC	General Electric – Vallicitos
GGT	Gas Generation Testing
GGTC	Gas Generation Testing Canister
GGTS	Gas Generation Testing System
HEPA	high efficiency particulate air
HGAS	headspace gas sampling
HS	heat source
HWD	hazardous waste determination (AMWTP Waste Characterization Checklist Form-1086)
HWMA	Hazardous Waste Management Area
HWN	hazardous waste number
IC	Idaho Nuclear Technology and Engineering Center (generator site code)
ID	Idaho National Engineering and Environmental Laboratory (generator site code)
IDC	item description code
IDR	Initial Drum Retrieval Project
IH	Industrial Hygienist
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
IS/IH	Industrial Safety/Industrial Hygiene
ITP	Import Transfer Port
IW	Radioactive Waste Management Complex (generator site code)
JH	J. C. Haynes, Ohio businessman who irradiated diamonds with Am-241 (generator site code)
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley Laboratory
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
M&O	Management and Operating
m^3	cubic meter
MD	Mound Laboratory (generator site code)
MFC	Materials and Fuels Complex (aka ANL-W)
MLLW	mixed low-level waste
MO	Monsanto-Dayton Laboratory (generator site code)

MP	management procedure
MS	mass spectrometer
MTRU	mixed transuranic waste
MX	Am-241 waste from a smoke detector manufacturing company in Mexico (generator site code)
nCi	nanocuries
NDA	non-destructive assay
NDE	non-destructive examination
NRF	Naval Reactor Facility
NTS	Nevada National Security Site
NWPA	Nuclear Waste Policy Act
OR	Oak Ridge National Laboratory (generator site code)
ORNL	Oak Ridge National Laboratory
PAM	packet assay monitor
PCB	polychlorinated biphenyl
PI	prohibited item
PK	process knowledge
PPE	personal protective equipment
ppm	part per million
QAPjP	Quality Assurance Project Plan
RBAS	Retrieval Box Assay System
RCRA	Resource Conservation Recovery Act
RE	Retrieval Enclosure
RF	Rocky Flats Plant (generator site code)
RFETS	Rocky Flats Environmental Technology Site (name of site after 1993?)
RFP	Rocky Flats Plant (name of site for waste stored at INL)
RH	remote handled
RL	Richland, Washington – Hanford Site (generator site code)
RT	Radiological Technician
RTR	real-time radiography
RWMC	Radioactive Waste Management Complex
S/C	Supercompactor
SCG	summary category group
SCW	special case waste
SDA	Subsurface Disposal Area
SDOP	six drum overpack
SNL	Sandia National Laboratory
SRS	Savannah River Site
SWB	standard waste box
TAA	Temporary Accumlation Area
TAN	Test Area North
TRA	Test Reactor Area

TRAMPAC	TRUPACT-II Authorized Methods for Payload Control
TRU	transuranic
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TSCA	Toxic Substance Control Act
TWBIR	Transuranic Baseline Inventory Report
UN	Unknown or Undefined (generator site code)
VE	visual examination
VOC	volatile organic compound
WAC	waste acceptance criteria
WAP	Waste Analysis Plan
WG Pu	weapons grade plutonium
WIPP	Waste Isolation Pilot Plant
WM	Waste Management
WS	Waste Stream
WMC	waste matrix code
WMCG	waste matrix code group
WMF	Waste Management Facility
WSPF	waste stream profile form
WTS	Waste Tracking System

EXECUTIVE SUMMARY

This Advanced Mixed Waste Treatment Project (AMWTP) baseline document was developed to compile information for transuranic (TRU) waste generated at the Idaho National Laboratory (INL) AMWTP. It includes acceptable knowledge (AK) waste management (WM) program and waste stream (WS) information (WM and WS elements) required by the Waste Isolation Pilot Plant (WIPP) Waste Acceptance Plan (WAP) and Waste Acceptance Criteria (WAC). [4]

AMWTP waste is generated during processing and management of waste containers historically stored at the AMWTP and of waste containers received at AMWTP under the AMWTP Offsite Waste Program. The operations described in this report may generate TRU, mixed low-level waste (MLLW) and/or low-level waste (LLW). This document is compiled in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. [1]

WM information is presented in Sections 3.1 through 3.10. The site map, site description and history, origin of the waste inventory stored, site mission, and defense determination for the AMWTP are presented in Sections 3.1 through 3.4. Discussions of the WM, generation processes, characterization, and packaging, at the AMWTP are provided in Sections 3.5 through 3.6. Radionuclide information is presented in Section 3.7. Waste certification information is presented in Section 3.8. Correlation of AMWTP waste and corresponding waste groups based on the physical form are presented in Sections 3.10. Sections 4.0 through Section 7.0 provide the WIPP WAP required WS information for each waste group including identification of waste generation, waste packaging and characterization. Definitions and a list references are provided in Sections 8.0 and 9.0, respectively. Additional information is provided in appendices as follows:

- Appendix A. Acceptable Knowledge Source Document Inventory for AMWTP Waste

1.0 INTRODUCTION

WIPP-required WM program and WS information specific to AMWTP newly generated TRU waste is described in this document. The focus of this report is to provide the pertinent AK for TRU waste generated at the AMWTP and destined for disposal at the WIPP facility.

AMWTP waste is generated during processing of waste containers from two principal sources:

1. Containers historically stored in the INL Radioactive Waste Management Complex (RWMC) Transuranic Storage Area-Retrieval Enclosure (TSA-RE) and Transuranic Storage Area (TSA) Type II Storage Modules and

2. Containers received at AMWTP through the Offsite Waste Program from:

    a. Non-AMWTP INL facilities [e.g., Materials and Fuels Complex (MFC), Idaho Nuclear Technology and Engineering Center (INTEC), Radioactive Waste Management Complex (RWMC)] and,

    b. U.S. Department of Energy (DOE) offsite facilities (e.g., U.S. DOE regional and national sites).

The waste generation operations that may generate TRU AMWTP waste include waste container retrieval, waste container handling, maintenance, waste characterization, and waste treatment processes/activities.

The wastes stored, characterized, treated, and managed by the AMWTP include TRU, mixed TRU (MTRU), LLW, and MLLW, as defined in Section 8.0. [6] From this point forward, TRU will be used to indicate both TRU and MTRU waste. Although the primary focus of this report is AMWTP generated TRU waste, LLW and MLLW may be generated from the processes/activities described in this report. The LLW and MLLW item description codes (IDCs) will not be addressed in this report. AMWTP TRU wastes are grouped in preliminary waste groups, as outlined in Section 3.10 for this baseline; which may not represent the final waste stream delineation that is determined for a WIPP waste stream profile form (WSPF).

This report is written in compliance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. [1] The AK source documents used to develop this report are listed in Section 9.0, References. Appendix A, Acceptable Knowledge Source Document Inventory for AMWTP Waste, is the list of all AK source documents related to AMWTP waste in the AMWTP AK record.

2.0 REQUIREMENT AND GUIDANCE DOCUMENTS

The following is a list of requirement and guidance documents that dictate or direct collection and review of AK documents and the development of baseline AK reports, or outlines Resource Conservation and Recovery Act (RCRA)/Toxic Substances Control Act (TSCA) requirements:

- **Collection, Review, and Management of Acceptable Knowledge Documentation, MP-TRUW-8.13:** This is the AMWTP management procedure (MP) that provides an outline of the methods used by AMWTP personnel and/or subcontractors in the collection, review, compilation, evaluation, and management of AK documents. Implementation of this procedure assures that a consistent, defensible, and auditable AK record is created for the TRU waste inventory to be characterized by the AMWTP and the AMWTP newly-generated waste. This procedure includes the instructions used in the development of an AK Baseline Document based on the collected documentation. A template for the AK Baseline Document is included in Appendix H of MP-TRUW-8.13. [1]

- **AMWTP Hazardous Waste Management Act (HWMA)/RCRA Permit:** The AMWTP WAC defines AMWTP requirements for receiving, storing and treating waste. [11, 14]

- **Certification Plan for INL Transuranic Waste, MP-TRUW-8.1:** The Certification Plan summarizes the methods and procedures used by the AMWTP to certify waste as compliant to the WAC applicable to the transportation, storage, and disposal of contact-handled (CH) and remote-handled (RH) TRU waste at the WIPP. [2]

- **Quality Assurance Project Plan, MP-TRUW-8.2:** The Quality Assurance Project Plan (QAPjP) describes how the requirements of the WIPP WAP for TRU waste are met at the AMWTP. It identifies the quality of data necessary and the procedures developed by the AMWTP to attain and maintain quality. [55]

- **TRU Waste Certification, MP-TRUW-8.5:** This procedure summarizes the method used by the AMWTP to certify waste as compliant with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and CCP-PO-003, CCP Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRUPAC), for transportation, storage, and disposal of CH-TRU waste at the WIPP. [7, 82]

3.0 AMWTP WASTE MANAGEMENT

3.1 Facility Location

The AMWTP is located on the INL site in southeastern Idaho in the RWMC. (Figure 1) The AMWTP site includes the TSA. (Figure 2)

3.2 Site Description and History

The TSA is a 56 acre area of the INL RWMC (Figure 1) established in 1970 for TRU waste storage and consists of Waste Management Facility (WMF)-636 TSA-RE, WMF-635

Type I and WMF-628 through MWF-634 Type II storage modules, WMF-676 Treatment facility, and various other buildings. (Figure 2) Waste containers from DOE, U.S. Department of Defense (DOD) and INL facilities were shipped to Idaho and stored at the TSA beginning in 1970. In 2003, British Nuclear Fuel, Inc (BNFL) was awarded the contract to manage the TSA area, build the Advanced Mixed Waste Treatment Facility (AMWTF), and retrieve and process the accessibly stored waste remaining in the Type I and Type II storage modules and the retrievably stored waste located in the TSA-RE. Two of the Type II modules, WMF-628 and WMF-634, were modified and are now used as characterization facilities. In 2004, management of the Advanced Mixed Waste Treatment Project was assumed by Bechtel, BWXT Idaho, Inc. (BBWI).

Three asphalt pads located on the west side of the TSA: TSA-1 (Pad-1), TSA-2 (Pad-2), and TSA-R (Pad-R) are divided into cells. There are eight cells in Pad 1, three cells in Pad 2, and three cells in Pad R. (Figure 3). From 1970 through 1982 waste containers (i.e., 55-gallon and 83/85-gallon drums) were stacked either horizontally or vertically on Pads 1 and 2. Boxes were positioned around the outside of each cell and between stacks of drums to provide stability. The retrieval pad (Pad R) constructed to receive waste retrieved from the RWMC Subsurface Disposal Area (SDA) was finished in August 1975. (Figure 1) Waste containers packaged in fiberglass-reinforced plywood (FRP) and Sandia boxes, metal bins, and cargo containers were placed for storage on Pad R from 1975 through 1982. Waste retrieved from the SDA in 1974 and early 1975 was overpacked into 83-gallon drums and stored on Pad 1 (Cells 7 and 8). As each cell reached its volume limit, the waste containers were covered with plywood and other sheeting materials (e.g., tarp or polyvinyl sheeting) followed by a minimum of 2 ft. of soil cover above the highest container in the cell. Side burden soil was added to reduce the grade angle and soil was also placed between cells to act as a firebreak. Interstitial soil may be located between containers and the surrounding area. Soil over some of the containers may have exceeded 4 ft in depth. Some containers stored on Pad-R were covered with plastic or tarps only. [13, 51, 84]

From 1982 through 1992, additional waste containers received at the TSA were stored in a temporary air-support building located east of the earthen covered TSA (bermed pads). In 1993, seven Type II storage modules (WMF-628, -629, -630, -631, -632, -633 and -634) and one Type I storage module (WMF-634) were built on the east side of the bermed pads for added storage capacity and long term storage. (Figure 2) Transfer of waste containers from the air-support building to the Type II storage modules began in 1994. In 1996 the Retrieval Enclosure (RE) was constructed over the bermed pads to create the TSA-RE (WMF-636). [84]

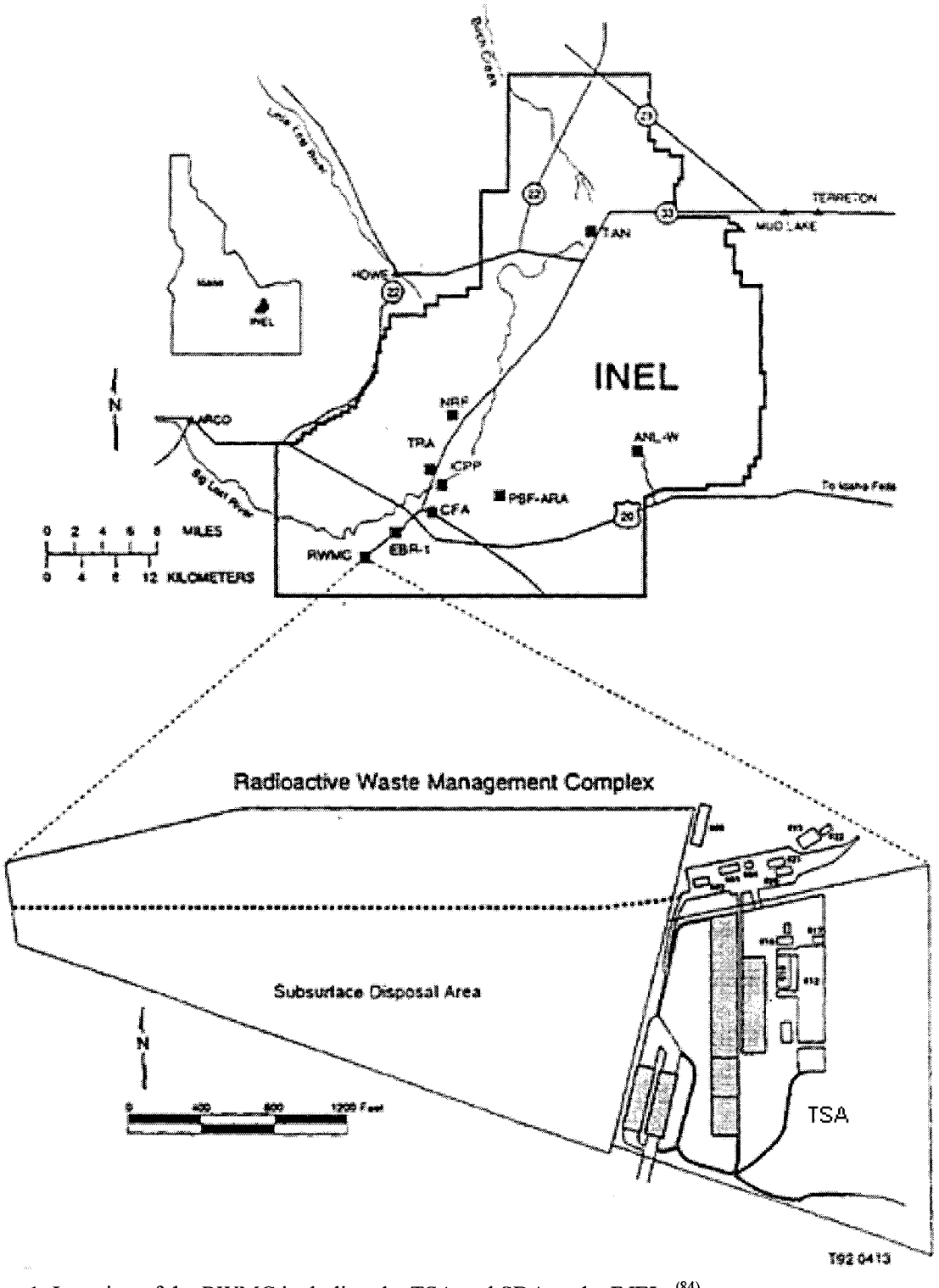

Figure 1. Location of the RWMC including the TSA and SDA at the INEL. (84)

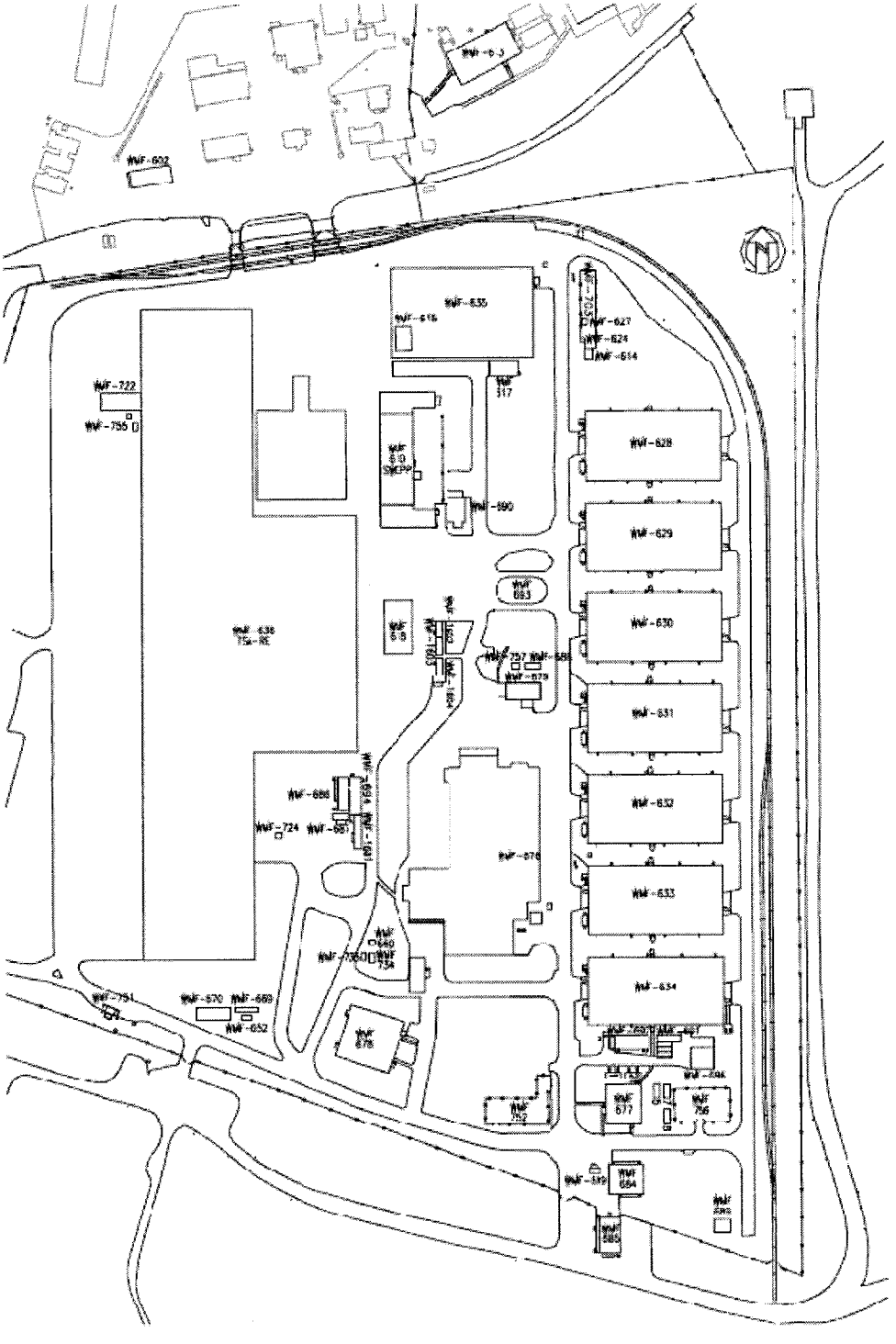

Figure 2. Map of the Transuranic Storage Area (TSA).[15]

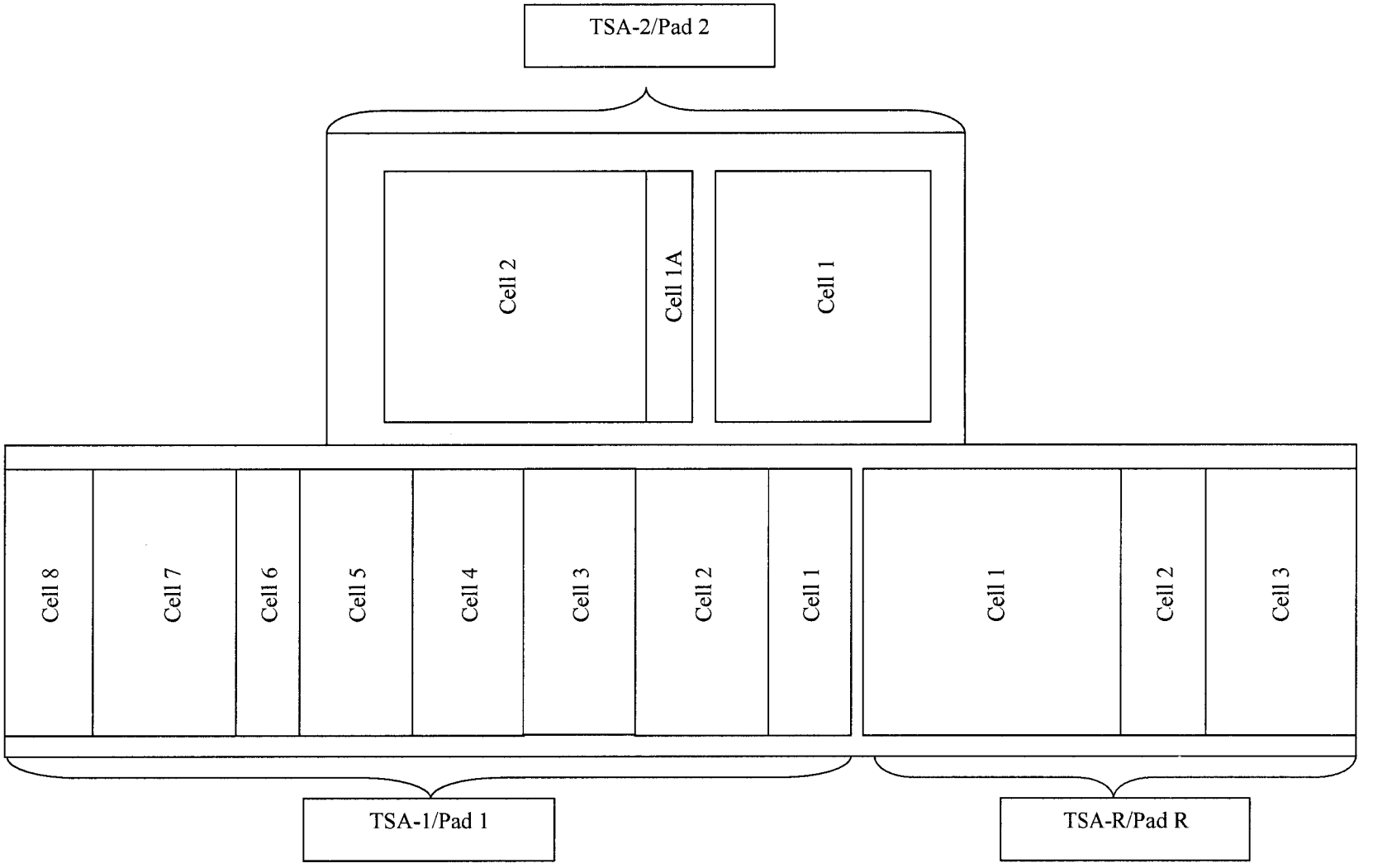

Figure 3. TSA-RE.[84]

3.2.1 Historically Stored Waste Description and Origin

Over 100,000 containers (boxes and drums) of waste containing > 10nCi/g TRU were stored on Pad-1, Pad-2 and Pad R. Storage of waste containers on the Pads began November 1970 with Pad 1, Cell 1. Approximately 80,000 containers, of which 90% are 55-gallon steel drums, were stored on Pads 1 and 2. Waste containers retrieved from the RWMC SDA during the initial drum retrieval (IDR) and the early waste retrieval (EWR) projects were overpacked into 83-gallon drums, cargo containers and M-III bins. The waste overpacked in 83-gallon drums prior to construction of Pad R were stored on Pad 1 in Cells 7 and 8. The cargo containers and MIII bins were stored on Pad R, Cell 1. Non-SDA waste packaged in boxes and bins received between November 1980 and July 1982 was stored on Pad R, Cells 2 and 3. Non-AMWTP Waste generators, the time periods of waste receipt and TSA storage locations are listed in Table 3.1. [15, 51, 84]

Boxed waste was placed around the perimeter of the Pads-1 and 2 cells. Drums were stacked inside these areas. Boxed waste was also placed in rows inside the cell area to provide stability. All of the drums in Pad-1, Cells 1 and 2 were stacked horizontally. The majority of the drums in Pad-1, Cells 3 and 4 were stacked horizontally with some drums stacked vertically. All drums stored in Pad-1, Cells 5, 6 and 8 and Pad-2, Cells 1, 1A and 2 were vertically stacked. In the Pad-1, Cell 7 a majority of the drums was stacked vertically with a small number of drums stacked horizontally. Most stacks were covered with wood, polyvinyl sheeting, and 2 to 3 ft (0.6 to 0.9 m) of soil. Waste containers on the south end of the Pad-1 were not covered with soil. In 1996, about 25 years after the first waste containers were covered with soil, a large steel building, the retrieval enclosure (i.e., TSA-RE) was constructed over the waste, shielding the estimated 80,000 containers. [51, 84]

Waste containers retrieved from the SDA (Pits 1, 2, 11 and 12, Trenches 1, 5, 7, 8, 9 and 10) during the IDR and EWR from 1974 through 1978 were overpacked into 83-gallon drums, wooden boxes, MIII/MIV bins, and cargo containers. Most of the 83-gallon drums were stored on Pad-1 Cells 7 and 8. The bins and cargo containers were stacked on Pad R, Cell 1 and also covered with soil and other materials. Each cargo container was loaded during retrieval with anywhere from 29 to 96 containers, depending on the size of containers (e.g., 30-gallon, 55-gallon, 83-gallon). Drums were stacked vertically with plywood sheets placed between the layers. Absorbent material was placed around each drum on the container floor and on top of the plywood sheets. The waste containers retrieved during the IDR includes combustible, compactable, homogeneous solid and depleted uranium oxide received from Rocky Flats between April 1970 and September 1972. The EWR waste originated at Rocky Flats Plant (RF) and INL generators prior to 1964 and is over packed in approximately 75 MIII bins. The remaining 283 MIII bins contain waste containers retrieved from Pits 11 and 12 during the IDR. Each bin contains 3 to 12 inner containers with an average of 8 containers per bin. It is assumed that the majority of the waste in the Pits 11 and 12 bins originated at RF. [51]

There are an estimated 105 oversize boxes (i.e., dimensions exceed the box size waste acceptance criteria for the AMWTF) in the AMWTP inventory stored on TSA-R, Cells 2 and 3. The boxes contain waste from RF, MD, and waste retrieved during the EWR project. The majority of the contents is large equipment (e.g., gloveboxes from MD, piping from RF). These boxes will be evaluated in the future for possible unpacking and sizing. (31)

Additional boxed waste stored on Pad R, Cells 2 and 3 was shipped to the TSA by RF, MD, Argonne National Laboratory-East (ANL-E) and the INL Chemical Processing Plant (CPP). The boxes are a combination of FRPs, Sandias, and MIII/MIV bins. The boxes and bins were stacked and covered with soil and other materials on Cell 2 and a portion of Cell 3. (84)

Between 1992 and 2007, waste from offsite facilities was not shipped to the INL although waste from INL facilities was received sporadically and stored in the Type IIs at the AMWTP TSA. Beginning in 2007, AMWTP began receiving offsite waste, in addition to non-AMWTP INL waste, for characterization and/or treatment, and shipment to WIPP. Non-AMWTP waste generators, the time periods of waste receipt and AMWTP TSA storage locations are listed in Table 3.1.

Table 3.1. Non-AMWTP waste generators, the time periods of waste receipt and AMWTP TSA storage locations.

Generator	IDC Prefix	TSA-RE			*Air Support Bldg 1982 to 1992	Type IIs 1993 to 2007	Type IIs 2007 to current
		Pad 1 11/70 to 10/75	Pad 2 9/75 to 7/80	Pad R 8/75 to 7/82			
Offsite Generators							
ANL-E	AE	X	X	X	X		X
Battelle Columbus Laboratory	BC		X				
Bettis Atomic Power Laboratory	BL	X	X		X		
General Electric - Vallicitos Nuclear Center (GEVNC)	GV						X
Los Alamos National Laboratory (LANL)	LA						X
Lawrence Berkley National Laboratory (LBNL)	LB						X
Lawrence Livermore National Laboratory (LLNL)	LL						X
Mound Laboratory	MD		X	X	X		

Table 3.1. (Continued).

Generator	IDC Prefix	TSA-RE			*Air Support Bldg 1982 to 1992	Type IIs 1993 to 2007	Type IIs 2007 to current
		Pad 1 11/70 to 10/75	Pad 2 9/75 to 7/80	Pad R 8/75 to 7/82			
Nuclear Radiation Development	ND						X
Nevada Test Site (NTS)	NT						X
Oak Ridge National Laboratory (ORNL)	OR						X
Richland - Hanford	RL						X
RF	RF	X	X	X	X		
RF Non-RF Waste**	RF	X	X	X			
Sandia National Laboratory (SNL)	SL						X
Savannah River Site (SRS)	SR						X
Non-AMWTP INL Generators							
Argonne-West (MFC)	AW	X	X		X	X	X
Auxiliary Reactor Area (ARA)	IA	X					
Accelerated Retrieval Project (ARP)	SD					X	X
Central Facilities Area (CFA)	IF	X			X		
Chemical Processing Plant (CPP)	IC	X	X	X	X	X	X
Naval Reactor Facility (NRF)	IN	X	X		X		
RWMC	IW						X
Test Reactor Area (TRA)	IR	X	X		X		
Test Area North (TAN)	IT	X	X		X		
Unknown	UN	X	X	X			

Table 3.1. (Continued).

Generator	IDC Prefix	TSA-RE			*Air Support Bldg 1982 to 1992	Type IIs 1993 to 2007	Type IIs 2007 to current
		Pad 1 11/70 to 10/75	Pad 2 9/75 to 7/80	Pad R 8/75 to 7/82			
Non-Defense Related Offsite Waste							
Babcock and Wilcox (B&W)	BW				X		
Bendix-Grand Junction	BX		X				
Haynes, JC	JH				X 1988		
Mexican-Am241	MX		X 1986				
Monsanto	MO				X		

*In 1996 these containers were moved into the Type II storage modules

**RF non-RF waste refers to waste generated by local offsite institutions and government agencies (e.g., universities, private industry, and defense agencies) and transshipped to the Idaho by RF under the direction of the Rocky Flats AEC Office. [91]

From 1999 through 2002, approximately 3,100 cubic meter (m^3) of the RF TRU waste stored in the Type II modules, were characterized and shipped to WIPP under the INL 3,100 m^3 Project. [18, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102]

The AMWTP facilities covered by this report are identified in Table 3.2 with the operations and related waste generating processes/activities in each building and the report section where discussed.[6]

Table 3.2. AMWTP buildings, operations and processes/activities associated with TRU waste generation.

Building	Operations	Process/Activity	Section
AMWTP Site Wide	3.6.2 Waste Container Handling	Container Movement and Storage	3.6.2.1
	3.6.3 Maintenance	Spill Response and Clean-Up	3.6.3.4
WMF-610 Characterization Building	3.6.4 Characterization Operations (WMF-628, -634, -635, -636, -676)	Non-Destruction Examination (NDE) Activities	3.6.4.1
WMF-615 Drum Vent Facility (DVF)	3.6.2 Waste Container Handling	Drum Vent and Drum Filter Placement and Replacement	3.6.2.3
	3.6.3 Maintenance	Glovebox Glove and Bag-Out Bag Change Out	3.6.3.3

Table 3.2. (Continued).

Building	Operations	Process/Activity	Section
WMF-628 Drum Treatment Facility (DTF)	3.6.2 Waste Container Handling	Overpack, Un-Overpack, Relidding, Drum Liner Removal, and Confinement Layer Reduction	3.6.2.2.5
		Drum Vent and Drum Filter Placement and Replacement	3.6.2.3
	3.6.3 Maintenance	Ventilation System Pre-Filter and HEPA Filter Replacement	3.6.3.5
	3.6.4 Characterization Operations (WMF-628, -634, -635, -636)	(NDE) Activities	3.6.4.1
		Visual Examination (VE)	3.6.4.2
	3.6.5 Treatment (WMF-628, -676, -634)	Liquid Pump Decanting and Absorption	3.6.5.3
		Liquid Absorption	3.6.5.4
		Absorption/Resorption (Shaker Table Operations) WMF-628	3.6.5.5
WMF-629—633 Type II Storage Modules	3.6.2 Waste Container Handling	Waste Container Preparation, Overpack, Un-Overpack, and Re-Overpack	3.6.2.2
	3.6.2 Waste Container Handling	Drum Vent and Drum Filter Placement and Replacement	3.6.2.3
WMF-634 Characterization Facility	3.6.2 Waste Container Handling	Drum Vent and Drum Filter Placement and Replacement	3.6.2.3
	3.6.3 Maintenance	Cleanout of Containment Areas including Criticality Cleanout	3.6.3.1
		Glovebox Glove and Bag-Out Bag Change Out	3.6.3.3
		Ventilation System Pre-Filter and HEPA Filter Replacement	3.6.3.5
	3.6.4 Characterization Operations (WMF-628, -634, -635, -636)	Non-Destruction Examination (NDE) Activities	3.6.4.1
		VE	3.6.4.2
		Solid Sampling of Homogeneous Solid Waste S3000/S4000	3.6.4.3
WMF-635 Type I Storage Module	3.6.2 Waste Container Handling	Un-Overpacking and Re-Overpacking of S3000 Waste Drums in WMF-635 DRF	3.6.2.2.3
		Drum Vent and Drum Filter Placement and Replacement	3.6.2.3
	3.6.3 Maintenance	Ventilation System Pre-Filter and HEPA Filter Replacement	3.6.3.5

Table 3.2. (Continued).

Building	Operations	Process/Activity	Section
WMF-636 TSA-RE	3.6.1 Waste Container Retrieval from TSA-RE Berm	TSA-RE Berm Preparation Prior to Waste Container Retrieval (WMF-636)	3.6.1.1
		Waste Container Retrieval Operations in the TSA-RE (WMF-636)	3.6.1.2
	3.6.3 Maintenance	Ventilation System Pre-Filter and HEPA Filter Replacement	3.6.3.5
WMF-676 AMWTF	3.6.2 Waste Container Handling	Drum Preparation in WMF-676 Drum Repack System (DRS)	3.6.2.2.2
		Confinement Layer Reduction	3.6.2.2.8
	3.6.3 Maintenance	Cleanout of Containment Areas including Criticality Cleanout	3.6.3.1
		Maintenance of Remote Controlled Demolition Robot (Brokk®) Manipulators	3.6.3.2.1
		Glovebox Glove and Bag-Out Bag Change Out	3.6.3.3
		Supercompactor Hydraulic Oil Change	3.6.3.2.2
		Ventilation System Pre-Filter and HEPA Filter Replacement	3.6.3.5
		Visual Examination (VE)	3.6.4.2
WMF-676 AMWTF	3.6.4 Characterization Operations (WMF-628, -634, -635, -636)	Prohibited/Non-Conformance Item Removal and Treatment	3.6.5.1
	3.6.5 Treatment (WMF-628, -676, -634)	Waste/Size Reduction (WMF-676)	3.6.5.2
		Liquid Absorption	3.6.5.4
		Homogeneous Solid Waste Treatment in South Box Line	3.6.5.6

The main facilities inside the TSA are:

- WMF-610 Waste Characterization Building
- WMF-615 DVF
- WMF-628 Characterization Building and DTF
- WMF-629 through WMF-633 Type II Storage Modules

- WMF-634 Characterization Facility
- WMF-635 Type I Storage Module and Drum Re-overpacking Facility (DRF)
- WMF-636 TSA RE; Pads 1, 2, and TSA-R
- WMF-676 AMWTF.

3.3 Mission

The AMWTP mission is to process TRU radioactive waste historically stored in the TSA; support cleanup through characterization/treatment and disposition of waste generated at the Idaho site; and perform characterization/treatment and disposition of waste received from other DOE sites. BBWI is the primary contractor for the AMWTP. [6]

3.4 Defense Waste Determination

In accordance with interim guidance, TRU waste is eligible for disposal at WIPP if it has been generated in whole or part by one of the atomic energy defense activities identified in the Nuclear Waste Policy Act of 1982 (NWPA), and is not high level or spent nuclear fuel. [16, 17] Defense wastes include those wastes generated during work involving only defense activities or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated.

The majority (~93%) of the waste historically stored at the AMWTP was generated at the RF during defense program activities; such as purification and production of weapons grade plutonium (WG Pu) and plutonium primaries. Waste from other DOE facilities [e.g., BC, MD, MFC (AW)] was also received and stored at the AMWTP. This additional waste was generated during defense related activities or related to production and use of plutonium heat sources (HS) used by the DOD or in support of DOD missions (e.g., ^{238}Pu for spacecraft, generators, and satellites). The sites identified above have existing defense-related waste determinations. [18, 19, 20, 23]

The AMWTP TRU wastes are generated from contact with the existing waste materials during waste container retrieval, waste container handling, characterization, and treatment activities of defense related waste. AMWTP newly generated waste is classified as defense related waste. If a condition occurs that a newly generated waste is not derived from defense related waste, it will be addressed on a case-by-case basis at that time. There is no historical record or evidence of spent nuclear fuel or high-level waste included in the inventory addressed by the AMWTP TRU program. The AMWTP does not generate spent nuclear fuel or high-level waste. [18, 19, 20, 21, 23]

Waste from offsite DOE and non-AMWTP INL facilities/projects received under the AMWTP Offsite Waste Program must meet the AMWTP WAC prior to acceptance. Part of the AMWTP WAC requires that the waste to be received meets the definition of defense-related wastes. These determinations are documented by the Offsite Waste Program prior to receipt at

the AMWTP for characterization, treatment (supercompaction), storage and/or shipment. AMWTP waste generated during processing of offsite wastes is also considered defense-related. (22, 103, 104)

3.5 AMWTP TRU Waste Management

Waste management was initiated in 2003 when the AMWTP first started operations to retrieve, characterize and treat historically stored waste from the TSA. Waste management includes administrative controls to ensure that waste generated during storage, handling, waste characterization, and/or treatment of historically stored waste and waste received under the Offsite Waste Program is properly managed. The Waste Services group is responsible for oversight of waste management. The AMWTP wastes generated during these activities are managed in compliance with the AMWTP HWMA/RCRA Permit. (27, 35, 49, 105, 106)

Waste generated at the AMWTP that is derived from or has contacted TRU waste stored at AMWTP is managed as TRU waste until radioassay data indicate that it is not TRU. The TRU waste is assigned an appropriate Summary Category Group (SCG), a Waste Matrix Code Group (WMCG), a Waste Matrix Code (WMC) and an IDC. (11, 35, 80) TRU programs provides oversight of the activities associated with data validation and waste stream certification requirements for all TRU waste destined for WIPP disposal.

3.5.1 Waste Identification/Categorization

Each AMWTP TRU waste is first categorized by assignment of a SCG, WMCG, and WMC based on physical form. IDCs are used to identify specific waste generated during specific operations or processes/activities. Assignments of SCGs, WMGCs, WMCs and IDCs are documented in RPT-TRUW-05, Waste Matrix Code Reference Manual. (80)

The three summary category groups identified for WIPP wastes are:

- S3000 homogeneous solids waste
- S4000 soil and/or gravel
- S5000 heterogeneous debris waste

WMCG are assigned based on the bulk physical/chemical form (i.e., solidified inorganic, solidified organic, salt waste for S3000; soils for S4000; and lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal for S5000).

WMCs are based on the expected physical form (matrix) that makes up the majority of the waste material in each container. The first position of the WMC is a letter that denotes the physical form of the waste (L for liquid, S for solid, etc.). The four digit numerical identifiers further denote the type of waste (e.g., homogeneous solid, organic or inorganic, heterogeneous

debris, soil, etc.). The DOE guidance document DOE Waste Treatability Group Guidance aids generating facilities in assigning WMCs to WIPP wastes.

The AMWTP generator site-specific IDCs contain the two digit alpha generator site code, BN, and a three digit numerical code specific for each waste. [80] Prior to WIPP profiling AMWTP TRU wastes are assigned HWNs through collaboration between Waste Services and TRU programs based on one or more of the following: the generating process, material inputs, testing/sampling results and AK/PK. HWN assignment is documented in HWDs developed and maintained in the operating record by AMWTP Waste Services and incorporated into the AK record.

TRU waste destined for disposal at WIPP is characterized on a waste stream basis as described by the WIPP WAP, the AMWTP implementing documents MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan and MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. [2, 3, 55]

3.6 Waste Generation Operations

AMWTP waste is generated during processing of TSA historically stored waste containers and waste containers received at the AMWTP from other INL and off-site DOE facilities through the AMWTP Offsite Waste Program. [6]

AMWTP operations that may generate TRU wastes include:

- Waste container retrieval from the AMWTP TSA-RE
- Waste container handling
- Maintenance activities
- Waste characterization (e.g., VE, sampling)
- Treatment of TRU waste.

Treatment of TRU waste AMWTP TRU wastes generated by these operations are identified, characterized, segregated, treated, and packaged for storage and eventual offsite disposal. [6, 15] The operations that generate AMWTP waste are described in the following sub-sections.

3.6.1 Waste Container Retrieval from TSA-RE Berm

Waste container retrieval from the TSA-RE cells includes preparation for extraction such as sampling of the berm soil and removal of the berm covering materials as well as removal of intact waste containers (e.g., boxes and drums), contaminated surface soil, and loose waste and

waste container materials. The applicable procedures used in waste container extraction are listed in the Table 3.3.

Table 3.3. Operations, processes, building/area and applicable procedures.

Operations	Processes	Building/ Area	Applicable Procedures	Doc Section
3.6.1 Waste Container Retrieval from TSA-RE Berm	TSA-RE Berm Preparation	WMF-636 TSA-RE	INST-OI-23 [24] INST-EC&P-7.28.1 [26] INST-OI-24 [27]	3.6.1.1
	Waste Container Retrieval		INST-OI-09 [28] INST-OI-11 [25] INST-OI-84 [32] INST-OI-88 [33] INST-EC&P-7.10 [39] MP-RS&C-6.17 [79]	3.6.1.2

3.6.1.1 TSA-RE Berm Preparation Prior to Waste Container Retrieval (WMF-636)

Samples are collected from the overburden, side burden, firebreaks and interstitial soil on the TSA pads in preparation of removal of the soil and other covering material to expose the waste containers for retrieval. Discrete soil samples are collected using hand augers, and sent for analyses of radionuclide contamination and RCRA hazardous constituents; VOCs, SVOCs, other organic compounds (e.g., total petroleum hydrocarbons), polychlorinated biphenyl (PCBs), metals and inorganic compounds. [24, 26]

After sample analysis, the side burden and top soil as well as plywood and other covering materials are removed from around the waste containers.

3.6.1.1.1 Soil Removal

Small loaders, compact excavators and manual methods (e.g., shovels) are used to remove berm soil from around the buried waste containers. Clean soil is removed to a dump truck using a front end loader and the soil is transported to a disposal area. Soil with staining or suspected contamination is packaged into waste containers per INST-OI-24, Waste Packaging. [24, 27]

Soil is monitored during soil removal operations and radiologically contaminated soil is monitored by Industrial Safety/Industrial Hygiene (IS/IH) for volatile organic compounds (VOCs) contamination and packaged per INST-OI-24. [24, 27]

3.6.1.1.2 Plywood and Other Covering Materials Removal

Plywood sheets and tarps or other covering materials were used to cover the waste containers in the TSA-RE berm areas and are also removed during berm preparation. Plywood sheeting was placed between the layers of drums in the TSA-RE storage for stabilizing the

stacked drums. Containers were also covered by tarps and other materials to impede soil and water from infiltrating the stacks. [24]

At or near the dig face, miscellaneous materials, tarp, plastic, and or plywood are inspected for damage or staining. Staining is used as an indicator that the tarps and other covering materials may be considered hazardous or mixed waste. Staining may be indicated by light shadows, slight streaks, or minor discolorations. Whenever possible, contaminated or stained materials are separated from clean materials to support waste minimization. [24]

Materials from the berm removed during preparation for container retrieval are also surveyed by Radiological Technician (RT) and Industrial Hygienist (IH) and segregated based on radiological and chemical contamination. As the drums are removed from the stacks, the interstitial plywood is removed and inspected for contamination. [24]

3.6.1.2 Waste Container Retrieval Operations in the TSA-RE (WMF-636)

After the soil and other covering materials are removed, waste containers are extracted from the TSA-RE WMF-636 storage pads. Prior to physically removing the containers from the Pads 1 and 2 waste stacks, an initial large area wipe is taken and counted for radiological contamination values. Areas of suspect hazardous constituent contamination on the external portion of containers are painted or wrapped to seal the hazardous constituents. The container to be retrieved is visually inspected for staining or damage that would preclude its retrieval or require immediate overpacking. [13, 25, 28, 32]

Cargo containers and bins were retrieved from Pad R beginning in 2009. The soil and other covering materials were removed from around the stored containers as described previously (Section 3.6.1.1). Each cargo container and bin was evaluated to determine its historical identification number and the probability (high or low) of containing one or more inner drum(s) of roaster oxide. Bins were set aside for future unpacking of waste contents.

Intact containers from the bermed pads are moved away from the rest of the waste stack. Inner containers (e.g., 30-gallon, 55-gallon and 83/85-gallon drums and wooden boxes) extracted from each cargo container is overpacked, as needed. The surfaces of retrieved/extracted containers are cleared of residual soil and debris; surveyed (radiological), inspected and labeled. Each container is visually examined to determine historical data (e.g., generator, IDC, pack date). The retrieved/extracted waste containers are stored in stacks in the TSA-RE based on the type of waste, and container size. Retrieved drums/containers/packages smaller than a 55-gallon drum are overpacked into 55-gallon or larger drums or boxes.

Containers extracted from cargo containers or those retrieved from the bermed pads with poor integrity or that are breached or have other structural defects are overpacked or repaired to the extent possible as described in the following Sections. [13, 25, 28, 32]

3.6.1.2.1 Container Integrity

Containers with questionable physical integrity are required to be placed into secondary containment prior to additional handling or transfer out of the TSA-RE. Questionable physical integrity is defined as containers with areas of suspect hazardous constituent contamination on the exterior, structural defects (e.g., physical degradation, excessive rust), breached containers (e.g., holes, splits that may release contamination), and bulging containers. [28]

The primary action is to repair container integrity deficiencies (e.g., breaches, structural defects) to the extent possible without overpacking the container except for solid waste matrix drums (sludge drums). Damaged or stained TRU waste containers are evaluated based on radiological and IH conditions, and managed as follows: [32]

- Breached TRU debris waste containers may be repaired or overpacked.
- Wooden containers with areas of suspect hazardous constituent contamination on the external portion are painted to seal the hazardous constituents to the container. [28]
- Breached containers of solid waste matrix (sludge drums) are not repaired but overpacked. [28]
- Bulging waste containers are handled only with supervision. The recommended sequence is retrieval, place on a cradle or turntable, set the container upright using the drum tipper, install a lid restraint; and segregate the container until it can be vented. [28]
- Dropped, mishandled and/or breached waste containers are evaluated, and overpacked, repaired, or processed as necessary.

3.6.1.2.2 Loose Waste

Loose waste materials identified during retrieval activities are isolated and evaluated to determine the source and type of the material, the extent of the release, and presence of hazardous material. Loose waste may be found on the TSA pads, in cargo containers and bins. [28, 33, 39]

Loose waste material is recovered using appropriate tools (e.g., vacuums, scoop, brush, and/or shovel). If the entire container is compromised, the original packaging materials and pieces of the original drum are included in the new container. [33, 39, 79]

The recovered materials are packaged into new DOT 7A Type A-approved waste drums (e.g., 55-gallon, 83/85-gallon, 100-gallon) or boxes to contain less than 380 fissile gram equivalents (FGE) ^{239}Pu per container. Containers are filled and assigned the total fissile content of all parent containers from which the material originated. If the parent container(s) is unknown, it is assumed to contain less than 200 FGE ^{239}Pu for collector drums and less than 325 FGE ^{239}Pu for collector boxes. [27, 33, 39, 79]

Waste materials determined to contain PCB, beryllium and/or acute hazardous waste have special requirements for handling and packaging. IS/IH is consulted to determine the need for sampling for beryllium or other contaminates of concern. (33)

Spilled material or leaked liquid clean up is covered by INST-OI-88, Spill/Leak Response and Cleanup and if applicable under MP-EC&P-7.10, Spill response procedure as described in detail in Section 3.6.3.4. (33, 39)

3.6.2 Waste Container Handling

TRU waste container handling involves movement and management of waste containers (e.g., drums, boxes, and bags or plastic wrapped materials) around the AMWTP TSA. Waste container handling includes, placing containers in storage, container preparation (e.g., un-overpacking, overpacking), drum liner removal and liner repack, re-lidding, confinement layer reduction, and drum venting. (25) The applicable procedures and locations for waste container handling operations are listed in the Table 3.4. (25)

Table 3.4. Waste container handling operations, processes, buildings/areas and applicable procedures

Operations	Processes	Building/Area	Applicable Procedures	Doc Section
3.6.2 Waste Container Handling	Container Movement and Storage	Site Wide	INST-OI-11 (25)	3.6.2.1
	Waste Container Preparation, Overpack, Un-Overpack, and Re-overpack	WMF-629 WMF-630 WMF-635 DRF WMF-676 DRS/Special Case Waste (SCW)	INST-FOI-21 (29) INST-FOI-23 (36) INST-OI-84 (32) INST-OI-80 (53) INST-OI-91 (54)	3.6.2.2
3.6.2 Waste Container Handling	Overpack/Un-overpack, Re-lidding, Drum Liner Removal and Liner Repack, Confinement Layer Reduction	WMF-628 (DTF) WMF-676	INST-OI-68 (42) INST-FOI-16 (41)	3.6.2.2.5 3.6.5.2
	Drum Vent and Drum Filter Placement and Replacement	Type II modules WMF-628 WMF-634 DVS WMF-635 WMF-615 DVF	INST-OI-09 (28) INST-FOI-21 (29) INST-OI-45 (56) INST-OI-50 (57) INST-OI-92 (58) INST-OI-43 (52) CCP-TP-082 (86)	3.6.2.3

3.6.2.1 Container Movement and Storage

Retrievably stored waste containers are transported to and removed from RCRA storage units to maintain compliance with the AMWTP Site RCRA permit and to meet AMWTP offsite milestones/commitments. Primary movements are in support of operational activities relating to characterization, treatment and offsite shipment. [25]

Waste drums (55-, 85-, and 100-gallon) and boxes are stacked in storage areas in the Type I and Type II storage modules, in storage areas in the TSA-RE and in the facility WMF-676. Storage configuration is based on container size, and weight and drum conditions. Drums are stacked in rows with plywood sheets placed between drums layers for stabilization. [25]

All pyrophoric waste containers are stored in a designated pyrophoric materials storage area. [25]

A mobile crane may be used in the Type II modules to move containers (e.g., MIII/MIV bins). Sandia boxes are moved using the Sandia Lift Fixture. A clamshell lifting attachment may be used in lieu of a Parrot Beak Handler for an out of round container. [25]

Boxes with runner/stringers or cribbing are considered elevated and may be stored directly on the floor of Pad 1 or Pad. R. All boxes stored on Pad 2 must be elevated on pallets. Secondary containment is required if a container contains liquids or has questionable container integrity. Only AMWTP retrievable waste may be stored on Pad 1 or Pad R. Offsite waste is not permitted to be stored on Pad 1 or Pad R. Only retrievable waste and supercompacted waste may be stored on Pad 2. [25]

A single rear axle dual wheeled flat bed truck is used to move containers within WMF-636. Individual drums or boxes are moved with a forklift and/or all terrain extend-a-boom fork lift to lift the containers onto the flat bed or to move containers within a buildings. Waste containers are inspected for structural soundness prior to movement. [25]

3.6.2.2 Waste Container Preparation, Overpack, Un-Overpack, and Re-Overpack

Waste container preparation and handling is conducted in the WMF-676 Drum Repack System (DRS), the WMF-635 DRF, and in the Type II modules as described in the following Sections. The specific handling described includes preparation of containers for visual examination, overpacking or treatment, and overpacking, un-overpacking, and re-overpacking of containers with structural defects in support of safety and spill prevention programs. Overpacking includes drums packed into six-drum overpacks (SDOPs) for movement of waste from the Type II storage modules to the facility. Each facility handles specific types of waste containers and/or waste receiving containers depending on function and location. [29, 32, 36, 53, 54, 89]

3.6.2.2.1 Loading Six Drum Overpacks (SDOP)

Debris waste containers greater than 55-gallon or with poor container integrity or structural defects are overpacked into SDOPs for transfer into a box line. The waste containers are loaded into the SDOPs in Type-II modules (e.g., WMF-629 and WMF-630). All drums to be packed into an SDOP are first verified to contain less than or equal to 200 FGE and linked to the SDOP in Waste Tracking System (WTS). The containers are dumped from the SDOP into the box line trough where they are opened, prohibited items are removed and set aside, and the remaining waste is packed into 55-gallon silver drums. The waste drums are moved via a conveyor to an assay station and into the supercompactor for compaction. [32]

3.6.2.2.2 Drum Preparation in WMF-676 DRS

The DRS consists of the DWHE room, the DOHE, which includes the Drum Opening Station (DOS), and the Drummed Waste Packaging Glovebox (DWPG). (Figure 4) Drummed TRU waste is prepared in the (DOHE/DOS) prior to entry into the DWPG for visual examination, prohibited item removal or treatment, and repackaging prior to entry into the supercompactor. Drum preparation includes lid removal and opening of the drum liner. Containers and un-containerized waste are considered to be in treatment at all times in the DWHE, DWPG, and SCW glovebox system. Prohibited items may be removed from containers in the DWPG and treated in the SCW glovebox. [29, 36, 89]

Overpack drums (83/85-gallon) may be prepared in the DOHE prior to un-overpacking the inner 55-gallon drum, which involves moving the overpack container into the DOS, and removing the lid and locking ring. The inner 55-gallon drum is lifted from the overpack in the DOS, surveyed for radiological contamination and inspected during lifting. The unpacked 55-gallon drum is placed on the floor or on the dolly for later handling. [29]

Waste containers exit the DRS area either through the System 423 lift (for assay and supercompaction) or through the DWPG for VE and/or repackaging. [29]

3.6.2.2.3 Un-Overpacking and Re-Overpacking of S3000 Waste Drums in WMF-635 DRF

Un-overpacking and re-overpacking in the WMF-635 DRF tent is limited to S3000 TRU waste containers. This excludes the organic homogeneous wastes (IDCs RF-003, RF-700, and RF-801). [54] Overpacked S3000 waste drums that have poor container integrity or cannot be treated in WMF-628 are moved into the DRF tent and prepared for overpacking into a SWB for shipment to WIPP. Filter vents, locking rings and lids are removed from the overpack drums and set aside for disposal into a prepared waste container. Vented inner containers (30-gallon or 55-gallon) are lifted from the overpack and inspected for container integrity. Intact drums are staged in the DRF on an appropriate pallet or dolly or directly loaded into a prepared SWB. Breached waste containers or those with poor integrity are not retrieved from their overpack containers and are returned for storage. [54, 89]

The empty 83/85 drums are inspected to determine the presence of waste material. Any waste material is removed, and bagged. Liquid waste is absorbed with an approved absorbent (e.g., Aquaset II-G® and Micro-Cel® E) placed into a poly bag. The bagged waste from the empty container is disposed of in the SWB with the parent waste. The lid and locking ring and a new vent are reinstalled on the empty overpack container, which is then crushed using the drum crusher and loaded into a waste box. (54)

3.6.2.2.4 Un-Overpacking of Boxed Waste Containers in WMF-629

Large overpack TRU containers such as TX-4 and cakeboxes are un-overpacked in WMF-629. Forklifts and attachments used to move these boxes are covered to reduce the possibility for cross contamination, as applicable. Box lids are removed and cribbing (e.g., plastic/herculite sheeting and cribbing) is installed to allow radiological surveys as needed. Removed box lids are placed on plastic/herculite sheeting to prevent cross contamination. To process the un-packed waste boxes to RCRA empty status, all waste (e.g., lid gaskets, inner bags, etc.) is removed from the container; the container is reassembled (e.g., re-install bolts, cargo tape is applied to lid and box seam as applicable), the exterior is surveyed and the container is decontaminated as appropriate. (53)

When a breached waste container is found, and conditions permit, the container and the area are decontaminated and the container is overpacked or repaired and placed back into storage. Areas of suspected contamination on the external portion of containers are painted or covered to seal the constituents to the container. (53)

3.6.2.2.5 Overpack, Un-Overpack, Relidding, Drum Liner Removal, and Confinement Layer Reduction

The WMF-628 DTF activities include overpacking/un-overpacking, and relidding, and drum liner removal of S3000, S4000 and S5000 TRU waste and reduction of the layers of confinement of S3000 and S4000 waste. (42)

3.6.2.2.6 Overpack, Un-Overpack and Re-lidding

Overpacking is performed on drums received into the DTF if the drum is damaged where it cannot be stored. The drum is lifted out of the overpack and placed into a new 83/85-gallon drum, lidded with a vented lid and closed with a locking ring bolt. (42)

Overpack 83-gallon drums of S3000 and S4000 waste containers taken into the DTF are first un-overpacked. Overpacked S5000 waste is also un-overpacked in the DTF as necessary. After removal of the lid from the overpack, the inner container is lifted, monitored for structural integrity, radiologically surveyed and decontaminated as necessary. Emptied overpack drums are evaluated to determine if RCRA empty and dispositioned accordingly. (42)

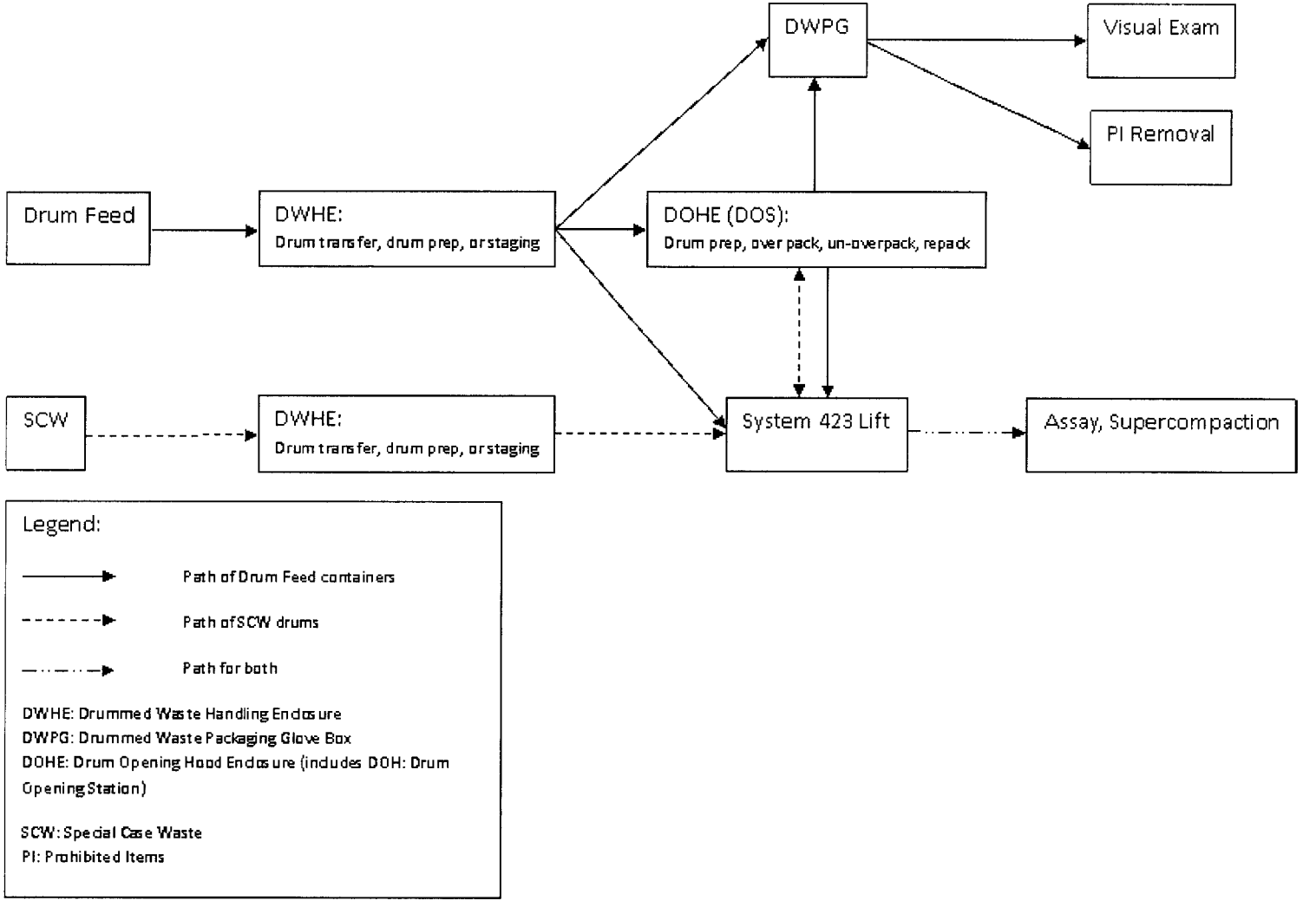

Figure 4. WMF-676 Drum Repack System (DRS) waste container movement [29]

The filter vent and lid locking ring are then removed from the un-overpacked 55-gallon drums. The interior of the container is radiologically surveyed prior to complete removal of the drum lid. Waste container lids with excessive rust or that cannot be reinstalled on a drum due to warping or other structural issues are replaced with new lids and ring that are compatible with the container. A new filter vent is installed and the drum is closed. [42]

If the container requires absorption or decanting the procedure is described in Section 3.6.5.3. [42]

3.6.2.2.7 Drum Liner Removal and Liner Repack

Drums of S3000 and S4000 waste with container integrity issues require drum liner removal and liner repack prior to shipment to WIPP or treatment on the shaker table. Removal of rigid drum liners involves first removing the liner lid or cutting slots out of the liner lid to facilitate removal of the liner. When the liner lid is removed, a confinement method is used to contain the waste in the liner (e.g., application of a shower cap). Liners are raised above the source drum (55-gallon), decontaminated as needed, surveyed for radiological contamination and structural integrity and the liner containing the waste is placed into a new 55-gallon container. [42]

In the event the rigid liner cannot be removed from the drum, the liner is lowered back into the original drum, the liner lid replaced or repaired, and the container is banded, relidded, vented and overpacked. Drum liners that are successfully removed from the original drum but cannot be repackaged into a 55-gallon drum are packed into a soft-sided overpack and overpacked into an 83/85-gallon overpack. [42]

3.6.2.2.8 Confinement Layer Reduction

Layers of confinement in S3000 and S4000 waste containers are breached during treatment for liquids and during prohibited items removal. The rigid liner lids are cut out or removed; concrete cap materials are broken up and left in the container or placed into waste bags for return to the treatment drum after treatment, and layers of bagging are cut open and the bag umbilical(s) removed. The removed packaging materials are placed back into the treatment drum along with any secondary waste items generated after treatment is completed, if there is sufficient space in the container. [42]

All layers of confinement in S5000 waste containers are breached as an integral part of treatment during removal of waste from containers in the box lines and supercompaction (Section 3.6.5.2.2). [41]

3.6.2.3 Drum Vent and Drum Filter Placement and Replacement

TRU waste containers are vented prior to characterization or movement of containers into the WMF-676 Facility. Installation of drum vents or ports and filter removal and replacement are conducted in the Type II modules (i.e., WMF-629 through WMF-633), WMF-628, WMF-634 and WMF-635 and in the drum vent facility (WMF-615). Drums lids are wiped as needed prior to vent/port or filter insertion. The drums are remotely punched, a vent, port or filter is inserted and the drum is discharged. The top of each drum is swiped for a contamination survey and the swipe is scanned prior to removal of the drum from the area. [28, 56, 57]

- Drums requiring WAC headspace gas sampling that have non-penetrable filter media are moved to the HSG filter change out hood or the SUMMA sampling filter change out area (WMF-628). Drums requiring WAP headspace gas sampling that require a filter replacement are conducted in WMF-634. The container filter is removed and discarded as radiological waste, the gasket seating surface is cleaned as appropriate and an appropriate container filter is installed. [52, 86]

- Drum lids with excessive corrosion are replaced prior to installation of the drum filter. Drums with dents, imperfections or existing filters that interfere with the seal housing, are repositioned or the drum lid is replaced. [56]

- Drum filter removal and replacement for TRU waste drums is monitored using a PID and a high efficiency particulate air (HEPA) filter vacuum to remove any drum filings resulting from the removal process, or other material from the drum surface. Current drum filters are removed from the drum and disposed of based on radiological contamination and an appropriate filter is installed. The container is surveyed by an RT. Containers with survey results in excess of acceptable limits, require decontamination, containment or affixing of the contamination. [52, 58]

- Drums retrieved from Pad R, Cell 1 cargo containers and bins identified as RF-751 or unidentified homogeneous solid waste are not vented prior to RTR examination due to the potential presence of depleted uranium (roaster oxide).

- When ever, a new lid or an old lid is installed onto a waste drum, a new filter vent is installed. [29]

3.6.3 Maintenance

Maintenance includes equipment maintenance (e.g., oil change outs and equipment change outs), as well as cleanout of containment areas (e.g., Drum Repack System, box lines), periodic replacement of glovebox gloves and ports, spill response and clean up, and replacement of ventilation system filters. These maintenance activities occur across the AMWTP to support overall operations and criticality concerns. The applicable procedures and locations for maintenance operation are listed in the Table 3.5.

Table 3.5. Maintenance operations, processes, buildings/areas, and applicable procedures.

Operations	Processes	Building/Area	Applicable Procedures	Doc Section
3.6.3 Maintenance	Cleanout of Containment Areas	WMF-615 DVF WMF-634 DVS WMF-676 DRS WMF-676 Box lines WMF-676 SCW	INST-OI-16 [69] INST-OI-73 [70] INST-FOI-21 [29] INST-FOI-16 [41] INST-FOI-23 [36]	3.6.3.1
		WMF-676 Supercompactor	INST-FOI-20 [38]	3.6.5.2
	Equipment Maintenance	WMF-676	INST-MS-0111 [72] INST-MS-0049 [85]	3.6.3.2
	Glovebox Glove and Bag Support Ring Change out	WMF-615 WMF-676 WMF-634	INST-OI-16 [41] INST-FOI-21 [29] INST-FOI-23 [36]	3.6.3.3
	Spill Response and Clean up	Site Wide	INST-OI-11 [25] INST-OI-88 [33] INST-EC&P-7.10 [39] INST-FOI-25 [43]	3.6.3.4
	Ventilation System Pre-filter and HEPA Filter Replacement	WMF-628 WMF-635 WMF-676 WMF-636 Vacuums and portable exhausters WMF-615 WMF-634 WMF-636	MP-EC&P-7.4 [60] INST-FOI-34 [59] INST-MI-1001 [63] INST-MI-1082 [64] INST-MI-1051 [62] INST-MI-1070 [61] INST-OI-91 [54] MP-RS&C-6.17 [79]	3.6.3.5

3.6.3.1 Cleanout of Containment Areas including Criticality Cleanout

Regular cleanout of containment areas (WMF-634 Drum Core Sample Retrieval System (DCSRS), WMF-676 DRS, and WMF-676 north and south box lines) is conducted to prevent criticality situations and prior to receiving known incompatible waste (i.e., waste coming in is incompatible with previously processed waste). Cleanout of the supercompactor glovebox suite is described in Supercompaction Section 3.6.5.2.2.1. [41]

3.6.3.1.1 WMF-634 DCSRS Cleanout

Cleanout of the DCSRS glovebox is performed after a sampling event is complete. The glovebox is cleaned out by returning residual core material, packaging material (e.g., plastic, absorbents removed and set aside prior to sampling), and any secondary waste generated to the source container. In the event the source container does not have sufficient headspace to accommodate the waste materials, they are packaged separately from all other waste in the glovebox per INST-OI-24. [69, 70]

The coring tools, equipment and the three sections of the glovebox are wiped down to a visibly clean condition. Waste packages are transferred to the bag-out port and bagged out of the glovebox and placed into a collector drum. The drum is removed from the drum port and surveyed. Trapped air from the drum transfer sleeve is removed using a HEPA filtered vacuum and the top lip of the drum is taped over the drum transfer sleeve. A VE is performed during final closure of the drum. A drum lid with an installed bung type filter vent is placed on the drum, and a drum lid locking ring and filter vent are installed. [69, 70]

3.6.3.1.2 WMF-676 Drum Repack System (DRS) Criticality Cleanout

The DWHE, DOHE, and DWPG are considered a single area (DRS) for criticality cleanout and are all cleaned before resetting the FGE totals in Fuel Tracking System (FTS). Cleanout of the DRS includes emptying any container (including vacuums) that are not labeled and specifically controlled "For non-fissile materials ONLY" and removal of drums within the area that do not form part of the area mass limit (e.g., lidded SCW drums). [29]

The DRS is visually inspected to provide a means of achieving criticality control by ensuring "clumps" of contamination are not present. Items used for cleanout, such as wipes used for cleaning contamination off the inside of a glovebox, are collected into the same container as waste and are treated as part of the "clump" volume. Following a criticality cleanout and inspection, less than 1,000 cm^3 (approximately a quart bottle) of contamination may be left in a glovebox. Waste items (e.g., PPE) are inspected to verify contamination level before being bagged from the DOHE and bulked into a 55-gallon drum and assayed to control the fissile mass within a drum to below the 200 FGE ^{239}Pu WAC. Waste containers exit the DRS area either through the system lift (for assay and supercompaction), through the DWPG (for VE and/or repackaging), or are transferred to the SCW glovebox for treatment. [29]

3.6.3.1.3 WMF-676 Special Case Waste (SCW) Criticality Cleanout

The WMF-676 SCW glovebox system is composed of 4 interconnected gloveboxes; 1) transfer, 2) treatment, 3) sampling, and 4) container-in-container gloveboxes. The SCW gloveboxes and secondary waste items are visually inspected for significant quantities of contamination to determine that such quantities ("clumps" of contamination) are not present as a means of achieving criticality control. Cleanout of the SCW glovebox includes removing any waste material and secondary waste items and wiping the inside of the glovebox to remove contamination. Items used for cleaning contaminated material from the glovebox (e.g., wipes) are treated as part of the "clump" volume of waste material removed. Following a criticality cleanout and inspection, less than 1,000 cm^3 (approximately a quart bottle) of contamination may be left in a glovebox. [36]

3.6.3.1.4 Box Lines and Containment Systems Cleanout

Criticality cleanout of the box lines and containment systems is initiated based on radiological contamination. The box lines are also cleaned out of extraneous materials (e.g., paint chips, wood chips, debris) periodically (at least quarterly). [41]

Liquids present in the box line troughs are removed, either by absorption, or using a portable sump pump during cleanout. Loose waste materials are placed in bags and removed from the troughs and placed in staged 55-gallon silver drums for supercompaction. All surfaces are visually inspected to ensure all incompatible waste material has been removed from the box line areas. The trough and containment surfaces are swept with the Brokk® tool to remove any excess material and contamination. Wipes and other materials used during the cleanout are included with any waste material removed. [41] All accessible horizontal surfaces outside the troughs are cleaned of dust, debris, and oil, and the collected waste is temporarily accumulated in the trough until packaged out of the box line room. [41]

Following criticality cleanout and inspection, less than 3,000 cm^3 (approximately the size of a soccer ball) of waste is allowed to remain in the respective box line trough. Non-fissile items (e.g., metal shelving or wood from the waste box) that do not have any visible contamination remain in the box line after cleanout. [41]

3.6.3.2 Equipment Maintenance

Standardized maintenance procedures are used at AMWTP. Maintenance is performed with services, drives, and electrical power isolated and AMWTP personnel using appropriate PPE. [46]

Modular units within WMF-676 (such as manipulators) are typically maintained/repaired in designated areas near where they are used, or they can be removed from the area on failure and taken to the contaminated maintenance cell for repair. Any failed or uneconomical-to-repair components originating from within Zone 3 areas (e.g., waste tools used in box lines or gloveboxes) are bagged out of the area, collected in containers and removed from WMF-676. Replacement tools are imported through bagging ports or directly in a container. [46, 47]

3.6.3.2.1 Maintenance of Brokk® Manipulators

Changing the hydraulic fluid (i.e., QuintoLubric 822-300 hydraulic fluid) from the Brokk® pedestals is performed on a quarterly basis as part of routine maintenance. Three Brokk® floor-mounted manipulators are installed in the two box line cells located in WMF-676. The Brokks® are hydraulically driven, remotely operated, and are situated in highly contaminated cells. They are primarily used to sort, segregate, and size-reduce waste and waste containers dumped from boxes into the two box line troughs. (78, 85)

To remove the Brokk® manipulator oil, the oil and any sludge is pumped, drained or dipped from the equipment and the waste is placed into accumulation containers (e.g., polyethylene containers or 55-gallon drums). The polyethylene containers are, double bagged from the room prior to removal from the area. The equipment is inspected; breather filters are replaced, minor leaks are repaired as needed, and the oil is replaced. The drained oil is placed into waste containers with absorbent material. When the waste container is full or all oil has been drained, the waste container is closed and stored until disposal is determined. (85)

3.6.3.2.2 Supercompactor Hydraulic Oil Change

Periodic cleanout of the Supercompactor includes changing the hydraulic oil, inspection of the oil reservoir, replacement of breather filters, repair of any minor leaks, performing a functional check of the reservoir level indicator, and a flow measurement of the HPU chilled water and other maintenance as needed. (72)

During oil change, the supercompactor reservoir is completely drained, and the reservoir is inspected and cleaned. Cleaning includes wiping off any suspended oil on the walls of the reservoir using reach tools; removing oil from the bottom of the reservoir using a squeegee and lint-free rags or a vacuum. A plastic scraper on an extension pole or other non-metal device is used to remove any sludge remaining on the reservoir floor. After cleaning, the reservoir is re-inspected to ensure no foreign matter or objects are present. A new O-ring is installed and the cover is put back on the reservoir and the oil is replaced with QuintoLubric 888-68 oil. (72, 74)

The drained oil is placed into a waste drum. When the waste drum is filled or all oil has been drained the waste drum is closed and stored until disposal is determined. When all of the operations have been performed, the supercompactor is refilled with prefiltered QuintoLubric 888-68 oil and put back into operations. (72)

3.6.3.3 Glovebox Glove and Bag-Out Bag Change Out

Glovebox gloves (e.g., coring, DRS, SCW, DVS, DVF gloveboxes) are inspected daily or before use for wear and tear. Gloves that fail an inspection are changed at the time of the failure or when the inspection date has expired. The glove and the rubber O-ring from the glove support ring are removed, bagged-out of the area and placed into a waste collection container. A light coating of vacuum grease is applied to the replacement O-ring and the O-ring, and replacement glove(s) are installed onto the glove support ring. (29, 36, 41)

Bag-out bags including support rings are also inspected daily. Those that fail inspection are replaced. New O-rings and bag support ring are installed over the replacement bag-out bag. The previous bag is rolled up completely and placed into the inner housing of the ejection tool with the bag ring on the open end and removed. During installation of the replacement bag, the bag support ring and bag stub are disengaged from the enclosure ring into the inside of the glovebox to be bagged out of the glovebox after installation is completed. [29]

3.6.3.4 Spill Response and Clean Up

Spills from breached containers results in spill response actions. Actions to be taken for spill/leak clean-up of liquid or solid waste materials are dependent on the waste type, radionuclide content and extent of the spill, leak or release. Spill areas are isolated when necessary to protect others and to keep spill material from spreading. The spill/leak area is evaluated by the appropriate personnel, and characterization/cleanup activities are determined. All decisions and activities are documented appropriately. Released material is tested and recovered based on testing results into collection drum(s). It is managed as TRU waste until assayed to determine level of radionuclide contamination. Spills due to a container leak or breach or a release of any hazardous or radiological material at the AMWTP are reported to the Environmental group. [25, 27, 33, 39, 49]

- PCB, beryllium, and acute hazardous waste releases have specific requirements (e.g., PPE) for cleanup/handling and packaging. The leaked/spilled material is tested (e.g., pH) and packaged into a collector drum and stored for future evaluation and disposition. Each collector drum is controlled to less than 200 FGE ^{239}Pu. [33]

- When there is a spill or leak from a non-PCB/Be contaminated waste container, appropriate PPE is donned, leaked/spilled material is tested (e.g., pH) as necessary, and spilled material is recovered and placed into either 55-gallon drums or boxes. The resulting waste is managed as TRU waste until assayed. [33]

- Any spillage of fissile waste material is recovered at the earliest practical opportunity, using INST-OI-88, Spill/Leak Response and Cleanup. [33] Any container produced as a result of the recovery from a spillage is assayed. [43]

- Dry materials may be removed by vacuum. Vacuums are used only for cleanup of non-fissile or low-level waste materials. Leaked/spilled material is picked up or absorbed using appropriate tools (vacuums, scoop, brush, and/or shovel). [33]

- Liquids are cleaned up with the use of appropriate absorbent material over the leaked/spilled material. When absorbed the material is picked up. The area of the spill/leak is wiped up to remove excess. [33]

The types of absorbent materials used during spill clean-up are based on characterization data and determination of the nature of any liquids present. Approved absorbents are Aquaset®, Aquaset II-G®, Micro-Cel® E, Oil Dri® (i.e., historical use only), Hg Absorb, Petroset II® and Petroset II-G® as well as absorbent PIG® mats or towels. The spill cleanup materials are placed in appropriate waste receptacles and stored in a Temporary Accumulation Area (TAA). [25, 27, 33, 39, 49]

3.6.3.5 Ventilation System Pre-Filter and HEPA Filter Replacement

Pre-filters and HEPA filters from multiple ventilation systems and filtered equipment (e.g., gloveboxes, the shredder area, DRF, DTF, vacuum cleaners) are replaced on a periodic or as needed basis. All HEPA filter/pre-filter replacement is bag-in-bag-out, which allows filter change from the exterior of the filter housing without exposing personnel to the contents of the spent filter. [63]

When a HEPA filter or HEPA filter bank falls below 99.97% efficiency as determined by testing, the filters are isolated and replaced within 10 days. [60, 61, 62, 64] Ventilation areas are defined as Zone 1, Zone 2, and Zone 3 areas based on the environments serviced. Zone 1 areas are served by a singled bank of HEPA filters and Zone 2 areas are served by two stages of HEPA filtration. The Zone 1 and 2 exhaust systems areas are combined downstream of the filters and routed to a common duct to the main stack. Zone 3 filtration areas are served by three stages of HEPA filters. The first stage filter is located near the areas served and the exhaust passes through the second and third HEPA filter banks before being exhausted through the main stack. The glovebox exhaust system serves gloveboxes with Zone 3 environments and is similar to the Zone 3 exhaust system, except that the flow rate requirements are much lower. This system also has first stage HEPA banks followed by second and third stage HEPA filter banks. [15]

Ventilation systems are present in the following areas:

- Characterization facilities (WMF-610, WMF-615, WMF-628, WMF-634) ventilation consists of a general exhaust for the building plus special-purpose exhaust systems in the drum venting system(s) and drum core sampling area. Drum venting includes a vapor extraction system to evacuate headspace gases of drums, and a multistage high-efficiency particulate air (HEPA) filtered exhaust system. [15] These are Zone 2 areas.

- The outside of soft-sided containment (tents) are Zone 2 areas. [64]

- Drum coring (WMF-634) ventilation consists of a glovebox suite enclosed in a secondary containment enclosure. Exhaust from the glovebox and from the secondary enclosure passes through multistage HEPA filters before exhausting with the main facility exhaust. [15] This is a Zone 3 area.

- The AMWTF (WMF-676) is divided into clean areas and three ventilation/radiological confinement zones (Zones 1, 2 and 3). Exhaust from the ventilation zones are separately conveyed to the atmosphere in individual flues. Zone 1 areas are served with a single-stage bank of HEPA filters and Zone 2 areas have two stages of HEPA filtration, which exhaust to

the main stack. Zone 3 areas are served with three stages of HEPA filters. [15] The drum opening hood filters are changed after 1,000 drums have been processed. [61]

- Glovebox Zone 3 environments have three stages of HEPA filtration but with much lower flow rate requirements than other Zone 3 areas. [15]

- The (WMF-635) DRF Zone 3 ventilation system includes pre-filters and HEPA filters which are removed along with any significant material from the ventilation ducting. Inspection/replacement/cleaning of the WMF-635 DRF ventilation system and associated equipment is conducted when 1,000 overpack drums have been opened in the DRF. [54]

The ventilation inlet and housing are first inspected to determine if contamination may be present and if the change/containment bag is intact. For both pre-filters and HEPA filter replacement the containment/change bag is taped to the filter housing spigot to contain material during removal. The change bag is inspected, surveyed and unrolled from the outer groove of the spigot. Manipulating though the change bag(s), the pre-filter or filter is withdrawn from the housing and placed into the bottom end of the change bag and visually inspected. The change bag is closed with a twist and tape. Depending on radiological contamination, pre-filters/HEPA may be doubled bagged. The bagged pre-filter/HEPA filter is placed into a secondary bag and tape sealed close and the filter is folded to fit into a 55-gallon drum. The bagged pre-filters or HEPA filters are packaged into a staged 55-gallon or larger drum. Only one unmonitored HEPA filter or pre-filter is packed into each 55-gallon drum. No other waste material other than that generated during change-out operations is allowed in the waste drum. Incidental waste generated during filter replacement may be placed into the same waste container as the removed filter. New containment bags with replacement HEPA filter or pre-filters are installed. [60, 63, 64] Spent pre-filters, HEPA filters, and any secondary waste generated during removal operations from both Zones 2 and 3 are discarded individually or as a single group (with no other materials) in a 55-gallon or larger waste container. [64]

Vacuum cleaners and portable air-handling equipment are equipped with HEPA filters and are used to control radioactive contamination by vacuuming gross amounts of surface contamination, or loose debris. Vacuum cleaners and air-handling equipment are used under the direction of Criticality and/or Radiological Safety and may be used in WMF-615, WMF-634, and WMF-636, but are not limited to those areas. RT's survey HEPA-filtered vacuums and air-handling equipment for radiation and contamination under the following conditions; after each use when a significant change in contamination or radiation levels is possible, prior to transfer to another area, prior to and after dumping and/or HEPA filter change out, or as required by routine survey frequencies. [79]

3.6.4 Characterization Operations (WMF-628, -634, -635, -636, -676)

TRU waste characterization operations at the AMWTP include a variety of non-destructive and/or destructive processes used in the verification of process knowledge (PK) and AK information for each waste. Waste retrieved from the TSA-RE or the Type II storage modules, from receipt of offsite waste, or newly generated is characterized using a combination of two or more of the following technologies: real-time radiography (RTR)/VE, radioassay, headspace gas

sampling (HGAS), and homogeneous solid sampling and analyses as required by the WIPP WAP. In addition, every container is characterized for transportation by HGAS, as required by the WAC. Characterization data are used to optimize treatment processes for criticality control; to certify waste for disposal at the WIPP, or other onsite or offsite facilities; and to ensure compliance with regulations governing storage and transportation of TRU waste. IDCs, SCGs and WMCs are verified and prohibited items are identified by the operators during RTR and VE in support of TRU Programs characterization activities.

The principal items of equipment used at the AMWTP for characterization are RTR units, a box radioassay system, drum radioassay systems, drum-venting/headspace gas sampling units, a drum coring system/solid sampling glovebox, and gas generation testing systems (GGTS). These systems are located in WMF-610, WMF-628, WMF-634, WMF-635, and WMF-676. Fast scan assay or Quick scan RTR equipment may also be deployed to aid in the identification of waste. The equipment and procedures for radiography and nuclear assay conform to the requirements specified in MP-TRUW-8.2. [15, 55]

The applicable AMWTP procedures and locations for waste characterization operations are listed in the Table 3.6.

Table 3.6. Waste characterization operations, processes, buildings/areas and applicable procedures

Operations	Processes	Building/Area	Applicable Procedures	Doc Section
3.6.4 Characterization	NDE (RTR, NDA, HGAS, GGT, PAM)	WMF-610, WMF-676 WMF-628 WMF-634 WMF-635	INST-OI-12 [65] INST-OI-41 [66] INST-OI-43 [52] INST-OI-81 [67] INST-FOI-01 [68] INST-FOI-25 [43] INST-OI-14 [75] INST-OI-15 [76] CCP-CM-013 [10]	3.6.4.1
	VE	WMF-634 WMF-628 DTF WMF-676 Box lines WMF-676 DWPG WMF 676 SCW	INST-FOI-17 [44] INST-FOI-21 [29] INST-FOI-23 [36] INST-OI-34 [77] INST-OI-16 [69]	3.6.4.2
	Coring/Solid Sampling of Homogeneous Solid Waste S3000/S4000	WMF-634	INST-OI-16 [69] INST-OI-73 [70] INST-OI-75 [71]	3.6.4.3

3.6.4.1 NDE Activities

Waste characterization is conducted in buildings WMF-610, WMF-628, WMF-634, WMF-635 and WMF-676 and includes examination by several non-destructive activities as described below:

- RTR is an x-ray technique used to confirm the specific waste matrix code and waste description, identity prohibited items and provide data for waste material parameters. [55, 65] AMWTP operates two RTR units located in WMF-634. Both units are used for certified scanning of either drums (55-gallon, 83/85-gallon, 100-gallon) or boxes. [15, 65, 66, 67]

- Non-destructive assay (NDA) is performed to characterize each drum or box for radiological content. The Drum Assay System located in WMF-634 is designed to measure FGE for criticality safety control in the AMWTP process areas and to ensure compliance with the radiological characterization requirements specified in the WIPP CH-WAC. [75]

- Drum Assay Systems (Z-390-100 and Z-390-101) are automated non-destructive assay systems used to measure fissile gram equivalents (FGE) for criticality safety control in the AMWTF process areas and ensure compliance with radiological characterization requirements for supercompaction feed drums. The drum assay machines are located in WMF-676 along the two conveyors from the north and south box lines to the supercompactor and measure the FGE for each feed drum prior to entry into the supercompactor. [68]

- The Packet Assay Monitor (PAM) located in the SCW area is used to measure the FGE of waste packets (e.g., bagged bottles/jars of squeezants, sample containers, waste packages) prior to being bulk packaged or transferred into the SCW glovebox for treatment. [43]

- The Retrieval Box Assay System (RBAS) located in WMF-634 is used to determine FGE and TRU alpha activity concentration in waste boxes prior to movement of the boxes into a box line to be dismantled and the contents removed, repackaged, and re-assayed. [76]

- Headspace gas WAP sampling and analysis of waste containers is conducted in WMF-634 using an automated manifold system with gas chromatography/mass spectrometry (GC/S) and gas chromatography/thermal conductivity detector (GC/TCD) methods. Prefilter samples are taken by penetrating the carbon composite filter on vented containers with a side-port needle attached to a probe gun and collecting the sample from beneath the drum lid. Alternatively, the sample may be collected using a sampling port device mounted in a drum lid or as part of a filter. [52]

- Gas Generation Testing (GGT) is conducted in WMF-635 on selected containers determined to be test category drums to determine the hydrogen concentration and pressure. The selected containers are drums with decay heat exceeding the analytical limit, the waste type has not bounding G value, or the flammable VOC concentration in the container headspace cannot be demonstrated to be less than or equal to 500 part per million (ppm). Containers are loaded into the Gas Generation Test Canister (GGTC), which is closed and pressurized with air or nitrogen, and heated. The data is used in the calculation of the hydrogen/methane and total gas generation rate. [130]

- The Transportation Only HSG Unit in WMF-628 is used to analyze headspace gas from TRU waste containers to determine flammable gas concentration in the head space of containers for transportation to WIPP. A sample is collected from a waste container headspace, injected into two different columns in a gas chromatograph. The samples then go to a mass spectrometer (MS) and are analyzed for detection of VOCs and hydrogen and methane. The data are used to calculate concentrations of the compounds detected. [87]

3.6.4.2 Visual Examination (VE)

VE is an intrusive physical examination of the contents of a drum or box used to identify and verify physical form and the absence of prohibited items as well as to confirm that the waste matches the waste stream description and the waste matrix code assigned to a waste container. VE may be conducted while performing specific operations in which the waste can be visually examined, either while in an opened container, when the waste is removed from a container, during repackaging of waste, or while the drum is opened prior to solid sampling. VE may also be used to characterize AMWTP waste (such as secondary waste) at the time of generation/packaging to identify physical form and to verify the absence of prohibited items. [36, 44, 69, 77]

Prohibited items identified during visual examination are removed and treated if applicable or segregated for future evaluation and dispositioning. [29]

VE in the WMF-676 DWPG was used in the past to confirm RTR data. The drum was prepared in the DOHE. The drum lid was removed and packaged, the rigid liner lid was opened, and a temporary drum cap bag was attached to the top of the drum in place of the lid. The drum was transferred to the DWPG and docked to the horizontal ports. Waste was then removed from the original drum, visually examined and repackaged into a new container after examination. [29, 44]

3.6.4.3 Solid Sampling of Homogeneous Solid Waste S3000/S4000

Inorganic homogeneous solid, organic homogeneous solid, and soil/gravel waste containers may be sampled by either coring the waste or collecting grab samples. Each waste container is processed in the DCSRS only after a complete cleanout before and after processing to minimize cross-contamination of the samples collected from each source drum.

3.6.4.3.1 Core Sampling

Containers of direct load homogeneous solids or soils are processed in the WMF-634 DCSRS to support on-site and offsite characterization. The DCSRS consists of a core retrieval glovebox with associated drilling equipment, a core bit preparation glovebox and a sample preparation glovebox where cored materials are processed for sampling. The waste is packaged in 30-gallon or 55-gallon drums, which may be in 55-gallon or 83/85-gallon overpack drums, respectively. A representative core is retrieved to provide a sample for external laboratory analyses. Samples are analyzed for total metals, volatile organic compounds and semi-volatile organic compounds. The analyses provide data required to satisfy the characterization

requirements of MP-TRUW-8.2, and to identify contaminated waste or other waste categories requiring treatment. [55, 69]

A homogeneous solid waste container is transported to the DCSRS; the TID, drum lid-locking ring and bolt are removed and any filter vent(s) are removed. The inside of the drum is surveyed. Depending on the survey results, the drum lid may or may not be removed prior to entry into the glovebox. A new drum transfer sleeve is attached to the bag-in port, and the waste container is docked in the core retrieval glovebox. If necessary, the lid is removed and absorbent material present on top of the inner drum or rigid liner is moved aside or bagged and set aside inside the glovebox. The lid is cut out of the drum/liner, removed and staged. Any spacers are removed if present and set aside and the drum waste bag is cut away. The removed outer drum lid and lid locking ring are packaged per INST-OI-24. [27, 69]

Using the appropriate automated or manual coring tools, the coring bit is lowered into the waste and the waste is cored. Manual core sampling within the DCSRS is conducted when wastes are not amenable to the normal automated coring processes (e.g., containers that exhibit lower fill factors or contain waste that is less densely packed than typical sludge and soil/gravel wastes). Manual core sampling uses non-rotational coring tools and is performed within the confines of a Zone 3 glovebox (i.e., DCSRS). Core samples are collected by manually driving a certified-clean core tube liner into waste at a randomly established coring location. [69, 70]

When coring is complete, the core tube liner is pulled out of the core barrel and the exposed core tube liner is capped. After the tube is capped, it is extracted until completely free of the core barrel. The other end of the core tube liner is then capped and the core is then visually examined to record the physical description and recovery results. [69]

The core-tube liner with core sample material is wiped down and passed into the sample preparation glovebox. Sample/sub-sample materials are collected from random locations on the core and placed in appropriate sample containers to be sent for analyses. Sample vials or jars are wiped with a disposable wipe prior removing from the glovebox. The sampled core-tube liner ends are recapped. [69]

Residual core material is returned to the source drum. Fissile materials removed from a waste drum and any waste generated as a result of processing that waste drum are removed from the glovebox and put back into the same drum prior to docking another drum. All equipment and coring tools used are wiped down to a visible clean condition Waste material is returned to the source drum in the following priority: 1) Core material, 2) original materials (plastic absorbents) and 3) secondary waste generated as a result of coring and sampling. When secondary waste is not packaged into the source drum because of insufficient head space, it is bagged out of the glovebox, surveyed and loaded into 55-gallon drums. [69]

If liquids are identified during core sampling of an AMWTP legacy waste container, any core material is returned to the source drum, all secondary waste is bagged out of the glovebox and the drum is identified for treatment (liquid absorption) in WMF-628 (DTF) as described in Section 3.6.5.4.1. If liquids are identified during sampling of an off-site waste drum, all original

material and secondary waste are returned to the drum and the core sample is sent for analysis. (69)

3.6.4.3.2 Container-in-Container Sampling

Container-in-container sampling of TRU homogeneous solids or soil/gravel (S3000 or S4000) wastes is also conducted in the WMF-634 DCSRS gloveboxes using a manual grab sampling method. Container-in-container sampling is used when the waste form is other than direct loaded, including waste packaged in small inner packages (e.g., metal or plastic containers or in small plastic bags). Samples are analyzed for total metals, volatile organic compounds and semi-volatile organic compounds. (71)

For sampling the small inner packages; the drum is docked as previously described, the drum locking ring and bolt are removed, and surveyed, and sharp edges of the ring are taped prior to packaging. The filter vent(s) is removed from the lid to be added to the waste inventory of the drum upon closure. The lid is surveyed and removed, taping the sharp edges as needed and packaged. (71)

Packing material (e.g., vermiculite) is removed and put into a plastic bag; the drum waste bag(s) are cut away from the contents; each inner package is removed from the source drum and sequentially numbered. Random packages are selected and the sampling method is based on the type of material (e.g., small puck, loose material, large puck). Sample material is placed into a sample pan, broken into pieces/particles, and mixed. Sub-samples are collected from the pan and placed into appropriate sample vials or jars, weighed, recorded and labeled. Excess material in the sample pan is returned to an appropriate container, closed and returned to the source drum prior to closure. The glovebox is cleaned and the drum exported. Samples are bagged out of the glovebox and prepared for shipment to an approved laboratory for analyses. (71)

If liquids are identified during solid sampling, they may be treated prior to undocking the drum from the glovebox if there is sufficient headspace to accommodate the addition of an appropriate absorbent. Aquaset II-G® for aqueous or Micro-Cel® E for organic liquids are the only currently approved absorbents suitable for use. (71)

Fissile materials removed from a waste drum and any waste generated as a result of processing are removed from the glovebox and put back into the same drum prior to docking another drum. All equipment and sampling tools used are wiped down to a visible clean condition Waste material is returned to the source drum in the following priority: 1) Source drum waste material, 2) original materials (plastic absorbents) and 3) secondary waste generated as a result of sampling. When secondary waste is not packaged into the source drum because of insufficient head space, it is bagged out of the glovebox, counted by packet assay, surveyed and bulk loaded into 55-gallon drums. (71)

3.6.5 Treatment (WMF-628, -676, -634)

Waste treatment at the AMWTP is conducted on TRU waste to render the waste containers compliant with the WIPP WAC and WAP requirements, to meet AMWTP storage requirements

and to meet supercompactor acceptance criteria. Supercompaction is also conducted to reduce waste volume. Treatment operations are conducted in buildings WMF-628 and WMF-676 and include prohibited item removal, size reduction (e.g., supercompaction), liquid decanting, absorption, and resorption. The procedures and locations for waste treatment operations are listed in the Table 3.7.

Table 3.7. Waste treatment operations, processes, buildings/areas and applicable procedures

Operations	Processes	Building/Area	Applicable Procedures	Doc Section
3.6.5 Treatment	Prohibited/ Non-conformance Item Removal	WMF-676 DWPG WMF-676 SCW WMF-676 Box lines WMF-634 DCSRS	INST-FOI-21 [29] INST-FOI-23 [36] INST-FOI-16 [41]	3.6.5.1
	Waste/Size Reduction (WMF-676)	WMF-676 Box lines WMF-676 Room 232 WMF-676 Room 224B WMF-676 Room 225A	INST-FOI-32 [37] INST-FOI-20 [38] INST-FOI-16 [41] INST-FOI-15 [48] INST-MS-0097 [73]	3.6.5.2
	Liquid Pump Decanting and Absorption	WMF-628 DTF	INST-OI-68 [42]	3.6.5.3
	Liquid Absorption	WMF-676 SCW WMF-628 DTF	INST-FOI-23 [36] INST-FOI-20 [38] INST-FOI-21 [29] INST-OI-68 [42] INST-EC&P-7.10 [39] INST-FOI-16 [41]	3.6.5.4
	Absorption/ Resorption(Shaker Table Operations)	WMF-628 DTF	INST-OI-68 [42]	3.6.5.5
	Homogeneous Solid – Treatment in Box Line	WMF-676 Box line	TBD	3.6.5.6

3.6.5.1 Prohibited/Non-Conformance Item Removal and Treatment

Prohibited/non-conformance items are waste items that are not suitable for direct treatment via the primary WMF-676 supercompaction treatment process, including items discovered during RTR and box line waste segregation operations. These items do not meet the supercompactor acceptance criteria for direct treatment or do not meet the WIPP WAC/WAP. [36] Prohibited item removal and repackaging are conducted in multiple containment areas to support of on-site and offsite compliance. Prohibited liquid treatment is described in Sections 3.6.5.3 and 3.6.5.4.

- WMF-676 Facility areas: prohibited/non-conformance item removal
  - Box lines, and
  - DWPG/SCW.

3.6.5.1.1 Prohibited/Non-Conformance Item Removal

Prohibited items are identified during characterization activities such as RTR, solid waste sampling and sorting and visual examination in the box lines or gloveboxes. Homogeneous solid waste drums containing prohibited or non-conforming items may be transported to the DWPG for removal of the items and/or treatment. Debris waste drums containing prohibited or non-conforming items may be transferred to the DWPG/SCW for removal of the items or overpacked into SDOP boxes to be processed in a box line for either removal of the item and/or treatment by supercompaction. [36]

Prohibited and non-conformance items identified in the box lines may be bagged out and packaged for later treatment in DWPG/SCW such as: [36]

- small inner containers (i.e., container(s) removed from another container) containing
  - containerized liquids (immobilization)
  - PCB items (draining and packaging)
  - homogeneous solid waste. [29, 44]
- items suspected of containing PCBs (e.g., light ballasts), and
- pressurized containers (puncture and/or draining).

3.6.5.1.2 Prohibited Item (PI) Treatment

Treatment of prohibited items is conducted in the Special Case Waste glovebox system to support on-site and offsite compliance. The SCW prohibited item treatment process is illustrated in the process flow for treatment of liquids shown in Exhibit 1 of INST-FOI-23. Prohibited wastes are defined as waste that is prohibited from treatment in the box lines or acceptance at

WIPP. Prohibited debris items treated to remove the prohibited characteristic are managed as AMWTP waste and are candidate wastes for supercompaction. Containers with WIPP-prohibited liquids are treated using nonhazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G® or Micro-Cel® E) to render the waste acceptable prior to shipment. [38, 39, 42] The resulting AMWTP waste is characterized and assigned to an appropriate waste stream. [5, 27]

Prohibited waste may be stored in the SCW glovebox system, drum repack system, or SCW collection area until transferred out of WMF-676. Examples of prohibited or non-conforming items removed from original waste containers that are treated or managed in the SCW glovebox system are: [29, 36, 46]

- containers with prohibited liquids including waste items containing liquids,
- elemental mercury, in the form of containerized liquid, [46]
- pressurized containers, and [46]
- PCB items.

Non-PCB containerized liquids collected from waste containers or from waste items (e.g., wet cell batteries, valves, pumps) are separated from other waste. The liquids are evaluated for compatibility with other liquid waste and are only packaged with other compatible liquid waste containers. After determination of chemical compatibility, the liquids are segregated into groups and sent to either the WMF-628 DTF or the WMF-676 SCW glovebox for treatment. [41]

Liquids are first examined to determine if the liquid has multiple phases. Multi-phase liquid waste is separated into containers for further evaluation (e.g., testing, sampling) and treatment. The liquids are tested to determine specific gravity, and pH, if aqueous. Aqueous liquids are neutralized as necessary (e.g., pH < 3 use sodium bicarbonate and pH > 11.5 use sodium bisulfate) prior to absorption with Aquaset II-G®. Micro-Cel® E is used to absorb organic liquids. The containers of absorbed liquid are double bagged in the glovebox and bagged out as a waste packet. Waste packets containing neutralized and stabilized waste are placed into a collector drum for storage. Waste packets are packaged singly in a 55-gallon drum if un-assayed. Assayed packets are packaged in bulk in a collector drum depending on FGE values. Empty containers are bagged out and transferred to the SCW collection area for storage until the appropriate disposition has been determined. [29, 36, 44]

Containers of elemental mercury removed from waste containers or segregated from other liquid are absorbed using Hg Absorb and bagged out of the glovebox and stored for future management/dispositioning. [36]

Pressurized container treatment includes venting of known non-hazardous gases in the SCW glovebox system. A puncturing device is used to release gas from the container. After puncturing, the container is opened as necessary and any free liquid is poured into another container. The depressurization area is decontaminated after each container depressurization, as

necessary. [36] Depressurized containers are bagged out of the glovebox and packaged and directions of Waste Services. [36] Pressurized containers containing chlorofluorocarbon (CFCs), flammable carrier gases, or unknown contents are not processed, but are returned to the INL Management and Operating (M&O) contractor. [36]

PCB contaminated items are prohibited from supercompaction and are transferred to the SCW glovebox system for packaging. [46] Bulk liquid contained in PCB equipment (e.g., capacitors, ballasts, transformers) is prohibited from treatment. [42]

3.6.5.2 Waste/Size Reduction (WMF-676)

The AMWTP facility, WMF-676, houses a supercompactor, a shredder and a plasma arc cutter that are used to reduce the volume of waste and size reduce emptied original waste containers (e.g., drums and boxes) and large items (e.g., gloveboxes, lathes, other machinery) to support subsequent containerization and/or treatment.

3.6.5.2.1 North and South Box Lines

Debris waste packaged in boxes and drums overpacked in six drum overpacks (SDOPs) are transported into one of two box lines (i.e., north and south). Prior to entry into the box lines, lids are cut off the boxes remotely using the Box Opening Gantry Robot (BOGR), or manually. The lids are usually left in place (on top of the box).The boxes or boxes and lids are transferred to the box line areas. In the box lines waste is dumped into a trough or removed from the containers (drums and boxes) using the remote controlled demolition robots (the Brokks®), or the PaR manipulator. Box tipper units in both the north and south box lines are used to tip waste boxes over the box line troughs. The Brokks® are floor mounted hydraulically driven, remotely operated manipulators. Two Brokk® units are located in the north box line. One Brokk® unit and the PAR remote manipulator and pintle grabber are located in the south box line. The Brokks® and PAR manipulators are used to sort, segregate, and size-reduce waste (and containers, if required) dumped into the box line troughs. The south box line is also equipped with an Import Transfer Port (ITP). Drums damaged during box line loading or during lidding operations or other approved waste containers may be brought into the south box line via the ITP. [27, 38, 41, 44, 157]

The box line debris waste is sorted or size reduced as needed. Waste is sorted to remove items prohibited from the supercompactor or shipment to WIPP and is visually examined to identify and verify physical form. The waste is loaded into 55-gallon thin walled drums ("silvers") for feed to the supercompactor. The cleanout of the treatment box lines is limited to housekeeping (e.g., criticality cleanout) and to remove prohibited items (reference Section 3.6.3.1). [27, 38, 41, 44, 157]

Spills of TRU waste material outside the box line troughs are cleaned up by the end of the next shift and the material is placed into the trough. Any liquids discovered during processing are absorbed using an approved absorbent. Empty boxes and box lids verified to contain no significant amounts of contamination are transferred to a shredder where the material is handled as LLW. [157]

3.6.5.2.2 Supercompaction

The supercompactor is a glovebox with a 2,000-ton capacity compactor used to compact 55-gallon feedstock waste drums to roughly one-fifth their normal size. Supercompaction is the treatment to reduce the volume of debris waste. Supercompaction is also the treatment for unprotected sharp objects, sealed containers greater than four liters that do not contain prohibited liquids and excess layers of confinement because there are no layers of confinement following supercompaction. The supercompactor feedstock consists of waste originally generated at RF, MD, BC, BN and RL.

3.6.5.2.2.1 Supercompactor Cleanout

Cleanout of the supercompactor glovebox is performed as needed to remove maintenance and operation waste items from the supercompactor glovebox suite which are too large to bag-out of the glovebox, or used to remove smaller debris as part of the overall cleanup operations. Cleanout is performed anytime waste accumulates in the gloveboxes or in conjunction with the Annual Glovebox Cleanout or with a Criticality Cleanout. [73]

Maintenance debris from supercompactor cleanout consists of empty or non-fissile maintenance waste items and operational waste. Operational waste is described as old glovebox gloves, port covers, any non-serviceable tools and slings and debris. Waste is accumulated during cleanup of the supercompactor gloveboxes (e.g., Infeed, Venturi airlock, post compaction) and conveyers. The waste is VE'd, packaged in 55-gallon silver drums and placed into the conveyor system for lidding, assay and compaction. [73]

Squeezants are liquids expressed from debris waste containers during supercompaction and are removed from the supercompactor sump during criticality cleanout and during routine cleanout/removal. The removed liquids are put into squeezants bottles/jars and all areas are visually inspected for debris. All waste is double bagged at the collection area boundary. Squeezant packets (bagged bottles/jars) are placed individually into containers (smaller than or equal to 55-gallon drums) for transfer to SCW for processing. [38]

Bagged debris generated during removal of squeezants from the supercompactor is bagged out of the supercompactor glovebox. Debris packets are placed into 5-gallon buckets within an accumulation container prior to being assayed. After assay the debris packets are packaged together based on assay results.

3.6.5.2.3 Size Reduction of Large Items

Size reduction of large wooden, metal and concrete items may only be performed in the hot maintenance cell (Room 224B) and the shredder room (Room 225A) and other waste items are size reduced in the south box line (Room 228B) using a guillotine.

The hot maintenance area contains equipment (e.g., plasma arc cutter, saws all, drills, etc.) used to physically size waste items such that the waste may be processed in the supercompactor

or be containerized and removed from WMF-676. [37] The plasma arc cutter unit is used to size reduce large metal and concrete items that cannot be reduced using the Brokk®. [37]

The shredder is used to reduce the size of RCRA empty waste containers [i.e., wooden, FRP, and metal boxes] including lids. Empty boxes and lids (e.g., metal and wood) from the north and south box lines are moved to the shredder to reduce them in size. Prior to transferring a box to the box size-reduction area, the box interior and lid is inspected to verify that there is insignificant (i.e., < 15 cm^3) waste material present. Empty containers generated during waste repackaging conducted in the SCW and DTF gloveboxes may also be sent to the shredder for size reduction. [27, 41, 48]

Shredder contents are visually inspected to insure that shredding is complete and that no large box pieces or non-shredded materials remain. Shredder contents are emptied from the shredder into an export box through a gravity powered chute into a metal waste box. Sleeving is bunched and twisted and secured with a tie wrap. The sleeve is tightly bunched and twisted then wrapped with vinyl tape and the cut sleeve on each end is taped to close. [48]

Some large waste items removed from the box line are size-reduced using a guillotine located in Room 228B, the south box line. The item is placed onto the guillotine feed table, pushed to the desired location and cropped to size for drum loading. Sized material is moved back into the box line trough via the guillotine disposal chute. Emptied boxes and box lids are cleaned of any excess material and transferred to the shredder area. [41]

3.6.5.3 Liquid Pump Decanting and Absorption

Containers with prohibited liquids are pump decanted and treated to support WIPP compliance. The processes and activities address prohibited liquids in accessible location(s) with inadequate headspace. These types of containers are candidates for pump decanting in WMF-628 DTF. Overpacked containers of S3000 and S4000 waste containers are taken into the DTF, un-overpacked prior to treatment (e.g., decanting and liquid absorption). The liquid is pumped from the source waste container into a collector drum and treated with absorbent. [42]

3.6.5.3.1 Decanting

A collector drum is a 55-gallon drum with a rigid 90-ml polyethylene liner with one-inch of absorbent and fitted with a shower cap beneath the lid. A previously used collector drum containing absorbed decanted liquid with sufficient head space to receive additional liquid and absorbent material may be used if the addition does not cause the waste in the collector drum to exceed 200 FGE and that the previous liquid and the current liquid are of the same group number (e.g., Group 1 RF-001, RF-002, RF-741, RF-742 and RF-800). Sleeving is placed around the collector drum. The scale with collector drum is placed in position next to the source drum, the initial weight of the collector drum is taken and both drums are grounded. [42]

Sheeted pump tubing is inserted through an opening in the collector drum shower cap and liquid is pumped from the source/parent container into the collector drum. The accessible liquid from the source drum is removed to achieve adequate headspace for absorption of liquid

remaining in the source drum. When pumping is complete, the final weight of the collector drum is taken and the volume of liquid pumped is recorded. Remaining liquid in the source container is treated by the addition of absorbent. Debris waste is not placed into the decant collector drum under any circumstance. The hose ends are bagged and the hose is placed into the source drum. [42]

3.6.5.3.2 Absorption of Decanted Liquid

The collector drum is positioned under the vent hood and the shower cap is removed, bagged and packaged in accordance with the HWD and INST-OI-24. The type of absorbent is determined based on the source. If the liquid came from an aqueous homogeneous solid waste, the liquid is treated with Aquaset II-G®. If the liquid came from an organic homogeneous solid waste, the liquid is organic and is treated with Micro-Cel® E. [27, 42]

For each source container, the total volume of unabsorbed liquid in the collector drum is determined and the amount of absorbent required is estimated and slowly added to the drum until all liquid has been absorbed. If Micro-Cel® E is the absorbent used, an additional 12 pints of absorbent is added to the top of the waste. The liquid from another source container may be added after all liquids in the collection drum have been absorbed if there is sufficient headspace. Either a new shower cap is installed and the drum is lidded or if the drum is full and will not be reused, the rigid liner is lidded and the drum is closed with a lid, locking ring and bolt. [42]

3.6.5.4 Liquid Absorption

Un-containerized liquids identified in waste containers are treated based on location of the liquid in the container, type of waste (e.g., debris or direct loaded solids) or generation process (e.g., supercompactor squeezants). Un-containerized liquid wastes identified in the box lines troughs are absorbed in the trough and removed with the debris for supercompaction. Squeezants are transferred and treated in the SCW glovebox. Liquids identified in homogeneous solid container-in-container waste containers are treated by absorption in the WMF-634 DCSRS during sampling. [29, 42, 89] Liquids identified in homogeneous solid waste containers during coring are sent for treatment in the WMF-628 (DTF). [69]

Treatment of containerized liquids removed from waste containers is described in the Prohibited Item Treatment Section 3.6.5.1.2.

3.6.5.4.1 Liquid Absorption in WMF-628 Drum Treatment Facility (DTF)

The DTF is a soft-sided containment multi function enclosure tent located in WMF-628. Liquid absorption operations were previously conducted in a soft-sided containment tent in WMF-635. Each is a tented area with its own filtered ventilation system, adequate drum treatment/handling tools, and radiation monitoring instruments. [45]

Observable liquids identified in prohibited quantities in S3000 and S4000 waste of direct loaded drums with sufficient headspace are treated in WMF-628 DTF. Aquaset II-G® and Micro-Cel® E are the chemical absorbents used for aqueous and organic liquids, respectively. [42]

Based on the quantity of liquid present, the amount of absorbent needed is calculated (1:1 ratio). Layers of containment are breached as necessary to access the liquid to be treated, and the appropriate absorbent is added to the container and mixed. Secondary waste items generated during treatment are placed in the waste container prior to closure. If sufficient headspace is not available in the source container, waste generated during processing are bagged out of the DTF and packaged per INST-OI-24 under the direction of Waste Services. [27, 42]

3.6.5.4.2 Liquid Absorption in WMF-676 SCW Glovebox System

The SCW glovebox system is located in WMF-676 and composed of 4 interconnected gloveboxes; 1) transfer, 2) treatment, 3) sampling, and 4) container-in-container gloveboxes. Each glovebox is individually connected to the ventilation system. The SCW room also contains the SCW packet assay monitor (SCW PAM), a chemical hood and sink, a sample storage refrigerator, and several storage containers. [46] Treatment of liquid waste conducted in the SCW glovebox system includes:

- Liquid from supercompaction of waste (i.e., squeezants),
- Liquid generated from pretreatment processing,
- Liquid drained from fluid containing waste items (e.g., pressurized containers, wet cell batteries, valves, pumps). [36]

Squeezants from supercompaction of feedstock debris waste drums accumulate in the supercompactor sump located in WMF-676. Squeezant removal is conducted during criticality cleanout or when the sump is 90% full. Liquids are pumped into separate collection containers, bagged out of the supercompactor glovebox and packaged separately into collection containers for transfer to the SCW. Each bagged jar/packet is assayed in the SCW PAM to determine ^{239}Pu FGE. All packets must be assayed and carry with them via barcode an appropriate FGE value packets are placed into the SCW glovebox or before multiple packets are packaged into 55-gallon drums. [36, 38, 39, 40]

All collected liquid containers (bottles/jars) are visually inspected to determine if the waste contains multiple phases. Multi-phase liquids are separated (e.g., inorganic, organic, mercury) by decanting into multiple containers as necessary prior to treatment. [36] The containerized liquids are tested as follows:

- A chemical test strip is used to determine the type of liquid (i.e., organic or aqueous)
- The specific gravity of the liquid relative to distilled water is determined
- A liquid shake-out test is used to determine miscibility.
- The pH is tested and the liquid neutralized as necessary. [36]

Sodium bicarbonate is used to neutralize aqueous liquids with pH less than 3. Sodium bisulfate is used to neutralize aqueous liquid with pH greater than 11.5. The liquid is separated

into two or more containers to provide sufficient volume for the addition of absorbent. [36] Absorbent material is added to each container in a 1:1 ratio and mixed into the liquid. Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II-G®, and Hg Absorb are the only chemical absorbents used in absorption activities. [36, 41] Only Hg Absorb is used in mercury absorption activities in SCW. If liquid is present after absorbent addition and mixing, additional absorbent is mixed in, but no more than two additional times. Liquid absorption is not performed more than three times per container. [36]

The SCW glovebox is also used to treat aerosol containers and small inner containers removed from waste containers with liquid contents. Liquid from these containers is emptied into collection bottles/jars, and tested to determine pH and the appropriate absorbent to be used. [36, 46]

Items (e.g., wet cell batteries, valves, pumps, and similar fluid-containing items) that require inspection to determine the presence of liquid are moved into the SCW treatment glovebox and examined for liquid content. Items containing liquids are drained into a new container for testing and treatment. [36]

3.6.5.5 Absorption/Resorption (Shaker Table Operations) WMF-628

Homogeneous solid waste containers are vibrated using a commercial mechanical vibrator (shaker table) located in WMF-628 DTF to facilitate treatment of liquid. Due to properties specific to the RF-003 organic setups waste, vibration of the waste containers causes either the liquid and waste matrix back into contact resulting in resorption of the liquid into the waste matrix or allows the liquid to rise to the surface of the sludge where the liquid can be absorbed onto added absorbent material. [42, 50, 89]

3.6.5.6 Homogeneous Solid Waste Treatment in South Box Line

The RF organic set-up homogeneous solid waste (RF-003/RF-743) is identified as PCB contaminated and containers with free liquid cannot be shipped to WIPP until the containers are processed by absorption of the liquid. The handling and transit of containers associated with the sludge processing campaign in the south box line include operations conducted in the Drum Import/Export Glovebox (DIEG) located in Room 126B at AMWTF. [148]

Organic set-up waste containers are loaded into a SDOP box in one of the storage modules outside the AMWTF. The SDOP is transported by conveyor (System 345 south box line drum conveyor) to the south box park and subsequently to the south box line for processing. The boxes are lifted by the box line crane into the clamping frame, and partially tipped. All of the sludge drums are removed from the box and placed outside the mixing area. To remove the organic setup wastes for treatment, the containers may be cut open, by the Brokk®. The waste in the bags is removed from the liners and placed in the south box line trough for treatment. The drum and liners are segregated from the waste and undergo size reduction. The sludge is spread over the bottom of the mixing area and un-containerized liquid is treated by the addition of the appropriate absorbent (e.g., Micro-Cel® E) to the sludge mixture. The absorbent, liquid and sludge are mixed using remote tools until absorption is complete as verified by VE. [145, 147, 148]

VE is used to verify physical form of the waste, prevent shipment of PIs (listed in Exhibit 3 of INST-FOI-22) to WIPP, confirm waste matrix code, confirm waste stream description for each container and verify liquid absorption. During VE in the box line, prohibited and nonconforming non-liquid items and containerized liquids are segregated, packaged and removed from the box line. The inventory of waste (e.g., by weight and volume), waste items (e.g., drum stub bags) and packaging materials for each new 55-gal 90-ml rigid liner is summarized in WTS for each liner/container. (145, 155)

When the liquid has been absorbed (i.e., there is no visible liquids present in the trough), the treated sludge is loaded into a transport container (a reusable 55-gal drum with a new rigid liner without an installed lid) by sweeping the waste into the drum port or by scooping the waste using the clamshell attachment on the Brokk®. When the liner is full of treated waste, the transport container and liner are undocked and moved back to the DIEG via conveyor (System 390 Drum assay conveyer), where the liner is lifted from the transport container and placed into a new 55-gal drum. The drum bag is twisted and taped prior to lidding and transport out of the AMWTF via the System 310 drum dolly. During loading and undocking drums in the DIEG, acceptable glovebox waste (e.g., drum stub bag, changed glovebox gloves) may be added to the filled liner. The new drums are nominal 55-gal drums containing a filtered drum bag and a 90-mil rigid drum liner inside the filtered bag. (145, 146, 147, 148, 156)

The treated waste is transferred to Central Characterization Program (CCP) for certification for shipment to WIPP. (155)

3.7 Radionuclides

AMWTP does not add radionuclides during storage, treatment or processing of waste. Therefore, all radionuclides in newly generated waste derived from the storage, treatment or processing of waste are those present when the original waste was delivered to the AMWTP or are the decay products thereof.

There are currently two sources of waste at the AMWTP from which newly generated waste could be derived: waste containers in historical storage and waste containers received under the AMWTP Offsite Waste Program.

Historically stored waste includes waste from ANL-E, RF, MD, BC, and BL, as well as, from non-AMWTP INL sites. The radionuclides in this waste are described in detail in RPT-TRUW-07, (90) and are summarized in Tables 3.8, 3.9 and 3.10. The predominant radionuclides in this waste will usually be ^{239}Pu and ^{240}Pu. In some containers composed primarily of waste derived from the MD Plant, the predominant radionuclides will be ^{238}Pu and ^{239}Pu. When waste is contaminated with depleted uranium (DU) or enriched uranium (EU) as well as WG Pu the prevalent radioisotopes may include uranium.

Table 3.8. Radionuclides expected to be quantifiable or calculated by NDA technique in newly generated wastes derived from historically stored waste by generator site [90]

ANL-E	RF	MD	BC	BL [b]
^{241}Am [b]	^{241}Am [a]	^{241}Am [a]	^{241}Am [a]	^{241}Am [a]
^{137}Cs	^{237}Np	^{137}Cs [a]	^{237}Np	^{237}Np
^{237}Np	^{238}Pu [a]	^{237}Np	^{238}Pu [a]	^{238}Pu [a]
^{238}Pu [b]	^{239}Pu [a]	^{238}Pu [a]	^{239}Pu [a]	^{239}Pu [a]
^{239}Pu [b]	^{240}Pu [a]	^{239}Pu [a]	^{240}Pu [a]	^{240}Pu [a]
^{240}Pu [b]	^{241}Pu	^{240}Pu [a]	^{241}Pu	^{241}Pu
^{241}Pu	^{242}Pu [a]	^{241}Pu	^{242}Pu [a]	^{242}Pu [a]
^{242}Pu [b]	^{233}U [a]	^{242}Pu [a]	^{233}U [a]	^{232}Th
^{90}Sr [b]	^{234}U [a]	^{90}Sr [a]	^{234}U [a]	^{233}U [a]
^{234}U [b]	^{235}U	^{233}U [a]	^{235}U	^{234}U [a]
^{235}U	^{236}U	^{234}U [a]	^{236}U	^{235}U
^{236}U	^{238}U [a]	^{235}U	^{238}U [a]	^{236}U
^{238}U [b]		^{236}U		^{238}U [a]
		^{238}U [a]		

a. These are the ten WIPP-tracked radionuclides. All other radionuclides that contribute to 95% of the radioactive hazard for the payload container shall be reported on the TRUPACT-II bill of lading or manifest in accordance with 49 CFR 172.203, Shipping Papers, and 49 CFR 173.433, Shippers—General Requirements for Shipments and Packagings. [90]

b. Radioactive contamination identified in AK for the BL waste included uranium oxide and thorium oxide, as well as ^{241}Am and ^{239}Pu. It is assumed that the other plutonium and uranium isotopes will also be present. Additional radioisotopes identified in the TWBIR for the waste to be direct shipped to WIPP from BL are listed below in Table 3.9.

Table 3.9. Other radionuclides identified in stored waste for each generator site[a] (90)

ANL-E	RF	MD	BC	BL
^{227}Ac	^{243}Am [b]	^{227}Ac		^{243}Am
^{243}Am	^{244}Cf [b]	^{207}Bi [b]		^{137m}Ba [e]
7Be	^{245}Cf [b]	^{60}Co		^{212}Bi [b]
^{207}Bi	^{137}Cs [c, d]	^{206}Pb		^{249}Cf
^{212}Bi	^{244}Cm	^{209}Po		^{250}Cf
^{214}Bi	^{40}K [f]	^{40}K [b, f]		^{251}Cf
^{243}Cm	^{90}Sr [c, d]	^{231}Pa		^{252}Cf
^{60}Co	^{228}Th [e]	^{226}Ra		^{60}Co
^{134}Cs	^{229}Th [e]	^{230}Th [e]		^{134}Cs
^{137}Cs [b]	^{231}Th [e]	^{231}Th [e]		^{137}Cs
^{150}Eu	^{234}Th [e]	^{232}Th [e]		^{246}Cm
^{152}Eu	^{232}U	^{234}Th [e]		^{152}Eu
^{154}Eu		^{232}U [b]		^{154}Eu
^{155}Eu				^{55}Fe
^{40}K				^{85}Kr
^{22}Na				^{212}Pb
^{212}Pb				Mixed fission products
^{214}Pb				^{239}Np [e]
^{226}Ra				^{63}Ni
229Th				^{216}Po
230Th				^{212}Po
^{232}Th				^{147}Pm
234Th				^{224}Ra
^{233}U [b]				^{220}Rn
				^{90}Sr
				^{228}Th [e]

Table 3.9. (Continued).

ANL-E	RF	MD	BC	BL
				^{232}U [b]
				^{90}Y [e]

a. A complete list of radionuclides that might be present in the waste is found in the baselines for the waste generators. [18, 19, 20, 22, 23]

b. Detected by NDA and resolved by AKR. [90]

c. This is one of the ten WIPP-tracked radionuclides. All other radionuclides that contribute to 95% of the radioactive hazard for the payload container shall be reported on the TRUPACT-II bill of lading or manifest in accordance with 49 CFR 172.203 and 49 CFR 173.433.

d. Cesium-137 and computed ^{90}Sr could be present as sealed sources in RF-004 and RF-480 and is present in individual waste containers of RF-002 but are not expected in other RF wastes.

e. Daughter products.

f. Potassium-40 is a likely radionuclide when a container has extremely low radioactivity.

Historically stored waste include waste generated from non-AMWTP INL sites [ie., Argonne National Laboratory-West (ANL-W, aka [MFC] Material Fuels Complex), Auxiliary Reactor Area (ARA), Central Facilities Area (CFA), Chemical Processing Plant (CPP), Loss of Fluid Test Reactor (LOF), Naval Reactor Facility (NRF), Test Area North (TAN), Test Reactor Area (TRA) and Waste Management Complex (WMC)].

Information about radionuclides in this waste is primarily found in the RWMIS database, and is summarized in Table 3.10. The radionuclides are listed in order of decreasing average activity concentration so the top two radionuclides are the most prevalent radionuclides in the waste streams originating from that facility. [a] The bold line identifies a significant break in average activity concentration such that radionuclides above the line are expected to be found more frequently and in higher concentrations than those below the line.

Table 3.10. Radionuclides expected to be quantifiable or calculated by NDA technique in newly generated wastes derived from historically stored waste by non-AMWTP INL generator site.

MFC	ARA	CFA	CPP	D&D	LOF	NRF	TAN	TRA	WMC
^{239}Pu	^{241}Pu	^{241}Am	^{241}Pu	^{241}Am	^{241}Am	^{238}Pu	^{239}Pu	^{241}Pu	^{241}Pu
^{240}Pu	^{239}Pu	^{238}Pu	^{239}Pu		^{238}U	MFP [a]	^{240}Pu	^{147}Pm	^{241}Am
^{241}Pu	^{240}Pu	^{134}Cs	^{238}Pu			^{241}Pu	^{241}Am	^{244}Cm	^{239}Pu
MFP [a]	^{241}Am	^{242}Pu	^{240}Pu			^{233}U	^{238}U	^{239}Pu	^{240}Pu
MAP [b]	^{242}Pu	^{239}Pu	^{241}Am			^{239}Pu	^{232}Th	^{238}Pu	^{238}Pu
^{137}Cs		^{152}Eu	^{233}U			^{137}Cs		^{60}Co	^{242}Pu
^{58}Co		MAP [b]	MFP [a]			^{240}Pu		^{95}Zr	
^{54}Mn		^{238}U	^{137}Cs			^{242}Pu		^{137}Cs	
^{60}Co		^{234}Th	^{106}Ru			^{235}U		^{240}Pu	
UN β, γ [c]		^{244}Cm	^{242}Pu			^{238}U		^{233}U	
^{242}Pu		^{235}U	^{237}Np					UN β, γ [c]	
^{51}Cr		MFP [a]	^{235}U					^{252}Cf	

Table 3.10. (Continued).

MFC	ARA	CFA	CPP	D&D	LOF	NRF	TAN	TRA	WMC
^{238}U			^{243}Am					^{144}Ce	
^{144}Ce			^{238}U					^{241}Am	
^{252}Cf								^{228}Ra	
^{90}Sr								^{106}Rh	
^{235}U								^{106}Ru	
^{233}U								^{144}Pr	
^{241}Am								^{152}Eu	
^{106}Ru								^{227}Ac	
^{238}Pu								^{137m}Ba	
^{237}Np								^{90}Y	
^{134}Cs								^{90}Sr	
^{232}Th								^{232}U	
^{155}Eu								^{237}Np	
^{226}Ra								^{233}Pa	
								^{242}Pu	
								^{125}Sb	
								^{155}Eu	
								^{85}Kr	
								^{134}Cs	
								^{95}Nb	
								^{238}U	
								^{151}Sm	
								^{99}Tc	
								^{243}Am	
								^{232}Th	
								^{236}Pu	
								^{154}Eu	
								^{3}H	
								^{235}U	
								^{234}U	
								^{89}Sr	
								^{242}Cm	
								^{103}Ru	
								^{212}Bi	
								^{212}Pb	
								^{228}Th	
								^{110}Ag	
								^{236}U	
								^{141}Ce	

Table 3.10. (Continued).

MFC	ARA	CFA	CPP	D&D	LOF	NRF	TAN	TRA	WMC
								^{160}Tb	
								^{239}Np	
								^{153}Gd	
								^{129m}Te	
								^{124}Sb	
								^{129}I	
								^{243}Cm	
								^{225}Ra	

a. MFP = Mixed Fission Products
b. MAP = Mixed Activation Products
c. UN β, γ = Unidentified beta and gamma radiation.

Waste received under the AMWTP Offsite Waste Program includes waste from the Hanford Site (RL), the Materials and Fuels Complex (MFC), Los Alamos National Laboratory (LANL), Nevada Test Site (NTS), Savannah River Site (SRS), Oak Ridge National Laboratory (ORNL), Lawrence Livermore National Laboratory (LLNL), General Electric Vallecitos (GEV), Sandia National Laboratory (SNL), and Argonne National Laboratory-East (ANL-E).

Information about radionuclides in this waste is primarily found in the AMWTP Offsite Waste Stream Profile (Form-1900) for each waste stream, and is summarized in Table 3.11. The radionuclides are listed in order of decreasing average activity concentration so the top two radionuclides are the most prevalent radionuclides in the waste streams originating from that facility. [a] The bold line identifies a significant break in average activity concentration such that radionuclides above the line are expected to be found more frequently and in higher concentrations than those below the line. [109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

Table 3.11. Radionuclides identified in offsite waste by generator site.

ANL-E	LANL	NTS	SRS	ORNL	LLNL	GEV	SNL	RL
^{241}Am	^{241}Pu	^{241}Pu	^{238}Pu [b]	^{241}Pu	^{241}Pu	^{241}Am [b]	^{238}Pu [b]	^{241}Pu
^{252}Cf	^{241}Am [b]	^{239}Pu [b]	^{241}Pu	^{239}Pu [b]	^{239}Pu [b]	^{137}Cs [b]	^{239}Pu [b]	^{239}Pu [b]
^{137}Cs	^{239}Pu [b]	^{244}Cm	^{239}Pu [b]	^{241}Am [b]	^{241}Am [b]	^{241}Pu	^{244}Cm	^{241}Am [b]
^{237}Np	^{238}Pu [b]	^{241}Am [b]	^{241}Am [b]	^{240}Pu [b]	^{238}Pu [b]	^{90}Sr [b]	^{241}Am [b]	^{240}Pu [b]
^{238}Pu	^{240}Pu [b]	^{240}Pu [b]	^{240}Pu [b]	^{238}Pu [b]	^{240}Pu [b]	^{239}Pu [b]	^{241}Pu	^{238}Pu [b]
^{239}Pu	^{237}Np	^{238}Pu [b]	^{234}U [b]	^{242}Pu [b]	^{244}Cm	^{240}Pu [b]	^{240}Pu [b]	^{242}Pu [b]
^{240}Pu	^{243}Am	^{254}Es	^{238}U [b]	^{237}Np	^{233}U [b]	^{238}Pu [b]	^{243}Cm	^{233}U [b]
^{241}Pu	^{242}Pu [b]	^{226}Ra	^{237}Np	^{137}Cs [b]	^{242m}Am	^{60}Co	^{234}U [b]	^{137}Cs [b]
^{233}U	^{234}U [b]	^{233}U [b]	^{137}Cs [b]	^{90}Sr [b]	^{252}Cf	^{154}Eu	^{238}U [b]	^{90}Sr [b]
^{238}U	^{235}U	^{243}Am	^{90}Sr [b]	^{232}U	^{137}Cs [b]	^{234}U [b]	^{234}Th	^{237}Np
^{234}U	^{90}Sr [b]	^{234}U [b]	^{242}Pu [b]	^{243}Am	^{243}Am	^{242}Pu [b]	^{243}Am	^{243}Am
^{235}U	^{137}Cs [b]	^{243}Cm	^{235}U	^{252}Cf	^{249}Cf	^{235}U	^{232}U	^{234}U [b]

Table 3.11. (Continued).

ANL-E	LANL	NTS	SRS	ORNL	LLNL	GEV	SNL	RL
^{90}Sr	^{243}Cm	^{237}Np	^{226}Ra	^{236}Pu	^{242}Pu [b]	^{238}U [b]	^{228}Th	^{238}U [b]
^{232}Th	^{238}U [b]	^{242}Pu [b]	^{208}Tl	^{226}Ra	^{234}U [b]	^{236}U	^{137}Cs [b]	^{243}Cm
^{232}U	^{236}Pu	^{238}U [b]	^{214}Bi	^{232}Th	^{243}Cm	^{233}U [b]	^{90}Sr [b]	^{232}U
^{243}Am	^{226}Ra	^{245}Cm	^{154}Eu	^{233}U [b]	^{231}Pa	^{243}Am	^{245}Cm	^{235}U
^{236}Pu	^{232}Th	^{137}Cs [b]	^{214}Pb	^{235}U	^{245}Cm	^{252}Cf	^{235}U	^{60}Co
^{242}Pu	^{233}U [b]	^{90}Sr [b]	^{232}U	^{238}U [b]	^{237}Np	^{237}Np	^{237}Np	^{22}Na
^{226}Ra		^{235}U	^{60}Co		^{229}Th	^{236}Pu	^{233}Pa	^{154}Eu
^{7}Be		^{249}Cf	^{228}Ac		^{238}U [b]	^{226}Ra	^{60}Co	^{152}Eu
^{22}Na		^{231}Pa	^{232}Th		^{212}Bi	^{232}Th	^{226}Ra	^{232}Th
^{40}K		^{154}Eu	^{22}Na		^{248}Cm		^{210}Pb	^{226}Ra
^{60}Co		^{227}Ac	^{243}Am		^{235}U		^{210}Po	^{133}Ba
^{134}Cs		^{252}Cf			^{208}Tl		^{154}Eu	^{249}Cf
^{150}Eu [b]		^{236}Pu			^{228}Th		^{232}Th	^{40}K
^{152}Eu		^{232}Th			^{227}Ac		^{242}Pu [b]	^{228}Th
^{154}Eu					^{232}U		^{252}Cf	^{94}Nb
^{155}Eu					^{236}Pu		^{236}Pu	
^{207}Bi					^{242}Am		^{233}U [b]	
^{212}Bi					^{154}Eu			
^{212}Pb					^{251}Cf			
^{214}Bi					^{148}Gd			
^{214}Pb					^{90}Sr [b]			
^{228}Ac					^{152}Eu			
^{220}Tj					^{234}Th			
230Th					^{230}Th			
234Th					^{40}K			
^{243}Cm					^{60}Co			
^{244}Cm					^{232}Th			
^{249}Cf					^{109}Cd			
					^{247}Cm			
					^{22}Na			
					^{94}Nb			
					^{226}Ra			
					^{125}Sb			

3.8 Waste Certification

Prior to shipment of any of the AMWTP waste to WIPP, waste containers are included in a waste stream for which there is a WIPP approved waste stream profile form. Containers of waste are certified for shipment to WIPP per the requirements listed in MP-TRUW-8.5. [82]

Characterization certification and labeling are conducted to meet applicable requirements of the WIPP. Documentation of the waste certification process is maintained in accordance with permit conditions and quality assurance requirements. Waste is certified that it meets the appropriate WAC requirements before being transported or shipped to the receiving facility. [2, 7, 15]

3.9 Waste Characterization

Characterization of the AMWTP wastes is initially based on the as-generated waste form with consideration given to the generating process, hazardous constituents, and PCB status. A HWD is developed by Waste Services in collaboration with TRU Program AKEs. The HWD is placed into the AMWTP operating record and maintained/updated by AMWTP Waste Services. [35]

Prior to profiling the waste for shipment to WIPP, the waste is characterized using RTR/VE, radioassay, HGAS, and homogeneous solid sampling Analyses as required by the WIPP WAP. In addition, every container is characterized for transportation by headspace gas sampling as required by the WAP (Section 3.6.4), [1, 5]

3.10 Correlation of Wastes Generated

All waste generated at the AMWTP that is derived from or has contacted TRU waste managed by AMWTP is managed as TRU until proven by assay otherwise. [27, 33] Wastes generated during the same or similar process or activity no matter the location and that have the same final waste form are grouped together as presented in Table 3.12.

AMWTP wastes are initially handled and packaged under the direction of the Waste Services group when generated.

Table 3.12. Sections 4.0 through 7.0 AMWTP waste groups with generating process and related IDCs.

Section	Waste Group Sub-Section	IDC
4.0 TRU Liquids	4.1 Liquids Generated During Supercompaction of Debris Waste Containers	BN-518
	4.2 Liquids Segregated or Collected from Stored Waste (to be developed)	BN-528
		BN-529
	4.3 Liquids Generated from Maintenance Activities (to be developed)	BN-534

Section	Waste Group Sub-Section	IDC
5.0 S3000 Wastes	5.1 Absorbed Squeezants	BN-507
		BN-514
	5.2 TRU Homogeneous Solids	BN-505
		BN-511
		BN-513
	5.3 Absorbed Prohibited Liquids Derived From Historically Stored Waste Containers	BN-509
		BN-515
		BN-605
6.0 S4000 Wastes	6.1 TRU Soil	BN-501
		BN-522
7.0 S5000 Wastes	7.1 Supercompactor Feedstock Debris Waste	BN-500
		BN-508
		BN-519
		BN-524
		BN-537
		BN-538
	7.2 Supercompacted TRU Debris Waste	BN-510
		BN-550
	7.3 Heterogeneous Debris Waste from Offsite Waste	BN-520
		BN-521
	7.4 AMWTP Heterogeneous PCB Debris Waste	BN-536
		BN-604
	7.5 WMF-676 PCB Contaminated Debris Waste	BN-600

4.0 TRU LIQUID WASTE

4.1 Liquids Generated During Supercompaction of Debris Waste Containers

4.1.1 Waste Description

TRU squeezant waste is generated as a result of the supercompaction process. TRU Supercompactor squeezants are expressed during supercompaction (Section 3.6.5.2.2). The squeezants are aqueous and organic liquids or in some cases multiple phase liquids packaged in 4-liter polyethylene bottles/jars. The liquids are assumed to be contaminated with the chemical

and radiological constituents identified for the authorized supercompactor feedstock wastes as identified in RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1). This waste group is comprised of IDC BN-518 as described in Table 4.1 which also provides the dates of generation for TRU squeezants.

Table 4.1. Squeezant IDC, waste description, and generation dates. (131)

IDCs	IDC Description	Generation Dates
BN-518	TRU Supercompactor Squeezants	2004 – ongoing

BN-518 TRU Supercompactor Squeezants: Inorganic and organic liquids expressed from feedstock debris waste drums during supercompaction and collected from the supercompactor sump during clean-out.

4.1.2 Waste Generation

Supercompactor feedstock debris waste drums often contain small amounts of liquid. During compaction of the drums, the liquid is expressed/squeezed from the drums and collected in the supercompactor sump. The sump liquid (squeezants) is transferred (e.g., manually or remotely pumped) from the sump into one-gallon squeezants bottles/jars during supercompactor glovebox clean-out. The squeezants can also be removed from the sump manually using a dipper. (Section 3.6.5.2.2.1) (36, 131)

4.1.2.1 Areas and/or Building from which the Waste Was Generated

The squeezants waste is generated in the supercompactor glovebox in Room 232B of the facility (WMF-676).

4.1.2.2 Process Flow Diagrams

The process flow diagram for supercompactor squeezants is presented in Figure 5.

4.1.2.3 Material Inputs

The materials present in the squeezant waste are aqueous and organic liquids and incidental liquid mercury expressed from feedstock debris drums during supercompaction.

4.1.2.4 Waste Volume

Approximately 100 gallons of squeezants are generated per year. (133)

4.1.3 Waste Packaging

The squeezants bottles/jars are double bagged at the collection area boundary and may be stored in the supercompactor area for later removal or bagged out of the area and packaged into a collector container for transfer to Special Case Waste (total of 3 plastic bags of confinement). When the bagged squeezants bottles/jars are removed from the supercompactor area they are

packaged as either one packet per 55-gallon drum or one packet per transfer device (i.e., 5-gallon bucket) and transferred to SCW for storage and/or treatment.

The SCW packet assay monitor (PAM) system is used for determination of fissile gram equivalent (FGE) ^{239}Pu in containers and packets. At SCW, squeezant packets are assayed to determine the FGE value before they are bulk packaged into 55-gallon drums or placed into the SCW glovebox.

4.1.4 Waste Characterization

The AMWTP approach to characterization is described in Section 3.9. Squeezants have historically been managed as mixed waste. The squeezants waste is characterized based on process knowledge and the AK for the supercompactor feedstock debris, as documented by the AMWTP Waste Services group hazardous waste determination (HWD). [134] AK characterization is augmented by VE, RTR and NDA. HWN assignments and assay measurements are for safe storage only. The squeezant HWNs/constituents may change over time due to changes in the feedstock debris waste authorized for supercompaction. Waste constituents and HWNS assigned to the squeezants waste are identified in RPT-TRUW-12 and the Waste Services HWD. The liquid squeezants waste is not characterized for shipment to WIPP, but treated by absorption. Absorbed squeezants waste is described in Section 5.1.

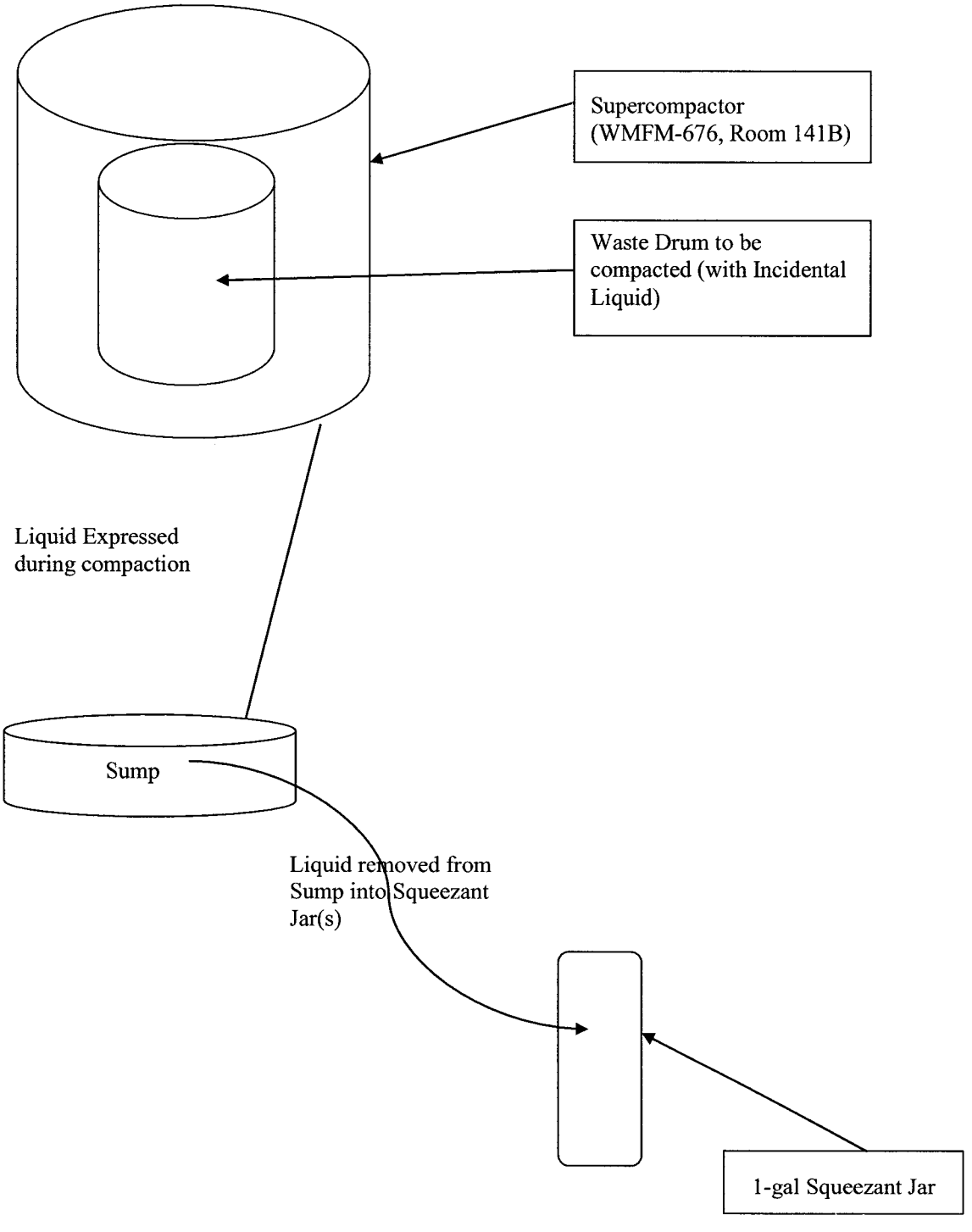

Figure 5. Process flow diagram for supercompactor squeezant generation.

4.1.4.1 EPA Hazardous Waste Number Assignments

An HWD was developed for the Supercompactor Squeezant waste by the Waste Services Group that identified the HWNs assigned to the waste. The squeezants are assumed to be contaminated with less than 1% by weight beryllium. The applicable RCRA HWNs and hazardous constituents for the squeezants waste are assigned based on the authorized supercompactor feed waste (RPT-TRUW-83), the HWNs assigned to the BN510.1 (or BN510) Supercompacted Debris Waste Streams, and process knowledge. [18, 19, 20, 22, 23, 131, 134]

The AMWTP TRU squeezants are characteristic and listed waste. The HWNs and associated hazardous waste constituents are listed in the HWD letter to file and in RPT-TRUW-12. [5, 134]

4.1.4.1.1 Ignitability, Corrosivity, Reactivity

The AMWTP TRU Supercompactor Squeezant waste is liquid, and has the potential to exhibit the characteristic of corrosivity (D002) prior to treatment. The waste is not an ignitable compressed gas, or an oxidizer. The waste does not contain sulfides which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste does not contain explosive material and is not forbidden explosives. The TRU Supercompactor Squeezants waste does not exhibit the characteristics of ignitability (D001), or reactivity (D003) and may exhibit the characteristic of corrosivity (D002) prior to treatment.

4.1.4.1.2 Toxicity Characteristic

The AMWTP TRU Supercompactor Squeezant waste may meet the definition of toxicity for metals and organics as defined in 40 CFR 261.24. Assignment of the RCRA toxicity characteristic metals and organics HWNs to the Supercompactor Squeezants is based on feed to the supercompactor as documented in Waste Stream profiles BN510 and BN510.1. The characteristic HWNs are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride). [134]

4.1.4.1.3 Listed Waste

4.1.4.1.3.1 F-Listed HWNs

The supercompactor squeezants waste is listed waste and is assigned the F-listed (HWNs) identified for the debris waste feed to the supercompactor as documented in WSPFs BN510 and BN510.1 based on the derived from rule as follows:

- **F001:** 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane

- **F002:** 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane

- **F004:** cresols and nitrobenzene

- **F005:** 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone (MEK), pyridine, and toluene

- **F006, F007, and F009:** electroplating waste

4.1.4.1.3.2 P-, U- and K- Listed HWNs

- The Supercompactor Squeezant waste is not a P-, U- or K-listed waste. None of the supercompactor feedstock debris wastes are discarded, unused, commercial chemical products, off-specification species, or manufacturing intermediates and do not contain spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, the wastes were not mixed with, or derived from, the treatment, storage, or disposal of P- or U-listed waste. Therefore, the supercompactor squeezants waste is also not a P-, U- or K-listed waste and no P- or U-listed HWNs are assigned to the supercompactor squeezant waste. The U134 HWN is not assigned to the supercompacted debris waste (BN510.1) and is not assigned to this waste. [1, 6, 7, 8, 9, 29]

4.1.4.2 Identification of Radionuclides

The radionuclides expected in the supercompactor squeezant waste originate from historically stored (i.e., RF, MD, BC) debris waste as summarized in Tables 3.8 and 3.9 and include radionuclides from RL waste (Table 3.11). The WIPP tracked radionuclides (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am) are expected to be present and measurable by NDA. The remaining WIPP tracked radionuclides ^{137}Cs and ^{90}Sr are not expected to be present in measurable quantities. (Section 3.7)

The two most prevalent radionuclides expected in the majority of AMWTP squeezants are ^{239}Pu and ^{240}Pu. This is based on a review of the BN510.1 product drums; however, prevalent radioisotopes in some of the supercompacted debris waste product drums and therefore in the squeezants may be a combination of ^{239}Pu and a different second TRU or uranium isotope due to variablility in the feedstock. (Section 3.7)

4.1.4.3 Identification of Prohibited Items

AMWTP TRU squeezants are liquid and prohibited from shipment to WIPP. The waste does not contain any other WIPP prohibited items. Only liquids are placed into the squeezants bottles/jars. This liquid waste is treated by absorption and the absorbed squeezants waste is described in Section 5.1.

4.1.4.4 Identification of PCBs

Drums of supercompactor debris waste feedstock identified during RTR/VE as containing PCB items are not included in the supercompacted debris waste stream. PCB items identified in boxed debris are removed during box line operations. PCB items removed from debris waste feedstock drums and boxes are packaged as newly generated waste and are not authorized as supercompactor debris waste feedstock. The supercompactor sump liquid waste does not contain PCB contamination.

4.2 Liquids Segregated or Collected from Stored Waste

To be developed: BN-528 and BN-529

IDCs	Description	Generation Dates
BN-528	TBD	TBD
BN-529	TBD	TBD

4.3 Liquids Generated from Maintenance Activities

To be developed: BN-534

IDCs	Description	Generation Dates
BN-534	TBD	TBD

5.0 S3000 HOMOGENEOUS SOLIDS WASTE

5.1 Absorbed Squeezants

5.1.1 Waste Description

This waste group includes TRU absorbed squeezant waste generated from the supercompaction process. Incidental liquid from supercompactor feedstock debris waste containers is expressed during compaction (i.e., squeezants), and collected in the supercompactor sump (Section 4.1). The squeezants are routinely removed from the sump and transferred to the SCW for storage and/or treatment. This waste group is comprised of IDCs BN-507 and BN-514 as listed in Table 5.1 which also provides a description and the dates of generation.

Table 5.1. Absorbed squeezants IDCs, waste descriptions, and generation dates

IDCs	Description	Generation Dates
BN-507	Absorbed Aqueous Squeezants	2003 – ongoing
BN-514	Absorbed Organic Squeezants	2003 – ongoing

BN-507 Absorbed Aqueous Squeezants: Aqueous liquids (IDC BN-518) expressed from debris waste containers during supercompaction and treated in the SCW glovebox by absorption with inorganic particulate absorbent (e.g., Aquaset II-G®). The liquids originate from any of the supercompactor feedstock wastes as identified in RPT-TRUW-83. (80)

BN-514 Absorbed Organic Squeezants: Organic liquids (IDC BN-518) expressed from debris waste containers during supercompaction and treated in the SCW glovebox by absorption with an inorganic particulate absorbent (e.g., Micro-Cel® E, Petroset®, and Petroset II-G®). The liquids originate from any of the supercompactor feedstock wastes as identified in RPT-TRUW-83. (80)

5.1.2 Waste Generation

The liquid squeezants are packaged in 4-liter polyethylene bottles/jars. When taken into SCW for treatment, the liquid squeezant (IDC BN-518) bottles/jars are visually inspected to determine if the waste contains multiple phases (e.g., mercury, organic, aqueous). Multi-phase liquids are separated by decanting each phase into separate bottles/jars (Section 3.6.5.2.2). (36) The containerized liquids are tested as follows:

- A chemical test strip is used to determine the type of liquid (i.e., organic or aqueous)
- The specific gravity of the liquid relative to distilled water is determined
- A liquid shake-out test is used to determine miscibility
- The pH is tested and the liquid neutralized as necessary. (36)

Sodium bicarbonate is used to neutralize aqueous liquids with pH less than 3. Sodium bisulfate is used to neutralize aqueous liquid with pH greater than 11.5. Prior to treatment the liquid is separated into two or more 1-gallon (4-liter) Nalgene bottles/jars as necessary to provide sufficient volume for the addition of absorbent. (36) Applicable absorbent material is added to each container in a 1:1 ratio and mixed into the liquid. Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II-G®, and Hg Absorb are the only chemical absorbents used in absorption activities. (36, 41) Only Hg Absorb is used in mercury absorption activities in SCW. If liquid is present after absorbent addition and mixing, additional absorbent is mixed in, but no more than two additional times. Liquid absorption is not performed more than three times per container, without contacting the shift supervisor. When treatment is complete the bottles/jars are double or triple bagged out of the glovebox and placed into 55-gallon drums. (Section 3.6.5.4.2) (36)

5.1.2.1 Areas and/or Building from which the Waste Was Generated

The absorbed squeezants are generated in the WMF-676 SCW glovebox system.

5.1.2.2 Process Flow Diagrams

The process flow diagram for Absorbed Squeezants waste is presented in Figure 6.

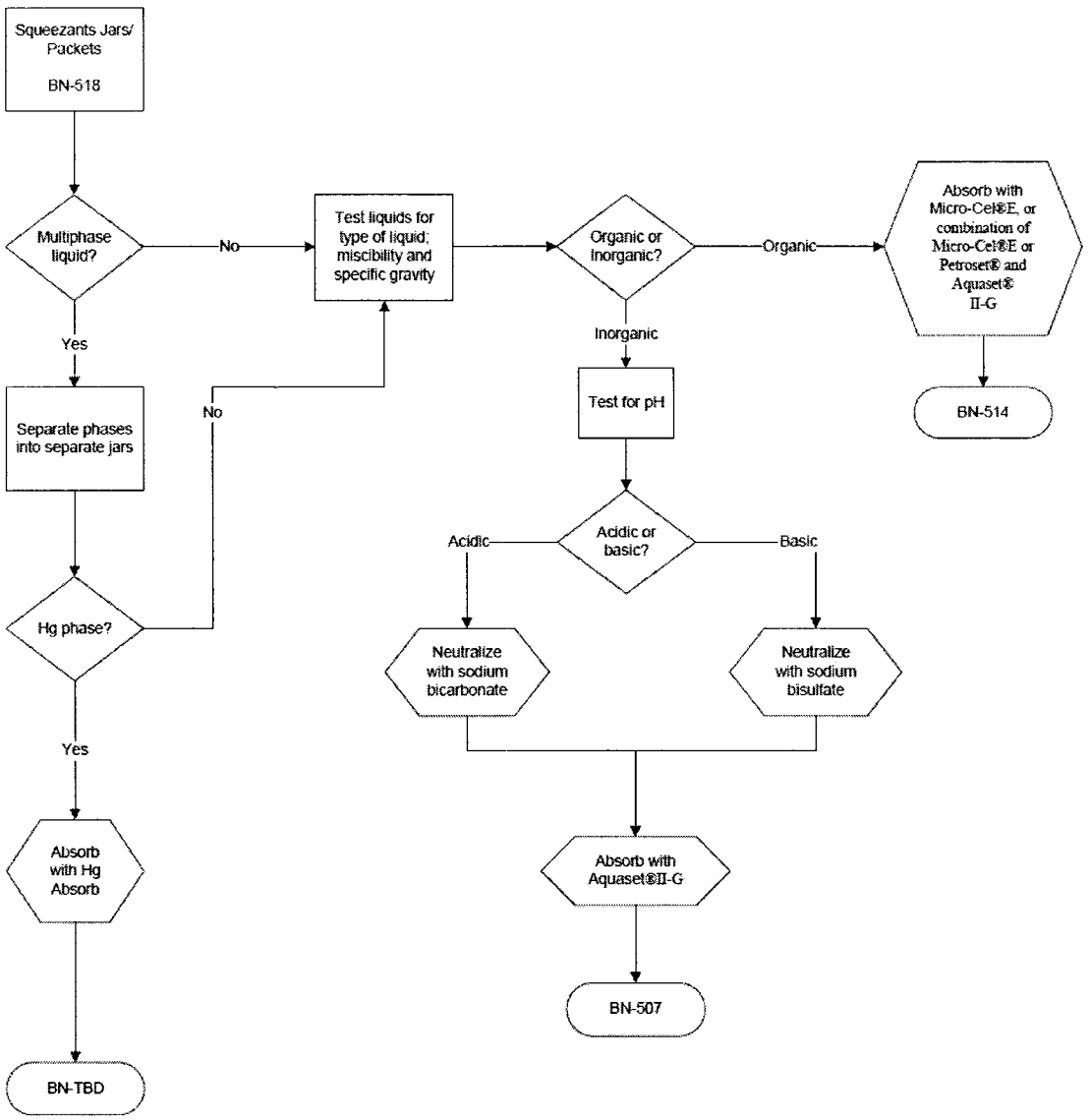

Figure 6. Process flow diagram for absorbed squeezants waste.

5.1.2.3 Material Inputs

The material inputs to the absorbed squeezants are aqueous and organic liquids from supercompactor debris feedstock waste containers collected from the supercompactor sump, neutralization agents (e.g., sodium bicarbonate, sodium bisulfate), and approved particulate absorbent material(s) (i.e., Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II-G®, and Hg Absorb. The majority of the liquid removed from the sump is aqueous and is immobilized with the addition of Aquaset II-G® in a 1:1 ratio or greater as needed for complete absorption. One

55-gallon drum has been identified as containing absorbed organic squeezants. Organic squeezants are immobilized with the addition of Micro-Cel® E, also in a 1:1 ratio or greater as needed. [36, 41]

Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group and the TRU Program.

5.1.2.4 Waste Volume

The absorbed squeezants waste is generated at a rate of 20 to 40 drums per year. Over the last 6 years, 176 55-gallon drums of absorbed squeezants have been generated. The current (2011) waste volume is approximately 3,520 gallons (~14,080 liters). [133]

5.1.3 Waste Packaging

Absorbed squeezants are packaged in 4-liter Nalgene bottles/jars, triple bagged and approximately 20 bottles/jars are packaged per 55-gallon drum with up to 2 bag liners. [27, 133]

5.1.4 Waste Characterization

The AMWTP approach to characterization is described in Section 3.9. Absorbed squeezants have historically been managed as mixed waste. The absorbed squeezants waste is characterized based on process knowledge and the AK for the supercompactor feedstock debris waste as documented by the AMWTP Waste Services group HWD 061604-01. AK characterization is augmented by VE, RTR and NDA. The absorbed squeezants HWNs/constituents may change over time due to changes in the feedstock authorized for supercompaction. HWNs assigned to absorbed squeezants are listed in RPT-TRUW-12 and the Waste Services HWD. [18, 19, 20, 22, 23, 131, 133]

The absorbed squeezants 4-liter Nalgene bottles/jars are VE during treatment in the SCW glovebox to verify absorption. The bottles/jars of absorbed squeezants are bagged out of the glovebox and packaged into 55-gallon drums. Absorbed squeezant waste drums are examined by RTR and assayed. A minimum of five drums are randomly selected for solid sampling from each waste stream lot in accordance with MP-TRUW-8.25. [132, 133]

5.1.4.1 U.S. Environmental Protection Agency (EPA) Hazardous Waste Number (HWN) Assignments

A hazardous waste determination (HWD) was developed for the Absorbed Supercompactor Squeezants waste by the Waste Services Group that identified the HWNs assigned to the waste. The applicable RCRA HWNs and hazardous constituents for the squeezants waste are assigned based on the supercompactor feed waste (RPT-TRUW-83), the HWNs assigned to the BN510.1 (or BN510) Supercompacted Debris Waste Streams, and process knowledge. [18, 19, 20, 22, 23, 131, 133]

The AMWTP TRU Absorbed Supercompactor Squeezants are characteristic and listed waste. The HWNs and associated hazardous waste constituents are listed in the HWD letter to file and in RPT-TRUW-12. [5, 133]

5.1.4.1.1 Ignitability, Corrosivity, Reactivity

The AMWTP TRU Absorbed Supercompactor Squeezants waste is not liquid, and is not an ignitable compressed gas, or an oxidizer. The waste does not contain sulfides which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste does not contain explosive material and is not forbidden explosives. The TRU Absorbed Supercompactor Squeezants waste does not exhibit the characteristics of ignitability (D001), corrosivity (D002) or reactivity (D003).

5.1.4.1.2 Toxicity Characteristic

The AMWTP TRU Absorbed Supercompactor Squeezants waste may meet the definition of toxicity for metals and organics as defined in 40 CFR 261.24. Assignment of the RCRA toxicity characteristic metals and organics HWNs to the Absorbed Supercompactor Squeezants is based on feed to the supercompactor as documented in Waste Stream profiles BN510 and BN510.1. The characteristic HWNs are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride). [134]

5.1.4.1.3 Listed Waste

5.1.4.1.3.1 F-Listed HWNs

The Absorbed Supercompactor Squeezants waste is listed waste and is assigned the F-listed (HWNs) identified for the debris waste feed to the supercompactor as documented in WSPFs BN510 and BN510.1 based on the derived from rule as follows:

A HWD was developed for the absorbed supercompactor squeezants by the Waste Services Group that identified the HWNs assigned to the waste. The applicable RCRA HWNs and hazardous constituents for the squeezants waste are assigned based on the supercompactor feed waste (RPT-TRUW-83) and process knowledge. The addition of absorbent material and/or neutralization agents does not add additional characteristic or listed waste to the absorbed TRU squeezants waste. [133]

The absorbed TRU squeezants waste is assigned the same HWNs as identified for the squeezants:

- **F001:** 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane

- **F002:** 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane
- **F004:** cresols and nitrobenzene
- **F005:** 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone, pyridine, and toluene
- **F006, F007, and F009:** electroplating waste

5.1.4.1.3.2 P-, U- and K-Listed HWNs:

- The Absorbed Supercompactor Squeezants waste is not a P-, U- or K-listed waste. None of the supercompactor feedstock debris wastes are discarded, unused, commercial chemical products, off-specification species, or manufacturing intermediates and do not contain spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, the wastes were not mixed with, or derived from, the treatment, storage, or disposal of P- or U-listed waste. Therefore, the absorbed supercompactor squeezants waste is also not a P-, U- or K-listed waste and no P- or U-listed HWNs are assigned to the absorbed supercompactor liquid waste stream. The absorbed squeezants are assumed to be contaminated with less than 1% by weight beryllium. The U134 HWN is not assigned to the supercompacted debris waste (BN510.1) and is not assigned to this waste stream. [1, 6, 7, 8, 9, 29]

5.1.4.2 Radionuclide Content

The radionuclides expected in the absorbed supercompactor squeezants waste are summarized in Tables 3.8 and 3.9 and also include the radionuclides from RL waste (Table 3.11). The WIPP tracked radionuclides (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am) are expected to be present and measurable by NDA. The remaining WIPP tracked radionuclides ^{137}Cs and ^{90}Sr are not expected to be present in measurable quantities. (Section 3.7)

The two most prevalent radionuclides expected in the majority of AMWTP absorbed supercompactor squeezants waste are ^{239}Pu and ^{240}Pu. This is based on a review of the BN510.1 product drums; however, prevalent radioisotopes in some of the supercompacted debris waste product drums and therefore in the absorbed supercompactor sump liquid drums may be a combination of ^{239}Pu and a different second TRU or uranium isotope due to variability in the feedstock.

5.1.4.3 Prohibited Items (PIs)

AMWTP Waste Service's HWDs, AMWTP packaging procedures, and AMWTP RTR and/or VE procedures are used to support the absence of PIs for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. Any WIPP prohibited item identified during characterization will be treated prior to shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification

agents (e.g., AquasetII-G®, Micro-Cel®E, PetrosetII-G®, or other approved inorganic particulate) to render the waste acceptable prior to shipment.

5.1.4.4 Identification of PCBs

Drums of supercompactor debris waste feedstock identified during RTR/VE as containing PCB items are not included in the supercompacted debris waste stream. PCB items identified in boxed debris are removed during box line operations. PCB items removed from debris waste feedstock drums and boxes are packaged as newly generated waste and are not authorized as supercompactor debris waste feedstock. The supercompactor sump liquid waste does not contain PCB contamination.

5.2 TRU Homogeneous Solids

5.2.1 Waste Description

This waste group includes TRU homogeneous solids waste that is being managed as newly generated because the historically stored waste (e.g, RF, MD, BC) may have been cross-contaminated with other wastes during retrieval or characterization (e.g., VE). It also includes intact containers of historically stored retrieved TRU homogeneous solids waste with insufficient AK information (e.g., the generator and/or type of solids are not known and cannot be determined by RTR or VE). The waste group is comprised of IDCs BN-505, BN-511, and BN-513 as described in Table 5.2 which also provides the dates of generation for TRU homogeneous solids.

Table 5.2. TRU homogeneous solids IDCs, waste descriptions, and generation dates.

IDCs	Description	Generation Dates
BN-505	Inorganic Homogeneous Solids	2003 – ongoing
BN-511	PCB Organic Homogeneous Solids	TBD
BN-513	Non-PCB Organic Homogeneous Solids	2006 – ongoing

BN-505 Inorganic Homogeneous Solids: Loose or cross contaminated inorganic homogeneous solids derived from historically stored waste (e.g., sludges, salts, ash, heels, special setups, or other process residual solids including absorbents) repackaged during retrieval, characterization, treatment, storage, and other waste management activities conducted at the AMWTP. Waste may also contain <50% by volume debris that were present in the waste from the original generator (e.g., metal cans, plastic bottles, etc.). [80]

BN-511 PCB Organic Homogeneous Solids: Loose or cross contaminated organic homogeneous solids derived from historically stored waste (e.g., organic setups IDCs RF-003 or RF-743) repackaged during retrieval, characterization, treatment, storage, and other waste management activities conducted at the AMWTP that may or are contaminated with PCBs. This includes homogeneous solids generated by AMWTP as a result of repackaging loose homogeneous solids found on Cells 1 and 2 of Pad 1 or in cargo containers and bins that are suspected of being PCB contaminated because these solids may be commingled with other

waste. Loose waste from bins and cargos are associated with the 1974-1978 historical waste retrieval operations at the RWMC (reference IDCs IW-179, RF-998 and RF-999). It also includes intact containers of historically stored homogeneous solids waste with insufficient AK information. Waste may also contain <50% by volume debris that was present in the waste from the original generator (e.g., metal cans, plastic bottles, etc.) or < 50% by volume debris or soil that were commingled with loose homogeneous solids waste at retrieval. These commingled wastes may include debris or soils from other breeched containers or from contaminated interstitial soil. (80)

BN-513 Non-PCB Organic Homogeneous Solids: Loose or cross contaminated organic homogeneous solids derived from historically stored waste [e.g., solidified organic liquids (RF-700 or RF-801) or cemented resins (RF-432 or RF-822)] repackaged during retrieval, characterization, treatment, storage, and other waste management activities conducted at the AMWTP that are not contaminated with PCBs. Waste may also contain <50% by volume debris that were present in the waste from the original generator (e.g., metal cans, plastic bottles, etc.). (80)

5.2.2 Waste Generation

TRU homogeneous solids derived from historically stored wastes (e.g., RF, MD, BC) that are generated as a result of (but not limited to) the following:

- TRU homogeneous solids waste that is cross-contaminated with other wastes during VE to confirm RTR in the WMF-676 DWPG (Section 3.6.4.2)
- Small containers of TRU homogeneous solids waste that is cross-contaminated with other wastes and is segregated from debris waste in the Supercompactor (S/C) box lines during the VE process (Sections 3.6.4.2 and 3.6.5.1.1)
- TRU homogeneous solids waste that is cross-contaminated with other wastes and is repackaged during retrieval of historically stored waste (Section 3.6.1.2.2).
- TRU homogeneous solids waste that is not commingled with other wastes and is repackaged during retrieval of historically stored waste; but where the generator and/or type of waste cannot be determined (Section 3.6.1.2.2).
- Intact containers with insufficient AK information include containers retrieved during retrieval of historically stored waste (Section 3.6.1.2).

TRU homogeneous solids derived from PCB wastes are assigned IDC BN-511. TRU homogeneous solids not derived from PCB wastes are assigned either IDC BN-505 or IDC BN-513 based on physical form (organic versus inorganic matrix). TRU homogeneous solids waste associated with containers with insufficient AK information are assigned IDC BN-511 to reflect the most conservative characterization.

5.2.2.1 Areas and/or Buildings

The TRU homogeneous solids that may be cross-contaminated during characterization are generated in the WMF-676 DWPG (Section 3.6.4.2) or in WMF-676 box line (Section 3.6.5.1.1). The TRU homogeneous solids loose waste that is repackaged during retrieval is generated in the WMF-636 TSA-RE (Section 3.6.1.2). The TRU homogeneous solids in intact containers with insufficient AK information are retrieved from historical storage in the WMF-636 TSA-RE (Section 3.6.1.2). Releases involving homogeneous solids in other areas at AMWTP may also result in the generation of TRU homogeneous solids if cross contamination occurs.

5.2.2.2 Process Flow Diagram

The process flow diagram for TRU homogeneous solids is presented in Figure 7.

5.2.2.3 Material Inputs

Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group, and the TRU Program. The material inputs to TRU homogenous solids wastes are dependent on the type of waste and the generator of the waste being retrieved during various activities including, but not limited to historically stored homogeneous solid wastes examined by VE in the WMF-676 DWPG, homogeneous solid wastes segregated from debris waste during VE in the WMF-676 box line, homogeneous solid wastes retrieved as loose waste, or homogeneous solid wastes retrieved as intact containers with insufficient AK information from WMF-636 TSA-RE (e.g., Cells 1 and 2, Pad 1, cargo containers, and bins). The TRU homogeneous solid wastes primarily include loose or cross-contaminated homogeneous solid wastes from RF, MD, and BC that may also contain or be commingled with soils, solids, or debris waste (e.g., RF, MD, BC) present in retrieval area or present in the repackaging area (Section 3.2.1).

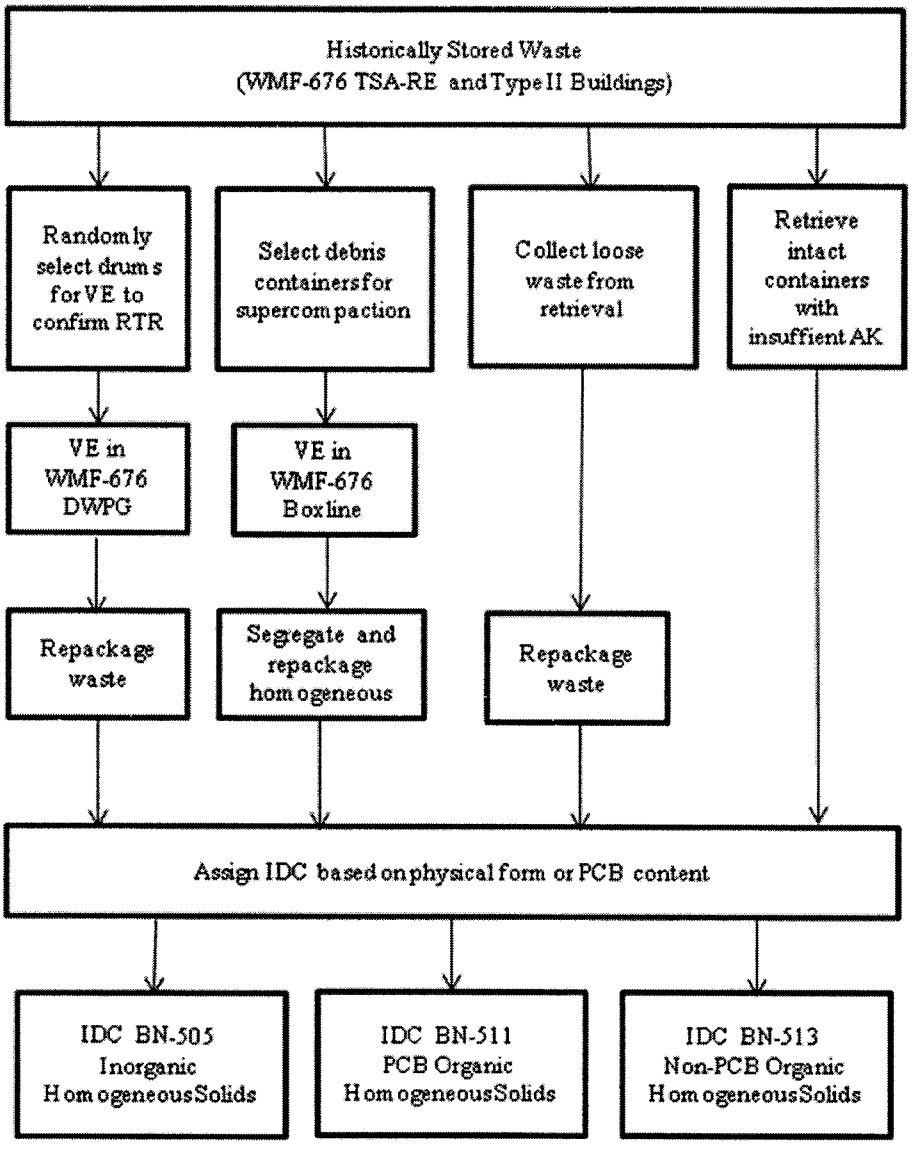

Figure 7. Process flow diagram for TRU homogeneous solids.

5.2.2.4 Waste Volume

The current inventory of TRU homogeneous solids includes 11 drums generated during visual examination to confirm RTR (Section 3.6.4.2). The estimated volumes of waste will be developed and incorporated into AK Summary at the time of profiling. See AMWTP WTS for current up-to date volumes for each IDC within this waste group.

5.2.3 Waste Packaging

The TRU homogeneous solids are repackaged in 55-gallon drums with up to 2 bag liners. The waste may either be loose waste that is direct loaded into drums (typically performed in WFM-636 TSA-RE) or be comprised of waste packaged in small containers (plastic bottles or metal cans) by the original generator that are repackaged into a drum (typically performed in WFM-676 SCW). The TRU homogeneous solids in intact containers were packaged by the original generator in accordance with their procedures and include a variety of packaging configurations (e.g. rigid liners, up to two drum bags, and/or inner bottles, cans, or cartons with up to two small bags). These drums may be overpacked into 83 or 100-gallon drums. [27, 80]

5.2.4 Waste Characterization

The AMWTP approach to characterization is described in Section 3.9. The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU homogeneous solids may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of five drums will be randomly selected for solid sampling from each waste stream lot in accordance with MP-TRUW-8.25. [132]

5.2.4.1 Identification of EPA HWNs

The TRU homogeneous solids have historically been managed as mixed TRU waste. The TRU homogeneous solids HWNs/constituents are dependent on contributing generators of the stored waste and may change over time. The temporarily-assigned HWNs and potential constituents for TRU homogeneous solids can be found in RPT-TRUW-12. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling which will include a review of the HWNs assigned to the historically stored waste that were retrieved and/or repackaged. Final WIPP characterization determinations for the TRU homogeneous solids will be documented within applicable RPT-TRUW-12 and WIPP WSPFs. [5]

5.2.4.1.1 Ignitability, Corrosivity, and Reactivity

The TRU homogeneous solids are not a liquid, an ignitable compressed gas, or an oxidizer and are not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or be treated by absorption prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate to ensure that the waste is acceptable for disposal at WIPP. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste does not contain explosive material and is not forbidden explosives. Although some of the waste to be retrieved in the future may contain wastes assigned F006, F007, and F009 listed HWNs associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a

danger to human health or the environment. The TRU homogeneous solids do not exhibit the characteristics of ignitability (D001), corrosivity (D002), or reactivity (D003). [5]

5.2.4.1.2 Toxicity Characteristic

The TRU homogeneous solids may meet the definition of toxicity for metals and organics. See RPT-TRUW-12 for the temporarily-identified toxicity characteristic waste numbers.

5.2.4.1.3 Listed Waste

5.2.4.1.3.1 F-Listed HWNs

The TRU homogeneous solids may meet the definition for an F-listed waste. See RPT-TRUW-12 for the temporarily-identified F-listed hazardous waste numbers.

5.2.4.1.3.2 P-, U- and K-Listed HWNs

The TRU homogeneous solids are not currently classified as a P-, U- or K-listed waste.

The AMWTP does not use commercial chemicals containing beryllium powder. Although TRU homogeneous solids may contain beryllium contamination (including wastes derived from IDC RF-800 which may contain greater than 1.0 wt % beryllium), the beryllium contamination is only associated spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to the TRU homogeneous solids.

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated wastes from the generator sites. Based on this information, the U134 HWN does not apply to the TRU homogeneous solids.

The AMWTP does not generate waste that would be classified as K-listed waste. The TRU homogeneous solids are not hazardous waste from specific sources listed in 40 CFR 261.32. Based on this information, the K-listed HWNs do not apply to the TRU homogeneous solids.

5.2.4.2 Radionuclide Content

The radionuclides expected to be quantifiable or calculated by NDA technique in TRU homogeneous solids waste derived from historical stored wastes are summarized in Table 3.8. Other radionuclides identified in the waste are summarized in Table 3.9. Radionuclides from other historically stored waste generators may also contribute the TRU homogeneous solids (Table 3.10).

5.2.4.3 Prohibited Items

The TRU homogeneous solids are not expected to contain WIPP prohibited items. AMWTP Waste Services' hazardous waste determinations, AMWTP packaging procedures, and AMWTP RTR and/or VE procedures are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. Any WIPP prohibited item found will be treated prior to shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate) to render the waste acceptable prior to shipment. Other PIs (e.g., sealed containers greater than 4 liters) will be treated to render the waste acceptable prior to shipment.

5.2.4.4 Identification of PCBs

The TRU homogeneous solids contaminated with PCB wastes (e.g., waste identified as, or commingled with RF organic setup wastes) are assigned IDC BN-511. TRU homogeneous solids waste associated with containers with insufficient AK information are also assigned IDC BN-511 to reflect the most conservative PCB characterization. IDC BN-505 or IDC BN-513 is assigned to TRU homogeneous solids that are not derived from PCB wastes.

5.3 Absorbed Prohibited Liquids Derived From Historically Stored Waste Containers

5.3.1 Waste Description

This TRU waste group includes waste generated as a result of treating prohibited liquids identified in historically stored waste. This waste group is expected to be comprised primarily of absorbed liquids decanted from historically stored waste containers of S3000 waste (Section 3.6.5.3). This TRU waste group may also include other absorbed liquids including, but not limited to containerized prohibited liquids that are absorbed in the WMF-676 SCW that are segregated from historically stored containers of S5000 wastes(Sections 3.6.5.1.2 and 3.6.5.4.2). This waste group is comprised of IDCs BN-509, BN-515, and BN-605 as described in Table 5.3 which also provides the dates of generation for TRU absorbed liquids.

Table 5.3. TRU absorbed liquid IDCs, waste descriptions, and generation dates.

IDCs	Description	Generation Dates
BN-509	Absorbed Organic Liquids (Excluding Squeezants)	TBD
BN-515	Absorbed Aqueous Liquids (Excluding Squeezants)	TBD
BN-605	Absorbed Liquids TSCA/PCB	TBD

BN-509 Absorbed Organic Liquids (Excluding Squeezants): Organic liquids derived from waste containers (e.g., liquids generated from DTF decant operations including liquids decanted from containers of IDCs RF-700 and RF-801) that are not PCB contaminated and that are treated using an inorganic particulate absorbent material (e.g., Micro-Cel® E, Petroset II-G®,

Aquaset II-G®, or other approved inorganic absorbents). [42, 80] This IDC may also include prohibited organic liquids derived from historically stored waste that are absorbed in SCW.

BN-515 Absorbed Aqueous Liquids (Excluding Squeezants): Aqueous liquids derived from waste containers (e.g., liquids generated from DTF decant operations including liquids decanted from containers of IDCs RF-001, RF-002, RF-004, RF-007, RF-800, RF-802, RF-803, RF-806, RF-807, RF-976, RF-978, RF-995, MD-834, MD-835, MD-836, and BC-204) that are treated using an inorganic particulate absorbent material (e.g., Aquaset II-G®, Micro-Cel® E, or other approved inorganic absorbents). [42, 80] This IDC may also include prohibited aqueous liquids derived from historically stored waste absorbed in SCW.

BN-605 Absorbed Liquids TSCA/PCB: Organic or aqueous PCB liquids derived from waste containers (e.g., liquids generated from DTF decant operations including liquids decanted from containers of IDC RF-003) that were treated using an inorganic particulate material (e.g., Aquaset®, Petroset®, Micro-Cel® E, or other inorganic particulate absorbent material approved by EPA). [42, 80] This IDC may also include prohibited PCB liquids derived from historically stored waste absorbed in SCW.

5.3.2 Waste Generation

The TRU waste group is comprised of absorbed prohibited liquids derived from historically stored waste. It is expected to be generated primarily as a result of absorption of liquids pump decanted from stored waste containers that are treated to address prohibited liquids in accessible location(s) with inadequate headspace (Section 3.6.5.3). This waste group may also include other absorbed prohibited liquids including, but not limited to containerized prohibited liquids that are segregated from historically stored containers of S5000 wastes that are subsequently treated in SCW (Sections 3.6.5.1.2 and 3.6.5.4.2).

The TRU absorbed liquids derived from PCB waste are assigned IDC BN-605. The TRU absorbed liquids not derived from PCB waste are assigned either IDC BN-509 or IDC BN-515 based on physical form (organic versus inorganic matrix).

5.3.2.1 Areas and/or Buildings

The prohibited liquid pump decantation and absorption activities are performed in WMF-628 DTF (Section 3.6.5.3). The absorption of containerized prohibited liquids or prohibited liquids drained from waste items is performed in WMF-676 SCW (Section 3.6.5.4.2).

5.3.2.2 Process Flow Diagram

The process flow diagram for TRU absorbed liquids (excluding squeezants) is presented in Figure 8.

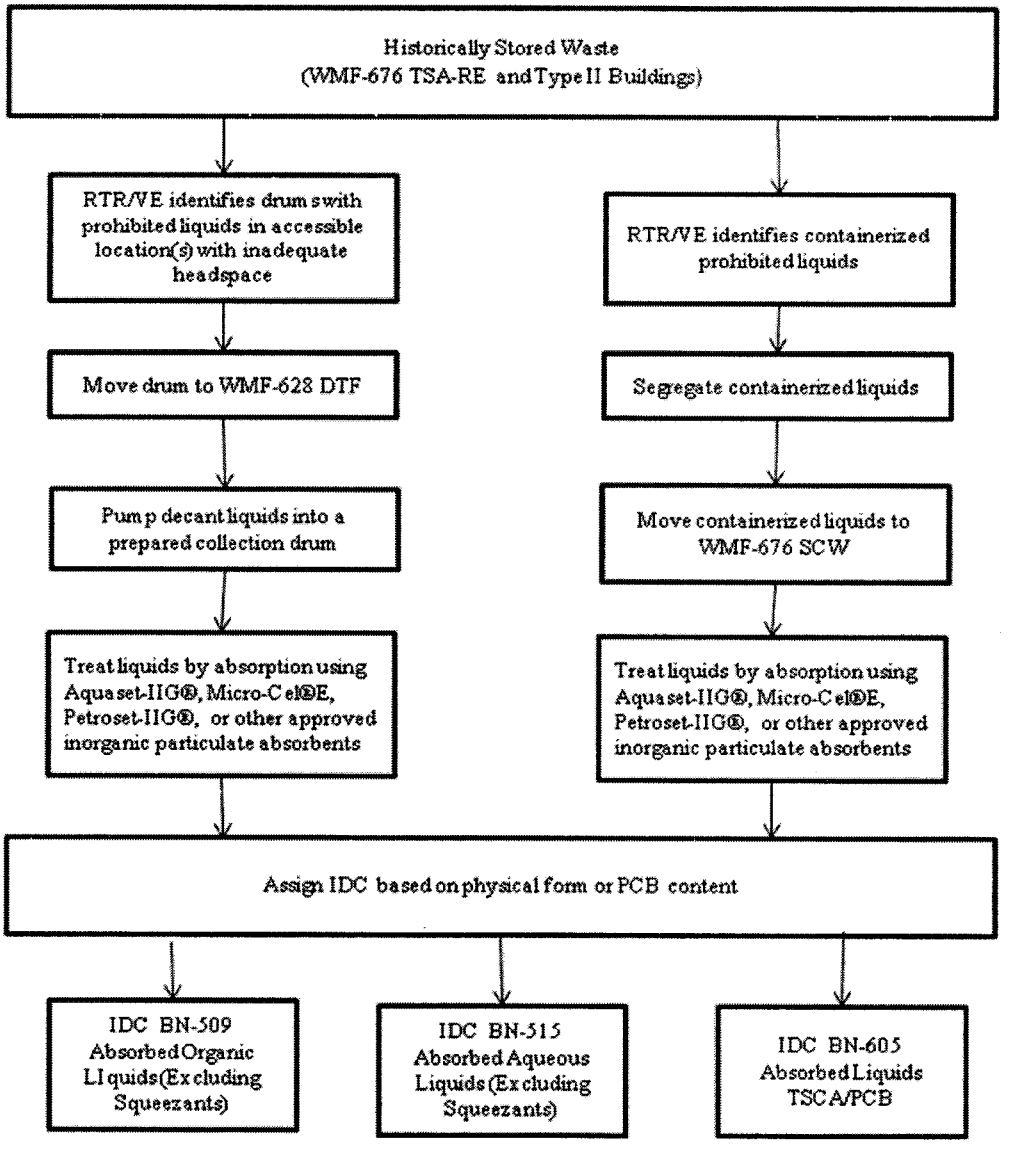

Figure 8. Process flow diagram for absorbed liquids (excluding squeezants).

5.3.2.3 Material Inputs

Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group, and the TRU Program. The material inputs to TRU absorbed liquids wastes are dependent on the type and generator of the prohibited liquids being absorbed including, but limited to prohibited liquids derived from containers of historically stored homogeneous solids (e.g., pump decant operations) and containerized prohibited liquids/liquids drained from waste items (e.g., VE in box line). Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate absorbents may be used to absorb the prohibited liquids.

These absorbed liquids are derived primarily from RF, MD, and BC waste containers (Section 3.2.1). [42, 80]

5.3.2.4 Waste Volume

No TRU absorbed liquids have been generated. The projected volume of waste will be estimated after the startup of the decant operations in DTF and/or treatment of liquids in SCW. See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

5.3.3 Waste Packaging

The TRU absorbed liquids are packaged in 55-gallon drums with rigid liner (for direct load of decanted prohibited liquids generated in WMF-628 DTF) or up to 2 drum bags (for small containers of absorbed liquids generated in WMF-676 SCW). [27, 80]

5.3.4 Waste Characterization

The AMWTP approach to characterization is described in Section 3.9 The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU absorbed liquids may be visually examined during packaging or examined by RTR after packaging. Each drum of absorbed liquids is assayed to confirm the waste is TRU. A minimum of five drums will be randomly selected for solid sampling of each wasts stream lot in accordance with MP-TRUW-8.25. [132]

5.3.4.1 Identification of EPA HWNs

The TRU absorbed liquids are characterized as mixed TRU waste. The temporarily-assigned HWNs and potential constituents for absorbed liquid IDCs BN-509, BN-515, and BN-605 can be found in RPT-TRUW-12. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling which will include a review of the HWNs assigned to the historically stored waste that was decanted or drained. Final WIPP characterization determinations for the TRU absorbed liquids will be documented within applicable RPT-TRUW-12 and WIPP WSPFs. [5]

5.3.4.1.1 Ignitability, Corrosivity, Reactivity

The TRU absorbed liquids are not a liquid, an ignitable compressed gas, or an oxidizer and are not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorption) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate to ensure that the waste is acceptable for disposal at WIPP. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste does not contain explosive material and are not forbidden explosives. Some of the absorbed liquids are derived from wastes

that are assigned F006, F007, and F009 listed HWNs associated with cyanide electroplating operations; however, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The TRU absorbed liquids do not exhibit the characteristics of ignitability (D001), corrosivity (D002), or reactivity (D003). [5]

5.3.4.1.2 Toxicity Characteristic

The TRU absorbed liquids may meet the definition of toxicity for metals and organics. See RPT-TRUW-12 for the temporarily-identified toxicity characteristic waste numbers.

5.3.4.1.3 Listed Waste

5.3.4.1.3.1 F-Listed HWNs

The TRU absorbed liquids may meet the definition for an F-listed waste. See RPT-TRUW-12 for temporarily-identified F-listed hazardous waste numbers.

5.3.4.1.3.2 P-, U- and K-Listed HWNs

The TRU absorbed liquids are not currently classified as a P-, U- or K-listed waste.

The AMWTP does not use commercial chemicals containing beryllium powder. Although TRU absorbed liquids may contain beryllium contamination (including prohibited liquids derived from containers of IDC RF-801 which contains beryllium that may be greater than 1.0 wt %), the beryllium contamination is only associated spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to the TRU absorbed liquids.

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated wastes from the generator sites. Based on this information, the U134 HWN does not apply to the TRU absorbed liquids.

The AMWTP does not generate waste that would be classified as K-listed waste. The TRU absorbed liquids are not hazardous waste from specific sources listed in 40 CFR 261.32. Based on this information, the K-listed HWNs do not apply to the TRU absorbed liquids.

5.3.4.2 Radionuclide Content

The radionuclides expected to be quantifiable or calculated by NDA technique in TRU absorbed liquids waste derived from historically stored waste are summarized in Table 3.8. Other radionuclides identified in the waste are summarized in Table 3.9.

5.3.4.3 Prohibited Items

The TRU absorbed liquids are not expected to contain WIPP prohibited items AMWTP Waste Service's hazardous waste determinations, AMWTP packaging procedures, and AMWTP RTR and/or VE procedures are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. Any WIPP prohibited item found in the TRU absorbed liquid wastes will be treated prior to shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate) to render the waste acceptable prior to shipment.

5.3.4.4 Identification of PCBs

The TRU absorbed liquids derived from PCB waste (e.g., prohibited liquids decanted from containers of organic setups) are assigned IDC BN-605. IDC BN-509 or IDC BN-515 is assigned to absorbed liquids that are not derived from PCB wastes.

6.0 S4000 SOIL

6.1 TRU Soil

6.1.1 Waste Description

TRU soil is generated during retrieval and/or spills/clean-up activities. During the retrieval process soil may be generated from the removal of overburden and/or interstitial soil between containers of waste or as a result of spill clean-up or packaged soil from a breached soil waste container. This waste group is comprised of IDCs BN-501 and BN-522 as listed in Table 6-1 also including the dates of generation for AMWTP TRU soil. [28]

Table 6.1. AMWTP TRU soil waste IDCs, wastes descriptions, and generation dates.

IDC	Description	Generation Dates
BN-501	AMWTP PCB Soil	2003-ongoing
BN-522	AMWTP Non-PCB Soil	2003-ongoing

BN-501 AMWTP PCB Soil: Soil (natural geologic material <2.36 inches [60 millimeters]) generated during retrieval, characterization, treatment, packaging, storage, and other waste management activities conducted at the AMWTP that are or may be PCB contaminated. It includes soils generated by AMWTP as a result of packaging loose soil found on Cells 1 and 2 of Pad 1 and in cargos or bins that is suspect of being PCB contaminated because this soil may be commingled with other potential PCB waste. Loose waste from bins and cargos are associated with the 1974-1978 historical waste retrieval operations at the RWMC (reference IDCs IW-179, RF-998 and RF-999). The BN-501 soil may also contain <50% by volume homogeneous solids or debris including natural geologic material (e.g., rocks) >2.36 inches (60 millimeters) as a result of packaging retrieved soil and/or spill clean-up activities (e.g., sludge, wood, paper, plastic, metal, absorbents, etc.). [80]

BN-522 AMWTP Non-PCB Soil: Soil (natural geologic material <2.36 inches [60 millimeters]) generated during retrieval, characterization, treatment, packaging, storage, and other waste management activities conducted at the AMWTP that are not PCB contaminated. It includes soils generated by AMWTP as a result of packaging loose but not commingled soil from breached containers found on Cells 1 and 2 of Pad 1 but does not include any soil commingled with PCB wastes. The BN-522 soil waste may also contain <50% by volume homogeneous solid waste or debris including natural geologic material (e.g., rocks) >2.36 inches (60 millimeters) as a result of packaging retrieved soil and/or spill clean-up activities (e.g., sludge, wood, paper, plastic, metal, absorbents, etc.). [80]

6.1.2 Waste Generation

Soil is generated primarily generated during retrieval activities within WMF-636; however, soil may also be generated during spill clean-up activities (Sections 3.6.1 and 3.6.3.4). Containerization of the berm soil and subsequent management is based on radioassay results. Soils that assay as MLLW are managed under the AMWTP MLLW program. Soils that assay as TRU (i.e., $\geq$100 nCi/g) are managed for subsequent shipment to WIPP. Loose soil discovered during retrieval and/or spill is packaged into drums or boxes. Containerized soil that is in poor condition where historical information is lacking may be repackaged and managed as newly generated AMWTP soil.

TRU soils are primarily generated during the retrieval process within WMF-636 (Section 3.6.1). The waste may also be generated during characterization, treatment, packaging, storage, and other waste management activities (Section 3.0). Soil that is suspect of being PCB contaminated is packaged as BN-501. Soil that is not suspected of being PCB contaminated (i.e., non-PCB) is packaged as BN-522. [28, 80]

6.1.2.1 Areas and/or Building from which the Waste Was Generated

The waste is primarily generated within WMF-636. The waste may be generated within WMF-628 through 635 as a result of spill clean-up. [28]

6.1.2.2 Process Flow Diagram

The process flow diagram for AMWTP TRU soil is presented in Figure 9.

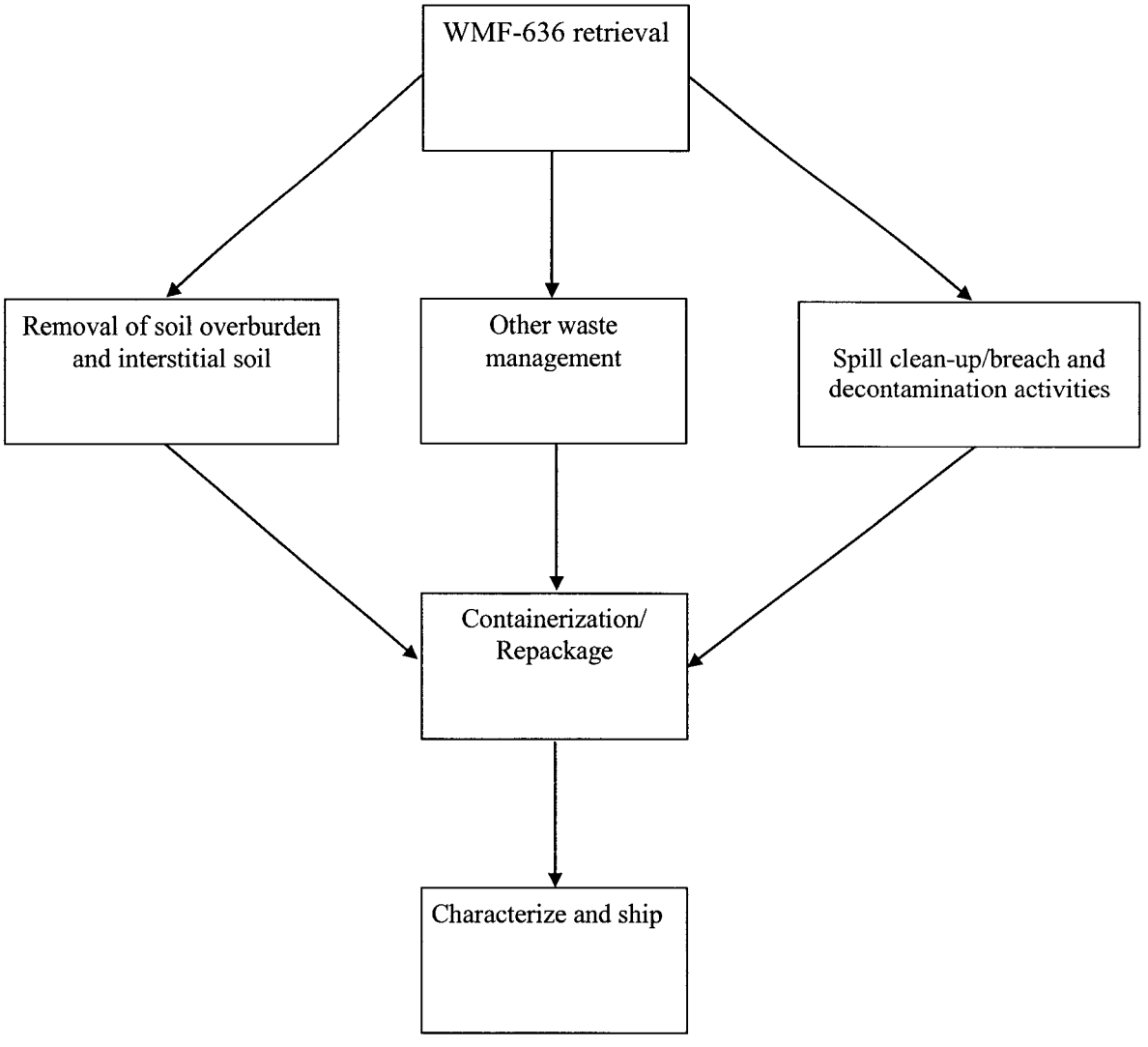

Figure 9: General process flow diagram for the primary activity that generates AMWTP soil.

6.1.2.3 Material Inputs

The material inputs to the TRU soil is primarily contaminated soil identified during retrieval or spill cleanup. The waste may also contain or be commingled with homogeneous solids or debris waste (Section 3.2.1). Non-hazardous solidification agents: Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents may also be present in waste containers. [28, 33, 39, 139, 140, 141, 142]

Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group and the TRU Program.

6.1.2.4 Waste Volume

Estimated volumes of TRU soil generated from retrieval and spill clean-up activities will be developed and incorporated into the AK Summary at the time of WIPP profiling. See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

6.1.3 Waste Packaging Description

TRU soil is packaged in accordance with INST-OI-24. [24, 27]

6.1.4 Waste Characterization

The AMWTP approach to characterization is described in Section 3.9.

The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU soil may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of five drums will be randomly selected for solid sampling from each waste stream lot in accordance with MP-TRUW-8.25. Final WIPP characterization of TRU soil will be documented in WIPP WSPFs and RPT-TRUW-12 at the time of WIPP profiling. [5, 44, 65, 132]

6.1.4.1 Identification of EPA HWNs

The TRU soils have historically been managed as mixed TRU waste. The TRU soil HWNs/constituents are dependent on contributing generators of the stored waste and may change over time. The temporarily-assigned HWNs and potential constituents for TRU soils can be found in RPT-TRUW-12. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling which will include a review of the HWNs assigned to the historically stored waste that were retrieved and/or repackaged. Final WIPP characterization determinations for the TRU soils will be documented within applicable RPT-TRUW-12 and WIPP WSPFs. [5]

6.1.4.1.1 Ignitability

TRU soil does not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of ignitability. TRU soil is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU soil is not compressed gas and does not contain compressed gas. TRU soil does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or

spontaneous chemical change. The TRU soil does not exhibit the characteristic of ignitability (D001). [5, 139, 140, 141, 142]

6.1.4.1.2 Corrosivity

TRU soil does not meet the 40 CFR 261.22 definition of corrosivity. TRU soil is not liquid waste and is not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU soil does not exhibit the characteristic of corrosivity (D002). [5, 139, 140, 141, 142]

6.1.4.1.3 Reactivity

TRU soil does not meet the 40 CFR 261.23 definition of reactivity. TRU soil is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU soil is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part, 173. Although some of the waste contains wastes assigned F006, F007, and F009 listed HWNs associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. TRU soil does not exhibit the characteristic of reactivity (D003). [5, 139, 140, 141].

6.1.4.1.4 Toxicity Characteristic

TRU soil may meet the definition of toxicity for metals and organics as defined in 40 CFR 261.24. RCRA toxicity characteristic organic constituents may change over time due to variation in the source of contamination. The final list of RCRA toxicity organic constituents and associated HWNs will be developed prior to WIPP profiling. See RPT-TRUW-12 and Waste Services HWDs for applicable toxicity characteristic waste numbers assigned to TRU soil. [5]

6.1.4.1.5 Listed Waste

TRU soil waste may meet the definition for an F-listed waste. See RPT-TRUW-12 and Waste Services HWDs for listed hazardous waste numbers assigned to TRU soil waste. RCRA

listed constituents may vary over time. The final list of RCRA listed waste constituents and associated HWNs will be developed prior to WIPP profiling.

6.1.4.1.5.1 F-Listed HWNs

TRU soil may meet the definition for an F-listed waste. F-listed HWNs currently identified for soil waste are F001, F002, F004, F005, F006, F007 and F009. [5]

6.1.4.1.5.2 P-, U- and K-Listed HWNs

TRU soil is not currently classified as a P-, U- or K-listed waste. TRU soil is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, TRU soil was not mixed with, or derived-from the treatment, storage, or disposal of P- or U-listed waste. As a result, P- or U-listed HWNs are not assigned to TRU soil. [5]

The AMWTP does not use commercial chemicals containing beryllium powder. The TRU soil may be contaminated with trace quantities of beryllium (e.g., less than one percent of the waste by weight). Although TRU soil may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to TRU soil. [5]

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid may be present in waste from the generator sites. The TRU soil does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to TRU soil. [5]

The AMWTP does not generate waste that would be classified as K-listed waste. TRU soil is not hazardous waste from specific sources since it is not generated from the processes listed in 40 CFR 261.32. TRU soil does not contain and was not derived-from waste that would be associated with specific sources associated with a K-listed HWN. Therefore, TRU soil is not K-listed hazardous waste.

The HWNs assigned to the TRU soil group is identified by IDC within RPT-TRUW-12 and applicable Waste Services HWDs. [5]

6.1.4.2 Radionuclide Content

TRU soil may be contaminated with various radionuclides as a result of retrieval operations and spill clean-up. Soil can contain any radionuclide associated with retrieved waste.

Radionuclides associated with AMWTP retrieved waste are identified in Section 3.7, Tables 3.8 and 3.9. Radionuclides from other historically stored waste generators may also contribute the TRU soils (Table 3.10).

6.1.4.3 Prohibited items

The TRU soil is not expected to contain WIPP prohibited items. AMWTP Waste Services' HWDs, AMWTP packaging procedures, and AMWTP RTR and/or VE procedures are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. Any WIPP prohibited item found will be treated prior to shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset II-G®, Micro-Cel® E, Petroset II-G®, or other approved inorganic particulate) to render the waste acceptable prior to shipment. Other PIs (e.g., sealed containers greater than 4 liters) will be treated to render the waste acceptable prior to shipment. [139, 140, 141, 142]

6.1.4.4 Identification of PCBs

TRU soil may be PCB contaminated as a result of leaking PCB containers within the earthen covered storage areas. Newly generated soil classified as PCB is assigned the IDC BN-522. [5]

7.0 S5000 HETEROGENEOUS DEBRIS WASTE

7.1 Supercompactor Feedstock Debris Waste

7.1.1 Waste Description

The supercompactor feedstock debris waste group is composed of non-PCB debris waste. It currently includes repackaged debris wastes from other generators (reference IDCs listed in RPT-TRUW-83) and AMWTP waste generated from S/C operations. This S/C feedstock waste is identified as IDC BN-508. Other debris wastes that are potential feedstock to the AMWTP S/C (i.e., BN-500, BN-519, BN-537 and BN-538) are also included in this waste group. However, waste that is potential S/C feedstock cannot undergo supercompaction until the waste is authorized as feedstock by EPA and Carlsbad Field Office (CBFO). [5, 131]

Supercompactor feedstock debris waste has been generated since March 2003. This waste group includes approved feedstock IDC BN-508 and potential IDCs BN-500, BN-519, and BN-524 as listed in Table 7-1. The Table 7.1 includes waste descriptions and dates of generation.

Table 7.1. Supercompactor feedstock debris waste IDCs, waste descriptions, and generation dates.

IDC	IDC Description	Generation Dates
BN-500	Newly Generated Debris (not BN-508)	2003-ongoing
BN-508	AMWTP Newly Generated Debris	2003-ongoing
BN-519*	TRU SDOP to Supercompactor	N/A
BN-524	Pad 1 Cells 1 and 2 Non-PCB Debris	2011-ongoing
BN-537	TRU Empty Containers	TBD
BN-538	Oversized Debris Items From Supercompactor Facility	2009-current
*This is a temporary IDC only and is used as a management tool to transport/receive waste into the WMF-676 box line.		

IDC BN-500 Newly Generated Debris (not BN-508): Heterogeneous non-PCB debris waste generated by AMWTP that is not BN-508 (i.e., not directly related to supercompaction (SC) operations). This IDC includes non-PCB waste generated in TSA-RE, Type II storage areas, DRF, DTF, and filters generated from the S/C operations. It includes waste repackaged in the DWPG and SCW that is generated as a result of processing waste assigned IDCs not approved in RPT-TRUW-83. It includes repackaged loose debris waste found in the cargos and bins that is **not** PCB contaminated. Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludges) as a result of repackaging and/or spill clean-up activities.

This IDC may contain any type of debris waste. The IDC includes, but is not limited to: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; absorbent PIGs® (e.g., mats, blankets, socks, etc.), filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete, PIGs® (absorbent). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludges) as a result of repackaging and/or spill clean-up activities. (80)

IDC BN-508 AMWTP Newly Generated Debris: Un-compacted debris waste generated in WMF-676 directly related to the S/C operations (e.g., debris from box lines, debris from repackaging waste in the DWPG and SCW, and debris from S/C maintenance activities) that is linked to a source container with an IDC approved in RPT-TRUW-83. This waste is approved supercompactor feedstock. (80) This IDC may contain various types of debris including, but not limited to: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete. BN-508 wastes do not include WIPP or supercompactor PIs that cannot be processed through the supercompactor. Waste containers may also contain <50% by volume homogeneous

solids (e.g., absorbents including Vermiculite, Oil Dri® and Aquaset II-G®), soil, and sand also from breached legacy containers or from spill clean-up activities.(80)

IDC BN-519 TRU SDOP to Supercompactor: TRU debris packaged in 55-gallon drums or larger that has been over-packed into a SDOP box for processing through the box lines in AMWTF. This IDC is assigned to the overpack container only and not the waste it contains. (Section 3.6.2.2.1) (80)

IDC BN-524 Pad 1 Cells 1 and 2 Non-PCB Debris: Heterogeneous debris waste generated during repackaging of loose waste found on Cells 1 and 2 of Pad 1 that is commingled with non-RF debris but is **not** contaminated with or commingled with PCB waste (e.g., organic setups or interstitial soil). Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludges).

IDC BN-537 TRU Empty Containers: Empty cargo containers, boxes, 55-gallon drums or 83/85-gallon overpacks generated during the retrieval process verified to be non-PCB waste. (80)

IDC BN-538 Oversized Debris Items from Supercompactor Facility: The IDC includes oversized debris waste items that are transferred out of the facility via the shredder chute. Examples of oversized waste items include hardened metals, milling tables, and large diameter solid bars. The debris items may also include large tools or equipment from the Facility. The waste also includes shredded boxes (wooden and steel) used as filler material. The waste may include gloves, wipes, plastic, PPE, bag cutters, tape, and sleeve stub generated during the packaging operations. Examples of oversized waste items include hardened metals, milling tables, large diameter solid bars, large tools or equipment that cannot be size-reduced. The IDC does not apply to generation activities outside of the box line. The IDC may include gloves, wipes, plastic, PPE, bag cutters, tape, and sleeve stub generated during the packaging operations.

7.1.2 Waste Generation

The supercompactor feedstock debris waste group is composed of non-PCB debris waste. It currently includes repackaged debris wastes from other generators (reference IDCs listed in RPT-TRUW-83) and AMWTP waste generated from S/C operations. This S/C feedstock waste is identified as IDC BN-508. Other debris wastes that are potential feedstock to the AMWTP S/C (i.e., BN-500, BN-519, BN-537 and BN-538) are also included in this waste group. This debris waste can be generated by the operations described in Section 3.6.

BN-500 includes secondary debris waste that is not associated with S/C operations and is generated as a result of: routine waste handling and retrieval operations, repackaging of loose waste, repackaging legacy waste with inadequate historical information, radiological/chemical monitoring, spill response activities, decontamination, treatment, equipment maintenance, and characterization (e.g., VE, HSG, GGT, and solid sampling). Secondary debris is generated as a result of providing overall support to TRU waste operations retrieved waste containers and occurs in various storage areas throughout the AMWTP. It does not include waste that meets the description of BN-508.

IDC BN-508 is generated in WMF-676 as a result of managing waste that is linked to a source container with an IDC approved in RPT-TRUW-83 (i.e., authorized feed to S/C). Secondary waste generated directly from box line and/or S/C operations are included in this IDC. The primary generation activity is from repackaging authorized S/C debris feedstock within the box line. Authorized S/C debris feedstock wastes are received into the south or north box line and transferred to the box line troughs for sorting/segregation of prohibited items, size reduction and repackaging. After conducting VE activities on the waste, the waste is loaded/repackaged into unlined 55-gallon drums (silvers). The silvers are sent to the S/C for processing/treatment as BN-508s. The IDC also includes repackaged waste from DWPG/SCW areas. Containerized waste (BN-508) generated directly from S/C operations can be placed into the box line or used as direct feed to the S/C if linked to a source container.

BN-524 debris waste is generated during repackaging of loose waste from breached containers retrieved from Cells 1 and 2 of Pad 1, and is **not** PCB contaminated or commingled with PCB waste (e.g., organic setups or with interstitial soil). (Section 3.6.1.2).

IDC BN-537 may be generated as a result of removing empty containers from the AMWTP retrieval area or otherwise generated as a result of repackaging or un-overpacking containers. (Sections 3.6.1, 3.6.2, and 3.6.5).

IDC BN-538 is generated from WMF-676 box line operations (Section 3.6.5). Oversized items received into the WMF-676 box line may be removed from authorized debris feedstock waste for subsequent management. Oversized debris waste items that are physically too large to be treated with existing S/C facility equipment, or have physical characteristics (e.g., density, hardness, etc.) that are outside the design specifications may be removed and dropped down the box line trough for subsequent management.

7.1.2.1 Areas and/or Building from which the Waste Was Generated

The AMWTP heterogeneous debris wastes are generated across the facility as shown in Table 7.2.

Table 7.2. Area of generation with generation process and applicable report section for each heterogeneous debris waste.

IDC	Area	Process	Section
BN-500	WMF-636 TSA-RE	Retrieval	3.6.1
	Site Wide	Monitoring	3.6.2
	WMF-628 DTF WMF-629 WMF-630 WMF-635 DRF WMF-676 DRS/SCW	Repackaging	3.6.2

Table 7.2. (Continued).

IDC	Area	Process	Section
	Site Wide Type II Modules WMF-615 DVF WMF-628 DTF WMF-629 WMF-630 WMF-634 DVS WMF-635 DRF WMF-676 DRS/SCW	Container Handling	3.6.2
	Site Wide	Storage	3.6.2.1
	WMF-615 WMF-628 WMF-634 WMF-635 WMF-636 WMF-676	Maintenance	3.6.3
	WMF-615 DVF WMF-634 DVS WMF-676 DRS WMF-676 SCW	Decontamination	3.6.3.1
	Site Wide	Spill response	3.6.3.4
	WMF-628 WMF-634 WMF-676 DWPG/SCW	Characterization	3.6.4
	WMF 676 DWPG WMF-676 SCW WMF-634 DCSRS WMF-628 DTF	Treatment	3.6.5
BN-508	WMF-676 DWPG/SCW	Repackaging	3.6.2.2.3
	WMF-676 Box lines	Repackaging	3.6.5.2.1
	WMF-676 Box lines and S/C	Maintenance	3.6.3.1.4
BN-519	WMF-629, -630	SDOP Packaging	3.6.2.2.1
BN-524	WMF-636 TSA-RE Pad-1, Cells 1 and 2	Waste Container Retrieval	3.6.1.2
BN-537	WMF-636 TSA-RE	Waste Container Retrieval	3.6.1.2
	WMF-676 DRS WMF-635 DRF WMF-629 Boxes	Drum Preparation	3.6.2.2
	WMF-628 DTF	Un-Overpacking	3.6.2.3

Table 7.2. (Continued).

IDC	Area	Process	Section
BN-538	WMF-676 Room 224B WMF-676 Room 225A WMF-676 Room 228B	Size Reduction	3.6.5.2

7.1.2.2 Process Flow Diagrams

The process flow diagrams for the Supercompactor feedstock debris waste is presented in Figures 10 through 13.

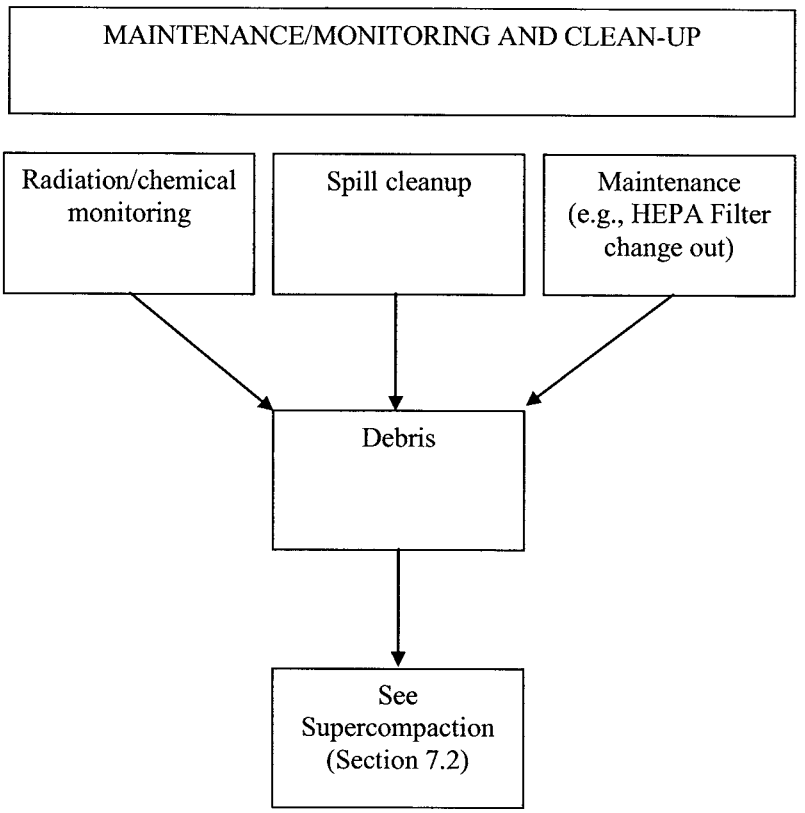

Figure 10. General flow diagram for newly generated debris waste from maintenance/monitoring and clean-up activities.

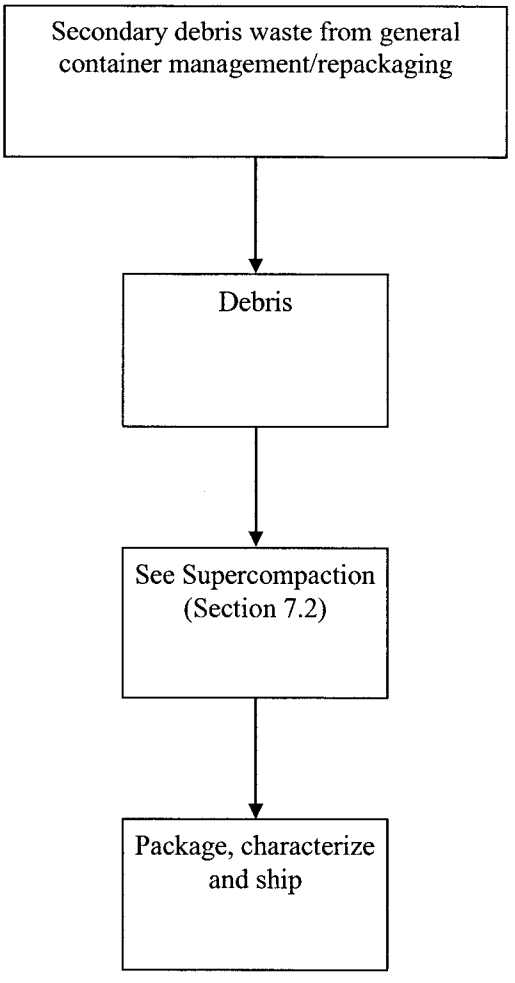

Figure 11. General flow diagram for newly generated debris waste from retrieval/repackaging and storage activities.

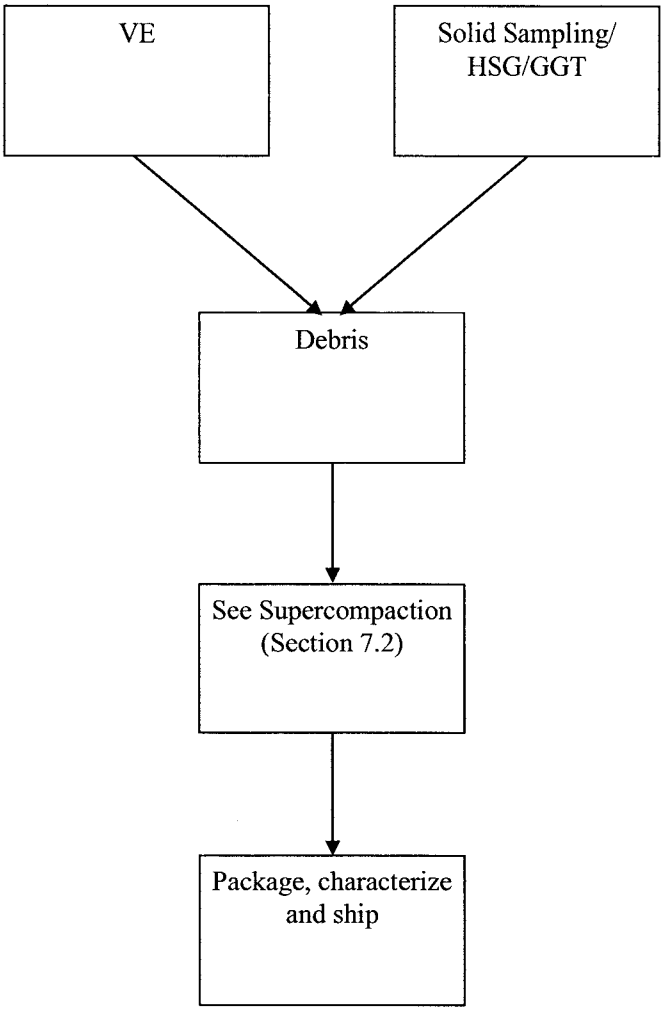

Figure 12. General flow diagram for newly generated debris waste from characterization activities.

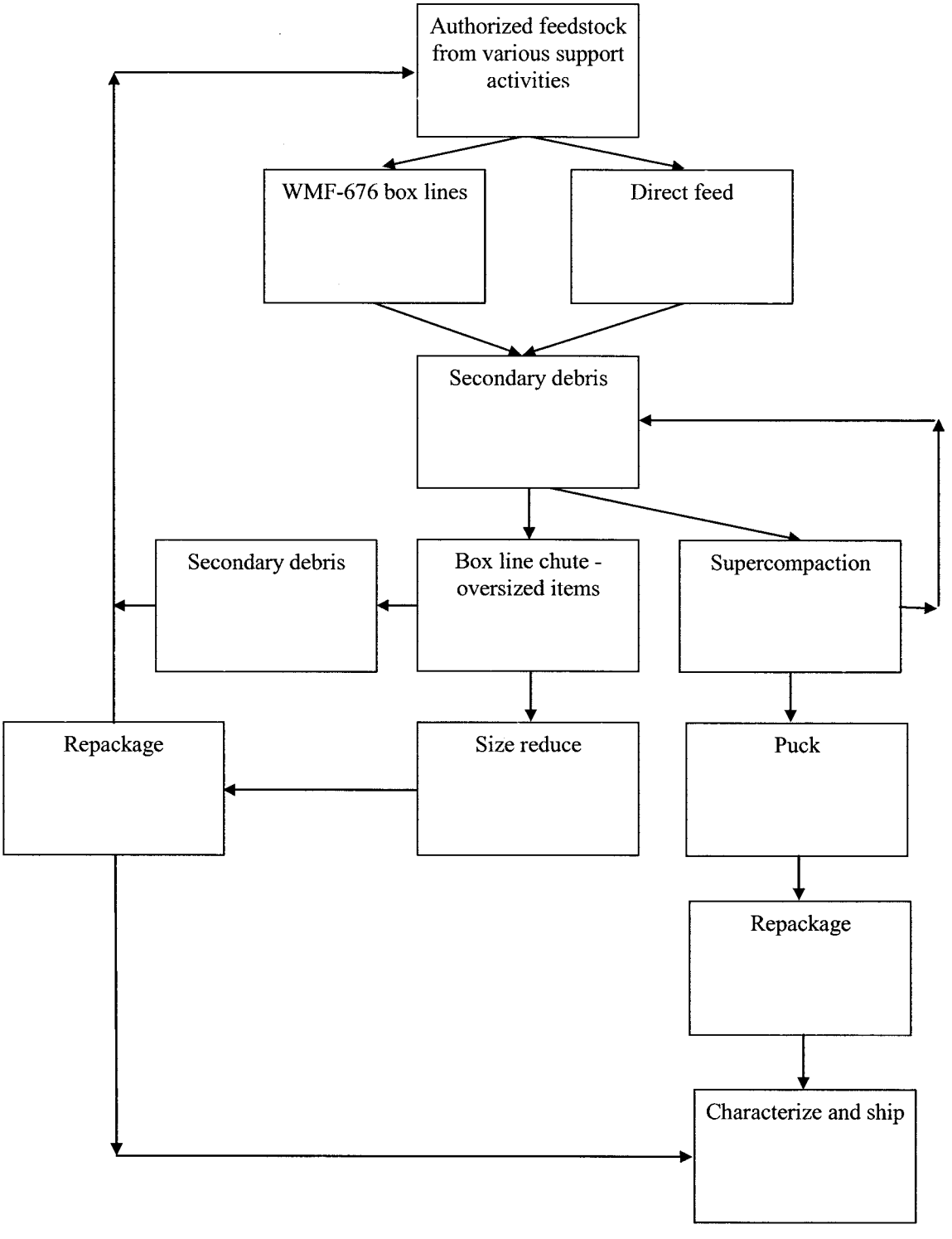

Figure 13. General flow diagram for supercompaction activities. See supercompactor section for additional flowchart information.

7.1.2.3 Material Inputs

TRU supercompactor feedstock debris may contain any type of debris waste (e.g., paper and rags; gloves; wipes; asbestos; PPE); plastic and rubber items; absorbent PIGs® (e.g., mats, blankets, socks, etc.), filters; leaded gloves, aprons, bricks, and sheeting; metal debris, lead, cadmium; floor tiles, piping, sheet rock, insulation, glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; tools; graphite; grit; asphalt and concrete). Waste containers may also contain <50% by volume homogeneous solids (e.g., sludges and absorbents) and soil. Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group and the TRU Program.

7.1.2.4 Waste Volume

The estimated volumes of supercompactor feedstock debris waste may change over the lifetime of the project as additional feedstocks are approved for supercompaction.

Estimated volumes of supercompactor feedstock debris waste that may be eligible in the future for supercompaction will be developed and incorporated into AK Summary at the time of profiling. See AMWTP WTS for current up-to date volumes for each IDC within this waste group.

7.1.3 Waste Packaging

Supercompactor feedstock debris waste is packaged in accordance with INST-OI-24 [27]

AMWTP supercompactor feedstock debris waste (IDC BN-508) generated during box line operations is packaged in thin-walled 55 gallon drums (i.e., silvers) (Section 3.6.5.2).

7.1.4 Waste Characterization

The AMWTP general approach to characterization is described in Section 3.9.

The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU supercompactor feedstock debris may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of ten drums will be randomly selected for HSG sampling from each waste stream lot in accordance with MP-TRUW-8.25. [132]

7.1.4.1 Identification of EPA HWNs

The TRU supercompactor feedstock debris has historically been managed as mixed TRU waste. The TRU supercompactor feedstock debris HWNs/constituents are dependent on contributing generators of the retrieved and/or received waste and may change over time. The temporarily-assigned HWNs and constituents for the potential TRU supercompactor feedstock debris can be found in RPT-TRUW-12. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of

profiling which will include a review of the HWNs assigned to the retrieved and/or received waste. The assigned HWNs and constituents for the approved TRU supercompactor feedstock debris (i.e., BN-508) can be found in RPT-TRUW-12. Final WIPP characterization determinations for the other TRU supercompactor feedstock will be documented within applicable RPT-TRUW-12 and WIPP WSPFs.

7.1.4.1.1 Ignitability

TRU supercompactor feedstock debris waste eligible for supercompaction is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The supercompactor feedstock debris waste is not compressed gas and does not contain compressed gas. The waste does not meet the DOT definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The waste does not exhibit the characteristic of ignitability (D001). Containers of aerosol cans may be generated as a result of AMWTP segregation practices. Aerosol cans found in waste containers are either verified that the cans is punctured; or is otherwise segregated/removed and treated to render the can non-reactive prior to compaction. Containers of TRU waste that contain aerosol cans that cannot be treated or verified as punctured will be assigned a unique IDC to prevent processing within the S/C. [5, 139, 140, 141, 142]

7.1.4.1.2 Corrosivity

TRU supercompactor feedstock debris waste eligible for supercompaction does not meet the 40 CFR 261.22 definition of corrosivity. TRU debris waste eligible for supercompaction is not liquid waste and is not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and/or WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU debris waste eligible for supercompaction does not exhibit the characteristic of corrosivity (D002). [5, 139, 140, 141, 142]

7.1.4.1.3 Reactivity

TRU supercompactor feedstock debris waste eligible for supercompaction does not meet the 40 CFR 261.23 definition of reactivity. Reactive wastes are prohibited from entering the supercompactor. TRU debris waste eligible for supercompaction is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU debris waste eligible for supercompaction is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water.

The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part, 173. Although some of the waste contains wastes are assigned F006, F007, and F009 listed HWNs and associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. TRU debris waste eligible for supercompaction does not exhibit the characteristic of reactivity (D003). [5, 139, 140, 141, 142]

Containers with aerosol cans may be generated as a result of AMWTP segregation practices. Aerosol cans found in waste containers are either verified that the can is punctured or is otherwise segregated/removed and treated to render the can non-reactive prior to compaction. Containers of TRU waste that contain aerosol cans that cannot be treated or verified as punctured will be NCR'd to prevent processing within the S/C.

7.1.4.1.4 Toxicity Characteristic

The TRU supercompactor feedstock debris waste may meet the definition of toxicity for metals and organics. RCRA toxicity characteristic organic constituents may change over time. The final list of RCRA toxicity organic constituents and associated HWNs for debris not currently authorized for supercompaction will be developed prior to WIPP profiling. See RPT-TRUW-12 and Waste Services HWDs for applicable toxicity characteristic waste numbers assigned to TRU debris waste other than IDC BN-508. [5]

IDC BN-508 within this waste group is assigned the characteristic HWNs: D004 through D011, D022, D028, D029, D030, D034, D037 and D043. [5]

7.1.4.1.5 Listed Waste

The TRU supercompactor feedstock debris waste may meet the definition for an F-listed waste. See RPT-TRUW-12 and Waste Services HWDs for applicable listed hazardous waste numbers assigned to AMWTP newly generated TRU debris waste. RCRA listed constituents may change over time. The final list of RCRA listed waste constituents and associated HWNs for debris not currently authorized for supercompaction will be developed prior to WIPP profiling. [5]

7.1.4.1.5.1 F-listed

IDC BN-508 within this waste group is identified with the HWNs: F001, F002, F004, F005, F006, F007 and F009. [5]

7.1.4.1.5.2 P-, U- and K-Listed HWNs

TRU supercompactor feedstock debris waste eligible for supercompaction is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, TRU debris waste that may be eligible (or is) for supercompaction was not mixed with, or derived-from the treatment, storage, or disposal of P- or U-listed waste. As a result, P and U-listed HWNs are not assigned to TRU debris waste eligible for supercompaction. (5)

The AMWTP does not use commercial chemicals containing beryllium powder. The TRU debris waste eligible for supercompaction may be contaminated with beryllium in concentrations of less than one percent of the waste by weight. Although TRU debris waste eligible for supercompaction may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to TRU debris waste eligible for supercompaction. (5)

The AMWTP does not use hydrofluoric acid within TRU waste operations. Hydrofluoric acid was identified as a contaminant within S/C authorized debris feedstock. Hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated TRU debris waste eligible for supercompaction. TRU debris waste eligible for supercompaction does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to TRU debris waste eligible for supercompaction. (5)

7.1.4.2 Radionuclide Content

The AMWTP debris waste in this group may be contaminated with radionuclides associated with AMWTP retrieved waste identified in Section 3.7.

The radionuclides expected in the supercompactor debris feedstock waste originate from historically stored (primarily RF, MD, BC) debris waste as summarized in Tables 3.8 and 3.9 and RL waste summarized in Table 3.11. Other debris wastes that are potential feedstock include radionuclides from other historically stored waste (Table 3.11). The WIPP tracked radionuclides (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am) are expected to be present and measurable by NDA. The remaining WIPP tracked radionuclides ^{137}Cs and ^{90}Sr are not expected to be present in measurable quantities. (Section 3.7)

7.1.4.3 Prohibited Items

TRU supercompactor feedstock debris is not expected to contain WIPP prohibited items. AMWTP Waste Service's HWDs, AMWTP packaging procedures, AMWTP RTR and/or VE

procedures are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be supercompacted. Any WIPP or S/C prohibited item found will be treated prior supercompaction or will be managed separately. [139, 140, 141, 142]

7.1.4.4 Identification of PCBs

TRU supercompactor feedstock debris is evaluated for PCBs on a case-by-case basis. TRU debris waste eligible for supercompaction will not contain PCBs equal to or greater than 50 ppm. [5]

7.2 Supercompacted TRU Debris Waste

7.2.1 Waste description

The supercompacted TRU debris waste group is generated from a single process/activity (i.e., supercompaction) and is composed of supercompacted authorized TRU debris feedstock waste. [131] The AMWTP supercompacted TRU debris waste group is composed of supercompacted TRU feedstock debris waste containers (aka pucks) packed into 100-gal product drums. The feedstock debris waste consists of various combustible and noncombustible debris materials originally generated at multiple DOE sites (i.e., RF, MD, BC, RL, and BN). The process of supercompaction produces "pucks". A puck is a compacted 55-gallon debris container. Several pucks are loaded into 100-gallon product drums for off-site shipment. Pucks are compressed/compacted 55 gallon drums that have been size reduced to approximately one fifth of their normal size. The supercompacted debris wastes (i.e., pucks) are repackaged into 100-gallon product drums as BN-550 (previously identified as BN-510). After compaction, the drum pucks are loaded into 100-gallon drums. AMWTP supercompacted TRU debris wastes have been generated since March 2003. The Supercompacted debris waste IDCs, waste descriptions and dates of generation are provided in Table 7.3.

Table 7-3. Supercompacted debris waste IDCs, waste descriptions and dates of generation.

IDC	Description	Dates of Generation
BN-510	Supercompacted Debris	2003-2010
BN-550	Supercompacted Debris (BN510.1)	2010-ongoing

BN-510 Supercompacted Debris (BN510): All types of TRU debris waste that is compacted at the AMWTP and will be shipped to WIPP under WSPF BN510. 100-gallon product drums typically containing multiple compacted 55-gallon drums of feedstock debris (i.e., pucks) associated with the IDCs listed in RPT-TRUW-30.

BN-550 Supercompacted Debris (BN510.1): All types of TRU debris waste that is compacted at the AMWTP and will be shipped to WIPP under WSPF BN510.1 100-gallon product drums typically containing multiple compacted 55-gallon drums of feedstock debris (i.e., pucks) associated with the IDCs listed in RPT-TRUW-83.

Supercompacted debris waste includes: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete packaged in 55-gallon drums, supercompacted, and packaged for shipment into 100-gallon product drums.

Supercompacted debris may contain small amounts of non-debris waste such as absorbed liquids, soil, dirt, sand, absorbent, or homogeneous solids. Non-debris waste will be less than 50% by volume in each 100-gallon drum of compacted debris. [18, 19, 20, 22]

7.2.2 Waste Generation

The AMWTP Supercompacted Debris waste is generated during treatment/size reduction of 55-gallon thin walled containers (silvers) and original 55-gallon containers by supercompaction. After compaction, the drum pucks are loaded into 100-gallon drums (IDC BN-550 and BN-510). Several pucks are loaded into 100-gallon product drums for off-site shipment.

The supercompacted debris waste is generated from a single process (i.e., supercompaction). The waste produced from supercompaction is similar in material, physical form, and hazardous constituents, and is a single waste stream.

The authorized S/C feedstock debris waste is introduced into the S/C as any of the following:

- Direct feed
  - Original 55-gallon drums of authorized historically stored waste from the generator site);
  - From the drummed waste packaging glovebox (DWPG) where drummed waste is sorted and repackaged into new 55-gallon drums (Section 3.6.2.2.2), and
  - Secondary debris waste generated as a result of S/C operations (e.g., maintenance, container management, clean-outs) (Sections 3.6.3.1.4 and 3.6.5.2.2).
- Box lines
  - Authorized historically stored waste in boxes, from the generator site, and
  - SDOPs of 55- or 85-gallon drums of authorized debris waste.

7.2.2.1 Areas and/or Building from which the Waste Was Generated

The waste is generated within the WMF-676 Supercompactor.

7.2.2.2 Process Flow Diagrams

Figure 14 provides a general process flow diagram for supercompaction operations.

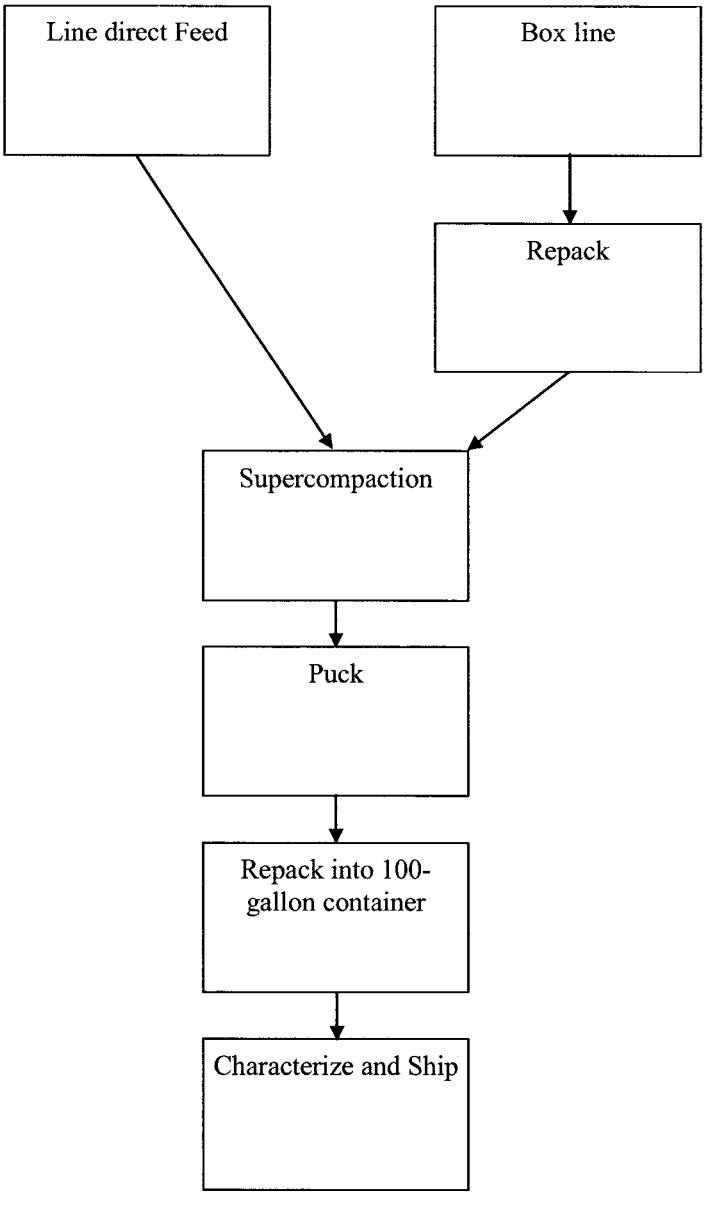

Figure 14. General flow diagram chart for supercompaction operations.

7.2.2.3 Material Inputs

The heterogeneous debris waste feedstock to the supercompactor was originally generated at multiple DOE sites (i.e., RF, MD, BC, and RL) and includes AMWTP waste (BN) generated during supercompactor operations. The material inputs to the supercompactor debris waste are the authorized S/C feedstock generated from AMWTP S/C related activities such as:

Direct feed 55-gallon drums without rigid liners identified by generator (RF, MD, BC, BN) assigned IDCs.

- Direct feed 55-gallon drums with rigid liners identified by generator (RF, MD, BC) assigned IDCs.
- Repackaged RF, MD, BC, RL and BN debris waste from the box line or DWPG in 55-gallon drums.

RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant Waste; RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Waste-Mound Plant Waste; RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory; and RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, and this report (i.e., RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste), are the AMWTP baseline documents for the BN, RF, MD, BC, RL and BN facilities (respectively). [18, 19, 20, 22]

Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II® or Petroset II-G® may be added to the waste by AMWTP to absorb prohibited liquids within debris waste containers prior to compaction. [131]

7.2.2.4 Waste Volume

AMWTP supercompacted TRU debris wastes have been generated since March 2003 either as BN-510 or BN-550. The current projected volume for BN510.1 supercompacted debris is:

- 16,000 100-gallon drums (3,330 m^3) [131]
- 105 Standard Waste Boxes (SWBs) (198 m^3). [131]

The S/C's current daily throughput capacity is approximately 150 drums. The average generation rate is estimated to be 120 m^3 per month. [131]

BN510 waste is no longer processed through the S/C. The volume of BN510 WSPF previously processed through the S/C is 25,264 TRU drums. [158]

See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

7.2.3 Waste Packaging

Supercompacted TRU debris waste containers (i.e., pucks) are placed directly into 100-gallon product drums. There are no inner packagings or layers of confinement associated with the 100-gallon product drums. There is a filtered lid on the 100-gallon drums. If 100-gallon drums become damaged, they are packaged into SWBs for shipment to WIPP.

7.2.4 Waste Characterization

The AMWTP general approach to characterization is described in Section 3.9

The supercompacted TRU debris waste is characterized by AK based on the authorized S/C feedstock debris. AK characterization is augmented by VE, RTR and NDA of the feedstock debris waste (Section 3.8). A minimum of ten drums will be randomly selected for HSG sampling from each waste stream lot in accordance with MP-TRUW-8.25. [132]

Currently the S/C TRU feedstock waste consists of debris waste from RF, MD, RL and BC, as well as, AMWTP newly generated debris wastes from the WMF-676 (i.e., BN-508). Characterization results are documented within the WIPP-approved WSPF BN510.1 and RPT-TRUW-12. [5, 131]

7.2.4.1 Identification of EPA HWNs

The TRU supercompactor debris has historically been managed as mixed TRU waste. The TRU supercompactor debris HWNs/constituents are dependent on contributing generators of the retrieved and/or received waste and may change over time. See RPT-TRUW-12 for a list of current chemical contaminants and applicable HWNs to AMWTP supercompacted TRU debris. [5] Final WIPP characterization determinations for supercompacted TRU debris waste are documented within applicable WIPP WSPFs and within RPT-TRUW-12. [5, 131, 150]

7.2.4.1.1 Ignitability

The supercompacted debris waste does not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of ignitability. Ignitable wastes are prohibited from entering the supercompactor. The supercompacted debris waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorption) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The supercompacted waste are not compressed gas and do not contain compressed gas. The waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The supercompacted waste does not exhibit the characteristic of ignitability (D001). [5, 18, 19, 20, 22, 131, 139, 141, 142, 152, 153, 154]

7.2.4.1.2 Corrosivity

The supercompacted debris waste does not meet the 40 CFR 261.22 definition of corrosivity. The supercompacted debris waste is not liquid waste and does not contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The supercompacted waste does not exhibit the characteristic of corrosivity (D002). [5, 18, 19, 20, 22, 131, 139, 141, 142, 152, 153, 154]

7.2.4.1.3 Reactivity

The supercompacted debris waste does not meet the 40 CFR 261.23 definition of reactivity. Reactive wastes are prohibited from entering the supercompactor. Supercompacted debris is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The supercompacted waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part, 173. Although the waste contains wastes that are assigned F006, F007, and F009 listed HWNs that are associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. This non-reactive position is based on AMWTP AK documents that debris waste being used as feedstock is a non-reactive Resource Conservation and Recovery Act (RCRA) waste. The supercompacted waste does not exhibit the characteristic of reactivity (D003).[5, 18, 19, 20, 22, 131, 139, 141, 142, 152, 153, 154]

7.2.4.1.4 Toxicity Characteristic

The supercompacted debris waste contains RCRA toxicity constituents associated with toxicity characteristic metals and organics. The RCRA toxicity characteristic metals and organics assigned to supercompacted waste are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride). The RCRA toxicity characteristic metal HWNs: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver) were identified based on AK documentation associated with RF, MD, BC, BN and RL feedstock for the BN510.1 WSPF. The D004, D005, D006, D007, D008, D009, D010, and D011 HWNs are assigned to the supercompacted debris waste. The HWN D022 (chloroform) was assigned based on AK documentation associated with RF, MD, and RL feedstock. The associated toxicity characteristic HWN D022 is assigned to the supercompacted debris waste.

The HWNs D027 (1,4-dichlorobenzene); D030 (2,4–dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride) were assigned based on AK documentation associated with RL feedstock. The associated toxicity characteristic HWNs D027, D030, D034, D037 and D043 are assigned to the supercompacted debris waste. The HWNs D028 (1,2-dichloroethane) and D029 (1,1-dichloroethylene) were assigned in the AK documentation associated with RF and RL feedstock. The D028 and D029 HWNs are assigned to the supercompacted debris waste. [5, 18, 19, 20, 22, 131, 139, 141, 142, 152, 153, 154]

7.2.4.1.5 Listed Waste

7.2.4.1.5.1 F-Listed HWNs

The supercompacted debris waste contains constituents associated with RCRA listed waste HWNs. Listed hazardous waste constituents differ from supercompacted debris BN-510 wastes previously processed. See prior WIPP-approved WSPF for BN510 for constituents related to the IDC BN-510. [5,131, 150]

The BN510.1 supercompacted debris waste is assigned the F-listed HWNs: F001, F002, F004, F005, F006, F007, and F009. These F-Listed HWNs were historically assigned to feedstock waste by the original generator of the waste, for spent solvents used for cleaning, degreasing, and laboratory operations, and from electroplating operations. The HWNs: F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) and F002 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock. In addition, the F002 hazardous waste constituents 1,2-dichlorobenzene, chlorobenzene were assigned based on AK documentation associated with RL feedstock. Therefore, supercompacted debris waste is assigned the EPA HWNs F001 and F002. [5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154]

Non-halogenated F003 solvent constituents (e.g., acetone, cyclohexanone, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butly alcohol, and xylenes) were identified in the AK and process knowledge (PK) record as contaminants associated with the supercompactor debris waste feedstock. The supercompacted waste does not exhibit the characteristic of ignitability. Therefore the F003 HWN is not assigned to the supercompacted debris waste. (5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154)

The HWN F004 (cresols and nitrobenzene) were assigned based on AK documentation associated with RL feedstock. The resultant supercompacted debris waste retains the listed HWNs assigned to the supercompactor feedstock based on current regulatory requirements (i.e., the RCRA derived from rule). Therefore, supercompacted debris waste is assigned the EPA HWN F004. The HWN F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine, and toluene) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock. Therefore, supercompacted debris waste is assigned the EPA HWN F005. The HWNs F006, F007 and F009 were assigned based on AK documentation associated with RF feedstock and HWNs F007 and F009 were also assigned based on AK documentation associated with MD feedstock. Therefore, supercompacted debris waste is assigned the F006, F007, and F009 EPA HWNs. (5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154)

7.2.4.1.5.2 P-, U- and K-Listed HWNs

The supercompacted TRU debris waste and the TRU feedstock debris are not currently classified as a P-, U- or K-listed waste.

The supercompacted TRU debris waste is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33. In addition, the TRU supercompacted debris and TRU feedstock debris waste was not mixed with, or derived-from the treatment, storage, or disposal of P- or U-listed waste. As a result, P- or U-listed HWNs are not assigned to supercompacted TRU waste. (5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154)

The AMWTP does not use commercial chemicals containing beryllium powder. The supercompacted TRU debris and TRU feedstock debris may be contaminated with trace quantities of beryllium (e.g., less than one percent of the waste by weight). Although supercompacted waste may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to supercompacted TRU waste. (5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154)

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated the S/C TRU feedstock debris waste. The supercompacted TRU debris and TRU feedstock debris does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to supercompacted TRU waste. [5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154]

The supercompacted TRU waste streams are not classified as K-listed waste. The materials in this waste stream are not hazardous waste from specific sources since they were not generated from the processes listed in 40 CFR 261.32. The supercompacted TRU debris and feedstock debris does not contain and was not derived-from waste that would be associated with specific sources associated with a K-listed HWN. Therefore, the supercompacted TRU waste is not K-listed hazardous waste. [5, 18, 19, 20, 22, 131, 139, 141, 142, 150, 152, 153, 154]

7.2.4.2 Radionuclide Content

Radionuclide content of AMWTP waste is described in Section 3.7. The radionuclides expected to be quantifiable or calculated by NDA technique in the supercompacted debris waste are those identified in Tables 3.8 for RF, MD, and BC and Table 3.11 for RL. The predominant radionuclides by activity for the waste stream are ^{239}Pu, ^{238}Pu, and ^{240}Pu, however some TRU waste containers may have other TRU nuclides (e.g., ^{241}Am, ^{237}Np) that are predominant for that container. [90]

7.2.4.3 Prohibited Items

Prohibited items for the AMWTP S/C and disposal at WIPP differ. The AMWTP utilizes RTR/VE to evaluate each container for both AMWTP S/C and WIPP prohibited items. [38, 41, 44, 65] WIPP and AMWTP S/C prohibited items are removed and/or treated as applicable. (Section 3.6.5.1) Supercompaction is the treatment for unprotected sharp objects and sealed containers greater than four liters that do not contain prohibited liquids. Because there are no layers of confinement following supercompaction, it is also the treatment for excess layers of confinement. Containers of waste identified with these types of WIPP prohibited items are evaluated on a case-by-case basis for acceptability into the supercompactor for treatment. Items/materials prohibited from the supercompactor are:

- PCBs or PCB contaminated waste: To prevent PCB cross contamination and additional permit requirements (e.g., TSCA), the S/C TRU debris wastes that contain TSCA regulated materials such as PCBs >50 PPM are not authorized for supercompaction. Supercompacted TRU debris and the TRU feedstock debris waste is not PCB contaminated (i.e., >50 ppm). [41, 44, 65]
- Elemental mercury has been identified as being detrimental to the S/C seals/gaskets and is prohibited from the S/C. [41, 44, 65]
- Ignitable, corrosive and reactive wastes are prohibited as feed to the S/C. [11]

- Free liquids, as determined by RTR to be in excess of 5% of the waste volume. [11]
- Non-vented gas containers. [11]

Debris waste feedstock containers that are identified as containing prohibited items during RTR or VE are treated (to absorb prohibited liquids or to remove prohibited items) or are rejected, as appropriate. None of the supercompacted debris drums shipped to WIPP contains prohibited items.

Prohibited items that can be treated to remove the prohibited characteristic are managed as newly generated waste. Containers with WIPP-prohibited liquids may be treated using nonhazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G® or Micro-Cel® E) to render the waste acceptable prior to shipment. [139, 140, 141, 142] Newly generated waste is characterized and assigned to an appropriate waste stream. In the event the treatment renders a debris waste form that can be compacted, it is included in BN510.1 as IDC BN-508.

7.2.4.4 Identification of PCBs

PCB items (i.e., RTR/VE) are not authorized for supercompaction. Authorized feedstock debris waste from non-AMWTP generators (current and historically) is not and have not been classified as having >50 ppm PCBs by the original generators. AMWTP newly generated debris waste is characterized by the AMWTP Waste Services in collaboration with AMWTP AK personnel. If PCB items are found by RTR/VE in these authorized feedstock waste they are removed prior to compaction. AMWTP newly generated debris wastes that are associated with regulated levels of concern for PCBs (i.e., >50 ppm) are assigned an IDC that is not included within the authorized supercompactor feedstock list. [143, 144]

Supercompacted TRU debris (and associated feedstock debris waste) is classified as non-PCB waste (i.e., <50 ppm). [131, 150]

7.3 Heterogeneous Debris Waste from Off-Site Waste

7.3.1 Waste description

Heterogeneous debris waste is routinely generated as a result of supporting off-site waste characterization (e.g., solid sampling, HSG, etc.). Due to potential variability in hazardous constituents (and HWNs) over time, secondary debris waste generated from characterization of DOE off-site is given a unique IDCs to ensure compliant storage and handling and for purposes of WIPP profiling (e.g., BN-520 and BN-521).

TRU heterogeneous debris waste generated from off-site waste may contain any type of debris waste (e.g., paper and rags; gloves; wipes; personal protective equipment (PPE); plastic and rubber items; absorbent PIGs® (e.g., mats, blankets, socks, etc.), filters; metal debris). TRU heterogeneous debris waste generated from characterization of off-site waste may contain small amounts of non-debris waste such as soil/dirt and/or homogeneous solids (e.g., from glovebox clean-out). Non-hazardous solidification agents: Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents may also be added to the waste by AMWTP to absorb prohibited liquids in response to PI treatment and/or spill clean-up activities. Non-debris waste will be less than 50% by volume in the debris waste container.

TRU debris waste generated from off-site waste has been generated since 2007. Table 7.4 provides dates of generation for TRU debris waste from activities associated with off-site waste.

Table 7.4. TRU debris waste generated from the management of off-site waste IDCs, waste descriptions, and generation dates.

IDC	Description	Generation Dates*
BN-520	TRU PCB Secondary Debris Generated from Offsite Waste	2007-ongoing
BN-521	TRU Secondary Debris Generated from Offsite Waste	2007-ongoing
*Earlier generation date for newly generated waste may be identified and will be evaluated on a case-by-case basis.		

IDC BN-520 TRU PCB Secondary Debris Generated from Offside Waste: heterogeneous PCB secondary debris generated from the management of offsite wastes. The debris may include PCB items, PPE, tarps, tools, PIGs®/mats, HEPA filters, smear paper, etc.

IDC BN-521 TRU Secondary Debris Generated from Offsite Waste: non-PCB heterogeneous secondary debris generated from the management of offsite wastes that are **not** profiled by AMWTP for shipment to WIPP. The debris may include PPE, tarps, tools, PIGs®/mats, HEPA filters, smear paper, etc.

7.3.2 Waste Generation

BN-520 and BN-521 are generated primarily as a result of solid sampling off-site non-debris waste within WMF- 634 (Section 3.6.4). DOE off-site homogeneous solid and soil (i.e., S3000 and S4000) wastes received by the AMWTP Offsite Waste Program and are solid sampled by AMWTP in support of CCP waste profiling. Debris waste resulting from solid sampling or waste container handling of PCB contaminated waste is assigned BN-520. Debris waste resulting from solid sampling or waste container handling of non-PCB contaminated waste is assigned BN-521.

The BN 520 and BN-521 heterogeneous debris wastes are primarily generated as a result solid sampling of S3000 and S4000 wastes. Additional support activities associated with off-site waste characterization that have the potential to generate secondary debris waste include, but are not limited to: radiological monitoring, maintenance, general container movement/management, and spill response activities associated with support of TRUPACT-II Authorized Methods for Payload Control (TRAMPAC) requirements.

In order to prevent cross contamination, once waste from the off-site generator is cored general housekeeping is invoked between coring events and the glovebox is decontaminated prior to processing waste from a different waste generator.

7.3.2.1 Areas and/or Building from which the Waste Was Generated

The waste is generated within WMF-634.

7.3.2.2 Process Flow Diagrams

The waste process flow diagram for off-site waste characterization is presented in Figure 15.

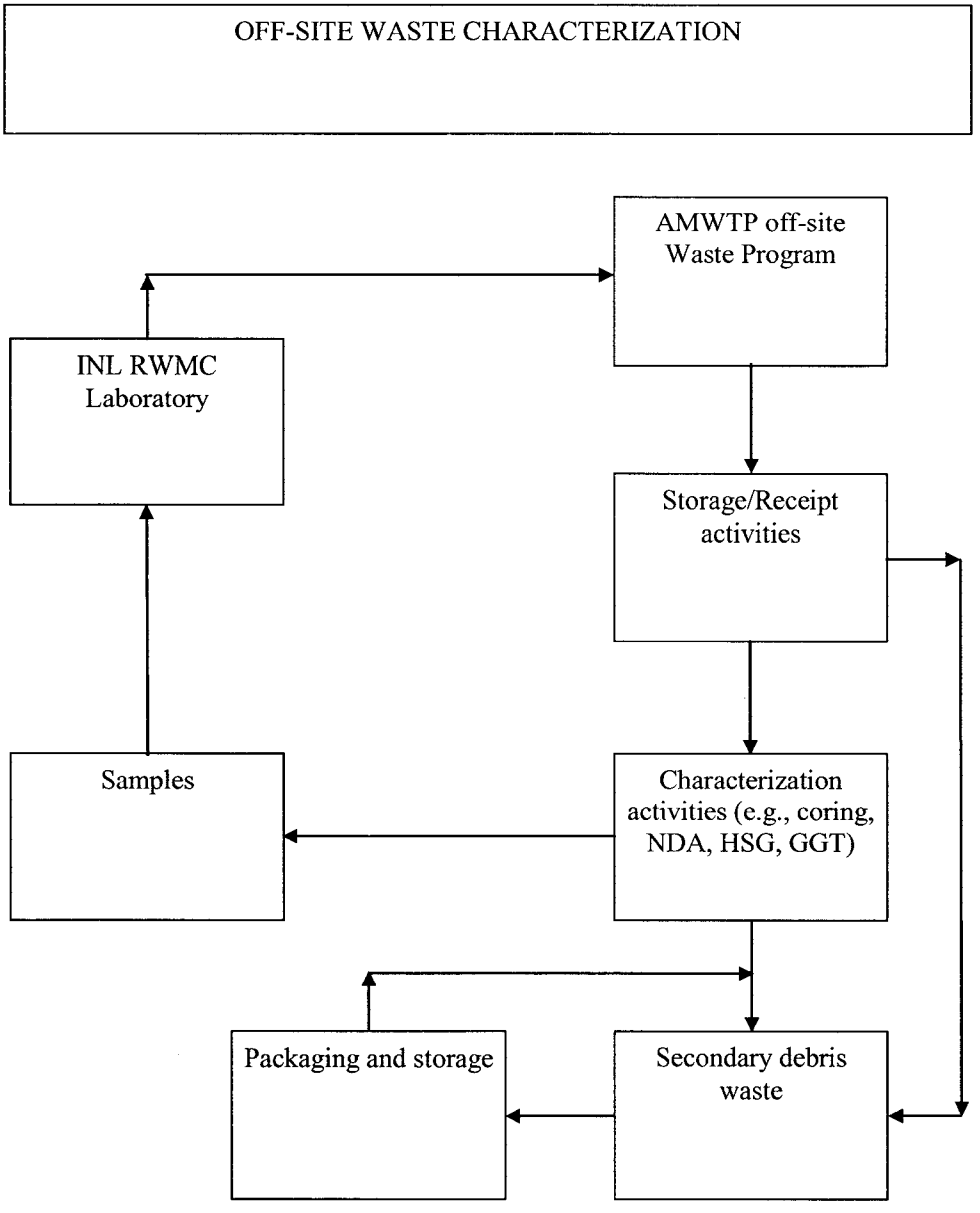

Figure 15. Off-site waste characterization and support activities.

7.3.2.3 Material Inputs

TRU heterogeneous debris waste generated from off-site waste may contain any type of debris waste (e.g., paper and rags; gloves; wipes; personal protective equipment [PPE]; plastic and rubber items; absorbent PIGs® [e.g., mats, blankets, socks, etc.], filters; metal debris). Waste containers may also contain <50% by volume homogeneous solids (e.g., sludges and absorbents) and soil. Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group, and the TRU Program.

7.3.2.4 Waste Volume

The estimated volume of TRU heterogeneous debris waste generated from off-site waste to be generated over the lifetime of the project is not currently known.

Estimated volumes of TRU heterogeneous debris waste generated from off-site waste will be developed and incorporated into WIPP WSPFs at the time of WIPP profiling. Containers of each IDC identified in this waste group are documented in the AMWTP waste tracking system (WTS) when generated. See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

7.3.3 Waste Packaging

TRU heterogeneous debris generated from off-site waste (i.e., are packaged in accordance with INST-OI-24 [27]

7.3.4 Waste Characterization

The AMWTP general approach to characterization is described in Section 3.9

The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU heterogeneous debris generated from off-site waste may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of ten drums will be randomly selected for HSG sampling from each waste stream lot in accordance with MP-TRUW-8.25.

7.3.4.1 Identification of EPA HWNs

The TRU heterogeneous debris waste generated from off-site waste HWNs/constituents are dependent on contributing generators and may change over time. The temporarily-assigned HWNs and constituents can be found in RPT-TRUW-12. RPT-TRUW-12 provides a list of potential chemical contaminants and HWNs related to debris waste generated from off-site waste characterization. Characterization information (i.e., HWNs and hazardous constituents) for debris waste generated from off-site waste characterization is maintained by the AMWTP Offsite Waste Program and AMWTP Waste Services. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling. [65, 77]

TRU heterogeneous debris waste generated from off-site waste has historically been managed as mixed waste. [5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

7.3.4.1.1 Ignitability

TRU heterogeneous debris waste from off-site waste does not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of ignitability. The AMWTP will not accept waste from off-site DOE facilities that meet the definition of ignitability. TRU heterogeneous debris waste from off-site waste is not expected to be a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The waste are not compressed gas and do not contain compressed gas. The heterogeneous TRU debris waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The heterogeneous TRU debris waste does not exhibit the characteristic of ignitability (D001). (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 139, 140, 141, 142)

7.3.4.1.2 Corrosivity

TRU heterogeneous debris waste from off-site waste does not meet the 40 CFR 261.22 definition of corrosivity. TRU heterogeneous debris waste from off-site waste is not liquid waste and is not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and/or WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU heterogeneous debris waste from off-site waste does not exhibit the characteristic of corrosivity (D002). (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 139, 140, 141, 142)

7.3.4.1.3 Reactivity

TRU heterogeneous debris waste from off-site waste does not meet the 40 CFR 261.23 definition of reactivity. Reactive wastes are prohibited from being accepted at the AMWTP. TRU heterogeneous debris waste from off-site waste is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. TRU heterogeneous debris waste from off-site waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part 173. Although some of the waste contains wastes are

assigned F006, F007, and F009 listed HWNs and associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. TRU heterogeneous debris waste from off-site waste does not exhibit the characteristic of reactivity (D003).[5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 139, 140, 141, 142]

7.3.4.1.4 Toxicity Characteristic

TRU heterogeneous debris waste generated from off-site waste may meet the definition of toxicity for metals and organics. RCRA toxicity characteristic organic constituents may vary over time. The final list of RCRA toxicity organic constituents and associated HWNs will be developed prior to WIPP profiling. See the off-site waste coordinator and the AMWTP WS HWDs for applicable toxicity characteristic waste numbers assigned to Heterogeneous TRU debris from off-site waste.

Currently the IDCs within this waste group include the HWNs: D004 through D011, D018, D019, D022, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038 and D043.[5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

7.3.4.1.5 Listed Waste

TRU heterogeneous debris waste generated from off-site waste may meet the definition for an F-listed waste. RCRA listed waste constituents may vary over time. The final list of RCRA listed HWN constituents and associated HWNs will be developed prior to WIPP profiling. See RPT-TRUW-12, the AMWTP off-site waste coordinator and WS HWDs for applicable listed hazardous waste numbers assigned to heterogeneous TRU debris from off-site waste.[5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

7.3.4.1.5.1 F-Listed HWNs

See RPT-TRUW-12. Currently the IDCs within this waste group are assigned listed HWNs: F001, F002, F004, F005, F006, F007 and F009.[5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

7.3.4.1.5.2 P- and K-Listed HWNs

TRU heterogeneous debris waste generated from off-site waste is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P- listed hazardous waste as identified in 40 CFR 261.33. In addition, the TRU heterogeneous debris waste generated from off-site waste e was not mixed with, or derived-from the treatment, storage, or disposal of P-listed waste. As a result, P-listed HWNs are not assigned to TRU heterogeneous debris waste generated from off-site waste.[5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129]

The AMWTP does not use commercial chemicals containing beryllium powder. TRU heterogeneous debris waste generated from off-site waste may be contaminated with trace quantities of beryllium (e.g., less than one percent of the waste by weight). Although TRU heterogeneous debris waste generated from off-site waste may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to TRU heterogeneous debris waste generated from off-site waste. (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129)

7.3.4.1.5.3 U-Listed HWNs

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated the TRU heterogeneous debris waste generated from off-site waste. TRU heterogeneous debris waste generated from off-site waste does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to TRU heterogeneous debris waste generated from off-site waste. (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129)

Secondary debris waste generated from off-site waste characterization may include U-listed waste. Currently U151 is assigned to a limited subpopulation of debris from coring activities.

See RPT-TRUW-12, the AMWTP off-site waste coordinator and WS HWDs for the list of potential chemical contaminants to TRU heterogeneous debris waste generated from off-site waste. Final WIPP characterization determinations for newly generated waste off-site waste characterization wastes are documented within RPT-TRUW-12 at the time of WIPP profiling. (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129)

7.3.4.2 Radionuclide Content

Radionuclide content of AMWTP waste is described in Section 3.7. The radionuclides expected to be quantifiable or calculated by NDA technique in the TRU heterogeneous debris waste generated from off-site waste are those identified in Table 3.11. TRU heterogeneous debris waste generated from off-site waste is generated during management of waste from multiple generators.

7.3.4.3 Prohibited Items

TRU heterogeneous debris waste generated from off-site waste is not expected to contain WIPP prohibited items. AMWTP Waste Service's hazardous waste determinations, AMWTP packaging procedures, RTR and/or VE are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP

If found WIPP prohibited item associated with TRU heterogeneous debris waste generated from off-site waste will undergo treatment prior shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents) to render the waste acceptable prior to shipment. (139, 140, 141, 142)

7.3.4.4 Identification of PCBs

TRU heterogeneous debris waste generated from off-site waste may be contaminated with PCBs in concentrations >50 ppm. PCB determinations for off-site waste during characterization is dependent upon the status of the waste as received from off-site DOE facilities. Waste that is generated from characterization of off-site waste retains the PCB classification as previously profiled. PCB contaminated debris waste from off-site waste characterization is assigned BN-520. Non-PCB contaminated debris waste from off-site waste characterization is assigned BN-521. (5, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129)

7.4 AMWTP Heterogeneous PCB Debris Waste

7.4.1 Waste description

The following AMWTP heterogeneous PCB debris waste group is composed of PCB general/routine debris waste that may be generated in multiple buildings. The preliminary grouping is developed to establish a separate grouping for AMWTP heterogeneous PCB debris waste that is not generated from off-site characterization activities (Section 7.3). The AMWTP heterogeneous debris waste group is bounded by hazardous waste constituents and HWNs associated with retrieved historically stored waste.

TRU heterogeneous PCB debris waste may contain any type of debris waste (e.g., PCB items (e.g., ballast/capacitors/transformers), paper and rags; gloves; wipes; PPE; plastic and rubber items; absorbent PIGs® (e.g., mats, blankets, socks, etc.), filters; metal debris).TRU

AMWTP heterogeneous PCB debris waste may contain small amounts of non-debris waste such as soil/dirt and/or homogeneous solids (including absorbed liquids). Non-hazardous solidification agents: Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents may also be added to the waste by AMWTP to absorb prohibited liquids in response to PI treatment and/or spill clean-up activities. Non-debris waste will be less than 50% by volume in the debris waste container. (139, 140, 141, 142)

Table 7.5 provides list of IDCs included in this waste group and dates of generation for each IDC.

Table 7.5. AMWTP heterogeneous PCB debris waste IDCs, waste descriptions and generation dates.

IDC	Description	Generation Dates*
BN-536	TRU Empty Containers with PCBs	2005-ongoing
BN-604	Debris TSCA/PCB	2005-ongoing
*Earlier generation date for AMWTP heterogeneous PCB debris waste may be identified and will be evaluated on a case-by-case basis. Proposed IDCs for PCB contaminated waste from Pad 1, Cells 1 and 2 are in development.		

BN-536 TRU Empty Container with PCBs: Empty cargo containers, boxes, 55-gallon drums or 83/85-gallon overpacks generated during the retrieval or treatment processes that may contain PCBs. [80]

BN-604 Debris TSCA/PCB: Heterogeneous PCB debris waste generated by AMWTP including waste generated during handling of TSCA PCB contaminated waste or waste that contains PCB items other than PCB debris waste generated in WMF-676. Waste also includes repackaged loose debris found in cargos or bins and debris generated during the cleanup of spills or leaks from SDA waste containers (e.g., IDCs SD-703, SD-704, SD-705, and SD-706) that is PCB waste or is suspected to be PCB contaminated or contain PCB items. Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). [80]

Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludge).

7.4.2 Waste Generation

TRU heterogeneous PCB debris waste includes debris waste generated as a result of: routine waste handling and retrieval operations, repackaging of loose waste, radiological/chemical monitoring, spill response activities, decontamination, treatment, equipment maintenance, and characterization (e.g., VE, HSG, GGT, and solid sampling)... TRU heterogeneous PCB debris is generated as a result of providing overall support to TRU waste operations retrieved waste containers and occurs in various storage areas throughout the AMWTP.

BN-536 may be generated within WMF-628 through 636 and WMF-676 as a result of removing PCB waste from a container (Sections 3.6.1 through 3.6.5). Empty containers are generated as a result of removing all contained waste but the waste may have been or was contaminated with PCBs, contained PCB waste or contained breached PCB items. The containers are from retrieval, repackaging and/or treatment operations and can occur within various AMWTP operations. (Sections 1.0 through 3.0 of this document).

BN-604 may be generated during handling of TSCA PCB contaminated waste or waste that contains PCB items within WMFs-628 through 636 (Sections 3.6.1 through 3.6.5) The waste includes, but not is limited to: PCB waste generated by various site wide AMWTP activities (excluding WMF-676) as a result of retrieval and general handling activities (e.g., waste

repackaged loose debris found in cargos or bins); loose PCB items and PCB suspected waste generated from breached or leaking containers (e.g., RF Organic setup waste); and spill clean-up and decontamination activities associated with RF and ARP PCB contaminated sludge (Sections 1.0 through 3.0 of this document). [5, 28, 33, 39] Containers of ARP PCB contaminated sludge have been known to weep liquids as a result of container deterioration during storage. Leaks/weeps from ARP containers are contained and decontaminated as necessary using rags, wipes and/or absorbent material. [80]

PCB decontamination involves a double-wash/-rinse and swipe sampling of the spill area. Non-hazardous Sunrise Exeter® and Simple Green® cleaning solutions are used for decontaminating PCB contaminated areas. An optional decontamination step may include the use of acetone or hexane. Following decontamination activities, a wipe saturated with hexane is used to swipe a 100 cm^2 area of the decontaminated area, and the swipe sample is analyzed for PCB content by the onsite laboratory to verify that PCB cleanup standards are met.

PCB decontamination involves pouring/applying Sunrise® cleaner/solvent to the area then use a scrubber (brush or pad) to scrub for about 1 min and then wiping up the liquid with a pad or towel. The area is then rinsed with Sunrise® cleaner/solvent by pouring/applying Sunrise® cleaner/solvent and letting it sit for 1 minute prior to wiping the spill area up with a pad or towel. A second wash is performed the same as the first wash. The second rinse uses either Sunrise® cleaner/solvent or Simple Green®. The product is poured/applied in the same manner as noted in the first rinse.

An optional decontamination solvent rinse using hexane or acetone may be required. When required, hexane or acetone is poured/applied to the spill area and then wiping up the liquid with a pad or towel.

Following decontamination, the spill area is sampled (e.g., 100 cm^2 area) and analyzed to determine a clean status. Swipe sampling of the PCB spill area includes the use of hexane. Hexane is placed on a swipe sample and a 100 cm^2 area is wiped down. The swipe sample is then sent to the on-site laboratory for PCB analysis. [33, 39, 135, 136, 159]

7.4.3 Areas or Building from which the Waste Was Generated

The waste is primarily generated within WMFs-610 through -636 and WMF-676 (for empty PCB contaminated containers only). [143]

7.4.3.1 Process Flow Diagrams

Process flow diagrams for AMWTP TRU heterogeneous PCB debris waste are developed based on generation activities and locations. Figure 16 provides the general process flow diagram that generates AMWTP heterogeneous PCB debris waste.

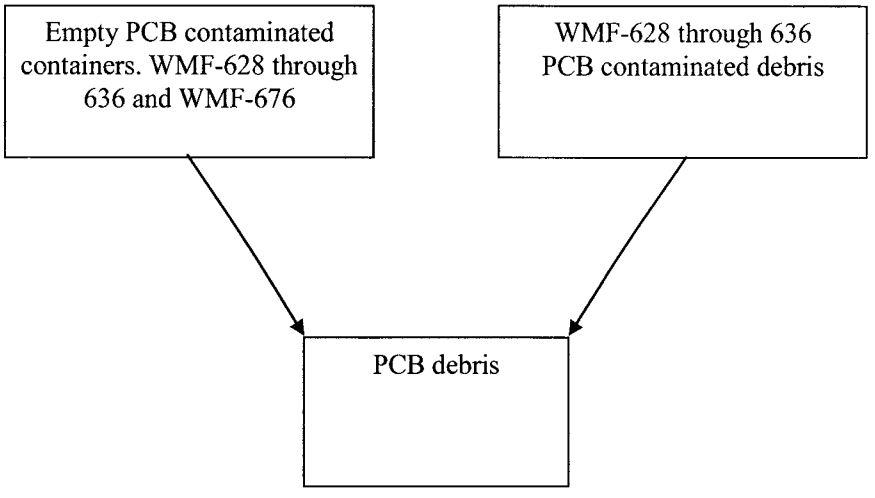

Figure 16. General PCB debris flow diagram for BN-536 and BN-604.

7.4.4 Material Inputs

TRU heterogeneous debris waste generated from off-site waste may contain any type of debris waste (e.g., PCB items (e.g., ballast/capacitors/transformers), paper and rags; gloves; wipes; personal protective equipment (PPE); plastic and rubber items; absorbent PIGs® (e.g., mats, blankets, socks etc), filters; metal debris). Waste containers may also contain <50% by volume homogeneous solids (e.g., sludges and absorbents) and soil. Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group and the TRU Program. [143]

7.4.5 Waste Volume

The estimated volumes of heterogeneous PCB debris waste are not known at this time.

Estimated volumes of heterogeneous PCB debris generated will be developed and incorporated into WIPP WSPFs and this document at the time of WIPP profiling.

Containers of each IDC identified in this waste group are documented in the AMWTP waste tracking system (WTS) when generated. See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

7.4.6 Waste Packaging

AMWTP heterogeneous PCB debris waste is packaged in accordance with INST-OI-24 [27]

7.4.7 Waste Characterization

The AMWTP general approach to characterization is described in Section 3.9.

The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU heterogeneous debris generated from off-site waste may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of ten drums will be randomly selected for HSG sampling from each waste stream lot in accordance with MP-TRUW-8.25.

7.4.7.1 Identification of EPA HWNs

The temporarily-assigned HWNs and constituents can be found in RPT-TRUW-12. RPT-TRUW-12 provides a list of potential chemical contaminants and HWNs related to debris waste generated from off-site waste characterization. Characterization information (i.e., HWNs and hazardous constituents) for debris waste generated from off-site waste characterization is maintained by the AMWTP Offsite Waste Program and AMWTP Waste Services. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling. [5, 65, 77]

AMWTP heterogeneous PCB debris waste has historically been managed as mixed waste. [5, 143]

7.4.7.1.1 Ignitability

AMWTP heterogeneous PCB debris wastes do not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of ignitability. The AMWTP heterogeneous PCB debris waste is not expected to be a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or treated by absorption prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The waste are not compressed gas and do not contain compressed gas. The AMWTP heterogeneous PCB debris waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The AMWTP heterogeneous PCB debris waste does not exhibit the characteristic of ignitability (D001). [5, 139, 140, 141, 142, 143]

7.4.7.1.2 Corrosivity

AMWTP heterogeneous PCB debris waste does not meet the 40 CFR 261.22 definition of corrosivity. AMWTP heterogeneous PCB debris waste is not liquid waste and is not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. AMWTP heterogeneous PCB debris waste does not exhibit the characteristic of corrosivity (D002). [5, 139, 140, 141, 142, 143]

7.4.7.1.3 Reactivity

AMWTP heterogeneous PCB debris waste does not meet the 40 CFR 261.23 definition of reactivity. AMWTP heterogeneous PCB debris waste is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. AMWTP heterogeneous PCB debris waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part, 173. Although some of the waste contains wastes are assigned F006, F007, and F009 listed HWNs and associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. AMWTP heterogeneous PCB debris waste does not exhibit the characteristic of reactivity (D003). [5, 139, 140, 141, 142, 143]

7.4.7.1.4 Toxicity Characteristic

RCRA toxicity characteristic organic constituents may vary over time. The final list of RCRA toxicity organic constituents and associated HWNs will be developed prior to WIPP profiling. [5, 143]

The AMWTP newly generated heterogeneous PCB contaminated debris may meet the definition of toxicity for metals and organics.

Currently the IDCs within this waste group include the HWNs: D004 through D011, D022, D027, D028, D029, D030, D032, D034, D037, and D043. [5, 143]

7.4.7.1.5 Listed Waste

RCRA listed waste constituents may vary over time. The final list of RCRA listed waste constituents and associated HWNs will be developed prior to WIPP profiling. [5, 143]

7.4.7.1.5.1 F-Listed HWNs

See RPT-TRUW-12. Currently some of the IDCs within this waste group include the listed HWNs: F001, F002, F004, F005, F006, F007 and F009. [5, 143]

7.4.7.1.5.2 P-, U- and K-Listed HWNs

AMWTP heterogeneous PCB debris waste is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P- or U- listed hazardous waste as identified in 40 CFR 261.33. In addition, the AMWTP heterogeneous PCB debris waste was not mixed with, or derived-from the treatment, storage, or disposal of P- or U-listed waste. As a result, P- and U-listed HWNs are not assigned to AMWTP heterogeneous PCB debris waste. [5, 143]

The AMWTP does not use commercial chemicals containing beryllium powder. The AMWTP heterogeneous PCB debris waste may be contaminated with trace quantities of beryllium (e.g., less than one percent of the waste by weight). Although AMWTP heterogeneous PCB debris waste may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to AMWTP heterogeneous PCB debris waste. [5, 143]

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated AMWTP heterogeneous PCB debris waste. AMWTP heterogeneous PCB debris waste does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to AMWTP heterogeneous PCB debris waste. [5, 143]

Potassium cyanide (P098) and Sodium cyanide (P106) are assigned to ARP waste shipments to WIPP. These HWNs do not apply to on-site management of ARP waste and secondary debris waste generated as a result of managing ARP waste by the AMWTP. [5, 143]

RPT-TRUW-12 provides a list of chemical constituents and generator assigned HWNs for AMWTP Heterogeneous PCB debris wastes. [5]

7.4.8 Radionuclide Content

Radionuclide content of AMWTP waste is described in Section 3.7. The radionuclides expected to be quantifiable or calculated by NDA technique in the TRU heterogeneous PCB debris waste are those identified in Tables 3.8, 3.9 and 3.10. TRU heterogeneous PCB debris waste is generated during management of waste from multiple generators. The radionuclides expected in waste from each generator are identified in Section 3.7 Tables 3.8, 3.9 and 3.10.

7.4.9 Prohibited Items

AMWTP heterogeneous PCB debris waste is not expected to contain WIPP prohibited items. AMWTP Waste Service's hazardous waste determinations, AMWTP packaging procedures, RTR and/or VE are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. [65, 77]

If found WIPP prohibited item associated with AMWTP heterogeneous PCB debris waste will undergo treatment prior shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents) to render the waste acceptable prior to shipment. [139, 140, 141, 142]

7.4.10 Identification of PCBs

AMWTP heterogeneous PCB debris wastes are known or suspected to be contaminated with PCBs in concentrations >50 ppm. [5, 143]

7.5 WMF-676 PCB Contaminated Debris Waste

The following WMF-676 PCB contaminated debris waste group is composed of PCB general/routine debris waste that is generated within WMF-676. The preliminary grouping is developed to establish a separate grouping for PCB contaminated debris that is generated within WMF-676.

7.5.1 Waste Description

WMF-676 PCB contaminated debris waste may contain small amounts of non-debris waste such as soil/dirt and/or homogeneous solids (including absorbed liquids). Non-hazardous solidification agents: Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents may also be added to the waste by AMWTP to absorb prohibited liquids in response to PI treatment and/or spill clean-up activities. Non-debris waste will be less than 50% by volume in the debris waste container. [139, 140, 141, 142]

Table 7-6 provides list of IDCs included in this waste group and dates of generation for WMF-676 PCB contaminated debris.

Table 7-6. WMF-676 PCB-contaminated debris waste IDCs, waste description, and generation dates.

IDC	Description	Generation Dates
BN-600	WMF-676 PCB Contaminated Debris	2005-ongoing

BN-600 WMF 676 PCB Contaminated Debris: is PCB contaminated heterogeneous debris waste generated in WMF-676 during management of PCB waste (e.g., removal, cleanout, or treatment of PCB waste/items from box lines). Waste also includes debris waste generated in WMF-676 during spill clean-up of PCB waste. (80)

The BN600 waste is PCB contaminated heterogeneous debris waste generated during the removal and/or treatment of PCB prohibited waste within WMF-676. The waste includes: PCB electrical equipment (e.g., capacitors, ballast, transformers), PIG® mats/blankets/pillows, size-reduced drum liners and empty containers, personal protective equipment (PPE), wipes, and S/C feedstock debris that is contaminated due to PCB spills (e.g., paper and rags; gloves; wipes; asbestos; PPE; plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete). (143)

Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludge).

7.5.2 Waste Generation

BN600 waste is generated within WMF-676 during removal and/or treatment of prohibited PCB waste (e.g., PCB items from S/C feed and PCB liquids within RF organic setups). The WIPP and the AMWTP supercompactor facilities prohibit various forms of PCB waste. Waste containers with any amount of PCB liquid is prohibited at the WIPP facility. The AMWTP supercompactor prohibits waste with PCB concentration equal to or greater than 50 ppm PCBs from being compacted. (143)

7.5.2.1 WMF-676 Prohibited PCB Liquid Treatment

Containers of RF organic setup wastes with prohibited PCB liquids are loaded into six drum overpacks for transport to the AMWTP WMF-676 south box line. Prior to treating the organic setups, the containers may be cut open, by the Brokk®. The waste in the bags is removed from the liners and placed in the south box line trough for treatment. The drum and liners are segregated from the waste and undergo size reduction. (145)

The removed organic setup waste is mixed with Micro-Cel® E absorbent using a remote manipulator (i.e., Brokk®) in the south box line trough to absorb the WIPP prohibited PCB liquid. New 55-gallon containers with new rigid liners are transferred into the WMF-676 south box line import/export glovebox area. The new liners are removed and transferred to (placed in) a waste transfer container. The lined transfer container (without the waste) is transported to the south box line trough and loaded with treated organic setup waste. The treated organic setup waste is visually examined as it is loaded into lined transfer containers. (145, 146)

The transfer container is moved to the south box line import/export glovebox area. The liner (with treated organic setup waste) is transferred to a new 55-gallon container in the glovebox. The new lined container is transferred out of the south box line import/export glovebox area. (145)

7.5.2.2 WMF-676 Prohibited PCB Item Removal

Authorized debris feedstock to the supercompactor is accepted into the north (and previously the south) box line. The waste is visual examined (VE) for WIPP and AMWTP supercompactor PIs within the box line troughs. The supercompactor feedstock is periodically identified as containing PCB items (e.g., PCB ballast, PCB capacitors). PCBs are prohibited within the AMWTP supercompactor.

WIPP and AMWTP supercompactor prohibited PCB items (e.g., containers with PCB liquids, PCB ballast/capacitors/transformers etc) are removed/segregated from the box lines debris waste and managed separately to prevent compaction and possible PCB contamination within the supercompactor. If PCB items are breached and/or leaking within the box line troughs, The PCB items and all waste materials generated from contact with PCB waste is removed from the box line trough and the trough area decontaminated. If required PCB items removed from box line operations may be transported to the WMF-676 DWPG or SCW for further treatment and repackaging. [41, 44, 65]

Prohibited PCB items found in supercompactor direct feed containers by means of RTR may be transported directly to WMF-676 DWPG or SCW for removal/segregation and/or treatment of PCBs waste. [41, 44, 65] PCBs liquids are prohibited at WIPP and PCBs greater than 50 ppm are prohibited from being processed in the AMWTP supercompactor. [41]

7.5.2.3 WMF-676 Criticality Clean-Out

Periodic criticality clean-out operations may be conducted within the WMF-676 south box line after performing PCB treatment to remediate PCB prohibited liquids. Various secondary debris waste items may be generated criticality clean-out operations within the WMF-676 south box line (e.g., PPE, rags, wipes). [147, 148]

7.5.2.4 WMF-676 Spill Clean-Up

Spill clean-up of PCB waste can occur within the: WMF-676 north or south box line areas, the DWPG and/or SCW as a result of removing/segregating and/or treating prohibited PCB waste. Upon discovery of a PCB spill, the spilled material, as well as any material that comes into contact with PCBs, are removed and containerized. The area is then decontaminated using an EPA approved/recommended decontamination activity. Various secondary debris waste items may be generated during spill clean-up activities within the WMF-676 (e.g., PCB electrical equipment (PCB ballast/capacitors/transformers), PPE, tools, rags, wipes, plastic, paper, wood, metal and glass. PIG® absorbent). [33, 39, 135, 136, 137, 138, 139, 140, 141, 142]

WMF-676 PCB decontamination involves a double-wash/-rinse and swipe sampling of the spill area. Non-hazardous Sunrise Exeter® and Simple Green® cleaning solutions are used for decontaminating PCB contaminated areas. An optional decontamination step may include the use of acetone or hexane. Following decontamination activities, a wipe saturated with hexane is used to swipe a 100 cm^2 area of the decontaminated area, and the swipe sample is analyzed for PCB content by the onsite laboratory to verify that PCB cleanup standards are met.

PCB decontamination involves pouring/applying Sunrise® cleaner/solvent to the area then use a scrubber (brush or pad) to scrub for about 1 min and then wiping up the liquid with a pad or towel. The area is then rinsed with Sunrise® cleaner/solvent by pouring/applying Sunrise® cleaner/solvent and letting it sit for 1 minute prior to wiping the spill area up with a pad or towel. A second wash is performed the same as the first wash. The second rinse uses either Sunrise® cleaner/solvent or Simple Green®. The product is poured/applied in the same manner as noted in the first rinse.

An optional decontamination solvent rinse using hexane or acetone may be required. When required, hexane or acetone is poured/applied to the spill area and then wiping up the liquid with a pad or towel.

Following decontamination, the spill area is sampled (e.g., 100 cm^2 area) and analyzed to determine a clean status. Swipe sampling of the PCB spill area includes the use of hexane. Hexane is placed on a swipe sample and a 100 cm^2 area is wiped down. The swipe sample is then sent to the on-site laboratory for PCB analysis. (33, 39, 135, 136, 159)

7.5.2.5 WMF-676 South Box Line Equipment Maintenance

The south box line equipment (e.g., Brokk® manipulator) used to cut open containers, size reduced, mix absorbents and load treated RF organic setup wastes into new containers is assumed to be PCB contaminated. Periodically personnel enter the south box line and perform maintenance as required on this equipment to ensure optimum operating functions (e.g., replacement of parts, oil changes, repair of the Brokk® etc.). Decontamination may also be conducted on the equipment during maintenance work. PCB contaminated debris is generated during maintenance and decontamination of equipment. (33, 143)

7.5.3 Areas or Building from which the Waste Was Generated

The waste is generated within WMF-676. (143)

7.5.4 Waste Diagram

Figure 17 provides the waste diagram for primary activities that generate WMF-676 PCB contaminated debris.

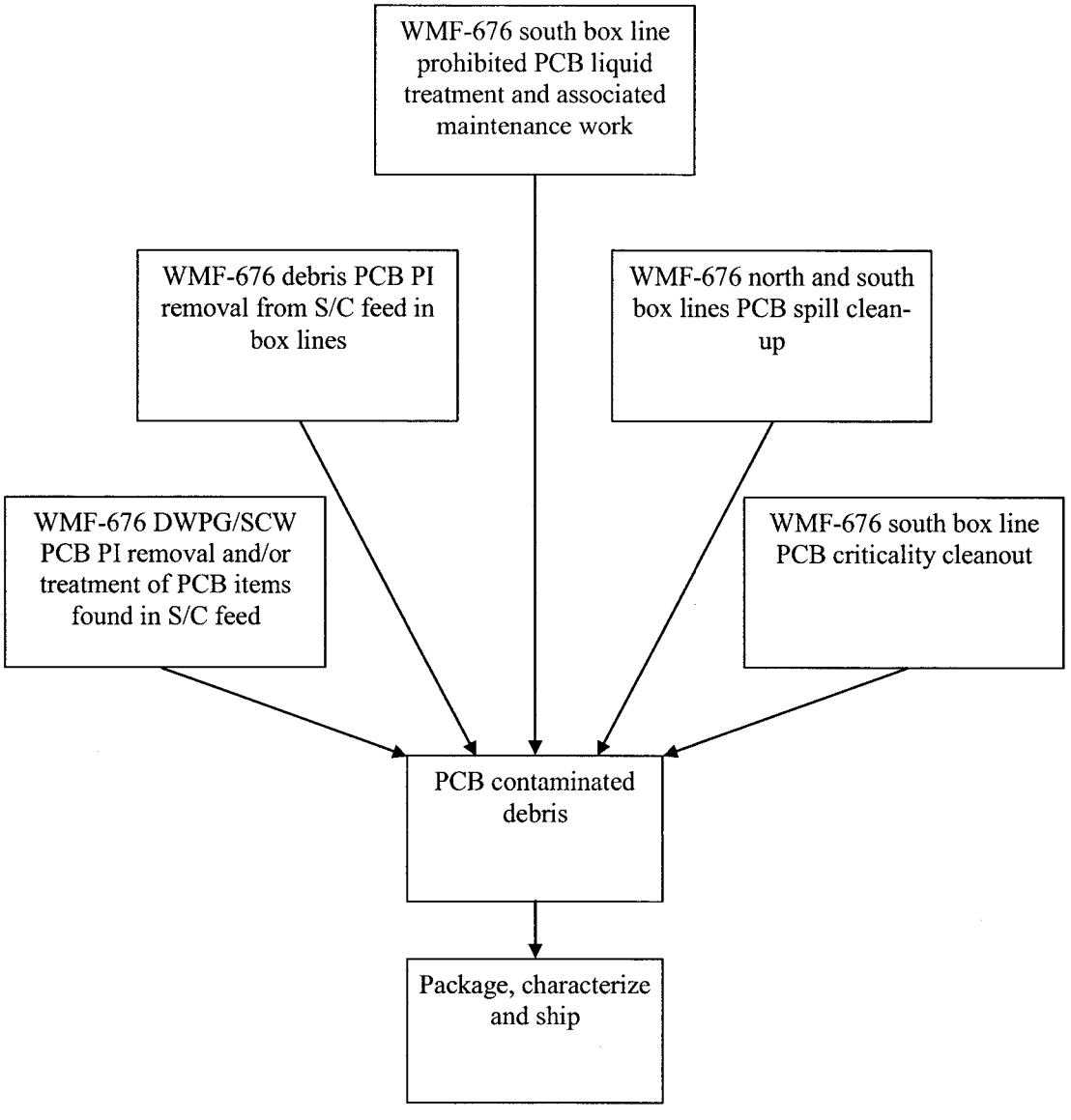

Figure 17. Waste diagram for BN600.

7.5.5 Material Inputs

Material inputs are identified through collaboration between the AMWTP waste generator, AMWTP Waste Services group and the TRU Program. The varieties and types of debris that may be generated during PCB PI removal and/or treatment include, but are not limited to those items identified in the WMF-676 PCB contaminated debris (IDC BN-600) waste description above. [143]

7.5.6 Waste Stream Volume

Estimated volumes of WMF-676 PCB contaminated debris generated from PI removal/treatment and from spill clean-up will be developed and incorporated into WIPP WSPFs and this document at the time of WIPP profiling. See AMWTP waste tracking system (WTS) for current up-to date volumes for each IDC within this waste group.

A projected waste stream estimates for BN-600 is 745 55-gallon drums (155 $m^{3)}$. The current volume is 45 drums and the average generation rate is estimated to be 100 55-gallon drums per year (20.8 m^3 per year) for the next seven years. [143, 149]

7.5.7 Waste Packaging

WMF-676 PCB contaminated debris is packaged in accordance with INST-OI-24. [27] Newly generated TRU wastes are placed in a filtered container. Absorbent may be added prior to placement of waste into the container. Waste will be bagged using a 6-mil (or thicker) bag or placed in an open head drum with a 6-mil (or thicker) polyethylene drum bag liner. A waste container may be bulk loaded (multiple bags in one container), loaded with a single bagged item, or loaded with multiple items in a single drum bag liner. [143]

7.5.8 Waste Characterization

The AMWTP general approach to characterization is described in Section 3.9

The waste is characterized based on process knowledge and the AK. AK characterization is augmented by VE, RTR and NDA. The TRU heterogeneous debris generated from off-site waste may be visually examined if repackaged or may be examined by RTR (including after repackaging). Each drum is assayed to confirm the waste is TRU. A minimum of ten drums will be randomly selected for HSG sampling from each waste stream lot in accordance with MP-TRUW-8.25. Final WIPP characterization of TRU WMF-676 PCB contaminated debris will be documented in WIPP WSPFs and RPT-TRUW-12 at the time of WIPP profiling. [5, 44, 65]

7.5.8.1 Identification of EPA HWNs

WMF-676 PCB contaminated debris waste has historically been managed as mixed waste. [143] The temporarily-assigned HWNs and constituents can be found in RPT-TRUW-12. RPT-TRUW-12 provides a list of potential chemical contaminants and HWNs related to debris waste generated from off-site waste characterization. TRU Programs AKEs in collaboration with Waste Services will determine the applicable WIPP HWNs and hazardous constituents at the time of profiling. [5, 65, 77]

7.5.8.1.1 Ignitability

WMF-676 PCB contaminated debris wastes do not meet the 40 Code of Federal Regulation (CFR) 261.21 definition of ignitability. The AMWTP heterogeneous PCB debris waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of

WIPP-WAC limits will be removed or treated by absorption prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. The waste are not compressed gas and do not contain compressed gas. The WMF-676 PCB contaminated debris waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The WMF-676 PCB contaminated debris waste does not exhibit the characteristic of ignitability (D001). [5, 139, 140, 141, 142, 143]

7.5.8.1.2 Corrosivity

WMF-676 PCB contaminated debris waste does not meet the 40 CFR 261.22 definition of corrosivity. WMF-676 PCB contaminated debris waste is not liquid waste and is not expected to contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to WIPP shipment/disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. WMF-676 PCB contaminated debris wastes does not exhibit the characteristic of corrosivity (D002). [5, 139, 140, 141, 142, 143]

7.5.8.1.3 Reactivity

WMF-676 PCB contaminated debris waste does not meet the 40 CFR 261.23 definition of reactivity. WMF-676 PCB contaminated debris waste is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset II-G®, or Micro-Cel® E absorbents to ensure that the waste is acceptable for disposal at WIPP. WMF-676 PCB contaminated debris waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The wastes do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR Part 173. Although some of the waste contains wastes are assigned F006, F007, and F009 listed HWNs and associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. WMF-676 PCB contaminated debris waste does not exhibit the characteristic of reactivity (D003). [5, 139, 140, 141, 142, 143]

7.5.8.1.4 Toxicity Characteristic

The WMF-676 PCB contaminated debris waste meets the definition of toxicity for metals and organics. [5, 143]

Currently the IDCs within this waste group include the HWNs: D004 through D011, D022, D027, D028, D029, D030, D032, D034, D037, and D043. [5, 143]

7.5.8.1.5 Listed Waste

RCRA listed waste constituents may vary over time. The final list of RCRA listed waste constituents and associated HWNs will be developed prior to WIPP profiling. [5, 143]

7.5.8.1.5.1 F- Listed HWNs

See RPT-TRUW-12. Currently some of the IDCs within this waste group include the listed HWNs: F001, F002, F004, F005, F006, F007, and F009. [5, 143]

7.5.8.1.5.2 P-, U- and K Listed HWNs

WMF-676 PCB contaminated debris waste is not discarded, unused, commercial chemical products, off-specification species, a manufacturing intermediate or contains spill residues thereof that would meet the listing of P or U- listed hazardous waste as identified in 40 CFR 261.33. In addition, the WMF-676 PCB contaminated debris waste was not mixed with, or derived-from the treatment, storage, or disposal of P or U-listed waste. As a result, P and U-listed HWNs are not assigned to WMF-676 PCB contaminated debris waste. [5, 143]

The AMWTP does not use commercial chemicals containing beryllium powder. The WMF-676 PCB contaminated debris waste may be contaminated with trace quantities of beryllium (e.g., less than one percent of the waste by weight). Although WMF-676 PCB contaminated debris waste may contain beryllium contamination, the beryllium contamination is only associated with spent forms of beryllium, it is not associated with commercial chemical product, an off-specification species, a manufacturing intermediate a container residue, or a spill residue thereof. Based on this information, the P015 HWN does not apply to WMF-676 PCB contaminated debris waste. [5, 143]

The AMWTP does not use hydrofluoric acid at the site. Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing at some of the generator sites, AK indicates that only spent forms of hydrofluoric acid would have contaminated WMF-676 PCB contaminated debris waste. WMF-676 PCB contaminated debris waste does not contain and was not derived from an unused commercial chemical product, an off specification species thereof, or a manufacturing intermediate that would be classified as a U134 HWN. Based on this information, the U134 HWN does not apply to WMF-676 PCB contaminated debris waste. [5, 143]

RPT-TRUW-12 provides a list of chemical constituents and generator assigned HWNs for WMF-676 PCB contaminated debris waste. [5]

7.5.9 Radionuclide Content

Radionuclide content of AMWTP waste is described in Section 3.7. The radionuclides expected to be quantifiable or calculated by NDA technique in the TRU heterogeneous PCB debris waste are those identified in Tables 3.8 and 3.9 for RF, MD and BC and RL identified in Table 3-11. TRU heterogeneous PCB debris waste is generated during management of waste from multiple generators. The radionuclides expected in waste from each generator are identified in Section 3.7 Tables 3.8, 3.9 and 3.11.

7.5.10 Prohibited Items

WMF-676 PCB contaminated debris wastes is not expected to contain WIPP prohibited items. AMWTP Waste Service's hazardous waste determinations, AMWTP packaging procedures, RTR and/or VE are used to support the absence of prohibited items for newly generated waste. Drums containing prohibited items will not be shipped to WIPP. [65, 77]

If found WIPP prohibited item associated with WMF-676 PCB contaminated debris wastes will be treated prior to shipment to WIPP or will be managed separately. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II®, Petroset II-G® or Micro-Cel® E absorbents) to render the waste acceptable prior to shipment. [139, 140, 141, 142]

7.5.11 Identification of PCBs

WMF-676 PCB contaminated debris wastes are known or suspected to be contaminated with PCBs in concentrations >50 ppm. [5, 143]

8.0 DEFINITIONS

Acceptable Knowledge (AK). Any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as data resulting from the analysis of waste, conducted prior to or separate from the waste certification process authorized by EPA's Certification Decision, to show compliance with Condition 3 of the certification decision (Appendix A of the part). (40 CFR 194.2 and 194.67, Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations).

Acceptable Knowledge Resolution (AKR) Checklist (Form-1070). The documented resolution of differences between AK documentation and characterization data. Typically, an AK Resolution addresses inconsistencies identified during confirmatory analysis and observations performed during the AMWTP characterization processes.

Alpha Low-Level Waste (ALLW). Waste containing TRU radionuclides with total activity from 10-100 nanocuries per gram (nCi/g) (greater than the lower limit of detection [LLD]) and may or may not contain characteristic and/or listed waste constituents.

Low-Level Waste. Waste contaminated with radionuclides with total activity under 100 nCi/g.

Mixed Low-Level Waste. Waste that contains LLW and characteristic and/or listed waste constituents.

Mixed Transuranic Waste. Waste contaminated with TRU radionuclides and characteristic and/or listed waste constituents.

Non-AMWTP generator. An INL waste generator, such as the Idaho Nuclear Technology and Engineering Center (INTEC) and MFC.

Offsite generator. A non-INL waste generator, such as MD, BC, RL, RF, etc.

Retrievably stored. Refers to waste that is retrieved from AMWTP TSA-RE berm area.

TRU radionuclides. Alpha-emitting radionuclides with an atomic number greater than 92 (i.e., the element uranium) with half lives greater than 20 years.

TRU waste. Waste contaminated with TRU radionuclides at an activity concentration greater than 100 nCi/g.

WIPP Waste Stream. Waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents.

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26. INST-EC&P-7.28.1, SMWTP TSA-RE Soil Sampling Procedure [P1093S]

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33. INST-OI-88, Spill/Leak Response and Cleanup [P1096S]
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152. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]

153. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]

154. CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4 2010 [P855A]

155. INST-FOI-22, Visual Examination of S3000 Waste in the Facility

156. Email correspondence between Daniel L. Benedict and AK: Timothy E. Venneman Re: Criticality controls/evals for S3114 treatment S Box line. [C1022A]

157. Criticality Safety Evaluation for AMWTF Box Lines.

158. Memo to File, Estimated Waste Stream Volumes and Waste Material Parameter Weights for 2011 Annual Transuranic Waste Inventory Report Update, ECT-001-11, April 4, 2011. [C1023A]

159. Correspondence from AMWTP Environmental, June 15, 2011. [C1024A]

APPENDIX A

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C027A	N/A	Internal correspondence to E. A. Dicarlo from J. A. Hayden. "Disposal of Organic Lab Waste (DHDECMP in Xylene) from the Plutonium Lab, Bldg. 559."	J. A. Hayden	4/18/1988
C1010A	N/A	Interview of Dave Preston, Coring & Solid Sampling SME Lead and Drum Treatment & Repackaging SME Lead, BBWI, by Carolyn Abbott, AK SME re: Clarification of waste container processing at AMWTP.	Carolyn Abbott, PhD	04/13/2011
C1011A	HWD 061410-01	Letter to File Re: HWD 061410-01 Supercompactor Squeezants (IDC BN-518 and BN-632) (HWD 061410-01)	Waste Services	02/17/2020
C1016A	WJE-001-11	Interoffice Memorandum, Estimated Number of Containers for the BN600 Polychlorinated Biphenyl Contaminated debris Waste Stream (WJE-001-11)	William J. Erhardt (AMWTP, AKE)	05/12/2011
C1018A	HWD 041811-03	HWD 041811-03, WMF-676 PCB Contaminated Debris (BN-600) (HWD 041811-03)	AMWTP Waste Services	06/06/2011
C1019A	RCM-001-2011	Memo to File, Waste Material Parameter (WMP) Weight per Unit Waste Calculations for the AMWTP WMF-676 PCB Contaminated Debris Waste Stream (RCM-001-2011)	Randall C. Morris	05/24/2011
C1022A	N/A	Email correspondence between Daniel L. Benedict and AK: Timothy E. Venneman Re: Criticality controls/evals for S3114 treatment S box line.	Daniel Benedict	06/01/2011
C1023A	ECT-001-11	Estimated Waste Stream Volumes and Waste Material Parameter Weights for 2011 Annual Transuranic Waste Inventory Report Update - ECT-001-11 (ECT-001-11)	Elizabeth C. Thiel	04/04/2020
C258A	N/A	Interview Record of J.B. Williamson, BCL, conducted by Kevin Peters and Scott Smith, WASTREN, Inc. "Historical Operations Conducted in JN-4." September 26, 2000.	Kevin Peters and Scott Smith, WASTREN, Inc.	9/26/2000
C259A	N/A	Interview Record of David Freas, BCL, conducted by Kevin Peters and Scott Smith, WASTREN, Inc. "Historical Operations in Building JN-4."	Kevin Peters and Scott Smith, WASTREN, Inc.	9/29/2000
C260A	N/A	Interview Record of William Pardue, BCL, conducted by Scott Smith, WASTREN, Inc. "Historical Operations in Building JN-4."	Scott Smith, WASTREN, Inc.	10/2/2000
C274A	N/A	Untitled letter defining TRU waste, from EPA office of Air and Radiation to DOE CBFO. From Frank Marcinowski, Director EPA Radiation Protection Division, to Ines Triay, Manager CBFO.	Frank Marcinowski	8/8/2003
C289A	N/A	Memorandum to file from Vivian Sendelweck, "Boxes of Rocky Flats Waste to be included in the Supercompacted Debris Waste (BN510), revised April 13, 2005.	Vivian Sendelweck	04/13/2005

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C290A	N/A	Memorandum to file, "Estimation of percentage of ferrous and non-ferrous metals and cellulosic, plastic, and rubber (CPR) waste materials in the supercompacted debris waste (BN510)"	Vivian Sendelweck	3/2/2005
C291A	CKA-019-06	Memorandum to file from Carolyn K. Abbott, "Development of Default Mass Fraction Values for Mound, Battelle, Bettis, and the AMWTP Wastes," , (CKA -019-06)	Carolyn K. Abbott	4/12/2006
C292A	MLJ-001-07	Memorandum to file, Estimation of Generation Rate and Quantity to be Included in the Supercompacted Debris Waste (BN510). (MLJ-001-07)	Micky L. Johnson	6/26/2007
C293A	N/A	Memorandum to file from Vivian Sendelweck, "Two IDCs (460 and 463) of Rocky Flats waste are not included in RFP AK baseline document"	Vivian Sendelweck	3/17/2005
C294A	N/A	Interview record of Eric D'Amico conducted by Kathy Zbryk, BNFL, Inc. on March 15, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988."	Kathy Zbryk, BNFL, Inc.	3/15/2009
C295A	N/A	Interview record of Pat Arnold conducted by Kathy Zbryk, BNFL, Inc. on March 17, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988."	Kathy Zbryk, BNFL, Inc.	3/17/2005
C296A	N/A	Interview record of Carl Trump conducted by Kathy Zbryk, BNFL, Inc. on March 18, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988," Clarification email dated April 13, 2005.	Kathy Zbryk, BNFL, Inc.	4/13/2005
C297A	N/A	Letter to Frank Marcinowski, Director, Radiation Protection, EPA, from R. Paul Detwiler, Acting Manager, DOE, CBFO, dated March 5, 2004. re: Disposition of supercompacted waste from the Idaho National Environmental and Engineering Laboratory's Advanced Mixed Waste Treatment Project (AMWTP).	R. Paul Detwiler, Acting Manager, DOE, CBFO	3/5/2004
C298A	N/A	Letter from Kerry Watson, Director, Office of Characterization and Transportation, Department of Energy, Carlsbad Field Office, to James Bearzi, New Mexico Environment Department, Hazardous Waste Bureau, dated March 30, 2005	Kerry Watson	3/30/2005
C299A	KJP/002/0399	Correspondence from Kevin J. Peters to Rajib Bhatt, "Assessment of TRU Waste Box Inventory," (KJP/002/0399)	Kevin J. Peters	3/16/1999

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C301A	N/A	Memorandum from Kerry W. Watson, Director, Office of Characterization and Transportation to distribution, entitled "Method for Reporting HSG in 100Gallon Drums Containing Supercompacted 55-Gallon Drums with Rigid Liners"	Kerry W. Watson	5/31/2005
C305A	N/A	Enclosure 3 with letter (C297A). Effect of Waste Porosity Modeling on AMW Performance Assessment.	Clifford W Hansen, Joshua S. Stein, and Bill Zelinski, Sandia National Laboratories, Carlsbad Programs	3/4/2004
C306A	N/A	Enclosure 6 with letter (C297A). Effect of Naturally Occurring Sulfate on the MgO Safety Factor in the Presence of Supercompacted Waste and Heterogeneous Waste Emplacement. Joseph F. Kanney, Anna C. Snider, T. William Thompson, and Laurence H. Brush, Sandia National Laboratories, Carlsbad Programs.	Joseph F. Kanney, Anna C. Snider, T. William Thompson, and Laurence H. Brush, Sandia National Laboratories, Carlsbad Programs	3/5/2004
C307A	N/A	Enclosure 4 with letter (C297A). Memorandum to Records, Effect of Increased Gas Viscosity on repository Pressures in the ANW Performance Assessment.	Joseph F. Kanney, William P. Zelinski, and Clifford W. Hansen. Sandia National Laboratories	3/3/2004
C308A	N/A	Enclosure 5 with letter (C297A). Memorandum to Records, Effect of TDOP stacking assumptions in analysis of supercompacted waste (Revision 1). Clifford W. Hansen and Anna Snider. Sandia National Laboratories.	Clifford W. Hansen and Anna Snider. Sandia National Laboratories	3/2/2004
C309A	N/A	Enclosure 2 with letter (C297A). Effect of Increased Iron Surface area from Supercompacted AMWTP Waste on Long-Term Repository Conditions as Modeled in Performance Assessment if the WIPP. Joshua S. Stein and William P. Zelinski, Sandia National Laboratories, Carlsbad Programs Group.	Joshua S. Stein and William P. Zelinski, Sandia National Laboratories, Carlsbad Programs Group	3/1/2004
C310A	N/A	Enclosure 1 with letter (C297A). Discussion of Material Properties for AMW Waste. Francis D. Hansen, Sandia National Laboratories, Carlsbad Programs Group.	Francis D. Hansen, Sandia National Laboratories, Carlsbad Programs Group	3/1/2004
C453A	TV-002-205	Memorandum to file from Tim Venneman "Estimated Percentage of Plutonium in Firebrick Debris Waste Stream BN161, November 30, 2005." (TV-002-205)	Tim Venneman	11/30/2005
C454A	N/A	Memorandum to file from Tim Venneman "Estimated Percentage of Ferrous and Non-Ferrous Metals and CPR in Firebrick Debris Waste Stream BN161, November 30, 2005"	Tim Venneman	11/30/2005
C455A	N/A	Letter from L. B. Sonnenberg, Miller Wilson Laboratory for Chemical Research to Neil Watson "Hydrogen Diffusivity Test of Eight Drill Filter Vents"	L. B. Sonnenberg	1/25/2003
C456A	N/A	Letter to Dr. Rod Arbon, "Hydrogen Diffusion Rates of NucFil-020/EG&G Drum Vent Filters Lots A through P"	Terry Wickland	8/9/2003
C459A	VSS-012-2005	Memorandum to file from Vivian Sendelweck "Estimated Percentage of Plutonium in Special Setups BN004 Waste Stream BN004." (VSS-012-2005)	Vivian Sendelweck	11/12/2005

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C499A	MLJ-004-08	Memo to File: Waste Stream Volumes and Waste Material Parameter Densities for Annual Transuranic Waste Inventory Report Update (MLJ-00408)	M. L. Johnson	10/22/2008
C503A	RCM-001-2006	Reason for observation of octamethylcyclotetrasiloxane as a TIC in BN510 drums; Randall C. Morris and Jessie Melton; 01/30/2006 (RCM-001-2006)	Randall C. Morris and Jessie Melton	1/30/2006
C504A	N/A	Look-Up Table Additions	Vincent J Medina	1/31/2006
C506A	SPC-017-2005	Interoffice Memorandum to AMWTP Site Project Managers, "Guidelines for AK Verification of Cs-137 and Sr-90 in RFETS Waste per AKR-05-208" (SPC -017-2005)	Steve Carpenter	3/1/2005
C507A	EPS-007-2006	Interoffice Memorandum, "AMWTP Containers with a WTS Pack Date of 1/1/50,". (EPS-007-2006)	Eric Schweinsberg	3/24/2006
C508A	WRT-MTS-96-3026	Letter from J W. Congdon, Westinghouse Savannah River Company to Dr. James Herzog, Lockheed Idaho Tech, Co. Physical Behavior of Pu-238 Oxide (U), WRT-MTS-96-3026, October 17, 1996. (WRT-MTS-96-3026)	J W. Congdon	10/17/1996
C515A	CKA-015-2005	Interoffice Memorandum from Carolyn Abbott (Acceptable Knowledge Expert), Waste Matrix code and Waste Parameter Guidance (CKA-015-2005)	Carolyn Abbott	9/30/2005
C521A	N/A	Email to Steve Carpenter and Carolyn K. Abbott regarding Nylon Slings; Vincent J. Medina; May 1, 2006	Vincent J. Medina	5/1/2006
C522A	GKT-001-06	Container Identification Changes as a Result of Sampling, Packaging, Overpacking, Repackaging, and Unknowns from Cell 5 of the Transuranic Storage Area-1 (GKT-001-06)	Gina Tedford	5/15/2006
C533A	TV-014-06	Memorandum to File: Acceptable Knowledge Document for Potentially Asbestos-Contaminated Low-Level Waste (TV-014-06)	Tim Venneman	10/17/2005
C534A	TV-001-07	Memorandum to File: Waste Material Parameter (WMP) Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste (TV-001-07)	T. Venneman	1/19/2007
C535A	MLJ-001-08	Memorandum from M L. Johnson to File, Estimated Number Of Drums For The Waste Isolation Pilot Plant Approved Direct Ship Waste Streams, MLJ-008-06, December 13, 2006 Revision to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-001-08, April 24, 2008 Revision Two to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-001-08, June 25, 2008 (MLJ-001-08)	M L. Johnson	6/25/2008
C540S		Letter from James P. Bearzi, NMED to Dr. Moody and Mr. Raaz "NMED Approval of the Advanced Mixed Waste Treatment Project Final Audit Report, Audit A-06-24," January 23, 2007	James P. Bearzi	1/23/2007

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C541S	CBFO:NTP:CF:GS:07-0679:UFC 5822.00	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Recertification of INL AMWTP Authority for Solids (S3000) and Debris (S5000) Waste – Audits A-06-09, A-06-24, and A-06-25," February 26, 2007 (CBFO:NTP:CF:GS:07-0679:UFC 5822.00)	David C. Moody	2/26/2007
C543S	CCN 07-30515, CKA-001-07	Memorandum to File: Estimate of compacted volume and number of product drums: Hanford debris waste and debris waste from Pits 11 and 12, and the volume of homogeneous solids waste retrieved from Pits 11 and 12. Carolyn K. Abbott, CCN 07-30515, CKA-001-07, August 13, 2007 (CCN 0730515, CKA-001-07)	Carolyn Abbott	8/13/2007
C544A	N/A	Letter to file re: Contaminated Soil from Retrieval, dated 12/21/04.	B. Warner and Kevin Leavitt	12/21/2004
C545S	N/A	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Expansion of Certification Authority to Include Manual Drum Coring System Operations" May 23, 2007	David C. Moody	5/23/2007
C546S	CCN 07-30516, TV-001-07	Memorandum to file (CCN 07-30516): Advanced Mixed Waste Treatment Project Acceptable Knowledge Accuracy Assessment August 1, 2006 through June 30, 2007- TV-001-07, Tim Venneman, August 14, 2007 (CCN 0730516, TV-001-07)	Tim Venneman	8/14/2007
C547S	JHK-002-07, CCN 07-30519	Memorandum to Eric Schweinsberg, Co-Located Core Sample Control Charts, JHK-002-07, CCN 07-30519, August 16, 2007 AMWTP correspondence.	Jason Kettel	8/16/2007
C548S	JHK-002-07, CCN 07-30519	Memorandum to Eric Schweinsberg, Co-Located Core Sample Control Charts, JHK-002-07, CCN 07-30519, August 16, 2007 AMWTP Correspondence	Jason Kettel	8/16/2007
C551A	N/A	Estimated Percent of Plutonium in Rocky Flats, AMWTP, and Mound wastes.	Martin Clapham	7/5/2008
C559S	N/A	Correspondence to Mark Matthews, Chairman, Transuranic Waste Steering Committee, Carlsbad Area Office, re: Designation of TRU Waste as Defense or Non-Defense.	Raymond E. Lang, Senior Program Manager Support, Technology Development, and Waste Operations Division.	10/11/1994
C560S	JHK-005-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-005-07, November 1, 2007 AMWTP correspondence. (JHK-005-07)	Jason Kettel	11/1/2007
C561S	JHK-006-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample F-Test Results , JHK-006-07, November 1, 2007 AMWTP correspondence. (JHK-006-07)	Jason Kettel	11/1/2007
C562S	JHK-007-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-007-07, December 12, 2007 AMWTP correspondence. (JHK-007-07)	Jason Kettel	12/12/2007
C563S	JHK-008-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample F-Test Results (JHK-008-07)	Jason Kettel	12/12/2007

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C564S	JHK-002-08	randum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-002-08, September 2, 2008 AMWTP correspondence. (JHK-002-08)	Jason Kettel	9/2/2008
C565S	JHK-001-08	Memorandum to Eric Schweinsberg , Co-Located Core Sample F-Test Results (JHK-001-08)	Jason Kettel	9/2/2008
C566S	JHK-003-08	Memorandum to Eric Schweinsberg, Acceptable Knowledge Accuracy Report for 7/1/07 to 6/30/08 (JHK-003-08)	Jason Kettel	9/4/2008
C567S	CBFO:NTP:NC:GS:08-0883:UFC 5822.00	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Expansion of AMWTP Recertification to include Container-in-Container Sampling Method – Audit A-08-09," Letter No. CBFO:NTP:NC:GS:08-0883:UFC 5822.00, September 24, 2008 (CBFO:NTP:NC:GS:08-0883:UFC 5822.00)	David C. Moody	9/24/2008
C568S	N/A	E-mail to Steve Carpenter (AMWTP AK TRU Programs): AMWTP Macro Rejects – PFNW	James B. Zovi (AMWTP Offsite LLW/MLLW Disposition Project)	10/2/2008
C592S	CBFO:NTP:KWW:JGW:04-1983:UFC:5822	Memorandum to Elizabeth Sellers, Amendment of Authority Granted to INEEL AMWTP for Characterization and Certification of Contact Handled Homogenous Solids Transuranic Waste (CBFO:NTP:KWW:JGW:041983:UFC:5822)	R. Paul Detwiler	9/17/2004
C593S	CBFO:QA:MPN:LC060280:UFC:2300	Memorandum to Guy Girard, QA and NDA Audit A-06-10 of the INL AMWTP Recertification Audit (CBFO:QA:MPN:LC06-0280:UFC:2300)	Martin P. Navarrete	4/12/2006
C594S	CBFO:QA:MPN:LC:061185:UFC:2300	Letter to Mr. Zappe, Transmittal of the Certification Audit Report for the AMWTP Audit A-06-24 (CBFO:QA:MPN:LC:06-1185:UFC:2300)	David C. Moody	10/12/2006
C595S	CBFO:QA:MPN:LC:061158:UFC:2300	Memorandum to Guy Girard, Audit Report for TRU Waste Characterization and Certification of the AMWTP at the INL (CBFO:QA:MPN:LC:061158:UFC:2300)	Martin P. Navarrete	9/14/2006
C596S	CBFO:QA:MPN:LC:070284:UFC:2300	Memorandum to Bill Lattin, CBFO Surveillance Report S-07-21 of the AMWTP Manual Drum Coring Operations (CBFO:QA:MPN:LC:070284:UFC:2300)	Martin P. Navarrete	4/12/2007
C597S	CBFO:QA:DSM:LC:071627:UFC:2300	Memorandum to Bill Lattin, Audit Report A-07-15, TRU Waste Characterization and Certification of the AMWTP (CBFO:QA:DSM:LC:071627:UFC:2300)	Martin P. Navarrete	9/10/2007
C598S	CBFO:QA:MPN:LC:071647:UFC:2300	Letter to Mr. Zappe, Transmittal of the Certification Audit Report A-07-14 of the AMWTP (CBFO:QA:MPN:LC:07-1647:UFC:2300)	David C. Moody	9/27/2007
C600S	CBFO:NTP:NC:GS:08-0611:UFC 2300.33	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Recertification of INL AMWTP Audits A-07-14 and A-07-15," CBFO:NTP:NC:GS:08-0611:UFC 2300.33, February 20, 2008 (CBFO:NTP:NC:GS:08-0611:UFC 2300.33)	David C. Moody	2/20/2008

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C606S	CBFO:QA:MPN:KBS:08-0376:UFC 2300.00	Memorandum to file, Letter from David C. Moody, CBFO to Mr. Steve Zappe, NMED, Transmittal of the Carlsbad Field Office Final Audit Report A-08-09 of the Advanced Mixed Waste Treatment Project, July 10, 2008. (CBFO:QA:MPN:KBS:08-0376:UFC 2300.00)	David C. Moody, CBFO	7/10/2008
C608S	CBFO:NTP:NC:GS:08-0883:UFC:5822.00	Memorandum to Elizabeth Sellers, Expansion of AMWTP Recertification to include Container–in-Container Sampling Method – Audit A-08-09 (CBFO:NTP:NC:GS:08-0883:UFC:5822.00)	David C. Moody	9/24/2008
C609S	CBFO:QA:MPN:KBS:08-1390:UFC:2300.00	Memorandum to Bill Lattin, Interim Audit Report for Recertification Audit A-08 -19, Advanced Mixed Waste Treatment Program (CBFO:QA:MPN:KBS:08-1390:UFC:2300.00)	Martin P. Navarrete	10/10/2008
C610S	CBFO:QA:MPN:KBS:08-1535:UFC:2300.00	Letter to Mr. Zappe, Transmittal of the Certification Audit Report for the Advanced Mixed Waste Treatment Program, Audit A-08-19 (CBFO:QA:MPN:KBS:08-1535:UFC:2300.00)	David C. Moody	11/25/2008
C618A	CKA-001-09	Memorandum to File: Summary of Retrieval Acceptable Knowledge (AK) for Pad R, Cell 1 Waste. (CKA-001-09)	Carolyn K. Abbott	5/21/2009
C620A	MLJ-001-09	Memo to Gina K. Tedford: Waste Stream Volumes and Waste Material Parameter Densities for Annual Transuranic Waste Inventory Report Update (MLJ-001-09)	M. L. Johnson	8/13/2009
C629A	N/A	New IDCs for Squeezants	Neil Brill and Darren Aitken	3/19/2009
C630S	JHK-005-08	Memorandum to Eric Schweinsberg, Co-located Core Sample Control Charts (JHK-005-08)	Jason Kettel	12/15/2008
C631S	JHK-006-08	Memorandum to Eric Schweinsberg: Co-Located Solid Sampling F-Test Results (JHK-006-08)	Jason Kettel	12/15/2008
C788S	CBFO:NTP:NC:GS:09-0835:UFC 2300.00	Memorandum to Richard Provencher, DOE-ID Assistant Manager, Recertification of INL AMWTP Audit A-08-19 (CBFO:NTP:NC:GS:090835:UFC 2300.00)	David C. Moody, CBFO	3/25/2009
C789S	C-2009-0101	Remote Handled Drum Evaluation--JHP-002-09 (C-2009-0101)	James H. Pletscher	3/5/2009
C790S	C-2009-0081	Remote Handled Drum Evaluation-JHP-001-09 (C-2009-0081)	James H. Pletscher	2/18/2009
C817A	N/A	Correspondence from Kevin Leavitt to AK personnel. HWN assignment BN633	Kevin Leavitt, AMWTP Waste Services	4/6/2009
C821A	N/A	IDCs	Kevin Leavitt and Darren Aitken, AMWTP Waste Services	4/16/2009
C834A	N/A	E-mail to Micky Johnson: Pre filter split	Dave Preston	6/3/2009
C840S	JHK-001-09	Acceptable Knowledge Accuracy Assessment for July 1, 2008 to June 30, 2009 (JHK-001-09)	Jason Kettel	7/29/2009
C841S	JHK-004-08	Revised AK Accuracy Assessment for 7/1/07 to 6/30/08 (JHK-004-08)	Jason Kettel	11/3/2008
C850A	MLJ-004-10	Memo to File, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream (MLJ-004-10)	M. L. Johnson	09/01/2010

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C851A	MLJ-002-2010	Memo to File, Waste Material Parameter per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream (MLJ-002-2010)	M. L. Johnson	3/10/2010
C853S	CBFO:NTP:NC:GS:10-0748:UFC 2300.00	Memorandum to Richard Provencher, DOE-ID Assistant Manager, Recertification of INL AMWTP Audit A-09-19 (CBFO:NTP:NC:GS:100748:UFC 2300.00)	David C. Moody, CBFO	02/28/2010
C856A	MLJ-003-10	Memorandum to Gina Tedford, Waste Stream Volumes and Waste Material Parameter Densities for 2010 Annual Transuranic Waste Inventory Report Update (MLJ-003-10)	M. L. Johnson	3/31/2010
C866S	N/A	Correspondence to Dr. Moody concerning results of EPA's baseline inspection of TRU waste characterization program implemented by AMWTP	Juan Reyes, EPA Director Radiation Protection Division, Washinton D.C.	10/3/2006
C869S	N/A	Correspondence from the EPA to Donald C. Cadbury, Manager, National TRU Program CBFO.	Tom Peake, Director Center for Waste Management and Regulations	06/10/2010
C870S	CBFO:NTP:DCG:MAG:100883:UFC 5900.00	Correspondence from David C. Moody to James R. Cooper, Acting Deputy Manager, Idaho Cleanup Project and includes Attachments 1-4. (CBFO:NTP:DCG:MAG:10-0883:UFC 5900.00)	David C. Moody	6/11/2010
C941A	JHK-001-10	Memorandum to Eric Schweinsberg and Tom Fallon, Co-located Core Sample Control Charts (JHK-001-10)	Jason Kettel	7/6/2010
C942A	JHK-002-10	Memorandum to Eric Schweinsberg: Co-Located Solid Sampling F-Test Results (JHK-002-10)	Jason Kettel	7/6/2010
C945A	SMS-018-2004	Determination of Beryllium Content of RFETS TRU Waste (SMS-018-2004)	Scott M. Smith	12/01/2004
C949A	CBFO:ORC:CAZ:KJB 01-0793 UFC 5486	Legacy Solidified TRU/PCB Waste (CBFO:ORC:CAZ:KJB 01-0793 UFC 5486)	Cynthia Zvonar, Assistant Manager, office of Regulatory Compliance	06/21/2001
C950A	N/A	Letter from John H. Smith, Chemist, to Ms. Lynne Smith, WIPP Office Director. Response to the email message of August 16, 2001 from Ms. Cynthia Zvonar of the Carlsbad Field Office which describes certain DOE TRU wastes which contain non-liquid PCBs.	John H. Smith, Ph-D, Chemist, EPA	02/28/2002
C951S	N/A	C. Maupin's notebook page outlining AMWTP communications with EPA Region X on use and approval of Micro Cell-E absorbent for PCB waste.	Christian Maupin, AMWTP subcontractor for RCRA permitting	01/04/2010
C953A	HWN 061604-01	Letter to File RE: Absorbed Supercompactor Squeezants (IDCs BN-507 and BN-514) (HWN 061604-01)	Waste Services	01/31/2011
C954S	CBFO:NTP:NC:GS:11-0167:UFC 2300.00	Memorandum to Mark Searle, Acting Deputy Manager Idaho Cleanup Project, Recertification INL AMWTP Audit A-10-24 (CBFO:NTP:NC:GS:110167:UFC 2300.00)	Edward Ziemianski, Acting Manger, CFO	03/03/2011
D070A	N/A	Advanced Mixed Waste Treatment Project (AMWTP) TRU and AMWTP mixed low-level waste (MLLW) program's hazardous waste determinations (HWDs)	Tim Venneman	6/11/2009
D077A	N/A	Discrepancy in assignment of HWNs D036/F004 to RF waste	Carolyn Abbott	07/14/2010

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
D089A	n/a	Discrepancy Resolution. Incorrect EPA Hazardous Waste Number. (n/a)	Scott Smith	03/11/2008
P015A	EGG-WM-6503	TRU Waste Sampling Program: Volume I - Waste Characterization (EGGWM-6503)	Clements, Thomas L. Jr., and Donald E Kudera	09/00/1985
P016A	INEL-95/0281	Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste (INEL-95/0281)	Wastren, Inc.	07/00/1995
P021A	PSD86-061	EG&G Drum Sampling Program Results FY 1986 (PSD86-061)	P. M. Arnold	10/00/1986
P024A	WM-F1-82-021	Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes (WM-F1-82-021)	T. L. Clements, Jr.	10/00/1982
P028A	WIPP-DOE-144	TRU Waste Certification Compliance Requirements for Acceptance of Newly Generated Contact-Handled Wastes to be Shipped to the Waste Isolation Pilot Plant. (WIPP-DOE-144)	Published by Westinghouse Electric Corporation	1/1/1989
P1030A	N/A	BN510.1 Supercompacted Debris Waste Stream Profile Package, Sept. 10, 2010	AMWTP, CBFO	09/10/2010
P1031A	RPT-TRUW-86	Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (RPT-TRUW-86)	AMWTP	CURR DATE
P1092S	INST-OI-11	Waste Container Handling (INST-OI-11)	AMWTP	Cur Date
P1093S	INST-EC&P-7.28.1	AMWTP TSA-RE Soil Sampling Procedure (INST-EC&P-7.28.1)	AMWTP	Cur Date
P1094S	INST-OI-09	Retrieval Enclosure Waste Container Extraction (INST-OI-09)	AMWTP	Cure Date
P1095S	INST-OI-84	Waste Container Repair and Overpack (INST-OI-84)	AMWTP	Cur Date
P1096S	INST-OI-88	Spill / Leak Response and Cleanup (INST-OI-88)	AMWTP	Cur Date
P1097S	INST-OI-93	Inverting Boxes (INST-OI-93)	AMWTP	Cur Date
P1099S	INST-FOI-32	Size Reduction of Large Items (INST-FOI-32)	AMWTP	Current
P1101A	RPT-TRUW-78	AMWTP Challenging Waste Forms and Disposition (RPT-TRUW-78)	AMWTP	11/28/2008
P1103S	INST-OI-43	HGAS Sampling and Analysis Operations (INST-OI-43)	AMWTP	Current
P1104S	INST-OI-45	Drum Filter Installation (INST-OI-45)	AMWTP	Current
P1105S	INST-OI-50	WMF-615 Filter Insertion Operations (INST-OI-50)	AMWTP	Current
P1106S	INST-OI-92	Drum Filter Removal and Replacement Operations (INST-OI-92)	AMWTP	Current
P1107S	INST-FOI-34	Shredder Pre-Filter Replacement (AFU-750-200 or AFU-750-201 ONLY) (INST-FOI-34)	AMWTP	Current
P1108A	RPT-TRUW-74	Decanted Liquid Chemical Compatibility and Hazard Evaluation (RPT-TRUW74)	AMWTP	08/28/2007
P1109A	DOE/TRU-10-3425	Annual Transuranic Waste Inventory Report - 2010 (Data Cutoff Date 12/31/2009) (DOE/TRU-10-3425)	U. S. Department of Energy, Carlsbad Field Office Prepared by the Los Alamos National Laboratory – Carlsbad Operations (LANL-CO) TRU Waste Inventory Team	11/00/2010
P1112A	FAC-SD-23	Special Case Waste (FAC-SD-23)	AMWTP	03/15/2007
P1116S	INST-OI-80	Unpacking Overpack Containers (INST-OI-80)	AMWTP	Cur date
P1118A	MP-TRUW-8.2	Quality Assurance Project Plan (MP-TRUW-8.2)	AMWTP (owner: T.G. Fallon)	Current

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P1120S	INST-MI-1070	System 234 Pre-Filter Replacement (INST-MI-1070)	AMWTP Maintenance	12/22/2009
P1121A	INST-MI-1051	HVAC Pre-Filter Replacement (INST-MI-1051)	AMWTP	01/19/2008
P1122A	INST-MI-1001	Ventilation HEPA Filter Replacement (INST-MI-1001)	AMWTP	02/13/2007
P1123A	INST-MI-1082	System 235 Air Filter Replacement (INST-MI-1082)	AMWTP Maintenance	10/08/2010
P1124S	INST-OI-81	Real-Time Radiography Operations (for WIPP Certification of Boxes) (INSTOI-81)	AMWTP	12/29/2010
P1126A	INST-OI-73	Manual Drum Coring Operations (INST-OI-73)	AMWTP	Current
P1127A	INST-OI-75	Container-In-Container Sampling (INST-OI-75)	AMWTP	Current
P1128S	INST-MS-0111	Supercompactor Hydraulic Oil Change (INST-MS-0111)	AMWTP	05/21/2008
P1129S	INST-MS-0097	Removal of Maintenance Debris from the Supercompactor Glovebox Suite (INST-MS-0097)	AMWTP Maintenance	09/22/2009
P1130S	N/A	Quintolubric 702-46, Quaker Chemical Corporation	Quaker Chemical Corporation	05/23/2002
P1133S	6105 TSCA C-I-2 OS-ETSD-IO-005	Notification About a Change in the Type of Absorbent Used Under the Advanced Mixed Waste Treatment Project Risk-Based Disposal Approval (OS-ETSD-IO-005.) (05 TSCA C-I-2 OS-ETSD-IO-005)	David L. Wessman, DOE TSCA Compliance Manager	01/07/2010
P1134S	SR-W026-221F-HOM	AMWTP Form-1900, DOE CH-TRU Waste Profile for Savannah River Site, Building 221F, Absorbed Waste (SR-W026-221F-HOM)	Mark Doherty, AKE	09/05/2010
P1135A	CCP-AK-SRS-3	Central Characterization Project Acceptable Knowledge Summary Report for Savannah River Site Waste Streams: SR-W026-221F-HET, SR-W026-221FHOM, SR-W026-221F-HEPA, SR-W026-221F-HET-A (CCP-AK-SRS-3)	Larry Porter	04/26/2010
P1136A	N/A	Approval of the Toxic Substance Control Act (TSCA) Risk-based Disposal Approval (RBDA) Application for management of transurancic Polychlorinated biphenyl (PCB) Remediation Waste at the Advanced mixed Waste Treatment Project (AMWTP) Facility		06/12/2007
P1139S	MP-RS&C-6.17	Use of Vacuum Cleaners and Portable Air Handling Equipment in Radiological Areas (MP-RS&C-6.17)	Radiological Control	Current
P1141S	CCP-CM-013	CCP Transportation HSG Only - Flammable Gas Analysis (FGA) (CCP-CM013)	Mark Pearcy, CCP	05/25/2007
P1142S	CCP-TP-082	CCP Waste Container Filter Vent Operations (CCP-TP-082)	Larry Porter, CCP	02/22/2011
P1223A	CCP-TP-083	CCP Gas Generation Testing (CCP-TP-083)	D. K. Ploetz	03/27/2009
P1291S	MSDS-016	MSDS Allstar Crystal Glass Cleaner (U14825) (MSDS-016)	Unisource Worldwide, Inc.	01/17/2002
P1292S	MSDS-157	MSDS Orange Glo - Multi Purpose Cleaner (MSDS-157)	MF Distributions, Inc.	07/30/2004
P1293S	MSDS-020	MSDS: WD-40 Aerosol (MSDS-020)	WD-40 Company	08/05/2009
P1294S	MSDS-432	MSDS Acetone (MSDS-432)	Science Lab.com, Inc.	11/06/2008
P1295S	MSDS-228	MSDS: ReACT General Decontamination Agent: Low Foam Formula Low Foam Formula Concentrate (MSDS-228)	Uni-Chem Chemicals, Inc.	
P1296S	MSDS-209	MSDS 3M Hi-Strength Spray Adhesive 90 (aerosol) (MSDS-209)	3M Company	04/07/2009
P1297S	MSDS-023	MSDS: Alconox (MSDS-023)	Alconox, Inc.	04/20/2009

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P1298S	MSDS-004	MSDS Simple Green All-Purpose Clean and Simple Green Scrubbing Pad (MSDS-004)	Sunshine Makers, Inc.	05/01/2009
P1299S	MSDS-988	MSDS: "Soil Sement" (MSDS-988)	Midwest Industrial Supply	06/30/2006
P1300S	MSDS-971	MSDS: DECON Gel 1101 (MSDS-971)	Cellular Bioengineering, Ind.	04/09/2007
P1301S	MSDS-281	MSDS: Stripcoat TLCL Free (MSDS-281)	Sanchem, Inc.	10/01/2003
P1302S	MSDS-779	MSDS: Clorox Disinfecting Wipes (MSDS-779)	The Clorox Company	09/01/1999
P1303S	MSDS-730	MSDS: Orange Hand Cleaner Pumice Lotion (MSDS-730)	Henkel Loctite Corporation	01/07/2003
P1304S	N/A	MSDS: ABC Asbestos Binding Compound	Fiberlock Technologies, Inc.	03/10/2009
P1305S	N/A	MSDS: Faultless Professional Spray Starch	Faultless Starch / Bon Ami Co.	02/15/2007
P1306S	N/A	MSDS: Faultless White Boxed Starch	Faultless Starch / Bon Ami Co.	10/19/2004
P1307S	N/A	MSDS: Magic Spray Starch	Faultless Starch / Bon Ami Co.	02/15/2007
P1308S	N/A	MSDS: Faultless Industrial Laundry Starch	Faultless Starch / Bon Ami Co.	10/13/2004
P1309S	MSDS-464	MSDS - Hexane (MSDS-464)	Fisher Scientific	10/26/2009
P1310S	MSDS-861	MSDS - Exeter (MSDS-861)	Sunrise Environmental Scientific	03/15/2001
P1316S	MSDS-067	MSDS: Quaker Chemical Quintolubric 822-300 (MSDS-067)	Quaker Chemical Corp.	N/A
P141A	RWMC-EDF-805; INEL-95/029	Matrix Parameter Category Groups (MPCG). RWMC-EDF-805; INEL-95/029. LMITCO. Rev. 0, December 13, 1995. Rev. 1, October 27, 1997. Rev. 2, April 12, 2001. Rev. 3, July 9, 2002. Rev. 4, September 13, 2002 (RWMCEDF-805; INEL-95/029)	BBWI Document Control	9/13/2002
P330A	Microfiche 83-01-0029	Battelle-Columbus 40 Years of Energy Research for the U.S. Government (Microfiche 83-01-0029)	Battelle Memorial Institute.	1985
P358A	EDF-3395	Summary RTR Data Collected During 3,100 m3 Project (EDF-3395)		2/3/2003
P364A	INEL-95/194 (RWMC EDF# 837)	Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC) (INEL-95/194 (RWMC EDF# 837))	J. R. Wixson	8/24/1995
P365A	INEL-95/0412	Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory (includes Appendices A and B documents and a letter from John H. Kolts, DOE-ID to Frank Yaklich, BNFL Inc). (INEL-95/0412)	B. D. Raivo, G. K. Becker, T. H. Smith, and G. L. Anderson	12/1/1995
P374A	n/a	RWMC/AMWTP site map (n/a)	AMWTP	
P380A	N/A	Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management.	Department of Energy, Albuquerque Office	2/1/1993
P386A	RPT-PMP-01	Project Management Plan, AMWTP (RPT-PMP-01)	AMWTP	11/01/2009
P387A	INST-OI-34	Non-Facility Visual Examination Operations (INST-OI-34)	AMWTP	Cur date
P388A	INST-OI-24	Waste Packaging (INST-OI-24)	AMWTP	Cur Date
P389A	INST-OI-23	Soil Removal Operations (INST-OI-23)	AMWTP	Cur Date
P390A	MP-WM&M-13.2	Satellite Accumulation Areas, Rev. 5, BNFL Inc., MP-WM&M-13.2, 03/31/03. Rev. 6, 02/18/04. Rev. 7, 03/25/04 (MP-WM&M-13.2)	BNFL	3/25/2004

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P391A	MP-WM&M-13.3	90-Day Temporary Accumulation Areas, Rev. 5, BNFL Inc., MP-WM&M-13.3 (MP-WM&M-13.3)	AMWTP	Current
P392A	MP-WM&M-13.9	Waste Characterization and Waste Services Management (MP-WM&M-13.9)	AMWTP	Current
P393A	RPT-TRUW-12	Advanced Mixed Waste Treatment Project Waste Stream Designations (RPTTRUW-12)	AMWTP	CUR DATE
P394A	BNFL-5232-EDF-166	Container Flowsheet (BNFL-5232-EDF-166)	B. Holmes	11/14/2000
P395A	BNFL-5232-1-05-55-001	Process Flow Sheet (Volume Balance (BNFL-5232-1-05-55-001)	A. Hall	8/16/2000
P396A	MP-TRUW-8.1	Certification Plan for INEEL Contact-Handled Transuranic Waste (MP-TRUW -8.1)	AMWTP	12/2/2004
P398A	RPT-TRUW-07	Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge (RPT-TRUW-07)	AMWTP	Cur date
P399A	RPT-TRUW-05	AMWTP Waste Matrix Code Reference Manual (RPT-TRUW-05)	Generated for the AMWTP Project.	CUR DATE
P400A	RPT-TRUW-06	AMWTP Baseline AK for Newly Generated Waste (RPT-TRUW-06)	AMWTP	CUR DATE
P403A	INST-FOI-23	Special Case Waste Glovebox Operations (INST-FOI-23)	AMWTP	Current
P404A	MP-EC&P-7.10	Spill Response Procedure (MP-EC&P-7.10)	AMWTP	Current
P405A	INST-FOI-21	Drummed Waste Handling Operations (INST-FOI-21)	AMWTP	Current
P409A	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis. (MP-TRUW-8.25)	AMWTP	3/12/2008
P410A	BNFL-5232-MP-WM&M-13.10	General Sampling, Rev. 4, BNFL-5232-MP-WM&M-13.10, 09/13/04 (BNFL5232-MP-WM&M-13.10)	General Sampling, Rev. 4, BNFL-5232-MP-WM&M-13.10, 09/13/04	9/13/2004
P412A	BNFL-5232-INST-FOI-26	AMWTF Waste Receipt and Storage, Rev. 10, BNFL-5232-INST-FOI-26, 12/21/04 (BNFL-5232-INST-FOI-26)	BNFL, Inc. Information Source: Martin Wheeler	12/21/2004
P413A	INST-OI-16	Drum Coring Operations (INST-OI-16)	AMWTP (C. Sisson approval)	CUR DATE
P414A	INST-FOI-20	Supercompactor and Post-Compaction Operations (INST-FOI-20)	AMWTP	CUR DATE
P415A	INST-FOI-16	Box Line Operations (INST-FOI-16)	AMWTP (G. McCain approval)	CUR DATE
P416A	BNFL-5232-INST-OI-40	Liquid Absorption Operations (BNFL-5232-INST-OI-40)	BNFL, Inc. Information Source: Martin Wheeler	8/11/2004
P417A	RPT-TRUW-04	Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory (RPT-TRUW-04)	AMWTP	N/A
P418A	AMWTP-RPT-TRUW-13	Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste (AMWTP-RPT-TRUW-13)	AMWTP	CURR. DATE
P433A	INST-FOI-17	Facility Visual Examination Operations (INST-FOI-17)	AMWTP (J. P. Hingston owner)	Current
P439A	N/A	BN510 Supercompacted Debris Waste Stream Profile Package, May 26, 2005 Change Notice #1, January 24, 2007, Change Notice #2, July 5, 2007, Change Notice # 3, April 2, 2008	AMWTP, CBFO	09/11/2008
P441A	DWG-5232-53-9840	Joseph Laurman, BNFL DWG-5232-53-9840, Rev 5 "General Arrangement & Details 110 Gallon Puck Drum" (DWG-5232-53-9840)	Joseph Laurman	6/5/2003

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P446A	N/A	MSDSs for materials used in the washing of the 100-gallon drums: Multi-Terj 2111, Johnson Diversey, Inc., 2/2/2004; Dubois 737 Rust Inhibitor, Dubois Chemicals, 10/16/1998; No. 2672-5 Contact Cement, Dural Company, Inc., 1/3/1998.	Skolnik Industries, Inc.	MULTIPLE D
P447A	SDS code: 013725-08	Material Safety Data Sheet (MSDS); Quintolubric 888-68 (SDS code: 013725 -08)	Quaker Chemical Corp.	3/26/2004
P567A	EDF-2550	INEEL Stored Contact-Handled Transuranic Waste Volumes; Idaho National Engineering and Environmental Laboratory; EDF-2550, Rev 0; September 30, 2002 (EDF-2550)	C.J. Barnard	9/30/2002
P595A	M4T00-DCD-03-062, RFETS01	Hanford Site Transuranic Waste Management Waste Specific Acceptable Knowledge Documentation for TRM Incinerator Ash from Rocky Flats Environmental Technology Site, Waste Stream RFETS01, M4T00-DCD-03062, RFETS01, Revision 2. No date given. (M4T00-DCD-03-062, RFETS01)	Site AK files	N/A
P611A	AMWTP-RPT-TRUW-03	Drum Assay Technical Review Report (AMWTP-RPT-TRUW-03)	AMWTP	CUR DATE
P612A	ACMM-9500	Sample Preparation for Semivolatile Organic Compounds and Polychlorinated Biphenyls, Idaho National Engineering and Environmental Laboratory (ACMM-9500)	INEEL	12/15/2004
P613A	ACMM-2810	Determination of Mercury by CVAA for TRU Waste Characterization (ACMM2810)	Idaho National Engineering and Environmental Laboratory	1/27/2005
P614A	ACMM-2901	Determination of Metals by ICP-AES for TRU Waste Characterization (ACMM -2901)	Idaho National Engineering and Environmental Laboratory	1/27/2005
P615A	ACMM-8909	Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel (ACMM-8909)	Idaho National Engineering and Environmental Laboratory	1/17/2006
P616A	ACMM-9260	Volatile Organic Compounds by Gas Chromatography Mass Spectrometry (ACMM-9260)	Idaho National Engineering and Environmental Laboratory	12/1/2005
P617A	ACMM-9270	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (ACMM-9270)	Idaho National Engineering and Environmental Laboratory	1/20/2005
P618A	ACMM-9441	Determination of Nonhalogenated Volatile Organics by Gas Chromatography (ACMM-9441)	Idaho National Engineering and Environmental Laboratory	12/22/2004
P619A	PLN-600	Analytical Laboratories Quality Assurance Plan for the TWCP (PLN-600)	Idaho National Engineering and Environmental Laboratory	4/18/2005
P620A	PLN-1258	Quality Program Plan for the TWCP, , PLN-1258, Revision 2, 4/3/05 (PLN1258)	Idaho National Engineering and Environmental Laboratory	4/3/2005
P649A	RPT-TRUW-56	Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant (RPT-TRUW-56)	Advanced Mixed Waste Treatment Project	CUR DATE
P650A	RPT-TRUW-60	Acceptable Knowledge Document for INL Stored Transuranic Waste-Bettis Atomic Power Laboratory (RPT-TRUW-60)	AMWTP	CUR DATE
P654S	TREE-1321	Early Waste Retrieval Final Report (TREE-1321)	James R. Bishoff, Robert J. Hudson	08/00/1979
P655S	TREE-1061	Containment of Transuranic Contamination at the Early Waste Retrieval Project (TREE-1061)	Joseph L. Harness, Joseph D. McKinney	1/1/1977

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P656A	EDF-0135	Estimate of Number of SWBs to Ship Damaged Product Drums (EDF-0135)	Tamara Shokes	10/23/2006
P657S	N/A	Material Safety Data Sheets for Petroset II and Petroset IIG	Fluid Tech, Inc.	VARIOUS
P658A	HNF-28620	Acceptable Knowledge Document for Consolidated Babcock and Wilcox Parks Township Site Plutonium Facility Debris Waste Stream, RLCBWD (HNF-28620)	M.M. Anderson	9/28/2006
P659A	RLMPURX.001	RLMPURX.001 Transuranic Mixed Heterogeneous Debris Hanford Waste Stream Profile Package (RLMPURX.001)	M.M. Anderson	2/6/2004
P662A	HNF-28514	Acceptable Knowledge Document for Hanford Site Solid Waste Operations Complex Debris Waste Stream, RLSWOCD.001, October 5, 2006 (HNF28514)		10/5/2006
P666A	ID-RF-S3114,	Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-RF-S3114; Barbara Broomfield; November 15th, 2006 (IDRF-S3114,)	Barbara Broomfield	11/01/2009
P667A	N/A	AMWTP RCRA Part B Permits and interim status documents.	N/A	N/A
P670A	DOE/LLW-217	DOE Waste Treatability Group Guidance (DOE/LLW-217)	T. D. Kirkpatrick	1/1/1995
P673A	HNF-33244	Acceptable Knowledge Document for 300 Area Mixed Debris Waste Stream, RLM300D, HNF-3324 (HNF-33244)	Vivian Sendelwick, AK, Fluor Hanford, Inc	12/18/2007
P682S	LWP-8300	Transuranic Waste Handling (LWP-8300)	INL - Battelle Energy Alliance	DRAFT
P740S	EDF-RWMC-625	TSA-1 and TSA-2 Waste Stack Corrosion Rate Validation Plan. (EDF-RWMC -625)	Kevin J. Liekhus	3/18/1993
P742S	DOE/ID-10202	Investigative Report of the Breached Transuranic Waste Box and Subsequent Spread of Contamination Discovered April 21, 1988, at the Radioactive Waste Management Complex. (DOE/ID-10202)	C. R. Enos, W. G. Hathaway, J. S. Klossner, T. D. Merkling	6/1/1988
P743A	CAO-94-1005	Waste Isolation Pilot Plant Transuranic Waste Baseline Inventory Report (CAO-94-1005)	WIPP Technical Assistance Contractor for U.S. Department of Energy	02/01/1995
P744A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	DOE/Carlsbad Area Office	12/00/1995
P745A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	DOE/CAO	06/01/1996
P753A	TREE-1265	Early Waste Retrieval Interim Report (TREE-1265)	Kirk B. McKinley and Joseph D. McKinney	5/1/1978
P755A	INEEL/EXT-02-01125	Ancillary Basis for Risk Analysis of the Subsurface Disposal Area (INEEL/EXT-02-01125)	K. Jean Holdren, Bruce H. Becker, Nancy L. Hampton, L. Don Koeppen, Swen O. Magnuson, T. J. Meyer, Gail L. Olson, A. Jeffrey Sondrup	9/27/2002
P757A	N/A	Nuclear Waste Policy Act of 1982	U.S. Congress	1982
P758A	ACI-120	Solid Radioactive Waste Retrieval Test (ACI-120)	R. J. Thompson	5/1/1972
P768A	WM-F1-81-003	A History of the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory (WM-F1-81-003)	Laura S. Pendlebury	8/30/1985
P780S	EDF RWMC-349	TSA-R Recovery Plan (EDF RWMC-349)	T. H. Johnsen	12/23/1988

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P807A	INST-OI-68	Drum Treatment Facility Operations (INST-OI-68)	AMWTP (D. Wirkus approval)	CUR DATE
P808S	N/A	Material Safety Data Sheet, MICRO CEL-E	Celite Corporation	1/17/2009
P816A	ANL/CP- - 74106; DE92 007399	Characterization of Mixed CH-TRU Waste for the WIPP Experimental Test Program Conducted at ANL-W (ANL/CP- - 74106; DE92 007399)	C. C. Dwight, G. C. McClellan, K. P. Guay, J. C. Courtney, and M. J. Duff	1992
P838A	DOE/TRU-09-3425	Annual Transuranic Waste Inventory Report - 2009 (DOE/TRU-09-3425)	Los Alamos National Laboratory - Carlsbad Operations (LANL-CO)	NOT DATED
P841A	N/A	Waste Stream Profile Package for Solidified Plutonium Recovery Incinerator Waste (BN222)	AMWTP	01/29/2010
P856A	RPT-TRUW-03	Drum Assay Technical Review Report (RPt-TRUW-03)	AMWTP	12/7/2006
P859S	RPT-82	Supercompactor Liquid Treatment Capabilities, Evaluation and Conclusion (RPT-82)	AMWTP	6/2/2009
P860S	N/A	Settlement Agreement: Public Service Company of Colorado v. Batt	State of Idaho	10/16/1995
P866S	MSDS 1003 and MSDS 1002	Material Safety Data Sheet, PIG Acid Encapsulating/neutralizing, absorbents, February 5, 2007; Material Safety Data Sheet, PIG Packing Material, absorbents, February 1, 2007 (MSDS 1003 and MSDS 1002)	New Pig Corp.	2/1/2007
P867S	MSDS-088, MSDS-092, MSDS-089	SPILL-X-S Agent; SPILL-X-A Agent; SPILL-X-C Agent; (MSDS-088, MSDS092, MSDS-089)	ANSUL Inc.	9/1/2009
P868A	N/A	AMWTP Mission Statement for October 2009 through Jan 2010	AMWTP	NOT DATED
P881S	N/A	MSDS -- Fluid Tech, Aquaset (sodium montmorillonite) and Aquaset II-G (sepiolite)	Fluid Tech, Inc.	1/1/2005
P888A	WM-PD-85-014	Waste Characterization for INEL Remote-Handled/Special-Case Stored Transuranic Wastes (WM-PD-85-014)	Dennis A. Peterson	11/1/1985
P889S	Docket No: A-98-49, II-A4-66	FINAL REPORT WASTE CHARACTERIZATION INSPECTION REPORT EPA BASELINE INSPECTION NO. EPA-AMWTP-03.06-8 OF THE ADVANCED MIXED WASTE TREATMENT PROJECT FACILITY AT THE IDAHO NATIONAL LABORATORY March 28–30, 2006 (Docket No: A-98-49, II-A4-66)	EPA	09/00/2006
P953A	RPT-DSA-02	Documented Safety Analysis (RPT-DSA-02)	AMWTP	Current Date
U177A	N/A	Hydrogen diffusivity test data for the BNFLSS filters tested between October 7, 2003 and August 11, 2005	N/A	N/A
U178A	N/A	Hydrogen diffusivity test data for the BNFLLS filters tested between January 29, 2004 and June 25, 2004.	N/A	N/A
U179A	N/A	Hydrogen diffusivity test data for the BNFLSM filters tested between January 29, 2004 and August 24, 2004.	N/A	N/A
U180A	N/A	Hydrogen diffusivity test data for the BNFLLM filters tested between January 29, 2004 and February 16, 2005.	N/A	N/A
U181A	N/A	Hydrogen diffusivity test data for the BNFLSP filters tested between December 19, 2003 and September 10, 2004.	N/A	N/A

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U182A	N/A	Hydrogen diffusivity test data for the BNFLLP filters tested between January 29, 2004 and September 22, 2004.	N/A	N/A
U216S	N/A	Briefing Booklet for the National TRU Executive Committee, The Definition of Defense TRU Wastes Policy Recommendations.	N/A	1995

AK4

AMWTP Advanced Mixed Waste Treatment Project

RPT-TRUW-13, Rev. 7

Acceptable Knowledge Document for INL Stored Transuranic Waste—Mound Plant Waste

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11329.)
Susan Peterman
TRU Programs Manager

07/05/12
Date

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ACRONYMS

AC	content description for drum (acid/caustic drum)
AEC	Atomic Energy Commission
AK	acceptable knowledge
AKE	acceptable knowledge expert
ALLW	alpha low-level waste
AMWTP	Advanced Mixed Waste Treatment Project
B	building designator for Detonator Manufacturing Facility
BN	British Nuclear
Building 49	building number for Timer Fabrication Facility
BX	content description for box (boxed equipment)
CA	content description for drum (base)
CAO	Carlsbad Area Office (now Carlsbad Field Office)
CBFO	Carlsbad Field Office
CD	content description for drum (canned drum)
CFR	Code of Federal Regulations
CH	contact-handled
CS	content description for box (contaminated soil)
D&D	decontamination and decommissioning
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy DS building designator for Explosives Component Development Standards Facility
E	building designator for Transducer Fabrication & Analytical Facility
EDL	economic discard limit
EPA	Environmental Protection Agency
EQ	content description for drum (equipment drum)
ERDA	Energy Research and Development Authority
FRP	fiberglass-reinforced polyester
H	building designator Change House (Laundry Building)
HEPA	high efficiency particulate air
HH	building designator for Hydrolysis House (Stable Isotope Separation Facility)
HPG	high performance generator
HSG	headspace gas
HWN	hazardous waste number
I	building designator for Detonator Manufacture Facility
IDC	item description code
INEL	Idaho National Engineering Laboratory (now INL)
INL	Idaho National Laboratory

LC	content description for drum (combustible LSA waste)
LD	content description for drum (compacted LSA waste – combustible)
LES	Lincoln Experimental Satellite
LLW	low-level waste
LN	content description for drum (non-combustible LSA waste)
LSA	low specific activity
M	building designator for Machine & Maintenance Shops (including plating shop)
MHW	multi-hundred watt
MSDS	Material Safety Data Sheet
MWG	milliwatt generator
NBS	National Bureau of Standards
NDA	non-destructive assay
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NTS	Nevada Test Site
ORNL	Oak Ridge National Laboratory
PCBs	polychlorinated biphenyls
PMC	plutonium molybdenum cermet
PP	building designator for Plutonium Processing (Building 38)
PPO	pressed plutonium oxide
QAPD	Quality Assurance Program Document
QAPjP	Quality Assurance Project Plan
R	building designator for Research Building
R&D	research and development
R&R	building designator for Reactor Materials Handling Facility
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/feasibility study
RTG	radioisotopic thermoelectric generator
RTR	real-time radiography
RTV	room-temperature vulcanizing
RWMC	Radioactive Waste Management Complex
SALE	Safeguards Analytical Laboratory Exchange
SD	building designator for Sanitary Disposal facility
SL	content description for drum (sludge/cement drum)
SM	building designator for Special Metallurgical Facility
SNAP	space nuclear auxiliary power
SNM	special nuclear material
SRP	Savannah River Plant
SW	building designator for Semi-Works Building (Disassembly and Surveillance Facility)

T	building designator for Technical Building (Development and Purification of Radioactive Materials)
TOPO	tri-n-octylphosphine
TRU	transuranic
TSA	Transuranic Storage Area
TSCA	Toxic Substances Control Act
VE	visual examination
WAC	Waste Acceptance Criteria
WD	building designator for Waste Disposal Building
WDA	building designator for Waste Disposal Addition
WIPP	Waste Isolation Pilot Plant
WAC	Waste Acceptance Criteria for the Waste Isolation Pilot Plant
WAP	Waste Analysis Plan for the Waste Isolation Pilot Plant, Attachment B of the WIPP Hazardous Waste Permit
WMC	waste matrix code
WS	a designation for the Waste Solidification Facility
WSP	Waste Stream Profile
WSPF	Waste Stream Profile Form
WTS	waste transfer system

EXECUTIVE SUMMARY

The purpose of this document and supporting documentation is to present the acceptable knowledge available for transuranic waste generated at the U.S. Department of Energy Mound Plant located in Miamisburg, Ohio. This report summarizes the acceptable knowledge for solidified acid/caustic waste, cemented sludge, and heterogeneous debris waste.

The Mound wastes were shipped to the Idaho National Laboratory between 1975 and 1988 for storage. Acceptable knowledge (AK) is information that can be used for waste characterization in lieu of or in conjunction with waste sampling and analysis. The primary objective is to provide a consistent, defensible, and auditable record to be used during the certification of waste destined for disposal at the Waste Isolation Pilot Plant (WIPP).

Many sources of information were reviewed during the development of this document. Relevant documentation sources were incorporated into a data management system. These references are identified in Appendix B and are grouped into four categories; published documents, unpublished data, correspondence, and discrepancy reports. These categories correspond to the "P," "U," "C," and "D" superscripts used throughout this document (e.g., ^{P323A}). These superscript identifiers can be used to link the information in this document to the source.

1.0 INTRODUCTION

Transuranic (TRU) waste generated by the Mound Plant will be characterized to address the objectives of the U.S. Department of Energy (DOE) WIPP TRU Waste Characterization Program. Program requirements for contact-handled (CH)-TRU waste characterization are provided in the WIPP Hazardous Waste Permit, Attachment B, Waste Analysis Plan (WIPP-WAP). [1]

Implementation of these requirements is described in the Quality Assurance Project Plan (QAPjP) for the Advanced Mixed Waste Treatment Project (AMWTP) TRU Waste Certification Program. [2] The WIPP-WAP and QAPjP require that a consistent, defensible, and auditable record of characterization information is collected, reviewed, and managed. The information required by the WIPP-WAP for TRU waste streams generated at the Mound Plant is presented as follows.

The WIPP-WAP requires sites certifying TRU waste for disposal at WIPP to compile and maintain an AK record relating site history, mission, and waste management. In addition, waste stream-specific data describing the physical and chemical composition of the waste and the originating process are required for certification. The method used to collect, review, and manage the AK documentation required by the WIPP-WAP and the AMWTP QAPjP is described in AMWTP procedure MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. [3]

The primary purpose of this document is to present the required waste management and waste stream AK associated with CH-TRU waste that was generated at the Mound Plant and shipped to the Idaho National Laboratory (INL) between 1975 and 1988 for storage. The following is a list of specific elements required by the WIPP-WAP that are included in this report.

- Maps of the Mound Plant (Appendix A)
- Summaries of the history and mission for the site
- Descriptions of historical laboratory operations and waste management practices
- Type and quantity of TRU waste generated.

During the AK review process, TRU waste materials generated at the Mound Plant and shipped to INL were identified and delineated into waste streams based on the waste generating process or activity, hazardous constituents and the matrix (material and physical form) of the waste. The delineation of the final waste streams is documented in RPT-TRUW-12, AMWTP Waste Stream Designations. [8] The waste was assessed based on potential hazardous constituents present in the waste generating processes. This assessment and the supporting AK source documentation will be used as the basis for TRU waste stream characterization activities.

This report also provides the following:

- Defense waste justification
- Spent nuclear fuel and high level waste discussions
- Basis for radioisotopic content determination.

As defined in MP-TRUW-8.13, the AK record consists of information from published documents, unpublished data, correspondence, and discrepancy reports, which correspond to the "P," "U," "C," and "D" respectively. These AK source document references are identified as alphanumeric superscripts within this document (e.g., [P323A]). Source documents pertinent to Mound waste are presented in Appendix B.

Published Documentation – In general, published documents represent the most reliable, reviewed, and controlled sources of information. Published documentation includes, but is not limited to, controlled documents and databases, previously controlled documents and databases, procedures, reports, and studies. Published sources are referenced by the "P" designator in this document.

Unpublished Data – Unpublished data consists of information that has typically not received peer review and may not have been formally controlled. In many cases, this will consist of raw data used during the development of published documentation. This AK will primarily be used to supplement and verify published information. Unpublished data includes, but is not limited to, draft documents, forms, analytical data packages, logbooks, notes, and inventory lists, in addition to internal reports, studies, and databases. Unpublished sources are referenced by the "U" designator in this document.

Correspondence – Correspondence consists of communication records relating to specific TRU waste streams or TRU waste management. Typically, this information consists of uncontrolled records of internal and external communications. Correspondence will primarily be used to supplement and clarify the AK. Correspondence includes, but is not limited to, internal and external letters, memos, directives, telecommunication records, meeting minutes, and personal interview summaries. Correspondence sources are referenced by the "C" designator in this document.

Discrepancy Reports – These reports are the documented resolutions of discrepancies identified between AK sources or between AK sources and characterization data. In general, a discrepancy report will consist of a letter to the AK record that will be referenced in the affected document location. Discrepancy reports are referenced by the "D" designator in this document.

Many information sources were reviewed during the development of this report. Sources determined to be relevant to AK were incorporated into the AMWTP AK source document record. [U123A] Discrepancies between sources were resolved by contacting cognizant personnel or collecting additional information. If the inconsistency could not be resolved, the most conservative information was incorporated into the document.

Appendix B presents the AK source references that were used in compiling this report.

2.0 REQUIREMENTS

The requirements, guidance documents, and procedures that dictate or direct waste characterization and certification activities associated with the AMWTP AK program are listed below:

The requirements for packaging, transportation, and disposal of TRU waste at WIPP are defined in the Transuranic Waste Acceptance Criteria for the WIPP-WAC, DOE/WIPP-02-3122. [4] The WIPP-WAC requirements include the preparation of certification plans and associated quality assurance plans describing site-specific TRU waste certification programs for submittal to the DOE Carlsbad Field Office (CBFO) for review and approval. Once approved, the site is granted authority to ship waste to WIPP.

The federal hazardous waste regulations codified to protect the environment, including the Resource Conservation and Recovery Act (RCRA) are described in detail in Title 40 of the Code of Federal Regulations (CFR) (i.e., 40 CFR Parts 260 through 265, 268, and 270). [5] The requirements for making a hazardous waste determination, obtaining hazardous waste permits, and controlling the land disposal of hazardous waste are defined in these regulations. Also included are the RCRA standards for waste generators, transporters, and treatment, storage, and disposal facilities.

Additional RCRA requirements are invoked through the WIPP RCRA permit [i.e., Waste Isolation Pilot Plant Hazardous Waste Permit, Waste Analysis Plan (WAP), EPA No. NM4890139088]. [1] A detailed description of the quality assurance and quality control requirements for the TRU waste characterization program are provided in the WIPP-WAP. [1] The characterization parameters that must be addressed during characterization of TRU waste destined for disposal at the WIPP facility are established in this plan. For each parameter, the requirements for waste characterization, including the use of AK, real-time radiography (RTR), visual examination (VE), and sampling and analysis are provided.

The federal, state, and industry quality requirements applicable to the CBFO quality assurance program are identified in the Quality Assurance Program Document (QAPD), CAO-94-1012. [6] The minimum requirements for CBFO personnel and guidance for the development and implementation of quality assurance programs by all program participants are also described in this document.

The quality of data necessary and the characterization techniques including the use of AK employed by the AMWTP to meet the requirements of the WIPP-WAP for TRU waste generated at the Mound Plant are specified in the MP-TRUW-8.2, Quality Assurance Project Plan for the AMWTP Transuranic Waste Certification Program. [2]

The methods for collecting, reviewing, compiling, and managing, AK documentation are outlined in the AMWTP procedure MP-TRUW-8.13. [3] This procedure was implemented to

ensure that a consistent, defensible, and auditable record of AK documentation is created. This AK document is the result of the implementation of MP-TRUW-8.13.

3.0 WASTE GENERATING OPERATIONS

3.1 Mound Plant History and Mission

The Mound Plant, originally called the Mound Laboratory, was a research, development, and production facility built in 1946. The laboratory, located in Miamisburg, Ohio, supported the Manhattan Project as one of the original facilities operated by the Atomic Energy Commission (AEC). The managing agency later became the Energy Research and Development Authority (ERDA), and in 1977 became the DOE.

Personnel began working at the Mound Laboratory in 1948 and operations using radionuclides started in January 1949. (P380A, P518A) Mound was built around a valley named Test Fire Valley for the explosives work performed there. A map of the Mound facility is provided as Appendix A. (C601A) Three key areas associated with generation of TRU wastes pertinent to this report are identified as follows. (P469A, U126A)

- To the southeast of Test Fire Valley is the "plutonium hill" with laboratory and production facilities devoted to plutonium work. The key facility is the Plutonium Processing (PP) Building, also denoted as Building 38, and is often referred to in conjunction with its predecessor, the Special Metallurgical (SM) Building, as SM/PP.
- To the north of Test Fire Valley are a group of buildings dominated by the Research (R) Building, the Semi-Works (SW) Building, and the Technical (T) Building. SW/R contained laboratory and engineering areas devoted to plutonium and rare isotope work.
- On the north slope of the valley, just below SW/R, is the Waste Disposal (WD) Building where liquid wastes were collected and processed.

Historically, work performed at the Mound site supported weapons and non-weapons energy programs. Projects included research and production of radioactive isotopes and stable isotopes of noble gases. Over the years, a number of other missions were assigned to Mound. These included several isotope extraction projects, plutonium research and other weapons program support, tritium engineering and development, explosives research, development of plutonium-238 (^{238}Pu) heat sources, and the manufacture of radioisotopic thermoelectric generators (RTGs). (C344A, C345A, P380A, P469A, P522A, P523A, P524A)

TRU wastes sent from Mound to INL include wastes generated by ^{238}Pu heat source operations. Development of ^{238}Pu heat sources used in RTG units and the manufacture of the RTG units themselves began in 1961 in SM Building and continued after 1967 in PP Building. Other related work was performed in R Building and in Building 50. (P380A, P507A, P518A)

The ^{238}Pu heat sources used in the manufacture of RTGs were fabricated at Mound from materials supplied by the Savannah River Plant (SRP). The fabrication processes included plutonium metal, pressed plutonium oxide (PPO), or plutonium-molybdenum cermet (PMC) processes. Fabrication of the heat sources from plutonium metal was terminated in the mid-1960s, although use of the two oxide processes continued. Encapsulation of the processed plutonium heat sources with exotic metals was also performed at Mound until early 1979. After that, encapsulated plutonium oxide heat sources supplied by SRP were used in RTG manufacture. More than 500 RTGs were manufactured at Mound between 1961 and the end of 1982. (P380A,P518A, P522A, P523A, P524A)

The Mound Plant began shipping TRU waste to INL in early 1975 and continued shipping until 1988. Prior to that time, radioactive waste was shipped to Oak Ridge National Laboratory (ORNL) or to commercial sites for disposal. (P380A) TRU wastes (cemented sludge, combustibles, non-combustibles and soils) remaining in storage at Mound when shipments to INL ceased were scheduled to be shipped to SRP for repackaging for shipment to WIPP. (7)

3.1.1 Defense Waste Determination

The CBFO defines defense waste as nuclear waste derived from the manufacture of nuclear weapons and operation of naval reactors. The WIPP WAC defines defense waste as originating from specific defense activities as specified in Section 2 of the Nuclear Waste Policy Act of 1982 [U.S. Code, Title 42, Chapter 108, Section 10101(3)]. (4, 30) By definition, this includes any activity performed in carrying out any of the following functions:

A. Naval reactors development
B. Weapons activities, including defense inertial confinement fusion
C. Verification and control technology
D. Defense nuclear materials production
E. Defense nuclear waste and materials by-products management
F. Defense nuclear materials security and safeguards and security investigations
G. Defense research and development.

Ongoing defense-related operations were conducted at the Mound Plant for a variety of customers, including Lawrence Livermore National Laboratory, Hanford, ORNL, and the Space Program. For the waste addressed in this report, the radioisotopic content (e.g., plutonium and other transuranic radionuclides of interest) is the result of commingling of wastes from both defense-related and non-defense activities. (C409A, C417A, C436A, C444A, C469A, C470A, C498A, P380A, P492A, P522A, P523A, P524A, P544A, P548A, P553A, P554A, P555A, P558A, P559A, P560A, U155A)

Activities that contributed to Mound waste shipped to INL were primarily the design and development of ^{238}Pu heat sources for spacecraft, generators, and satellites used directly by the U.S. Department of Defense (DOD) or in support of DOD missions. Specific sources utilized for defense activities include the following:

- Transit Program use of space nuclear auxiliary power (SNAP) heat source generators in U.S. Navy navigational satellites beginning in 1961. (C498A, P380A, P548A, P559A, P560A
- Half-watt heat sources for the U.S. Navy produced from 1974 to 1976 (P380A, P554A, P558A)
- Multi-hundred watt (MHW) heat sources fabricated in 1974 and 1975 for the Lincoln Experimental Satellites (LES), which are U.S. Air Force communications satellites (C409A, C417A, C436A, C444A, P380A, P544A, P548A, P554A, P558A, P560A, U155A)
- High Performance Generator (HPG) MOD 3 for the DOD in 1976 and 1977 (C469A, P380A, P544A)
- Milliwatt Generator (MWG) heat source capsules for a power supply used in U.S. military weapons fabricated from 1974 and continued into the 1980s. (C469A, P380A, P548A, P553, P554A)

Pu-238 heat sources were also produced for non-defense applications, such as weather satellites, the Apollo moon missions, and planetary missions (e.g., Mars, Jupiter, and Saturn); however, Pu-238 contaminated waste from non-defense activities was not separated from the waste from defense work and is therefore commingled. (C469A, P492A, P548A, P554A, P558A, P559A, P560A)

Based on the review of AK and the *Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plan* issued February 13, 1997, TRU wastes generated at the Mound Plant were determined to meet the definition of defense waste in the areas of defense nuclear materials production, and defense research and development. (P203A) Even though other work performed in the laboratory did not support defense programs, no attempt was made to segregate the defense-related wastes. Since segregation of the wastes is no longer feasible, by definition the wastes are eligible for disposal at WIPP. (P380A, P385A, P510A, U129A)

3.2 TRU Waste Operations

Waste materials contaminated with TRU radionuclides were generated during research, engineering and support of weapons programs, including production of plutonium, radionuclides recovery, and the manufacture of RTGs. The term *transuranic* refers to the man-made actinide elements with atomic numbers greater than uranium (atomic number 92). Plutonium and americium are the primary TRU actinides encountered in DOE facilities. In 1973, alpha activity greater than 10 nanocuries per gram (nCi/g) was established by DOE as the threshold at which waste was defined as TRU. This definition included all radionuclides with half-lives greater than 20 years and the TRU radionuclides except ^{238}Pu and ^{241}Pu. Later that same year, ^{238}Pu was added into the TRU classification. Since 1982, TRU waste has been defined by DOE as materials contaminated with greater than or equal to 100 nCi/g of alpha-emitting TRU radionuclides with a half-life greater than 20 years. (P380A, P518A)

The processes that generated the majority of TRU waste shipped to INL from the Mound site included the development of ^{238}Pu heat sources, plutonium and other radionuclides recovery, decontamination of items and facilities, construction of assay standards, laboratory activities, and soil remediation. Other activities undertaken at Mound that produced waste forms addressed in

this report included: research and development of nuclear waste management techniques, development of measurement technologies for nuclear materials as required for safeguards, basic research in areas including metal hydrides and radionuclides separation, and development of instrumentation and verification procedures for studies of radiation workers. There were also classified activities that may have contributed to some of the waste, but these process descriptions are not included in this report. Table 3-1 is a listing of the Mound projects that are pertinent to the waste stored at INL. (C410A, C412A, C420A, C444A, P380A, P423A, P480A, P481A, P517A, P518A, P522A, P523A, P524A,, U126A, U153A, U155A, U158A)

Development of ^{238}Pu heat sources at the Mound site started in 1961. The heat sources were developed and fabricated for use in RTGs and for lunar experiments, weather satellites, communication satellites, navigational satellites, and spacecraft. Other heat sources were developed for use in life-support systems, swimsuit heaters, artificial hearts and cardiac pacemakers. Development and fabrication of heat sources involved plutonium processing and recovery operations.

Wastes generated from these operations were alpha-contaminated and TRU wastes. Liquid and solid radioactive wastes were separated into two streams; high-risk and low-risk, regardless of origin. Prior to 1982, waste which did not meet the definition of recoverable waste but which had plutonium content greater than 10 nCi/g, was designated as high-risk or TRU waste. Material containing less than 10 nCi/g was defined as low-risk or low-level radioactive waste, regardless of origin. In 1982, TRU waste was redefined to be alpha contamination greater than 100 nCi/g. (P380A)

Table 3-1. Mound projects pertinent to waste stored at INL

Project	Buildings	Period	Product(s)
Plutonium Project	SM, PP (38)	1959-1987	^{238}Pu Gadolinium polonide
*Plutonium Metal Production (heat source)	R, SM	Early to mid-1960s	^{238}Pu metal
Pressed Plutonium Oxide Fabrication (heat source)	50, SM, T, R, PP	mid-1960s to late 1970s	^{238}Pu oxide
Plutonium-molybdenum Cermet Production (heat source)	50, SM, T, R, PP	1972-1973	^{238}Pu-Cermet
Production (recovery) of Stable Isotopes	SW, HH, R	1957-1992	^{36}Ar, ^{38}Ar, ^{40}Ar, ^{79}Br, ^{81}Br, ^{12}C, ^{13}C, ^{35}Cl, ^{37}Cl, ^{3}He, ^{78}Kr, ^{80}Kr, ^{82}Kr, ^{83}Kr, ^{84}Kr, ^{86}Kr, ^{14}N, ^{15}N, ^{20}Ne, ^{21}Ne, ^{22}Ne, ^{16}O, ^{17}O, ^{18}O, ^{34}S, ^{36}S, ^{124}Xe, ^{126}Xe, ^{126}Xe, ^{129}Xe, ^{131}Xe, ^{134}Xe, ^{136}Xe
Recovery of Plutonium and Other Rare Isotopes	SM, PP, R, SW	1956-1983	^{244}Cm, ^{231}Pa, ^{233}Pa, ^{208}Po, ^{209}Po, ^{238}Pu ^{228}Th, ^{229}Th, ^{230}Th ^{233}U, ^{234}U, ^{90}Y
Waste Treatment	PP, WD, WDA	1949-1988	^{227}Ac, ^{241}Am, ^{137}Cs, ^{60}Co, ^{3}H, ^{237}Np, ^{239}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{208}Po, ^{209}Po, ^{210}Po, ^{231}Pa, ^{226}Ra, ^{222}Rn, ^{90}Sr, ^{228}Th, ^{229}Th, ^{230}Th, ^{232}Th, ^{232}U, ^{233}U, ^{234}U, ^{235}U, ^{238}U
Analytical Laboratory	PP, R, SW, T	1949-1988	^{227}Ac, ^{241}Am, ^{137}Cs, ^{60}Co, ^{3}H, ^{237}Np, ^{239}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{208}Po, ^{209}Po, ^{210}Po, ^{231}Pa, ^{226}Ra, ^{222}Rn, ^{90}Sr, ^{228}Th, ^{229}Th, ^{230}Th, ^{232}Th, ^{232}U, ^{233}U, ^{234}U, ^{235}U, ^{238}U
Decontamination and Decommissioning	50, SM, T, R, PP	1949-1988	^{227}Ac, ^{241}Am, ^{207}Bi, ^{255}Cm, ^{137}Cs, ^{60}Co, ^{3}H, ^{237}Np, ^{239}Np, ^{206}Pb, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{208}Po, ^{209}Po, ^{210}Po, ^{231}Pa, ^{226}Ra, ^{222}Rn, ^{90}Sr, ^{228}Th, ^{229}Th, ^{230}Th, ^{232}Th, ^{232}U, ^{233}U, ^{234}U, ^{235}U, ^{238}U, ^{90}Y

*Production of plutonium metal at Mound was discontinued prior to generation of the waste shipped to INL; however, the decontamination and decommissioning (D&D) of the facilities associated with these operations may have generated waste that was shipped to INL. (U126A)

The estimated total drum equivalents and the percent by volume alpha low-level (ALLW, 10 to 100 nCi/g) and TRU waste (greater than 100 nCi/g) for each Mound waste item description code (IDC) identified in the AMWTP inventory are presented in Table 3-2. (P365A, P398A, P548A)

Table 3-2. Estimated total drum equivalents for Mound ALLW and TRU waste and percent volume of ALLW.

IDC	AMWTP Waste Stream	Description/Title of Waste	Drum Equivalents (TRU)	Drum Equivalents (ALLW)	Percent Volume ALLW
Homogeneous Solids Waste					
MD-811	BN811	Evaporator & dissolver sludge	4	0	0%
MD-834[a]	BN835	High-Level* Acid	713	188	21%
MD-835[a]	BN835	High-Level* Caustic	831	844	50%
MD-836	BN836	High-Level* Sludge/Cement	2089 [g]	2089 [g]	50%
Soils Waste					
MD-842	BN842	Contaminated soil	179	404	69%
Debris Waste					
MD-801	BN510, BN304	Rags, Paper, Wood, etc.	35	0	0%
MD-802	BN510, BN304	Dry Box Gloves and O-rings	121	0	0%
MD-803	BN510, BN304	Metal, Equipment, Pipe, Valves, etc.	167	13	7%
MD-804	BN510, BN304	Plastic, Tygon, mani-boots, etc.	220	0	0%
MD-805	BN510, BN304	Asbestos Filters	38	0	0%
MD-810	BN510, BN304	Glass, Flasks, Sample Vials, etc.	13	0	0%
MD-812[c]	[c]	Spent Ion Exchange Resins	[d]	[d]	[d]
MD-813	BN510, BN304	Glass Filters and Fiberglass	3	0	0%
MD-814	BN814, BN304	Graphite Waste	2	0	0%
MD-815	[e]	Classified Parts	[e]	[e]	[e]
MD-824[b]	BN510	Equipment Boxes, Non-combustible	1750	3948	69%
MD-825[b]	BN510, BN304	Equipment Drums, Non-combustible	314	76	19%
MD-826[b]	BN510	Equipment Boxes, Combustible	377	47	11%
MD-827[b]	BN510, BN304	Equipment Drums, Combustible	9	0	0%
MD-832[c]	[c]	Contaminated Mercury	[f]	[f]	[f]
MD-838	BN510	<10 nCi/g, Non-combustible	0	1	100%

IDC	AMWTP Waste Stream	Description/Title of Waste	Drum Equivalents (TRU)	Drum Equivalents (ALLW)	Percent Volume ALLW
Debris Waste (continued)					
MD-847	BN510	LSA <100 nCi/g Combustible	20	721	97%
MD-848	BN510, BN304	LSA <100 nCi/g Non-combustible	6	128	96%

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g. 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

a. The combination of IDCs MD-834 and MD-835 in one waste stream based on AK that both were generated from the same process and have the same hazardous waste designations, create a waste stream with a 40% volume ALLW.

b. IDCs MD-824, MD-825, MD-826, and MD-827 wastes are likely to be combinations of others; IDC MD-825 drums contain IDC MD-802, MD-803, MD-804, MD-805, MD-810, and MD-811 wastes; IDC MD-827 drums may include IDCs MD-802, MD-803, and MD-804 wastes.

c. Content codes 812 and 832 do not appear in INL records. Only small quantities of these wastes were generated and the wastes packaged in cartons/cans as described in section 3.5. The small quantity waste cartons were placed in drums based on whether combustible or non-combustible and a mix of cartons/cans in a single drum is anticipated. (P024A)

d. Drum equivalents are not available for the IDC MD-812 waste because the waste was generally packaged in small cartons and placed in containers with other types of waste. None of these wastes were packaged such that they were the majority (>50% by volume or weight) of the drum contents. IDC MD-812, ion exchange resins, was packaged in 28 cartons which were placed in combustible waste drums (IDCs MD-801, MD-802, and MD-804) for shipment to INL. Drums of IDC MD-812 are not anticipated.(P024A)

e. IDC MD-815 is listed in RPT-TRUW-12 as consisting of classified parts. There is no indication of the number of containers that might be stored at INL Radioactive Waste Management Complex (RWMC) Transuranic Storage Area (TSA).

f. Drum equivalents are not available for the IDC MD-832 waste because the waste was generally packaged in small cartons/cans and placed in containers with other types of waste. None of these wastes were packaged such that they were the majority (>50% by volume or weight) of the drum contents. IDC MD-832, Contaminated Mercury, was packaged in 61 cartons or 1/2-gallon metal cans which were placed in non-combustible waste drums (IDC MD-803, MD-805, MD-810, MD-811, MD-813, MD-814, and MD-826) for shipment to INL. Drums of IDC 832 are not anticipated. (P024A)

g. Drum equivalents for IDC MD-836 has been updated to reflect current radioassay data. (D050A)

The Mound operations applicable to the TRU waste present in the AMWTP inventory located at the RWMC TSA are described in the following sections.

3.2.1 Plutonium Processing

Plutonium was first processed at the Mound site beginning in 1960 in SM Building. That building was replaced with PP Building in December 1967. The SM and PP buildings are sometimes addressed as SM/PP complex. Plutonium processing ceased at Mound in 1982.

Throughout the history of the ^{238}Pu processing program, a plutonium recovery process was included in SM/PP complex as part of operations. Some of the recovery processes were transferred to SRP in 1975. Limited recovery operations continued until 1982 in support of the D&D activities of the plutonium processing facilities. (P380A, P507A, P518A, P522A, P523A, P524A)

The initial research using ^{238}Pu as a heat source began in 1959. From the early 1960s to the late 1970s, ^{238}Pu heat sources were produced in one of three processes at Mound: (1) fabrication from plutonium metal, (2) PPO sphere production, and (3) PMC production. The heat sources were encapsulated for use as power sources in RTGs and the RTG units themselves were manufactured at Mound. Fabrication of heat sources from plutonium metal was terminated in the mid-1960s, but the oxide production processes (PPO and PMC) continued into the late 1970s. Encapsulation of the processed plutonium heat sources was performed at Mound until 1979. After that, encapsulated plutonium oxide heat sources were supplied by SRP, and nonencapsulated ^{238}Pu was no longer handled at the Mound site. (C418A, C440A, P380A, U171A)

Of the three processes used to produce heat source materials, the plutonium metal production process did not generate any waste shipped to INL. The other two processes (PPO and PMC) did produce waste that was ultimately sent to INL and these processes are described in the following sections.

3.2.1.1 Pressed Plutonium Oxide Sphere Production

The PPO sphere fabrication process as illustrated in the process flow diagram, Figure 3-1, (P380A) was used from the mid-1960s to the late 1970s. The PPO process involved either a microsphere or shard process for which all but a few steps were identical. The process began by transferring ^{238}Pu dioxide into the glovebox. The oxide was dissolved in a mixture of nitric and hydrofluoric acids. The resulting plutonium nitrate solution was adjusted with nitric acid to provide a 2.0 to 2.5 normal hydrogen ion concentration. If necessary, a valence adjustment was made, and the resulting solution was treated with ammonium hydroxide to precipitate a plutonium hydroxide. The solution was filtered, and the plutonium precipitate was washed with dilute ammonium hydroxide solution, vacuum dried and then air dried overnight. The dried plutonium precipitate was crushed to produce a fine powder. The powder was then either fed through a plasma torch, producing microspheres, or was sieved for size and heated to produce shards. A hot press was used to form the sphere of plutonium. The sphere was then transferred to another glovebox facility in PP or R buildings for encapsulation. (C444A, C464A, C470A, P380A, U126A, U156A, U168A, U171A)

Encapsulation was primarily conducted in R Building and involved welding a machined metal cover over the sphere. Encapsulation materials included iridium, graphite, tantalum, titanium, iconel, platinum-rhodium, yttrium, and hastelloy (an alloy of cobalt, molybdenum, chrome, tungsten, and iron). (C444A, P380A, U126A, U156A, U168A)

3.2.1.2 Plutonium-molybdenum Cermet Production

The PMC process as illustrated in the process flow diagram, Figure 3-2, (P380A) used a cermet consisting of a sintered granular plutonium dioxide coated with molybdenum as a ^{238}Pu heat source. The cermet was processed to produce a solid material that could be machined and assembled into heat source capsules. Plutonium dioxide underwent dissolution with nitric acid and hydrofluoric acid followed by a hydrogen ion concentration and valence adjustment using was separated from the supernatant liquid by filtration. The precipitate was washed with dilute ammonium hydroxide and then dried. The dried precipitate was sized and then sintered. The sintered material was coated with molybdenum and pressed into discs. These discs were then assembled into the heat source capsules. Other materials used in fabrication included inconel, tantalum, platinum-rhodium, yttrium and iridium. PMC precipitation was used until 1973 when it was discontinued in favor of the PPO process. (C464A, C470A, P380A, P483A, P484A)

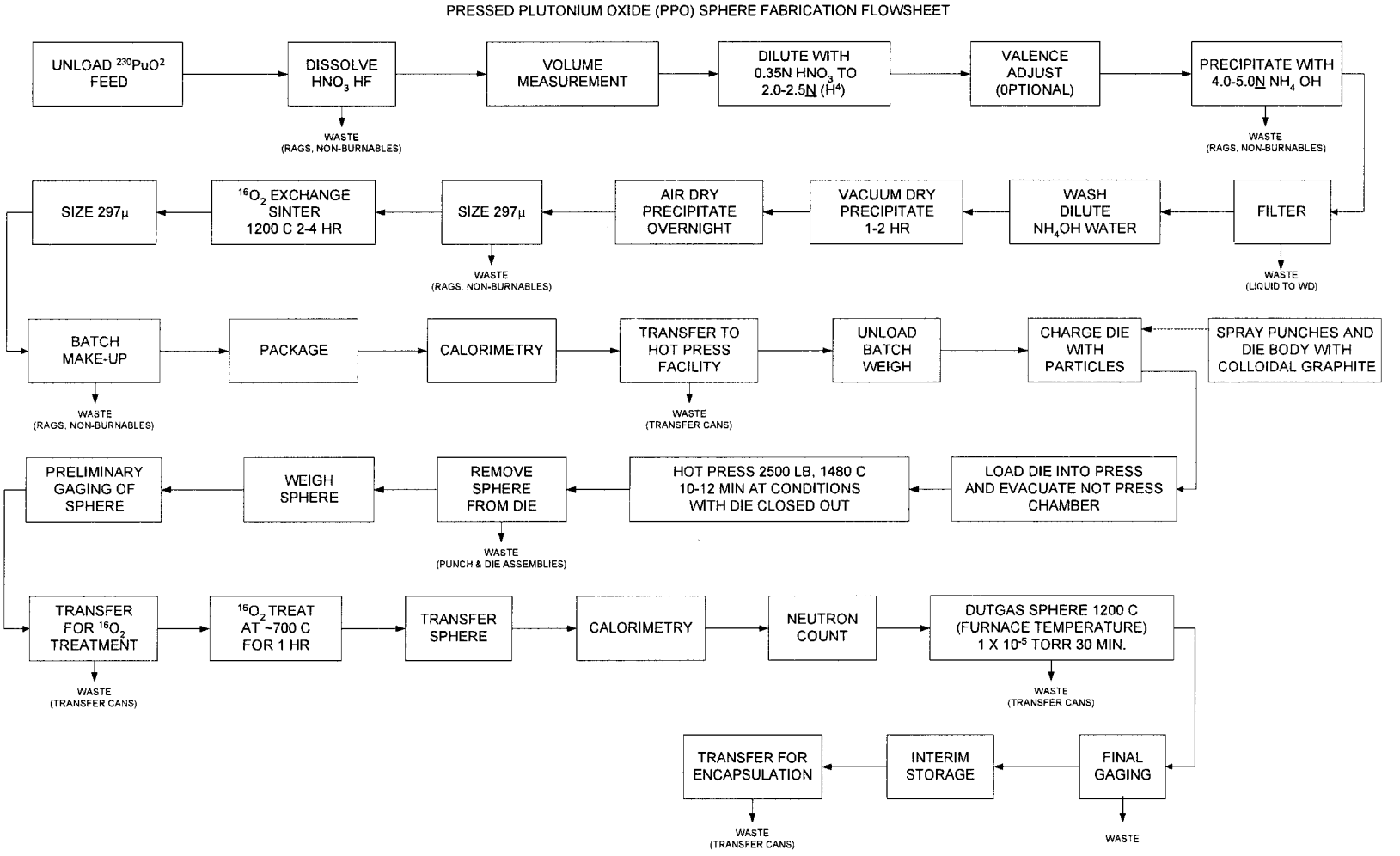


Figure 3-1. Pressed plutonium oxide fabrication process flow chart.

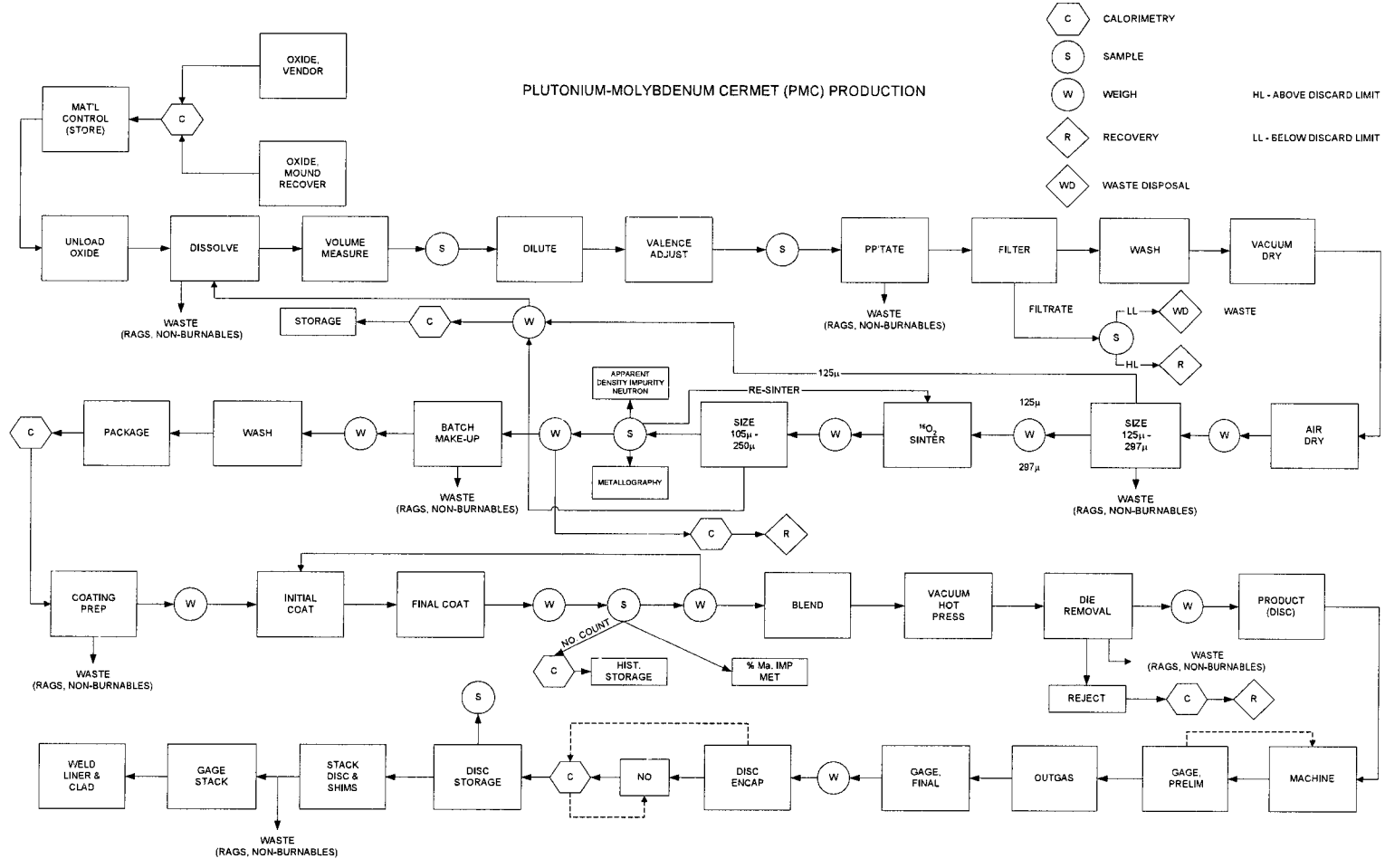


Figure 3-2. Plutonium-molybdenum cermet production process flow chart.

3.2.2 Plutonium Recovery

PP activities resulted in line-generated byproducts and waste materials that were evaluated for appropriate treatment, recovery, and disposition. The recovery of plutonium for production activities represented a significant element of the program. The processing conducted in PP Building began in 1967. Plutonium recovery process wastes and by-products were characterized on the basis of plutonium content and were classified as recoverable, high-risk or low-risk wastes. Wastes with a plutonium content exceeding the economic discard limit (EDL) were classified as recoverable wastes, and were sent to the plutonium recovery process. Physical processing included ultrasonic wash, evaporation and filtration. Chemical processing included dissolution, precipitation, fusion, incineration, ion exchange and fluorination. The plutonium recovery process is illustrated in Figure 3-3. (P380A)

In gloveboxes, solid objects were washed or leached in water or acid solutions with the aid of ultrasonic cleaning equipment. The objects were gamma scanned or wiped and counted. After decontamination, objects were either returned to their original use or declared high-risk or low-risk waste based on radionuclide activity and dispositioned accordingly. The wash water and leachate were sent to plutonium recovery. High temperature-fired oxide and ceramic RTG materials that did not meet product specifications were dissolved in a mixture of nitric and hydrofluoric acid. If these materials could not be readily dissolved, they underwent pyrosulfate fusion followed by dissolution. Glass fiber filters were dissolved in a hydrofluorinator-pressurized vessel, and the silicon tetrafluoride generated in the process was removed via a caustic scrubber. (C464A, P380A)

The high-risk acidic solutions containing plutonium were sent to the plutonium recovery processes including ion exchange, fluorination, or precipitation, or were treated as waste. The caustic scrubber solutions were also designated as recoverable, high-risk, or low-risk waste, based on the EDL and either sent to recovery or waste treatment. Other solid materials containing recoverable plutonium or off-specification RTG material that resisted dissolution underwent pyrosulfate fusion followed by dissolution. Chemicals used in recovery operations include nitric acid, hydrofluoric acid, hydroxylamine, sodium carbonate, ferrous sulfamate, and sodium hydroxide. (C385A, C398A, C423A, C464A, C481A, P380A, P475A, P503A, P522A, U126A, U157A, U167A)

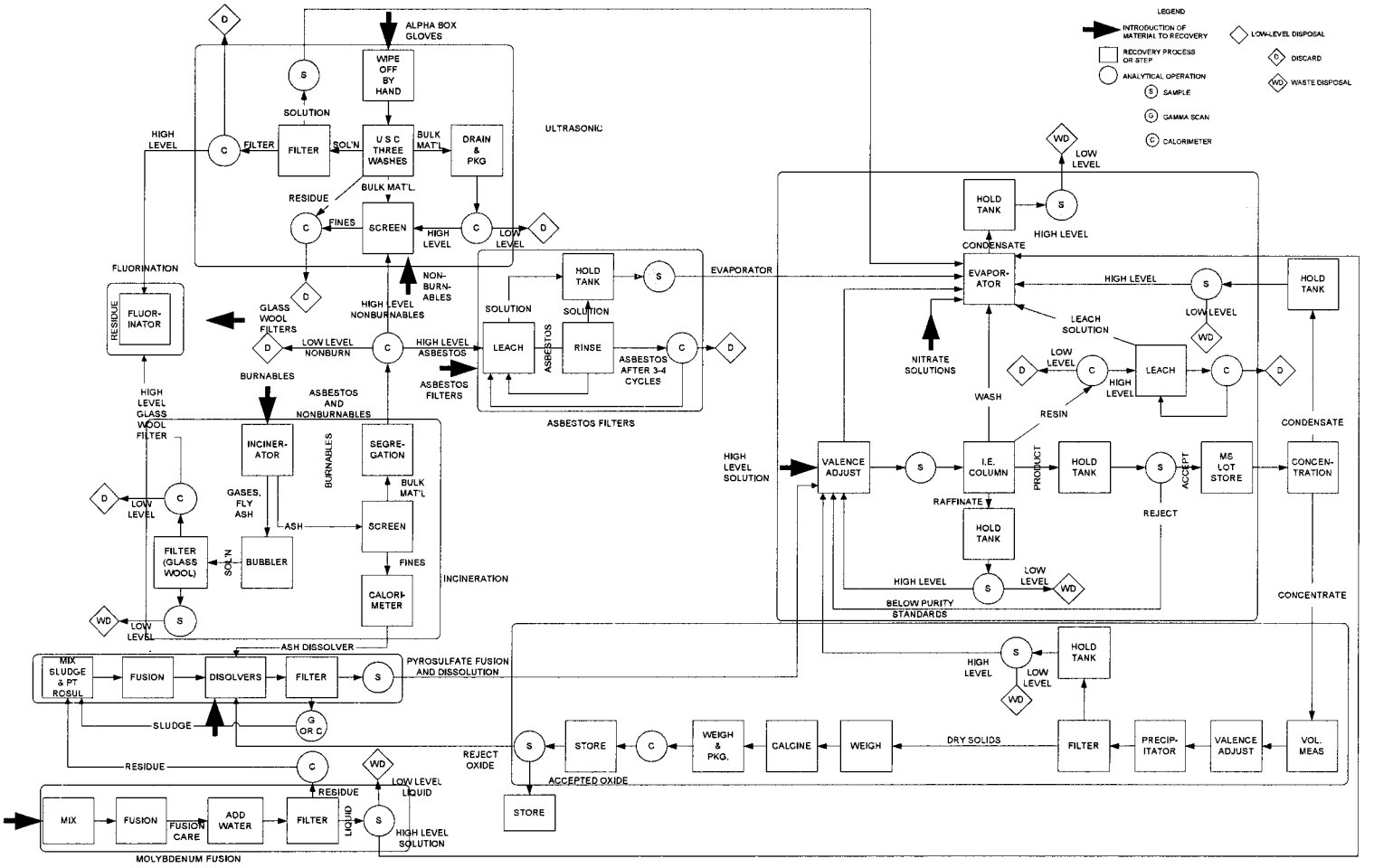


Figure 3-3. Plutonium-238 recovery process

During production, if paper towels or rags accumulated significant quantities of ^{238}Pu, the thermal energy released by the plutonium would cause the towel or rag to start smoldering. The glovebox operator would put the towels and rags in an open-topped metal can and allow the process to continue. Since the glovebox had an inert atmosphere, there was no open flame. After a period of time, the can contained a carbonized ash that contained plutonium oxide. The volatile pyrolysis products were swept from the glovebox, and after high efficiency particulate air (HEPA) filtration, were discharged to the atmosphere via the building's stack. All other combustible wastes, including paper, wood, leaded neoprene gloves, and in-line glovebox HEPA filters were treated in an incinerator installed in a glovebox. The ash residue from the incinerator was sent back for dissolution and leaching. (P380A) Plutonium processing conducted in PP Building was no different from processing in SM Building. The PP Building, like the SM Building, had its own plutonium recovery process, including an in-line glovebox incinerator, for destruction of combustible wastes generated in production and plutonium recovery processes. Leaded gloves were initially incinerated but this process was discontinued and the leaded gloves were subjected to acid leaching and the leachate went to the plutonium recovery process. (P380A, U126A) It is assumed that combustible waste that contained less than recoverable quantities of ^{238}Pu were packaged and sent to INL.

In the plutonium recovery process, solutions at various points in the process were sampled and analyzed using alpha spectroscopy in PP or R buildings. This step was key in the separation of materials to be recovered from those below the discard limit to be sent to waste disposal. (C444A, P380A)

3.2.3 Rare Isotope Recovery

The Mound Plant's Rare Isotope Programs were designed to develop or improve processes to produce rare radionuclides. This work began in the mid 1950s in R, SW, and SM buildings and continued until 1985. The radionuclides processed under these programs, included polonium-209 (^{209}Po), several thorium isotopes (^{229}Th, ^{230}Th, ^{228}Th), uranium isotopes (^{233}U, ^{234}U), actinium-227 (^{227}Ac), radium-226 (^{226}Ra), and protactinium-231 (^{231}Pa). Projects involving specific radionuclides were started at different times during the 25-year period that the program was active, and varied in size and duration. The source materials for the recoveries for the different radionuclides also differed. (P380A)

The ^{230}Th programs began by separating the various fractions obtained from processing uranium and its ores to identify sources of ^{230}Th and ^{231}Pa. A later program processed a material referred to as "airport cake," which was also known as Cotter Concentrate. These programs or other related processes were conducted into the 1970s. The organic wastes generated from ^{230}Th and ^{231}Pa recovery were treated and sent to DOE sites other than INL for burial. The aqueous waste was either sent to the WD building for treatment or discharged to the Greater Miami River. Waste from the ^{232}Th production processes was shipped to a private site owned by the General Atomic Company for disposal from October 1974 through July 1975. (C382A, P380A, P505A, P518A, P526A)

Production of ^{234}U took place in R Building, and a satellite operation referred to as the solvent extraction system was housed in SM Building. In R Building, ^{234}U was recovered by chemical separation from aged ^{238}Pu over a 10-year period beginning in 1962, Figure 3-4. (P380A) The uranium-containing fraction was separated from raffinate solutions generated in plutonium recovery operations by the solvent extraction system in SM Building. However, operations stopped in SM Building and the facility was dismantled in 1972. Therefore any wastes generated from processes in SM Building are not included in the wastes stored at INL. (P380A, P519A, U173A)

Recovery of ^{234}U from ^{238}Pu was a three-step process with each step performed in a separate glovebox line. The first step involved dissolving plutonium from returned heat source materials in nitric acid followed by precipitation with dimethyloxalate. The resulting plutonium oxalate was then calcined and returned to storage for future processing. The filtrate containing ^{234}U was concentrated by evaporation and treated with nitric acid to decompose the oxalate resulting in uranyl nitrate. (P380A, P518A)

In the second step, aluminum nitrate was added to the uranyl nitrate and the pH was adjusted. The solution was transferred to an anion exchange column and the ^{234}U was eluted with 7-N nitric acid. The plutonium was eluted with 0.35 molar nitric acid and sent to plutonium recovery. (P380A, P518A)

In the final step, uranyl nitrate was converted to the chloride, and the resulting solution was transferred to a Dowex anion exchange column. Uranium was separated from plutonium and neptunium by elution with varying molar concentrations of hydrochloric acid. The uranyl chloride eluent from the resin column was treated with ammonium hydroxide to form a precipitate that was filtered, washed, and dried, then converted to uranium oxalate. (P380A, P518A

3.2.4 Other Processes

In addition to plutonium heat source production operations, support operations in the SW, SM, PP, and R buildings were conducted and included analytical laboratory support, encapsulation research, shaping and pressing heat source research, metallography and other metallurgical research. The D&D of R Building began in 1978 and generated TRU waste. Solid waste generated in R Building is similar to that generated in PP Building. The volume of waste generated by analytical operations was small. (C379A, C444A, P319A, P380A, U126A)

3.2.4.1 Laboratory and Research and Development Activities

The analytical laboratories supported research, production, recovery, and waste treatment operations at Mound. The laboratories also performed radiochemical analysis (non-tritium) in support of D&D operations. The North Analytical Line in PP Building was used in the Safeguards Analytical Laboratory Exchange (SALE) program, which verified radionuclide inventory and standard analytical techniques used by other laboratories. Samples containing primarily ^{239}Pu were analyzed for total percent plutonium, as well as other measurements.

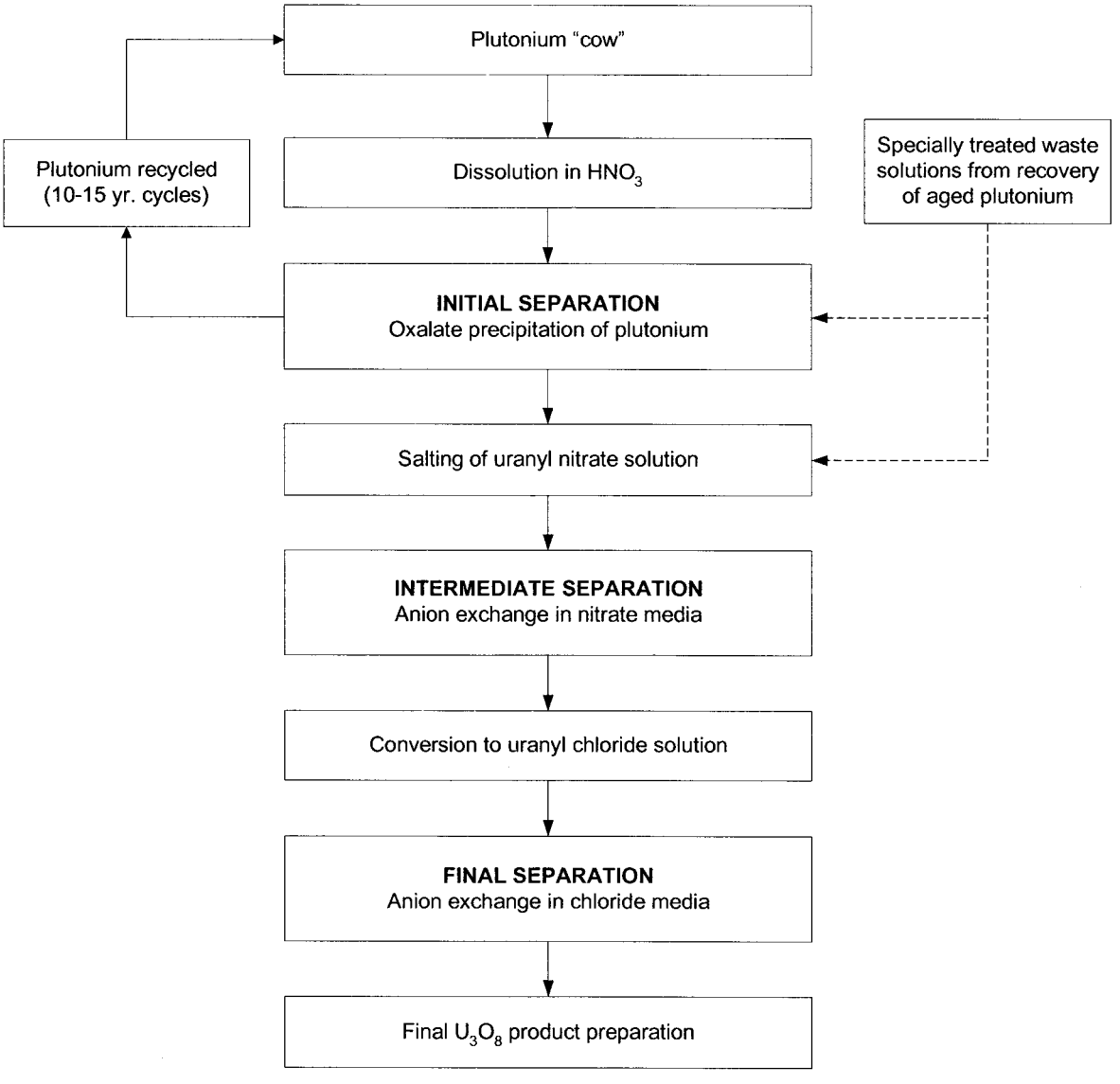


Figure 3-4. Chemical separation steps for uranium-234 recovery and purification.

Beginning in 1988, this line was also used for the "Orphan Source Program." The objective of this program was to determine which radionuclides were contained in unknown sources previously used at Mound and were no longer needed. Some characterization studies were conducted on these sources, and repackaging of sources was also performed in this line. This laboratory also performed radiochemical analysis (non-tritium) in support of the decontamination work. Analytical procedures included mass spectroscopy, calorimetry, ion-exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. The analytical laboratory in R Building most recently performed chemical analysis and emission spectroscopy on plutonium compounds, alloys, and mixtures. Operations in this area ceased in about 1989. (C384A, C424A, C429A, C441A, C444A, C446A, C447A, P380A, P475A, P482A, P483A, P484A, P505A, P511A, P518A, P520A, P546A, U126A, U154A, U157A, U187A)

Research and development (R&D) solvent extraction and plutonium/uranium separation in R Building used carbon tetrachloride, methylene chloride, trichloroethane, organophosphate, nitric acid, hydrochloric acid, ammonium hydroxide, and sulfuric acid. (C448A, C449A, C450A, C458A, C466A, P380A, P492A, U126A)

Major R&D programs in R Building included: (C450A, P380A, P518A)

- Fabrication of ^{210}Po neutron sources and RTGs
- Separation of plutonium from irradiated ^{238}U
- Separation of ^{227}Ac from irradiated ^{226}Ra
- Separation of ^{231}Pa from residues of previous uranium processing
- Separation of ^{230}Th from residues of previous uranium processing
- Fabrication of alpha and neutron sources; ^{238}Pu, ^{239}Pu, ^{241}Am
- Examination of ^{235}U, ^{238}U, ^{239}Pu, americium-241 (^{241}Am), neptunium-237 (^{237}Np), and curium-244 (^{244}Cm) for use as reactor fuels
- Separation of strontium-90 (^{90}Sr) and yttrium-90 (^{90}Y)
- Separation of ^{231}Pa and ^{233}Pa
- Fabrication of ^{238}Pu heat sources for RTGs
- Separation of ^{234}U from aged ^{238}Pu
- Tritium (^{3}H) research.

TRU radionuclides were first introduced to R Building in 1948 with the separation and recovery of plutonium from irradiated uranium. The alpha and neutron source programs and reactor fuels research began in 1956. The initial research using ^{238}Pu as a heat source began in 1959. Decontamination activities in R Building were ongoing throughout its operational history to make way for new programs. Most of the R&D and analytical operations that generated TRU waste in R Building, including the laboratories that supported the ^{238}Pu heat source program, the reactor fuels program, and the ^{234}U separation program ended by the late-1970s. Studies in R

Building were also conducted using ^{239}Pu as a "cold" substitute for ^{238}Pu. The D&D of many of these laboratories occurred throughout the 1980s. (C377A, P380A, P517A, P518A)

Production of ^{234}U took place in R Building, and a satellite operation referred to as the solvent extraction system was housed in SM Building. ^{234}U was recovered from ^{238}Pu using a solvent extraction process involving nitric acid, aluminum nitrate, and tri-n-octylphosphine oxide (TOPO). This operation began in 1962 and was conducted over a 10-year period. (P380A, P518A, U173A)

A wide variety of operations were conducted in SW Building. Tritium operations included recovery/enrichment from scrap, surveillance of War Reserve reservoirs, and process development. In addition, programs involving ^{238}Pu, ^{239}Pu, uranium isotopes, ^{227}Ac, ^{226}Ra, and other radionuclides including ^{241}Am, and ^{237}Np, were conducted in SW Building. (C378A, C394A, C451A, P380A, P505A)

The new cave (hot cell operation) and associated laboratory area in SW Building were used for a variety of non-tritium isotope separation research projects including separation of ^{229}Th from aged ^{233}U and its daughters, ^{226}Ra from K-65 residue (K-65 residue is a precipitate from the processing of pitchblende ore), and ^{231}Pa and ^{230}Th from Cotter Concentrate. In addition, these facilities were also used to retrieve the ^{209}Po and lead-206 (^{206}Pb) from previous polonium work done at Mound. (C452A, P380A, P467A, P485A, P505A, P518A, P526A, U171A)

3.2.4.2 Facility Demolition

The D&D at Mound was an ongoing process beginning in 1949. Since the early 1970s, the D&D program involved demolition of the former plutonium processing facilities including the SM, R and PP buildings. The D&D of SM Building took place between 1968 and 1972. These activities included D&D of gloveboxes, conveyor housing, piping, service equipment, and structures that generated contaminated soils, clothing, rags, Kimwipes, shoe covers, plastic, wood, and other miscellaneous debris waste. Any wastes generated from processes in SM Building would not be included in the wastes stored at INL; however, waste generated from the D&D of the SM Building may be included in the wastes stored at INL. (P024A, P313A, P380A, P519A, U126A, U173A)

The D&D program operated in two phases. First, equipment was cleaned and removed from affected areas and packaged into containers for shipment off-plant. Non-glovebox line associated items such as furniture and electronic equipment were removed. Small, loose in-line equipment was placed into containers and bagged out of the glovebox. Larger items were cut and wrapped. (P381A) Polyurethane foam was used to immobilize (fix) contamination. Second, structural decontamination was performed to remove or seal contamination. (C350A, P380A)

Interconnecting lines that serviced the gloveboxes were removed using various cutting techniques and tools. Small piping less than two inches was removed using reinforcing rod cutters to pinch, seal, and separate the tubing. A cap filled with room-temperature vulcanizing (RTV) rubber was then placed over each end and taped in place. A small hole was drilled into larger diameter piping (2- to 4-inch diameters), and the pipe was filled with foam for a few

inches on either side of the hole so that it could be cut at the foam barrier, then capped with plastic caps that were filled with RTV rubber and taped in place. (C481A, C486A, P498A, P499A, P516A)

Removal of floor coverings and sandblasting paint off walls and ceilings removed most of the building's surface contamination. If contamination above release criteria remained, a powered vacuum scabbler was used to remove ¼-inch layers of contaminated concrete. If contaminants penetrated beneath floor slabs along cracks, the concrete floor may have been removed to allow for the removal of contaminated materials. A detergent and paint remover in a high pressure washer was also used to decontaminate building interiors and equipment. (C374A, P498A, P499A, P512A)

The D&D of PP Building glovebox lines begin in 1977. After ^{238}Pu processing ceased in 1978, the focus of D&D was on removal of buildings and piping. The D&D of R Building laboratory glovebox lines begin in 1978. (P319A) Starting in 1980, the only alpha-contaminated waste produced by Mound was from D&D operations of the alpha facilities including PP, SW/R or SM glovebox lines and support equipment. (U126A) By 1982, the in-line processing had ceased, and all remaining ^{238}Pu residues were treated as waste. (P319A, P380A, U126A)

Gloveboxes, process equipment in gloveboxes, and hoods were decontaminated using water, detergent, and hypochlorite. Until 1980, D&D of some of the process equipment used acid solution rinses to recover plutonium. The outside metal parts of gloveboxes were cleaned with metal polish to remove the metal surface contaminated with plutonium. After cleaning, polyurethane was foamed into the glovebox interior to secure remaining glovebox equipment. The gloveboxes were packed into boxes and the void space was foamed with urethane. (C350A, C375A, C463A, P380A)

Soil removal was conducted following the 1969 rupture of the waste transfer system (WTS) pipelines which carried high-risk acidic and caustic liquid waste and low-risk wastewater from SM/PP complex to WD Building. The WTS consisted of pipelines buried 6 to 25 feet below grade, an associated storage and pumping facility (Building 41), and surrounding soil. A rupture in the high-risk pipeline occurred at a corroded joint located in a section of pipe on the hillside between the pump house (Building 41) and south of WD Building. The rupture of this pipeline also caused the area surrounding the old Sanitary Disposal (SD) facility adjacent to WD Building to become contaminated with 238Pu. The contaminated soil was removed from this area in 1974 and subsequently shipped to INL. Removal of the WTS and Building 41 was accomplished in 1986. (C488A, P380A, P473A, P500A, P501A, P509A, P517A, P547A)

3.2.4.3 Alpha-Wastewater Sources

The primary sources of alpha-contaminated wastewater were the H, R, SW, SM, PP, and WD Buildings, and the old alpha waste pipeline. (P380A, U126A) The SW and R buildings are addressed as SW/R complex. Similarly, the SM and PP buildings shared the same system for the disposal of alpha-contaminated wastewater and are addressed as SM/PP complex. (U126A)

Floor drains in these buildings discharged materials to the alpha wastewater treatment system. Materials common to the building's floor drains included soapy shower water, mop and plutonium decontamination water, cleansers and detergents, oils, paint, alcohol, and acetone. Approximately 200 pounds per year of acids (nitric, sulfuric, hydrochloric, and hydrofluoric) were discharged into drains from laboratory sinks. (C477A, P319A, P380A, P385A, P474A, P525A, P536A, U126A, U196A)

The H Building housed laundry facilities for both uncontaminated and contaminated clothing. Waste generated at H Building from the laundry, the floor drains, and a sink was collected in a holding tank and drained through a pipe to a lift station at SW Building. From the lift station, H Building wastewater was pumped to WD Building influent tanks. Products used in H Building that would have entered the wastewater included liquid soap containing ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contained ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. (P380A, P524A, U126A)

The SW/R Building complex included a small laboratory section that handled alpha emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for research and development, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in WD Building. Chemicals used in the laboratory included carbon tetrachloride, methylene chloride, trichloroethane, chloroform, organophosphate, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, nitric acid, and sulfuric acid. Chemicals used in other SW/R Building operations included hydrogen peroxide; ammonium hydroxide; hydrochloric, hydrofluoric, nitric, sulfuric, boric, and lactic acids; methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene, freon, tetrachloroethylene, toluene, sodium sulfite solution; potassium and copper sulfates; carbonates; and sodium hydroxide (lime). (C443A, C449A, C458A, C466A, C468A, C472A, C473A, P380A, P385A, P474A, P485A, P492A, P493A, P503A, P525A, P536A, U126A, U196A)

The SM and PP processes were virtually the same and are discussed as SM/PP complex.[1] Wastewater was collected in a 10,000-gallon tank on the west side of PP Building, pumped to a tanker truck, and transported to WD Building. PP Building wastewater from floor drains, shower water, sinks, and a laboratory were collected in sumps. The sump water was then pumped to a tank on the west side of PP Building and then pumped to a tanker truck for transport to WD Building for treatment. (U126A) Wastes generated from plutonium processes were managed as illustrated in Figure 3-5. (P380A)

1. Operations stopped in SM Building and the facility was dismantled in 1972; therefore, any wastes generated from processes in SM Building are not included in the wastes stored at INL (earliest package date is January 1974); however, the waste stored at INL may include D&D waste from the SM Building. (P380A, P519A, U173A)

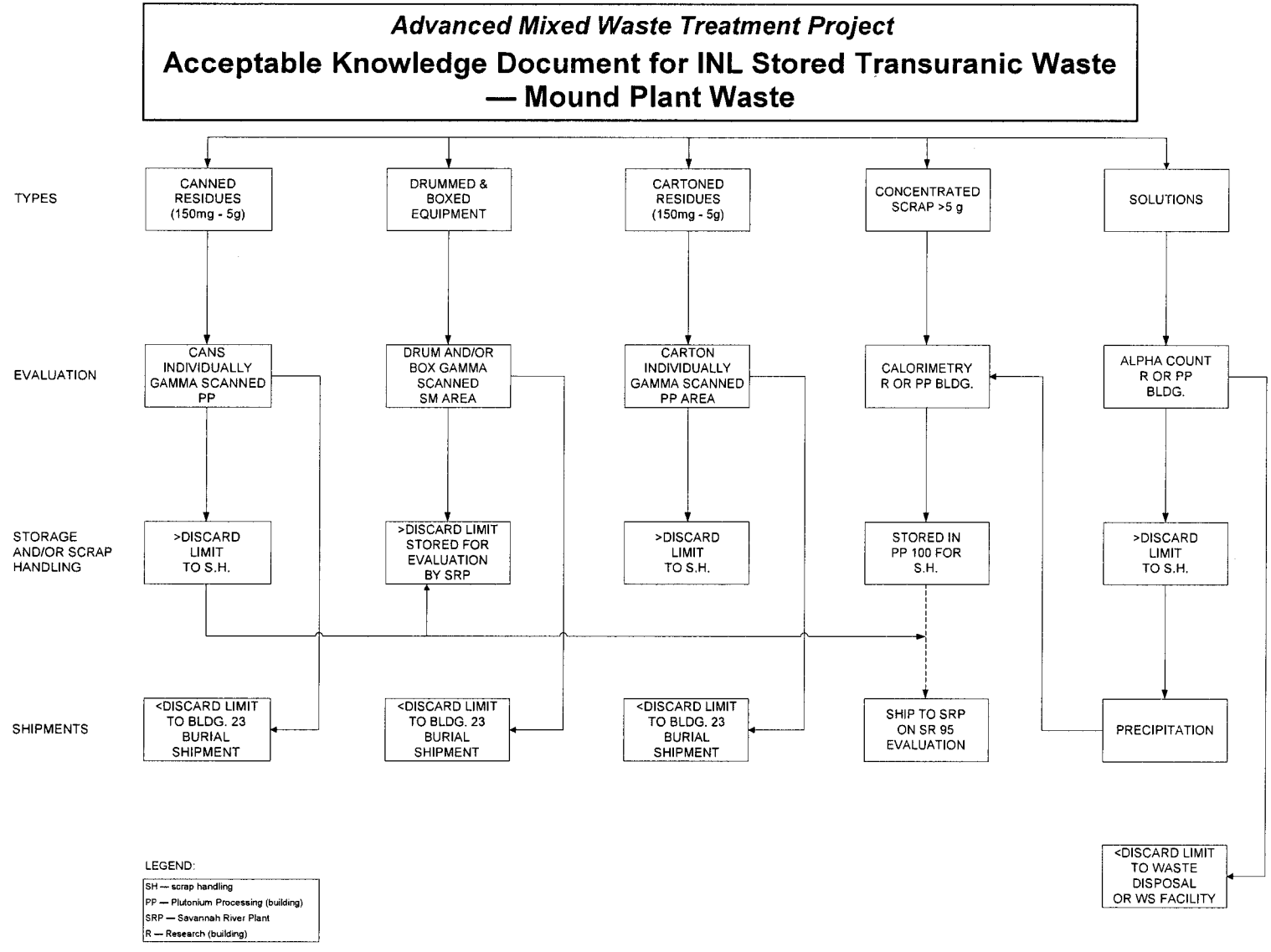


Figure 3-5. In-line plutonium process wastes.

The laboratory in PP Building performed a variety of analytical procedures, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. Vials of liquid scintillation solution were bagged for pickup, and sent to Building 23 as mixed waste. All other spent chemicals from PP were poured down the sink drains into the wastewater tank. Chemicals used in the laboratories included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichoroethane, acetone and ethanol were used for cleaning. Trichoroethane and methanol were used in SM/PP complex as a degreaser for metal parts. (C458A, C464A, C465A, C467A, C473A, C490A, P380A, P469A, P492A, P503A, P525A, P536A, U126A, U196A)

In WD Building, the floor and sink drains are connected to or pumped from sumps to the WD alpha influent tanks. There was a small laboratory in WD Building where the alpha and beta waste streams were analyzed for pH, sludge moisture, and influent and effluent scintillation counts. This laboratory was not used on a routine basis, but the sink was connected to the WD tanks. Hazardous compounds used in the laboratory included Instagel, which has a xylene base. (P380A, P458A)

An old underground alpha waste pipeline had been used to transfer wastes to WD Building from the laundry in H Building and from the SW/R complex. The drains and connections to this line were plugged when the line was replaced; however, a small amount of water from this pipe continued to be received at WD Building, mainly after rains. (P380A)

Floor drains in all buildings described discharged to the alpha wastewater treatment system. Materials common to the floor drains included soapy shower water, mop and plutonium decontamination water, cleansers and detergents, oils, paint, alcohol, and acetone. Acids (nitric, sulfuric, hydrochloric, and hydrofluoric) were discharged into drains from laboratory sinks. Small amounts of solid chemical wastes were also included in the liquid waste including potassium carbonate, potassium sulfate, copper sulfate, calcium carbonate, oxalic acid, lithium chloride, zirconium oxide, sodium carbonate, caustic soda and lime, potassium pyrosulfite, potassium bromide, nickel sulfate, asbestos fiber, methylene blue, mercury, lead, beryllium, and cyanides. (C477A, P319A, P380A, P385A, P474A, P525A, P536A, U196A)

3.3 TRU Waste Generation and Treatment

The plutonium production processes generated combustible and non-combustible wastes contaminated with plutonium and airborne plutonium particulates. Combustible waste consisted of leaded gloves, neoprene gloves, O-rings, paper towels, cartons, coveralls, booties, shoe covers, paper suits, HEPA filters, plastic tubing, bottles, piping, sheeting, sample vials, gaskets, manipulator boots, rubber air lines, wood, wooden ladders, cardboard tubes, Kimwipes, and cloth rags. (C349A, P380A, U141A, U159A)

Non-combustible wastes consisted of ceramic material such as concrete, floor tile, plaster, bricks, fiberglass and asbestos insulation, graphite and tantalum crucibles, glassware including beakers and flasks, metal, hoods, parts of hoods, gloveboxes, parts of gloveboxes, conduit, metal ladders, tools, valves, piping, copper tubing, nuts, bolts, tubing, pumps, motors, filter materials, aqueous solutions, and other miscellaneous items of process equipment and instruments. (C349A, P380A, U141A, U159A)

The volume of waste generated by the analytical laboratories was very small. Solid wastes generated included glass, paper, and plastic contaminated with ^{239}Pu, ^{238}Pu, ^{235}U, ^{238}U, beryllium, and mercury. The beryllium-contaminated wastes included glass, paper, gloves, and sample precipitates. Beryllium contaminated wastes were generated from analyses of weapons components through the SALE program. Typically, less than 0.1 g of beryllium was generated annually. (P380A)

No waste generated from processes in SM Building is included in the wastes stored at INL because operations stopped in 1972 and Mound waste stored at INL was generated after 1973. It is possible that wastes generated from the D&D of the SM and from other D&D activities performed after 1972 were sent to INL. Any D&D waste removed from the SM Building would have been similar to the D&D waste removed from the PP Building. The D&D of PP Building recovery, analytical, and production glovebox lines began in late 1977. (P380A)

The following items were removed during PP Building D&D operations:

- Stainless steel gloveboxes, 7 feet high by 3 feet wide, removed in sections
- Fiberglass gloveboxes, 4 feet high by 3 feet wide, removed in sections
- Plexiglas windows from gloveboxes
- Stainless steel fume hoods
- One machining lathe, 2 feet by 3 feet
- Tantalum tanks (evaporators, dissolvers, precipitators)
- Polyethylene tanks (1 to 8 gallons)
- Stainless steel tanks (3 to 40 gallons)
- Approximately 20 large stainless steel tanks (132 to 160 gallons)
- Six resistance furnaces, 18 inches diameter by 18 inches high
- Fiberglass and asbestos insulation from furnaces
- Two vacuum pump presses
- Three stainless steel diffusion pumps, the largest of which is 3 feet long by 18 inches diameter
- Numerous Welsh pumps

- Manipulators and manipulator boots
- Lead-lined glovebox gloves and some asbestos gloves
- Glassware
- Wrenches and other hand-tools
- Graphite molds and crucibles
- Duct work
- Small amounts of lead shot
- Paper, rags, plastic
- Stainless steel and black iron piping, 3/8 inch to 1 inch diameter
- Welding equipment (electrodes, cables)
- Conduit
- Concrete, floor tile
- Approximately 900 linear feet of fiberglass conveyor system, 2 feet wide by 3 feet high (sent in 1982). (P319A)

The following items were removed from R Building during D&D operations:

- 414 linear feet of stainless steel gloveboxes, 4 feet high by 3 feet wide
- Vacuum heat press, partially dismantled; press contained a spherical chamber, 3 feet diameter with 1 inch thick stainless steel walls
- Three stainless steel diffusion pumps, largest pump is 3 feet high by 18 inches diameter
- Numerous Welsh vacuum pumps, 18 inches diameter by 22 inches long
- One machining lathe, 2 feet high by 3 feet long
- Several stainless steel tanks
- Two fume hoods, 4 feet high by 3 feet long, made of ½ inch stainless steel
- Copper and stainless steel piping
- Hot plates, hand tools
- Glassware (flasks, beakers)
- Crucibles (graphite and tantalum)
- Lead-lined glovebox gloves
- Plastic, paper, rags, etc. (P319A)

The wastes generated by the D&D program generally reflect the contaminants from the processes used in the facility being decommissioned as well as the waste produced by the work itself. Radioactive wastes from the D&D program at Mound have generally contained alpha-emitters and tritium. Most of the alpha-contaminated waste generated from D&D operations came from PP Building. Smaller amounts of alpha-contaminated soil were generated from D&D of the waste transfer lines. One glovebox from the R Building was characterized as TRU waste. (P380A)

Treatment of wastes at Mound was generally limited to the processing of liquid waste from ^{210}Po and ^{238}Pu processes, although other wastes were also treated by incineration and low-level liquid solidification. Wastewater from plutonium production in SM Building was treated in treatment facilities in WD Building and in a separate similar facility in SM Building. After completion of the WTS pipeline in 1971, the wastewater was treated in the Waste Disposal Addition (WDA). Both the high-risk and low-risk plutonium wastewater consisted primarily of ^{238}Pu and ^{239}Pu with ^{241}Am, ^{237}Np, ^{235}U, and ^{234}U at trace concentrations. (P380A)

3.3.1 Liquid Waste Treatment

The WD Building was the central facility for treatment of alpha-contaminated wastewaters. The WD Building also housed a beta wastewater treatment system. The process flow for the alpha wastewater in WD Building is presented in Figure 3-6. (P380A)

The alpha treatment system treated only dilute low-risk wastewater because most wastewater was pre-treated prior to discharge to WD Building to remove the highest percentage of solids possible. There are four 30,000-gallon influent tanks constructed of epoxy-coated steel outside the north wall of WD Building in a below ground concrete vault. These tanks served as feed tanks for the clariflocculators in the alpha wastewater treatment system. Alpha-contaminated wastewater was pumped into the tanks through pipelines from the H, R, SW, and WD buildings and delivered by tanker trucks from SM/PP complex. (P469A, U126A)

The WDA was constructed and included the WTS pipelines. These pipelines carried high-risk acidic and caustic liquid waste and low-risk wastewater from SM/PP to the WDA. The WDA began accepting low-risk plutonium wastewater in August 1967. The high-risk portion of the pipeline was not operational until April 1968 and was abandoned in 1974. The WDA low-risk plutonium wastewater treatment was moved to WD, and the WDA alpha influent tanks were converted to use in the beta wastewater treatment system which began treating tritiated wastewater in 1973. (P380A, P518A, P533A)

Solidified sludge and liquids were generated in WD Building. Inputs to WD, however, were from many site locations during the time period that INL stored Mound wastes were generated. (P380A) Sources of the alpha-contaminated liquid wastes treated at Mound that may have been shipped to INL included:

- Low-risk liquid waste from the pipeline leading from PP Building (until 1976)

- Low-risk liquid waste brought from PP Building by tanker truck (after 1976)
- Drains, sumps, showers, and laboratory sinks from SW/R
- WD drains, sumps, and laboratory sinks
- H Building (laundry) drains. (P380A)

Wastewater treated with additives (carbon, barium chloride, and/or calcium chloride), flocculent (ferric sulfate, aluminum sulfate, and Nalco 676), and pH-adjusting chemicals (e.g., sodium hydroxide or sulfuric acid) was discharged into one of two of the 60,000 gallon clariflocculators for setting. The sludge from the clariflocculators was pumped into sludge pits and then discharged to a sludge solidification and drumming unit where it was solidified with cement in 55-gallon drums. The supernatant from the clariflocculator was filtered and discharged into an effluent storage tank. The effluent was neutralized with sulfuric acid and discharged into the Great Miami River. (C343A, C349A, C411A, P380A, P464A, P469A, P522A, P523A, P524A, P536A, U126A, U145A, U159A)

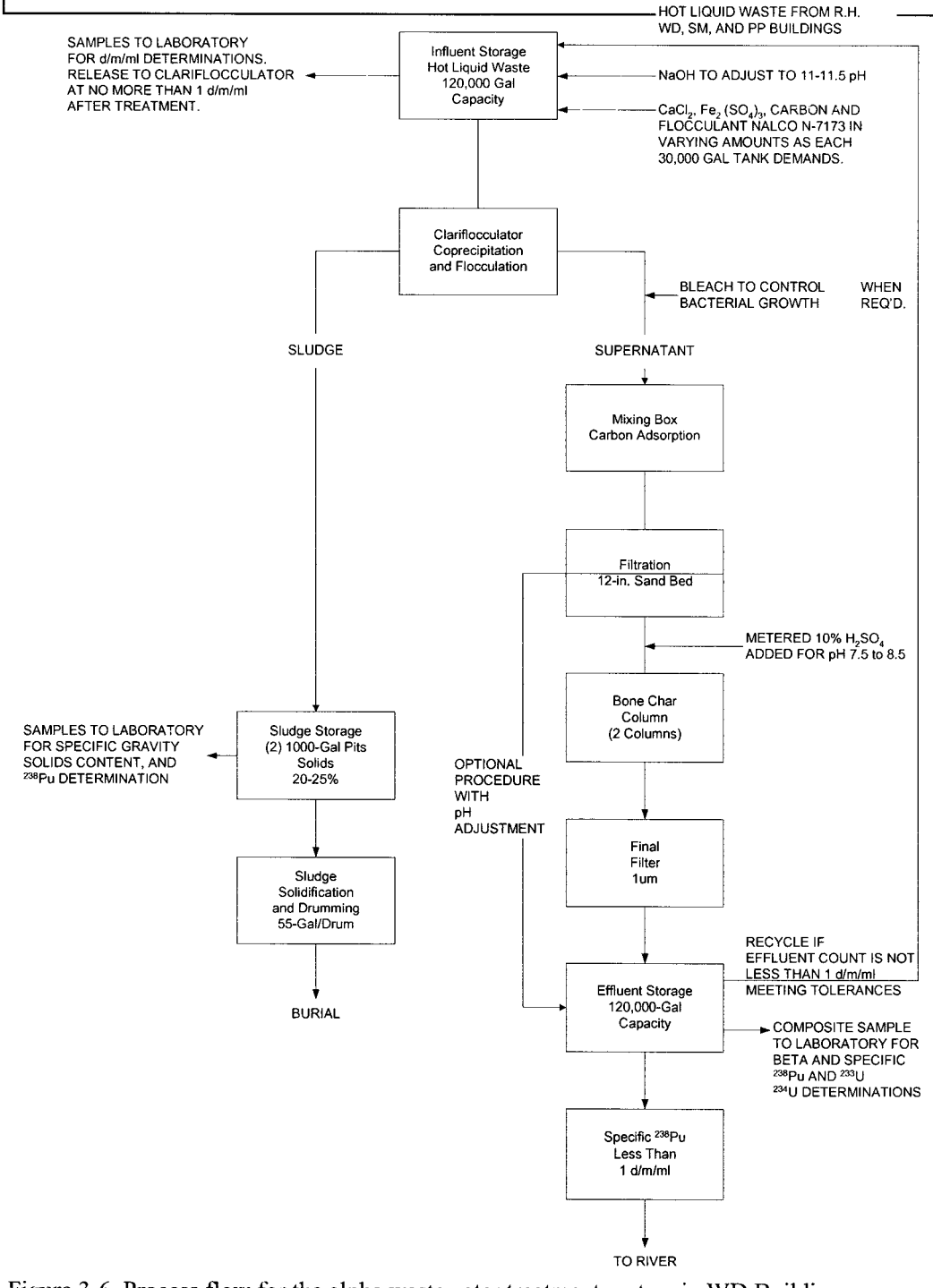


Figure 3-6. Process flow for the alpha wastewater treatment system in WD Building.

The WTS ruptured near WD in 1969 leading to significant ^{238}Pu contamination, as described in Section 3.2.4.2. In December 1970, elevated alpha activity was observed at the SD influent tanks during routine monitoring. Subsequent search and sampling of the sanitary and process sewer lines indicated that seepage from the process lines had in fact affected the sanitary lines which were made from vitrified clay. (C488A, P380A, P500A, P501A, P509A, P517A, P547A)

High-risk liquid wastes were packaged for disposal in the WD until 1968, when packaging operations were moved to WDA. In 1974, packaging took place in the Waste Solidification (WS) Facility adjacent to PP Building. High-risk liquid waste, acid and caustic liquids primarily from plutonium processing and recovery operations and the corrosive vapor scrubber system, was mixed with an absorbent in the Waste Solidification (WS) Facility located in PP Building and drummed for off-plant disposal. Until the early 1970s vermiculite or an aluminum-magnesium-iron silicate clay material (Florco) were used, and then Auto-Dri, Dri-Rite, or Sorbal were used until a drum pressurization problem occurred due to their use. (C359A, C362A, C364A, C365A, C368A, C463A, P024A) After the pressurization problem was identified, Florco was again used, beginning in July 1975; however Dri-Rite may have been used in some drums until September 1975. (C361A, C365A, P024A) In addition, AMWTP RTR identified vermiculite (or a vermiculite-like product) in a container packaged in October 1979. (17)

Drums not meeting acceptance criteria were repackaged in the WD facility. Several hundred drums of solidified acid/caustic waste were repackaged in the WD facility in the late 1970s. They were repackaged to meet TRU waste criteria, to remove free liquid, or to correct packaging deficiencies caused by the pressurization problems. Typically, 10 gallons of high-risk liquid waste were mixed with about 150 pounds of absorbent. Drums were allowed to off-gas before the inner liner was closed, and liner lid sealed to liner body with adhesive. Drums were staged at Building 23 before shipment off-plant. This operation ceased in 1982 when no further high-risk liquid waste was generated. The system underwent D&D as part of the former plutonium facilities. (C349A, C360A, C364A, C365A, C463A, P319A, P380A, P457A, P471A, P510A, P522A, P523A, P524A, U159A, U167A)

3.3.2 Solid Waste Treatment

Treatment of solid wastes at Mound was generally limited to incineration and compaction during packaging of low activity materials. Beginning in the mid-1970s, some <100 nCi/g debris waste was placed into plastic bags which were sealed with tape and compacted inside prepared 55-gallon drums in one of two solid radioactive waste compactors located in PP Building. The compaction ratio was approximately 4:1. (C478A, P024A, P313A, P365A, P380A, P522A, P524A, U159A) The compacted waste was either shipped for off-plant burial or sent to INL for 20-year retrievable storage. The compactor was removed from service and dismantled in 1987. (P380A)

In addition, in the late 1970s, line generated waste that did not meet INL criteria due to the contents having greater than 1 gram of ^{238}Pu and/or 4×10^5 nanocuries per gram of alpha activity per 55-gallon drum, the contents of the drum were to be split into two drums and packaged with non-line material to meet the criteria. When splitting did not create the desired results, the contents of the drum were to be distributed within a TRU fiberglass coated plywood box. (C370A, C371A)

3.3.2.1 Incineration

When PP Building's plutonium processing facility became operational (~1967), an incinerator was installed in the plutonium recovery process glovebox line. The incinerator had a capacity of 10 gallons. It was fired with natural gas, and the concentration of nitrogen and oxygen in the glovebox was controlled so the system operated in an oxygen-starved condition. Off-gas was scrubbed with a sodium hydroxide scrub solution and filtered. The filters were made from a glass fiber/asbestos media. The filtered off-gas entered the building process exhaust system, was filtered again by the two-stage HEPA filtration system, and was discharged to the atmosphere. Combustible material containing recoverable quantities of ^{238}Pu that were treated in the incinerator included: wood, neoprene leaded gloves, paper towels, rags, and glovebox HEPA filters. The incinerator ash was sent to the plutonium recovery process. (P380A, P503A)

3.3.2.2 Glass Melter Furnace

The glass melter thermal treatment unit was located in WDA. Wastes were added to the furnace through a port located in the ceiling. Combustibles ignited immediately as they entered the furnace chamber. Solids and incompletely burned solids fell to the surface of the molten glass in the refractory. Other feeds to the furnace were shredded dry solid wastes, ion exchange resins, liquid waste, and sludge. A tube filter filtered out particles from the scrub solution prior to its addition back into the scrubbing equipment. Filter cake accumulated on the filter elements and was periodically removed. Sludge and spent scrub solutions were recycled to the glass melter chamber or immobilized in concrete. A strainer received effluent from the tube filter and filtered out iron chips before the effluent was discharged to the deluge tank. (P380A)

3.4 TRU Waste Management

During the 1940s and 1950s, all radioactive wastes were shipped to ORNL for burial. Much of the LLW was shipped to commercial facilities such as Maxie Flats, Kentucky; Barnwell, South Carolina; and West Valley, New York. Classified wastes were shipped to ORNL or SRP, South Carolina. In the early 1970s, the AEC required that all TRU wastes be packaged in containers that would withstand up to 20 years of retrievability and be buried at an AEC site. The criteria for disposal of TRU wastes exempted Mound's principal contaminant, ^{238}Pu, if the activity was below 10 nCi/g. As a result, in the mid-1970's Mound began subdividing the TRU waste streams and implemented a program to reduce the volume of LLW by compaction or onsite incineration. (P380A)

Large materials were stored until the R & R Building, was constructed in 1964. Drums were opened and waste materials sorted in a special glovebox facility prior to further recovery, treatment or disposal. (C402A, P380A)

Mound TRU waste containers in INL inventory were generated from operations and D&D activities as described above. Waste management at the Mound site changed significantly in 1972. At that time, a waste management program became a formal part of the Mound organization. The formal program included but was not limited to plans for managing and reducing the amount of wastes generated; reported results of treatment facilities; and reported waste management accomplishments. The initial focus was on handling, minimizing, and disposing of radioactive waste. Nonradioactive wastes were added to the program plans in 1978, although chemical wastes had been part of the program since 1972. (P380A)

Wastes generated from processing ^{234}U in R Building were identified to be aqueous wastes high in nitrate and chloride. They were either returned to plutonium and neptunium recovery operations or were transferred to WD Building via the waste water pipeline for disposal depending on the level of radionuclide activity. (P380A)

Other solid wastes generated during recovery operations included paper products; broken glassware, metal, spent ion exchange resins, rubber, and leaded gloves. The materials were placed into 30-gallon steel drums, overpacked into 55-gallon drums and shipped off-plant. (P380A)

In 1982, as a result of the ever-increasing volume of TRU wastes nationally, the criterion for identification of TRU waste was raised from 10 nCi/g to 100 nCi/g. This action reduced the quantities of TRU waste that required retrievable storage. Through the 1980's, Mound shipped non-TRU wastes (<100 nCi/g) to the Nevada Test Site (NTS) for burial and TRU wastes (>100 nCi/g) to INL for burial. Shipments to INL stopped in 1988, based on an Idaho gubernatorial order. (P380A)

Mound's certification plan for solidified sludge TRU waste shipments to the WIPP was approved in 1985. By June 1988, all four of Mound's TRU wastes (cemented sludge, non-combustible, combustible, and soils) were certified for disposal at WIPP.

3.5 Waste Packaging

The majority of waste drums used by Mound for shipment to INL were 55-gallon drums with a 90-mil polyethylene liner. Typically, 90-mil liners were lined with a polyethylene drum bag. (P381A) Per Mound operating instructions, the liner lid was sealed to liner body with adhesive in drums generated prior to mid 1980s. Plywood spacers (¼- to ¾- inches thick) were placed between the rigid liner lid and the drum lid before the drum lid was installed. (C269A, C361A, C365A, C463A, C479A, P380A, P381A, P510A)

RTR and/or VE have identified variations in packaging configurations for 55-gallon drums. Some drums do not have a polyethylene drum bag or have more then one polyethylene drum bag. (14, 20, 21) The drum bag was typically twisted and sealed with tape; however, plastic zip

ties, wire ties, or fold and tape are also acceptable closure methods. (24, P381A) RTR has also identified the absence of plywood spacers in some Mound drums. (13, 27) It was originally estimated that plywood spacers were 22-½ inches in diameter, 0.74-inches thick, and weighed approximately 7 pounds. However, the observations made by experienced RTR operators and measurements taken during visual examinations of multiple Mound containers reveal that the plywood spacers vary in size and thickness; therefore, the weight of the plywood spacers would vary from approximately 2 pounds to a maximum of 7 pounds. (28)

All boxes used to package TRU wastes were coated with fiberglass-reinforced polyester (FRP). Standard-sized boxes (4 × 4 × 7 feet) were used to package equipment (IDC MD-824) and in some instances 55-gallon drums of waste (up to five 55-gallon drums per box). Standard-sized boxes were also used to package contaminated soil (IDC MD-842) that had been previously placed in small boxes (2 × 3 ½ × 3 feet) and sealed. Four smaller boxes of soil were placed into each standard-sized box. (C351A, C415A, C416A, P380A)

Oversize boxes were used for glovebox sections (IDC MD-824) or large equipment (IDC MD-824) that would not fit into standard boxes. The interior of each glovebox was coated with polyurethane foam to fix contamination. Each glovebox was wrapped in two layers of polyethylene plastic. Polyurethane foam was sprayed into the corners of each box to provide shoring. Descriptions of each oversize box type and its use at Mound are presented in Table 3-3. (P319A)

Table 3-3. Oversized box type and use.

Box Type	Width	Height	Length	Use
I	5 ft 11-1/2 in	9 ft	11 ft 4-1/2 in	Double height gloveboxes
III	5 ft 1/2 in	8 ft 8-1/2 in	9 ft ½ in	Double height gloveboxes
IV	4 ft	5 ft 6 in	8 ft	Glovebox sections from R Building
V	5 ft ½ in	5 ft 2-1/8 in	8 ft 7-1/2 in	Standard sized gloveboxes on stands

Small line-generated wastes (rags, paper, glass, filters, metal, rubber, evaporator and dissolver sludge, etc.) were placed in 1-gallon plastic coated cardboard cartons or ½-gallon metal cans; the cartons/cans were then placed in polyethylene bags. Cartons/cans were bagged into polyethylene "tube" bags (i.e., up to five cartons/cans were packed per bag) and placed in 55-gallon drums. Beginning in the late 1970's, cartons/cans containing below-discard amounts of ^{238}Pu were segregated into combustible and non-combustible fractions. Larger line-generated waste items (tools, motors, etc.) were double contained in polyethylene before placement in drums or boxes, depending on size. (C426A, P024A, P319A, P380A, P383A, P384A)

Each inner carton/cans was labeled with an IDC to identify content (Table 3-2). The cartons/cans were packed into 55-gallon drums and each drum was assigned the content code typically representing the majority of cartons/cans in the drum with the same IDC. For example, a drum labeled with an IDC MD-803 will contain a majority of cartons/cans containing metal wastes – labeled 803 – but will also contain other cartons/cans containing other non-combustible wastes (e.g., IDCs MD-805, MD-810, etc.) and may contain combustible waste (e.g., IDCs MD-801, MD-802, MD-804, etc.). (19, 25, C340A, P319A)

The solidified acid/caustic waste (IDCs MD-834 and MD-835) and the cemented sludge (IDC MD-836) were placed directly into 55-gallon drums with a 90-mil polyethylene liner. Typically, 90-mil liners for solidified acid/caustic waste (IDCs MD-834 and MD-835) were lined with a polyethylene drum bag. (P381A) Cemented sludge drums (IDC MD-836) were not lined with polyethylene drum bags. (P379A). Some drums of solidified acid/caustic waste may contain ½-gallon or 1, 2, or 4-liter plastic bottles of absorbed liquid waste. (P024A)

Non-line generated debris wastes (combustible and non-combustible wastes) were packaged in one or two plastic bags or placed directly into the 55-gallon drums with a 90-mil polyethylene liner. Typically, 90-mil liners were lined with a polyethylene drum bag. (P024A, P381A)

The following are the waste designator codes that were assigned to waste containers; however, anomalies in the use of these codes have been noted (e.g., IDCs MD-825, MD-827 and MD-847 containers assigned CD designator per the inventory list): (P319A, P380A, P381A, U122A)

- AC for drums of absorbed acid/caustic liquid wastes (IDCs MD-834 or MD-835) until 1976 (also includes drums of IDC MD-834 repackaged at Mound between 1977 and 1980 prior to shipment to INL)
- CA for drums of absorbed caustic liquid wastes (IDC MD-835) after 1976
- CD for drums with inner containers (cartons/cans) (IDCs MD-801, MD-802, MD-803, MD-804, MD-805, MD-810, MD-811, MD-813, MD-814, and MD-825)
- CS for containers of contaminated soil (IDC MD-842)
- EQ for drums of non-combustible and combustible equipment (IDCs MD-825 and MD-827, respectively)
- BX for boxes of non-combustible and combustible equipment (IDCs MD-824 and MD-826, respectively)
- LC for LSA combustible waste (IDC MD-847)
- LD for compacted combustible LSA waste (IDC MD-847)
- LN for LSA non-combustible waste (IDC MD-848)
- LS for LSA combustible and non-combustible waste (IDCs MD-847 and MD- 848, respectively)

- SL for sludge/cement (IDC MD-836).

The last two digits of a container assigned a designator code represent the year that the drum was manufactured. (U167A)

Two solid radioactive waste compactors were brought into operation in 1974. Both were located in PP Building. The first compactor was used to compact radioactive wastes containing less than 10 nCi/g of TRU radionuclides. The second compactor was used to compact solid wastes containing greater than 10 nCi/g of TRU radionuclides. The compacted wastes were either shipped for off-plant burial or sent to INL for 20-year retrievable storage. These compactors were removed from service and dismantled in 1987.

Additional information on waste packaging is included in Sections 4.3, 5.3, and 6.3.

3.6 TRU Waste Inventory

A baseline container inventory estimate of the TRU waste inventory sent from the Mound Plant to INL as addressed in this report is provided in RPT-TRUW-06, Acceptable Knowledge AMWTP Baseline Document AK for AMWTP Waste. (9)

3.7 Waste Grouping

During the review of AK, TRU waste generated from Mound Plant operations was identified and grouped based on the physical matrix of the waste and potential treatment options (e.g., supercompaction of debris waste). The wastes and their characteristics assessed for the development of this document, included: the processes or activities that generated the waste, the waste matrix code (WMC), the waste description, and the hazardous constituents. The waste groupings are summarized in Table 3-4. (8, U126A) The WMCs and dates of generation are those assigned based on AK source documents from the generator site. (P380A, U127A)

Sections 4.0, 5.0 and 6.0 of this report contains the summarizations of the AK for solidified acid/caustic waste, cemented sludge, and debris wastes.

Table 3-4. Grouping of Mound Plant waste stored at INL.

IDC	Title	Dates of Generation
Solidified Acid/Caustic Waste (Section 4.0), WMC S3113, Inorganic Particulate Absorbents		
MD-834	High Level* Acid	1975 –1980
MD-835	High Level* Caustic	1974 – 1985 (U126A)
Cemented Sludge (Section 5.0), WMC S3121, Wastewater Treatment Sludges		
MD-836	High Level* Sludge/Cement	1974 – 1985
Evaporator and Dissolver Sludge, WMC S3125, Reprocessing Solids		
MD-811	Evaporator and Dissolver Sludge	1976 – 1977
Contaminated Dirt, WMC S4200, Soils/Debris)		
MD-842	Contaminated Soil	1975 – 1987
Heterogeneous Debris Waste (Section 6.0), WMC S5490, Unknown/Other Debris [b]		
MD-801	Rags, Paper, Wood, etc.	1977 – 1982
MD-802	Drybox Gloves and O-Rings	1975 – 1981
MD-803	Metal, Equipment, Pipes, Valves, etc.	1974 – 1982
MD-804	Plastic, Tygon, Mani-boots, etc.	1976 – 1982
MD-805	Asbestos Filters	1975 – 1982
Heterogeneous Debris Waste (Section 6.0), WMC S5490, Unknown/Other Debris [b]		
MD-810	Glass, Flasks, Sample Vials, etc.	1976 – 1980
MD-812[a]	Spent Ion Exchange Resin	[a]
MD-813	Glass Filters and Fiberglass	1976
MD-814	Graphite Waste	1976 –1977
MD-824	Equipment Boxes, Non-combustible	1975 – 1986
MD-825	Equipment Drums, Non-combustible	1975 – 1985
MD-826	Floor Sweepings/ Rust (prior to 1981) Equipment Boxes, Combustible (after 1980)	1981 – 1988
MD-827	Equipment Drums, Combustible	1982 – 1985
MD-832[a]	Contaminated Mercury	[a]
MD-838	<10 nCi/g Non-Combustible	1975
MD-847	LSA<100 nCi/g Combustible	1974 – 1982
MD-848	LSA<100 nCi/g Non-Combustible	1974 – 1982

IDC	Title	Dates of Generation
Classified Parts, WMC S9000, Unknonwn/Other Solids)		
MD-815	Classified Parts	1981 – 1982

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g., 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

a. Content codes 812 and 832 do not appear in INL records. Only small quantities of these wastes were generated and the wastes packaged in cartons as described in Section 3.5. The small quantity waste cartons were placed in drums based on whether combustible or non-combustible and a mix of cartons in a single drum is anticipated. IDC MD-812, ion exchange resins, was packaged in 28 cartons. The cartons containing ion exchange were placed in other combustible waste drums (IDCs MD-801, MD-802, and MD-804) for shipment to INL. IDC MD-832, contaminated mercury, was packaged in 61 cartons or 1/2-gallon metal cans . The cartons containing mercury were placed in other non-combustible waste drums (IDCs MD-803, MD-805, MD-810, MD-811, MD-813, MD-814, and MD-826) for shipment to INL. (P024A)

3.8 TRU Waste Characterization

3.8.1 Material Input Related to Hazardous Constituents

A review of the available AK documentation was performed to identify chemical usage and related constituents that were present at Mound. Some of these constituents may have been introduced into the various waste streams generated at Mound. Table 3-3, Mound Chemicals and Constituents of Concern, summarizes the chemicals and constituents of concern and the use applicable to operations at Mound (including non-Pu operations conducted in plating shop, photographic process, plastics and explosive development [e.g., B, DS, E, I, and M buildings, Building 49], and sanitary disposal facility [SD]). (P380A, P492A, P548A) The table also includes chemicals/constituents that were identified as being present at Mound but their specific use or location of use was not identified. The cemented sludge waste stream (BN836) was generated during the treatment of WD wastewaters. The solidified acid/caustic waste stream (BN835) was generated from treating acids and bases generated in plutonium recovery processes. Chemicals/constituents identified as being present at Mound in AK source documents or identified by interviews that detailed a specific use and/or with supportive AK documentation are included in this table.

Table 3-5. Mound Chemicals and Constituents of Concern

Chemical/ Constiuent	Use	References
Acetone	Plating shop wastewater to SD	P380A (3-24)
	SM/PP wastewater to WD	P380A (2-30)
	R wastewater to WD	P380A (3-27), U126A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Cleaning in SM/PP	C465A, C472A, P503A,
	Cleaning in SW	P493A
	Solvent use in SW	C472A
	Ultrasonic cleaning in R Bldg	P493A
	Cleaning in R Bldg	C466A
	Degreasing in PP Bldg	C464A
	Cleaning in buildings DS, E, H, 27, 28, 29, 37, 42, 43, 51, 60 (non-Pu areas)	P493A
	Trace quantities in IDC MD-836	C477A
	Identified in IDC MD-836 by INEL	P361A, P365A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Ventilation hoods (use and location unspecified)	P380A
	Solvent use, unspecified location	P380A (Table VI.3),
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
Ammonium hydroxide	Pu-238 processing in PP Bldg	P380A, C470A
	U-234 processing in R Bldg	P380A
	Cotter Concentrate processing in SW	P380A
	Basic waste from SM/PP	P024A, P380A
	PP and R wastewater to WD Bldg	P380A, P492A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)
Arsenic	Analysis in R Bldg	P493A
	Draft waste flowsheet for cemented sludge & debris	C354A
	Plating shop wastewater to SD	P380A
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A

Chemical/ Constiuent	Use	References
Barium	Analysis in R Bldg	P493A
	WD reagent (barium chloride, 1972-1975)	P523A
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in IDC MD-824, 826	U184A, U192A
	Identified in IDC MD-824 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDC MD-824	U206A (Content Code MD 117/217)
	Unspecified uses	C458A
	R Bldg chemical inventory (1996, 1998)	P497A
Benzene	Cleaning in R Bldg	C466A
	Ventilation hoods (use and location unspecified)	P380A
	Used in buildings H, HH, WD, 37	P493A
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A
Cadmium	Plating shop wastewater to WD	P380A
	Analysis in R Bldg	P493A
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in IDCs MD-824, 826	U184A, U192A
	Identified in IDCs MD-824, 836, 842 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 836, 842	U206A (Content Codes MD 111/211, 117/217)
	Unspecified uses	C466A
	R Bldg chemical inventory (1996)	P497A
Carbon disulfide	Used in isolating sulfur isotopes in HH	P380A, P493A
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
Carbon tetrachloride	Solvent extraction in SW/R Bldg	P380A (3-27), U126A
	Solvent extraction in SW Bldg	P380A (2-73)
	Cleaning in R Bldg	C466A
	Unspecified uses	P380A (4-25)
	Mound list of chemical reagents	P380A (Table VII.2)
Chloroform (Trichloromethane)	Solvent use in B and R buildings	P493A
	Ventilation hoods (use and location unspecified)	P380A
	Unspecified use	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Chromium	Analysis in R Bldg	P493A
	Hastelloy (containing chrome) used as encapsulation material	P380A
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in acidic liquid waste	P380A (2-28), U126A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Present in IDCs MD-824, 826	U184A, U192A
	Trace quantities in IDCs MD-824, 836	C477A
	Identified in IDCs MD-824, 836 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 842, 836	U206A (Content Codes MD 111/211, 117/2117)
	Unspecified uses	C466A
	R Bldg chemical inventory (1996, 1998)	P497A
Chlorobenzene (Phenyl chloride)	Potential contaminant to WDA sump	P380A (4-25)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996)	P497A
Ethanol (Ethyl alcohol)	SM/PP wastewater to WD	P380A (2-30)
	SW/R wastewater to WD	P380A (3-29), U126A
	Cleaning in SM/PP	C465A, P503A
	Cleaning in SW/R	P380A
	Ultrasonic cleaning in R Building	P493A
	Degreasing in Building 49 (non-Pu area)	P380A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Solvent use, unspecified location	P380A (Table VI.3)
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Hydrochloric acid	Pu-238 processing in PP Bldg	P024A, P380A, P503A
	U-234 processing in R Bldg	P380A
	Pu-239 research in R Bldg	C449A
	Pa-231 processing in SW Bldg	P380A
	Acidic liquid waste from SM/PP	P024A
	R, PP, SW, and SM wastewater to WD	P380A
	Present in wastewater in WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)
Hydrofluoric acid	Pu-238 processing in PP Bldg	C464A, P024A, P380A
	Cleaning in PP F-Line	P503A
	Acidic liquid waste from SM/PP	P024A, P380A
	PP, R, and SM wastewater to WD	P380A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)
Isobutanol (Isobutyl alcohol)	Unspecified uses	C458A
	Mound list of chemical reagents	P380A (Table VII.2)
Isopropyl alcohol (2-Propanol)	SM/PP wastewater to WD	P380A (2-30)
	SW/R wastewater to WD	P380A (3-29), U126A
	Degreasing in Building 49 (non-Pu area)	P380A
	Cleaning in Building E (non-Pu areas)	P493A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A,
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Lead	Analysis in R Bldg	P493A
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in acidic liquid waste	P380A (2-28), U126A
	Present in Cotter Concentrate (SW Bldg)	P380A (2-70)
	Trace amounts in WD influent	P380A (Table II.5)
	Leaded rubber gloves/aprons, lead bricks	C481A, P532A, P539A
	Present in IDCs MD-824, 826	U184A, U192A
	Trace quantities in IDCs MD-824, 836, 842	C477A
	Identified in IDCs MD-802, 824, 827, 836, 842 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 827, 836, 842	U206A (Content Codes MD 111/211, 116/216, 117/217)
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	R Bldg chemical inventory (1996, 1998)	P497A
Mercury	Analysis in R Bldg	P493A
	Trace amounts in WD influent	P380A (Table II.5)
	Draft waste flowsheet for cemented sludge & debris	C354A
	Used in Teplar pumps	U126A
	Thermometers	C466A, C472A
	Present in IDCs MD-824, 826	U184A, U192A
	Trace quantities in IDCs MD-824, 836	C477A
	Identified in IDCs MD-803, 805, 810, 811, 813, 814, 824, 826, 827, 836, 842 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 827, 836, 842	U206A (Content Codes MD 111/211, 116/216, 117/217)
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Unidentified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A

Chemical/ Constiuent	Use	References
Methanol (Methyl alcohol)	SM/PP wastewater to WD R wastewater to WD Cleaning in R and SW Building Degreasing or cleaning in SM Present in wastewater in WD Trace quantities in IDC MD-836 Identified in IDC MD-836 by INEL Trace quantities allowed in IDC MD-836, 842 Mound list of chemical reagents	P380A (2-30), P380A (3-27), U126A P493A C467A, C473A P319A, P385A, P474A, P525A, P536A, U196A C477A P361A, P365A U206A (Content Code MD 111/211) P380A (Table VII.2)
Methylene chloride (Dichloromethane)	Solvent extraction in SW/R Bldg Ultrasonic cleaning in R Bldg Ventilation hoods (use and location unspecified) Influent to storm sewer from paint shop Cleaning in buildings B and E (non-Pu areas) Unspecified uses Mound list of chemicals R Bldg chemical inventory (1996)	P380A (3-27), U126A P493A P380A P380A P493A P380A (5-18) P380A (Table VII.2) P497A
Methyl ethyl ketone (2-Butanone)	Ventilation hoods (use and location unspecified Unspecified uses Mound list of chemical reagents	P380A P380A (Table VI.4) P380A (Table VII.2)
Methyl isobutyl ketone	Unspecified uses Mound list of chemical reagents	C468A P380A (Table VII.2)
Nitric acid	Pu-238 processing in PP Bldg Cleaning in PP F-Line and used during D&D Pu-239 research in R Bldg Used in PP and SM Bldgs Acidic liquid waste from SM/PP R, PP, SW, and SM wastewater to WD Present in wastewater to WD Trace quantities in IDC MDs-836 Trace quantities allowed in IDCs MDs-836, 842 Mound list of chemical reagents	C464A, P024A, P380A, P503A P503A C449A C481A P024A, P380A P380A P319A, P385A, P474A, P525A, P536A, U196A C477A U206A (Content Code MD 111/211) P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Oxalic acid	Pu-238 processing in PP Bldg	P380A
	Acidic liquid waste from SM/PP	P024A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)
Phosphoric acid	Plating shop wastewater to SD	P380A
	Environmental laboratory wastewater to SD	P380A
	Mound list of chemical reagents	P380A (Table VII.2)
Selenium	Analysis in R Bldg	P493A
	Present in Cotter Concentrate (SW Bldg)	P380A (2-70)
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in IDCs MD-824, 826	U184A, U192A
	Identified in IDCs MD-824, 836, 842 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 836, 842	U206A(Content Codes MD 111/211, 117/217)
	R Bldg chemical inventory (1996, 1998)	P497A
Silver	Analysis in R Bldg	P493A
	Photographic and plating wastewater to SD	P380A
	Present in Cotter Concentrate (SW Bldg)	P380A (2-70)
	Draft waste flowsheet for cemented sludge & debris	C354A
	Present in IDCs MD-824, 826	U184A, U192AA
	Identified in IDCs MD-824, 836, 842 by INEL	P310A, P361A, P365A, U199A
	Trace quantities allowed in IDCs MD-824, 836, 842	U206A(Content Codes MD 111/211, 117/217)
	Unspecified uses	C466A
	R Bldg chemical inventory (1996)	P497A
Sodium hydroxide	Pu-238 processing in PP Bldg (caustic scrubber)	P380A, P503A
	Basic waste from SM/PP	P024A
	H wastewater to WD	P524A
	Reagent in WD treatment process	P319A, P385A, P474A, P522A, P523A, P524A, P525A, P536A, U196A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Sulfuric acid	Pu-238 processing in PP Bldg	P380A, P503A
	Pu-239 research in R Bldg	C449A
	Acidic liquid waste from SM/PP	P024A, P380A
	R, PP, SW, and SM wastewater to WD	P380A
	Reagent in WD treatment process	P319A, P385A, P474A, P522A, P523A, P524A, P525A, P536A, U196A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C744A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Mound list of chemical reagents	P380A (Table VII.2)
Tetrachloroethylene (Perchloroethylene)	Plating shop wastewater to SD	P380A (3-24)
	Solvent use in SW	C472A
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
1,1,1-Trichloroethane (TCA)	Solvent extraction in SW/R Bldg	P380A (3-27), U126A
	Degreasing in SM/PP Bldg	P380A (3-28)
	Cleaning in SW Bldg	P493A
	Cleaning in PP F-line	P503A
	Cleaning in building HH	P380A, P493A
	Cleaning in buildings B, DS, M (non-Pu areas)	P493A
	Trace quantities in IDC MD-836	C477A
	Identified in IDC MD-836 by INEL	P361A, P365A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)

Chemical/ Constiuent	Use	References
Trichloroethylene (Trichloroethene) (TCE)	Plating shop wastewater to SD	P380A
	SM/PP wastewater to WD	P380A (2-30, 3-28)
	SW/R (chemicals used in area) wastewater to WD	P380A (3-27), U126A
	Degreasing in SM and PP	C464A, C467A
	Ultrasonic cleaning in E Bldg (non-Pu areas)	P380A (2-95)
	Cleaning/degreasing in buildings B, DS, and 49 (non-Pu areas)	P380A, P493A
	Present in wastewater to WD	P319A, P385A, P474A, P525A, P536A, U196A
	Trace quantities in IDC MD-836	C477A
	Identified in IDC MD-836 by INEL	P361A, P365A
	Trace quantities allowed in IDCs MD-836, 842	U206A(Content Code MD 111/211)
	Ventilation hoods (use and location unspecified)	P380A
	Solvent use, unspecified location	P380A (Table VI.3)
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TF)	Plating shop wastewater to SD	P380A
	Freon (type not identified) used as degreaser in SW	C472A
	Cleaning/degreasing in buildings 49, B, DS, E, I, and M (non-Pu areas)	P380A, P493A
	Trace freon (type not identified) in IDC MD-836	C477A
	Identified in IDC MD-836 by INEL	P361A, P365A
	Trace quantities allowed in IDCs MD-836, 842	U206A (Content Code MD 111/211)
	Solvent use, unspecified location	P380A (Table VI.3),
	Unspecified uses	P380A (Table VI.4)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A
Toluene	Cleaning in SW	P493A
	Solvent use in SW	C472A
	Cleaning in building DS (non-Pu area)	P493A
	Ventilation hoods (use and location unspecified)	P380A
	Solvent use, unspecified location	P380A (Table VI.3)
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A

Chemical/ Constiuent	Use	References
Xylene	Cleaning and polishing in SW	P493A
	Cleaning in R Bldg	C466A
	Scintillation counting in WD	P380A
	Mound list of chemical reagents	P380A (Table VII.2)
	R Bldg chemical inventory (1996, 1998)	P497A

3.8.2 Hazardous Waste Determination

The hazardous waste determinations are addressed in Sections 4.4, 5.4, and 6.4. These sections provide the hazardous waste determination for waste designated for disposal at WIPP in accordance with the applicable RCRA and the WIPP WAP requirements. These determinations are WIPP-specific and are based on a review of AK documentation, knowledge of the processes generating the waste, results of RTR/VE examination of the waste, and headspace gas and solid sampling analytical results, if available.

The AMWTP waste stream profiles for the solidified acid/caustic waste stream (BN835), the cemented sludge waste stream (BN836), and the debris waste stream (BN304) have been approved by CBFO. (P437A, P604A, P646A)

3.8.3 Radionuclides

"Heat source" materials comprise the bulk of the radionuclides in the Mound wastes. The two most prevalent radionuclides in the radioactive wastes generated at the Mound site was ^{238}Pu and ^{239}Pu, with lesser amounts of ^{241}Am, ^{237}Np, and ^{234}U; and trace quantities of ^{240}Pu, ^{241}Pu, and ^{242}Pu. The plutonium isotopes would normally be split in the same ratio as for the final plutonium heat source product: 80% ^{238}Pu, 16% ^{239}Pu, 3% ^{240}Pu, 0.8% ^{241}Pu, and 0.2% ^{242}Pu. Neptunium-237 is an ingrowth from ^{241}Am decay, and ^{234}U is expected in wastes with aged plutonium and in waste originating from the ^{234}U separation process. Other radionuclides expected to be present in the waste at detectable quantities are: ^{235}U, ^{238}U, weapons grade plutonium containing primarily ^{239}Pu and ^{240}Pu, and small quantities of other radionuclides generated during operations or research activities including ^{227}Ac, ^{207}Bi, ^{60}Co, ^{231}Pa, ^{206}Pb, ^{209}Po, ^{266}Ra, ^{230}Th, ^{232}Th, ^{232}U, ^{233}U, and ^{236}U. Cesium-137 may be present in production glovebox waste containers. Strontium-90 is reported in the Mound AK and would also be expected to be present where ^{137}Cs is observed. Cobalt-60 was a by-product from irradiation of aluminum cans used to contain the bismuth/polonium 210 source material used in the fabrication of RTGs. Tritium may be present in the debris waste generated during D&D. Other radionuclides present at Mound are listed in Table 3-1. (12, 16, 25, 28, C266A, C351A, C352A, C354A, C378A, C379A, C380A, C382A, C428A, C436A, C452A, P380A, P398A, P423A, P467A, P472A, P485A, P505A, P518A, P623A, U126A, U139A, U159A, U167A)

Potassium-40 (^{40}K) has been detected in Mound waste containers by AMWTP radioassay. Potassium-40 is ubiquitous in the natural environment and was identified as present in Mound waste by AK. (18)

The radioisotopic content for the MD wastes shipped to INL from 1975 through 1988 was estimated for the AMWTP based only on AK and the results are presented in the AMWTP report, RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge. [10] The estimated amounts presented in that report are not duplicated here. RPT-TRUW-07 also provides the default mass fractions that are used for NDA of Mound waste containers. As non-destructive assay (NDA) data is collected on containers of the MD wastes, the content determination may require refinement based on actual measured amounts. Discrepancies between the AK derived isotopic content values and measured values will be resolved by a physicist subject matter expert and/or by an acceptable knowledge expert (AKE) as appropriate to each circumstance.

3.9 TRU Waste Certification

3.9.1 Mound Certification Program

CBFOs preliminary approval of Mound's certification plan was received in December 1983 and in 1985 for solidified sludge TRU waste shipments to WIPP in New Mexico. By June 1988, all four of Mound's TRU wastes (cemented sludge, non-combustible, combustible, and soils) were certified for disposal at WIPP. These certifications are not applicable to the Mound wastes stored at INL. [C341A, P380A, P474A]

3.9.2 AMWTP Certification Program

The procedures and processes used to certify waste at the AMWTP are identified in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste.

4.0 SOLIDIFIED ACID/CAUSTIC WASTE

This waste consists of acidic and caustic liquid wastes combined with an absorbent. The wastes were primarily generated from plutonium processing and recovery operations and the corrosive vapor scrubber system located in PP Building (also referred to as Building 38). Both types of waste were processed at the Waste Solidification (WS) Facility. Waste stream volumes and time period of generation are listed in Table 4-1. (U126A)

Table 4-1. Solidified acid/caustic wastes — Dates of generation for containers in AMWTP inventory (accessible and retrievable containers).

IDC	Title	Dates of Generation (Package Dates)	Number of Containers [a]
MD-834	High Level Acid* – PP Building High Level Acid* – R Building	Jan. 1975 – Mar. 1980	901 (901)
MD-835	High Level* Caustic	Nov. 1974 – Apr. 1985	1675 (1676)

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g., 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

a. Number of containers as reported in C534A, P364A, P365A, U122A, and U126A. Numbers in parentheses were taken from Reference 9.

Item Description Code 834, High Level Acid: This waste consists of acidic liquid waste generated from plutonium recovery and processing operations in PP Building. Limited amounts of acidic liquid waste also were generated and processed at the R Building. Plutonium recovery operations ended in late 1975 and the volume of acidic liquid wastes decreased thereafter. Acidic liquid wastes were absorbed on clay materials. Waste drums containing absorbed acidic liquid wastes generated before July 1975 were stored at Mound for repackaging due to pressurization problems and shipped to INL after 1976. Approximately 95% of the acidic liquid waste is nitric acid (HNO_3) with trace amounts of hydrofluoric (HF), hydrochloric (HCl), sulfuric (H_2SO_4) and oxalic acids. Since December 1976, acidic liquid waste was combined with caustic liquid wastes from plutonium processing in the WS building. (C349A, P024A, P380A, P510A, U126A)

Item Description Code 835, High Level Caustic: This waste consists of caustic liquid waste primarily generated from the corrosive vapor scrubber system located in PP Building. Caustic scrubber solutions were designated as recoverable, high-risk, or low-risk waste, based on the EDL, and either sent to recovery or waste treatment. Waste from PP Building was processed at the WS Building. Limited amounts of caustic liquid waste were also generated and processed at the R Building. After February 1982, all acidic liquid waste generated and processed in R Building was neutralized and combined with the caustic liquid waste. Caustic liquid waste consists primarily of sodium hydroxide (NaOH) and limited amounts of ammonium hydroxide ($NH_4[OH_2]$). The caustic liquid waste was absorbed onto Florco absorbent. (C349A, P024A, P380A, P510A, U126A)

Other wastes (e.g., rubber gloves, rubber gaskets) may be included in containers of IDCs MD-834 and MD-835 wastes. (15)

4.1 Waste Generation

Acidic and caustic liquid wastes were primarily generated during plutonium processing in PP and R buildings and were classified as high-risk or low-risk depending upon their radionuclide activity. Low-risk liquid waste was processed either in SM (prior to 1968) or in the WDA or WD buildings (after 1967) prior to being discharged as treated effluent and is not part of this waste stream. High-risk liquid wastes were absorbed onto a clay material and shipped offsite for disposal. When PP Building came on line in 1967, the WDA was added to WD Building to process the high-risk and low-risk liquid wastes. Problems with leakage associated with the waste lines used to transfer wastewater to the WDA prompted construction of the WS Building in 1974 for the high-risk liquid absorption process. This building was an addition to PP Building. (P380A, P522A, P523A, P524A)

High-risk liquid wastes were basic or acidic depending on where they were generated in the plutonium processes, during other radionuclides recovery, cleaning or leaching of items, and construction of assay standards. The three plutonium processes were PPO production, PMC production, and plutonium recovery. Chemicals used in production and recovery operations include nitric, hydrofluoric, hydrochloric, sulfuric and oxalic acids; sodium hydroxide, ammonium hydroxide, hydroxylamine, sodium carbonate, ferrous sulfamate, pyrosulfate, and hydrogen peroxide. (C449A, C464A, C481A, P380A, P503A, P522A) These operations are described in detail in Section 3.2.

Liquid wastes were also generated from glove box decontamination activities. Gloveboxes, process equipment in gloveboxes, and fume and chemical hoods were decontaminated using water, detergent, and hypochlorite. Some process equipment was rinsed with acid solutions to recover plutonium. Decontamination within a glove box generally produced a recoverable or high-risk waste. Decontamination outside the glove box produced either a high-risk or low-risk waste, depending on the plutonium activity. (P380A)

Acidic liquid waste was also generated during ^{234}U separation projects in R Building. Uranium-234 was extracted from aged ^{238}Pu in the R and SM buildings from 1962 to 1972. The process utilized tri-n-octylphosphine (TOPO), which was recycled and finally absorbed on Florco in one and four-liter plastic bottles and shipped as waste. Given the time frame, it is unlikely this material was shipped to INL. (P380A)

Caustic liquid waste was generated primarily from the corrosive vapor scrubber system at PP Building. The system was charged with a caustic solution (sodium hydroxide) to scrub acidic fumes from all PP operations. (P380A, P503A, P522A)

Beginning in 1974, acid and caustic liquid wastes were processed at the WS Facility. Since December 1976, any acidic liquid wastes were combined with caustic liquid waste for processing. Some caustic liquid waste was generated and processed at the R Building. Florco absorbent was added to the waste. (P380A, U167A) After plutonium recovery operations were transferred to the Savannah River Plant in late 1975, the volume of acidic liquid waste was greatly reduced and separate processing was no longer required. After December 1976, the acidic and caustic liquid wastes were combined for processing and nearly all the high-risk waste liquids were slightly basic. (P380A, U167A)

Small amounts of waste drums identified as IDC MD-834 or IDC MD-835 were generated in the SW/R and SM/PP complexes[2] from other processes besides plutonium recovery that used acidic or caustic materials, such as: production of assay standards, research activities, metallography, chemical analysis of samples, and decontamination of laboratory equipment and components. Assay standards were constructed by adding solutions of known plutonium content to absorbent in small (1, 2, and 4-liter) plastic bottles that were placed in 55-gallon drums to simulate waste drums. (P380A, U167A)

4.2 Waste Treatment

From 1961 to 1967, high-risk and low-risk liquid wastes were processed in SM building. Beginning in 1963, the high-risk liquid waste was absorbed onto a clay material (Florco) in 30-gallon drums. In 1968, the drumming station was moved to the WDA where vermiculate or Florco was used until the early 1970s and then Auto-Dri or Sorbal was used. (P380A, C479A) In September 1974, the drumming station was moved to the WS building. Prior to December 1976, the acidic and caustic high-risk liquid wastes were processed separately. After December 1976, the acidic and caustic liquid wastes were combined for processing and nearly all of the high-risk waste liquids were slightly basic. The caustic liquid absorption activities were discontinued in the WS Building on November 12, 1982, because the operation was no longer needed. (P024A, P380A, P522A P523A, P524A, U126A) The solidified acid/caustic waste absorption process as illustrated in Figure 3-7. (P522A, P523A, P524A, U132A)

The majority of the waste stored at INL was generated in the WS building. Liquid wastes generated from processes in PP Building were transferred into a holding tank at the WS Facility and vacuumed or air sparged to ensure suspension of the plutonium throughout the liquid batch. In 1974, the ratio of absorbent and liquid waste was changed after leaking drums were discovered at Mound. (C362A, C369A) The use of Auto-Dri, Dri-Rite or Sorbal, caused pressurization problems. (C359A, C360A, C363A, C365A, C368A, C463A, P024A, P319A, P380A, U132A) These absorbents contained diatomaceous earth and the reaction between the calcium carbonate and the acidic solutions produced carbon dioxide. A different absorbent, trade name Florco, was introduced in January 1975. (C364A) Florco did not contain calcium carbonate and did not produce the reaction. (C361A, P380A, P522A, P523A, P524A, U126A, U167A) Florco absorbent is naturally occurring montmorillonite clay

2. Operations stopped in SM Building and the facility was dismantled in 1972; therefore, any wastes generated from processes in SM Building are not included in the wastes stored at INL (earliest package date is January 1974)); however, the waste stored at INL may include D&D waste from the SM Building.. (P380A, P519A, U173A))

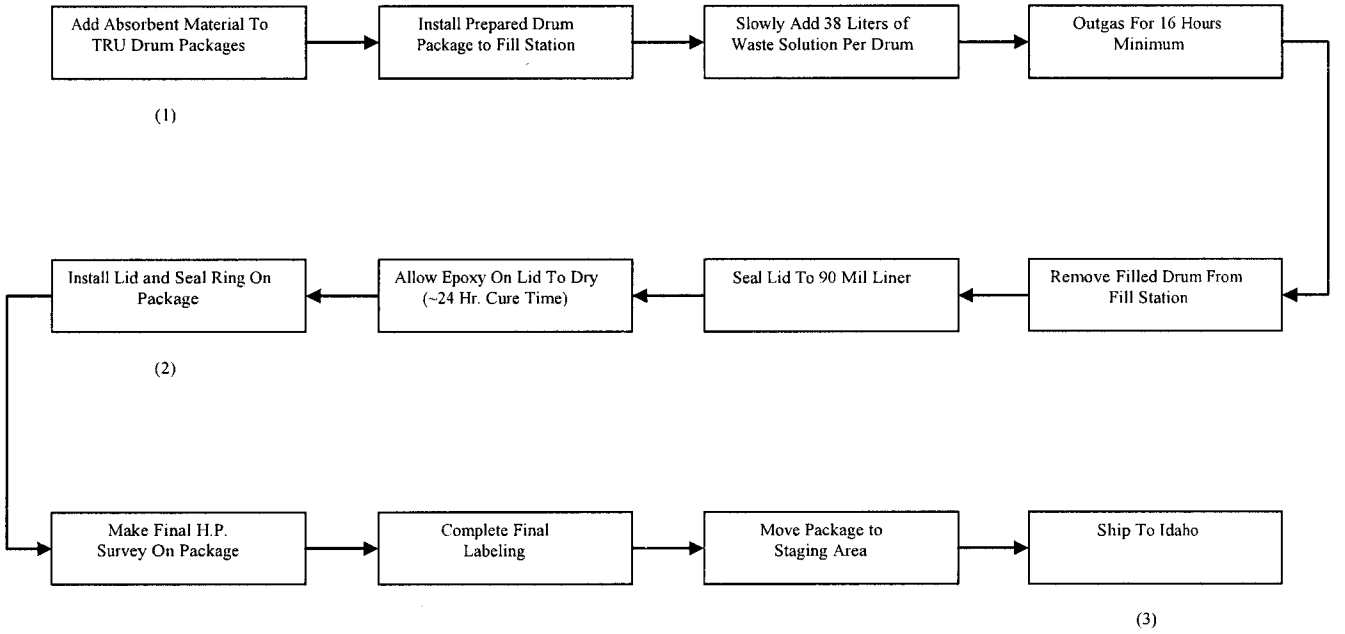
blended with attapulgite, another clay mineral. The clay mixture is an aluminum-magnesium-iron silicate with trace quantities of other metals. The density of Florco is 26 to 28 lb/ft3, and the absorptive capacity of Florco is 0.99 liters/kg based on small-scale experiments. (P024A)

Auto-Dri or Dri-Rite may have been used in some drums until September 1975; however, Florco was used exclusively since September 1975 when packaging acid waste. (C361A, C363A, C365A, C463A, P024A) After sparging, a 10-gallon aliquot was transferred into a calibrated tank and gravity-fed into a prepared 55-gallon drum. Each prepared drum was filled with 150 pounds of Florco prior to adding the liquid waste. After being filled, the drums were kept under negative pressure for a minimum of 16 hours to allow for off-gassing before they were sealed. (P380A, C463A, P510A, P522A, P523A, P524A) Waste from drums suspected of being pressurized were repackaged at Mound by dividing the contents of a drum into two drums and refilling each drum with Florco, storing the drums for approximately three months, rechecking for pressurization, and dividing the drum contents again if necessary. The final shipment of repackaged waste drums (including drums containing absorbed acid waste) was made in December 1980 and received at INL for storage in early 1981. (C363A, C365A, P380A)

Acidic and caustic liquid waste generated from ^{234}U separation projects also was absorbed on Florco absorbent. Approximately 0.16 gallon (600 ml) of the acidic and caustic liquid waste generated from ^{234}U separation projects was added to 1.5 pounds of Florco contained in a ½ gallon plastic (wide-mouth) bottle and allowed to off-gas for a minimum of 16 hours before being capped. (P024A, P380A) Some drums identified as IDC MD-834 or IDC MD-835 were generated in the SW/R and SM/PP complexes[3] from other processes besides plutonium recovery that used acidic or caustic materials. The waste liquids were added to absorbent in small (1, 2, and 4 liter) plastic bottles that were placed in 55-gallon drums. (P380A, U167A)

Other waste materials (e.g., rubber gloves, rubber gaskets) may be included in containers of IDC MD-834 and MD-835 waste. (15)

3. Operations stopped in SM Building and the facility was dismantled in 1972; therefore, any wastes generated from processes in SM Building are not included in the wastes stored at INL (earliest package date is January 1974)); however, the waste stored at INL may include D&D waste from the SM Building. (P380A, P519A, U173A)



(1) Three 50 lb. bags (150 lbs total) Florco (approximately 75% excess for 38 liters.
(2) Raycohesive – two coats on liner and lid.
(3) ~250 drums per year.

Figure 3-7. Solidified acid/caustic waste process flow.

4.3 Waste Packaging

Each waste generating area was responsible for packaging, filling, sealing and labeling waste containers. Waste containers were then transferred to the waste management department for final inspection (application of permanent seals, touch-up painting and spot radiation and contamination checks) and preparation for shipment. (P024A)

Beginning in 1967, acidic and caustic liquids were drummed with absorbents at the WDA and prepared for shipment off-plant for disposal. Beginning in 1974, the drumming stations was moved to the WS Building. Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. The drum liner was lined with a polyethylene drum bag. After addition of liquid wastes and the time allowed for off gassing (minimum of 16 hours), the drum bag was sealed with tape. A rigid drum liner lid was installed. Per Mound operating instructions, the liner lid was sealed to liner body with adhesive in drums generated prior to mid 1980s. Plywood spacers were then placed between the rigid liner lid and the drum lid before the drum lid was installed. Absence of plywood spacers or drum bags in some containers has been identified by RTR. (13, 14, C269A, C361A, C365A, C463A, P380A, P381A, P510A, P522A, P523A, P524A, U132A) Section 3.5 provides the acceptable variations in the 55-gallon drum packaging configuration.

Some drums of IDC MD-834 and MD-835 may contain ½ gallon or 1, 2, and 4 liter plastic bottles of absorbed liquid waste. Up to 45 bottles were placed in each drum. Drums filled prior to February 1982 may contain a mixture of bottles with absorbed acidic or caustic liquid waste. Since 1982, all acidic liquid wastes were neutralized, made basic, and combined with caustic liquid waste before processing. (P024A)

Other waste materials (e.g., rubber gloves, rubber gaskets) may be included in containers of IDC MD-834 and MD-835 waste. (15)

Based on AK and AMWTP characterization activities, the Mound IDCs MD-834 and MD-835 sludges have layers of confinement ranging from 0 to 2 drum bags. (14) Other configurations with additional layers of containment exist and a determination will be made for the treatment to reduce layers of confinement, TRUCON code reassignment, or other processing. (14)

4.4 Waste Characterization

The solidified acid/caustic waste (IDCs MD-834 and MD-835) addressed in this section contain at least 50% by volume materials that meet the WIPP-WAP criteria for classification as solidified inorganic waste, and are therefore homogeneous solid wastes. (P393A) The initial generator did not identify any EPA HWNs for this waste; however, INL identified EPA HWNs D001 and D002 as potential HWNs for IDC MD-834 and EPA HWN D002 for IDC MD-835 if individual drums contain prohibited liquids. (8)

This section provides the hazardous waste determination for the solidified acid/caustic waste stream designated for disposal at WIPP in accordance with the applicable RCRA and the WIPP WAP requirements. Currently, the solidified acid/caustic waste (i.e., IDCs MD-834 and MD-835) is characterized under a CBFO approved WSP BN835. (P437A) This hazardous waste determination is WIPP-specific and is based on a review of AK documentation for the waste, knowledge of the processes generating the waste, results of RTR/VE examinations of the waste, and headspace gas and solid sampling analytical results.

Individual drums of solidified acid/caustic waste may contain prohibited liquid. Only drums that are compliant with the WIPP WAC (e.g., <1% by volume liquids and < 1 inch of liquid in any internal container) will be considered candidates for shipment to WIPP. The EPA HWNs D001 and D002 are, therefore, not assigned to the drums that are candidates for shipment to WIPP.

4.4.1 Hazardous Waste Determination

Based on a review of the AK information, the solidified acid/caustic waste may exhibit the characteristics of toxicity for chromium, lead, and mercury. In addition, the solidified/caustic waste was generated as the result of absorbing acidic and caustic liquid wastes that may have contained trace amounts of F001 and F002-listed solvent constituents Therefore, EPA HWNs D007, D008, D009, F001 and F002 are conservatively assigned to the containers of solidified acid/caustic waste designated for disposal at WIPP and are presented in Table 4-2. (D039A, P437A)

Table 4-2. Solidified acid/caustic wastes WIPP EPA HWNs assignment.

IDC	Title	WIPP-Approved EPA HWNs
MD-834	High Level Acid* – PP Building High Level Acid* – R Building	D007, D008, D009, F001, F002
MD-835	High Level* Caustic	D007, D008, D009, F001, F002

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g., 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

4.4.1.1 Characteristic Waste

The materials in this waste stream designated for disposal at WIPP may exhibit the characteristic of toxicity for chromium (D007), lead (D008), and mercury (D009) metals as defined in 40 CFR 261.24. (P437A)

Ignitability: The materials in this waste stream do not meet the definition of *ignitability* as defined in 40 CFR 261.21. This waste is not liquid, nor is it a compressed gas, and the waste does not contain compressed gases. Liquids and compressed gases have been identified as prohibited by the INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P437A, P465A) Although the waste materials are not liquid, the presence of prohibited liquids in containers of solidified acidic/caustic wastes has not been ruled out. (P024A) Nitric acid can be considered a D001 HWN if it meets the definition of a Department of Transportation (DOT) oxidizer. The solidified acidic waste is not classified as DOT oxidizer. Only WIPP WAC compliant drums will be considered candidates for shipment to WIPP. Containers with liquids in excess of the allowed volume will be set aside for treatment and additional characterization thus rendering the container non-ignitable. The waste stream is therefore not an ignitable waste (D001).

Corrosivity: The materials in this waste stream do not meet the definition of *corrosivity* as defined in 40 CFR 261.22. The acidic and caustic liquid wastes were treated in the WS Facility and absorbed onto vermiculite, Florco, Auto-Dri, Dri-Rite, or Sorbal. The procedures used ensured that sufficient absorbent was used to eliminate the possibility of liquids in the containers. Liquids and corrosive items have been identified as prohibited by INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, C463A, P437A, P465A,) Although the waste materials are not liquid, the presence of prohibited liquids in containers of solidified acidic/caustic wastes has not been ruled out. (P024A) Only WIPP WAC compliant drums will be considered candidates for shipment to WIPP. Containers with liquids in excess of the allowed volume will be set aside for treatment and additional characterization. The waste stream is therefore not a corrosive waste (D002).

Reactivity: The materials in this waste stream do not meet the definition of *reactivity* as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes when mixed with water. The waste may contain trace quantities of cyanides or sulfides but would not generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment if the waste is exposed to pH condition between 2 and 12.5. The materials are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, nor do the drums contain explosive materials. (P024A) Explosives were produced and tested at Mound Plant, but wastes generated from explosives were managed in waste stream and process areas entirely separate from radioactive wastes. (P380A) Liquids, pyrophoric material, and explosives are identified as prohibited according to Idaho waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P380A, P465A) This waste stream is therefore not a reactive waste (D003).

Toxicity: The materials in this waste stream may meet the definition of *toxicity* as defined in 40 CFR 261.24. The toxicity characteristic contaminants fall into one of two categories: metals and organics.

The toxicity characteristic metals identified for this waste stream are chromium (D007), lead (D008), and mercury (D009). Trace amounts of tantalum, molybdenum, iron, chromium, nickel, and lead have been identified as waste constituents in low-risk wastes. (P380A, U126A) An alloy containing chrome was used for encapsulation of PPO spheres in R Building. (P380A) Plutonium was leached from leaded glovebox gloves as part of the plutonium recovery process and this acidic leachate potentially entered this waste stream. (P380A, U126A) Mercury was used in some gloveboxes. (C466A, C472A, U126A) The metals chromium, lead, and mercury may be expected in trace amounts in the acidic and caustic liquid wastes. The D007, D008 and D009 HWNs are conservatively assigned to this waste stream. (D039A)

There is no acceptable knowledge indicating the presence or use of pesticides or herbicides in the areas or processes generating this waste. Therefore, EPA HWNs for toxicity characteristic due to pesticides or herbicides (D012 – D017) are not assigned to this waste stream.

Carbon tetrachloride, 1,1,1-trichloroethane, and trichloroethylene were identified in AK as being solvents used at Mound. (C466A, P380A, U126A) Carbon tetrachloride and trichloroethylene were used in laboratory and production operations for their solvent properties. (C464A, C466A, C467A, P380A, U126A) 1,1,1-Trichloroethane was used for cleaning and degreasing. (P380A, P492A, P493A, P503A, U126A) This WIPP waste stream is conservatively characterized as a F001 and F002-listed hazardous waste; therefore, the EPA HWNs for above toxicity characteristic constituents are not identified for this waste stream. There is no evidence that other toxicity characteristic volatile or semi-volatile organic compounds were used in operations that generated this waste. Therefore, the EPA HWNs for toxicity characteristic due to organic compounds (D018 – D043) are not identified to this waste stream.

4.4.1.2 Listed Waste

The solidified acid/caustic waste stream designated for disposal at WIPP is conservatively characterized as F-listed waste in accordance with 40 CFR 261.31 and the WIPP WAP requirements. The wastes were generated as a result of absorbing acidic and caustic liquid wastes that may have contained trace amounts the F001 and F002-listed solvent constituents. Some of this waste was generated prior to the RCRA and no controls were in place to prohibit these solvents from being mixed with acidic or caustic liquid waste. In addition, F listed solvent constituents have been detected by headspace analysis. The listed EPA HWNs F001 and F002 are conservatively applied to all containers of solidified acid/caustic waste destined for disposal at the WIPP facility and are presented by IDC in Table 4-2. (D039A, P437A)

Carbon tetrachloride, 1,1,1-trichloroethane, and trichloroethylene were used in PP Building and the laboratory section of SW/R complex. (C466A, P380A, U126A) 1,1,1- trichloroethane was used for degreasing in PP Buildingand in various extraction processes were performed in both PP Building and the SW/R. (P380A, P493A, P503A, U126A) Carbon tetrachloride and trichloroethylene were potentially used in laboratory or production processes. (C464A, C466A, C467A, P380A, U126A) Headspace gas analysis detected 1,1,1-trichloroethane and trichloroethylene in concentrations exceeding the PRQL, which supports the conservative application of F001 and F002 to solidified/caustic waste designated for disposal at WIPP.

Acetone, methanol, and xylene were used in R and PP Buildings and could have been commingled with this waste. (C464A, C465A, C472A, P380A, P503A, P536A, U126A) Because the solidified acid/caustic waste is not classified as an ignitable waste (i.e., not assigned D001), EPA HWN F003 is not assigned to this waste.

Beryllium was identified in AK source documents as a potential contaminant of this waste stream. (P380A, U126A) Small amounts of beryllium metal may have also been discharged into the low-risk wastewater treatment system. The amount of beryllium in the waste is not expected to exceed 1%. (P437A) Beryllium was not disposed as an unused commercial chemical product in the waste stored at INL. Therefore, the waste does not meet the definition of a P-listed waste, and the P015 listed HWN does not apply to this waste.

The absorbed acidic liquid waste consists of spent nitric acid and hydrofluoric acid (HF) absorbed onto a clay material, Florco. (U126A) Although HF was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, only spent HFcould be in this waste. (C464A, P024A, P380A, P503A, P522A, P536A) Based on this information, the U-listed HWN for HF (^{134}U) does not apply to this waste stream.

The materials in this waste stream are not discarded commercial chemical products, off-specification species, container residues, or spills thereof (40 CFR 261.33). The materials in this waste stream are not P- or U-listed hazardous waste.

The materials in this waste stream are not hazardous waste from specific sources, because they were not generated from any of the processes listed in 40 CFR 261.32. The materials in this waste stream are not K-listed hazardous wastes.

4.4.1.3 TSCA Waste

PCBs are not expected to be present in the solidified acid/caustic waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the Toxic Substance Control Act (TSCA) and the WIPP WAC.. (P319A, P365A, P380A, P493A, P525A)

4.4.2 Radionuclides

Radioisotopic content for the Mound wastes was estimated for the AMWTP based only on AK and the results are presented in RPT-TRUW-07 report. The data and results presented in that report are not duplicated here. As NDA data are collected on containers of the Mound wastes, the content determination may require refinement based on actual measured amounts. Discrepancies between AK derived isotopic content values and measured values will be resolved by a physicist subject matter expert and/or by an acceptable knowledge expert (AKE) as appropriate to each circumstance.

4.4.3 Prohibited Items

Items prohibited by WIPP (i.e., excess liquids) have been identified in containers of solidified acid/caustic waste. Containers with prohibited items identified during characterization activities are segregated, treated, and/or repackaged to remove the items before certification and shipment of any containers to WIPP.

5.0 CEMENTED SLUDGE

This sludge waste was generated from the treatment of liquid waste from sources such as showers, decontamination processes, laundry, research and analytical operations. The sludge waste is solidified in cement. This waste represents approximately 50% of all Mound-generated waste drums. (P385A) Waste stream volume and time period of generation are listed in Table 5-1. (U126A)

Table 5-1. Cemented Sludge — Dates of generation for containers in AMWTP inventory (accessible and retrievable containers).

IDC	Title	Dates of Generation (Package Dates)	Number of Containers
MD-836	High Level* Sludge/Cement	Nov. 1974 – June 1985	4178 [a] (4323[b])

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g., 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

a. Number of containers as reported in C534A, P364A, P365A, U122A, and U126A.

b. Number of containers as reported in D050.

Item Description Code 836, High Level Sludge/Cement: This waste consists of sludge solidified with cement. The sludge was generated from treatment of alpha-contaminated wastewater generated outside process gloveboxes from sources such as floor drains, laboratory sinks, and sumps. The waste was transported to the WD Building from several locations at Mound. The potential sources of the wastewater were the H, R, SW, SM, PP, WD and WDA buildings and the old alpha waste line. The SW and R buildings are addressed as SW/R complex, and the SM and PP buildings are addressed as SM/PP complex. Wastewater was also collected from the annex on the WD Building (WDA) and Buildings 23, 50, and 51. The sludge waste generated as the result of treating the above liquid streams is also referred to in some Mound documents as Solidified Sludge/Liquid. (C343A, C349A, P024A, P399A, P380A, P469A, P474A, P522A, P523A, P524A, P525A, U126A, U159A)

5.1 Waste Generation

The Mound cemented sludge waste was generated in WD Building from the treatment of low-level alpha-contaminated liquid waste generated in the radioactive areas in PP, R, H (laundry), and WD and other Mound locations. The drain systems from these radioactive areas (including floor drains, laboratory sink drains, shower water, and sumps) terminated in the WD

Building. (P522A, P523A, P524A, P525A, U145A) The liquid waste included limited (trace) amounts of solvents. (P319A. P385A, P474A, P525A, P536A, U196A)

The primary inputs to the WD for the waste stored at INL includes the following: (P380A, P469A, P522A, P523A, P524A, U126A)

- Laundry drains in H Building
- Low-level or low-risk waste from SM/PP buildings transferred by pipeline (until 1976)
- Low-level or low-risk waste from SM/PP buildings transported by tanker truck (after 1976)
- Liquids from drains, sumps, showers, and laboratory sinks in SW/R
- Liquids from drains, sumps, and laboratory sinks in WD and WDA.

Other potential sources of wastewater included the following: (P380A, P522A, P523A, P524A, U126A)

- Liquid wastes from Building 23 sump (mixed waste storage) transported in drums
- Liquid wastes from drains in Buildings 50 and 51.
- Drummed alpha-contaminated waste water from T and HH
- Liquids from the old, alpha-waste line which connected WD building to SW/R complex and H Building (mainly after rain).

5.1.1 SM/PP Complex

SM/PP complex[4] wastewater sources that were transferred to the WD included floor drains, shower water, sinks, and a laboratory located in PP. Wastewater from these sources drained to two 500-gallon sumps. The wastewater was transferred to WD via a pipeline until 1976, when the pipeline was sealed and wastewater was pumped from the sumps to a storage tank outside the building. When appropriate, the wastewater was pumped from the tank to a tanker truck and transported to WD Building for treatment. A variety of analytical procedures were performed in PP Building laboratory, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. With the exception of liquid scintillation vials, all spent chemicals used in the laboratory were assumed to be radioactively contaminated and were poured down the sink drains into the wastewater system. Scintillation vials and spent cocktail were bagged and sent to Building 23 for dispositioning. Chemicals used in the laboratory included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichoroethane, acetone, ethanol and methanol were used for cleaning. Trichloroethane and methanol also were used in SM/PP

4. Operations stopped in SM Building and the facility was dismantled in 1972; therefore, any wastes generated from processes in SM Building are not included in the wastes stored at INL (earliest package date is January 1974); however, the waste stored at INL may include D&D waste from the SM Building. (P380A, P519A, U173A)

complex as a degreaser for metal parts. A limited volume of solvents was discarded in laboratory sinks. (C464A, C465A, C466A, C467A, C473A, C490A, P380A, P469A, P503A, P522A, P525A, U126A, U196A)

5.1.2 SW/R Complex

The SW/R Building complex included a small laboratory section that handled alpha emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for research and development, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in WD Building.

Chemicals used in the laboratory included carbon tetrachloride, methylene chloride, trichloroethane, chloroform, organophosphate, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, nitric acid, and sulfuric acid. Chemicals used in other SW/R Building operations included hydrogen peroxide; ammonium hydroxide; hydrochloric, hydrofluoric, nitric, sulfuric, boric, and lactic acids; methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene, freon, tetrachloroethylene, toluene, sodium sulfite solution; potassium and copper sulfates; carbonates; and sodium hydroxide (lime). (C443A, C444A, C449A, C464A, C466A, C472A, P380A, P474A, P485A, P493A, P525A, P536A, U126A, U196A)

5.1.3 H Building

The H Building housed the laundry facilities for both uncontaminated (cold) and contaminated (hot) clothing for Mound. All of the water generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank on the "hot side" of the building. The wastewater was pumped to the WD Building alpha wastewater influent tanks. Products used in the H Building included liquid soap that contains ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contains ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. (P380A, U126A)

5.1.4 WD and WDA Buildings

All floor and sink drains in the WD and WDA buildings were connected to sumps located in the basement of the buildings. Wastewater from the sumps was transferred either by pipeline or by pumping to storage tanks for transfer to the WD alpha influent tanks. There was a small laboratory in WD Building where alpha and beta waste streams were analyzed. Sludge moisture and pH analyses and scintillation counts of influent and effluent wastes were performed. The laboratory was not used on a routine basis, but the sink was connected to the WD sumps. (P380A)

Before construction of the above-ground alpha wastewater transfer line, alpha wastes were transferred to the WD through the underground "old alpha waste line," which was connected to SW/R complex and H Building laundry. Although all of the drains and other connections to this line are believed to be plugged, a small amount of water from this pipe (mainly after rains) continued to be disposed of in the WD alpha influent tanks. (P380A)

Hazardous compounds used in the WD laboratory included Instagel, which has a xylene base. Spent liquid scintillation cocktail and used scintillation vials, were bagged and

dispositioned as mixed waste and sent to Building 23 for storage. The liquid scintillation waste was not sent to INL. (P380A, P458A)

5.1.5 Other Buildings

The T Building housed a multitude of research, development, and production programs. The two major radionuclide programs were the polonium and tritium programs. From 1949 to 1973, ^{210}Po programs included a processing and separation program, a fuels R&D program, and a production program with polonium. Decontamination work was done from 1971 through 1973 on the ^{210}Po processing areas. A variety of other activities were performed in the T Building such as nondestructive testing, environmental testing, gamma and mass spectroscopy, calorimetry, neutron activation analysis, and safeguards R&D. Tritium contaminated waste was drummed and sent to the beta contaminated wastewater system. (P380A, P518A)

Building 23 was situated adjacent to the WD. Drummed radioactive and mixed wastes were stored in Building 23 prior to shipment of the wastes to off-plant disposal facilities. Several floor drains connected to a sump were used to collect any spills or leaks from the stored drums. Liquid wastes in the sump were sampled prior to dispositioning. Nonradioactive or clean material was released to the sanitary sewer system. Contaminated liquid wastes were transported in drums to the WD alpha wastewater influent tanks. The only documented spill involved non-hazardous materials. (P380A, U126A)

Building 50 housed plutonium operations, including production of heat sources using ^{238}Pu. Building 51 housed an incinerator that was used to burn non-radioactive waste prior to 1974. (P380A)

5.2 Waste Treatment

The alpha wastewater treatment system in the WD consisted of four influent tanks, two clariflocculators, two sand filters, two bone char columns (after 1977), four effluent storage tanks, two sludge pits, and a sludge solidification and drumming unit shown in Figure 3-6. (P380A) All liquid wastes were collected in the influent tanks and sampled for radioactivity then prepared for treatment. The primary radioisotopic contaminant of the liquid wastes was ^{238}Pu, with trace amounts of ^{233}U, ^{237}Np, and ^{241}Am. The trace radionuclides originated from processing liquid wastes during R&D projects.

Chemicals used in treatment of the liquid wastes included activated carbon, calcium chloride, barium chloride, ferric sulfate, aluminum sulfate, sodium hydroxide (after 1975), sulfuric acid (before 1976), cement, and bone char. These chemicals were added in varying but pre-determined amounts to provide the desired absorption, phosphate precipitation, flocculation, and scavenging. After 1974, the flocculating agents Nalco C-627 (before 1982) and Nalco N-7173 (after 1981) were also used to improve the quality of the effluent and to reduce the volume of sludge generated. A major portion of the radioisotopes present was retained by the flocculated solids. Each of the four influent tanks was agitated by two mixers to prevent settling of the solids. (P319A, P380A, P464A, P522A, P523A, P524A, P525A, P536A, U145A)

The mixture was then pumped into two clariflocculators where the precipitate (sludge) and liquid were separated after the flocculated solids were allowed to settle. Aluminum sulfate (prior to 1976) or sodium hydroxide (after 1976) was added to control the pH between 11.0 and 11.5 and to maximize the precipitation and settling. The supernatant liquid was removed by siphoning the liquid above the settled sludge. Prior to 1977 the supernatant liquid was acidified (using sulfuric acid) and treated with activated carbon and sodium hypochlorite (after 1975 for bacteria control), and then filtered through sand beds prior to being pumped into four effluent tanks. After 1977, the supernatant liquid was treated with activated carbon, filtered through sand beds, neutralized with sulfuric acid to 7.0 to 8.0 pH, and/or passed through a bone char filter (and 1 micron filter after 1979) prior to being pumped into the effluent tanks. The treated effluent in the storage tanks was neutralized with nitric acid before it was discharged to the Great Miami River, via a permitted NPDES outfall. (C343A, C349A, C411A, P380A, P385A, P464A, P469A, P522A, P523A, P524A, P525A, P536A, U145A, U159A)

The dewatered sludge (approximately 15 to 30 % solids) was then pumped from the clariflocculators into two sludge holding tanks. (P319A, P379A, P510A, U159A, U196A) The principal non-radioactive constituents of the sludge are carbon and ferric hydroxide with minor amounts of calcium carbonate, calcium phosphate, and calcium oxalate. (U159A) Prior to 1977, the sludge was treated with caustic soda (sodium hydroxide) to reduce bacterial action. The sludge was sampled on a batch basis to determine activity level prior to solidifying in 55-gallon drums containing 90-mil rigid polyethylene liners. In some cases a drum bag liner may have been used. (P024A, P380A, P522A, P523A, P525A) Two to 2-1/2 bags (about 190 to 240 pounds) of Portland cement were slowly added to approximately 40 gallons of sludge in a waste drum while working the mixer up and down through the sludge-cement mixture and then mixing for about 7 to 10 minutes. After the mixer blades were removed from the drum, unmixed cement was typically added to the top of the sludge-cement mixture. (P024A, P319A, P379A, P510A, U159A) After August 1983, the solidification instruction required that the sludge cement mixture be allowed to cure over night before the rigid drum liner lid was installed. (P379A) The cemented sludge waste process is illustrated in Figure 3-8. (U132A)

Drums of tritium-contaminated wastewater from the T and HH buildings were sent to the beta waste water system for treatment, not to the alpha waste water system and therefore did not contribute to the IDC MD-836 waste. (P380A)

5.3 Waste Packaging

For the cemented sludge wastes, each 55-gallon drum was lined with a 90-mil rigid polyethylene liner without a drum bag liner (no layers of confinement). Based on real-time radiography (RTR) examinations, a bag liner was used in some drums of cemented sludge waste. (P399A) After being filled with waste, the drum bag, if present, was sealed with tape and the rigid drum liner lid was installed. Based on RTR/VE examination, a cement cap may be present on top of the cemented sludge and the sludge may exhibit variable layers of solidification. Absorbents (such as Florco) may also be present on top of the cemented sludge. Per Mound protocols,

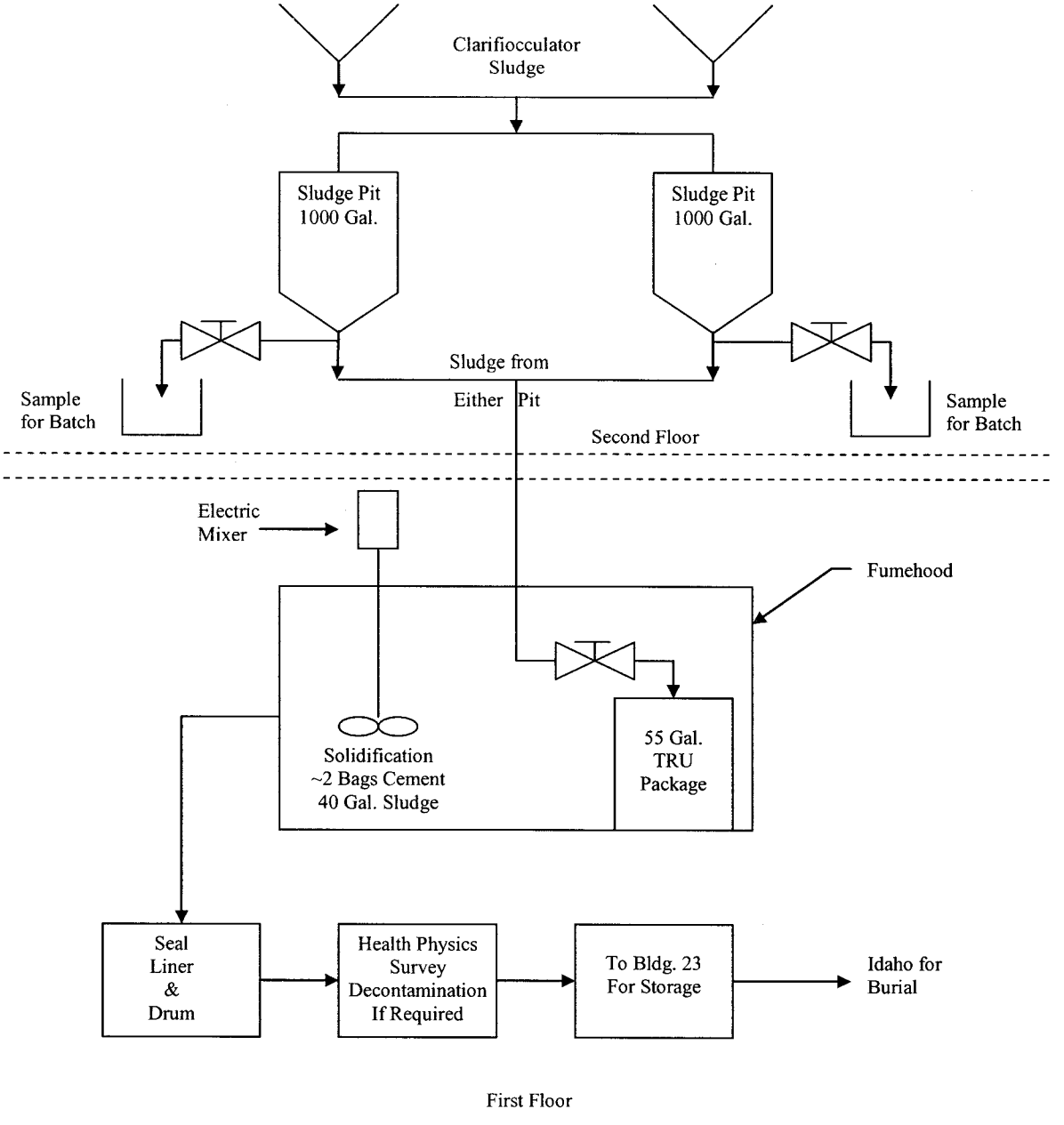


Figure 3-8 Cemented sludge process flow

the liner lid was sealed to liner body with adhesive in drums generated prior to mid 1980s. Plywood spacers were placed between the rigid drum liner lid and the drum lid. Absence of plywood spacers in some containers has been identified by RTR. (13, C411A, C426A, C463A, P379A, P380A, P381A, P399A) The resulting sludge/cement drums weigh between 575 and 650 pounds. (C411A, C426A, P024A, P319A, P379A, P380A, P510A,) Section 3.5 provides the acceptable variations in the 55-gallon drum packaging configuration.

In some cases, "light" waste drums also were packaged. The light drums contain a small quantity of cemented sludge and plastic, paper, and gloves generated from cleanup operations. (P024A)

5.4 Waste Characterization

The cemented sludge waste (i.e., IDC MD-836) addressed in this section contains at least 50% by volume materials that meet the WIPP-WAP criteria for classification as solidified inorganic waste, and are therefore homogeneous solid wastes. (P393A) The sludge waste was generated from wastewater treatment and subsequently solidified with Portland cement. The wastewater treatment effluent was subject to NPDES point source discharge permit. This waste was characterized and shipped to the INL as nonhazardous waste by the initial generator (i.e., MD). (8) The generator subsequently identified EPA HWNs D004 through D011 as potential HWNs for this waste stream in a draft 1984 document. (C354A) Mound also characterized the low-level cemented sludge waste as nonhazardous and shipped the waste to the Nevada Test Site. (P623A, P624A, P625A)

This section provides the hazardous waste determination for the cemented sludge waste designated for disposal at WIPP in accordance with the applicable WIPP WAP requirements. The cemented sludge waste (IDC MD-836) is characterized under a CBFO approved WSP BN836. (P646A) This WIPP-specific hazardous waste determination is based on a review of AK documentation, the knowledge of the processes that generated the waste, the results RTR/VE examinations of the waste, and headspace gas and solid sampling analytical results.

Some IDC MD-836 drums may contain prohibited liquid. Those drums that contain prohibited liquids are segregated and excluded from the inventory designated for disposal at WIPP. Only drums that are compliant with the WIPP WAC will be considered candidates for shipment to WIPP, are candidates for WIPP.

5.4.1 Hazardous Waste Determination

Based on a review of the AK documents, the waste may exhibit the characteristics of toxicity for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver metals. In addition, this waste was generated as the result of solidifying sludge generated from the treatment of wastewater that may contain trace amounts of F001, F002, and F005-listed solvent constituents. (C354A, C464A, C466A, C467A, C472A, P319A, P380A, P474A, P493A, P503A, P525A, U126A) The EPA HWNs D004, D005, D006, D007, D008, D009, D010, D011, F001, F002 and F005 are

conservatively assigned to the containers of cemented sludge waste designated for disposal at WIPP are presented in Table 5-2. (D056A, P646A)

Table 5-2. Cemented Sludge —WIPP EPA HWN assignment.

IDC	Title	WIPP-Approved EPA HWNs
MD-836	High Level* Sludge/Cement	D004 –D011, F001, F002, F005 [a]

* The waste stream description is derived from the waste stream name found in the TWBIR. The "high-level" descriptor was used to identify Mound waste that was expected to contain high levels of contamination (e.g., 0.02 Ci per liter) and not to designate waste generated from fuel rods. (P384A)

a. In AMWTP-RPT-TRUW-12, EPA HWNs D002 and F003 were identified as potential HWNs because some containers of waste may contain prohibited liquids. (8) Only drums meeting the WIPP-WAP and WIPP WAC will be certified for shipment to the WIPP facility; therefore, D002 and F003 will not be assigned to the containers that are candidates for shipment to WIPP.

5.4.1.1 Characteristic Waste

The materials in this stream may exhibit a characteristic of toxicity for arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011) as defined in 40 CFR 261.24. (8, C354A, P646A)

Ignitability: The materials in this waste stream do not meet the definition of *ignitability* as defined in 40 CFR 260.21. The waste materials were solidified and are not liquid. Liquids and compressed gases have been identified as prohibited by INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A, P474A) The materials are not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The materials are not compressed gases, and pressurized containers are not present. The materials are not U.S. Department of Transportation (DOT) oxidizers as defined in 49 CFR 173. This waste stream is therefore not an ignitable waste (D001).

Corrosivity: The materials in this waste stream designated for disposal at WIPP do not meet the definition of *corrosivity* as defined in 40 CFR 261.22. Liquids and corrosive items have been identified as prohibited by INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A, P474A) The waste is not a liquid, but prohibited liquids may be present in some waste containers. (P024A) Containers of this waste containing prohibited liquids associated with treated wastewater would not exhibit the characteristic of corrosivity. Only WAC compliant drums will be considered candidates for shipment to WIPP. Containers with liquids in excess of the allowed volume are not considered candidates for shipment to WIPP and will be set aside for treatment and additional characterization. This waste stream is therefore not a corrosive waste (D002).

Reactivity: The materials in this waste stream do not meet the definition of *reactivity* as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes when mixed with water. The materials do not contain sulfides, and are not capable of detonation or explosive reaction. The materials are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, nor do the drums contain explosive materials. (P024A) Explosives were produced and tested at the Mound Plant, but wastes generated from explosives were managed in waste streams entirely separate from radioactive wastes. (P380A) Liquids, pyrophoric material, and explosives are identified as prohibited according to Idaho waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A) This waste stream is therefore not a reactive waste (D003).

Toxicity: The materials in this waste stream may meet the definition of *toxicity* as defined in 40 CFR 261.24. The toxicity characteristic contaminants fall into one of two categories; metals and organics. Organic compounds include halogenated and nonhalogenated solvents, pesticides, herbicides and other toxic compounds. This waste stream may exhibit the toxicity characteristic for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver metals. (C354A, D056A, P380A, P493A, U142A, U196A)

Arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver metals were identified in the AK record as expected constituents in the wastewaters disposed of in the alpha wastewater treatment system. (8, C354A, P380, P365A, P493A, U126A) Based on process descriptions, sources of toxicity characteristic metals were used in the R Building laboratory operations. Arsenic, cadmium, selenium and silver are attributed to chemicals used in laboratory operations. (P493A) Barium chloride was one of the chemicals used in the WD facility to treat the alpha-contaminated wastewater. (P523A) Mercury was used in analytical and production operations. (C466A, P310A, P319A, P365A, P380A, P493A, U184A, U192A, U199A) The cemented sludge may contain paint contaminated with chromium or lead. (P319A, P474A, P385A, P525A, P536A, U196A) Chromium and lead were detected in historical sampling of the alpha-contaminated sludge. (P319A, P385A, P365A, P525A, P536A, U196A) It is possible that the cemented sludge wastes contain any of these metal compounds. The associated EPA HWNs (D004 – D011) is conservatively identified for this waste stream.

Benzene, carbon tetrachloride, chloroform, methyl ethyl ketone, tetrachloroethylene, and trichloroethylene are toxicity characteristic organic compounds identified in the AK record as being used for its solvent properties in the processes that may have contributed to the alpha wastewater. (C464A, C466A, C467A, C472A, P319A, P380A, P385A, P474A, P492A, P493A, P525A, P536A, U126A, U196A) Carbon tetrachloride, benzene, and trichloroethylene were used for cleaning/degreasing. (C464A, C467A, C466A, P3801, P492A, P493A, U126A) None of these constituents were detected in the solid sampling. This WIPP waste stream is conservatively characterized as an F001, F002, and F005 listed waste; therefore, the EPA HWNs for the above toxicity characteristic constituents are not identified for this waste stream.

There is no documentation indicating the presence or use of pesticides or herbicides in the areas or processes from which the cemented sludge waste was generated. Therefore, this waste is not assigned the toxicity characteristic EPA HWNS for any of the regulated pesticides or herbicides (D012 – D017).

5.4.1.2 Listed Hazardous Waste

For purposes of waste designated for disposal at WIPP, the cemented sludge waste is conservatively identified as a listed waste as defined in 40 CFR 261, Subpart D as hazardous waste from non-specific sources (40 CFR 261.31). Minor amounts (approximately 5 pints total organics per year) of organics, including trichloroethylene, were disposed of in the alpha-contaminated wastewater that entered the wastewater treatment system which subsequently generated the cemented sludge. (P319A, P380A, P474A, P525A) These trace amounts of organics were discharged into a wastewater treatment system regulated by a Clean Water Act point source discharge permit and were eligible for RCRA regulatory exclusions identified in 40 CFR 261.3. The listed HWNs F001, F002, and F005 are conservatively assigned to all containers of MD-836 destined for disposal at the WIPP facility. (D056A, P365A, P646A)

Trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, and methyl ethyl ketone are identified in AK documents as solvents used in cleaning/degreasing and laboratory operations in SM/PP and SW/R complexes. (C464A, C466A, C467A, P380A, P365A, P493A, P503A) 1,1,2-Trichloro-1,2,2-trifluoroethane was used for cleaning/degreasing operations in non-plutonium areas at Mound. (P365A, P380A, P493A) Benzene, carbon disulfide, tetrachloroethylene, and toluene were used as solvents in laboratory and production operations. (C466A, C472A, P380A, P493A) Paint removers containing methylene chloride or methyl ethyl ketone may have been used in the D&D process. (P380A, C481A, C497A) Only trichloroethylene, acetone, methanol, and acetone were identified in the Mound Quality Control Plan for Control of Radioactive Waste as constituents in the alpha-contaminated wastewater. (P536A) The wastewater may have been contaminated with trace quantities of any of the above constituents during decontamination operations. EPA HWNs F001, F002, and F005 are conservatively assigned to all containers of cemented sludge destined for disposal at the WIPP facility. 1,1,1-Trichloroethane, trichloroethylene, tetrachloroethylene, benzene and toluene were detected in HSG analysis, which supports the HWNs assigned by AK. (D056A, C472A, P380A, P536A, P646A)

Acetone, methanol, and xylene were also used as solvents in laboratory and production operations. (C464A, C465A, C466A, C467A, C472A, C473A, P319A, P365A, P380A, P385A, P474A, P493A, P503A, P525A, P536A, U196A) It is possible that the cemented sludge was contaminated with residuals from these operations. However, the cemented sludge waste is not a liquid waste. If a waste no longer exhibits the characteristic of ignitability, the F003 HWN can be removed [40 CFR 261.3(g)(1)]. Based on the above information, the EPA HWN F003 is not assigned to this waste stream.

There is no documentation indicating the presence or use of F004 listed solvents in the areas or processes generating sludge/cement wastes. Therefore, this waste is not an F004 listed hazardous waste.

Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, only spent hydrofluoric acid could have contaminated the alpha wastewater. (C464A, P024A, P319A, P380A, P385A, P474A, P503A, P522A, P525A, P536A, U196A) Based on this information, the U-listed HWN (^{134}U) for hydrofluoric acid is not applicable to this waste stream.

Beryllium was identified in AK documentation as a potential constituent in some of the Mound wastes, including cemented sludge. (C477A) The beryllium-contaminated wastes were generated from analyses of weapons components through the SALE program. Typically, less than 0.1 g of beryllium was generated annually. (P380A) Beryllium, if present in any drum, will be less than 1% of the waste weight. Beryllium was not disposed of at the Mound site as an unused commercial chemical product. Therefore, the waste does not meet the definition of a P-listed waste, and the P015 listed HWN does not apply to this waste.

The materials in this waste stream are not discarded commercial chemical products, off-specification species, or container residues (40 CFR 261.33), and are, therefore, not P or U listed hazardous waste.

The materials in this waste stream are not hazardous waste from specific sources and were not generated from any of the processes listed in 40 CFR 261.32. The materials in this stream are, therefore, not K-listed hazardous waste.

5.4.1.3 TSCA Waste

PCBs are not expected to be present in the solidified acid/caustic waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with TSCA and the WIPP-WAC. (P319A, P365A, P380A, P493A, P525A)

5.4.2 Radionuclides

Radioisotopic content for the Mound wastes was estimated for the AMWTP based only on AK and the results are presented in RPT-TRUW-07 report. The data and results presented in that report are not duplicated here. As NDA data are collected on containers of the Mound wastes, the content determination may require refinement based on actual measured amounts. Discrepancies between AK derived isotopic content values and measured values will be resolved by a physicist subject matter expert and/or by an acceptable knowledge expert (AKE) as appropriate to each circumstance.

5.4.3 Prohibited Items

Excess liquids have been identified in containers of cemented sludge. Containers with items prohibited by identified during characterization activities will be segregated, treated, and/or repackaged to remove the items before certification and shipment of any container to WIPP.

6.0 HETEROGENEOUS DEBRIS WASTE

The heterogeneous debris waste generated at Mound includes line-generated combustibles, lead-lined glovebox gloves, metal debris waste, limited amounts of spent ion exchange resin and mercury, various types of plastics, HEPA filters (with asbestos media), glassware, spun-glass filters and fiberglass insulation, graphite crucibles and electrodes, D&D debris (including concrete, floor tile, vacuum sweeper filters, and sweeper hose), nonline-generated combustible wastes, and non-line generated non-combustible wastes including concrete, plaster, bricks, and dirt. The wastes were primarily generated from D&D of gloveboxes, equipment and facilities used for plutonium heat source production, plutonium and other radionuclides recovery, as well as operations in support of these activities such as analytical laboratory operations, research and development, maintenance and utilities, and waste treatment. (C349A, C481A, P024A, P310A, P319A, P365A, P380A, P381A, P384A, P399A, P469A, P518A, P522A, P523A, P524A, P532A, P539A, U126A, U141A, U159A, U184A, U192A, U199A)

Table 6-1 contains the IDC descriptions for the debris waste generated at Mound. However, individual containers of waste may contain other combustible or non-combustible waste materials (e.g., other IDCs) as described in Section 6.3.1. (15, 17, 21, 26, 27, P024A, P319A) Waste stream volumes and time period of generation are listed in Table 6-1. (U126A, U127A)

Table 6-1. Heterogeneous debris wastes — Dates of generation for containers in AMWTP inventory (accessible and retrievable containers).

IDC	Title	Dates of Generation (Package Dates)	Number of Containers[d]
MD-801[d]	Rags, paper, wood, etc.	Feb. 1977 - Nov 1982	35[a, b, c]
MD-802[d]	Dry box gloves and O-rings	Feb. 1975 – Oct. 1981	121[a, c] (120)[b]
MD-803[d]	Metal, Equipment, Pipes, Valves, etc.	Dec. 1974 – Mar. 1982	180[a, c] (145)[b]
MD-804[d]	Plastic, Tygon, Mani-boots, etc.	Mar 1976 – Jan 1982	220[a, c] (221)[b]
MD-805[d]	Asbestos Filters	Mar. 1975 – Jan. 1982	38[a, b, c]
MD-810[d]	Glass, Flasks, Sample Vials, etc.	Mar 1976 – Feb 1980	13[a, c] (12)[b]
MD-812	Spent Ion Exchange Resin	[f]	[f]
MD-813[d]	Glass filters and Fiberglass	Oct. 1976	3[a, c] (3)[b]
MD-814[d]	Graphite Waste	Jul. 1976 – Jun. 1977a	2[a, b, c]

IDC	Title	Dates of Generation (Package Dates)	Number of Containers [d]
MD-824	Equipment Boxes, Non-combustible	Apr. 1975 – June 1986a	381 [a] (342) [b] 2013 [c]
MD-825[d]	Equipment Drums, Non-combustible	Feb. 1975 – Nov. 1985c	236 [a] (226) [b] 389.45 [c]
MD-826	Equipment boxes, Combustible (after 1980) Floor Sweepings/Rust g (prior to 1981)	Mar. 1981 – Jan. 1988	33 [a] (31) [b] 423.6 [c]
MD-827[d]	Equipment drums, Combustible	Sep. 1982 – June 1985	9 [a, c] (5) [b]
MD-832	Contaminated Mercury	[f]	[f]
MD-838	<10 nCi/g Non-Combustible	Jan 1975	1 [a, b, c,] e
MD-847	LSA<100 nCi/g Combustible waste	Jan. 1974 – June 1982	NA [a] (741) [b, c]
MD-848[d]	LSA<100 nCi/g Non-Combustible	Aug 1974 – Jan 1982	NA [a] (134) [b, c]

NA = Not available

a. Number of containers as reported in C534A, P364A, P365A, U122A, and U126A.

b. Data from RPT-TRUW-06.

c. From RPT-TRUW-07, drum equivalents.

d. IDCs eligible for direct-ship under waste stream BN304. The number of containers in the fourth column are the estimated number (with load management applied) that can be either direct-shipped under waste stream BN304 or supercompacted and shipped to WIPP under waste stream BN510.

e. IDC MD-838 may not be eligible for shipment to WIPP.

f. Content codes 812 and 832 do not appear in INL records. Only small quantities of these wastes were generated and the wastes packaged in cartons/cans as described in Section 3.5. The small quantity waste cartons were placed in drums based on whether combustible or non-combustible and a mix of cartons/cans in a single drum is anticipated. IDC MD-812, Ion Exchange Resins, was packaged in 28 cartons which were placed in other combustible waste drums (IDCs MD-801, MD-802, and MD-804) for shipment to INL. IDC MD-832, Contaminated Mercury, was packaged in 61 cartons or 1/2-gallon metal cans, which were placed in other non-combustible waste drums (IDCs MD-803, MD-805, MD-810, MD-811, MD-813, MD-814, and MD-826) for shipment to INL. (P024A)

g. Only small quantities of IDC MD-826, Floor Sweepings/Rust were generated and are present as cartons within drums of other Mound debris IDCs. (P024A)

Item Description Code MD-801, Rags, paper wood, etc.: This waste consists of line-generated cloth rags and Kimwipes, towels, coveralls, booties, and limited amounts of wood and cardboard tubes. Limited amounts of other combustible wastes (e.g., gloves, plastic) may also be included. (C349A, P024A, P365A, P399A, P506A) This waste IDC was originally intended for incineration on site and includes easily burned material such as wood, rags, paper, cartons plastic sheeting. (P384A, U126A) IDC MD-801 debris waste with recoverable plutonium was incinerated. IDC MD-801 debris waste below recoverable levels was packed and sent to INL.

***Item Description Code MD-802, Dry box gloves and O-rings*:** This waste primarily consists of neoprene dry box (glovebox) gloves, neoprene O-rings (approximately 7-in. diameter by ¼ in. thick), and lead-lined glovebox gloves. The lead-lined gloves are coated with Hypalon (chlorine and sulfonyl chloride substituted polyethylene [from Merck Index, ninth edition]) and/or neoprene. (C349A, C481A, P024A, P384A, P532A, P539A, P506A Gloves included only alpha-box gloves, not rubber or other gloves. (P384A, U126A)

***Item Description Code MD-803, Metal, Equipment, Pipes, Valves, etc.*:** This waste consists primarily of stainless steel, carbon steel, and small amounts of aluminum metal wastes in the form of valves, piping, wrenches, nuts, bolts, stainless steel tubing, spatulas, pans, hotplates, ring stands, check weights, etc. (C349A, P024A, P384A, P506A)

***Item Description Code MD-804, Plastic, Tygon, Manipulator Boots, etc.*:** This waste consists primarily of various types of plastics (polyvinyl chloride [PVC], polyethylene, Tygon, etc., in the form of tubing, piping, sample vials, gaskets, and manipulator boots), rubber gloves, and non-burnables other than alpha-box gloves, metal, and glass. (C349A, P024A, P384A)

***Item Description Code MD-805, Asbestos Filters*:** This waste consists of 6 inch high by 6 inch in diameter and 6 inch high by 3 inch in diameter HEPA filters used on either supply or exhaust of alpha glove boxes. Other filter sizes may be in this waste. The majority of the filters have pressed hardboard frames and asbestos filter media. Some filters have metal frames. (C349A, P024A) Other asbestos waste may be included in this IDC. (P384A, P506A, U126A)

***Item Description Code MD-810, Glass, Flasks, Sample Vials, etc.*:** This waste consists primarily of whole and broken glassware and glass vials. The majority of the glassware is Pyrex™. Limited amounts of other non-combustible wastes may also be present, including the following: Metal, Equipment, Pipes, Valves, etc.; Asbestos Filters; Evaporator and Dissolver Sludge; Glass Filters and Fiberglass; Graphite Waste; Equipment Boxes or Floor Sweepings; and Contaminated Mercury. (C349A, P024A, P384A, P506A)

***Item Description Code MD-812, Spent Ion Exchange Resin*:** This waste was generated during the purification or separation of plutonium. The resin is an organic based polymer produced by Dow Chemical Company. Only cartons of this waste are present in drums of other Mound debris waste IDCs. (P024, P384A, P506A)

***Item Description Code MD-813, Glass Filters and Fiberglass*:** This waste consists of spun-glass filters (e.g., 10 inches in length by 3 or 4 inches in diameter) used to filter solutions and fiberglass prefilters (6 inches in diameter by 0.5 inches thick) on gloveboxes. (C349A, P024A, P384A, P506A, U126A)

***Item Description Code MD-814, Graphite Waste*:** This waste consists of graphite crucibles and electrodes used in analytical procedures. The crucibles are approximately 0.5 inches in diameter and 0.75 inches high. The graphite electrodes are in the shape of rods that are approximately 0.125 inches in diameter and 1 inch long. (P024A, P384A)

***Item Description Code MD-824, Equipment Boxes, Non-combustible*:** This waste originally included equipment too large to fit in a drum. Waste primarily consists of large, non-combustible equipment such as tanks (stainless steel and tantalum), piping, ducting, conduit, electric motors, pumps, metallurgical presses, lathes, dissolvers, evaporators, furnaces, ladders, vacuum sweepers, 24 × 24 × 12-inch HEPA filters, fume hoods, gloveboxes, Plexiglas glovebox windows, and floor tile. Limited amounts of combustible waste (plastic tanks, fiberglass gloveboxes, plastic contamination control tents, etc.) have also been included in the waste. (C349A, P024A, P384A) Later documents include all non-combustibles in this category, with lower numbered IDCs no longer mentioned. (U126A)

***Item Description Code MD-825, Equipment Drums, Non-combustible*:** This waste originally consisted of equipment too large to fit into a carton or can. Waste primarily consists of non-combustible equipment such as small tanks, dissolvers, motors, pumps, piping, small valves, tools, hotplates, presses, grinders, metallurgical polishers, ring stands, ring stands, concrete, floor tile, sheet metal, vacuum sweeper filters, sweeper hose, and glass. The waste is similar to IDC MD-824 but is smaller and is packaged into drums. Limited amounts of combustible waste, such as plastic tanks, will be present. (C349A, P024A, P384A) Limited amounts of IDC MD-832, Contaminated Mercury, may be included in IDC MD-825. (24) Later documents include all non-combustibles in this category, with the lower numbered IDCs no longer mentioned. (U126A)

***Item Description Code MD-826, Floor Sweepings/Rust and Equipment boxes, combustible*:** The IDC MD-826 waste includes two different types of waste depending on when the waste was generated. Prior to 1981, this IDC was used for glovebox floor sweepings and rust. The IDC MD-826 floor sweepings/rust waste was contained in 1-gallon plastic-coated cardboard cartons which were placed in containers of other Mound IDC debris waste. (P024A, P365A, P399A) The actual amount of floor sweepings is small. After 1980, this IDC was used for large, combustible waste items such as plastic tanks, Plexiglas shielding and windows, wood and fiberglass conveyor glovebox sections. Limited amounts of small combustibles such as shoe covers and surgical gloves are also included. (P024A, P307A) These types of large combustible wastes were included in IDC MD-824 prior to 1980. (P365A, P399A)

***Item Description Code MD-827, Equipment drums, combustible*:** This waste consists of plastic, cellulose, and wood, and may include floor sweepings. (P399A) This waste is similar to IDC MD-826, except that it is smaller items which fit into drums instead of boxes. (P365A)

***Item Description Code MD-832, Contaminated Mercury*:** This waste was generated primarily by the analytical group. The mercury is contained in plastic bottles (probably pint sized) inside half-gallon metal cans or one-gallon plastic-coated cardboard cartons. Only cartons/cans of this waste are present in drums of other Mound Debris IDC waste. (P024A, P384A)

***Item Description Code MD-838, < 10 nCi/g Non-Combustible*:** A single IDC MD-838 drum was accidentally shipped to INL instead of to a commercial burial ground. Mound records indicate that the drum contains combustible waste. (P024A)

***Item Description Code MD-847, LSA<100 nCi/g combustible waste*:** This waste consists of nonline-generated combustible wastes such as plastic sheeting, paper, rags, gloves (rubber, cloth), plastic bottles, wood, paper suits, and shoe covers. (P024A, P319A, P365A, P399A, U159A) The waste may be either dry or damp. An estimated 75% of the waste is compacted; approximately 25% of the waste is not compacted due to the presence of non-compactable items, such as wood. (C349A, P024A, P365A) Table 1 of AK source P365A contains the following sentence "This waste consists of nonline-generated combustible wastes such as plastic sheeting, paper, reagents, gloves (rubber, cloth), plastic bottles, wood, paper suits, and shoe covers." The description of this waste in other AK documents is "This waste consists of nonline-generated combustible wastes such as plastic sheeting, paper, rags, gloves (rubber, cloth), plastic bottles, wood, paper suits, and shoe covers." If reagents are identified during RTR/VE and repackaging, those containers will be removed and not included in the feed to the supercompactor.

***Item Description Code MD-848, LSA< 100 nCi/g Non-Combustible*:** IDC MD-848 consists of non-line generated non-combustible wastes such as tools, pipe, equipment, metal, glass, concrete, plaster, bricks, and dirt. Limited amounts of combustible wastes (paper, rags, etc.) may be included. (C349A, P024A)

Any of the debris waste drums may also contain discarded centerpost cans or calorimeter cans (dense containers approximately 2½ inches in diameter by 4 inches) used to store and transport ^{238}Pu product material. These small containers should not contain any significant quantities of ^{238}Pu product material and may be packaged in a metal vault storage container (approximately 3½ inches in diameter by 4 inches) with a pressure gauge. (29, C505, U156A)

6.1 Waste Generation

TRU Mound debris wastes stored at INL were generated primarily from D&D of facilities and equipment from defense operations related to the design and development of heat sources using ^{238}Pu for spacecraft, generators, and satellites. These operations and facilities included plutonium processing operations, plutonium and other radionuclide recovery, and other activities supporting these operations including laboratory and research and development operations, maintenance operations, and waste treatment operations. (C349A, P024A, P319A, P365A, P380A, P384A, P399A, U126A, U141A, U159A)

6.1.1 PPO and PMC Production and Plutonium Recovery

Wastes from the production processes are described in characterized on the basis of their plutonium content and were classified as recoverable, high- risk or low-risk waste. The production processes are described in Section 3.2. Solid or liquid wastes that had a plutonium content exceeding the EDL were classified as recoverable wastes, and were sent to the plutonium recovery process in SM/PP complex. Waste materials that contained plutonium below the discard limit were defined as high-risk or low-risk wastes. Decontamination within the glovebox generally produced a recoverable or high-risk waste. Decontamination outside the glovebox produced either a high-risk or low-risk waste depending on the plutonium activity. (C444A, P380A, U126A, U156A, U168A)

Wastes with a plutonium content exceeding the EDL were classified as recoverable wastes, and were sent to the plutonium recovery process. Physical processing included ultrasonic wash, evaporation and filtration. Chemical processing included dissolution, precipitation, fusion, incineration, ion exchange and fluorination. In gloveboxes, solid objects were washed or leached in water or acid solutions. Materials that did not meet specifications were dissolved in a mixture of nitric and hydrofluoric acid. If these materials could not be readily dissolved, they underwent pyrosulfate fusion followed by dissolution. Glass fiber filters were dissolved in a hydrofluorinator-pressurized vessel, and the silicon tetrafluoride generated in the process was removed via a caustic scrubber. All of the resulting solutions were then processed further by chemical recovery including ion exchange, fluorination, or precipitation, or were treated as waste. (C385A, C398A, C423A, P380A, P475A, U157A, U167A)

As described in Section 3.2 the plutonium recovery processes involved incineration of combustible waste. During production, if paper towels or rags accumulated significant quantities of ^{238}Pu, the thermal energy released by the plutonium would cause the towel or rag to start smoldering. The glovebox operator would put the towels and rags in an open-topped metal can and allow the process to continue. Since the glovebox had an inert atmosphere, there was no open flame. After a period of time, the can contained a carbonized ash that contained plutonium oxide. The volatile pyrolysis products were swept from the glovebox, and after HEPA filtration, were discharged to the atmosphere via the building's stack. All other combustible wastes, including paper, wood, leaded neoprene gloves, and in-line glovebox HEPA filters were treated in an incinerator installed in a glovebox. The ash residue from the incinerator was sent back for dissolution and leaching. (P380A) Plutonium processing conducted in PP Building was no different from processing in SM building.[5] PP Building, like the SM Building, had its own plutonium recovery process, including an in-line glovebox incinerator, for destruction of combustible wastes generated in production and plutonium recovery processes. However, leaded gloves were not incinerated in SM Building recovery operations. The leaded gloves were subjected to acid leaching and the leachate went to the plutonium recovery process. (P380A) It is assumed that

5.Operations stopped in SM Building and the facility was dismantled in 1972; therefore, any wastes generated from processes in SM Building are not included in the wastes stored at INL (earliest package date is January 1974); however, the waste stored at INL may include D&D waste from the SM Building.. (P380A, P519A, U173A)

combustible waste that contained less than recoverable quantities of ^{238}Pu were packaged and sent to INL.

6.1.2 Research and Development and Laboratory Operations

A number of research and development programs were conducted in the SW/R buildings related to production and recovery of radionuclides and are described in Section 3.2. Research and development solvent extraction and plutonium/uranium separation in R Building used carbon tetrachloride, methylene chloride, trichloroethane, organophosphate, nitric acid, hydrochloric acid, ammonium hydroxide, and sulfuric acid. (C448A, C449A, C450A, C466A, P380A, U126A)

As described in Section 3.2.3 the analytical laboratories supported research, production, recovery, and waste treatment operations at Mound. The laboratories also performed radiochemical analysis (non-tritium) in support of D&D operations. Analytical procedures included mass spectroscopy, calorimetry, ion-exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. The analytical laboratory in R Building most recently performed chemical analysis and emission spectroscopy on plutonium compounds, alloys, and mixtures. Operations in this area ceased in about 1989. (C384A, C424A, C429A, C441A, C444A, C446A, C447A, P380, P475A, P482A, P483A, P484A, P505A, P511A, P518A, P520A, P546A, U126A, U154A, U157A, U187A) Chemicals used in the laboratories included carbon tetrachloride, methylene chloride, trichloroethane, chloroform, organophosphate, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, nitric acid, and sulfuric acid. Chemicals used in other SW/R Building operations included hydrogen peroxide; ammonium hydroxide; hydrochloric, hydrofluoric, nitric, sulfuric, boric, and lactic acids; methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene, freon, tetrachloroethylene, toluene, sodium sulfite solution; potassium and copper sulfates; carbonates; and sodium hydroxide. Trichoroethane, acetone and ethanol were used for cleaning. Trichloroethane and methanol also were used in SM/PP complex as a degreaser for metal parts. (C443A, C444A, C449A, C464A, C465A, C466A, C467A, C472A, C490A, P380A, P469A, P474A, P493A, P503A, P525A, P536A, U126A, U196A,)

6.1.3 Facility Demolition

D&D at Mound was an ongoing process originating in 1949. Since the early 1970s, the D&D Program involved demolition of the former plutonium processing facilities including the SM, R, and PP buildings. D&D of the SM Building took place between 1968 and 1972. These activities included D&D of gloveboxes, conveyor housing, piping, service equipment, and structures that generated contaminated soils, clothing, rags, Kimwipes, shoe covers, plastic, wood, and other miscellaneous debris waste. (C481A, P024A, P313A, P380A, P532A, P539A, U126A)

Gloveboxes, process equipment in gloveboxes, and hoods were decontaminated using water, detergent, and hypochlorite. Until 1980, D&D of some of the process equipment used acid solution rinses to recover plutonium. The outside metal parts of gloveboxes were cleaned with metal polish to remove the metal surface contaminated with plutonium. After cleaning, polyurethane was foamed into the glovebox interior to secure remaining glovebox equipment. The gloveboxes were packed into boxes and the void space was foamed with urethane. (C350A, C375A, C470A, P380A)

The D&D of PP Building glovebox lines began in 1977. Since that time most of the solid waste from PP Building was generated from D&D operations. D&D of R Building laboratory glovebox lines began in 1978. (P319A) All TRU waste generated after 1980 was D&D waste resulting from D&D and demolition of the alpha facilities. (U126A) Debris wastes were also generated during normal maintenance and cleanup, as well as D&D. (P307A)

The D&D program operated in two phases. First, equipment was cleaned and removed from affected areas and packaged into containers for shipment off-plant. Non-glovebox line associated items such as furniture and electronic equipment were removed. Small, loose in-line equipment was placed into containers and bagged out of the glovebox. Larger items were cut and wrapped. (P381A) Polyurethane foam was used to 'fix' contamination. Second, structural decontamination was performed to remove or seal contamination. (C350A, P380A)

Interconnecting lines that serviced the gloveboxes were removed using various cutting techniques and tools. Small piping less than 2 inches was removed using reinforcing rod cutters to pinch, seal, and separate the tubing. A cap filled with RTV rubber was then placed over each end and taped in place. A small hole was drilled into larger diameter piping (2- to 4-inch diameters), and the pipe was filled with foam for a few inches on either side of the hole so that it could be cut at the foam barrier, then capped with plastic caps that were filled with RTV rubber and taped in place. (C481A, C486A, P498A, P499A, P516A)

Removal of floor coverings and sandblasting paint off walls and ceilings removed most of the building's surface contamination. If contamination above release criteria remained, a powered vacuum scabbler was used to remove ¼-inch layers of contaminated concrete. If contaminants penetrated beneath floor slabs along cracks, the concrete floor may have been removed to allow for the removal of contaminated materials. A detergent and paint remover in a high pressure washer was also used to decontaminate building interiors and equipment. (C374A, P498A, P499A, P512A)

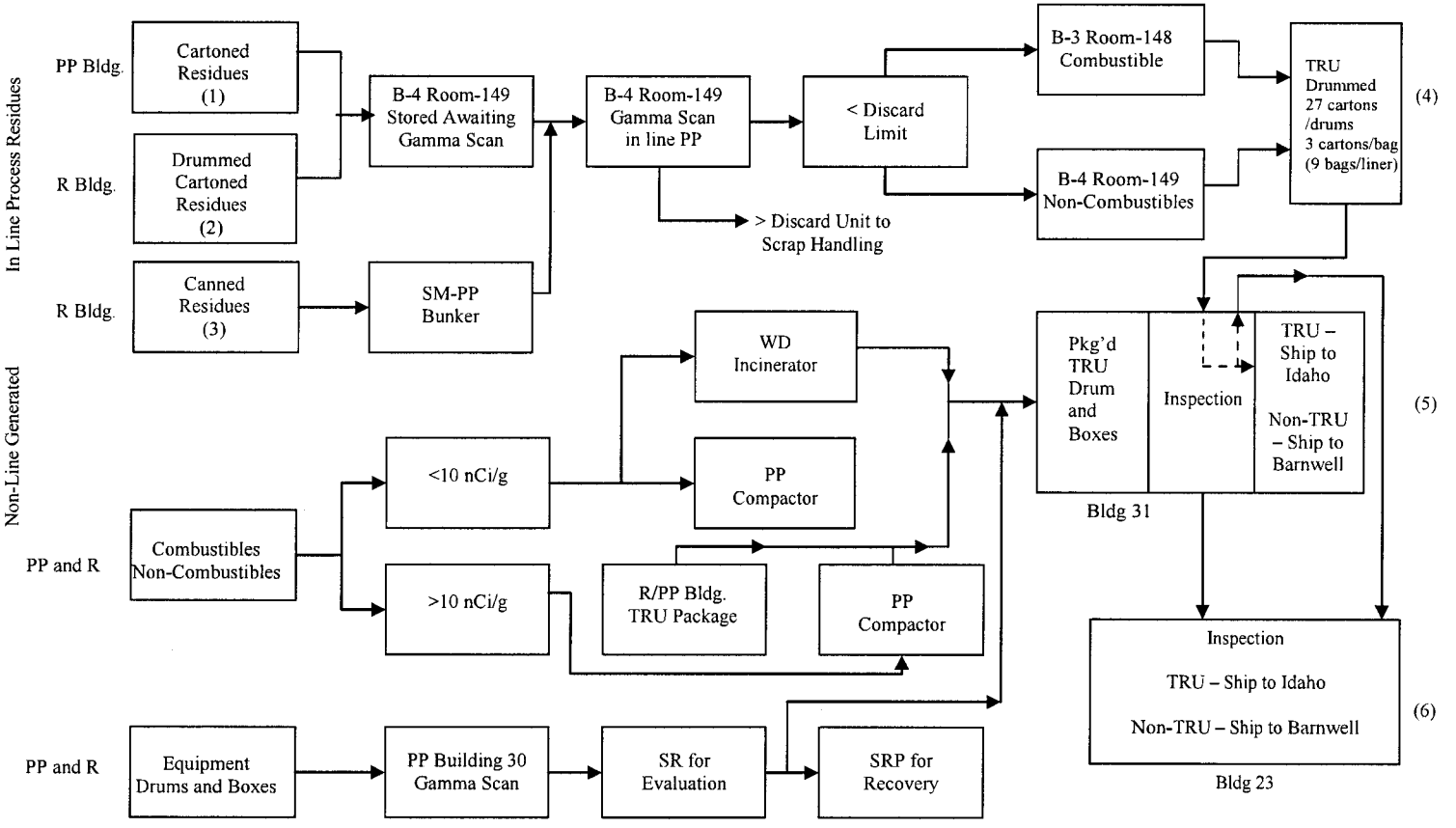
6.2 Waste Treatment

Treatment of wastes at Mound was generally limited to the processing of liquid waste from ^{210}Po and ^{238}Pu processes, although other wastes were also treated by incineration and low level liquid solidification. Wastewater from plutonium production in SM Building was treated in treatment facilities in the WD, and in a separate similar facility in SM Building. Debris waste was generated secondary waste as a result of the treatment processes (e.g., PPE). Debris waste was also generated during routine maintenance and D&D activities (e.g., HEPA filters, incinerator off-gas filters, graphite, glass, wood, metal, plastic, paper, etc.). (P380A)

Some of the <100 nCi/g combustible waste (IDC MD-847) was placed into plastic bags which were sealed with tape and compacted inside prepared 55-gallon drums in one of two solid radioactive waste compactors located in PP Building. The compaction ratio was approximately 4:1. (P024A, P313A, P365A) The first compactor became operational in July 1974 for compaction of radioactive wastes containing less than 10 nCi/g of TRU radionuclides. The second compactor became operational in December 1974 and was used to compact solid wastes containing greater than 10 nCi/g of TRU radionuclides. The compacted waste was either shipped for off-plant burial or sent to INL for 20-year retrievable storage. (P380A)

6.3 Waste Packaging

Operations and D&D personnel were responsible for packaging all waste items. Information sheets were filled out on each waste container. (P319A) Each waste generating area was responsible for packaging, filling, sealing and labeling waste containers. Waste containers were then transferred to the waste management department for final inspection (application of permanent seals, touch-up painting and spot radiation and contamination checks) and preparation for shipment. (P024A) Debris waste items were typically packaged in at least two layers of plastic before placement in a prepared waste container. The process flow for debris waste is illustrated in Figure 3-9. (U132A)



(1) Pu-238 Concentration = 64 mgs to 5 g/carton.
(2) Pu-238 Concentration - <150 mgs/carton usually consists of analytical, mass and emission spec. waste.
(3) Pu-238 Concentration = 160 mg to 5 g/carton.
(4) Amount of Pu-238 contained in drum is established by the addition of amounts contained in the 27 individual cartons.
(5) Pu-238 RA waste from PP Bldg. can be inspected and, if need be, can be shipped by van from Bldg 31.
(6) Sludge from WD, SW and R Bldg. RA waste and non-TRU from the same area are inspected and shipped from Bldg 23. Drums, equipment drums and boxes requiring ATMX cars are transferred from Bldg 23 for shipment. Inspection can be accomplished in either Bldg 31 or 23.

Figure 3-9. Heterogeneous debris waste process flow .

6.3.1 Waste Packaged in Drums

The different inner packaging configurations for the debris waste are described below. The debris waste was placed in a 55-gallon drum that was lined with a 90-mil rigid polyethylene drum liner. The rigid drum liner was typically lined with a polyethylene drum bag. Other packaging configurations observed during AMWTP characterization activities include the absence of, or multiple drum bags. [14, 20] The drum bag(s) were typically sealed with tape; however, plastic ties are also an acceptable closure method. [24] Per Mound operating instructions, the liner lid was sealed to liner body with adhesive in drums generated prior to mid 1980s. [P381A] Plywood spacers (¼- to ¾- inches thick) were placed between the rigid liner lid and the drum lid before the drum lid was installed. [27, C269A, C426A, P024A, P380A] RTR identified the absence of spacers in some drums. [13, 27] Section 3.5 provides the acceptable variations in the 55-gallon drum packaging configuration.

RTR characterization indicates that absorbent (e.g., Florco) may or may not be present in a waste container. [22] Absorbents found within waste bags (or in contact with the waste) are considered to be waste. Absorbent located outside of the waste bags (regardless of volume) are not considered waste, but rather part of the packaging and therefore do not impact IDC/WMC assignment. However, if absorbent is found within a waste bag (or in contact with the waste) and is >50% by volume in the container, the absorbent has the potential to impact IDC/WMC assignment.

Any combination of plastic bags, provided that a maximum of six bag layers (of which two are liner bags) is not exceeded, does not impact the acceptability of the drums as direct ship candidates for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for waste stream BN304 will be segregated and addressed accordingly.

Small line-generated wastes (rags, paper, glass, filters, metal, rubber, etc.) were physically separated by operating personnel into high-risk and low-risk categories. The segregated waste was packaged in 1-gallon plastic-coated cardboard cartons and filled to capacity. The total weight of the packaged item was limited to approximately 20 pounds. For IDC MD-805, one 10-inch filter, two 4-inch liters, or 2.3 carton of bulk spun glass was packaged into a carton. For IDC MD-810, waste was usually broken into ~ 1-inch diameter pieces to increase packaging efficiency. The lid was placed on the carton and sealed with 2-inch masking tape. Each carton was labeled for content and placed in a polyethylene bag, which was sealed with tape. Each carton of waste was assayed for plutonium content and bagged out of the glovebox line into a PVC or polyethylene "sleeve" bag. Some sleeves may consist of 2 polyethylene bags. The sleeve bag, containing up to five cartons of waste, was twisted and sealed with tape and placed into a prepared waste drum. Up to eight sleeve bags were placed into a drum. [C269A, P024A, P319A, P380A, P384A] If a paper carton could not be used because of containment issues (such as glass, tools, and other hard waste items with the potential to breach cartons), the waste was first packaged into 1- or 2-quart paint cans with press-on lids. The lids were secured, and the cans were placed in a plastic bag. The cans were then either placed in a number 12 tin can or in a polyethylene

"sleeve" bag. The sleeve bag, containing up to five cans of waste, was sealed with tape and placed into a prepared 55-gallon waste drum. Tin cans were placed in a plastic bag, the bag was taped closed, and up to 15 cans were placed in a 30-gallon drum to be sent to gamma scan for analysis. After gamma scan, any cans containing waste below the approved discard limit would be packaged in drums and discarded as waste. (C426A, P024A, P384A)

Graphite waste may be packaged in half-gallon metal cans, bagged out of the glovebox in plastic bags, then placed inside a larger can and the lid sealed with a roll seam, and the cans placed in a prepared drum. The drum may contain up to four cans of graphite waste. (P024A)

Drums containing inner cartons/cans of small line-generated wastes were identified by the waste designator code, CD (canned drum). Each inner carton/can was labeled with an IDC to identify content. The cartons/cans were packed into 55-gallon drums and each drum was assigned the content code representing the majority of cartons in the drum with the same IDC or as identified by the generator. Waste management protocol at Mound did not require that all waste placed in a container have the same IDC. For example, a drum labeled as IDC MD-803 (Metal Equipment, Pipe, Valves) contains cartons/cans of metal wastes, but may also contain cartons/cans of other non-combustible wastes such as asbestos filters, glass, spun-glass/fiberglass filters, sludge, mercury, etc. (C340, C376A, P319A, P381A, P384A) RTR examination of containers of Mound waste have supported that the Mound debris waste is not well segregated by IDC and that combustible and non-combustible waste may be found in the same container. (15, 19) For example, a drum labeled with an IDC of MD-803 will contain a majority of cartons containing metal wastes- labeled MD-803, but will likely also contain other cartons containing other non-combustible wastes (e.g., IDCs MD-805, MD-810, etc.) and may contain cartons containing combustible wastes (e.g., IDCs MD-801, MD-802, and MD-804). (15, 19, C340A, P319A)

Some debris waste in sleeve bag configurations was also packaged in 30-gallon drums. The 30-gallon drums were then placed in 55-gallon drums. (P024A)

Debris items that were too large to fit in a carton or can were packaged into drums as IDC MD-825 (non-combustible) or IDC MD-827 (combustible). Larger waste items may be bundled together, bagged out of the glovebox into one or two plastic bags, or placed directly into a prepared waste drum (55-gallon drum with a 90-mil polyethylene liner and polyethylene drum bag). Sharp edges on waste items were taped before those items were removed from the glovebox line. (P024A) Approximately 20 -25 pounds of Florco absorbent was placed on the bottom of the drum bag as a precautionary measure before the waste was placed in the drum.

The <100 nCi/g combustible waste (IDC MD-847) was packaged in a plastic bag and sealed with tape. (P313A, P365A) However, RTR has identified drums with up to four bag layers. (21)Absorbent clay (approximately 20 to 25 pounds) was placed in the bottom of the rigid liner. The waste was then placed in the drum and compacted (unless the waste contained a non-compactable item). Approximately 75% of the IDC MD-847 waste drums in INL storage are compacted. (C426A, P024A, P313A)

IDC MD-848 waste items, depending on the contamination levels and size of the waste item, may be packaged in one or two plastic bags or placed directly into a prepared waste drum. (P024A)

6.3.2 Waste Packaged in Boxes

IDC MD-824 waste items were either packaged in standard size (4 × 4 × 7 ft) boxes or oversize boxes. Only stainless steel glovebox sections were packaged in oversize boxes, and the equipment was removed from the glovebox prior to packaging. The glovebox interior was coated with approximately two 3/4 inches of polyurethane foam to "fix" the radioactive contamination. For standard size boxes, waste items were typically single or double-contained in plastic before placement. Some waste items, such as pipes or tanks, were closed or the ends sealed, and placed directly into the waste box. Liquids, such as lubricants and oils, were drained from pumps, lathes, etc. Between 50 and 100 pounds of Florco absorbent (Floridin Company clay product) was placed in the bottom of each standard box as a precautionary measure to absorb liquid. Some waste boxes may contain a single heavy piece of equipment and polyurethane foam. The foam was used to provide shoring. A limited number of waste boxes contain smaller plywood boxes of various sizes. The smaller boxes are used for easier handling of smaller waste items and greater contamination controls. Up to six smaller boxes may be found in a standard box. (C426A, P024A)

Plywood boxes were coated with fiberglass-reinforced polyester. Florco absorbent was added to waste box that contained, or were suspected of containing, damp waste. Prior to 1982, standard boxes were lined with a plastic liner and then a corrugated cardboard liner. Use of the cardboard ceased in 1981. Polyurethane foam was used for shoring in oversized boxes and some standard-size boxes. Oversized boxes were not lined with plastic or cardboard liners. (P024A)

Combustible waste (IDC MD-826) such as plastic tanks or fiberglass conveyor gloveboxes were usually placed in one or more plastic bags or wrapped in one or more layers of plastic sheeting before being placed into prepared waste boxes. Some waste items were placed directly into prepared boxes without additional containment, depending on contamination level. All FRP boxes were standard-size (4 × 4 × 7 ft) waste boxes. Each box was lined with plastic. Florco absorbent (approximately 50 to 100 lb) was placed in the bottom of the box if the waste was suspected to be damp. (C426A, P024A, P365A, U159A)

6.4 Waste Characterization

The Mound debris wastes addressed in this section contain at least 50% by volume materials that meet the WIPP WAP criteria for classification as heterogeneous debris waste.

At the time of shipment, the generator did not identify any EPA HWNs for the debris wastes; however, the generator identified EPA HWNs D004 through D011 as potential HWNs for the debris wastes in a draft 1984 document. (C354A Based on this information, INL identified EPA HWNs D005, D006, D007, D008, D009, D010, and/or D011 as potential HWNs for some of the debris waste IDCs. (P361A, P365A) INL also identified potential EPA HWNs D001 (due to nitrates) and D002 (due to prohibited corrosive liquids in some drums) for some of the debris waste IDCs. (P361A, P365A)

This section provides the hazardous waste determination for the debris wastes designated for disposal at WIPP in accordance with the applicable RCRA and the WIPP WAP requirements. This determination is based on knowledge of the material, knowledge of the processes generating the waste, RTR/VE review of the waste, and headspace gas analysis. The characterization of most of the debris waste IDCs are included in WSP BN304 which was approved by CBFO. (P604A) WSP BN304 includes IDCs MD-801, MD-802, MD-803, MD-804, MD-805, MD-810, MD-813, MD-825, MD-827, and MD-848. All MD debris wastes are expected to have the same EPA HWNs as those IDCs addressed in the approved BN304 WSP. The debris waste IDCs not included in WSP BN304 (i.e., MD-824, MD-826, MD-838, and MD847) are included as feed to the supercompactor. The MD debris wastes were generated by the same processes/operations (primarily D&D) and differ only in the type of packaging (i.e., packaged in boxes instead of drums) or segregation of combustibles into drums to allow for compaction by Mound.

Some containers of debris waste may contain prohibited liquid. Those drums that contain prohibited liquids are segregated and excluded from the inventory designated for disposal at WIPP. Only drums that are compliant with the WIPP WAC will be considered candidates for shipment to WIPP, are candidates for WIPP. The EPA HWN D002 is, therefore, not assigned to the drums that are candidates for shipment to WIPP.

6.4.1 Hazardous Waste Determination

The debris wastes designated for disposal at WIPP may exhibit the characteristic of toxicity for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, chloroform, and 1,1-dichloroform and are conservatively assigned the EPA HWNs D004 through D011, D022, and D029. The wastes may also have been mixed with halogenated solvents, nonhalogenated solvents and electroplating wastes, and are conservatively assigned the associated F-listed HWNs F001, F002, F005, F007 and F009. The EPA HWNs conservatively applied to the containers of debris wastes designated for disposal at WIPP with a direct ship waste stream profile are presented by IDC in Table 6-2. (D047A, P492A, P604A)

Table 6-2. Debris wastes WIPP EPA HWN assignment.

IDC	Title	WIPP-Approved EPA HWNs
MD-801	Rags, paper, wood, etc.	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-802	Dry box gloves and O-rings	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-803	Metal, Equipment, Pipes, Valves, etc.	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-804	Plastic, Tygon, Manipulator Boots, etc.	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-805	Asbestos Filters	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a, b]
MD-810	Glass, Flasks, Sample Vials, etc.	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-812[c]	Spent Ion Exchange Resin	[c]
MD-813	Glass Filters and Fiberglass	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a, b]
MD-814	Graphite Waste	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-824	Equipment Boxes, Non-combustible	[d]
MD-825	Equipment Drums, Non-combustible	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-826	Floor Sweepings/Rust [f] (prior to 1981) Equipment Boxes, Combustible (after 1980)	[d]
MD-827	Equipment Drums, Combustible	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a]
MD-832 [c]	Contaminated Mercury	[c]
MD-838	<10 nCi/g Non-Combustible	[c]
MD-847	LSA<100 nCi/g Combustible	[d]
MD-848	LSA<100 nCi/g Non-Combustible	D004 – D011, D022, D029, F001, F002, F005, F007, F009 [a, b]

a. These EPA HWNs are as assigned in the WIPP approved WSP BN304.

b. Potential EPA HWNs D001, D002 and F003 were originally identified in RPT-TRUW-12 because individual containers of waste may contain prohibited liquids or due to nitrates. [8] Only drums meeting the WIPP-WAP and WIPP WAC will be certified for shipment to the WIPP facility. Source documents indicate that some debris wastes were initially assigned D001 based on the potential presence of nitrates with cellulosic waste materials. However, testing of nitrate salts with cellulosic materials has been conducted and it was determined that the combination of nitrate salts with cellulosic materials does not result in ignitable waste. EPA HWNs D001, D002, and F003 are therefore not assigned to the debris wastes designated for disposal at WIPP. (C287A, P492A)

c. Content codes 812 and 832 do not appear in INL records. Only small quantities of these wastes were generated and the wastes packaged in cartons as described in Section 3.5. The small quantity waste cartons were placed in drums based on whether combustible or non-combustible and a mix of cartons in a single drum is anticipated. IDC MD-812, ion exchange resins, was packaged in 28 cartons which were placed in other combustible waste drums (IDCs MD-801, MD-802, and MD-804) for shipment to INL. IDC MD-832, contaminated mercury was packaged in 61 cartons (1/2-gallon metal) which were placed in other non-combustible waste drums (IDCs MD-803, MD-805, MD-810, MD-811, MD-813, MD-814, and MD-826) for shipment to INL. (P024A)

d. The potential EPA HWNs for those IDCs not assigned to a CBFO approved direct ship WSP are the same as the EPA HWNs assigned to the debris IDCs associated with direct ship WSP BN304 because theses debris wastes were generated by the same processes/operations (primarily D&D) and differ only in the type of packaging (i.e., packaged in boxes instead of drums) or segregation of combustibles into drums to allow for compaction by Mound. (P604A)

e. The one container of IDC MD-838 is not identified as a debris waste designated for disposal at WIPP.

f. Only small quantities of IDC MD-826, Floor Sweepings/Rust were generated and are present as cartons within drums of other Mound debris IDCs. (P024A)

6.4.1.1 Characteristic Waste

The debris wastes designated for disposal at WIPP may exhibit the characteristic of toxicity for arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), silver (D011), chloroform (D022), and 1,1-dichloroethylene (D029) as defined in 40 CFR 261.24. (P604A)

Ignitability: The debris wastes do not meet the definition of *ignitability* as defined in 40 CFR 261.21. The materials in this waste are not liquid, nor are they compressed gases, nor does the waste contain compressed gases. Liquids and compressed gases have been identified as prohibited by INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A, P474A) Gas cylinders and aerosol cans have been identified as existing in this waste group. The cylinders, which contained inert gas, were to be depressurized and the valves left in an open position prior to being placed in the waste container. A limited number of aerosol cans have been periodically included in the waste, however the cans were to be punctured before being placed in the waste container. (P024A) Any pressurized containers identified during characterization activities must be treated or removed prior to disposal at WIPP. The waste materials are not and do not contain DOT oxidizers as defined in 49 CFR 173, and are not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. (P024A, C476A) Source documents indicate that some debris wastes were initially assigned D001 based on the potential presence of nitrates with cellulosic waste materials. However, testing of nitrate salts with cellulosic materials has been conducted and it was determined that the combination of nitrate salts with cellulosic materials does not result in ignitable waste. (C287A, P492A) Hyperchlorite solutions were used during D&D but trace contamination on debris wastes does not meet the definition of a DOT oxidizer. WIPP WAC compliant drums will be considered candidates for shipment to WIPP. The debris wastes are therefore not ignitable wastes (D001).

Corrosivity: The debris wastes do not meet the 40 CFR 261.22 definition of *corrosivity.* The debris wastes are not liquid. Free liquids and corrosive items have been identified as prohibited by INL waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A, P474A) However, prohibited liquids may be present in some of the waste containers. (P024A) Only WIPP WAC compliant drums will be considered candidates for shipment to WIPP. Containers with liquids in excess of the allowed volume will be set aside for treatment and additional characterization. The debris wastes are therefore not corrosive wastes (D002).

Reactivity: The debris wastes do not meet the definition of *reactivity* as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes when mixed with water. The materials do not contain sulfides, and are not capable of detonation or explosive reaction. Although debris wastes may be contaminated with trace amounts of cyanide (from cleanup of waste from electroplating operations), the materials are not capable of generating toxic fumes or vapors in sufficient quantity such that it would pose a threat to human health or the environment. The materials are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in

49 CFR 173, nor do the drums contain explosive materials. (P024A, C476A) Explosives were produced and tested at Mound Plant, but wastes generated from explosives were managed in waste groups entirely separate from radioactive wastes. (P380A) Free liquids, pyrophoric material, and explosives are identified as prohibited according to Idaho waste acceptance criteria or Mound waste certification criteria since 1978. (C340A, C376A, C415A, C416A, P465A) Gas cylinders and aerosol cans have been identified as existing in this waste group. The cylinders, which contained inert gas, were depressurized and the valves left in an open position prior to being placed in the waste container. A limited number of aerosol cans have been periodically included in the waste, however the cans were punctured before being placed in the waste container. (P024A) The debris wastes are therefore not reactive wastes (D003).

Toxicity: The debris wastes may meet the definition of *toxicity* as defined in 40 CFR 261.24. The toxicity characteristic contaminants fall into one of two categories: metals and organics. Organic compounds include halogenated- and nonhalogenated-solvents, pesticides, herbicides and other toxic compounds.

AK for debris wastes indicates the potential for toxic metals such as arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Based on process descriptions, toxic metals such as arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver were used in R Building laboratory operations. An alloy containing chrome was used for encapsulation of PPO spheres. Debris waste also includes leaded gloves and bricks. Small containers of mercury from analytical operations were packaged with debris waste. Mercury was used in Teplar pumps in some gloveboxes. In addition, most of the debris waste was generated from D&D operations. Based on process descriptions, this waste may also contain other debris that may contain toxic characteristic metals. For example, silver solder (in circuit boards), fluorescent bulbs containing mercury, mercury thermometers, mercury switches, mercury batteries, and paint contaminated with chromium or lead may be present. (C354A, C458A, C461A, C466A, C467A, C472A, C477A, C481A, D047A, P024A, P310A, P319A, P365A, P380A, P385A, P474A, P492A, P493A, P532A, P539A, U126A, U142A, U184A, U191A, U192A, U196A, U199A, U206A) Consequently, as a conservative measure, the EPA characteristic HWNs D004, D005, D006, D007, D008, D009, D010, and D011 are assigned to the debris wastes designated for disposal at WIPP.

There is no documentation indicating the presence or use of pesticides or herbicides in the areas or processes generating debris waste. Therefore, the characteristic toxicity EPA HWNS due to pesticides or herbicides (D012 – D017) are not assigned to the debris wastes.

Toxicity characteristic organic compound chloroform (D022) was identified as a solvent used in operations. (P493A) Even though only trace quantities of chloroform are expected, the exact concentration is unknown. (D047A,) Current headspace gas sampling results for debris wastes support the presence of chloroform and detected 1,1 dichloroethylene (D029). The calculated UCL_{90} values are below the PRQL values; consequently, EPA HWNs D022 and D029 are assigned as a conservative measure for the debris wastes.

Organic compounds carbon tetrachloride, tetrachloroethylene, and trichloroethylene were identified in the AK record as being used for their solvent properties in production and laboratory operations. (C464A, C466A, C467A, C472A, P380A, P492A, P493A, U126A) Benzene and methyl ethyl ketone are also identified as potential waste constituents from the production operations and analytical laboratories and paint remover was used during D&D. Based on this information, the WIPP debris waste stream is conservatively characterized as an F001, F002, and F005 listed hazardous waste; therefore, the EPA HWNs for the above toxicity characteristic constituents are not identified for this waste stream. (D047A)

6.4.1.2 Listed Waste

None of the debris TRU wastes were considered mixed waste by Mound during negotiations with Ohio EPA; the TRU waste stored at Mound following the end of shipments to INL is assumed representative of the waste shipped to INL. (U126A) However,carbon tetrachloride methylene chloride, tetrachloroethylene , 1,1,1-trichloroethane , trichloroethylene, and toluene are identified in AK as being used for cleaning and degreasing or in solvent extraction operations in plutonium production and analytical laboratory processes. 1,1,2-trichloro-1,2,2-trifluoroethane, benzene, and methyl ethyl ketone have also been identified as potential contaminants from laboratory, waste treatment, D&D operations or other operations at Mound. (C344A, C464A, C466A, C467A, C472A, C481A, D047A, P380A, P492A, P497A, P493A, P503A, U126A) As a result, the EPA HWNs F001, F002, and F005 are conservatively assigned to containers of debris wastes designated for disposal at WIPP. (P604A)

AK source documents note that solvent extraction processes were performed at the Mound laboratories and wastes generated by D&D may contain debris waste from the facility solvent extraction processes. In addition, secondary debris waste produced by the solvent extraction work itself may have contributed to the debris waste IDCs addressed within this baseline. (P380A)

Acetone, methanol, and xylene (non-chlorinated solvents) were also used as solvents in laboratory and production operations. (C344A, C464A, 465A, C466A, C467A, C472A, C473A, C490A, P319A, P380A, P385A, P474A, P485A, P493A, P503A, P525A, P536A, U196A) Debris wastes are not liquid waste but may be contaminated with residuals from these solvent operations. If a waste no longer exhibits the characteristic of ignitability, the F003 HWN can be removed [40 CFR 261.3(9)(1)]. Based on the above information, the EPA HWN F003 is not assigned to debris wastes.

EPA HWNs F007 and F009 are conservatively assigned to the debris wastes destined for disposal at WIPP due to the potential contamination of the debris with spent copper, gold, and sodium cyanide plating solutions. The cyanide plating baths were treated in SD Building. There is the potential that seepage of the underground lines coming into SD Building contaminated the surrounding soil. These lines were located in the same area as the WTS lines. The WTS lines were removed during D&D activities in the 1980s and, it is assumed, included in the debris waste at INL. (D047A, P380A, P492A)

Beryllium was identified in as a potential contaminant from analysis of weapon components. Typically, less than 0.1 grams of beryllium waste was generated annually. Based on a review of AK, it was determined that the debris wastes will contain less than one percent beryllium by weight. (P380A) If beryllium is present, it is a contaminant of the process and not as unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste HWN for beryllium (P015A), as defined in 40 CFR 261.33 is not assigned to the debris wastes.

Hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, and only spent hydrofluoric acid could have contacted the debris wastes. (C464A, C481A, P024A, P380A, P503A, P522A, P536A) Based on this information, the U-listed HWN (^{134}U) does not apply to the debris wastes.

The materials in the debris wastes are not discarded commercial chemical products, off-specification species, or container residues (40 CFR 261.33), and are therefore, not P or U listed hazardous waste. The materials in the debris wastes are not hazardous waste from specific sources. They were not generated from any of the processes listed in 40 CFR 261.32. The materials in this stream are, therefore, not K-listed hazardous waste.

6.4.1.3 TSCA

Polychlorinated biphenyls are not expected to be waste constituents in the debris wastes in concentrations greater than 50 parts per million (ppm). (P365A) Individual containers may contain PCB items (e.g., light ballasts). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the TSCA and the WIPP-WAC.

6.4.2 Radionuclides

Radioisotopic content for the Mound wastes was estimated for the AMWTP based only on AK and the results are presented in RPT-TRUW-07 report. The data and results presented in that report are not duplicated here. As NDA data are collected on containers of the Mound wastes, the content determination may require refinement based on actual measured amounts. Discrepancies between AK derived isotopic content values and measured values will be resolved by a physicist subject matter expert and/or by an acceptable knowledge expert (AKE) as appropriate to each circumstance.

6.4.3 Prohibited Items

Items prohibited by WIPP that may be present in containers of debris waste include sealed containers greater than 4 liters (e.g., 30-gallon drum, capped pipe sections), pressurized containers (e.g., unpunctured aerosol cans), and excess liquids (including bottles of mercury). Capped pipe sections are considered sealed containers greater than 4 liters depending on their length (i.e., 4-in. pipe more than 19 inches long, 3-in. pipe more than 34 inches long, or 2-in. pipe more than 77 inches long). As described in Section 3.2.4.2, a small hole was drilled into 2-to 4-inch piping and filled with urethane foam for a few inches on either side of the hole, so that the pipe could be cut at the foam barrier. The pipe sections were capped with plastic caps filled with RTV. Containers with prohibited items identified during characterization activities will be segregated, treated, and/or repackaged to remove the items before certification and shipment of any container to WIPP.

7.0 REFERENCES

1. NM4890139088, Waste Isolation Pilot Plant Hazardous Waste Permit, New Mexico Environment Department, State of New Mexico

2. MP-TRUW-8.2, Quality Assurance Project Plan, Advanced Mixed Waste Treatment Facility

3. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, Advanced Mixed Waste Treatment Facility

4. DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, Carlsbad Field Office, U.S. Department of Energy

5. Code of Federal Regulations, Title 40, Parts 260 to 265, 268, and 270, U.S. Environmental Protection Agency

6. DOE/CBFO-94-1012, Quality Assurance Program Document, Carlsbad Field Office, U.S. Department of Energy

7. DOE/NTP-96-1204, National TRU Waste Management Plan, Carlsbad Field Office, U.S. Department of Energy

8. RPT-TRUW-12, AMWTP Waste Stream Designations, Advanced Mixed Waste Project

9. RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste, Advanced Mixed Waste Project

10. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Advanced Mixed Waste Project

11. Code of Federal Regulations, Title 49, Parts 173, Office of the Secretary of Transportation.

12. Acceptable Knowledge re. radionuclide (Co-60) inconsistent with Mound AK documentation, [AKR-04-146 R1]

13. Acceptable Knowledge re. unexpected packaging configuration and the absence of plywood spacers, [AKR-04-154 R1]

14. Acceptable Knowledge re. unexpected packaging configuration and the absence of drum bagging, [AKR-04-175 R2]

15. Acceptable Knowledge re. unexpected material (rubber and plastic debris) identified during RTR, [AKR-04-176 R2]

16. Acceptable Knowledge re. radionuclide (Actinium-227) inconsistent with Mound AK documentation, [AKR-04-199]

17. Acceptable Knowledge re. unexpected absorbent (vermiculite) identified in Mound Plant Waste, [AKR-05-224]

18. Acceptable Knowledge re. radionuclide (K-40) inconsistent with AK documentation, [AKR-04-80 R1]

19. Acceptable Knowledge re. waste matrix code (WMC) assignments for the Mound debris wastes, [AKR-05-234]

20. Acceptable Knowledge re. Use of absorbent material and packaging identified during RTR inconsistent with AK, [AKR-05-277 R1]

21. Acceptable Knowledge re. packaging identified during RTR inconsistent with AK, [AKR-05-329]

22. Acceptable Knowledge re. containers with a plastic tie for bag closure and for bags folded and taped closures not covered in AK documentation, [AKR-05-242 R2]

23. Acceptable Knowledge re. radionuclide (Bi-207) inconsistent with AK documentation, [AKR-05-354]

24. Acceptable Knowledge re. container of IDC MD-825 (Equipment Drums – Non-combustible) identified with inner containers of IDC MD-832 (Contaminated Mercury), [AKR-05-300]

25. Acceptable Knowledge re. unexpected material (metal debris) identified during RTR, [AKR-05-289 R1]

26. Acceptable Knowledge re. radionuclide (U-232) inconsistent with AK documentation, [AKR-05-351]

27. Acceptable Knowledge re: unexpected packaging configuration – plywood spacer, [AKR-05-287 R1]

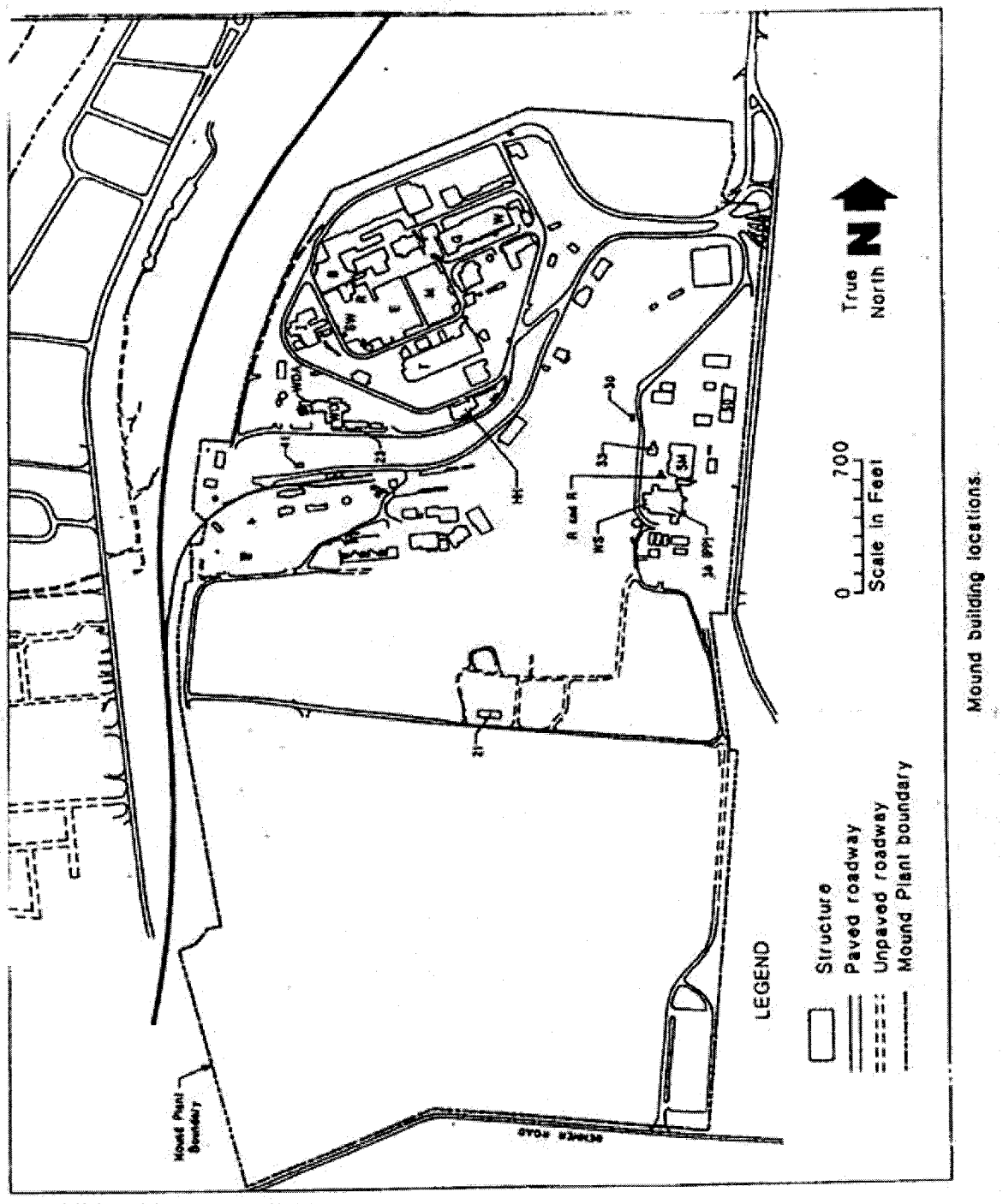
28. Acceptable Knowledge re. reporting of estimated weights versus fixed weights from the RTR pick list for plywood spacers, [AKR-05-248]

29. Acceptable Knowledge re. unexpected dense waste items in Mound debris waste, [AKR-06-358]

30. Nuclear Waste Policy Act of 1982, U.S. Code, Title 42, Chapter 108, Section 10101, Definitions.

Appendix A

Map of the Mound Facility



Additional images available through AK Source Document C601A.

Appendix B

AK Document Reference Inventory[a]

(a) A complete list of AK Source Documents is included in U123A

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C266A (BN)	Memorandum from R. Clinton, Fluor (Hanford) to P. J. Crane. "SR-90 to CS-137 Ratio for Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA." M4T00-PJC-02-076.		Determination of the ratio of ^{90}Sr to ^{137}Cs based on analysis of historical tank waste data at Hanford and established theoretical information. This ratio has been accepted for use at Hanford and was also used at INL during the 3100 m^3 project.	April 11, 2002
C269A (MD)	E-mail from Sheila Hailey to Julia Bagley, et al., "Mound Waste – Packaging Materials."		Establishes the standard weight to be used by the AMWTP for plywood spacers identified in Mound 55-gallon drums.	August 11, 2003
C279A (MD)	Telecons and e-mails relating to Florco, Sorbal, and Auto Dri absorbents.		Research to determine the densities of Florco, Sorbal, and Auto Dri. The data was gathered to establish approximate densities relative to Oil Dri.	August 23, 2004
C287A	Correspondence from Tim Venneman to Vivian Sendelweck, Nitrate compounds and organic material in stored and buried waste		Information concerning the test of organic/nitrated compounds simulated in buried and retrieved waste to determine ignitability. The results of those 54 tests indicate that at ambient temperature no concerns were noted.	February 28, 2005
C302A (MD)	Letter to File regarding plywood spacers in Mound waste identified as waste versus packaging	K. Zbryk, M. Clapham, E. Dumas	Description of how NCRs issued on the identification of spacers as waste for the Mound IDC 834 and 835 sludge containers (BN835) are to be resolved (Use as is) based on RA ETR review.	February 24, 2005
C303A (MD)	Memo re: Review of MD-835 Containers with Plywood Spacers	Barry Howes	Discussion of effects to RA (TAAC) data due to identification of plywood spaces as waste and not packaging.	June 23, 2005
C304A (MD)	Memo re: MD 835 CPR Evaluation	Don Pound	Discussion of effects to CPR due to identification of plywood spaces as waste and not packaging.	June 23, 2005

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C339A (MD)	Letters to W. S. Bennett, "Monthly Report for TRU Waste Systems Office"	W. T. Cave, Director of Nuclear Operations, Mound	Monthly reports including November 1981 through September 1982	Various Dates
C340A (MD)	Memorandum from A. B. Combs, "WIPP Criteria"	A. B. Combs, Supervisor, D&D Processing	Memorandum with attached draft waste container certification forms.	August 31, 1981
C341A (MD)	Memorandum from D. L. Gillas "Mound WIPP Certification Program Plan for Newly Generated Contact Handled TRU Waste" WIPP:DLG 83-1101	D. L. Gillas	Approval letter to Mound on the WIPP Certification Program Plan document	December 16, 1983
C342A (MD)	Polychlorinated Biphenyls Annual Report for 1978	Safety and Loss Prevention	Annual report documenting PCB disposition for the calendar year of 1978	June 25, 1979
C343A (MD)	Memorandum to L. Leventhal requesting information on analyzing sludge waste	R. K. Blauvelt	Request for EP toxicity test for two sludge waste streams.	March 14, 1985
C344A (MD)	Memorandum to H. L. Turner regarding the Hazardous Chemical Defense Waste Management Program Site Visit Report (HWP84/82)	R. M. Munson	Report documenting results of review. Contains site, facilities and waste stream descriptions.	August 23, 1984
C345A (MD)	Defense Transuranic Waste Materials Program or Funding Source Questionnaire	J. W. Guerrero	Questionnaire on determining source of waste	April 11, 1984
C346A (MD)	Monthly Report for TRU Waste Systems Office	R. K. Blauvelt	Monthly reports provided from Mound to the TRU Waste Systems Office regarding Waste Characterization Studies and Soils Agglomeration	September, 1984 July, 1984 June 1984

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C347A (MD)	Analysis of Soil Samples	A. Olding	Request for analysis of soil samples	July 13, 1984
C348A (MD)	Stored Transuranic Waste Characterization – TLC-8-81	T. L. Clements	Characterization data of Mound waste sent to INEEL, including questionnaire for off-site TRU waste generators with content code, weights and average Pu and Am calculations	May 5, 1981
C349A (MD)	WIPP Immobilization Criterion Study – TLC-9-84	T. L. Clements	Study conducted concerning WIPP Immobilization Criterion. Provides content codes	July 2, 1984
C350A (MD)	Informal Investigation of Foaming Incident on October 17, 1979	R. E. Hermetz	Report highlighting the investigation of the foaming incident in Building 68 and the resulting fire. Also includes vendor information on fire and foam chemical makeup. Foam used for shoring and void filler	February 4, 1980
C351A (MD)	TRU Transportation Plan	R. K. Blauvelt	TRU materials Transportation Plan for Mound in letter report to H. Kresny. Includes description of type of TRU waste and facilities of generation	August 20, 1985
C352A (MD)	Cs-137 Content in Soil Samples	A. R. Campbell	Cs-137 results for soil samples	June 4, 1979
C353A (MD)	Guidelines for Off-Site Contaminated Soil	R. L. Olsen	Guidelines for gathering and preparing samples for shipment to RF for analysis	October 20, 1978
C354A (MD)	Mound Waste Streams	R. K. Blauvelt	Draft waste flowsheet and data sheet for Mound waste streams	October 25, 1984

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C355A (MD)	Disposition of Spent Photo Fixer Solution	R. K. Blauvelt	Documentation of conversation between RK Blauvelt and DG Carfagno regarding disposition of spent photo fixer solution processed for silver recovery.	June 25, 1980
C356A (MD)	Chemical Waste Disposal Guidelines	A. H. Vaughters	Documents guidelines for chemical waste disposal	March 17, 1982
C357A (MD)	Criteria for Plutonium Storage Facilities	H. C. Donnelly	Memorandum from the Deputy General Manager of the Atomic Energy Commission regarding criteria for plutonium storage facilities	March 31, 1971
C358A (MD)	Packaging and Storage of Pu-238 Heat Sources in T-257	A. F. Schmidt	Description of packaging operation and facility.	June 19, 1972
C359A (MD)	Radioactive Waste Shipped to INEL	R. T. Braun	Inventory of all categories of waste shipped to Idaho to date.	January 28, 1976
C360A (MD)	Acid/Caustic TRU Waste Drums – Pressure Check (Interim Report)	W. R. Harris	Total of 137 acid/caustic TRU drums were inspected for pressure build-up in October 1975. Letter provides drum status.	March 4, 1976
C361A (MD)	Process Review 76-7	W. R. Harris	Process Review committee minutes for waste solidification, PP 50-52. Provides process description and a process flow diagram for Pu-238 High Level liquid waste	July 8, 1976
C362A (MD)	Disposition of High Level Radioactive Caustic and Acid TRU Drums	D. A. Edling	65 high level radioactive caustic ad acid drums in WDA-9 and WDA-10 contain 20 gallons of liquid in 200 pounds of DRI-RITE absorbent. 7 gallons of additional free liquid was discovered after a leak was found. Letter discusses possible disposition of the free liquid and additional storage.	February 21, 1975

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C363A (MD)	Repackaging of Acid/Caustic Drums	F. A. Traino	This memo discusses the 148 55-gallon acid/caustic drums to be repackaged. Provides location of repacking operations and venting of drums.	November 28, 1977
C364A (MD)	TRU Drums Shipped to Idaho	W. R. Harris	Provides listing of the Acid/Caustic drums that have been shipped to Idaho. The list contains the drum number and type of solution packaged in type of absorbent.	September 10. 1977
C365A (MD)	Repackaging of Acid/Caustic Waste	R. K. Blauvelt	Mound repackaged approximately 300 drums of TRU acid/caustic waste in the WD Building.	November 15, 1978
C366A (MD)	Packaging of TRU Wastes for Shipment to INEL	D. A. Edling	As of June 30, 1979 Mound has shipped 615 55 gallon drums of TRU acid waste to INEL and there were 295 drums waiting shipment.	July 5, 1979
C367A (MD)	Radioactive Waste from Redrumming Operations	D. A. Edling	Determination that empty acid waste liners can be shipped as Non-TRU waste	January 15, 1979
C368A (MD)	Acid/Caustic Drum Assay	W. H. Smith	Current Mound assay operations need to be revised to allow for assay of acid/caustic boxes and drums. Th-228 and its daughters cause interference to the 766 KeV and do no allow an accurate estimate of Pu-238.	November 15, 1978
C369A (MD)	Packaging of High Risk TRU Waste	W. T. Cave	Corrective actions for leak of a TRU drum in August of 1974 to allow TRU drums to be safely handled and shipped to Idaho.	October 14, 1974
C370A (MD)	Documentation of Discussion between Dr. BR Kokenge and RK Blauvelt on March 22, 1977.	R. K. Blauvelt	In cases where the Pu-238 contents do not meet the maximum shipping requirements, separating the waste into a box or several drums is allowable.	March 23, 1977

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C371A (MD)	Authorization to Resume Mound Hydrogenous Transuranic Waste Shipments to INEL	J. A. Chacon	Mound is authorized to resume shipments to INEL of hydrogenous transuranic waste containing plutonium in concentrations of less than 14.6 curies per 210 liter drum.	November 16, 1976
C372A (MD)	Waste Management Quarterly and Monthly Reports	R. K. Blauvelt	Monthly and Quarterly Reports from December 1979 to December 1985.	December 1979 to December 1985
C373A (MD)	D&D TRU Waste Shipments to ID	T. C. Jones	Idaho denies Mound request to use sent large intact glove boxes that Mound wants to fill with polyurethane foam.	July 7, 1978
C374A (MD)	Trip Report # 150, Visit to Savannah River Site 6/23/78	R. K. Blauvelt	A great deal of discussion was held regarding the decontamination of gloveboxes. Based on the report it was believed that Pu-238 gloveboxes can be decontaminated to a significantly lower lever by pressure washing and using chemical washes. Mound made the decision to not use the Savannah River method based on the large volume of TRU waste solutions that would be generated.	June 30, 1978
C375A (MD)	Special TRU Containers	J. R. Geichman	Glove boxes will be filled with polyurethane foam before placing into a waste package. Vendor data on the foam is attached.	April 5, 1978
C376A (MD)	Packaging Criteria for Transuranic Waste Shipments to INEL	H. N. Hill	Contains Document IDO-10074 that describes the formalized packaging criteria for TRU waste shipments for INEL.	July 25, 1978
C377A (MD)	Movement of Fissionable Material into Room R131-133	V. L. Avona	Room 131-133 has been approved for storage of two SNAP-27 heat sources or four SANP-19B heat sources as long as each is in a shipping cask or 55 gallon drum of water.	March 15, 1968

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C378A (MD)	Criticality Committee Letter – Operating Procedures and Criticality Precautions for SW Cave Area, SW-22	R. M. Waltrous	An operating limit of 125 grams of uranium 233 has been set for the process area for the SW-22 gloveboxes.	October 3, 1977
C379A (MD)	Procedure for Handling and Testing Aluminum Clad U-235 Fuel Plates	J. D. Hastings	The fuel plates are stored in six 55 gallon drums, three contain 190 plates, 64 in each drum, from Rockwell Hanford. Three of the drums belong to Mound and contain 190 plates, 64 in each drum. The drums are stored in T-208.	July 19, 1977
C380A (MD)	New Isotopes	W. P. Davis	A listing of new isotopes that are being or will be handled in the SM-PP-WD areas and their quantities..	March 28, 1977
C381A (MD)	Report on the Formal Nuclear Criticality Safety Review	R. K. Blauvelt	An audit was performed the week of November 15, 1976 for all areas of the laboratory handling and/or storing fissile material. The areas looked at were PP/SM Buildings, Buildings 37, 45, 50, R, SW, and T. There were a few issues identified with less than adequate documentation.	November 24, 1976
C382A (MD)	Operations in SW-22 After Proposed Thorium-229 Facility is in Operation	R. M. Watrous	Operations will consist of moving cow material from birdcages and moving to the gloveboxes, dissolving in nitric acid, extracting uranium with organic extractant, stripping uranium out of the extractant and then evaporating to proper concentration.	September 9, 1976
C383A (MD)	Repackaging of U-233 Oxide	W. Stringham	The major supply of U-233 prior to milking the Th-229 is packaged in approximately 1200 g lots. Due to criticality issues, it needs to be repackaged into 150g batches. Upon repackaging, the new glass bottles will be sealed and stored in lead bird cages.	January 9, 1976

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C384A (MD)	Verification Program Procedures, Rocky Flats Samples	H. B. Kreider	82 containers of samples were received from Rocky Flats for audit verification. The operation was conducted in R-159. This document also details specific issues identified with several drums.	July 29, 1975
C385A (MD)	Nuclear Criticality Procedures for Calorimetry of Plutonium Nitrate Solutions	W. W. Rodenburg	Request for procedure review. The operations will be performed in building R-159. This procedure covers the preparation, calorimetric assay, storage and handling of plutonium nitrate solutions.	April 3, 1974
C386A (MD)	Storage of Loaded MHW Shipping Containers	H. B. Kreider	Request to move the sources from T-1W to the SW second floor.	January 8, 1980
C387A (MD)	Audit of the Nuclear Criticality Safety Practices and Procedures in the SW Building	R. A. Wolfe	An audit was performed April 24, 1969 of the SW building. SW-234 was placed into operation without an operational procedure. Record keeping of fissile material was lacking. Also, once a procedure was in place, operations were taking place that were not part of that procedure. In room SW-8, 520 grams of uranium 235 and 59 grams of plutonium 239 were transferred from SW-142 without documentation.	April 30, 1969
C388A (MD)	Audit of Nuclear Criticality Safety Practices and Procedures in the SW and R Buildings	R. A. Wolfe	An audit was performed March 1, 1968. Due to the small quantities of fissile materials expected to be processed in the neutron source area in the SW Building, there is no longer a need to have a criticality control restriction in this area.	March 13, 1968

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C389A (MD)	Audit of the Nuclear Criticality Control Safety Practices and Procedures in the SW-Addition	R. A. Wolfe	An audit was performed January 11, 1968 in the Nuclear Component Development and Pre-Production Facility. In SW-238, operations involving the water storage batch were not covered by the criticality control procedures	January 15, 1968
C390A (MD)	Audit of the Nuclear Safety Procedures and Practices of the SM-Building	J. B. Kahle	An audit was performed February 9, 1967 in the SM Building. It was identified that several people were storing quantities of plutonium 238 in the SM-37 vault. Each person knew the quantity of their plutonium but not the overall combined volume, possibly exceeding the volume limit for the room.	March 3, 1967
C391A (MD)	Audit of Nuclear Safety Procedures and Practices in T-3	J. B. Kahle	An audit was performed February 2, 1967 in T-3. No log was being kept with the over all volume of Pu-238 for any given time, creating a possibility of exceeding the overall room limit.	February 10, 1967
C392A (MD)	Audit of the Nuclear Safety Procedures and Practices in T-1 and T-4	J. B. Kahle	An audit was performed February 2, 1967 in T-1 and T-4. A recommendation was made to remove the "Explosives" sign since no explosives are being stored in this location.	February 10, 1967
C393A (MD)	Audit of the Nuclear Safety Procedures and Practices in R-143 and R-149	J. B. Kahle	An audit was performed January 26, 1967 in R-143 and R-149. No log was being kept with the over all volume of Pu-238 for any given time, creating a possibility of exceeding the overall room limit.	January 31, 1967
C394A (MD)	Audit of the Nuclear Safety Procedures and Practices – neutron Storage Facility in the SW-Building	J. B. Kahle	An audit was performed January 9, 1967 in SW-219, 221, 222, 223, and 224. Plutonium scrap was brought in from the R Building and stored in the SW-219 birdcages.	January 16, 1967

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C395A (MD)	Audit of Nuclear Safety Procedures and Practices of the SM-Buildings (SM-28, 37, 39, 57, 58, 59 and 60)	J. B. Kahle	An audit was performed March 11, 1966. Fissile material had been processed in Room 28 without Criticality approval.	April 18, 1966
C396A (MD)	Criticality Audit – Storage Vaults	J. B. Kahle	An audit was performed on March 9, 1965 in the T Building and R-117. There were no procedures for the T Building vaults, approximately 150 grams of U-233 and 430 grams of Ph-239 were stored in the east tunnel vault in a cardboard box and wooden box and the quantity of fissionable material stored in R-117 exceeded the approved limit by 40 grams.	March 12, 1965
C397A (MD)	Report of Formal Criticality Safety Review	L. F. Rodriguez	An audit was performed September 5, 1973 at the PP area and Buildings 37 and 45. The audit team also visited the T, R and SW buildings. The reports provides operations description of SW-237	September 24, 1973
C398A (MD)	Criticality Procedure – Maintenance Work on Criticality Alarm Systems	J. W. Doty	Provides operation description of PP-100	August 22, 1973
C399A (MD)	Operating Procedures for Building 45	L. F. Rodriguez	The heat source in Building 45 contains Pu-238 in the oxide form. The MHW heat sources will not be stored overnight in Building 45.	July 19, 1973
C400A (MD)	Criticality Committee	R. A. Neff	Discusses handling of Plutonium in Building 45	June 22, 1973
C401A (MD)	Operating Procedures for SM-PP Bunker	L. F. Rodriguez	No operating procedure or criticality control signs are required for the SM-PP Bunker since the total Pu-238 volume in the area will not exceed .1 criticality value unit (200 grams).	July 19, 1973

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C402A (MD)	Residue Storage, SM-PP Bunker	J. W. Doty	Process and Facility description for the SM-PP Bunker	July 13, 1979
C403A (MD)	Operating Procedures for R-199 and T-16	L. F. Rodriguez	It is not required to keep R-199 under the criticality program due to the low volumes of fissile materials.	July 19, 1973
C404A (MD)	Operating Procedures for T-245 Storage Area	L. F. Rodriguez	The fissile material room limit for T-257 is <5000 grams of Pu239 in the oxide form, 80% Pu238.	July 19, 1973
C405A (MD)	Criticality Informal Review	L. F. Rodriguez	For T-311, the criticality log is not updated with the amount of fissile material present in certain small heat sources that are brought into the laboratory for calorimetry purposes.	July 16, 1973
C406A (MD)	Operating Procedures for West Criticality Vault –T-2W		This procedure discusses the management of packages in the vault and isotopic values of packages.	July 1973
C407A (MD)	SW Criticality Informal Review	L.F. Rodriguez	No fissile material in SW-208 an dSW-210 currently	June 15, 1973
C408A (MD)	Criticality Procedure Building 23 MRC Pu-238 Scrap Declaration # 4	R. S. Grimm	Packaging of five drums of Pu-238 mixed with Pu-239 in solid form oxide at Building 23. Each drum will contain no more than 200 grams of plutonium.	June 12, 1973
C409A (MD)	Operating Descriptions of the A-2 Sphere Production Facility (PP Building)	T. C. Elswick	The facility description and current volume of storage available.	May 23, 1973
C410A (MD)	Technical -10087 Revisions/ Nuclear Criticality Safety and Packaging Survey of mound Laboratory	W. M. Arnold	Packaging survey provides facility and mission descriptions	July 10, 1969

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C411A (MD)	TR # 161 Visit SRL on July 19, 1977 and ORNL on July 20, 1977	J. W. Doty	Discusses TRU waste with Savannah River and Savannah River's responses to Mounds TRU Waste Packaging Questionnaire for solid sludge	July 27, 1077
C412A (MD)	Request for increase in Pu-238 limit – Building 50, Room 116 Storage Area	R. K. Blauvelt	Approval has been granted to raise the operating limit of Room 116, Building 50 to 30 kg from 26 kg of Pu-238.	March 23, 1977
C413A (MD)	Operating Procedures for Building 50, Cell III	E. A. DeVer	Operating procedure for Cell III in Building 50	September 1977 October 1979
C414A (MD)	Criticality Procedures	C. O. Brewer	Vacuum Glove Box in Room 111 of Building 50	November 17, 1976
C415A (MD)	TRU-186 – TRU Waste Discussions, Idaho Operations Office, July 31-August 1, 1974	K. V. Gilbert	Finalization of plans to ship Mound drums to Idaho	August 5, 1974
C416A (MD)	Shipments of Transuranic Waste From Mound Laboratory to NRTS	D. Davis	Contains working procedure for shipment and storage of Mound drums at Idaho	August 14, 1974
C417A (MD)	Operating Procedures for A-2 (PP-Bldg) PuO2 Fuel Production Facility	T. C. Elswick	Request to change criticality limits in alpha boxes 702 and 703. Also discusses uses of boxes.	July 12, 1974
C418A (MD)	Storage Room 37 SM/PP Area	J. W. Doty	Description of Room 37 Operations	July 16, 1973
C419A (MD)	Operating Descriptions of the A-2 Sphere Production Facility (PP-Building)	T. C. Elswick	Description of A-2 Sphere facility.	May 23, 1973
C420A (MD)	PP-100 Storage Area	J. W. Doty	Description of Bin's in the PP-100 Storage Area	July 11, 1973

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C421A (MD)	PP-100 Storage Area	J. W. Doty	Changes to function of the PP-100 Storage Area	November 15, 1971
C422A (MD)	Criticality Committee Review	D. A. Edling	Change to operating limit for Bin 4	July 15, 1971
C423A (MD)	Deviation of Technical Manual MD-10075 Criticality Precautions in the PP Building Request	W. R. Harris	Change to the total grams of plutonium stored in D-1 Lab	June 5, 1969
C424A (MD)	Criticality Limits – PP-A-3	W. R. Amos	Increase in criticality limits for duration of the 19B Post Mortem Capsules	January 13, 1969
C425A (MD)	Increase of Criticality Limits for SM-37 Vault	F. D. Lonadier	Discusses the increase quantity of material prepared for the SNAP programs.	March 3, 1967
C426A (MD)	Internal Packaging of Mounds TRU Wastes	R. K. Blauvelt	Internal packaging of soft wastes, hard wastes, processed/treated wastes, large equipment waste, and special waste described in detail	August 26, 1983
C427A (MD)	Analytical Sample Selection for Pu Isotopic Analysis of PuO2 Samples DZO-35-09-001 and YEC	J. F. Lemming	Description of the sampling process for DZO and YEC drums.	July 24, 1979
C428A (MD)	Fissile Material Loading of TRU Shipments	D. A. Edling	Describes waste types and fissile quantities of waste to be shipped to Idaho from Mound	February 26, 2979
C429A (MD)	Pu-239 Experiments in PP-113	J. V. Dichiaro	Approximately 150 grams of Pu-239 in PP-113 to be placed in contact with polymerizing organic liquids.	May 8, 1978
C430A (MD)	Criticality Safety Committee – Nuclear Criticality Procedures for T-Building, Room 245	R. K. Blauvelt	Nuclear Criticality Procedures for T-Building, Room 245	November 1, 1977

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C431A (MD)	Residue Drum Storage	J. W. Doty	Residue drums will be stored in Building 31, T Building	September 24, 1969
C432A (MD)	Pu-239-Be Destructive Program	A. F. Schmidt	Testing, packaging and storage of 12 neutron sources in T-227.	May 23, 1972
C433A (MD)	Pu-239-Be Neutron Sources Handling and Storage in T-242 and T-277	A. F. Schmidt	Residues from the 12 sources are stored in T-242.	June 7, 1972
C434A (MD)	Pu-239-Be Neutron Source Handling and Storage Procedure for T-242	A. F. Schmidt	Room T-242 contains a 6x6x16 square covered water tank with a square 8x8 lattice of 64 tubes extending from the center of the tank for storage of sources.	January 22, 1973
C435A (MD)	Operating Procedures for T-16	L. F. Rodriguez	T-16 is used for the measurement of neutron/gamma doses from encapsulation sources and the calibration of Health Physics survey instruments.	October 30, 1973
C436A (MD)	T-242 Storage Area	J. W. Doty	Fuel contained in the heat sources will be 80% Pu-238 and may exist in the form of cermet or pressed Pu oxide.	July 19, 1974
C437A (MD)	Pu-238 Relocation (T-242)	A. F. Schmidt	The 17 SRP # 5320 casks are transferred from R-197A to T-242.	October 18, 1976
C438A (MD)	MWG Heat Sources	H. B. Kreider	MWG Heat sources will be stored in welded stainless steel containers with an argon and helium atmosphere inside each container	October 3, 1978
C439A (MD)	Process for storage of small quantities of fissile material in T-225	J. Lemming	Small quantities of fissile materials will be stored in T-225 and will be doubly contained in stainless steel containers with welded lids or o-ring seals.	June 28, 1978

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C440A (MD)	T-245 Storage Area	J. W. Doty	Letter provides the basic handling and storing of heat sources in T-245. Drawing of T-245 Storage area included.	July 11, 1973
C441A (MD)	High Wattage Water Bath Calorimeter	T. B. Rhinehammer	The high wattage water bath calorimeter h as been moved from R-111 to T-316 to support the needs of the 08 program	January 27, 1967
C442A (MD)	Operating Procedures for High Wattage Water Bath Calorimetry in T-316	T. B. Rhinehammer	Describes the process for polonium-210 and plutonium-238 heat sources in T-316	February 2, 1967
C443A (MD)	SW Criticality Review Reply	E. T. Kirk	Memo describes operations SW-237 and SW-13.	September 22, 1971
C444A (MD)	Criticality Review of Operating Procedures	D. A. Edling	Attachment contains list of existing research buildings and their associated projects	April 23, 1971
C445A (MD)	Criticality Committee Review	D. A. Edling	Provides the actual quantities and form of several containers of depleted uranium.	August 19, 1971
C446A (MD)	Revised Criticality Procedures for R-111	W. W. Rodenburg	All forms of Pu-238 is used in R Building. Personnel in R-111 perform calorimetric assay of Pu-238 and occasionally Pu-239.	
C447A (MD)	Criticality Review Committee Review	D. A. Edling	Describes the metallography of compatibility samples in the center glovebox line in R-120	June 2, 1971
C448A (MD)	Criticality Committee Review	D. A. Edling	The primary operation performed in the R-131-133 laboratory is the development of Pu-238 pellet type and mixed Pu-238-O2-Y particle type fuel. The material is in solid form.	December 6, 1972

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C449A (MD)	Pu-239 Criticality Procedure R-129	D. R. Rogers	Describes research and development work to be performed in R-129. This includes forms of isotopes, solutions, types of operations.	November 12, 1972
C450A (MD)	Preparation of Mixed Oxides of Pu-239 and U-238	C. T. Bishop	Describes process of preparing mixed oxides of Pu-239 and U-238 in R-151.	December 13, 1967
C451A (MD)	Decontamination of W55 and W56 Parts	D. R. Billing	Describes decontamination of W55 and W56 parts in SW-19 facilities.	May 11, 1971
C452A (MD)	Uranium From Oak Ridge	R. W. Watrous	8.7 kg of U-233 was obtained from Oak Ridge to be used as the "cow" for thorium-229 and will be retained at Mound.	January 17, 1969
C457A (MD)	Estimation Of Percentages Of Ferrous And Non-Ferrous Metals And Cellulosics, Plastic, And Rubber (CPR) Waste Materials In The Mound Debris Waste (BN304), MLJ-006-2005 and MLJ-008-2005	M. L. Johnson	Memorandum MLJ-006-2005 lists the assumptions, methodology, and source for the estimation of waste materials (ferrous, non-ferrous, and cellulosics, plastics, and rubber (CPR) in BN304 waste stream. Memorandom MLJ-008-2005 revises the estimate to reflect the removal of IDC 847 from BN304 waste stream.	November 30, 2005 December 28, 2005
C458A (MD)	Interview of Ron Sohn, Mound Employee, Re: TRU Waste Generation	J. L. McTaggart, B. Gutierrez	Interview describing operations conducted in the SM, PP, R Buildings at Mound between 1962 to 2003.	June 4, 2003
C461A (MD)	CCP Record of Communication: Interview with Bill Franz	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt	An interview was performed to get information on Mound TRU Waste. Includes information on soils, packaging, metals, and chemicals.	March 4, 2003
C462A (MD)	CCP Record of Communication : Interview with Dan Hopkins	Ben Gutierrez	An interview was performed to get information on Mound Site History. Includes some building specific waste information	April 21-24, 2003

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C463A (MD)	CCP Record of Communication: Interview with Dick Blauvelt	Ben Gutierrez	An interview was performed to get information on Mound Site History. Includes some building specific waste information.	April 21-24, 2003
C464A (MD)	CCP Record of Communication: Interview with Dr. Bernie Konenge	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt	An interview was performed to get information on TRU Waste Management at Mound. Includes information on R, PP, and SM Buildings.	June 24, 2003
C465A (MD)	CCP Record of Communication: Interview with Toby Elswick	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt, John Rovansic	An interview was performed to get information on TRU waste generation and waste management in SM/PP Buildings	May 13, 2003
C466A (MD)	CCP Record of Communication: Interview with Paul Figgins	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt	An interview was performed to get information on TRU Waste Management at Mound. Includes information on SW-22 Hoods and Boxes, the Separation Processes, Cotter Concrete, Milking of the Cow and types of TRU waste generated.	May 15, 2003
C467A (MD)	CCP Record of Communication: Interview with Clyde Chong	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt	An interview was performed to get information on TRU Waste Management at Mound. Includes information on the SM Building and chemicals used, types of TRU waste generated, and packaging.	May 14, 2003
C468A (MD)	CCP Record of Communication : Interview with Ron Goss	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt	An interview was performed to get information on TRU Waste at Mound. Includes information on waste management, chemicals used, radiological items, the North Analytical Line, Packaging and the types of waste generated.	March 21, 2003 and April 22, 2003

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C469A (MD)	Miscellaneous Correspondence Regarding Plutonium-238 Programs	Various Savannah River Site Authors	Savannah River Site (SRS) correspondence regarding the availability of Pu-238 for space and national security missions. Indicates plans to use Pu-238 to provide nuclear power supplies for the NASA Galileo mission (launch targeted in 1985) and the International Solar Polar Mission (launch targeted in 1986). In addition to the space missions also indicates Pu-238 generates used for classified programs: the milliwatt generators and the High performance Generators (HPG).	Various
C470A (MD)	CCP Record of Communication: Interview with Al Combs	Jerri McTaggert	An interview was performed to get information on TRU Waste at the Mound Site. Includes information on waste generating activities, physical waste form, chemicals, prohibited items, and packaging.	May 15, 2003
C471A (MD)	Memo from DOE Ohio to EPA re: PCBs in Oil, MB-0348-01	R. B. Provencher	Solidification of oil is necessary to allow shipments to SRS. Liquids not acceptable.	April 23, 2001
C472A (MD)	CCP Record of Communication: Interview with Mike Deaton	Ben Gutierrez, Jerri McTaggert, Dick Blauvelt	An interview was performed to get information on TRU waste management and Mound site history. Includes information on SW Building, physical waste form, chemicals and metals, waste packaging, and prohibitive items	June 5, 2003
C473A (MD)	CCP Record of Communication: Interview with Don Luthey	Ben Gutierrez, Jerri McTaggert, Dick Blauvelt	An interview was performed to get information on TRU waste management at Mound. Includes information on SM and PP buildings specific information and waste packaging,	June 10, 2003

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C474A (MD)	List of Container Types	Jerri McTaggert	The document provides a break down of container types at the Mound Site.	
C476A (MD)	Memo – Reactivity of Resins (nitrated)	R. N. Rogers	Contains a compilation of information on exchange-resin properties and rapid reactions in the gas phase. Indicates that resins in the nitrate form do not meet the RCRA definition of ignitability or reactivity.	May 18, 1983 June 9, 1983
C477A (MD)	Chemical Compatibility and Materials Lists Data Requirements for TRUPACT II Authorized Payload Compliance Plan	P. E. Drez	Contains request for information regarding materials and chemicals from Mound.	March 25, 1988
C478A (MD)	Program to Reduce the Generation of TRU Contaminated Solid Waste	J. R. McClain	Letter transmitting information previously requested regarding the need to reduce the generation of TRU contaminated solid waste. Mound uses compaction and incineration to reduce waste volumes.	January 23, 1975
C479A (MD)	Shipment of Mounds TRU Waste to the NRTS for Retrievable Storage	W. W. Hickman	Letter describing technical data concerning heat generation of Pu-238 and detailed information about the typical types of TRU contaminated material generated.	October 22, 1973
C480A (MD)	Memorandum to Eric Schweinsberg from Vivian Sendelweck "Guidance on Mound Plywood Spacers' VSS-014-2005	Vivian Sendelweck		November 18, 2005
C481A (MD)	Interview Bill Parvis, Mound Employee, Re: TRU Waste Generation		Interview describing D&D operations conducted in PP and SM buildings at Mound.	June 1, 2005
C483A (MD)	IdahoTRU Waste Criteria	R. K. Blauvelt	Discusses changes required to the quality procedures to implement new criteria.	September 19, 1980

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C484A (MD)	Change Notice of Off Site Packaging Criteria Report IDO-10074 – RMS-61-81	R. M. Schletter	Describes the two changes in the packaging criteria for TRU waste DOT-17C drums received and stored at the RWMC. One is in regards to the gasket, the other deals with vermiculite.	May 13, 1981
C485A (MD)	Mound TRU Waste Shipments to INEL	J. A. Morley	Describes possible impacts to Mound Operations if shipments to INEL were stopped for several years.	October 21, 1988
C486A (MD)	WTS Line Removal Problems/Suggestions	W. P. Davis	Contains a list of problems and suggestions for removal of the WTS lines.	October 23, 1981
C487A (MD)	SR-MD-SOIL	S. Rose	E-mail to Jeff Harrison regarding 10 randomly selected soil drums. Includes RTR data sheets	August 10, 2005
C488A (MD)	Comprehensive Environmental Response, Compensation and Liability Information System (CERLIS)	R. M. Munson	Contains preliminary assessment performed by Ohio EPA to identify and remedy hazardous materials problems in Ohio.	March 1988
C489A (MD)	Transmittal of Mound Waste Box Evaluation	J. Biedscheid	Preliminary evaluation of waste parameters for Mound oversized CH-TRU waste boxes and TRUPACT-II compliance for 55 gallon drums.	July 14, 2000
C490A (MD)	Transmittal of Mound Building 38 Accident Analysis Revised Building 38 FSAR Chapter 5	T. G. Ryan	Contains the information needed to be completed an accident analysis of Building 38. Comments to annual review of Building 38 FSAR.	November 30, 1993 September 8, 1994
C491A (MD)	TRU Waste Box, Safety Assessment	R. B. Provencher	The safety assessment evaluates risk associated with free liquids found in TRU Boxes.	December 3, 2002

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C492A (MD)	CCP Discrepancy Report – Soil with Smaller Amounts of Debris, DR006	J. Harrison	Discrepancy in drums and whether or not they belong in the Savannah River waste stream SR-MD-HET.	August 30,2005
C493A (MD)	CCP Discrepancy Report – EPA Code D008, DR001	J. Harrison	Mound only used EPA code D008, SRS used D008 and D009	August 24, 2005
C494A (MD)	CCP Discrepancy Report – Two most prevalent radionucleds not consistent with historical radioassay	J Harrison	Two most prevalent radionuclides (Pu-238 and Pu-239), are not consistent with historical data.	August 24. 2005
C495A (MD)	SAND Boxes	R. K. Blauvelt	Describes SAND boxes being received from Rocky Flats and the tests and checks that should be done on them.	September 3, 1982
C496A (MD)	Request for Approval.	R. K. Blauvelt	Memo to Idaho from Mound requesting approval for the use of insta-foam froth pak, equipment removal and the use of cardboard liner in the FRP box	February 27, 1981
C497A (MD)	Change Notice of Offsite Packaging Criteria (IDO-10074) for Revised Metal Container Painting Requirements – RHB-263-81	R. H. Beers	Notification to Mound of specific changes in the packaging criteria for waste received and stored at the RWMC.	August 11, 1981

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C498A (MD)	E-mail to HERTFR@doe-md.gov. from Hertweckhertweck@brecnet.com Regarding "Emailing: space-desc."	Hertweckhertweck @brecnet.com	E-mail relative to Space and Defense Radioisotope Thermoelectric Generator (RTG) program supporting NASA space missions. Indicates the RTG Program provides support for radioisotope power source development, demonstration, testing, and delivery. Focus is on previous space missions including the Apollo lunar surface scientific packages and Pioneer, Viking, Voyager, Galileo, and Ulysses spacecrafts. It also indicates an RTG used in the Navy Transit 4 satellite.	February 1, 2002
C505A (MD)	Record of interview/telecon with Dick Blauvelt by Carolyn Abbott, "Unknown objects identified in waste drums generated at Mound Plant"	Carolyn Abbott	Conversation concerning objects in IDCs MD 803 and MD 825 in e-mail attached. Mr. Blauvelt identified the items as check weights, center post cans or calorimeter cans, vault storage container, inline filter, and graphite die. Other items were not identified. Mr. Blauvelt cautioned that while drummed items should not contain significant quantities of ^{238}Pu, Mound boxes may be more problematic.	February 17, 2006
C508A	Physical Behavior of Pu-238 Oxide (U), WRT-MTS-96-3026. Westinghouse Savannah River Company. (See C517A)	J W. Congdon	Report describes physical properties of Pu-238, differences in behavior of Pu-238 and Pu-239. Activity of Pu-238 is nearly 300 times that of Pu-239. Pu-238 as most hazardous material processed - 3.5 times as many incidents despite processing over 100 times as much Pu-239.	October 17, 1996

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C517A (MD)	Interoffice Memorandum to Dan Croft (Treatment Facility Manager), Charles Posegate (Nuclear Facility Manager), and Doug Wale (Operations Manager), "Mound Laboratory Plutonium -238 Containing Waste – CKA-018-2006" (See C508A)	Carolyn Abbott Steve Carpenter Martin Clapham	Plutonium-238 oxide, the prevalent isotope in Mound waste containers, exhibits physical properties that make waste contaminated with it difficult to handle. This memorandum provides guidance to help operations determine best management practices to be used in handling Mound waste drums and boxes.	March 14, 2006
C518A (MD)	Estimation of Percentages of Ferrous and Non-Ferrous Metals And Cellulosics, Plastic, and Rubber Waste Materials in the Mound Cemented Sludge Waste (BN836), MLJ-001-06	M. L. Johnson	Documents the basis for estimating the weight percent of ferrous metal, non-ferrous metal, cellulosics, plastics, and rubber (CPR) in the cemented sludge waste stream BN836.	April 25, 2006
C519A (MD)	Estimated Percentage of Plutonium in Cemented Sludge Waste Stream BN836, MLJ-002-06	M. L. Johnson	Memorandum listing the values, calculations, and source used to estimate the percent plutonium for BN836 waste stream.	April 25, 2006
C523A (MD)	Estimated Percentage of Plutonium in Mound Debris Waste Stream BN304, MLJ-00X-06	M. L. Johnson	Memorandum listing the values, calculations, and source used to estimate the percent plutonium for BN304 waste stream.	June 14, 2006
C524A (MD)	Correspondence from Mound Environmental personnel in reference to questions pertaining to MD836 wastes.	Gayle Shockey	Correspondence documents MD836 sludge as non-hazardous (Also see P623A, P624A and P625A)	2/15/06
C525A (MD)	Correspondence from Mound Environmental personnel in reference to questions pertaining to MD836 wastes	Gayle Shockey	Correspondence documents MD836 sludge as non-hazardous (Also see P623A, P624A and P625A)	2/15/06
C526A	Letter to Mr. Kerry Watson with the subject: Contract No. DE-AC07-99ID13727 – Mound Debris Waste, JDM-032-06	Jeffrey D. Mousseau	Correspondence documents compactability of Mound IDC 847 waste in the AMWTP supercompactor facility. Attachment 2 is a DVD with an RTR review of two MD-847 drums.	May 31, 2006

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
C535A	Memorandum to File, Estimated Number Of Drums For The Waste Isolation Pilot Plant Approved Direct Ship Waste Streams, MLJ-008-06 and Revision to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-001-08; Revision Two to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-002-08	M. L. Johnson	MLJ-008-06 memorandum documents the review conducted to verify the accuracy of the estimated maximum number of drums shippable to WIPP as documented on the approved direct ship waste stream profile forms. MLJ-001-08 memorandum documents the update to volumes to account for drums of waste shipped by BNFL for the 3100 m^3 Project and to update the assumption concerning the number of drums per box of sludge waste. The second memorandum also addresses the proposed waste stream BN222. The third memorandum issued to correct errors in table.	December 13, 2006 April 24, 2008 June 25, 2008
C551A (MD)	Estimated Percent of Plutonium in Rocky Flats, AMWTP and Mound wastes, July 5, 2008	M. Clapham	E-mail and supporting raw data (i.e., CD) from the AMWTP Senior Physicist/ radiological SME. Summarizing the Pu weight percentages (Total Pu mass divided by net weight of the waste) for waste drums that have been assayed from the following generators: RF, AMWTP and MD	July 5, 2008
C601A	Letter to John Medema, DOE-ID, transmittal of maps of the Mound site	William Franz	Transmittal of Mound site maps and summary of applicable building titles	September 19, 2003
D039A (MD)	Discrepancy Report D039A – Differences in the Assignment of HWNs to Mound Acid/Caustic Waste, IDCs MD834 and MD835 between AMTWP-RPT-TRUW-13 and AMWTP-RPT-TRUW-23.	Carolyn Abbott	Updates the Mound AK baseline document concerning Acid/Caustic Waste.	September 1, 2005
D040A (MD)	Discrepancy Report D040A – Discrepancy in Dates of Waste Generation Reported for Mound Laboratory Waste in AMWTP-RPT-TRUW-13.	Carolyn Abbott	Updates the Mound AK baseline document concerning waste generation dates.	September 1, 2005

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
D047A (MD)	Discrepancy Report D047A – Assessment of Hazardous Waste Numbers Assigned to BN304 Waste stream profile, Mound Debris Stream – MLJ-005-2005	M. Johnson	Update applicable AK documents to reflect the addition of D004, D022, D028, D029, F005, F007, and F009 HWNs to Mound debris IDCs	November 30, 2005
D049A (MD)	Discrepancy Report D049A – Assessment of waste material parameters assigned to MD metal debris waste, MLJ-007-2005	M. L. Johnson	Update AMWTP-RPT-TRUW-05 concerning waste material parameters for metal debris waste from Mound	December 28, 2005
D050A (MD)	Discrepancy Report D050A – Estimate Of Volumes for Cemented Sludge Waste (BN836), MLJ-03-2006	M. L. Johnson	Memo issued to document basis for estimating the volume of candidate containers for waste stream BN836, Cemented Sludge. The memo also documents the revised estimate of the percentage of containers with TRU alpha activity at levels greater than 100 nCi/g.	April 27, 2006
D056A (MD)	Discrepancy Report D056A – Assessment Of Hazardous Waste Numbers Assigned to Cemented Sludge (BN836), MLJ-004-06, MLJ-005-06, MLJ-006-06	M. L. Johnson	Summary of AK evaluation which provides the basis for the conservative assignment of EPA HWNs D004-D011, F001, F002, and F005 to BN836, cemented sludge from Mound. Evaluation performed to address incorporation of additional Mound AK source documents into the AK record and to resolve discrepancies between documented information for cemented sludge generated at Mound concerning the appropriate EPA HWN assignments.	April 27, 2006 May 1, 2006 May 10, 2006
P020A (IN, MD, RF)	Characteristics of Transuranic Waste at Department of Energy Sites. RFP-3357.	R. T. Jensen and F. J. Wilkinson III	Inventory data (1981) for transuranic wastes at DOE facilities. No specific process information; rather, inventory data, i.e., radionuclide content, volume, weight, etc.	May 1983
P024A (IN, MD, RF)	Content Code Assessments for INL Contact-Handled Stored Transuranic Wastes. WM-F1-82-021.	Thomas L. Clements, Jr.	Assessment by content code of transuranic wastes stored at INL in 1981. Process, packaging, radionuclide, and certification information by content code is included.	October 1982

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P203A	Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant.		Guidance to assist the transuranic waste sites in establishing and demonstrating that only TRU waste generated by atomic energy defense activities is certified for disposal at WIPP.	February 13, 1997
P204A (ID, MD, RF)	Linking Legacies. Connecting the Code War Nuclear Weapons Production Processes to Their Environmental Consequences. DOE/EM-0319.		Historical report connecting the missions and functions of the nuclear weapons facility with the inventory of waste and materials remaining at the site.	January 1997
P207A (BN)	RWMC HWMA/RCRA Permit. Permit Condition II.K.4 Semi-Annual Verification/Characterization Progress Report, RWMC Document Control should be contacted for most current revision.		Document used to report characterization progress to the State of Idaho. This report is no longer being used for inventory values of accessibly stored waste (inventory values are now obtained from TRIPS). The most current version of this report will not be maintained separately in the AK report.	February 1, 2000
P307A (BN)	Hazardous Waste Constituents of INEL Contact-Handled Stored Transuranic Waste. EDF-369.	D. E. Kudera.	This EDF contains information on the types of hazardous constituents that are expected to be present in the RWMC stored contact handled waste, organized by content code.	May 19, 1989

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P310A (IN)	EPA Hazardous Waste Codes Found in INL Stored TRU Waste Content Codes, EG&G Idaho, Inc. EDF-RWMC-421, Rev. 0, November 21, 1990. Rev. 1, February 23, 1991. Rev. 2, June 30, 1993. Rev. 3, July 10, 1996. Rev. 4, April 1, 1994.		This EDF identifies hazardous constituents that are contained in transuranic wastes stored at the INL RWMC. EPA HWNs are assigned for the constituents in each IDC. HWNs in this EDF are intended for wastes examined at SWEPP, to support shipments to ANL-W, and to support on-going environmental and waste characterization activities.	November 21, 1990
P313A (MD)	Characterization of Wastes Generated at Mound Laboratory with IDCs of 825, 847, and 848. INEL/INT-99-00226, LMITCO, EDF-RWMC-1062, Rev. 0.		This EDF documents the reclassification of 372 waste containers from Mound Laboratory in storage at the RWMC that were classified as "Unknown" with respect to hazardous waste classification. It justifies process knowledge based arguments to apply HWNs from other Mound generated IDCs to the subject drums if the "Unknown" drums could possibly fit the description of the characterized IDCs.	April 7, 1999
P319A (IN)	Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification. WM-F1-81-015.		This report summarizes the available information on the potential non-radiological hazards that might be included in the transuranic wastes stored at the INEEL. Characterization information includes process descriptions, types of waste, and management practices. Generic types of hazards are described.	September 1981

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P361A (IN)	Chemical Constituents in Transuranic Storage Area (TSA) Waste. EDF-803, Rev. 0. June 12, 1995. Rev. 1, July 10, 1996. Rev. 2. August 12, 1997. Rev. 3. April 4, 1998. Rev. 4. October 30, 2000. Rev. 5. September 17, 2001. Rev. 6. August 1, 2002. Rev. 7. December 18, 2002.		A comprehensive list of chemical constituents determined, or suspected, to be present in TRU wastes stored at the TSA at RWMC.	June 12, 1995
P364A (IN)	Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA for Radioactive Waste Management Complex. RWMC-EDF-837, INEL-95/194.	J. R. Wixson.	Cell-by-cell estimate of the earthen-covered and geofabric-covered waste inventory in the RWMC TSA by Content Code (IDC).	August 24, 1995
P365A (IN)	Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory (includes Appendices A and B documents and a letter from John H. Kolts, DOE-ID to Frank Yaklich, AMWTP). INEL-95/0412.	B. D. Raivo, G. K. Becker, T. H. Smith, and G. L. Anderson	Summary and detailed description information for TRU-contaminated wastes stored at the INL TSA. Includes physical, radiological, and chemical parameters. Used in planning AMWTP treatment services and facilities.	December 1995
P376A (MD)	Technical Manual MD-21824, Issue 2 – Assay of Pu-238 Contaminated Waste In Boxes.		This is a Technical Manual describing box assay measurement to identify the amount of Pu-238 in waste containers.	August 28, 1984
P377A (MD)	Technical Manual MD-21912, Issue 1 – Measurement Control Procedures: Segmented Drum Assay System.		This is a Mound facility procedure describing the measurements and activities of the Segmented Drum Assay System (SDAS).	September 30, 1986

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P378A (MD)	Technical Manual MD-21825, Issue 1 – Assay of Pu-238 Contaminated Waste In Drums.		This is a Mound facility Technical Manual describing the assay of Pu-238 contaminated waste in drums.	November 28, 1984
P379A (MD)	Technical Manual MD-70180 – Mound Facility Radioactivity Liquid Waste Disposal.		This is a Mound facility Technical Manual describing the procedures used by the Waste Disposal (WD) Group for processing radioactive liquid waste produced in various areas of the facility. This source is a compilation of several issues of MD-70180 that includes various revisions of several operations: Technical Manual MD-70180 Op. 704 July 13, 1981 Technical Manual MD-70180 Op. 704 & 705 October 5, 1983 Posted Operation – Clariflocculator Sludge Processing Op. 701-706 August 15, 1983 Clariflocculator Sludge Processing Op. 701-705 January 1, 1981 Posted Operation – Clariflocculator Sludge Processing Op. 701-702 & 704-706 October 24, 1984	Various Dates
P380A (MD)	Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management.		Background information pertinent to the Mound Plant remedial investigation/ feasibility study (RI/FS) submitted to US EPA under the terms of the FFA. Process descriptions, and waste management practices are described for each building.	February 1993.

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P381A (MD)	Technical Manual MD-70205 TRU Waste Management.		This is a Technical Manual describing the procedures used by TRU Waste Management Operations at the Mound Facility. This source is a compilation of several issues (5, 7, 11, 12, 13, and 20) of MD-70205 that includes various revisions of several operations.	December 1, 1978
P382A (MD)	Determination of Plutonium in WD Sludge/Sand. PD-80026.		Determination of Plutonium in WD Sludge/Sand. PD-80026. December 3, 1990.	December 3, 1990
P383A (MD)	Removing Inline Process Waste From PP Building. Manual Number: 70205.		This procedure describes the removal of inline process waste from the PP Building at the Mound Facility.	Not dated.
P384A (MD)	Technical Manual MD-20734 – Plutonium Processing-Material Control.		This Technical Manual establishes the policies and describes the procedures that control the movement of radioactive materials in all areas that processed plutonium at the Mound Facility. It further describes the waste categories and materials associated with each (i.e. Non-combustibles – Category 804).	September 15, 1973.
P385A (MD)	Technical Manual MD-10203, Issue 1 and Issue 6 [Mound WIPP Certification Program For Newly Generated Contact Handled (CH) Waste].		The document describes the certification plan used by Mound Laboratory for certifying newly generated contact handled TRU waste for ultimate receipt at the Waste Isolation Pilot Plant (WIPP) Facility.	June 1, 1985

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P393A (BN)	Waste Stream Designations, RPT-TRUW-12 (previously versions identified as AMWTP-EDF-199 or BNFL-5232-RPT-TRUW-12)		Document that establishes waste matrix code assignments, waste stream designations, and baseline hazardous waste number assignments. It also describes anticipated facility generated waste and the item description codes to be applied. This document was re-issued as a report (AMWTP-RPT-TRUW-12) to comply with current AMWTP project criteria for document preparation and usage.	February 19, 2003
P398A (BN)	Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge. RPT-TRUW-07.	AMWTP	Provides the radiological composition of TRU wastes that will be characterized at AMWTP. The report presently addresses wastes originating from Rocky Flats and from Mound Laboratory.	current revision
P399A (BN)	Waste Matrix Code Reference Manual. RPT-TRUW-05.	AMWTP	Provides waste matrix code information and describes expected packaging configurations and material parameters for each waste material to be characterized by the AMWTP.	current revisin
P400A (BN)	AMWTP Baseline AK for Newly Generated Waste, RPT-TRUW-06: .	AMWTP.	Baseline acceptable knowledge information for the AMWTP as required by the WIPP CH WAP and WAC. Includes a baseline inventory of all retrievably and accessibly stored wastes to be processed by the AMWTP.	current revision

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P423A (MD)	Mound Site Radionuclides by Location, Technical Manual MD-22153, Issue 3.		This is a Technical Manual describing the Mound Site radionuclides by location. The document identifies radionuclides used in each of the rooms for each of the Mound buildings. Information is given about a given radionuclide to facilitate internal dose assessment. Information about ground surveys and core sample results are compiled to indicate possible intakes at specific locations as a result of D&D and other work. This source was used to document the isotopic distribution of heat source plutonium from Mound.	March 22, 2001.
P437A (BN)	BN835 Acid/Caustic Sludge Waste Stream Profile Package		Characterization information for Mound Acid/Caustic Sludge, submitted to and approved by CBFO.	April 2005
P457A (MD)	Material Safety Data Sheets (MSDS); Engelhard Corporation for All Attapulgite Products, Calcined including FLORCO- X, Engelhard Corporation,		MSDS for Attapulgite Clay (dehydrated aluminum-magnesium silicate) products; All Attapulgite Products, Calcined and FLORCO X. Includes a list of the composition, a summary of the hazards identification, and applicable regulatory information. The only hazard identified is a chronic health hazard due to dust.	February 19, 2004
P458A (MD)	Material Safety Data Sheet (MSDS); Insta Gel Plus, Packard BioScience B.V., Groningen, The Netherlands		MSDS for Insta Gel Plus, a mixture used as a laboratory chemical. Includes a list of the components (1,2,4-trimethylbenzene, ethoxylated alkylphenol, 2,5-diphenyloxazole, & 1,4-bis-(2-methylstyryl)benzene), a summary of the hazards (flammable, inhalation hazard, eye and respiratory irritant, environmental toxicant), and applicable regulatory information.	March 24, 2004.

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P463A (MD)	Radioactive Waste Management Site Plan	Monsanto Research Corp.	Radioactive Waste Management Site Plan for the Mound Facility. Includes descriptions of facilities, waste generating processes, waste stored,, budget projects, and description of decommissioning and decontamination See P522A, P523A, and P524A for copies of other versions of the Radioactive Waste Management Site Plan.	November 1 1981 August 15, 1978 June 19, 1975
P464A (MD)	Isotope-Extraction Process Copes with Radioactive Waste	R. F. Althoff	Article in Chemical Engineering magazine discussing the chemical extraction of polonium-210 and the waste created during this process.	March 11, 1968
P465A (MD)	Criteria for Packaging Transuranic Waste for Receipt at the Idaho National Engineering Laboratory Radioactive Waste Management Complex Offsite Generated Waste, IDO-10074, Rev. 1	B. C. Anderson	Document defines packaging criteria requirements for storage of transuranic radioactive wastes at the INEEL.	June 1980
P467A (MD)	Status Report on SW Cave Area Cleanup	B. R. Kokenge	Memo defining current status of SW Cave Area cleanup and disposition of specific materials such as U233, Ra226, and cotter concentrate	July 29, 1982
P468A (MD)	Soils Agglomeration AR-05-15-20	J. W. Doty R. K. Blauvelt	Task description for testing and development of a process for the agglomeration of TRU contaminated soils.	June 8, 1984
P469A (MD)	Mound Implementation Plan for DOE Order 5820.2 Radioactive Waste Management,, Rev. 1	R. K. Blauvelt	Implementation plan. Includes facility/sire description, plant mission and operations descriptions.	April 1985

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P470A (MD)	TRU Waste Clyclone Drum Incinerator and Treatment System. Schedule 189c 77-04-148	D. P. Kelly	Describes efforts to develop an incineration system to treat combustible contaminated TRU waste	April 11, 1977
P471A (MD)	Radioactive Waste – Radiolytic and Chemically Induced Gas Generation in Radioactive Waste	D. Davis	All waste sent to Idaho from Mound was evaluated for potential pressure build-up. Mound Type B Acid Waste was identified as having pressure build-up potentials. Due to lessons learned and pressure build up when Auto-dri was used, Flor-co is now used and there is less pressure build up. 210 55 gallon drums have been shipped to Idaho as of January 28, 1976. Auto-dri was used in 24 of these drums.	February 6, 1976
P472A (MD)	Plutonium-238 Isotopic Fuel Form Data Sheets, MLM-1691	S. G. Abrahamson D. G. Carfagno B. R. Kokenge	Compilation of data for isotopic fuel forms of Pu-238.	October 31, 1969
P473A (MD)	WD Soil Removal Project	H. A. Black	A total of 2700 cu ft of contaminated soil was removed from the WD south hillside.	November 1974
P474A (MD)	Mound WIPP Certification Program for Newly Generated Contact Handled TRU Waste		Process description for certification of TRU waste	August 1983
P475A (MD)	PP Analytical Group Criticality Procedure		Criticality procedure for PP-113, PP-143 and PP-158	
P476A (MD)	Hazardous Chemical Defense Waste Management Program – Annual Report FY 1985	L. D. Eyman	Provides list of sites and projects	September 1985
P477A (MD)	Room Layout – Nuclear Non-Destructive Test Facility		Map of T Building	April 26, 1971

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P478A (MD)	Operating Procedures for the T Bldg, Criticality Vault (T-4E)		Operating procedures for the T-4E vault from 1976 thru 1980	October 30, 1980
P479A (MD)	Operating Procedures for the T Bldg, West Criticality Vault, T-2W		Operating procedure for T-2W vault	August 18, 1978
P480A (MD)	Nuclear Criticality Procedures for T-311		Procedure for T-311. This area is for calorimetric assay of Mound generated materials.	
P481A (MD)	Nuclear Criticality Procedure for T-310		Description of area used for calorimetric assay of audit verification samples and various research and development efforts associated with calorimetry	
P482A (MD)	Procedures for Preparing and Handling PuO2 Material for Automated Plutonium Assay System Samples		Mound to receive plutonium from HEDL for testing of the automated plutonium assay system.	June 1, 1977
P483A (MD)	Criticality Control Procedures for R-127 and R-145		The primary function of the laboratories R-127 and R-145 is the development and production of Pu-238 containing cermet-type fuels.	November 22, 1971
P484A (MD)	Nuclear Safety Procedures for Reactor Fuels Laboratory		This procedure covers laboratory work in R-159, 155, 120 and occasionally 118.	October 29, 1965
P485A (MD)	Criticality Precautions for Processing Uranium-233 in the SW Hot Cell Area		Describes the criticality prevention precautions to be observed in processing uranium-233 in any form to recover the thorium-229 daughter content.	August 28, 1973

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P492A (MD)	Central Characterization Project Acceptable Knowledge Summary Report For Mound Site Transuranic Waste Stored at Savannah River Site. Waste Streams: SR-MD-HET; SR-MD-SOIL; SR-MD-HOM-A, SR-MD-HOM-B. CCP-AK-SRS-008, Revision 2	Central Characterization Project	Document describing the compilation of acceptable knowledge (AK) for waste generated at Mound and sent to the Savannah River Plant (SRS) for storage. The document was written to present the AK to satisfy the WIPP Waste Analysis Plan (WAP) and WIPP Contact Handled Waste Acceptance Criteria (CH-WAC) required program elements and required waste stream specific elements for debris, soil, and homogenous solid waste streams generated at Mound and stored at SRS. Includes information relating to plant history, process operations, and waste management, in addition to waste-specific data.	September 23, 2005
P493A (MD)	Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, MLM-ML-90-48-001. *UCNI*	Audeen W. Fentiman, Mound	Provides building-by-building characterization of Mound's hazardous, radioactive, and mixed waste. Also indicates prohibited items were not allowed in waste per procedure.	August 15, 1990
P497A (MD)	1996 and 1998 Chemical Inventory and 1991 Carcinogen List, CCP AK Source P096	Mound		1991, 1996, 1998
P498A (MD)	Tools for Decontamination and Decommissioning of Nuclear Facilities	R. E. Hermatz	A paper was presented to the American Nuclear Society in 1986 regarding the tools for D&D. The D&D of three Pu-238 facilities at Mound had 1100 liner feet of gloveboxes and miles of piping.	November 16, 1986

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P499A (MD)	Mounds Decommissioning Experience, Tooling and Technique	A. B. Combs, W. P Davis, T. C. Elswick, J. M Garner, J. R. Geichman	As a result of D&D projects at Mound, valuable experience was gained. This document describes many areas of expertise gained through D&D projects such as contamination control, equipment removal, structural decontamination and waste packaging.	October 1982
P500A (MD)	The Mound Site Survey Project for the Characterization of Radioactive Materials in the Site Soils	R. L. Stought, D. A. Edling, D. G. Draper	Results of a site survey performed 1982-1985. The purpose was to characterize 19 previously identified sites and 3 new sites that had known contamination. Identifies isotopic content of soil and maps identifying where the soil was taken form.	May 16, 1988
P501A (MD)	Reinvestigation of the January 1969 Pu-238 Waste Transfer Line Break		An investigation occurred after the high level Pu-238 transfer line between PP and WD building broke in 1969. 963 ft3 of soil was removed as a result of the leak.	September 16, 1974
P502A (MD)	Addendum to MLM-ML-95-41-0001, Mound Building 38 FSAR: Pu-239 Repackaging, Phase 1	S. T. Khericha S. Eide L. N. Haney T. K. Overlin T. G. Ryan	Addendum to Building 38 FSAR for repackaging of Pu-239. Items to be repacked were limited to A-line glove boxes 114, 114A and 113. The repack operation covered 750 grams of Pu-239 and orphan sources.	June 1996
P503A (MD)	EG&G Mound Building 38 Accident Analysis of Internal (operational) Events (Results and Findings)	J. L. Jones, Jr. R. G. Ryan	Contains report presenting background, methodology, and finds of an in-depth analysis of potential fire, spill and release accidents capable of being initiated within Building 38. Includes mission description and an in depth description of operations of most rooms in Building 38.	June, 1994

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P504A (MD)	Building 50 Radioisotopic Thermoelectric Generator Assembly and Testing Facility Final Safety Analysis Report *UCNI*	T. A. Frazier R. E. Berry G. D. Miller	FSAR for Building 50 Radioisotopic Thermoelectric Generator Assembly and Testing Facility. Includes site characteristics, facility descriptions, process description, and waste management processes.	July 25, 2002
P505A (MD)	Technical Manual MD-10480, Issue 4: SW/R Complex Basis for Interim Operations *UCNI*	J. L. Allison P. A. Craycraft	Basis for Interim Operations provides facility descriptions, operational descriptions and facility inventories for SW and R Complex.	September 30, 2001
P506A (MD)	Estimated Discard Limits for Pu-238 Recovery Processing in the PP Building	D. F. Luthy W. H. Bond	Provides basis for Pu-238 recovery costs and is a guide for removal of plutonium bearing wastes from the glove boxes to be discarded. The first part gives a breakdown and explanation for Pu-238 and the second part gives a brief description of each type of residue, along with the time required to process the residue.	March 26, 1975
P507A (MD)	Hazard Evaluation of the Special Metallurgical (SM) Building at Mound Laboratory, MLM-MU-76-66-0001	T. M. Flanagan	This document identifies, assesses and documents the hazards associated with SM Building. Provides a facility description and history, site maps, plutonium inventory and floor plans. Also contains core sample results.	August 6, 1976
P508A (MD)	Building WDA, Room 10 Glove Box Removal, Wall Removal, Characterization, and Cleanup Safety Assessment, MLM-3848, Issue 1	C. White R. Church S. D. Rohrig	Technical Manual describing the Decontamination and decommissioning of Build WD	June 21, 2001

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P509A (MD)	Executive Summary of TRU Waste at Mound	Unknown	Contains 192 waste packages, provides waste descriptions for 18 waste streams, comments on waste and generation process, concerns if any and container information on TRU Contact Handled Waste.	September 15, 1993
P510A (MD)	Technical Manual, TRU Waste Management, MD-70205	J. A. Morley S. H. Torres A. D. Rogers	Technical Manual for TRU Waste Management at Mound. Consists of numerous versions of this document on TRU Waste at Mound.	June 14, 1988
P511A (MD)	Final Safety Analysis Report for Building 38, MLM-ML-95-41-0001, Revision 1	M. D. Gilliat F. J. Mintz M. K. Williams	The Final Safety Analysis Report for Building 38 contains site and building descriptions, radioactive and hazardous waste management, and D&D provisions.	November 1995
P512A (MD)	Waste Disposal Facility (WD/WDA) Auditable Safety Analysis, MD-10481, Issue 4	Unknown	Waste Disposal Facility (WD/WDA) Auditable Safety Analysis consists of facility description, hazard analysis, WD Building Floor Plans, and a radioactive material inventory	January 21, 2003
P513A (MD)	Vent TRU Drums in CWPF	W. Franz	Work package for venting of TRU drums. Includes list of drums, vent numbers, weights, curie content, and content inventory.	
P514A (MD)	TRU Drum Venting Fact sheet and TRU Drum Venting System Pre-Operational Process Hazards Review	Unknown	Procedure for venting of TRU drums. Includes list of drums, vent numbers, weights, curie content, and content inventory.	February 20, 1996
P515A (MD)	TRU Drum Venting and Purging System, NFT-SR-0001	Unknown	Operating Procedure for TRU Waste Drum Venting and Purging System. Provides instructions for venting, headspace gas analysis, purging and installation of HEPA grade filter vents on TRU waste drums that are greater than 10 years old	January 13, 2000

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P516A (MD)	The Use of Urethane Foam in the Decontamination and Decommissioning of Nuclear Facilities	R. E. Hermetz	Urethane foam is used in a two-part spray system. It is used to coat interior surfaces of gloveboxes for the purpose of "fixing" contamination.	October 14, 1982
P517A (MD)	Ten Year Plan for Decontamination and Decommissioning for Mound	S. Freeman	The ten year plan for the D&D effort at Mound includes the following buildings: SM, PP, R, SW, and WD.	June 30, 1977
P518A (MD)	Technical Manual – MD-22153, Mound Site Radionuclides by Location, Issue 1	T. L. Vaughn	Document provides a summary of rooms, dates, and radioisotopes for Buildings WD, WDA, PP, 38, R, SM, SW, and T.	June 22, 1995
P519A (MD)	A Summary Review of Mound Laboratory's Experience in D&D of Radioactive Facilities, 1949-1973	J. M. Garner W. P. Davis	Mound completed four major D&D projects. This documents describes the D&D efforts and the time frame of work and waste volumes generated.	
P520A (MD)	Decontamination and Decommissioning Projects Findings of No Significant Impact	DOE	Environmental review of Mounds proposed D&D activities. It was determined that the project does not significantly affect the quality of human environment.	May, 1995
P521A (MD)	D&D Operations Procedures – Technical Manual MD-10167, Issue 9		Technical manual containing D&D Operations Procedures for Mound	April 18, 1995
P522A (MD)	Mound Laboratory Radioactive Waste Management Site Plan 1977 to 1980	Monsanto Research Corp.	Site Plan covers the period of 1977 to 1980. The document contains descriptions of waste generating processes, waste management facilities, types of radioactive waste stored and descriptions of decontamination and decommissioning.	1977 – 1980

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P523A (MD)	Mound Site Waste Management Reports and Site Plans 1972 to 1976	Monsanto Research Corp.	Site Plan covers the period of 1972 to 1976. The document contains descriptions of waste generating processes, waste management facilities, types of radioactive waste stored and descriptions of decontamination and decommissioning.	1972 – 1976
P524A (MD)	Mound Site Waste Management Reports and Site Plans 1981 to 1989	Monsanto Research Corp	Site Plan covers the period of 1981 to 1989. The document contains descriptions of waste generating processes, waste management facilities, types of radioactive waste stored and descriptions of decontamination and decommissioning.	1981 – 1989
P525A (MD)	Mound WIPP Certification Program for Newly Generated Contact Handled TRU Waste, MD-10203, Issues 1, 2, 5 and 6	J. A. Morley	This document summarizes the quality assurance requirements to which Mound needs to adhere to certify CH waste for WIPP	June 1, 1985 June 10, 1986 September 1, 1988 April 15, 1989
P526A (MD)	Safety Evaluation for the Revised U-233 Re-Pack Project	R. L. Higgins	The document contains the USQ and Safety Evaluation for the U-233 Re-pack project. U-233 was used to grow Th-299 in significant quantifies. Now that the project is over, the U-233 must be repackaged and disposed of.	January 17, 1995
P527A (MD)	Final Safety Analysis Report for the SW/R Tritium Complex, MLM-ML-92-42-0001	T. L. Buxton	Final Safety Analysis Report for the SW/R Tritium Complex, MLM-ML-92-42-0001	February 4, 1992
P528A (MD)	On Site Transportation and Handling of Radioactive and Hazardous Materials	W. R. Henderson	Technical Manual for onsite transportation of radioactive and hazardous materials on the Mound site by Mound personnel using a vehicle.	December 4, 2000

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P529A (MD)	Technical Manual, MD-10173, Issue 13: Users Handbook – Waste Accountability Shipping and Packaging (WASP)	W. E. Stalder	This document consists of a handbook for personnel responsible for generating input data for the WASP computer system. Contains waste flows and data specifications for each input form.	August 4, 1998
P530A (MD)	Technical Manual, MD-81070, Issue 1: Mound Plant Waste Acceptance Criteria	M. E. Sizemore	Waste acceptance criteria provides guidelines for those who generate non-radioactive waste in order to identify, characterize, analyze, package and document waste streams.	October 13, 1992
P531A (MD)	Technical Manual, MD-70523, Issue 2: Management of Hazardous Waste, Radioactive Mixed Waste, Trash, and Recyclable Metals; Management/Procedures for Waste Storage Areas (MD-70523)	P. E. Figgins	Procedure provides information on the compatibility of waste with other types of wastes and containers.	February 16, 1995
P532A (MD)	Fiscal Year 1997 Update to the Approved Site Treatment Plan for the Mixed Wastes at the Mound Facility – Background and Plan Volumes, Revision 10		Site Treatment Plan for Mound Mixed Wastes, includes TRU waste stream information, expected generation	December 18, 1997
P533A (MD)	Mound Laboratory Environmental Study – 1974, MLM-2249	D. R. Rogers	Study to determine the cause of Pu-238 deposits and the mechanism of the release into off-site waterways.	September 15, 1975
P534A (MD)	MSDS	Unknown	List and directory of chemical MSDS sheets.	March 27, 1996
P535A (MD)	WD Soil Removal Project	H. A. Black	Evaluation of the 1969 line break to determine if the leak was a continuing problem.	November, 1974

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P536A (MD)	Mound Quality Control Plan for the Control Of Radioactive Waste	Monsanto Research Corporation	Quality Control plan for materials used for packaging, handling and transportation of waste.	October, 1982
P538A (MD)	DOT-E 5948, Revision 10 – Railcar Exemption	R. A. McGuire	Exemption allowing the transport of packaged fissile and non-fissile TRU radioactive waste material in a railcar from Mound.	June 26, 2000
P539A (MD)	Site Treatment Plan for the Mixed Wastes at the Mound Facility, Revision 8	US DOE	Site Treatment Plan for Mound Mixed Wastes, includes TRU waste stream information, expected generation	September 15, 1995
P540A (MD)	Mound Site Website www.globalsecurity.org/wmd/facility/mound.htm	John Pike	Website describing the mission, and facilities	August 22, 2002
P541A (MD)	Drum Specification , 30 Gallon DOT-17H Drum WMP-575005 for Idaho	R. H. Schletter	Specification covers the minimum requirements for a DOT-17H 30 gallon drum.	October 1978
P542A (MD)	Drum Specification, DOT 7A Steel Box for Idaho	R. H. Schletter	Specifications covers the requirement for a DOT-7A steel box for overpack or loose, waste shipping and storage.	August, 1980
P543A (MD)	Waste Characterization Services Report	D. Mark	This report contains a description of the counting equipment, calibration documents, discussions of analysis techniques, error analysis and characterization results. The report was revised in late 1997 to implement a revised drum numbering methodology and to correct a number of clerical errors. Provides a portion of the Waste Characterization Services Report and listing of boxes <100 nCi/g and associated isotopic values.	February 1998

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P544A (MD)	DRAFT – Criticality Safety Evaluation for Mound RTG Storage, ERA-NRE-94-?	J. L. Judd	The purpose of the task described in this report was to perform criticality calculations for plutonium oxide fuel material in various storage configurations and determine minimum safe spacings, for the most reactive configurations.	March 1994
P545A (MD)	Predecisional Draft and Operational Safety Requirements for SW/R Tritium Complex	D. R. Billings T. M. Flanagan	Contains facility descriptions and associated hazards.	November 4, 1993
P546A (MD)	Plutonium Working Group Report on ES&H Vulnerabilities Associated with the Department's Plutonium Storage, DOE/EH-0415-Volume II, Appendix B, Part 7	Unknown	Vulnerabilities studies performed on the uncertainties in plutonium packaging, contaminated facilities, and uncertainties in the natural phenomena accident analysis.	September 1994
P547A (MD)	Investigation Report No. 74-13 Plutonium Off-Site	Monsanto Research Corp.	Results of investigation of off site plutonium contamination	
P548A (MD)	Mound Laboratory Fact Book, MLM-ML-76-49-0002	Monsanto Research Corp.	Contains facts and historical timeline of Mound Operations	September 23, 1976
P549A (MD)	Pu-238 Fuel Data Sheets	Mound Laboratory	Contains Fuel Data	
P550A (MD)	On-Site Handling, Repackaging, and Transportation of Nuclear Materials Located in SW-19 and R-127; Preliminary Hazards and Accident Analysis – DRAFT *UCNI*	T. Solack D. Ullman C. Cox	Contains draft preliminary hazards and accident analysis for the handling, repackaging, and transportation of nuclear materials.	September 1996

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P551A (MD)	UGL Action Memo: Removal Action of Soil and Underground Waste Transfer Lines Leading to WD Building	DOE- Miamisburg CH2M Hill	Action Memorandum Engineering Evaluation/Cost Analyst was generated to document the general site conditions that would justify application of a Removal Action consistent with CERCLA, to propose the Removal Action described and to allow public input.	September, 2003
P552A (MD)	1996 and 1998 Chemical Inventory and 1991 Carcinogen List	Mound Industrial Hygiene	Alphabetical listing of Mound Chemicals	1991, 1996, 1998
P553A (MD)	"Milliwatt Surveillance Program Ensures RTG Safety and Reliability," The Actinide Research Quarterly.	Los Alamos National Laboratory	Journal article indicating how the U.S. military's need for a rugged, reliable power source with a long life was met with the radioisotope thermoelectric generator, or RTG. Indicates RTGs used for defense purposes. Also includes a description of materials used to encase plutonium heat sources to make RTGs.	Winter 1994
P554A (MD)	1975 Mound Laboratory Annual Report, "Pu-238 Heat Sources," MLM-MU-76-63-0001.	Mound Laboratory	Report briefly describing the manufacture of thermoelectric generators for various programs. Programs and users identified include the Multihundred Watt/Lincoln Experimental satellite, Multiwatt/Mariner-Jupiter-Saturn, the Viking, the Navy, lunar experiments, weather satellites, navigational satellites, spacecraft, the Milliwatt Generator.	1975
P555A (MD)	Excerpts from the 1976 and 1977 Mound Laboratory Annual Reports, "Mound 76" and "Mound 77, Mound Facility Annual Report 30 Years of Growth."	Mound Laboratory	Excerpts from 1976 and 1977 annual reports.	1976 and 1977

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P556A (MD)	Excerpts from MD-70205, "Material Type Codes," Issue 3.	Mound Laboratory	Excerpts from MD-70205 listing waste content codes.	Undated
P557A (MD)	Specification Drum 55 GAL DOT-17C, ES-50365 B.	Thomas Edward Curry, EG&G Idaho, Inc.	Describes minimum specifications for the 55-gallon DOT-17C drum.	July 22, 1978
P558A (MD)	Mound Laboratory Annual Report CY 1974, MLM-MU-75-70-0001.	R.K. Flitcraft	Report describing activities related to various projects conducted in 1974.	October 1975
P559A (MD)	"An Early History of U.S. Radioisotope Thermoelectric Generators," Nuclear News.	Not Identified	Article describing the history of the radioisotopic thermal generator (RTG) and the different programs that used the RTGs.	May 2003
P560S (MD)	Power for Spacecraft: The Nuclear Option, DOE/OPA-0038(8-78).	US DOE Office of Public Affairs	Report describing the uses of the radioisotopic thermal generator (RTG) in space.	August 1978
P591A (MD)	Material Safety Data Sheets (MSDS) for Micro® Detergents	International Products Corp.	MSDS for Micro® and Micro® Liquid Laboratory Cleaner. Includes a list of the ingredients, a summary of the hazards identification, and applicable regulatory information. No RCRA-regulated hazardous constituents identified. The only hazards identified are acute health hazards if skin/eye contact or inhalation. Some ingredients are also identified as SARA III.	March 30, 1990 and April 1, 1993

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P592A (MD)	Material Safety Data Sheets (MSDS) for Paint Removers	W M Barr & Co Inc.	MSDS for HB-2 Heavy-Bodied Paint Remover and Allpro Lacquer Thinner. Includes a list of the ingredients, a summary of the hazards identification, and applicable regulatory information. RCRA-regulated hazardous constituents methylene chloride (F001/F002), methyl ethyl ketone (F005), methanol (F003), toluene (F005), and xylene (F003) identified.	November 17, 1982 and October 14, 1993
P604A (BN)	BN304 Mound Debris Waste Stream Profile Package.	CBFO (Washington TRU Solutions LLC) and AMWTP	Characterization information for Mound Debris Waste Stream BN304 submitted to and approved by CBFO.	December 13, 2005
P622A (MD)	Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach	Babcock and Wilcox of Ohio	This document addresses the environmental issues associated with the restoration of the Mound site. Document identifies the radionuclides present in the soil at levels above background based on soil sampling performed in the 1980s. These radionuclides include plutonium-238, thorium-230, thorium-232, cobalt-60, cesium-137, tritium, actinium-227, americium-241, bismuth-207, and bismuth-210m. Depleted uranium (U-238) is suspected to be present in metallic form in some areas.	February 1999
P623A (MD)	Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 3 (Solidified Alpha Sludge)	J. C. Miles, Babcock & Wilcox of Ohio	1998 NTS WSP reflects a non-hazardous, LLW status for MD836 sludge	March 9, 1998, Revised June 11, 1998
P624A (MD)	Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 4 (Solidified Alpha Sludge)	J. C. Miles, Babcock & Wilcox of Ohio	1998 NTS WSP reflects a non-hazardous, LLW status for MD836 sludge	March 9, 1998, Revised June 11, 1998

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
P625A (MD)	Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 5 (Solidified Alpha Sludge)	James Fontaine	2002 NTS WSP reflects a non-hazardous, LLW status for MD836 sludge	June 6, 2002
P646A	BN836 Cemented Sludge Waste Stream Profile Package.		Characterization information for Mound cemented sludge, submitted to and approved by CBFO.	April 28, 2006
P648A (MD)	A nuclear jump-start for space power, Ben Iannotta, Aerospace America Online, http://www.aiaa.org/aerospace/Article.cfm?issuetocid=244&ArchiveIssueID=29, August 2002	Ben Iannotta	This magazine article documents the use of radioisotope thermoelectric generators (RTGs) in the Apollo Moon missions, the Viking mission to Mars, the Galileo Jupiter probe, and the Cassini Saturn probe.	August 2002
U122A (IN)	Container Inventory Report for WMF-629 thru WMF-633.		TRIPS query identifying containers remaining in accessible storage (Type-II modules) following completion of the 3,100 m^3 Project.	December 24, 2002
U123A (BN)	AK Document Reference Inventory. AMWTP Form-1084.	BNFL Inc.	Listing of all acceptable knowledge source documents accumulated for accessibly- and retrievably-stored wastes to be characterized/treated at the AMWTP. Summarizes document type, name/title, and number, as well as author, date, if known, and description of the document subject.	August 6, 2003

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U126A (MD)	U. S. Department of Energy Mound Laboratory, Acceptable Knowledge for Transuranic Waste Shipped to Idaho National Engineering and Environmental Laboratory. Draft.	Bill Franz, Mound LATA Assistant Vice President for Waste Management. Not dated; provided to AMWTP in 2003	Draft summaries of acceptable knowledge (AK) for waste generated at Mound Laboratory that was sent to the INL for storage. The summary includes information relating to the Laboratory history, process operations, and waste-specific data. This source consists of two summaries. The first focuses on IDCs 834 and 835. The second summary (Phase II) addresses IDCs 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, and 842.	Not dated; provided to AMWTP in 2003
U127A (IN)	BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS).		Several spreadsheet databases, providing data for drums shipped to the RWMC between 1971 and 1996. Includes IDCs, package dates, prefixes, container numbers, content codes, radionuclide information, and other container-specific information. The information is believed to be from the Transuranic Waste Management Information System (TWMIS), although this cannot be verified. Format is Access on CD.	
U129A (RF, MD, BC)	Defense Determination for AMWTP Waste		Determination that waste generated from processes at RF, MD, and BC were determined to qualify as defense waste for disposal to WIPP. Includes the completed Defense TRU Waste Determination Checklist, and the TRANSURANIC Waste Defense Determination Approval Form.	May 25, 2005
U130A (MD)	Defense Waste Cyclone Incinerator Demonstration Program		Defense Waste Cyclone Incinerator Demonstration Program to demonstrate the economic value of the incinerator for treating defense, combustible transuranic waste at DOE facilities and waste burial sites.	

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U131A (MD)	Pelletized Waste Form Demonstration Program		Demonstration program for incinerator ash and other secondary wastes resulting from the incineration process can be immobilized in a waste form for permanent storage/burial.	
U132A (MD)	Mound Laboratory Radioactive Waste Process Flow Sheets		Process flow diagrams for liquids, low activity waste, sludge, solids, Pu-239 waste, tritiated solid waste, treated liquid and high activity waste, U-233 Th-230 and Pa231 waste and other RA waste	March 19, 1975 May 31, 1977
U133A (MD)	Waste Management Facilities Map, Mound Laboratory		Map of the waste management facilities at the Mound laboratory	January 1971
U134A (MD)	Hazardous Chemical Defense Waste Management Program, Preliminary Database		Printouts of DOE Hazardous Chemical Defense Waste Management Program Preliminary Database. Includes waste stream ID, EPA Hazard numbers, waste type, volume, and source	January 1, 1983
U135A (MD)	Applicability of the Term "Byproduct Material" for Purposes of RCRA, to waste produced by DOE Facilities		Definition of byproduct material and the determination of whether that is governed by RCRA or AEA.	Unknown
U136A (MD)	Estimate of the Effect of Capture Gamma Rays on Glove Box Surface Doses for HEDL LGRA Study	A. Shapiro	An estimate of the capture gamma-ray dose on the surface of glove boxes for the LGRA was calculated.	February 25, 1983
U137A (MD)	Criticality Evaluation of Low Gamma Receiving Area	A. Shapiro	Criticality results of evaluations of the calorimeters and glove box were made. Results included in this document	
U138A (MD)	Shielding Study for Low Gamma Receiving Area and Calorimetry Laboratory	R. E. Wieneke	Telephone Conversation between J. Petty and R. E. Wieneke documented	October 12, 1982
U139A (MD)	Radioactive Waste Shipment	P. E. Figgins	Discussion of two sources found during cleanup of SW-132 to be included in the shipment for burial.	August 10, 1983

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U140A (MD)	Specifications and Material Safety Data Sheet for Resinex 60 Dust Control Agent		Material Safety Data Sheet for Resinex 60 Dust Control Agent	
U141A (MD)	Type I TRU Waste Packages		Inventory of TRU boxes, grams of Pu, gross weight, date loaded and contents description	
U142A (MD)	Mixed Waste Streams Generated at AL – Mound		Identifies waste stream number, description, Hazardous Waste Codes.	
U143A (MD)	Authorization to Ship SS or Non-SS Material		Documentation for shipping soil samples to Rocky Flats for analysis. Isotopic data provided for the samples	June 19, 1979
U144A (MD)	Analysis Report		Analysis of hydraulic oil for PCBs and other major chromatographic species	December 11, 1981
U145A (MD)	Nuclear Waste Program	Unknown	Discusses the laboratory wide procedures and responsibilities for departments involved in the activities of processing, handling, storage, control, and disposal of all nuclear wastes including gases, liquids and solids.`	
U146A (MD)	Building Inventories		Building 23 inventories of radioactive waste shipped, and end of month total inventory	May 1980 thru December 1986
U147A (MD)	Storage Criteria for Unirradiated Enriched Uranium	W. T. Cave	Draft proposal of new design criteria for unirradiated enriched uranium storage facilities	June 9, 1972
U148A (MD)	Year End Status reports on Shipments of Radioactive Materials	R. A. Wolfe	Status reports discussing number of drums and shipments status. Includes building and volume information	January 9, 1973
U149A (MD)	Monthly Status Reports	R. Deaton	WD Monthly Report of tank solidification. Includes volumes and microcuries of Pu-238, U-233/234 and tritium.	November 1978 thru October 1981

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U150A (MD)	Acid and Caustic Inventory	Unknown	Contains acid and caustic inventories for Mound facilities August thru October 1979.	October 1979
U151A (MD)	Mound Facility's Decontamination and Decommissioning Experience	W. P. Davis A. B. Combs	Presentation provided on the Mound decontamination and decommissioning experience. Provides maps and mission descriptions.	April 15-16, 1980
U152A (MD)	TRU Package Thermal Evaluations	J. F. Griffin	Documentation showing that the 4x4x7 package and similar packages meet the 7A packaging heat condition.	March 7, 1979
U153A (MD)	Nuclear Criticality Procedures for T-Building Room 245	R. Neff	Provides summary of activities in T-245 and physical and chemical forms of waste that is allowable.	September 26, 1977
U154A (MD)	Procedure for preparation of mixed oxide materials for the confirmatory assessment experiments.	J. I. Lemming	Two batches of FFTF mixed fuel power will be used in confirmatory assessment experiments. The document provides uranium and plutonium isotopics. Calorimetry will be performed in T-310 and then the drums will be moved to PP-113. Assay measurements will be performed in T-245, T-226 and T-227.	September 13, 1977
U155A (MD)	Summary of Informal Criticality Audit	R. K. Blauvelt	An informal criticality audit was performed May 24-25, 1977 for the areas at Mound handling or storing fissile material. The areas surveyed are identified with a description of the function of each location.	May 24-25, 1977
U156A (MD)	Criticality Control Procedures for R-143	C. Brewer	The primary function of R-143 is fabricating heat sources. The fuel for the heat sources is received from the R Building and PP Building.	

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U157A (MD)	Criticality Procedures – PP Analytical Group		The areas to be controlled by this procedure are PP-113, 143 and 157. This document also discusses the types of operations performed in each facility.	August 4, 1976
U158A (MD)	Summary of Informal Criticality Audit	R. K. Blauvelt	An informal audit was performed the week of June 20, 1976. Deviations from procedures were identified in the SM Vault 37 and F Line areas. In both cases inventory was not documented correctly.	June 28, 1976
U159A (MD)	Request for TRU Solid Waste Questionnaire	D. A.Edling R. K. Blauvelt	Responses to TRU Solid Waste Questionnaire. Discusses all aspects of solid waste at Mound	July 28, 1978
U160A (MD)	Operating Procedures for SW-237 Vault	R. K. Blauvelt	Discusses operational requirements for the use of SW-237 vault and Pu-238/239 and U-233/235 limits.	April 11, 1980
U161A (MD)	Operating Procedures for T-1W Vault		Discusses operational requirements for the use of R-1W vault and Pu-238/239 and U-233/235 limits.	March 12, 1980
U162A (MD)	Criticality Committee Meeting	L. F. Rodriguez	Committee discussed removal of fissile material from SW-237. The fissile material has not been moved from the vault for several months	November 9, 1973
U163A (MD)	Guidelines for Operating Procedures for Cage 8		Guidelines for temporary storage area for inbound and outbound shipments of fissile material	
U164A (MD)	Product Bulletin and MSDS for Nutek Cleaning Products		NUTEK-69B is used for removing hard water deposits and light oxides. NUTEK-316 is an industrial cleaner and emulsifier	

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U165A (MD)	Box Core Sample Results of Contaminated Soild from WD Hillside		Results of contaminated soil provided in nanocuries.	
U166A (MD)	Container Shipment Report		Container shipment reports for the following containers: 0000061BX76, 0000060BX75, 0000042BX75, and 0000041BX75	September 28, 1976
U167A (MD)	TRU Waste Certification Task – Inline Liquid Waste Description		Sludge waste stream description	
U168A (MD)	Refractory Encapsulation		The Refractory Heat Source Encapsulation Facility in Room 161, PP Building consists of five water shielded alpha type boxes	
U169A (MD)	Operating Procedures for SM-37 Vault		Operations procedure for SM-37 vault, includes isotopic limits for plutonium and uranium	October 1980
U170A (MD)	Criticality Safety Committee	R. R. Walston	Describes Pu operations and locations	
U171A (MD)	Criticality Evaluation of Radioactive Waste Incineration Operation	R. A. Schwind	Mound is funded to develop the cyclone incinerator concept for treatment of combustible alpha contaminated radioactive waste.	March 3, 1978
U172A (MD)	Appendix 1 – Criticality and Storage Procedures for Fissionable Material in T Building Calorimeters		Provides description of plutonium ash standards and isotopic make up of standards	
U173A (MD)	Uranium Purification	P. E. Figgins	R-149 is used for the recovery and purification of gram quantifies of U-234 from aged Pu-238 materials.	January 14, 1969
U183A (MD)	TRUPACT II Shipment of Mound Pu-239 Material	J. Biedscheid	E-mail with request for information to complete TRUPACT II shipment to SRS	July 26, 2000

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U184A (MD)	Summary Report on Mound Boxes	M. Devarakonda	Table containing drum numbers, and radiological and known physical attributes.	March 31, 2000
U185A (MD)	Fax: Background Volume STP FY-00 Update	W. Franz	Background Volume STP FY-00 Update to section addressing PCBs	February 28, 2001
U186A (MD)	Mound Laboratory – Classified Document Summary, Defense Processes at Mound	J. Rovansek	Contains handwritten notes giving references that support the defense mission at Mound	April 1, 2003
U187A (MD)	List of Sources of TRU Waste from Mail Hill Tritium Project	Unknown	Contains a list of the sources of TRU waste from the Mail Hill Tritium Project. Includes Areas SW-22, R-140, SW-19 and SW-137	
U188A (MD)	Process Knowledge for Old SD Project	D. Adkins	E-mail providing process knowledge related to buried drums at the Old SD project.	November 20, 1997
U189A (MD)	Contaminated Precious Metals	E. Howell	Process knowledge regarding contaminated precious metals in BD-38. Primarily these metals are from prior heat source programs.	November 6, 1997
U190A (MD)	Waste Baseline Inventory Report 1995	Unknown	Contains a portion of the Waste Baseline Inventory Report for 1995	December 1995
U191A (MD)	Waste Examination Log and RTR Work Sheet	Unknown	Waste Examination Log and RTR Work Sheet	2001 2003
U192A (MD)	Drum Container Tables	Unknown	Tables containing radiological and known physical attributes	March 30, 2000
U193A (MD)	TRAMPAC Requirements Matrix by Drum	Unknown	Tables for various containers list a TRAMPAC requirement and whether the container passes, fails or is pending for that specific requirement.	

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U194A (MD)	DRAFT Mound Compliance with TRUPACT-II Authorized Contents	Unknown	Document demonstrates compliance of the 55 gallon drums of TRU waste stored at Mound with the TRUPACT-II payload requirements. Contains marked up copy.	April, 2000
U195A (MD)	Mound TRU Boxes Spreadsheet	Unknown	Spreadsheets for Mound containing container types, vent information, container weight, waste description and isotopic data	
U196A (MD)	TRU Waste Certification Task Sludge From the Waste Disposal Plant	Unknown	Describes the sludge process at WD facility, sludge composition, process flow chart and chemicals.	
U197A (MD)	Regulatory Requirements Associated with Transfer of Mound's Transuranic Waste to Another DOE Site	Unknown	Overview of requirements impacting the shipment of Mound's waste to another DOE Site	
U198A (MD)	DRAFT – Mound Transuranic Waste Feasibility Study: Options and Recommendations for a "Path Forward"	J. Lyons	Transuranic waste feasibility study.	July 8, 1998
U199A (MD)	Verification Methods Matrix	Unknown	Provides IDC and waste stream ID, generator location, EPA hazardous waste numbers, volume	March 6, 1995
U200A (MD)	Mound Site TRU Waste Data: Preliminary TRUPACT-II Transportation Compliance Evaluation	Unknown	Provides container types, summary of TRAMPAC requirements, and demonstration of compliance of the 55 gallon drums with TRUPACT-II payload requirements.	
U201A (MD)	Container Approval Requests and Deviations for Shipments	G. Siry	Container Approval Requests	November 12, 2002

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U202A (MD)	Tables of TRU Waste Packages	Unknown	Table containing box numbers, loading dates, Pu-238 grams, gross weight in lbs, and description of contents.	
U203A (MD)	Summary of Characterization data for A-Line Glove Boxes	Benchmark Environmental Corp	Contains characterization data for boxes from A-Line	September 1999
U204A (MD)	Waste Category – TRU Boxes.	Unknown	Contains handwritten notes on TRU Boxes	
U205A (MD)	Trash Categories/Content Codes and Waste Categories	Unknown	Contains trash categories, content codes and waste categories.	
U206A (MD)	List of Chemicals and Materials in TRU Waste Content Codes	Unknown	Contains list of IDC's, content codes, and description of each.	June, 1989
U207A (MD)	List of Drums	Unknown	List of drums, dates, source, operation, misc.	May 24, 1981
U208A (MD)	Excerpt from Draft Report Describing Waste Streams Generated at Mound, not dated.	Unknown	One waste stream is solid wastes containing paper, wood, plastic, glass, building debris, and scrap equipment. The other waste stream is cemented sludges. Both contain Pu-238 and Pu-239. No hazardous waste codes are applied; however, a mixed low-level waste stream contains xylene, toluene and other solvents and has D001, F003, and F005 codes applied.	Undated

REFERENCE NUMBER[a]	TITLE/DESCRIPTION	AUTHOR	SUMMARY	DATE
U209A (MD)	Notes From Interviews and Document Reviews. Interviewees Include Rob Robinson, Gary Morris, and Ron Sohn. Documents Identified Include Miscellaneous Correspondence and Draft Report, WCB 2.	Unknown	Notes from interviews, correspondence, and a draft report indicating the plutonium processing building received $^{238}PuO_2$ from SRS and fabricated Pu-238 heat sources for commercial and military applications. Waste from civilian and defense heat sources are co-mingled.	September 1964 February 19, 2003
U213A (MD)	Form 1066, TRUW Waste Management AK Checklist, Mound Laboratory,	AMWTP	Form 1066 is updated as the Form 1068s for the AK source documents are completed or updated. Periodically the Form 1066 is printed to generate a record	Updated periodically

a. Reference Abbreviations:
BN – Advanced Mixed Waste Treatment Facility
IN – Idaho National Engineering and Environmental Laboratory
MD – Mound Laboratories
RF – Rocky Flats Plant

AK5

B-2012-0203
RECORD
JMC 10/02/12

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P1030A	2. Revision: 4

3. **Category**

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. **Title/Description Information:** BN510.1 Supercompacted Debris Waste Stream Profile Package

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 9/10/10

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM4, WM5, WM6, WM7	BN	All	The AK Summary addresses all of the required Waste Management (WM) elements by providing either a summary of the information or by identifying a reference to the document(s) that contain the information. Therefore, the WM elements identified in this summary are for those elements that are found in this package.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	BN-550	All	The AK Summary includes all waste stream (WS) elements.
WS4, WS6, WS7, WS8	BN-600	All	BN510.1 Supercompacted Debris Waste Stream Profile Package
WS5	BN-600		Characterization information for waste stream BN510.1

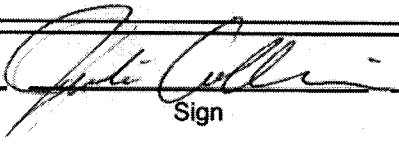
9. **Document Summary:**

Characterization information for waste stream BN510.1 (supercompacted waste generated at AMWTP) submitted to and approved by CBFO. This package includes the following documentation:
* CBFO approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1), September 5, 2012
* Change Notice #2 for Supercompacted Debris Waste (BN510.1) Revision 1, July 31, 2012
* Correspondence letter from AMWTP to CBFO requesting Change Notice #2, August 2, 2012
* CBFO approval of Change Notice #1 for Supercompacted Debris Waste (BN510.1), January 31, 2012
* Change Notice #1 for Supercompacted Debris Waste (BN510.1) Revision 0, January 30, 2012
* EPA Approval Letter and Report dated March 16, 2011 associated with the Unannounced Continued Compliance Inspection performed in November 2010.
* CBFO e-mail correspondence noting review and approval of RPTs: TRUW-83 and TRUW-82 are not required.
* EPA DOCKET NO. A-98-49; II-A4-143,
* CBFO Approval Letter for WSPF BN510.1, September 10, 2010
* AMWTP Form-1195, Waste Stream Profile Form for BN510.1, September 10, 2010
* AMWTP Form-1597, Reconciliation with Data Quality Objectives, September 10, 2010
* AMWTP Form-1598, Characterization Information Summary Report, September 10, 2010
* RPT-TRUW-83, Rev 3, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), September 17, 2012
* AMWTP Form-1187, Waste Stream Profile Form HWN Assignment Worksheet, September 21, 2010
* AMWTP Form-1067, TRU Waste Stream AK Documentation Checklist. September 21, 2010
* LDR Notification - IDC BN510.1
* Initial Submittal Letter to CBFO, September 9, 2010
* Final Submittal Letter to CBFO, September 10, 2010

P1030A Revision 4 updates the record to include Change Notice #2 and RPT-TRUW-83, Rev 3.

10. Source Document Data Limitations (if any):

None

11. AK Expert:	Julie Collins		10/2/2012	
	Print	Sign	Date	

P1030A R4

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

SEP - 5 2012

Mr. James Cooper, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Change Notice #2 for Waste Stream Profile Form Number BN510.1

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the *Update for the Waste Isolation Pilot Plant (WIPP) Operating Record (Change Notice #2) for Waste Stream Profile Form Number BN510.1, Supercompacted Debris Waste,* for the Advanced Mixed Waste Treatment Project (AMWTP).

The CBFO has concluded that the change notice is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the change notice as submitted. Using the methods approved at the AMWTP, the data can be entered into the certification and shipping modules of the Waste Isolation Pilot Plant Waste Data System.

If you have questions, please contact Norma Castaneda at (575) 234-7118.

Sincerely,

J. R. Stroble

J. R. Stroble, Director
Office of the National TRU Program

Enclosure

CBFO:NTP:NC:PG:12-0586:UFC 5900.00

SEP - 5 2012

cc: w/enclosure

N. Castaneda, CBFO	*ED
C. Fesmire, CBFO	ED
B. Mackie, CBFO	ED
T. Morgan, CBFO	ED
M. Pinzel, CBFO	ED
R. Unger, CBFO	ED
J. Wells, DOE-ID	ED
W. Lattin, DOE-ID	ED
J. Cooper, DOE-ID	ED
D. Haar, ITG	ED
S. Peterman, ITG	ED
E. Schweinsberg, ITG	ED
R. Chavez, WTS	ED
D. Cook, WTS	ED
R. Galbraith, WTS	ED
K. Guillermo, WTS	ED
J. Haschets, WTS	ED
R. Kantrowitz, WTS	ED
R. Kehrman, WTS	ED
C. Kirkes, WTS	ED
S. Kouba, WTS	ED
R. Lee, WTS	ED
C. Luoma, WTS	ED
W. Most, WTS	ED
M. Pearcy, WTS	ED
M. Ramirez, WTS	ED
A. Ray, WTS	ED
R. Reeves, WTS	ED
F. Romo, WTS	ED
M. Sensibaugh, WTS	ED
F. Sharif, WTS	ED
M. Strum, WTS	ED
K. Urquidez, WTS	ED
J. Vernon, WTS	ED
V. Waldram, WTS	ED
M. Walentine, WTS	ED
P. Gilbert, LANL	ED
S. Lott, LANL	ED
G. Lyshik, LANL	ED

CBFO M&RC

*ED denotes electronic distribution

Update for WIPP Operating Record (Change Notice #2)

Supercompacted Debris Waste (BN510.1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN510.1. This waste stream is Supercompacted Debris Waste and was approved by DOE/CBFO on September 10, 2010. Change Notice #1 for BN510.1 was approved by CBFO on January 31, 2012.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of Audit report approval by NMED**

Added additional audit approval date May 24, 2012.

2. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.1, Areas of Operation**

Add the following paragraph to Section 1.4.1 immediately following the bullets, prior to the final paragraph.

The boxed waste includes six-drum overpacks (SDOPs containing up to six 55- or 85-gallon drums), The SDOPs are of two types. One type is packaged with characterized debris drums for processing in AMWTF. These contain drums with IDCs confirmed by RTR to be acceptable feedstock waste. The other type is packaged with drums that are not characterized but are labeled with historical AK information that indicates acceptable feedstock waste.

3. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.3, Waste Generating Process**

Replace the second paragraph of Section 1.4.3 with the following: "Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG. Boxes of waste, including SDOPs, are introduced into a boxline for sorting and repackaging into 55-gal drums. The SDOPs with uncharacterized drums undergo RTR to confirm the waste is >50% debris in each drum. The drum contents are then visually examined in the boxline trough to confirm the waste is approved feed stock. The other boxed wastes undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed in the boxline or special-case waste (SCW) glovebox. After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55-gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor."

4. AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Appendix A, Supercompactor Debris Waste Feedstock, Heterogeneous Waste Type.

Modify Appendix A under the Combustibles Waste Type to include IDCs RF-430 and RF-431 and under the Heterogeneous Debris Waste Type to include IDCs BN-510, BN-550,and RF-241. These portions of the table now read:

COMBUSTIBLES	RF	010	Paper & Rags
	RF	020	Wood & Benelex
	RF	030	Plastic
	RF	040	Rubber
	RF	33A	WIPP Experimental Test Program (WETP) Bin Program-Combustibles A (IDCs 335, 336, 337 and 339)
	RF	33B	WETP Bin Program – Combustibles B (IDCs 330, 337, and 339)
	RF	302	Benelex® and Plexiglas®
	RF	330	Paper and Rags-Dry
	RF	336	Paper and Rags-Moist
	RF	337	Plastic, Teflon®, Washables, PVC
	RF	339	Leaded Rubber Gloves and Aprons
	RF	430	Unleached Ion Column Resin
	RF	431	Leached Resin
	RF	460	Washables, Rubber, Plastic
	RF	463	Leaded Rubber Gloves and Aprons
	RF	464	Benelex® and Plexiglas®
	RF	833	Plastics, TRU Mixed
	RF	831	Dry Combustibles
	RF	832	Wet Combustibles
	RF	900	Low specific activity (LSA) Paper, Plastics, Etc.
	RF	970	Wood

HETEROGENEOUS	BC	201	Non-combustible solids
	BC	202	Combustible Solids-Paper/Cloth
	BN	508	AMWTP Newly Generated Debris
	BN	510	Supercompacted Debris
	BN	550	Supercompacted Debris (BN510.1)
	MD	801	Rags, Paper, Wood, etc.
	MD	802	Dry Box Gloves & O-Rings
	MD	803	Metal, Equipment, Pipe, Valves, etc.
	MD	804	Plastic, Tygon□, Mani-Boots, etc.
	MD	805	Asbestos Filters
	MD	810	Glass, Flasks, Sample Vials, Etc.
	MD	813	Glass Filters and Fiberglass
	MD	814	Graphite Waste
	MD	824	Equipment Boxes, Non-combustible
	MD	825	Equipment Drums, Non-combustible
	MD	826	Equipment Boxes, Combustible
	MD	827	Equipment Drums, Combustible

	MD	838	<10 nCi/g Non-combustible
	MD	847	Low Specific Activity (LSA) <100 nCi/g Combustible
	MD	848	LSA <100 nCi/g Non-combustible
	RF	241	Americium Process Residue
	RF	372	Grit
	RF	374	Blacktop, Concrete, Dirt, and Sand
	RF	750	Pits 11 and 12 Debris
	RF	760	Pad 1 Cells 1 and 2 RF Debris
	RF	950	LSA Metal, Glass, etc.
	RF	960	Concrete, Asphalt, etc.
	RL	712	Hanford Plutonium Finishing Plant Debris
	RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
	RL	716	Hanford 231-Z Building Debris

Reason/Justification for Changes

Item 1.

WSPF, Form-1195, the audit report approval dates were updated to reflect the most recent approval date.

Item 2.

AK Summary Report, Section 1.4.1, Areas of Operation, was updated to describe the two types of SDOPs introduced into the boxline as supercompactor feed.

Item 3.

AK Summary Report, Section 1.4.3, Waste Generating Process, was updated to reflect a revised process flow for SDOPs. At retrieval, the historical AK information listed on the container is entered into the WTS. The historical information includes the generator, and waste type (IDC). If the container information identifies the waste as an approved feedstock IDC, then it is acceptable for uncharacterized SDOP building. Uncharacterized SDOPs are built from specific approved feedstock IDCs. Prior to loading, individual containers will not require RTR/VE and NDA. However, the SDOP will undergo RTR to confirm that each container's contents are greater than 50 percent debris. The SDOPs will be sent to the boxline for processing where visual examination will confirm that the waste type of each container in an SDOP is approved feed stock. The process for SDOPs created with RTR certified containers is unchanged. A certified VE is performed on the repackaged waste from the boxline to confirm the waste as a BN-508.

Item 4.

AK Summary Report, Appendix A, Supercompactor Debris Waste Feedstock, Heterogeneous Waste Type, was updated to include the IDCs RF-241, RF-430, RF-431, BN-510 and BN-550. IDCs BN-510 and BN-550 represent supercompacted debris from waste streams BN510 and BN510.1, respectively. Including them as approved feedstock allows poorly compacted 100 gallon containers or other supercompaction errors to be efficiently reprocessed.

Update for WIPP Operating Record (Change Notice #2)

Supercompacted Debris Waste (BN510.1)

The changes submitted in this change notice do not affect the waste stream designation, assignment of EPA hazardous waste numbers, or the waste matrix code as identified in the previously approved waste stream profile form.

Update for the WIPP Operating Record (BN510.1) certification

I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of TRU Programs Manager	Sue Peterman, TRU Programs Manager Printed Name and Title	7/31/12 Date

Idaho Treatment Group

August 2, 2012

C-2012-0235

Transmitting Electronically
Site.documents@wipp.ws

Washington TRU Solutions
Attn: Mr. Richard Chavez
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-EM0001467, Request for Approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1) – DHH-15-12

Dear Mr. Chavez:

The Advanced Mixed Waste Treatment Project (AMWTP) requests approval of Change Notice #2 for Supercompacted Debris Waste (BN510.1). Enclosed is the change notice for approval and the associated Acceptable Knowledge Report, RPT-TRUW-83, Rev. 3A, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1).

After receiving approval on these documents, the revisions will be processed through the Document Control process. If you have any questions or comments, please call me at 208-557-6718 or Ms. Susan Peterman at 208-557-6383.

Sincerely,
IDAHO TREAMENT GROUP, LLC

Dave H. Haar
Waste Programs Manager

SMP/skc

Enclosures

cc: ***Transmitting Electronically***
Stephen Carpenter, ITG
Trey Greenwood, WTS
James Jackson, ITG
William Lattin, DOE-ID
Mark Pearcy, WTS
Eric Schweinsberg, ITG
Susan Peterman, ITG
Jerry Wells, DOE-ID
Mary V. Willcox, DOE-ID
AMWTP Correspondence Control

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

JAN 31 2012

Mr. James Cooper, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Waste Stream Profile Form Change Notice #1 for BN510.1, Supercompacted Debris Waste

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the Update for the WIPP Operating Record (Change Notice #1) for Waste Stream Profile Form (WSPF) Number BN510.1, *Supercompacted Debris Waste* at the Advanced Mixed Waste Treatment Project (AMWTP). The CBFO has concluded that the Change Notice is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the Change Notice as submitted. Using the methods approved at the AMWTP, the data can be entered into the certification and shipping modules of the Waste Isolation Pilot Plant Waste Data System.

Please contact Norma Castaneda at (575) 234-7118, if you have questions.

Sincerely,

J. R. Stroble

J. R. Stroble, Director
Office of the National TRU Program

Enclosure

CBFO:NTP:NC:GL:12-0412:UFC 5900.00

cc: w/enclosure

M. Pinzel, CBFO	*ED
T. Morgan, CBFO	ED
N. Castaneda, CBFO	ED
B. Mackie, CBFO	ED
R. Unger, CBFO	ED
C. Fesmire, CBFO	ED
J. Wells, DOE-ID	ED
W. Lattin, DOE-ID	ED
D. Haar, ICP	ED
E. Schweinsberg, AMWTP	ED
D. Cook, WTS	ED
C. Kirkes, WTS	ED
M. Pearcy, WTS	ED
M. Ramirez, WTS	ED
A. Ray, WTS	ED
F. Romo, WTS	ED
F. Sharif, WTS	ED
J. Vernon, WTS	ED
M. Strum, WTS	ED
K. Urquidez, WTS	ED
M. Walentine, WTS	ED
R. Chavez, RES	ED
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S. Kouba, RES	ED
W. Most, RES	ED
D. Sellmer, CTAC	ED
P. Gilbert, LANL	ED
G. Lyshik, LANL	ED
S. Lott, LANL	ED
P. Roush, WIPP Operating Record	ED
D. Guevara, RCRA Chronology	ED
CBFO M&RC	

*ED denotes electronic distribution

CBFO:NTP:NC:GL:12-0412:UFC 5900.00

Update for WIPP Operating Record (Change Notice #1)

Supercompacted Debris Waste (BN510.1)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN510.1. This waste stream is Supercompacted Debris Waste and was approved by DOE/CBFO on September 10, 2010.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Added additional audit approval date January 25, 2011.

2. **WSPF Form-1195, Technical contact:, Technical contact phone number:**

   Updated to: Sue Peterman, (208) 557 6383

3. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Updated the following procedures:

   - Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 21, 8/05/11
   - Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 15, 8/09/11
   - CCP Transuranic Authorized Methods For Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 12, 12/29/10.

4. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), ACRONYMS**

   Added the following acronyms: "HWMA - Hazardous Waste Management Act" and "SDOP – six-drum overpack box."

5. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.2.10, Description from the ATWIR.**

   Updated section as follows: "The Annual Transuranic Waste Inventory Report (ATWIR) description for waste stream BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste.[28]»"

6. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.3, Waste Stream Description.**

   Revised the first paragraph third sentence to read: "The supercompacted debris waste (i.e., BN510.1) has a common physical form that contains similar hazardous constituents and is generated from a single process or activity."

   Added fourth sentence to read: "The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]»"

Updated Table 1, Physical waste form description for BN510.1, to remove the existing footnote a and to relabel the existing footnote b as footnote a.

7. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.3, Waste Generating Process.**

   Modified second paragraph, second sentence and added new third and fourth sentences. That paragraph now reads as follows: "Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG *[drummed waste packaging glovebox]*. Boxed waste, including six-drum overpacks (SDOPs containing up to six 55- or 85 gallon drums), are introduced into a boxline for sorting and repackaging into 55-gal drums. The boxed wastes, including the SDOPs undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed in the boxline or special-case waste (SCW) glovebox (prohibited items processed in the SCW glovebox are not returned as feedstock). After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55 gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor."

8. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.4, Material Inputs.**

   Revised the second to the last paragraph to add PIG absorbents. That paragraph now reads as follows: "Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II®, Petroset IIG®, or PIG® absorbents may be added to the waste by AMWTP to absorb prohibited liquids within debris waste.[38, 39, 42, 48, 49, 50]"

9. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.4.5, Waste Material Parameters.**

   Revised the first paragraph to read as follows: "The original waste material parameter (WMP) weight percentages for the BN510.1 waste stream estimate were based on the visual examination (VE) data for 100-gallon product drums generated from 2005 through 2009. WMP data for 22,399 containers with completed RTR/VE data from the BN510 waste stream were obtained from the AMWTP Waste Tracking System (WTS) database for containers examined prior to January 1, 2010. This population represented approximately 54% of the estimated volume of supercompacted waste (i.e., 22,399 out of 41,600 drums projected for BN510 and BN510.1 waste streams). The updated estimate is based on the VE data from 3,426 drums of BN510.1 supercompacted waste visually examined prior to September 12, 2011. The estimated WMP weights (by percent) for the BN510.1 waste stream, excluding 100 gallon drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13. The updated estimated WMP weight parameters are representative of the BN510.1 waste stream and are summarized in Table 2.[12, 13, 46]"

Revised Table 2, "Waste material parameters for supercompacted debris waste," to read as follows:

Waste Material Parameters	Estimated Percent WMP weight/unit waste
Iron-based Metals/Alloys	79
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	1
Cellulosics	12
Rubber	<1
Plastics (waste materials)	7
Inorganic Matrix	<1
Organic Matrix	0
Soils/Gravel	<1

10. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.6, Prohibited Items.**

Deleted the last bullet because it is not needed for a waste stream approved for shipment to WIPP. This is per discussion with CBFO during review and approval for AMWTP WSPF BN600.

Revised 3rd paragraph to read as follows: "Boxline(s) are used to VE and repackage the boxed debris waste into 55-gallon drums. Debris waste feedstock treated or examined in the DWPG, and waste from maintenance and cleanup activities, is either examined by RTR or visually examined. The 55-gallon drums are non-destructive assayed. These drums of debris waste feedstock are then supercompacted and the pucks packaged into a 100-gallon product drum (IDC BN-550).[10, 11]"

Revised last paragraph to add PIG® absorbents.

11. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7, Resource Conservation and Recovery Act (RCRA) Determination.**

Inserted new paragraph to read as follows: "The BN510.1 waste is (and has been) subject to the State of Idaho Hazardous Waste Management Act (HWMA)/RCRA requirements (e.g., 40 CFR 264 and 40 CFR 265) and is currently being managed under the AMWTP RCRA permitting requirements until it is shipped off-site.[44, 45]"

12. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2, Hazardous Determination.**

    Deleted the paragraph and inserted new paragraphs to read as follows:

    "1.7.2.1 Hazardous Waste Management

    "The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1] The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on the RCRA mixture and/or derived-from rules.[1, 6]

    "The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]"

    The addition of the section heading numbered 1.7.2.1 renumbered subsequent sections in 1.7.2.

13. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.1, Ignitability.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

14. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.2, Corrosivity.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

15. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.3, Reactivity.**

    Revised paragraph to add PIG® absorbents and references 48, 49, and 50.

16. AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 3, References

Revised the following reference: "28. DOE/TRU-11-3425, Annual Transuranic Waste Inventory report – 2011, U. S. Department of Energy, Carlsbad Field Office, Rev. 0 [P1374A]"

Revised the following references to read:

"40. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]"

"41. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]"

Added Reference 43 as follows:

"43.CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4 2010 [P855A]"

Added the following references:

"44. ID4890008952, AMWTP HWMA/RCRA Permit and interim status documents."

"45. Resource Conservation and Recovery Act, 40 CFR Parts 260 through 280."

"46. MLJ-03-11, Memorandum to File, Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream, September 27, 2011. [C1045A]"

"47. Hazardous Waste Determination #071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508. [C1051A]"

"48. Material Safety Data Sheets for Universal PIG® Absorbents (MSD-014) New Pig Corp. October 10, 2011. [P1376S]"

"49. Material Safety Data Sheets for Oil-Only PIG® Absorbents (MSD-016) New Pig Corp. August 3, 2011. [P1377S]"

"50. Material Safety Data Sheets for BLUE PIG® Sock Absorbents (MSD-029) New Pig Corp. February 9, 2011. [P1378S]"

17. **AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Appendix A**

Added the following IDCs in their proper location in the table:

Waste Type	Site	IDC	Description
Combustibles	RF	010	Paper & Rags
Combustibles	RF	020	Wood & Benelex
Combustibles	RF	030	Plastic
Combustibles	RF	040	Rubber
Graphite	RF	070	Graphite
Heterogeneous	RF	750	Pits 11 and 12 Debris
Heterogeneous	RF	760	Pad 1 Cells 1 and 2 RF Debris
Inorganic Non-Metal	RF	060	Glass
Uncategorized Metal	RF	050	Metal Scrap

Reason/Justification for Changes

Item 1.

WSPF, Form-1195, the audit report approval dates were updated to reflect the most recent approval date.

Item 2.

WSPF Form-1195, updated the technical contact and phone number.

Item 3.

WSPF Form-1195, documents used for WAP certification were revised to reflect the most recent revisions.

Item 4.

AK Summary Report, List of Acronyms was updated to reflect revised information.

Item 5.

AK Summary Report, Section 1.2.10, Description from the ATWIR, and footnote a was updated and footnote b was deleted per issue of 2011 ATWIR.

Item 6.

AK Summary Report, Section 1.3, Waste Stream Description, First paragraph was updated per the current WAP language. Text was added to state that the BN510 waste was not being

generated after addition of the Hanford waste. Table 1 was updated to remove the existing footnote a and to relabel the existing footnote b as footnote a.

Item 7.

AK Summary Report, Section 1.4.3, Waste Generating Process language was updated to add current process flow. The SDOPs are currently created from 85-gallon or 55-gallon drums that have a certified RTR/VE and non-destructive assay (NDA). These drums were originally characterized because they were planned to be processed as direct feed. The SDOPs loaded with these drums, are dumped into the box lines for processing and packaging as BN-508s. It was determined that it was more economical to process containers via SDOP than direct feed. A revised process for creating SDOPs is proposed based on the following on information. At retrieval, the historical information listed on the container is entered into the WTS. The historical information includes the generator, waste type (IDC), weight, and pack date. If the container information identifies the waste as an approved feedstock IDC, then it is acceptable for SDOP building. SDOPs will be built from specific sole generator approved feedstock IDCs. Boxed waste RTR will be performed on the SDOP to confirm that each container's contents are greater than 50 percent approved feedstock debris from the identified generator. The SDOPs will be sent to the boxline for processing. A certified VE is performed on the repackaged waste from the boxline to confirm the waste as a BN-508. RTR/VE and NDA will not be required for the individual containers prior to loading into the SDOP.

Item 8.

AK Summary Report, Section 1.4.4, Material Input, was updated to include the addition of PIG absorbents.

Item 9.

AK Summary Report, Section 1.4.5, Waste Material Parameters, was updated for BN510.1 waste only, rather than a composite of BN510 and BN510.1 waste.

Item 10.

AK Summary Report, Section 1.6, Prohibited Items, was updated. The last bullet was deleted because it is not needed for a waste stream approved for shipment to WIPP. Revised third paragraph for clarification and consistency with the process. Revised last paragraph to add PIG® absorbents.

Item 11.

AK Summary Report, Section 1.7, RCRA Determination, was changed to support recent WIPP Permit Modification concerning assigning hazardous waste numbers (HWNs) consistent with RCRA requirements.

Item 12.

AK Summary Report, Section 1.7.2, Hazardous Determination, was changed to support recent WIPP Permit Modification concerning documentation of how waste was historically managed.

Text was added to state that the BN510 waste was not being generated after addition of the Hanford waste.

Item 13.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.1, Ignitability. Revised paragraph to add PIG® absorbents.

Item 14.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.2, Corrosivity. Revised paragraph to add PIG® absorbents.

Item 15.

AK Summary, Supercompacted Debris Waste (RPT-TRUW-83), Section 1.7.2.3, Reactivity. Revised paragraph to add PIG® absorbents.

Item 16.

AK Summary Report, Section 3, References, was updated to update revised documents referenced in the AK Summary and to identify references that support the information revised.

Item 17.

AK Summary Report, Appendix A, IDCs RF-010, RF-020, RF-030, RF-040, RF-050, RF-070, and RF-060 were added to support their addition to the BN510.1 waste stream. These debris IDCs were used by the Rocky Flats Plant prior to June 1971. They are precursor IDCs to the three-digit IDCs currently approved as feed stock and listed in Appendix A. An example is RF-010 (paper and rags) is equivalent to RF-330 (paper and rags-dry) and RF-336 (paper and rags-moist). Waste to be retrieved by AMWTP includes waste shipped from the Rocky Flats Plant prior to 1972. Some of this waste may be included in the historically retrieved waste from the Subsurface Disposal Area (SDA), and stored in cargos, bins, and 85-gallon over packs at the Transuranic Storage Area-Retrieval Enclosure (TSA-RE). This waste may also be retrievably stored on Pad 1, Cells 1 and 2. Waste assigned these IDCs may be retrieved and treated in the Supercompactor facility. The addition of these IDCs to the BN510.1 waste stream does not increase the total volume of waste shipped to WIPP because this waste is included in the inventory and does not add additional EPA Hazardous Waste numbers to the profile.

AK Summary Report, Appendix A, IDCs RF-750 and RF-760 were added to support their addition to the BN510.1 waste stream. These IDCs are assigned by AMWTP to Rocky Flats Plant debris waste that was generated prior to the assignment of IDCs by the Rocky Flats Plant and is equivalent to approved RF IDCs listed in Appendix A. IDC RF-750 is assigned to debris waste historically retrieved from Pits 11 and 12 and stored in cargos, bins and 85-gallon over packs at TSA-RE.. IDC RF-760 is assigned to waste being retrieved from the TSA-RE, Pad 1, Cells 1 and 2. IDC RF-750 and RF-760 are also assigned to debris waste from these locations where the historical information on the container is limited but based on adequate container information and characterization (RTR/VE and NDA); the waste is determined to be equivalent

to approved Rocky Flats debris waste. The addition of these IDCs to the BN510.1 waste stream does not increase the total volume of waste shipped to WIPP and does not add additional EPA Hazardous Waste Numbers to the profile.

The changes submitted in this change notice do not affect the waste stream designation, assignment of EPA hazardous waste numbers, or the waste matrix code as identified in the previously approved waste stream profile form.

Update for the WIPP Operating Record (BN510.1) certification

I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of TRU Programs Manager	Printed Name and Title	Date
	SM Peterman TRU Programs Manager	1/30/12

Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
September 10, 2010

Mr. James Cooper, Acting Deputy Manager
U. S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: Review of Advanced Mixed Waste Treatment Project Waste Stream Profile Form BN510.1, Supercompacted Debris Waste

Dear Mr. Cooper:

The Carlsbad Field Office (CBFO) has reviewed the subject Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN510.1, Supercompacted Debris Waste and has concluded that the WSPF is complete and that the waste stream determinations were made in accordance with applicable procedures and guidance.

The CBFO therefore approves the WSPF as submitted. Using the methods approved for AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have questions on this matter, please contact me at (575) 234-7372.

Sincerely,

Donald C. Gadbury, Director
Office of the National TRU Program

cc:
G. Basabilvazo, CBFO *ED
C. Gadbury, CBFO ED
S. McCauslin, CBFO ED
D. Miehls, CBFO ED
M. Navarrete, CBFO ED
K. Watson, CBFO ED
P. Gilbert, LANL ED
S. Lott, LANL ED
G. Lyshlk, LANL ED
CBFO, M&RC
*ED denotes electronic distribution

CBFO:NTP:DCG:GS:10-1521:UFC 5600.00

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BN510.1

Generator site name: Advanced Mixed Waste Treatment Project Technical contact: Eric Schweinsberg

Generator site EPA ID: ID4890008952 Technical contact phone number: (208)557-6425

Date of Audit report approval by NMED: 4/29/2005 (Revised 5/3/2005), 6/16/06, 1/18/08, 1/9/09, 1/8/2010

Title, version number, and date of documents used for WAP certification:

Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev 19, 6/30/2010

Quality Assurance Project Plan, MP-TRUW-8.2, Rev 13, 6/30/10

CCP Transuranic Authorized Method for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 11, 6/4/2009

Did your facility generate this waste? ☒Yes ☐No If no, provide the name and EPA ID of the original generator:

Waste Stream Information[1]

WIPP ID: IN-BN510.1 [3] Summary Category Group: S5000

Waste Matrix Code Group: Heterogeneous Debris Waste Waste Stream Name: Supercompacted Debris Waste

Description from the WTWBIR: BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste. [3]

Defense TRU Waste: (ref 1) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs 105 Number of Drums 16,000 Number of Canisters 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary Report, Table 5

List applicable EPA Hazardous Waste Numbers:[2] D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009

Applicable TRUCON Content Codes: ID121

Acceptable Knowledge Information[1]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: Reference No. 2

Facility mission description: Reference No.3

Description of operations that generate waste: References No.1 and 3

Waste identification/categorization schemes: Reference Nos. 1, 3, 4, and 5

Types and quantities of waste generated: Reference No. 1 and 3

Correlation of waste streams generated from the same building and process, as appropriate: Reference Nos. 1 and 3

Waste certification procedures: Reference No. 7

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: Reference Nos. 1and 3

Waste stream volume and time period of generation: Reference No. 1

Waste generating process description for each building: Reference Nos. 1 and 3

Process flow diagrams: Reference Nos. 1 and 3

Material inputs or other information identifying chemical/radionuclide content and physical waste form: Ref. Nos. 1, 3, 4, 5, and 6

Waste Material Parameter Weight Estimates per unit of waste: Reference No. 1

Which Defense Activity generated the waste: (check one)

☒	Weapons activities including defense inertial confinement fusion	☐	Naval Reactors development
☐	Verification and control technology	☐	Defense research and development
☐	Defense nuclear waste and material by products management	☐	Defense nuclear material production
☐	Defense nuclear waste and materials security and safeguards and security investigations		

Supplemental Documentation

Process design documents:	N/A
Standard operating procedures:	Reference No. 13
Safety Analysis Reports:	Reference No. 14
Waste packaging logs:	N/A
Test plans/research project reports:	N/A
Site databases:	Reference No 15
Information from site personnel:	N/A
Standard industry documents:	N/A
Previous analytical data:	Reference Nos. 16, 17, 18, and 19
Material safety data sheets:	Reference No. 1, 16, 17, 18, 19, and 20
Sampling and analysis data from comparable/surrogate Waste:	N/A
Laboratory notebooks:	N/A

Sampling and Analysis Information[2]

For the following, when applicable, enter procedure title(s), number(s) and date(s))

Radiography:	Reference No. 8
Visual Examination:	Reference Nos. 9 and 10
Headspace Gas Analysis	
VOCs:	Reference No. 11
Flammable:	Reference No. 12
Other gases (specify):	N/A
Homogeneous Solids/Soils/Gravel Sample Analysis	
Total metals:	N/A
PCBs:	N/A
VOCs:	N/A
Nonhalogenated VOCs:	N/A
Semi-VOCs:	N/A
Other (specify):	N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
	Steve Gaspar SPM	9,10,10

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs), attach signed Characterization Information Summary documenting this determination.

(3) The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report (ATWIR) waste streams: *IN-BN510, RLPFP-01, RL325-01,* and *RL231Z-01.* The ATWIR waste stream ID "IN-BN510.1"and the waste stream description "BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste" will be added in the annual update of the ATWIR to be issued in 2011.

WASTE STREAM PROFILE CONTINUATION SHEET

Reference List:

1. RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Rev. 0, September, 2010
2. BNFL-5232-52-0101, Site Plan of the Advanced Mixed Waste Treatment Facility, Rev. 0, April 1999
3. RPT-TRUW-06, AMWTP Baseline AK for Newly-generated Waste, Rev. 12, August 16, 2010
4. RPT-TRUW-12, AMWTP Waste Stream Designations, Rev. 14, August 2, 2010
5. RPT-TRUW-05, Waste Matrix Code Reference Manual, Rev. 24, June 16, 2010
6. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, Rev. 16, August 12, 2010
7. MP-TRUW-8.5, TRU Waste Certification, Rev. 25, December10, 2009
8. INST-OI-12, Real Time Radiography Operations (Drum), Rev. 44, June 30, 2010
9. INST-OI-34, Non-Facility Visual Examination Operations, Rev. 22, June 30, 2010
10. INST-FOI-17, Facility Visual Examination Operations, Rev. 19, June 30, 2010
11. INST-OI-43, HGAS Sampling and Analysis Operations, Rev.18, April 7, 2010
12. DOE/WIPP 06-3345, Waste Isolation Pilot Plant Flammable Gas Analysis, Rev. 3.2, May 22, 2009
13. INST-FOI-20, Supercompactor and Post-Compaction Operations, Rev. 30, March 4, 2010
14. RPT-DSA-02, Documented Safety Analysis, Rev. 6, December 2, 2009
15. BBWI-Generated Drum Data, including Data from the Transuranic Waste Management Information System (TWMIS).
16. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), Rev. 6, September 11, 2008
17. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant, Rev. 3, August 19, 2010
18. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory, Rev. 5, July 18, 2007
19. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste-Mound Plant Waste, Rev. 6, August 21, 2008
20. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, Rev. 1, June 21, 2010
21. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, Rev. 19, 6/30/2010
22. MP-TRUW-8.2, Quality Assurance Project Plan, Rev. 13, 6/30/2010

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90 % Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	☒	☐	☐	
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	☐	☐	☒	Central Characterization Project (CCP) will evaluate containers on an individual basis through transportation headspace gas and WIPP Data System (WDS).
6. Have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	WAP solid sampling not required for this S5000 waste stream.

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
8. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
9. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
11. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section B3-1, for the lot?	☒	☐	☐	
12. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in the QAPjP, Sections B3-2 through B3-9, for the lot?	☒	☐	☐	WAP solid sampling not required for this S5000 waste stream.
13. Have the program required quantitation limit (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BN510.1

Data Quality Objective	Yes	No	N/A	Comment
14. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
16. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
17. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	
18. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Signature	Printed Name	Date
Site Project Manager	[signature]	Steve Carpenter	9.10.10
2nd Site Project Manager	George Byram	George Byram	9-10-10

AMWTP Advanced Mixed Waste Treatment Project	Characterization Information Summary Report	Form-1598, Rev. 6 Effective: 09/04/09 Page 1 of 13

Implementing Document: MP-TRUW-8.14

WSPF Number: BN510.1 Lot Number: Boxline 1

SPM

Printed Name: Steve Carpenter Signature: [signature] Date: 9.10.10

2nd SPM

Printed Name: George Byram Signature: George Byram Date: 9-10-10

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN510.1 Lot Number: Boxline 1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN510.1 Supercompacted Debris Waste as required by MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP). [21, 22] In addition, AMWTP has conducted characterization testing and analysis using visual examination (VE), headspace gas sampling and analysis, and radioassay.
Justification for Selection of Radiography and/or VE as an appropriate method for characterizing the waste

The boxline waste is characterized using VE and the direct feed waste is characterized by RTR or VE. The supercompactor feed waste is amenable to using either real time radiography (RTR) or VE. Both methods are equally capable of providing qualified personnel the means to examine the waste and meet the data quality objectives (DQOs). VE is the appropriate method for characterizing boxline waste because it can be accomplished and recorded per the QAPjP (MP-TRUW-8.2) during sorting, size reduction, and repackaging into 55 gallon drums. Radiography is the appropriate method the direct feed line because it can be readily accomplished per the QAPjP (MP-TRUW-8.2) on direct feed drums. However, where dense or otherwise impenetrable objects and/or lead shielding that may create a

condition or configuration where examination using radiography will not yield acceptable DQOs, only direct visual examination is appropriate.
This Characterization Information Summary (CIS) presents the headspace gas analytical data from fourteen containers. These data meet the necessary characterization requirements for S5000 debris waste. The headspace gas sampling data from these fourteen containers is summarized in Tables 1A and 1B. Table 5 lists the correlation of container numbers to characterization data packages. Table 6 presents the RTR/VE summary of prohibited items. Table 7 presents the correlation between the container numbers and the headspace gas sample numbers.

The Site Project Manager (SPM) signature certifies that through AK, testing and/or analysis that the waste included in this waste stream is not corrosive, ignitable, reactive, or incompatible with the Treatment, Storage, and Disposal Facility (TSDF) and does not contain prohibited liquids. The AK Summary for this waste stream contains specific information about the corrosivity, reactivity, and ignitability of the waste stream and is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this profile.

Data Results

Headspace gas sampling was performed on all fourteen containers included in Boxline Lot 1 for BN510.1 waste stream. The statistical evaluation of the analytical data collected for BN510.1, Boxline Lot 1 is presented in Table 1. Table 5 lists the correlation of container numbers to characterization data packages. Table 7 lists the correlation of container number to headspace gas sample numbers. The data are used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for each volatile compound and to resolve the assignment of EPA HWNs for the BN510.1 waste stream. Per Section B2-2a of MP-TRUW-8.2, Quality Assurance Project Plan, the AMWTP used the data to calculate the UCL_{90} values for the waste stream and assign EPA HWNs as appropriate.

HWNs are assigned based on AK. HWNs assigned by AK are retained for the waste stream even if the headspace gas sampling analytical results for the assigned compounds are not above the program required quantitation limit (PRQL). No sampling UCL_{90} results are above the PRQL values for constituents associated with the toxicity characteristic HWNs (Table 1). The HWN assignment for this waste stream includes:

- Toxicity characteristic metals – D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010, (selenium), and D011 (silver).
- Toxicity characteristic organics – D022 (chloroform), D027 (1,4- dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).
- F-Listed HWNs for spent solvents used for cleaning and degreasing , and in laboratory operations – F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F002 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane); F004 (cresols and nitrobenzene); and F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone, pyridine, and toluene).
- F-Listed HWNs from electroplating operations – F006, F007 and F009 waste generated as a result of contact with electroplating waste.

Headspace sampling results support AK. No additional EPA HWNs are required.

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 1A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Transformation Used [b]	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [e]	14	0	None	1.20	1.20	0	[c]		10	
Methanol	14	0	None	34.5	34.5	0	[c]		100	
Ethyl ether	14	0	None	1.00	1.00	0	[c]		10	
1,1,2-Trichloro-1,2,2-trifluoroethane	14	0	None	1.15	1.15	0	[c]		10	F001, F002 [d]
1,1-Dichloroethylene	14	0	None	1.05	1.05	0	[c]		10	D029 [d]
Acetone	14	0	None	10.5	10.5	0	[c]		100	
Methylene chloride	14	9	Natural log	4.61	1.52	1.43	2.03	2.30	10	F001, F002 [d]
trans-1,2-Dichloroethylene	14	0	None	1.25	1.25	0	[c]		10	
1,1-Dichloroethane	14	0	None	1.25	1.25	0	[c]		10	
cis-1,2-Dichloroethylene	14	0	None	1.40	1.40	0	[c]		10	
Methyl ethyl ketone	14	0	None	12.0	12.0	0	[c]		100	F005 [d]
Chloroform	14	1	Natural log	1.25	0.435	0.236	0.519	2.30	10	D022 [d]
1,1,1-Trichloroethane	14	1	Natural log	1.39	0.719	0.192	0.788	2.30	10	F001, F002 [d]
Carbon tetrachloride	14	0	None	3.00	3.00	0	[c]		10	F001 [d]
Benzene	14	0	None	1.10	1.10	0	[c]		10	F005 [d]
1,2-Dichloroethane	14	0	None	2.10	2.10	0	[c]		10	D028 [d]
Butanol	14	0	None	30.0	30.0	0	[c]		100	
Trichloroethylene	14	1	None	7.50	1.65	1.68	2.26		10	F001, F002 [d]
Methyl isobutyl ketone	14	0	None	18.5	18.5	0	[c]		100	
Toluene	14	0	None	0.950	0.950	0	[c]		10	F005 [d]
Tetrachloroethylene	14	0	None	1.05	1.05	0	[c]		10	F001, F002 [d]
Chlorobenzene	14	0	None	1.05	1.05	0	[c]		10	F002 [d]
Ethyl benzene	14	0	None	1.15	1.15	0	[c]		10	
m- & p-Xylene	14	0	None	1.15	1.15	0	[c]		10	
o-Xylene	14	0	None	1.15	1.15	0	[c]		10	
Bromoform	14	0	None	1.55	1.55	0	[c]		10	
1,1,2,2-Tetrachloroethane	14	0	None	1.30	1.30	0	[c]		10	
Cyclohexane [f]	14	0	None	1.30	1.30	0	[c]		10	
Carbon disulfide [e]	14	0	None	1.25	1.25	0	[c]		10	F005 [d]
1,2,4-Trimethylbenzene [f]	14	0	None	1.35	1.35	0	[c]		10	
1,3,5-Trimethylbenzene [f]	14	0	None	1.35	1.35	0	[c]		10	

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, and UCL_{90}.

c. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated,

d. The HWNs for these constituents have been applied based on acceptable knowledge. No additional HWNs were added as a result of headspace gas sampling

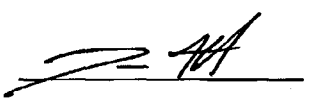
e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: J. Kettel Signature:  Date: 9/9/10

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
Cyclotetrasiloxane, octamethyl-	110	13	14	93	14	93
Trichlorofluoromethane	87	1	14	7.1	14	7.1

Notes:

Octamethylcyclotetrasiloxane is not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: M. Johnson Signature: MJohnson Date: 9/9/10

Verification of % Detected Calculation:

Printed Name: J. Kettel Signature: [signature] Date: 9/9/10

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package.

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10376274	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379527	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379532	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379533	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379536	N/A	N/A	ASY10-01905	VEB10-00906	N/A	N/A
10379541	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379598	N/A	N/A	ASY10-01905	VEB10-00906	N/A	N/A
BN10376278	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379487	N/A	N/A	ASY10-01906	VEB10-00906	N/A	N/A
10379560	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
10379577	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379583	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379592	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379593	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379751	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
BN10376279	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379440	N/A	N/A	ASY10-01893	VEB10-00903	N/A	N/A
10379530	N/A	N/A	ASY10-01906	VEB10-00906	N/A	N/A
10379568	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379569	N/A	N/A	ASY10-01906	VEB10-00910	N/A	N/A
10379571	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
10379573	N/A	N/A	ASY10-01905	VEB10-00909	N/A	N/A
BN10376281	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379563	N/A	N/A	ASY10-01907	VEB10-00910	N/A	N/A
10379578	N/A	N/A	ASY10-01905	VEB10-00910	N/A	N/A
10379581	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379737	N/A	N/A	ASY10-01907	VEB10-00911	N/A	N/A
10379743	N/A	N/A	ASY10-01907	VEB10-00911	N/A	N/A
10379746	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
BN10376282	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379105	N/A	N/A	ASY10-01896	VEB10-00907	N/A	N/A
10379543	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379551	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379552	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379601	N/A	N/A	ASY10-01897	VEB10-00908	N/A	N/A

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package (continued).

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10379513	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379492	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379547	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379553	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379554	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
BN10379514	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379356	N/A	N/A	ASY10-01885	VEB10-00899	N/A	N/A
10379371	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379439	N/A	N/A	ASY10-01893	VEB10-00903	N/A	N/A
10379481	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379499	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379502	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
BN10379515	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379314	N/A	N/A	ASY10-01885	VEB10-00897	N/A	N/A
10379484	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379501	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379537	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379556	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
BN10379516	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379312	N/A	N/A	ASY10-01885	VEB10-00897	N/A	N/A
10379365	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379370	N/A	N/A	ASY10-01885	VEB10-00898	N/A	N/A
10379503	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
BN10379517	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379490	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379491	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379498	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379548	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379588	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379599	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
BN10379518	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379488	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379534	N/A	N/A	ASY10-01897	VEB10-00905	N/A	N/A
10379538	N/A	N/A	ASY10-01896	VEB10-00906	N/A	N/A
10379542	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379595	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379596	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 5. Correlation of container identification numbers to data package (continued).

Container No. [a]	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package [b]	Solid Analysis Data Package [b]
BN10379521	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379500	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379544	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379546	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379550	N/A	N/A	ASY10-01893	VEB10-00905	N/A	N/A
10379589	N/A	N/A	ASY10-01897	VEB10-00906	N/A	N/A
10379597	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
BN10379523	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379441	N/A	N/A	ASY10-01892	VEB10-00904	N/A	N/A
10379486	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379489	N/A	N/A	ASY10-01893	VEB10-00904	N/A	N/A
10379549	N/A	N/A	ASY10-01896	VEB10-00905	N/A	N/A
10379557	N/A	N/A	ASY10-01896	VEB10-00904	N/A	N/A
BN10379713	HS110-00021	N/A	N/A	N/A	N/A	N/A
10379528	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379561	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379567	N/A	N/A	ASY10-01907	VEB10-00910	N/A	N/A
10379586	N/A	N/A	ASY10-01906	VEB10-00909	N/A	N/A
10379742	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A
10379744	N/A	N/A	ASY10-01910	VEB10-00911	N/A	N/A

a. Container numbers are listed in a sequence with the 100-gallon container first, then subsequently listed are the corresponding 55-gallon containers that were supercompacted to pucks and placed in the 100-gallon container.
b. WAP solid sampling is not required for S5000 waste

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items.

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10376274	N/A	Completed [d]
10379527	N/A	Completed
10379532	N/A	Completed
10379533	N/A	Completed
10379536	N/A	Completed
10379541	N/A	Completed
10379598	N/A	Completed
BN10376278	N/A	Completed [d]
10379487	N/A	Completed
10379560	N/A	Completed
10379577	N/A	Completed
10379583	N/A	Completed
10379592	N/A	Completed
10379593	N/A	Completed
10379751	N/A	Completed
BN10376279	N/A	Completed [d]
10379440	N/A	Completed
10379530	N/A	Completed
10379568	N/A	Completed
10379569	N/A	Completed
10379571	N/A	Completed
10379573	N/A	Completed
BN10376281	N/A	Completed [d]
10379563	N/A	Completed
10379578	N/A	Completed
10379581	N/A	Completed
10379737	N/A	Completed
10379743	N/A	Completed
10379746	N/A	Completed
BN10376282	N/A	Completed [d]
10379105	N/A	Completed
10379543	N/A	Completed
10379551	N/A	Completed
10379552	N/A	Completed
10379601	N/A	Completed

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items (continued).

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10379513	N/A	Completed [d]
10379492	N/A	Completed
10379547	N/A	Completed
10379553	N/A	Completed
10379554	N/A	Completed
BN10379514	N/A	Completed [d]
10379356	N/A	Completed
10379371	N/A	Completed
10379439	N/A	Completed
10379481	N/A	Completed
10379499	N/A	Completed
10379502	N/A	Completed
BN10379515	N/A	Completed [d]
10379314	N/A	Completed
10379484	N/A	Completed
10379501	N/A	Completed
10379537	N/A	Completed
10379556	N/A	Completed
BN10379516	N/A	Completed [d]
10379312	N/A	Completed
10379365	N/A	Completed
10379370	N/A	Completed
10379503	N/A	Completed
BN10379517	N/A	Completed [d]
10379490	N/A	Completed
10379491	N/A	Completed
10379498	N/A	Completed
10379548	N/A	Completed
10379588	N/A	Completed
10379599	N/A	Completed
BN10379518	N/A	Completed [d]
10379488	N/A	Completed
10379534	N/A	Completed
10379538	N/A	Completed
10379542	N/A	Completed
10379595	N/A	Completed
10379596	N/A	Completed

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 6. RTR/VE summary of prohibited items (continued).

Container No. [a]	RTR Prohibited Items [b]	VE Prohibited Items [c]
BN10379521	N/A	Completed [d]
10379500	N/A	Completed
10379544	N/A	Completed
10379546	N/A	Completed
10379550	N/A	Completed
10379589	N/A	Completed
10379597	N/A	Completed
BN10379523	N/A	Completed [d]
10379441	N/A	Completed
10379486	N/A	Completed
10379489	N/A	Completed
10379549	N/A	Completed
10379557	N/A	Completed
BN10379713	N/A	Completed [d]
10379528	N/A	Completed
10379561	N/A	Completed
10379567	N/A	Completed
10379586	N/A	Completed
10379742	N/A	Completed
10379744	N/A	Completed

a. Container numbers are listed in a sequence with the 100-gallon container first, then subsequently listed are the corresponding 55-gallon containers that were supercompacted to pucks and placed in the 100-gallon container.
b. RTR was not performed on any of the containers in Boxline Lot 1.
c. See Table 5 for the associated VE data packages. None of the identified containers contain prohibited items as defined by Section B-1c of the AMWTP Quality Assurance Project Plan QAPjP, MP-TRUW-8.2.
d. VE is performed on the 55-gallon containers prior to supercompaction and placement of the pucks in the 100-gallon containers; therefore, verification of no prohibited items for the contents of the 100-gallon container has been completed.

WSPF Number: BN510.1 Lot Number: Boxline 1

Table 7. Correlation of container numbers to sample numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s) [a]
BN10376274	57658	N/A
BN10376278	57662	N/A
BN10376279	57659	N/A
BN10376281	57661	N/A
BN10376282	57670	N/A
BN10379513	57669	N/A
BN10379514	57667	N/A
BN10379515	57664	N/A
BN10379516	57663	N/A
BN10379517	57665	N/A
BN10379518	57666	N/A
BN10379521	57668	N/A
BN10379523	57671	N/A
BN10379713	57660	N/A

a. WAP solid sampling is not required for S5000 waste

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [c, d, e]	Comments
Chloromethane [f]	14	0	None	1.20	1.20	0			10		No samples above MDL
Methanol	14	0	None	34.5	34.5	0			100		No samples above MDL
Ethyl ether	14	0	None	1.00	1.00	0			10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	14	0	None	1.15	1.15	0			10		HWNs F001/F002 applied
1,1-Dichloroethylene	14	0	None	1.05	1.05	0			10		HWN D029 applied
Acetone	14	0	None	10.5	10.5	0			100		No samples above MDL
Methylene chloride [g]	14	9	Natural log	4.61	1.52	1.43	2.03	2.30	10	10	HWNs F001/F002 applied
trans-1,2-Dichloroethylene	14	0	None	1.25	1.25	0			10		No samples above MDL
1,1-Dichloroethane	14	0	None	1.25	1.25	0			10		No samples above MDL
cis-1,2-Dichloroethylene	14	0	None	1.40	1.40	0			10		No samples above MDL
Methyl ethyl ketone	14	0	None	12.0	12.0	0			100		HWN F005 applied
Chloroform	14	1	Natural log	1.25	0.435	0.236	0.519	2.30	10	10	HWN D022 applied
1,1,1-Trichloroethane	14	1	Natural log	1.39	0.719	0.192	0.788	2.30	10	10	HWNs F001/F002 applied
Carbon tetrachloride	14	0	None	3.00	3.00	0			10		HWN F001 applied
Benzene	14	0	None	1.10	1.10	0			10		HWN F005 applied
1,2-Dichloroethane	14	0	None	2.10	2.10	0			10		HWN D028 applied
Butanol	14	0	None	30.0	30.0	0			100		No samples above MDL
Trichloroethylene	14	1	None	7.50	1.65	1.68	2.26		10		HWNs F001/F002 applied
Methyl isobutyl ketone	14	0	None	18.5	18.5	0			100		No samples above MDL
Toluene	14	0	None	0.950	0.950	0			10		HWN F005 applied
Tetrachloroethylene	14	0	None	1.05	1.05	0			10		HWN F001/F002 applied
Chlorobenzene	14	0	None	1.05	1.05	0			10		HWN F002 applied
Ethyl benzene	14	0	None	1.15	1.15	0			10		No samples above MDL
m- & p-Xylene	14	0	None	1.15	1.15	0			10		No samples above MDL

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 1

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [c, d, e]	Comments
o-Xylene	14	0	None	1.15	1.15	0			10		No samples above MDL
Bromoform	14	0	None	1.55	1.55	0			10		No samples above MDL
1,1,2,2-Tetrachloroethane	14	0	None	1.30	1.30	0			10		No samples above MDL
Cyclohexane [g]	14	0	None	1.30	1.30	0			10		No samples above MDL
Carbon disulfide [f]	14	0	None	1.25	1.25	0			10		HWN F005 applied
1,2,4-Trimethylbenzene [g]	14	0	None	1.35	1.35	0			10		No samples above MDL
1,3,5-Trimethylbenzene [g]	14	0	None	1.35	1.35	0			10		No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{95} is not calculated.

b. *The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and* UCL_{95}.

c. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

d. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10.

e. The required number of samples for VOCs listed in Table IV.D.1 of the WIPP Hazardous Waste Facility Permit was calculated using equation A-8 in MP-TRUW-8.25.

f. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

g. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11583.)
Steve Carpenter
Acceptable Knowledge Manager

09/17/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/10/2010	All	DCR-9081. Initial issue.
1	01/12/11	Various	DCR-9747. References modified to accommodate reference changes within AK baseline document for Hanford waste. Revised to incorporate WIPP WAP permit renewal changes. Editorial corrections
2	01/31/12	Various	DCR-10508. Added changes approved by CBFO in Change Notice 1 to BN510.1 waste stream profile. Incorporated BLUESHEET-077.
3	09/17/12	5, A1, A2	DCR-11583. Added changes approved by CBFO in Change Notice 2 to BN510.1 waste stream profile.

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ACRONYMS

AK	acceptable knowledge
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ATWIR	Annual Transuranic Waste Inventory Report
BC	Battelle Columbus (prefix)
BN	AMWTP (prefix)
CCP	Central Characterization Project
CH	contact-handled
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CWS	Chemical Warfare Service
D&D	decommissioning and dismantling
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DU	depleted uranium
DWPG	drummed waste packaging glovebox
EDMS	electronic document management system
EPA	U.S. Environmental Protection Agency
EU	enriched uranium
HEPA	high efficiency particulate air
HENC	High-Efficiency Passive Neutron Counter
HWMA	Hazardous Waste Management Act
HSG	headspace gas
HWN	hazardous waste number
IDC	Item Description Code
INL	Idaho National Laboratory
LLD	lower limit of detection
LSA	low specific activity
MD	Mound Plant (prefix)
MEK	methyl ethyl ketone
MPFPD	Mixed Plutonium Finishing Plant Debris
NDA	non-destructive assay
PCB	polychlorinated biphenyl
PFP	plutonium finishing plant
PK	process knowledge
PMC	plutonium-molybdenum cermet
POS	Plant Optimization System

PPE	personal protective equipment
PPO	pressed plutonium oxide
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (prefix)
RL	Richland, Washington Hanford Site (prefix)
RLMPFPCD	Richland Mixed Plutonium Finishing Plant Comprehensive Debris
RTG	radioisotopic thermoelectric generators
RTR	real-time radiography
SCW	special case waste
SDOP	six-drum overpack box
SWB	standard waste box
TRU	transuranic
TRUCON	TRU waste content codes
TSCA	Toxic Substance Control Act
VE	visual examination
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WETP	WIPP experimental test program
WG Pu	weapons-grade plutonium
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMP	waste material parameter
WSPF	Waste Stream Profile Form

Advanced Mixed Waste Treatment Project

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN510.1

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Supercompacted Debris Waste

1.2.2 Point of Generation

Advanced Mixed Waste Treatment Facility (AMWTF), Building Waste Management Facility (WMF)-676

1.2.3 Waste Stream Volume (Newly Generated)

Projected Volumes:

16,000 100-gallon drums (3,330 m^3)[2]

105 Standard Waste Boxes (SWBs) (198 m^3)[2]

Fifty percent of the debris waste feedstock is estimated to contain greater than 100 nanocuries per gram (nCi/g) transuranic (TRU) alpha activity and 50% contains less than 100 nCi/g TRU alpha activity.[14]

1.2.4 Generation Dates and Rate of Generation

August 2010 – December 2018

The average generation rate is estimated to be 120 m^3 per month.[28]

1.2.5 TRUCON Codes

ID121[3]

1.2.6 Waste Isolation Pilot Plant Waste Stream ID

Waste Stream ID: IN-BN510.1[a]

1.2.7 Summary Category Group

S5000 – Debris Waste[(4)]

1.2.8 Waste Matrix Code Group

Heterogeneous Debris Waste

1.2.9 Waste Matrix Code

S5490 – Unknown/Other Heterogeneous Debris Category

The unknown/other-heterogeneous Waste Matrix Code (WMC) includes waste that is consistent with the definition for the Heterogeneous Debris (S5400), but does not meet the criteria for assignment into the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.[(4)] The waste stream consists of supercompacted debris waste.

1.2.10 Description from the ATWIR

The Annual Transuranic Waste Inventory Report (ATWIR) description for waste stream BN510.1 is a newly generated debris waste stream generated from supercompacted 55-gallon containers of debris waste.[(28) a]

1.2.11 Defense Determination for AMWTP Waste

The supercompacted debris waste stream (BN510.1) generated at the Advanced Mixed Waste Treatment Project (AMWTP) is a result of compaction of waste generated at the Rocky Flats (RF), Mound (MD), Battelle Columbus (BC), Hanford (RL), and AMWTP (BN). The debris wastes identified as feedstock to the AMWTP Supercompactor were generated from defense-related processes or activities at the five U.S. Department of Energy (DOE) sites as follows:

- The transuranic (TRU) debris wastes generated at RF and shipped to the Idaho National Laboratory (INL) were generated through defense program activities, or commingled with non-defense program waste that cannot be segregated. Furthermore, there is no historical record or evidence of spent nuclear fuel or high-level waste ever having been handled at the RF facility.[(7, 19)]

a. The BN510.1 waste stream includes waste from the following Annual Transuranic Waste Inventory Report waste streams: IN-BN510, RLPFP-01, RL325-01, and RL231Z-01. [(28)]

- The majority of the MD debris waste feedstock was generated during defense-related operations conducted at the MD for a variety of customers, including Lawrence Livermore National Laboratory, Hanford, Oak Ridge National Laboratory, and the Space Program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the U.S. Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by MD was the Space Nuclear Auxiliary Power system, which was sponsored by the DOD. Operations at the facility included processing and recovering plutonium, developing reactor fuels, conducting reactor fuel waste studies, and recovery of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the MD debris waste feedstock is the result of commingling of wastes from both defense-related and domestic activities.[8, 20]

- Debris waste feedstock shipped from BC to the INL was generated during decommissioning and dismantling (D&D) of the JN-3 (Research Reactor Building) and other facilities. Defense-related operations were conducted at BC in support of Army, Navy, and Air Force programs. These operations included weapons-related activities and defense research into plutonium materials properties and development, plutonium metallurgy, actinide joining, and weapons production and assembly. Processing of test shot samples, development of ^{238}Pu heat sources for spacecraft for DOD, and some specialized work for Los Alamos were conducted in the JN-4 Plutonium Laboratory.[9, 21, 22, 23]

- The debris waste feedstock generated at RL and shipped to the AMWTP was generated during nuclear materials production, nuclear waste and materials by-products management, and defense research and development (R&D) activities conducted at RL facilities. Due to the nature of the work performed at RL analytical facilities, defense-related activities were carried out concurrent with non-defense projects and the wastes were commingled at the point of generation. Segregation of waste into defense and non-defense portions is not feasible. The RL debris waste may contain debris waste that has been determined to be waste that is incidental to reprocessing of spent nuclear fuel. The debris waste is not spent nuclear fuel or high-level waste.[29]

- The waste generated at the AMWTF is the result of contact with defense related TRU debris waste feedstock during treatment, characterization, maintenance, repackaging, and management.[6]

In accordance with interim guidance, defense wastes are identified as those wastes generated during work involving only defense activities, or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The TRU wastes included in the BN510.1 Waste Stream Profile Form (WSPF) meet this definition.[24, 25]

1.3 Waste Stream Description

The newly generated debris waste stream (BN510.1) is generated from supercompaction of 55-gallon containers of debris waste. The supercompacted debris waste (i.e., BN510.1) is generated from a single process (i.e., supercompaction). The supercompacted debris waste

(i.e., BN510.1) has a common physical form that contains similar hazardous constituents and is generated from a single process or activity (Table 1). The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of hazardous waste numbers (HWNs) to the Supercompactor feedstock from Hanford debris waste.[29,31] A list of authorized debris waste feedstock (by original generator and item description code [IDC]) is presented in Appendix A, Supercompactor Debris Waste Feedstock.[31] A description of the processes that generated the supercompacted debris waste is presented in Section 1.4.4.

Table 1. Physical waste form description for BN510.1.

ATWIR Number	IDC	Waste Matrix Code (WMC)	Description
IN-BN510.1	BN-550	S5490	Debris waste from multiple debris waste feedstock sources that have been supercompacted into pucks and packaged into 100-gallon drums.[a]

a. A list of debris waste feedstock IDCs is presented in Appendix A of this report.

Supercompacted debris waste consists of various combustible and noncombustible debris materials that originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).[6]

The BN510.1 supercompacted debris waste stream includes waste from Hanford Richland Mixed Plutonium Finishing Plant Comprehensive Debris (RLMPFPCD) stream and the following previously approved Waste Isolation Pilot Plant (WIPP)-WSPFs: [29, 31, 37]

- AMWTP BN510 [31, 37]
- Hanford RLM231ZD.001 [29, 37]
- Hanford RLM325D.001 [29, 37]
- Hanford RLMPDT.001 [Mixed Plutonium Finishing Plant Debris (MPFPD)]. [29, 37]

Supercompacted debris waste includes: paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete packaged in 55-gallon drums, supercompacted, and packaged into 100-gallon product drums. Supercompacted debris may contain small amounts of non-debris waste such as absorbed liquids, soil, dirt, sand, absorbent, or homogeneous solids. Non-debris waste will be less than 50% by volume in each 100-gallon drum of compacted debris.[7, 8, 9, 29]

1.4 Process Description

1.4.1 Areas of Operation

The BN510.1 waste stream is generated by supercompaction of debris waste feedstock at the AMWTF in Building WMF-676. The debris waste feedstock is introduced into the supercompactor as any of the following:

- Direct feed (in original 55-gallon drums from the generator site)
- From the drummed waste packaging glovebox (DWPG) where drummed waste is sorted and repackaged into new 55-gallon drums
- From the waste treatment boxline(s) where boxed waste is sorted, size-reduced, and repackaged into 55-gallon drums.

The boxed waste includes six-drum overpacks (SDOPs) containing up to six 55- or 85- gallon drums). The SDOPs are of two types: 1) one type is packaged with characterized debris drums for processing in AMWTF. These contain drums with IDCs confirmed by real-time radiography (RTR) to be acceptable feedstock waste; 2) the other type is packaged with drums that are not characterized but are labeled with historical acceptable knowledge (AK) information that indicates acceptable feedstock waste.

The supercompactor, a glovebox with a 2,000-ton capacity compactor, size-reduces 55-gallon waste drums to roughly one-fifth their normal size. The supercompacted drums (pucks) are then packaged into 100-gallon containers (puck drums).

1.4.2 Process Flow Diagram

Figure 1 presents a flow diagram illustrating the generation and processing of AMWTP supercompacted debris waste.

1.4.3 Waste Generating Process

The AMWTP waste generation process is supercompaction of individual 55-gallon drums of debris waste feedstock into pucks (the final waste form). Debris waste feedstock contained in 55-gallon drums is characterized and validated through radioassay and RTR/visual examination (VE) to verify contents and then sent directly to the supercompactor for processing.[11, 32, 33, 34, 35]

Debris waste feedstock drums (e.g., 55- or 85-gallon drums) that require repackaging are introduced into the DWPG. Boxes of waste, including SDOPs, are introduced into a boxline for sorting and repackaging into 55-gallon drums. The SDOPs with uncharacterized drums undergo RTR to confirm the waste is >50% debris in each drum. The drum contents are then visually examined in the boxline trough to confirm the waste is approved feed stock. The other boxed wastes undergo RTR to confirm the waste form is approved feed stock. Certified VE is performed on the waste processed in the boxline as IDC BN-508. Prohibited items are processed

in the boxline or special-case waste (SCW) glovebox. After treating, sorting, and/or removal of prohibited item(s), the waste is repackaged into 55-gallon drums as IDC BN-508.[10, 11, 47] No campaigning of feedstock type or generator site debris waste feedstock occurs during the supercompaction process. There is no cleanout of the boxline(s) except for periodic housekeeping. Repackaged waste drums and direct feed drums (not requiring repack) are fed into the Supercompactor.

Supercompaction is the treatment for unprotected sharp objects and sealed containers greater than four liters that do not contain prohibited liquids. Because there are no layers of confinement following supercompaction, it is also the treatment for excess layers of confinement. After compaction, the drum pucks are loaded into 100-gallon drums (IDC BN-550).[10] No additional chemicals or waste constituents are added to the supercompacted debris waste as a result of this process.

Debris waste generated during repackaging and VE is also included in the Supercompactor feedstock. This facility-generated waste is visually examined.[11]

The plant optimization system (POS) is used to optimize processing drums through the Supercompactor to produce 100-gallon drums (containing compacted drum pucks) to meet the WIPP Waste Acceptance Criteria (WAC).[5, 10, 27]

1.4.3.1 Liquid Waste Generation

Any liquids that may be generated as a consequence of supercompaction are removed from the Supercompactor sump, absorbed, packaged, and dispositioned.[10, 11, 30] This liquid waste is not included in the supercompacted debris waste stream (BN510.1) and is managed as a separate waste.

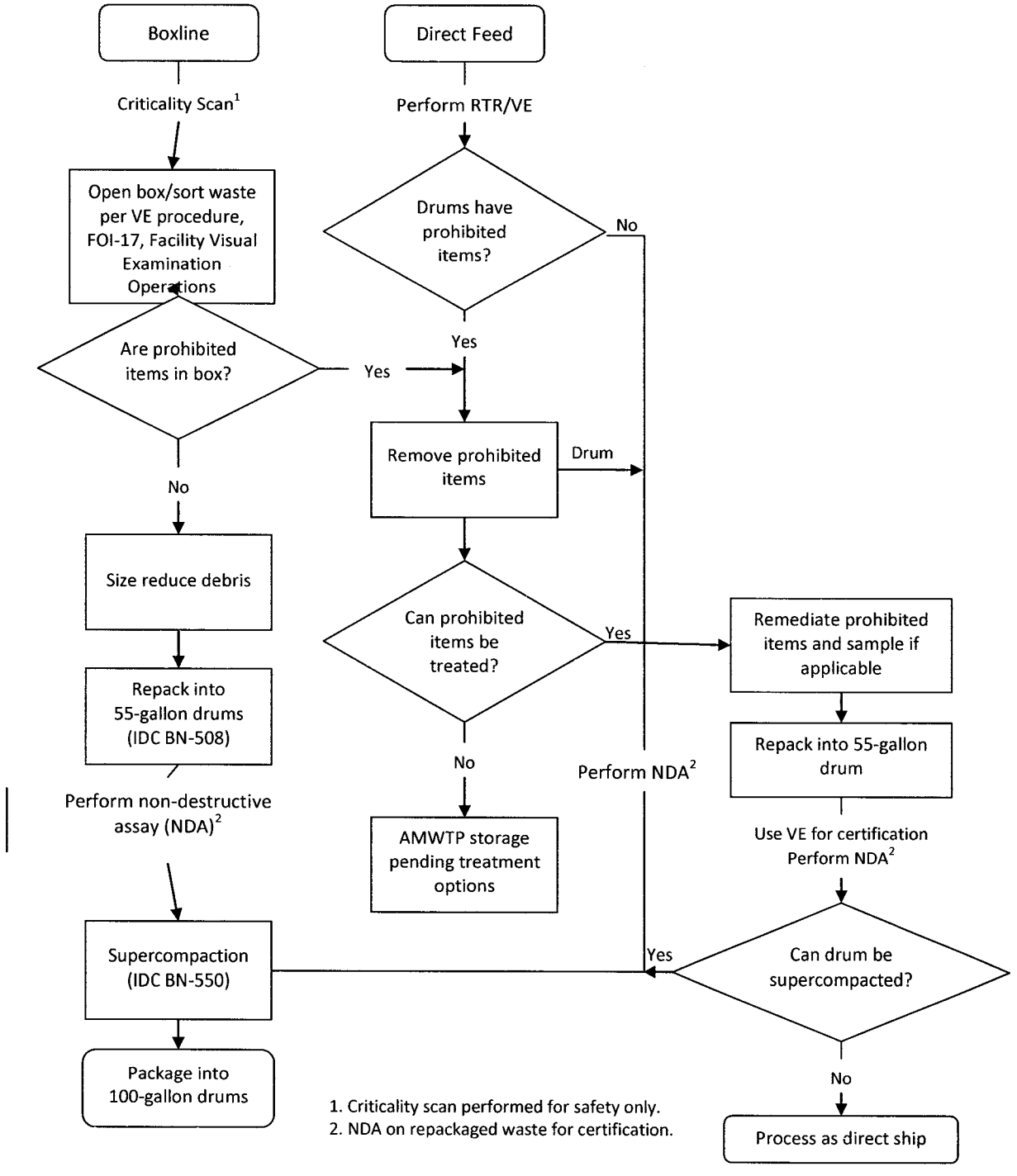

Figure 1. General flowchart for supercompacted debris waste generation and processing at the AMWTP.

1.4.4 Material Inputs

The heterogeneous debris waste feedstock to the Supercompactor originated from multiple DOE sites (i.e., RF, MD, BC, RL, and BN).

The AMWTP retrievably-stored debris waste feedstock was generated at the RF, MD, and BC. The debris waste feedstock was generated during plutonium pit production; depleted uranium component fabrication; enriched uranium processing; support operations including radionuclide recovery, waste treatment, maintenance, laboratory analysis, and machining of non-nuclear weapon components; R&D; special order work; fabrication of ^{238}Pu heat sources and manufacture of radioisotopic thermoelectric generators; D&D activities; and materials development.[7, 8, 9]

The RL debris waste feedstock shipped to the AMWTP was generated during plutonium production and fabrication; radiochemical processing and plutonium metallurgy laboratory activities; R&D; D&D technology development; and maintenance, cleanout, stabilization, and D&D activities.[29]

The BN debris waste feedstock is generated as a result of AMWTP waste facility maintenance operations, treatment (i.e., supercompaction, absorption of prohibited liquids, and removal of prohibited items), characterization, and general container management activities.[6]

The processes that generated debris wastes are listed below:

- RF
  - Plutonium metal and plutonium-containing materials manufacture, recovery, and treatment[7]
  - Plutonium production support operations including maintenance, laboratory activities, and R&D[7]
  - Non-routine events including renovations, spills, fires, and decommissioning[7]
  - Construction, demolition, and D&D operations.[7]
- MD
  - D&D of the Mound Plant Facility[8]
  - Pressed plutonium oxide (PPO) sphere and plutonium-molybdenum cermet (PMC) production[8]
  - Plutonium and other isotopic recovery[8]
  - Plutonium manufacture support such as laboratory activities and R&D[8]
  - Facility maintenance.[8]

BC

- Research into the metallurgical and ceramic properties of plutonium and its alloys[9]
- Plutonium processing[9]
- Development of nuclear fuels[9]
- D&D of the BC facilities.[9]

- RL
  - Plutonium Finishing Plant production, maintenance, cleanout, stabilization, and D&D[29]
    - RLMPDT.001 (MPFPD)[29]
    - RLMPFPCD[29]
  - Building 325 Radiochemical Processing Laboratory activities (RLM325D.001)[29,]
  - Building 231-Z cleanout operations/activities, metallurgy R&D, plutonium fabrication, and D&D technology development (RLM231ZD.001).[29]

- BN
  - Characterization activities[6]
  - Repackaging activities[6]
  - Waste treatment activities including supercompaction, absorption of prohibited liquids, and removal of prohibited items [6]
  - Facility operations including waste management and maintenance.[6]

The debris waste feedstock received and stored at the AMWTP is packaged in 55- or 85-gallon drums and a variety of boxes, bins, and crates. These boxes, bins, and crates are constructed of metal or fiberglass-reinforced plywood. The types of supercompactor debris waste feedstock containers are as follows:

- Direct feed 55-gallon drums without rigid liners identified by generator (RF, MD, BC, BN) assigned IDCs
- Direct feed 55-gallon drums with rigid liners identified by generator (RF, MD, BC) assigned IDCs
- Repackaged RF, MD, BC, RL and BN debris waste from the boxline or DWPG in 55-gallon drums.

The first two bulleted types of debris waste feedstock containers retain their generator assigned IDCs until compaction.[1]

The Acceptable Knowledge Baseline Document for AMWTP Waste, RPT-TRUW-06,[6] was compiled to provide the AK baseline report for the AMWTP newly generated wastes in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.[13] RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant; RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Waste-Mound Plant Waste; RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory; and RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP, are the AMWTP baseline documents for the RF, MD, BC, and RL facilities, respectively.[7, 8, 9, 29]

Non-hazardous solidification agents Aquaset®, Aquaset II-G®, Micro-Cel® E, Petroset II®, Petroset IIG®, or PIG® absorbents may be added to the waste by AMWTP to absorb prohibited liquids within debris waste.[38, 39, 42, 48, 49, 50]

The flow of the AMWTP AK documentation is presented in Figure 2.

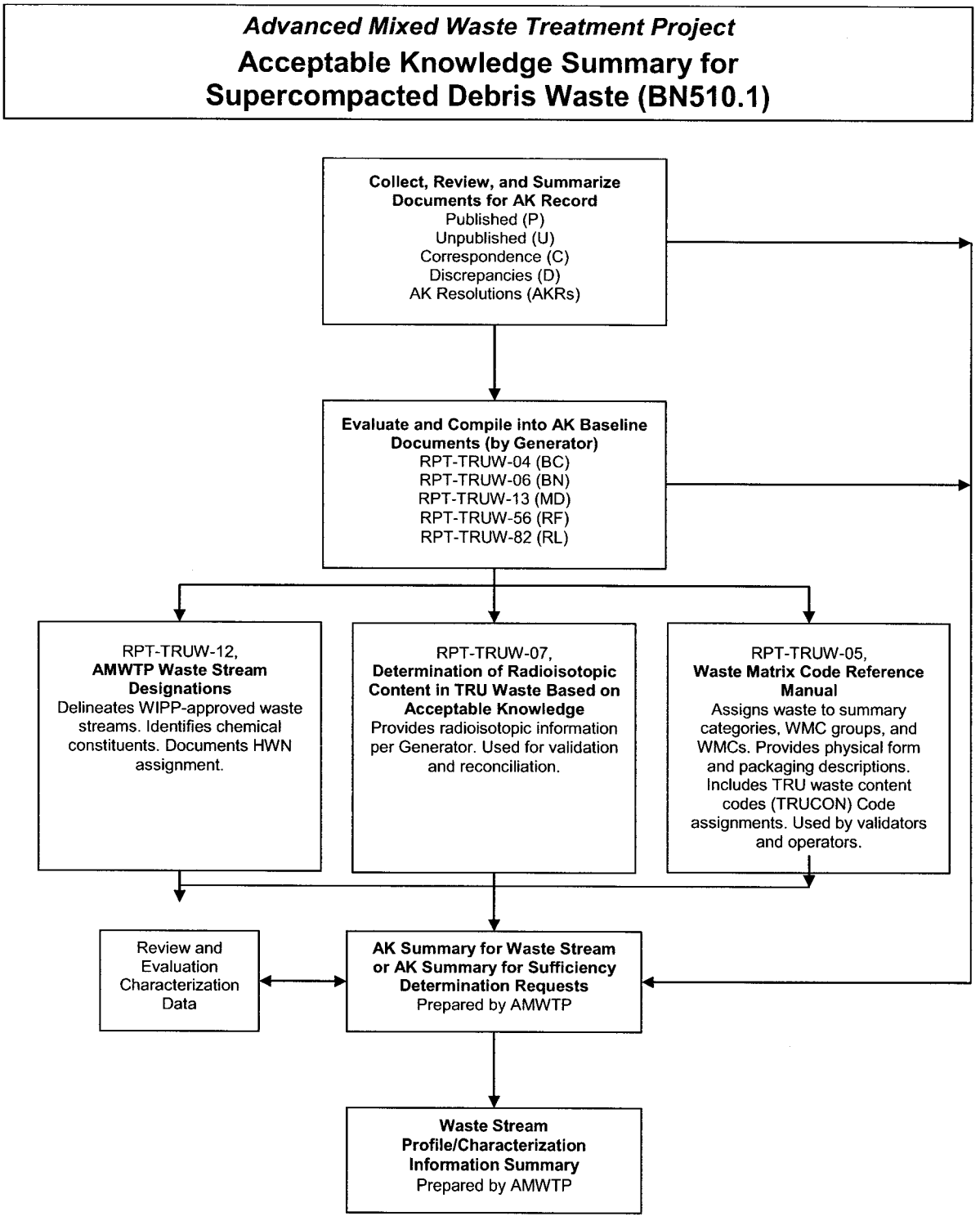

Figure 2. Document hierarchy and information flow for AK.

1.4.5 Waste Material Parameters

The original waste material parameter (WMP) weight percentages for the BN510.1 waste stream estimate were based on the visual examination (VE) data for 100-gallon product drums generated from 2005 through 2009. WMP data for 22,399 containers with completed RTR/VE data from the BN510 waste stream were obtained from the AMWTP Waste Tracking System database for containers examined prior to January 1, 2010. This population represented approximately 54% of the estimated volume of supercompacted waste (i.e., 22,399 out of 41,600 drums projected for BN510 and BN510.1 waste streams). The updated estimate is based on the VE data from 3,426 drums of BN510.1 supercompacted waste visually examined prior to September 12, 2011. The estimated WMP weights (by percent) for the BN510.1 waste stream, excluding 100-gallon drum packaging, were calculated in accordance with the requirements of MP-TRUW-8.13. The updated estimated WMP weight parameters are representative of the BN510.1 waste stream and are summarized in Table 2.[12, 13, 46]

Table 2. Waste material parameters for supercompacted debris waste.

Waste Material Parameters	Estimated Percent WMP weight/unit waste
Iron-based Metals/Alloys	79
Aluminum-based Metals/Alloys	<1
Other Metals	<1
Other Inorganic Materials	1
Cellulosics	12
Rubber	<1
Plastics (waste materials)	7
Inorganic Matrix	<1
Organic Matrix	0
Soils/Gravel	<1

1.5 AK Sufficiency Determination

No AK sufficiency determinations apply to this waste stream.

1.6 Prohibited Items

The following items are prohibited in waste containers shipped to Waste Isolation Pilot Plant (WIPP) as documented in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan. [5, 27]

- Liquid waste and prohibited observable liquids
- Sealed containers greater than 4 liters
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (Hazardous Waste Numbers [HWNs] D001, D002, or D003)
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8 of MP-TRUW-8.2, unless specifically approved though a Class 3 permit modification.[27]

Debris waste feedstock containers that are identified as containing prohibited items during RTR or VE are treated (to absorb prohibited liquids or to remove prohibited items) or are rejected, as appropriate. None of the supercompacted debris drums shipped to WIPP will contain prohibited items.

Boxline(s) are used to VE and repackage the boxed debris waste into 55-gallon drums. Debris waste feedstock treated or examined in the DWPG, and waste from maintenance and cleanup activities, is either examined by RTR or visually examined. The 55-gallon drums are non-destructive assayed. These drums of debris waste feedstock are then supercompacted and the pucks packaged into a 100-gallon product drum (IDC BN-550).[10, 11]

Prohibited items that can be treated to remove the prohibited characteristic are managed as newly generated waste. Containers with WIPP-prohibited liquids may be treated using non-hazardous solidification agents (e.g., Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents) to render the waste acceptable prior to shipment.[38, 39, 42, 48, 49, 50] Newly generated waste is characterized and assigned to an appropriate waste stream. [5, 27] In the event the treatment renders a debris waste form that can be compacted, it is included in BN510.1 as IDC BN-508.

1.7 Resource Conservation and Recovery Act Determination

The BN510.1 waste is (and has been) subject to the State of Idaho Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) requirements (e.g., 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, and 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities) and is currently being managed under the AMWTP RCRA permitting requirements until it is shipped offsite [44,45]

1.7.1 EPA Hazardous Waste Numbers

Supercompacted debris is characterized as mixed TRU waste. The HWNs assigned to the authorized supercompacted debris waste feedstock include HWNs associated with the debris waste feedstock as originally compiled in the AK baseline documents.[6, 7, 8, 9, 29]

Toxicity characteristic HWNs applied to the supercompacted debris waste are:

D004 (arsenic)], D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), D011 (silver) D022 (chloroform), D027 (1,4-dichlorobenzene), D028 (1,2-dichloroethane), D029 (1,1-dichloroethylene), D030 (2,4-dinitrotoluene), D034 (hexachloroethane), D037 (pentachlorophenol), and D043 (vinyl chloride).

Listed HWNs applied to this waste stream are:

F001: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and, trichlorofluoromethane;

F002: 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene , chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane;

F004: cresols and nitrobenzene;

F005: 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, methyl ethyl ketone (MEK), pyridine, and toluene; and

F006, F007, and F009: electroplating waste.

The HWNs assigned to the BN wastes generated in the facility as a result of handling and processing feedstock waste are derived from the compilation of all EPA HWNs assigned to the authorized debris waste feedstock from the contributing generator sites (Table 3).
[6, 7, 8, 9, 29, 40, 41, 43]

Table 3. HWN assignment by generator site.

Generator Site/Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Rocky Flats[7]																					
Isotope recovery [b]	•	•	•	•	•	•	•	•													
Laboratory reagents, research	•	•	•	•	•	•	•	•	•											• [a]	
Degreasing, decontamination																	• [a]	• [a]			
Cleaning, spill clean up																				• [a]	
Electroplating																					• [a]
Based on AK/HSG											•	•									
Mound Plant[8]																					
PPO & PMC production and isotope recovery [b]	•	•	•	•	•	•	•	•													
Cleaning and degreasing																	• [c]	• [c]		• [c]	
Electroplating																					• [c]
Based on AK/HSG									•			•									

Table 3 (continued)

Activity	Arsenic D004	Barium D005	Cadmium D006	Chromium D007	Lead D008	Mercury D009	Selenium D010	Silver D011	Chloroform D022	1,4-Dichlorobenzene D027	1, 2-Dichloroethane D028	1,1-Dichloroetthylene D029	2,4-Dinitrotoluene D030	Hexachloroethane D034	Pentachlorophenol D037	Vinyl Chloride D043	Spent Solvents F001	Spent Solvents F002	Spent Solvents F004	Spent Solvents F005	Electroplating waste F006 F007 F009
Battelle Columbus [9]																					
Metallurgical research		•	•	•	•	•		•													
Cleaning and degreasing																	•[d]	•[d]		•[d]	
Hanford[29, 40, 41, 43]																					
PFP plutonium metal production operations and glovebox activities including maintenance, clean out, D&D and stabilization:																					
• RLMPDT.001 (MPFPD)	•	•	•	•	•	•	•	•					•								
• RLMPFPCD	•	•	•	•	•	•	•	•	•				•				•[e]	•[e]	•[e]	•[e]	
Radiochemistry Processing Laboratory operations and maintenance (RLM325D.001)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[e]	•[e]	•[e]	•[e]	
Metallurgy operations, cleanout, and D&D (RLM231ZD.001)			•	•	•	•											•[e]	•[e]		•[e]	

Table 3 (continued)

Activity	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Chloroform	1,4-Dichlorobenzene	1, 2-Dichloroethane	1,1-Dichloroetthylene	2,4-Dinitrotoluene	Hexachloroethane	Pentachlorophenol	Vinyl Chloride	Derived-From Rule	Derived-From Rule	Derived-From Rule	Derived-From Rule	Derived-From Rule
	D004	D005	D006	D007	D008	D009	D010	D011	D022	D027	D028	D029	D030	D034	D037	D043	F001	F002	F004	F005	F006 F007 F009
AMWTP[7, 8, 9, 29, 31, 40, 41, 43]																					
Newly generated waste from composited feedstock (i.e., supercompaction operations),	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•[f]	•[f]	•[f]	•[f]	•[f]

a. RF – F001 =, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, tetrachloroethylene and trichloroethylene; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, tetrachloroethylene, and trichloroethylene; and F005 = 2-ethoxyethanol, benzene, carbon disulfide, methyl ethyl ketone, and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

b. Process used to recover radioisotopes (e.g., plutonium, americium, neptunium) which caused precipitation of metals as well as the radionuclides.

c. MD - F001 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, and methylene chloride; F002 =1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, and methylene chloride; F005 = benzene, carbon disulfide, MEK, and toluene. F007 and F009 HWNs are assigned due to electroplating waste contamination.

d. BC – F001= methylene chloride and trichloroethylene; F002 = methylene chloride and trichloroethylene; and F005 = benzene, MEK, and toluene.

e. RL – F001=1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; and F005 = 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene. Listed HWN constituents identified in footnote [c] are the summation from referenced AK and process knowledge (PK) documents.

f. BN (product drum)– F001= 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene and trichlorofluoromethane; F002 = 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane; 1,2-dichlorobenzene, chlorobenzene, methylene chloride; tetrachloroethylene, trichloroethylene, and trichlorofluoromethane; F004 = cresols and nitrobenzene; F005 = 2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine and toluene; and F006, F007, and F009 are assigned due to electroplating waste contamination.

1.7.2 Hazardous Determination

1.7.2.1 Hazardous Waste Management

The wastes that comprise this waste stream are newly generated. HWNs initially or historically assigned to the wastes are the same as the current HWN assignments.[1] The wastes that comprise this waste stream have historically been managed as mixed TRU waste at the AMWTP and are currently classified by AMWTP AK as mixed TRU waste based on RCRA mixture and/or derived-from rules.[1, 6]

The generation of BN510 waste has been discontinued and WSPF BN510.1 has been developed due to the addition of HWNs to the Supercompactor feedstock from Hanford debris waste.[29, 31]

1.7.2.2 Ignitability

The waste materials in this waste stream do not meet the 40 CFR 261.21, Characteristic of Ignitabiity, definition of ignitability. Ignitable wastes are prohibited from entering the Supercompactor. The supercompacted debris waste is not a liquid, an ignitable compressed gas, or an oxidizer. If found, liquid in excess of WIPP-WAC limits will be removed or undergo treatment (absorption) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The waste materials in this waste stream are not compressed gas and do not contain compressed gas. The waste does not meet the U.S. Department of Transportation definition of an oxidizer as defined in 49 CFR 173, Shippers – General Requirements for Shipments and Packagings. Finally, the waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. This waste stream does not exhibit the characteristic of ignitability (D001).

1.7.2.3 Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22, Characteristic of Corrosivity, definition of corrosivity. The supercompacted debris waste is not liquid waste and does not contain liquids in excess of WIPP-WAC limits. If found, liquid in excess of WIPP-WAC limits will be removed or treated (absorbed) prior to supercompaction and WIPP disposal. Containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP. [38, 39,42, 48, 49, 50] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

1.7.2.4 Reactivity

The waste materials in this waste stream do not meet the 40 CFR 261.23, Characteristic of Reactivity, definition of reactivity. Reactive wastes are prohibited from entering the

supercompactor. Supercompacted debris is not a liquid waste. Any containers that are identified as having prohibited liquids may be treated using Aquaset®, Aquaset II-G®, Petroset II® or Petroset IIG®, Micro-Cel® E, or PIG® absorbents to ensure that the waste is acceptable for disposal at WIPP.[38, 39,42, 48, 49, 50] The BN510.1 waste stream is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfide waste which, when exposed to a pH between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. The waste is not capable of detonation or explosive reaction if subjected to a strong initiating source if heated under confinement. The waste is not readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure. The materials do not contain explosive material and are not forbidden explosives or Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173. Although the waste contains wastes that are assigned F006, F007, and F009 listed HWNs that are associated with cyanide electroplating operations, the waste when exposed to a pH between 2 and 12.5 will not generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment. This non-reactive position is based on AMWTP AK documents that debris waste being used as feedstock is a non-reactive RCRA waste. This waste stream does not exhibit the characteristic of reactivity (D003).

1.7.2.5 Toxicity

The supercompacted debris waste stream contains RCRA toxicity constituents associated with toxicity characteristic metals and organics. See Table 3 for process-related activities associated with the HWNs.

The RCRA toxicity characteristic metals and organics assigned to this waste stream are: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver); D022 (chloroform); D027 (1,4-dichlorobenzene); D028 (1,2-dichloroethane); D029 (1,1-dichloroethylene); D030 (2,4-dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride).[1, 6, 7, 8, 9, 18, 29, 31, 40, 41, 43]

The RCRA toxicity characteristic metal HWNs: D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D009 (mercury); D010 (selenium); D011 (silver) were identified based on AK documentation associated with RF, MD, BC, BN and RL feedstock for the BN510.1 WSPF. The D004, D005, D006, D007, D008, D009, D010, and D011 HWNs are assigned to the supercompacted debris waste stream. [1, 6, 7, 8, 9, 29, 31, 40, 41, 43]

The HWN D022 (chloroform) was assigned based on AK documentation associated with RF, MD, and RL feedstock to the BN510.1 WSPF. The associated toxicity characteristic HWN D022 is assigned to the supercompacted debris waste stream.[29, 31, 40, 41]

The HWNs D027 (1,4-dichlorobenzene); D030 (2,4–dinitrotoluene); D034 (hexachloroethane); D037 (pentachlorophenol); and D043 (vinyl chloride) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The associated

toxicity characteristic HWNs D027, D030, D034, D037 and D043 are assigned to the supercompacted debris waste stream.[29, 40, 41]

The HWNs D028 (1,2-dichloroethane) and D029 (1,1-dichloroethylene) were assigned in the AK documentation associated with RF and RL feedstock to the BN510.1 WSPF. The D028 and D029 HWNs are assigned to the supercompacted debris waste stream.[18, 29, 31, 41]

1.7.2.6 Listed Waste

F-Listed HWNs. The supercompacted debris waste stream contains constituents associated with RCRA-listed waste HWNs. See Table 3 for process-related activities associated with the HWNs.

The BN510.1 supercompacted debris waste stream is assigned the F-listed HWNs: F001, F002, F004, F005, F006, F007, and F009. These F-Listed HWNs were historically assigned to feedstock waste by the original generator of the waste, for spent solvents used for cleaning, degreasing, and laboratory operations, and from electroplating operations. [1, 6, 7, 16, 29, 40, 41, 43]

The HWNs: F001 (1,1,1- trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,2,2-tetrachloro-1,2-difluoroethane, carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) and F002 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,2-dichlorobenzene, chlorobenzene, methylene chloride, tetrachloroethylene, trichloroethylene, and trichlorofluoromethane) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. In addition, the F002 hazardous waste constituents 1,2-dichlorobenzene, chlorobenzene were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWNs F001 and F002.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Non-halogenated F003 solvent constituents (e.g., acetone, cyclohexanone, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butly alcohol, and xylenes) were identified in the AK and PK record as contaminants associated with the supercompactor debris waste feedstock. The BN510.1 waste stream does not exhibit the characteristic of ignitability. Therefore the F003 HWN is not assigned to the supercompacted debris waste stream.[1]

The HWN F004 (cresols and nitrobenzene) were assigned based on AK documentation associated with RL feedstock to the BN510.1 WSPF. The resultant supercompacted debris waste retains the listed HWNs assigned to the supercompactor feedstock based on current regulatory requirements (i.e., the RCRA derived-from rule). Therefore, supercompacted debris waste stream is assigned the EPA HWN F004.[29, 40, 41]

The HWN F005 (2-ethoxyethanol, 2-nitropropane, benzene, carbon disulfide, isobutanol, MEK, pyridine, and toluene) were assigned based on AK documentation associated with RF, MD, BC and RL feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste stream is assigned the EPA HWN F005.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The HWNs F006, F007 and F009 were assigned based on AK documentation associated with RF feedstock and HWNs F007 and F009 were also assigned based on AK documentation associated with MD feedstock to the BN510.1 WSPF. Therefore, supercompacted debris waste is assigned the F006, F007, and F009 EPA HWNs.[1, 6, 7, 16]

P-, U- and K- Listed HWNs. The feedstock debris wastes in this waste stream are not discarded, unused, commercial chemical products, off-specification species, or manufacturing intermediates and do not contain spill residues thereof that would meet the listing of P- or U-listed hazardous waste as identified in 40 CFR 261.33, Discarded Commercial Chemical Products, off-Specification Species, Container Residues, and Spill Residues thereof. In addition, the waste materials in this waste stream were not mixed with, or derived from, the treatment, storage, or disposal of P- or U-listed waste. As a result, P- or U-listed HWNs are not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Although hydrofluoric acid was identified as a chemical contaminant associated with the supercompactor debris waste feedstock, only spent forms of hydrofluoric acid would have contaminated the feedstock debris waste. Based on this information, the U134 HWN is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

Based on a review of AK, it was determined that the BN510.1 waste stream will contain less than one percent beryllium by weight. Beryllium is a contaminant associated with this waste. The source of the beryllium is not associated with a powdered form and is not associated with unused commercial chemical product, an off-specification species, or a container residue, and does not contain a spill residue thereof. The P015 HWN for beryllium powder is not assigned to this waste stream.[1, 6, 7, 8, 9, 29, 40, 41, 43]

The waste materials within this waste stream are not hazardous waste from specific sources listed in 40 CFR 261.32, Hazardous Wastes from Specific Sources, (i.e., K-listed hazardous waste) and they have not been mixed with; derived from the treatment, storage, or disposal of K-listed wastes; and do not contain spill residues thereof. The waste materials in this waste stream are not assigned K-listed HWNs. [1, 6, 7, 8, 9, 29, 40, 41, 43]

Toxic Substances Control Act (TSCA) Regulated Contaminants. Polychlorinated biphenyl items with PCB concentrations equal to or exceeding 50 parts per million are not expected in the BN510.1 waste stream.

Drums of debris waste feedstock identified during RTR/VE as containing PCB items are segregated or sent to DWPG or SCW for item removal.[1, 17, 30, 31] PCB items identified in boxed debris are removed during boxline operations. PCB items removed from debris waste feedstock drums and boxes are packaged as newly generated waste and are not authorized as supercompactor debris waste feedstock.

Asbestos has been identified in some of the debris feedstock waste. Any containers identified as containing regulated types or quantities (e.g., greater than 1% of friable asbestos)

will be labeled, as required, in accordance with TSCA and Occupational Safety and Health Administration regulations.

Other Applicable Waste Streams. The AMWTP BN510 waste stream is pertinent to the BN510.1 waste stream. The IDCs identified within Appendix A includes IDCs previously identified within the BN510 WIPP-approved WSPF. The EPA HWNs assigned to the BN510 WSPF included D004 through D011, D022, D028, D029, F001, F002, F005, F006, F007, and F009.[31] The EPA HWNs assigned to BN510.1 include D004 through D011, D022, D027, D028, D029, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009. The addition of the D027, D034, D037, D043 and F004 HWNs is due to AK associated with the inclusion of RL debris waste into the supercompactor feedstock.[29, 40, 41]

1.8 Radionuclides

The radionuclides of concern for BN510.1 are ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, and ^{241}Am. The remaining WIPP-tracked radionuclides, ^{137}Cs and ^{90}Sr, are not expected to be present in measurable quantities in debris waste feedstock from RF except for IDC RF-480 due to disposal of isotopic sealed source material. Cesium-137 and computed ^{90}Sr are anticipated radionuclides for IDC RF-480 feedstock and may be detected during NDA. Cesium-137 and ^{90}Sr were identified as potentially present in MD, BC, and RL debris waste. [7, 8, 9, 14, 29]

At a minimum, the ratios of the two most prevalent radionuclides in the isotopic mix are compared to confirm existing AK data in compliance with contact-handled (CH)-WAC requirements. The two most prevalent radionuclides expected in the majority of AMWTP supercompacted debris waste product drums are ^{239}Pu and ^{240}Pu. This is based on a review of product drums included in the BN510 WSPF; however, the prevalent radioisotopes in some product drums of supercompacted debris waste may be a combination of ^{239}Pu and a different second TRU or uranium isotope due to commingling of wastes.

Table 4 identifies the predominant radionuclides and the principle source of those radionuclides for each of the original generators and for the supercompacted debris wastes.[7, 8, 9, 14, 29] For waste containers that have multiple generators and therefore a mixture of weapons grade plutonium (WG Pu), enriched uranium (EU), depleted uranium (DU), heat source isotopes, and fuel grade plutonium, a combination of any two of the common isotopes identified may be detected as the most prevalent. Radioassay data are reviewed and assessed by AMWTP NDA personnel as described in the RPT-TRUW-03, Drum Assay Technical Review Report.[15]

The radioisotopic content for each AMWTP supercompacted debris waste 100-gallon product drum will be calculated based on the aggregate of the NDA results for each of the compacted debris waste feedstock drums contained therein. The POS is used to ensure that each payload container does not exceed WAC weight or dose limits and complies with the required TRU activity (greater than 100 nCi/g). The direct feed 55-gallon drums will contain at least one TRU radionuclide greater than the lower limit of detection (LLD). The 100-gallon product drums that contain puck(s) with TRU radionuclides at less than LLD from the boxline feed, as determined by 55-gallon drum assay, are assayed using the Super HENC (high energy neutron counter) for final TRU determination.

Table 4. Predominant radionuclides expected in debris wastes by generator site.

Generator Site	Principal Plutonium Source	Predominant Radionuclides by Activity
RF	WG	^{239}Pu, ^{240}Pu
RF	WG, DU, EU	^{239}Pu (^{235}U or ^{238}U)
MD	WG	^{239}Pu, ^{240}Pu
MD	Heat source	^{238}Pu, ^{239}Pu
BC	WG	^{239}Pu, ^{240}Pu
RL	Combination WG Pu, fuels-grade Pu	^{239}Pu (^{241}Pu or ^{241}Am)
BN	WG (RF waste)	^{239}Pu, ^{240}Pu
BN	Combination WG Pu, heat source Pu	^{238}Pu, ^{239}Pu
BN	Combination WG Pu, heat source Pu, uranium, fuels-grade Pu	^{239}Pu (^{240}Pu, ^{241}Pu, ^{238}Pu, ^{241}Am, ^{235}U or ^{238}U)

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

BN510.1 consists of supercompacted drums of debris waste (pucks) placed directly into 100-gallon product drums. There are no inner packagings or layers of confinement associated with the 100-gallon product drums. There is a filtered lid on the 100-gallon drums. If 100-gallon drums become damaged, they are packaged into SWBs for shipment to WIPP.

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen, and methane. Headspace gas (HSG) sampling and analysis is performed when required by the WIPP-Waste Acceptance Plan and/or CH-TRAMPAC. At a minimum, the HSG analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HSG results exceeding 500 parts per million flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).[26]

3.0 REFERENCES

NOTE: *Advanced Mixed Waste Treatment Project documents such as procedures, AK reports, and operating instructions, are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Document Management System (EDMS). Previous revisions are available on EDMS.*

1. RPT-TRUW-12, AMWTP Waste Stream Designations
2. MLJ-004-10, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream, September 1, 2010. [C850A]
3. DOE/WIPP 01-3194, CH-TRU Waste Content Codes (CH-TRUCON)
4. DOE/LLW-217, DOE Waste Treatability Group Guidance, 1995. [P670A]
5. MP-TRUW-8.1, Certification Plan for INL Transuranic Waste
6. RPT-TRUW-06, Acceptable Knowledge Baseline Document for AMWTP Waste
7. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant
8. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste
9. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory
10. INST-FOI-20, Supercompactor and Post-Compaction Operations
11. INST-FOI-17, Facility Visual Examination Operations
12. MLJ-02-10, Memorandum to File, Waste Material Parameter (WMP) Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream, March 10, 2010. [C851A]
13. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation
14. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge
15. RPT-TRUW-03, Drum Assay Technical Review Report
16. Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, May 5, 1994-March 5 2001. [P052A]
17. Summary of PCB AK Sources, Wastren, Inc., September 5, 2001. [C207A]

18. Memorandum from Steve Carpenter to Eric Schweinsberg, Detection of 1,1-Dichloroethylene in BNINW216, Rev.1 Reconciliation Lots, April 2005. [C311A]

19. Correspondence from DOE Carlsbad Area Office to J.M. Roberson, RFFO, and J.M. Wilcynski, INEEL, Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS), May 20, 1997. [C191A]

20. Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, February 1993. [P380A]

21. Interview of J.B. Williamson, BCL, regarding Historical Operations Conducted in JN-4, September 2000. [C258A]

22. Interview of David Freas, BCL, regarding Historical Operations in Building JN-4, September 2000. [C259A]

23. Interview of William Pardue, BCL, regarding Historical Operations in Building JN-4, October 2000. [C260A]

24. DOE, Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant, 1997. [P203A]

25. Correspondence from Frank Marcinowski to EM-13 (Stan Wolf, 301-903-7962), Process for TRU Waste Defense Determination, February 2005. [C329A]

26. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), Central Characterization Project [P672A]

27. MP-TRUW-8.2, Quality Assurance Project Plan

28. DOE/TRU-11-3425, Annual Transuranic Waste Inventory Report - 2011, U.S. Department of Energy, Carlsbad Field Office, Rev. 0. [P1374A]

29. RPT-TRUW-82, Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP

30. INST-FOI-23, Special Case Waste Operations

31. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

32. INST-OI-12, Real-Time Radiography Operations (Drum)

33. INST-OI-34, Non-Facility Visual Examination Operations

34. INST-FOI-01, In-Plant Drum Assay Operations

35. INST-OI-14, Drum Assay Operations

36. RPT-TRUW-05, Waste Matrix Code Reference Manual

37. Correspondence from the EPA to Donald C. Cadbury, National TRU Program CBFO, June 10, 2010. [C869S]

38. Material Safety Data Sheet, Micro-Cel®E, Celite Corporation, January 17, 2007 [P808S]

39. Material Safety Data Sheets, Aquaset® (sodium montmorillonite) and Aquaset II-G® (sepiolite), Fluid Tech, January 1, 2005, and November 11, 2008 [P881S]

40. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]

41. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]

42. Material Safety Data Sheets for Petroset II and Petroset IIG, Fluid Tech, Inc. June 8, 1998, and March14, 2006. [P657S]

43. CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4, 2010 [P855A]

44. ID489008952, AMWTP HWMA/RCRA Permit and interim status documents.

45. Resource Conservation and Recovery Act, 40 CFR Parts 260 through 280.

46. MLJ-03-11, Memorandum to File, Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream, September 27, 2011. [C1045A]

47. Hazardous Waste determination #071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508. [C1051A]

48. Material Safety Data Sheets for Universal PIG® Absorbents (MSD-014) New Pig Corp., October 10, 2011. [P1376S]

49. Material Safety Data Sheets for Oil-Only PIG® Absorbents (MSD-016) New Pig Corp., August 3, 2011. [P1377S]

50. Material Safety Data Sheets for BLUE PIG® Sock Absorbents (MSD-029) New Pig Corp., February 9, 2011. [P1378S]

51. 49 CFR 173, Shippers – General Requirements for Shipments and Packagings

Appendix A – Supercompactor Debris Waste Feedstock

The following table lists the authorized debris waste feedstock by original generator and IDC.[7, 8, 9, 29, 36]

Waste Type	Site	IDC	Description
COMBUSTIBLES	RF	010	Paper & Rags
	RF	020	Wood & Benelex
	RF	030	Plastic
	RF	040	Rubber
	RF	33A	WIPP Experimental Test Program (WETP) Bin Program-Combustibles A (IDCs 335, 336, 337 and 339)
	RF	33B	WETP Bin Program – Combustibles B (IDCs 330, 337, and 339)
	RF	302	Benelex® and Plexiglas®
	RF	330	Paper and Rags-Dry
	RF	336	Paper and Rags-Moist
	RF	337	Plastic, Teflon®, Washables, PVC
	RF	339	Leaded Rubber Gloves and Aprons
	RF	430	Unleached Ion Column Resin
	RF	431	Leached Resin
	RF	460	Washables, Rubber, Plastic
	RF	463	Leaded Rubber Gloves and Aprons
	RF	464	Benelex® and Plexiglas®
	RF	833	Plastics, TRU Mixed
	RF	831	Dry Combustibles
	RF	832	Wet Combustibles
	RF	900	Low specific activity (LSA) Paper, Plastics, Etc.
	RF	970	Wood
FILTERS	RF	328	Ful-Flo® Incinerator Filters
	RF	335	Absolute 8 × 8 Filters
	RF	338	Insulation and Chemical Warfare Service (CWS) Filter Media
	RF	360	Insulation
	RF	376	Cemented Insulation & Filter Media

Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

Waste Type	Site	IDC	Description
	RF	490	High efficiency particulate air Filters and CWS Filters
	RF	491	Plenum Prefilters
GRAPHITE	RF	070	Graphite
	RF	300	Graphite Molds
	RF	301	Graphite Cores
	RF	303	Scarfed Graphite Chunks
	RF	310	Graphite Scarfings
	RF	312	Coarse Graphite
HETEROGENEOUS	BC	201	Non-combustible solids
	BC	202	Combustible Solids-Paper/Cloth
	BN	508	AMWTP Newly Generated Debris
	BN	510	Supercompacted Debris
	BN	550	Supercompacted Debris (BN510.1)
	MD	801	Rags, Paper, Wood, etc.
	MD	802	Dry Box Gloves & O-Rings
	MD	803	Metal, Equipment, Pipe, Valves, etc.
	MD	804	Plastic, Tygon®, Mani-Boots, etc.
	MD	805	Asbestos Filters
	MD	810	Glass, Flasks, Sample Vials, Etc.
	MD	813	Glass Filters and Fiberglass
	MD	814	Graphite Waste
	MD	824	Equipment Boxes, Non-combustible
	MD	825	Equipment Drums, Non-combustible
	MD	826	Equipment Boxes, Combustible
	MD	827	Equipment Drums, Combustible
	MD	838	<10 nCi/g Non-combustible
	MD	847	LSA <100 nCi/g Combustible
	MD	848	LSA <100 nCi/g Non-combustible
	RF	241	Americium Process Residue
	RF	372	Grit
	RF	374	Blacktop, Concrete, Dirt, and Sand
	RF	750	Pits 11 and 12 Debris
	RF	760	Pad 1 Cells 1 and 2 RF Debris
	RF	950	LSA Metal, Glass, etc.

Waste Type	Site	IDC	Description
	RF	960	Concrete, Asphalt, etc.
	RL	712	Hanford Plutonium Finishing Plant Debris
	RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
	RL	716	Hanford 231-Z Building Debris
INORGANIC NON-METAL	RF	060	Glass
	RF	440	Glass
	RF	441	Raschig Rings, Unleached
	RF	442	Raschig Rings, Leached
	RF	44A	WETP Bin Program – Glass (IDCs 440 and 442)
	RF	368	Magnesium Oxide Crucibles
	RF	370	LECO Crucibles
	RF	371	Fire Brick
	RF	377	Coarse Fire Brick
	RF	391	Crucibles & Sand
	RF	392	Sand, Slag, and Crucible
LEAD/CADMIUM METAL	RF	488	Glovebox Parts w/Lead
UNCATEGORIZED METAL	RF	050	Metal Scrap
	RF	48A	WETP Bin Program – Metals (IDCs 480 and 481)
	RF	320	Heavy Non-special Source Metal
	RF	321	Lead
	RF	416	Zinc Magnesium Alloy Metals
	RF	480	Scrap Metal (Non SS)
	RF	481	Leached Metals (Non SS)

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form HWN Assignment Worksheet	AMWTP Form 1187 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

WSPF Number: BN510.1,R0

AK Source Document / Rev. Number : RPT-TRUW-83, Rev. 0

HWN	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X					X	✔
F002	X					X	✔
F003							✔
F004	X					X	✔
F005	X					X	✔
F006	X					X	✔
F007	X					X	✔
F009	X					X	✔
D004	X					X	✔
D005	X					X	✔
D006	X					X	✔
D007	X					X	✔
D008	X					X	✔
D009	X					X	✔
D010	X					X	✔
D011	X					X	✔
D022	X					X	✔
D027	X					X	✔
D028	X					X	✔
D029	X					X	✔
D030	X					X	✔
D034	X					X	✔
D037	X					X	✔
D043	X					X	✔

AK Expert: Tim Venneman Date: 9-2-10
Print/Sign

Site Project Manager: Steve Capista Date: 9.21.10
Print/Sign

Waste Stream or Waste Type Description: Supercompacted debris

Waste Stream or IDC Number: BN510.1

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C018A, C048A, C053A, C067A, C072A, C074A, C082A, C087A, C102A, C155A, C162A, C170A, C171A, C182A, C184A, C185A, C254A, C289A, C295A, C296A, C299A, C320A, C322A, C344A, C351A, C358A, C375A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C478A, C486A, C488A, C490A, C491A, C522A, C533A, C789S, C869S, C872A, C884A, C885A, C889A, C891A, C892A, C897A, C904A, C913A, C916A, C920A, C921A, C924A, C928A, C932A, C934A, D007A, D023A, D029A, D030A, D061A, D085A, P001A, P006A, P012A, P014A, P016A, P024A, P035A, P037A, P038A, P049A, P052A, P058A, P060A, P061A, P062A, P067A, P076A, P079A, P082A, P083A, P090A, P097A, P098A, P1000A, P1001A, P1002A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1016A, P1017A, P1019A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1029A, P1031A, P1033A, P1034A, P1036A, P1037A, P1039A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1056A, P1058A, P109A, P113A, P117A, P127A, P153A, P164A, P167A, P198A, P221A, P222A, P223A, P224A, P225A, P319A, P328A, P333A, P335A, P336A, P345A, P347A, P350A, P351A, P352A, P357A, P368A, P369A, P370A, P380A, P381A, P385A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P507A, P509A,

Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P525A, P526A, P527A, P540A, P544A, P545A, P546A, P550A, P551A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P733S, P736A, P744A, P746A, P816A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P928A, P932A, P936A, P941A, P950A, P953A, P954A, P957A, P964A, P965A, P966A, P969A, P972A, P974A, P975A, P976A, P977A, P978A, P979A, P981A, P982A, P983A, P984A, P985A, P986A, P987A, P988A, P990A, P991A, P993A, P995A, P996A, P997A, P998A, P999A, U013A, U032A, U043A, U047A, U052A, U056A, U059A, U069A, U077A, U126A, U139A, U141A, U145A, U146A, U148A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U198A, U202A, U203A, U204A, U207A, U244A, U248A, U256A, U261A, U267A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste stream volume and time period of generation.	WS2	C048A, C072A, C118A, C254A, C289A, C294A, C295A, C296A, C322A, C348A, C359A, C372A, C375A, C379A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C499A, C507A, C522A, C526A, C534A, C535A, C542S, C543S, C620A, C850A, C851A, C855A, C856A, C861A, C869S, C887A, C889A, C891A, C892A, C895A, C904A, C912A, C913A, C915A, C916A, C919A, C920A, C924A, C931A, C934A, D029A, D030A, D040A, D061A, P024A, P052A, P061A, P090A, P1000A, P1004A, P1007A, P1008A, P1009A, P1012A, P1014A, P1015A, P1016A, P1020A, P1022A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1031A, P1033A, P1034A, P1036A, P1039A, P1046A, P1051A, P1057A, P1058A, P113A, P127A, P153A, P184A, P205A, P221A, P222A, P223A, P224A, P225A, P237A, P246A, P318A, P319A, P328A, P333A, P354A, P357A, P364A, P365A, P368A, P380A, P400A, P417A, P418A, P442A, P443A, P461A, P462A, P469A, P482A, P486A, P487A, P498A, P499A, P501A, P505A, P506A, P507A, P509A, P511A, P517A, P519A, P522A, P523A, P524A, P567A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P671S, P717A, P743A, P744A, P746A, P826A, P838A, P853A, P854A, P855A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P954A, P958A, P960A, P963A, P964A, P972A, P976A, P978A, P981A, P983A, P985A, P986A, P990A, P997A, P998A, P999A, U022A, U059A, U069A, U122A, U126A, U127A, U139A, U141A, U142A, U146A, U148A, U154A, U159A, U166A, U187A, U197A, U198A, U202A, U207A, U218A, U235S, U248A, U249A, U255A, U257A, U258A, U261A, U264A, U266A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C005A, C008A, C014A, C018A, C050A, C053A, C061A, C082A, C087A, C100A, C171A, C175A, C180A, C181A, C184A, C185A, C254A, C257A, C258A, C260A, C444A, C458A, C466A, C473A, C481A, C872A, C879A, C880A, C888A, C894A, C897A, C904A, C912A, C925A, C926A, C934A, D037A, D080A, P001A, P012A, P014A, P015A, P016A, P024A, P035A, P037A, P038A, P039A, P049A, P052A, P053A, P055A, P056A, P058A, P059A, P060A, P061A, P062A, P067A, P070A, P076A, P078A, P079A, P081A, P082A, P083A, P092A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1014A, P1015A, P1018A, P1019A, P1022A, P1023A, P1024A, P1025A, P1026A, P1028A, P1029A, P103A, P1047A, P104A, P1050A, P1051A, P1052A, P1056A, P1057A, P1058A, P106A, P109A, P110A, P114A, P117A, P124A, P163A, P164A, P167A, P175A, P205A, P221A, P222A, P223A, P224A, P225A, P282A, P319A, P335A, P341A, P345A, P347A, P352A, P357A, P368A, P369A, P380A, P400A, P403A, P404A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P482A, P483A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P504A, P505A, P507A, P511A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P526A, P527A, P546A, P558A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P743A, P744A, P746A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P904A, P913A, P922A, P936A, P941A, P944A, P947A, P948A, P949A, P950A, P955A, P957A, P958A, P959A, P962A, P964A, P970A, P972A, P973A, P974A, P975A, P977A, P979A, P980A, P982A, P985A, P986A, P987A, P988A, P989A, P990A, P993A, P995A, P996A, P997A, P998A, P999A, U011A, U015A, U022A, U047A, U052A, U056A, U073A, U077A, U086A, U091A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U244A, U256A, U265A, U266A

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C027A, C041A, C050A, C051A, C060A, C063A, C064A, C070A, C072A, C076A, C078A, C081A, C083A, C084A, C086A, C090A, C091A, C093A, C094A, C095A, C098A, C099A, C100A, C101A, C102A, C105A, C107A, C119A, C123A, C155A, C162A, C178A, C179A, C181A, C184A, C186A, C187A, C198A, C205A, C245A, C246A, C251A, C253A, C255A, C257A, C258A, C259A, C260A, C261A, C262A, C263A, C269A, C322A, C342A, C344A, C349A, C350A, C354A, C356A, C359A, C373A, C375A, C385A, C409A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C486A, C488A, C489A, C490A, C493A, C496A, C505A, C533A, C546S, C871A, C872A, C889A, C890A, C891A, C892A, C898A, C900A, C901A, C902A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C925A, C926A, C927A, C937A, C940A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D061A, D070A, D076A, D082A, D083A, D084A, P002A, P006A, P015A, P016A, P021A, P024A, P033A, P035A, P037A, P038A, P052A, P053A, P056A, P060A, P061A, P062A, P067A, P068A, P076A, P078A, P079A, P081A, P083A, P091A, P092A, P094A, P098A, P1003A, P1004A, P1005A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1034A, P1036A, P1039A, P1047A, P1048A, P1052A, P106A, P108A, P109A, P113A, P114A, P151A, P163A, P164A, P205A, P207A, P214A, P215A, P221A, P222A, P223A, P224A, P225A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P319A, P324A, P328A, P334A, P335A, P336A, P337A, P341A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P359A, P365A, P368A, P369A, P380A, P393A, P400A, P401A, P403A, P404A, P405A, P406A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P457A, P458A, P461A, P462A, P463A, P469A, P475A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P497A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P509A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P527A, P532A, P534A, P539A, P545A, P546A, P552A, P591A, P592A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P657S, P660A, P667A, P717A,

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	P744A, P752A, P808S, P853A, P854A, P855A, P857A, P867S, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P896A, P900A, P902A, P903A, P904A, P905A, P908A, P913A, P914A, P915A, P916A, P917A, P918A, P919A, P920A, P921A, P922A, P925A, P926A, P930A, P931A, P935A, P937A, P947A, P948A, P949A, P950A, P951A, P958A, P960A, P961A, P963A, P965A, P972A, P973A, P974A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P989A, P990A, P991A, P993A, P994A, P995A, P998A, U005A, U013A, U019A, U020A, U022A, U030A, U032A, U043A, U047A, U062A, U086A, U097A, U113A, U126A, U132A, U140A, U141A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U192A, U195A, U197A, U202A, U204A, U205A, U208A, U218A, U244A, U247A, U248A, U251A, U252A, U253A, U255A, U257A, U263A, U265A, U266A

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C005A, C007A, C015A, C018A, C022A, C051A, C063A, C066A, C089A, C090A, C103A, C104A, C120A, C184A, C186A, C187A, C204A, C254A, C255A, C257A, C258A, C280A, C289A, C293A, C294A, C295A, C298A, C299A, C313A, C315A, C316A, C319A, C323A, C330A, C332A, C335A, C337A, C348A, C349A, C350A, C370A, C373A, C375A, C376A, C378A, C379A, C383A, C409A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C478A, C479A, C481A, C485A, C486A, C489A, C490A, C491A, C496A, C499A, C504A, C505A, C515A, C520A, C521A, C526A, C530A, C531A, C533A, C534A, C546S, C550S, C566S, C789S, C834A, C840S, C841S, C851A, C869S, C871A, C872A, C873A, C880A, C883A, C885A, C886A, C891A, C892A, C893A, C895A, C896A, C897A, C904A, C905A, C907A, C911A, C912A, C913A, C915A, C916A, C917A, C918A, C921A, C924A, C929A, D022A, D042A, D049A, D061A, D079A, D085A, P001A, P006A, P008A, P009A, P012A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P032A, P035A, P037A, P038A, P039A, P043A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P063A, P064A, P076A, P083A, P090A, P094A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1010A, P1011A, P1013A, P1014A, P1016A, P1017A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1033A, P1036A, P1039A, P1040A, P1041A, P1046A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1055A, P1056A, P113A, P116A, P117A, P141A, P154A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P282A, P283A, P305A, P306A, P316A, P319A, P328A, P333A, P334A, P335A, P336A, P342A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P365A, P368A, P370A, P372A, P380A, P381A, P384A, P385A, P393A, P399A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P465A, P469A, P475A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A,

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	P636A, P637A, P638A, P649A, P650A, P654S, P657S, P660A, P667A, P670A, P717A, P736A, P744A, P746A, P752A, P816A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P906A, P911A, P914A, P915A, P916A, P917A, P918A, P919A, P921A, P922A, P931A, P947A, P948A, P957A, P963A, P964A, P968A, P969A, P970A, P971A, P972A, P973A, P974A, P977A, P978A, P979A, P980A, P981A, P982A, P983A, P985A, P986A, P989A, P991A, P993A, P995A, P996A, P997A, U004A, U009A, U022A, U028A, U097A, U113A, U126A, U139A, U141A, U145A, U146A, U153A, U154A, U156A, U157A, U159A, U166A, U175A, U176A, U184A, U187A, U189A, U190A, U191A, U192A, U195A, U197A, U198A, U204A, U205A, U206A, U207A, U208A, U218A, U219S, U230A, U243A, U244A, U246A, U247A, U248A, U250A, U252A, U255A, U263A, U266A

Generator site TRU waste stream (WS) - specific information		
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C021A, C048A, C060A, C064A, C070A, C076A, C078A, C079A, C081A, C083A, C084A, C091A, C093A, C094A, C095A, C096A, C099A, C101A, C102A, C107A, C117A, C119A, C123A, C192A, C199A, C205A, C245A, C253A, C255A, C257A, C258A, C260A, C261A, C262A, C263A, C299A, C313A, C320A, C354A, C458A, C481A, C493A, C509A, C566S, C607A, C840S, C841S, C883A, C889A, C890A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C921A, C924A, C926A, C927A, C932A, C938A, C939A, C940A, D005A, D008A, D009A, D013A, D014A, D015A, D016A, D017A, D018A, D020A, D024A, D025A, D027A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D064A, D070A, D076A, D077A, D078A, D081A, D082A, P009A, P012A, P013A, P015A, P016A, P017A, P021A, P022A, P023A, P035A, P038A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P062A, P067A, P079A, P080A, P094A, P1003A, P1012A, P1013A, P1015A, P1016A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1039A, P1045A, P1047A, P1052A, P108A, P114A, P151A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P239A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P316A, P324A, P334A, P335A, P336A, P337A, P351A, P356A, P357A, P365A, P368A, P380A, P393A, P400A, P417A, P418A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P486A, P487A, P489A, P490A, P491A, P492A, P503A, P505A, P506A, P509A, P512A, P517A, P519A, P520A, P527A, P532A, P539A, P592A, P594A, P599A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P717A, P733S, P743A, P744A, P756A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P892A, P893A, P894A, P914A, P915A, P916A, P917A, P918A, P924A, P930A, P931A, P948A, P949A, P950A, P957A, P958A, P959A, P964A, P972A, P977A, P978A, P979A, P980A, P981A, P983A, P984A, P986A, P994A, U005A, U011A, U015A, U020A, U022A, U030A, U046A, U059A, U060A, U062A, U082A, U085A, U086A, U087A, U088A, U089A, U090A, U097A, U102A, U103A, U113A, U142A, U184A, U185A, U190A, U192A, U199A, U205A, U206A, U208A, U218A, U244A, U249A, U254A, U255A, U263A, U265A

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C072A, C130A, C134A, C137A, C174A, C180A, C184A, C210A, C221A, C255A, C256A, C281A, C285A, C291A, C338A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C373A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C453A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C489A, C490A, C491A, C494A, C505A, C506A, C508A, C517A, C523A, C551A, C552S, C566S, C840S, C841S, C867S, C871A, C874A, C884A, C889A, C891A, C892A, C893A, C894A, C895A, C896A, C899A, C903A, C905A, C910A, C911A, C912A, C913A, C915A, C917A, C919A, C920A, C921A, C922A, C923A, C925A, C932A, C938A, D022A, D051A, D079A, P016A, P024A, P035A, P038A, P053A, P056A, P061A, P062A, P067A, P076A, P078A, P079A, P081A, P083A, P090A, P092A, P094A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1006A, P1007A, P1008A, P1009A, P1010A, P1012A, P1013A, P1014A, P1015A, P1018A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1029A, P1033A, P1034A, P1035A, P1036A, P1040A, P1046A, P1047A, P1048A, P104A, P1051A, P1052A, P1054A, P1057A, P1058A, P115A, P117A, P155A, P156A, P163A, P164A, P189A, P190A, P194A, P195A, P198A, P221A, P222A, P223A, P224A, P227A, P230A, P231A, P232A, P233A, P234A, P235A, P236A, P240A, P282A, P283A, P294A, P295A, P305A, P306A, P307A, P319A, P322A, P348A, P349A, P353A, P354A, P355A, P357A, P368A, P380A, P381A, P385A, P398A, P400A, P417A, P418A, P423A, P435S, P442A, P443A, P448A, P449A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P467A, P469A, P472A, P482A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P594A, P604A, P610A, P611A, P621A, P622A, P632A, P633A, P635A, P636A, P637A, P638A,

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	P649A, P650A, P660A, P743A, P744A, P745A, P759S, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P913A, P928A, P929A, P936A, P937A, P939A, P949A, P950A, P954A, P957A, P958A, P960A, P961A, P963A, P964A, P965A, P969A, P970A, P972A, P973A, P974A, P975A, P977A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P987A, P988A, P989A, P990A, P991A, P993A, P994A, P996A, P998A, P999A, U022A, U047A, U073A, U126A, U137A, U139A, U141A, U142A, U147A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U166A, U168A, U169A, U170A, U172A, U173A, U184A, U185A, U187A, U189A, U190A, U192A, U195A, U198A, U199A, U202A, U203A, U205A, U208A, U235S, U243A, U244A, U247A, U248A, U249A, U250A, U251A, U252A, U253A, U255A, U257A, U259A, U260A, U262A, U263A, U264A, U265A, U266A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C198A, C199A, C214A, C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C511A, C516A, C530A, C531A, C532A, C568S, C613S, C614S, C615S, C616S, D035A, D070A, P001A, P012A, P013A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P053A, P063A, P215A, P221A, P222A, P223A, P224A, P225A, P237A, P319A, P356A, P357A, P358A, P368A, P370A, P372A, P385A, P399A, P400A, P403A, P405A, P412A, P417A, P418A, P442A, P443A, P461A, P462A, P465A, P486A, P487A, P492A, P525A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P733S, P744A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, U113A, U126A

<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

All required AK information has been compiled and tracking numbers assigned.

AK Expert: William J. Erhardt — Print/Sign — Date: 9-21-10

Site Project Manager: Steve Carpenter — Print/Sign — Date: 9.21.10

LDR NOTIFICATION- IDC BN510.1

WASTE STREAM BN510.1

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043, F001, F002, F004, F005, F006, F007, and F009 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	D022	September 19, 1996
	D027	September 19, 1996
	D028	September 19, 1996
	D029	September 19, 1996
	D030	September 19, 1996
	D034	September 19, 1996
	D037	September 19, 1996
	D043	September 19, 1996
	F001	Nov 8, 1986
	F002	Nov 8, 1986
	F004	Nov 8, 1986
	F005	Nov 8, 1986
	F006	July 8, 1989
	F007	July 8, 1989
	F009	July 8, 1989

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

September 9, 2010 C-2010-0320

Mr. Rick Chavez
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Submittal of Waste Stream Profile BN510.1 - ET-054-10

Dear Mr. Chavez:

This letter accompanies the Waste Stream Profile BN510.1, *Supercompacted Debris Waste*, and RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*, for your review and approval. We believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Eric Schweinsberg at 208-557-6425.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

TEV/ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
Marc Italiano, CBFO
James M. Jackson, BBWI
Talley W. Jenkins, Jr., DOE-ID
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Wesley A. Skaar, BBWI
Matthew E. Storms, BBWI
J. R. Stroblel, CBFO
Jerry L. Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

September 10, 2010 C-2010-0325

Mr. Rick Chavez
Washington Regulatory & Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC07-99ID13727 – Re-Submittal of Waste Stream Profile BN510.1 - ET-056-10

Dear Mr. Chavez:

This letter accompanies the Waste Stream Profile BN510.1, *Supercompacted Debris Waste*, and RPT-TRUW-83, *Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)*, for your review and approval. Your comments have been resolved and we believe it is compliant with the Waste Analysis Plan.

If you have any questions feel free to contact me at 208-557-6454 or Mr. Steve Carpenter at 208-680-1127.

Sincerely,

Enrique Torres, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

ET/at

cc: George T. Byram, BBWI
Stephen P. Carpenter, BBWI
Thomas F. Fallon, BBWI
Courtland Fesmire, CBFO
Koreen Guillermo, WRES
James M. Jackson, BBWI
Talley W. Jenkins, Jr., DOE-ID
William C. Lattin, DOE-ID
Eric P. Schweinsberg, BBWI
Wesley A. Skaar, BBWI
Matthew E. Storms, BBWI
J. R. Stroblel, CBFO
Jerry L. Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

AK6

B-2012-0203
RECORD
JMC 10/02/12

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P646A	**2. Revision:** 8

3. Category

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. Title/Description Information: BN836 Cemented Sludge Waste Stream Profile Package, April 28, 2006
Change Notice #1, January 24, 2007 Change Notice #2, April 2, 2008

Document Number: N/A

Revision: N/A

Author: AMWTP
CBFO

Date: 04/28/2006

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM2, WM3, WM5, WM6, WM7	MD	all	The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	MD-836	all	The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.

9. Document Summary:

The package includes characterization information for waste stream profile BN836 (cemented sludge from Mound) submitted to and approved by CBFO. The AK summary provides a summary of the information that addresses all of the waste stream (WS) AK elements as well as the waste management (WM) program AK elements associated with facility mission, operations description, type and quantity of TRU waste generated, correlation of waste streams generated from the same process, and defense determination. The package includes references to the documents that address the remaining WM elements.
This revision includes the following documents:

- CBFO Approval letter of CN #2 for WSPF BN836, April 2, 2008
- Change Notice # 2 for WSPF BN836, March 27, 2008
- CBFO Approval letter of CN #1 for WSPF BN836, January 24, 2007
- Change Notice # 1 for WSPF BN836, January 24, 2007
- CBFO Approval letter for WSPF BN836, April 28, 2006
- Waste Stream Profile Form-1195, DQO Form-1597, and CIS Form-1598 for BN836, Rev. 0, April 28, 2006
- Acceptable Knowledge Summary, RPT-TRUW-63, Rev. 6, June 27, 2012
- Waste Stream Profile Form HWN Assignment Worksheet Form-1187 for BN836, April 27, 2006
- TRU Waste Management AK Documentation Checklist Form-1067 for BN836, July 22, 2009
- LDR Notification – MD836, Waste Stream BN836
- AMWTP transmittal letter WSP BN836, JDM 023-2006, April 25, 2006
- E-mail correspondence from CBFO to AMWTP document services. CBFO approval RPT-TRUW-63, Revision 5A, July 14, 2009

P646A Revision 8 updates the record to include revised AK Summary Report RPT-TRUW-63, Rev. 6, June 27, 2012

10. Source Document Data Limitations (if any):

The characterization only applies to containers certified for disposal at WIPP.

11. AK Expert:	Julie Collins	Julie Collins	10/2/2012	
	Print	Sign	Date	

P646A Rev 8

Washington
TRU Solutions LLC

WRES:08:145
UFC:5822.00

April 2, 2008

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #2) CEMENTED SLUDGE (BN836, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has approved the Change Notice Number 2 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN836, Rev. 0, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

W. M. Wierzbicki, Manager
Regulatory Compliance

KSG:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (575) 234-7200 • Fax: (575) 234-7063

Update for WIPP Operating Record (Change Notice # 2)

Cemented Sludge (BN836, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN836, Revision 0. This waste stream is Cemented Sludge and was approved by DOE/CBFO on April 28, 2006. Change Notice #1 was approved January 24, 2007.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Add additional audit approval dates January 23, 2007 and January 18, 2008.

2. **WSPF Form-1195, Title, version, number, and date of documents used for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 14, 12/27/07.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 10, 10/25/07.

   Delete the following procedure:

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Add the following procedure:

   CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), CCP-PO-003, Rev. 10, 11/16/06

3. **AK Summary, Cemented Sludge (RPT-TRUW-63), Report Number**

   Revise report number from AMWTP-RPT-TRUW-63 to RPT-TRUW-63.

4. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information**

   Revise section as follows:

   WIPP Identification Number IN-W179.158 [8]

5. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.5, Prohibited Items**

   Add the following bullets to the first paragraph:

   - Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Plan, unless specifically approved through a Class 3 permit modification. [60]

- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as describe in Attachment B7 of MP-TRUW-8.2, Quality Assurance Project Plan. [60]

Revised first sentence of last paragraph as follows:

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities.

6. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 1.7, Radionuclides**

Revise last sentence to first paragraph as follows:

The cemented sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [2, 27, 28, 42, 54, 61]

7. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 2.2, Flammability Considerations**

Revise last sentence as follows:

Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [57]

8. **AK Summary, Cemented Sludge (RPT-TRUW-63), Section 3.0, References**

Revise existing references as follows:

5. DOE/WIPP 02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U.S. Department of Energy, Carlsbad Field Office, October 29, 2007

7. DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON), February 2008

8. DOE/TRU-2006-3344, Transuranic Waste Baseline Inventory Report-2004, U. S. Department of Energy, Carlsbad Field Office

9. DOE/LLW-217, DOE Waste Treatability Group Guidance, T. D. Kirkpatrick, Prepared for DOE Idaho Operations Office, January 1995

10. NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Current Revision

Update for WIPP Operating Record (Change Notice # 2)

Cemented Sludge (BN836, Rev. 0)

Add the following references:

59. CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [P672A]

60. MP-TRUW-8.2, *Quality Assurance Project Plan*

61. MP- TRUW-8.1, Certification Plan for INL Transuranic Waste

Reason/Justification for the Changes

The audit report approval dates were updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions and to identify new TRAMPAC procedure required to support change in shipping contractor at AMWTP.

The AK Summary report number was changed to reflect changes in document control protocols.

AK Summary Section 1.2.6, Transuranic Waste Baseline Inventory Report (TWBIR) Information, was changed to update the TWBIR number to reflect the current TWBIR.

AK Summary Section 1.5, Prohibited Items was changed to add two prohibited items to reflect the requirements of the updated Quality Assurance Project Plan, MP-TRUW-8.2, Section B-1c.

AK Summary Section 1.7, Radionuclides was updated to clarify statement concerning compliance with requirement in Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Section 3.1.6.

AK Summary Section 2.2, Flammability Consideration was updated to reflect new TRAMPAC procedure.

AK Summary Section 3, References were updated or added to identify references that support the information revised or updated in the AK Summary.

Update for the WIPP Operating Record (BN836) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Eric P. Schweinsberg, SPM 3/27/08

Signature of Site Project Manager | Printed Name and Title | Date

Washington
TRU Solutions LLC

WRES:07:023
UFC:5822.00

January 24, 2007

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: UPDATE FOR WIPP OPERATING RECORD (CHANGE NOTICE #1) CEMENTED SLUDGE (BN836, REV. 0)

Dear Mr. Provencher:

Washington TRU Solutions, on behalf of the Permittees, has approved the Change Notice Number 1 for Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN836, Rev. 0, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

We therefore approve the Change Notice as submitted. Using the methods approved at AMWTP, AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions on this matter, please contact me at (505) 234-7545.

Sincerely,

Steven C Kahn

for W. M. Wierzbicki, Manager
Regulatory Compliance

WMW:ks

Enclosure

P.O. Box 2078 • Carlsbad, New Mexico USA 88221-2078
Phone: (505) 234-7200 • Fax: (505) 234-7083

cc. F. Marcinowski, DOE HQ ED
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J. Ziemianski, DOE-ID ED
T. Jenkins, DOE-ID ED
J. Wells, DOE-ID ED
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S. Carpenter, AMWTP ED
R. Chatfield, WTS ED
D. Hofer, WTS ED
G. Johnson, WTS ED
D. Kump, WTS ED
D. Speed, WTS ED
D. Standiford, WTS ED
M. Strum, WTS ED
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Update for WIPP Operating Record (Change Notice # 1)

Cemented Sludge (BN836, Rev. 0)

Please add the following information to the WIPP Operating Record for Waste Stream Profile Form (WSPF) BN836, Revision 0. This waste stream is Cemented Sludge and was approved by DOE/CBFO on April 28, 2006.

This WSPF is being revised. The WSPF components are bolded. The updates are:

1. **WSPF Form-1195, Date of audit report approval by NMED**

   Revise the audit approval dates to the following: 12/23/03, 4/1/05, and 12/9/05.

2. **WSPF Form-1195, Title, version, number, and date of documents use for WAP Certification**

   Update the following procedures:

   Certification Plan for INL Transuranic Waste, MP-TRUW-8.1, Rev. 12, 1/24/07.

   Contact-Handled Transuranic Waste Authorized Methods for Payload Control, MP-TRUW-8.3, Rev. 6, 7/01/06.

   Quality Assurance Project Plan, MP-TRUW-8.2, Rev. 8, 1/24/07.

3. **WSPF Form-1195, Required Waste Stream Information, new item entitled Waste material parameter weight estimates per unit of waste**

   Add the new item. See Section 1.4.6, Table 1.3 of the AK summary. This is listed as Item 5 in the Change Notice.

4. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), TABLES**

   Revise Table of Contents per the following:

   Delete Table 1-3 Estimated percentage of various materials in BN836

   Change Table 1-4 Waste material parameters for cemented sludge waste (BN836) to Table 1-3 Estimated waste material parameter weights per unit of waste for cemented sludge waste (BN836).

5. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 1.4, Process Description**

   Section 1.4.5 Material Inputs, delete last paragraph and delete Table 1-3, Estimated percentages of various materials in BN836.

   Delete Section 1.4.6 and Table 1-4.

   Add Section 1.4.6 Waste Material Parameters:

Update for WIPP Operating Record (Change Notice # 1)

Cemented Sludge (BN836, Rev. 0)

1.4.6 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN836, waste material parameter data from 100% of the completed RTR and VE of Mound cemented sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 69% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTP's comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate waste material parameter weights (by percent) for Mound cemented sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documents and are summarized in Table 1-3. [34, 58]

Table 1-3. Estimated waste material parameter weights per unit of waste for cemented sludge waste (BN836).

Waste Material Parameters	Weight per Unit Waste by Percent
Inorganic Matrix	100
Other Inorganic Materials	<1
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	<1
Iron-based Metals	<1
Other metals	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic sludge. [21]

6. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 2.0, Shipping Considerations**

Section 2.2 Flammability Considerations, change to read as follows:

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH TRAMPAC) requirements. As specified in the CH TRAMPAC, a determination of compliance with the flammable gas limits will be performed for volatile organic compounds (VOCs), hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH TRAMPAC. At a minimum, the headspace gas analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with headspace gas results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable

CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with MP TRUW 8.3, Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH TRAMPAC).

7. **AK Summary, Cemented Sludge (AMWTP-RPT-TRUW-63), Section 3.0, References**

Update reference number 34 to read Memorandum to File from Tim Venneman, "Waste Material Parameter Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste." TV-001-07, January 19, 2007 (C534A)

Add the following as reference number 58: MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge, Rev. 15, January 2007.

Reason/Justification for the Change

The audit report approval dates were revised and updated to reflect the most recent approval date.

The documents used for WAP certification were revised to reflect the most recent revisions.

Table 1-3 and the last paragraph have been deleted from section 1.4.5 because cellulosic, plastic, and rubber information was incorporated into Section 1.4.6, Waste Material Parameters.

Waste material parameter weight estimates per unit of waste and method for determining those estimates have been incorporated into Section 1.4.5 to meet the revised WIPP Hazardous Waste Facility Permit requirements as described in the Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-12b.

Flammability consideration has been changed to clarify the method used for determining flammability as described in Quality Assurance Project Plan, MP-TRUW-8.2, Section B3-11a.

Update for the WIPP Operating Record (BN836) certification:
I hereby certify that I have reviewed this Update for WIPP Operating Record, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature of Site Project Manager	Printed Name and Title	Date
Eric P. Schweinsberg	Eric P. Schweinsberg, SPM	1/24/07

Washington
TRU Solutions LLC

WRES:06:036
UFC:5822.00

April 28, 2006

Mr. Richard Provencher, Deputy Manager
U.S. Department of Energy
Idaho Clean-up Project
Idaho Operations Office (NE.ID)
1955 Fremont Avenue
Idaho Falls, ID 83401-1222

Subject: TRANSMITTAL OF APPROVED ADVANCED MIXED WASTE TREATMENT PROJECT WASTE STREAM PROFILE FORM NUMBER BN836, CEMENTED SLUDGE

Dear Mr. Provencher:

Washington TRU Solutions LLC, on behalf of the Permittees, has evaluated the Advanced Mixed Waste Treatment Project (AMWTP) Waste Stream Profile Form (WSPF) BN836, Cemented Sludge. We have concluded that the WSPF is complete and that the waste stream determination was made in accordance with applicable procedures and guidance.

The Permittees therefore approve the WSPF as submitted. Using the methods approved at AMWTP, the AMWTP may enter the data into the certification and shipping modules of the WIPP Waste Information System.

If you have any questions, please contact me at (505) 234-7545 or (505) 706-0055.

Sincerely,

D. T. Bignell, Manager
Regulatory Compliance

DTB:rdr

P.O. Box 3078 • Carlsbad, New Mexico USA 88221-3078
Phone: (505) 234-7200 • Fax: (505) 234-7061

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AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form	AMWTP Form-1195 Rev. 3 Effective Date: 1/26/06 MP-TRUW-8.14 Page 1 of 3

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: BNEJ6, Rev. 0

Generator site name: Advanced Mixed Waste Treatment Project

Generator site EPA ID: ID4890008952

Technical contact: Eric Schweinsberg

Technical contact phone number: (208) 557-6425

Date of Audit report approval by NMED: 12/23/03, 7/03/04, 10/25/05

Title, version number, and date of documents used for WAP certification:

Certification Plan for INEEL Contact-Handled (CH-TRU) Transuranic Waste, MP-TRUW-8.1, Rev. 10, 1/3/06
Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), MP-TRUW-8.3, Rev. 5, 1/3/06
Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2, Rev. 5, 1/3/06

Did your facility generate this waste? ☐Yes ☒No *If no, provide the name and EPA ID of the original generator:* Mound, OH6890008984

Waste Stream Information[1]

WIPP ID: IN-W179

Summary Category Group: 83000

Waste Matrix Code Group: Solidified Inorganics

Waste Stream Name: Cemented Sludge

Description from the WTWBIR: This waste, generated at the Mound Plant, consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in Portland cement.

Defense TRU Waste: (Ref. 1) ☒Yes ☐No Check One: ☒CH ☐RH

Number of SWBs: 0 Number of Drums: 4,323 (55-gallon drums) Number of Canisters: 0

Batch Data report numbers supporting this waste stream characterization: See Characterization Information Summary, Table 5

List applicable EPA Hazardous Waste Codes:[3] D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, F005

Applicable TRUCON Content Codes: ID111/ID211

Acceptable Knowledge Information[1]

[For the following, enter the supporting documentation used (i.e., references and dates)]

Required Program Information

Map of site: See Reference List No. 1 (Appendix A) and No. 2

Facility mission description: See Reference List No. 1 (Section 3) and No. 3

Description of operations that generate waste: See Reference List No. 1 (Sections 3 and 5) and No. 9

Waste identification/categorization schemes: See Reference List Nos. 1 and 4

Types and quantities of waste generated: See Reference List No. 9

Correlation of waste streams generated from the same building and process, as appropriate: See Reference List Nos. 1 and 9

Waste certification procedures: See Reference List Nos. 7 and 8

Required Waste Stream Information

Area(s) and building(s) from which the waste stream was generated: See Reference List No. 1 (Sections 3 and 5) and No. 9

Waste stream volume and time period of generation: See Reference List No. 9

Waste generating process description for each building: See Reference List No. 1 (Sections 3 and 5) and No. 9

Process flow diagrams: See Reference List No. 1 (Figure 3-6)

Material inputs or other information identifying chemical/radionuclide content and physical waste form: See Reference List No. 9

Which Defense Activity generated the waste: (check one)

☐ Weapons activities including defense inertial confinement fusion
☐ Naval Reactors development
☐ Verification and control technology
☐ Defense research and development
☐ Defense nuclear waste and material by products management
☒ Defense nuclear material production
☐ Defense nuclear waste and materials security and safeguards and security investigations

AMWTP Advanced Mixed Waste Treatment Project	Waste Stream Profile Form	AMWTP Form-1195 Rev. 3 Effective Date: 1/26/06 MP-TRUW-8.14 Page 2 of 3

Supplemental Documentation

Process design documents: None
Standard operating procedures: See Reference List No. 1
Safety Analysis Reports: See Reference List No. 1
Waste packaging logs: None
Test plans/research project reports: See Reference List No. 1
Site databases: See Reference List No. 1
Information from site personnel: See Reference List No. 1
Standard industry documents: See Reference List No. 1
Previous analytical data: See Reference List No. 1
Material safety data sheets: See Reference List No. 1
Sampling and analysis data from comparable/surrogate Waste: See Reference List No. 1
Laboratory notebooks: None

Sampling and Analysis Information

For the following, when applicable, enter procedure title(s), number(s) and date(s)

Radiography: See Reference List No. 10
Visual Examination: See Reference List No. 11

Headspace Gas Analysis

VOCs: See Reference List Nos. 12 and 21
Flammable: See Reference List Nos. 12 and 21
Other gases (specify): N/A

Homogeneous Solids/Soils/Gravel Sample Analysis

Total metals: See Reference List Nos. 13, 14, 15, and 20
PCBs: N/A
VOCs: See Reference List Nos. 16 and 20
Nonhalogenated VOCs: See Reference List Nos. 17 and 20
Semi-VOCs: See Reference List Nos. 18, 19, and 20
Other (specify): N/A

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

R.B. Eschenbaum Jr. ES. R.B. Eschenbaum Alt. SPM 4/28/06

Signature of Site Project Manager — Printed Name and Title — Date

NOTE: (1) Use back of sheet or continuation sheets, if required.
(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.

Waste Stream Profile Continuation Sheet

Reference List

1. Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 4, March 2006.
2. Site Plan of the Advanced Mixed Waste Treatment Facility, DWG-5232-52-0101, Rev. 0, April 1999.
3. AMWTP TRU Waste Management Acceptable Knowledge Elements, AMWTP-RPT-TRUW-06, Rev. 6, April 2006.
4. AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6, March 2006.
5. Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, NM4890139088-TSDF, March 2006.
6. Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, U. S. Department of Energy, Carlsbad Field Office, Waste Isolation Pilot Plant, DOE/WIPP 02-3122, Rev. 4, December 2005.
7. Certification Plan for INEEL Contact-Handled Transuranic Waste, MP-TRUW-8.1, Rev. 10, January 2006.
8. TRU Waste Certification, MP-TRUW-8.5, Rev. 17, February 2006.
9. Acceptable Knowledge Summary for Cemented Sludge (BN836), AMWTP-RPT-TRUW-63, Rev. 0, April 2006.
10. Real-Time Radiography Operations (Drum), INST-OI-12, Rev. 25, February 2006.
11. Visual Examination Operating Procedures and Data Reporting, INST-OI-34, Rev. 15, March 2006.
12. Drum Vent/Headspace Gas Sample Operations, INST-OI-13, Rev. 21, March 2006.
13. Microwave Assisted Digestion of Homogeneous Solids, Soil and Gravel, ACMM-8909, Rev. 10, January 2006.
14. Determination of Mercury by CVAA for TRU Waste Characterization, ACMM-2810, Rev. 3, January 2005.
15. Determination of Metals by ICP-AES for TRU Waste Characterization, ACMM-2901, Rev. 3, January 2005.
16. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, ACMM-9260, Rev. 14, December 2005.
17. Determination of Nonhalogenated Volatile Organics by Gas Chromatography, ACMM-9441, Rev. 12, March 2006.
18. Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, ACMM-9270, Rev. 8, January 2005.
19. Sample Preparation for Semi-Volatile Organic Compounds and Polychlorinated Biphenyls, INEEL Analytical Laboratories Department, Analytical Chemistry Methods Manual, ACMM-9500, Rev. 11, December 2004.
20. RCRA Statistical Sampling, MP-TRUW-8.25, Rev. 12, January 2006.
21. HGAS Sampling and Analysis Operations, INST-OI-43, Rev. 12, September 2005.

Characterization Information Summary

Introduction

Advanced Mixed Waste Treatment Project (AMWTP) has compiled Acceptable Knowledge (AK) information for waste stream BN836 as required by the Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP) and the Contact-Handled Transuranic Waste Acceptance Criteria (CH-WAC).[5,6] To confirm AK, AMWTP has characterized BN836 waste using real-time radiography (RTR) or visual examination (VE), headspace gas sampling and analysis, solid sampling and analysis, and radioassay.

This Characterization Information Summary (CIS) presents analytical data from six containers for total solids analysis and 19 additional containers for headspace gas analysis. The headspace gas analytical data includes results from the six containers that were solid sampled and from 19 containers that were sampled for headspace gas only. These data meet the necessary requirements for confirmatory characterization. Headspace gas data from the 25 containers are presented in Tables 1A and 1B. Solid sampling data from six containers are presented in Tables 2, 3A, 3B, 4A, and 4B. Table 5 correlates container numbers to characterization data packages. Table 6 presents the RTR/VE summary of prohibited items and AK confirmation. Table 7 correlates the container number to the headspace gas and the solid sample numbers.

Solid sampling was performed on randomly selected containers obtained from BN836–Lot 1, Cemented Sludge from the Mound Plant. BN836–Lot 1 consists of 637 drums of mixed transuranic waste.

Data Results

The data in this CIS are obtained from the required ("n") samples from solid sampling and analysis, and headspace gas analysis from 25 containers. The data consist of analyte maximum and mean concentrations, standard deviation, and the 90% upper confidence level (UCL_{90}). The data are used to assign and/or confirm U.S. Environmental Protection Agency (EPA) hazardous waste numbers (HWNs) for the BN836 waste stream by comparing the UCL_{90} to the program-required quantitation limit (PRQL).

HWNs are applied to the waste stream even if headspace gas and solid sampling analytical results for the assigned compounds are less than the program required quantitation limit (PRQL) for those analytes identified by AK and detected in solid or headspace gas sampling. Barium is the only toxicity characteristic metal analyte with a UCL_{90} result above its associated RTL value. There were no volatile organic compounds (VOCs) with UCL_{90} values above the PRQL for either the headspace gas or solid sampling results. The AK indicates that there are no semi-volatile organic compounds (SVOCs) present in the waste, and there were no solid sampling results above the PRQL for SVOCs. The EPA HWN assignment for this waste stream includes:

- Toxicity characteristic metals –D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), D010 (selenium), and D011 (silver)

Characterization Information Summary

- Listed HWNs for organics – F001 and F002 (1,1,1-trichloroethane and trichloroethylene), F002 (tetrachloroethylene), and F005 (benzene and toluene)

Solid sampling and headspace gas results confirm AK that the above analytes are present in the waste stream. The HWN D005 is required to be applied based on the detection of barium at concentrations above the RTL. The HWNs D004, D006, D007, D008, D009, D010, D011, F001, F002, and F005 are conservatively applied based on the detection of corresponding analytes at concentrations less than the associated RTL/PRQL.

AMWTP Advanced Mixed Waste Treatment Project	Reconciliation with Data Quality Objectives	AMWTP Form-1397 Rev. 0 MP-TRUW-8.11 Effective Date: 12/06/04 Page 1 of 1

I certify by signature (below) that sufficient data have been collected to determine the following program-required waste parameters:

WSPFW BN836, Rev. 0 (Lot 1)

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	✓			
2. Have waste material parameter weights been established for each container in the lot?	✓			
3. Does each container of waste contain TRU radioactive waste?	✓			
4. Have mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments?	✓			
5. Has the potential flammability of TRU waste headspace gases been evaluated for the lot?	✓			Containers will be evaluated on an individual basis using headspace gas analysis and WWIS.
6. Have mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream (if applicable) lot been evaluated against the constituent hazardous waste number assignments?	✓			
7. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	✓			
8. Can the waste stream be classified as hazardous or nonhazardous at the 90-percent confidence level?	✓			
9. Have a sufficient number of waste containers been visually examined (as a QC check on radiography) to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent for the summary category group?	✓			
10. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	✓			
11. Have all TICs been appropriately identified and reported in accordance with the requirements of Section B3-1 for the lot?	✓			
12. Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in Sections B3-2 through B3-9 for the lot?	✓			
13. Have the PRQLs for all analyses been met for the lot?	✓			

Signature of Site Project Manager

P Oschenbaum
Printed Name

4/28/06
Date

AMWTP Advanced Mixed Waste Treatment Project	Characterization Information Summary Report	AMWTP Form-1590 Rev. 0 MP-TRUW-8.14 Effective Date: 11/30/04 Page 1 of 17

WSPF Number: BN836, Rev. 0 (Lot 1)

SQAO Lyle Ryman Date: 4/28/06
SQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM L Kochenbaum Date: 4/28/06
SPM signature indicates concurrence with all information presented in this report.

AMWTP	Characterization Information Summary Report	AMWTP Form-1590 Rev. 0 MP-TRUW-8.14 Effective Date: 11/30/04 Page 1 of 17

Characterization Information Summary

Characterization Description:

Drum selection and quantity of drums for Totals Analysis, Reduced Headspace Gas Sampling, and/or Newly Generated Soils/Gravel have been evaluated and meet the requirements established in MP-TRUW-8.25, *RCRA Statistical Sampling.* [20]

Y ☒ N ☐ NA ☐

L Kuchenbaum — 4/28/06

SPM Signature — Date

For "N" or "NA" provide rationale.

Table 1A. Headspace gas summary data. BN836 Lot 1

ANALYTE	Number of Samples	# Samples above MDL [a]	Trans-formation Used [c]	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	Upper 90 % confidence limit (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Code
1,1-Dichloroethane [e]	25	1	Natural log	3.83	0.28	0.82	0.50	2.30	10	N/A
1,1-Dichloroethylene	25	0	None	2.45	1.34	0.30	[b]	-	10	N/A
1,1,1-Trichloroethane [e]	25	14	Natural log	4.39	1.55	1.44	1.93	2.30	10	F001, F002 [d]
1,1,2-Trichloro-1,2,2-trifluoroethane	25	0	None	2.35	1.46	0.24	[b]	-	10	N/A
1,1,2,2-Tetrachloroethane	25	0	None	2.35	1.23	0.62	[b]	-	10	N/A
1,2-Dichloroethane	25	0	None	2.35	1.19	0.32	[b]	-	10	N/A
1,2,4-Trimethylbenzene [f]	25	0	None	2.35	1.14	0.62	[b]	-	10	N/A
1,3,5-Trimethylbenzene [f]	25	0	None	2.30	1.19	0.57	[b]	-	10	N/A
Acetone	25	0	None	25.50	11.90	5.52	[b]	-	100	N/A
Benzene [e]	25	1	Natural log	2.64	0.21	0.72	0.40	2.30	10	F005 [d]
Bromoform	25	0	None	2.00	1.20	0.53	[b]	-	10	N/A
Butanol	25	0	None	27.50	17.80	5.95	[b]	-	100	N/A
Carbon disulfide [f]	25	0	None	2.50	1.45	0.29	[b]	-	10	N/A
Carbon tetrachloride	25	0	None	2.45	1.27	0.31	[b]	-	10	N/A
Chlorobenzene	25	0	None	2.10	1.22	0.52	[b]	-	10	N/A
Chloroform	25	0	None	2.30	1.14	0.43	[b]	-	10	N/A
Chloromethane [g]	25	0	None	2.60	1.31	0.31	[b]	-	10	N/A
cis-1,2-Dichloroethylene	25	0	None	2.25	1.19	0.47	[b]	-	10	N/A
Cyclohexane [f]	25	0	None	2.20	1.16	0.51	[b]	-	10	N/A
Ethyl benzene	25	0	None	2.15	1.22	0.53	[b]	-	10	N/A
Ethyl ether	25	0	None	2.30	1.47	0.30	[b]	-	10	N/A
m&p-Xylene [e]	25	1	Natural log	5.01	0.25	1.09	0.54	2.30	10	N/A [h]
Methanol [e]	25	1	Natural log	3.60	3.19	0.33	3.27	4.61	100	N/A [h]
Methyl ethyl ketone	25	0	None	24.50	13.10	5.85	[b]	-	100	N/A
Methyl isobutyl ketone	25	0	None	19.50	14.58	4.70	[b]	-	100	N/A
Methylene chloride	25	0	None	2.30	1.23	0.50	[b]	-	10	N/A
o-Xylene	25	0	None	2.20	1.31	0.53	[b]	-	10	N/A
Tetrachloroethylene [g]	25	1	Natural log	1.36	0.11	0.46	0.23	2.30	10	F002 [d]
Toluene [g]	25	2	Natural log	2.83	0.32	0.76	0.52	2.30	10	F005 [d]
trans-1,2-Dichloroethylene [e]	25	1	Natural log	2.48	0.24	0.67	0.42	2.30	10	N/A
Trichloroethylene [e]	25	7	Natural log	2.83	0.57	0.83	0.78	2.30	10	F001, F002 [d]

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the MDL after dividing by 2. All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, standard deviation, UCL_{90}, and PRQL are presented as transformed values

d. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream because the analyte was detected in the headspace gas even though the UCL_{90} result for the constituent is less than the PRQL.

e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.[29]

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), 1,3,5-trimethylbenzene (CAS No. 108-67-8) and carbon disulfide (CAS No. 75-15-0) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP [reference Section 2.2 of the AK Summary for Cemented Sludge (BNB36)].[9]

g. Chloroacetone (CAS No. 74-87-3) is not a target analyte for this waste stream but will be reported because it has been added as a target compound for other waste streams at AMWTP.

h. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN F003 was not applied.

Did the Data verify the Acceptable Knowledge? Yes__X__ No_____

The detection of these analytes in the headspace gas confirms their presence in the waste (which were identified based on AK) and the EPA HWNs are being applied conservatively even though the UCL_{90} result for the constituents are less than the associated PRQL values.

If no, describe the basis for assigning the EPA Hazardous Waste Codes. N/A

Statistics performed by: George Byrne Date: 4/27/06

Signature

Table 1B. Headspace gas summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
2-Propanol, 2-methyl[a]	98.0	8	25	32.0%	25	32.0%

a. Although 2-propanol, 2-methyl (CAS No. 75-65-0) was detected in greater than 25% of the samples for this waste stream, it is not a 40 CFR 261, Appendix VIII listed analyte and will, therefore, not be added as a target analyte for this waste stream.

Did the Data verify the Acceptable Knowledge? Yes: X No: _____

If no, describe the basis for assigning the EPA Hazardous Waste Codes. N/A

Verification of % Detected Calculation: George Byrne Date: 4/27/06
Signature

Table 2. Metals summary data. BN836 Lot 1

ANALYTE	# Samples	# Samples above MDL [a]	Trans-formation Used [d]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed RTL	RTL [c] (mg/kg)	EPA Code
Arsenic [b]	6	6	Natural log	1.72	1.60	0.076	1.65	4.61	100	D004 [i]
Barium [b]	6	6	Natural log	8.67	8.04	0.330	8.23	7.60	2000	D005 [h]
Cadmium [b]	6	6	Natural log	2.08	0.517	1.11	1.19	3.00	20	D006 [i]
Chromium [b]	6	6	Natural log	4.11	3.82	0.195	3.94	4.61	100	D007 [i]
Lead [b]	6	6	Natural log	4.79	4.11	0.374	4.34	4.61	100	D008 [i]
Mercury [b]	6	6	Natural log	1.41	0.885	0.438	1.15	1.39	4	D009 [i]
Selenium	6	6	None	1.90	1.52	0.366	1.74	–	20	D010 [i]
Silver [b]	6	6	Natural log	1.19	0.704	0.327	0.902	4.61	100	D011 [i]
Antimony [b]	6	4	Natural log	1.41	0.097	1.03	0.718	4.61	100	N/A [f]
Beryllium [b]	6	6	Natural log	0.182	-0.400	0.303	-0.217	4.61	100	N/A [f, g]
Nickel [b]	6	6	Natural log	3.78	3.30	0.330	3.50	4.61	100	N/A [f]
Thallium [b]	6	6	Natural log	1.41	0.911	0.351	1.12	4.61	100	N/A [f]
Vanadium	6	6	None	44.0	24.8	16.1	34.5	–	100	N/A [f]
Zinc [b]	6	6	Natural log	5.39	5.08	0.196	5.20	4.61	100	N/A [f]

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. The maximum, mean, standard deviation (SD), UCL_{95}, and RTL are presented as transformed values.
c. To determine whether a HWN should be added, the UCL_{95} is compared against the appropriate limit. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the RTL. RTLs correspond to the analyte PRQL for analytes that are not characteristic hazardous waste constituents.
d. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.
f. There are no associated toxicity characteristic HWNs with these analytes.
g. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.
h. This analyte is identified based on AK. HWN D005 is applied to the waste stream because the UCL_{95} result for the constituent is above the RTL.
i. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{95} result for the constituent is not above the RTL.

Did the Data verify the Acceptable Knowledge? Yes X No

The detection of these analytes confirms their presence in the waste (which were identified based on AK) and the EPA HWNs are being applied conservatively for those constituents with UCL_{95} less than the RTL.

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

Statistics performed by: Tamara E Sellers Date: 4/28/06

Signature

Table 3A. Total VOC summary data. BN836 Lot 1

ANALYTE	# Samples	# Samples above MDL [a]	Transformation Used [e]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Transformed PRQL	PRQL [c] (mg/kg)	EPA Code
1,1-Dichloroethylene	6	0	None	0.185	0.178	0.005	[b]	–	10	N/A
Trans-1,2-dichloroethylene	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
1,1,1-Trichloroethane	6	0	None	0.090	0.089	0.002	[b]	–	10	F001, F002 [d]
1,1,2,2-Tetrachloroethane	6	0	None	0.185	0.178	0.005	[b]	–	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
1,1,2-Trichloroethane	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
1,2-Dichloroethane	6	0	None	0.185	0.178	0.005	[b]	–	10	N/A
Acetone	6	0	None	0.600	0.550	0.045	[b]	–	100	N/A
Benzene	6	0	None	0.185	0.178	0.005	[b]	–	10	F005 [d]
Bromoform	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Butanol	6	0	None	1.20	1.09	0.066	[b]	–	100	N/A
Carbon disulfide	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Carbon tetrachloride	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Chlorobenzene	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Chloroform	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Ethyl benzene	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Ethyl ether	6	0	None	0.600	0.550	0.045	[b]	–	100	N/A
Isobutanol	6	0	None	1.20	1.00	0.253	[b]	–	100	N/A
Methanol	6	4	None	6.30	2.78	2.21	4.11	–	100	N/A [f]
Methyl ethyl ketone	6	0	None	0.600	0.550	0.045	[b]	–	100	N/A
Methylene chloride	6	0	None	0.185	0.178	0.005	[b]	–	10	N/A
Pyridine	6	0	None	0.600	0.550	0.045	[b]	–	100	N/A
o-Xylene	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
m&p-Xylene	6	0	None	0.185	0.178	0.005	[b]	–	10	N/A
Tetrachloroethylene	6	0	None	0.185	0.178	0.005	[b]	–	10	F002 [d]
Toluene	6	0	None	0.090	0.089	0.002	[b]	–	10	F005 [d]
Trichloroethylene	6	0	None	0.090	0.089	0.002	[b]	–	10	F001, F002 [d]
Trichlorofluoromethane	6	0	None	0.090	0.089	0.002	[b]	–	10	N/A
Vinyl chloride	6	0	None	0.185	0.178	0.005	[b]	–	4	N/A

a. *When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.*
b. All measurements are below detection; therefore, the UCL_{95} is not calculated.
c. To determine whether a HWN should be added, the UCL_{95} is compared against the appropriate limit. For toxicity characteristic (TC) wastes, the TC limit expressed as the RTL is used if compounds do not have a PRQL in the permit. For listed wastes, the PRQL is used.
d. These analytes were identified by AK and detected in the headspace gas. The HWNs are conservatively applied to the waste stream even though the associated analytes were not detected in solid samples.
e. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.
f. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN F003 was not applied.

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Statistics performed by: Tamara D Holes Date: 4/28/06
Signature

Table 3B. Total VOC summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the Data verify the Acceptable Knowledge? Yes___X____ No_____

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Verification of % Detected Calculation: N/A (Signature) Date: _____

Table 4A. Total SVOC summary data. BN836 Lot 1

Analyte	# Samples	# Samples Above MDL [a]	Trans-formation Used [c]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA code
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	[b]	--	2.6	N/A
bis(2-Ethylhexyl) phthalate [d,e]	6	2	Natural log	-0.916	-1.93	0.606	-1.56	3.69	40	N/A
Fluoranthene [f]	6	1	None	0.460	0.160	0.147	0.249	--	40	N/A
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	[b]	--	2.6	N/A
Hexachloroethane	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.200	0.200	0.000	[b]	--	40	N/A
Nitrobenzene	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
Pentachlorophenol	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A
Phenol [g]	6	0	None	0.100	0.100	0.000	[b]	--	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurement are below detection; therefore, the UCL_{95} is not calculated.

c. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{95}, and PRQL.

d. The maximum, mean, standard deviation (SD), UCL_{95}, and RTL are presented as transformed values

e. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNBNW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate was detected in >25% of the samples and even though it is not a TIC, it will be added as a target analyte for the BN836 waste stream. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

f. Fluoranthene was detected as a TIC in BNBNW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

g. Phenol was detected as a TIC in BNBNW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Statistics performed by: Tamara L. Holmes Date: 4/28/06

Signature

Table 4B. Total SVOC summary data – tentatively identified compounds. BN836 Lot 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	# Containers in Lot	% Detected	# Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the Data verify the Acceptable Knowledge? Yes X No

If no, describe the basis for assigning the EPA Hazardous Waste Codes: N/A

Verification of % Detected Calculation: N/A Date: _____

Signature

Table 5. Correlation of container identification numbers to data package. BN836 Lot 1

Container Number	Headspace Gas Sampling Data Package	RTR Data Package	RA Data Package	Visual Examination Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10001015	HS206_00047	RTR06-00119	ASY06-00521	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10001175	HS505_00108	RTR05-06363	ASY04-00490	N/A	N/A	N/A
10002218	HS106_00040	RTR04-00237	ASY04-00620	N/A	N/A	N/A
10008841	HS106_00033	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10008842	HS406_00051	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10008843	HS406_00051	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10008846	HS206_00032	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10008847	HS406_00051	RTR06-00072	ASY06-00205	N/A	N/A	N/A
10008848	HS206_00036	RTR06-00072	ASY06-00196	N/A	N/A	N/A
10016469	HS205_00205	RTR05-06365	ASY05-11364	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10019189	HS406_00098	RTR06-00109	ASY06-00487	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10019228	HS406_00082	RTR06-00110	ASY06-00488	N/A	N/A	N/A
10039602	HS206_00029	RTR05-06399	ASY06-00022	N/A	N/A	N/A
10040145	HS106_00044	RTR05-06395	ASY05-11587	N/A	N/A	N/A
10040454	HS206_00036	RTR06-00079	ASY06-00261	N/A	N/A	N/A
10040884	HS106_00044	RTR05-06396	ASY05-11587	N/A	N/A	N/A
10042479	HS206_00032	RTR06-00072	ASY06-00197	N/A	N/A	N/A
10052726	HS406_00098	RTR05-06375	ASY05-11495	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10055339	HS106_00032	RTR05-06388	ASY06-00194	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10056273	HS206_00018	RTR05-06376	ASY05-11505	N/A	N/A	N/A
10056699	HS106_00031	RTR05-06390	ASY05-11564	N/A	N/A	N/A
10058505	HS106_00031	RTR06-00061	ASY06-00130	N/A	SSC06-00002	ALD06012S ALD06011V ALD06005N ALD06020M
10059091	HS406_00051	RTR06-00041	ASY06-00124	N/A	N/A	N/A
10061136	HS206_00018	RTR05-06381	ASY05-11526	N/A	N/A	N/A
10062890	HS206_00017	RTR05-06380	ASY05-11535	N/A	N/A	N/A

NOTE: For headspace gas sampling data packages, the HSO prefix represents use of the DVS system and the HSI prefix represents use of the HGAS system.

Table 6. RTR/VE summary of prohibited items and AK confirmation. BN836 Lot 1 [a]

Container Number	RTR Prohibited Items	Visual Examination Prohibited Items [c]	AK Confirmation [b]
10001015	None	N/A	Complete
10001175	None	N/A	Complete
10002218	None	N/A	Complete
10008841	None	N/A	Complete
10008842	None	N/A	Complete
10008843	None	N/A	Complete
10008846	None	N/A	Complete
10008847	None	N/A	Complete
10008848	None	N/A	Complete
10016469	None	N/A	Complete
10019189	None	N/A	Complete
10019228	None	N/A	Complete
10039602	None	N/A	Complete
10040145	None	N/A	Complete
10040454	None	N/A	Complete
10040884	None	N/A	Complete
10042479	None	N/A	Complete
10052726	None	N/A	Complete
10055339	None	N/A	Complete
10056273	None	N/A	Complete
10056699	None	N/A	Complete
10058505	None	N/A	Complete
10059091	None	N/A	Complete
10061136	None	N/A	Complete
10062890	None	N/A	Complete

Notes:

a. See Table 5 for the associated RTR and visual examination data packages. None of the listed containers contains prohibited items as defined by Section B-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPJP), MP-TRUW-8.2. The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity.

b. Acceptable Knowledge confirmations for RTR and visual examinations are conducted by an Acceptable Knowledge Expert on every drum by completing a checklist for each RTR and visual batch. This checklist can be accessed through the batches listed in Table 5.

c. None of these drums have a VE in lieu of RTR examination. N/A indicates that containers have not been selected for visual examination by AMWTP.

Table 7. Sample identification number cross-correlation table. BN836 Lot 1

Container Number	Headspace Gas Sample Number	Solid Sample Number(s)
10001015	HS206_00047B-11	10089448, 10089450, 10089453
10001175	HS505_00108B-11	N/A
10002218	HS106_00040B-05	N/A
10008841	HS106_00033B-10	N/A
10008842	HS406_00051B-11	N/A
10008843	HS406_00051B-14	N/A
10008846	HS206_00032B-21	N/A
10008847	HS406_00051B-04	N/A
10008848	HS206_00036B-16	N/A
10016469	HS205_00205B-13	10089407, 10089408, 10089411
10019189	HS406_00098B-01	10089848, 10089896, 10089949
10019228	HS406_00082B-01	N/A
10039602	HS206_00029B-18	N/A
10040145	HS106_00044B-10	N/A
10040454	HS206_00036B-08	N/A
10040884	HS106_00044B-07	N/A
10042479	HS206_00032B-13	N/A
10052726	HS406_00098B-03	10089674, 10089675, 10089678
10055339	HS106_00032B-01	10089384, 10089385, 10089388
10056273	HS206_00018B-14	N/A
10056699	HS106_00031B-01	N/A
10058505	HS106_00031B-09	10089635, 10089636, 10089639
10059091	HS406_00051B-10	N/A
10061136	HS206_00018B-20	N/A
10062890	HS206_00017B-19	N/A

Attachment A
Evaluation of required number of samples. BN836 Lot 1

Analyte	# Samples	# Samples above MDL [a]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, e, g]	Comments
Arsenic [f]	6	6	Natural log	1.72	1.60	0.076	1.65	4.61	100	5	HWN D004 applied per AK [h]
Barium [f]	6	6	Natural log	8.67	8.04	0.330	8.23	7.60	2000	5	HWN D005 required to be applied [j]
Cadmium [f]	6	6	Natural log	2.08	0.517	1.11	1.19	3.00	20	5	HWN D006 applied per AK [h]
Chromium [f]	6	6	Natural log	4.11	3.82	0.195	3.94	4.61	100	5	HWN D007 applied per AK [h]
Lead [f]	6	6	Natural log	4.79	4.11	0.374	4.34	4.61	100	5	HWN D008 applied per AK [h]
Mercury [f]	6	6	Natural log	1.41	0.885	0.438	1.15	1.39	4	5	HWN D009 applied per AK [h]
Selenium	6	6	None	1.90	1.52	0.366	1.74	--	20	5	HWND010 applied per AK [h]
Silver [f]	6	6	Natural log	1.19	0.704	0.327	0.902	4.61	100	5	HWN D011 applied per AK [h]
Antimony [f]	6	4	Natural log	1.41	0.097	1.03	0.718	4.61	100	5	No associated HWN [d]
Beryllium [f]	6	6	Natural log	0.182	-0.400	0.303	-0.217	4.61	100	5	HWN not required to be applied [h, i]
Nickel [f]	6	6	Natural log	3.78	3.30	0.330	3.50	4.61	100	5	No associated HWN [d]
Thallium [f]	6	6	Natural log	1.41	0.911	0.351	1.12	4.61	100	5	No associated HWN [d]
Vanadium	6	6	None	44.0	24.8	16.1	34.5	--	100	5	No associated HWN [d]
Zinc [f]	6	6	Natural log	5.39	5.08	0.196	5.20	4.61	100	5	No associated HWN [d]
1,1-Dichloroethene (1,1-Dichloroethylene)	6	0	None	0.185	0.178	0.005	--	--	10	--	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	6	0	None	0.090	0.089	0.002	--	--	10	--	No samples above MDL
1,1,1-Trichloroethane	6	0	None	0.090	0.089	0.002	--	--	10	--	HWNs F001/F002 applied per AK [l]
1,1,2,2-Tetrachloroethane	6	0	None	0.185	0.178	0.005	--	--	10	--	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.089	0.002	--	--	10	--	No samples above MDL
1,1,2-Trichloroethane	6	0	None	0.090	0.089	0.002	--	--	10	--	No samples above MDL
1,2-Dichloroethane	6	0	None	0.185	0.178	0.005	--	--	10	--	No samples above MDL

Analyte	# Samples	# Samples above MDL [a]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, e, g]	Comments
Acetone	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Benzene	6	0	None	0.185	0.178	0.005	–	–	10	–	HWN F005 applied per AK [f]
Bromoform	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Butanol	6	0	None	1.20	1.09	0.066	–	–	100	–	No samples above MDL
Carbon disulfide	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Carbon tetrachloride	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Chlorobenzene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Chloroform	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Ethyl benzene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Ethyl ether	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Isobutanol	6	0	None	1.20	1.00	0.253	–	–	100	–	No samples above MDL
Methanol	6	4	None	6.30	2.78	2.21	4.11	–	100	5	HWN not required to be applied [i]
Methyl ethyl ketone	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
Methylene chloride	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
Pyridine	6	0	None	0.600	0.550	0.045	–	–	100	–	No samples above MDL
o-Xylene	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
m&p-Xylene	6	0	None	0.185	0.178	0.005	–	–	10	–	No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	6	0	None	0.185	0.178	0.005	–	–	10	–	HWN F005 applied per AK [f]
Toluene	6	0	None	0.090	0.089	0.002	–	–	10	–	HWN F005 applied per AK [f]
Trichloroethene (Trichloroethylene)	6	0	None	0.090	0.089	0.002	–	–	10	–	HWNs F001/F002 applied per AK [f]
Trichlorofluoromethane	6	0	None	0.090	0.089	0.002	–	–	10	–	No samples above MDL
Vinyl chloride	6	0	None	0.185	0.178	0.005	–	–	4	–	No samples above MDL
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL

Analyte	# Samples	# Samples above MDL [a]	Trans-formation Used	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL [b] (mg/kg)	Required number of samples [c, d, g]	Comments
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2,4-Dinitrophenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	–	–	2.6	–	No samples above MDL
bis(2-Ethylhexyl) phthalate [f]	6	2	Natural log	-0.916	-1.93	0.606	-1.56	3.69	40	5	HWN not required to be applied [i]
Fluoranthene	6	1	None	0.460	0.160	0.147	0.249	–	40	5	HWN not required to be applied [i]
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	–	–	2.6	–	No samples above MDL
Hexachloroethane	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.200	0.200	0.000	–	–	40	–	No samples above MDL
Nitrobenzene	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
Pentachlorophenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL
Phenol	6	0	None	0.100	0.100	0.000	–	–	40	–	No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2). If all measurements are below detection, the UCL_{95} is not calculated.

b. For analytes that have both an RTL and a PRQL, the PRQL is used to calculate the required number of samples.

c. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not applied (i.e., it only applies to those cases where a site intends to establish that the constituent is less than the regulatory threshold and the associated EPA HWN does not apply).

d. If there is no HWN associated with an analyte, then that analyte is not used to define the number of required samples.

e. If there are no samples above the MDL for a given analyte, then that analyte is not used to define the number of required samples.

f. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL / RTL for that analyte.

g. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

h. PD15 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.

i. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{95} is less than the RTL or PRQL.

j. This analyte is identified as being present in this waste stream based on AK. HWN D005 is applied to the waste stream because the UCL_{95} result for the constituent is above the RTL.

k. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{95} result for the constituent is less than the RTL.

l. These analytes were identified by AK and detected in the headspace gas. The HWNs are conservatively applied to the waste stream even though the associated analytes were not detected in solid samples.

Acceptable Knowledge Summary for Cemented Sludge (BN836)

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11342.)

Susan Peterman
TRU Programs Manager

06/27/12
Date

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ACRONYMS AND ABBREVIATIONS

AK	Acceptable Knowledge
AMWTP	Advanced Mixed Waste Treatment Project
BN	BNFL Inc.
CAO	Carlsbad Area Office
CCP	Central Characterization Project
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
CFR	Code of Federal Regulations
D&D	decontamination and decommissioning
DOD	U.S. Department of Defense
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
HWN	hazardous waste number
IDC	item description code
INL	Idaho National Laboratory
MD	Mound
MDL	method detection limit
nCi/g	nanocuries per gram
PCB	polychlorinated biphenyl
ppm	parts per million
PPO	pressed plutonium oxide
PRQL	program-required quantitation limit
RCRA	Resource Conservation and Recovery Act
R&D	research and development
RTG	radioisotopic thermoelectric generator
RTL	regulatory threshold limit
RTR	real-time radiography
TRU	transuranic
TSCA	Toxic Substances Control Act
TWBIR	Transuranic Waste Baseline Inventory Report
UCL90	90% upper confidence limit
VE	visual examination
VOCs	Volatile Organic Compounds
WAC	Waste Acceptance Criteria

WD	Waste Disposal [building at Mound]
WDA	WD Annex
WIPP	Waste Isolation Pilot Plant
WIPP-WAP	Waste Isolation Pilot Plant Waste Analysis Plan
WMC	waste matrix code
WMP	waste material parameter

Advanced Mixed Waste Treatment Facility

Acceptable Knowledge Summary for Cemented Sludge (BN836)

1.0 WASTE STREAM DESCRIPTION

1.1 Waste Stream Number

BN836 [1]

1.2 Basic Waste Stream Information

1.2.1 Waste Stream Name

Cemented Sludge [1]

1.2.2 Point of Generation

Mound (MD) –Waste Disposal (WD) Building. [2, 3]

1.2.3 Waste Stream Volume

4,323 55-gallon drums (908 m^3) – current volume [4]
0 55-gallon drums (0 m^3) – projected volume

The above is an estimate of the number of candidate containers for waste stream BN836. The estimated percentages (by number of containers) of transuranic (TRU) activity are 50% greater than 100 nCi/g and 50% less than 100 nCi/g. [4]

Advanced Mixed Waste Treatment Project (AMWTP) will employ payload management practices in accordance with the Waste Acceptance Criteria (WAC) for waste stream BN836. [5]

1.2.4 Generation Dates

AMWTP stores containers of Mound cemented sludge waste generated from 1974 to 1985. Wastes stored at AMWTP with generation dates (i.e., pack date) later than 1985 are the result of repackaging (e.g., waste characterization activities). [2, 3, 6]

1.2.5 TRUCON Codes

ID111/ID211 [7]

1.2.6 Transuranic Waste Baseline Inventory Report (TWBIR) Information

Waste Stream ID: IN-BN836 (previously identified as IN-W179.158) [8]

1.2.7 Summary Category Group

S3000- Homogeneous Solids [9]

1.2.8 Waste Matrix Code Group

Solidified Inorganics [1, 10]

1.2.9 Waste Matrix Code (WMC)

S3121 – Wastewater Treatment Sludges [1, 9]

Mound cemented sludge waste consists of at least 50 volume percent sludge from a wastewater treatment process that was solidified with cement.

1.2.10 Description from the TWBIR

This waste, generated at the Mound Plant, consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in Portland cement. [8]

1.2.11 AMWTP Defense-Related Determination

Mound wastes were generated during defense-related operations conducted for a variety of customers, including Lawrence Livermore National Laboratory, Hanford Site, Oak Ridge National Laboratory, and the space program. Plutonium-238 heat sources were designed and developed for spacecraft, generators, and satellites used directly by the Department of Defense (DOD) or in support of DOD missions. One of the major space programs supported by the Mound Plant was the Space Nuclear Auxiliary Power system which was sponsored by the DOD. Operations at the facility included plutonium processing and recovery, development of reactor fuels, performance of reactor fuel waste studies, and production of tritium and other isotopes for both DOD and domestic or private entities. The radioisotopic content (e.g., plutonium and other TRU isotopes of interest) of the cemented sludge is the result of commingling of wastes from both defense and domestic related activities. Defense wastes are identified as those wastes generated during work involving only defense activities or during work in which defense and non-defense wastes were inadvertently mixed in the past and from which the non-defense portion cannot be segregated. The cemented sludge waste stream, therefore, meets the definition of defense waste from defense nuclear materials production and defense research and development (R&D). [2, 11, 12, 13, 20, 37, 38, 39, 40]

1.3 Waste Stream Description

1.3.1 Description

This waste stream consists of drums containing Mound cemented sludge (Item Description Code [IDC] MD-836). The sludge waste was generated from the treatment of alpha-contaminated wastewaters at the Waste Disposal (WD) Building. The wastewater originated outside process gloveboxes from sources such as floor drains, laboratory sinks, and sumps, as well as the old alpha waste line. The wastewaters were generated from decontamination, laundry, research and analytical operations from several facilities at Mound including the Laundry

(H Building), Plutonium Processing (PP building) /Special Metallurgy (SM building) Complex, Semi-Works (SW building)/Research (R building) Complex, Technical (T building), WD, and the annex on the WD Building (WDA), and Buildings 23, 50, and 51. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing and personnel and contains detergents, cleansers, soaps, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. The sludge was solidified with Portland cement. Florco, a non-hazardous absorbent, may have also been added to this waste stream. [2, 3, 11, 14, 15, 16, 17, 18, 19, 20, 21]

This waste was generated from similar activities and is similar in material, physical form, and hazardous constituents and is a single waste stream. The waste is primarily an inorganic matrix. Individual drums may also contain small amounts of debris including plastic, rubber and paper items. [2, 3, 21, 22] Each container in this waste stream contains at least 50% by volume sludge waste.

1.4 Process Description

1.4.1 Areas of Operation

Mound cemented sludge waste was generated by treating alpha-contaminated wastewater generated from the following operations conducted in H, PP/SM, SW/R, T, WD and WDA Buildings and Buildings 23, 50 and 51: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Laboratory and Research and Development Operations
- Waste Treatment
- Decontamination and Decommissioning (D&D).

1.4.2 Process Flow Diagram

Process flow diagrams for Mound Sludge generating process are provided in Figures 3-6 and 3-8 of RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste. [2] Process flow diagrams of the sludge generating and solidifying processes are also provided in the Mound radioactive waste management site plans and status reports. [14, 15, 16]

1.4.3 Wastewater Generation

The TRU Mound cemented sludge waste stored at the Idaho National Laboratory (INL) was generated from the treatment of alpha-contaminated wastewater collected from various facilities at Mound that housed defense operations related to the design and development of heat sources using ^{238}Pu for spacecraft, generators, and satellites. These operations and facilities included plutonium processing operations, plutonium and other isotope recovery, and other activities supporting these operations including laboratory and R&D operations, maintenance operations, and waste treatment operations. The wastewater was generated primarily from the decontamination of equipment, buildings, clothing, and personnel and contains detergents,

cleansers, soap, janitorial wastes, cooling water, acids, caustics, paint, and trace amounts of organics. [2, 3, 11, 18, 19, 20]

The drain systems from all radioactive areas terminated in the WD Building. [53] Alpha-contaminated wastewater was collected from H, PP/SM, SW/R, WD, and WDA Buildings. Alpha-contaminated wastewater was also received from T Building prior to 1976, from the Building 23 sump if it became contaminated, from Building 50 after 1977, and from Building 51 between 1980 and 1983. Floor drains in these buildings, as well as laboratory sink drains, shower water, and sumps contributed to this waste. During the period of time that the waste to be dispositioned by the AMWTP was generated, the primary inputs to the WD included the following: [2, 3, 11, 14, 15, 16, 17, 18, 19, 20]

- Wastewater from laundry drains in H Building
- Wastewater from SM/PP complex transferred by pipeline (until 1976)
- Wastewater from SM/PP complex transported by tanker truck (after 1976)
- Wastewater from drains, sumps, showers, and laboratory sinks in SW/R complex
- Wastewater from drains, sumps, and laboratory sinks in WD Building and WDA.

The alpha-contaminated wastewater also includes liquids collected from the old, alpha waste line which was connected to the SW/R complex and the laundry in the H Building. Although these connections were believed to be plugged, a small amount of water from this waste line was received at the WD, mainly after rain. [3, 11]

Demolition of the SM/PP and R Building plutonium processing facilities began in the 1970s; however, the cemented sludge included in this waste stream was generated from 1974 to 1985. These activities included D&D of gloveboxes, conveyor housing, piping, process equipment, and structures. [3, 11, 20, 22] Gloveboxes, process equipment in gloveboxes, and hoods were decontaminated using water, detergent, and hypochlorite. Until 1980, D&D of some of the process equipment used acid solution rinses to recover plutonium. [11] A detergent and paint remover in a high pressure washer was also used to decontaminate building interiors and equipment. [12, 43]

1.4.3.1 SM/PP Complex

Plutonium was processed at the Mound site in the SM Building and PP Building (Building 38), otherwise known as the SM/PP Complex. The primary processes were pressed plutonium oxide (PPO) sphere production and plutonium-molybdenum cermet (PMC) production. The ^{238}Pu was used as the heat source in radioisotopic thermoelectric generators (RTGs), and the RTG units themselves were manufactured at Mound. The alpha-contaminated wastewater that was transferred from the SM/PP complex to the WD included wastewaters from floor drains, shower water, sinks, and a laboratory located in the PP Building. Small quantities of chemicals used in the plutonium production and recovery operations became constituents of the wastewater and include cooling water, trace amounts of alcohols (methanol, ethanol, isopropanol), detergents, shower water, janitorial wastes (wax, wax stripper, and bowl cleaner),

paint, and trace amounts of acetone and trichloroethane. Wastewater from these sources drained into two 500-gallon sumps. The wastewater was transferred to WD via a pipeline until 1976, when the pipeline was sealed and wastewater was pumped from the sumps to a storage tank outside the building. The wastewater was then pumped from the tank to a tanker truck and transported to WD Building for treatment. [3, 11, 18, 19, 20, 44, 48, 49, 50, 51, 62, 63, 64, 65, 70]

A variety of analytical procedures were performed in PP Building laboratory, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. With the exception of liquid scintillation vials, all spent chemicals used in the laboratory were assumed to be radioactively contaminated and were poured down the sink drains into the wastewater system. Scintillation vials and spent cocktail were bagged and sent to Building 23 for dispositioning. Chemicals used in the laboratory included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichloroethane and methanol also were used in the SM/PP complex as a degreaser for metal parts. [3, 11, 19, 20, 22, 43, 45, 49, 50, 51, 52]

1.4.3.2 SW/R Complex

SW, R, and related facilities are considered as the SW/R complex because they are physically joined. Historically, R Building housed tritium recovery, plutonium development work, and analytical support. The SW Building housed tritium recovery and purification; tritium component development, component evaluation, and materials analysis; and research on plutonium actinium, radium, uranium, thorium, and protactinium. During decommissioning, several gloveboxes in the R-140 laboratory area were characterized as TRU waste. Encapsulation was conducted in the R Building and involved welding a machined metal cover over a sphere of PPO spheres. Encapsulation materials included iridium, graphite, tantalum, titanium, hastelloy (an alloy of cobalt, molybdenum, chromium, tungsten, and iron), inconel, platinum-rhodium, and yttrium. Encapsulation operations in the R Building at Mound were conducted until 1979. In addition to encapsulation, several processes in the R Building supported SM/PP production operations, including encapsulation research, shaping and pressing heat sources, and other research. [3, 11, 20]

The SW/R Building complex also included a small laboratory section that handled alpha-emitting radionuclides such as ^{238}Pu and ^{239}Pu. This laboratory was used for R&D, mostly involving solvent extraction processes. The sink and floor drains from these laboratories were connected to a sump equipped with a steam lift pump that pumped the wastewater to the R Building and then to the alpha influent tanks in WD Building. Chemicals used in the laboratory included carbon tetrachloride, dichloromethane, organophosphate, nitric acid, boric acid, and sulfuric acid. Yearly estimates of waste materials sent to the WD Building from the R Building laboratories included hydrogen peroxide; ammonium hydroxide; and hydrochloric, hydrofluoric, nitric, sulfuric, and lactic acids (approximately 7 pints total); methanol, propanol, mineral oil, ethanol, acetone, xylene, trichloroethylene (approximately 5 pints total), and sodium sulfite solution (approximately 1 pint); and 86 lb of various chemicals, including potassium and copper sulfates and carbonates and sodium hydroxide (lime). [3, 11, 12, 18, 19, 20, 29, 44, 45, 46, 47, 48, 52, 63, 64, 65]

1.4.3.3 H Building

The H Building housed the laundry facilities for both uncontaminated (cold) and contaminated (hot) clothing for Mound. All of the water generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank on the "hot side" of the building. The wastewater was pumped to the WD Building alpha wastewater influent tanks. Products used in the H Building included liquid soap that contains ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contains ammonium bicarbonate and sodium hexametaphosphate, and fabric softener. [3, 11, 16]

1.4.3.4 WD and WDA Buildings

WD Building was the central facility for the treatment of radioactive liquid wastes at Mound, and historically included alpha and beta wastewater treatment systems. An addition to WD Building (WDA) was constructed, including the Waste Treatment System (WTS) pipeline, which carried acidic and caustic wastewater from SM and PP to WDA, and began accepting alpha-contaminated wastewater in August 1967. The high-risk portion of the pipeline was not operational until April 1968 and was abandoned in 1974. The WDA alpha-contaminated wastewater treatment was moved to WD, and the WDA alpha influent tanks were converted to use in the beta wastewater treatment system which began treating tritiated wastewater in 1973. Cemented sludge included in this waste stream was generated from 1974 to 1985. [2, 3, 6, 11, 12]

All floor and sink drains in the WD and WDA Buildings were connected to sumps located in the basement of the buildings. Wastewater from the sumps was transferred either by pipeline or by pumping to storage tanks for transfer to the WD alpha influent tanks. There was a small laboratory in WD Building where alpha and beta waste streams were analyzed. This laboratory was not used on a routine basis, but the sink was connected to the WD sumps. Sludge moisture and pH analyses and scintillation counts of influent and effluent wastes were performed. Hazardous compounds used in the WD laboratory included Instagel, which has a xylene base. Spent liquid scintillation cocktail and used scintillation vials, were bagged and dispositioned as mixed waste and sent to Building 23 for storage. The liquid scintillation waste was not sent to INL. [3, 11]

1.4.3.5 Other Buildings

The T Building housed a multitude of research, development, and production programs. The two major radionuclide programs were the polonium and tritium programs. From 1949 to 1973, ^{210}Po programs included a processing and separation program, a fuels R&D program, and a production program with polonium. Decontamination work was done from 1971 through 1973 on the ^{210}Po processing areas. A variety of other activities were performed in the T Building such as nondestructive testing, environmental testing, gamma and mass spectroscopy, calorimetry, neutron activation analysis, and safeguards R&D. Tritium contaminated waste was drummed and sent to the beta contaminated wastewater system. [11, 27]

Building 23 is adjacent to the WD. Drummed radioactive and mixed wastes were stored in Building 23 prior to shipment of the wastes to off-plant disposal facilities. Several floor drains connected to a sump were used to collect any spills or leaks from the stored drums. Liquid wastes in the sump were sampled prior to dispositioning. Nonradioactive or clean material was released to the sanitary sewer system. Contaminated liquid wastes were transported in drums to the WD alpha wastewater influent tanks. [3, 11]

Building 50 housed plutonium operations, including production of heat sources using ^{238}Pu. Building 51 housed an incinerator that was used to burn non-radioactive waste prior to 1974. [11]

1.4.4 Wastewater Treatment Process

The alpha wastewater treatment system in the WD consisted of four influent tanks, two clariflocculators, two sand filters, two bone char columns (after 1977), four effluent storage tanks, two sludge tanks (pits) , and a sludge solidification/drumming unit. All liquid wastes were collected in the influent tanks and sampled for radioactivity and then prepared for treatment. [11, 14, 15, 16]

Chemicals such as activated carbon, calcium chloride, and ferric sulfate; barium chloride aluminum sulfate, and sulfuric acid (before 1976); and sodium hydroxide (after 1975) were added in varying but pre-determined amounts to provide the desired adsorption, phosphate precipitation, flocculation, and scavenging. After 1974, the flocculating agents Nalco C-627 (before 1982) and Nalco N-7173 (after 1981) were also used to improve the quality of the effluent and to reduce the volume of sludge generated. A major portion of the radioisotopes present was retained by the flocculated solids. Each of the four influent tanks was agitated by two mixers to prevent settling of the solids. [11, 14, 15, 16, 19, 20, 23, 53]

The mixture was then pumped into two clariflocculators where the precipitate (sludge) and liquid were separated after the flocculated solids were allowed to settle. Aluminum sulfate (prior to 1976) or sodium hydroxide (after 1976) was added to control the pH between 11.0 and 11.5 and to maximize the precipitation and settling. The supernatant liquid was removed by siphoning the liquid above the settled sludge. Prior to 1977 the supernatant liquid was acidified (using sulfuric acid) and treated with activated carbon and sodium hypochlorite (after 1975 for bacteria control), and then filtered through sand beds prior to being pumped into four effluent tanks. After 1977, the supernatant liquid was treated with activated carbon, filtered through sand beds, neutralized with sulfuric acid to 7.0 to 8.0 pH, and/or passed through a bone char filter (and 1 micron filter after 1979) prior to being pumped into the effluent tanks. If the effluent met the applicable requirements governing discharge of radioactive materials to the environment, it was released to the Great Miami River. If the effluent did not meet the requirements, it was recycled through the process. [11, 14, 15, 16, 19, 23, 53]

The dewatered sludge (approximately 15 to 30 % solids) was then pumped from the clariflocculators into two sludge holding tanks. [20, 24, 25, 26, 44] The principal non-radioactive constituents of the sludge are carbon and ferric hydroxide with minor amounts of calcium

carbonate, calcium phosphate, and calcium oxalate. [26] Prior to 1977, the sludge was treated with caustic soda (sodium hydroxide) to reduce bacterial action. The sludge was sampled on a batch basis to determine activity level prior to solidifying in 55-gallon drums containing 90-mil rigid polyethylene liners. In some cases a drum bag liner may have been used. [11, 14, 15, 16, 21] Two to 2-1/2 bags (about 190 to 240 pounds) of Portland cement were slowly added to approximately 40 gallons of sludge in a waste drum while working the mixer up and down through the sludge-cement mixture and then mixing for about 7 to 10 minutes. After the mixer blades were removed from the drum, unmixed cement was typically added to the top of the sludge-cement mixture. The sludge-cement mixture was allowed to cure overnight before the rigid drum liner lid or drum lid was installed. The drums of cemented sludge typically weigh between 575 and 650 pounds. [20, 22, 24, 25, 26] Based on real-time radiography (RTR) examinations, a bag liner was used in some drums of cemented sludge waste. [21]

1.4.5 Material Inputs

The principal non-radioactive constituents of the sludge (prior to mixing with cement) are carbon and ferric hydroxide with minor amounts of calcium carbonate, calcium phosphate, and calcium oxalate. [26] The chemicals presented in Table 1-1 were used in the Mound plutonium production and recovery, laboratory, R&D, and D&D activities and may have contaminated the alpha-contaminated wastewaters. The chemicals presented in Table 1-2 were used to treat the wastewaters, as well as identified as being in the wastewater (typically in trace amounts) or added to the sludge without treatment (sodium carbonate and sodium chloride). [19, 44] The alpha-contaminated wastewaters were treated in the WD Building, resulting in the cemented sludge waste.

Table 1-1. Chemicals used in Production, Recovery, Laboratory, R&D, and D&D Activities.

Chemical Types	Chemical Compounds
Halogenated solvents used for cleaning/degreasing	Benzene, carbon tetrachloride, methylene chloride, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and trichloroethylene. [2, 11, 12, 29, 45, 50, 51]
Nonhalogenated solvents used for cleaning/degreasing	Acetone, methanol, toluene, and xylene. [3, 11, 12, 18, 19, 20, 29, 45, 48, 49, 50, 51, 52, 62]
Organic solvents used in production processes or laboratories	Acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, dichloromethane, ethanol, methanol, methyl ethyl ketone, methylene chloride, propanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon TF), and InstaGel (contains xylenes). [2, 3, 11, 12, 20, 29, 30, 48, 49, 50, 52, 70]
Chemicals used in plutonium processing and recovery operations	Acids (nitric, sulfuric, acetic, hydrochloric, hydrofluoric, and oxalic) ammonium hydroxide, aluminum nitrate, dimethyloxalate ferrous sulfamate, hydroxylamine nitrate, sodium carbonate, sodium hydroxide, and tri-n-octylphosphine (TOPO). [2, 3, 11, 20, 22, 43, 47, 50, 70]
Chemicals used in laboratory operations	Acids (acetic, boric, hydrochloric, hydrofluoric, lactic, nitric, and sulfuric), ammonium hydroxide, carbon tetrachloride, copper sulfate, hydrogen peroxide, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), mineral oil, organophosphate, potassium carbonate, potassium sulfate, sodium hydroxide, sodium sulfite. [2, 3, 11, 20, 22, 29, 52, 70]
Chemicals used in D&D operations	Acid solutions, detergent (e.g., Micro® detergents, nonsolvent based cleaners with no identified RCRA regulated hazardous constituents), hypochlorite, polyurethane foam, RTV rubber, and paint remover (e.g., methylene chloride or methyl ethyl ketone). [11, 12, 20, 31, 32]
Absorbents used in packaging	Florco (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents), Auto-Dri and Dri-Rite (calcium carbonate). [2, 11, 20, 22, 33]

Table 1-2. Chemical Contaminants that may be present in the Cemented Sludge Waste.

Chemical Types	Chemical Compounds
Chemicals used in wastewater treatment processes	Activated carbon, calcium chloride, ferric sulfate, barium chloride, aluminum sulfate, sulfuric acid, sodium hydroxide , sodium hypochlorite, Nalco C-627 and Nalco N-7173 (organic polymers, polyelectrolyte flocculants), and bone char. [14, 15, 16, 17]
Chemicals identified in liquids sent to the wastewater treatment process.	Acetone, acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, oxalic, sulfuric), alcohols (methanol, ethanol, and propanol), ammonia, ammonium bicarbonate and sodium hexamethaphosphate (powdered soap), ammonium hydroxide, asbestos fiber, beryllium, calcium carbonate, caustic soda and lime, chromium, copper sulfate, cyanides, ethylene glycol monobutyl ether and sodium hydroxide (liquid soap), fabric softeners [a], hydrogen peroxide, lead, lithium chloride, mercury, methylene blue, mineral oil, nickel sulfate, paint, potassium bromide, potassium carbonate, potassium pyrosulfate, potassium sulfate, sodium carbonate, sodium chloride, sodium hydroxide, sodium sulfite, trichloroethylene, and zirconium oxide.[11, 18, 19, 20, 44, 63, 64, 65]
Materials used in waste solidification processes	Cement and Florco absorbent (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents). [2, 11, 33]

a. Fabric softeners may include chemicals such as alchohols (e.g, benzyl alcohol, ethanol, isopropyl) alpha-terpineol, benzyl acetate, camphor, chloroform, ethyl acetate, limonene, linalool, and pentane. [55, 56, 57]

1.4.6 Waste Material Parameters

To estimate the waste material parameter (WMP) weight percentages for BN836, WMP data from 100% of the completed RTR and VE (visual examination) of Mound cemented sludge drums were obtained from the AMWTP Waste Tracking System (WTS) database on October 11, 2006. This represents 69% of the estimated number of drums for this waste stream. Drums evaluated were generated from 1974 through 1985 and are representative of the waste stream. WTS is AMWTPs comprehensive, DOE-audited waste tracking database in which all waste containers are tracked cradle-to-grave and all related characterization data are stored. A statistical analysis of the RTR and VE data was performed to estimate WMP weights (by percent) for Mound cemented sludge, excluding packaging, in accordance with the requirements of MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation, and are summarized in Table 1-3. [34, 58]

Table 1-3. Estimated Waste Material Parameter Weights Per Unit of Waste for Cemented Sludge Waste (BN836).

Waste Material Parameters	Weight per Unit Waste by Percent
Inorganic Matrix	100
Other Inorganic Materials	<1
Cellulosics	<1
Rubber	<1
Plastics (waste materials)	<1
Iron-based Metals	<1
Other metals	<1

Although individual drums in this waste stream may contain other homogenous solid waste and debris materials, the waste stream as a whole will be greater than 50%, by volume, inorganic sludge. (21)

1.5 Prohibited Items

The following items are prohibited at the Waste Isolation Pilot Plant (WIPP) in accordance with Section B-1c of the WIPP Waste Analysis Plan (WIPP-WAP): (10)

- Liquid waste
- Non-radionuclide pyrophoric materials
- Hazardous wastes not occurring as co-contaminants with TRU mixed wastes
- Wastes incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Wastes containing explosives or compressed gases
- Wastes with polychlorinated biphenyls (PCBs) not authorized under an Environmental Protection Agency (EPA) PCB waste disposal authorization
- Wastes exhibiting the characteristics of ignitability, corrosivity, or reactivity (hazardous waste numbers [HWNs] D001, D002, or D003).
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table B-8 of MP-TRUW-8.2, Quality Assurance Project Plan, unless specifically approved through a Class 3 permit modification. (60)
- Any waste container from a waste stream (or waste stream lot) that has not undergone either radiographic or visual examination of a statistically representative subpopulation of the waste stream in each shipment, as described in Attachment B7 of MP-TRUW-8.2. (60)

- Sealed inner containers greater than four liters.

The absence of prohibited items is determined and documented through acceptable knowledge (AK) and characterization activities. RTR or VE is performed on each container to verify the absence of prohibited items. [35, 36] Drums with prohibited items are treated or rejected as appropriate. Drums containing prohibited items will not be shipped to WIPP.

1.6 Resource Conservation and Recovery Act (RCRA) Determination

1.6.1 EPA Hazardous Waste Numbers

Mound cemented sludge is characterized as mixed-TRU waste. Toxicity characteristic HWNs assigned to the cemented sludge waste are D004, D005, D006, D007, D008, D009, D010, and D011. Listed HWNs assigned to this waste stream are F001, F002, and F005. [41]

1.6.2 Hazardous Determination

The hazardous waste determination for cemented sludge waste is described in the following subsections.

Ignitability

The materials in this waste stream do not meet the 40 CFR 261.21 definition of *ignitability*. The cemented sludge is not a liquid. Additionally, absorbents (e.g., cement, Florco) were added during packaging of this waste. The waste materials are not compressed gases, nor does the waste contain compressed gases. The waste does not meet the U.S. Department of Transportation (DOT) definition of an oxidizer as defined in 49 CFR 173 and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. Trace quantities of hypochlorite solutions, hydrogen peroxide, nitric acid, and other potential DOT oxidizers in the wastewater were treated in the WD Building, and trace contamination in the cemented sludge does not meet the definition of a DOT oxidizer. [11, 19, 22, 25, 44] Therefore, this waste stream does not exhibit the characteristic of ignitability (D001).

Corrosivity

The materials in this waste stream do not meet the 40 CFR 261.22 definition of *corrosivity*. The cemented sludge waste is not liquid. In addition, absorbents (e.g., cement, Florco) were added during packaging of this waste. [25, 44] Therefore, this waste stream does not exhibit the characteristic of corrosivity (D002).

Reactivity

The materials in this waste stream do not meet the 40 CFR 261.23 definition of *reactivity*. The cemented sludge waste is stable and will not undergo violent chemical change, react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials may contain trace quantities of sulfides

or cyanides but would not generate toxic gas in sufficient quantity to pose a threat to human health or the environment. The materials are neither forbidden explosives nor Division 1.1, 1.2, or 1.3 (Class A or B) explosives as defined in 49 CFR 173, and the drums do not contain explosive materials. Explosives were produced and tested at Mound Plant, but wastes generated from explosives were managed in waste groups entirely separate from radioactive wastes. [2, 11, 19, 44] Therefore, this waste stream does not exhibit the characteristic of reactivity (D003).

Toxicity

The materials in the cemented sludge waste have been conservatively assigned the toxicity characteristic for metals as defined in 40 CFR 261.24. Based on AK, cemented sludge waste may contain RCRA toxicity constituents due to mixture with toxicity characteristic metals and organics.

AK for cemented sludge waste indicates the presence of toxicity characteristic metals arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011). [11, 28, 29, 66, 67] Based on process descriptions, sources of toxicity characteristic metals were used in the R Building laboratory operations (reference Table 1-1). Arsenic, cadmium, selenium and silver are attributed to chemicals used in laboratory operations. [29] Barium chloride was one of the chemicals used in the WD facility to treat the alpha-contaminated wastewater. [14] The cemented sludge may contain paint contaminated with chromium or lead. [18, 19, 20,44, 63, 64] Mercury was used in analytical and production operations. [11, 20, 28, 29, 48, 52, 67, 68, 69] Chromium and lead were detected in historical sampling of the alpha-contaminated sludge. [18, 19, 20, 28, 44, 63, 64]

Solid samples were analyzed for total metal. Statistics were calculated based on using one-half the method detection limit (MDL) for less than detectable observations with data transformation applied where appropriate. The 90 percent upper confidence limit (UCL_{90}) exceeded the regulatory threshold limit (RTL) for the toxicity characteristic metal barium; consequently, the EPA characteristic HWN D005 assigned by AK is retained for the cemented sludge waste. Although the calculated UCL_{90} did not exceed the associated RTL based on totals for the toxicity characteristic metals arsenic, cadmium, chromium, lead, mercury, selenium and silver, the corresponding EPA characteristic HWNs D004, D006, D007, D008, D009, D010 and D011 are also conservatively assigned to the cemented sludge waste. [41, 66]

> Carbon tetrachloride, chloroform, methyl ethyl ketone, benzene, tetrachloroethylene, and trichloroethylene were identified as chemicals used at Mound for their solvent properties and may be present in the alpha-contaminated wastewater. [2, 3, 11, 12, 29, 45, 48, 51] Carbon tetrachloride, benzene, and trichloroethylene were used for cleaning/degreasing. [2, 3, 11, 12, 29, 45, 51] None of these constituents were detected in the solid sampling; therefore, the toxicity codes for these constituents are not applied.

Listed Waste

F-Listed HWNs

F001, F002, and F005 listed HWNs are conservatively assigned to the Mound cemented sludge waste for spent solvents. [28, 41]

Solid samples were analyzed for volatile organic compounds (VOCs) and semivolatile organic compound constituents and only methanol was detected above the MDL. The calculated UCL_{90} of the mean concentration did not exceed the associated program required quantitation limit (PRQL) for the RCRA characteristic solvents or F-listed solvents. Headspace gas (HGAS) sampling and analysis detected nine VOCs (benzene, 1,1-dichloroethane, trans-1,2-dichloroethylene, methanol, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, and xylene); however, the calculated UCL_{90} did not exceed the associated PRQL for these constituents.

Minor amounts (approximately 5 pints total organics per year) of organics, including trichloroethylene, were disposed of in the alpha-contaminated wastewater. [2, 11, 19, 20] Trace amounts of organics were discharged into a wastewater treatment system regulated by a Clean Water Act point source discharge permit and were eligible for RCRA regulatory exclusions identified in 40 CFR 261.3. Nevertheless, the listed HWNs F00l F002, and F005 were conservatively assigned.

Trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, and methyl ethyl ketone were identified in AK documents as solvents used in cleaning/degreasing and laboratory operations in SM, PP, SW, and R Buildings. [2, 3, 11, 28, 29] 1,1,2-Trichloro-1,2,2-trifluoroethane was used for cleaning/degreasing in other operations. [2, 11, 28, 29] Benzene, tetrachloroethylene, carbon disulfide, and toluene were used as solvents in laboratory and production operations. [2, 11, 29, 48, 52] Paint removers containing methylene chloride or methyl ethyl ketone may have been used in the D&D process. [11, 43] These chemicals were not identified as constituents in the alpha-contaminated wastewater. The wastewater may have been contaminated with trace quantities of these constituents during decontamination operations. EPA HWNs F001, F002, and F005 are conservatively assigned to this waste stream. 1,1,1-Trichloroethane, trichloroethylene, tetrachloroethylene, benzene and toluene were detected in HSG analysis, which support AK. [41]

Acetone, methanol, and xylene (non-chlorinated solvents) were also used as solvents in laboratory and production operations and acetone and methanol were identified as constituents in this wastewater. [11, 18, 19, 20, 28, 29, 44, 48, 49, 50, 51, 52, 62, 63, 64, 65, 70] Cemented sludge is not a liquid waste but may be contaminated with residuals from these solvent operations. If a waste no longer exhibits the characteristic of ignitability, the F003 hazardous waste number can be removed [40 CFR 261.3(g)(1)]. Because the waste is not ignitable, the EPA HWN F003 is not assigned to this waste stream.

Although 2-methyl-2-propanol, (CAS No. 75-65-0) was detected in greater than 25% of the samples for this waste stream, it is not a 40 CFR 261, Appendix VIII listed analyte and will, therefore, not be added as a target analyte for this waste stream.

P-, U- and K-Listed HWNs

Although hydrofluoric acid was identified as a chemical used (for its intended purpose) during plutonium processing and recovery operations at Mound, only spent forms of hydrofluoric acid would have contaminated the alpha wastewater. [11, 18, 19, 20, 22, 44, 45, 50, 63, 64] This waste stream does not contain and was not derived from an unused commercial product, an off specification species thereof, or a manufacturing intermediate that would be classified as U134 HWN. Based on this information, the U134 HWN does not apply to this waste stream.

Beryllium was identified in AK as a potential contaminant from analysis of weapon components. Typically, less than 50 grams of beryllium waste was generated annually. Based on a review of AK and the solid sampling results, it was determined that the cemented sludge waste contains less than one percent beryllium by weight. [2, 3, 11, 19, 65] If beryllium is present, it is a contaminant of the process and not as an unused commercial chemical product, an off-specification species, a container residue, or a spill residue thereof. Therefore, the P-listed waste code for beryllium, as defined in 40 CFR 261.33, is not assigned to the waste.

The materials in this waste stream are not discarded, unused, commercial chemical products, off-specification species, container residues, or spills thereof (40 CFR 261.33). No P- or U-listed hazardous waste numbers apply to the materials in this waste stream.

The materials in this waste are not hazardous waste from specific sources since they were not generated from any of the processes listed in 40 CFR 261.32. The materials in this waste stream are, therefore, not K-listed hazardous waste.

TSCA Regulated Contaminants

PCBs are not expected to be present in the cemented sludge waste stream in concentrations greater than 50 parts per million (ppm). If any containers are identified during RTR/VE as containing PCB items (e.g., light ballasts) greater than 50 ppm, the drums containing the PCB items will be managed and shipped in accordance with the WAC. [2, 5, 11, 19, 20, 29, 35, 36]

1.7 Radionuclides

The primary radionuclides contained in Mound TRU waste stored at INL are those identified for "heat source" materials (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu). Mound TRU waste is also expected to contain ^{241}Am, ^{235}U, and ^{237}Np, due to ingrowth. Weapons-grade material composed primarily of ^{239}Pu is also expected to be present, as well as small quantities of other isotopes from research activities. Uranium-234 is an expected constituent in aged plutonium. Other radioisotopes that have been measured in Mound wastes are ^{227}Ac, ^{233}U, ^{238}U, ^{137}Cs, and ^{60}Co. Although ^{90}Sr was not detected, it is expected to be present in waste where ^{137}Cs is

observed. The cemented sludge waste stream does not contain concentrations of plutonium in excess of 20% by weight for the aggregate of any material category. [2, 27, 28, 42, 54, 61]

The ratios of the two most prevalent radionuclides in the container are compared to confirm existing AK data in compliance with WAC requirements. The two most prevalent radionuclides anticipated in the cemented sludge waste are ^{238}Pu and ^{239}Pu. [42]

2.0 SHIPPING CONSIDERATIONS

2.1 Waste Packaging

Each 55-gallon drum was lined with a 90-mil rigid polyethylene drum liner. Some of the rigid liners were lined with a polyethylene drum bag. After being filled with waste, the drum bag, if present, was sealed with tape and the rigid drum liner lid was installed. Based on RTR/VE examination, a cement cap may be present on top of the cemented sludge and the sludge may exhibit variable layers of solidification. Absorbents (such as Florco) may also be present on top of the cemented sludge. Plywood spacers were placed between the rigid liner lid and the drum lid before the drum lid was installed. Any combination of plastic bags that does not exceed five layers of confinement (of which no more than three are inner bags) is acceptable for shipment to WIPP. Containers with excess layers of confinement or packaging configurations not addressed by an approved TRUCON code for this waste stream will be segregated and vented or rejected as appropriate. [21, 24, 25, 26]

2.2 Flammability Consideration

The payload containers in the waste stream must comply with the Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements. As specified in the CH-TRAMPAC, a determination of compliance with the flammable gas limits will be performed for VOCs, hydrogen and methane. Headspace gas sampling and analysis is performed when required by the WAP and/or CH-TRAMPAC. At a minimum, the HGAS analytical results are evaluated to determine the total concentration of flammable VOCs present in the waste. Payload containers, including those with HGAS results exceeding 500 ppm flammable VOCs, are evaluated for compliance with applicable CH-TRAMPAC requirements prior to shipment. Payloads containing flammable VOCs are managed in accordance with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC). [59]

3.0 REFERENCES

NOTE: *References are cited per the style guide provided by AMWTP Document Control. AMWTP documents such as procedures, AK Reports, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Data Management System. Previous revisions are available upon request through Document Services.*

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WSPF Number: BN836, Cemented Sludge ~~Waste~~ 4/28/06

AK Source Document / Rev. Number : AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6 and Discrepancy Report D056A – Assessment of Hazardous Waste Numbers Assigned to Cemented Sludge (BN836)

HWN	(1) AK ASSIGNED	(2) STORAGE	(3) RECONC.	(4) DELETE RECONC.	(5) ITEMS/ CONST.	(6) FINAL	(7) PERMIT-TED
F001	X	X	x		X	X	✔
F002	X	X	x		X	X	✔
F003	X	X			X	N/A	✔
F004							✔
F005	X		x		X	X	✔
F006							✔
F007							✔
F009							✔
D004	X		x	o	X	X	✔
D005	X		X		X	X	✔
D006	X	X	x	o	X	X	✔
D007	X	X	x	o	X	X	✔
D008	X	X	x	o	X	X	✔
D009	X	X	x	o	X	X	✔
D010	X	X	x	o	X	X	✔
D011	X	X	x	o	X	X	✔
D022							✔
D029							✔
D032							✔
D001							✔
D002		X				N/A	✔

For column 3, "X" indicates UCL_{95} above the associated PRQL/RTL and "x" indicates detected but UCL_{95} below the PRQL/RTL.
For column 4, AMWTP retained all characteristic toxicity codes even if UCL_{95} was below the RTL value.
For column 6, "N/A" applies because only containers verified to meet WIPP CH-WAC criteria will be included in this waste stream (i.e. not liquid waste); therefore, D002 and F003 are not applicable to containers that can be assigned to this waste stream (reference AMWTP-TRUW-63).

AK Expert: M L Johnson, ML Johnson Print/Sign Date: 4/27/06

Site Project Manager: Steve Carpenter Print/Sign Date: 4.27.06

Implementing Document: MP-TRUW-8.13

Waste Stream or Waste Type Description: Cemented Sludge

Waste Stream or IDC Number: BN836

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C343A, C344A, C351A, C358A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C488A, C490A, P024A, P319A, P380A, P381A, P385A, P418A, P423A, P463A, P469A, P474A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P492A, P493A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P540A, P544A, P545A, P546A, P550A, P551A, P646A, P744A, U126A, U145A, U146A, U148A, U149A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U196A, U198A, U202A, U203A, U204A, U207A
Waste stream volume and time period of generation.	WS2	C348A, C359A, C372A, C379A, C411A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C534A, C535A, D040A, D050A, P024A, P364A, P365A, P380A, P400A, P418A, P469A, P482A, P505A, P506A, P507A, P509A, P511A, P519A, P522A, P523A, P524A, P567A, P646A, P744A, U122A, U126A, U127A, U134A, U142A, U146A, U148A, U149A, U154A, U159A, U187A, U197A, U198A, U202A, U207A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C444A, C458A, C466A, C473A, C481A, P024A, P319A, P379A, P380A, P381A, P385A, P418A, P423A, P463A, P464A, P469A, P474A, P482A, P483A, P485A, P492A, P493A, P504A, P505A, P507A, P510A, P511A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P546A, P558A, P646A, P744A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U196A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C269A, C339A, C342A, C344A, C349A, C354A, C356A, C359A, C385A, C409A, C411A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C488A, C490A, C493A, C546S, D056A, D070A, P024A, P207A, P307A, P310A, P319A, P365A, P379A, P380A, P381A, P385A, P409A, P418A, P423A, P457A, P458A, P463A, P464A, P469A, P474A, P475A, P485A, P492A, P493A, P497A, P503A, P504A, P505A, P506A, P509A, P510A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P527A, P532A, P534A, P536A, P539A, P545A, P546A, P552A, P591A, P592A, P623A, P624A, P625A, P643A, P644A, P645A, P646A, P744A, U126A, U132A, U140A, U149A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U195A, U196A, U197A, U202A, U204A, U205A, U208A
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C339A, C348A, C349A, C370A, C376A, C378A, C379A, C383A, C409A, C411A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C479A, C481A, C485A, C490A, C518A, C524A, C525A, C534A, C546S, P024A, P207A, P319A, P365A, P379A, P380A, P381A, P385A, P393A, P399A, P418A, P423A, P463A, P465A, P469A, P474A, P475A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P623A, P624A, P625A, P646A, P670A, P744A, U126A, U145A, U146A, U149A, U153A, U154A, U156A, U157A, U159A, U187A, U189A, U190A, U191A, U195A, U196A, U197A, U198A, U204A, U205A, U206A, U207A, U208A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C354A, C458A, C481A, C493A, D056A, D070A, P207A, P307A, P310A, P319A, P365A, P393A, P418A, P492A, P503A, P505A, P506A, P509A, P512A, P519A, P527A, P532A, P539A, P592A, P623A, P624A, P625A, P646A, P744A, P756A, U060A, U142A, U185A, U190A, U199A, U205A, U206A, U208A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C291A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C490A, C494A, C508A, C517A, C519A, C551A, C552S, D050A, P024A, P319A, P381A, P385A, P398A, P418A, P423A, P463A, P464A, P467A, P469A, P472A, P474A, P482A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P611A, P622A, P623A, P624A, P625A, P646A, P744A, U126A, U137A, U142A, U147A, U149A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U170A, U172A, U173A, U185A, U187A, U189A, U190A, U195A, U196A, U198A, U199A, U202A, U203A, U205A, U208A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C516A, D070A, P024A, P385A, P418A, P465A, P474A, P492A, P525A, P536A, P646A, P744A, U126A, U196A

<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Tim Viennemann Date: 7-22-09
Print/Sign Date

Site Project Manager: Steve Carpenter Date: 7.22.09
Print/Sign

LDR NOTIFICATION- IDC MD836

WASTE STREAM BN836

The mixed waste identified on manifest number _____ and bearing the EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, and F005 are designated as transuranic (TRU) mixed waste and have been exempted from the land disposal prohibitions of 40 CFR 268 by the Land Withdrawal Act Amendments (Public Law 104-201). This amendment exempts WIPP waste from treatment standards promulgated pursuant to section 3004(m) of the Solid Waste Disposal Act [42 U.S. C. 6924(m)] and are not subjected to the Land Disposal Prohibitions in section 3004(d), (e), (f), and (g) of the Solid Waste Disposal Act. This waste is not prohibited for land disposal.

Container Identification numbers	Hazardous waste number(s)	Land Disposal Prohibition effective date
	D004	May 26, 2000
	D005	May 26, 2000
	D006	May 26, 2000
	D007	May 26, 2000
	D008	May 26, 2000
	D009	May 26, 2000
	D010	May 26, 2000
	D011	May 26, 2000
	F001	Nov 8, 1988
	F002	Nov 8, 1988
	F005	Nov 8, 1988
	F006	August 8, 1988

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

April 25, 2006 CCN 06-20231

Mr. Dale Bignell, Director
Washington Regulatory and Environmental Services
4021 National Parks Highway
Carlsbad, NM 88220

Subject: Contract No. DE-AC-07-99ID13727 – Waste Stream Profile, BN836 - JDM-023-06

Dear Mr. Bignell:

Attached is Waste Stream Profile (WSPF), BN836, Cemented Sludge, and AMWTP-RPT-TRUW-63, *Acceptable Knowledge Summary for Cemented Sludge (BN836)*, for your review and approval. We have evaluated and reviewed the profile and believe it is compliant with the Waste Acceptance Plan (WAP).

If you have any questions feel free to call me at 208-557-6404 or Eric Schweinsberg at 208-557-6425.

Sincerely,

Jeffrey D. Mousseau, P.E.
Waste Programs Manager
Bechtel BWXT Idaho, LLC
Advanced Mixed Waste Treatment Project

Attachment

SC/skc

cc: Rod Arbon, BBWI
Steve Carpenter, BBWI
Rick Chavez, WRES
Elvin Dumas, BBWI
Tom Fallon, BBWI
Guy Girard, DOE-ID
Jim Jackson, BBWI
Scott Raish, BBWI
Ron Reeves, WRES
Frank Russo, BBWI
Eric Schweinsberg, BBWI
Ingrid Siddoway, BBWI
Jerry Wells, DOE-ID
WIPP Site Documents
AMWTP Correspondence Control

Venneman, Timothy E.

From: Schweinsberg, Eric
Sent: Tuesday, July 14, 2009 11:33 AM
To: Tedford, Gina; Carpenter, Steve; Johnson, Micky L.; Venneman, Timothy E.
Subject: FW: CBFO Approval RPT-TRUW-63, Revision 5A
Follow Up Flag: Follow up
Flag Status: Red

fyi

Eric P. Schweinsberg
SPM/TRU Programs
AMWTP - Idaho National Lab
208-557-6425 (Work)
208-351-9247 (Cell)
208-557-6561 (Fax)

We make a living by what we get. We make a life by what we give

---

From: Sena, Gloria - DOE [mailto:Gloria.Sena@wipp.ws]
Sent: Tuesday, July 14, 2009 11:04 AM
To: Document Services
Cc: Brown, Gail L.; Schweinsberg, Eric; Wells, Jerry L; Gilbert, Patsy - LANL; Lyshik, Gwen - LANL
Subject: CBFO Approval RPT-TRUW-63, Revision 5A

As requested in the email from Sherrie Walker on July 2, 2009, the Carlsbad Field Office (CBFO) has reviewed RPT-TRUW-63, Revision 5A, *Acceptable Knowledge Summary for Cemented Sludge (BN836)*. There were no comments generated. We have determined that the report continues to meet CBFO requirements.

If you have any questions, please contact Norma Castaneda at (505) 234-7118.

Office of the National TRU Program
Carlsbad Field Office

cc:
WIPP Operating Record
CBFO M&RC

CBFO:NTP:GS:09-1056:UFC 5822.00

AMWTP
Advanced Mixed Waste Treatment Project

Waste Matrix Code Reference Manual

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-11109.)
Steve Carpenter
AKE Manager and SPM

09/26/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	05/11/03	All	DCR-2250, Initial issue.
1	06/10/04	All	Re-sorting the tables according to IDC rather than Waste Matrix Code. Added in newly documented packaging configuration for RF 001. Included additional detail for MD-834, MD-835, and MD-836. Added BN 512, AE 100, AE 101, AE 102, AE 104, AE 105, AE 106, AE 107, AE 110, AE 111, AE 120, AE 121, BL 081, BL 012, BL 015, BL 030, ID 150, ID 152, ID 153, ID 154, ID 155, ID 156, ID 160, ID 161, ID 162, ID 163, ID 164, ID 157, ID 021, ID 601, ID 175.
2	3/03/05	Page 48	DCR-4021-Replaced waste matrix code S5129 with S3119.
3	07/14/05	Various	DCR-4228. Added Mound IDC 810. Added IDC 812 information to IDCs 801, 802, 803 and 804. Added IDC 832 information to IDCs. Added information regarding packaging for the RF wastes repackaged during the BIN program. Replaced acronym RFP with RF.
4	08/19/05	All	DCR-4463. Added clarification concerning which IDCs can and cannot be shipped to WIPP. Updated and corrected WMCs to reflect information in TRUW-6 and -12.
5	10/11/05	Various	DCR-4558. Revised to add newly approved AK information.
6	10/13/05	25 and 39	DCR-4621. Minor change to correct errors in Rev. 5.
7	1/10/06	3, 48, and 75	DCR-4720. Change the WMC for resins (IDCs RF 432 and RF 822).

Revision Number	Date Approved	Pages Affected	Description of Revision
8	2/24/06	All	DCR-4786. Added new section to provide additional information concerning expected variations in waste composition and packaging configurations, reformatted tables to add or clarify information (e.g., waste in boxes, WIPP acceptable), incorporated AKRs, added new IDCs, and added information to waste stream descriptions.
9	03/06/2006	All	DCR-4846. Insert Appendix A, correct references, and incorporate revised AKR-05-331.
10	04/05/06	Various	DCR-4872. Revise Sections 3.1.2 and 3.34, incorporate AKRs, and make additional corrections throughout.
11	06/13/06	Various	DCR-5007. Revise Section 1.0 to address audit observations concerning the use of the report. Revise Section 4.0 to make corrections throughout, including updating WMC/IDC names to match TWBIR/WTS, deleting newly generated IDCs (ID 000, RF 000, BN 502, BN 503, BN 504, BN 506, BN 512, BN 513, BN 513, BN 514, and RF 9999) that are no longer needed, and adding clarification concerning use of generator area codes in WTS to identify the generator of INL waste instead of the generator site code, ID. For certain IDCs (302, 33A, 33B, 330, 336, 337, 464, 831, 832, and 833), change WMC to S5300 and change the WMC description to "Organic Debris."
12	08/08/06	Various	DCR-5122. Revised to provide clarification, update new information, and make minor corrections to waste matrix codes.
13	09/14/06	Various	DCR-5284. Revised to add/correct information concerning prohibited items (including adding new Section 3.4) for implementation of corrective action identified from CBFO CAR 06-036, TrackWise CAR 23463. Also changed the WMC for IDC RF 374 to S5490 and added information to Special Notes for IDC RF 003 concerning PCB Mass weight.

Revision Number	Date Approved	Pages Affected	Description of Revision
14	10/26/06	Various	DCR-5421. Revised to add/correct information for IDCs RF 337, RF 338, RF 371, RF 376, RF 480, RF 481, RF 48A, SD 704, SD 705, and SD 706 which included addressing corrective actions identified in NCRs 23821, 23895, and 23932. Added information concerning packaging configurations and prohibited items to Sections 3.3 and 3.4. Added applicable references to Section 5. Add column of WMCs to Appendix A.
15	11/30/06	Various	DCR-5511. Added information to effected IDCs concerning when an IDC is not required if the proposed change is to another IDC included in the same approved waste stream. Corrected WMCG designation for metal waste assigned to BN296. Incorporated information from AKR-04-43, AKR-04-75, and AKR-05-358. Changed the WMCs for RF crucibles, grit and other debris waste as documented in AKR-05-239 R1, AKR-06-427, AKR-06-428, and AKR-06-429. Added information to clarify when a WMC change is required for IDCs that contain homogeneous solids, soil/gravel, and/or debris. Revised waste definitions to match WAP. Added information concerning use of generator codes, prohibited items, and PCB waste. Changed "secondary waste" to "other waste" throughout the document. Deleted IDC SD 703.
16	04/03/07	All	DCR-5830. Update descriptions to include atypical waste items identified in AK documents (including historical RTR/VE). Update description for IDCs SD 704, SD 705, and SD 706 to include information from AK Summary report. Update descriptions for RF 371 to clarify cinderblocks acceptable as in primary waste form in individual containers.

Revision Number	Date Approved	Pages Affected	Description of Revision
17	07/03/07	Various	DCR-6129. Add clarification to Table 3-1 concerning estimation of waste parameters. Add new IDCs UN 000 and UN 00D and revised name and description for IDCs UN 00A, UN 00B, and UN 00C for temporary IDCs. Revise and/or update information for IDCs RF 002, RF 003, RF 007, RF 095, RF 337, RF 338, RF 371, RF 374, RF 376, RF 480, RF 490, BN 501, BN 505, BN 507, BN 508, BN 509, BN 511, BN 526, BN 530, BN 535, BN 603, BN 604, BN 605, RF 696 (RF 807b), BN 201, RF 800, RF 801, RF 802, RF 803, RF 807, MD 834, RF 950, RF 978, RF 990, and RF 995. Add IDCs RL 710, RL 711, RL 712, and RL 713 for Hanford waste. Add IDCs RF 741, RF 742, RF 743, RF 744, RF 745, RF 750, and RF 751 for Rocky Flats waste retrieved from Pits 11 and 12. Add IDCs BN 531, BN 607, BN 608, BN 609, BN 610, BN 611, BN 612, BN 613, BN 614, BN 615, BN 616, BN 617, BN 618, BN 619, BN 620, BN 621, BN 622, BN 623, BN 624, BN 625, BN 626, BN 627, BN 628, BN 629, and BN 630 for LLW and MLLW wastes. Update references to new style guide. Correct format of TRUCON codes in Appendix A. Make editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
18	02/14/08	Various	DCR-6724. Add IDC RF-746. Change WMC for IDCs AE-100, RF-241, RF-960. Provide clarification concerning recommending IDC changes, indeterminate RTR/VE exams, and allowable amounts of other waste forms. Add waste description information (e.g., soils/gravel, absorbents, filters, and other waste forms). Add information concerning liquids found in homogenous solids and cemented solids found in debris waste. Add alternate packaging configurations (e.g., Kraft tubes). Add historical ID information. Add hyphen between generator designator and IDC number to match format used in WTS reports. Change titles in Waste Matrix Code Reference Tables and, as required, revise contents of Tables to only identify waste parameters for primary waste form. Change WMPs from Inorganic Matrix to Other Inorganic Materials for IDCs: ID-005, RF-005, RF-420, RF-421, RF-422, and RF-425.
19	08/19/08	Various	DCR-7429. Add IDCs ID-142, AW-165, AW-167, RF-010, RF-020, RF-030, RF-040, RF-050, RF-060, RF-070, RF-080, RF-747, RF-748, and RF-752. Updated packaging information for newly generated IDCs to reflect applicable procedure(s). Provide clarification concerning handling of empty aerosol containers, available versus not summarized information, and recommended IDC changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
20	10/30/08	Various	DCR-7661. Correct description for revision 19. Add packaging information for newly generated IDCs. Correct information for IDC RF-748. Change generator area code for analytical waste to reflect waste generator is INTEC (i.e., change IDCs BN-526 and BN-603 to IDCs IC-526 and IC-603 in this report and in WTS). Provide additional information concerning PCBs and packaging configuration for ARP waste. Add information identifying containers that may contain U134 waste. Add information indentifying prohibited items found in MLLW/LLW boxes. Provide clarification to description of HEPA filters. Add section 3.3.5 to address drum filter vents. Provided clarification concerning use of area generator codes in this report and WTS for waste generated at INL facilities. Add special notes for IDCs RF-393, RF-420 and RF-422 concerning IDCs recommendations if waste form is cemented pucks instead of uncemented waste. Add information concerning use of X7000 and S9000 SCGs. General editorial changes.
21	05/26/09	ALL	DCR-8239. Periodic review. Add Section 3.3.6. Add new IDCs IW-176 thru IW-179, NT-210 thru NT-220, BN-500, BN-518, BN-519, BN-520, BN-521, BN-631, BN-632, BN-633, BN-634, BN-635, RF-998, and RF-999. Updated information for IDCs IW-005, ID-142 (revised to AW-142), ID-154, ID-157, RF-241, RF-302, RF-336, RF-371, RF-432, RF-481, BN-501, BN-508, BN-510, BN-511, BN-604, BN-618 thru BN-620, BN-622, BN-625 thru BN-627, RF-741 thru RF-752, MD-847, and RF-960. Delete duplicate references and add new references. General editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
22	07/20/09	Various	DCR-8483. Periodic Review. Add IDCs BN-528, BN-529, BN-536, BN-537, BN-636, and BN-637. Change generator designator from ID to AW for IDCs AW-160 through AW-167. Change generator designator from ID to IC for IDCs IC-156 and IC-601. Revise WMCs for IDCs ID-150, AW-161 and AW-165. Revise WIPP status for IDC AW-164. Revise IDC descriptions for IDCs BN-520, BN-521, BN-634 and BN-635. Update information concerning prohibited items (based on RTR results). Update information in Reference Section. Update TRUCON code table in Appendix A. General editorial changes.
23	12/03/09	Various	DCR-8852. Add new IDCs BN-513, BN-514, BN-515, BN-522, IC-527, BN-538, RF-749, RF-753, and RF-754. Revise names of IDCs RF-095, RF-337, BN-501, BN-507, BN-509, BN-511, IC-526, IC-603, and RF-995. Update information concerning PCB and non-PCB wastes (including designating BN-501, BN-511, IC-526 and IC-603 as PCB wastes). Update special notes for UN IDCs and IDCs associated with leaded gloves. Change WMCs for RF-095, BN-603, and RF-995. Update information concerning roaster oxide and 30-gallon drums that may be present in waste retrieved from Pits 11 and 12. Add new references including CCP AK Summaries for NTS wastes. General editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
24	06/16/10	Various	DCR-9294. Update list of generators in Section 2. Update information in Section 2 to reflect WIPP permit modification and generator information for RL and MFC. Add new IDCs PC-000, LL-212, LL-213, LL-221, GV-222, IW-526, IW-527, BN-550, IW-603, BN-702, RL-714, RL-716, and RF-760. Delete IDCs AW-142, RL-710, RL-711 and RL-713.Create new tables for IDCs AW-150 and IC-150. Revise the IDC names and descriptions for IDCs AW-160, AW-164, AW-165, AW-167, RF-374, BN-520, BN-521, BN-634, BN-635, and RL-712. Add NTS to names of IDCs NT-211, NT-212, and NT-213. Update IDC descriptions, packaging configurations, and special notes for AE, AW, BC and BL IDCs. Add SWB configuration for S3000 waste in approved profiles. Update special notes for waste received under the Offsite Waste procedures. Correct date for use of rigid liner at RF. Update acronym and abbreviations. Update information in Reference Section. Add BN222 to Appendix A. General editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
25	12/09/10	Various	DCR 9668. Revised special notes for IDCs UN-00A, UN-00B, UN-00C, and UN-00D. Revised names and descriptions of IDCs BN-500, BN-528, BN-529, and BN-537 to specify waste included in these IDCs. Revised description of IDCs BN-508, BN-509, BN-520, BN-521, BN-536, BN-604, BN-605, BN-607 through BN-617, BN-634, and BN-635 to specify wastes included in these IDCs. Added new IDC BN-534. Updated description of organic setups (IDCs RF-003, BN-511, and RF-743) to reflect solidified liquid. Updated description and special notes for IDC AE-100 to incorporate results of RTR examination. Updated description for IDC RF-337 to identify additional items that may be present in the waste. Updated special notes for IDCs RF-370 and RL-712 to incorporate results of RTR examinations. Revised "confirm" to verify" and added clarification concerning prohibited liquids throughout document to be consistent with WIPP WAP. Added Aquaset II-G® throughout document. Updated list of acronyms, references and Appendix A. General editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
26	04/26/11	Various	DCR-10057. Revised Section 3 to identify RF and MD concerning variations in waste composition, absorbents, and packaging configurations. Added IDCs LA-002, LA-003, LA-005, LA-006, SL-223, SL-224, AW-225, SL-227, OR-250, SR-251, SR-252, SR-253, AE-254, SD-703, RL-715, RL-720, and SR-835. Revised Sections 3 and 4 to add abbreviated IDC table format for waste received under the AMWTP Offsite Waste Program and profiled by CCP. Added Section 3.5.7. Revised IDC tables for wastes from AW, NT, LL, GV, IC, SD, and RL generators to abbreviated format. Added IDCs IC-525 and IW-602 to segregate assigned P and U listed HWNs. Added IDCs BN-539 and BN-600. Revised waste descriptions and special notes for IDCs BN-500, BN-505, BN-507, BN-508, BN-509, BN-511, BN-513, BN-514, BN-515, BN-520, BN-521 BN-528, BN-529, BN-534, BN-604, and BN-605. Added clarification that "bulk" is "direct loaded" drums. Updated lists of acronyms, generator sites, and references. General editorial changes.
27	06/08/11	Various	DCR-10144. Added IDCs BN-523, BN-524, BN-525, BN-526, BN-527, BN-597, BN-598, BN-599, BN-602, and BN-603. Added offsite waste IDCs ND-228, LB-229, and SR-842. Revised name for IDC RF-760. Revised descriptions and/or special notes for IDCs RF-336, BN-500, BN-505, BN-508, BN-509, BN-511, BN-513, BN-515, BN-600, BN-604, BN-605, and RF-760. Updated lists of acronyms, generator sites, and references. General editorial changes and corrections.

Revision Number	Date Approved	Pages Affected	Description of Revision
28	09/01/11	Various	DCR-10322. Added Section 3.1.1.1 and clarified scope of Section 3.3.1. Updated and corrected information in Table 3.1. Added offsite waste IDC AE-230. Deleted WMCs and updated Special Notes for IDCs IW-005, IW-179, BN-519, RF-998, and RF-999 to reflect IDCs for overpack container configuration. Updated Special Notes for IW-176, IW-177, and IW-178 to include bin configuration. Revised information for IDCs AE-100, AE-101, AE-104, RF-004, BN-500, BN-508, BN-523, BN-524, BN-600, RF-751, and RF-760. Updated Special Notes to add prohibited items identified by RTR or VE examinations based on WTS query performed on 6/30/2011. Added TRUCON codes for waste stream BN600 in Appendix A. Updated list of references. General editorial changes and corrections.
29	02/08/12	Various	DCR-10551. Corrected approval date of revision 28 in Revision Log. Modified UN-00A to clarify waste description, primary waste parameters, and special notes. Modified RF-004 to clarify Special Notes. Modified AE-100, AE-101, AE-102, AE-104, AE-105, AE-106, AE-107, AE-110, AE-111, AE-120, and AE-121 to reflect newly available AK. Changed name of AE-230. Add IDC SR-255. Removed RF-374a/697 and replaced it as RF-697. Add IDC BN-541. Modified BN-632 to clarify special notes. Modified BN-633 to clarify special notes. Removed RF-807b and replaced it as RF-696. Modified RF-751 to clarify special notes. Modified RF-760 to clarify waste description and special notes. Modified RF-802 to clarify special notes. Added references 248 - 263.

Revision Number	Date Approved	Pages Affected	Description of Revision
30	09/26/12	Various	DCR-11109. Updated Secs. 1.0, 2.0, 3.0, 3.2, 3.3.2, 3.5.6, and added section 3.5.7. Updated Waste Matrix Reference Tables for PC-000, UN-000, UN-00A, UN-00B, UN-00C, UN-00D, RF-003, RF-090, RF-095, AE-100, AE-101, AE-102, AE-104, AE-105, AE-106, AE-107, AE-110, AE-111, AE-120, AE-121, AW-150, ID-153, ID-154, ID-155, AW-160, AW-161, AW-162, AW-163, AW-164, AW-165, IW-179, BC-201, BC-202, BC-203, RF-241, BN-500, BN-501, BN-505, BN-508, BN-509, BN-510, BN-511, BN-513, BN-519, BN-520, BN-521, BN-528, BN-529, BN-534, BN-541, BN-598, BN-604, BN-633, RF-750, RF-752, RF-760, RF-807, MD-811, and RF-995. Deleted Waste Matrix Reference Tables for IW-176, IW-177, IW-178, RF-752, RF-754, and RF-748. Added Waste Matrix Reference Tables for SD-176, SD-177, SD-178, LA-250, SR-255, SR-256, SR-257, SR-258, SR-259, SR-260, SR-261, and CW-600. Added references 265 – 272. Deleted Appendix A.

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ACRONYMS AND ABBREVIATIONS

NOTE: *The two-letter abbreviations for generator sites and areas are listed in Section 2.0.*

ACL	Analytical Chemistry Laboratory (former name for MFC Analytical Laboratory)
AK	Acceptable Knowledge
AKE	Acceptable Knowledge Expert
AKR	Acceptable Knowledge Resolution
AL	Analytical Lab (at MFC)
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
ARA	Auxiliary Reactor Area
ARP	Accelerated Retrieval Project
BAPL	Bettis Atomic Power Laboratory
CBFO	Carlsbad Field Office
CL	Casting Laboratory (at MFC)
CCP	Central Characterization Project
CFA	Central Facilities Area
CFR	Code of Federal Regulations
CPP	Chemical Processing Plant
D&D	Decontamination and Decommissioning
DOE	Department of Energy
DRF	Drum Repackaging Facility
DTF	Drum Treatment Facility
DU	depleted uranium
DWPG	Drum Waste Packaging Glovebox
EFL	Experimental Fuels Laboratory (at MFC)
EWR	Early Waste Retrieval project
FMF	Fuel Manufacturing Facility
FRP	Fiberglass reinforced plywood (a.k.a. fiberglass reinforced polyester)
GE	General Electric
GGE	Gas Generation Experiments
HFEF	Hot Fuel Examination Facility
HRA	Hot Repair Area
HWN	Hazardous Waste Number
ICP	Idaho Cleanup Project
IDC	item description code
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center (formerly called CPP)
ITRI	Inhalation Toxicology Research Institute

IWTS	Integrated Waste Tracking System
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LDR	land disposal restriction
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
LRC	Lynchburg Research Center
MFC	Materials and Fuels Complex
MLLW	mixed low-level waste
NCR	Nonconformance Report
NDA	nondestructive assay
NMAC	New Mexico Administrative Code
NRD	Nuclear Radiation Development LLC
NRF	Naval Reactor Facility
NTS	Nevada Test Site
OASIS	Organic and Sludge Immobilization System
ORNL	Oak Ridge National Laboratory
PBF	Power Burst Facility
PCB	polychlorinated biphenyl
PFP	Plutonium Finishing Plant
PK	process knowledge
Poly	polyethylene
PPE	personal protective clothing
RBDA	Risk Based Disposal Authorization
RCRA	Resource Conservation and Recovery Act
RFETS	Rocky Flats Environmental Technology Site (formally known as RFP)
RFP	Rocky Flats Plant
RH	remote handled
RWMC	Radioactive Waste Management Complex
RTR	real-time radiography
RTV	room-temperature vulcanizing
SAND	Box designed by Sandia Laboratory in Albuquerque, NM
S/C	Supercompaction
SCW	Special Case Waste
SCG	Summary Category Group
SDA	Subsurface Disposal Area
SDOP	Six-Drum Overpack
SNL	Sandia National Laboratory
SRS	Savannah River Site
SS&C	sand, slag, and crucible
TAN	Test Area North
TID	tamper indicating device
TRA	Test Reactor Area

TRAMPAC	TRU Waste Authorized Methods for Payload Control
TRU	Transuranic
TRUCON	TRU Waste Content Codes
TSA-RE	Transuranic Storage Area-Retrievable Enclosure
TWBIR	Transuranic Waste Baseline Inventory Report
VE	visual examination
VNC	Vallecitos Nuclear Center
WAP	Waste Analysis Plan
WCA	Waste Characterization Area
WETP	WIPP Experimental Test Program
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMCG	Waste Matrix Code Group
WMP	Waste Management Profile
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System

1.0 PURPOSE/SCOPE

This report is a reference manual that provides waste generation information, waste packaging configurations, and physical waste form descriptions (including waste material parameters [WMPs]), for real-time radiography/visual examination (RTR/VE) operators and validators. This information is provided to ensure proper assignment of Summary Category Group (SCG) and Waste Matrix Codes (WMC) following best management practices at the operations level. SCGs and WMCs are verified by the operators during RTR and VE in support of TRU Programs characterization activities in accordance with MP-TRUW-8.2, Quality Assurance Project Plan. [85] The RTR and VE data collected during verification of SCGs and WMCs may also be used by the low-level waste/mixed low-level waste (LLW/MLLW) Programs or the Offsite Waste Program. This report also includes waste form information for newly generated item description codes (IDCs), including IDCs used by the LLW/MLLW Program.

For containers eligible for shipment to Waste Isolation Pilot Plant (WIPP), operators will examine container contents and packaging characteristics to: 1) verify that the physical form matches the waste stream description and the WMC (and IDC as appropriate), 2) estimate each of the waste material parameter weights based on these observations, and 3) identify any WIPP prohibited materials..

The terms *Summary Category Group, Waste Matrix Code Groups,* and *Waste Matrix Code* are used throughout the WIPP Waste Analysis Plan (WIPP-WAP) and pertain to a collection of descriptive titles, definitions, and associated numerical codes used to classify mixed waste at Department of Energy (DOE) facilities. The SCGs, which identify the physical form, consist of three broad categories: Homogeneous Solids (S3000), Soil/Gravel (S4000), and Debris Waste (S5000). The Waste Matrix Code Groups (WMCGs) include eleven waste stream groupings related to the physical and chemical properties of the waste. The WMCs, which are subcategories of the three SCGs and the eleven WMCGs, address the bulk physical/chemical form (i.e., matrix) of the waste.

The WMCGs are defined in the WIPP-WAP and include the following eleven groups: solidified inorganics, solidified organics, salt waste, soils, lead/cadmium metal, inorganic non-metal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal. WMCs (a.k.a., matrix parameters) are defined in DOE/LLW-217, DOE Waste Treatability Group Guidance.

If a container of waste does not include at least 50% by volume of any given SCG, the SCG constituting the greatest volume of waste will be used to describe the waste. SCGs have been assigned to the waste based on acceptable knowledge (AK) and the following WIPP criteria:

- S3000 homogeneous solids include waste that is at least 50% by volume solid materials, excluding soil, that do not meet the WIPP criteria for classification as debris. Examples include inorganic process residues (e.g., incinerator ash, digestion heels, absorbed liquids, solidified liquids), inorganic sludges, organic sludges, salt waste (e.g., evaporation), and pyrochemical salt waste.

- S4000 soil/gravel includes waste that is at least 50% by volume soil/gravel (natural geologic material $\leq$2.36 inches [60 millimeters]).

- S5000 debris waste includes heterogeneous waste that is at least 50% by volume materials that meet the criteria specified in 20.4.1.800 New Mexico Administrative Code (NMAC). Debris is defined as solid material exceeding 2.36 inch (60 millimeter) particle size that is:
  - A manufactured object
  - Plant or animal matter
  - Natural geologic material.

According to the WIPP-WAP, particles smaller than 2.36 inches (60 millimeters) in size may be considered debris if the debris is a manufactured object(s) and if it is not a particle(s) of S3000 or S4000 material.

NOTE: *X7000/X7211/X7900 (Special Waste) and S9000 (Unknown/Other Solids) may be temporarily assigned as SCGs to waste where additional AK and/or RTR/VE data is required before a final WMC can be assigned (e.g., AE-106, AE-107, BL-012, BL-015, BL-040, BL-081, BL-338, MD-815, RF-080, RF-980, PC-000, and UN-000).*

SCGs, WMCGs, and WMCs have been assigned to TRU waste that is stored and generated at the Advanced Mixed Waste Treatment Project (AMWTP) based upon the available AK and current WIPP requirements. Additional AK information (including waste description, packaging configuration, drum preparation, waste parameters, and special notes) is obtained from a comprehensive AK database and may be augmented by data collected during RTR/VE examinations.

The comprehensive AK database undergoes routine update. AK information is being continuously developed, documented, and added to the official AK record. As additional AK information is obtained, this document will be revised to reflect additional AK information that may be used to verify the SCG/WMC assignments.

2.0 GENERATOR SITE AND AREA CODES

The following two-letter codes are used to identify the generator site and generator area for the waste stored at the Idaho National Laboratory (INL). For this report, the two-letter site code is used to identify the generator of a waste except for certain INL area generators as identified below. In the Waste Tracking System (WTS) either the site code or area code is used for the INL area generators. UN is used as a temporary IDC designator that reflects a waste with an "undetermined" form or an "undefined" IDC during characterization activities.

Site Code	Area Code	Description
AE	–	Argonne National Laboratory-East (ANL-E)
BC	–	Battelle Columbus Laboratory
BL	–	Bettis Atomic Power Laboratory (BAPL)
BW	–	Babcock and Wilcox
BX	–	Bendix-Grand Junction Operation Office
CW	–	CH2M-WG Idaho
GV	–	General Electric Vallecitos Nuclear Center (VNC)
ID [a]	AW	INL Materials and Fuels Complex (formerly called ANL-West [ANL-W])
ID	BN	INL Advanced Mixed Waste Treatment Project (formerly called BNFL)
ID [a]	IA	INL Auxiliary Reactor Area (ARA)
ID	IC	INL Idaho Nuclear Technology and Engineering Center (INTEC), formerly called Chemical Processing Plant (CPP)
ID [a]	IF	INL Central Facilities Area (CFA)
ID [a]	IN	INL Naval Reactor Facility (NRF)
ID [a]	IP	INL Critical Infrastructure Test Range Complex (formerly called INL Power Burst Facility [PBF])
ID [a]	IR	INL Advanced Test Reactor Complex (formerly called Test Reactor Area [TRA])
ID [a]	IT	INL Test Area North (TAN)
ID [a]	IW	INL Radioactive Waste Management Complex (RWMC)
ID	SD	INL Subsurface Disposal Area (SDA)
JH	–	J. C. Haynes, Ohio businessman who irradiated diamonds with ^{241}Am
LA		Los Alamos National Laboratory (LANL)
LB		Lawrence Berkeley National Laboratory (LBNL)
LL	–	Lawrence Livermore National Laboratory (LLNL)
MD	–	Mound Laboratory
MO	–	Monsanto-Dayton Laboratory
MX	–	Americium-241 waste from a smoke detector manufacturing company in Mexico
ND		Nuclear Radiation Development, LLC (NRD)
NT	–	Nevada Test Site (NTS)
OR		Oak Ridge National Laboratory (ORNL)
RF	–	Rocky Flats Plant (RFP) (subsequently known as Rocky Flats Environmental Technology Site [RFETS])
RL	–	Hanford Site (Richland, Washington)
SD	–	Subsurface Disposal Area
SL		Sandia National Laboratories (SNL)
SR		Savannah River Site (SRS)

a. The two-character site code "ID" is used in this report when the collection of AK information has not been summarized. . Either the site code "ID" or the area codes "AW, IA, IF, IN, IP, IR, IT, or IW" may be used in WTS to identify the INL area generators.

3.0 GUIDANCE CONCERNING USE OF THIS MANUAL

Table 3.1, Explanation of Reference Table Content, provides a detailed template of the information found in Section 4.0 by IDC. The primary references for this information are the associated AK baselines and key source documents (References 2 and 3). These primary references are typically not identified by superscripts within this document.[4, 5, 50, 54, 180, 181] References that augment the baselines or that are specific to individual IDCs, waste generators, or waste streams are identified by superscripts within this document. The information for newly generated IDCs including IDCs for LLW/MLLW may only identify the IDC assignment. The IDC descriptions for LLW and MLLW are obtained through Waste Services and AK interactions. Newly generated LLW and MLLW information is updated as information becomes available. Abbreviated tables are provided for IDCs associated with waste received under the AMWTP Offsite Waste Program that will be characterized and profiled by Central Characterization Project (CCP). The waste stream description, composition, packaging, and prohibited items information for these wastes are available from the AMWTP Offsite Waste Coordinator.

In addition to identifying the SCG and WMC for each IDC, the WMC Reference Tables in Section 4.0 provide other information associated with each IDC. These tables provide a description of the waste that identifies the expected primary waste form(s), as well as the other waste forms (including absorbent) that may be associated with assigned IDCs. These tables also include a description of the packaging configurations (including applicable inner containers), identification of the expected waste parameters for the primary waste form(s), special notes that provide other pertinent information (e.g., potential prohibited items, recommended IDC changes, variations within the waste, or historical ID configuration). Fields within Table 3.1 are updated as additional AK information or RTR/VE results are collected and summarized.

The WMC reference tables are arranged in order by the IDC number first and generator second.

Variations identified by AK and/or by characterization activities (e.g., RTR or VE) that are specific to an IDC are incorporated into the tables found in Section 4.0 . The majority of the historically stored waste being retrieved at the AMWTP is from RF and MD. Variations in the RF and MD waste that are not specific to any given IDC are described in Sections 3.1, 3.2, and 3.3 and include:

- Other waste that may be found in individual containers of RF and MD waste
- Absorbents that may or may not be present as part of the packaging processes at RF and MD
- Container packaging variations (e.g., type/number of packaging layers, use of plywood spacers, and identification of 30-gallon drums) for RF and MD waste.

3.1 Expected Variations in Waste Composition

The following sections are the expected variations in waste composition of RF and MD wastes.

3.1.1 RF Waste

Waste packages may contain waste forms other than the waste form associated with the IDC assigned to the container. [2] Examinations (RTR and intrusive VE) of RF containers have verified the occurrence of this condition. The other waste forms may include, but are not limited to, the following: [24]

- Combustibles (paper, cardboard, rags, cloth towels, booties, gloves, etc.)
- Plastic (bottles, tubing, bags, sheeting, etc.)
- Wood (filter frames, handles, etc.)
- Rubber (gloves, gaskets, hose, etc.)
- Glass (bottles, vials, Raschig rings, beakers, etc.)
- Lead (glass, tape, gloves, scrap, aprons, etc.)
- Metal (nuts, bolts, nails, cans, welding rods, tools, wire, scrap, etc.)
- Other debris (filters, concrete, light bulbs, D-cell batteries, lead cell batteries, etc.).

The presence of these other waste forms does not impact the WMC or HWN assignment unless the amount of these other waste forms exceeds 50% of the container's contents and either:

1. The other waste forms do not support the assigned WMC for the container, or
2. The presence and volumes of other waste forms would require a change of the waste stream number.

If a WMC and/or waste stream assignment change is required, a Nonconformance Report (NCR) and Acceptable Knowledge Resolution (AKR) are also required. [85, 86]

NOTE: *An IDC change is not required if the proposed IDC change is to another IDC within the same direct ship Waste Stream Profile Form (WSPF) (see special notes for affected IDCs).*

3.1.1.1 RF S3000 Waste Packaged in Small Containers

Some of RF S3000 homogeneous solids waste is packaged in small containers (e.g. poly bottles, cans, or small plastic bags). Examples of these homogeneous solids waste packaged in small containers include ash wastes (IDCs RF-420, RF-421, RF-422), cemented ash wastes (IDCs RF-292, RF-696, RF-818, RF-820), pyrochemical salts (IDCs RF-409, RF-410, RF-411, RF-412, RF-414), cemented resins (IDCs RF-432, RF-822), heels (IDCs RF-311, RF-361, RF-393), and miscellaneous solids (IDC RF-290, RF-806, RF-817, RF-823). For some drums, the quantity of packaging (e.g., cans, poly bottles, small plastic bags, clamshells, etc.) exceeds the quantity of homogeneous solids waste. If the quantity of packaging exceeds the quantity of S3000 waste, an IDC should not be changed to a debris IDC. The original IDC assigned by RF to identify homogenous solids should be retained. If the quantity of debris by volume (including inner packaging) exceeds the volume of S3000 waste, an AK evaluation may be requested by RTR operator/VE by recommending an IDC change. The AKE will determine if an IDC change is required or if the original IDC assigned by RF to identify homogeneous solids should be retained and the drum be assigned to the appropriate S3000 waste stream.

3.1.2 MD Waste

Waste management protocol at MD did not require that all waste placed in a container have the same IDC. For example, a drum labeled as IDC MD-803 (Metal Equipment, Pipe, Valves) contains cartons/cans of metal wastes but may also contain cartons/cans of other non-combustible wastes such as asbestos filters, glass, spun-glass/fiberglass filters, sludge, mercury, etc. [32, 33, 34, 35] RTR examination of containers of MD debris waste has also verified that the MD debris waste is not well segregated by IDC/waste form and that combustible and non-combustible waste may be found in the same container. [30]

Due to the lack of segregation by IDC/waste form at the drum level, the MD debris waste was assigned the WMC S5490, Unknown/Other Heterogeneous Debris. [18] A single WSPF was developed and approved for MD debris waste. This WSPF (designated BN304) includes IDCs MD-801, MD-802, MD-803, MD-804, MD-805, MD-810, MD-813, MD-814, MD-825, MD-827, and MD-848. Therefore, an IDC change is not required if the proposed change is to another IDC within waste stream BN304.

NOTE: *An IDC change is not required if the proposed IDC change is to another IDC within the same WSPF.*

IDC MD-847 bulk (direct loaded) combustible waste is not included in the MD debris WSPF BN304. If a container with one of the IDCs listed for the BN304 waste stream contains greater than 50% (by volume) bulk or direct loaded combustible debris that is not packaged in cans or cartons, the IDC must be changed to MD-847.

The presence of non-debris waste does not impact the characterization (WMC assignment) of containers of MD debris unless the amount of the MD non-debris waste is greater than 50% by volume of the waste material in the container. An IDC change is required if MD non-debris waste (e.g., IDC MD-811, MD-812, MD-832, MD-834, MD-835, MD-836, or MD-842) is identified at greater than 50% by volume of the waste in designated debris waste containers (e.g., IDCs MD-801, MD-802, MD-803, MD-804, MD-805, MD-810, MD-813, MD-814, MD-825, MD-827, MD-847, and MD-848).

3.2 Classification of Absorbents

The presence (or absence) of absorbent in a container does not necessarily impact the characterization (IDC/WMC assignment). If the absorbent (i.e., S3000) is greater than 50% by volume of the waste in debris waste containers (i.e., S5000 SCG), an AK evaluation will be performed. Based on current AK information, the types of absorbent identified in this document do not impact the characterization. Any absorbent reported should be consistent with the type of absorbent used at the site that generated the waste (e.g., Florco was used at MD and Oil-Dri® used at RF). The following are the expected variations in quantity and type of absorbent in containers of RF and MD wastes.

3.2.1 RF Waste

Based on AK information, absorbent was added to every RF drum as part of the inspection process:

Prior to March 1982, one to two quarts of Oil-Dri® was placed on the top of the outer, sealed polyethylene drum bag.

- After February 1982, vermiculite was used to fill the space between the outer, sealed polyethylene drum bag and the top of the 90-mil rigid liner (typically 3 to 12 pounds or 24 to 96 pints was added dependent on the fill factor of the drum).

However, based on AMWTP RTR characterization data, the amount and type of absorbent actually used can vary from the expected volumes and time frame of use as shown in the following examples: [22]

- Oil-Dri® was found in containers with closure dates after February 1982
- Vermiculite was found in containers with closure dates prior to February 1982
- Both Oil-Dri® and vermiculite were found in a container
- Up to 12 quarts of Oil-Dri® were found in one container
- No absorbent was found in other containers.

3.2.2 MD Waste

Based on AK information, absorbent was added to MD drums of bulk or direct loaded waste (e.g., IDC MD-825, MD-826, MD-847, and MD-848) as part of the packaging process: [3, 31, 32, 33]

- For drums with IDC MD-825 waste, approximately 20 to 25 pounds of Florco absorbent was placed on the bottom of the drum bag before any waste was placed in the drum.
- For drums with IDCs MD-847 and MD-848 wastes, approximately 5 to 10 pounds of Florco absorbent was placed on the bottom of each drum for absorption of any free liquid.
- For boxes of IDC MD-826 waste, approximately 50 to 100 pounds of Florco absorbent was placed on the bottom of the box before any waste was placed in the box if the waste was suspected of being damp.
- Absorbent may also be present in the space between the 30-gallon drum and 55-gallon drum (if this configuration is observed).
- Vermiculite and Florco were used at the MD Plant until the early 1970s when they were replaced by Auto-Dri, Dri-Rite, or Sorbal. MD began the switch back to Florco in early 1975; however, Dri-Rite was used in some drums until September 1975.

NOTE: *When calculating density, the appropriate density associated with the type of absorbent should be assigned (e.g., 0.5 pounds per pint should be used for Florco).* [36]

However, based on AMWTP RTR characterization data, the amount (including the absence) and type of absorbent (Vermiculite, Florco, Auto-Dri, or Sorbal) can vary from the expected. For example, vermiculite was identified in a waste container that was generated in the late 1970s. [31]

3.3 Waste Packaging Configuration Variations

The packaging configurations documented in Section 4.0 reflect the expected packaging configurations based on the waste management practices identified in AK source documents. Individual containers may have packaging configurations that differ from those identified in Section 4.0. Variations in packaging configuration are listed below and do not require an AK evaluation unless otherwise noted. An AK evaluation may be requested for a packaging configuration not identified in this document. The following are the expected variations in waste packaging configurations in containers of RF and MD wastes.

3.3.1 Bulk versus Inner Container Packaging for S3000 Wastes

The variation in expected packaging configuration between bulk or direct loaded S3000 homogeneous solids waste (e.g., waste placed directly into drum rigid liner or drum bag liner) versus S3000 homogeneous solids waste packaged in small inner containers or bags requires an AK evaluation unless the variation has already been documented in Section 4.0 (see Special Notes for the IDC undergoing evaluation) or by an approved AKR. For example, an AK evaluation would be required if RTR identifies a drum of IDC RF-292 with bulk or direct loaded sludge because Section 4.0 for RF-292 waste only identifies that this sludge was packaged in inner containers and does not identify that this sludge was bulk or direct loaded. Conversely, an AK evaluation is not required if RTR identifies a drum of IDC RF-001 with sludge packaged in small containers since this type of packaging has already been addressed in the "Special Notes" in Section 4.0 for this IDC.

NOTE: *An AK evaluation can be initiated by RTR/VE using the same process used to reject the IDC/WMC.*

3.3.2 Number and Types of Packaging Layers

Other variations in the number and type of container liners/packaging (or absence) do not impact the characterization (WMC assignment); however, it may affect other aspects relating to WIPP/TRU Waste Authorized Methods for Payload Control (TRAMPAC) acceptability. A determination of whether the container needs TRUCON code reassignment, treatment, or other special processing (due to identified packaging configuration) to allow the container to be shipped may be required if the shipping category specifications cannot be met.

Any exceptions to the acceptability of the above variations to packaging configurations are identified in the Section 4.0 (see Special Notes) for the IDC being evaluated.

3.3.2.1 Drum/Box Packaging Configurations

Individual containers may not have the same number and/or type of container liners as identified in the AK source documents (see Section 4.0). [23, 26, 27] Examples of variations that do not require an AK evaluation include:

- An RF drum (with package closure date after 1971) may not have a rigid liner
- An RF or MD drum may have more or less drum bags (including no drum bags) than identified in Section 4.0
- A box may not have a plastic liner
- A drum may have a cardboard liner (when one is not identified in Section 4.0)
- A box may not have a cardboard liner (when one is identified in Section 4.0).

3.3.2.2 Inner Packaging Configurations

Individual drums may not have the same number or type of inner packaging as identified in the AK source documents (see Section 4.0). [26, 27, 91] Examples of the variations that do not require an AK evaluation include:

- The type of inner package (metal can, bottle, bag, Fiberpaks, or Kraft tubes) for RF waste may differ from that identified in Section 4.0.
- The number and type of small bags used to package the RF waste may vary from that specified in Section 4.0. For example, an inner package may have been triple-bagged instead of double-bagged or an o-ring bag was used instead of a polyethylene (poly) bag.
- MD waste may be packaged in a ½-gallon or 1-gallon metal paint can instead of a 1-gallon plastic coated carton.
- MD or RF (prior to 1974) waste may contain a 30-gallon drum with waste inside a 55-gallon drum. A 30-gallon drum with lid (30 pounds of Iron-based Metals/Alloys) should be identified as sealed container greater than 4 liters. [20, 56]
- An MD drum may contain small dense containers (such as centerpost cans/calorimeter cans). [62]

3.3.3 MD Plywood Spacers

Plywood spacer(s) from ¼- to ¾-inch thick were placed between the rigid liner lid and the drum lid before the drum lid was installed on drums containing IDCs MD-801, MD-802, MD-803, MD-804, MD-810, MD-811, MD-813, MD-814, MD-825, MD-827, MD-834, MD-835, MD-836, MD-847, and MD-848. Melamine (masonite) spacers have also been found in MD drums. The absence or presence of plywood spacers in any drum of waste from MD does not impact the assignment of IDC, WMC, or Hazardous Waste Numbers (HWNs), and the characterization and acceptability of the drums are not impacted by this variation of packaging configuration. [3, 25]

NOTE: *The other waste characteristics (e.g., assay results, waste contents consistent with IDC) should be evaluated to ensure that the waste generator designation is correct for those MD containers without plywood spacers.*

3.3.4 Drum Filter Vents

Based on a review of the MD and RF waste certification plans and/or waste packaging and inspection procedures, the drum and rigid liner lids were not vented and the rigid liner lid did not contain a vent hole when these wastes were shipped from MD or RF to INL. [33, 46, 102, 104, 105, 106, 107, 108, 109, 110] Filter vents were required on drums of MD waste beginning in 1986; however, drums of MD waste shipped to INL were packaged prior to 1986 and would not be vented. [103] Carbon composite vents were required on drums of RF combustible waste beginning in 1988; however, drums of RF combustible waste shipped to INL were packaged prior to 1987 and would not be vented. [111] The absence (or presence) of drum filter vents do not affect the IDC, WMC, or characterization of a container.

The 1980 INL acceptance criteria for MD and RF required that the rigid liner lids be sealed with an adhesive and the drum head gasket be coated with a nonhardening adhesive. [112]

Prior to drums of retrieved waste being examined by RTR or VE, they are vented and a filter installed in accordance with procedures INST-OI-45, Drum Filter Installation, or INST-OI-50, WMF-615 Filter Insertion Operations. [113, 114]

A drum vent filter is installed in containers of newly generated supercompacted debris waste in accordance with procedure INST-FOI-20, Supercompactor and Post-Compaction Operations. [115] A drum vent filter is installed in containers of newly generated non-debris solids and newly generated debris not authorized for supercompaction in accordance with INST-OI-24, Packaging Radioactive Waste. [116]

3.3.5 Container Types

The following are the typical container types consistent with AK for the RF and MD generator sites. Other container types, however, may have been used.

3.3.5.1 RF Container Types

RF 55-gallon drum chines (a.k.a., chimes) are larger and more distinct than the chines on MD drums.

RF used a variety of boxes during the period that RF shipped waste to INL. Prior to 1982, RF used fiberglass reinforced plywood (FRP) boxes. Most RF FRP boxes have interior flush (ribbed on the outside) but some RF FRP boxes have exterior flush (smooth on the outside). RF FRP boxes typically have four evenly spaced skids (runners or manufactured cribbing), but some RF boxes may have five skids. Beginning in 1982, RF also packaged waste in SAND boxes. The SAND boxes are made of corrugated steel with or without additional support. [75, 101]

NOTE: *One or more skids may be missing from some boxes, but evidence of spacing may still be visible on the bottom of the box.*

3.3.5.2 MD Container Types

MD 55-gallon drums are taller than RF drums and the chines on MD drums are smaller and more rolled than the chines on RF drums. MD drums also have the year of manufacture on the bottom of the

drum (e.g., '79'). MD drums are sealed with a padlock-type yellow tamper indicating device (TID) with Mound stamped on one side and the TID seal number stamped on the other side. [16, 101]

MD used FRP boxes typically with exterior flush (smooth the outside), five evenly spaced skids (runners or manufactured cribbing), and a yellow-painted horizontal stripe; however, some boxes may have interior flush (ribbed on the outside) and the number of skids may vary from five. Mound boxes also have a metal plaque with a serial number that is a portion of the historical ID. [101]

NOTE: *Some RF FRP boxes also may have exterior flush and five skids so validation of MD boxes requires at least one other attribute (e.g., yellow-painted stripe and metal plaque) to determine generator. Only Mound painted a yellow stripe on FRP boxes.*

3.4 Bag Closure Methods

Waste management practices for RF and MD indicate "twist and tape" method for bag closure. However, a stub bag that is a heat-sealed "filtered bag" was found in some containers that were visually examined at ANL-W as part of a previous VE program. A stub bag with a "twist and tape" closure may also be present in drums that have undergone VE or coring at AMWTP. RTR also identified a "filtered bag" in a RF drum that was not visually examined by ANL-W. In addition, RTR and/or VE have identified "twisted and tied" and "fold and tape" as methods of bag closure for RF and MD. Twist and taped or fold and tape were the methods used to package waste at AW and RL. Heat-sealed bags may also be present in AW, BC, and RL waste. The presence of a heat-sealed bag, twisted and tied (with zip-tie or wire) bag, or fold and tape bag are acceptable means of bag closure for any IDC as alternative closure methods for "twist and tape" bag and do not affect the IDC, WMC, or HWN assignment of the container. [5, 28, 29, 43, 164, 180]

3.5 Prohibited Items

Prohibited items are also identified in Section 4.0 (Description or Special Notes) as described in AK source documents or detected during RTR or VE activities. However, prohibited items may be present in IDCs other than those identified in Section 4.0. Containers with prohibited items or whose contents cannot be verified (e.g., due to impenetrable objects or otherwise unidentifiable) are prohibited from disposal at the WIPP facility until the container contents are made acceptable or no prohibited items are verified. The containers that require corrective action will be flagged for appropriate disposition. The following are summaries of potential prohibited items that may be found in the waste.

3.5.1 Potential Prohibited Items in RF Wastes

Prohibited items that may be present in containers of RF debris waste include, but are not limited to sealed containers greater than 4 liters (e.g., clamshells, taped 8804 or 8806 Vollrath cans), pressurized containers (e.g., unvented aerosol cans or compressed gas cylinders with relief valve), prohibited containerized liquids (e.g., bottles, cans, or lead cell batteries with liquids in excess of WIPP permit requirements), liquids in excess of 1% within the payload container, and sharp or heavy objects that do not meet the criteria for packaging protection. [2, 38, 51, 100]

Containers of RF bulk or direct loaded sludge, solidified liquids, or salt wastes (IDCs RF-001, RF-002, RF-003, RF-004, RF-005, RF-007, RF-095, RF-700, RF-741, RF-742, RF-744, RF-745, RF-749, RF-800, RF-801, RF-802, RF-803, RF-807, and RF-995) may contain prohibited liquids. IDC RF-002

sludge packaged prior to 1973 may contain bottles of liquid chemical waste or mercury. Visual examination of containers of RF bulk or direct loaded sludge, solidified liquids, or salt waste packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. [2, 3, 51, 52]

RF homogeneous solid waste packaged in small containers may include prohibited sealed containers greater than 4 liters (e.g., clamshells) and prohibited containerized liquids. [2, 3, 51]

3.5.2 Potential Prohibited Items in MD Wastes

Prohibited items that may be present in containers of MD debris waste include, but are not limited to, sealed containers greater than 4 liters (e.g., 30-gallon drum, taped 8804 or 8806 Vollrath cans, and capped pipe sections), pressurized containers (e.g., unvented aerosol cans or gas cylinder with relief valve in place), prohibited containerized liquids (including bottles of mercury), and excess liquids. [3, 4]

MD homogeneous solids waste may include prohibited liquids in the payload container. Visual examination of containers of MD bulk or direct loaded homogeneous solids waste (e.g., IDCs MD-834, MD-835, and MD-836) packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. [4]

3.5.3 Potential Prohibited Items in BC Wastes

Containers of BC debris waste may include prohibited pressurized containers (e.g., unvented aerosol cans or gas cylinder with relief valve in place) and prohibited containerized liquids (e.g., small bottles of liquids and liquids in plastic bags). [5]

3.5.4 Potential Prohibited Items in BL Wastes

Containers of BL homogeneous solid and debris wastes may include prohibited sealed containers greater than 4 liters (e.g., if sealed, tin-plated steel cans 4 3/8 inches by 20 to 24 inches, or 2R inner containers greater than 10-inches length in type 6M drums). Prohibited liquids may also be present in the containers of debris waste. [50]

3.5.5 Potential Prohibited Items in AW Wastes

Prohibited liquids may be present in the containers of AW debris waste shipped to AMWTP prior to 2010. [164]

3.5.6 Potential Prohibited Items in RL Wastes

Containers of RL debris waste are verified by radiography at RL to ensure no prohibited items are present in the container to be shipped to AMWTP. Potential prohibited items that are present in the waste at RL include prohibited liquids, un-punctured aerosol cans, PCB items, and sealed containers greater than 4 liters (e.g. 5-quart, 4-gallon, and 5-gallon cans). [180]

3.5.7 Potential Prohibited Items in AE Wastes

Waste packaged prior to February 1981 may contain prohibited items including, but not limited to, prohibited liquids, sealed containers greater than 4 liters, and PCB items.[271]

3.5.8 Potential Prohibited Items in INL and Offsite Wastes

INL wastes received under the AMWTP Offsite Waste Program must meet the acceptance criteria outlined in procedure MP-TRUW-8.40, INL Waste Acceptance. Offsite wastes received under the AMWTP Offsite Waste Program must meet the acceptance criteria outlined in procedure MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance. Waste may be accepted if treatment by the AMWTP renders the waste acceptable for disposal. Any prohibited items (removed during treatment) may be returned to the originating INL or offsite waste generator. [189, 190]

Table 3.1. Explanation of reference table content.

WMCG	*WMC Description*		*SCG*
WMC	*Generator – IDC*	*IDC Description (A concise description [title] of the waste which is also recorded in WTS)*	
WIPP Status	*This field contains statement as to whether waste is or is not a candidate for shipment to WIPP and to identify when CCP is responsible to characterize (i.e., RTR/VE) and profile the waste.*		
Waste Description	*This field contains a brief description of the primary waste form(s) expected in the waste. It also identifies other waste forms that may be present in the waste (i.e., waste may also contain less than 50% by volume...), for example: Inorganic sludge generated at RF in Building 774 from precipitation of aqueous waste. Waste may also contain less than 50% by volume debris items (e.g., surgeon's gloves, glovebox gloves).*		
Inner Packaging	*This field contains a brief description of the inner packaging (listed from innermost layer to outer layer), for example: 1-gallon cardboard carton / Poly bag/Poly bag or Direct loaded into the waste drum.* **NOTE:** *Number of layers of packaging may vary from those identified in Section 4.0.*		
Drum Preparation	*This field contains a brief description of the typical drum preparation (listed from outermost layer to inner layer), for example: Rigid liner (after 1971) / Poly Drum Bag / Poly Drum Bag.*		
Box/Bin Preparation	*This field contains a brief description of the typical box/bin preparation (if boxes or bins were used to package the waste), for example: Poly Box Bag / Cardboard Box Liner.* **NOTE:** *A box may not have all liners identified in Section 4.0.*		
Primary Waste Parameter(s)	*This field identifies the **expected** waste parameters associated with the **primary** waste form(s). This information is based on the IDC and waste descriptions **designated** by the waste generator in AK source documents. It does **not** identify the **minor** waste parameter(s) for inner packaging or other waste forms that may **also** be present in a drum. For example: Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals is identified as the expected waste parameters for IDC RF-480 (light metal) although other wastes forms including plastic, paper, rubber, or glass may also be present in a drum.* **NOTE:** *Identify in WTS all waste parameters and estimate the associated weights for all waste forms observed during RTR or VE including expected primary waste form(s), the other waste forms, and inner packaging. See Section 3.0 for examples of other waste forms (including absorbent) and alternative inner packaging that have been found in waste containers.*		
Special Notes	*This field contains information pertinent to characterization activities, such as potential prohibited items, acceptable and unacceptable packaging variations, polychlorinated biphenyl (PCB) information, etc. This field also provides information regarding recommended IDC/WMC changes.*		

NOTE: *These tables do not contain all possible variations in packaging configurations. Examples of acceptable variations are provided in Sections 3.0 and 4.0. Observations of additional anomalies should be noted during characterization activities and referred to the Acceptable Knowledge Experts (AKEs) for evaluation. Abbreviated tables are provided for the IDCs associated with the wastes received under the AMWTP Offsite Waste Program that will be characterized and profiled by CCP. The waste stream description, composition, packaging, and prohibited items information for these wastes are available from the AMWTP Offsite Waste Coordinator.*

4.0 WASTE MATRIX CODE REFERENCE TABLES

Unknown/Other Solids	Unknown/Other Solids	S9000
S9000	**PC-000**	**Post-Characterization Unknown**
WIPP Status	Not a WIPP Candidate (see Special Notes)	
Waste Description	Temporary IDC for intact containers of waste without sufficient historical information and the physical form of the waste (i.e., homogeneous solids, debris or soil) is not known after characterization activities (e.g., after RTR).	
Inner Packaging	TBD by VE	
Drum Preparation	TBD by VE	
Box Preparation	TBD by VE	
Primary Waste Parameter(s)	TBD by VE	
Special Notes	Final IDC assignment required before waste can be shipped to WIPP. VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC, then recommend change to the most applicable IDC from the following: If > 50% by volume homogeneous solid but it is not possible to recommend a generator specific IDC, recommend a, b, or c: a. If a definitive assessment determines waste is inorganic solids, recommend change to IDC BN-505 and assign Inorganic Matrix as the waste material parameter. b. If a definitive assessment determines waste is organic solids but the waste is not PCB contaminated, recommend change to IDC BN-513 and assign Organic Matrix as the waste material parameter. c. If the type of homogeneous solids is indeterminate, recommend change to IDC BN-511 (which is the default IDC that conservatively assumes waste is Organic and PCB contaminated) and assign Organic Matrix as the waste parameter. If > 50% by volume debris, recommend change to IDC. • If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-500. • If waste may be PCB contaminated, recommend change to IDC BN-604. If > 50% by volume soils, gravel, or sand (natural geologic material < 2.36 inches [60 millimeters]), recommend change to IDC. • If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-522. • If waste may be PCB contaminated, recommend change to IDC BN-501. If > 50% by volume liquids, recommend change to IDC. • If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-529. • If waste may be PCB contaminated, recommend change to IDC BN-528 If indeterminate, VE may retain IDC PC-000 but must choose "can not be verified" on the WTS screen. An AK evaluation will be performed for all containers that were assigned the temporary IDC PC-000.	

Unknown/Other Solids	Unknown/Other Solids	S9000
S9000	**UN-000**	**Undetermined Form**
WIPP Status	Not a WIPP Candidate (see Special Notes)	
Waste Description	Temporary IDC for intact containers of waste without sufficient historical information. Physical form of the waste (e.g., homogeneous solids, debris, or soil) is not known; therefore, applicable characterization activities (e.g., radioassay, RTR/VE) and an AK evaluation must be completed before IDC assignment can be made.	
Inner Packaging	TBD by RTR or VE	
Drum Preparation	TBD by RTR or VE	
Box Preparation	TBD by RTR or VE	
Primary Waste Parameter(s)	TBD by RTR or VE	
Special Notes	Final IDC assignment required before waste can be shipped to WIPP. RTR or VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC after RTR, then recommend change to the most applicable IDC from the following: • If > 50% by volume homogeneous solids, recommend change to IDC UN-00A (conservatively assign Organic Matrix as the waste parameter, unless a definitive assessment determines the waste parameter is Inorganic Matrix). • If > 50% by volume debris, recommend change to IDC UN-00B. • If > 50% by volume soils, gravel, or sand (natural geologic material < 2.36 inches [60 millimeters]), recommend change to IDC UN-00C. • If >50% by volume liquids, recommend change to IDC UN-00D. • If indeterminate, RTR may recommend change to IDC PC-000. If VE is performed, see PC-000 for recommendations. An AK evaluation will be performed for all containers that were assigned the temporary IDCs UN-00A, UN-00B, UN-00C, UN-00D, or PC-000. AKE may retain or recommend temporary IDCs UN-00A, UN-00B, UN-00C, UN-00D, or PC-000 if VE is required prior to assigning final IDC.	

Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**UN-00A**	**Undefined Homogeneous Solids**	
WIPP Status	Not a WIPP Candidate (see Special Notes)		
Waste Description	Temporary IDC for intact containers of homogeneous solids waste without sufficient historical information that require completion of characterization activities (e.g., radioassay, RTR/VE) and AK evaluation before IDC assignment can be made. UN-00A is considered PCB waste until a final determination of the IDC is made.		
Inner Packaging	TBD by RTR or VE		
Drum Preparation	TBD by RTR or VE		
Box Preparation	TBD by RTR or VE		
Primary Waste Parameter(s)	Organic Matrix.		
Special Notes	Final IDC assignment required before waste can be shipped to WIPP. RTR or VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC after RTR, then recommend a change to the most applicable from the following: • If > 50% by volume debris, recommend change to IDC UN-00B. • If > 50% by volume soils, gravel, or sand (natural geologic material < 2.36 inches [60 millimeters]), recommend change to IDC UN-00C. • If > 50% by volume liquids, recommend change to IDC UN-00D. • If indeterminate waste type, recommend change to IDC UN-000. An AK evaluation will be performed for all containers that were assigned the temporary IDC UN-00A. If > 50% by volume homogeneous solid and the AKE cannot recommend a generator specific IDC, recommend a, b, or c: a. If a definitive assessment determines waste is inorganic solids, recommend change to IDC BN-505 and assign Inorganic Matrix as the waste material parameter. b. If a definitive assessment determines waste is organic solids but the waste is not PCB contaminated, recommend change to IDC BN-513 and assign Organic Matrix as the waste material parameter. c. If the type of homogeneous solids is indeterminate, recommend change to IDC BN-511 (which is the default IDC that conservatively assumes waste is Organic and PCB contaminated) and assign Organic Matrix as the waste parameter. AKE may retain IDC UN-00A and request a VE be required prior to assigning final IDC. If VE is performed, see PC-000 for recommendations.		

Heterogeneous Debris Waste		Unknown/Other Debris	S5000
S5900	**UN-00B**	**Undefined Debris**	
WIPP Status	Not a WIPP Candidate (see Special Notes)		
Waste Description	Temporary IDC for intact containers of debris waste without sufficient historical information that require completion of characterization activities (e.g., radioassay, RTR/VE) and AK evaluation before IDC assignment can be completed.		
Inner Packaging	TBD by RTR or VE		
Drum Preparation	TBD by RTR or VE		
Box Preparation	TBD by RTR or VE		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	Final IDC assignment required before waste can be shipped to WIPP. RTR or VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC after RTR, then recommend a change to the most applicable from the following: • If >50% by volume homogeneous solids, recommend change to IDC UN-00A. • If >50% by volume soils, gravel, or sand (natural geologic material <2.36 inches [60 millimeters]), recommend change to IDC UN-00C. • If >50% by volume liquids, recommend change to IDC UN-00D. • If indeterminate waste type, recommend change to IDC UN-000. An AK evaluation will be performed for all containers that were assigned the temporary IDC UN-00B. If >50% debris and the AKE cannot recommend a generator specific IDC, recommend a or b: a. If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-500. b. If waste may be PCB contaminated, recommend change to IDC BN-604. AKE may retain IDC UN-00B if VE required prior to assigning final IDC. If VE is performed, see PC-000 for recommendations.		

Soils	Unknown/Other Soil/Gravel		S4000
S4900	**UN-00C**	**Undefined Soil**	
WIPP Status	Not a WIPP Candidate (see Special Notes)		
Waste Description	Temporary IDC for intact containers of soil without sufficient historical information that require completion of characterization activities (e.g., radioassay, RTR/VE) and AK evaluation before IDC assignment can be completed.		
Inner Packaging	TBD by RTR or VE		
Drum Preparation	TBD by RTR or VE		
Box Preparation	TBD by RTR or VE		
Primary Waste Parameter(s)	Soils/gravel		
Special Notes	Final IDC assignment required before waste can be shipped to WIPP. RTR or VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC after RTR, then recommend a change to the most applicable from the following: • If > 50% by volume homogeneous solids, recommend change to IDC UN-00A. • If > 50% by volume debris, recommend change to IDC UN-00B. • If > 50% by volume liquids, recommend change to IDC UN-00D. • If indeterminate waste type, recommend change to IDC UN-000. An AK evaluation will be performed for all containers that were assigned the temporary IDC UN-00C. If > 50% by volume soils, gravel, or sand (natural geologic material $\leq$ 2.36 inches [60 millimeters]) and the AKE cannot recommend a generator specific IDC, recommend a or b: a. If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-522. b. If waste may be PCB contaminated, recommend change to IDC BN-501. AKE may retain IDC UN-00C if VE required prior to assigning final IDC. If VE is performed, see PC-000 for recommendations.		

N/A	Unknown/Other Liquids		N/A
N/A	**UN-00D**	**Undefined Liquids**	
WIPP Status	Not a WIPP Candidate (see Special Notes)		
Waste Description	Temporary IDC for intact containers of liquid waste without sufficient historical information that require completion of characterization activities (e.g., radioassay, RTR/VE) and an AK evaluation before IDC assignment can be completed.		
Inner Packaging	TBD by RTR or VE		
Drum Preparation	TBD by RTR or VE		
Primary Waste Parameter(s)	N/A		
Special Notes	Liquid absorption and final IDC assignment required before waste can be shipped to WIPP. RTR or VE will be used to identify physical form and waste material parameters. Generator-specific IDC and WMC are recommended based on physical form, packaging configuration, labeling on the drum, or any marking or labeling on items within the container that would identify the generator IDC. If not possible to recommend a generator-specific IDC, then recommend a change to the most applicable from the following: • If >50% by volume homogeneous solids, recommend change to IDC UN-00A. • If >50% by volume debris, recommend change to IDC UN-00B. • If >50% by volume soils, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]), recommend change to IDC UN-00C. • If indeterminate waste type, recommend change to IDC UN-000. An AK evaluation will be performed for all containers that were assigned the temporary IDC UN-00D. If >50% by volume liquids and the AKE cannot recommend a generator specific IDC, recommend a or b: a. If a definitive assessment determines waste is **not** PCB contaminated, recommend change to IDC BN-529. b. If waste may be PCB contaminated, recommend change to IDC BN-528 AKE may retain IDC UN-00D if VE required prior to assigning final IDC. If VE is performed, see PC-000 for recommendations.		

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-001**	**First Stage Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Inorganic sludge generated in Building 774 from the precipitation of process aqueous liquids. After 1979, waste consisted of combined first and second stage sludge. Up to 50 pounds Portland cement added to drum (primarily at bottom of drum, rigid liner, and/or drum bags) to absorb liquids. After 1982, cement added at top of sludge prior to sealing O-ring drum bag. Waste may also contain <50% by volume cellulosic, plastic, rubber and metal debris items (e.g., surgeon's gloves, glovebox gloves, leaded rubber aprons, filters, plastic tubing, and bolts). [68]	
Inner Packaging	Direct loaded into the waste drum. A small number of drums may contain sludge waste within poly bags, metal cans, and/or poly bottles. See Special Notes below.	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / O-Ring Load-Out Drum Bag Up to 5 pounds Portland cement may be added on top of inner sealed Poly drum bag. Some drums may be either lead-lined or contain a lead-taped rigid liner.	
Box Preparation	Drums of this waste may be direct loaded into standard waste boxes (SWBs) as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Prior to 1982, no cement or absorbent was added at the top of the sludge prior to sealing the O-ring drum bag; therefore, excess liquids may be present on top of the sludge. Based on RTR results, waste may also contain prohibited liquids within the drum bag or between the rigid liner and drum, as well as on top of sludge packaged after 1982. Waste may also contain compressed gases (including aerosol cans), prohibited liquids in small containers, sealed containers >4 liters, sharp objects, impenetrable objects, or impenetrable lead shielding. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. A small number of drums with container prefixes 741 or 7412 may contain multiple packages of sludge waste packaged in poly bags, poly bottles, metal cans, or other small containers instead of sludge directly loaded into drum. [7, 11] Although the subject drums have a configuration similar to RF-292, RF-290, and RF-696, AK does not support the reassignment to one of these IDCs, provided the historical ID begins with "IDRF0741" or "IDRF7412." Potential IDC changes should still be recommended and evaluated for other historical IDs or when there is a large discrepancy between current and historical ID container weights. If indeterminate, recommend change to IDC UN-00A and an AK evaluation will be performed. Historical ID typically begins with "IDRF0741" or "IDRF7412."	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**LA-002**	**TA-50 Radioactive Liquid Waste Treatment Facility**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [195, 196]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-002**	**Second Stage Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Inorganic sludge generated in Building 774 from precipitation of liquid effluent from First Stage Treatment, and aqueous liquid waste from all process areas at RF. Up to 50 pounds Portland cement was added in layers as sludge was placed in the drum, as well as inside Poly drum bag to absorb liquids. Drums packaged prior to 1973 may also contain <50% by volume other waste including debris items (e.g., electric motors, batteries) and bottles of liquid chemical waste or mercury. [3]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner (after1971) / Poly drum bag / O-Ring Load-Out Drum Bag Up to 5 pounds of Portland cement may have been added on top of each sealed Poly drum bag.	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Waste may also contain compressed gases (including aerosol cans), prohibited liquids in small containers, sealed containers >4 liters, sharp objects, or impenetrable objects. A 2.5 gallon propane tank with prohibited liquids was identified by RTR in one drum. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. One drum of second stage sludge packaged after 1973 included a small container of waste (contaminated soil) buried in the sludge. [76] Radionuclide sources may have been placed in individual drums of sludge waste prior to 1980. [88] Historical ID typically begins with "IDRF0742."	

Solidified Inorganics	Inorganic Sludges	S3000
S3120	**LA-003**	**Solidified Inorganics**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [196, 197]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**RF-003**	**Organic Setups, Oil Solids**
WIPP Status	WIPP Candidate	
Waste Description	Organic sludge-like waste generated in Building 774 Grease Plant by mixing solvent and oils from machining operations with Micro-Cel®E (i.e., synthetic calcium silicate) and small quantities of Oil-Dri®. Up to 20 pounds Oil-Dri® was added at the top and/or bottom of the drum, rigid liner, and/or drum bags.	
Inner Packaging	Direct loaded into the waste drum.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Drum Load-Out Bag [2]	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain prohibited liquids on top of the waste, within the drum bag, or between the rigid liner and drum. Waste may also contain aerosol cans, prohibited liquids in small containers, sealed containers >4 liters, sharp objects, or impenetrable objects. [243] Visual examination of this bulk or direct loaded waste packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. This waste has been identified as PCB contaminated. The net weight of waste should be used as the "PCB Mass" in WTS. One of the containers with historical drum numbers IDRF074313464 through IDRF074313472 may contain a 1-liter bottle of organic liquid waste. [3] Liquid treatment is authorized for this IDC under approval of the Risk Based Disposal Authorization (RBDA) and liquid treatment is only allowed if waste is targeted for shipment to WIPP. Historical ID typically begins with "IDRF0743."	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RF-004**	**Special Setups**
WIPP Status	WIPP Candidate	
Waste Description	Solidified inorganic waste generated in Building 774 by mixing aqueous chemical liquid waste generated by various operations at RF with a cement mixture and adding up to 15 pounds of cement to the top of the sludge. Up to 20 pounds of cement was added to top and/or bottom of drum, rigid liner, and/or O-ring drum bag.	
Inner Packaging	Direct loaded into the waste drum. A small number of drums may contain poly bottles. See Special Notes below.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Drum Load-Out Bag	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Prohibited liquids may be present in this sludge waste. [41] Based on RTR results, waste may contain prohibited liquids within the drum bag. Waste may also contain sealed containers > 4 liters, sharp objects, or impenetrable objects. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. Some drums may contain primarily poly bottles of solidified waste instead of direct loaded sludge waste. An AK evaluation is required if poly bottles of solidified waste are identified. Make a recommended IDC change to IDC UN-00A and an AK evaluation will be performed. Other drums may not contain sludge but contain debris waste (i.e., polyethylene bottles that previously contained liquid waste). A small amount of cement was added to empty bottles before packaging into drums. Recommend change to IDC RF-337 if the drum only contains bottles with small amounts of cement. IDC RF-004 was replaced by IDC RF-802 in 1986. Historical ID typically begins with "IDRF0744."	

Salt Waste	Salt Waste	S3000
S3140	**LA-005**	**LANL Mixed Salt Waste**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, and primary waste material parameters. [198, 236]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

N/A	N/A		N/A
N/A	**IW-005**	**Evaporator Salts-Retrieved RF TRU**	
WIPP Status	N/A – Overpack Container		
Waste Description	The M-III bins contain evaporator salts that were generated by the Building 774 evaporator system at RF. The evaporator salts were packaged in 55-gallon drums by RF prior to 1972 and shipped to INL. The drums were subsequently placed into M-III bins and transferred to Pad R. [97]		
Bin Configuration	Bins may contain up to eight 55-gallon drums. Absorbent (~100 pounds) was routinely spread inside the M-III bins. [123, 124]		
Primary Waste Parameter(s)	N/A – overpack container		
Special Notes	IDC IW-005 is reserved to track bins packaged with waste retrieved from the pits and is not to be used to characterize the waste. Bins may be labeled with an identifier including the letters "RR." Intact drums of evaporator salt unloaded from the bins are assigned IDC RF-745. [97]		

Salt Waste	Nitrate Salts		S3000
S3143	**RF-005**	**Evaporator Salts**	
WIPP Status	WIPP Candidate		
Waste Description	Salt residues generated by Building 774 evaporator system from concentrating and drying liquid waste from the solar evaporation ponds. Waste may also contain <50% by volume surgeon's gloves, paper, rags, and metal debris.		
Inner Packaging	Direct loaded into waste drum or box.		
Drum Preparation	Up to 2 plastic drum bags and/or a crepe paper bag.		
Box Preparation	Plastic liner/ Cardboard liner		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	May contain Portland cement used as absorbent. Based on RTR, waste may contain prohibited liquids. [243] Visual examination of this bulk or direct loaded salt packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. A majority of the waste should contain TRU activity concentration of <10 nCi/g. Historical ID typically begins with "IDRF0745."		

Solidified Inorganics	Solidified Homogeneous Solids		S3000
S3150	**LA-006**	**Cemented TRU Waste**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [198, 199]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-007**	**Building 374 Dry Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Inorganic sludge generated in Building 374 in support of Pu recovery activities. This sludge was dried, or a moist sludge was mixed with cement or a cement and diatomaceous earth mixture. Oil-Dri®, Vermiculite or other absorbents may be present in some drums. [40] Waste may also contain <50% by volume plastic, rubber and metal debris items (e.g., leaded rubber gloves). [69]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner (after1971) / Poly drum bag / O-Ring Load-Out Drum Bag	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Waste may also contain sharp objects. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May have cement in drum. Historical ID typically begins with "IDRF0747."	

Combustibles	Unknown/Other Organic Debris	S5000
S5390	**BL-010**	**Rags, Gloves, Poly**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Rags, gloves, paper, plastic, rubber, filters and wood debris from Bettis Labs. Waste may also contain any amount of noncombustible debris items but may only contain <50% by volume oil-contaminated Absorbal, floor sweepings, grinding sludge and binary powder. [50, 81]	
Inner Packaging	Small items wrapped in plastic and placed in 3 ¼ inch × 7 inch steel can with threaded lid/Juice Can with rolled seam lid. Large items wrapped in plastic, placed in 4 3/8 inch × 20 inch to 24 inch steel can, and then wrapped in plastic [3]	
Drum Preparation	Rigid Liner	
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber	
Special Notes	15 to 80 cans were stacked in the drum rigid liner. If >50% by volume homogeneous solids (e.g., absorbed oil), recommend an IDC change. IDC UN-00A may be used if type of homogeneous solids is unknown.	

Combustibles	Organic Debris		S5000
S5300	**RF-010**	**Paper and Rags**	
WIPP Status	WIPP Candidate		
Waste Description	IDC RF-010 existed prior to IDCs RF-330 and RF-336 and as the predecessor IDC it is expected to include cloth, paper, and wood products including items such as wipes, towels, rags, coveralls, booties, gloves, HEPA filter frames, and lumber. Waste was packaged as a dry waste. Waste may also contain any amount of plastic, and rubber but may only contain <50% by volume metal and other inorganic material debris items (e.g., concrete, cement, leaded-glovebox gloves, surgeon's gloves, lead tape, and glass and metal items such as raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). Absorbent may have been added to waste.[81]		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag. Rigid liners are not expected in any of the drums packaged prior to 1972.		
Drum Preparation	Poly Drum Bag/ Poly Drum Bag or O-Ring bag Drums may be lead-lined (waste from americium recovery line).		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber		
Special Notes	IDC RF-010 was used prior to June 1971 and appears to have been replaced by IDCs RF-330 and RF-336.[99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. An IDC change to RF-330, RF-336, or RF-337 is not recommended because the waste was generated prior to the existence of these IDCs. Drums may contain compacted waste.		

Uncategorized Metal[98]	Unknown/Other Solids		S9000[98]
S9000[98]	**BL-012**	**Miscellaneous Sources**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	The waste consists of two ^{226}Ra sources.[81]		
Inner Packaging	2R pipe Lead shielding within pipe		
Drum Preparation	Celotex discs are used to center the 2R pipe		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	S9000 (Unknown/Other Solids) and WMCG Uncategorized Metal were assigned to IN-W360 in the 1995 Transuranic Waste Baseline Inventory Report (TWBIR).[98] The final WMC will be determined when sufficient AK or RTR/VE data is available.		

Uncategorized Metal [98]	Unknown/Other Solids	S9000 [98]
S9000 [98]	**BL-015**	**Neutron Sources**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	The waste consists of two ^{238}Pu-Be sources and one ^{238}Pu-Li source. [81]	
Inner Packaging	Each source is double encapsulated in stainless steel/1/2-inch steel pipe/2R pipe	
Drum Preparation	Celotex discs and annular segments of polyethylene are used to center the 2R pipe	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	S9000 (Unknown/Other Solids) and WMCG Uncategorized Metal were assigned to IN-W359 in 1995 TWBIR. [98] The final WMC will be determined when sufficient AK or RTR/VE data is available.	

Heterogeneous Debris Waste	Predominantly Inorganic Debris	S5000
S5420	**BL-020**	**Non-compressible, Non-combustible**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Debris waste including Absolute filters, metal equipment/tools, metal scrap (bars, sheets), furnace brick, and glovebox equipment. Waste may also contain <50% by volume combustibles or <50% by volume solidified chemical waste (homogeneous solids including neutralized chemical solution mixed with Absorbal) from laboratory analysis packaged in plastic wrapped bottles and/or cans. [50, 81]	
Inner Packaging	Small items wrapped in plastic and placed in 3 ¼ inch × 7 inch steel can with threaded lid/Juice Can with rolled seam lid Large items wrapped in plastic, placed in 4 3/8 inch × 20 inch to 24 inch steel can, and then wrapped in plastic Larger items wrapped in plastic and directly loaded into drum All items single or double-bagged prior to placing in drum Absorbed liquids packaged in bottles that were placed in metal cans and wrapped with plastic [3]	
Drum Preparation	Rigid liner	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain sharp objects. [243] If >50% by volume homogeneous solids (e.g., solidified chemical waste), recommend an IDC change. IDC UN-00A may be used if type of homogeneous solids is unknown.	

Combustibles	Organic Debris		S5000
S5300	**RF-020**	**Wood & Benelex**	
WIPP Status	WIPP Candidate		
Waste Description	IDC RF-020 existed prior to IDCs RF-464 and RF-970 and as the predecessor IDC it is expected to include wood products (e.g., lumber, plywood, filter frames, ladders, and Benelex). Benelex is densely laminated wood product which was usually coated with fire retardant paint or may have lead shielding attached. Benelex came in 2 inch thick sheets. Waste may also contain <50% by volume plastic, rubber, metal, glass, and other inorganic material debris items (wipes, nails, sheetrock, etc.).		
Inner Packaging	Poly bag / Poly bag Waste may be placed directly into waste drum or box.		
Drum Preparation	Poly Drum Bag/ Poly Drum Bag A cardboard liner may be present in some drums. Rigid liners are not expected in any of the drums packaged prior to 1972.		
Primary Waste Parameter(s)	Cellulosics (e.g., Benelex, wood), Other Metal (e.g., lead shielding)		
Special Notes	IDC RF-020 was used prior to June 1971 and appears to have been replaced by IDCs RF-464 and RF-970. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. Benelex is a Cellulosic material and may have lead shielding attached and some of the hinges and handles may still be attached. The lead shielding was usually bolted to the Benelex so look for the bolts and nuts. An IDC change to RF-464 or RF-970 is not recommended because the waste was generated prior to the existence of these IDCs.		

Lead/Cadmium Metal	Debris Waste		S5000
S5000	**ID-021**	**Radioactive Mixed Lead Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	In WTS, the generator area codes IC, IN, IR, IT, and IW may be used to identify the generator instead of the generator site code, (for example, IDCs IC-021, IN-021, IR-021, IT-021, or IW-021 may be used instead of IDC ID-021 in WTS).		

Solidified Inorganics	Unknown/Other Inorganic Sludges	S3000
S3129	**BL-030**	**Solidified Grinding Sludge**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Inorganic sludge comprised of abrasive materials from grinding wheels dried to either powder or cake form. Waste may also contain <50% by volume debris waste (e.g., filters and rags) [50, 81]	
Inner Packaging	Packaged in 3-1/4 inch × 7-inch steel can and then wrapped in plastic. [3]	
Drum Preparation	Rigid liner 17C or 6M drums	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	If >50% by volume debris, recommend an IDC change.	

Combustibles	Organic Debris	S5000
S5300	**RF-030**	**Plastic**
WIPP Status	WIPP Candidate	
Waste Description	IDC RF-030 existed prior to IDC RF-337 and as the predecessor IDC it is expected to include plastic and non-leaded rubber waste debris items in the form of empty bottles, piping, tubing, glovebox windows, bags, tape, sheeting, and protective clothing (e.g., supplied air suits, surgeon's gloves, booties, respirator masks, parts and cartridges, and non-leaded glovebox gloves), etc. Types of plastic include polyethylene, polypropylene, PVC, teflon, tygon, and plexiglas. Types of rubber include latex, neoprene, hypalon and viton. Waste may also contain any amounts of cloth, paper and wood products including items such as wipes and paper. [57] Waste may only contain <50% by volume glass and metal debris items (e.g., metal respirator cartridges, raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire).	
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Drum Preparation	Poly Drum Bag / Poly Drum Bag A limited number of drums are lead-lined.	
Primary Waste Parameter(s)	Plastic (waste materials), Cellulosics, Rubber	
Special Notes	IDC RF-030 was used prior to June 1971 and appears to have been replaced by IDC RF-337. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. An IDC change to RF-330, RF-336 or RF-337 is not recommended because the waste was generated prior to the existence of these IDCs.	

Lead/Cadmium Metal [98]	Unknown/Other Solids	S9000
S9000	**BL-040**	**Solid Binary Scrap Powder**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Solid binary scrap (ceramic based UO_2 and ThO_2) in form of powder, pellets, or rods. Waste also contains fuel rods constructed of zirconium tubes filled with fuel pellets. Waste may also contain combustible waste. [50, 81]	
Inner Packaging	Packaged in 3-1/4 inch × 7 inch or 4-3/8 inch × 20 to 24 inch steel cans, and then wrapped in plastic (3 cans per drum). Fuel rods were packaged in 5-inch diameter steel pipe (10–20 rods per drum) [3]	
Drum Preparation	6M shipping drums (either 55- or 100-gallon capacity) Lead shielding	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Up to 3 cans per drum. S5112 (Metal Debris with Lead) and WMCG Lead/Cadmium Metal were assigned to IN-W260 in 1995 TWBIR, but the WMC was conservatively changed to S9000. The final SCG/WMC will be determined when sufficient AK or RTR/VE data is available.	

Combustibles	Leaded Gloves/Aprons	S5000
S5311	**RF-040**	**Rubber**
WIPP Status	WIPP Candidate	
Waste Description	IDC RF-040 existed prior to IDC RF-463 and as the predecessor IDC it is expected to include primarily neoprene/Hypalon leaded glovebox gloves and leaded aprons.	
Inner Packaging	O-Ring bag / Poly bag	
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly Drum Bag Some drums may be lead-lined. Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Gloves and aprons are 100% Rubber – assigned per CBFO (WAP Table B3-1)	
Special Notes	IDC RF-040 was used prior to June 1971 and appears to have been replaced by IDC RF-463. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. Be careful of liner bag wash out and wash out of less dense items. Aprons are identifiable by shoulder harness rings. Based on results of RTR examination of similar waste, this waste may contain prohibited liquids. An IDC change to RF-339 or RF-463 is not recommended, because the waste was generated prior to the existence of these IDCs.	

Solidified Inorganics	Inorganic Particulate Absorbents	S3000
S3113	**BL-050**	**Solidified Solutions**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	This waste consists of plutonium and neptunium-bearing salts each separately solidified in a Pyrex beaker. [81]	
Inner Packaging	Beaker/PVC sleeve/wide mouth plastic jar/stainless steel can/PVC sleeve/metal can/2R pipe	
Drum Preparation	Celotex discs are used to center the 2R pipe	
Primary Waste Parameter(s)	Iron-based Metals, Plastic (waste materials), Other Inorganic Materials	
Special Notes	The two cans were placed inside a 2R pipe which was centered in a 55-gallon 17C drum.	

Uncategorized Metal	Metal Debris with Lead	S5000
S5112	**RF-050**	**Metal Scrap**
WIPP Status	WIPP Candidate	
Waste Description	IDC RF-050 existed prior to IDC RF-480 and as the predecessor IDC it is expected to include iron, stainless steel, carbon steel, aluminum, copper, brass, and bronze metal scrap in the form of sheet, ducting, piping, tubing, angle iron, mechanical parts, electrical parts, wire, cable, foil, empty metal produce and paint cans, etc. Waste may also contain any amounts of lead (e.g., lead shielding, lead sheeting, scrap lead) but may only contain <50% by volume cellulosics, plastic, rubber, glass, and other inorganic material debris items (e.g., items made of glass, concrete, etc.). [73]	
Inner Packaging	Poly bag / Poly bag or O-Ring bag / Poly bag. Waste may be in Fiberpaks.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may be lead-lined (e.g., waste from americium lines). Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals (e.g., lead, copper, brass, bronze) **NOTE:** *When the type of metal cannot be determined, use Iron-based Metals/Alloys waste parameter.* [14]	
Special Notes	IDC RF-050 was used prior to June 1971 and appears to have been replaced by IDC RF-480. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. Metal waste may contain a wide variety of manufactured items which may contain PCB items (such as ballasts, capacitors, or transformers). [49] Lead cell batteries with liquids in excess of WAP limits or whose contents cannot be verified are prohibited from disposal at the WIPP facility. [38] An IDC change to RF-320, RF-321, RF-480, or RF-481 is not recommended because the waste was generated prior to the existence of these IDCs.	

Inorganic Non-Metal	Glass Debris	S5000
S5122	**RF-060**	**Glass**
WIPP Status	WIPP Candidate	
Waste Description	IDC RF-060 existed prior to IDC RF-440 and as the predecessor IDC it is expected to include glass items such as bottles, vials, light bulbs, labware, glovebox windows, lead-taped sample vials, crushed and ground glass. The materials may be composed of glass, ceramic, leaded glass or quartz. Absorbent material (Oil-Dri®) may be present. Waste may also contain <50% by volume cellulosic, plastic, rubber and metal debris items (e.g., glovebox window frames and gaskets, cans, nuts, bolts, tools, bottles, leaded rubber gloves and aprons, cardboard, wood, filters, light ballasts, etc). [72]	
Inner Packaging	½ or 1-gallon Poly Bottles / Poly bag / Poly bag or O-Ring bag / Poly bag or Poly bag / Poly bag Waste may be packaged in Fiberpaks. Waste (light bulbs, fluorescent tubes) may be placed directly into container.	
Drum Preparation	Poly Drum Bag / Poly Drum Bag Cardboard Liner Drum may be present A small number of drums are lead-lined Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Other Inorganic Materials **NOTE:** *If leaded glass, then use a 50/50 ratio for the lead (Other Metals) and glass (Other Inorganic Materials)*	
Special Notes	IDC RF-060 was used prior to June 1971 and appears to have been replaced by IDC RF-440. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. Waste may have light ballasts (which may contain PCBs). Leaded glass appears to become denser as rotated because a larger cross section of glass must be penetrated. Waste may also contain lead-taped glass bottles and vials. [77] An IDC change to RF-440 is not recommended because the waste was generated prior to the existence of this IDC.	

Graphite	Graphite Debris		S5000
S5126	**RF-070**	**Graphite**	
WIPP Status	WIPP Candidate		
Waste Description	IDC RF-070 existed prior to IDC RF-300 and as the predecessor IDC it is expected to include graphite molds, cores, spacers, and electrodes from plutonium casting operations. The graphite may include broken or whole molds, small pieces, or fines. Waste may also contain <50% by volume cellulosic, plastic, rubber, glass, and metal materials (e.g., paper, cardboard, elastic bands, tubing, surgeon's gloves, thermocouples, bolts, tools, etc).		
Inner Packaging	Poly bottle / O-Ring bag / Poly bag O-Ring bag / Poly bag Some drums may include graphite packaged in Kraft Tubes [61, 91]		
Drum Preparation	Poly Drum Bag / Poly Drum Bag or Poly Drum Bag / O-Ring bag Rigid liners are not expected in any of the drums packaged prior to 1972.		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	IDC RF-070 was used prior to June 1971 and appears to have been replaced by IDC RF-300. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. Waste pieces may be in poly bottles. The O-ring bags will be lined with a fiberboard liner and may include a fiberboard disc. An IDC change to RF-300, RF-301, RF-303, RF-310 or RF-312 is not recommended because the waste was generated prior to the existence of these IDCs.		

Uncategorized Metal	Unknown/Other Solids		S9000
S9000	**RF-080**	**Equipment**	
WIPP Status	WIPP Candidate		
Waste Description	IDC RF-080 existed prior to IDC RF-980 and as the predecessor IDC it is expected to include unknown equipment, complete information is not available.		
Inner Packaging	May contain poly bags		
Drum Preparation	May contain poly bags Rigid liners are not expected in any of the drums packaged prior to 1972.		
Primary Waste Parameter(s)	*Not currently available*		
Special Notes	IDC RF-080 was used prior to June 1971 and appears to have been replaced by IDC RF-980. [99] Containers with this IDC may be found in Cells 1 and 2, Pad 1. An IDC change to RF-980 is not recommended because the waste was generated prior to the existence of this IDC. S9000 (Unknown/Other Solids) was conservatively assigned to this waste. The final WMC will be determined when sufficient AK or RTR/VE data is available.		

Uncategorized Metal [98]	Unknown/Other Special Waste	X7000
X7900	**BL-081**	**Metal Samples Fissile**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	The waste consists of 17 drums of unirradiated fuel-bearing metallographic mounts. The mount material is identified as Quickmont Powder and liquid, which are non-hazardous materials per the Resource Conservation and Recovery Act (RCRA). [81]	
Inner Packaging	Metal "juice can" with roll-seam lid 43 to 91 cans per drum	
Drum Preparation	Rigid liner	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	S3100 (Inorganic Homogeneous Solids) and WMCG Uncategorized Metal were assigned to IN-W372 in the 1995 TWBIR. [98] The SCG and WMC were changed to X7000 (Special Waste) and X7900 (Unknown/Other Special Waste), respectively. The final WMC will be determined when sufficient AK or RTR/VE data is available.	

Soils	Soil/Debris	S4000
S4200	**RF-090**	**Dirt**
WIPP Status	WIPP Candidate	
Waste Description	Dry dirt or soil generated during operations such as cleanup of spills or leaks. Waste could be damp and may include evaporator pond sludge. Waste may also contain <50% by volume combustible debris items (e.g., coveralls, gloves). [3]	
Inner Packaging	Soil may be single or double bagged in small poly bags or directly loaded into the drum	
Drum Preparation	Rigid Liner (after1971) / Poly Drum Bag / Poly Drum Bag / Fiberboard liner Up to 2 quarts Oil-Dri® added on top of outer sealed Poly drum bag.	
Primary Waste Parameter(s)	Soils/gravel	
Special Notes	Based on RTR results, waste may contain aerosol cans, prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable objects/waste. [243] WMC S4200/IDC RF-090 can ONLY be used if >50% by volume soil or gravel (natural geologic material ≤2.36 inches [60 millimeters]). If >50% by volume debris, including rocks (natural geologic materials >2.36 inches [60 millimeters]), recommend change to IDC RF-960. If indeterminate, recommend change to IDC UN-00A or UN-00C and an AK evaluation will be performed. IDC RF-090 was replaced by RF-990 in early 1972; IDC RF-374 was used by RF for similar waste generated before and after this date. [3, 97, 152]	

Solidified Organics	Biological Sludges	S3000
S3221	**RF-095**	**Sewer Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Organic sludge from cleaning the stabilization ponds at the Building 995 sewage treatment plant. If sludge was wet, cement was added in layers as the sludge was placed into drum.	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / O-Ring bag Portland cement added to top and bottom in inner drum bag.	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Based on RTR results of drums of other RF bulk or direct sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge waste packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May have cement in drum, rigid liner, poly drum bag. IDC RF-095 was replaced by IDC RF-995 in early 1972 and RFP discontinued shipping sewer sludge to INL in 1976. [3, 97, 152]	

Heterogeneous Debris Waste	Heterogeneous Debris	S5000
S5400	**AE-100**	**General Plant Waste**
WIPP Status	Potential WIPP Candidate	
Waste Description	Waste contains, but is not limited to: combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers, copper, lead, brass items; pipe, tubing, fittings, sheeting, lead shot, boxes, glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes, and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos), paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits, booties, gloves, filter cartridges, tape), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, PPE (e.g., gloves, filter cartridges, tape), bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic waste packaged in 1-gallon poly bottles. [250, 256, 257, 258, 259]	
Inner Packaging	Poly bags / 4-inch diameter by 8-inch high aluminum cans or ½ and 1-gallon metal cans or poly bottles placed in 3- or 5-gallon paint cans with crimp on lids[3,255, 256, 257, 258, 259]	
Drum Preparation	No drum liners identified	
Bin Preparation	Waste in bins is usually segregated (e.g., combustible versus non-combustible). Waste may be packaged in 55-gallon drums placed in M-III bins or waste may be packaged in 3-gallon, 5-gallon, or 30-gallon containers and placed in M-III bins. [117]	
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastics (waste materials), Iron-based Metals/Alloys, Other Inorganic Materials	
Special Notes	Waste may contain gas cylinders and aerosol cans. After 1974 containers with combustible waste are labeled with green triangle. [3] Prior to 1981, liquids absorbed on vermiculite were packaged in 1-gallon poly bottles which were placed in 3-gallon paint can with vermiculite filling the void space. Several 3-gallon paint cans were placed into a 55-gallon drum. Absorbed liquids may also be packaged in 5-gallon containers. [3] RTR has also identified bins containing 55-gallon drums and other drums/buckets of various sizes of bulk or direct loaded homogeneous solids (e.g., no inner containers). [117] If >50% by volume homogeneous solids, recommend an IDC change to AE-102. Based on observations during retrieval, M-III bins of AE-100 may be painted white.	

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**AE-101**	**Cut Up Gloveboxes**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Glove box sections (1/4 to 1 1/4-inch-thick stainless steel or aluminum), equipment that may have been size reduced (e.g., lathes, milling machines, rolling mills, furnaces), and associated tools, glassware, piping, filters, hydraulic cylinders (8 and 10-inches in diameter), gas cylinders (<1-foot in diameter and <4 feet long) and cinderblocks from D&D operations and other combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers; copper, lead, brass items; pipe, tubing, fittings, sheeting, lead shot; boxes, glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos); paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits and booties), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, PPE (e.g., gloves, filter cartridges, tape), bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic liquids in poly bottles. [3, 248]	
Inner Packaging	Miscellaneous items in heat sealed poly bags, glovebox windows are double wrapped in polyethylene, glovebox sections wrapped in one or more layers of polyethylene, large metal items may or may not be plastic bagged. [3, 248,255, 256, 257, 258, 259]		
Bin Preparation	M-III bins with half or full-size poly liners or wooden boxes. [3, 248] Several pounds of vermiculite were added to bins. [248]		
Primary Waste Parameter(s)	Other Inorganic Materials (e.g., glass), Iron-based Metals/Alloys (e.g., glovebox)		
Special Notes	The gas cylinders were reported to have been vented and the valves left in the open position prior to packaging. [248] Lubricating, cooling, and functional fluids (oils) were drained from the waste items and included in poly bottles as absorbed liquids. [248] The waste contains similar material inputs as AE-100 wastes. [250, 256, 257, 258, 259]		

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**AE-102**	**Absorbed Liquids**
WIPP Status	Potential WIPP Candidate	
Waste Description	Various organic and inorganic absorbed liquids and homogeneous solids from multiple ANL-E buildings. Wastes include but are not limited to: precipitates, oils, ether-based scintillation fluids, decontamination liquids, ion exchange resins, evaporator residues and may include absorbed photographic solutions and other solid or semisolid materials. Liquid wastes were neutralized with the addition of NaOH, and absorbed onto vermiculite or Oil-Dri. The waste may contain Portland cement and may also contain <50% by volume heterogeneous debris waste. [250, 256, 257, 258, 259]	
Inner Packaging	None (direct loaded)[250, 251, 252, 253]	
Drum Preparation	90 mil polyethylene liner.	
Bin Preparation	Drums were unloaded from bins upon receipt from ANL-E; however, 15 bins of AE-102 waste are identified in WTS.	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes)	
Special Notes	Prior to the mid 1980s, content Code 102 (currently IDC AE-102) was used for all ANL-E homogeneous solids waste).[257, 258, 259] Organic Matrix may be conservatively assigned to this waste. Based on observations during retrieval, M-III bins of AE-102 may be painted red.	

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**AE-104**	**Alpha Hot Cell Waste**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Wastes include, but are not limited to: items made of polyvinyl chloride, polypropylene, polyethylene, polyurethane, neoprene, bake-lite, butyl rubber O-rings, Q-tips, lab equipment, tools, fixtures, glassware, pipe, tubing fittings, fasteners, insulating firebrick, small lead weights, ferrous and non-ferrous metal scraps, electric motors, slave manipulators, aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers; copper, lead, brass items; pipe, tubing, fittings, sheeting, lead shot, boxes; glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos); paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits and booties), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, PPE (e.g., gloves, filter cartridges, tape), bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans.[248]		
Inner Packaging	Waste may be loose, plastic-bagged, or packaged in 4 × 10-inch portal cans or one-gallon paint cans prior to placing waste in 7 1/2-gallon steel buckets bagged in 20-mil PVC heat sealed bag which was placed into 30-gallon drum (2 buckets per drum).[248,255, 256, 257, 258, 259]		
Drum Preparation	Some 30-gallon drums were loaded directly into lead shielded cask. Drums were unloaded from casks at INEL prior to storage. Other drums were overpacked into MIII bins.		
Bin Preparation	MIII-bins containing drums were loaded into lead shielded casks. Bins were unloaded from casks at INEL prior to storage.[248]		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	This waste was initially identified as potentially remote handled. Some metal or glass containers were compacted prior to packaging.[248] Waste in bins was usually segregated (combustible versus non-combustible).[248] The waste contains similar material inputs as AE-100 wastes.[250, 256, 257, 258, 259]		

Solidified Inorganics		Unknown/Other Homogeneous Solids	S3000
S3900	**AE-105**	**Empty Bottles and Absorbent**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Waste consists of empty polyethylene and glass bottles used at ANL-E to transport liquid waste (AE-102) for treatment. The waste may also contain <50% by volume heterogeneous debris waste. [250, 256, 257, 258, 259]		
Inner Packaging	None [250, 251, 252, 253]		
Drum Preparation	90 mil liner Void space in drum was filled with vermiculite		
Bin Preparation	Drums were unloaded from bins upon receipt from ANL-E; however, 1 bin of AE-105 waste is identified in WTS.		
Primary Waste Parameter(s)	Other Inorganic Materials, Plastics (waste materials)		
Special Notes	Bottles may have lids and those >4 liters should be considered to be sealed containers. At one point the ANL-E content Code 105 description reflected glass.		

Heterogeneous Debris Waste [98]		Heterogeneous Debris	S5000 [98]
S5400 [98]	**AE-106**	**Special Source Material (UNK)**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Waste contains, but is not limited to: combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers; copper, lead, brass items; pipe, tubing, fittings, sheeting, lead shot, boxes; glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes, and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos); paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits and booties), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, metal lids, PPE (e.g., gloves, filter cartridges, tape), bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass; small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic waste packaged in 1-gallon poly bottles. [250, 256, 257, 258, 259]		
Inner Packaging	Poly bags / 4-inch-diameter by 8-inch-high aluminum cans or 1/2- and 1-gallon metal cans or poly bottles placed in 3- or 5-gallon paint cans with crimp on lids [3,255, 256, 257, 258, 259]		
Drum Preparation	No drum liners identified		
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastics (waste materials), Iron-based Metals/Alloys, Other Inorganic Materials		
Special Notes	S9000 (Unknown/Other Solids) and WMCG Heterogeneous Debris Waste were assigned to IN-W350 in 1995 TWBIR. [98] The waste contains similar material inputs as AE-100 wastes. [250, 256, 257, 258, 259]		

Heterogeneous Debris Waste [98]	Heterogeneous Debris	S5000 [98]
S5400 [98]	**AE-107**	**RH waste**
WIPP Status	Potential WIPP Candidate	
Waste Description	Waste contains, but is not limited to: combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers, copper, lead, brass items; pipe, tubing, fittings, sheeting, shot, boxes, glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos), paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits, booties, gloves, filter cartridges, tape), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic waste packaged in 1-gallon poly bottles. [250, 256, 257, 258, 259]	
Inner Packaging	Poly bags / 4-inch-diameter by 8-inch-high aluminum cans or 1/2- and 1-gallon metal cans or poly bottles placed in 3- or 5-gallon paint cans with crimp on lids.[3,255, 256, 257, 258, 259]	
Drum Preparation	No drum liners identified	
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastics (waste materials), Iron-based Metals/Alloys, Other Inorganic Materials	
Special Notes	S9000 (Unknown/Other Solids) and WMCG Heterogeneous Debris Waste were assigned to IN-W349 in 1995 TWBIR. [98] The waste contains similar material inputs as AE-100 wastes. [250, 256, 257, 258, 259]	

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**AE-110**	**Research Generated Waste**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Waste contains, but is not limited to: combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers, copper, lead, brass items; pipe, tubing, fittings, sheeting, shot, boxes, glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos), paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits, booties, gloves, filter cartridges, tape), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic waste packaged in 1-gallon poly bottles. [250, 256, 257, 258, 259]		
Inner Packaging	Poly bags / 4-inch diameter by 8-inch high aluminum cans or ½ and 1-gallon metal cans or poly bottles placed in 3- or 5-gallon paint cans with crimp on lids[3,255, 256, 257, 258, 259]		
Drum Preparation	No drum liners identified		
Bin Preparation	Waste in bins is usually segregated (e.g., combustible versus non-combustible). Waste may be packaged in 55-gallon drums placed in M-III bins or waste may be packaged in 3-gallon, 5-gallon or 30-gallon containers and placed in M-III bins. [117]		
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastics (waste materials), Iron-based Metals/Alloys, Other Inorganic Materials		
Special Notes	The waste was first identified in the mid to late 1980s and early 1990s during RWMC SWEPP operations. The waste prior to this time was identified as content Code 100 (or AE-100 IDC). It contains similar material inputs as AE-100 wastes.[250, 256, 257, 258, 259]		

Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**AE-111**	**Solidified Wet Sludge**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Various organic and inorganic absorbed liquids and homogeneous solids from multiple ANL-E buildings. Wastes include but are not limited to: precipitates, oils, ether-based scintillation fluids, decontamination liquids, ion exchange resins, evaporator residues and may include absorbed photographic solutions and other solid or semisolid materials. Liquid wastes were neutralized with the addition of NaOH, and absorbed onto vermiculite or Oil-Dri. The waste may contain Portland cement and may also contain <50% by volume heterogeneous debris waste. [250, 256, 257, 258, 259]		
Inner Packaging	Direct loaded or in one-gallon containers. [250, 251, 252, 253]		
Drum Preparation	90 mil polyethylene liner.		
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials. (see Special Notes)		
Special Notes	The waste was first identified in the mid to late 1980s and early 1990s during RWMC SWEPP operations. The waste prior to this time was identified as content Code 102 (or AE-102 IDC). It is contains similar material inputs as AE-102 wastes. [250, 256, 257, 258, 259] Organic Matrix may be conservatively assigned to this waste.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BX-111**	**Miscellaneous Source Material**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**AE-120**	**D and D Waste Comp. and Comb. Solids**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Waste contains, but is not limited to: combustible and non-combustible items such as: aluminum, stainless steel, and iron items; cans, lids, trays, wire, targets, disks, gauges, pipe, fittings, valves, bolts, clips, screws, tubing, tools (e.g., forceps, vise, tweezers, scissors, pliers, razor knives, and saw blades), screens, planchettes, foil, columns, racks, unistruts, pressure cookers, copper, lead, brass items; pipe, tubing, fittings, sheeting, shot, boxes, glass and ceramic items; bottles, jars, lab ware (e.g., pipettes, vials, flasks, beakers, syringes and test tubes), crucibles (magnesium and beryllium oxide), leaded glass panes, and insulation (fiber glass and asbestos), paper, cardboard, cloth, wood items; rags, towels, filters, cartons, boxes, PPE (e.g., suits, booties, gloves, filter cartridges, tape), lab coats, gloves (leather), gloves, tubing, o-rings, stoppers, cords, gaskets, bottles, metal lids, PPE (e.g., gloves, filter cartridges, tape), bags, sheeting, epoxy sample/source mounts, and rope (nylon), plastic and glass bottles, glass, small tools, balances, and empty metal cans. Waste may also contain <50% by volume absorbed organic waste packaged in 1-gallon poly bottles. [250, 256, 257, 258, 259]		
Inner Packaging	Poly bags / 4-inch-diameter by 8-inch-high aluminum cans or 1/2- and 1-gallon metal cans or Poly bottles placed in 3- or 5-gallon paint cans with crimp on lids[3,255, 256, 257, 258, 259]		
Drum Preparation	No drum liners identified		
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastics (waste materials), Iron-based Metals/Alloys, Other Inorganic Materials		
Special Notes	The waste was first identified in the mid to late 1980s and early 1990s during RWMC SWEPP operations. The waste prior to this time was identified as content Code 100 (or AE-100 IDC). It contains similar material inputs as AE-100 wastes.[250, 256, 257, 258, 259]		

Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**AE-121**	**TRU Organic Solid Waste**	
WIPP Status	Potential WIPP Candidate		
Waste Description	Various organic and inorganic absorbed liquids and homogeneous solids from multiple ANL-E buildings. Wastes include but are not limited to: precipitates, oils, ether-based scintillation fluids, decontamination liquids, ion exchange resins, evaporator residues and may include absorbed photographic solutions and other solid or semisolid materials. Liquid wastes were neutralized with the addition of NaOH, and absorbed onto vermiculite or oil-Dri. The waste may contain Portland cement and may also contain <50% by volume heterogeneous debris waste. [250, 256, 257, 258, 259]		
Inner Packaging	Direct loaded or in one-gallon containers. [250, 251, 252, 253]		
Drum Preparation	90 mil polyethylene liner.		
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials. (see Special Notes)		
Special Notes	The waste was first identified in the mid to late 1980s and early 1990s during RWMC SWEPP operations. The waste prior to this time was identified as content Code 102 (or AE-102 IDC). It contains similar material inputs as AE-102 wastes.[250, 256, 257, 258, 259] Organic Matrix may be conservatively assigned to this waste.		

Heterogeneous Debris Waste		Debris Waste	S5000
S5000	**MX-142**	**Scrap Processing Equipment**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris Waste	S5000
S5490	**AW-150**	**Laboratory Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Laboratory debris waste generated at ANL-W may include laboratory equipment (e.g., fission counters, sonic sifter), electric saw, welder controllers, tool boxes, hand tools (e.g., metal files, wire brushes, hacksaw and blades), grinder motors, pumps, fluxwire, thermocouple wire, other wire (aluminum, steel, and other metal), miscellaneous laboratory ware (e.g., beakers, polyethylene bottles), cans containing crushed glass or combustibles, foil (aluminum, tin, plutonium, or tantalum), sponges, pipette tips, paint cans (e.g., one pint or one gallon), paper, polyvinyl chloride (PVC) bags, polyethylene bags and materials, ceramics, PPE (e.g., Tyvek coveralls, anti-Cs), cloth rags, terri-towels, glove port rings, nylon gloveport blanks, O-rings, gloves (e.g., neoprene, rubber, nitrile, leather), leaded gloves, thermal gloves, crucibles, filters with wood and metal frames, HEPA filters, pre-filters, filter media, ion exchange resins, Pu-Be sources, Pu standards, irradiated GE caps, wood, rubber tubing, piping and miscellaneous metal pieces, asbestos floor tile and insulation, sample planchets, aluminum capsules, uranium pellets, actinide neutron sources, a radium needle, small vials of fuel, metal containers of experimental fuel capsules, a plastic glovebox, centrifuges, tools, and experimental fuel capsules. Waste may also contain <50% by volume analytical samples and pellets dissolved and absorbed on Oil-Dri [3, 98, 265]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Other Metals, Other Inorganic Materials, Plastics (waste materials), Rubber, Cellulosics **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	If >50% by volume homogeneous solids (e.g., absorbent), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris Waste	S5000
S5490	**IC-150**	**Laboratory Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	Laboratory debris waste generated at INTEC may include Kimwipes, trash, glassware, and gloves. Waste may also contain <50% by volume dissolved samples absorbed on Oil-Dri or analytical samples. [3, 98]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Other Metals, Other Inorganic Materials, Plastics (waste materials), Rubber, Cellulosics		
Special Notes	If >50% by volume homogeneous solids (e.g., absorbent), recommend a change to IDC UN-00A. Laboratory waste generated as of the result of the analysis samples of INTEC waste may contain or may have been derived from unused hydrofluoric acid product (HWN U134). U134 waste with any observable liquid is prohibited from disposal at WIPP.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris Waste	S5000
S5490	**ID-150**	**Laboratory Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Laboratory waste from CFA (IDC IF-150)and TRA (IDC IR-150) are not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	Based on RTR results, waste may contain impenetrable objects. [243] In WTS, the generator area codes IF and IR may be used to identify the generator instead of the generator site code, (i.e., IDCs IF-150 or IR-150 may be used instead of IDC ID-150 in WTS).		

Solidified Inorganics		Homogeneous Solids	S3000
S3000	**IC-151**	**Solidified Fuel Sludge**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*RH waste not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Uncategorized Metal	Debris Waste	S5000
S5000	**ID-152**	**Pu Neutron Sources**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Waste includes Pu-Be neutron sources, Pu standard, Pu foil, tools, and non-combustible waste. Waste from TAN may be encapsulated in cement. [3]	
Inner Packaging	Package date 1975: ^{239}Pu-Be sources from TAN were placed in carbon steel pipe, which was centered in drum. Cement was added, filling annular space of the drum and encapsulating the pipe containing the sources. [3, 97] Package date 1978: None specified for ^{238}Pu-Be sources from NRF. [3, 97] Package Date 1980: RH waste from ANL-W is packaged in an insert. [3, 97]	
Drum Preparation	Plastic liners were used. [3] Drums packaged in 1978 were 6M 55-gallon drums. [3, 97]	
Bin Preparation	INTEC waste was packaged in a bin. [97]	
Primary Waste Parameter(s)	Other Metals, Other Inorganic Materials (e.g., cement)	
Special Notes	15-gallon drums are potentially sealed containers >4 liters. Information on closure of the 15-gallon drums is not provided. In WTS, the generator area codes AW, IC, IN, and IT are used to identify the generator instead of the generator site code (i.e., IDCs AW-152, IC-152, IN-152, or IT-152 are used instead of IDC ID-152 in WTS).	

Heterogeneous Debris Waste	Predominantly Organic Debris	S5000
S5440	**ID-153**	**Combustible Lab Waste**
WIPP Status	Waste Not Currently Included in AMWTP Scope for WIPP Disposal	
Waste Description	Single drum of CH debris waste generated at NRF (IDC IN-153) includes a Pu-Be source in a paraffin filled 30-gallon drum inserted into a 55-gallon drum. Wood was used for bracing and shoring the inner drum. [3] Other containers and generators: *Not currently summarized*	
Inner Packaging	NRF waste placed in a paraffin filled 30-gallon drum Other containers and generators: *Not currently summarized*	
Drum Preparation	NRF drum - None Other containers and generators: *Not currently summarized*	
Primary Waste Parameter(s)	NRF: Other Metals, Cellulosics, Organic Matrix Other containers and generators: *Not currently summarized*	
Special Notes	In WTS, the generator area codes AW and IN may be used to identify the generator instead of the generator site code (i.e., IDC IN-153 may be used instead of IDC ID-153 in WTS).	

Uncategorized Metal	Unknown/Other Inorganic Debris	S5000
S5190	**ID-154**	**Sample Fuel**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Debris waste generated at TRA (IDC IR-154) may include actinide neutron sources, small vials of fuel, and metal containers of fuel capsules. [3]	
Inner Packaging	IR Package Date 1975: Drum filled with cement, leaving a small cavity for waste. Waste contained actinide sources, a radium needle, and small vials of sample fuel. [3] IR Package Date 1979: 1-gallon containers, with lead shot for shielding around 1-gallon containers, diatomaceous earth added for support. [3] Other containers and generators: *Not currently summarized*	
Drum Preparation	Plastic Liner	
Primary Waste Parameter(s)	Other Metals, Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain impenetrable objects. [243] In WTS, the generator area codes AW and IR may be used to identify the generator instead of the generator site code, (i.e., IDC IR-154 may be used instead of IDC ID-154 in WTS).	

Heterogeneous Debris Waste	Debris Waste	S5000
S5000	**ID-155**	**TRU Scrap**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	Debris waste generated at TRA (IR-155) may include plastic glovebox, hydraulic pump, vacuum pumps, centrifuges, tools, and experimental fuel capsules. Other generators: *Not currently summarized*	
Inner Packaging	Package Date 1975: No packaging around waste Package Date 1979: Waste was packaged into 1-gallon cans Other containers and generators: *Not currently summarized*	
Drum Preparation	One or more plastic bags, bags sealed with tape Other containers and generators: *Not currently summarized*	
Box Preparation	One plastic box liner	
Primary Waste Parameter(s)	Plastic (waste materials), Iron-based Metals/Alloys, Other Metals	
Special Notes	Based on RTR results, waste may contain mercury, sealed containers > 4 liters (e.g., sealed 2" pipe), or impenetrable objects. [243] Based on AK, hydraulic pump may contain oil. (3) In WTS, the generator area codes AW, IN, IR, and IW may be used to identify the generator instead of the generator site code, (i.e., IDCs IN-155, IR-155, or IW-155 may be used instead of IDC ID-155 in WTS).	

Heterogeneous Debris Waste		Debris Waste	S5000
S5000	**IC-156**	**Chem Cell Rip-out (UNK)**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	Steel piping, vessels, scaffolding, anti-contamination clothing, concrete, and welding slag. [3]		
Inner Packaging	None or two layers of plastic.		
Box Preparation	Two layers of plastic lining box. Plastic is folded over the waste and taped shut. Diatomaceous earth may have been added on top of the bag before closing.		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Cellulosics, Other Inorganic Material		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**ID-157**	**Miscellaneous Radionuclide Sources**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	Radionuclide sources (e.g., ^{239}Pu, ^{252}Cf, and ^{241}Am) from calibration units across the INL site. [98]		
Inner Packaging	Lead or metal containers (pigs) or wrapped in lead tape.		
Drum Preparation	Poly Drum Bag Some drums may have lead shielding		
Primary Waste Parameter(s)	Iron-based Metals/Alloys **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain mercury, sharp objects, sealed containers > 4 liters, or impenetrable objects. [243] In WTS, the generator area codes IA, IC, IF, IR, IT, and IW may be used to identify the generator instead of the generator site code, (i.e., IDCs IA-157, IC-157, IF-157, IR-157, IT-157, or IW-157 may be used instead of IDC ID-157 in WTS).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-160**	**AL/CL Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated in the Building 752 analytical and casting laboratories (AL and CL) at Materials and Fuels Complex (MFC) (formerly known as ANL-W) may include terri-towels, rags, hand tools (wire brushes, metal files, hacksaws, and blades), equipment (grinder motors, scales), thermocouple wire, gloves (neoprene, nitrile, leaded, and leather), graphite crucibles, small aluminum cans containing glass labware, pipette tips, piping, rubber tubing, poly bags, PVC bags, HEPA filters, O-rings, gloveport rings, and nylon gloveport blanks. Waste may also contain <50% by volume inorganic and organic liquids solidified with absorbent (i.e., Aquaset, Petroset, or diatomaceous earth) packaged in small bottles.[170, 171]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Cellulosics, Plastics (waste), Iron-based Metals/Alloys, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	IDC AW-160 was originally assigned to one drum of remote handled-transuranic (RH-TRU) waste from the analytical chemistry and metallography operations in Hot Fuel Examination Facility (HFEF), Building 785. [98] This RH-TRU drum is no longer part of the AMWTP inventory. The IDC AW-160 assignment has been reassigned to the waste described above.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris Waste	S5000
S5490	**AW-161**	**ACL Glassware, Paper, Poly, and Misc.**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated during analytical hot-cell analyses in the Analytical Chemistry Laboratory (ACL) in Building 752 at the ANL-W may include glassware, paper (e.g., tissue, blotting), rags, polyethylene (e.g., sheeting, bottles, beakers), metal hardware (e.g., pump parts, copper tubing, glovebox waste, and unistrut). The waste may also contain <50% by volume aqueous and organic liquids solidified/absorbed on Oil-Dri® [172, 173]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Other Inorganic Materials, Cellulosics, Plastics (waste materials), Iron-based Metals/Alloys, Other Metals (e.g. copper) **NOTE:** *Other debris waste parameters may be present in the waste.*		
Special Notes	If >50% by volume homogeneous solids (e.g., absorbent), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-162**	**ANL-W FMF EFL Zr-U-Pu Fuel Cast.**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated in the Fuel Manufacturing Facility (FMF) Experimental Fuels Laboratory (EFL) at the ANL-W may include solid zirconium, uranium, and plutonium fuel casting metal alloy wastes. The waste is a solid with small amounts of glass powder from broken glass molds. The waste may also include molds, crucibles, glassware, paper products, plastics, and filter media. The waste may also contain <50% by volume samples absorbed on Oil-Dri®. [98, 172, 174]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Other Metals (e.g., uranium, zirconium), Other Inorganic Materials **NOTE:** *Other debris waste parameters may be present in the waste.*		
Special Notes	If >50% by volume homogeneous solids (e.g., absorbent), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-163**	**ANL-W ACL Cold-Line Ab. Liq. and Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated during cold-line sample analysis in the ACL in Building 752 at ANL-W may include hardware (cans, sample containers), glassware, paper (tissue), and polyethylene (bottles, bags, pouches). The waste may also contain <50% by volume liquids absorbed on Oil-Dri®. [98, 172, 175]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Other Inorganic Materials, Iron-based Metals/Alloys, Plastics (waste materials), Cellulosics **NOTE:** *Other debris waste parameters may be present in the waste.*		
Special Notes	If >50% by volume homogeneous solids (e.g., solidified liquids), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-164**	**ANL-W HRA/WCA Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated in the Hot Repair Area (HRA) and Waste Characterization Area (WCA) in Building 785 to support various WIPP sampling and characterization activities that supported the WIPP Experimental Test Program (WETP), 3100 m^3 Project, and offsite waste programs may include personal protective equipment (PPE) (Tyvek coveralls, gloves, hoods), cloth rags, terri towels, paper, glass, poly, PVC, rubber, and scrap metal. Waste may also contain <50% by volume brine absorbed on Vermiculite. [176, 177, 178]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Plastics (waste materials), Cellulosics, Iron-based Metals/Alloys, rubber. **NOTE:** *Other debris waste parameters may be present in the waste.*		
Special Notes	If >50% by volume homogeneous solids (e.g., solidified liquids or absorbents), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-165**	**Ash Stabilization and GGE Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated during the cleanup and disposal of lab equipment and test containers from ash stabilization and gas generating experiments (GGE) in Building 785 at ANL-W may include test canisters, stainless steel tubing and valves, plastic bagging and sleeving, rubber gloves, rags, and duct tape. Waste may also contain <50% by volume ash solidified with ceramicrete or brine solution absorbed on vermiculite. [179]		
Inner Packaging	Prior to 1978, plastic-lined containers After 1977, plastic, glass or metal containers (that may be wrapped in plastic) were placed in lined containers		
Drum Preparation	One or two drum bags Oil-Dri® added to top of drum bags		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Plastic (waste materials), Rubber, Cellulosics		
Special Notes	If >50% by volume homogeneous solids (e.g., solidified liquids), recommend change to IDC UN-00A.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**AW-167**	**MFC CH-TRU Heterogeneous Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Debris waste generated in the Building 752 AL and in the Building 704 FMF at MFC (formerly known as ANL-W) may include miscellaneous laboratory equipment and hand tools (e.g., press, electric saw, hacksaw and blades, wire brushes, welder controllers, tool boxes, sonic sifter, profilometer, sample cabinet, metal files, grinder motors, poly reservoirs, pumps, thermocouple wire, copper and steel wire, polishing plates [aluminum, steel, stone and glass], scales, feed material transfer cans), labware (beakers, poly bottles, glass, one-pint cans containing crushed glass or combustibles, aluminum and tin foil, sponges, and pipette tips), various sized paint cans (one-pint to one gallon), paper, PVC bags, poly bags and materials, cloth rags, terri towels, gloveport rings, nylon gloveport blanks, O-rings, , neoprene gloves, PPE (e.g. Tyvek coveralls, booties, nitrile and leather gloves, leaded gloves and thermal gloves), small aluminum cans containing laboratory glassware, graphite crucibles, HEPA filters with wood and metal frames, pre-filters, filter media and wood, rubber tubing, piping, miscellaneous metal pieces, and asbestos floor tile and insulation. Waste may also contain <50% by volume non-debris (e.g. dissolved fuel samples solidified/absorbed with Aquaset, Petroset, kitty litter or diatomaceous earth) packaged in poly bottles. [164, 165]		
Inner Packaging	2 to 3 layers of bags Some waste may be packaged in cans (1-qt to 2-gallon paint cans).		
Drum Preparation	Drum liner		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Inorganic Materials (e.g., glass), Cellulosics, Plastics (waste) **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	This IDC is assigned to waste received from MFC after 2009 in accordance with AMWTP Profile ID-MFC-S5490. [165] RTR/VE to verify that waste does not have any supercompactor facility prohibited items (e.g., PCB items, prohibited liquids, >4-liter sealed containers, un-punctured aerosol cans). If waste contains any prohibited items, notify AMWTP Offsite Waste Coordinator. If waste is <50% by volume debris, recommend IDC UN-00A or UN-00C and notify the AMWTP Offsite Waste Coordinator.		

Uncategorized Metal	Debris Waste	S5000
S5000	**ID-175**	**DRCT Scrap Metal Waste from TAN**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	*Not currently summarized*	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	In WTS, the generator area code IT may be used to identify the generator instead of the generator site code, (i.e., IDC IT-175 may be used instead of IDC ID-175 in WTS).	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**SD-176**	**Pre-1980 INL-Exhumed SDA Homogeneous Solids**
WIPP Status	Potential WIPP Candidate	
Waste Description	This includes homogeneous solids retrieved, generated and/or repackaged during the Early Waste Retrieval (EWR) Project and placed into M-III bins and during the Initial Drum Retrieval (IDR) Project packaged into 85-gallon drums, FRP boxes, M-III bins and cargos. This includes all loose homogenous solid waste found in boxes, bins, and cargos. Waste may also contain <50% by volume debris or soil. [121, 122, 123, 124]	
Inner Packaging	*Not currently summarized*	
Drum Configuration	EWR: All retrieved drums were wrapped in at least one layer of plastic. [121, 122, 123, 124] Retrieved drums were 55-gallon or 30-gallon drums. Leaking drums and breached drums were typically overpacked into 83-gallon drums. [121, 122] Loose waste (which may include a mix of debris, solids, and soils) was packaged into 55-gallon drums.[121] This waste may also be compacted in the drum. 55-gallon and 85-gallon drums were typically placed in Tri-Wall containers but may be direct loaded in an M-III bin. IDR: Retrieved drums were 55-gallon or 30-gallon drums. Breached or contaminated drums were wrapped in plastic and placed in 85-gallon drum or M-III bin over packs. All drums were overpacked into either, 85-gallon drums, M-III bins, or cargo containers. Rigid liners are not expected in any of the EWR and IDR retrieved drums.	
Tri-Wall Configuration	EWR: A plastic liner was placed in each Tri-Wall prior to loading. Damaged (breached) drums and loose waste were placed into plastic bags and packaged in Tri-Wall cardboard boxes. [123, 124] Tri-Walls may hold up to four 55-gallon drums. Tri-Walls may contain drums, loose waste, or a combination of loose and drummed waste. IDR: Did not use Tri-Walls.	
Box Configuration	EWR: no boxes were used IDR: Two FRP boxes were created to hold ten damaged drums.	
Bin Configuration	EWR:Bins may contain, but are not limited to: • eight 55-gallon drums **or** • six 55-gallon drums and two 83-gallon drums or • two Tri-wall cardboard boxes on a wood pallet [121, 123, 124] Absorbent (~100 pounds) was routinely spread inside the M-III bins. [123, 124] IDR: Same as EWR but no Tri-Walls. IDR M-III bins are not expected to contain loose waste.	
Cargos Configuration	See- IDC-RF-998 and RF-999 Loose waste may accumulate in cargos during storage or retrieval activities.	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	For purposes of characterization of the bins and boxes, RTR can recommend this IDC if the majority of the contents are homogenous solids. The EWR and IDR solid waste may be PCB contaminated and is managed as PCB contaminated waste. A PCB determination is required prior to WIPP waste profiling or treatment as non-PCB waste.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490	**SD-177**	**Pre-1980 INL-Exhumed SDA Heterogeneous Debris**
WIPP Status	Potential WIPP Candidate	
Waste Description	Waste includes intact containers of >50% by volume miscellaneous heterogeneous debris generated historically at the RWMC. This includes debris retrieved, generated and/or repackaged during the EWR Project and placed into M-III bins and during the Initial Drum Retrieval (IDR) Project packaged into 85-gallon drums, FRP boxes, M-III bins and cargos. This includes all loose debris waste found in boxes, bins and cargos. Waste may also contain <50% homogeneous solids or soil. [121, 122, 123, 124]	
Inner Packaging	*Not currently summarized*	
Drum Configuration	EWR: All retrieved drums were wrapped in at least one layer of plastic. [121, 122, 123, 124] Retrieved drums were 55-gallon or 30-gallon drums. Leaking drums and breached drums were typically overpacked into 83-gallon drums. [121, 122] Loose waste (which may include a mix of debris, solids, and soils) was packaged into 55-gallon drums. [121]This waste may also be compacted in the drum. 55-gallon and 85-gallon drums were typically placed in Tri-Wall containers but may be direct loaded in an M-III bin. IDR: Retrieved drums were 55-gallon or 30-gallon drums. Breached or contaminated drums were wrapped in plastic and placed in 85-gallon drum or M-III bin over packs. All drums were overpacked into either, 85-gallon drums, M-III bins or cargo containers. Rigid liners are not expected in any of the retrieved drums.	
Tri-Wall Configuration	EWR: A plastic liner was placed in each Tri-Wall prior to loading. Damaged (breached) drums and loose waste were placed into plastic bags and packaged in Tri-Wall cardboard boxes. [123, 124] Tri-Walls may hold up to four 55-gallon drums. Tri-Walls may contain drums, loose waste, or a combination of loose and drummed waste. IDR: Did not use Tri-Walls.	
Bin Configuration	EWR: Bins may contain, but are not limited to: • eight 55-gallon drums **or** • six 55-gallon drums and two 83-gallon drums or • two Tri-wall cardboard boxes on a wood pallet [121, 123, 124] IDR: Same as EWR but no Tri-Walls. • IDR M-III bins are not expected to contain loose waste. Absorbent (~100 pounds) was routinely spread inside the M-III bins. [123, 124]	
Cargos Configuration	See- IDC-RF-998 and RF-999 Loose waste may accumulate in cargos during storage or retrieval activities.	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	For purposes of characterization of the bins and boxes, RTR can recommend this IDC if the majority of the contents are heterogeneous debris. Based on RTR results, waste may contain sealed containers >4 liters or impenetrable objects. [243] The waste may be PCB contaminated due to comingled with PCB homogenous solids or soils. A PCB determination is required prior to WIPP waste profiling or treatment, if comingled with homogenous solids or soils. If confirmed or no determination is provided, this is assumed as PCB wastes and assigned as BN-604.	

Soils	Soil	S4000
S4200	**SD-178**	**Pre-1980 INL-Exhumed SDA Soil**
WIPP Status	Potential WIPP Candidate	
Waste Description	Waste includes intact containers soils generated historically at the RWMC. This includes soils retrieved, generated and/or repackaged during the EWR Project and placed into M-III bins and during the Initial Drum Retrieval (IDR) Project packaged into 85-gallon drums, FRP boxes, M-III bins, and cargos. This includes all loose debris waste found in boxes, bins and cargos. Waste may also contain <50% by volume debris or homogeneous solids. [121, 122, 123, 124]	
Inner Packaging	*Not currently summarized*	
Drum Configuration	EWR: All retrieved drums were wrapped in at least one layer of plastic. [121, 122, 123, 124] Retrieved drums were 55-gallon or 30-gallon drums. Leaking drums retrieved in 1976 and breached drums retrieved in 1978 were typically overpacked into 83-gallon drums. [121, 122] Loose waste (which may include a mix of debris, solids, and soils) was packaged into 55-gallon drums.[121] This waste may also be compacted in the drum. 55-gallon and 85-gallon drums were typically placed in Tri-Wall containers but may be direct loaded in an M-III bin. IDR: Retrieved drums were 55-gallon or 30-gallon drums. Breached or contaminated drums were wrapped in plastic and placed in 85-gallon drum or M-III bin over packs. All drums were overpacked into either, 85-gallon drums, M-III bins, or cargo containers. Rigid liners are not expected in any of the retrieved drums.	
Tri-Wall Configuration	EWR: A plastic liner was placed in each Tri-Wall prior to loading. Damaged (breached) drums and loose waste were placed into plastic bags and packaged in Tri-Wall cardboard boxes. [123, 124] Tri-Walls may hold up to four 55-gallon drums. Tri-Walls may contain drums, loose waste, or a combination of loose and drummed waste. IDR: Did not use Tri-Walls.	
Bin Configuration	EWR: Bins may contain, but are not limited to: • eight 55-gallon drums **or** • six 55-gallon drums and two 83-gallon drums **or** • two Tri-wall cardboard boxes on a wood pallet [121, 123, 124] IDR: Same as EWR but no Tri-Walls. • IDR M-III bins are not expected to contain loose waste. Absorbent (~100 pounds) was routinely spread inside the M-III bins. [123, 124]	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	For purposes of characterization of the bins, RTR can recommend this IDC if the majority of the contents are soils. Soils from the EWR project may contain a soil binder (Turco Lab 1368-33-1) or asphalt that was applied in 1974-1976 at the time the soil was retrieved from the pits and trenches. [121, 122] The EWR and IDR soil waste may be PCB contaminated due to commingling with PCB homogenous solids and is managed as PCB contaminated waste. A PCB determination is required prior to WIPP waste profiling or treatment as non-PCB waste.	

N/A		N/A	N/A
N/A	**IW-179**	**Pre-1980 SDA Waste Retrieval Bins**	
WIPP Status	N/A – Overpack Container		
Waste Description	The majority of the waste in the EWR bins was originally generated at RF and Idaho facilities and disposed in Pits 1 and 2 and Trenches 5, 7, 8, 9, and 10 prior to 1964 and subsequently retrieved from these pits and trenches by the EWR Project between 1976 and 1978. The waste in the EWR bins also includes repackaged waste (e.g., damaged drums, loose waste, and soil) and waste generated by the EWR Project (reference IDCs SD-176 through SD-178). The waste is packaged in 55-gallon drums (including original generator containers), 83-gallon drums (overpacked waste) and Tri-Wall cardboard boxes. These waste containers were placed into M-III bins and transferred to Transuranic Storage Area-Retrievable Enclosure (TSA-RE). [121, 122, 123, 124]		
Bin Configuration	Bins may contain, but are not limited to: • Eight 55-gallon drums **or** • Six 55-gallon drums and two 83-gallon drums **or** • Two Tri-wall cardboard boxes on a wood pallet [121, 123, 124] Absorbent (~100 pounds) was routinely spread inside the M-III bins. [123, 124]		
Primary Waste Parameter(s)	N/A – overpack container		
Special Notes	Bins may be labeled with an identifier including the letters "EB" or "EWB." IDC IW-179 is reserved to track bins packaged with waste retrieved from the pits and trenches and is not to be used to characterize the waste. If bins are examined by RTR, then recommend an IDC based on the majority of the waste contained in the bin (reference IDCs SD-176, SD-177 and SD-178). Some of the retrieved bins are labeled "may contain ordnance;" however, no ordnance has been identified within bins examined to date. The contents of the eight drums labeled "Cluster Fragmentation Bomb" retrieved from Trench 5 were inspected to ensure that no drums containing cluster fragmentation bombs were moved to TSA-RE. The drums that contained only innocuous debris were moved to TSA-RE (the exact number of drums is unknown) but are still labeled "Cluster Fragmentation Bomb." [121, 128] Although no roaster oxide containers were identified as being placed in Pits 1 and 2 or Trenches 5, 7, 8, 9, and 10, roaster oxide was being generated at RF prior to 1964 and may be present in this waste. Empty bins may be PCB regulated. A PCB case-by case evaluation is required prior to WIPP waste profiling or treatment.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BC-201**	**Non-combustible Solids**	
WIPP Status	WIPP Candidate		
Waste Description	Various non-combustible debris wastes from decontamination and decommissioning (D&D) activities including tools, crucibles, piping, valves, pieces of equipment, lead bricks, Plexiglas, and filters. Waste may also contain any amount of combustible debris waste such as cellulosics and plastic bagging.		
Inner Packaging	1-gallon cardboard cartons / Poly bag (triple-bagged)		
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly or O-Ring bag		
Bin Preparation	Nonremovable plywood liners Bins may contain drums or triple-bagged waste		
Primary Waste Parameter(s)	Plastic (waste materials), Other Inorganic Materials, Iron-based Metals/Alloys, Other Metals (e.g., lead) **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain light ballasts (which may contain PCBs), compressed gas canisters, sealed containers >4 liters (e.g., 5-gallon metal cans), prohibited liquids, or impenetrable objects.[243] Liquid metal (i.e., mercury) wastes were sealed in polyethylene bottles, the bottles placed in a 1/2- or 1-gallon metal paint can, the can void space filled with vermiculite or plaster of paris, and then sealed.[272]		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BC-202**	**Combustible Solids–Paper/Cloth**	
WIPP Status	WIPP Candidate		
Waste Description	Cloth, paper, and wood products, primarily such as wipes, towels, rags, coveralls, booties, HEPA filter frames, plastic suits, plastic tent structures, rubber gloves, and air hose. Plastic and Cellulosics are usually in the same drum.		
Inner Packaging	O-Ring bag / Poly bag / Poly bag, or Poly bag / Poly bag / Poly bag		
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly Drum Bag Rigid Liner / Poly Drum Bag / O-Ring bag		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber **NOTE:** *Any amount of other debris waste parameters may be present.*		
Bin Preparation	Nonremovable plywood liners Bins may contain drums or triple-bagged waste		
Special Notes	Based on RTR results, waste may contain aerosol cans or prohibited liquids.[243] Liquid metal (i.e., mercury) wastes were sealed in polyethylene bottles, the bottles placed in a half- or 1-gallon metal paint can, the can void space filled with vermiculite or plaster of paris, and then sealed.[272]		

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490	**BC-203**	**Paper, Cloth, Metal, Glass**
WIPP Status	WIPP Candidate, Managed as PCB contaminated	
Waste Description	Cloth, paper, and wood products, primarily such as wipes, towels, rags, coveralls, booties, HEPA filter frames, miscellaneous metals, glass from D&D work, and gallon paint cans. Plastic and cellulosics are usually in the same drum.	
Inner Packaging	O-Ring bag / Poly bag / Poly bag, or Poly bag / Poly bag / Poly bag	
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly Drum Bag Rigid Liner / Poly Drum Bag / O-Ring bag	
Bin Preparation	Nonremovable plywood liners Bins may contain drums or triple-bagged waste	
Primary Waste Parameter(s)	Cellulosics, Other Metals (e.g., lead), Iron-based Metals/Alloys, Other Inorganic Materials (e.g., glass), Plastics (waste)	
Special Notes	Oils removed from equipment may be contaminated with PCBs. These oils were absorbed in Oil-Dri in 1-gallon metal cans, and the cans were placed in waste containers. An estimated twenty 1-gallon cans were placed in IDC BC 203 waste containers. PCB waste with any observable liquid is prohibited from disposal at WIPP. Do not recommend an IDC change to BC-202. Managed as PCB contaminated waste. [1] Liquid treatment not authorized for this IDC. Liquid metal (i.e., mercury) wastes were sealed in polyethylene bottles, the bottles placed in a 1/2- or 1-gallon metal paint can, the can void space filled with vermiculite or plaster of paris, and then sealed. [272]	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**BC-204**	**Solidified Solutions**
WIPP Status	WIPP Candidate	
Waste Description	Solidified solutions from washing gloveboxes. Approximately 30 gallons of water with Turco soap was mixed with 250 pounds of plaster of paris and allowed to cure in the drum. [3]	
Inner Packaging	Direct loaded into the waste drum Approximately 5 pounds of Plaster-of-Paris were added on top of waste.	
Drum Preparation	Rigid Liner / Poly drum bag A second poly drum bag may be present.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243]	

Solidified Inorganics [126]	Unknown/Other Homogeneous Solids	S3000
S3900	**NT-210**	**NTS Berkeley Solidified Liquids**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [126, 134, 154]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-211**	**NTS Lawrence Berkeley Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [126, 135, 154]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Solidified Inorganics and Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**LL-212**	**LLNL Solidified Liquids and Sludge**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [166, 167, 200]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Solidified Organics [136]		Unknown/Other Homogeneous Solids	S3000
S3900	**NT-212**	**NTS LLNL Solidified Sludge and Liquids**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [127, 130, 136]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**LL-213**	**LLNL Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [166, 168, 200]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-213**	**NTS LLNL Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [127, 130, 138]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-214**	**NTS Lynchburg Heterogeneous Debris**	
WIPP Status	**WIPP Candidate – Offsite Waste Characterized by CCP**		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [129, 139, 155]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-215**	**NTS EG&G Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [140, 141, 157]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-216**	**NTS Roller Coaster Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [142, 143, 158]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-217**	**NTS RF Decon Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [144, 145, 156]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-218**	**NTS Livermore and Berkeley Combined Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [146, 147, 159]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator		

Combustible Waste		Plastic/Rubber Debris	S5000
S5310	**NT-219**	**NTS ITRI Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [148, 149, 160]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**NT-220**	**NTS Decon and Maintenance Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [150, 151, 161]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Salt Waste	Chloride Salts		S3000
S3141	**LL-221**	**LLNL Pyrochemical Salt Waste**	
WIPP Status	WIPP Candidate - Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [166, 169, 200]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris	Heterogeneous Debris		S5000
S5400	**GV-222**	**GE VNC Hot Cell Debris Waste**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [162, 163, 202]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris	Heterogeneous Debris		S5000
S5400	**SL-223**	**SNL LRRI Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [203, 204, 205]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**SL-224**	**SNL HFC Heterogeneous Debris**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [206, 207, 208]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**AW-225**	**EFL Lead Gloves**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [209]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**SL-227**	**Sandia Sources**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [210, 211, 244]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**ND-228**	**NRD Mixed Heterogeneous Debris**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [237, 238, 245]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**LB-229**	**LBNL Mixed Heterogeneous Debris**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [239, 240]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris	Heterogeneous Debris	S5000
S5400	**AE-230**	**Argonne CH Debris**
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, and primary waste material parameters. [222, 247]	
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490 [96]	**RF-241**	**Americium Process Residue**
WIPP Status	WIPP Candidate	
Waste Description	Metal, glass, combustibles, plastic, and other miscellaneous debris wastes. Waste was generated in the cleanup and decommission of the americium recovery line. Other debris waste includes filters, leaded glovebox gloves, rags and wipes.	
Inner Packaging	O-Ring bag and/or Poly bag sealed and placed in Fiberpaks, 30-gallon drum or placed directly in 55-gallon drum. Shielding was provided by lead taping the Fiberpaks, lead lining (1/16- to 1/8-inch) the 30 or 55-gallon drums, or a combination of lead shielding. Some drums may have no shielding.	
Drum Preparation	Lead Shielding (see above)/ Rigid Liner (after1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials, Other Metals (e.g., lead), Cellulosics, Plastic (waste materials), Rubber, Iron-based Metals/Alloys	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers > 4 liters, sharp objects, impenetrable objects, or impenetrable lead shielding. [243] Some drums may contain homogeneous solids packaged in metal paint cans. If >50% by volume homogeneous solids, recommend an IDC change to UN-00A and an AK evaluation will be performed. [125]	

Soils	Soils	S4000
S4200	**LA-250**	**Contaminated Soil from TA-21 DP West Facility**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [266, 269]	
Special Notes	If waste is <50% by volume soils or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Soils	Soil	S4000
S4100	**OR-250**	**OR-NFS-CH-Soil**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [212, 213]	
Special Notes	If waste is <50% by volume soil or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**SR-251**	**SRS Barnwell Solidified Inorganic Waste**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [214, 215]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Particulates	S3000
S3110	**SR-252**	**SRS F-Canyon and FB-Line Absorbed Wastes**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [216, 217]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Particulates	S3000
S3110	**SR-253**	**SRS Mound Site Inorganic Particulates**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [218, 219]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Particulates	S3000
S3110	**AE-254**	**Argonne CH Homogeneous Solids**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, and primary waste material parameters. [221, 222]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Homogeneous Solids	S3000
S3100	**SR-255**	**SRS Inorganic Sludge from 235F**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [266, 269]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Particulates	S3000
S3110	**SR-256**	**SRS Inorganic Particulates from 221H**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [266, 269]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Particulates	S3000
S3110	**SR-257**	**SRS Solidified Inorganics from 773A**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [266, 269]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	
Solidified Organics	Organic Sludges	S3000
S3220	**SR-258**	**SRS Solidified Organics from 211F**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [267, 270]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Inorganic Sludges	S3000
S3120	**SR-259**	**SRS Solidified Inorganics from 211F**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [268, 270]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Organics	Organic Sludges	S3000
S3114	**SR-260**	**SRS Solidified Organics from 321M**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [268, 270]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Organics	Organic Absorbents	S3000
S3212	**SR-261**	**BCLDP absorbed hydraulic sludge from JN-1**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [268, 270]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Off-Gas Treatment Sludges	S3000
S3123	**RF-290**	**Filter Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Sludge is from the incinerator off-gas system or from filter plenums during a filter change, may also be from pumps	
Inner Packaging	Packaged in 1-quart ice cream cartons (plastic containers)/ Small Poly bag(s)/ 8802 Vollrath Stainless Can	
Drum Preparation	Rigid Liner (after1971) / Poly drum bag / Poly drum bag	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	There may be free liquids in the ice cream cartons. Based on RTR results, waste may contain prohibited liquids. [243] After 1974, sludge from incinerator off-gas system or from plenums with cement added to absorb liquids was identified as IDC RF-292.[44] Per available shipping records, IDC RF-290 was not shipped to INL after 1971. [97, 152]	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RF-292**	**Cemented Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Incinerator sludge generated from the scrubber system. The sludge is a combination of fly ash and diatomaceous filter media. Portland cement was added as an absorbent for liquids in the sludge. Waste may also contain <50% by volume plastic debris items (e.g., filters).	
Inner Packaging	Prior to 1977 PVC bag / Small Poly bag / Small Poly bag / 1-gallon metal paint can with cement to absorb free liquids. After 1977 the sludge was placed in 2-L to 1-gallon poly bottles / small poly bag/ small poly bag.	
Drum Preparation	Rigid Liner / Poly drum bag / Poly drum bag	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	There may be free liquids in the poly bottles. Based on RTR results, waste may also contain prohibited liquids in the drum bag. Waste may also contain sealed containers >4 liters (e.g., clamshells) or sharp objects. [243] VE results show some sludge may be packaged directly into metal cans and the metal cans then packaged into small bags. A cement plug (Other Inorganic Materials) may be present on the top of the bottle. Prior to 1974, cement was not added to the sludge and the sludge was identified as RF-290. [44]	

Graphite	Graphite Debris	S5000
S5126	**RF-300**	**Graphite Molds**
WIPP Status	WIPP Candidate –Drums may also be characterized by CCP	
Waste Description	Graphite molds from Pu casting operations. The molds may be broken or whole. Pieces include spacers, electrodes, ingot molds, and graphite pieces from research. Waste may also contain <50% by volume cellulosic, plastic, rubber, glass, and metal materials (e.g., paper, cardboard, elastic bands, tubing, surgeon's gloves, thermocouples, bolts, tools, etc).	
Inner Packaging	Poly bottle / O-Ring bag / Poly bag O-Ring bag / Poly bag O-ring bags are lined with a fiberboard liner and may include a fiberboard disc. Some drums may include graphite packaged in Kraft Tubes [61, 91]	
Drum Preparation	Rigid Liner (after1971) / Poly Drum Bag / Poly Drum Bag Rigid Liner (after 1971) / Poly Drum Bag / O-Ring bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, (including metal cans and 30-gallon drums) or sharp objects. [243] O-ring bags in the middle of the waste may be breached. An IDC change to RF-301, RF-303, RF-310 or RF-312 is not recommended, because these are all graphite debris waste also assigned to WSPF ID-RF-S5126.	

Graphite	Graphite Debris		S5000
S5126	**RF-301**	**Graphite Cores**	
WIPP Status	WIPP Candidate –Drums may also be characterized by CCP		
Waste Description	Graphite cores from Pu casting operations. The molds should be broken. Waste may include graphite electrodes and graphite pieces from research. Waste may also contain <50% by volume cellulosic, plastic, rubber, and metal debris items.		
Inner Packaging	Poly bottle / O-Ring bag / Poly bag O-Ring bag / Poly bag O-ring bags are lined with a fiberboard liner and may include a fiberboard disc.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Rigid Liner (after 1971) / Poly Drum Bag / O-Ring bag		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	O-ring bags in the middle of the waste may be breached. An IDC change to RF-300, RF-303, RF-310 or RF-312 is not recommended because these are all graphite debris waste also assigned to WSPF ID-RF-S5126.		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-302**	**Benelex and Plexiglas**	
WIPP Status	WIPP Candidate		
Waste Description	Benelex is a densely laminated wood product. It was usually coated with fire retardant paint. Benelex may also have lead shielding attached. Benelex came in 2-inch thick sheets. Plexiglas is a plastic sheeting 1/8 inch to 4-inch thick. Waste may also contain cellulosic or rubber (e.g., paper, rubber window gaskets, surgeon's gloves, and wipes), but may only contain <50% by volume metal debris items (e.g., leaded glass, angle iron, and metal hardware).		
Inner Packaging	Poly bag / Poly bag Waste may be placed directly into waste drum or box.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag/ Poly Drum Bag A cardboard liner may be present in some drums.		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics (e.g., Benelex), Plastic (waste material; e.g., Plexiglas), Other Metal (e.g., lead shielding)		
Special Notes	Based on RTR results, waste may contain sharp objects. [243] Benelex is a Cellulosic material and may have lead shielding attached and some of the hinges and handles may still be attached. The lead shielding was usually bolted to the Benelex so look for the bolts and nuts. Waste boxes generated during 1973 to 1974 may contain larger pieces of Benelex shielding on iron angle frames that were generated as part of the fire cleanup activities. IDC RF-302 replaced IDC RF-464 in late 1972.		

Graphite	Graphite Debris		S5000
S5126	**RF-303**	**Scarfed Graphite Chunks**	
WIPP Status	WIPP Candidate –Drums may also be characterized by CCP		
Waste Description	Waste consists of pieces of broken graphite molds generated from the mechanical cleaning (scarfing) of graphite molds and cores. Waste may also contain <50% by volume plastic and metal debris items.		
Inner Packaging	Poly bottle / O-Ring bag / Poly bag O-Ring bag / Poly bag Fiberpak/O-ring bag / Poly bag O-ring bags are lined with a fiberboard liner and may include a fiberboard disc.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum bag / Poly Drum bag Rigid Liner (after 1971) / Poly Drum bag / O-Ring bag		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	O-ring bags in the middle of the waste may be breached. An IDC change to RF-300, RF-301, RF-310 or RF-312 is not recommended because these are all graphite debris waste also assigned to WSPF ID-RF-S5126.		

Graphite	Graphite Debris		S5000
S5126 e	**RF-310**	**Graphite Scarfings**	
WIPP Status	WIPP Candidate –Drums may also be characterized by CCP		
Waste Description	Graphite fines and small pieces generated mechanically during the removal of Pu from the molds.		
Inner Packaging	1-gallon Poly bottle / O-Ring bag / Small Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag 1 to 2 quarts Oil-Dri® or vermiculite in bottom of outer drum bag.		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	Based on RTR results, waste may contain sharp objects. [243] An IDC change to RF-300, RF-301, RF-303 or RF-312 is not recommended because these are all graphite debris waste also assigned to WSPF ID-RF-S5126.		

Solidified Inorganics	Unknown Other Inorganic Particulates	S3000
S3119	**RF-311**	**Graphite Heels**
WIPP Status	WIPP Candidate	
Waste Description	Heel remaining after graphite scarfings were dissolved in nitric acid to recover the Pu. The graphite heel was collected on an R-6 filter pad and dried.	
Inner Packaging	1-gallon Poly bottle / Small PVC bag / Small Poly bag	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag 1 to 2 quarts Oil-Dri® or vermiculite on top of outer drum bag.	
Box Preparation	Poly Box Liner / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Box may contain graphite molds and other foundry supplies generated during cleanup operations after the 1969 fire. If >50% by volume debris, recommend an IDC change.	

Graphite	Graphite Debris	S5000
S5126	**RF-312**	**Coarse Graphite**
WIPP Status	WIPP Candidate –Drums may also be characterized by CCP	
Waste Description	Scarfed graphite pieces and broken graphite molds from Pu casting operations. Pieces include spacers, electrodes, ingot molds, and graphite pieces from research. The graphite was scarfed to remove the source metal for recovery. Waste may also contain <50% by volume plastic and metal debris items.	
Inner Packaging	Poly bottle / O-Ring bag / Poly bag O-Ring bag / Poly bag O-ring bags are lined with a fiberboard liner and may include a fiberboard disc. Fiberpak / O-ring bag / Poly bag	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Rigid Liner (after 1971) / Poly Drum Bag / O-Ring bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	O-ring bags in the middle of the waste may be breached. Insufficiently destroyed shapes may be classified waste. An IDC change to RF-300, RF-301, RF-303, or RF-310 is not recommended because these are all graphite debris waste also assigned to WSPF ID-RF-S5126.	

Uncategorized Metal	Metal Debris with Lead	S5000
S5112	**RF-320**	**Heavy Non-special Source Metal**
WIPP Status	WIPP Candidate	
Waste Description	Heavy non-special source metals are metals above copper on the Periodic Table and include tantalum, tungsten, platinum, depleted uranium, lead bricks/tape/sheeting. Waste consists primarily of tantalum crucibles, funnels, funnel inserts, and pour-rods. Waste may also contain <50% by volume plastic waste.	
Inner Packaging	Poly bag / Poly bag or O-Ring bag / Poly bag Waste may be in Fiberpaks.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Drums may be lead lined.	
Box Preparation	Poly Box Liner / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Metals (e.g., lead, tantalum, tungsten, platinum), Iron-based Metals/Alloys	
Special Notes	Based on RTR results, waste may contain light ballasts or transformers (which may contain PCBs), compressed gases (including aerosol cans), mercury, prohibited liquids, sealed containers >4 liters, impenetrable objects/waste. Based on VE results, waste may also contain sharp objects. [243] Depleted uranium is very dense like lead. Do not recommend an IDC change to RF-321, RF-480, or RF-481, because these are all metal waste also assigned to WSPF BN296.	

Uncategorized Metal	Metal Debris with Lead	S5000
S5112	**RF-321**	**Lead**
WIPP Status	WIPP Candidate	
Waste Description	Lead waste in the form of lead bricks, shielding, glovebox port covers. Waste may also contain lead-acid batteries.	
Inner Packaging	Poly bag / Poly bag O-Ring bag / Poly bag	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Metals (e.g., lead), Iron-based Metals/Alloys	
Special Notes	Based on RTR results, waste may contain sharp objects. [243] An IDC change to RF-320, RF-480, or RF-481 is not recommended, because these are all metal waste also assigned to WSPF BN296.	

Filters	Composite Filters		S5000
S5410	**RF-328**	**Ful-Flo Incinerator Filters**	
WIPP Status	WIPP Candidate		
Waste Description	Filters including hollow cylindrical filters 10 inch × 3-½ inch diameter made of fibrous resin material or In-Line liquid filters made of polypropylene.		
Inner Packaging	O-Ring bag / Poly bag / Clamshell Some filters may be packaged in poly bottles.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Primary Waste Parameter(s)	Plastic (waste materials)		
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243] The fibrous resin Ful-Flo filters can be distinguished from the polypropylene wound Ful-Flo filters. The fibrous resin filters have a cross weave pattern of ¼-inch deep grooves that circle the filter along its length. Grooves look much like they were cut by a lathe. Waste may have free liquids. Clamshells are sealed container >4 liters if closed. Liquids may be present in the bagging materials. An IDC change to RF-335, RF-338, RF-360, RF-376, or RF-490 is not recommended because these are all filter/insulation waste also assigned to WSPF BN211.		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-33A**	**WETP Bin Program – Combustibles A**	
WIPP Status	WIPP Candidate		
Waste Description	WETP Bin Program – Combustibles A (IDCs RF-335, RF-336, RF-337 and, RF-339)		
Inner Packaging	Bagged waste was removed from IDC RF-336, RF-337, and RF-339 drums for VE. Bags were breached for VE. After VE, waste was placed directly into bins.		
Bin Preparation	Wire mesh was placed in the bins (possibly on top and under the waste). Bins were then overpacked in SWBs.		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber		
Special Notes	Bins may contain 8 × 8 inch glovebox filters (IDC RF-335) consisting of glass and polyamide filter media. (Other Inorganic Materials)		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-33B**	**WETP Bin Program – Combustibles B**	
WIPP Status	WIPP Candidate		
Waste Description	WETP Bin Program – Combustibles B (IDCs RF-330, RF-337 and, RF-339)		
Inner Packaging	Bagged waste was removed from IDC RF-330, RF-337, and RF-339 drums for VE. Bags breached for VE. After VE, waste was placed directly into bins.		
Bin Preparation	Wire mesh was placed in the bins (possibly on top and under the waste). Bins were then overpacked in SWBs.		
Primary Waste Parameter(s)	Cellulosics, Rubber, Plastic (Waste Materials), Rubber		
Special Notes			

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-330**	**Paper and Rags-Dry**	
WIPP Status	WIPP Candidate – Drums may also be characterized by CCP		
Waste Description	Cloth, paper, and wood products including items such as wipes, towels, rags, coveralls, booties, gloves, HEPA filter frames, and lumber. Waste was packaged as a dry waste. Waste may also contain any amount of plastic, and rubber but may only contain <50% by volume metal and other inorganic material debris items (e.g., concrete, cement, leaded-glovebox gloves, surgeon's gloves, lead tape, and glass and metal items such as raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). Absorbent may have been added to waste.		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag Waste in boxes may be contained in 1 to 4 layers of plastic, with outer bag punctured.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag/ Poly Drum Bag or O-Ring bag Drums may be lead-lined (waste from americium recovery line).		
Box Preparation	Poly Box Bag/ Cardboard Box Liner Up to 100 pounds of absorbent may have been added to box during packaging.		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber		
Special Notes	Based on RTR results, waste may contain light ballasts or transformers (which may contain PCBs), compressed gases (including aerosol cans), mercury, prohibited liquids, sealed containers >4 liters, sharp objects, impenetrable waste/objects or impenetrable lead shielding. [243] An IDC change to RF-336 or RF-337 is not recommended because these are all organic debris waste also assigned to WSPF ID-RF-S5300-A. Prior to 1978, drums may contain compacted waste. [3]		

Filters	Composite Filters		S5000
S5410	**RF-335**	**Absolute 8 × 8 Filters**	
WIPP Status	WIPP Candidate		
Waste Description	Absolute glovebox air intake and exhaust HEPA filters. Filter sizes include 8 × 8 × 6 inches, 8 × 8 × 4 inches, and 12 × 12 × 6 inches. The glovebox filter frames are wood or metal. The filter media is fiberglass and Nomex (glass and aromatic polyamide fibers). The filter media can also be made of asbestos. The mesh screen is made of aluminum. The waste may also contain <50% by volume metal debris items.[70]		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag Filter media may be packaged in poly bottles.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag A limited number of drums may be lead-lined.		
Box Preparation	Poly Box Liner / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics (90%) and Aluminum-based Metals/Alloys (10%). **NOTE:** *Conservatively assign filter media in wood frame as Cellulosics. Cement should be identified as Other Inorganic Materials.*		
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable lead shielding. [243] An IDC change to RF-328, RF-338, RF-360, RF-376, or RF-490 is not recommended, because these are all filter/insulation waste also assigned to WSPF BN211.		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-336**	**Paper and Rags-Moist**	
WIPP Status	WIPP Candidate – Drums may also be characterized by CCP		
Waste Description	Cloth, paper and wood products including items such as wipes, towels, rags, coveralls, booties, gloves, and HEPA filter frames. Waste was packaged as a moist waste. Waste may also contain any amount of plastic and rubber but may only contain <50% by volume glass, metal and other inorganic material debris items (e.g., concrete, cement, metal scrap, leaded-glovebox gloves, lead tape, surgeon's gloves, raschig rings, vials, bottles, nails, cans, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). Absorbent (Oil-Dri® or vermiculite) was added during packaging.		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag Waste in boxes may be contained in 1 to 4 layers of plastic.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag or O-Ring bag Drums may be lead-lined (waste from americium recovery line).		
Box Preparation	Poly Box Bag / Cardboard Box Liner Up to 200 pounds of absorbent (Oil-Dri®) added during packaging.		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber		
Special Notes	Based on RTR results, waste may contain light ballasts (which may contain PCBs), compressed gas cylinders (including aerosol cans), cans with ignitable liquids, mercury, prohibited liquids, sealed containers >4 liters, sharp objects, impenetrable objects/waste, or impenetrable lead shielding. [243)] Individual drums may contain one-gallon metal cans of cemented sludge. [94] Based on the markings on container 10174247 (e.g., hand written "compacted"), individual containers may contain compacted waste. If >50% by volume homogeneous solids, recommend an IDC change. IDC UN-00A may be used if type of homogeneous solids is unknown (e.g., no markings on the drum). An IDC change to RF-330 or RF-337 is not recommended because these are all organic debris waste also assigned to WSPF ID-RF-S5300-A. Lack of absorbent is acceptable.		

Combustibles	Organic Debris		S5000
S5300 [89]	**ID-337**	**Plastic, Teflon, Wash, PVC, Ret. RF TRU**	
WIPP Status	WIPP Candidate		
Waste Description	Retrieved IDC RF-337 from the berm area. [2, 17]		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	In WTS, the generator area code IW may be used to identify the generator instead of the generator site code, (i.e., IDC IW-337 may be instead of IDC ID-337 in WTS).		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-337**	**Plastic, Teflon, Washables, PVC**	
WIPP Status	WIPP Candidate – Drums may also be characterized by CCP		
Waste Description	Plastic and non-leaded rubber waste includes debris items in the form of empty bottles, piping, tubing, glovebox windows, bags, tape, sheeting, and protective clothing (e.g., supplied air suits, surgeon's gloves, booties, respirator masks, parts and cartridges, and non-leaded glovebox gloves), etc. Types of plastic include polyethylene, polypropylene, PVC, teflon, tygon, and plexiglas. Types of rubber include latex, neoprene, hypalon and viton). "Washables" are rubber- and plastic-based materials that received a washing in Building 776 prior to being shipped offsite. [53] Waste may also contain any amounts of cloth, paper and wood products including items such as wipes and paper. [57] Waste may only contain <50% by volume metal and other inorganic material debris items (e.g., concrete, cement, leaded-glovebox gloves, surgeon's gloves, lead tape, and glass and metal items such as raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). Absorbent may have been added to waste.		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag A limited number of drums are lead-lined.		
Box Preparation	Box Poly Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Plastic (waste materials), Cellulosics, Rubber		
Special Notes	Based on RTR results, waste may contain compressed gases (including aerosol cans), prohibited liquids, sealed containers >4 liters, sharp objects, impenetrable objects/waste, or impenetrable lead shielding. [243)] For a drum comprised primarily of respirator masks with metal cartridges, assign Rubber (80%), Aluminum-based Metals/Alloys (15%) and Cellulosics (5%). An IDC change to RF-330 or RF-336 is not recommended because these are all organic debris waste also assigned to WSPF ID-RF-S5300-A.		

Lead/Cadmium Metal	Non-Activated Lead	X7000
X7211	**BL-338**	**RWMC Lead Shielded Overpack Empty**
WIPP Status	Waste Not Currently Included in AMWTP Scope for WIPP Disposal	
Waste Description	Lead shielded overpack drums that are empty	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	Other Metals (e.g., lead)	
Special Notes	TBD	

Filters	Composite Filters	S5000
S5410	**RF-338**	**Insulation and CWS Filter Media**
WIPP Status	WIPP Candidate	
Waste Description	Filter media (fiberglass, asbestos, paper), asbestos-type or fiberglass pipe insulation, baffling insulation, and asbestos fire blankets and gloves. The majority of the waste drums are believed to be filter media generated from splitting CWS, absolute and HEPA filters apart. Waste may also contain <50% by volume aluminum and wood filter frames.	
Inner Packaging	1-gallon Poly bottle / PVC bag / Poly bag or PVC or Poly bag / Poly bag Insulation waste may be placed directly into drum/box or wrapped with tape. Gloves and fire blankets may be single or double-contained in plastic.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Up to 5 pounds absorbent added to bottom of drum bag.	
Box Preparation	Poly Box Bag / Cardboard Box Liner	
Primary Waste Parameter(s)	Fiberglass filter media and insulation are Other Inorganic Materials. CWS Filter media are conservatively assigned Cellulosics. Asbestos and baffling insulation are Other Inorganic Materials. Pre-Filters (home furnace type) are Cellulosics. **NOTE:** *Conservatively assign filter media as Cellulosics when the type of media cannot be determined.*	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sharp objects, or impenetrable lead shielding. [243] There may be some aluminum tape on the pipe insulation. Drum may contain a type of CWS filter with a metal housing (looks like a coffee can without a lid or bottom) and is conservatively assigned Cellulosics (90%) and Iron-based Metals/Alloys (10%). A limited number of drums may contain compacted insulation waste. After 1976, this IDC was phased out and waste was incorporated into IDC RF-376. [20] An IDC change to RF-328, RF-335, RF-360, RF-376, or RF-490 is not recommended because these are all filter/insulation waste also assigned to WSPF BN211.	

Combustibles	Leaded Gloves/Aprons		S5000
S5311	**RF-339**	**Leaded Rubber Gloves and Aprons**	
WIPP Status	WIPP Candidate		
Waste Description	Primarily neoprene/hypalon leaded glovebox gloves and leaded aprons and may also contain lead sheeting and bricks.		
Inner Packaging:	O-Ring bag / Poly bag or no inner bags if generated by Size Reduction Facility in Building 776		
Drum Preparation	Rigid Liner / Poly Drum Bag/ Poly Drum Bag Some drums may be lead-lined.		
Box Preparation	Poly Box Liner / Cardboard Box Liner		
Primary Waste Parameter(s)	Gloves and aprons are 100% Rubber - assigned per Carlsbad Field Office (CBFO) (WAP Table B3-1)		
Special Notes	Based on results of RTR examination, waste may contain prohibited liquids, impenetrable objects/waste. [243] Aprons are identifiable by shoulder harness rings. An IDC change to RF-463 is not recommended because this is leaded rubber waste also assigned to WSPF BN252. Historical ID typically begins with "IDRF0019." IDC RF-339 replaced IDC RF-463 in 1973.		

Filters	Composite Filters		S5000
S5410	**RF-360**	**Insulation**	
WIPP Status	WIPP Candidate		
Waste Description	Asbestos-type pipe insulation, fiberglass pipe insulation, baffling insulation, asbestos fire blankets and gloves, and filter media (fiberglass, asbestos, paper) from prefilters and filters. Waste may also contain <50% by volume combustible material such as surgeon's gloves. Portland cement or absorbent was added to wet waste.		
Inner Packaging	Poly bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Asbestos-type insulation is Other Inorganic Materials. Pre-filters (home furnace type) are Cellulosics. **NOTE:** *Conservatively assign filter media as Cellulosics when the type of media cannot be determined.*		
Special Notes	Based on RTR results, waste may contain aerosol cans, prohibited liquids, or sealed containers >4 liters. [243] There may be some aluminum tape on the pipe insulation. An IDC change to RF-328, RF-335, RF-338, RF-376, or RF-490 is not recommended, because these are all filter/insulation waste also assigned to WSPF BN211. IDC RF-360 was replaced by IDC RF-338 in 1973.		

Solidified Inorganics	Unknown/Other Inorganic Particulates	S3000
S3119	**RF-361**	**Insulation Heel**
WIPP Status	WIPP Candidate	
Waste Description	Insoluble insulation residue or "heel" remaining after the dissolution process to dissolve Pu contaminants in acid for reprocessing. Generated from an R&D process.	
Inner Packaging	8801 and 8802 Vollrath stainless steel cans, and/or ½ - 1-gallon poly bottles.	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag / Fiberboard liner 1 – 2 quarts Oil-Dri® or vermiculite in bottom of outer drum bag.	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	TBD	

Inorganic Non-Metal	Unknown/Other Inorganic Debris	S5000
S5190 [63]	**RF-368**	**Magnesium Oxide Crucibles**
WIPP Status	WIPP Candidate	
Waste Description	Magnesium oxide (MgO_2) crucibles and crucible pieces from the plutonium reprocessing activities. The crucibles may also contain <50% by volume residual salts. Waste may also contain <50% by volume cellulosics and plastics.	
Inner Packaging	O-Ring bag / Poly bag Poly bag / Poly bag May be packaged in 1-gallon poly bottles, metal cans, or clamshell containers	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	. If closed, the clamshell container is a sealed container >4 liters.	

Inorganic Non-Metal	Unknown/Other Inorganic Debris	S5000
S5190 [63]	**RF-370**	**Leco Crucibles**
WIPP Status	WIPP Candidate	
Waste Description	Aluminum silicate-based ceramic crucibles ranging from 4-inch × ¾-inch square to 1-inch × 1 inch diameter. The crucibles may be intact or in pieces. Waste may also contain <50% by volume plastics and metals.	
Inner Packaging	1-gallon metal paint cans / PVC bag / Poly or PVC bag	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Prior to 1975, crucibles were broken before packaging into paint cans. Prior to 1972, IDC RF-370 may have been used for debris waste other than Leco Crucibles. For example, the contents of containers generated prior to 1972 may be >50% volume metals or plastics. If < 50% Leco crucibles, then recommend an IDC change. [185]	

Inorganic Non-Metal	Ceramic/Brick Debris	S5000
S5123	**RF-371**	**Fire Brick**
WIPP Status	WIPP Candidate	
Waste Description	Fire brick from Building 771 plutonium recovery incinerator. Individual drums may include primarily construction bricks and cinderblocks from the cleanup of the 1969 fire. Waste may also contain <50% by volume plastic, rubber, insulation, and metal debris items (e.g., surgical gloves, foil, and thermocouples). [71]	
Inner Packaging	Poly bag / Poly bag or Poly bag / Poly bag / Fiberpak or placed directly into waste drum or box	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Box Preparation	Poly Box Bag / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain light ballasts (which may contain PCBs), aerosol cans, prohibited liquids, or sealed containers >4 liters, sharp objects, or impenetrable waste. [243] The brick or cinderblock shapes (including some broken bricks/blocks) should be identifiable by RTR. If brick/block shapes are not visible throughout the waste container, an AK or RTR SME evaluation is required. For example, the contents of containers generated prior to 1974 may be >50% by volume soil or construction rubble (e.g., concrete, blacktop, etc.). Recommend change to IDC RF-697 (>50% by volume soil, gravel, or sand) or IDC RF-374 (>50% by volume debris), if the waste was packaged after November 26, 1972. [58, 59, 78] Recommend change to IDC RF-090 (>50% by volume soil, gravel, or sand) or IDC RF-960 (>50% by volume construction rubble debris), if packaged prior to November 27, 1972. An IDC change to RF-377 is not recommended because this is fire brick waste also assigned to WSPF BN161.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490 [9]	**RF-372**	**Grit**
WIPP Status	WIPP Candidate	
Waste Description	Aluminum oxide, iron fines, or iron pellets, or silica used for grit blasting activities. Grit blasting media such as walnut shells, glass beads, and ceramic beads may also be included. [9]	
Inner Packaging	1-gallon Poly bottles / O-Ring bag / Small Poly bag PVC or Poly Bag / 8801 or 8802 Vollrath Stainless Steel Can	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Up to 2 quarts Oil-Dri® added on top of outer sealed Poly drum bag.	
Primary Waste Parameter(s)	Other Inorganic Materials, Iron-Based Metals/Alloys, Aluminum-based Metals/Alloys **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells) or sharp objects. [243] There may be metal fines with the grit, but metal fines will not be distinguishable at the RTR.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [55]	**RF-374**	**Blacktop, Concrete, and Construction Rubble**	
WIPP Status	WIPP Candidate		
Waste Description	Blacktop, concrete, cinder blocks, rock, and construction rubble generated from construction, demolition, maintenance, size reduction, repackaging, decontamination, and decommissioning operations. Waste may also contain any amount of building or debris material that may be logically expected from these operations, including combustibles, metal, glass, plastic, rubber, ceiling tiles, floor tiles, sheetrock, etc. [37] Waste may only contain <50% by volume dirt and soil.		
Inner Packaging	Single- or double-contained in Poly or PVC Bags or Packaged in Fiberpaks or Placed directly into waste container		
Drum Preparation	Rigid Liner (after 1971) / up to 2 Poly Drum Bags May have cardboard drum liner		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Other Inorganic Materials (e.g., concrete, rock, stone portion of blacktop, felt portion of tar paper), Organic Matrix (e.g., 5% for organic binder portion of blacktop; 10% for organic binder portion of tar paper) **NOTE:** *Any amount of other debris waste parameters may be present and <50% by volume soil/gravel is allowed.*		
Special Notes	Based on RTR results, waste may contain aerosol cans, prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable waste. [243] The earliest known package date for IDC RF-374 stored at INL is November 26, 1972. IDCs RF 090, 990, and 960 were used before and after this date for similar wastes. IDCs 090, 960 and 990 were not shipped to INL after 1975. [152] WMC 5490/IDC RF-374 can ONLY be used if >50% by volume debris (e.g., metal, concrete, blacktop, rock or other debris materials). If >50% by volume soil, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]), then recommend change to IDC RF-697. Soil is expected to be packaged directly into 55-gallon drum. If >50% homogeneous solids, recommend an IDC change based on information on traveler. IDC UN-00A may be used if type of homogeneous solids is unknown (e.g. type of homogeneous solids is not identified by the markings on the drum). Individual drums assigned historical IDC RF-374 have been found to contain homogeneous solids (e.g., one-gallon metal paint cans of cemented sludge or 1-gallon poly bottles of cemented resins) and an IDC change is required. [92, 93] If indeterminate, recommend IDC UN-00B or UN-00C and an AK evaluation will be performed. Small cans and bottles of various liquids (including lubricant, jelly, and paint) were reportedly found in individual boxes of MLLW. [118] The title of the IDC RF-374 was modified by AMWTP from "Blacktop, Concrete, Dirt, and Sand" to "Blacktop, Concrete, and Construction Rubble" to reflect IDC RF-374 waste stored at INL is only debris waste.		

Solidified Inorganics	Inorganic Particulate Absorbents	S3000
S3113	**RF-375**	**Oil-Dri®**
WIPP Status	WIPP Candidate	
Waste Description	Oil-Dri®, vermiculite, and includes Oil-Dri® segregated from combustible feed to Plutonium Recovery Incinerator. Waste may also contain <50% by volume debris (e.g., rags, sorbent booms).	
Inner Packaging	1-gallon Poly bottles / O-Ring bag / Small Poly bag or Metal Paint Can / O-Ring bag / Small Poly bag Either of these configurations may also have been packaged into a clamshell prior to placement in waste drum.	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag / Fiberboard liner May have absorbent between outer poly drum bag and the rigid liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	If closed, the clamshell container is a sealed container >4 liters.	

Filters	Composite Filters		S5000
S5410	**RF-376**	**Cemented Insulation and Filter Media**	
WIPP Status	WIPP Candidate		
Waste Description	Filter media from various filters (prefilters, absolute glovebox, etc.), incinerator Ful-Flo filters, and whole filters such as 8 × 8 × 6-inch or 8 × 8 × 4-inch Absolute glovebox filters with wood or aluminum frames. Waste may include limited amounts on insulation waste, asbestos gloves, and fire blankets. Portland cement was added to the waste as an absorbent and for neutralization (up to 50 pounds for a drum and up to 180 pound for a box). Waste may also contain <50% by volume paper, rags, plastic, glass, and metal debris items. [70]		
Inner Packaging	15-gallon Poly bag or smaller Poly bags		
Drum Preparation	Rigid Liner (after 11971) / Poly Drum Bag / Poly Drum Bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Filter media is either Other Inorganic Material or Cellulosics. Insulation, asbestos, and cement are Other Inorganic Materials. **NOTE:** *Conservatively assign filter media in whole filters in wood frame as Cellulosics or when type of media cannot be determined.* HEPA filters with wood frames and aluminum mesh screens or baffles are Cellulosics (90% for frame and filter media) and Aluminum-based Metals/Alloys (10% for screens and baffles). HEPA filters with wood frames and with asbestos baffles are Cellulosics (90% for frame and filter media) and Other Inorganic Materials (10% for baffles). HEPA Filters with metal frames and aluminum mesh screens or baffles are Cellulosics (10% for filter media), Iron-based Metals/Alloys (85% for frame), and Aluminum-based Metals/Alloys (5% for screens and baffles). HEPA Filters with metal frames and with asbestos baffles are Cellulosics (10% for filter media), Iron-based Metals/Alloys (85% for frame), and Other Inorganic Materials (5% for baffles). Respirator canisters weigh about 0.25 pounds. The waste parameters for the respirator cartridges are divided in Aluminum-based Metals/Alloys (70%) and Cellulosics (30%). One type of CWS filter has a housing that looks like a coffee can without a lid or bottom and is conservatively assigned Cellulosics (90%) and Iron-based Metals/Alloys (10%). Ful-Flo filters (filter with grooves or cross hatched weave) are Plastic (waste materials). Pre-filters, similar to the type of filter used in a home furnace, are Cellulosic (100%).		
Special Notes	Based on RTR results, waste may contain aerosol cans or prohibited liquids . Based on VE results, waste may also contain sharp objects.[243] There may be some aluminum tape on the pipe insulation. A full face respirator weighs 3 pounds and is mostly rubber. Waste packaged prior to 1979 may be packaged in bottles, cans or plastic bags other than 15-gallon plastic bag. [3, 90] Do not recommend an IDC change if >50% by volume insulation or filter media. An IDC change to RF-328, RF-335, RF-338, RF-360, or RF-490 is not recommended because these are all filter/insulation waste also assigned to WSPF BN211.		

Inorganic Non-Metal	Ceramic/Brick Debris	S5000
S5123	**RF-377**	**Coarse Fire Brick**
WIPP Status	WIPP Candidate	
Waste Description	Fire brick from the Building 771 plutonium recovery incinerator. Pieces from ¼ inch to 1 inch.	
Inner Packaging	Poly bag / Poly bag Poly bag / Poly bag / Fiberpak	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	An IDC change to RF-371 is not recommended, because this is fire brick waste also assigned to WSPF BN161.	

Inorganic Non-Metal	Unknown/Other Inorganic Debris	S5000
S5190 [64]	**RF-391**	**Crucibles and Sand**
WIPP Status	WIPP Candidate	
Waste Description	These are the spent MgO_2 crucibles and spent MgO_2 sand from the button break out and foundry areas that have not been pulverized. The crucibles are broken and may include fines. Waste may also contain <50% by volume metal and plastic debris items.	
Inner Packaging	1-gallon Poly bottle or 1-gallon metal paint can / O-Ring bag / Poly bag	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may be lead-lined	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters (e.g., clamshells) impenetrable waste or impenetrable lead shielding. [243]	

Inorganic Non-Metal	Unknown/Other Inorganic Debris	S5000
S5190 [64]	**RF-392**	**Sand, Slag, and Crucible**
WIPP Status	WIPP Candidate	
Waste Description	These were the spent MgO_2 crucibles, slag, and spent sand from the button break out and foundry areas. The crucibles were broken into smaller pieces. Waste may also contain <50% by volume metal and plastic debris items.	
Inner Packaging	½ or 1-gallon Poly bottle or 1-gallon metal paint can / O-Ring bag / Poly bag	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells) or impenetrable waste. [243]	

Solidified Inorganic	Unknown/Other Inorganic Particulates	S3000
S3119 [13]	**RF-393**	**Sand, Slag, and Crucible Heels**
WIPP Status	WIPP Candidate	
Waste Description	The spent MgO_2 crucible, slag, and sand from the button break out and foundry areas were processed through the ball mill to make into a coffee ground consistency and then processed through dissolution to recover the Pu. The material that did not dissolve in the dissolution process is the sand, slag, and crucible (SS&C) heels. Waste may or may not contain absorbent. Waste may also contain <50% by volume plastic debris items.	
Inner Packaging	½ to 1-gallon Poly bottle / O-Ring bag / Poly bag May be packaged in 1-gallon paint cans.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Approximately 15 to 30 bottles were packed in each drum. Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells) or sharp objects. [243] If waste form is cemented pucks in plastic bags instead of uncemented heel in small containers (poly bottles or metal cans), then recommend an IDC change to RF-817. If indeterminate, recommend an IDC change to UN-00A and an AK evaluation will be performed.	

Salt Waste	Chloride Salts	S3000
S3141	**RF-409**	**Molten Salts-30% Unpulverized**
WIPP Status	WIPP Candidate	
Waste Description	Unpulverized fused chunks of spent salt with a 30 mole% magnesium chloride	
Inner Packaging	Stainless steel can (8801, 8802, Stacker cans) or produce cans / O-Ring bag / small poly bag/ 8802 or 8803 stainless steel can	
Drum Preparation	Waste Area Drum: Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum: Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	TBD	

Salt Waste	Chloride Salts	S3000
S3141	**RF-410**	**Molten Salts-30% Pulverized**
WIPP Status	WIPP Candidate	
Waste Description	Pulverized spent salt with a 30 mole% magnesium chloride	
Inner Packaging	Stainless steel can (8801, 8802, Stacker cans) or produce cans / O-Ring bag / small poly bag/ 8802 or 8803 stainless steel can.	
Drum Preparation	Waste Area Drum: Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum: Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Up to 50 cans per drum.	

Salt Waste	Chloride Salts		S3000
S3141	**RF-411**	**Electrorefining Salt**	
WIPP Status	WIPP Candidate		
Waste Description	Spent salt from the electrorefining process. The salt is a combination of chunks, granular, and fine particles. Waste may also contain <50% by volume metal pieces.		
Inner Packaging	Stainless steel can (8801, 8802, Stacker cans) or produce cans / O-Ring bag / small poly bag/ 8802 or 8803 stainless steel can or 1-gallon paint cans		
Drum Preparation	Waste Area Drum: Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum: Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	Up to 50 cans per drum. Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells). [243] If 1-gallon paint cans are present, then there may be lead or lead tape in paint cans.		

Salt Waste	Chloride Salts		S3000
S3141	**RF-412**	**Gibson Salts**	
WIPP Status	WIPP Candidate		
Waste Description	Gibson Spent Salt was generated from the Experimental Recovery Process to purify Pu. The salt is in the form of chunks and fines.		
Inner Packaging	Stainless steel can (8801, 8802, Stacker cans) or produce cans / O-Ring bag / small poly bag/ 8802 or 8803 stainless steel can		
Drum Preparation	Waste Area Drum: Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum: Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	Up to 50 cans per drum. Fiberpaks or clamshells may be lead lined or taped. If closed, the clamshell container is a sealed container >4 liters.		

Salt Waste	Chloride Salts		S3000
S3141	**RF-414**	**Direct Oxide Reduction Salt**	
WIPP Status	WIPP Candidate		
Waste Description	Spent Salt was generated from the direct oxide reduction process. The salt is in the form of chunks and fines. Waste may also contain <50% by volume ceramic debris items.		
Inner Packaging	Stainless steel can (8801, 8802, Stacker cans) or produce cans / O-Ring bag / small poly bag/ 8802 or 8803 stainless steel can		
Drum Preparation	Waste Area Drum: Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum: Rigid Liner (after 1971) / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells). [243] Fiberpaks or clamshells may be lead lined or taped. If closed, the clamshell container is a sealed container >4 liters. Expect Oil-Dri® or vermiculite inside the rigid liner.		

Uncategorized Metal	Metal Debris without Lead or Cadmium		S5000
S5111	**RF-416**	**Zinc Magnesium Alloy Metals**	
WIPP Status	WIPP Candidate		
Waste Description	Billets or ingots of zinc-magnesium alloy metal from R&D work.		
Inner Packaging	Produce Can / Poly bag / Poly bag / 8802 Vollrath Can O-Ring bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Primary Waste Parameter(s)	Other Metals		
Special Notes	Up to 50 cans per drum. This waste consists of a single drum, historical ID is RF005400298.		

Solidified Inorganics	Ash	S3000
S3111	**RF-420**	**Ash, Incinerator (Virgin)**
WIPP Status	WIPP Candidate	
Waste Description	Ash from incinerated combustibles at the Building 771 plutonium recovery incinerator. Ash was pulverized in a ball mill. Waste may also contain <50% by volume miscellaneous tramp metal and bits of unburned feed materials.	
Inner Packaging	½-gallon or 1-gallon Poly bottle / O-Ring bag / Small Poly bag The bottles may be bagged out separately or in groups.	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Oil-Dri® or vermiculite in bottom of inner bag.	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Up to 25 bottles per drum. Based on RTR results, waste may contain sealed containers >4 liters (e.g., large Vollrath cans or clamshells). [243] If waste form is cemented pucks in plastic bags instead of uncemented ash in poly bottles, then recommend an IDC change to RF-818. If indeterminate, recommend an IDC change to UN-00A and an AK evaluation will be performed.	

Solidified Inorganics	Ash	S3000
S3111	**RF-421**	**Ash Heels**
WIPP Status	WIPP Candidate	
Waste Description	Ash heels are the remaining ash from the dissolution process. Incinerator ash was dissolved in nitric acid to recover Pu. The ash that did not dissolve was collected on an R-6 filter pad and dried. This dried ash is the ash heel.	
Inner Packaging	½-gallon or 1-gallon poly bottle / O-Ring bag / Small Poly bag The bottles may be bagged out separately or in groups The waste may also be packaged in 8801/8802 cans.	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag 1 – 2 quarts Oil-Dri® or vermiculite in bottom of outer drum bag. Individual packages are placed in the prepared drum	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Up to 25 bottles per drum. The waste may also be packaged in 8801/8802 cans. Based on RTR results, waste may contain sealed containers >4 liters (e.g., clamshells) or sharp objects. [243]	

Solidified Inorganics	Ash	S3000
S3111	**RF-422**	**Soot**
WIPP Status	WIPP Candidate	
Waste Description	Soot is the waste collected from the cleaning of the plutonium recovery incinerator off-gas system.	
Inner Packaging	1-2 quart Poly bottles/ O Ring Bags / Small Poly bags (could be placed in additional Small Poly bags. Bottles may be packaged out of the glovebox as a group or individually	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Oil-Dri® or vermiculite in bottom of inner bag. Individual packages were placed in prepared drums.	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Up to 50 bottles per drum. Based on RTR results, waste may contain prohibited liquids or sealed containers >4 liters (e.g., clamshells). [243] If waste form is cemented pucks in plastic bags instead of uncemented soot in poly bottles, then recommend an IDC change to RF-820. If indeterminate, recommend and IDC change to UN-00A and an AK evaluation will be performed.	

Solidified Inorganics	Ash	S3000
S3111	**RF-425**	**Fluid Bed Ash**
WIPP Status	WIPP Candidate	
Waste Description	Fluid bed ash was generated from the combustion of combustible materials in the FBI pilot plant or the FBI demonstration unit.	
Inner Packaging	FBI Pilot Plant Ash: Small Poly bag/ O-Ring bag / Small Poly bag FBI Demonstration Plant Ash: Direct loaded	
Drum Preparation	FBI Pilot Plant Ash: Rigid Liner / Drum Bag / Drum Bag FBI Demonstration Plant Ash: Rigid Liner / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Oil-Dri® / vermiculite may be in outer drum bag and/or rigid liner. Based on RTR results, waste may contain sharp objects. [243]	

Combustibles	Unknown/Other Organic Debris		S5000
S5390 [10]	**RF-430**	**Unleached Ion Column Resin**	
WIPP Status	WIPP Candidate		
Waste Description	Spent anion and cation exchange resins from Pu and Am purification and recovery processes.		
Inner Packaging	Packaged in either a Fiberpak lined with poly bags and single or double bagged or a 1-gallon poly bottle and double bagged. Resin may have also been packaged in Kraft tubes. [2] Based on RTR examinations, resin was also packaged in metal cans.		
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Resin waste from the americium recovery line packaged in lead-lined drums.		
Primary Waste Parameter(s)	Plastic (waste material)		
Special Notes	Based on RTR results, waste may contain prohibited liquids or sealed containers >4 liters (e.g., clamshells). [243] Up to 10 Fiberpaks or up to 20 bottles per drum. After 1972, resins were leached, cemented and assigned IDC RF-432.		

Combustibles	Unknown/Other Organic Debris		S5000
S5390 [10]	**RF-431**	**Leached Resin**	
WIPP Status	WIPP Candidate		
Waste Description	Spent anion and cation exchange resins from Pu and Am purification and recovery processes. These resins were subsequently processed by leaching to recover the plutonium.		
Inner Packaging	Packaged in either a Fiberpak lined with poly bags and single or double bagged or a 1-gallon poly bottle and double bagged. Resin may have also been packaged in Kraft tubes. [2] Based on RTR examinations, resin was also packaged in metal cans.		
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Resin waste from the americium recovery line packaged in lead-lined drums.		
Primary Waste Parameter(s)	Plastic (waste material)		
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243] Up to 10 Fiberpaks or up to 20 bottles per drum. After 1972, leached resins were cemented and assigned IDC RF-432. Waste may be packaged in clamshells which are sealed containers >4 liters if closed.		

Solidified Organic	Organic Homogeneous Solids	S3000
S3211 [10]	**RF-432**	**Resin, Leached and Cemented**
WIPP Status	WIPP Candidate	
Waste Description	Leached, spent anion and cation exchange resins cemented with Portland cement and water. One-half inch of dry Portland cement was added to the bottle before the slurry was added and on top of the hardened resin/cement mixture.	
Inner Packaging	½ or 1-gallon Poly bottle or metal can/ Poly Bag / Poly Bag Waste may be packaged in 30-gallon drum inside a 55-gallon drum. Some drums have lead lining (1/16- to 1/8-inch) in the 30 or 55-gallon drums, or a combination of both. [125]	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Drums may be lead-lined (waste from americium recovery line, see above).	
Primary Waste Parameter(s)	Organic Matrix [15] **NOTE:** *Portland cement separate from cemented resins is Other Inorganic Materials.*	
Special Notes	Up to 20 bottles per drum. Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, sharp objects, impenetrable waste or impenetrable lead shielding. [243] Waste may be packaged in clamshells which are sealed containers >4 liters if closed.	

Inorganic Non-Metal	Glass Debris	S5000
S5122	**RF-44A**	**WETP Bin Program - Glass**
WIPP Status	WIPP Candidate	
Waste Description	WETP Bin Program (IDCs RF-440, RF-441, and RF-442)	
Inner Packaging	Bagged waste was removed from IDC RF-440, RF-441, and RF-442 drums for VE. Bags were breached for VE. After VE, waste was placed directly into bins. Waste may have been bagged out of the glove box or placed in Fiberpaks due to presence of sharp objects. Poly bag / Poly bag Poly bag / Poly bag / Fiberpak.	
Bin Preparation	Wire mesh was placed in the bins (possibly on top of and under the waste). Bins were then overpacked in SWBs.	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Can include small, broken glass pieces that are parts of Raschig rings (IDCs RF-441 and RF-442). If tank sludge/dried particulate (homogeneous solids) is noted, identify as Inorganic Matrix. WMC S5122/IDC RF-44A can ONLY be used if >50% by volume debris. If >50% by volume homogeneous solids, recommend an IDC change. IDC UN-00A may be used if type of homogeneous is unknown. If indeterminate, recommend IDC UN-00A or UN-00B and an AK evaluation will be performed. Plastic and Cellulosics may be a part of this waste.	

Inorganic Non-Metal	Glass Debris	S5000
S5122	**RF-440**	**Glass**
WIPP Status	WIPP Candidate	
Waste Description	Waste includes glass items such as bottles, vials, light bulbs, labware, glovebox windows, lead-taped sample vials, crushed and ground glass. The materials may be composed of glass, ceramic, leaded glass or quartz. Absorbent material (Oil-Dri®) may be present. Waste may also contain <50% by volume cellulosic, plastic, rubber and metal debris items (e.g., glovebox window frames and gaskets, cans, nuts, bolts, tools, bottles, leaded rubber gloves and aprons, cardboard, wood, filters, light ballasts, etc). [72]	
Inner Packaging	½ or 1-gallon Poly Bottles / Poly bag / Poly bag, or O-Ring bag / Poly bag, or Poly bag / Poly bag Waste may be packaged in Fiberpaks. Waste (light bulbs, fluorescent tubes) may be placed directly into container.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Cardboard Liner Drum may be present A small number of drums are lead-lined	
Box Preparation	Poly Box Bag / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Inorganic Materials **NOTE:** *If leaded glass, then use a 50/50 ratio for the lead (Other Metals) and glass (Other Inorganic Materials).*	
Special Notes	Based on RTR results, waste may contain aerosol cans, mercury, prohibited liquids, sealed container >4 liters, sharp objects, or impenetrable objects/waste. [243] Waste may contain rubber gaskets on windows. Leaded glass appears to become denser as rotated because a larger cross section of glass must be penetrated. Waste may also contain lead-taped glass bottles and vials. [77]	

Inorganic Non-Metal	Inorganic Debris	S5000
S5100 [89]	**RF-441**	**Raschig Rings, Unleached**
WIPP Status	WIPP Candidate – Drums may also be characterized by CCP	
Waste Description	Borosilicate glass rings that were not cleaned after removal from the tank. Waste may also contain <50% by volume plastic, cellulosics, and metal debris items, tank sludge, and absorbent material.	
Inner Packaging	Poly bag / Poly bag Poly bag / Poly bag / Fiberpak May be packaged in 1-gallon Poly bottles	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may have cardboard liner between drum bags.	
Box Preparation	Poly Box Bag / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain compressed gases (including aerosol cans), prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable waste. [243] Waste may include small, broken glass pieces. If tank sludge/dried particulate (homogeneous solids) is noted, then identify as Inorganic Matrix. WMC S5100/IDC RF-441 can ONLY be used if >50% by volume debris. If >50% by volume homogeneous solids, recommend an IDC change. IDC UN-00A may be used if type of homogeneous is unknown. If indeterminate, recommend IDC UN-00A or UN-00B and an AK evaluation will be performed. An IDC change to RF-442 is not recommended because this is raschig ring debris waste also assigned to WSPF ID-RF-S5100-A.	

Inorganic Non-Metal	Inorganic Debris	S5000
S5100 [89]	**RF-442**	**Raschig Rings, Leached**
WIPP Status	WIPP Candidate – Drums may also be characterized by CCP	
Waste Description	Borosilicate glass rings that were leached/cleaned after removal from the tanks. Waste may also contain <50% by volume plastic, cellulosics, and metal debris items and absorbent material.	
Inner Packaging	Poly bag / Poly bag Poly bag / Poly bag / Fiberpak May be packaged in 1-gallon Poly bottles	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may have cardboard liner between drum bags.	
Box Preparation	Poly Box Bag / Cardboard Box Liner	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable lead shielding. [243] Waste may include small, broken glass pieces. If tank sludge/dried particulate (homogeneous solids) is noted, then it should be considered as Inorganic Matrix. WMC S5100/IDC RF-442 can ONLY be used if >50% by volume debris. If >50% by volume homogeneous solids, recommend an IDC change. IDC UN-00A may be used if type of sludge is unknown. If indeterminate, recommend IDC UN-00A or UN-00B and an AK evaluation will be performed. An IDC change to RF-441 is not recommended because this is raschig ring debris waste also assigned to WSPF ID-RF-S5100-A.	

Combustibles	Unknown/Other Organic Debris		S5000
S5390	**RF-460**	**Washables, Rubber, Plastic**	
WIPP Status	WIPP Candidate		
Waste Description	Plastic and rubber waste destined for the washing facility in Building 776. The items were contaminated with acids or caustics, or solvents. The glove washer in the Building 776 Size Reduction Vault reduction was used to wash the waste and remove any surface contaminants. Waste may also contain any amount of cellulosics.		
Inner Packaging	O-Ring bag / Poly bag Poly bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Primary Waste Parameter(s)	Plastic (waste materials), Rubber		
Special Notes	Based on RTR results, waste may contain impenetrable waste. [243] Leaded glovebox gloves and aprons may be in this waste. Leaded gloves and aprons should be assigned 100% Rubber per CBFO (WAP Table B3-1).		

Combustibles	Leaded Gloves/Aprons		S5000
S5311	**RF-463**	**Leaded Rubber Gloves and Aprons**	
WIPP Status	WIPP Candidate		
Waste Description	Primarily neoprene/Hypalon leaded glovebox gloves and leaded aprons.		
Inner Packaging	O-Ring bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may be lead-lined.		
Primary Waste Parameter(s)	Gloves and aprons are 100% Rubber – assigned per CBFO (WAP Table B3-1)		
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters (e.g., 30-gallon drum), or impenetrable waste. [243] Aprons are identifiable by shoulder harness rings. IDC 463 was replaced by IDC 339 in 1973. An IDC change to RF-339 is not recommended because this is leaded rubber waste also assigned to WSPF BN252.		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-464**	**Benelex and Plexiglas**	
WIPP Status	WIPP Candidate		
Waste Description	Benelex is a densely laminated wood product. It was usually coated with fire retardant paint. Benelex came in 2 or 4 inch thick sheets. Plexiglas is a plastic sheeting 1/8 to 4-inch thick. Waste may also contain rubber or cellulosics (e.g., rubber window gaskets, surgeon's gloves, and wipes) but may only contain <50% by volume glass and metal debris items (e.g., leaded glass, lead shielding, and metal hardware).		
Inner Packaging	Poly bag / Poly bag Waste may be placed directly into drum.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag/ Poly Drum Bag A cardboard liner may be present in some drums.		
Primary Waste Parameter(s)	Cellulosics (e.g., Benelex), Plastic (waste materials) (e.g., Plexiglas)		
Special Notes	Based on RTR results, waste may contain prohibited liquids, sharp objects, or impenetrable waste. [243] Benelex is a cellulosic material and may have lead shielding (Other Metals) attached, and some of the hinges and handles may still be attached. The lead shielding was usually bolted to the Benelex so look for the bolts and nuts. This IDC was replaced by IDC RF-302 in late 1972.		

Uncategorized Metal	Metal Debris with Lead		S5000
S5112	**RF-48A**	**WETP Bin Program – Metal**	
WIPP Status	WIPP Candidate		
Waste Description	WETP Bin Program – Light Metal (IDCs RF-480 and RF-481)		
Inner Packaging	Bagged waste was removed from IDC RF-480 and RF-481 drums for VE. Bags were breached for VE. After VE, waste was placed directly into bins. Waste may have been repackaged in poly bags after VE. Poly bag / Poly bag O-Ring bag / Poly bag		
Bin Preparation	Wire mesh was placed in the bins (possibly on top and under the waste). Bins were then overpacked in SWBs.		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals (e.g., lead)		
Special Notes	Verify protection from sharp objects. Metals usually have other waste such as plastic. This waste will likely contain lead.		

Uncategorized Metal	Metal Debris with Lead	S5000
S5112	**RF-480**	**Non-special Source Metal**
WIPP Status	WIPP Candidate	
Waste Description	Waste includes light metals such as iron, stainless steel, carbon steel, aluminum, copper, brass, bronze, and other light metals below copper on the periodic table. Waste may be in the form of gloveboxes, glovebox windows, furnaces, lathes, drill presses, ducting, piping, tubing, angle iron, tanks, downdraft tables, part-carriers, respirator filters, ultrasonic cleaners, mechanical parts, electrical parts, scrap metal, wire, cable, gauges, valves, planchets, control panels, electronic instrumentation, vacuum sweepers, pumps, motors, railing, stairs, metal racks and trays, hotplates, empty metal produce and paint cans, carts, power tools, hand tools, chairs, desks, tables, typewriters, filing cabinets, crushed 55-gallon drums, lead cell batteries, aluminum foil, light ballasts, etc. Waste may also contain any amounts of lead (e.g., lead shielding, lead sheeting, scrap lead) but may only contain <50% by volume cellulosics, plastic, rubber, glass, and other inorganic material debris items (e.g., wipes, paper, wood, coveralls, glass containers, beakers, raschig rings, light bulbs, rubber gaskets, surgeon's gloves, plastic tubing and piping, rubber respirator masks, leaded rubber gloves, lead tape, leaded rubber aprons, concrete, etc.). [73]	
Inner Packaging	Poly bag / Poly bag or O-Ring bag / Poly bag. Waste may be in Fiberpaks. Large items may be wrapped in plastic or placed directly into container and may have been size reduced to improve packaging efficiency. Smaller items (with or without plastic packaging) may be into drums or boxes.	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may be lead-lined (waste from americium lines).	
Box Preparation	Poly Box Bag / Cardboard Box Liner Some boxes may be lead-lined (waste from americium lines).	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals (e.g., lead, copper, brass, bronze) **NOTE:** *When the type of metal cannot be determined, use Iron-based Metals/Alloys waste parameter.* [14]	
Special Notes	Based on RTR results, RF-480 waste packaged in drums or boxes may contain a wide variety of manufactured items which may contain PCB items (such as ballasts, capacitors, or transformers). [49] Waste may also contain wet cell batteries (with prohibited liquids), compressed gases (including aerosol cans), mercury, prohibited liquids, sealed containers >4 liters, sharp objects, impenetrable objects or impenetrable lead shielding. [243] Lead cell batteries with liquids in excess of WAP limits, or whose contents cannot be verified, are prohibited from disposal at the WIPP facility. [38] Small cans (1-gallon and smaller) of various liquids (including oil and paint remover) were reportedly found in individual boxes of MLLW. [118] An IDC change to RF-320, RF-321, or RF-481 is not recommended because these are all metal waste also assigned to WSPF BN296. Waste may include rubber respirator masks (as evidenced by grommets, snaps, and buckles as viewed by RTR). [60] An AK or RTR SME Evaluation is required for this condition. Recommend change to IDC RF-337 if >50% by volume rubber respirator masks/respirator filters.	

Uncategorized Metal	Metal Debris with Lead	S5000
S5112	**RF-481**	**Leached Non-special Source Metal**
WIPP Status	WIPP Candidate	
Waste Description	Waste includes light metals such as iron, stainless steel, carbon steel, aluminum, copper, brass, bronze, and other metals that were washed in hot water to remove surface contaminants such as acids or caustics. Waste may also contain any amount of lead (e.g., lead sheeting, lead pieces) but may only contain <50% by volume cellulosics, plastic, rubber, and glass debris items (e.g., wipes, paper, wood handles, plastic bottles, plastic tubing, glass containers, rubber gloves, etc.). [73]	
Inner Packaging	Poly bag / Poly bag O-Ring bag / Poly bag Waste may be in Fiberpaks A small number of drums may be lead-lined	
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag A small number of drums may be lead-lined.	
Box Preparation	Plastic Box Liner / Cardboard Box Liner	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals (e.g., lead, copper, brass, bronze) **NOTE:** *When the type of metal cannot be determined, use Iron-based Metals/Alloys waste parameter.* [14]	
Special Notes	Waste will likely contain lead. Based on RTR results, waste may contain light ballasts (which may contain PCBs), wet cell batteries (with prohibited liquids), compressed gases (including aerosol cans), prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable objects. [243] An IDC change to RF-320, RF-321, or RF-480 is not recommended because these are all metal waste also assigned to WSPF BN296.	

Lead/Cadmium Metal	Metal Debris with Lead	S5000
S5112	**RF-488**	**Glovebox Parts w/Lead**
WIPP Status	WIPP Candidate	
Waste Description	Glass, lead sheeting, lead bricks, glovebox parts with lead sheeting, other metal parts	
Inner Packaging	O-Ring bag / Poly bag Poly bag / Poly bag – Packaged in boxes	
Box Preparation	Plastic Box Liner / Cardboard Box Liner	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Inorganic Materials (e.g., glass), Other Metals (e.g., lead), Rubber	
Special Notes	This IDC was created by RF in 1988 to segregate glovebox parts with lead. [153]	

Filters	Composite Filters		S5000
S5410	**RF-490**	**HEPA Filters and CWS Filters**	
WIPP Status	WIPP Candidate		
Waste Description	Waste is primarily whole 24 × 24 × 12 inch HEPA filters. Pre-1976 waste includes CWS (Chemical Warfare Service) filters. Waste also includes Absolute 8 × 8-in glovebox filters, prefilters, insulation, and respirator filters. Filter media include asbestos type, fiberglass and paper types. Waste may also contain <50% by volume non-filter debris items (e.g., cardboard, rags, and plastic). [70]		
Inner Packaging	Poly bag / Poly bag O-Ring bag / Poly bag The waste may also be packaged in a cardboard box		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Oil-Dri® was added to drums containing damp waste.		
Box Preparation	Poly Box Bag / Cardboard Box Liner Up to 50 pounds of Portland cement added to any box containing damp filters. A small number of boxes contain uncrushed HEPA filters (~12 per box).		
Primary Waste Parameter(s)	Filter Media is either Other Inorganic Material or Cellulosics. Insulation, fiberglass, and asbestos are Other Inorganic Materials. **NOTE:** *Conservatively assign filter media in whole filters with wood frame as Cellulosics or when the type of media cannot be determined.* One type of CWS filter has a housing that is typically metal and looks like a coffee can without a lid or bottom and is conservatively assigned Cellulosics (90%) and Iron-based Metals/Alloys (10%). HEPA filters with wood frames and aluminum mesh screens or baffles are Cellulosics (90% for frame and filter media) and Aluminum-based Metals/Alloys (10% for screens and baffles). HEPA filters with wood frames and with asbestos baffles are Cellulosics (90% for frame and media) and Other Inorganic Materials (10% for baffles). HEPA Filters with metal frames and aluminum mesh screens or baffles are Cellulosics (10% for filter media), Iron-based Metals/Alloys (85% for frame), and Aluminum-based Metals/Alloys (5% for screens and baffles). HEPA Filters with metal frames and asbestos baffles are Cellulosics (10% for filter media), Iron-based Metals/Alloys (85% for frame), and Other Inorganic Materials (5% for baffles). Respirator canisters (0.25 pounds) are Aluminum-based Metals/Alloys (70%) and Cellulosics (30%).		
Special Notes	Filters may be crushed prior to placing in box. Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, sharp objects, or impenetrable waste. [243] Waste may contain light ballasts (which may contain PCBs). Filters highly contaminated with nitrate salts (e.g., >25% white crystalline material) should be handled with care. [12] An IDC change to RF-328, RF-335, RF-338, RF-360, or RF-376 is not recommended because these are all filter/insulation waste also assigned to WSPF BN211.		

Filters	Composite Filters		S5000
S5410	**RF-491**	**Plenum Prefilters**	
WIPP Status	WIPP Candidate		
Waste Description	These are prefilters to the HEPA Filters in the plenums.		
Inner Packaging	Poly bag / Poly bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics, Other Inorganic Materials (e.g., fiberglass) **NOTE:** *Conservatively assign filter media as Cellulosics when the type of media cannot be determined.*		
Special Note	The thin metal wire in the prefilter is an insignificant contributor.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-500**	**Newly Generated Debris (not BN-508)**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous non-PCB debris waste generated by AMWTP that is not BN-508. This IDC includes non-PCB waste generated in TSA-RE, Type II storage areas, Drum Repackaging Facility (DRF), Drum Treatment Facility (DTF) and waste characterization areas in WMF-634, and the Zone 3 HEPA and pre-filters generated from the WMF-676 ventilation systems. It includes waste repackaged in the Drum Waste Packaging Glovebox (DWPG) and Special Case Waste (SCW) that is generated as a result of processing waste assigned IDCs not approved in RPT-TRUW-83. It may also include repackaged loose debris from breached containers that is **not** PCB contaminated. Waste may include repackaged intact containers of historically stored debris with insufficient AK information to assign a specific IDC. Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludges).		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	Based on VE results, waste may contain sharp objects. [243] This IDC is assigned after confirmation of non-PCB status. PCB items or debris waste suspected to be contaminated with PCBs are assigned IDC BN-604. IDC BN-500 does **not** include secondary waste generated from managing waste received under the AMWTP Offsite Waste Program (reference IDC BN-521 for offsite waste).		

Soils	Soil/Debris		S4000
S4200	**BN-501**	**AMWTP PCB Soil**	
WIPP Status	WIPP Candidate		
Waste Description	Soils (natural geologic material ≤2.36 inches [60 millimeters]) generated during retrieval, characterization, treatment, packaging, storage, and other waste management operations conducted at the AMWTP that are or may be PCB contaminated. Also may include soils generated by AMWTP as a result of repackaging loose soil from breached containers that is suspect of being PCB contaminated. Waste may include repackaged intact containers of historically stored soils with insufficient AK information to assign a specific IDC. Waste may also contain <50% by volume homogeneous solids or debris including natural geologic material (e.g., rocks) >2.36 inches (60 millimeters).		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum.		
Drum Preparation	Up to 2 Poly Drum Bags.		
Primary Waste Parameter(s)	Soils/gravel.		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain sharp objects or may be impenetrable. [243] Containers within this IDC are classified as PCB. MLLW PCB soil is identified as IDC BN-627. Case-by-case evaluation required to manage this soil as non-PCB soil (reference IDCs BN-522 and BN-626).		

Solidified Inorganics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-505**	**Inorganic Homogeneous Solids**
WIPP Status	WIPP Candidate	
Waste Description	Loose or cross contaminated inorganic homogeneous solids derived from historically stored waste (e.g., sludges, salts, ash, heels, special setups, or other process residual solids including absorbents) repackaged during retrieval, characterization, treatment, storage, and other waste management operations conducted at the AMWTP. Also may include inorganic homogeneous solids generated by AMWTP as a result of repackaging loose homogeneous solids from breached containers. Waste may include repackaged intact containers of historically stored inorganic homogeneous solids waste with insufficient AK information to assign a specific IDC. Waste may also contain <50% by volume debris (metal cans, plastic bottles, etc.) and soils.	
Inner Packaging	Waste may be packaged in small containers and double or triple bagged in small poly bags or waste may be direct loaded into the waste drum	
Drum Preparation	Up to 2 Poly Drum Bags	
Primary Waste Parameter(s)	Inorganic Matrix (e.g., sludges, cemented liquids), Other Inorganic Materials (e.g., absorbents, pyrochemical salts, graphite heels, SS&C heels)	
Special Notes	Based on VE results, waste may contain sealed containers > 4 liters or sharp objects. [243] Disposition of newly generated waste will be dependent on radioisotopic content.	

Solidified Inorganics	Inorganic Particulate Absorbents	S3000
S3113	**BN-507**	**Absorbed Aqueous Squeezants**
WIPP Status	WIPP Candidate	
Waste Description	Aqueous squeezants from the supercompactor that have been absorbed onto inorganic particulate absorbent materials (e.g., Aquaset®, Aquaset II-G® or other approved inorganic absorbents).	
Inner Packaging	4-liter bottle / triple bagged into small poly bags	
Drum Preparation	Up to 2 Poly Drum Bags	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids. Based on VE results, waste may also contain mercury. [243] Aqueous liquid (excluding water soluble solvents such as acetone and methanol) from the Supercompactor ("squeezants") that have been absorbed are included under this IDC. Aqueous squeezants are collected as a liquid but must be absorbed before assignment of IDC BN-507 and to be a WIPP candidate container. Reference IDC BN-515 for absorbed aqueous liquids other than squeezants.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [79]	**BN-508**	**AMWTP Newly Generated Debris**	
WIPP Status	WIPP Candidate		
Waste Description	This is debris waste generated in WMF-676 that is directly related to the S/C operations from IDCs approved in RPT-TRUW-83 as approved feed stock. (e.g., debris from box lines) It includes TRU debris waste generated during waste management, maintenance, and clean-up operations performed in WMF-676 Zone 3 in direct support of S/C operations , and includes TRU debris waste from repackaging waste in DWPG and SCW with IDCs approved in RPT-TRUW-83. Waste may also contain <50% by volume homogeneous solids (e.g., absorbents including Vermiculite, Oil-Dri® and Aquaset II-G®), soil, and sand.		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum No inner packaging for Advanced Mixed Waste Treatment Facility (AMWTF) "silvers"		
Drum Preparation	Up to 2 Poly Drum Bags No drum bags for AMWTF "silvers"		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials), Other Inorganic Materials, Rubber, Other Metals, Aluminum-based Metals/Alloys **NOTE:** *Drum style HEPA filters are 90% Iron-Based Metals/Alloys, 5% Aluminum-based Metals/Alloys, 2.5% Rubber, and 2.5% Cellulosics. Flanders Premier pre-filters are 80% Other Inorganic Materials and 20% Cellulosics.* [133]		
Special Notes	Waste is a mixture of newly generated debris waste that could contain any types of debris feedstock waste. IDC BN-508 does **not** include waste generated outside WMF-676, waste generated in WMF-676 Zones 1 and 2, or waste generated in WMF-676 that is not directly related to the S/C operations (e.g., IDCs not listed in RPT-TRUW-83). IDC BN-508 does **not** include WMF-676 Zone 3 HEPA and Pre-filters generated from the S/C operations (reference IDC BN-500). IDC BN-508 may **not** contain PCB items or be PCB contaminated waste (reference IDC BN-600). If >50% by volume S3000 (e.g., absorbent) or S4000 (e.g., soil), recommend a change to UN-00A or UN-00C as appropriate and an AK evaluation will be performed. A catch pan may be placed on the bottom of each drum prior to compaction without impacting the assigned IDC BN-508. The catch pan weighs between 7.6 and 9 pounds and is constructed of the same material as a standard 55-gallon (17C) drum (i.e., Iron-based Metals/Alloys). [42]		

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**BN-509**	**Absorbed Organic Liquids (Excluding Squeezants)**
WIPP Status	WIPP Candidate	
Waste Description	Organic liquids derived from waste containers that are not PCB contaminated and that were treated using an inorganic particulate absorbent material (e.g., Micro-Cel®E, Petroset II-G®, Aquaset II-G®, or other approved inorganic absorbents). The absorbed organic liquids include prohibited liquids absorbed during DTF decant operations (e.g., liquids decanted from drums of IDCs RF-700 and RF-801) and prohibited containerized liquids removed and absorbed at SCW.	
Inner Packaging	Waste may be direct loaded into waste drum or packaged into 4-liter bottle / triple bagged into small poly bags	
Drum Preparation	Rigid liner if waste direct loaded into waste drum Up to 2 Poly Drum Bags if waste packaged in 4-liter bottles	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Organic liquids (including water soluble solvents such as acetone and methanol) that have been absorbed are included under this IDC. Organic wastes that are collected as a liquid must be absorbed before assignment of IDC BN-509 and to be considered a WIPP candidate container. IDC BN-509 does **not** include debris items designed or designated for spill cleanup or absorption of organic liquids (e.g., rags or PIG® spill response pig/mat products, reference IDC BN-500). IDC BN-509 does **not** include absorbed organic squeezants generated from the supercompactor (reference IDC BN-514). IDC BN-509 does **not** include absorbed organic liquids generated from maintenance operations (reference IDC BN-534). IDC BN-509 does **not** include PCB contaminated absorbed organic liquids (reference IDC BN-605).	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-510**	**Supercompacted Debris**	
WIPP Status	WIPP Candidate		
Waste Description	All types of TRU debris waste that is compacted at the AMWTP and will be shipped to WIPP under WSPF BN510.		
Inner Packaging	All inner packaging is breached during compaction		
Drum Preparation	100-gallon product drums typically containing multiple compacted 55-gallon drums of feedstock debris (i.e., pucks) associated with the IDCs listed in RPT-TRU-30.		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials), Other Inorganic Materials, Rubber, Other Metals, Aluminum-based Metals/Alloys,		
Special Notes	The puck includes catch pans (if used) as well as the compacted feed drum. [42] Only those IDCs identified in RPT-TRUW-30 are authorized as feed to the supercompactor. [6]		

Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**BN-511**	**PCB Organic Homogeneous Solids**	
WIPP Status	WIPP Candidate		
Waste Description	Loose or cross contaminated organic homogeneous solids derived from historically stored waste (e.g., organic setups IDCs RF-003 or RF-743) repackaged during retrieval, characterization, treatment, storage, and other waste management operations conducted at the AMWTP that may or are contaminated with PCBs. Also may include homogeneous solids generated by AMWTP as a result of repackaging loose homogeneous solids from breached containers that are suspected of being PCB contaminated.. It also includes repackaged intact containers of historically stored homogeneous solids waste with insufficient AK information to assign a specific IDC. Waste may also contain <50% by volume soils (e.g., interstitial soil) or debris (metal cans, plastic bottles, etc).		
Inner Packaging	Waste may be packaged in small containers and double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	Organic Matrix		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Organic waste derived from IDC RF-003 or IDC RF-743 is PCB waste. Loose homogeneous solid waste is assumed to be PCB contaminated. A case-by-case evaluation is required to manage the waste as non-PCB (reference IDC BN-513).		

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-513**	**Non-PCB Organic Homogeneous Solids**
WIPP Status	WIPP Candidate	
Waste Description	Loose or cross contaminated organic homogeneous solids, not contaminated with PCBs, created or repackaged during retrieval, characterization, treatment, storage, and other waste management operations conducted at the AMWTP (e.g., Brokk sludge, solidified organic liquids derived from historically stored waste [RF-700 or RF-801] or cemented resins [RF-432 or RF-822]). Also may include homogeneous solids generated by AMWTP as a result of repackaging loose organic homogeneous solids from breached containers. Waste may include repackaged intact containers of historically stored organic homogeneous solids waste with insufficient AK information to assign a specific IDC. Waste may also contain <50% by volume debris (metal cans, plastic bottles, etc.).	
Inner Packaging	Waste may be packaged in small containers and double or triple bagged in small poly bags or waste may be direct loaded into the waste drum	
Drum Preparation	Up to 2 Poly Drum Bags	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Containers within this IDC are not classified as PCB. IDC BN-513 does **not** include PCB contaminated organic homogeneous solids (reference IDC BN-511).	

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**BN-514**	**Absorbed Organic Squeezants**
WIPP Status	WIPP Candidate	
Waste Description	Organic squeezants from the supercompactor that have been absorbed onto inorganic particulate absorbent materials (e.g., Micro-Cel®E, Petroset II-G®, Aquaset®, Aquaset II-G®, or other approved inorganic absorbents).	
Inner Packaging	4-liter bottle / triple bagged into small poly bags	
Drum Preparation	Up to 2 Poly Drum Bags	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Based on VE results, waste may contain mercury. [243] Organic squeezants (including water soluble solvents such as acetone and methanol) that have been absorbed are included under this IDC. Organic liquids from the supercompactor must be absorbed before assignment of IDC BN-514 and to be considered a WIPP candidate container. Reference IDC BN-509 for absorbed organic liquids other than squeezants.	

Solidified Inorganics	Inorganic Particulate Absorbents	S3000
S3113	**BN-515**	**Absorbed Aqueous Liquids (Excluding Squeezants)**
WIPP Status	WIPP Candidate	
Waste Description	Aqueous liquids derived from waste containers that were treated using an inorganic particulate absorbent material (e.g., Aquaset II-G ®, Micro-Cel®E, or other approved inorganic absorbents). The absorbed aqueous liquids include prohibited liquids absorbed during DTF decant operations and prohibited containerized liquids removed and absorbed at SCW.	
Inner Packaging	Waste may be direct loaded into waste drum or packaged into 4-liter bottle / triple bagged into small poly bags	
Drum Preparation	Rigid liner if waste direct loaded into waste drum Up to 2 Poly Drum Bags if waste packaged in 4-liter bottles	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Aqueous liquid (excluding water soluble solvents such as acetone and methanol) that have been absorbed are included under this IDC. Aqueous liquid must be absorbed before assignment of IDC BN-515 and to be considered a WIPP candidate container. IDC BN-515 does **not** include debris items designed or designated for spill cleanup or absorption of aqueous liquids (e.g., rags or PIG® spill response pig/mat products, reference IDC BN-500). IDC BN-515 does **not** include absorbed aqueous squeezants from the supercompactor (reference IDC BN-507).	

Combustibles	Debris Waste	S5000
S5000	**BW-515**	**Plastics, Paper, Cloth, Etc.**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	*Not currently summarized*	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	TBD	

Uncategorized Metal	Debris Waste	S5000
S5000	**BW-516**	**Steel, Al, Electrical Devices-Handheld**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	*Not currently summarized*	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	TBD	

Uncategorized Metal	Debris Waste	S5000
S5000	**BW-517**	**Heavy Metals, Steel, Al, Brass**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	*Not currently summarized*	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-518**	**TRU Supercompactor Squeezants**
WIPP Status	WIPP Candidate (after absorption)	
Waste Description	Inorganic or organic liquids generated as squeezants from the supercompaction of debris.	
Inner Packaging	4-liter bottle / triple bagged into small poly bags	
Drum Preparation	no liner drum bag	
Primary Waste Parameter(s)	N/A	
Special Notes	TRU liquids require absorption for consideration as a WIPP candidate for disposal. After absorption, SCW assigns IDC BN-507 if inorganic/aqueous or IDC BN-514 if organic.	

N/A		N/A	N/A
N/A	**BN-519**	**TRU SDOP to Supercompactor**	
WIPP Status	N/A - Overpack Container		
Waste Description	All types of debris packaged in 55-gallon drums or larger that have been over-packed into a Six-Drum Overpack (SDOP) box for processing in AMWTF.		
Inner Packaging	All inner packaging is breached during size reduction or compaction.		
Box Preparation	No liners		
Primary Waste Parameter(s)	N/A – Overpack container		
Special Notes	IDC BN-519 is reserved to track boxes packaged with characterized debris drums for processing in AMWTF and is not to be used for characterizing waste. Only those IDCs identified in RPT-TRUW-83 are authorized as feed to the supercompactor and used as SDOP inner container feedstock.[6, 186]		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-520**	**TRU PCB Secondary Debris Generated from Offsite Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous PCB secondary debris generated from the management of offsite wastes. The debris may include PCB items, PPE, tarps, tools, PIG® spill response pig/mat products, HEPA filters, smear paper, etc. May contain <50% by volume non-debris waste such as dirt and/or homogeneous solids.		
Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain sharp objects.[243] This IDC applies only to secondary waste generated from waste that is PCB waste and was received under the AMWTP Offsite Waste Program that will be profiled by CCP. IDC BN-520 does **not** include PCB contaminated debris waste generated during the cleanup spills or leaks from SDA containers (e.g., IDCs SD-703, SD-704, SD-705, and SD-706, reference BN-604).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-521**	**TRU Secondary Debris Generated from Offsite Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous secondary debris generated from the management of offsite wastes that are **not** profiled by AMWTP for shipment to WIPP. The debris may include PPE, tarps, tools, PIG® spill response pig/mat products, HEPA filters, smear paper, etc. May contain <50% by volume non-debris waste such as dirt and/or homogeneous solids.		
Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	This IDC applies only to secondary waste generated from waste that is **not** PCB waste and was generated as a result of managing waste received under the AMWTP Offsite Waste Program that will be profiled by CCP.		

Soils	Soil/Debris		S4000
S4200	**BN-522**	**AMWTP Non-PCB Soil**	
WIPP Status	WIPP Candidate		
Waste Description	Soils (natural geologic material ≤2.36 inches [60 millimeters]) generated during retrieval, characterization, treatment, packaging, storage, and other waste management activities conducted at the AMWTP that are not PCB contaminated. Includes soils generated by AMWTP as a result of repackaging loose soil from breached containers found on Cells 1 and 2 of Pad 1but does not include any soil commingled with PCB wastes. Waste may also contain <50% by volume homogeneous solids or debris including natural geologic material (e.g., rocks) >2.36 inches (60 millimeters).		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	Soils/gravel		
Special Notes	Based on RTR results, waste may be impenetrable. [243] Containers within this IDC are classified as non- PCB. MLLW non-PCB soil is identified as IDC BN-626. IDC BN-522 does **not** include soil that may be PCB contaminated (reference IDCs BN-501 and BN-627).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-523**	**Pad 1 Cells 1 and 2 PCB Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous debris waste generated during repackaging of loose waste within Cells 1 and 2 of Pad 1 that may be commingled with PCB waste (e.g., homogeneous solids; interstitial soil; PCB liquids (e.g., oily liquids), or large PCB items including capacitor, transformers, transformer; electric motors, or hydraulic equipment). Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metal debris). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludges).		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	Loose homogeneous solids, interstitial soils, and oily liquids are assumed to be PCB contaminated. Reference IDC BN-524 for Cells 1 and 2 of Pad 1 heterogeneous debris waste that is not commingled with PCB waste or interstitial soil.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-524**	**Pad 1 Cells 1 and 2 Non-PCB Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous debris waste generated during repackaging of loose waste within Cells 1 and 2 of Pad 1 that is commingled with non-RF debris but is **not** commingled with PCB waste (see BN-523). Waste includes intact containers and repackaged containers of debris waste historically stored within Cells 1 and 2 of Pad 1 with insufficient AK information to assign a specific IDC. Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). Waste may also contain <50% by volume non-interstitial soils.		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	TBD by RTR or VE		
Special Notes	IDC BN-524 does **not** include Cells 1 and 2 of Pad 1 heterogeneous debris that may be commingled with PCB waste (reference IDC BN-523).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-525**	**P/U-listed Lab Non-PCB Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	WMC S5490/IDC BN-525 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to BN-602 IDC BN-525 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the Land Disposal Restriction (LDR) program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW BN-525 waste containers. Reference IDC BN-597 for laboratory debris waste that is or may be contaminated with PCBs		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**IC-525**	**INTEC Laboratory Debris Waste (P/U-listed)**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at INTEC.		
Inner Packaging	Plastic bag/Plastic Bag		
Drum Preparation	No Drum Bag		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	WMC S5490/IDC IC-525 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to IC-602. IDC IC-525 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the Land Disposal Restriction (LDR) program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW IC-525 waste containers.		

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-526**	**Lab PCB Debris Waste (not P/U-listed)**
WIPP Status	WIPP Candidate	
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is or may be contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste is generated at the analytical laboratory located at RWMC and operated by AMWTP.	
Inner Packaging	See INST-OI-24 [T16]	
Drum Preparation	See INST-OI-24 [T16]	
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. WMC S5490/IDC BN-526 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to BN-603. Any debris waste generated as the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, and RF-746) is PCB waste. PCB waste is prohibited from supercompaction (see INST-FOI-17, Facility Visual Examination Operations). IDC BN-526 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the Land Disposal Restriction (LDR) program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW BN-526 waste containers. Reference IDC BN-527 for laboratory debris waste that is **not** contaminated with PCBs.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490	**IC-526**	**Laboratory PCB Debris Waste**
WIPP Status	WIPP Candidate	
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is or may be contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at INTEC. [223]	
Inner Packaging	Plastic bag/Plastic Bag	
Drum Preparation	No Drum Bag	
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain prohibited liquids. [243] WMC S5490/IDC IC-526 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to IC-603. Any debris waste generated as of the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, and RF-746) is PCB waste. PCB waste is prohibited from supercompaction (see INST-FOI-17, Facility Visual Examination Operations). Based on information in the Integrated Waste Tracking System (IWTS), some laboratory waste contains waste that was generated as a result of the analysis of INTEC waste that may contain or may have been derived from unused hydrofluoric acid product (HWN U134). U134 waste with any observable liquid is prohibited from disposal at WIPP. IDC IC-526 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the Land Disposal Restriction (LDR) program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW IC-526 waste containers. Reference IDC IC-527 for laboratory debris waste that is **not** contaminated with PCBs.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**IW-526**	**Laboratory PCB Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is or may be contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at RWMC and operated by CH2M-WG. [223, 224]		
Inner Packaging	Plastic bag/Plastic Bag		
Drum Preparation	No Drum Bag		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. WMC S5490/IDC IW-526 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% by volume homogeneous solids, recommend IDC change to IW-603. Any debris waste generated as of the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, and RF-746) is PCB waste. PCB waste is prohibited from supercompaction (see INST-FOI-17, Facility Visual Examination Operations). IDC IW-526 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the LDR program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW IW-526 waste containers. Reference IDC IW-527 for laboratory debris waste that is not PCB contaminated.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-527**	**Lab Non-PCB Debris Waste (not P/U-listed)**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is **not** contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquid, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	WMC S5490/IDC BN-527 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to BN-599. IDC BN-527 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the LDR program requirements. As a result, mixtures of debris and non-debris waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW BN-527 waste containers. Reference IDC BN-526 for laboratory debris waste that is or may be contaminated with PCBs.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**IC-527**	**Laboratory Non-PCB Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is **not** contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquid, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at INTEC.[223]		
Inner Packaging	Plastic bag/Plastic Bag		
Drum Preparation	No Drum Bag		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	WMC S5490/IDC IC-527 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to IC-603. Reference IDC IC-526 for laboratory debris waste that is or may be contaminated with PCBs.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**IW-527**	**Laboratory Non-PCB Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples. This waste includes debris waste (e.g., beakers, vials) that is **not** contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquid, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste was generated at the analytical laboratory located at RWMC and operated by CH2M-WG.[223, 225]		
Inner Packaging	Plastic bag/Plastic Bag		
Drum Preparation	No Drum Bag		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	WMC S5490/IDC IW-527 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% by volume homogeneous solids, recommend IDC change to IW-603. Reference IDC IW-526 for laboratory debris waste that is or may be contaminated with PCBs.		

N/A		N/A	N/A
N/A	**BN-528**	**TRU PCB Liquids**	
WIPP Status	WIPP Candidate (after absorption)		
Waste Description	TRU liquids generated during retrieval, characterization, or treatment operations (e.g., removal of small containers of prohibited liquid or collection of liquids during retrieval) that may contain PCBs.		
Packaging	Not currently available		
Drum Preparation	Not currently available		
Primary Waste Parameter(s)	N/A		
Special Notes	An IDC change to IDC BN-529 is allowed if the analytical results confirm that suspect PCB waste is not PCB waste. IDC BN-528 does **not** include PCB contaminated liquids generated during decanting operations in DTF (reference BN-605 for absorbed PCB liquids from decanting operations). Treatment of PCB liquids is not authorized for this IDC under the approved AMWTP RBDA. Concurrence by EPA must be obtained prior to absorption.		

N/A		N/A	N/A
N/A	**BN-529**	**TRU non-PCB Liquids**	
WIPP Status	WIPP Candidate (after absorption)		
Waste Description	TRU liquids generated during retrieval, characterization, or treatment operations (e.g., removal of small containers of prohibited liquid or collection of liquids during retrieval) verified to be non-PCB waste.		
Packaging	Not currently available		
Drum Preparation	Not currently available		
Primary Waste Parameter(s)	N/A		
Special Notes	BN-529 does **not** include squeezants generated during supercompaction (reference IDC BN-518). IDC BN-529 does **not** include TRU liquids generated during decanting operations in DTF (reference IDC BN-509 for absorbed organic liquids from decanting operations and IDC BN-515 for absorbed aqueous liquids from decanting operations).		

N/A		N/A	N/A
N/A	**BN-530**	**MLLW Non-combustible Liquid**	
WIPP Status	MLLW – Not a WIPP Candidate		
Waste Description	Free flowing liquid without BTU content.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	TBD		

Inorganic Non-Metal		Debris Waste	S5000
S5000	**MO-530**	**Compacted Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

N/A		N/A	N/A
N/A	**BN-531**	**LLW Shredder Oil**	
WIPP Status	LLW - Not a WIPP Candidate		
Waste Description	Waste includes shredder oil only. Does **not** include Brokk oil (use IDC BN-535 for Brokk oil).		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	TBD		

N/A		N/A	N/A
N/A	**BN-534**	**Organic Liquid from Maintenance Activities**	
WIPP Status	MLLW – Not a WIPP Candidate		
Waste Description	This waste includes non-PCB contaminated organic liquids generated during AMWTP maintenance operations (e.g., draining the Brokk pedestal).		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	TBD		

N/A		N/A	N/A
N/A	**BN-535**	**MLLW Combustible Liquid**	
WIPP Status	MLLW - Not a WIPP Candidate		
Waste Description	Free flowing liquid with BTU content. Example includes Brokk oil. Does **not** include shredder oil.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	TBD		

Lead/Cadmium Metal		Debris Waste	S5000
S5000	**MO-535**	**Compacted Waste/Lead**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-536**	**TRU Empty Containers with PCBs**	
WIPP Status	WIPP Candidate		
Waste Description	Empty cargo containers, boxes, 55-gallon drums or 83/85-gallon overpacks generated during the retrieval or treatment processes that may contain PCBs. [116]		
Inner Packaging	N/A		
Drum Preparation	N/A		
Primary Waste Parameter(s)	Iron-Based Metals/Alloys, (Cellulosics for wooden boxes)		
Special Notes	Treatment (e.g., supercompaction) not authorized for this IDC (PCBs). An IDC change to IDC BN-537 is allowed for empty cargos if the analytical results confirm that suspect PCB waste is not PCB waste.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-537**	**TRU Empty Containers**	
WIPP Status	WIPP Candidate		
Waste Description	Empty cargo containers, boxes, 55-gallon drums or 83/85-gallon overpacks generated during the retrieval process verified to be non-PCB waste. [116]		
Inner Packaging	N/A		
Drum Preparation	N/A		
Primary Waste Parameter(s)	Iron-Based Metals/Alloys, (Cellulosics for wooden boxes)		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-538**	**Oversized Debris Items From Supercompactor Facility**	
WIPP Status	WIPP Candidate		
Waste Description	Oversized debris waste items that are transferred out of the facility via the shredder chute. Examples of oversized waste items include hardened metals, milling tables, and large diameter solid bars. The debris items may also include large tools or equipment from the Facility. The waste also includes shredded boxes (wooden and steel) used as filler material. The waste may include gloves, wipes, plastic, PPE, bag cutters, tape, and sleeve stub generated during the packaging operations.		
Inner Packaging	Debris items are wrapped in plastic.		
Box Preparation	Metal shredder box with docking sleeve		
Primary Waste Parameter(s)	Iron-Based Metals/Alloys, Cellulosics **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Shredded boxes are used as "packaging" to fill void volume. This waste does not include items that contain oil filled equipment or waste that does not meet the definition of debris per 40 CFR 268.2 (e.g., lead acid batteries, elemental lead).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-539**	**TRU Radioactive Only Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous debris waste generated in WMF-676 from the treatment of RCRA empty containers including shredded boxes constructed of metal, wood, and fiber glassed reinforced plywood. Waste may also include associated PPE, bagging, leather gloves, wipes, and cutting tools.		
Inner Packaging	*Not currently summarized*		
Drum/Box Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials)		
Special Notes			

Heterogeneous Debris Waste		Debris Waste	S5000
S5000	**MO-540**	**Non-Compacted Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

N/A		N/A	N/A
N/A	**BN-541**	**Debris SDOP to Supercompactor**	
WIPP Status	N/A - Overpack Container		
Waste Description	All types of debris packaged in 55-gallon drums or larger that have been over-packed into a Six-Drum Overpack (SDOP) box for processing in AMWTF.		
Inner Packaging	All inner packaging is breached during size reduction or compaction.		
Box Preparation	No liners		
Primary Waste Parameter(s)	N/A – Overpack container		
Special Notes	IDC BN-541 is reserved to track boxes packaged with uncharacterized debris drums for processing in AMWTF and is confirmed by RTR that all containers in the SDOP are > 50% debris. VE confirms that each container's contents are RPT-TRUW-83 IDCs. Only those IDCs identified in RPT-TRUW-83 are authorized as feed to the supercompactor and used as SDOP inner container feedstock.[6, 186]		

Heterogeneous Debris Waste		Debris Waste	S5000
S5000	**MO-545**	**WEP Shielded Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-550**	**Supercompacted Debris (BN510.1)**	
WIPP Status	WIPP Candidate		
Waste Description	All types of TRU debris waste that is compacted at the AMWTP and will be shipped to WIPP under WSPF BN510.1		
Inner Packaging	All inner packaging is breached during compaction		
Drum Preparation	100-gallon product drums typically containing multiple compacted 55-gallon drums of feedstock debris (i.e., pucks) associated with the IDCs listed in RPT-TRUW-83.[186]		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials), Other Inorganic Materials, Rubber, Other Metals, Aluminum-based Metals/Alloys		
Special Notes	The puck includes catch pans (if used) as well as the compacted feed drum. [42] Only those IDCs identified in RPT-TRUW-83 are authorized as feed to the supercompactor.[186]		

Solidified Organic	Homogeneous Solids	S3000
S3000	**MO-550**	**Solidified Oil**
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal	
Waste Description	*Not currently summarized*	
Inner Packaging	*Not currently summarized*	
Drum Preparation	*Not currently summarized*	
Primary Waste Parameter(s)	*Not currently summarized*	
Special Notes	TBD	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-597**	**P/U-listed Lab PCB Debris Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs and that are or may be contaminated with PCBs. Waste may also contain <50% by volume homogeneous solids including absorbed/solidified laboratory extraction liquids, sample residues (leached solids remaining after extraction), and returned unused sample material. This waste is generated at the analytical laboratory located at RWMC and operated by AMWTP.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	Cellulosics, Plastic, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. WMC S5490/IDC BN-597 can only be used if contaminated laboratory waste is >50% by volume debris. If laboratory waste is >50% homogeneous solids, recommend IDC change to BN-598. IDC BN-597 containers that are not destined for disposal at WIPP (e.g., MLLW) are subject to the Land Disposal Restriction (LDR) program requirements. As a result, mixtures of debris and non-debris waste with BN-597 waste cannot be classified as debris if the waste generated was the result of intentional mixing of debris and non-debris waste at the laboratory (reference 40 CFR 268.2). A case-by-case evaluation must be conducted for all MLLW BN-597 waste containers. Reference IDC BN-525 for laboratory debris waste that is **not** contaminated with PCBs.		

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-598**	**P/U-listed Lab PCB Homogeneous Solids Waste**
WIPP Status	WIPP Candidate	
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs and that are or may be contaminated with PCBs. The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC BN-598 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend IDC change to BN-597. Reference IDC BN-602 for laboratory homogeneous solids waste that is **not** contaminated with PCBs.	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-599**	**Lab Non- PCB Homogenous Solids Waste (not P/U-listed)**
WIPP Status	WIPP Candidate	
Waste Description	The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents that are not contaminated with PCBs. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC BN-599 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend IDC change to BN-527. Reference IDC BN-603 for laboratory homogeneous solids waste that is or may be contaminated with PCBs.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000

S5490	**BN-600**	**WMF-676 PCB Contaminated Debris**
WIPP Status	WIPP Candidate	
Waste Description	PCB contaminated heterogeneous debris generated in WMF-676 from the remediation of PCB prohibited wastes (e.g. removal, cleanout, spill cleanup, or treatment of PCB waste/items from box lines, SCW, or DWPG). The waste may include PCB electrical equipment (e.g., capacitors, ballast, transformers), PIG® mats, blankets, and pillows; size-reduced drum liners and empty containers; PPE; wipes, and supercompactor feedstock debris that is PCB contaminated due to PCB spills (e.g., paper and rags; gloves; wipes; asbestos; PPE; plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete). The waste may also contain < 50% by volume of non-debris (e.g., soil and particulate absorbents).	
Inner Packaging	Waste may be single or double bagged in small poly bags or waste may be direct loaded into the waste drum	
Drum Preparation	One Poly Drum Bag	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials) NOTE: *Other debris waste parameters may be present in the waste.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain prohibited liquids or impenetrable objects. Based on VE results, waste may also contain sharp objects. [243] Supercompaction is not authorized for this PCB IDC. IDC BN-600 does **not** include heterogeneous PCB debris waste generated outside of WMF-676 (reference IDC BN-604).	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000

S5490	**CW-600**	**Sludge Repackage Project PCB Contaminated Debris**
WIPP Status	WIPP Candidate	
Waste Description	PCB contaminated heterogeneous debris generated during the AMWTP sludge repackage project. The waste may include PCB electrical equipment (e.g., capacitors, ballast, transformers), size-reduced drum liners and empty containers; and PPE. The waste may also contain < 50% by volume of non-debris (e.g., soil, homogeneous solids, and particulate absorbents).	
Inner Packaging	Waste may be single or double bagged in small poly bags or waste may be direct loaded into the waste drum	
Drum Preparation	One Poly Drum Bag	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Cellulosics, Plastic (waste materials) NOTE: *Other debris waste parameters may be present in the waste.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. The waste may contain prohibited items (e.g., sealed containers, prohibited liquids, impenetrable objects, and sharp objects.) Supercompaction is not authorized for this PCB IDC.	

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**IC-601**	**Alpha Low Level Lab. WIPP Analytical Waste**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	May contain PCB wastes.		

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-602**	**P/U-listed Lab Non-PCB Homogeneous Solids Waste**
WIPP Status	WIPP Candidate	
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs that is not PCB contaminated. The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC BN-602 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend IDC change to BN-525. Reference IDC BN-598 for laboratory homogeneous solids waste that is or may be contaminated with PCBs.	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**IC-602**	**INTEC Laboratory Homogeneous Solids Waste (P/U-listed)**
WIPP Status	WIPP Candidate	
Waste Description	Secondary waste generated in the laboratory from analyzing TRU waste samples that are characterized with P and/or U-listed HWNs. The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at INTEC.	
Inner Packaging	Plastic bag/Plastic Bag	
Drum Preparation	No Drum Bag	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC IC-602 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend IDC change to IC-525.	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**BN-603**	**Lab PCB Homogenous Solids Waste (not P/U-listed)**
WIPP Status	WIPP Candidate	
Waste Description	The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents and that is or may be contaminated with PCBs. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at RWMC and operated by AMWTP.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Any homogeneous solids waste generated as of the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, and RF-746) is PCB waste. Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC BN-603 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend IDC change to BN-526. Reference IDC BN-599 for laboratory homogeneous solids waste that is **not** contaminated with PCBs.	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**IC-603**	**Laboratory Homogeneous Solids Waste**
WIPP Status	WIPP Candidate	
Waste Description	The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at INTEC. [223]	
Inner Packaging	Plastic bag/Plastic Bag	
Drum Preparation	No Drum Bag	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243] Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC IC-603 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend a or b: a. If waste is not PCB contaminated, recommend change to IDC IC-527. b. If waste is or suspected to be PCB contaminated, recommend change to IDC IC-526. This IDC is conservatively managed as PCB contaminated because it may contain waste generated as of the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, or RF-746). Based on information in IWTS, some laboratory waste contains waste generated as a result of the analysis of INTEC waste that may contain or may have been derived from unused hydrofluoric acid product (HWN U134). U134 waste with any observable liquid is prohibited from disposal at WIPP.	

Solidified Organics	Unknown/Other Homogeneous Solids	S3000
S3900	**IW-603**	**Laboratory Homogeneous Solids Waste**
WIPP Status	WIPP Candidate	
Waste Description	The waste is comprised of analytical liquids (e.g., extraction liquids) that have been absorbed or solidified with imbiber beads, Acid Bond 660, or other absorbent/solidification agents. These liquids were generated during analysis of TRU waste samples. The waste may contain sample residues (leached solids remaining after extraction) and returned unused sample material. Waste may also contain <50% by volume debris items (e.g. vials). This waste was generated at the analytical laboratory located at RWMC. [223, 226]	
Inner Packaging	Plastic bag/Plastic Bag	
Drum Preparation	No Drum Bag	
Primary Waste Parameter(s)	Organic Matrix, Inorganic Matrix, Other Inorganic Materials (see Special Notes) **NOTE:** *Other waste parameters may be present because waste may contain debris items.*	
Special Notes	Organic Matrix may be conservatively assigned to this waste. WMC S3900/IDC IW-603 can only be used if >50% by volume homogeneous solids (e.g., absorbed/solidified liquids, sample residues, or unused solid samples). If >50% by volume debris, recommend a or b: a. If waste is not PCB contaminated, recommend change to IDC IW-527. b. If waste is or suspected to be PCB contaminated, recommend change to IDC IW-526. This IDC is conservatively managed as PCB contaminated because it may contain waste generated as of the result of analyzing samples of PCB contaminated waste (e.g., IDCs RF-003, BC-203, BN-604, BN-605, RF-743, or RF-746).	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**BN-604**	**Debris TSCA/PCB**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous PCB debris waste generated by AMWTP including waste generated during handling of TSCA PCB contaminated waste or waste that contains PCB items other than PCB debris waste generated in WMF-676. Waste includes loose debris that is PCB contaminated or commingled with other PCB waste and debris generated during the cleanup of spills or leaks from waste containers that are PCB waste or are suspected to be PCB contaminated or contain PCB items (e.g., SDA IDCs). May also include intact containers of debris known or suspected to be commingled with PCB waste. Waste may contain any type of debris waste (e.g., cloth, paper, plastics, glass, rubber and metals debris). Waste may also contain <50% by volume soils or homogeneous solids (e.g., sludge).		
Inner Packaging	Waste may be double or triple bagged in small poly bags or waste may be direct loaded into the waste drum		
Drum Preparation	Up to 2 Poly Drum Bags		
Primary Waste Parameter(s)	Cellulosics, Plastics, Rubber, Other Inorganic Matrix, Iron-Based Metals/Alloys, Other Metals **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Treatment (e.g., supercompaction) is not authorized for this IDC (PCBs). Based on RTR results, waste may contain prohibited liquids (including prohibited liquids in battery) or sharp objects. [243] An IDC change to IDC BN-500 is allowed if the analytical results confirm that suspect PCB waste is not PCB waste. IDC BN-604 does **not** include PCB waste generated in WM-676 (reference IDC BN-600). IDC-BN-604 does **not** include the secondary waste generated from managing waste received under the AMWTP Offsite Waste Program other than spill cleanup waste from SDA waste containers (reference IDC BN-520 for offsite waste).		

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**BN-605**	**Absorbed Liquids TSCA/PCB**
WIPP Status	WIPP Candidate	
Waste Description	Organic or aqueous PCB liquids derived from waste containers that were treated using an inorganic particulate material (e.g., Aquaset®, Petroset®, Micro-Cel®E, or other inorganic particulate absorbent material approved by EPA). The absorbed organic or aqueous PCB liquids include prohibited liquids absorbed during DTF decant operations (e.g., liquids decanted from drums of IDC RF-003) and prohibited containerized liquids removed and absorbed at SCW. [187, 188]	
Inner Packaging	Waste may be direct loaded into waste drum or packaged into 4-liter bottle / triple bagged into small poly bags	
Drum Preparation	Rigid liner if waste direct loaded into waste drum Up to 2 Poly Drum Bags if waste packaged in 4-liter bottles	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Those waste specifically identified within the approved AMWTP PCB RBDA, PCB liquids can only be treated (absorbed) and only if the waste is destined for disposal at WIPP (i.e., only applies to TRU PCB liquids). IDC BN-605 does **not** include debris items designed or designated for spill cleanup or absorption of PCB liquids (e.g., rags or PIG® spill response pig/mat products, reference IDCs BN-600, BN-604 or BN-621).	

N/A	N/A	N/A
N/A	**BN-607**	**First/Second Stage Sludge Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 1 liquids decanted from containers of RF-001, RF-002, and RF-800 sludge waste. [116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-608**	**Special Setups Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 2 liquids decanted from containers of RF-004 and RF-802 sludge waste. [116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-609**	**Building 374 Sludge Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 3 liquids decanted from containers of RF-007, RF-803, and RF-807 sludge waste. [116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-610**	**Misc. Homogeneous Solid Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 4 liquids decanted from containers of RF-806 and RF-425 homogeneous solid waste. [116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-611**	**Sewage and Pond Sludge Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 5 liquids decanted from containers of RF-976, RF-978, and RF-995 sludge waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-612**	**Caustic Waste Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 6 liquids decanted from containers of MD-835 waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-613**	**Acid Waste Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 7 liquids decanted from containers of MD-834 waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-614**	**Cemented Sludge Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 11 liquids decanted from containers of MD-836 sludge waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-615**	**OASIS Waste Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 8 liquids decanted from containers of RF-700 and RF-801 sludge waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future. TRU liquids require absorption for consideration as a WIPP candidate for disposal. An IDC change is required after absorption.	

N/A	N/A	N/A
N/A	**BN-616**	**Organic Setups PCB Liquid**
WIPP Status	See Special Notes	
Waste Description	Group 9 liquids decanted from containers of RF-003 sludge waste.[116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	Decanting of TRU waste is permitted under specified conditions outlined in RBDA (e.g., <10% liquids in parent container and authorized IDC). Assay of liquids required prior to absorption/solidification. Absorption/solidification is prohibited for MLLW liquids classified as ≥500 ppm PCB. Absorption of TRU liquids allowed only if waste is confirmed for disposal at WIPP prior to absorption (reference IDC BN-605 for absorbed PCB liquids). To be used for the storage of liquid if required in the future.	

N/A	N/A	N/A
N/A	**BN-617**	**Solidified Solutions Liquid**
WIPP Status	WIPP Candidate (after absorption and if TRU)	
Waste Description	Group 10 liquids decanted from containers of BC-204 solidified solutions waste. [116]	
Inner Packaging	Not currently available	
Drum Preparation	Not currently available	
Primary Waste Parameter(s)	N/A	
Special Notes	To be used for the storage of liquid if required in the future.	

N/A	N/A	N/A
N/A	**BN-618**	**MLLW Non-debris**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media less than 60 mm. Examples include kitty litter and paint chips. This waste does **not** include soil.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-619**	**LLW Debris and Non-debris**
WIPP Status	LLW - Not a WIPP Candidate	
Waste Description	Non-soil solids. Examples include PPE, tarps, and tools. This waste stream does **not** include empty depressurized aerosol cans.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-620**	**MLLW Debris**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media >60 mm in any one dimension. Examples include PPE, tarps, tools, PIG® spill response pig/mat products (used to absorb liquids), etc.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sharp objects, or impenetrable objects. [243] The addition of liquid to containers of MLLW debris containing pigs or spill mats is prohibited (see INST-OI-24). [116]	

N/A	N/A	N/A
N/A	**BN-621**	**MLLW PCB Debris**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media >60 mm in any one dimension that is PCB controlled and labeled. Examples include PCB ballasts and PCB spilled liquids absorbed on debris (e.g., absorbent pads).	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	Based on VE results, waste may contain sharp objects. [243] Log sheets must indicate if ballasts are present or how the waste originated if a result of a spill. The addition of liquid to containers of MLLW debris containing pigs or spill mats is prohibited (see INST-OI-24). [116]	

N/A	N/A	N/A
N/A	**BN-622**	**MLLW PCB Non-debris**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media less than 60 mm that is PCB controlled and labeled. Examples include kitty litter used to absorb liquids and paint chips. This waste does **not** include soil.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	The addition of liquid to containers of MLLW PCB non-debris is prohibited (see INST-OI-24). [116]	

N/A		N/A	N/A
N/A	**BN-623**	**MLLW Aerosol Cans and Gas Cylinders with Contents Present**	
WIPP Status	MLLW – Not a WIPP Candidate		
Waste Description	Aerosol cans that are non-empty or contain residual pressure. Gas cylinders with valves attached.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	Aerosol cans containing contents or where the pressure cannot be released shall be accumulated separately from other waste types. Use either IDCs BN-620 or BN-624 for empty depressurized aerosol cans and empty gas cylinders without valve mechanism.		

N/A		N/A	N/A
N/A	**BN-624**	**LLW Empty Aerosol Cans and Empty Gas Cylinders**	
WIPP Status	LLW – Not a WIPP Candidate		
Waste Description	Empty aerosol cans and gas cylinders with valves removed.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	Use IDC BN-623 for aerosol cans containing contents or where the pressure cannot be released.		

N/A		N/A	N/A
N/A	**BN-625**	**LLW Soil**	
WIPP Status	LLW - Not a WIPP Candidate		
Waste Description	Earthen media less than 60 mm. Examples include dirt with small amounts of small rocks.		
Inner Packaging	See INST-OI-24 [116]		
Drum Preparation	See INST-OI-24 [116]		
Primary Waste Parameter(s)	N/A		
Special Notes	TBD		

N/A	N/A	N/A
N/A	**BN-626**	**MLLW Soil**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Earthen media less than 60 mm. Example includes dirt with small amounts of small rocks.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-627**	**MLLW PCB Soil**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Earthen media less than 60 mm that is PCB controlled and labeled. Examples include dirt with small amounts of small rocks.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-628**	**MLLW PCB Combustible Liquid**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Free flowing liquid with BTU content.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	Does **not** include decanted liquids from IDC RF-003 containers of Organic Setups) (reference IDC BN-616).	

N/A	N/A	N/A
N/A	**BN-629**	**MLLW PCB Non-combustible Liquid**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Free flowing liquid without BTU content.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-630**	**MLLW Lead-acid Batteries**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Lead-acid batteries that have not been drained to remove free liquids (battery acid).	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-631**	**LLW Non-combustible Liquid**
WIPP Status	LLW – Not a WIPP Candidate	
Waste Description	Free flowing liquid without BTU content. It is generated from process at the AMWTP in radiological areas and cannot be released by Radiological Control.	
Inner Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	TBD	

N/A	N/A	N/A
N/A	**BN-632**	**MLLW Supercompactor Squeezants**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Inorganic or organic liquids generated as squeezants from the supercompaction of exclusively MLLW debris waste.	
Inner Packaging	4-liter bottles triple bagged	
Drum Preparation	No liner drum bag	
Primary Waste Parameter(s)	N/A	
Special Notes	MLLW liquids from a MLLW campaign are not intermixed with any liquids generated from the supercompaction of TRU debris waste.	

N/A	N/A	N/A
N/A	**BN-633**	**MLLW SDOP to Supercompactor**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	All types of MLLW debris packaged in 55-gallon drums or larger that has been over-packed into a Six-Drum Overpack (SDOP) box for processing in AMWTF.	
Inner Packaging	All inner packaging is breached during size reduction or compaction.	
Box Preparation	No liners	
Primary Waste Parameter(s)	N/A	
Special Notes	IDC BN-633 is reserved to track boxes packaged with characterized debris drums for processing in AMWTF and is not to be used for characterizing waste. Only those IDCs identified in RPT-TRUW-83 are authorized as feed to the supercompactor and used as SDOP inner container feedstock. [6]	

N/A	N/A	N/A
N/A	**BN-634**	**MLLW PCB Debris Generated from Offsite Waste**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media >60 mm in any one dimension generated from offsite wastes that is PCB contaminated or PCB items. Examples include PCB items, PPE, tarps, tools, PIG® spill response pig/mat products, HEPA filters, smear paper, etc.	
Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	This IDC applies only to secondary waste generated from waste that is PCB waste and that was received through the AMWTP Offsite Waste Program.	

N/A	N/A	N/A
N/A	**BN-635**	**MLLW Debris Generated from Offsite Waste**
WIPP Status	MLLW – Not a WIPP Candidate	
Waste Description	Solid media >60 mm in any one dimension generated from offsite wastes that are **not** profiled by AMWTP for shipment to WIPP (e.g., approved as feed for the supercompacted waste stream). Examples include PPE, tarps, tools, PIG® spill response pig/mat products, drum lids, bag stubs, HEPA filters, etc.	
Packaging	See INST-OI-24 [116]	
Drum Preparation	See INST-OI-24 [116]	
Primary Waste Parameter(s)	N/A	
Special Notes	This IDC applies only to secondary waste generated from waste that is **not** PCB waste, was received through the AMWTP Offsite Waste Program, and is not profiled by AMWTP for shipment to WIPP (e.g., waste approved as feed for the supercompacted waste stream).	

N/A	N/A	N/A
N/A	**BN-636**	**LLW Empty Containers with PCB**
WIPP Status	LLW – Not a WIPP Candidate	
Waste Description	Empty cargo containers, 55-gallon drums or 83/85-gallon overpacks generated during the retrieval or treatment processes with suspect-PCB contamination. [116]	
Inner Packaging	N/A	
Drum Preparation	N/A	
Primary Waste Parameter(s)	Iron-Based Metals/Alloys	
Special Notes	Treatment (e.g., supercompaction) not authorized for this IDC (PCBs). An IDC change to IDC BN-637 is allowed for empty cargos if the analytical results confirm that suspect PCB waste is not PCB waste.	

N/A		N/A	N/A
N/A	**BN-637**	**LLW Empty Cargos**	
WIPP Status	LLW – Not a WIPP Candidate		
Waste Description	Empty cargo containers generated during the retrieval process verified to be non-PCB waste.[116]		
Inner Packaging	N/A		
Drum Preparation	N/A		
Primary Waste Parameter(s)	N/A		
Special Notes	**TBD**		

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RF-696**	**Bldg 771 Cemented Incinerator Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Cemented Incinerator Sludge was generated between 1985 and 1987. The incinerator sludge was immobilized with Portland cement and water into a 1-gallon polyethylene container mold and allowed to cure. The mold was removed and the solidified "puck" was placed in a 55-gallon drum. Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).	
Inner Packaging	O-Ring bag / Small Poly bag or Large Poly bag for the bag-out of multiple pucks at once.	
Drum Preparation	Waste Area Drum - Rigid Liner / Poly drum bag / Poly drum bag Glovebox Load-Out Drum - Rigid Liner / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and discs	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually. Building 771 Cemented Incinerator Sludge should be designated as RF-696 in WTS. This waste is identified as RF-807b in some documents. Historical ID typically begins with "IDRF0011."	

Soil		Soil/Debris	S4000
S4200	**RF-697**	**Dirt**	
WIPP Status	WIPP Candidate		
Waste Description	Dirt, sand, and soil generated from cleanup of spills and leaks. This is the dirt, soil, sand, and gravel portion of IDC RF-374. Waste may only contain <50% by volume construction rubble (e.g., concrete, blacktop, metal, rock, combustibles, glass, or plastic). Approximately 700 drums generated before 1979 may contain material from the lip area beside the blacktop pad that covered contaminated soil. [20]		
Inner Packaging	Single- or double-contained in Poly or PVC Bags OR Packaged in Fiberpaks OR Placed directly into waste container		
Drum Preparation	Rigid Liner (after 1971) / up to 2 Poly Drum Bags May have cardboard drum liner		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Soils/gravel		
Special Notes	Based on RTR results, waste may contain prohibited liquids or impenetrable waste. [243] IDC RF-697 was created to allow segregation of containers that were assigned IDC RF-374 by RF but contain >50% by volume soil. In addition, the IDC title for RF-374 was modified to reflect debris. WMC S4200/IDC RF-697 can ONLY be used if >50% by volume soils, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]).		

Solidified Organics		Solidified Homogeneous Solids	S3000
S3150	**RF-700**	**OASIS Waste**	
WIPP Status	WIPP Candidate – Characterized by CCP		
Waste Description	Solidified organic liquid generated in Building 774 Organic and Sludge Immobilization System (OASIS) prototype by mixing solvent and oils from machining operations with Envirostone® and gypsum cement.		
Inner Packaging	Direct loaded into the waste drum from the glovebox		
Drum Preparation	Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out Bag		
Primary Waste Parameter(s)	Organic Matrix		
Special Notes	Based on RTR results, waste may contain prohibited liquids within the drum bag. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. IDC 700 replaced by IDC 801.		

N/A		N/A	N/A
N/A	**BN-701**	**MLLW Supercompacted Debris**	
WIPP Status	MLLW – Not a WIPP Candidate		
Waste Description	Debris waste from supercompactor operations compacted into pucks that are all <100 nCi/g and are packaged into 100-gallon drums at the AMWTP.		
Inner Packaging	All inner packaging breached during compaction		
Drum Preparation	100-gallon product drums <100 nCi/g containing multiple compacted 55-gallon drums of debris each <100 nCi/g.		
Primary Waste Parameter(s)	N/A		
Special Notes	Mercury has been found in one MLLW drum (BN10164872). Only those IDCs identified in RPT-TRUW-30 are authorized as feed to the supercompactor.[6]		

N/A		N/A	N/A
N/A	**BN-702**	**MLLW Supercompacted Debris**	
WIPP Status	MLLW – Not a WIPP Candidate		
Waste Description	Debris waste from supercompactor operations compacted into pucks that are all <100 nCi/g and are packaged into 100-gallon drums at the AMWTP.		
Inner Packaging	All inner packaging breached during compaction		
Drum Preparation	100-gallon product drums <100 nCi/g containing multiple compacted 55-gallon drums of debris each <100 nCi/g.		
Primary Waste Parameter(s)	N/A		
Special Notes	Only those IDCs identified in RPT-TRUW-83 are authorized as feed to the supercompactor.[186]		

N/A		Unknown/Other Solids	S9000
S9000	**SD-703**	**SDA Waste Containing Nitrate Salts**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items.[227, 228]		
Special Notes			

Solidified Organics		Unknown/Other Homogeneous Solids	S3000
S3900	**SD-704**	**SDA Homogeneous Solids**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [67, 229]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**SD-705**	**SDA Heterogeneous Debris**	
WIPP Status	WIPP Candidate – Offsite Waste Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [67, 230]		
Special Notes	If waste is <50% by volume debris or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Soils	Soil/Debris		S4000
S4200	**SD-706**	**SDA Soil**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [67, 231]		
Special Notes	If waste is <50% by volume soils or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**RL-712**	**Hanford Plutonium Finishing Plant Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous debris waste generated at the Hanford Plutonium Finishing Plant (PFP) that may include iron-based metals tools, scrap, and equipment (pipes, pumps, tanks, hot plates, sampled racks, stirrers, burners, slip-lid cans, levels, grease guns); aluminum (foil, mask filters, racks, containers, structural components), leaded items (aprons, seals, tape, gloves),fluorescent light bulbs; glass; ceramics; paper (cardboard cartons), PPE, rags, wood (ladders, brush handles, filter frames), filter media, rubber (masks, gloves, tubing), and plastics (bags, poly jars, bottles, Anti-Corrosive Rad Pads [polypropylene]); sand, slag, and crucible waste; and beryllium and selenium sources. Waste may also contain <50% by volume absorbed organic and inorganic liquids packaged in metal cans. [82, 182, 191, 192]		
Inner Packaging	Plastic bags (up to five inner bags) May be packaged in poly bottles or metal cans (e.g., 4-quart, 5-quart, and 5-gallon paint cans and 4-gallon slip lid cans)		
Drum Preparation	Poly drum liner bag (after 1977) 55-gallon drum overpacked into 85-gallon drum		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Plastic (waste materials), Cellulosics, Rubber, Other Inorganic Materials, Other Metals **NOTE:** *Other debris waste parameters may be present in the waste.*		
Special Notes	This IDC is assigned to waste received from RL in accordance with AMWTP Profile MPFPDD. [182] RTR/VE to verify that waste does not have any supercompactor facility prohibited items (e.g., PCB items, prohibited liquids, >4-liter sealed containers, unpunctured aerosol cans). If waste contains any prohibited items, notify AMWTP Offsite Waste Coordinator. If waste is <50% by volume debris, recommend IDC UN-00A or UN-00C and notify the AMWTP Offsite Waste Coordinator.		

Heterogeneous Debris Waste		Heterogeneous Debris	S5000
S5400	**RL-714**	**Hanford Radiochemical Processing Lab 325 Bldg Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Heterogeneous debris waste generated in the Radiochemical Processing Laboratory located in Building 325 at Hanford may include inorganic debris (e.g., iron- based metals, glass ceramics, asbestos, and aluminum-based metals) and organic debris (e.g., plastic, cellulosics, and rubber). Example of debris items include diaper paper, wipes, towels, protective clothing, cardboard, metal cans, HEPA filters, stainless-steel tubing, plastic pipe, lead (bricks and sheeting), poly bottles, machinery, alkaline batteries, circuit boards, incandescent light bulbs, labware (beakers, pipettes, vials, tubing), gloves (leaded, cloth, leather, rubber, Hypalon), lab equipment (balances, drying ovens, heating mantles, pumps, vessels), thermometers, tape, concrete, non-asbestos insulation, plumbing fixtures, ladders, step benches, and tools (screw drivers, wrenches, shears). Waste may also contain <50% by volume absorbed and cemented liquids (organic and inorganic) packaged in cans, absorbents used in packaging (kitty litter, Vermiculite, diatomaceous earth), and soil. [83, 183, 193]		
Inner Packaging	Plastic bags (up to five inner bags including one heat sealed bag) May be packaged in metal cans (e.g., 4-quart, 5-quart, and 5-gallon paint cans and 4-gallon slip lid cans) RTR has also identified waste packaged in cardboard cartons		
Drum Preparation	Poly drum liner bag (after 1977) 55-gallon drum overpacked into 85-gallon drum		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Inorganic Materials, Plastic (waste materials), Cellulosics, Rubber, Other Metal NOTE: *Other waste parameters may be present in the waste.*		
Special Notes	This IDC is assigned to waste received from RL in accordance with AMWTP Profile RLM325D.001. [183] RTR/VE to verify that waste does not have any supercompactor facility prohibited items (e.g., PCB items, prohibited liquids, >4-liter sealed containers, or unpunctured aerosol cans). If waste contains any prohibited items, notify AMWTP Offsite Waste Coordinator. If waste is <50% by volume debris, recommend IDC UN-00A or UN-00C and notify the AMWTP Offsite Waste Coordinator.		

Solidified Inorganics	Inorganic Particulate Absorbents	S3000
S3113	**RL-715**	**Hanford Homogeneous Solid Waste**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [232, 233]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris Waste	Heterogeneous Debris	S5000
S5400	**RL-716**	**Hanford 231-Z Building Debris**
WIPP Status	WIPP Candidate	
Waste Description	Heterogeneous debris waste generated in Building 231-Z at Hanford may include cloth, wood, plastic, ladders, plexiglas, step benches, polyethylene bottles, gloves, paper, absorbents, rubber, insulation materials, rags, equipment, tools, glass, conduit, lathes, pumps, tanks, piping, fans, light fixtures, instrumentation, conveyor sections, wire, HEPA filters, gloveboxes, tanks, ductwork, concrete, bricks, floor tiles, piping, sheet rock, and lagging. Waste may also contain <50% by volume liquids absorbed on Quick-Zorb or Zorb-all or solidified with Portland cement packaged in cans and absorbents (e.g., kitty litter, Vermiculite, diatomaceous earth) used in packaging. [84, 184, 194]	
Inner Packaging	Plastic bags (up to two inner bags, including one heat sealed bag) May be packaged in metal cans (e.g., 4-quart, 5-quart, and 5-gallon paint cans and 4-gallon slip lid cans)	
Drum Preparation	Poly drum liner bag (after 1976) 55-gallon drum overpacked into 85-gallon drum	
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Plastic (waste materials), Cellulosics, Other Inorganic Materials, Rubber **NOTE:** *Other waste parameters may be present in the waste.*	
Special Notes	This IDC is assigned to waste received from RL in accordance with AMWTP Profile RLM231ZD.001. [184] RTR/VE to verify that waste does not have any supercompactor facility prohibited items (e.g., PCB items, prohibited liquids, unpunctured aerosol cans). If waste contains any prohibited items, notify AMWTP Offsite Waste Coordinator. If waste is <50% by volume debris, recommend IDC UN-00A or UN-00C and notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RL-720**	**Hanford KEBasin North Loadout Pit Sludge**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [234, 235]	
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-741**	**Pits 11 & 12 First Stage Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Drums of inorganic sludge with container prefix 741 that were generated at RF prior to October 1972 and were retrieved from Pits 11 and 12. The sludge was generated from the same process that generated the IDC RF-001 sludge. [80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge waste, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Historical ID includes container prefix of "741." Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-742**	**Pits 11 & 12 Second Stage Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Drums of inorganic sludge generated at Rocky Flats prior to October 1972 with container prefix 742 that were retrieved from Pits 11 and 12. The sludge was generated from the same process that generated the IDC RF-002 sludge. [80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Historical ID includes container prefix of "742." Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**RF-743**	**Pits 11 & 12 Organic Setups**
WIPP Status	WIPP Candidate	
Waste Description	Drums of organic waste with container prefix 743 that were generated at RF prior to October 1972 and were retrieved from Pits 11 and 12. The organic waste was generated from the same process that generated the IDC RF-003 waste. [80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. Based on RTR results, waste may contain prohibited liquids. [243] Visual examination of this bulk or direct loaded waste packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Liquid PCB treatment is only allowed if waste is targeted for shipment to WIPP and when this IDC is approved by EPA for treatment within the AMWTP RBDA. This waste is assumed to be PCB contaminated. The net weight of waste should be used as the "PCB Mass" in WTS. Historical ID includes container prefix of "743." Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RF-744**	**Pits 11 & 12 Special Setups**
WIPP Status	WIPP Candidate	
Waste Description	Drums of special setups generated at Rocky Flats prior to October 1972 with container prefix 744 that were retrieved from Pits 11 and 12. The special setups were generated from the same process that generated the IDC RF-004 special setups waste. [80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Historical ID includes container prefix of "744." Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Salt Waste	Evaporator Salts	S3000
S3143	**RF-745**	**Pits 11 & 12 Evaporator Salts**
WIPP Status	WIPP Candidate	
Waste Description	Drums of evaporator salts generated at RFP prior to October 1972 with container prefix 745 that were retrieved from Pits 11 and 12. The evaporator salts were generated from the same process that generated the IDC RF-005 evaporator salts. [80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Historical ID includes container prefix of "745." Based on RTR results of drums of other RF bulk or direct loaded salt, this waste may contain prohibited liquids. Visual examination of this bulk or direct loaded salt packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Containers retrieved from Pits 11 and 12 were placed on TSA-RE or overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120] This IDC also includes drums of evaporator salt packaged prior to 1972 that were placed into M-III bins which were transferred to TSA-RE (reference IDC IW-005). [97]	

Solidified Organics	Absorbed Organic Liquids	S3000
S3114	**RF-746**	**Pits 11 & 12 903 Pad Oil Drums**
WIPP Status	WIPP Candidate	
Waste Description	Drums with container prefix 746 may include empty drums that previously contained oil and solvents stored on the 903 Pad at RFP. The drums were emptied and absorbent and Micro-Cel®E (i.e., a synthetic calcium silicate) added at RFP prior to shipping the drums to INL. Some of these drums were placed in Pits 11 and 12 prior to October 1972 and subsequently retrieved from Pits 11 and 12. IDC RF-746 was created to designate those drums that were not adequately emptied and contain solvent/oil/absorbent/Micro-Cel®E. Drums with container prefix 746 may also contain debris or soil (See Special Notes). [67, 80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Organic Matrix (e.g., sludge)	
Special Notes	PCB waste with any observable liquid is prohibited from disposal at WIPP. The oil/sludge waste is assumed to be PCB contaminated. The net weight of sludge should be used as the "PCB Mass" in WTS. Treatment of liquids is not authorized for this IDC under the approved AMWTP RBDA. Concurrence by EPA must be obtained prior to absorption. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Drums were conservatively assigned IDC RF-746 based on their historical drum prefix 746 but may contain debris. If >50% by volume debris, recommend change to IDC RF-750. If >50% by volume soil, recommend change to IDC RF-753. If indeterminate, recommend IDC UN-000 and an AK evaluation will be performed. Historical ID includes container prefix of "746." Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Solidified Inorganics	Unknown/ Other Homogeneous Solids	S3000
S3900	**RF-747**	**Pits 11 & 12 Miscellaneous Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Drums of sludge generated at RFP prior to October 1972 with container prefixes other than 741 through 746 (e.g., prefixes 71, 771, 776, 777, or 871) that were retrieved from Pits 11 and 12. The sludge was generated in buildings other than Building 774 (e.g., Buildings 444, 447, 771, 776, 777, 881 and 883). [53, 80]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results of drums of RFP bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Based on RTR results, this waste may contain impenetrable waste. [243] If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. Drums were conservatively assigned IDC RF-747 based on weight (≥300 pounds) and their historical drum prefix is associated with a building other than Building 774 (e.g., Buildings 771, 776, 777, 881, and 883) but may contain debris. If >50% by volume debris, recommend IDC change to RF-750. If >50% by volume soil, recommend change to IDC RF-753. If indeterminate, recommend IDC UN-000 and an AK evaluation will be performed. Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Solidified Organics	Biological Sludges	S3000
S3221	**RF-749**	**Pits 11 and 12 Sewer Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Drums of sewer sludge generated at RFP sewage treatment plant prior to October 1972 with container prefix 995 that were retrieved from Pits 11 and 12. The sewage sludge was generated from the same process that generated the IDCs RF-095 and RF-995 sludge. [80]	
Inner Packaging	Direct loaded into the waste drum (prior to 1975).	
Drum Preparation	Poly drum bag / Poly drum bag Rigid liners are not expected in any of the drums packaged prior to 1972. Portland cement added as absorbent to bottom of inner bag prior to filling and as a "cap" after filling.	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Based on RTR results of drums of other RFP bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May have cement in drum, rigid liner, and/or poly drum bag. If homogeneous solids are packaged in 30-gallon drum, recommend change to IDC UN-00A. If >50% by volume debris, recommend IDC change to RF-750. If >50% by volume soil, recommend change to IDC RF-753. If indeterminate, recommend IDC UN-000 and an AK evaluation will be performed. Historical ID typically begins with "IDRF0995."	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**RF-750**	**Pits 11 & 12 Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Containers of debris generated at RFP prior to October 1972 and retrieved from Pits 11 and 12. Waste may include combustibles (paper, rags, clothing, wood, and plastic), filter paper, CWS filters, HEPA filters, non-combustibles (glass, scrap metal, ceramics, graphite, firebrick, equipment, and concrete). Waste may also contain <50% by volume soil. [57, 80]		
Inner Packaging	Direct loaded into the waste drum		
Drum Preparation	Poly Drum Bag / Poly Drum Bag Rigid liners are not expected in any of the drums packaged prior to 1972. Some debris waste may be packaged in 30-gallon drums. [132]		
Primary Waste Parameter(s)	Cellulosics, Plastics (waste materials), Rubber, Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Inorganic Materials, Other Metals		
Special Notes	Based on RTR results, waste may contain capacitors (which may contain PCBs), aerosol cans, prohibited liquids, sealed containers >4 liters (including 30-gallon drums), sharp objects, impenetrable objects/waste, or impenetrable lead shielding. [243] WMC S5490/IDC RF-750 can ONLY be used if >50% by volume RFP debris materials. If the debris waste is packaged in a 30-gallon drum **and** if the debris waste is very dense **or** there is any visible evidence of dense homogeneous solids (e.g. sludge with metal chips and shavings) mixed with the debris, recommend change to IDC UN-00B. If >50% by volume homogeneous solids (e.g., sludge), recommend change to IDC UN-00A. If >50% by volume soil, recommend change to IDC RF-753. If indeterminate, recommend change to IDC UN-000 and an AK evaluation will be performed. Historical IDs with container prefixes of "71, 76, or 77" may have been generated during D&D of Buildings 776 and 777 after the 1969 fire. [131] Containers retrieved from Pits 11 and 12 were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]		

Solidified Inorganics	Unknown/Other Homogeneous Solids	S3000
S3900	**RF-751**	**Pits 11 & 12 Roaster Oxide**
WIPP Status	WIPP Candidate (if TRU waste)	
Waste Description	Containers of roaster oxide (RO) generated at RFP. Containers may be direct shipped form RFP or part of the waste from the EWR or IDR projects. The RO consist of depleted uranium (DU) metal or alloy pieces (machining chips, turnings, or fines) that were oxidized (thermally stabilized) by calcining or roasting resulting in a fine uranium oxide powder (black or black-gray in color) that is approximately three to four millimeters in diameter and varies in texture from relatively fine grained to a more coarse-grained. The waste may also contain debris items including hunks of uranium metal, tooling, work gloves, and other items contaminated with DU. [53, 67, 80]	
Inner Packaging	Direct loaded into 30-gallon drum but may only be partially filled [67] 30-gallon drum may be overpacked into 55-gallon drum [67] Vermiculite or other such substance may be present as filler material between the 30- and 55-gallon drums. [67]	
Drum Preparation	Poly Drum Bag / O-Ring Drum Load-Out Bag Rigid liners are not expected in any of the drums packaged prior to 1972 Not expected to be packaged directly into a 55-gallon drum	
Primary Waste Parameter(s)	Other Inorganic Materials	
Special Notes	Based on RTR results, waste may contain sealed containers >4 liters (including 30-gallon drums) or impenetrable objects/waste. [243] Visual Examination of bulk or direct loaded RO (machining chips, turnings, etc. which have been thermally stabilized) packaged in 30-gallon drums would not provide additional relevant information to the RTR examination. Because waste is predominantly depleted uranium, most of the waste containers will not be shippable to WIPP. The efficiency of oxidation process did not preclude the possibility that pyrophoric material (i.e., un-oxidized machining chips, turning, or fines) may still be present in this waste. [67, 80] Due to the residual heat in the roaster oxide waste when it was placed into the 30-gallon drum, the pieces of oxide may have become fused forming a large chunk of material in the drum. [67] Drums were conservatively assigned IDC RF-751 based on generating building (e.g. drums with prefix 44, 444, 883, or 1544) or IDC (e.g., RF-950) but may not contain roaster oxide. If the drum does not contain RO (homogeneous solids) packaged in 30-gallon drums, RTR/VE must recommend an IDC change to the appropriate UN-00x IDC (where x is A, B, C, D, or 0) and an AK evaluation will be performed. AK may assign RF-751 to drums that are greater than 50% debris but may container roaster oxide (based on characterization results). Containers retrieved from the EWR and IDR projects were overpacked into 83-gallon drums, cargo containers, or bins which were transferred to TSA-RE (reference IDCs RF-998 and RF-999). [80, 119, 120]	

Soils	Soil/Debris		S4000
S4200	**RF-753**	**Pits 11 & 12 Legacy Dirt**	
WIPP Status	WIPP Candidate		
Waste Description	Dry dirt or soil generated during operations at RF prior to October 1972 and retrieved from Pits 11 and 12. Waste may have been generated from cleanup of spills or leaks at RF. Waste may also contain <50% by volume combustible debris items (e.g., coveralls, gloves). Waste does not include any loose dirt that was packaged during retrieval.		
Inner Packaging	Soil may be single or double bagged in small poly bags or directly loaded into the drum		
Drum Preparation	Poly Drum Bag / Poly Drum Bag / Fiberboard liner Up to 2 quarts Oil-Dri® added on top of outer sealed Poly drum bag.		
Primary Waste Parameter(s)	Soils/gravel		
Special Notes	Based on RTR results waste may contain sealed containers >4 liters (including 30-gallon drums). [243] Waste does not include loose soil retrieved from the cargo containers. WMC S4200/IDC RF-753 can ONLY be used if >50% by volume soil or gravel (natural geologic material ≤2.36 inches [60 millimeters]). If homogeneous solids are packaged in 30-gallon drum or if >50% by volume homogeneous solids (e.g., sludge), recommend change to IDC UN-00A. If >50% by volume debris, including rocks (natural geologic materials >2.36 inches [60 millimeters]), recommend change to IDC RF-750. If indeterminate, recommend IDC UN-000 and an AK evaluation will be performed.		

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris		S5000
S5490	**RF-760**	**Pad 1 Cells 1 and 2 RFP Debris**	
WIPP Status	WIPP Candidate		
Waste Description	Waste includes all RFP debris waste generated prior to 1973 that was retrieved from Pad 1, Cells 1 and 2 and that has not been commingled with any other known waste generator (e.g., INL waste). The waste also includes, but is not limited to loose/repackaged and/or overpacked Pad 1, Cells 1 and 2 RFP debris waste. Waste may include combustibles (e.g., paper, rags, clothing, wood, and plastic), filter paper, CWS filters, HEPA filters, and non-combustibles (e.g., glass, scrap metal, ceramics, graphite, firebrick, equipment, and concrete). Containers of debris waste may also contain <50% by volume RFP soil or sludge.		
Inner Packaging	Direct loaded into the waste drum		
Drum Preparation	Rigid Liner (after 1971)/Poly Drum Bag / Poly Drum Bag Rigid liners are not expected in any of the drums packaged prior to 1972.		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics, Plastics (waste materials), Rubber, Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Inorganic Materials, Other Metals.		
Special Notes	Based on RTR results, waste may contain compressed gases, sharp objects, or impenetrable lead shielding. [243] WMC S5490/IDC RF-760 can ONLY be used if >50% by volume debris materials. If >50% by volume homogeneous solids (e.g., sludge), recommend change to IDC UN-00A. If >50% by volume soil, recommend change to IDC UN-00C. If indeterminate, recommend change to IDC UN-000 and an AK evaluation will be performed. Reference IDC BN-604 for waste that includes RF debris waste commingled with interstitial soil; homogeneous solids from other containers; oily liquids; PCB waste; or soil waste that is not from RFP. Reference IDC BN-500 for waste that is commingled with debris waste that is not from RFP.		

Solidified Inorganics	Solidified Homogeneous Solids	S3000
S3150	**RF-800**	**First Stage Sludge – Cemented**
WIPP Status	WIPP Candidate	
Waste Description	Same as IDC RF-001 except for the immobilization process. For IDC RF-800, the sludge was co-fed into a drum with diatomite and Portland cement mixture that formed a solid monolith after curing. Waste may also contain <50% by volume cellulosic, plastic, and metal debris items (e.g., lead tape, filters). [68]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out Bag	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids within the drum bag. Waste may also contain sharp objects. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May contain absorbent material in rigid liner. Waste is managed as containing beryllium >1% by weight. Historical ID typically begins with "IDRF7412."	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-801**	**Rags, Paper, Wood, etc.**
WIPP Status	WIPP Candidate	
Waste Description	Cloth, paper and wood products such as wipes, towels, rags, coveralls, booties and other combustible waste including wood, cardboard tubes, rubber gloves, plastics, etc. Waste may also contain any amount of non-combustible waste (metal, glass, filters, etc.) or small containers of MD-812, resins.	
Inner Packaging	1-gallon plastic-coated cardboard carton / Poly bag / Stacked in PVC or Poly "sleeve" bag. Up to 5 cartons per sleeve bag and up to 8 sleeve bags per drum.	
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid	
Primary Waste Parameter(s)	Cellulosics **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	Based on RTR results, waste may contain prohibited liquids or sharp objects. [243] Some waste was packaged damp. Some waste may be packaged in ½-gallon paint or 1-gallon metal can instead of the 1-gallon carton. [33, 34] One-gallon cardboard carton is not a sealed container. The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.	

Solidified Organics	Solidified Homogeneous Solids	S3000
S3150	**RF-801**	**Solidified Organics**
WIPP Status	WIPP Candidate – Characterized by CCP	
Waste Description	Solidified organic liquid generated in Building 774 OASIS process by mixing solvent and oils from machining operations with Envirostone® and gypsum cement. Waste may also contain <50% by volume metal debris items. [74]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out Bag	
Primary Waste Parameter(s)	Organic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May contain absorbent material in rigid liner. Historical ID typically begins with "IDRF0743."	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-802**	**Dry Box Gloves and O-rings**
WIPP Status	WIPP Candidate	
Waste Description	Primarily neoprene glovebox gloves, neoprene O-rings, lead lined glovebox gloves including just the arm portion of alpha-box gloves and other combustible waste (paper, cloth, plastic, etc.). Waste may also contain any amount of non-combustible waste (metal, glass, filters, lead bricks etc.) or small containers of MD-812, resins.	
Inner Packaging	1-gallon plastic-coated cardboard carton / Poly bag / Stacked in PVC or Poly "sleeve" bag. Up to 5 cartons per sleeve bag and up to 8 sleeve bags per drum.	
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid	
Primary Waste Parameter(s)	Rubber (100% for gloves) assigned per CBFO (WAP Table B3-1.) **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, or sharp objects. [243] Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can instead of the 1-gallon carton. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.	

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-802**	**Solidified Laboratory Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Waste is solidified inorganic waste generated in Building 774 after 1986 by mixing aqueous chemical liquid waste generated by various operations at RF with a cement mixture.		
Inner Packaging	Direct loaded into the waste drum		
Drum Preparation	Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out Bag		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. Some drums may contain poly bottles of solidified waste. Recommend IDC UN-00A and an AK evaluation will be performed. Other drums may not contain sludge but contain debris waste (i.e., polyethylene bottles that previously contained liquid waste). A small amount of cement was added to empty bottles before packaging into drums. Recommend change to IDC RF-337 if drum contains only bottles with small amounts of cement. May contain absorbent material in rigid liner. Replaced IDC RF-004 in 1986. Historical ID typically begins with "IDRF0744."		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-803**	**Metal Equipment, Pipe, Valves, etc.**	
WIPP Status	WIPP Candidate		
Waste Description	Stainless steel, carbon steel, and small amounts of aluminum. Waste is in the form of valves, piping, tools, and equipment. Waste also contains other noncombustible waste (HEPA filters, spun-glass liquid filters, fiberglass prefilters, glass, graphite, rust, floor sweepings, sludge, etc.). Waste may also contain any amount of combustible waste (paper, plastic, rubber, etc.). Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	1-gallon plastic-coated cardboard carton / Poly bag / Stacked in PVC or Poly "sleeve" bag Up to 5 cartons per sleeve bag and up to 8 sleeve bags per drum. A limited number of drums may contain larger waste items (in single or double plastic bags) that do not fit into cartons.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Aluminum-based Metals/Alloys **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain compressed gases (including aerosol cans), mercury, prohibited liquids, sealed containers >4 liters, or sharp objects. [243] Verify protection from sharp objects. This waste will likely contain lead. Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can instead of the 1-gallon carton. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/ cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.		

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-803**	**Solidified DCP Sludge**	
WIPP Status	WIPP Candidate		
Waste Description	Wet sludge from Building 374 was dried and mixed with cement and water to form a monolith. Vermiculite may also be present in the waste. [22]		
Inner Packaging	Direct loaded into the waste drum		
Drum Preparation	Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out Bag		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May contain absorbent material in rigid liner. Historical ID typically begins with "IDRF0747."		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-804**	**Plastic, Tygon, Mani-Boots, etc.**	
WIPP Status	**WIPP Candidate**		
Waste Description	Various types of plastic wastes (PVC, polyethylene, polypropylene, Tygon, etc) in the form of tubing, piping, sample vials, gaskets, manipulator boots, etc. Waste also includes any amount of other combustible wastes (paper, cloth, rubber gloves, etc.) and may also contain any amount of non-combustible wastes (metal, glass filters, etc.) or small containers of MD-812, Resins.		
Inner Packaging	1-gallon plastic-coated cardboard cartons / Poly bag / Stacked in PVC or Poly "sleeve" bag. Up to 5 cartons per sleeve bag and up to 8 sleeve bags per drum.		
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly or O-Ring bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Plastic (waste materials), Rubber **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain mercury, sealed containers >4 liters, or sharp objects. [243] Some waste may be packaged in ½-gallon metal paint can or 1-gallon metal cans instead of the 1-gallon cartons. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-805**	**Asbestos Filters**	
WIPP Status	WIPP Candidate		
Waste Description	HEPA filters, primarily 6 inch diameter × 3 inch and 6 inch diameter × 6 inch. Filter media is asbestos and the frame is usually pressed wood. Some filters may have metal frame. Waste also contains filter media without frames and filter media that have been leached with nitric acid. Waste may also contain any amount of other non-combustible wastes (metal, glass, graphite, rust, floor sweepings, sludge, etc.) and may also contain any amount of combustible wastes (plastic, paper, rubber, etc.).Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	1-gallon plastic-coated cardboard box / Poly bag / Stacked in PVC or Poly "sleeve" bag Leached filter media placed in plastic bag prior to packaging in cardboard box. Up to 5 cartons per sleeve bag and up to 8 sleeve bags per drum.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Cellulosics, Other Inorganic Materials. **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain compressed gases, mercury, sealed containers >4 liters, sharp objects, or impenetrable objects. [243] The waste parameter split for the filters should be Cellulosics (90%) and Other Inorganic Materials (10%). Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can instead of the 1-gallon carton. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other containers of debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] The cardboard cartons are not layers of containment. Historical ID may include "CD" to identify inner packages.		

Solidified Inorganics	Solidified Homogeneous Solid	S3000
S3150	**RF-806**	**Solidified Process Solids**
WIPP Status	WIPP Candidate	
Waste Description	Various sludges, particulates (including ash, resins, etc.), and dissolution heels immobilized into solid monoliths, typically into pucks using a 1-gallon mold. Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells). [66]	
Inner Packaging	Loaded into a waste area drum, or loaded into a Glovebox Load-Out drum	
Drum Preparation	Waste Area Drum - Rigid Liner / Poly drum bag / Poly drum bag Rigid Liner / Poly Drum Bag / O-Ring Drum Load-Out bag	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain sharp objects. Based on VE results, waste may also contain sealed containers > 4 liters. [243] Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually. Cemented resins should be identified as organic matrix. If cemented resins are >50% by volume, recommend an IDC change to RF-822.	

Solidified Inorganics	Wastewater Treatment Sludges	S3000
S3121	**RF-807**	**Bldg 374 Bypass Sludge (After 3/21/87)**
WIPP Status	WIPP Candidate	
Waste Description	Sludge generated in building 374 in support of Pu recovery activities. This sludge bypassed the dryer unit and was direct loaded into the waste drum with cement, generated after 3-21-87. Oil-Dri® or vermiculite may be present in the waste. [22] Waste may also contain <50% by volume rubber and metal debris items (e.g., leaded rubber glove, batteries). [69]	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner / Poly drum bag / O-Ring bag	
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain prohibited liquids or sharp objects. [243] Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May have 1 – 2 Liters of Oil-Dri® in poly drum bag. Building 374 Bypass Sludge should be designated as RF-807 in WTS and the historical ID typically begins with "IDRF0747." Don't confuse this waste with the cemented incinerator sludge (in the form of small pucks that are assigned RF-696 in WTS). This waste was previously identified as RF-807a.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-810**	**Glass, Flasks, Sample Vials, Etc.**	
WIPP Status	WIPP Candidate		
Waste Description	Primarily whole and broken glassware and glass vials. Majority of glassware is Pyrex. Waste also includes any amount of other non-combustible wastes (metal, HEPA filters, spun-glass liquid filters, fiberglass prefilters, graphite, rust, floor sweepings, sludge, etc.) and may also contain any amount of combustible wastes (plastic, paper, rubber, etc.). Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	1- or 2-quart metal cans / Poly bag / Stacked in PVC or Poly "sleeve" bag Up to 5 cans per sleeve bag and up to 8 sleeve bags per drum.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain prohibited liquids, sealed containers >4 liters, or sharp objects. [243] Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.		

Solidified Inorganics	Reprocessing Solids	S3000
S3125	**MD-811**	**Evaporator and Dissolver Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Dry evaporator and dissolver sludge in the form of powder or sand-like particles. Waste may also contain <50% by volume debris (metal, glass, filters, graphite, rust, floor sweepings, plastic, combustible, etc.). Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).	
Inner Packaging	1/2-gallon metal paint cans or 1-gallon metal cans or 1-gallon plastic-coated cardboard container / Poly bag / Stacked in PVC or Poly "sleeve" bag. Up to 5 containers per sleeve and up to 8 sleeve bags per drum. Variation in packaging may occur.	
Drum Preparation	Rigid Liner / Poly drum bag Plywood spacer(s) typically placed between rigid liner lid and drum lid	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results, waste may contain sharp objects. [243] The evaporator and dissolver sludge looks similar to absorbent material due to its particle size. WMC S3125/IDC MD-811 can ONLY be used if >50% by volume homogeneous solids. If >50% by volume debris, recommend change to applicable MD debris IDC. If indeterminate, recommend IDC UN-00A or UN-00B and an AK evaluation will be performed. Approximately one to three 1-gallon cartons of beryllium-contaminated waste generated per year with less than 0.05 grams of beryllium per carton. Historical ID may include "CD" to identify inner packages.	

N/A	N/A	N/A
N/A	**MD-812**	**Spent Ion Exchange Resin**
WIPP Status	N/A	
Waste Description	Spent ion exchange resin generated from plutonium recovery operations. Only present in small containers in drums of MD debris waste.	
Inner Packaging	1-gallon plastic-coated cardboard cartons / Poly bag / Stacked in PVC or Poly "sleeve" bag Up to 5 containers per sleeve.	
Drum Preparation	N/A	
Primary Waste Parameter(s)	Plastic (waste materials)	
Special Notes	Only present as small containers in drums of MD debris waste.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-813**	**Glass Filters and Fiberglass**	
WIPP Status	WIPP Candidate		
Waste Description	Primarily spun glass filters used to filter solutions (10 inch × 3 inch diameter) and fiberglass prefilters for glove box (6 inch diameter × 0.5 inch thick). Waste includes other non-combustible wastes (metal, HEPA filters, glass, graphite, rust, floor sweepings, sludge, etc.) and may also contain combustible waste (plastic, paper, rubber, etc.).Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	1-gallon plastic-coated cardboard carton / Poly bag / Stacked in PVC or Poly "sleeve" bag Up to 5 containers per sleeve and up to 8 sleeve bags per drum.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain sharp objects. [243] Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can instead of the 1-gallon carton. [33, 34] This debris waste was packaged using small inner containers (e.g., cardboard cartons). The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] The cardboard boxes are not layers of containment. Historical ID may include "CD" to identify inner packages.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-814**	**Graphite Waste**	
WIPP Status	WIPP Candidate		
Waste Description	Graphite crucibles and electrodes from Pu casting operations or analytical procedures. The molds may be broken or whole. Pieces include spacers, electrodes, and graphite pieces from research. Waste may include any amount of other non-combustible wastes (metal, HEPA filters, glass, spun-glass liquid filters, fiberglass prefilters, rust, floor sweepings, sludge, etc.) and may also contain any amount of combustible waste (plastic, paper, rubber, etc.).Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	1-gallon cardboard carton / O-Ring bag / Poly bag ½-gallon Metal Can / Poly bag / Metal Can		
Drum Preparation	Rigid Liner / Poly Drum Bag / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain compressed gases, mercury, or sharp objects. [243] Some waste may be packaged in ½-gallon metal paint can or a 1-gallon metal can instead of the 1-gallon carton. [33, 34] The IDC designated represents the majority of the waste as identified by the generator; however, cartons/cans of other debris waste material are expected to be present. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). [19] Historical ID may include "CD" to identify inner packages.		

Heterogeneous Debris Waste [98]		Unknown/Other Solids	S9000 [98]
S9000 [98]	**MD-815**	**Classified Parts**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal.		
Waste Description	Classified Parts		
Inner Packaging	*Not currently available*		
Drum Preparation	*Not currently available*		
Primary Waste Parameter(s)	*Not currently available*		
Special Notes	S9000 (Unknown/Other Solids) and WMCG Heterogeneous Debris Waste were assigned to IN-W325 in 1995 TWBIR. [98] The final WMC will be determined when sufficient AK or RTR/VE data is available.		

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-817**	**Cemented SS and C Heels**	
WIPP Status	WIPP Candidate		
Waste Description	Sand, slag, and crucible heels are the fines that had been processed through the dissolution process to remove Pu. What did not dissolve is called the heels. The heels were mixed with Portland cement and water in 1-gallon molds (clamshell halves) and allowed to cure. The waste was removed from the molds in the form of a solid monolith (puck). Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).		
Inner Packaging	O-Ring bag / small poly bag or large poly bag for the bag-out of multiple pucks at once.		
Drum Preparation	Waste Area Drum - Rigid Liner/ Poly drum bag / Poly drum bag Glovebox Load Out Drum - Rigid Liner / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and discs.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually.		

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-818**	**Cemented Incinerator Ash**	
WIPP Status	WIPP Candidate		
Waste Description	Ash from the burn chamber (IDC RF-420) of the Pu recovery incinerator. The ash was cemented by hand. Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).		
Inner Packaging	O-Ring bag / small poly bag or large poly bag for the bag out of multiple pucks at once.		
Drum Preparation	Waste Area Drum - Rigid Liner / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum - Rigid Liner / Poly drum bag / O-Ring bag Fiberboard liner and disc		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually. There may be some metal or other unburned material in the pucks.		

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-820**	**Cemented Soot**	
WIPP Status	WIPP Candidate		
Waste Description	Soot removed during the cleanup of the off-gas system for the Pu recovery incinerator. Was cemented by hand in clamshells and allowed to cure into pucks. Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).		
Inner Packaging	O-Ring bag / small poly bag or large poly bag for the bag out of multiple pucks at once.		
Drum Preparation	Waste Area Drum - Rigid Liner / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum - Rigid Liner / Poly drum bag / O-Ring bag Fiberboard liner and disc		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results, waste may contain sharp objects. [243] Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually.		

Solidified Organic		Organic Homogeneous Solids	S3000
S3211 [10]	**RF-822**	**Cemented Resins**	
WIPP Status	WIPP Candidate		
Waste Description	Washed, spent anion and cation exchange resins cemented with Portland cement and water to form slurry, then cast into a 1-gallon mold. The cured puck was removed from the mold as a solidified monolith. [1] Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).		
Inner Packaging	O-Ring bag / small poly bag		
Drum Preparation	Glovebox Load-Out Drum - Rigid Liner / Poly Drum Bag / O-Ring Load-Out Drum Bag / One to two Poly Drum Bags (From 1970-72)/ Cardboard may have been used to line the inner drum bag		
Primary Waste Parameter(s)	Organic Matrix		
Special Notes	Based on RTR results, waste may contain sharp objects. [243] Lead drum liners between drum and rigid liner used for cemented resin from Am recovery line. One to 2 quarts of Oil-Dri® on top of the poly drum bag (Vermiculite after 2/82 between the rigid liner and the top of the poly drum bag.)		

Solidified Inorganics		Solidified Homogeneous Solids	S3000
S3150	**RF-823**	**Cemented Miscellaneous Sludge**	
WIPP Status	WIPP Candidate		
Waste Description	Various inorganic particulates and sludges were cemented and allowed to cure into pucks. [66] The cured pucks were removed from the molds in the form of solid monoliths. [75] Waste may also contain <50% by volume plastic debris items (e.g., broken clamshells).		
Inner Packaging	O-Ring bag / small poly bag or large poly bag for the bag-out of multiple pucks at once.		
Drum Preparation	Waste Area Drum - Rigid Liner / Poly Drum Bag / Poly Drum Bag Glovebox Load-Out Drum - Rigid Liner / Poly Drum Bag / O-Ring Load-Out Drum Bag / Fiberboard liner and disc		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Cemented pucks may have been bagged out in groups of 3 to 8, or bagged out individually. There may be some metal or other unburned material in the pucks.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-824**	**Equipment Boxes, Non-combustible**	
WIPP Status	WIPP Candidate		
Waste Description	Primarily large non-combustible waste items such as tanks (stainless and tantalum), piping, ducting, conduit, motors, pumps, gloveboxes, miscellaneous equipment, HEPA filters, glass, Plexiglas glovebox windows, floor tile, etc. Prior to 1981, waste also included large combustible waste items such as plastic tanks, fiberglass gloveboxes, plastic contamination control tents, etc.		
Inner Packaging	Typically single- or double-contained in plastic. Some waste items (pipes or tanks) are closed or ends sealed and placed directly into the waste box. Gloveboxes may be coated with polyurethane foam to fix contamination. Glovebox sections are either placed directly into box or wrapped in one or more layers of plastic.		
Box Preparation	Standard box / Plastic Box Liner / (prior to 1981) Cardboard Box Liner Oversize boxes (used for stainless steel glovebox sections) / no liners. Up to 100 pounds of Florco absorbent placed on bottom of box. Polyurethane foam used for shoring in oversize boxes and some standard-size boxes. Some boxes contain up to 6 smaller plywood boxes of various sizes. Other boxes contain up to 5 drums of combustible and non-combustible waste with foam sprayed in bottom of box to shore the drums.		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Aluminum-based Metals/Alloys, Other Metals (e.g., lead), Other Inorganic Materials, Plastic (waste materials) **NOTE:** *When the type of metal cannot be determined, use Iron-based Metals/Alloys waste parameter.* [21]		
Special Notes	Based on RTR results, waste may contain prohibited liquids. [243] Verify protection from sharp objects. Historical ID may include "BX" to identify package type. **NOTE:** *Pipes may be sealed at both ends with room temperature vulcanizing (RTV) rubber); therefore, 4-inch diameter pipe >19 inches long, 3-inch diameter pipe >34 inches long, and 2-inch diameter pipe >77 inches long should be identified as sealed containers >4 liters.*		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490	**MD-825**	**Equipment Drums, Non-combustible**	
WIPP Status	WIPP Candidate		
Waste Description	Non-combustible waste such as small tanks, piping, duct, conduit, motors, pumps, valves, HEPA filters, glass, windows, fiberglass, floor tile, etc. Waste may include any amount of combustible wastes such as plastic tanks. Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury). [39]		
Inner Packaging	Poly bag / Poly bag O-Ring bag / Poly bag.		
Drum Preparation	Rigid Liner / Poly Drum Bag May contain up to 25 pounds of Florco absorbent in drum bag. Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Other Inorganic Materials **NOTE:** *When the type of metal cannot be determined, use Iron-based Metals/Alloys waste parameter.* [21] *Also any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain lead battery (may contain prohibited liquids), compressed gases (including aerosol cans), mercury, prohibited liquids, sealed containers >4 liters, or sharp objects. [243] Some of the drums may contain waste packaged in cartons/cans. Verify protection from sharp objects. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are not packaged in cartons or cans (IDC MD-847). Historical ID may include "EQ" to identify waste type (equipment). **NOTE:** *Pipes may be sealed at both ends with RTV rubber; therefore, 4-inch diameter pipe >19 inches long and 3-inch diameter pipe >34 inches long should be identified as sealed containers >4 liters.*		

Combustibles	Debris Waste		S5000
S5000	**JH-826**	**Combustible Equip. Boxes and Floor Swp.**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently available*		
Inner Packaging	*Not currently available*		
Drum Preparation	*Not currently available*		
Primary Waste Parameter(s)	*Not currently available*		
Special Notes	TBD		

N/A		N/A	N/A
N/A	**MD-826** (before 1981)	**Floor Sweepings/Rust**	
WIPP Status	N/A		
Waste Description	Before 1981, this IDC was used for glovebox floor sweepings and rust, packaged in cartons.		
Inner Packaging	1-gallon plastic-coated cartons/poly bags stacked in PVC or polyethylene sleeve bags. Up to 5 containers per sleeve.		
Drum Preparation	N/A		
Primary Waste Parameter(s)	Other Inorganic Materials		
Special Notes	Only present as small containers in drums of other MD debris waste.		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-826** (after 1980)	**Equipment Boxes, Combustible**	
WIPP Status	WIPP Candidate		
Waste Description	After 1980, this IDC was used for large combustible waste items, such as plastic tanks, Plexiglas shielding and windows, wood, fiberglass glovebox sections, etc. Waste may also contain non-combustible wastes (metal, glass, filters, etc.). Waste may also contain small containers of mercury (see Special Notes for MD-832, Contaminated Elemental Mercury).		
Inner Packaging	Typically contained in one or more plastic bags or wrapped in one or more layers of plastic sheeting. Some waste may be placed directly into waste box.		
Box Preparation	Each box lined with plastic. Up to 100 pounds of Florco absorbent placed in bottom of box.		
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials) **NOTE:** Any amount of *other debris waste parameters may be present.*		
Special Notes	Prior to 1981, large combustible waste items were packaged as MD-824. Historical ID may include "BX" to identify waste package type. **NOTE:** *Prior to 1981, MD-826 was used to identify rust and floor sweepings packaged in 1-gallon plastic-coated cardboard cartons which were packaged in non-combustible waste drums.*		

Heterogeneous Debris Waste		Debris Waste	S5000
S5000	**JH-827**	**Solid Trash and Dry Lab Material**	
WIPP Status	Waste not currently included in AMWTP scope for WIPP disposal		
Waste Description	*Not currently summarized*		
Inner Packaging	*Not currently summarized*		
Drum Preparation	*Not currently summarized*		
Primary Waste Parameter(s)	*Not currently summarized*		
Special Notes	TBD		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-827**	**Equipment Drums, Combustible**	
WIPP Status	WIPP Candidate		
Waste Description	Rubber, plastic, cellulose, may include any amount of metal equipment. Waste was too large to fit inside cartons.		
Inner Packaging	Typically contained in one or more plastic bags or wrapped in one or more layers of plastic sheeting. Some waste may be placed directly into waste drum. [33, 34]		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Rubber, Cellulosics, Plastic (waste materials) **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Some of the drums may contain waste packaged in cartons/cans. Only recommend IDC change if non-debris waste is identified >50% by volume of the waste or the majority of the waste is combustibles that are compacted (IDC MD-847). Historical ID may include "EQ" to identify waste type (equipment).		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-831**	**Dry Combustibles**	
WIPP Status	WIPP Candidate		
Waste Description	Cloth, paper and wood products primarily such as wipes, towels, rags, coveralls, booties, HEPA filter frames. Waste was packaged as a dry waste. Waste may include any amount of plastic.		
Inner Packaging	O-Ring bag / Poly bag Poly bag / Poly bag		
Box Preparation	Poly Box Bag/ Cardboard Box Liner Up to 100 pounds of absorbent may have been added to box during packaging.		
Primary Waste Parameter(s)	Cellulosics		
Special Notes	Based on VE results, waste may contain sharp objects. [243]		

N/A		N/A	N/A
N/A	**MD-832**	**Contaminated Elemental Mercury**	
WIPP Status	N/A		
Waste Description	Contaminated elemental mercury included in small containers in drums of MD debris waste.		
Inner Packaging	Pint size plastic bottles inside 1-gallon, plastic coated cardboard cartons or ½-gallon metals cans / Poly bag / Stacked in PVC or Poly "sleeve" bag. Up to 5 containers per sleeve.		
Drum Preparation	N/A		
Primary Waste Parameter(s)	Other Metals		
Special Notes	Only present as small containers in drums of MD debris waste. Small containers with residual mercury cannot be supercompacted. These containers may be segregated from TRU waste and be sent to SCW for treatment.		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-832**	**Wet Combustibles**	
WIPP Status	**WIPP Candidate**		
Waste Description	Cloth, paper and wood products primarily such as wipes, towels, rags, coveralls, booties, HEPA filter frames. Waste was packaged as a moist waste. Waste may include any amount of plastic.		
Inner Packaging	O-Ring bag / Poly bag Poly bag / Poly bag		
Box Preparation	Poly Box Bag/ Cardboard Box Liner Up to 100 pounds of absorbent may have been added to box during packaging.		
Primary Waste Parameter(s)	Cellulosics		
Special Notes	Based on VE results, waste may contain sharp objects. [243]		

Combustibles	Organic Debris		S5000
S5300 [89]	**RF-833**	**Plastics, TRU Mixed**	
WIPP Status	WIPP Candidate		
Waste Description	Polypropylene, polyethylene, and PVC, in the form of empty plastic bottles, piping and tubing, plastic windows, plastic bags and plastic sheeting, tygon tubing, supplied air suits, Respirator parts and cartridges, non-leaded glovebox gloves. Waste may include any amount of cellulosics.		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag		
Box Preparation	Poly Box Bag/ Cardboard Box Liner Up to 100 pounds of absorbent may have been added to box during packaging.		
Primary Waste Parameter(s)	Plastic (waste materials)		
Special Notes	TBD		

Solidified Inorganics		Inorganic Particulate Absorbents	S3000
S3113	**MD-834**	**High Level Acid**	
WIPP Status	WIPP Candidate		
Waste Description	Acidic liquid wastes from Pu recovery processing. Acidic liquids were absorbed in clay material (Florco absorbent) between July 1975 and December 1976. Prior to July 1975, diatomaceous earth (Auto-Dri and/or Dri-Rite) was used but drums were subsequently repackaged and Florco added at Mound prior to shipping to INL. After 1976, caustic waste was combined with the acidic waste for processing as IDC MD-835. A limited number of drums of acidic and caustic liquid wastes were absorbed with Florco and packaged in small bottles prior to 1982. [3]		
Inner Packaging	Direct loaded into drum by adding 10-gallons of liquid to 150 pounds of absorbent. A small number of drums may contain sludge waste packaged in ½ or 1-gallon poly bottles, which were then placed in a poly bag. See Special Notes below.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results, waste may contain prohibited liquids within the drum bag or sharp objects. [243] The waste may be packaged in up to 45 bottles of absorbed acidic and/or caustic waste per drum. Vermiculite and Florco were used as absorbents until the early 1970s, and then Auto-Dri and Sorbal were used as absorbents until a drum pressurization problem occurred due to their use. After the pressurization problem was identified, Florco was again used, beginning in July 1975 and ending in 1976. Drums of bulk or direct loaded waste with pack dates after 1976 are assumed to contain the acid liquids that were absorbed on Auto-Dri or Sorbal prior to July 1975 that were subsequently repackaged at Mound by placing half the contents into a new drum and adding Florco. [3] An AK evaluation is recommended for drums without a Poly drum bag and with gross weights over 600 pounds or large difference between drum weight and weight of Historical ID drum. For these conditions recommend an IDC change, if indeterminate, recommend IDC UN-00A and an AK evaluation will be performed. Historical ID may include "AC" to identify waste type (acid/caustic waste).		

Solidified Inorganics		Inorganic Particulate Absorbents	S3000
S3113	**MD-835**	**High Level Caustic**	
WIPP Status	WIPP Candidate		
Waste Description	Caustic liquid wastes from fume scrubber system. Caustic waste was absorbed in aluminum-magnesium-iron silicate clay (Florco). Since 1976, acidic waste was combined with the caustic waste.		
Inner Packaging	Direct loaded into drum by adding 10-gallons of liquid to 150 pounds of absorbent. A small number of drums may contain sludge waste packaged in ½ or 1-gallon poly bottles, which were then placed in a poly bag. See Special Notes below.		
Drum Preparation	Rigid Liner / Poly Drum Bag Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results, drums of MD bulk or direct loaded solids waste may contain prohibited liquids. Waste may also contain sharp objects. [243] The waste may be packaged in up to 45 bottles of absorbed acidic and/or caustic waste per drum. Vermiculite and Florco were used as absorbents until the early 1970s, then Auto-Dri and Sorbal used as absorbent until a drum pressurization problem occurred due to their use. After the pressurization problem was identified, Florco was again used, beginning in July 1975. An AK evaluation is recommended for drums without a Poly drum bag and with gross weights over 600 pounds or large difference between drum weight and weight of historical ID drum. For these conditions recommend an IDC change, if indeterminate, recommend IDC UN-00A and an AK evaluation will be performed. Historical ID may include "AC" or "CA" to identify waste type (acid/caustic or caustic).		

Solidified Inorganics		Inorganic Particulate Absorbents	S3000
S3113	**SR-835**	**SRS High Level Caustic**	
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP		
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [219, 220]		
Special Notes	If waste is <50% by volume homogeneous solids or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.		

Solidified Inorganics		Wastewater Treatment Sludges	S3000
S3121	**MD-836**	**High Level Sludge/Cement**	
WIPP Status	WIPP Candidate		
Waste Description	Cemented sludge (sometimes called solidified sludge/liquid) generated from processing all low-level, alpha contaminated liquids wastes (shower water and soap, decontamination water, cooling water, some acids and caustics, etc.) from building floor drains, laundry and labs. Waste generated by mixing approximately 40-gallons of dewatered sludge with 2 to 2 ½ bags of Portland cement resulting in a solidified waste.		
Inner Packaging	Direct loaded into the prepared waste drum. Unmixed cement was placed on top of the sludge-cement mixture before placing the lid on the rigid liner. [46]		
Drum Preparation	Rigid Liner (no Poly Bag Liner) Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Box Preparation	Drums of this waste may be direct loaded into SWBs as an alternate packaging configuration for shipment to WIPP.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results, waste may contain prohibited liquids on top of the sludge or between the rigid liner and the drum. Waste may also contain sharp objects. [243] Some drums may include a poly drum bag as part of the packaging configuration. [47] A cement cap and variable layers of solidification have been observed in drums of cemented sludge during coring activities. [48] Generally, the sludge/cement drum weighs between 600 and 650 pounds (gross weight with >85 vol. % fill). Some drums may also contain <50% by volume plastic waste (with small quantities of liquids) on top of the cemented sludge. [45] Lighter drums (generally 300 to 400 pounds) typically contain these plastic, paper and gloves generated from cleanup operations. An AK evaluation is recommended for drums with poly bag liner and weights less than 400 pounds (with fill factor for sludge/cement mixture >70 vol. %), or for drums with large differences between drum weight and weight of historical ID drum. For these conditions recommend an IDC change, if indeterminate, recommend IDC UN-00A and an AK evaluation will be performed. Historical ID may include "SL" to identify waste type (sludge).		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-838**	**<10 nCi/g Non-combustible**	
WIPP Status	WIPP Candidate		
Waste Description	LSA drum of non-combustible waste may also contain some combustible waste <10 nCi/g		
Inner Packaging	Poly bag / Poly bag or placed directly in drum		
Drum Preparation	Poly Drum Bag		
Primary Waste Parameter(s)	*Not currently available*		
Special Notes	MD records indicate the drum contains combustible waste that was accidentally shipped to INL instead of commercial burial ground.		

Soils	Soils/Debris		S4000
S4200	**MD-842**	**Contaminated Soil**	
WIPP Status	WIPP Candidate		
Waste Description	Contaminated soil, including rocks and pebbles generated from the cleanup of spills and leaks. Soil was dry when packaged in the boxes. Waste may also contain <50% by volume debris waste (gloves and shovels) that was generated during the clean up.		
Inner Packaging	Packaged in small plastic-lined plywood boxes.		
Box Preparation	Four small boxes packaged into standard waste box with no plastic or cardboard liner. Pieces of lumber (2 × 4 inch) were used as blocking between smaller boxes.		
Primary Waste Parameter(s)	Soils/gravel		
Special Notes	This IDC may be used for containers of IDC MD-848 that are predominantly soil/gravel (i.e., >50% by volume). WMC S4200/IDC-842 can ONLY be used if >50% by volume soil, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]). If >50% by volume debris (including rock >2.36 inches), recommend change to the applicable MD debris IDC. If indeterminate, recommend IDC UN-00B or UN-00C and an AK evaluation will be performed. Historical ID may include "CS" to identify waste type (contaminated soil) or "BX" to identify package type.		

Soils	Soils/Debris	S4000
S4200	**SR-842**	**SRS Mound Site Soil/Debris**
WIPP Status	WIPP Candidate – Offsite Waste Solid Sampled by AMWTP and Characterized by CCP	
Waste Information	Contact the AMWTP Offsite Waste Coordinator for descriptions of the waste, inner packaging, drum preparation, primary waste material parameters, and prohibited items. [219, 241]	
Special Notes	If waste is <50% by volume soil or contains prohibited items, notify the AMWTP Offsite Waste Coordinator.	

Heterogeneous Debris Waste	Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-847**	**LSA<100 nCi/g Combustible**
WIPP Status	WIPP Candidate	
Waste Description	Non-line generated combustible waste such as plastic sheeting, paper, rags, gloves (rubber, cloth) plastic bottles, wood, paper suits and shoe covers. The waste may be either dry or damp. Waste may be compacted 4:1. Waste may also contain any amount of non-combustible waste such as metals, glass, concrete, etc. [30]	
Inner Packaging	Poly bag sealed with tape	
Drum Preparation	Rigid Liner Absorbent clay (up to 25 pounds) was placed in the bottom of the rigid liner. Plywood spacer(s) typically placed between rigid liner lid and drum lid.	
Primary Waste Parameter(s)	Cellulosics, Plastic (waste materials), Rubber **NOTE:** *Any amount of other debris waste parameters may be present.*	
Special Notes	Based on RTR results, waste may contain light ballasts or transformers (which may contain PCB), compressed gasses (including aerosol cans), prohibited liquids, sealed containers >4 liters, sharp objects or impenetrable objects. [243] A majority of this waste is slightly compacted combustible waste. Waste may be packaged in up to four layers. [27] Historical ID may include "LC" or "LS" to identify waste type (combustible, LSA) or "LD" to identify compacted waste.	

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [18]	**MD-848**	**LSA<100 nCi/g Non-combustible**	
WIPP Status	WIPP Candidate		
Waste Description	Non-line generated non-combustible wastes such as tools, pipe, equipment, metal, glass, concrete, plaster, bricks, and dirt. Waste may also contain combustible wastes (paper, rags, etc.).		
Inner Packaging	Poly bag / Poly bag or placed directly in drum		
Drum Preparation	Rigid Liner / Poly Drum Bag Absorbent clay (up to 25 pounds) was placed in the bottom of the bag liner. Plywood spacer(s) typically placed between rigid liner lid and drum lid		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Aluminum-based Metals/Alloys, Other Inorganic Materials, Soils/gravel **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain compressed gases (including aerosol cans), prohibited liquids, or sealed containers >4 liters, sharp objects, or impenetrable objects. [243] If >50% by volume soil, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]), recommend change to IDC MD-842. If indeterminate, recommend IDC UN-00B or UN-00C and an AK evaluation will be performed. If contents of the container are predominantly combustibles (plastics, paper, rubber), and not packaged in cartons, recommend change to IDC MD-847. Historical ID may include "LN" or "LS" to identify waste type (non-combustible, LSA). **NOTE:** *Per AK concerning the MD D&D process, pipes may be sealed at both ends with RTV rubber;* therefore *4-inch diameter pipe >19-inches in length should be identified as sealed containers >4 liters.*		

Combustibles	Unknown/Other Organic Debris		S5000
S5390	**RF-900**	**LSA Paper, Plastic, etc.**	
WIPP Status	WIPP Candidate		
Waste Description	Non-line generated combustible waste including plastics, empty polyethylene bottles, surgeon's gloves, cloth, paper, wipes, rubber, coveralls, and booties. Waste was packaged as a moist waste. Waste may also contain any amount of wood but may only contain <50% by volume glass, metal and other inorganic material debris items (e.g., welding rods, steel pipe, nuts, bolts, electric motor, flashlights, and concrete).		
Inner Packaging	Waste was typically placed directly into drum or box.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Up to 15 pounds of cement was added to drums containing damp waste. Some drums may include a cardboard liner.		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics, Plastics (waste materials), Rubber		
Special Notes	Based on RTR results, waste may contain aerosol cans, prohibited liquid, sealed containers >4 liters, sharp objects, or impenetrable objects/waste.[243] IDC RF-900 was not shipped to INL after 1975; IDCs RF-330 and RF-337 were used by RF for similar waste generated before and after this date. [3, 97, 152]		

Heterogeneous Debris		Unknown/Other Heterogeneous Debris	S5000
S5490 [65]	**RF-950**	**LSA Metal, Glass, etc.**	
WIPP Status	WIPP Candidate		
Waste Description	Non-line generated, non-combustible waste including electric conduit, metal piping, tools, electronic instrumentation, light bulbs, windows, office equipment, lead shielding, and structural steel. The waste may also contain any amount of combustible wastes (e.g., paper, plastic, rubber).		
Inner Packaging	Poly bag / Poly bag or placed directly into the drum or box.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Iron-based Metals/Alloys, Other Metals, Aluminum-based Metals/Alloys, Other Inorganic Materials **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, this waste may contain a wide variety of manufactured items which may contain PCB electrical items (e.g., ballasts, transformers, or capacitors). Waste may also contain aerosol cans, prohibited liquids, sealed containers > 4 liters, sharp objects, or impenetrable objects/waste. [243] Bottles of soil were found in individual boxes of MLLW. [118] A 5-gallon bucket containing a small volume of waste suspected to be sodium nitrate was reportedly found in an individual box of MLLW. [118] IDC RF-950 was not shipped to INL after 1975; IDCs RF-440 and RF-480 were used by RF for similar waste generated before and after this date. [3, 97, 152] Some drums that were retrieved from Pits 11 and 12 are labeled IDC "950" but are also marked "roaster oxide." Therefore, historical IDC RF-751 is assigned at retrieval to any drum retrieved from the cargo containers that is marked "roaster oxide" and is identified as IDC "950."		

Heterogeneous Debris Waste		Unknown/Other Heterogeneous Debris	S5000
S5490 [95]	**RF-960**	**Concrete, Asphalt, etc.**	
WIPP Status	**WIPP Candidate**		
Waste Description	Waste consists primarily of concrete and asphalt (blacktop). Boxed waste was probably generated from the removal of six reinforced-concrete treatment tanks at Building 774. [3] Waste may contain any amount of metals, glass, combustibles and other construction rubble (e.g., combustibles, metal, glass, plastic, rubber, ceiling tiles, floor tiles, sheetrock, etc.). Waste may only contain <50% by volume non-debris (e.g. soil or sludge).		
Inner Packaging	Waste may be single- or double-bagged, contained in Fiberpaks, or placed directly into drums or boxes.		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Some drums may not have rigid liner and/or Poly bags.		
Box Preparation	Poly Box Bag / Cardboard Box Liner.		
Primary Waste Parameter(s)	Other Inorganic Materials (e.g., concrete, rock, stone portion of blacktop, felt portion of tar paper), Organic Matrix (e.g., 5% for organic binder portion of asphalt blacktop; 10% for organic portion of tar paper). **NOTE:** *Any amount of other debris waste parameters may be present.*		
Special Notes	Based on RTR results, waste may contain light ballasts (which may contain PCBs), aerosol cans, prohibited liquid, sealed containers >4 liters, sharp objects, impenetrable objects/waste or impenetrable lead shielding. Small caliber ammunition (explosives) was identified in one drum. [243] WMC S5490/IDC RF-960 can ONLY be used if >50% by volume debris (including rock >2.36 inches [60 millimeters]). If >50% by volume soil, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]), recommend change to IDC RF-090 or RF-990 (if waste generated in Building 774). If indeterminate, recommend IDC UN-00B or UN-00C and an AK evaluation will be performed. IDC RF-960 was not shipped to INL after 1973; IDC RF-374 was used by RF for similar waste generated before and after this date. [3, 152]		

Combustibles	Wood Debris		S5000
S5320	**RF-970**	**Wood**	
WIPP Status	WIPP Candidate		
Waste Description	Wood products including lumber, plywood, filter frames, and ladders. Waste may also contain <50% by volume plastic, metal, and other inorganic material debris items (e.g., wipes, nails, sheetrock, etc.). May also include Benelex. [20]		
Inner Packaging	O-Ring bag / Poly bag or Poly bag / Poly bag		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag/ Poly Drum Bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner		
Primary Waste Parameter(s)	Cellulosics		
Special Notes	Based on RTR results, waste may contain prohibited liquid or sharp objects. [243] IDC-970 was not shipped to INL after 1978; IDC RF-330 was used by RF for similar waste generated before and after this date. [3, 152]		

Solidified Inorganics	Unknown/Other Inorganic Sludges		S3000
S3129	**RF-976**	**Building 776 Process Sludge**	
WIPP Status	WIPP Candidate		
Waste Description	Sludge mixed with cement from two waste collection tanks in building 776. The tanks collected effluent from the floor drains.		
Inner Packaging	Direct loaded into the waste drum		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag		
Box Preparation	Poly Box Bag / Cardboard Box Liner Up to 5 drums were packed into waste boxes.		
Primary Waste Parameter(s)	Inorganic Matrix		
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Based on RTR results, waste may contain sharp objects. [243] It is believed that some drums began to pressurize or show signs of pressurization prior to placement in waste boxes. Per TWMIS, IDC RF-976 was only shipped to INL in 1976 and early 1977; however, it may have been generated during the period of 1971 through 1979. [3, 20, 97]		

Solidified Inorganics	Unknown/Other Inorganic Sludges	S3000
S3129	**RF-978**	**Laundry Sludge**
WIPP Status	WIPP Candidate	
Waste Description	Sludge mixed with cement from two tanks that collected effluent from the laundry in building 776	
Inner Packaging	Direct loaded into the waste drum	
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag	
Box Preparation	Poly Box Bag / Cardboard Box Liner Up to 5 drums were packed into waste boxes.	
Primary Waste Parameter(s)	Inorganic Matrix	
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. It is believed that some drums began to pressurize or show signs of pressurization prior to placement in waste boxes. Stratification layers may be visible. The possibility exists that some boxes of RF-978 contain drums of RF-976 process sludge. Drum lids might have been loosened or holes might have been drilled in the drum lids prior to placement in the boxes.[3] Per TWMIS, IDC RF-978 only shipped to INL in late 1975 through 1977; however, it may have been generated during the period of 1971 through 1979. [3, 20, 97]	

Solidified Inorganics [98]	Unknown/Other Solids	S9000

S9000	**RF-980**	**Equipment**
WIPP Status	WIPP Candidate	
Waste Description	Equipment (see special notes).	
Inner Packaging	*Not currently available*	
Drum Preparation	May contain rigid liner and poly bags.	
Primary Waste Parameter(s)	*Not currently available*	
Special Notes	IDC RF-980 was only prior to 1974. IDRF000755884 (container 10166784) is the only drum of RF-980 identified in TWMIS. It was verified to contain only small containers of sludge. This IDC is being retained in case individual drums of this waste are found in Cells 1 or 2 of Pad 1. S3123 (Off-Gas Treatment Sludges) and WMCG Solidified Inorganics were assigned to waste IN-W187 in 1995 TWBIR based on above information that the single drum of RF-980 contains only IDC RF-290 sludge. [98] S9000 was conservatively assigned because information for this drum is unclear. The final WMC will be determined when sufficient AK or RTR/VE data is available. Recommend an IDC change to RF-950 or RF-960 if the majority of the drum contents are debris.	

Soils	Soils/Debris		S4000
S4200	**RF-990**	**Dirt**	
WIPP Status	WIPP Candidate		
Waste Description	Dry dirt or soil generated during the cleanup of spills or leaks. Waste also includes soil taken from around Building 774. [20] Waste may also include evaporator pond sludge. Waste could be damp. Waste may also contain <50% by volume cellulosic debris items (e.g., coveralls and gloves) generated during the cleanup.		
Inner Packaging	Soil may be double bagged in small poly bags or direct loaded into the drum		
Drum Preparation	Rigid Liner (after 1971) / Poly Drum Bag / Poly Drum Bag Drums may contain a Fiberboard liner		
Primary Waste Parameter(s)	Soils/gravel.		
Special Notes	Based on RTR results, waste may contain aerosol cans, prohibited liquid, sealed containers > 4 liters, sharp objects, or impenetrable waste. [243] IDC RF-990 replaced IDC RF-090 in early 1972 and was not shipped to INL after 1975; IDC RF-374 was used by RF for similar waste generated before and after this date. [3, 97, 152] WMC S4200/IDC RF-990 can ONLY be used if >50% by volume soil, gravel, or sand (natural geologic material ≤2.36 inches [60 millimeters]). If >50% by volume debris, recommend change to IDC RF-960. If indeterminate, recommend IDC UN-00B or UN-00C and an AK evaluation will be performed.		

Solidified Organics		Biological Sludges	S3000
S3221	**RF-995**	**Sewer Sludge**	
WIPP Status	WIPP Candidate		
Waste Description	Sludge primarily from cleaning the stabilization ponds at Building 995 sewage treatment plant. Cement was added in layers as drum filled if the sludge was moist.		
Inner Packaging	Direct loaded into the waste drum (prior to 1975) or waste box (after 1974).		
Drum Preparation	Rigid Liner (after 1971) / Poly drum bag / Poly drum bag Portland cement added as absorbent to bottom of inner bag prior to filling and as a "cap" after filling.		
Box Preparation	Poly Box Bag / Cardboard Box Liner Up to 90 pounds Portland cement added as absorbent to bottom of box prior to filling. The sludge was "capped" with up to 90 pounds Portland cement.		
Primary Waste Parameter(s)	Organic Matrix		
Special Notes	Based on RTR results of drums of other RF bulk or direct loaded sludge, this waste may contain prohibited liquids on top of the sludge, within the drum bag, or between the rigid liner and drum. Visual examination of this bulk or direct loaded sludge packaged in 55, 83, or 85-gallon drums would not provide additional relevant information to the RTR examination. May have cement in drum, rigid liner, and/or poly drum bag. IDC RF-995 replaced IDC RF-095 in early 1972. RFP discontinued shipping sewer sludge to INL in 1976. [3] Historical ID typically begins with "IDRF0995." Limited amounts of drums assigned IDC RF-995 were generated from Building 771 Plutonium Recovery Operations (e.g. drum prefix 0001). [3] These containers will require AKE evaluation.		

N/A		N/A	N/A
N/A	**RF-998**	**Pits 11 & 12 Cargos and Bins**	
WIPP Status	N/A – Overpack Container		
Waste Description	Most of the waste in the cargos and bins was originally generated at Rocky Flats and disposed in Pits 11 and 12 at the RWMC prior to October 1972. The waste packaged in 30- and 55-gallon drums of waste was subsequently retrieved from Pits 11 & 12 between 1974 and 1978 and placed into cargo containers or bins which were transferred to TSA-RE. Some 30-gallon drums had been historically overpacked into 55-gallon drums. During retrieval, some 55-gallon drums were overpacked into 83-gallon drums prior to placing in the bins or cargo containers. [80, 97, 119, 120]		
MIII Bin Configuration	Breached or externally contaminated drums were wrapped in plastic prior to placing in bins. Typically 8 drums but may contain 3 to 12 drums (including 30-, 55- and 83-gallon drums) were placed in each bin. [97, 119, 120]		
Cargo Container Configuration	Intact containers were placed in the cargo containers. Typically 72 drums but may contain 48 to 96 drums (including 30-, 55- and 83-gallon drums) were placed in each cargo container. Absorbent (~50 pounds) was spread on the floor of each cargo container. The floors and area extending one foot up the sidewalls of the cargo containers was waterproofed with a sealant material called Peda-Guard II. [97, 119, 120]		
Primary Waste Parameter(s)	N/A – overpack container		
Special Notes	IDC RF-998 is reserved to track cargos packaged with drums retrieved from Pits 11 and 12 and is not to be used for characterizing waste. There is a low probability that these cargo containers and bins contain drums of roaster oxide waste or drums that may contain roaster oxide (reference IDCs RF-751). [80] One drum retrieved from Pit 12 in April 1978 was labeled "Cyanimide – cyanide poisoning." [120] Majority of drums contain debris waste. Some drums may contain sludge, salt or soil. Intact drums unloaded from cargos and bins are assigned the applicable IDC (e.g., RF-741 through RF-752 or UN-000). Empty cargos and bins may be PCB regulated. A PCB case-by case evaluation is required prior to waste profiling or treatment.		

N/A		N/A	N/A
N/A	**RF-999**	**Pits 11 & 12 Cargos and Bins with Roaster Oxide**	
WIPP Status	N/A – Overpack Container		
Waste Description	Most of the waste in the cargos and bins was originally generated at Rocky Flats and disposed in Pits 11 and 12 at the RWMC prior to October 1972. The waste packaged in 30- and 55-gallon drums of waste was subsequently retrieved from Pits 11 & 12 between 1974 and 1978 and placed into cargo containers or bins which were transferred to TSA-RE. Some 30-gallon drums had been historically overpacked into 55-gallon drums. During retrieval, some 55-gallon drums were overpacked into 83-gallon drums prior to placing in the bins or cargo containers. [80, 97, 119, 120]		
MIII Bin Configuration	Breached or externally contaminated drums were wrapped in plastic prior to placing in bins. Typically 8 drums but may contain 3 to 12 drums (including 30-, 55- and 83-gallon drums) were placed in each bin. [97, 119, 120]		
Cargo Container Configuration	Intact containers were placed in the cargo containers. Typically 72 drums but may contain 48 to 96 drums (including 30-, 55- and 83-gallon drums) were placed in each cargo container. Absorbent (~50 pounds) was spread on the floor of each cargo container. The floors and area extending 1 foot up the sidewalls of the cargo containers was waterproofed with a sealant material called Peda-Guard II. [97, 119, 120]		
Primary Waste Parameter(s)	N/A – overpack container		
Special Notes	IDC RF-999 is reserved to track cargos packaged with drums retrieved from Pits 11 and 12 and is not to be used for characterizing waste. There is a high probability that these cargo containers and bins contain drums of roaster oxide waste or drums that may contain roaster oxide (reference IDCs RF-751). [80] One drum retrieved from Pit 12 in April 1978 was labeled "Cyanimide – cyanide poisoning." [120] Majority of drums contain debris waste. Some drums may contain sludge, salt or soil. Intact drums unloaded from cargos and bins are assigned the applicable IDC (e.g., RF-741 through RF-752 or UN-000). Empty cargos and bins may be PCB regulated. A PCB case-by case evaluation is required prior to waste profiling or treatment.		

5.0 REFERENCES

NOTE: *AMWTP documents such as procedures, AK Reports, AKRs, and operating instructions are cited without revision numbers or dates. The most recent revisions of these documents are available through the AMWTP Electronic Data Management System. Previous revisions are available upon request through Document Services.*

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3. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, October 1982 [P024A]

4. RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste-Mound Plant Waste

5. RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory

6. RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

7. Waste/Packaging Configuration Inconsistent with RF-IDC 001 [AKR-04-76]

8. Waste Matrix Code (WMC) assignment for the Rocky Flats IDC 310 Graphite Scarfings [AKR-05-237]

9. Waste Matrix Code (WMC) Revision and EPA HWN Assignment for the Rocky Flats IDC 372 Grit [AKR-05-239]

10. WMC Assignment for the RF IDCs 430 and 431 Resin Debris Wastes and RF IDCs 432 and 822 Cemented Resin Homogeneous Solid Waste [AKR-05-240]

11. Memorandum to Eric Schweinsberg from Carolyn Abbott, Discrepancy Report D034A - New Packaging Configuration for Rocky Flats (RF) IDC 001 (First Stage Sludge), CKA-005-2005, August 3, 2005 [D034A]

12. Memorandum to Eric Schweinsberg from Carolyn Abbott, Discrepancy Report D035A - Assessment of HWN D001 Assigned to Rocky Flats (RF) Filter Waste (IDCs 335, 338, 490), CKA-007-2005, August 9, 2005 [D035A]

13. Wrong WMC listed in WTS (for RF-IDC 393 SS&C Heel) [AKR-05-245, also addresses AKR-05-257]

14. Memorandum to Eric Schweinsberg from M. L. Johnson, Discrepancy Report D042A - Assessment of Acceptable Knowledge Information in AMWTP-RPT-TRUW-05 for Rocky Flats Metal Waste, MLJ-004-2005, September 15, 2005 [D042A]

15. Waste Parameter Assignment Change for RF IDC 432 [AKR-05-299]

16. Letter to R. K. Flitcraft from D. Davis, Jr., Shipment of Transuranic Waste From Mound Laboratory to the NRTS, August 14, 1974 [C416A]

17. EGG-WM-6503, TRU Waste Sampling Program: Volume I – Waste Characterization, September 1985 [P015A]

18. Waste Matrix Code (WMC) Assignments for Mound Debris Wastes [AKR-05-234]

19. MD IDCs With Inner Packages, RTR Operator Requested IDC Change, Rejected by AK [AKR-05-311]

20. RFP-3186, History of Rocky Flats Waste Streams, March 10, 1982 [P090A]

21. Memorandum to Eric Schweinsberg from Micky L. Johnson, Discrepancy Report D049A - Assessment of Acceptable Knowledge Information in AMWTP-RPT-TRUW-05 for Mound Metal Waste, MLJ-007-2005, December 28, 2005 [D049A]

22. Absorbent in RF waste containers absent or present in greater or lesser amounts than described in AK [AKR-05-258, also addresses AKR-03-12, AKR-03-14, AKR-03-15, AKR-03-16, AKR-03-26 (IDC 007), AKR-03-36 R1 (IDCs 007, 803), AKR-04-42 R1, AKR-04-44, AKR-04-45, AKR-04-46, AKR-04-48 (IDC 807), AKR-04-53, AKR-04-56, AKR-04-57, AKR-04-62, AKR-04-63, AKR-04-64, AKR-04-72, AKR-04-83 (IDC 807), AKR-04-84, AKR-04-100, AKR-04-103, AKR-04-112 R1, AKR-04-113, AKR-04-116 R1, AKR-04-117, AKR-04-123 (12 quarts Oil-Dri®), AKR-04-125, AKR-04-131, AKR-04-157, AKR-04-158, AKR-04-159, AKR-04-174, AKR-04-182, AKR-05-245, and AKR-05-257]

23. Unexpected packaging configuration – Unexpected Liner Configuration (in RF waste) [AKR-05-238, also addresses AKR-03-25, AKR-03-35 R1, AKR-03-38 R1, AKR-03-39, AKR-04-49, AKR-04-50 R1, AKR-04-54 R1, AKR-04-58, AKR-04-61, AKR-04-65, AKR-04-66, AKR-04-67 R1, AKR-04-68, AKR-04-70, AKR-04-118, AKR-04-128, AKR-04-133, AKR-04-156, AKR-04-161, AKR-04-162, AKR-04-163, AKR-04-181, AKR-04-196, AKR-05-219]

24. Unexpected Material (plastic and metal debris) identified during RTR [AKR-04-137, also addresses AKR-03-19, AKR-04-114, AKR-04-115 R1, AKR-04-121, AKR-04-130, AKR-04-134, AKR-04-160, AKR-04-173 R1 (batteries), AKR-04-184 (glass), AKR-05-217, AKR-05-218]

25. Unexpected packaging configuration – Absence of Plywood Spacer [AKR-04-154] and Unexpected packaging configuration – Plywood Spacer (in MD waste) [AKR-05-287]

26. More than 2 layers of containment (RF) [AKR-04-47, also addresses other AKRs associated with drum bag liners or inner packaging layers including AKR-03-13, AKR-04-59, AKR-04-69, AKR-04-74 for Fiber-Paks, AKR-04-87, AKR-04-126, AKR-05-209]

27. Unexpected packaging configurations – variable drum bagging (MD Waste) [AKR-04-175, also addresses AKR-05-329]

28. Filtered bag identified as method of bag closure [AKR-03-18, also addresses AKR-03-22, AKR-04-41 R1, AKR-05-312]

29. Twisted and tied identified as method of bag closure [AKR-04-132, also addresses AKR-05-242, R2]

30. Unexpected material (rubber debris) identified during RTR (of MD sludge waste [AKR-04-176, also addresses AKR-05-249 for leaded rubber gloves in plastic waste and AKR-05-289 R1 for metal and glass debris in combustible waste])

31. Unexpected absorbent (Vermiculite) identified in Mound Plant Waste [AKR-05-224]

32. WM-F1-81-015, Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification, September 1981 [P319A]

33. MD-20734, Technical Manual– Plutonium Processing-Material Control, Rev. 4, September 15, 1973 [P384A]

34. MD-70205, Technical Manual -TRU Waste Management, various revisions from January 1, 1976 through December 19, 1988 [P381A]

35. Letter to M. L. Mullins from Harry H. Hill, Packaging Criteria for Transuranic Waste Shipment To INEL, July 25, 1978 [C376A]

36. Inconsistent calculation of weight per pint of Florco absorbent [AKR-05-331]

37. Unexpected Material (ceiling tiles) identified during RTR (of IDC RF-374) [AKR-03-17, also addresses other wastes identified in AKR-03-11 (metal), AKR-03-27 (metal), AKR-04-73 (Poly Bottles), AKR-05-323 (floor tile), and AKR-07-469 (floor tiles)]

38. Lead Cell Batteries with Residual Liquid less than One Inch (in IDC RF-480 waste) [AKR-04-71]

39. Container of IDC MD-825 (Equipment Drums – Non-combustible) identified with inner containers of IDC MD-832 (Contaminated Mercury) [AKR-05-300]

40. Unspecified absorbent material may be present in RF-IDC 007 containers [AKR-03-37]

41. Residual Liquid in IDC RF-004 waste [AKR-04-43]

42. Catch pan added to all direct feed drums to supercompactor [AKR-05-288]

43. LA-13616-MS, Determination of H_2 Diffusion Rates through Various Closures on TRU Waste Bag-Out Bags, June 1999 [P445A]

44. IDC RF-292 on container 10026516 changed to IDC RF-290 incorrectly [AKR-05-236]

45. Unexpected materials (plastic waste) in IDC MD-836 containers with absorbents and plastic waste [AKR-06-366]

46. MD-70180, Technical Manual-Mound Facility Radioactivity Liquid Waste Disposal, January 1, 1981 through October 24, 1984 [P379A]

47. Unexpected packaging (plastic drum bag) in IDC MD-836 containers [AKR-06-374]

48. Cement cap and variable layers of solidification discovered during coring of IDC MD-836 drums [AKR-06-375]

49. Large PCB items found in box of IDC RF-480 [AKR-06-380]

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59. IDC Change from RF-371 to RF-697 [AKR-06-411]

60. IDC Change from RF-480 to RF-337 [AKR-06-410]

61. Kraft Tubes in IDC RF-300 waste [AKR-04-75]

62. Unexpected Dense Waste Items in Mound Debris Drums [AKR-06-358]

63. IDCs RF-368 and RF-370 WMC Change from S5123 to S5190 [AKR-06-427]

64. IDCs RF-391 and RF-392 WMC Change from S5129 to S5190 [AKR-06-428]

65. IDC RF-950 WMC Change from S5112 to S5490 [AKR-06-429]

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69. EDF-2657, Waste Stream Summary Sheet–Building 374 Sludge, Rev. 4, INEEL, January 6, 2003 [P238A]

70. EDF-1927, Waste Stream Summary Sheet–Filters and Insulation, Rev. 5, INEEL, January 6, 2003 [P225A]

71. EDF-3019, Waste Stream Summary Sheet–Fire Brick/Coarse Fire Brick, Rev. 1, INEEL, January 6, 2003 [included in P306A]

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76. Bottle of waste buried in a drum of IDC 002 sludge waste [AKR-06-423]

77. Change the IDC from RF-480 to RF-440 based on RTR data [AKR-06-422]

78. IDC change incorrectly changed (from IDC RF-371) to RF-374 [AKR-07-453]

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259. CCP-PK-ANLE-001, Central Characterization Project Process Knowledge Summary Report for Argonne Contact-Handled TRU Waste From Facility Maintenance and Laboratory Operations, Waste Streams: AECHDM-PK and AECHHM-PK, August 10, 2010. [P1155A]

260. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, October 1982. [P024A]

261. Pu-DP-2.4, Loading of TRU-Contaminated Waste In DOT 7A Steel Boxes (ANL-M-III). Quality Assurance Document, Rev 1. D. E. Stellrecht, March 9, 1973. [P338A]

262. ANL-E Safety Analysis for Twenty Year Retrievable Storage of Intermediate Gamma Level Transuranic Waste, W. D. Jackson, Rev 0, June 01, 1976 [P1321A]

263. ANL-E AGHCF-SORT, Procedure for Sorting Remote-Handled TRU Waste (30-Gallon Intermediate-Level Waste), Rev 0, January 07, 1987. [P1325A]

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265. RPT-TRUW-79, Acceptable Knowledge Document for Materials and Fuels Complex (MFC) Waste

266. AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-W027-773A-HOM, SRS Solidified Inorganics from 773A (SR-257), April 17, 2012 [P1409S]

267. AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-SDD-HOM-A, SRS Solidified Organics from 211F (SR-258), April 17, 2012 [P1414S]

268. AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-SDD-HOM-B, SRS Solidified Inorganics from 211F (SR-259), April 17, 2012 [P1413S]

269. CCP-AK-SRS-7, Central Characterization Project Acceptable Knowledge Summary Report for Savannah River Site Waste Streams: SR-W027-773A-HET, SR-W027-773A-HOM, Rev. 5, August 12, 2011 [P1415A]

270. CCP-AK-SR7-13, Central Characterization Project Acceptable Knowledge Summary Report for Savannah River Site, Site Deactivation and Decommissioning Waste, Waste Streams: SR-SDD-HOM-A, SR-SDD-HOM-B, SR-SDD-HET-A, Rev. 1, February 23, 2012 [P1416A]

271. RPT-TRUW-89, Acceptable Knowledge Document for Argonne National Laboratory – East (ANL-E) Waste

272. Renewal Application for Combined Special Nuclear Material and Byproduct License. Section 2, Plutonium Laboratory, September 1, 1977 [P351A]

6.0 RECORDS

Record Description	Classification
RPT-TRUW-05, Case file	Misc. Record/A16-1.2/Destroy 5 years after submittal or being superseded.

AMWTP Waste Stream Designations

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-10324.)
James Jackson
TRU Programs Manager

08/31/11
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/27/03	All	DCR-2378-1. Create RPT-12 from EDF-199
1	11/20/03	Various	DCR-2528. Update TRUCONs, add newly created IDC 512 and applicable data, add EPA HWN F003.
2	03/07/05	All	DCR-4022. Revise paragraph following flowchart; edit for clarification.
3	07/12/05	All	DCR-4229. Incorporate IDC information to be consistent with RPT-TRUW-05, Waste Matrix Code Reference Manual.
4	09/13/05	Table 1, Figure 1	DCR-4477. Update Table 1 and Figure 1 to be consistent with RPT-TRUW-05.
5	11/30/05	All	DCR-4666. Incorporate information concerning PCB items shippable to WIPP, characterization data for approved WSPFs, and identification of new waste streams.
6	03/06/06	All	DCR-4822. Incorporate new approved profile, CCP waste streams, retrieval, and to address newly generated waste.
7	07/11/06	All	DCR-4874. Reflect a streamlined approach to using certain project scoping documents (RPTs 05, 06, 07 and 12).
8	08/15/06	Various	DCR-5224. Document recent PCB contamination incidents.
9	07/17/07	All	DCR-6155. Incorporate revision log; annual update to reflect current operations prior to audit.
10	8/27/08	All	DCR-6333. Re-write. Remove MLLW IDCs from Appendix B.
11	07/01/09	Table 6b, Page 41	DCR-7530. Rewrite.
12	08/04/09	Various	DCR-8505. Revise document to include new IDCs to support operations (Add IDCs BN-528, BN-529, BN-536, BN-537). Changed IDC description on BN-520 and BN-521 to be consistent with recent changes noted in RPT-TRUW-05. Update PCB information to include new IDCs managed as PCB waste. Deleted MLLW BN IDCs (i.e., BN-607 through BN-617). Provided clarification.

Revision Number	Date Approved	Pages Affected	Description of Revision
13	03/09/10	Various	DCR-8588. Deleted IN-151 and AW-151 from Appendix A they do not exist in WTS. Remove MX-142 WIPP WSPF HWNs to correct prior cut and paste error. Corrected Section 3.0 (#5 AMWTP Newly Generated IDCs) on page 19 to include BN-501, BN-511, IC-526, IC-603, and BN-616 as PCB regulated. Added IDCs: IC-527, BN-513, BN-514, BN-515, BN-522, BN-538, RF-749, RF-753, RF-754. Clarified PCB language on Appendix A Notes. Changed IDC description in Table A-1 for RF-095, RF-995, RF-337, BN-501, BN-507, BN-509, BN-511, IC-526 and IC-603. Clarified newly generated waste Section 8. Added Notes 20, 21, 22, and 23 in Table A-1 to clarify HWNs and applicable hazardous constituents assignment. Added references for CCP AK summaries. Insert new information relating to recent WIPP approval of BN222 WSP (i.e., RF IDCs: 292, 696/807b, 818 and 820). Made editorial changes.
14	08/02/10	Various	DCR-9295. Table 1: Changed IDC Description for IDC RF-374. Section 7.0: Provided additional clarification within Section 7.0 relating to HWDs. Figure 3: Replaced boxes for IDC RF-832 and MD-330 with RF-336 and RF-330, and corrected WMC S5330 to S5300. Section 9.0: Added references 96–114. Table A-1: Add new IDCs: GV-222, BN-518, BN-538, BN-550, IC-150, IC-151, IW-526, IW-527, IW-603, LL-212, LL-213, LL-221, RL-712, RL-714, and RL-716. Changed Waste Description for IDCs: BN-520, BN 521, AW-160, AW-164, AW-165, AW-167, NT 211, NT-212, NT-213, RF-374. Added new constituents for IDCs: BN-507, BN-514, BN-520, AW-165, AW-167, IC-526, IC-527, IC-603, SD-704, RF-760. Deleted IDCs: AW-142. Added footnotes 24, 25, and 26. Added missing IDC RF-303. Table A-2: Added new generator site codes: GV, LL, and RL.

Revision Number	Date Approved	Pages Affected	Description of Revision
15	11/03/10	Text and Appendix A	DCR-9523. Modified BN-508 HWNs to accommodate new BN510.1 WSPF list of HWNs and applicable references. Deleted Note 26 from BN-520. Deleted Note 25 from BN-508. Deleted Note 25 from BN-521. Deleted Note 26 as a reference to Appendix A. Added information on beryllium in Appendix A for supercompacted-related IDCs. Changed Section 7.1 to include RPT-TRUW-83 and BN510.1 WSPF and to clarify that BN510 feedstock inventory will not be included into BN510.1 WSPF. Added BN510.1 information to Table 4. Section 8.0: last paragraph add BN510.1 and references. Deleted footnote f. References: added reference #s 115 and 116.
16	03/03/11	2, 6, 10, 15, 16, A107 – A110	DCR 9720: Modified language to incorporate new WIPP definition of a waste stream, Add three new IDCs to WSPFs BNINW216 and one IDC to BN004 as a result of WIPP approval of change notices (i.e., RF-741, RF-742 and RF-744). Added IDCs: BN-534, IC-157 and IW-525. Updated Appendix A. Modified notes to Appendix A as needed. General editorial changes.
17	07/19/11	Various	DCR-10076. General grammar/editorial changes. Added IDCs: BN-550, RL-712, RL-714 and RL-716 to Table 1. Added new PCB IDCs BN-523 and IW-526 to PCB section. Deleted Section 7.2, AMWTP Retrieved Wastes/Repackaged Retrieved Wastes, including Figure 3, Example of the delineation scheme for supercompacted waste stream. Added References 123 through 143. Appendix A: Deleted blank rows. Moved ID/AW, BW and BX to alphabetic listing. Added IC-525 (P/U listed HWNs) and IC-602 (P/U listed HWNs). Added proposed (forthcoming) IDCs BN-523, BN-524 and BN-600. Added IDCs: AE-254, BN-519, BN-539, BN-607 through BN-617, IC-021, IC-152, IC-156, and IC -601. Added off-site cored waste IDCs LA-002, LA-003, LA-005, LA-006, LB-229, OR-250, RL-715, RL-720, SL-223, SL-224, SL-227, SR-251, SR-252, SR-253 and SR-835. Deleted IDCs: AW-156, AW-157, IW-525 and IW-602. Added hazardous constituents and HWNs as applicable.

Revision Number	Date Approved	Pages Affected	Description of Revision
18	8/31/11	Various	Added BN600 WSPF information. Added new PCB IDCs (IW-526, BN-526, BN-597, BN-603 and BN-598) Added New references 145 through 150 Added new IDCs to Appendix A (AE-230, AW-225, BN-525, BN-526, BN-527, BN-597, BN-598, BN-599, BN-602, BN-603 and SR-842. Added references to IW-526, IW-527 and IW-603 Added Note 25

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ACRONYMS

AE	Argonne National Laboratory-East (generator site code)
AK	acceptable knowledge
AKE	Acceptable Knowledge Expert
AKR	Acceptable Knowledge Resolution
AMWTP	Advanced Mixed Waste Treatment Project
ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
ARP	Accelerated Retrieval Project
AW	Argonne National Laboratory-West (generator site code)
B&W	Babcock &Wilcox
BC	Battelle Columbus (generator site code)
BL	Bettis Atomic Power Laboratory (generator site code)
BN	AMWTP (generator site code)
BNFL	British Nuclear Fuels Limited
BW	Babcock & Wilcox (generator site code)
BX	Bendix-Grand Junction Operation Office (generator site code)
CAS	Chemical Abstract Service
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFA	Central Facilities Area
CFR	Code of Federal Regulations
CIS	Characterization Information Summary
CPP	Chemical Processing Plant
DOE	United States Department of Energy
EDF	engineering design file
EDMS	Electronic Document Management System
EPA	Environmental Protection Agency
ESS&H	Environmental, Security, Safety, and Health
FFCAct	Federal Facilities Compliance Act
GEN	generator
HGAS	headspace gas sampling
HWD	hazardous waste determination
HWMA	Hazardous Waste Management Act
HWN	Hazardous Waste Number
IC	INL Idaho Nuclear Technology and Engineering Center (formerly called Chemical Processing Plant; generator site code)
IDC	Item Description Code
IF	INL Central Facilities Area (generator site code)
IN	INL Naval Reactor Facility (generator site code)

INL	Idaho National Laboratory
IR	INL Reactor Technology Complex (formerly called Test Reactor Area; generator site code)
IW	INL Radioactive Waste Management Complex (generator site code)
JH	J. C. Haynes (generator site code)
LL	Lawrence Livermore National Laboratory (generator site code)
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
MD	Mound Laboratories (generator site code)
MFC	Materials Fuel Complex
MLLW	mixed low-level waste
MO	Monsanto-Dayton Laboratory (generator site code)
MX	^{241}Am waste from a smoke detector manufacturing company in Mexico (generator site code)
NDA	nondestructive assay
NRF	Naval Reactor Facility
NT	Nevada Test Site (generator site code)
NNSS	Nevada National Security Site
OASIS	Organic and Sludge Immobilization System
PCB	polychlorinated biphenyl
PK	process knowledge
PPE	personal protective equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RF	Rocky Flats Plant (generator site code)
RH	remote handled
RL	Richland, Washington Hanford Site (generator site code)
RTR	real-time radiography
RWMC	Radioactive Waste Management Complex
SCG	Summary Category Group
SD	INL Subsurface Disposal Area (generator site code)
SDA	Subsurface Disposal Area
TBD	to be determined
TCA	1,1,1-trichloroethane
TCE	trichloroethylene
TRA	Test Reactor Area
TRU	transuranic
TSA	Transuranic Storage Area
TSCA	Toxic Substances Control Act
UCL_{90}	90% Upper Confidence Level

VE	visual examination
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WMC	Waste Matrix Code
WMCG	Waste Matrix Code Group
WSP	Waste Stream Profile
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System

1.0 INTRODUCTION

The Advanced Mixed Waste Treatment Project (AMWTP) retrieves, characterizes, and packages transuranic (TRU) wastes for disposal at the Waste Isolation Pilot Plant (WIPP). The United States Department of Energy (DOE) originally identified an estimated 65,000 cubic meters that require characterization for disposal at WIPP. The majority of the waste received was originally generated at the following DOE facilities: Battelle Columbus, Bettis Atomic Power Laboratory, Mound Laboratories, and Rocky Flats Plant. The generator identification acronyms used for the Item Description Codes (IDCs) associated with these facilities are: BC, BL, MD, and RF, respectively. Additional wastes that comprise a portion of the current inventory and/or are to be received and managed in support of DOE TRU programs include, but are not limited to: Argonne National Laboratory-East (ANL-E), Argonne National Laboratory-West (ANL-W) / Idaho National Laboratory (INL) Materials Fuel Complex (MFC), Bendix-Grand Junction Operation Office, Hanford, INL Subsurface Disposal Area (SDA), INL Test Reactor Area (TRA), INL Central Facilities Area (CFA), INL Radioactive Waste Management Complex (RWMC), INL Chemical Processing Plant (CPP), INL Naval Reactor Facility (NRF), Monsanto-Dayton Laboratory, Nevada National Security Site (NNSS), Lawrence Livermore National Laboratory (LLNL), J. C. Haynesa, 241Am wastes from a smoke detector manufacturing company in Mexico, and wastes from Babcock and Wilcox (B&W). Generator identification acronyms associated with these facilities are: AE, AW, BX, RL, SD, IR, IF, IW, IC, IN, MO, NT, LL, JH, MX, and BW. Table A-2 provides a list of generator identification acronyms used for the IDCs associated with these facilities.

In addition, the AMWTP generates TRU-contaminated newly generated waste (i.e., BN) as a result of retrieval, characterization, storage, processing/treatment, and/or repackaging. AMWTP newly generated wastes are assigned the BN acronym in order to identify the generator of the wastes as AMWTP. This acronym previously reflected wastes generated during management by BNFL Inc., the initial operations contractor at AMWTP. The use of the current BN acronym does not reflect a particular contractor waste, but rather reflects AMWTP newly generated waste.

This report includes, but is not limited to, waste classification schemes, the identification of WIPP assigned Hazardous Waste Numbers (HWNs), and the identification of waste material (by IDCs associated with WIPP-approved Waste Stream Profile Forms [WSPFs]) covered under the current AMWTP scope of work or those developed by AMWTP's designee (e.g., Central Characterization Project [CCP]).

Appendix A summarizes hazardous waste constituents for TRU IDCs with the exception of non-INL off-site waste that is received for coring only. The information in Appendix A may be subject to change when additional acceptable knowledge (AK)/process knowledge (PK), or additional characterization is obtained, and will be revised as necessary to reflect finalized HWNs and/or changes to waste stream designations for TRU waste. At a minimum, all accessible and retrievably stored TRU wastes are managed as mixed waste unless final characterization results reflect a non-hazardous status.

Wastes destined for shipment to disposal facilities other than the WIPP are not covered by this document (e.g., low-level waste [LLW] or mixed low-level waste [MLLW] waste streams). Waste that cannot be disposed at WIPP are characterized and profiled by AMWTP organizations other than the AMWTP TRU program. Wastes not destined for disposal at WIPP are not subject to WIPP characterization requirements.

---

a. An Ohio businessman that irradiated diamonds with ^{241}Am.

LLW/MLLW characterization and profile development are conducted through applicable Offsite LLW/MLLW Disposition Project requirements and in accordance with the receiving facility's offsite Waste Stream Profile (WSP) approval processes. Final LLW/MLLW characterization results may differ from those of the TRU waste program due to differences in the offsite receiving facility's waste acceptance criteria (WAC) and/or whether the waste undergoes AMWTP waste processing/treatment prior to offsite shipment. An overview of the LLW/MLLW characterization process (including associated characterization information) is presented in RPT-LLW-12, Characterization Approach for Offsite LLW/MLLW Disposition Project Waste Streams.[107]

AMWTP TRU waste streams are proposed based on compilation of AK data. The compiled AK data for a proposed TRU waste stream are reviewed and evaluated to determine, at a minimum, the generating location, generating process(es) (including AMWTP waste processing, sorting, segregating, and packaging activities, if applicable) or activity, physical form, chemical constituents/properties, radiological concentrations, and assignment of HWNs.[10]

The general characterization scheme associated with TRU waste includes:

- Assignment/confirmation of IDCs associated with containerized wastes
- Assignment/confirmation of wastes into one of three summary category groups (SCGs) (S3000 Homogeneous Solids, S4000 Soil/Gravel, and S5000 Debris Wastes)
- Assignment/confirmation of wastes into appropriate Waste Matrix Code Groups (WMCGs) and Waste Matrix Codes (WMCs)
- Delineation of wastes into TRU waste streams for WIPP characterization
- Characterization of waste using AK
- Augmentation of AK characterization with sampling and analysis and real-time radiography (RTR) or visual examination (VE), as applicable
- Tracking HWNs associated with WIPP-approved WSPFs.

TRU waste destined for disposal at WIPP is characterized on a waste stream basis as described by the WIPP Waste Analysis Plan (WAP) and the AMWTP implementing documents MP-TRUW-8.1, Certification Plan for INL Transuranic Waste and MP-TRUW-8.2, Quality Assurance Project Plan.[52, 98, 99] A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

All of the wastes targeted for disposal at WIPP must be generated by processes associated with the national nuclear weapons program and meet the definition of defense-related waste. All waste transported to WIPP for disposal are determined to be defense-related wastes prior to development of a WIPP WSPF and undergo Carlsbad Field Office (CBFO) WSPF approval prior to shipment.

Figure 1, Document hierarchy and information flow for AK, is a flowchart outlining the general tracking and summarization of AK documents into the AK record.

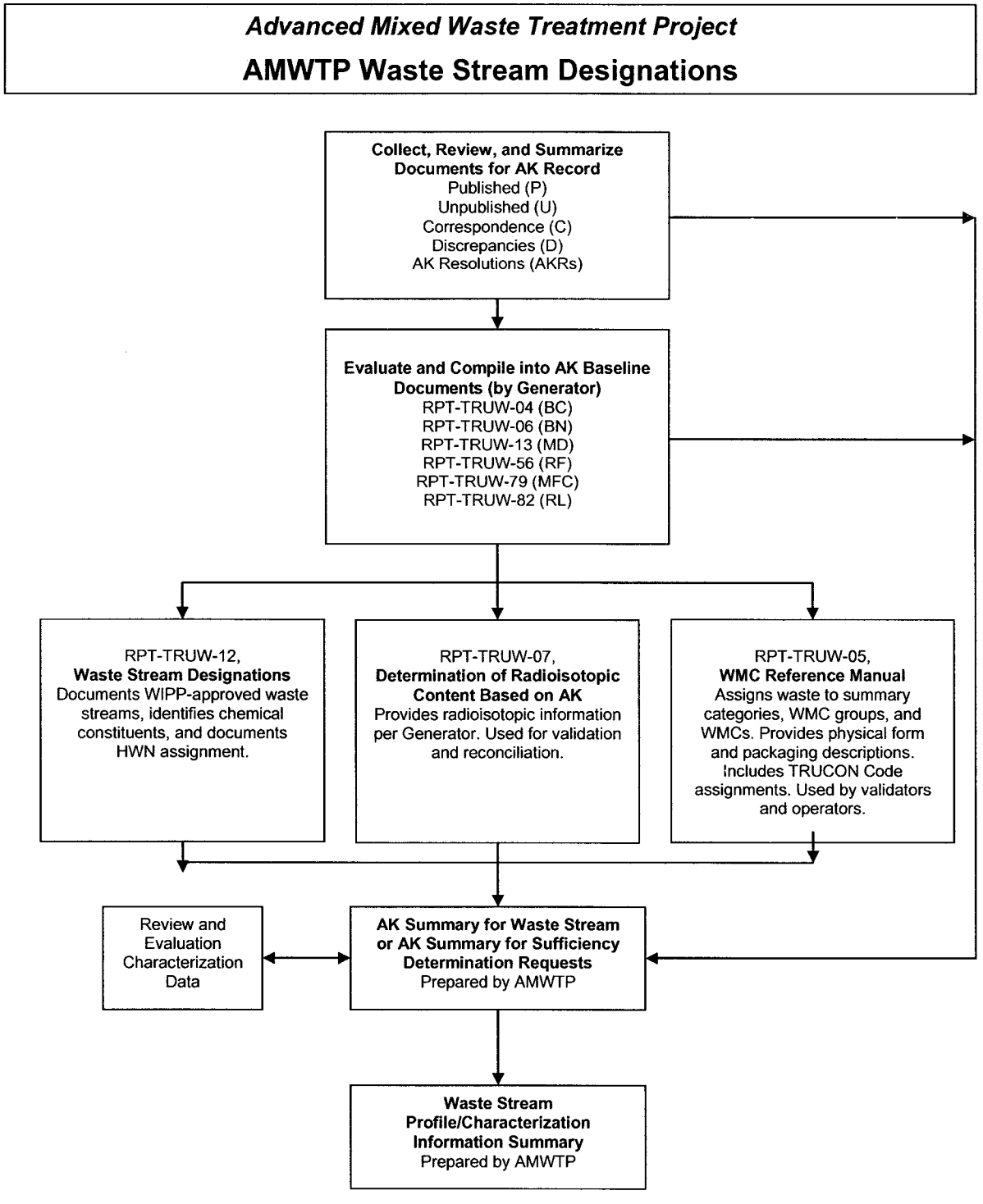

Figure 1. Document hierarchy and information flow for AK.

The following sections of this report address current AMWTP WSPFs. The sections are organized by SCGs with an additional Section 7.0 to present the approach to the AMWTP newly generated waste.

- Section 4.0, AMWTP Retrieved Homogeneous Solid Waste (SCG S3000)
- Section 5.0, AMWTP Retrieved Soil/Gravel Waste (SCG S4000)
- Section 6.0, AMWTP Retrieved Debris Waste (SCG S5000)
- Section 7.0, AMWTP Newly Generated Waste.

Wastes (i.e., IDCs) not addressed in current AMWTP or CCP WIPP-approved WSPFs are evaluated for inclusion into proposed WIPP WSPFs on a case-by-case basis as AK is reviewed, verified, and/or developed. Some wastes currently in storage may not be eligible for WIPP profiling by the AMWTP or CCP at this time, because one or more of the following restrictions apply:

- The waste does not currently have a defense waste determination.
- The waste is categorized as remote handled (RH).
- The waste contains classified materials.
- The waste is LLW/MLLW.
- The AK for the waste is insufficient or has not been summarized.

Appendix A provides available AK and WIPP characterization information about chemical constituents and HWN assignments (i.e., generator, WIPP) for TRU wastes currently stored/treated at the AMWTP. This appendix is based on referenced documents and is used along with other constituent information contained in the AMWTP Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) facility operating record to support safe storage/treatment of TRU waste.

The following sources of information and characterization activities are used to identify applicable hazardous constituents, chemical properties, and/or HWNs assigned to waste IDCs prior to and during WIPP profile development:

1. Waste generator information
2. AK source documents
3. WIPP characterization results (i.e., RTR/VE, headspace gas sampling [HGAS], and solid sampling)
4. Treatment activities (e.g., supercompaction, liquid absorption).

In some cases, due to the conservative nature of the original HWN assignment by the original generator location, or when the waste undergoes AMWTP treatment to remove a characteristic prior to shipment to WIPP, HWNs initially assigned may not be retained. For example, wastes with a D001,

D002, D003, or F003 HWN originally assigned by a generator may not apply to the final waste form being shipped to WIPP due to treatment/removal of characteristic properties prior to shipment. These types of exceptions are documented in AK Discrepancy Reports, Acceptable Knowledge Resolutions (AKRs), and/or AK summaries, as applicable. Justification for not retaining a HWN is documented according to MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.[108] Assignment of the final WIPP HWNs does not take place until the WIPP WSPF is approved by WIPP personnel. WIPP hazardous waste constituents and HWNs are updated within this document after the AMWTP receives WIPP-approval for the submitted WSPF.

LLW/MLLW and newly generated waste destined for disposal at non-WIPP facilities are characterized prior to off-site shipment by the Offsite LLW/MLLW Disposition Project based on the receiving facility's WAC. Although information in this document may support hazardous waste determinations (HWDs) and characterization of LLW/MLLW, the final characterization results for purposes of LLW/MLLW off-site shipments are documented in applicable Offsite LLW/MLLW Disposition Project documents.

HWDs for newly generated secondary TRU waste are performed and maintained by AMWTP Waste Services and incorporated into the AK record prior to profiling. All applicable records are maintained within the AMWTP facility operating record.

2.0 ASSIGNMENT OF SCGs, WMCGs, AND WMCs

The requirement for grouping waste materials generated from a single process or activity and that have common physical form and contain similar hazardous constituents is provided in the WIPP WAP, which is Attachment C to the WIPP Hazardous Waste Facility Permit.[52]

Wastes are delineated prior to WIPP profiling based on AK and placed into one of three broad physical form categories. The three broad physical form categories are referred to as SCGs. The three SCGs are:

1. Homogeneous Solids (S3000)
2. Soils/Gravel (S4000)
3. Debris Wastes (S5000).

If a waste does not contain at least 50% by volume of a SCG the waste is characterized based on the summary category constituting the greatest volume of waste.

2.1 S3000 – Homogeneous Solids

SCG S3000 is composed of waste that is primarily homogeneous solids. Homogeneous solids are defined as solid materials, excluding soil, that do not meet the New Mexico Environment Department criteria for classification as debris (as noted below). The waste within this SCG includes, but is not limited to, inorganic process residues, inorganic sludge, salt waste, and pyrochemical salt waste. Other waste streams are included in this SCG based on the specific waste stream types and final waste form. This SCG is expected to contain toxic metals and spent solvents. This SCG includes wastes that are at least 50% by volume homogeneous solids.

2.2 S4000 – Soils/Gravel

SCG S4000 is defined as waste that is composed primarily of soil and/or gravel. This SCG includes waste streams that are at least 50% by volume soil/gravel. This SCG is expected to contain spent solvents and toxic metals.

2.3 S5000 – Debris Wastes

SCG S5000 is defined as heterogeneous waste that is at least 50% by volume debris. Debris means solid material exceeding a 2.36 inch (60 millimeter) particle size that is intended for disposal and that is:

1. A manufactured object
2. Plant or animal matter
3. Natural geologic material.

Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object, and if it is not a particle of S3000 or S4000 material.

The waste in this SCG includes, but is not limited to glass, rubber, cellulosic, ceramic, wood, paper/rags, graphite, metal, and plastic debris waste. This SCG may contain spent solvents and toxic metals.

2.4 Approach for Assigning IDCs, WMCGs, and WMCs

The overall general approach for assigning IDCs, WMCGs, and WMCs is discussed below.

Each TRU waste stream consists of one or more wastes that are initially identified by a generating facility's IDCs. An AMWTP generator site-specific IDC contains a two digit character alpha prefix, which identifies the generator of the waste and a three digit numerical code. The IDC identifies a specific type of waste generated at a specific facility. Where an IDC was not assigned to waste by the original generator (e.g., pre-71 wastes from RF), the AMWTP assigns an IDC beginning with a two character alpha prefix reflecting the original generating site and a unique three digit numerical code (e.g., RF-741).

The wastes are grouped under a WMCG based on the bulk physical/chemical form that is expected in the SCG (i.e., solidified inorganic, solidified organic, salt waste for S3000[b]; soils for S4000; and lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal for S5000). Examples of WMCGs are depicted in Figure 2.

b. The S3000 SCG is further divided by subgroups that identify general properties of a group of waste (e.g., the S3000 SCG organic subgroup includes solidified organic WMCs and the S3000 inorganic SCG subgroup includes solidified inorganic and salt WMCs).

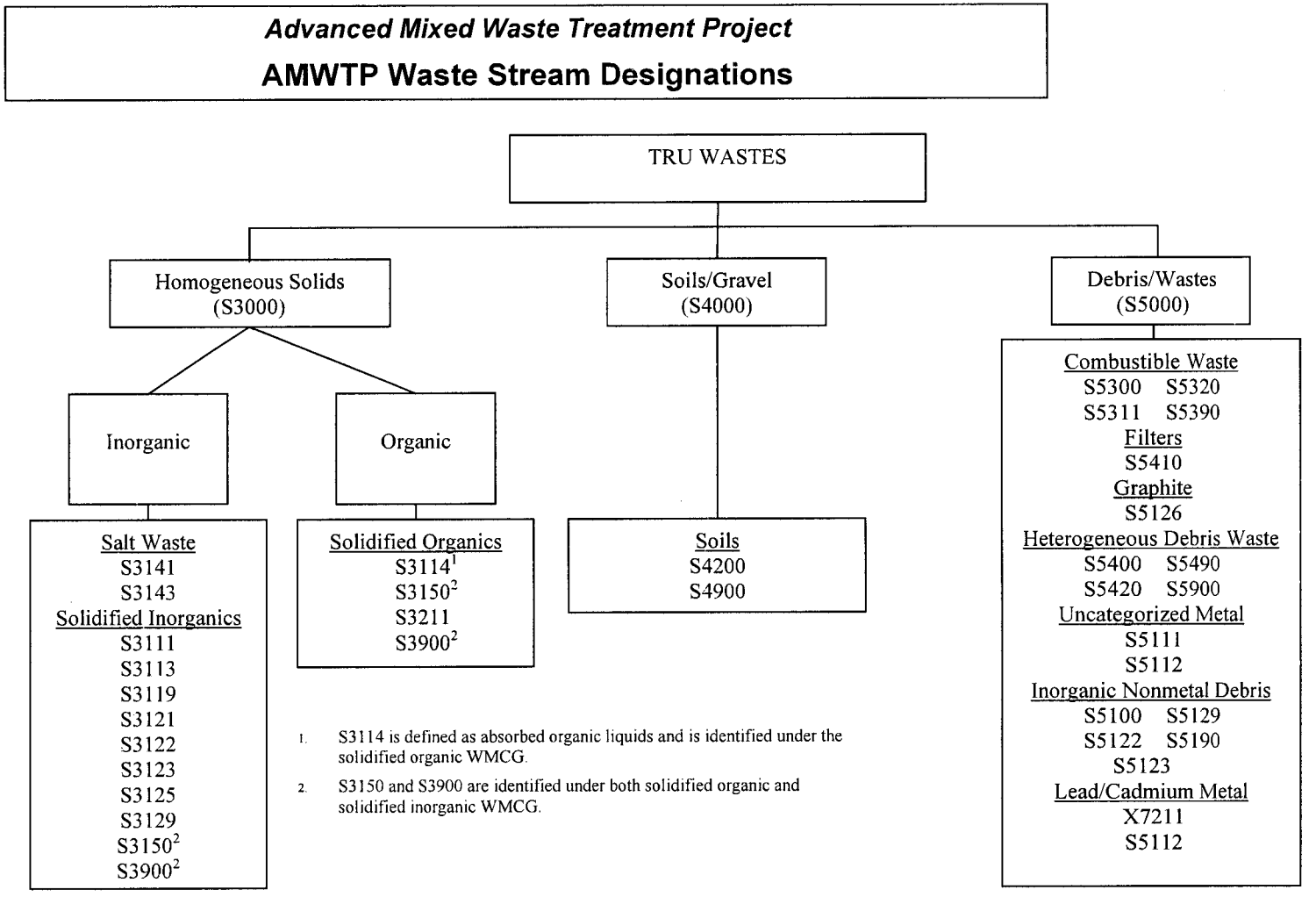

Figure 2. WMC assignment/grouping diagram.

The WIPP Permit requires that the WMC assignment be based on the majority of waste in the waste container. The WMC is used to identify the expected waste matrix (physical form) that makes up the majority of the waste material in each container. WMCs were developed by DOE in response to the Federal Facilities Compliance Act (FFCAct)[54] as a method to aid in categorizing DOE TRU mixed waste streams into a series of five-character alphanumeric codes and descriptors that represent different physical/chemical matrices (e.g., S3121, Homogeneous Solids, Wastewater Treatment Sludge). The first position is a letter that denotes the physical form of the waste (L for liquid, S for solid, etc.). The next position denotes whether the waste is homogeneous, soil, or debris (S3000 is homogeneous solids waste, S4000 is soil/gravel, and S5000 is debris waste), and the last three positions denote more specific categories (e.g., specific type of homogeneous solids [sludge, salt, etc.], soil/gravel, or debris [plastic, light metal, etc.]). The DOE guidance document DOE Waste Treatability Group Guidance aids generating facilities in assigning WMCs to WIPP wastes.[53]

For example, based on the waste description for IDC RF-004, the SCG, WMCG, and WMC can be developed. The IDC RF-004 is described as a solidified inorganic sludge and meets the definition of a homogeneous solid. The waste associated with IDC RF-004 is classified under the Homogeneous Solids (S3000) SCG. The homogeneous solid SCG is split into two subgroups: (1) inorganic, and (2) organic.

The inorganic subgroup (S3100) contains two WMCGs: (1) solidified inorganics (e.g., WMCs S3111, S3113, etc.), and (2) salt wastes (e.g., WMCs S3141 and S3143).

The organic subgroup only contains the solidified organic WMCG (e.g., WMCs S3114, S3150, S3211, etc.).[c]

Based on the above, the waste associated with IDC RF-004 is placed into the inorganic subgroup and further placed within the solidified inorganic WMCG. Waste associated with IDC RF-004 is assigned a WMC of S3150 based on the DOE treatability guide.[53]

Wastes with a WMC of S9000 and/or an IDC of UN-000 or PC-000 are classified as having an undetermined waste form classification and are further classified as "RCRA unknowns" per the AMWTP HWMA/RCRA permit.[15] Containers identified with this WMC and/or IDC are characterized using AK and RTR/VE data and assigned an appropriate WMC and IDC. Until a final WMC and IDC are assigned, the wastes are subjected to special handling and notification requirements as required by the AMWTP HWMA/RCRA permit (see discussion below, Section 3.0).

Waste descriptions and physical form assignments are verified by RTR or VE. RTR and VE are also used to identify the presence of prohibited items/conditions within the waste.

The delineation of waste streams based on assigned SCG, WMCG, and WMC with due consideration of the physical form, process/activity that generated the waste, treatment employed (if applicable), and applicable HWNs allows waste stream management and disposition to be as efficient as possible.

The TRU Program's list of SCGs, WMCGs, WMCs, and IDCs for TRU wastes that have been included in AMWTP WIPP-approved Direct Ship WSPFs or are feed to the supercompacted WSPF are presented in Table 1.

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c. Both S3100 and S3200 alphanumeric designations for WMCs are associated with the solidified organic WMCGs (S3200). This is unique to solidified organic WMCG.

Table 1. AMWTP WMCG and WMC classification for waste included in WIPP-approved WSPFs.

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
S3000 Homogeneous Solids					
S3100 Inorganic Homogeneous Solids					
Solidified Inorganics	S3113	Inorganic Particulate Absorbents	MD	834	High Level Acid
			MD	835	High Level Caustic
	S3121	Wastewater Treatment Sludges	MD	836	High Level Sludge/Cement
			RF	001	First Stage Sludge
			RF	002	Second Stage Sludge
			RF	007	Building 374 Dry Sludge
			RF	741	Pits 11 and 12 First Stage Sludge
			RF	742	Pits 11 and 12 Second Stage Sludge
	S3150	Solidified Homogeneous Solids	RF	004	Special Setups
			RF	744	Pits 11 and 12 Special Setups
			RF	800	First Stage Sludge-Cemented
			RF	802	Solidified Laboratory Waste
			RF	803	Solidified DCP Sludge
			RF	696 / 807b[b(1)]	Cemented Incinerator Sludge (Bldg 771 generated prior to March 21, 1987)
			RF	292	Cemented Sludge
			RF	818	Cemented Incinerator Ash
			RF	820	Cemented Soot
S3200 Organic Homogeneous Solids					
Solidified Organics	S3114[a]	Absorbed Organic Liquids	RF	003[h]	Organic Setups, Oil Solids
	S3150	Solidified Homogeneous Solids	RF	700[i]	OASIS Waste
			RF	801[i]	Solidified Organics
S4000 Soil/Gravel					
No WIPP approved WSPFs					

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
S5000 Debris Waste					
Heterogeneous Debris Waste	S5490	Unknown/Other Heterogeneous Debris	BC	201	Non-combustible Solids
			BC	202	Combustible Solids–Paper/Cloth
			RF	372	Grit
			RF	374[d]	Blacktop, Concrete, And Construction Rubble
			BN	508	AMWTP Newly Generated Debris
			BN	510	Supercompacted Debris
			BN	550	Supercompacted Debris (BN510.1)
			BN	600	AMWTP WMF-676 PCB Contaminated Debris (BN600)
			MD	801	Rags, Paper, Wood, etc.
			MD	802	Dry Box Gloves and O-rings
			MD	803	Metal, Equipment, Pipe, Valves, etc.
			MD	804	Plastic, Tygon, Mani-Boots, etc.
			MD	805	Asbestos Filters
			MD	810	Glass Flasks, Sample Vials, etc.
			MD	813	Glass Filters and Fiberglass
			MD	814	Graphite Waste
			MD	824	Equipment Boxes, Non-combustible
			MD	825	Equipment Drums, Non-combustible
			MD	826	Equipment Boxes, Combustible
			MD	827	Equipment Drums, Combustible
			MD	838	<10 nCi/g Non-combustible
			MD	847	LSA <100 nCi/g Combustible
			MD	848	LSA <100 nCi/g Non-combustible
			RF	950	LSA Metals, Glass, etc.

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
Heterogeneous Debris Waste	S5400	Unknown/Other Heterogeneous Debris	RF	960	Concrete, Asphalt, etc.
			RL	712	Hanford Plutonium Finishing Plant Debris
			RL	714	Hanford Radiochemical Processing Lab 325 Bldg Debris
			RL	716	Hanford 231-Z Building Debris
Filters	S5410	Composite Filters	RF	328	Ful-Flo Incinerator Filters
			RF	335	Absolute 8 × 8 Filters
			RF	338	Insulation and CWS Filter Media
			RF	360	Insulation
			RF	376	Cemented Insulation and Filter Media
			RF	490	HEPA Filters and CWS Filters
			RF	491	Plenum Prefilters
Combustible Waste	S5300	Organic Debris	RF	302	Benelex and Plexiglas
			RF	33A	WETP Bin Program – Combustibles A
			RF	33B	WETP Bin Program – Combustibles B
			RF	330[e]	Paper and Rags – Dry
			RF	336[e]	Paper and Rags – Moist
			RF	337[e]	Plastics, Teflon, Washables, PVC
			RF	464	Benelex and Plexiglas
			RF	831	Dry Combustibles
			RF	832	Wet Combustibles
			RF	833	Plastics, TRU Mixed
	S5311	Leaded Gloves/Aprons	RF	339	Leaded Rubber Gloves and Aprons
			RF	463	Leaded Rubber Gloves and Aprons
	S5320	Wood Debris	RF	970	Wood

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description
Combustible Waste	S5390	Unknown/Other Organic Debris	RF	460	Washables, Rubber, Plastic
			RF	900	LSA Paper, Plastic, etc.
Graphite	S5126	Graphite Debris	RF	300[f]	Graphite Molds
			RF	301[f]	Graphite Cores
			RF	303[f]	Scarfed Graphite Chunks
			RF	310[f]	Graphite Scarfings
			RF	312[f]	Coarse Graphite
Inorganic Nonmetal Debris	S5100[g]	Inorganic Debris	RF	441[g]	Raschig Rings, Unleached
			RF	442[g]	Raschig Rings, Leached
	S5122	Glass debris	RF	440	Glass
			RF	44A	WETP Bin Program – Glass
	S5123	Ceramic/brick debris	RF	371	Fire Brick
			RF	377	Coarse Fire Brick
	S5190	Unknown/Other Inorganic Debris	RF	368	Magnesium Oxide Crucibles
			RF	370	Leco Crucibles
			RF	391	Crucibles and Sand
			RF	392	Sand, Slag, and Crucibles
Lead/Cadmium Metal	S5112	Metal Debris With Lead	RF	488	Glovebox Parts w/Lead
Uncategorized Metal	S5111	Metal Debris without Lead or Cadmium	RF	416	Zinc Magnesium Alloy Metals
	S5112	Unknown/Other Metal Debris	RF	320	Heavy Non-special Source Metal
			RF	321	Lead
			RF	480	Non-special Source Metal
			RF	481	Leached Non-special Source Metal
			RF	48A	WETP Bin Program – Metal

Table 1. (continued).

WMCGs	Waste Matrix Codes	WMC Description	GEN IDC Prefix[c]	IDC	IDC Description

a. S3114 is the WMC for solidified organics. WMC assigned is dependent upon the ratio of organics and inorganic absorbent. The waste would be assigned to S3200 if organic component is >50%.

b. The INL 3,100 m^3 Project assigned IDC RF-696 to IDC RF-807b waste to eliminate some of the confusion that resulted from one IDC being associated with two different waste streams. IDC RF-807a continues to be IDC RF-807.

c. Generator sites/areas are identified in this table as follows: BC = Battelle Columbus, BN = AMWTP, RF = Rocky Flats Plant, BL = Bettis Laboratories, MD = Mound Laboratories and RL= Hanford.

d. IDC RF-374, Blacktop, Concrete, And Construction Rubble, has two WMCs (for IDC RF-374 and RF-374a/697). IDC determination is based on the majority of waste in the containers:
>50% vol. dirt or gravel is WMC S4200 (which is assigned IDC RF-697 versus RF-374a to differentiate in the database)
>50% vol. debris (IDC RF-374 - concrete, blacktop, metal, combustibles, plastics, gloves, etc.) is WMC S5490.

e. Part of CCP profile ID-RF-S5300A, RFETS Combustibles and Plastics Stored at INL.[50]

f. Part of CCP profile ID-RF-S5126, TRU Mixed Graphite Debris.[49]

g. Part of CCP profile ID-RF-S5100, Rocky Flats Raschig Rings Stored at the INL.[48]

h. Part of CCP profile ID-RF-S3114, Organic Setups.[46]

i. Part of CCP profile ID-RF-S3150A, Organic and Sludge Immobilization System Waste.[47]

3.0 AMWTP WASTE STREAMS

Determining the appropriate waste stream SCG, WMCG, WMC, IDC, and HWNs is based on AK. AK is the initial characterization method used at the AMWTP. AK is used to describe and define the waste stream and to initially characterize wastes by IDC. Initially, the AMWTP classifies each IDC, rather than individual containers, and assigns SCGs, WMCGs, and WMCs based on guidance established in the DOE Waste Treatability Group Guidance document and the WIPP-WAP.[52, 53]

AMWTP waste streams are developed based on the physical form of the waste, waste generation process or activity, and hazardous constituents. AMWTP WIPP-approved waste streams and associated waste stream numbers for TRU waste streams are presented in Sections 4.0, 6.0, and 7.0. One or more IDCs may be grouped into a waste stream.

AMWTP waste streams are developed in the following general manner:

1. AK is gathered, and a thorough review of documentation is conducted to determine SCG, WMCG, WMC, and, where applicable, initial HWNs and/or hazardous constituents (see Section 2.0).

2. Wastes are assigned an applicable SCG, WMCG, WMC, and IDC (see RPT-TRUW-05, Waste Matrix Code Reference Manual).[109]

3. Wastes to be profiled together are verified: to have been generated from a single process or activity, to have common physical form, and to contain similar hazardous constituents.

4. RTR or VE and radioassay data are collected to estimate the waste material paramaters

5. Wastes are further characterized using HGAS or solid sampling to obtain analytical data as necessary per applicable requirements.

6. Wastes are verified for compliance with compatibility requirements.

7. Wastes are packaged in compliance with applicable regulations.

8. Wastes are verified to meet facility-specific WIPP-WAC and WIPP-WAP requirements.

Once a waste stream assignment of TRU waste is complete, the IDC(s), SCG, WMCG, and HWNs are documented within the AMWTP or CPP AK summary and associated WSP package and submitted to WIPP for approval.

Wastes profiled by the AMWTP are assigned a BN prefix to the WSP number. For example, the AMWTP waste stream containing special setups (IDCs RF-004 and RF-802) is numbered BN004 and the AMWTP waste stream containing leaded rubber gloves (IDCs RF-339 and RF-463) is numbered BN252. For waste streams that were previously characterized by the INL, the waste stream number is BN plus the previous WSPF number (e.g., BNINW216) [d].

Polychlorinated biphenyls (PCBs) identified during collection and compilation of AK are potential contaminants for some BN, IW, RF and BC wastes generated or stored at the INL. There is evidence that some IDCs have PCBs due to treatment of oils containing PCBs or because the waste contains PCB oil filled equipment.

Any retrieved waste container associated with an IDC may contain a PCB electrical item such as a light ballast or contain oil filled electrical equipment. IDCs are evaluated to determine whether the entire waste stream requires classification as PCB or whether a case-by-case evaluation is appropriate.

The following TRU IDCs managed at the AMWTP are classified in their entirety as being PCB: BC-203, RF-003, BN-501, BN-511, BN-520, BN-523, IC-526, IW-526, BN-526, BN-528, BN-536, BN-BN-597, BN-598, BN-600, IC-603, IW-603, BN-604, BN-605, BN-616, RF-743, and RF-746.

Containers within the following IDCs may be PCB contaminated and will require an AMWTP case-by-case evaluation: IW-176, IW-177, IW-178, IW-179, SD-704, SD-705, SD-706, RF-998, and RF-999.[e]

If any other IDC is found to contain a small electrical item (such as fluorescent light ballasts) or other potential PCB item/material, the item and the associated container also undergo evaluation on a case-by case basis for Toxic Substances Control Act (TSCA) applicability. For example, one container of IDC RF-480 (Non-special Source Metal) was found to contain large oil filled PCB capacitors. The waste in this container is classified as PCB; however, the IDC RF-480 remains non-PCB.

Undefined wastes are designated UN-00A (undefined homogeneous solids), UN-00B (undefined debris), UN-00C (undefined soil), or UN-00D (undefined liquid). These types of IDCs have known physical forms, but determination of the generator and/or historical information is required. They are temporary IDCs until the final determination is made.

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d. Wastes profiled by CCP are assigned unique WSPF numbers in accordance with CCP procedures.

e. MLLW with the potential to be PCB regulated are identified in RPT-TRUW-05.

Unknown wastes are designated as IDCs UN-000 or PC-000.

Undefined and unknown IDCs are also evaluated for PCBs on a case-by-case basis. When intact PCB items are found they are typically removed and managed as PCB waste. Where removal is not achievable, or in the case of a breached PCB item, the container is managed as PCB waste.

AMWTP newly generated waste may be designated as PCB waste. Newly generated TRU IDCs are developed by TRU programs. The assignment of a PCB IDC to containers of newly generated secondary waste is performed by the AMWTP Waste Services Group and after interaction with operations and TRU program personnel. PCB determinations for newly generated waste are performed on a case-by-case basis.

Unless tested to verify the actual concentration of PCBs within known or suspected PCB waste streams, the AMWTP handles the known or suspected TRU PCB waste streams as being greater than 500 parts per million (ppm). This requirement is specified with the WIPP PCB disposal authorization and 40 Code of Federal Regulations (CFR) 761.50(a)(5), Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, Subpart D-Storage and Disposal, Applicability and 40 CFR 761.50. Drums that contain regulated PCB waste are managed and shipped in accordance with applicable regulatory requirements, the WIPP WAC,[12] and the WIPP PCB disposal authorization. The following information provides the overall AMWTP approach to PCB classification:

1. IDC RF-003 (Organic Setups, Oil Solids): Waste known to contain PCBs. Unless tested to verify actual concentration, IDC RF-003 is considered to have greater than 500 ppm PCB contamination.

2. Battelle Columbus Laboratories (BC): Based on AK, IDC BC-203 contains waste oils drained from various equipment pieces that are a potential source of PCBs of unknown concentrations. These waste oils were absorbed in Oil-Dri in one-gallon paint cans. An estimated 20 cans were placed in IDC BC-203 waste containers. Due to the limited number of drums in this IDC, the IDC is classified as PCB. No other BC IDCs have been identified by AK as having the potential for PCB contamination. Unless tested to verify actual PCB concentration, IDC BC-203 is considered to have greater than 500 ppm PCB contamination.

3. IDC RF-480 (Non-special Source Metal): AK records indicate that one or more containers contain PCB-contaminated equipment. PCB-containing items such as capacitors/ballast have been found in boxed waste of IDC RF-480. The overall number of PCB-items found to date is extremely small in relation to the overall volume of waste within IDC RF-480 and as a result IDC RF-480 is only considered a PCB waste stream on a case-by-case container basis.[59]

4. IDCs UN-000, UN-00A, UN-00B, UN-00C, and UN-00D: IDCs identified with a UN designator will be evaluated for PCB potential through the normal processes of RTR/VE, AK evaluation, and applicable IDC assignment. Through these actions and applicable IDC assignment the AMWTP will determine the presence or absence of PCBs for waste management purposes. In the case of organic sludge wastes, sampling and analysis may be required to make a final determination of PCB content.

5. AMWTP Newly Generated IDCs: AMWTP newly generated waste may be designated as PCB contaminated if it is equal to or greater than 50 ppm. Current IDCs identified as PCB waste include: BN-501 (AMWTP PCB Soil), BN-511 (PCB Organic Homogeneous Solids), BN-520

(TRU PCB Secondary Debris Generated from Offsite Waste), BN-523 (Pad 1 Cells 1 and 2 PCB Debris), BN-526 (Lab PCB Debris Waste (not P/U-listed), BN-528 (TRU PCB Liquids Generated During Retrieval), BN-536 (TRU Empty Containers with PCBs), BN-597 (P/U-listed Lab PCB Debris Waste), BN-598 (P/U-listed Lab PCB Homogeneous Solids Waste), BN-600 (WMF-676 PCB Contaminated Debris), BN-604 (TSCA/PCB Debris), and BN-605 (Absorbed Liquids TSCA/PCB).

6. Additional newly generated PCB-regulated IDCs associated with retrieved waste may be identified by TRU programs and provided to Waste Services on a case-by-case basis. Further discussions relating to newly generated waste can be found in Section 7.0.

7. IDCs RF-743 (Pits 11 & 12 Organic Setups) and RF-746 (Pits 11 & 12 Pad 903 Oil Drums): This waste was generated at Rocky Flats prior to 1972 and was retrieved from Pits 11 and 12, and is comprised of waste that was originally generated from the response to leaking drums stored on the RF Pad 903. These IDCs are currently managed as PCB regulated.

8. IDCs SD-704 (SDA Homogeneous Solids), SD-705 (SDA Heterogeneous Debris), and SD-706 (SDA Soil): SD-704 and SD-706 generated by the Accelerated Retrieval Project (ARP) that may be managed at the AMWTP for coring, headspace sampling, or assay. Some containers may contain PCBs and will require a CCP evaluation on a case-by-case basis.

9. IW-176 (RWMC Homogeneous Solids), IW-177 (RWMC Heterogeneous Debris), IW-178 (RWMC Soil), IW-179 (Early Waste Retrieval Bins), RF-998 (Pits 11 & 12 Cargos and Bins [without Roaster Oxide]), and RF-999 (Pits 11 & 12 Cargos and Bins with Roaster Oxide): These waste IDCs are from a variety of sources. Some of the containers within these IDCs may contain PCBs and will require an AMWTP case-by-case evaluation to determine the final PCB status prior to treatment and/or off-site management.

10. Laboratory waste [e.g., IC-526/IW-526/BN-526/BN-597, (Laboratory PCB Debris Waste) and BN-603/BN-598 (Laboratory Homogenous Solids Waste)] may be PCB contaminated. The laboratory provides analytical support to the AMWTP. Containers within these IDCs are classified as PCB.

11. Offsite/non-AMWTP (e.g., , SL-224, RL-720, etc.) PCB wastes are evaluated through their applicable offsite/non-AMWTP profile and supporting PK/AK documents for RCRA/TSCA applicability prior to receipt at the AMWTP.

Offsite (e.g., Hanford, etc.) and non-AMWTP (e.g., Idaho Nuclear Technology and Engineering Center, etc.) waste may be processed either as supercompaction feedstock (i.e., if non-PCB) or may be shipped directly to WIPP as direct-ship profiles. RCRA hazardous waste determinations/constituents (i.e., 40 CFR 262.11) and other applicable records (off-site waste profiles, process knowledge documentation) associated with Offsite/non-AMWTP waste are maintained by the AMWTP off-site waste coordinator and in the AMWTP facility operating record.

Hazardous waste determinations and initial characterization for newly generated AMWTP wastes are documented in accordance with MP-WM&M-13.9, Waste Characterization and Waste Services Management.[63] Newly generated waste containers undergo non-destructive assay (NDA) to determine if the waste is a TRU WIPP-candidate or a LLW/MLLW candidate waste. Containers of newly generated

TRU waste are assigned an applicable IDC, placed into an appropriate waste stream prior to WIPP profiling, and are subjected to sampling and analyses as required by the WIPP WAP. [f] An in-depth discussion of newly generated waste is provided in Section 7.0.

Applicable HWNs and/or hazardous waste constituents are identified for each TRU IDC using AK prior to WIPP profiling. The HWNs and chemical constituents initially associated with the TRU IDCs in this report were obtained from one or more of the following:

1. Engineering Design File (EDF)-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste[19]
2. Offsite generator documents prior to acceptance at the AMWTP (e.g., AMWTP offsite WSPFs)
3. AK documents received directly from the generator
4. AMWTP operating records.

HWNs are evaluated and assigned through an initial AK evaluation. This information is augmented by RTR/VE, HGAS, or solid sampling and analysis. Radioassay is also conducted on the waste prior to management and subsequent shipment. Radioassay results are presented in RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge.[110]

Generator-assigned characteristic HWNs (e.g., F003, D001, D002) may differ from the final HWNs assigned in WIPP profiles. The removal of generator-assigned HWNs associated with ignitable and corrosive properties may be due to treatment for the characteristic property (e.g., absorption, compacting) and/or repackaging (e.g., removal of prohibited items) prior to shipment.

4.0 AMWTP RETRIEVED HOMOGENEOUS SOLID WASTE

4.1 AMWTP S3000 Wastes

Homogeneous solid wastes that have been profiled by AMWTP and approved by WIPP are presented in Table 2 under the subheading, *The following are AMWTP's WIPP-approved homogeneous solid WSPFs*. The table also includes WIPP-approved WSPFs submitted by CCP on AMWTP's behalf. The associated AMWTP-authorized CCP profiles that have been approved by WIPP are presented in Table 2 under the subheading, *The following are AMWTP-authorized CCP homogeneous solid WSPFs.*

Characterization of WIPP-eligible homogeneous solid waste is comprised of AK information and augmentation of AK as applicable (e.g., characterization through intrusive sampling and analysis, RTR/VE, and radioassay). Homogeneous solid samples are collected to augment HWNs as assigned by AK for all TRU S3000 wastes to be disposed of at WIPP. All sampling activities are performed in accordance with approved methods (i.e., coring or other U.S. Environmental Protection Agency [EPA] approved sampling methods and WIPP Permit requirements).

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f. Containers of waste that are determined to be non-TRU waste are managed by the Offsite LLW/MLLW Disposition Project. The MLLW Disposition Project performs final characterization and profile development based on the applicable offsite facility requirements.

CCP has profiled waste at the direction of AMWTP. AMWTP-authorized CCP WSPs (e.g., ID-RF-S3114 and ID-RF-S3150) and the CCP AK summary (i.e., CCP-AK-INL-005, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory, Waste Streams: ID-RF-S3114 and ID-RF-S3150-A) were developed for direct-shipment to WIPP. The AMWTP-authorized CCP WSPs include RF organic sludge waste from the Grease Plant (IDC RF-003) and from the Organic and Sludge Immobilization System (OASIS) (IDCs RF-700 and 801).[46, 47, 112] These WSPF and AK summaries include the assignment of applicable SCG, WMC, WMCG, and HWNs and are based on CCP AK procedures. Copies of the CCP documents are located in the AMWTPs Electronic Document Management System (EDMS).

Table 2. Homogeneous solids waste streams (S3000).

BN WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
The following are AMWTP's WIPP-approved homogeneous solid WSPFs					
BNINW216[57]	First/Second Stage Sludge	001	First Stage Sludge	RF	S3121
		002	Second Stage Sludge	RF	S3121
		741	Pits 11 and 12 First Stage Sludge	RF	S3121
		742	Pits 11 and 12 Second Stage Sludge	RF	S3121
		800	First Stage Sludge-Cemented	RF	S3150
BNINW218[58]	Building 374 Sludge (approved)	007	Building 374 Dry Sludge	RF	S3121
		803	Solidified DCP Sludge	RF	S3150
		807a	Bypass Sludge (after 3/21/87)	RF	S3121
BN004[45]	Special Setups	004	Special Setups	RF	S3150
		744	Pits 11 and 12 Special Setups	RF	S3150
		802	Solidified Laboratory Waste	RF	—
BN835 (approved)[36]	Solidified Acid/Caustic	834	High Level Acid	MD	S3113
		835	High Level Caustic	MD	—
BN836[56]	Cemented Sludge	836	High Level Sludge/Cement	MD	S3121
BN222[95]	Solidified Plutonium Recovery Incinerator Waste	292	Cemented Sludge	RF	S3150
		696/ 807b	Cemented Incinerator Sludge (Bldg 771 generated prior to March 21, 1987)	RF	—
		818	Cemented Incinerator Ash	RF	—
		820	Cemented Soot	RF	—
The following are AMWTP-authorized CCP homogeneous solid WSPFs					

AMWTP Waste Stream Designations

BN WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
ID-RF-S3114 (by CCP)[46]	Organic Setups	003	Organic Setups, Oil Solids	RF	S3114
ID-RF-3150A (by CCP)[47]	Organic and Sludge Immobilization System Waste	700	OASIS Waste	RF	S3150
		801	Solidified Organics	RF	—

5.0 AMWTP RETRIEVED SOIL/GRAVEL WASTE

Containers primarily consisting of soil/gravel waste that are not TRU waste are ineligible for disposal at WIPP and will be segregated from the TRU soil/gravel waste and managed in accordance with applicable program requirements (e.g., Offsite LLW/MLLW Disposition Project requirements).

Soil/gravel waste is either retrieved waste or newly generated waste. Soil/gravel generated by removal of the soil berm and/or overburden soils is newly generated waste. Newly generated primary and secondary TRU waste are assigned HWNs through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs. TRU soil/gravel to be disposed of at WIPP will be characterized by the TRU Programs and sampled in accordance with WIPP WAP requirements. Newly generated S4000 waste is addressed in Section 7.0.

Soil/gravel waste determined to be TRU waste and eligible for disposal at WIPP are managed by the TRU Program and will be shipped to WIPP upon WIPP-approval of the applicable WSPF. Currently, there are no WIPP-approved WSPFs for AMWTP soil/gravel waste.

Characterization of WIPP-eligible TRU contaminated soil/gravel waste is the same as that for WIPP-eligible TRU contaminated homogeneous solid waste. Characterization is comprised of AK information and augmentation of AK (e.g., characterization through intrusive sampling and analysis or RTR/VE) as applicable. Soil/gravel samples are collected to augment HWNs as assigned by AK for all TRU S4000 wastes to be disposed of at WIPP. All sampling activities are in accordance with approved methods (i.e., coring or other EPA approved sampling methods and WIPP Permit requirements).

6.0 AMWTP RETRIEVED DEBRIS WASTE

6.1 AMWTP S5000 Wastes

Retrieved (i.e., not AMWTP newly generated waste) debris wastes profiled by AMWTP and approved by WIPP are presented in Table 3 under the subheading; *The following are AMWTP's WIPP-approved direct shipped heterogeneous debris WSPFs.* The table also includes WIPP-approved WSPFs submitted by CCP on AMWTP's behalf. The associated AMWTP-authorized CCP WIPP-approved profiles that are presented in Table 3 under the subheading; *The following are AMWTP-authorized CCP WIPP-approved heterogeneous debris WSPFs.*

With the exception of CCP WSPFs developed at the direction of AMWTP, debris waste streams identified in Table 3 were developed and characterized individually by the AMWTP using AMWTP procedures for direct-shipment to WIPP. CCP WSPFs arebased on CCP AK procedures.

Waste stream profiles ID-RF-S5126, ID-RF-S5100-A, and ID-RF-S5300-A and associated AK summaries (CCP-AK-INL-002, Central Characterization Project Acceptable Knowledge Summary Report for the Idaho National Laboratory Rocky Flats Transuranic Graphite Debris Waste Stream: ID-RF-S5126; CCP-AK-INL-006, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Raschig Rings Stored at the Idaho National Laboratory, Waste Stream: ID-RF-S5100-A; and CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory, Waste Stream ID-RF-S5300-A) were written by the CCP at AMWTP's direction and include the following IDCs: RF-300, 301, 303, 310,

and 312 (Graphite), RF-441 and 442 (Raschig Rings), and RF-330, 336, and 337 (Combustibles and Plastics), respectively.[48, 49, 50, 64, 113, 114]

Table 3. Retrieved debris waste streams (S5000).

WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
The following are AMWTP's WIPP-approved direct shipped heterogeneous debris WSPFs					
BN161[44]	Firebrick Debris	371	Fire Brick	RF	S5123
		377	Coarse Fire Brick	RF	
BN211[38]	Filter Debris Waste	328	Ful-Flo Incinerator Filters	RF	S5410
		335	Absolute 8 × 8 Filters	RF	
		338	Insulation and CWS Filter Media	RF	
		360	Insulation	RF	
		376	Cemented Insulation and Filter Media	RF	
		490	HEPA Filters and CWS Filters	RF	
BN243[40]	Glass	440	Glass	RF	S5122
BN252[41]	Leaded Rubber	339	Leaded Rubber Gloves and Aprons	RF	S5311
		463	Leaded Rubber Gloves and Aprons	RF	
BN296[39]	Non-Special Source Metal	320	Heavy Non-special Source Metal	RF	S5112
		321	Lead	RF	
		480	Non-special Source Metal	RF	
		481	Leached Non-special Source Metal	RF	
BN304[42]	Mound Debris	801	Rags, Paper, Wood, etc.	MD	S5490
		802	Dry Box Gloves and O-Rings	MD	
		803	Metal, Equipment, Pipe, Valves, etc.	MD	
		804	Plastic, Tygon, Mani-Boots, etc.	MD	
		805	Asbestos Filters	MD	
		810	Glass, Flasks, Sample Vials, etc.	MD	
		813	Glass Filters and Fiberglass	MD	
		814	Graphite Waste	MD	
		825	Equipment Drums, Non-combustible	MD	

Table 3. (continued).

WS#	Waste Stream Description	IDC	IDC Description	Gen IDC Prefix	WMC
BN304[42]	Mound Debris	827	Equipment Drums, Combustible	MD	
		848	LSA <100 nCi/g Non-combustible	MD	
The following are AMWTP-authorized CCP WIPP-approved direct shipped heterogeneous debris WSPFs					
ID-RF-S5126 (by CCP)[49]	TRU Mixed Graphite Debris	300	Graphite Molds	RF	S5126
		301	Graphite Cores	RF	
		303	Scarfed Graphite Chunks	RF	
		310	Graphite Scarfings	RF	
		312	Coarse Graphite	RF	
ID-RF-S5100-A (by CCP)[48]	Rocky Flats Raschig Rings Stored at the INL	441	Raschig Rings, Unleached	RF	S5100
		442	Raschig Rings, Leached	RF	
ID-RF-S5300-A (by CCP)[50]	RFETS Combustibles and Plastics Stored at INL	330	Paper and Rags-Dry	RF	S5300
		336	Paper and Rags-Moist	RF	
		337	Plastics, Teflon, Washables, PVC	RF	

7.0 AMWTP NEWLY GENERATED WASTE

The IDCs identified by the generator acronym "BN" represent newly generated AMWTP wastes. The term newly generated waste (including newly generated secondary waste) as outlined in this document is for WIPP designation only. See the HWMA/RCRA permit for the definition of newly generated waste for purposes of compliance with the HWMA/RCRA.

Newly generated waste can either be newly generated primary wastes or newly generated secondary waste.[55]

Newly generated primary waste includes retrieved legacy waste within an intact original container where historical information is inadequate and whose contents can only be verified by RTR/VE at the SCG level and newly generated loose/uncontainerized legacy waste (e.g., RF, MD, BC, etc).

Newly generated secondary waste includes wastes that are generated during waste management activities associated with the parent waste streams, and wastes generated from maintenance operations, characterization activities, and/or treatment activities (e.g., supercompaction squeezants).

Newly generated primary and secondary TRU waste have HWNs assigned through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs (i.e., Form-1086, AMWTP Waste Characterization Checklist).

AMWTP Waste Services assigns HWNs and develops AMWTP HWDs (i.e., Form-1086) for LLW/MLLW (i.e., personal protective equipment [PPE], filters, soil, swipes, squeezants, maintenance waste).

The assignment of IDCs to newly generated secondary waste is based on the as generated waste form with consideration given to the generating process, hazardous constituents (or PCB status), and applicable Waste Services and AK information generated.

Currently there are no WIPP-approved WSPFs for newly generated S3000/S4000 wastes.

Newly generated primary and secondary waste associated with legacy waste sources will, at a minimum, carry the EPA HWNs that were assigned to the source and/or parent container(s) unless a case-by-case justification is noted in the AK and/or Facility Operating Record (as applicable).

Final hazardous/radioactive waste determinations are determined for all non-WIPP wastes prior to offsite shipment under the Offsite LLW/MLLW Disposition Project. LLW/MLLW determinations are compared to facility-specific WAC prior to shipment to ensure compliance with the facility/unit-specific WAC.

7.1 AMWTP Debris Waste

The list of authorized supercompactor feedstock debris IDCs is presented in RPTs-TRUW-30 and TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510 and BN510.1, respectively).[94] The BN510 waste stream is utilized for shipment of BN-510 inventory and can no longer accept feedstock debris for supercompaction. Feedstock debris can only be supercompacted for creating BN-550 inventory for waste stream BN510.1. The WIPP-approved supercompacted debris waste WSPF consists of multiple feedstock TRU debris wastes that were designated for the same treatment process based on AK, HWNs, physical form, compatibility, and amenability to the treatment. RTR/VE and applicable HGAS and analysis are used to augment AK information for supercompacted TRU waste. CBFO approval must be obtained prior to supercompacting any container with an IDC that is not currently listed in Appendix A of RPT-TRUW-83. The IDC must also be included in Appendix A of RPT-TRUW-83 prior to supercompaction.[94]

The WMC assigned to the WIPP-approved supercompacted waste stream is S5490, Unknown/Other Heterogeneous Debris (see RPT-TRUW-30,and RPT-TRUW-83). The WMC number S5490 is defined as follows:

> *This unknown/other-detailed category includes waste that is consistent with the definition for the Heterogeneous Debris (S5400) summary category, but is insufficiently characterized to enable more definitive assignment into any of the S5410, S5420, S5450, or S5460 specific-detailed categories and does not meet the criteria for assignment into any of the S5410, S5420, S5440, S5450, or S5460 specific-detailed categories.*

Table 4. Table 4 identifies the AMWTP WIPP-Approved Newly Generated S5000 WSPF.

WSP	IDC	Waste Stream and IDC Description	Gen IDC Prefix	WMC
BN510	510	Supercompacted Debris	BN	S5490
BN510.1	550	Supercompacted Debris	BN	S5490
BN600	600	AMWTP WMF-676 PCB Contaminated Debris(BN600)	BN	S5490

Process flow diagrams of newly generated waste to the supercompactor are illustrated in RPT-TRUW-06. [55]

8.0 SUMMARY

All TRU waste managed by the AMWTP will be assigned an IDC, SCG, WMCG, WMC, and be identified within a WIPP-approved WSPF prior to shipment to WIPP.

Waste that is designated for shipment to WIPP is grouped into waste streams based on generation process or activity, material, physical form, and hazardous constituents. The AMWTP groups TRU homogeneous solid, soil/gravel, and debris wastes into distinct waste streams, as applicable. If waste previously identified within a distinct waste stream is determined to be outside that waste stream's parameters approved by WIPP, the waste will be evaluated and if appropriate a new WSPF will be developed and submitted to WIPP for approval.

HWN assignments and PCB status for retrieved TRU waste streams are initially based on preliminary AK information. These HWN/PCB assignments are based on a review of all applicable AK (including prior HWNs/PCB assignments by the generator). The final list of HWNs and PCB status assigned to a WIPP waste stream are based on the final AK determinations and are further augmented by subsequent applicable characterization data (e.g., RTR/VE, HGAS, or solid sampling results).

AMWTP generated TRU waste will be dispositioned as newly generated waste within an existing WSPF or within a new WSPF, as applicable. Newly generated TRU waste will be characterized using established AMWTP techniques (as noted below) and based on WIPP RCRA permit requirements for the applicable SCG.

HWN assignments and PCB status for newly generated TRU waste streams are initially assigned through collaboration between Waste Services and TRU programs. HWNs determined through collaboration activities are documented by Waste Services in AMWTP HWDs.

The final WIPP HWNs and WIPP PCB status associated with newly generated waste are assigned based on a review of all applicable AK (including prior HWNs assigned by Waste Services/Offsite Waste Coordinator) and augmented by applicable characterization data (e.g., RTR/VE, HGAS, and/or solid sampling results) prior to WIPP profiling.

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106. RPT-670, CH2M-WG Idaho Process Knowledge Summary Report for CH TRU Waste and Mixed Low-Level Waste Generated at INTEC and RWMC Analytical Laboratories in Support of AMWTP Sampling Activities [P891A]

107. RPT-LLW-12, Characterization Approach for Offsite LLW/MLLW Disposition Project Waste Streams

108. MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

109. RPT-TRUW-05, Waste Matrix Code Reference Manual

110. RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge

111. TREE-1286, Initial Drum Retrieval Final Report, K. B. McKinley and J. D. McKinney, Idaho National Engineering Laboratory [P652S]

112. CCP-AK-INL-005, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory, Waste Streams: ID-RF-S3114 and ID-RF-S3150-A, Revision 1, January 4, 2006 [P634A]

113. CCP-AK-INL-006, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Raschig Rings Stored at the Idaho National Laboratory, Waste Stream: ID-RF-S5100-A, Revision 1, October 20, 2005 [P635A]

114. CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory, Waste Stream ID-RF-S5300-A, Revision 1, October 6, 2005 [P633A]

115. RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

116. Waste Stream Profile Package, BN510.1 Supercompacted Debris Waste. [P1030A]

117. CCP-PK-RL-101, Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream MPFPDD, Rev. 2, June 4, 2010 [P853A]

118. CCP-PK-RL-102, Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM325D.001, Rev. 2, June 4, 2010 [P854A]

119. CCP-PK-RL-103, Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z building Contact Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream RLM231ZD.001, Rev. 2, June 4 2010 [P855A]

120. SR-W026-221F-HOM, AMWTP Form 1900, December 1, 2010 [P1134A]

121. CCP-AK-SRS-3, Central Characgerization Project Acceptable Knowledge Summary Report for Savannah River Site, Waste streams SR-W026-221F, Rev. 9, April 26, 2010 [P1135A]

122. AMWTP Waste Services Letter to File RE: Absorbed Supercompactor Squeezants (IDCs BN-507 and BN-514), HWN 061604-01, January 31, 2011. [C953A]

123. AMWTP Waste Services Letter to File RE: HWD 040811-01, WMF-676 PCB Contaminated Debris (BN-600), [C1018A]

124. Response to Request for Additional Information on Environmental Protection Agency (EPA) Hazardous Waste "P" and "U" Codes relative to B374 Operations, August 29, 2001.[C948S]

125. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S5-001, INTEC Waste Drum INTC050203, January 9, 2008. [P1260A]

126. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S3-001, INTEC Waste Drum INTC0500032, January 21, 2008. [P1261A]

127. Interoffice memorandum, Summary of Retrieval Acceptable Knowledge for Pad R, Cell 1 Waste, CKA-OOI-09, May 21, 2009. [C618A]

128. AMWTP Form-1687 Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids (LA-002). [P769A]

129. AMWTP Form-1687 Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids (LA-003). [P770A]

130. AMWTP Form-1900, AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-55 Mixed Tranuranic Waste, LA-MIN04-S.001 (IDC LA-005). [P1224A]

131. AMWTP Form-1900, DOE CH-TRU Waste Profile for LANL-CIN01.001, Los Alamos National Laboratory Solidified Inorganics (LA-006). [P1145A]

132. AMWTP Form-1900, DOE CH-TRU Waste Profile for nuclear Fuel Services Contact-Handld Transuranic Waste Soil Stored at Oak Ridge national Laboratory (OR-250). [P772A]

133. AMWTP Form-1687 NON-AMWTP Generator Waste Profile for Hanford PFP Absorbed Plutonium Nitrate Solutions RLPUNIT (RL-715).[P774A]

134. AMWTP Form-1587 NON-AMWTP Generator Waste Profile for Hanford Grouted KE Basin North Loadout Pit Sludge (RL-720). [P776A]

135. AMWTP Form-1900 DOE CH-TRU WASTE PROFILE For Mound Plant Solidified Acid/Caustic Waste Stored at the Savannah River Site (SR-835). [P778A]

136. AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-AGNS-HOM, Barnwell Solidified Inorganic Waste stored at Savannah River Site (IDC SR-251). [P1152A]

137. AMWTP Form-1900, DOE CH-TRU Waste Profile for Savannah River Site, Building 221F, Absorbed Waste (IDC SR-252). [P1134S]

138. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-HOM-C, Mound Site Inorganic Particulates Stored at Savannah River Site (SR-253). [P1153A]

139. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SA-T001-S5400, Lovelace Respiratory Research Institute Heterogeneous Debris Stored at Sandia National Laboratories (SL-223) [P1146A]

140. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-HFC-S5400, Sandia National Laboratories Hot Cell Facility Heterogeneous Debris (SL-224) [P1148A]

141. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SOURCES-S5400, Radioactive Sources from Sandia National Laboratory (SL-227) [P1150A]

142. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHHM-PK, Argonne CH Homogeneous Solids (AE-254) [P1154A]

143. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for LBNL-S5400, Lawrence Berkeley Mixed Heterogeneous Debris (LB-229) [P1313A]

144. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for NRD.1, Nuclear Radiation Development Mixed Heterogeneous Debris (ND-228) [P1312A]

145. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-ICP-MFC-Gloves, EFL Lead Gloves (AW-225), March 14, 2011 [P1143A]

146. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-PCB-S5490, Laboratory PCB Debris (IW-526), February 8, 2010 [P1162A]

147. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S5490, Laboratory Non-PCB Debris (IW-527), February 8, 2010 [P1163A]

148. AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S3900, Laboratory Homogeneous Solids (IW-603), February 8, 2010 [P1165A]

149. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-SOIL, Mound Site Soil/Debris Stored at SRS (SR-842), Rev. 0, May 19, 2011 [P1314A]

150. AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHDM-PK, Argonne CH Debris (AE-230), July 19, 2011 [P1154A]

Appendix A

Chemical Constitutents and HWNs Identified in TRU Waste

Appendix A
Chemical Constituents and HWNs Identified in TRU Waste

Appendix A information is used to support the AMWTP HWMA/RCRA permit development relating to TRU waste storage and management and is used to track HWN assignments relating to WIPP-approved WSPFs.

Appendix A summarizes hazardous waste constituents for TRU IDCs with the exception of water received by the AMWTP Offsite Waste Program (see Notes 9 and 19). AMWTP TRU wastes as well as TRU wastes received for WIPP profiling by AMWTP or CCP, are listed in Table A-1 by generator and IDC (i.e., columns 1 and 2, respectively). A brief waste description is noted in column 3. The chemical constituents or potential properties for individual IDCs are identified in column 4[g]. Related Chemical Abstract Service (CAS) numbers are tabulated in column 5.

Potential hazardous constituents that may be found within an applicable IDC (and associated source document reference numbers) are noted in column 6. Information within column 6 reflects unconfirmed information relating to potential EPA hazardous constituent (e.g., listed or characteristic) or potential EPA hazardous characteristic property. Potential hazardous constituents associated with AMWTP legacy wastes do not necessarily reflect generator-assigned HWNs or final WIPP-assigned HWNs. These potential hazardous constituents were identified based on information provided by the AMWTP Waste Services organization, or historical reviews of referenced AK documents, or information provided by non AMWTP waste generators. The identification of potential hazardous constituents is for purposes of supporting safe storage. The initial identification of potential hazardous constituents occurs prior to AMWTP AK/characterization activities relating to HWN assignment, including the statistically derived 90% Upper Confidence Level (UCL_{90}) value determination. The identification of current and future potential hazardous constituents and/or potential properties will be based on one or more of the following:

- New AK information
- New information provided by the generator
- New HWNs assigned by AK
- New HWNs identified as a result of AMWTP characterization activities performed to augment AK.

Generator-assigned and WIPP-approved EPA HWNs are presented in columns 7 and 8, respectively. The "Initial Gen Assigned HWN" column (column 7) contains the HWNs originally assigned by the waste generator, if available. The "WIPP WSPF Approved HWN" column (column 8) contains HWNs assigned through the WIPP characterization process and documented in the applicable WIPP-approved WSPF. The HWNs assigned for WIPP disposal pertain only to those containers certified for WIPP disposal.

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g. IDCs listed in Appendix A are subject to change. HWNs and constituents associated with off-site wastes are available through the Offsite Waste Program Coordiantor. The final list of HWNs and constituents will be identified prior to the time of WIPP profiling.

HI (historical interpretation), WG (waste generator), AK (acceptable knowledge), and WS (waste stream) noted in Table A-1 header reflect applicable sources of information based on waste generator supplied information, AK, and WSPF characterization results, respectively.

The AK source document references associated with hazardous constituent/HWN are noted in the applicable columns as $X\text{-}^{y}$. The abbreviations for generator sites and areas are listed in Table A-2.

Table A-1. Chemical constituents and HWNs identified in TRU waste.

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
AE, AE	100	GENERAL PLANT WASTE	ethyl ether	60-29-7	X-[1, 4, 5]	—	—
			nitrates	—	X-[1, 4, 5]	—	—
AE, AE	101	CUT UP GLOVEBOXES	lead	7439-92-1	X-[1, 5]	—	—
AE, AE	102	ABSORBED LIQUIDS	TBD	—	TBD	—	—
AE, AE	104	ALPHA HOT CELL WASTE	lead	7439-92-1	X-[1, 5, 7]	—	—
			sodium	7440-23-5	X-[1]	See Note 8	—
AE, AE	105	EMPTY BOTTLES AND ABSORBENT	TBD	—	TBD	—	—
AE, AE	106	SPECIAL SOURCE MATERIAL	TBD	—	TBD	—	—
AE, AE	107	RH WASTE	lead	7439-92-1	X-[7]	—	—
AE, AE	110	RESEARCH GENERATED WASTE	acetone	67-64-1	X-[5]	—	—
			arsenic	7440-38-2	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
AE, AE	111	SOLIDIFIED WET SLUDGE	arsenic	7440-38-2	X-[5]	—	—
			barium	7440-39-3	X-[5]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
AE, AE	120	D AND D WASTE COMPACTABLE AND COMBUSTIBLE SOLIDS	TBD	—	TBD	—	—
AE, AE	121	TRU ORGANIC SOLID WASTE	TBD	—	TBD	—	—
AE, AE	230	ARGONNE CH HOMOGENEOUS SOLIDS	See Notes 9 and 19[150]	See Note 9[150]	See Note 9[150]		
AE, AE	254	ARGONNE CH HOMOGENEOUS SOLIDS	See Notes 9 and 19[142]	See Note 9[142]	See Note 9[142]		
BC, BC	201	NON-COMBUSTIBLE SOLIDS	lead	7439-92-1	X-[1, 4]	—	—
BC, BC	202	COMBUSTIBLE SOLIDS-PAPER/CLOTH	TBD	—	TBD	—	—
BC, BC	203	PAPER, CLOTH, METALS, GLASS	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[61]	—	—
BC, BC	204	SOLIDIFIED SOLUTIONS	TBD	—	TBD	—	—
BL, BL	010	RAGS, GLOVES, POLY	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			lead	7439-92-1	X-[1]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
BL, BL	012	MISCELLANEOUS SOURCES	TBD	—	TBD	—	—
BL, BL	015	NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[3]	—	—
BL, BL	020	NON-COMPRESSIBLE, NON-COMBUSTIBLE	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
			nitrates	—	X-[1]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[3, 4, 5]	See Notes 2 and 3	—
BL, BL	030	SOLIDIFIED GRINDING SLUDGE	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[3, 5]	—	—
			methylene chloride	75-09-2	X-[3, 5]	—	—
BL, BL	040	SOLIDIFIED BINARY SCRAP POWDER	lead (shielding only)	7439-92-1	X-[1, 3, 4]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[3, 4]	See Notes 2 and 3	—
BL, BL	050	SOLIDIFIED SOLUTIONS	TBD	—	TBD	—	—
BL, BL	081	METAL SAMPLES FISSILE	TBD	—	TBD	—	—
BL, BL	338	RWMC LEAD SHIELDED OVERPACK: EMPTY	lead	7439-92-1	X-[1]	D008	—
BW, BW	515	PLASTICS, PAPER, CLOTH, ETC.	TBD	—	TBD	—	—
BW, BW	516	STEEL, AL, ELECTRICAL DEVICES-HANDHELD	TBD	—	TBD	—	—
BW, BW	517	HEAVY METALS, STEEL, AL, BRASS	TBD	—	TBD	—	—
BX, BX	111	MISCELLANEOUS SOURCE MATERIAL	TBD	—	TBD	—	—
GV, GV	222	GE VNC HOT CELL DEBRIS WASTE	See notes 9 and 19		See Note 9[103]	See Note 19[103]	
ID, AW	150	LABORATORY WASTE	lead	7439-92-1	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1]	See Notes 2 and 3	—
ID, AW	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
ID, AW	153	COMBUSTIBLE LAB WASTE	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
			lead (shielding only)	7439-92-1	X-[1, 5]	D008	—
ID, AW	154	SAMPLE FUEL	lead (shielding only)	7439-92-1	X-[1, 4, 5]	D008	—
ID, AW	155	TRU SCRAP	TBD	—	TBD	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, AW	160	AL/CL DEBRIS WASTE (See Note 19)	TBD	—	TBD	—	—
ID, AW	161	ACL GLASSWARE, PAPER, POLY, AND MISCELLANEOUS	none identified	—	X-[18]	—	—
ID, AW	162	ANL-W FMF EFL ZR-U-PU FUEL CASTING	none identified	—	X-[18]	—	—
ID, AW	163	ANL-W ACL COLD-LINE ABSORBED LIQUID AND DEBRIS	none identified	—	X-[18]	—	—
ID, AW	164	ANL-W HRA/WCA DEBRIS (See Note 19)	arsenic	7440-38-2	X-[68, 69]	D004	—
			barium	7440-39-3	X-[68, 69]	D005	—
			beryllium (not beryllium powder)	7440-41-7	X-[68, 69]	—	—
			cadmium	7440-43-9	X-[68, 69]	D006	—
			chromium	7440-47-3	X-[68, 69]	D007	—
			lead	7439-92-1	X-[68, 69]	D008	—
			mercury	7439-97-6	X-[68, 69]	D009	—
			selenium	7782-49-2	X-[68, 69]	D010	—
			silver	7440-22-4	X-[68, 69]	D011	—
			ignitable	N/A	X-[68, 69]	D001 See Note 2	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[68, 69]	—	—
			1,1,2-trichloroethane	79-00-5	X-[68, 69]	—	—
			1,4-dichlorobenzene	106-46-7	X-[68, 69]	—	—
			1,2-dichloroethane	107-06-2	X-[68, 69]	—	—
			1,1-dichlorethylene	156-60-5	X-[68, 69]	—	—
			2,4-dinitrotoluene	121-14-2	X-[68, 69]	—	—
			2-ethoxyethanol	110-80-5	X-[68, 69]	—	—
			2-nitropropane	79-46-9	X-[68, 69]	—	—
			acetone	67-64-1	X-[68, 69]	F003 See Note 2	—
			benzene	71-43-2	X-[68, 69]	D018	—
			carbon disulfide	75-15-0	X-[68, 69]	—	—
			carbon tetrachloride	56-23-5	X-[68, 69]	—	—
			chlorobenzene	108-90-7	X-[68, 69]	—	—
			chloroform (trichloromethane)	67-66-3	X-[68, 69]	—	—
			cresols	1319-77-3	X-[68, 69]	—	—
			cyanide	57-12-5	X-[68, 69]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl acetate (acetic acid)	141-78-6	X-[68, 69]	—	—
ID, AW	164	ANL-W HRA/WCA DEBRIS (See Note 19) (Continued)	ethyl benzene	100-41-4	X-[68, 69]	—	—
			ethyl ether	60-29-7	X-[68, 69]	—	—
			hexachlorobenzene	118-74-1	X-[68, 69]	—	—
			hexachloroethane	67-72-1	X-[68, 69]	—	—
			methanol	67-56-1	X-[68, 69]	—	—
			methylene chloride	75-09-2	X-[68, 69]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[68, 69]	—	—
			methyl isobutyl ketone	108-10-1	X-[68, 69]	—	—
			n-butyl alcohol (butanol)	71-36-3	X-[68, 69]	—	—
			pentachlorophenol	87-86-5	X-[68, 69]	—	—
			pyridine	110-86-1	X-[68, 69]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[68, 69]	—	—
			toluene	108-88-3	X-[68, 69]	—	—
			trichloromonofluoromethane	75-69-4	X-[68, 69]	—	—
			vinyl chloride	75-01-4	X-[68, 69]	—	—
ID, AW	165	ASH STABLIZATION & GGE DEBRIS (See Note 19)	arsenic	7440-38-2	X-[68]	D004[68, 105]	—
			barium	7440-39-3	X-[68, 105]	D005[68, 105]	—
			beryllium (not beryllium powder)	7440-41-7	X-[68, 105]	—	—
			cadmium	7440-43-9	X-[68, 105]	D006[68, 105]	—
			chromium	7440-47-3	X-[68, 105]	D007[68, 105]	—
			lead	7439-92-1	X-[68, 105]	D008[68, 105]	—
			mercury	7439-97-6	X-[68, 105]	D009[68, 105]	—
			selenium	7782-49-2	X-[68, 105]	D010[68, 105]	—
			silver	7440-22-4	X-[68, 105]	D011[68, 105]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[68, 105]	F001/F002[68, 105]	—
			xylene	1330-20-7	X-[68, 105]	F003 (See Note 2)[68, 105]	—
			toluene	108-88-3	X-[68, 105]	F005[68, 105]	—
ID, AW	167	MFC CH-TRU HETEROGENOUS DEBRIS (See Note 19)	cadmium	7440-43-9	X-[104]	D006[104]	—
			chromium	7440-47-3	X-[104]	D007[104]	—
			lead	7439-92-1	X-[104]	D008[104]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			silver	7440-22-4	X-[104]	D011[104]	—
ID, AW	225	EFL LEAD GLOVES	See Notes 9 and 19[145]	See Notes 9[145]	See Notes 9[145]		
ID, BN	500	NEWLY GENERATED DEBRIS (NOT BN-508)	See Note 15	—	See Note 15	See Note 15	—
ID, BN	501	AMWTP PCB SOIL	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 17	See Note 17	—
ID, BN	505	INORGANIC HOMOGENEOUS SOLIDS	See Note 17	—	See Note 17	See Note 17	—
ID, BN	507	ABSORBED AQUEOUS SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37,122]	F001/F002[37,75, 97, 115,122]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37,122]	F001[97, 115,122]	—
			1,2-dichloroethane	107-06-2	X-[37,122]	D028[37, 75, 115,122]	—
			1,2-dichlorobenzene	95-50-1	X-[37,122]	F002[97, 115,122]	—
			1,1-dichloroethylene	75-35-4	X-[37,122]	D029[37, 75, 115,122]	—
			1,4-dichlorobenzene	106-46-7	X-[97,122]	D027[97, 115,122]	—
			2,4-dinitrotoluene	121-14-2	X-[97,122]	D030[97, 115,122]	—
			2-ethoxyethanol	110-80-5	X-[97,122]	F005[97, 115,122]	—
			2-nitropropane	79-46-9	X-[97,122]	F005[97, 115,122]	—
			acetone	67-64-1	X-[37,122]	See Note 2	—
			arsenic	7440-38-2	X-[37,122]	D004[37, 75, 97,122]	—
			asbestos	1332-21-4	X-[37,122]	N/A	—
			barium	7440-39-3	X-[37,122]	D005[37, 75, 97, 115,122]	—
			benzene	71-43-2	X-[37,122]	F005[37, 75, 97, 115,122]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37,122]	N/A[37, 97, 115,122]	
			cadmium	7440-43-9	X-[37,122]	D006[37, 75, 97, 115,122]	—
			carbon disulfide	75-15-0	X-[37,122]	F005[37, 97, 115,122]	—
			carbon tetrachloride	56-23-5	X-[37,122]	F001[37, 75, 97, 115,122]	—
			chlorobenzene	108-90-7	X-[97,122]	F002[97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37,122]	D022[37, 75, 115,122]	—
			chromium	7440-47-3	X-[37,122]	D007[37, 75, 97, 115,122]	—
			cyanide cleaning bath solutions	—	X-[37,122]	F009[37, 75, 115,122]	—

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cyanide plating bath solutions	—	X-[37,122]	F007[37, 75, 115,122]	—
ID, BN	507	ABSORBED AQUEOUS SQUEEZANTS (Continued)	cresols	—	X-[97,122]	F004 [97, 115,122]	—
			electroplating sludges	—	X-[37,122]	F006[37, 75, 115,122]	—
			hexachlorobenzene	118-74-1	X-[37, 93,122]	N/A	—
			hexachloroethane	67-72-1	X-[97,122]	D034[97, 115,122]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[50, 97,122]	F005[97, 115,122]	—
			lead	7439-92-1	X-[37,122]	D008[37, 75, 97, 115,122]	—
			mercury	7439-97-6	X-[37,122]	D009[37, 75, 97, 115,122]	—
			methanol	67-56-1	X-[37,122]	See Note 2	—
			methylene chloride	75-09-2	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37,122]	F005[37, 75, 97, 115,122]	—
			nitrobenzene	98-95-3	X-[97,122]	F004[97, 115,122]	—
			pentachlorophenol	87-86-5	X-[97,122]	D037[97, 115,122]	—
			pyridine	110-86-1	X-[97,122]	F005[97, 115,122]	—
			selenium	7782-49-2	X-[37,122]	D010[37, 75, 115,122]	—
			silver	7440-22-4	X-[37,122]	D011[37, 75, 115,122]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			toluene	108-88-3	X-[37,122]	F005[37, 75, 97, 115,122]	—
			trichloroethylene (TCE)	79-01-6	X-[37,122]	F001/F002[37, 75, 97, 115,122]	—
			trichlorofluoromethane	75-69-4	X-[97,122]	F001/F002 [97, 115,122]	—
			vinyl chloride	75-01-4	X-[97,122]	D043[97, 115,122]	—
			xylene	1330-20-7	X-[37,122]	See Note 2	—
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97, 115]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97, 115]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 115]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS (Continued)	1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 115]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 97, 115]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 97, 115]	—
			benzene	71-43-2	X-[37]	F005[37, 97, 115]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 97, 115]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 115]	—
			chlorobenzene	108-90-7	X-[97]	F002 [97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 115]	—
			Chromium	7440-47-3	X-[37]	D007[37, 97, 115]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 115]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 115]	—
			cresols	—	X-[97]	F004[97, 115]	
			electroplating sludges	—	X-[37]	F006[37]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	
			lead	7439-92-1	X-[37]	D008[37, 97, 115]	—
			mercury	7439-97-6	X-[37]	D009[37, 97, 115]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97, 115]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97, 115]	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	508	AMWTP NEWLY GENERATED DEBRIS (Continued)	nitrobenzene	98-95-3	X-[97]	F004[97, 115]	
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	
			pyridine	110-86-1	X-[97]	F005[97, 115]	
			selenium	7782-49-2	X-[37]	D010[37, 115]	—
			silver	7440-22-4	X-[37]	D011[37, 115]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97, 115]	—
			toluene	108-88-3	X-[37]	F005[37, 97, 115]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97, 115]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	509	ABSORBED ORGANIC LIQUIDS (EXCLUDING SQUEEZANTS)	See Note 23	—	See Note 23	See Note 23	—
ID, BN	510	SUPERCOMPACTED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37]	F001/F002[37]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37]	F001/F002[37]
			1,2-dichloroethane	107-06-2	X-[37]	D028[37]	D028[37]
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37]	D029[37]
			acetone	67-64-1	X-[37]	See Note 2	N/A
			arsenic	7440-38-2	X-[37]	D004[37]	D004[37]
			asbestos	1332-21-4	X-[37]	N/A	N/A
			barium	7440-39-3	X-[37]	D005[37]	D005[37]
			benzene	71-43-2	X-[37]	F005[37]	F005[37]
			cadmium	7440-43-9	X-[37]	D006[37]	D006[37]
			carbon disulfide	75-15-0	X-[37]	F005[37]	F005[37]
			carbon tetrachloride	56-23-5	X-[37]	F001[37]	F001[37]
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37]	D022[37]
			chromium	7440-47-3	X-[37]	D007[37]	D007[37]
			cyanide cleaning bath solutions	—	X-[37]	F009[37]	F009[37]
			cyanide plating bath solutions	—	X-[37]	F007[37]	F007[37]
			electroplating sludges	—	X-[37]	F006[37]	F006[37]
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	N/A[93]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	510	SUPERCOMPACTED DEBRIS (Continued)	lead	7439-92-1	X-[37]	D008[37]	D008[37]
			mercury	7439-97-6	X-[37]	D009[37]	D009[37]
			methanol	67-56-1	X-[37]	See Note 2	N/A
			methylene chloride	75-09-2	X-[37]	F002[37]	F002[37]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37]	F005[37]
			selenium	7782-49-2	X-[37]	D010[37]	D010[37]
			silver	7440-22-4	X-[37]	D011[37]	D011[37]
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37]	F001/F002[37]
			toluene	108-88-3	X-[37]	F005[37]	F005[37]
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37]	F001/F002[37]
			xylene	1330-20-7	X-[37]	See Note 2	N/A
ID, BN	511	PCB ORGANIC HOMOGENEOUS SOLIDS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 14 and 17	See Notes 14 and 17	—
ID, BN	513	NON-PCB ORGANIC HOMOGENEOUS SOLIDS	See Note 17	—	See Note 17	See Note 175	—
ID, BN	514	ABSORBED ORGANIC SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37,75, 97]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37,75, 97]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 75]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 75]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97]	—
			2-nitropropane	79-46-9	X-[97]	F005[97]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 75, 97]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 75, 97]	—
			benzene	71-43-2	X-[37]	F005[37, 75, 97]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 75, 97]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	514	ABSORBED ORGANIC SQUEEZANTS (continued)	carbon tetrachloride	56-23-5	X-[37]	F001[37, 75, 97]	—
			chlorobenzene	108-90-7	X-[97]	F002[97]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 75]	—
			chromium	7440-47-3	X-[37]	D007[37, 75, 97]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 75]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 75]	—
			cresols	—	X-[97]	F004[97]	—
			electroplating sludges	—	X-[37]	F006[37, 75]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[50, 97]	F005[97]	—
			lead	7439-92-1	X-[37]	D008[37, 75, 97]	—
			mercury	7439-97-6	X-[37]	D009[37, 75, 97]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 75, 97]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 75, 97]	—
			nitrobenzene	98-95-3	X-[97]	F004[97]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97]	—
			pyridine	110-86-1	X-[97]	F005[97]	—
			selenium	7782-49-2	X-[37]	D010[37, 75]	—
			silver	7440-22-4	X-[37]	D011[37, 75]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 75, 97]	—
			toluene	108-88-3	X-[37]	F005[37, 75, 97]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 75, 97]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97]	—
			vinyl chloride	75-01-4	X-[97]	D043[97]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	515	ABSORBED AQUEOUS LIQUIDS (EXCLUDING SQUEEZANTS)	See Note 16	—	See Note 16	See Note 16	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	518	TRU SUPERCOMPACTOR SQUEEZANTS	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 75, 97, 115]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 75, 97, 115]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 75, 115]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 75, 115]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	—
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 75, 97, 115]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 75, 97, 115]	—
			benzene	71-43-2	X-[37]	F005[37, 75, 97, 115]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	
			cadmium	7440-43-9	X-[37]	D006[37, 75, 97, 115]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 75, 97, 115]	—
			chlorobenzene	108-90-7	X-[97]	F002[97, 115]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 75, 115]	—
			chromium	7440-47-3	X-[37]	D007[37, 75, 97, 115]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 75, 115]	—
			cyanide plating bath solutions	—	X-[37]	F007[37, 75, 115]	—
			cresols	—	X-[97]	F004[97, 115]	—
			electroplating sludges	—	X-[37]	F006[37, 75, 115]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	518	TRU SUPERCOMPACTOR SQUEEZANTS (Continued)	lead	7439-92-1	X-[37]	D008[37, 75, 97]	—
			mercury	7439-97-6	X-[37]	D009[37, 75, 97, 115]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 75, 97, 115]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 75, 97, 115]	—
			nitrobenzene	98-95-3	X-[97]	F004[97, 115]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	—
			pyridine	110-86-1	X-[97]	F005[97, 115]	—
			selenium	7782-49-2	X-[37]	D010[37, 75, 115]	—
			silver	7440-22-4	X-[37]	D011[37, 75, 115]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 75, 97, 115]	—
			toluene	108-88-3	X-[37]	F005[37, 75, 97, 115]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 75, 97, 115]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	—
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	519	TRU SDOP to SUPERCOMPACTOR	Temporary IDC for transport only. See IDC BN-550		See IDC BN-550	See IDC BN-550	
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5)	arsenic	7440-38-2	X-[76]	D004[76]	—
			barium	7440-39-3	X-[76]	D005[76]	—
			cadmium	7440-43-9	X-[76]	D006[76]	—
			chromium	7440-47-3	X-[76]	D007[76]	—
			lead	7439-92-1	X-[76]	D008[76]	—
			mercury	7439-97-6	X-[76]	D009/U151[76, 120, 121]	—
			selenium	7782-49-2	X-[76]	D010[76]	—
			silver	7440-22-4	X-[76]	D011[76]	—
			benzene	71-43-2	X-[76]	D018[76]	—
			beryllium (not beryllium powder)	7440-41-7	X-[76]	N/A	
			carbon tetrachloride	56-23-5	X-[76]	D019[76]	—
			chloroform (trichloromethane)	67-66-3	X-[76]	D022[76]	—
			cresol	1319-77-3	X-[76]	D026[76]	—

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AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	1,4-dichlorobenzene	106-46-7	X-[76]	D027[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	D028[76]	—
			1,1-dichlorethylene	156-60-5	X-[76]	D029[76]	—
			2,4-dinitrotoluene	121-14-2	X-[76]	D030[76]	—
			hexachlorobenzene	118-74-1	X-[76]	D032[76]	—
			hexachlorobutadiene	87-68-3	X-[76]	D033[76]	—
			hexachloroethane	67-72-1	X-[76]	D034[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	D035[76]	—
			nitrobenzene	98-95-3	X-[76]	D036[76]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[76]	N/A[76]	—
			pentachlorophenol	87-86-5	X-[76]	D037[76]	—
			pyridine	110-86-1	X-[76]	D038[76]	—
			vinyl chloride	75-01-4	X-[76]	D043[76]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[76]	F001/F002[76]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[76]	F001/F002[76]	—
			carbon tetrachloride	56-23-5	X-[76]	F001/F002[76]	—
			methylene chloride	75-09-2	X-[76]	F001/F002[76]	—
			tetrachloroethylene (perclene)	127-18-4	X-[76]	F001/F002[76]	—
			trichloroethylene (TCE)	79-01-6	X-[76]	F001/F002[76]	—
			trichlorofluoromethane	75-69-4	X-[76]	F001/F002[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	F002[76]	—
			1,1,2-trichloroethane	79-00-5	X-[76]	F002[76]	—
			chlorobenzene	108-90-7	X-[76]	F002[76]	—
			methylene chloride	75-09-2	X-[76]	F002[76]	—
			cresol	1319-77-3	X-[76]	F004[76]	—
			nitrobenzene	98-95-3	X-[76]	F004[76]	—
			2-ethoxyethanol	110-80-5	X-[76]	F005[76]	—
			2-nitropropane	79-46-9	X-[76]	F005[76]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[76]	F005[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	F005[76]	—
			pyridine	110-86-1	X-[76]	F005[76]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	520	TRU PCB SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	toluene	108-88-3	X-[76]	F005[76]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[76]	F009[76]	—
			cyanide plating bath solutions	—	X-[76]	F007[76]	—
			electroplating sludges	—	X-[76]	F006[76]	—
ID, BN	521	TRU SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5)	arsenic	7440-38-2	X-[76]	D004[76]	—
			barium	7440-39-3	X-[76]	D005[76]	—
			cadmium	7440-43-9	X-[76]	D006[76]	—
			chromium	7440-47-3	X-[76]	D007[76]	—
			lead	7439-92-1	X-[76]	D008[76]	—
			mercury	7439-97-6	X-[76]	D009/U151[76, 120, 121]	—
			selenium	7782-49-2	X-[76]	D010[76]	—
			silver	7440-22-4	X-[76]	D011[76]	—
			benzene	71-43-2	X-[76]	D018[76]	—
			beryllium (not beryllium powder)	7440-41-7	X-[76]	N/A	
			carbon tetrachloride	56-23-5	X-[76]	D019[76]	—
			chloroform (trichloromethane)	67-66-3	X-[76]	D022[76]	—
			cresol	1319-77-3	X-[76]	D026[76]	—
			1,4-dichlorobenzene	106-46-7	X-[76]	D027[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	D028[76]	—
			1,1-dichlorethylene	156-60-5	X-[76]	D029[76]	—
			2,4-dinitrotoluene	121-14-2	X-[76]	D030[76]	—
			hexachlorobenzene	118-74-1	X-[76]	D032[76]	—
			hexachlorobutadiene	87-68-3	X-[76]	D033[76]	—
			hexachloroethane	67-72-1	X-[76]	D034[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	D035[76]	—
			nitrobenzene	98-95-3	X-[76]	D036[76]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[76]	N/A[76]	—
			pentachlorophenol	87-86-5	X-[76]	D037[76]	—
			pyridine	110-86-1	X-[76]	D038[76]	—
			vinyl chloride	75-01-4	X-[76]	D043[76]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[76]	F001/F002[76]	—

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	521	TRU SECONDARY DEBRIS GENERATED FROM OFFSITE WASTE (See Note 5) (Continued)	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[76]	F001/F002[76]	—
			carbon tetrachloride	56-23-5	X-[76]	F001/F002[76]	—
			methylene chloride	75-09-2	X-[76]	F001/F002[76]	—
			tetrachloroethylene (perclene)	127-18-4	X-[76]	F001/F002[76]	—
			trichloroethylene (TCE)	79-01-6	X-[76]	F001/F002[76]	—
			trichlorofluoromethane	75-69-4	X-[76]	F001/F002[76]	—
			1,2-dichloroethane	107-06-2	X-[76]	F002[76]	—
			1,1,2-trichloroethane	79-00-5	X-[76]	F002[76]	—
			chlorobenzene	108-90-7	X-[76]	F002[76]	—
			methylene chloride	75-09-2	X-[76]	F002[76]	—
			cresol	1319-77-3	X-[76]	F004[76]	—
			nitrobenzene	98-95-3	X-[76]	F004[76]	—
			2-ethoxyethanol	110-80-5	X-[76]	F005[76]	—
			2-nitropropane	79-46-9	X-[76]	F005[76]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[76]	F005[76]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[76]	F005[76]	—
			pyridine	110-86-1	X-[76]	F005[76]	—
			toluene	108-88-3	X-[76]	F005[76]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[76]	F009[76]	—
			cyanide plating bath solutions	—	X-[76]	F007[76]	—
			electroplating sludges	—	X-[76]	F006[76]	—
ID, BN	522	AMWTP NON-PCB SOIL	—	—	See Note 16	See Note 16	—
ID, BN	523	PAD 1 CELLS 1 AND 2 PCB DEBRIS	See Note 17		See Note 17	See Note 17	
			polychlorinated-biphenyls (PCBs)	1336-36-3	PK	None	
			beryllium (not beryllium powder)	7440-41-7	PK	None	
ID, BN	524	PAD 1 CELLS 1 AND 2 NON-PCB DEBRIS	See Note 17		See Note 17	See Note 17	
			beryllium (not beryllium powder)	7440-41-7	PK	None	
ID, BN	525	P/U-LISTED LAB NON-PCB DEBRIS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	526	LAB PCB DEBRIS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, BN	527	LAB NON-PCB DEBRIS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	528	TRU PCB LIQUIDS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 15	See Note 15	—
ID, BN	529	TRU non-PCB LIQUIDS	See Note 15	—	See Note 15	See Note 15	—
ID, BN	534	ORGANIC LIQUID FROM MAINTENANCE ACTIVITIES	See note 15		See Note 15	See note 15	
ID, BN	536	TRU EMPTY CONTAINERS WITH PCBS	polychlorinated-biphenyls (PCBs)	1336-36-3	PK	None	—
ID, BN	537	TRU EMPTY CONTAINERS	None identified	—	N/A	None	—
ID, BN	538	OVERSIZED DEBRIS ITEMS FROM SUPERCOMPACTOR FACILITY (See Note 22)	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97]	—
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97]	—
			1,2-dichloroethane	107-06-2	X-[37]	D028[37]	—
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97]	—
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37]	—
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97]	—
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97]	—
			2-ethoxyethanol	110-80-5	X-[97]	F005[97]	—
			2-nitropropane	79-46-9	X-[97]	F005[97]	—
			acetone	67-64-1	X-[37]	See Note 2	—
			arsenic	7440-38-2	X-[37]	D004[37, 97]	—
			asbestos	1332-21-4	X-[37]	N/A	—
			barium	7440-39-3	X-[37]	D005[37, 97]	—
			benzene	71-43-2	X-[37]	F005[37, 97]	—
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A	
			cadmium	7440-43-9	X-[37]	D006[37, 97]	—
			carbon disulfide	75-15-0	X-[37]	F005[37, 97]	—
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 97]	—
			chlorobenzene	108-90-7	X-[97]	F002[97]	—
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37]	—
			chromium	7440-47-3	X-[37]	D007[37, 97]	—
			cyanide cleaning bath solutions	—	X-[37]	F009[37]	—
			cyanide plating bath solutions	—	X-[37]	F007[37]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cresols	—	X-[97]	F004[97]	—
			electroplating sludges	—	X-[37]	F006[37]	—
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	—
			hexachloroethane	67-72-1	X-[97]	D034[97]	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97]	—
			lead	7439-92-1	X-[37]	D008[37, 97]	—
ID, BN	538	OVERSIZED DEBRIS ITEMS FROM SUPERCOMPACTOR FACILITY (See Note 22) (Continued)	mercury	7439-97-6	X-[37]	D009[37, 97]	—
			methanol	67-56-1	X-[37]	See Note 2	—
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97]	—
			nitrobenzene	98-95-3	X-[97]	F004[97]	—
			pentachlorophenol	87-86-5	X-[97]	D037[97]	—
			pyridine	110-86-1	X-[97]	F005[97]	—
			Selenium	7782-49-2	X-[37]	D010[37]	—
			Silver	7440-22-4	X-[37]	D011[37]	—
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97]	—
			Toluene	108-88-3	X-[37]	F005[37, 97]	—
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97]	—
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97]	—
			vinyl chloride	75-01-4	X-[97]	D043[97]	—
			xylene	1330-20-7	X-[37]	See Note 2	—
ID, BN	539	TRU RADIOACTIVE ONLY DEBRIS WASTE	N/A	N/A	PK	None	
ID, BN	550	SUPERCOMPACTED DEBRIS (BN510.1)	1,1,1-trichloroethane (TCA)	71-55-6	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[37]	F001[97, 115]	F001[97, 116]
			1,2-dichloroethane	107-06-2	X-[37]	D028[37, 115]	D028[37, 116]
			1,2-dichlorobenzene	95-50-1	X-[37]	F002[97, 115]	F002[97, 116]
			1,1-dichloroethylene	75-35-4	X-[37]	D029[37, 115]	D029[37, 116]
			1,4-dichlorobenzene	106-46-7	X-[97]	D027[97, 115]	D027[97, 116]
			2,4-dinitrotoluene	121-14-2	X-[97]	D030[97, 115]	D030[97, 116]
			2-ethoxyethanol	110-80-5	X-[97]	F005[97, 115]	F005[97, 116]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			2-nitropropane	79-46-9	X-[97]	F005[97, 115]	F005[97, 116]
			acetone	67-64-1	X-[37]	See Note 2	See Note 2
			arsenic	7440-38-2	X-[37]	D004[37, 97, 115]	D004[37, 97, 116]
			asbestos	1332-21-4	X-[37]	N/A	N/A
			barium	7440-39-3	X-[37]	D005[37, 97, 115]	D005[37, 97, 116]
ID, BN	550	SUPERCOMPACTED DEBRIS (BN510.1) (Continued)	benzene	71-43-2	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			beryllium (not beryllium powder)	7440-41-7	X-[37]	N/A[37, 97, 115]	N/A
			cadmium	7440-43-9	X-[37]	D006[37, 97, 115]	D006[37, 97, 116]
			carbon disulfide	75-15-0	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			carbon tetrachloride	56-23-5	X-[37]	F001[37, 115]	F001[37, 116]
			chlorobenzene	108-90-7	X-[97]	F002 [97, 115]	F002 [97, 116]
			chloroform (trichloromethane)	67-66-3	X-[37]	D022[37, 115]	D022[37, 116]
			chromium	7440-47-3	X-[37]	D007[37, 97, 115]	D007[37, 97, 116]
			cyanide cleaning bath solutions	—	X-[37]	F009[37, 115]	F009[37, 116]
			cyanide plating bath solutions	—	X-[37]	F007[37, 115]	F007[37, 116]
			cresols	—	X-[97]	F004[97, 115]	F004[97, 116]
			electroplating sludges	—	X-[37]	F006[37, 115]	F006[37, 116]
			hexachlorobenzene	118-74-1	X-[37, 93]	N/A	N/A
			hexachloroethane	67-72-1	X-[97]	D034[97, 115]	D034[97, 116]
			isobutanol (isobutyl alcohol)	78-83-1	X-[97]	F005[97, 115]	F005[97, 116]
			lead	7439-92-1	X-[37]	D008[37, 97, 115]	D008[37, 97, 116]
			mercury	7439-97-6	X-[37]	D009[37, 97, 115]	D009[37, 97, 116]
			methanol	67-56-1	X-[37]	See Note 2	See Note 2
			methylene chloride	75-09-2	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			nitrobenzene	98-95-3	X-[97]	F004[97, 115]	F004[97, 116]
			pentachlorophenol	87-86-5	X-[97]	D037[97, 115]	D037[97, 116]
			pyridine	110-86-1	X-[97]	F005[97, 115]	F005[97, 116]
			selenium	7782-49-2	X-[37]	D010[37, 115]	D010[37, 116]
			silver	7440-22-4	X-[37]	D011[37, 115]	D011[37, 116]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97]
			toluene	108-88-3	X-[37]	F005[37, 97, 115]	F005[37, 97, 116]
			trichloroethylene (TCE)	79-01-6	X-[37]	F001/F002[37, 97, 115]	F001/F002[37, 97, 116]
			trichlorofluoromethane	75-69-4	X-[97]	F001/F002[97, 115]	F001/F002[97, 116]
			vinyl chloride	75-01-4	X-[97]	D043[97, 115]	D043[97, 116]
			xylene	1330-20-7	X-[37]	See Note 2	See Note 2
ID, BN	597	P/U-LISTED LAB PCB DEBRIS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	598	P/U-LISTED LAB PCB HOMOGENEOUS SOLIDS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	599	LAB NON- PCB HOMOGENOUS SOLIDS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	600	WMF-676 PCB CONTAMINATED DEBRIS	1,1,1-trichloroethane (TCA)	71-55-6	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			1,1,2,2,-tetrachloro-1,2-difluoroethane	79-34-5	X-[115, 123]	F001[46, 115, 123]	
			1,2-dichloroethane	107-06-2	X-[115, 123]	D028[46, 115, 123]	
			1,2-dichlorobenzene	95-50-1	X-[46, 115, 123]	F002[46, 115, 123]	
			1,1-dichloroethylene	75-35-4	X-[46, 115, 123]	D029[46, 115, 123]	
			1,4-dichlorobenzene	106-46-7	X-[46, 115, 123]	D027[46, 115, 123]	
			2,4-dinitrotoluene	121-14-2	X-[46, 115, 123]	D030[46, 115, 123]	
			2-ethoxyethanol	110-80-5	X-[46, 115, 123]	F005[46, 115, 123]	
			2-nitropropane	79-46-9	X-[115, 123]	F005[46, 115, 123]	
			acetone	67-64-1	X-[46, 115]	See Note 2	
			arsenic	7440-38-2	X-[115, 123]	D004[115, 123]	
			asbestos	1332-21-4	N/A[123]	N/A	
			barium	7440-39-3	X-[115, 123]	D005[115, 123]	
			benzene	71-43-2	X-[46, 115, 123]	F005[46, 115, 123]	
			beryllium (not beryllium powder)	7440-41-7	X-[46, 115, 123]	N/A[46, 115, 123]	
			cadmium	7440-43-9	X-[115, 123]	D006[46, 115, 123]	
			carbon disulfide	75-15-0	X-[46, 115, 123]	F005[46, 115, 123]	
			carbon tetrachloride	56-23-5	X-[46, 115, 123]	F001[46, 115, 123]	

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chlorobenzene	108-90-7	X-[46, 115, 123]	F002 [46, 115, 123]	
			chloroform (trichloromethane)	67-66-3	X-[46, 115, 123]	D022[46, 115, 123]	
			chromium	7440-47-3	X-[115, 123]	D007[115, 123]	
			cyanide cleaning bath solutions	—	X-[115, 123]	F009[46, 115, 123]	
			cyanide plating bath solutions	—	X-[115, 123]	F007[46, 115, 123]	
			cyclohexane	110-82-7	X-[46, 115, 123]	See Note 2	
			cresols	—	X-[46, 115, 123]	F004[46, 115, 123]	
			electroplating sludges	—	X-[115, 123]	F006[46, 115, 123]	
			ethyl benzene	100-41-4	X-[46, 115,	See Note 2	
			ethyl ether		X-[46, 115,	See Note 2	
			hexachlorobenzene	118-74-1	X-[46, 123]	D032[46, 123]	
			hexachloroethane	67-72-1	X-[46, 115, 123]	D034[46, 115, 123]	
			hexane		X-[123]	N/A	
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[115,	N/A	
			isobutanol (isobutyl alcohol)	78-83-1	X-[115, 123]	F005 [115, 123]	
			lead	7439-92-1	X-[115, 123]	D008[115, 123]	
			mercury	7439-97-6	X-[115, 123]	D009[115, 123]	
			methanol	67-56-1	X-[46, 115]	See Note 2	
			methylene chloride	75-09-2	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 115, 123]	F005[46, 115, 123]	
			methyl isobutal ketone		X-[115]	N/A	
			n-butyl alcohol (butanol)	71-36-3	X-[46, 115]	See Note 2	
			nitrobenzene	98-95-3	X-[46, 115, 123]	F004[46, 115, 123]	
			pentachlorophenol	87-86-5	X-[46, 115, 123]	D037[46, 115, 123]	
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[46]	N/A	
			pyridine	110-86-1	X-[46, 115, 123]	F005[46, 115, 123]	
			selenium	7782-49-2	X-[115, 123]	D010[115, 123]	
			silver	7440-22-4	X-[115, 123]	D011[115, 123]	
			tetrachloroethylene (perclene)	127-18-4	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			toluene	108-88-3	X-[46, 115, 123]	F005[46, 115, 123]	

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			trichlorofluoromethane	75-69-4	X-[46, 115, 123]	F001/F002[46, 115, 123]	
			vinyl chloride	75-01-4	X-[46, 115, 123]	D043[46, 115, 123]	
			xylene	1330-20-7	X-[46, 115, 123]	See Note 2	
ID, BN	602	P/U-LISTED LAB NON-PCB HOMOGENEOUS SOLIDS WASTE	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	603	LAB PCB HOMOGENOUS SOLIDS WASTE (NOT P/U-LISTED)	See Note 25[106]		See Note 25[106]	See Note 25[106]	
ID, BN	604	DEBRIS TSCA/PCB	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 15 and 17	See Notes 15 and 17	—
ID, BN	605	ABSORBED LIQUIDS TSCA/PCB	polychlorinated-biphenyls (PCBs)	1336-36-3	See Notes 14 and 15	See Note 14 and 15	—
ID, BN	607	FIRST/SECOND STAGE SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	608	SPECIAL SETUPS LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	609	BUILDING 374 SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	610	MISC. HOMOGENEOUS SOLID LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	611	SEWAGE AND POND SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	612	CAUSTIC WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	613	ACID WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	614	CEMENTED SLUDGE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	615	OASIS WASTE LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	616	ORGANIC SETUPS PCB LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, BN	617	SOLIDIFIED SOLUTIONS LIQUID	Not generated to date		Not generated to date	Not generated to date	
ID, IC	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	PK	D008	
ID, IC	150	LABORATORY WASTE	arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	
			cadmium	7440-43-9	X-[106]	D006[106]	
			chromium	7440-47-3	X-[106]	D007[106]	
			lead	7439-92-1	X-[106]	D008106	
			mercury	7439-97-6	X-[106]	D009106	
			selenium	7782-49-2	X-[106]	D010106	
			silver	7440-22-4	X-[106]	D011106	
			benzene	71-43-2	X-[106]	D018106	
			carbon tetrachloride	56-23-5	X-[106]	D019/F001106	

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	
			cresol	1319-77-3	X-[106]	D026[106]	
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	
			hexachloroethane	67-72-1	X-[106]	D034[106]	
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	
			pentachlorophenol	87-86-5	X-[106]	D037[106]	
			pyridine	110-86-1	X-[106]	D038[106]	
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	
			vinyl chloride	75-01-4	X-[106]	D043[106]	
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	
			methylene chloride	75-09-2	X-[106]	F002[106]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	
			toluene	108-88-3	X-[106]	F005[106]	
			electroplating sludges	—	X-[106]	F006[106]	
			cyanide plating bath solutions	—	X-[106]	F007[106]	
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	— F009[106]	
ID, IC	151	SOLIDIFIED FUEL SLUDGE	See Note 16	—	See Note 16	—	—
ID, IC	152	PU NEUTRON SOURCES	TBD		TBD	TBD	
ID, IC	156	CHEM CELL RIP-OUT (UNK)	TBD		TBD	TBD	
ID, IC	157	MISCELLANEOUS RADIONUCLIDE SOURCES	See Note 16	—	See Note 16	See Note 16	

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, IC	525	INTEC LABORATORY DEBRIS WASTE (P/U-LISTED)	See IDC IC-602		X-[124, 125, 126]	See IDC IC-602	
ID, IC	526	LABORATORY PCB DEBRIS WASTE (See Note 5)	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106]	N/A	—
			arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID, IC	527	LABORATORY NON-PCB DEBRIS WASTE (See Note 5)	arsenic	7440-38-2	X-[106]	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106]51	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID,IC	601	ALPHA LOW LEVEL LAB. WIPP ANALYTICAL WASTE	See IC-150		See IC-150	See IC-150	See IC-150
ID,IC	602	LABORATORY HOMOGENEOUS SOLIDS WASTE (P/U-LISTED)	arsenic	7440-38-2	X-[124, 125, 126]	D004[125, 126]	
			barium	7440-39-3	X-[124, 125, 126]	D005[125, 126]	
			cadmium	7440-43-9	X-[124, 125, 126]	D006[125, 126]	
			chromium	7440-47-3	X-[124, 125, 126]	D007[125, 126]	
			lead	7439-92-1	X-[124, 125, 126]	D008[125, 126]	
			mercury	7439-97-6	X-[124, 125, 126]	D009[125, 126]	
			selenium	7782-49-2	X-[124, 125, 126]	D010[125, 126]	
			silver	7440-22-4	X-[124, 125, 126]	D011[125, 126]	
			chloroform (trichloromethane)	67-66-3	X-[124, 125, 126]	D022[125, 126]	
			cresol	1319-77-3	X-[124, 125, 126]	D026[125, 126]	
			1,4-dichlorobenzene	106-46-7	X-[124, 125, 126]	D027[125, 126]	
			1,2-dichloroethane	107-06-2	X-[124, 125, 126]	D028[125, 126]	
			1,1-dichloroethylene	156-60-5	X-[124, 125, 126]	D029[125, 126]	
			2,4-dinitrotoluene	121-14-2	X-[124, 125, 126]	D030[125, 126]	
			hexachlorobenzene	118-74-1	X-[124, 125, 126]	D032[125, 126]	
			hexachloroethane	67-72-1	X-[124, 125, 126]	D034[125, 126]	
			nitrobenzene	98-95-3	X-[124, 125, 126]	D036[125, 126]	

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			pentachlorophenol	87-86-5	X-[124, 125, 126]	D037[125, 126]	
			vinyl chloride	75-01-4	X-[124, 125, 126]	D043[125, 126]	
			tetrachloroethylene (perclene)	127-18-4	X-[124, 125, 126]	F001/F002[125, 126]	
			trichloroethylene	79-01-6	X-[124, 125, 126]	F001/F002[125, 126]	
			methylene chloride	75-09-2	X-[124, 125, 126]	F001/F002[125, 126]	
			1,1,1-trichloroethane (TCA)	71-55-6	X-[124, 125, 126]	F001/F002[125, 126]	
			carbon tetrachloride	56-23-5	X-[124, 125, 126]	F001/F002[125, 126]	
			tetrachloroethylene (perclene)	127-18-4	X-[124, 125, 126]	F002[125, 126]	
			chlorobenzene	108-90-7	X-[124, 125, 126]	F002[125, 126]	
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[124, 125, 126]	F002[125, 126]	
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[124, 125, 126]	F002[125, 126]	
			trichlorofluoromethane	75-69-4	X-[124, 125, 126]	F002[125, 126]	
			1,1,2-trichloroethane	79-00-5	X-[124, 125, 126]	F002[125, 126]	
			cresols	—	X-[124, 125, 126]	F004[125, 126]	
			nitrobenzene	98-95-3	X-[124, 125, 126]	F004[125, 126]	
			toluene	108-88-3	X-[124, 125, 126]	F005[125, 126]	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[124, 125, 126]	F005[125, 126]	
			carbon disulfide	75-15-0	X-[124, 125, 126]	F005[125, 126]	
			isobutanol (isobutanol)	78-83-1	X-[124, 125, 126]	F005[125, 126]	
			pyridine	110-86-1	X-[124, 125, 126]	F005[125, 126]	
			benzene	71-43-2	X-[124, 125, 126]	F005[125, 126]	
			2-ethoxyethanol	110-80-5	X-[124, 125, 126]	F005[125, 126]	
			2-nitropropane	79-46-9	X-[124, 125, 126]	F005[125, 126]	
			electroplating sludges	—	X-[124, 125, 126]	F006[125, 126]	
			cyanide plating bath solutions	—	X-[124, 125, 126]	F007[125, 126]	
			Stripping and cleaning bath solutions cyanide electroplating	—	X-[124, 125, 126]	F009[125, 126]	
			cyanides	N/A	X-[124, 125, 126]	P030[125, 126]	
			potassium cyanide	151-50-8	X-[124, 125, 126]	P098[125, 126]	
			potassium silver cyanide	506-61-6	X-[124, 125, 126]	P099[125, 126]	
			sodium cyanide	143-33-9	X-[124, 125, 126]	P106[125, 126]	
			acetonitrile	75-05-8	X-[124, 125, 126]	U003[125, 126]	

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			dimethyl sulfite	77-78-1	X-[124, 125, 126]	U103[125, 126]	
			1-4,-dioxane	123-91-1	X-[124, 125, 126]	U108[125, 126]	
ID, IC	603	LABORATORY HOMOGENEOUS SOLIDS WASTE (See Note 5)	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106]	N/A	—
			arsenic	7440-38-2	See Note 19	D004[106]	—
			barium	7440-39-3	X-[106]	D005[106]	—
			cadmium	7440-43-9	X-[106]	D006[106]	—
			chromium	7440-47-3	X-[106]	D007[106]	—
			lead	7439-92-1	X-[106]	D008[106]	—
			mercury	7439-97-6	X-[106]	D009[106]	—
			selenium	7782-49-2	X-[106]	D010[106]	—
			silver	7440-22-4	X-[106]	D011[106]	—
			benzene	71-43-2	X-[106]	D018[106]	—
			carbon tetrachloride	56-23-5	X-[106]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106]	D022[106]	—
			cresol	1319-77-3	X-[106]	D026[106]	—
			1,4-dichlorobenzene	106-46-7	X-[106]	D027[106]	—
			1,2-dichloroethane	107-06-2	X-[106, 51]	D028[106]	—
			1,1-dichloroethylene	156-60-5	X-[106]	D029[106]	—
			2,4-dinitrotoluene	121-14-2	X-[106]	D030[106]	—
			hexachlorobenzene	118-74-1	X-[106]	D032[106]	—
			hexachlorobutadiene	87-68-3	X-[106]	D033[106]	—
			hexachloroethane	67-72-1	X-[106]	D034[106]	—
			hydrofluoric acid (hydrogen fluoride)	7664-39-3	X-[106]	U134	
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106]	D035/F005[106]	—
			nitrobenzene	98-95-3	X-[106]	D036/F004[106]	—
			pentachlorophenol	87-86-5	X-[106]	D037[106]	—
			pyridine	110-86-1	X-[106]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106]	D039[106]	—
			trichloroethylene	79-01-6	X-[106]	D040/F002[106]	—
			vinyl chloride	75-01-4	X-[106]	D043[106]	—
			1,2-dichlorobenzene	95-50-1	X-[106]	F002[106]	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106]	F002[106]	—
			methylene chloride	75-09-2	X-[106]	F002[106]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106]	F002[106]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106]	F002[106]	—
			trichlorofluoromethane	75-69-4	X-[106]	F002[106]	—
			1,1,2-trichloroethane	79-00-5	X-[106]	F002[106]	—
			toluene	108-88-3	X-[106]	F005[106]	—
			electroplating sludges	—	X-[106]	F006[106]	—
			cyanide plating bath solutions	—	X-[106]	F007[106]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106]	F009[106]	—
ID, IF	150	LABORATORY WASTE	lead	7439-92-1	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1]	See Notes 2 and 3	—
ID, IF	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IN	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IN	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1, 5]	—	—
ID, IN	153	COMBUSTIBLE LAB WASTE	beryllium (not beryllium powder)	7440-41-7	X-[1, 4]	—	—
			lead (shielding only)	7439-92-1	X-[1]	D008	—
ID, IN	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IR	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IR	150	LABORATORY WASTE	lead	7439-92-1	X-[5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	—	—
ID, IR	154	SAMPLE FUEL	lead (shielding only)	7439-92-1	X-[1, 4]	—	—
ID, IR	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IR	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IT	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IT	152	PU NEUTRON SOURCES	beryllium (not beryllium powder)	7440-41-7	X-[1]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
ID, IT	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IT	175	DRCT SCRAP METAL WASTE FROM TAN	TBD	—	TBD	—	—
ID, IW	005	EVAPORATOR SALTS-RETRIEVED RF TRU	nitrates	—	X-[4]	—	—
ID, IW	021	RADIOACTIVE MIXED LEAD WASTE	lead	7439-92-1	lead	D008	—
ID, IW	155	TRU SCRAP	TBD	—	TBD	—	—
ID, IW	157	MISCELLANEOUS RADIONUCLIDE SOURCES	TBD	—	TBD	—	—
ID, IW	176	RWMC HOMOGENEOUS SOLIDS	See Note 16	—	See Note 16	See Note 16	—
ID, IW	177	RWMC HETEROGENOUS DEBRIS	See Note 16	1336-36-3	See Note 16	See Note 16	—
ID, IW	178	RWMC SOIL	See Note 16	1336-36-3	See Note 16	See Note 16	—
ID, IW	179	EARLY WASTE RETRIEVAL BINS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 18	See Note 16	—
ID, IW	337	PLASTIC, TEFLON, WASHABLES, PVC, RETRIEVED RF TRU	See Note 16	—	See Note 16	—	—
ID, IW	526	LABORATORY PCB DEBRIS WASTE	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106,146]	N/A	—
			arsenic	7440-38-2	X-[106,146]	D004[106,146]	—
			barium	7440-39-3	X-[106,146]	D005[106,146]	—
			cadmium	7440-43-9	X-[106,146]	D006[106,146]	—
			chromium	7440-47-3	X-[106,146]	D007[106,146]	—
			lead	7439-92-1	X-[106,146]	D008[106,146,146]	—
			mercury	7439-97-6	X-[106,146]	D009[106,146]	—
			selenium	7782-49-2	X-[106,146]	D010[106,146]	—
			silver	7440-22-4	X-[106,146]	D011[106,146]	—
			benzene	71-43-2	X-[106,146]	D018[106,146]	—
			carbon tetrachloride	56-23-5	X-[106,146]	D019/F001[106,146]	—
			chlorobenzene	108-90-7	X-[106,146]	D021/F002[106,146]	—
			chloroform (trichloromethane)	67-66-3	X-[106,146]	D022[106,146]	—
			cresol	1319-77-3	X-[106,146]	D026[106,146]	—
			1,4-dichlorobenzene	106-46-7	X-[106,146]	D027[106,146,146]	—
			1,2-dichloroethane	107-06-2	X-[106, 51,146]	D028[106,146]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1-dichloroethylene	156-60-5	X-[106,146]	D029[106,146]	—
			2,4-dinitrotoluene	121-14-2	X-[106,146]	D030[106,146]	—
			hexachlorobenzene	118-74-1	X-[106,146]	D032[106,146]	—
			hexachlorobutadiene	87-68-3	X-[106,146]	D033[106,146]	—
			hexachloroethane	67-72-1	X-[106,146]	D034[106,146]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106,146]	D035/F005[106,146]	—
			nitrobenzene	98-95-3	X-[106,146]	D036/F004[106,146]	—
			pentachlorophenol	87-86-5	X-[106,146]	D037[106,146]	—
			pyridine	110-86-1	X-[106,146]	D038[106,146]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106,146]	D039[106,146]	—
			trichloroethylene	79-01-6	X-[106,146]	D040/F002[106,146]	—
			vinyl chloride	75-01-4	X-[106,146]	D043[106,146]	—
			1,2-dichlorobenzene	95-50-1	X-[106,146]	F002[106,146]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106,146]	F002[106,146]	—
			methylene chloride	75-09-2	X-[106,146]	F002[106,146]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106,146]	F002[106,146]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106,146]	F002[106,146]	—
			trichlorofluoromethane	75-69-4	X-[106,146]	F002[106,146]	—
			1,1,2-trichloroethane	79-00-5	X-[106,146]	F002[106,146]	—
			toluene	108-88-3	X-[106,146]	F005[106,146]	—
			electroplating sludges	—	X-[106,146]	F006[106,146]	—
			cyanide plating bath solutions	—	X-[106,146]	F007[106,146]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106,146]	F009[106,146]	—
ID, IW	527	LABORATORY NON-PCB DEBRIS WASTE (See Note 19)	arsenic	7440-38-2	X-[106 147]	D004[106 ,147]	—
			barium	7440-39-3	X-[106 147]	D005[106 147]	—
			cadmium	7440-43-9	X-[106 147]	D006[106 147]	—
			chromium	7440-47-3	X-[106 147]	D007[106 147]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			lead	7439-92-1	X-[106 147]	D008[106 147]	—
			mercury	7439-97-6	X-[106 147]	D009[106 147]	—
			selenium	7782-49-2	X-[106 147]	D010[106 147]	—
			silver	7440-22-4	X-[106 147]	D011[106 147]	—
			benzene	71-43-2	X-[106 147]	D018[106 147]	—
			carbon tetrachloride	56-23-5	X-[106 147]	D019/F001[106]	—
			chlorobenzene	108-90-7	X-[106 147]	D021/F002[106]	—
			chloroform (trichloromethane)	67-66-3	X-[106 147]	D022[106 147]	—
			cresol	1319-77-3	X-[106 147]	D026[106 147]	—
			1,4-dichlorobenzene	106-46-7	X-[106 147]	D027[106 147]	—
			1,2-dichloroethane	107-06-2	X-[106, 51 147]	D028[106 147]	—
			1,1-dichloroethylene	156-60-5	X-[106 147]	D029[106 147]	—
			2,4-dinitrotoluene	121-14-2	X-[106 147]	D030[106 147]	—
			hexachlorobenzene	118-74-1	X-[106 147]	D032[106 147]	—
			hexachlorobutadiene	87-68-3	X-[106 147]	D033[106 147]	—
			hexachloroethane	67-72-1	X-[106 147]	D034[106 147]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106 147]	D035/F005[106 147]	—
			nitrobenzene	98-95-3	X-[106 147]	D036/F004[106 147]	—
			pentachlorophenol	87-86-5	X-[106 147]	D037[106 147]	—
			pyridine	110-86-1	X-[106 147]	D038[106 147]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106 147]	D039[106 147]	—
			trichloroethylene	79-01-6	X-[106 147]	D040/F002[106 147]	—
			vinyl chloride	75-01-4	X-[106 147]	D043[106 147]	—
			1,2-dichlorobenzene	95-50-1	X-[106 147]	F002[106 147]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106 147]	F002[106 147]	—
			methylene chloride	75-09-2	X-[106 147]	F002[106 147]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106 147]	F002[106 147]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106 147]	F002[106 147]	—
			trichlorofluoromethane	75-69-4	X-[106 147]	F002[106 147]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloroethane	79-00-5	X-[106 147]	F002[106 147]	—
			toluene	108-88-3	X-[106 147]	F005[106 147]	—
			electroplating sludges	—	X-[106 147]	F006[106 147]	—
			cyanide plating bath solutions	—	X-[106 147]	F007[106 147]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106 147]	F009[106 147]	—
ID, IW	603	LABORATORY HOMOGENOUS SOLIDS WASTE	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[106,148]	N/A	—
			arsenic	7440-38-2	X-[106,148]	D004[106,148]	—
			barium	7440-39-3	X-[106,148]	D005[106,148]	—
			cadmium	7440-43-9	X-[106,148]	D006[106,148]	—
			chromium	7440-47-3	X-[106,148]	D007[106,148]	—
			lead	7439-92-1	X-[106,148]	D008[106,148]	—
			mercury	7439-97-6	X-[106,148]	D009[106,148]	—
			selenium	7782-49-2	X-[106,148]	D010[106,148]	—
			silver	7440-22-4	X-[106,148]	D011[106,148]	—
			benzene	71-43-2	X-[106,148]	D018[106,148]	—
			carbon tetrachloride	56-23-5	X-[106,148]	D019/F001[106,148]	—
			chlorobenzene	108-90-7	X-[106,148]	D021/F002[106,148]	—
			chloroform (trichloromethane)	67-66-3	X-[106,148]	D022[106,148]	—
			cresol	1319-77-3	X-[106,148]	D026[106,148]	—
			1,4-dichlorobenzene	106-46-7	X-[106,148]	D027[106,148]	—
			1,2-dichloroethane	107-06-2	X-[106, 51,148]	D028[106,148]	—
			1,1-dichloroethylene	156-60-5	X-[106,148]	D029[106,148]	—
			2,4-dinitrotoluene	121-14-2	X-[106,148]	D030[106,148]	—
			hexachlorobenzene	118-74-1	X-[106,148]	D032[106,148]	—
			hexachlorobutadiene	87-68-3	X-[106,148]	D033[106,148]	—
			hexachloroethane	67-72-1	X-[106,148]	D034[106,148]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[106,148]	D035/F005[106,148]	—
			nitrobenzene	98-95-3	X-[106,148]	D036/F004[106,148]	—
			pentachlorophenol	87-86-5	X-[106,148]	D037[106,148]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			pyridine	110-86-1	X-[106,148]	D038[106]	—
			tetrachloroethylene (perclene)	127-18-4	X-[106,148]	D039[106]	—
			trichloroethylene	79-01-6	X-[106,148]	D040/F002[106,148]	—
			vinyl chloride	75-01-4	X-[106,148]	D043[106,148]	—
			1,2-dichlorobenzene	95-50-1	X-[106,148]	F002[106,148]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[106,148]	F002[106,148]	—
			methylene chloride	75-09-2	X-[106,148]	F002[106,148]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[106,148]	F002[106,148]	—
			1,2-dichlorobenzene (ortho-dichlorobenzene)	95-50-1	X-[106,148]	F002[106,148]	—
			trichlorofluoromethane	75-69-4	X-[106,148]	F002[106,148]	—
			1,1,2-trichloroethane	79-00-5	X-[106,148]	F002[106,148]	—
			toluene	108-88-3	X-[106,148]	F005[106,148]	—
			electroplating sludges	—	X-[106,148]	F006[106,148]	—
			cyanide plating bath solutions	—	X-[106,148]	F007[106,148]	—
			stripping and cleaning bath solutions cyanide electroplating	—	X-[106,148]	F009[106,148]	—
ID, SD	704	SDA HOMOGENEOUS SOLIDS	See Notes 9 and 19[51]	56-23-5	See Note 9[51]	See Note 19[51]	F001[51]
ID, SD	705	SDA HETEROGENEOUS DEBRIS	See Notes 9 and 19[51]		See Note 9[51]	See Note 19[51]	
ID, SD	706	SDA SOIL	See Notes 9 and 19[51]		See Note 9[51]	See Note 19[51]	
JH, JH	826	COMBUSTIBLE EQUIPMENT BOXES AND FLOOR SWEEPINGS	none identified	—	X-[13]	—	—
JH, JH	827	SOLID TRASH AND DRY LAB. MATERIAL	lead	7439-92-1	X-[13]	—	—
LB, LB	229	LBNL MIXED HETEROGENEOUS DEBRIS	See Notes 9 and 19[143]		See Note 9[143]	See Note 19[143]	
LL, LA	002	TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY	See Notes 9 and 19[128]		See Note 9[128]	See Note 19[128]	
LL, LA	003	SOLIDIFIED INORGANICS	See Notes 9 and 19[129]		See Note 9[129]	See Note 19[129]	
LL, LA	005	LANL MIXED SALT WASTE	See Notes 9 and 19[130]		See Note 9[130]	See Note 19[130]	
LL, LA	006	CEMENTED TRU WASTE	See Notes 9 and 19[131]		See Note 9[131]	See Note 19[131]	

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LL, LL	212	LLNL SOLIDIFIED SLUDGE AND LIQUIDS	See Notes 9 and 19		See Note 9[100]	See Note 19[100]	
LL, LL	213	HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[101]	See Note 19[101]	
LL, LL	221	LLNL PYROCHEMICAL SALT WASTE	See Notes 9and 19		See Note 9[102]	See Note 19[102]	
MD, MD	801	RAGS, PAPER, WOOD, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			arsenic	7440-38-2	X-[42]	—	D004[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead (if MD-802 present in the waste container)	7439-92-1	X-[4, 42]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if 812 present in the container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	802	DRY BOX GLOVES AND O-RINGS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			arsenic	7440-38-2	X-[42]	—	D004[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[1, 4, 5]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-812 present in the waste container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
MD, MD	803	METAL, EQUIPMENT, PIPE, VALVES, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (if MD-805 present in the waste container)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 present in the waste container)	—	X-[4, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
MD, MD	804	PLASTIC, TYGON, MANI-BOOTS, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead (if MD-802 is present in the waste container)	7439-92-1	X-[4]	—	D008[42]
			mercury	7439-97-6	X-[42]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-812 present in the waste container)	—	X-[4]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	805	ASBESTOS FILTERS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos	1332-21-4	X-4, 5	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	N/A	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 is present in the waste container)	—	X-[1, 4, 5, 42]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4, 42]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	810	GLASS FLASKS, SAMPLE VIALS, ETC.	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (from MD-805)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 is present in the waste container)	—	X-[1]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	811	EVAPORATOR AND DISSOLVER SLUDGE	asbestos (if MD-805 is present in the waste container)	1332-21-4	X-[4]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5]	—	—
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			nitrates (MD-811 may be present in containers of MD-803, 805, 810, and 813)	—	X-[1, 4, 5]	—	—
MD, MD	812	SPENT ION EXCHANGE RESIN	nitrates (MD-812 may be present in containers of MD-801, 802, and 804)	—	X-[4, 5]	—	—
MD, MD	813	GLASS FILTERS AND FIBERGLASS	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos (from MD-805)	1332-21-4	X-[4, 42]	N/A	N/A
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4, 42]	N/A	N/A
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (from MD-832)	7439-97-6	X-[4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates (if MD-811 present in the waste container)	—	X-[1, 4, 42]	See Note 2	N/A
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	814	GRAPHITE WASTE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[42]	—	D008[42]
			mercury (also from MD-832)	7439-97-6	X-[1, 4, 5]	—	D009[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	815	CLASSIFIED PARTS	See Note 24	—	See Note 24	—	—
MD, MD	824	EQUIPMENT BOXES NON-COMBUSTIBLE	asbestos (from MD-805)	1332-21-4	X-[4]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			barium	7440-39-3	X-[5]	—	—
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—
			selenium	7782-49-2	X-[5]	—	—
			silver	7440-22-4	X-[5]	—	—
MD, MD	825	EQUIPMENT DRUMS NON-COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[20]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[20]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[20]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	—	—
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[20]	—	D008[42]
			mercury	7439-97-6	X-[20]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[20]	—	D010[42]
			silver	7440-22-4	X-[20]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MD, MD	826	EQUIPMENT BOXES, COMBUSTIBLE	asbestos (if MD-805 present in the waste container)	1332-21-4	X-[4]	—	—
			mercury (if MD-832 present in the waste container)	7439-97-6	X-[4, 5]	—	—
MD, MD	827	EQUIPMENT DRUMS, COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			barium	7440-39-3	X-[42]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[42]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[42]	—	D007[42]
			cyanide	57-12-5	X-[42]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[5]	—	D008[42]
			mercury	7439-97-6	X-[5]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			selenium	7782-49-2	X-[42]	—	D010[42]
			silver	7440-22-4	X-[42]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
MD, MD	832	CONTAMINATED MERCURY	mercury	7439-97-6	X-[1, 4, 5]	—	—
			beryllium (not beryllium powder from MD-811)	7440-41-7	X-[4]	—	—
MD, MD	834	HIGH LEVEL ACID	nitrates	—	X-[1, 5, 36]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[4]	See Note 2	N/A
			1,1,1-trichloroethane (TCA)	71-55-6	X-[36]	—	F001/F002[36]
			asbestos	1332-21-4	X-[36]	N/A	N/A
			acetone	67-64-1	X-[36]	See Note 2	N/A
			beryllium (not beryllium powder)	7440-41-7	X-[36]	—	—
			chromium	7440-47-3	X-[36]	—	D007[36]
			lead	7439-92-1	X-[36]	—	D008[36]
			mercury	7439-97-6	X-[1]	—	D009[36]
			methanol	67-56-1	X-[36]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[36]	—	F001[36]
			trichloroethylene (TCE)	79-01-6	X-[36]	—	F001/F002[36]
			xylene	1330-20-7	X-[36]	See Note 2	N/A
MD, MD	835	HIGH LEVEL CAUSTIC	potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4, 5]	See Note 2	N/A
			1,1,1-trichloroethane (TCA)	71-55-6	X-[36]	—	F001/F002[36]
			chromium	7440-47-3	X-[36]	—	D007[36]
			asbestos	1332-21-4	X-[36]	N/A	N/A
			acetone	67-64-1	X-[36]	See Note 2	N/A
			beryllium (not beryllium powder)	7440-41-7	X-[36]	N/A	N/A
			lead	7439-92-1	X-[36]	—	D008[36]
			mercury	7439-97-6	X-[36]	—	D009[36]
			methanol	67-56-1	X-[36]	See Note 2	N/A
			nitrates	—	X-[36]	N/A	N/A
			carbon tetrachloride	56-23-5	X-[36]	—	F001[36]
			trichloroethylene (TCE)	79-01-6	X-[36]	—	F001/F002[36]
			xylene	1330-20-7	X-[36]	See Note 2	N/A
MD, MD	836	HIGH LEVEL SLUDGE/CEMENT	1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	F002[56]
			acetone	67-64-1	X-[5, 56]	See Note 2	N/A

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			arsenic	7440-38-2	X-[56]	—	D004[56]
			barium	7440-39-3	X-[56]	—	D005[56]
			benzene	71-43-2	X-[56]	—	F005[56]
			beryllium (not beryllium powder)	7440-41-7	X-[5]	N/A	N/A
			cadmium	7440-43-9	X-[5]	—	D006[56]
			chromium	7440-47-3	X-[5]	—	D007[56]
			lead	7439-92-1	X-[5]	—	D008[56]
			mercury	7439-97-6	X-[5]	—	D009[56]
			methanol	67-56-1	X-[5, 56]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	See Note 2	N/A
			nitrates	—	X-[56]	N/A	N/A
			selenium	7782-49-2	X-[5]	—	D010[56]
			silver	7440-22-4	X-[5]	—	D011[56]
			tetrachloroethylene (perclene)	127-18-4	X-[56]	—	F001/F002[56]
			toluene	108-88-3	X-[56]	—	F005[56]
			trichloroethylene (TCE)	79-01-6	X-[5, 56]	—	F001/F002[56]
			xylene	1330-20-7	X-[56]	See Note 2	N/A
MD, MD	838	<10 NCI/G NON-COMBUSTIBLE (UNK)	See Note 24	—	See Note 24	See Note 24	—
MD, MD	842	CONTAMINATED SOIL	cadmium	7440-43-9	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Notes 2 and 3	—
			selenium	7782-49-2	X-[5]	—	—
			silver	7440-22-4	X-[5]	—	—
MD, MD	847	LSA <100 NCI/G COMBUSTIBLE	mercury	7439-97-6	X-[20]	—	—
			nitrates (from MD-812)	—	X-[20]	—	—
			lead	7439-92-1	X-[20]	—	—
MD, MD	848	LSA <100 NCI/G NON-COMBUSTIBLE	1,1-dichloroethylene	75-35-4	X-[42]	—	D029[42]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[42]	—	F001/F002[42]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[42]	—	F001/F002[42]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			acetone	67-64-1	X-[42]	See Note 2	N/A
			arsenic	7440-38-2	X-[42]	—	D004[42]
			asbestos	1332-21-4	X-[42]	N/A	N/A
			barium	7440-39-3	X-[20]	—	D005[42]
			benzene	71-43-2	X-[42]	—	F005[42]
			cadmium	7440-43-9	X-[20]	—	D006[42]
			carbon disulfide	75-15-0	X-[42]	—	F005[42]
			carbon tetrachloride	56-23-5	X-[42]	—	F001[42]
			chloroform (trichloromethane)	67-66-3	X-[42]	—	D022[42]
			chromium	7440-47-3	X-[20]	—	D007[42]
			cyanide	57-12-5	X-[42]	N/A	N/A
			cyanide cleaning bath solutions	—	X-[42]	—	F009[42]
			cyanide plating bath solutions	—	X-[42]	—	F007[42]
			lead	7439-92-1	X-[20]	—	D008[42]
			mercury	7439-97-6	X-[20]	—	D009[42]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[42]	—	F005[42]
			methanol	67-56-1	X-[42]	See Note 2	N/A
			methylene chloride	75-09-2	X-[42]	—	F001/F002[42]
			nitrates	—	X-[42, 20]	See Note 2	N/A
			potential corrosive if liquids exceed the WIPP-WAC limit	—	X-[20]	See Note 2	N/A
			selenium	7782-49-2	X-[20]	—	D010[42]
			silver	7440-22-4	X-[20]	—	D011[42]
			tetrachloroethylene (perclene)	127-18-4	X-[42]	—	F002[42]
			toluene	108-88-3	X-[42]	—	F005[42]
			trichloroethylene (TCE)	79-01-6	X-[42]	—	F001/F002[42]
			xylene	1330-20-7	X-[42]	See Note 2	N/A
MO, MO	530	COMPACTED WASTE	none identified	—	X-[11]	—	—
MO, MO	535	COMPACTED WASTE/LEAD	lead	7439-92-1	X-[11]	—	—
MO, MO	540	NON-COMPACTED WASTE	lead	7439-92-1	X-[11]	—	—
			2-methoxyethanol	109-86-4	X-[11]	—	—
			ether	60-29-7	X-[11]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			dichlorodifluorourethane	—	X-[11]	—	—
			polyphenylisocyanate	—	X-[11]	—	—
MO, MO	545	WEP SHIELDED WASTE	styrene	100-42-5	X-[11]	—	—
MO, MO	550	SOLIDIFIED OIL	none identified	—	X-[11]	—	—
MX, MX	142	SCRAP PROCESSING EQUIPMENT	lead	7439-92-1	X-[14]	—	—
			nitrates	—	X-[14]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[14]	See Notes 2 and 3	—
			barium	7440-39-3	X-[5, 9]	—	—
			benzene	71-43-2	X-[8, 9, 16]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	—	—
			cadmium	7440-43-9	X-[1, 5, 8, 9, 16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 9]	F001	—
			chlorobenzene	108-90-7	X-[16]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5, 9]	—	—
			chromium	7440-47-3	X-[5, 8, 16]	—	—
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	—
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	—
			electroplating sludges	—	X-[9, 16]	F006[16]	—
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	—
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	—
			lead	7439-92-1	X-[1, 4, 5, 8, 9, 16]	D008[16]	—
			mercury	7439-97-6	X-[4, 5, 9, 16]	—	—
			methanol	67-56-1	X-[1, 5, 16]	F003[16] See Note 2	—
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 9, 16]	F002[16]	—
			nitrate	—	X-[4, 6, 16, 57]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	—
			selenium	7782-49-2	X-[9, 16]	—	—

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			silver	7440-22-4	X-[5, 8, 9, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5, 8, 16]	F001[16]	—
			toluene	108-88-3	X-[8, 9, 16, 24]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 9, 16]	F001[16]	—
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16] See Note 2	—
ND, ND	228	NRD MIXED HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[144]	See Note 19[144]	
NT, NT	210	NTS BERKELEY SOLIDIFIED LIQUIDS	See Notes 9 and 19		See Note 9[71, 90]	See Note 19[71, 90]	
NT, NT	211	NTS LAWRENCE BERKELEY HETEROGENEOUS DEBRIS (See	See Notes 9 and 19		See Note 9[71, 90]	See Note 19[71, 90]	
NT, NT	212	NTS LAWRENCE LIVERMORE NATIONAL LABORATORY (LLNL) SOLIDIFIED SLUDGE AND LIQUIDS	See Notes 9 and 19		See Note 9[70, 84]	See Note 19[70, 84]	
NT, NT	213	NTS LLNL HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[70, 84]	See Note 19[70, 84]	
NT, NT	214	NTS LYNCHBURG HETEROGENEOUS DEBRIS	See Notes 9 and 19		See Note 9[77]	See Note 19[87]	
NT, NT	215	NTS EG&G HETEROGENEOUS DEBRIS)	See Notes 9 and 19		See Note 9[78, 86]	See Note 19[78, 86]	
NT, NT	216	NTS ROLLER COASTER DEBRIS	See Notes 9 and 19		See Note 9[79]	See Note 19[79, 89]	
NT, NT	217	NTS RF DECON DEBRIS	See Notes 9 and 19		See Note 9[80]	See Note 19[80, 88]	
NT, NT	218	NTS LIVERMORE AND BERKELEY COMBINED DEBRIS	See Notes 9 and 19		See Note 9[81, 85]	See Note 19[81, 85]	
NT, NT	219	NTS ITRI DEBRIS	See Notes 9 and 19		See Note 9[81, 85]	See Note 19[81, 85]	
NT, NT	220	NTS DECON AND MAINTENANCE DEBRIS	See Notes 9 and 19		See Note 9-[83, 92]	See Note 19[83, 92]	
OR, OR	250	OR-NFS-CH-SOIL	See Notes 9 and 19[132]		See Note 9[132]-	See Note 19[132]	
RF, RF	010	PAPER & RAGS (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	020	WOOD & BENELEX (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	030	PLASTIC (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	040	RUBBER (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	050	METAL SCRAP (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	060	GLASS (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	070	GRAPHITE (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	080	EQUIPMENT (Pre-1971)	See Note 16	—	See Note 16	See Note 16	—
RF, RF	001	FIRST STAGE SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 8, 16]	F002[16]	F002[24, 57]
			1,1,2,2-trichloroethane	79-00-5	X-[16, 24]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5, 24, 57]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	F003[57] See Notes 1 and 2
			arsenic	7440-38-2	X-[9, 16]	—	D004[24, 57]
			barium	7440-39-3	X-[5, 9]	—	D005[24, 57]
			benzene	71-43-2	X-[8, 9, 16]	—	F005[24, 57]
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	N/A	N/A
			cadmium	7440-43-9	X-[1, 5, 8, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 9]	F001	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[5, 9]	—	D022[57]
			chromium	7440-47-3	X-[5, 8, 16]	—	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A
			lead	7439-92-1	X-[1, 4, 5, 8, 9, 16]	D008[16]	D008[24, 57]
			mercury	7439-97-6	X-[4, 5, 9, 16]	—	D009[24, 57]
			methanol	67-56-1	X-[1, 5, 16]	F003[16]	F003[57] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 8, 9, 16, 6]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[4, 6, 16, 57]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	—	D010[24, 57]
			silver	7440-22-4	X-[5, 8, 9, 16]	—	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 8, 16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[8, 9, 16, 24]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16]	F003[57] See Notes 1 and 2
RF, RF	002	SECOND STAGE SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	F002[16]	F002[24, 57]
			1,1,2,2-trichloroethane	79-00-5	X-[16, 24]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5, 24, 57]	F003[16] See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	F003[57] See Notes 1 and 2
			arsenic	7440-38-2	X-[9, 16]	—	D004[24, 57]
			barium	7440-39-3	X-[5, 9, 16]	—	D005[24, 57]
			benzene	71-43-2	X-[9, 16]	—	F005[24, 57]
			beryllium (not beryllium powder)	7440-41-7	X-[4, 57]	N/A	N/A
			cadmium	7440-43-9	X-[1, 5, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[1, 5, 9, 16]	F001[16]	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[5, 9, 16]	—	D022[57]
			chromium	7440-47-3	X-[1, 5, 9, 16]	—	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			lead	7439-92-1	X-[1, 4, 5, 9, 16]	D008[16]	D008[24, 57]
			lithium (discharged batteries)	7439-93-2	X-[4, 16, 24, 57]	See Note 2	N/A
			mercury	7439-97-6	X-[1, 4, 5, 9, 16]	D009[16]	D009[24, 57]
			methanol	67-56-1	X-[1, 5, 16]	F003[16]	F003[57] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 6, 9, 16]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[4, 6, 16, 57]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	—	D010[24, 57]
			silver	7440-22-4	X-[5, 9, 16]	—	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[9, 16]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 9, 16]	F001[16]	F001/F002[24, 57]
			xylene	1330-20-7	X-[1, 5, 9, 16]	F003[16]	F003[57] See Notes 1 and 2
RF, RF	003	ORGANIC SETUPS, OIL SOLIDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 4, 5, 6, 8, 16]	F001[16]	F001/F002[46]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16]	F002[16]	F002[46]
			1,1-dichloroethylene	75-35-4	X-[16]	D029[16]	D029[46]
			1,2-dichlorobenzene	95-50-1	X-[46]	—	F002[46]
			1,2-dichloroethane	107-06-2	X-[16]	D028[16]	D028[46]
			1,4-dichlorobenzene	106-46-7	X-[46]	—	D027[46]
			2-ethoxyethanol	110-80-5	X-[46]	—	F005[46]
			2,4-dinitrotoluene	121-14-2	X-[46]	—	D030[46]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			benzene	71-43-2	X-[46]	—	F005[46]
			beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5, 16]	N/A	N/A
			butanol	71-36-3	X-[46]	See Note 2	N/A
			carbon disulfide	75-15-0	X-[46]	—	F005[46]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[4, 5, 6, 8, 16]	F001[16]	F001[46]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[46]
			cresol	1319-77-3	X-[46]	—	D026[46]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[46]	—	D032[46]
			hexachloroethane	67-72-1	X-[16]	D034[16]	D034[46]
			methanol	67-56-1	X-[5]	F00316 See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46]	—	F005[46]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[16]	F002[46]
			nitrobenzene	98-95-3	X-[1, 4, 5, 16]	—	D036[46]
			nitrates	—	X-[6]	See Note 2	N/A
			pentachlorophenol	87-86-5	X-[46]	—	D037[46]
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[1, 4 .5, 16. 46]	N/A	N/A
			pyridine	110-86-1	X-[46]	—	F005[46]
			tetrachloroethylene (perclene)	127-18-4	X-[1, 4, 5, 6, 8, 16]	F001[16]	F002[46]
			trichlorofluoromethane	75-69-4	X-[46]	—	F001/F002[46]
			toluene	108-88-3	X-[16]	—	F005[46]
			trichloroethylene (TCE)	79-01-6	X-[1, 4, 5, 6, 8, 16]	F001[16]	F002[46]
			xylene	1330-20-7	X-[16]	F003[16] See Note 2	N/A
RF, RF	004	SPECIAL SETUPS	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	F001[16]	F001/F002[45]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 16]	F002[16]	F001/F002[45]
			1,1-dichloroethylene	75-35-4	X-[5]	—	D029[45]
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A
			acetone	67-64-1	X-[45]	See Note 2	N/A
			benzene	71-43-2	X-[5, 16]	—	F005[45]
			cadmium	7440-43-9	X-[1, 5]	—	D006[45]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16]	F001[45]
			chromium	7440-47-3	X-[16]	—	D007[45]
			cyanide	57-12-5	X-[16, 45]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[5, 16, 45]	F003[16] See Note 2	N/A
			ethyl ether	60-29-7	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5]	D008	D008[45]
			methanol	67-56-1	X-[1, 5, 16, 45]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5]	—	F002[45]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[45]	—	F005[45]
			nitrates		X-[16, 45]	—	—
			silver	7440-22-4	X-[45]	—	D011[45]
			toluene	108-88-3	X-[5, 16]	—	F005[45]
			tetrachloroethylene (perclene)	127-18-4	X-[5]	—	F001/F002[45]
			trichloroethylene (TCE)	79-01-6	X-[6, 16]	F001[16]	F001/F002[45]
			xylene	1330-20-7	X-[1, 5, 16]	F003[16] See Note 2	N/A
			electroplating sludges	—	X-[45]	—	F006[45]
			cyanide plating bath solutions	—	X-[45]	—	F007[45]
			cyanide cleaning bath solutions	—	X-[45]	—	F009[45]
RF, RF	005	EVAPORATOR SALTS	nitrates	—	X-[4, 5]	—	—
			possible ignitable if deemed an oxidizer	—	X-[1, 5]	—	—
RF, RF	007	BUILDING 374 DRY SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[16]	N/A	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 8, 16]	F002[16]	F001[25]
			1,2-dichloroethylene	540-59-0	X-[5, 16]	N/A	N/A
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A
			acetone	67-64-1	X-[16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[5, 16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-[5, 25]	N/A	N/A
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			cadmium	7440-43-9	X-[1, 5, 16]	D006[16]	D006[25]
			carbon tetrachloride	56-23-5	X-[5, 6, 8, 16]	F001[16]	F001[25]
			chromium	7440-47-3	X-[1, 5, 8, 16]	—	D007[25]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			electroplating sludges	—	X-[16]	F006[16]	F006[25]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[25]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[25]
			ethyl benzene	100-41-4	X-[5, 16]	See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			hexane	110-54-3	X-[25]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	D008[25]
			mercury	7439-97-6	X-[5, 16]	—	D009[25]
			methanol	67-56-1	X-[1, 5, 16, 25]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 8, 16]	F002[16]	F002[25]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 8]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			styrene	100-42-5	X-[16]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	F001[16]	F001[25]
			toluene	108-88-3	X-[5, 16]	—	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[25]
			xylene	1330-20-7	X-[1, 5, 16, 25]	See Note 2	N/A
RF, RF	090	DIRT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			1-butanol	71-36-3	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			methanol	67-56-1	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
			nitrates	—	X-[1, 5]	—	—
			nitrobenzene	98-95-3	X-[1, 5]	—	—

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[1, 5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1, 5]	—	—
			xylene	1330-20-7	X-[1, 5]	—	—
RF, RF	095	SEWER SLUDGE	See Note 16	—	See Note 16	See Note 16	—
RF, RF	241	AMERICIUM PROCESS RESIDUE	lead	7439-92-1	X-[1, 4, 5, 16]	D008[16]	—
			methylene chloride	75-09-2	X-[1, 5]	F002[5]	—
			nitrates	—	X-[1, 4, 16]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5, 16]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5, 16]	See Note 2 and 3	—
			xylene	1330-20-7	X-[1, 5]	F003[5] See Note 2	—
RF, RF	290	FILTER SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			1-butanol	71-36-3	X-[1, 5]	—	—
			cadmium	7440-43-9	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			lead	7439-92-1	X-[1, 5]	—	—
			methanol	67-56-1	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2 and 3	—
			xylene	1330-20-7	X-[1, 5]	See Note 2	—
RF, RF	292	CEMENTED SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	—	F001/F002[26, 95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F001/F002[26, 95]
			1-butanol	71-36-3	X-[1, 5]	See Note 2	N/A[95]
			acetone	67-64-1	X-[16]	See Note 2	N/A[26, 95] See Notes 1 and 2
			arsenic	7440-38-2	X-[16]	—	D004[26, 95]
			barium	7440-39-3	X-[16]	—	D005[26, 95]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			benzene	71-43-2	X-[5, 16]	—	F005[26, 95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[1, 5, 16]	—	D006[26, 95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[26, 95]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[26, 95]
			chromium	7440-47-3	X-[8, 16]	—	D007[26, 95]
			cyanide cleaning bath solutions	—	X-[16]	See Note 11	F009[26, 95]
			cyanide plating bath solutions	—	X-[16]	See Note 11	F007[26, 95]
			electroplating sludges	—	X-[16]	See Note 11	F006[26, 95]
			lead	7439-92-1	X-[1, 5, 8, 16]	—	D008[26, 95]
			mercury	7439-97-6	X-[8, 16]	—	D009[26, 95]
			methanol	67-56-1	X-[1, 5, 16]	See Note 2	N/A[26, 95] See Notes 1 and 2
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[26, 95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[95]	—	F005[95]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 4]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[26, 95]
			silver	7440-22-4	X-[8, 16]	—	D011[26, 95]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 26]	—	F001/F002[26, 95]
			toluene	108-88-3	X-[5, 8, 16, 26]	—	F005[26, 95]
			trichloroethylene (TCE)	79-01-6	X-[5, 16, 26]	—	F001/F002[26, 95]
			xylene	1330-20-7	X-[1, 16, 26]	See Note 2	N/A[26, 95] See Notes 1 and 2
RF, RF	300	GRAPHITE MOLDS (Only drums with prefix 0012) -	1,1,1-trichloroethane (TCA)	71-55-6	X-[65]	See Note 7	See Note 7
RF, RF	300	GRAPHITE MOLDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[5, 16]	—	D029[22, 49]
			1,2-dichloroethylene	540-59-0	X-[5]	See Note 2	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	—	F002[22, 49]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methylene chloride	75-09-2	X-[5, 16]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[22, 49]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			methanol	67-56-1	X-[5]	See Note 2	N/A
			nitrates	—	X-[8]	—	—
			toluene	108-88-3	X-[5, 16, 64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[22, 49, 64]	—	F002[22, 49, 64]
			xylene	1330-20-7	X-[5]	See Note 2	N/A
RF, RF	301	GRAPHITE CORES	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			methylene chloride	75-09-2	X-[22, 49, 64]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[22, 49]	—	F001[22, 49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			toluene	108-88-3	X-[64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[49, 64]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	302	BENELEX AND PLEXIGLAS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			carbon tetrachloride	56-23-5	X-[5, 6, 8]	F001[5]	—
			isopropanol	67-63-0	X-[8]	—	—
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	—
			polychlorinated-biphenyls (PCBs)	1336-36-3	—	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[5]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	—	F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			methylene chloride	75-09-2	X-[5, 16]	—	F002[22, 49, 64]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[22, 49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			toluene	108-88-3	X-[5, 16, 64]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F002[22, 49, 64]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	F002[22, 49]
RF, RF	303	SCARFED GRAPHITE CHUNKS	1,1,1-trichloroethane (TCA)	71-55-6	X-[49, 64]	—	F001/F002[49, 64]
			1,1-dichloroethylene	75-35-4	X-[49]	—	D029[49]
			methylene chloride	75-09-2	X-[49, 64]	—	F002[49, 64]
			carbon tetrachloride	56-23-5	X-[49]	—	F001[49]
			lead	7439-92-1	X-[49, 64]	—	D008[49, 64]
			toluene	108-88-3	X-[49]	—	F005[49]
			trichloroethylene (TCE)	79-01-6	X-[49, 64]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	310	GRAPHITE SCARFINGS	1,1,1-trichloroethane (TCA)	71-55-6	X-[49, 64]	—	F001/F002[49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[49]
			methylene chloride	75-09-2	X-[49, 64]	—	F002[49, 64]
			carbon tetrachloride	56-23-5	X-[49]	—	F001[49]
			lead	7439-92-1	X-[16]	—	D008[49, 64]
			toluene	108-88-3	X-[49]	—	F005[49]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F002[49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[49]	—	F002[49]
RF, RF	311	GRAPHITE HEELS	nitrates	—	X-[1]	—	—
RF, RF	312	COARSE GRAPHITE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	—	F001/F002[22, 49, 64]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[22, 49]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[49]
			lead	7439-92-1	X-[16]	—	D008[22, 49, 64]
			methylene chloride	75-09-2	X-[5, 6, 16]	—	F002[22, 49, 64]
			toluene	108-88-3	X-[16]	—	F005[22, 49]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F002[22, 49, 64]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	F002[49]
			xylene	1330-20-7	X-[5]	See Note 2	N/A
RF, RF	320	HEAVY NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[39]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6]	F001[5]	F001/F002[39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	F001[5]	F001/F002[39]
			1,2-dichloroethane	107-06-2	X-[39]	—	D028[39]
			acetone	67-64-1	X-[39]	See Note 2	N/A

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			arsenic	7440-38-2	X-[39]	—	D004[39]
			barium	7440-39-3	X-[39]	—	D005[39]
			benzene	71-43-2	X-[39]	—	F005[39]
			cadmium	7440-43-9	X-[39]	—	D006[39]
			carbon disulfide	75-15-0	X-[39]	—	F005[39]
			carbon tetrachloride	56-23-5	X-[5]	F001[5]	F001[39]
			chloroform (trichloromethane)	67-66-3	X-[5]	D022[5]	D022[39]
			chromium	7440-47-3	X-[39]	—	D007[39]
			cyanide cleaning bath solutions	—	X-[39]	—	F009[39]
			cyanide plating bath solutions	—	X-[39]	—	F007[39]
			electroplating sludges	—	X-[39]	—	F006[39]
			lead	7439-92-1	X-[1, 2, 5, 6, 8, 16]	D008[5]	D008[39]
			mercury	7439-97-6	X-[6, 16]	—	D009[39]
			methanol	67-56-1	X-[39]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[5]	F002[5]	F002[39]
			selenium	7782-49-2	X-[39]	—	D010[39]
			silver	7440-22-4	X-[39]	—	D011[39]
			tetrachloroethylene (perclene)	127-18-4	X-[39]	F001[5]	F001/F002[39]
			toluene	108-88-3	X-[5]	F005[5]	F005[39]
			trichloroethylene (TCE)	79-01-6	X-[5]	—	F001/F002[39]
			xylene	1330-20-7	X-[39]	See Note 2	N/A
RF, RF	321	LEAD	1,1-dichloroethylene	75-35-4	X-[39]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[39]	—	F001/F002[39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[39]	—	F001/F002[39]
			1,2-dichloroethane	107-06-2	X-[39]	—	D028[39]
			acetone	67-64-1	X-[39]	See Note 2	N/A
			arsenic	7440-38-2	X-[39]	—	D004[39]
			barium	7440-39-3	X-[8]	—	D005[39]
			benzene	71-43-2	X-[39]	—	F005[39]
			beryllium (not beryllium powder)	7440-41-7	X-[39]	N/A	N/A
			cadmium	7440-43-9	X-[39]	—	D006[39]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon disulfide	75-15-0	X-[39]	—	F005[39]
			carbon tetrachloride	56-23-5	X-[39]	—	F001[39]
			chloroform (trichloromethane)	67-66-3	X-[39]	—	D022[39]
			chromium	7440-47-3	X-8	—	D007[39]
			cyanide cleaning bath solutions	—	X-[39]	—	F009[39]
			cyanide plating bath solutions	—	X-[39]	—	F007[39]
			electroplating sludges	—	X-[39]	—	F006[39]
			lead	7439-92-1	X-[2, 8, 16]	D008[2, 8, 16]	D008[39]
			mercury	7439-97-6	—	—	D009[39]
			methanol	67-56-1	X-[39]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[39]	—	F002[39]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[8]	See Note 2	N/A
			selenium	7782-49-2	X-[39]	—	D010[39]
			silver	7440-22-4	X-[39]	—	D011[39]
			tetrachloroethylene (perclene)	127-18-4	X-[39]	—	F001/F002[39]
			toluene	108-88-3	X-[39]	—	F005[39]
			trichloroethylene (TCE)	79-01-6	X-[39]	—	F001/F002[39]
			xylene	1330-20-7	X-[39]	See Note 2	N/A
RF, RF	328	FUL-FLO INCINERATOR FILTERS	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	—	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F001/F002[38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[16]	N/A	N/A
			barium	7440-39-3	X-[16]	—	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[38]
			chromium	7440-47-3	X-[16]	—	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	See Note 6	—	See Note 6[38]
			cyanide plating bath solutions	—	See Note 6	—	See Note 6[38]
			electroplating sludges	—	See Note 6	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X [38]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[38]
			nitrates	—	X-[16]	N/A	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[38]
			toluene	108-88-3	X-[16]	—	F005[38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[38]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
RF, RF	330	PAPER AND RAGS - DRY	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16]	F001/F002[28, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 16]	F002	F001/F002[28, 50]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[5, 8]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			acetone	67-64-1	X-[16]	F003[28] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[50]	—	D005[50]
			benzene	71-43-2	X-[16]	—	F005[28, 50]
			beryllium (not beryllium powder)	7440-41-7	X-[16]	N/A	N/A
			cadmium	7440-43-9	X-[16]	—	D006[28, 50]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[28, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16]	F001[28, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[28, 50]
			chromium	7440-47-3	X-[16]	—	D007[28, 50]
			cyanide cleaning bath solutions	—	X-[16]	—	F009[28, 50]
			cyanide plating bath solutions	—	X-[16]	—	F007[28, 50]
			cyclohexane	110-82-7	X-[16, 8]	See Note 2	N/A
			electroplating sludges	—	X-[16]	—	F006[28, 50]
			ethyl benzene	100-41-4	X-[5, 16, 8]	See Note 2	N/A
			isobutanol (isobutanol)	78-83-1	X-[50]	—	F005[50]
			lead	7439-92-1	X-[5, 6, 16]	—	D008[28, 50]
			methanol	67-56-1	X-[5, 16]	F003[28] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 16]	F002[16]	F002[28, 50]
			mercury	7439-97-6	X-[16]	—	D009[28, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			nitrates	—	X-[16]	N/A	N/A
			pyridine	110-86-1	X-[50]	—	F005[50]
			polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	N/A	N/A
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	—	D011[28, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 50]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[5, 8]	—	F005[28, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[28, 50]
			xylene	1330-20-7	X-[5, 16, 8]	F003[28] See Note 2	N/A
RF, RF	335	ABSOLUTE 8×8 FILTERS	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 8, 16]	F001[16]	F001/F002[31, 38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 8, 16]	F002[16]	F001/F002[31, 38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[5, 16]	See Note 2	N/A
			arsenic	7440-38-2	X-[8]	—	D004[38]
			asbestos	1332-21-4	X-[1, 4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[31, 38]
			benzene	71-43-2	X-[5, 16]	—	F005[31, 38]
			cadmium	7440-43-9	X-[8]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 8, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[31, 38]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[31, 38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[8, 16]	F009[16]	F009[31, 38]
			cyanide plating bath solutions	—	X-[8, 16]	F007[16]	F007[31, 38]
			electroplating sludges	—	X-[8, 16]	F006[16]	F006[31, 38]
			ethyl benzene	100-41-4	X-[16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[8, 16]	—	D008[31, 38]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			nitrates (only for waste generated in building 374 after 1984)	—	X-[1, 5, 16, 31]	See Note 2	N/A
			potential corrosive if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[8]	—	D010[38]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[31, 38]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[16, 31]	See Note 2	N/A
RF, RF	336	PAPER AND RAGS - MOIST	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 8, 16]	F001[16]	F001/F002[28, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16]	F002[16]	F001/F002[28, 50]
			1,2-dichloroethane	107-06-2	X-[50]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[5]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]
			acetone	67-64-1	X-[5, 16, 28]	F003[16] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[50]	—	D005[50]
			benzene	71-43-2	X-[16]	—	F005[28, 50]
			cadmium	7440-43-9	X-[16]	D006[16]	D006[28, 50]
			carbon disulfide	75-15-0	X-[16]	—	F005[28, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 7]	F001[16]	F001[28, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[16]	D022[28, 50]
			chromium	7440-47-3	X-[16]	D007[16]	D007[28, 50]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[28, 50]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[28, 50]
			electroplating sludges	—	X-[16]	F006[16]	F006[28, 50]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			Isobutanol (isobutyl alcohol)	78-83-1	X-[50]	—	F005[50]
			lead	7439-92-1	X-[5, 6, 16]	D008[16]	D008[28, 50]
			methanol	67-56-1	X-[16, 28]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 16]	F002[16]	F002[28, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			mercury	7439-97-6	X-[16]	D009[16]	D009[28, 50]
			pyridine	110-86-1	X-[50]	—	F005[50]
			nitrates (only for waste generated prior to 1975)	—	X-[1, 4, 5, 6, 16, 28]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit in waste packaged before 1974	—	X-[1, 5]	See Note 2	N/A
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	D011[16]	D011[28, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 50]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[28, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[28, 50]
			xylene	1330-20-7	X-[5, 16, 28]	F003[16] See Note 2	N/A
RF, RF	337	PLASTIC, TEFLON, WASHABLES, PVC	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 8, 16]	F001[16, 29]	F001/F002[30, 50]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 6, 8, 16, 50]	F002[16, 29]	F001/F002[30]
			1,2-dichloroethane	107-06-2	X-[50]	—	D028[50]
			1,1-dichloroethylene	75-35-4	X-[50]	—	D029[50]
			1,2-dichloropropane	78-87-5	X-[50]	See Note 2	N/A
			2-ethoxyethanol	110-80-5	X-[50]	—	F005[50]
			acetone	67-64-1	X-[5, 16]	F003[16, 29] See Note 2	N/A
			arsenic	7440-38-2	X-[50]	—	D004[50]
			barium	7440-39-3	X-[30, 50]	—	D005[30, 50]
			benzene	71-43-2	X-[16]	—	F005[30, 50]
			cadmium	7440-43-9	X-[16]	D006[16, 29]	D006[30, 50]

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon disulfide	75-15-0	X-[30, 50]	—	F005[30, 50]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	F001[16, 29]	F001[30, 50]
			chlorobenzene	108-90-7	X-[50]	—	F002[50]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[30, 50]
			chromium	7440-47-3	X-[16]	D007[16, 29]	D007[30, 50]
			cyanide cleaning bath solutions	—	X-[16]	F009[16, 29]	F009[30, 50]
			cyanide plating bath solutions	—	X-[16]	F007[16, 29]	F007[30, 50]
			cyclohexane	110-82-7	X[30, 50]	See Note 2	N/A
			electroplating sludges	—	X-[16]	F006[16, 29]	F006[30, 50]
			Isobutanol (isobutyl alcohol)	78-83-1	X-[30, 50]	—	F005[30, 50]
			lead	7439-92-1	X-[5, 6, 16]	D008[16, 29]	D008[30, 50]
			methanol	67-56-1	X-[5, 16]	F003[16, 29] See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 5, 6, 8, 16]	F002	F002[30, 50]
			mercury	7439-97-6	X-[16]	D009[16, 29]	D009[30, 50]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[50]	—	F005[50]
			nitrates (only for waste generated prior to 1974)	—	X-[30]	See Note 2	N/A
			pyridine	110-86-1	X-[50]	—	F005[50]
			selenium	7782-49-2	X-[50]	—	D010[50]
			silver	7440-22-4	X-[16]	D011[16, 29]	D011[30, 50]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[30, 50]
			toluene	108-88-3	X-[5, 16]	—	F005[30, 50]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[16, 29]	F001/F002[30, 50]
			xylene	1330-20-7	X-[5, 16]	F003[16, 29] See Note 2	N/A
RF, RF	338	INSULATION AND CWS FILTER MEDIA	1,1-dichloroethylene	75-35-4	X-[5, 38]	—	D029
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16]	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16]	F001/F002[38]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[38]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	N/A
			asbestos	1332-21-4	X-[1, 4, 5, 16]	N/A	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			barium	7440-39-3	X-[16]	D005[16]	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	—	D022[38]
			chromium	7440-47-3	X-[16]	D007[16]	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[38]	—	See Note 6[38]
			cyanide plating bath solutions	—	X-[38]	—	See Note 6[38]
			electroplating sludges	—	X-[38]	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	D008[16]	D008[38]
			mercury	7439-97-6	X-[16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[2, 5, 16]	F002[16]	F002[38]
			nitrates	—	X-[1, 5, 16]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit in waste packaged before 1974	—	X-[5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	D011[16]	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[38]
			toluene	108-88-3	X-[5, 16]	—	F005[38]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[38]
			xylene	1330-20-7	X-[38]	See Note 2	N/A
RF, RF	339	LEADED RUBBER GLOVES AND APRONS	1,1-dichloroethylene	75-35-4	X-[5, 6, 16]	—	D029[33, 41]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16, 34]	F001[16]	F001/F002[33, 41]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 8, 16, 34]	F001[16]	F001/F002[33, 41]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[41]
			acetone	67-64-1	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			benzene	71-43-2	X-[5, 34]	—	F005[33, 41]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[41]
			carbon tetrachloride	56-23-5	X-[6, 8, 16, 34]	F001[16]	F001[33, 41]
			chloroform (trichloromethane)	67-66-3	X-[5, 16, 34]	D022[16]	D022[33, 41]
			cyclohexane	110-82-7	X-[34]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16, 34]	—	F009[33, 41]
			cyanide plating bath solutions	—	X-[16, 34]	—	F007[33, 41]
			electroplating sludges	—	X-[16, 34]	—	F006[33, 41]
			ethanol	64-17-5	X-[41]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			isopropanol	67-63-0	X-[41]	See Note 2	N/A
			lead	7439-92-1	X-[1, 2, 6, 8, 16, 34]	D008[16]	D008[33, 41]
			nitrate	10099-74-8	X-[17, 33, 34]	N/A	N/A
			methanol	67-56-1	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			methyl chloride (chloromethane)	74-87-3	X-[33, 34]	—	F001/F002[33, 41]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[41]	—	F005[41]
			methylene chloride	75-09-2	X-[5, 6, 8, 16, 34]	F002[16]	F002[33, 41]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[41]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 34]	F001[16]	F001/F002[33, 41]
			toluene	108-88-3	X-[5, 8, 16, 34]	F005[16]	F005[33, 41]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[6, 8, 16, 34]	—	F001/F002[33, 41]
			xylene	1330-20-7	X-[5, 16, 34, 41]	F003[16, 33] See Note 2	N/A
			zinc	7440-66-6	X-[41]	—	—
RF, RF	33A	WETP BIN PROGRAM - COMBUSTIBLES A (RF IDCs 335, 336, 337, and 339)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			barium	7440-39-3	X-[21]	—	—
			cadmium	7440-43-9	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chloroform (trichloromethane)	67-66-3	X-[21]	—	—
			chromium	7440-47-3	X-[21]	—	—
			cyanide	57-12-5	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane	110-82-7	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			potential corrosives if liquids exceed the WIPP WAC limit in waste packaged before 1974	—	X-[21]	See Notes 2 and 3	—
			silver	7440-22-4	X-[21]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	33B	WETP BIN PROGRAM - COMBUSTIBLES B (RF IDCs 330, 337, and 339)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			cadmium	7440-43-9	X-[21]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chloroform (trichloromethane)	67-66-3	X-[21]	—	—
			chromium	7440-47-3	X-[21]	—	—
			cis-1,2-dichloroethylene	156-59-2	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane	110-82-7	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			ethyl benzene	100-41-4	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			silver	7440-22-4	X-[21]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trans-1,2-dichloroethylene	156-60-5	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	360	INSULATION	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 16]	—	F001/F002[38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5, 16]	—	F002/F002[38]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16]	See Note 2	N/A
			acetone	67-64-1	X-[16]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[16]	—	D005[38]
			benzene	71-43-2	X-[16]	—	F005[38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[1, 5, 16]	—	F001[38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[38]
			chromium	7440-47-3	X-[16]	—	D007[38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	See Note 6	—	See Note 6[38]
			cyanide plating bath solutions	—	See Note 6	—	See Note 6[38]
			electroplating sludges	—	See Note 6	—	See Note 6[38]
			ethyl benzene	100-41-4	X-[16]	See Note 2	N/A
			lead	7439-92-1	X-[16]	—	D008[38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X-[16]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 5, 16]	—	F002[38]
			nitrates	—	X-[1, 5, 16]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP WAC limit in waste packaged before 1974	—	X-[5]	See Note 2	N/A
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002
			toluene	108-88-3	X-[16]	—	F005[38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[38]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
RF, RF	361	INSULATION HEEL	nitrates	—	X-[1]	—	—
RF, RF	368	MAGNESIUM OXIDE CRUCIBLES	calcium	7440-70-2	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	370	LECO CRUCIBLE	chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[6]	—	—
RF, RF	371	FIRE BRICK	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16, 32]	—	F001/F002[35, 44]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 32]	—	F001/F002[35, 44]
			acetone	67-64-1	X-[16, 32, 44]	F003[35] See Note 2	N/A
			arsenic	7440-38-2	X-[8, 16, 32]	—	D004[35, 44]
			asbestos	1332-21-4	X-[6, 32, 35]	—	—
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[44]
			1,1-dichloroethylene	75-35-4	X-[44]	—	D029[44]
			barium	7440-39-3	X-[8, 16, 32]	—	D005[35, 44]
			benzene	71-43-2	X-[5, 16, 32]	—	F005[35, 44]
			carbon disulfide	75-15-0	—	—	F005[44]
			cadmium	7440-43-9	X-[8, 16, 32]	—	D006[35, 44]
			carbon tetrachloride	56-23-5	X-[5, 16, 32]	—	F001[35, 44]
			chloroform (trichloromethane)	67-66-3	X-[32]	—	D022[44]
			chromium	7440-47-3	X-[8, 16, 32]	—	D007[35, 44]
			cyanide cleaning bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			cyanide plating bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			electroplating sludges	—	X-[32, 35, 44, 62]	See Note 21	N/A
			lead	7439-92-1	X-[8, 16, 32]	—	D008[35]
			mercury	7439-97-6	X-[8, 16, 32]	—	D009[35]
			methanol	67-56-1	X-[5, 16, 32, 44]	F003[35] See Note 2	N/A
			methylene chloride	75-09-2	X-[5, 6, 8, 16, 32]	—	F002[35]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[44]	—	F005[44]
			nitrates	—	X-[8, 32, 35]	—	—
			selenium	7782-49-2	X-[8, 16, 32]	—	D010[35, 44]
			silver	7440-22-4	X-[8, 16, 32]	—	D011[35, 44]
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 32]	—	F001/F002[35]
			toluene	108-88-3	X-[5, 16, 32]	—	F005[35, 44]
			trichloroethylene (TCE)	79-01-6	X-[6, 8, 16, 32]	—	F001/F002[35, 44]
			xylene	1330-20-7	X-[5, 16, 32, 44]	F003[35] See Note 2	N/A
RF, RF	372	GRIT	beryllium (not beryllium powder)	7440-41-7	X-[1, 4, 5]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chromium	7440-47-3	X-[16]	D007[16]	—
RF, RF	374a / 697	DIRT **NOTE:** For purpose of data management within the Waste Tracking System (WTS), a surrogate IDC (RF-697) is being used to uniquely identify the IDC RF-374a subpopulation for soil. Drum labeling and Waste Data System (WDS) data transfer will reflect IDC RF-697 to align with the AK and the WSPF.	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 16]	F002[16]	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			1-butanol	71-36-3	X-[1]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[1, 16]	F001[16]	—
			chromium	7440-47-3	X-[16]	—	—
			cyanide	57-12-5	X-[16]	—	—
			cyanide cleaning bath solutions	—	X-[16]	—	—
			cyanide plating bath solutions	—	X-[16]	—	—
			electroplating sludges	—	X-[16]	—	—
			ethyl benzene	100-41-4	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[1]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 2, 16]	F002[16]	—
			nitrobenzene	98-95-3	X-[1]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1, 16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1, 16]	—	—
			xylene	1330-20-7	X-[1, 16]	—	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	374	BLACKTOP, CONCRETE, AND CONSTRUCTION RUBBLE	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 5, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			acetone	67-64-1	X-[5, 16]	—	—
			arsenic	7440-38-2	X-[8, 16]	—	—
			barium	7440-39-3	X-[8, 16]	—	—
			benzene	71-43-2	X-[5, 16]	—	—
			cadmium	7440-43-9	X-[8, 16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[16]	—
			chromium	7440-47-3	X-[8, 16]	—	—
			cyanide	57-12-5	X-[16]	—	—
			cyanide cleaning bath solutions	—	X-[8, 16]	—	—
			cyanide plating bath solutions	—	X-[8, 16]	—	—
			electroplating sludges	—	X-[8, 16]	—	—
			ethyl benzene	100-41-4	X-[5, 16]	—	—
			lead	7439-92-1	X-[8, 16]	—	—
			mercury	7439-97-6	X-[8, 16]	—	—
			methanol	67-56-1	X-[5]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[2, 5, 16]	F002	—
			multi-source leachate (F039)	—	X-[8, 66]	—	—
			nitrobenzene	98-95-3	X-[1, 5, 8]	—	—
			selenium	7782-49-2	X-[8, 16]	—	—
			silver	7440-22-4	X-[8, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	375	OIL-DRI (Residues from incinerator)	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16] See Note 4	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16] See Note 4	—
			1-butanol	71-36-3	X-[16]	—	—
			2-ethoxyethanol	110-80-5	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon disulfide	75-15-0	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16] See Note 4	—
			chlorobenzene	108-90-7	X-[16]	—	—
			chloroform (trichloromethane)	67-66-3	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			ethyl benzene	100-41-4	X-[16]	—	—
			ethyl ether	60-29-7	X-[16]	—	—
			isobutanol (isobutyl alcohol)	78-83-1	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 5, 16]	F002[16] See Note 4	—
			methyl isobutyl ketone	108-10-1	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	376	CEMENTED INSULATION AND	1,1-dichloroethylene	75-35-4	X-[38]	—	D029[38]

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
		FILTER MEDIA	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001[16]	F001/F002[31, 38]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002[16]	F001/F002[31]
			1,2-dichloroethane	107-06-2	X-[38]	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[16, 31, 38]	See Note 2	N/A
			arsenic	7440-38-2	X-[38]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 8, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	—	D005[31, 38]
			benzene	71-43-2	X-[16]	—	F005[31, 38]
			cadmium	7440-43-9	X-[38]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	—	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[31, 38]
			chromium	7440-47-3	X-[16]	—	D007[31, 38]
			cyanide	57-12-5	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	—	F009[31, 38]
			cyanide plating bath solutions	—	X-[16]	—	F007[31, 38]
			electroplating sludges	—	X-[16]	—	F006[31, 38]
			ethyl benzene	100-41-4	X-[5, 16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[16, 8]	—	D008[31, 38]
			mercury	7439-97-6	X-[16]	—	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]
			nitrates	—	X-[1, 5, 8, 16, 31]	—	—
			selenium	7782-49-2	X-[38]	—	D010[38]
			silver	7440-22-4	X-[16]	—	D011[31, 38]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[5, 16, 31, 38]	See Note 2	N/A
RF, RF	377	COARSE FIRE BRICK	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[32, 35, 44]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[32, 35, 44]
			1,2-dichloroethane	107-06-2	X-[44]	—	D028[44]
			1,1-dichloroethylene	75-35-4	X-[44]	—	D029[44]
			acetone	67-64-1	—	F003[35] See Note 2	N/A
			arsenic	7440-38-2	X-[8, 16]	—	D004[32, 35, 44]
			asbestos	1332-21-4	X-[35]	—	—
			barium	7440-39-3	X-[8, 16]	—	D005[32, 35, 44]
			benzene	71-43-2	X-[16]	—	F005[32, 35, 44]
			cadmium	7440-43-9	X-[8, 16]	—	D006[32, 35, 44]
			carbon disulfide	75-15-0	X-[44]	—	F005[44]
			carbon tetrachloride	56-23-5	X-[35, 44]	—	F001[35, 44]
			chloroform (trichloromethane)	67-66-3	X-[44]	—	D022[44]
			chromium	7440-47-3	X-[8, 16]	—	D007[32, 35, 44]
			cyanide cleaning bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			cyanide plating bath solutions	—	X-[32, 35, 44, 62]	See Note 21	N/A
			electroplating sludges	—	X-[32, 35, 44, 62]	See Note 21	N/A
			lead	7439-92-1	X-[8, 16]	—	D008[32, 35, 44]
			mercury	7439-97-6	X-[8, 16]	—	D009[32, 35, 44]
			methanol	67-56-1	X-[16, 32, 44]	F003[35] See Note 2	N/A
			methylene chloride	75-09-2	X-[16]	—	F002[32, 35, 44]
			nitrates	—	X-[35]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[32, 35, 44]
			silver	7440-22-4	X-[8, 16]	—	D011[32, 35, 44]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[32, 35, 44]
			toluene	108-88-3	X-[8, 16]	—	F005[32, 35, 44]
			trichloroethylene (TCE)	79-01-6	X-[6, 16]	—	F001/F002[32, 35, 44]

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			xylene	1330-20-7	X-[16, 32, 44]	F003[35] See Note 2	N/A
RF, RF	391	CRUCIBLES AND SAND	magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	392	SAND, SLAG, AND CRUCIBLE	calcium	7440-70-2	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
RF, RF	393	SAND, SLAG, AND CRUCIBLE HEELS	calcium	7440-70-2	X-[16]	See Note 8	—
			chromium	7440-47-3	X-[8, 16]	—	—
			methylene chloride	75-09-2	—	—	—
			nitrates	—	X-[1, 8, 16]	—	—
RF, RF	409	MOLTEN SALT – 30% UNPULVERIZED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	—
			1,2-dichloroethane	107-06-2	X-[5, 6, 8]	—	—
			lead	7439-92-1	X-[8]	—	—
			mercury	7439-97-6	X-[1]	—	—
			methylene chloride	75-09-2	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			toluene	108-88-3	X-[5]	—	—
RF, RF	410	MOLTEN SALT – 30% PULVERIZED	mercury	7439-97-6	X-[1, 9]	—	—
RF, RF	411	ELECTROREFINING SALT	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16]	—	—
			benzene	71-43-2	X-[5]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	—	—
			arsenic	7440-38-2	X-[8]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			barium	7440-39-3	X-[8]	—	—
			cadmium	7440-43-9	X-[8]	—	—
			chromium	7440-47-3	X-[8, 16]	—	—
			calcium	7440-70-2	X-[16]	—	—
			lead	7439-92-1	X-[8]	—	—
			mercury	7439-97-6	X-[8]	—	—
			selenium	7782-49-2	X-[8]	—	—
			silver	7440-22-4	X-[8]	—	—
			potassium	7440-09-7	X-[8, 16]	See Note 8	—
			magnesium	7439-95-4	X-[1, 16]	See Note 8	—
			sodium	7440-23-5	X-[8, 16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			methylene chloride	75-09-2	X-[5, 8]	—	—
			toluene	108-88-3	X-[5, 8]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	412	GIBSON SALTS	potential corrosive if wet	—	X-[4]	See Note 2	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[4, 16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
RF, RF	414	DIRECT OXIDE REDUCTION SALT	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[8, 16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
			ethyl benzene	100-41-4	X-[5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			toluene	108-88-3	X-[5]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	416	ZINC MAGNESIUM ALLOY METALS	carbon tetrachloride	56-23-5	X-[9, 16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			calcium	7440-70-2	X-[16]	See Note 8	—
			potassium	7440-09-7	X-[16]	See Note 8	—
			magnesium	7439-95-4	X-[16]	See Note 8	—
			sodium	7440-23-5	X-[16]	See Note 8	—
			zinc	7440-66-6	X-[16]	—	—
RF, RF	420	ASH, INCINERATOR (VIRGIN)	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	D004[16]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	D006[16]	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			lead	7439-92-1	X-[16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			selenium	7782-49-2	X-[16]	D010[16]	—
			silver	7440-22-4	X-[16]	D011[16]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	421	ASH HEELS	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	D004[16]	—
			barium	7440-39-3	X-[16]	D005[16]	—
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			lead	7439-92-1	X-[16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			nitrates	—	X-[1]	—	—
			selenium	7782-49-2	X-[16]	D010[16]	—
			silver	7440-22-4	X-[16]	D011[16]	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	422	SOOT	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[8, 16]	D004[16]	—
			barium	7440-39-3	X-[8, 16]	D005[16]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			benzene	71-43-2	X-[16]	—	—
			cadmium	7440-43-9	X-[8, 16]	D006[16]	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[8, 16]	D007[16]	—
			lead	7439-92-1	X-[8, 16]	D008[16]	—
			methanol	67-56-1	X-[16]	—	—
			mercury	7439-97-6	X-[8, 16]	D009[16]	—
			methylene chloride	75-09-2	X-[16]	F002[16]	—
			selenium	7782-49-2	X-[8, 16]	D010[16]	—
			silver	7440-22-4	X-[8, 16]	D011[16]	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—
RF, RF	425	FLUID BED ASH	chromium	7440-47-3	X-[16]	D007	—
			methanol	67-56-1	X-[16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			acetone	67-64-1	X-[16]	—	—
			benzene	71-43-2	X-[16]	—	—
			barium (not TCLP)	7440-39-3	X-[16]	—	—
			cadmium (not TCLP)	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			lead (not TCLP)	7439-92-1	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			toluene	108-88-3	X-[9, 16]	F005[16]	—
			xylene	1330-20-7	X-[16]	—	—

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	430	ION COLUMN UNLEACHED RESIN	nitrates	—	X-[1, 4, 5]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5]	—	—
RF, RF	431	LEACHED RESIN	nitrates	—	X-[1, 9]	—	—
			potential ignitable if deemed a DOT oxidizer	—	X-[1, 5]	—	—
RF, RF	432	RESIN, LEACHED AND CEMENTED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5, 16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			benzene	71-43-2	X-[5]	—	—
			chloroform (trichloromethane)	67-66-3	X-[5, 43]	—	—
			1,2-dichloroethane	107-06-2	X-[5, 43]	—	—
			1,1-dichloroethylene	75-35-4	X-[16, 43]	—	—
			chromium	7440-47-3	X-[16]	D007[16]	—
			carbon tetrachloride	56-23-5	X-[5, 6, 8]	F001[5]	—
			ethyl benzene	100-41-4	X-[5]	—	—
			isopropanol	67-63-0	X-[8]	—	—
			lead	7439-92-1	X-[5, 16]	D008[16]	—
			methylene chloride	75-09-2	X-[5, 6, 8]	F002[5]	—
			nitrates	—	X-[1, 6, 16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1]	—	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[5]	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	440	GLASS	1,1-dichloroethylene	75-35-4	X-[5, 6]	—	D029[40]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	F001[5]	F001/F002[28, 40]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 6, 16]	F002[16]	F001/F002[28, 40]
			1,2-dichloroethane	107-06-2	X-[5]	—	D028[40]
			acetone	67-64-1	X-[5, 16, 28, 40]	See Note 2	—
			barium	7440-39-3	X-[16]	D005[16]	D005[28, 40]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			benzene	71-43-2	X-[5, 16]	—	F005[28, 40]
			carbon disulfide	75-15-0	X-[5, 16]	—	F005[28, 40]
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[5]	F001[28, 40]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[5]	D022[28, 40]
			cyclohexane (ignitable liquid)	110-82-7	X-[6, 8, 16, 28]	See Note 2	N/A
			ethanol	64-17-5	X-[28, 40]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			isooctane	26635-64-3	X-[28]	See Note 2	N/A
			isopropanol	67-63-0	X-[28, 40]	See Note 2	N/A
			lead	7439-92-1	X-[5, 16]	D008[5, 16]	D008[28, 40]
			magnesium	7439-95-4	X-[40]	See Notes 2 and 8	—
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[28, 40]
			methanol	67-56-1	X-[5, 16, 28]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[40]	—	F005[40]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[5]	F002[28, 40]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5, 40]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16]	—	F001/F002[28, 40]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[28, 40]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	F001/F002[28, 40]
			xylene	1330-20-7	X-[5, 16, 28]	See Note 2	N/A
			zinc	7440-66-6	X-[40]	N/A	N/A
RF, RF	441	RASCHIG RINGS, UNLEACHED	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5, 6, 16]	—	F001/F002[23, 48]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F002[23, 48]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[1, 5, 6, 8, 16]	—	F001[23, 48]
			chloroform (trichloromethane)	67-66-3	X-[48]	—	D022[48]
			lead	7439-92-1	X-[5, 16]	D008[16]	D008[23, 48]
			mercury	7439-97-6	X-[16]	—	D009[48]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methanol	67-56-1	X-[5, 16, 23]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[48]	—	F005[48]
			methylene chloride	75-09-2	X-[48]	—	F002[48]
			nitrates	—	X-[5, 8]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[1, 5]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[5, 16, 23]	—	F002[48]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16, 23]	—	F002[48]
RF, RF	442	RASCHIG RINGS, LEACHED	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 8, 16]	F001[21] See Note 4	F001/F002[23, 48]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	—	F002[23]
			acetone	67-64-1	X-[5]	See Note 2	N/A
			carbon tetrachloride	56-23-5	X-[5, 16]	F001[21] See Note 4	F001[23, 48]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[48]
			ethyl benzene	100-41-4	X-[5]	See Note 2	N/A
			lead	7439-92-1	X-[5, 16]	D008[21]	D008[23, 48]
			mercury	7439-97-6	X-[16]	—	D009[48]
			methanol	67-56-1	X-[5, 23]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[48]	—	F005[48]
			methylene chloride	75-09-2	X-[5, 6, 8]	F002[21] See Note 4	F002[48]
			nitrates	—	X-[1, 5, 8]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[5]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[23]	—	F002[48]
			trichloroethylene (TCE)	79-01-6	X-[5, 23]	—	F002[48]
RF, RF	44A	WETP BIN PROGRAM - GLASS (RF IDCs 440 and 442)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			barium	7440-39-3	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			cyclohexane (ignitable liquid)	110-82-7	X-[21]	See Notes 2 and 3	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009[21]	—
			methylene chloride	75-09-2	X-[21]	F002[21]	—
			potential corrosives if liquids exceed the WIPP WAC limit	—	X-[21]	See Notes 2 and 3	—
			toluene	108-88-3	X-[21]	See Note 4	—
			trichloroethylene (TCE)	79-01-6	X-[21]	See Note 4	—
RF, RF	460	WASHABLES, RUBBER, PLASTIC	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
RF, RF	463	LEADED RUBBER GLOVES AND APRONS	1,1-dichloroethylene	75-35-4	X-[41]	—	D029[41]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	F001/F002[41]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[41]	—	F001/F002[41]
			1,2-dichloroethane	107-06-2	X-[41]	—	D028[41]
			benzene	71-43-2	X-[41]	—	F005[41]
			carbon disulfide	75-15-0	X-[41]	—	F005[41]
			carbon tetrachloride	56-23-5	X-[5]	—	F001[41]
			chloroform (trichloromethane)	67-66-3	X-[41]	—	D022[41]
			cyanide cleaning bath solutions	—	X-[41]	—	F009[41]
			cyanide plating bath solutions	—	X-[41]	—	F007[41]
			electroplating sludges	—	X-[41]	—	F006[41]
			ethanol	64-17-5	X-[41]	See Note 2	N/A
			isopropanol	67-63-0	X-[41]	See Note 2	N/A
			lead	7439-92-1	X-[1, 5]	D008[1]	D008[41]
			magnesium	7439-95-4	X-[41]	See Note 2 and 8	N/A
			methanol	67-56-1	X-[41]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[41]	—	F005[41]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methylene chloride	75-09-2	X-[5]	—	F002[41]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[41]	See Note 2	N/A
			tetrachloroethylene (perclene)	127-18-4	X-[41]	—	F001/F002[41]
			toluene	108-88-3	X-[41]	—	F005[41]
			trichloroethylene (TCE)	79-01-6	X-[5]	—	F001/F002[41]
			xylene	1330-20-7	X-[41]	See Note 2	N/A
			zinc	7440-66-6	X-[41]	—	—
RF, RF	464	BENELEX AND PLEXIGLASS	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	—	—
			barium	7440-39-3	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[5]	—	—
			lead	7439-92-1	X-[1, 5, 16]	D008[16]	—
			toluene	108-88-3	X-[5, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	—	—
RF, RF	480	NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[5, 6, 8]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 6, 16,	F001[21] See Note 4	F001/F002[27, 39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 6, 8, 16]	F002[21] See Note 4	F001/F002[27, 39]
			1,2-dichloroethane	107-06-2	X-[5, 6, 8, 16]	D028[16, 21]	D028[27]
			1-butanol	71-36-3	X-[5]	—	See Note 2
			acetone	67-64-1	X-[5, 16]	F003[16]	F003[27] See Notes 1 and 2
			asbestos	1332-21-4	X-[6, 39]	N/A	N/A
			arsenic	7440-38-2	X-[8, 21, 27]	—	D004[39]
			barium	7440-39-3	X-[8, 21, 27]	—	D005[39]
			benzene	71-43-2	X-[5, 16]	—	F005[27, 39]
			beryllium (not beryllium powder)	7440-41-7	X-[39]	—	—
			cadmium	7440-43-9	X-[8, 16, 21]	D006[16]	D006[27, 39]
			carbon disulfide	75-15-0	X-[16]	—	F005[27, 39]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 6, 8, 16]	F001[16]	F001/F002[27, 39]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[39]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			chromium	7440-47-3	X-[8, 16, 21]	D007[16]	D007[27, 39]
			cyanide	57-12-5	X-[27, 39]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[8, 16, 21]	F009[16]	F009[27, 39]
			cyanide plating bath solutions	—	X-[8, 16, 21]	F007[16]	F007[27, 39]
			cyclohexane (ignitable liquid)	110-82-7	X-[16, 21]	See Note 2	N/A
			electroplating sludges	—	X-[8, 16, 21]	F006[16]	F006[27, 39]
			ethyl benzene	100-41-4	X-[5, 8, 16]	See Note 2	N/A
			lead	7439-92-1	X-[1, 2, 5, 8, 16, 21]	D008[16, 21]	D008[27, 39]
			mercury	7439-97-6	X-[8, 16, 21]	D009[16]	D009[27, 39]
			methane	74-82-8	X-[8]	See Note 2	N/A
			methanol	67-56-1	X-[5, 6, 16]	F003[16]	F003[27] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[1, 2, 5, 6, 8, 16]	F002[16]	F002[27, 39]
			nitrates	—	X-[6]	See Note 2	N/A
			potential ignitable if liquid present	—	X-[8]	See Note 2	N/A
			polychlorinated-biphenyls (PCBs)	1336-36-3	X-[6, 16, 39]	N/A	N/A
			selenium	7782-49-2	X-[8, 21, 27]	—	D010[39]
			silver	7440-22-4	X-[8, 21, 16]	D011[16]	D011[27, 39]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[27, 39]
			toluene	108-88-3	X-[5, 8, 16]	—	F005[27, 39]
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 8, 16]	F001[16]	F001/F002[27, 39]
			xylenes (m, p, & o)	1330-20-7	X-[5, 8, 16, 39]	F003[16, 27]	F003[27] See Notes 1 and 2
RF, RF	481	LEACHED NON-SPECIAL SOURCE METAL	1,1-dichloroethylene	75-35-4	X-[5]	—	D029[39]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 8, 16]	—	F001/F002[27, 39]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 6, 8, 16]	F002[16]	F001/F002[27, 39]
			1,2-dichloroethane	107-06-2	X-[5, 6, 16]	D028[16]	D028[27]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			acetone	67-64-1	X-[16]	—	F003[27] See Notes 1 and 2
			arsenic	7440-38-2	X-[27]	—	D004[39]
			barium	7440-39-3	X-[27]	—	D005[39]
			benzene	71-43-2	X-[16]	—	F005[27, 39]
			cadmium	7440-43-9	X-[16]	D006[16]	D006[27, 39]
			carbon disulfide	75-15-0	X-[16]	—	F005[27, 39]
			carbon tetrachloride	56-23-5	X-[5, 6, 8, 16]	F001[16]	F001[27, 39]
			chloroform (trichloromethane)	67-66-3	X-[5]	—	D022[39]
			chromium	7440-47-3	X-[16]	D007[16]	D007[27, 39]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[27, 39]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[27, 39]
			electroplating sludges	—	X-[16]	F006[16]	F006[27, 39]
			ethyl benzene	100-41-4	X-[5, 16]	See Note 2	N/A
			lead	7439-92-1	X-[1, 6, 16]	D008[16]	D008[27, 39]
			mercury	7439-97-6	X-[16]	D009[16]	D009[27, 39]
			methanol	67-56-1	X-[16]	—	F003[27] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[39]	—	F005[39]
			methylene chloride	75-09-2	X-[5, 6, 8, 16]	F002[16]	F002[39]
			selenium	7782-49-2	X-[27]	—	D010[39]
			silver	7440-22-4	X-[16]	D011[16]	D011[27, 39]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[27, 39]
			toluene	108-88-3	X-[5, 16]	—	F005[27, 39]
			trichloroethylene (TCE)	79-01-6	X-[5, 16]	F001[16]	F001/F002[27, 39]
			xylenes (m, p, & o)	1330-20-7	X-[5, 16, 39]	See Note 2	F003[27] See Notes 1 and 2
RF, RF	488	GLOVEBOX PARTS W/LEAD	lead	7439-92-1	X-[2, 8]	D008	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RF, RF	48A	WETP BIN PROGRAM - METAL (RF IDCs 480 and 481)	1,1,1-trichloroethane (TCA)	71-55-6	X-[21]	F001[21] See Note 4	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[21]	F002[21] See Note 4	—
			1,1-dichloroethylene	75-35-4	X-[21]	—	—
			1,2-dichloroethane	107-06-2	X-[21]	D028[21]	—
			arsenic	7440-38-2	X-[21]	—	—
			barium	7440-39-3	X-[21]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[39]	—	—
			cadmium	7440-43-9	X-[21]	—	—
			carbon tetrachloride	56-23-5	X-[21]	F001[21] See Note 4	—
			chromium	7440-47-3	X-[21]	—	—
			cyanide	57-12-5	X-[21]	—	—
			cyanide cleaning bath solutions	—	X-[21]	—	—
			cyanide plating bath solutions	—	X-[21]	—	—
			cyclohexane (ignitable liquid)	110-82-7	X-[21]	See Notes 2 and 3	—
			dichloroethylene	25323-30-2	X-[21]	—	—
			electroplating sludges	—	X-[21]	—	—
			ethyl benzene	100-41-4	X-[21]	—	—
			lead	7439-92-1	X-[21]	D008[21]	—
			mercury	7439-97-6	X-[21]	D009	—
			methane	74-82-8	X-[21]	—	—
			methylene chloride	75-09-2	X-[21]	F002[21] See Note 4	—
			selenium	7782-49-2	X-[21]	—	—
			silver	7440-22-4	X-[21]	—	—
			toluene	108-88-3	X-[21]	—	—
			trichloroethylene (TCE)	79-01-6	X-[21]	—	—
			xylene	1330-20-7	X-[21]	—	—
RF, RF	490	HEPA FILTERS AND CWS FILTERS	1,1-dichloroethylene	75-35-4	—	—	D029[38]
			1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 2, 5, 16]	F001	F001/F002[31, 38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 2, 5, 16]	F002	F001/F002[31, 38]
			1,2-dichloroethane	107-06-2	X-5	—	D028[38]
			1-butanol	71-36-3	X-[16, 31]	See Note 2	N/A
			acetone	67-64-1	X-[5, 16, 31, 38]	See Note 2	N/A
			arsenic	7440-38-2	X-[8]	—	D004[38]
			asbestos	1332-21-4	X-[4, 5, 16]	N/A	N/A
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[31, 38]
			benzene	71-43-2	X-[16, 31]	—	F005[31, 38]
			beryllium (not beryllium powder)	7440-41-7	X-[38]	—	—
			cadmium	7440-43-9	X-[8]	—	D006[38]
			carbon disulfide	75-15-0	X-[38]	F005[16]	F005[38]
			carbon tetrachloride	56-23-5	X-[1, 2, 5, 16]	F001[16]	F001[31, 38]
			chloroform (trichloromethane)	67-66-3	X-[16]	D022[16]	D022[31, 38]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[31, 38]
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[31, 38]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[31, 38]
			electroplating sludges	—	X-[16]	F006[16]	F006[31, 38]
			ethyl benzene	100-41-4	X-[16, 31]	See Note 2	N/A
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[31, 38]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[38]
			methanol	67-56-1	X-[16, 31]	See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[38]	—	F005[38]
			methylene chloride	75-09-2	X-[1, 2, 5, 16]	F002[16]	F002[31, 38]
			nitrates (only for waste generated in Bldg 374 after 1984)	—	X-[1, 5, 16, 31]	See Note 2	N/A
			Polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	N/A	N/A
			selenium	7782-49-2	X-[8]	—	D010[38]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[31, 38]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[31, 38]
			toluene	108-88-3	X-[5, 16]	—	F005[31, 38]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[31, 38]
			xylene	1330-20-7	X-[5, 16, 31, 38]	See Note 2	N/A
RF, RF	491	PLENUM PREFILTERS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2]	F001[2]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			carbon tetrachloride	56-23-5	X-[2]	F001[2]	—
			methylene chloride	75-09-2	X-[2]	F002[2]	—
RF, RF	700	OASIS WASTE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 16]	F001[5]	F001/F002[46, 47]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002[5]	F002[46, 47]
			1,2-dichloroethane	107-06-2	X-[46, 47]	—	D028[46, 47]
			1,1-dichloroethylene	75-35-4	X-[16]	—	D029[46, 47]
			2,4-dinitrotoluene	121-14-2	X-[16]	—	D030[46, 47]
			2-ethoxyethanol	110-80-5	X-[46, 47]	—	F005[46, 47]
			acetone	67-64-1	X-[16]	See Note 2	N/A
			benzene	71-43-2	X-[46, 47]	—	F005[46, 47]
			carbon disulfide	75-15-0	X-[46, 47]	—	F005[46, 47]
			carbon tetrachloride	56-23-5	X-[8, 16]	F001[5]	F001[46, 47]
			chloroform (trichloromethane)	67-66-3	X-[5, 16]	D022[5]	D022[46, 47]
			chlorobenzene	108-90-7	X-[46, 47]	—	F002[46, 47]
			hexachlorobenzene	118-74-1	X-[16]	—	D032[46, 47]
			hexachloroethane	67-72-1	X-[16]	—	D034[46, 47]
			methanol	67-56-1	X-[47]	See Note 2	N/A
			methylene chloride	75-09-2	X-[16]	—	F002[46, 47]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 47]	—	F005[46, 47]
			nitrobenzene	98-95-3	X-[16]	—	D036[46, 47]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F002[46, 47]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F002[46, 47]
			toluene	108-88-3	X-[46, 47]	—	F005[46, 47]

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			vinyl chloride	75-01-4	X-[16]	—	D043[46, 47]
			xylene	1330-20-7	X-[5, 16]	F003[5] See Note 2	N/A
RF, RF	741	PITS 11 & 12 FIRST STAGE SLUDGE	See RF-001	See RF-001	See RF-001 [127]	See RF-001	See RF-001
RF, RF	742	PITS 11 & 12 SECOND STAGE SLUDGE	See RF-002	See RF-002	See RF-002 [127]	See RF-002	See RF-002
RF, RF	743	PITS 11 & 12 ORGANIC SETUPS	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 14 [127]	See Note 14	—
RF, RF	744	PITS 11 & 12 SPECIAL SETUPS	See RF-004	See RF-004	See RF-004 [127]	See RF-004	See RF-004
RF, RF	745	PITS 11 & 12 EVAPORATOR SALTS	See Note 16	—	See Note 13 [127]	See Note 13	—
RF, RF	746	PITS 11 & 12 903 PAD OIL DRUMS	polychlorinated-biphenyls (PCBs)	1336-36-3	X-[46] See Note 14 [127]	See Note 14	—
RF, RF	747	PITS 11 & 12 MISCELLANEOUS SLUDGE (from RF facility)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	748	PITS 11 & 12 NON-DEBRIS WASTE (from non-RF facilities)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	749	PITS 11 AND 12 SEWER SLUDGE	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	750	PITS 11 & 12 DEBRIS (from RF facility)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	751	PITS 11 & 12 ROASTER OXIDE	uranium metal	—	See Note 12 [127]	See Note 12	—
RF, RF	752	PITS 11 & 12 DEBRIS WASTE (from non-RF facilities)	See Note 16	—	See Note 16 [127]	See Note 16	—
RF, RF	753	PITS 11 & 12 LEGACY DIRT	—	—	See Note 16	See Note 16	—
RF, RF	754	PITS 11 & 12 LEGACY DIRT FROM NON-RF FACILITIES	—	—	See Note 16	See Note 16	—
RF, RF	760	PAD 1 CELLS 1 AND 2 RFP DEBRIS See Note 15	See Note 16		See Note 16	See Note 16	—
RF, RF	800	FIRST STAGE SLUDGE – CEMENTED	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8, 9, 16]	F001[16]	F001/F002[24, 57]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 16]	F002[16]	F002[24, 57]
			1-butanol	71-36-3	X-[2, 24, 57]	See Note 2	N/A
			acetone	67-64-1	X-[16]	—	F003[57] See Note 2
			arsenic	7440-38-2	X-[9, 16]	D004[16]	D004[24, 57]
			barium	7440-39-3	X-[9, 16]	D005[16]	D005[24, 57]
			benzene	71-43-2	X-[8, 9, 16]	F005[16]	F005[57]
			beryllium (not beryllium powder)	7440-41-7	X-[57]	N/A	N/A

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			cadmium	7440-43-9	X-[2, 8, 9, 16]	D006[16]	D006[24, 57]
			carbon tetrachloride	56-23-5	X-[2, 8, 9, 16]	F001[16]	F001[24, 57]
			chlorobenzene	108-90-7	X-[16]	—	F002[24, 57]
			chloroform (trichloromethane)	67-66-3	X-[9, 16]	—	D022[24, 57]
			chromium	7440-47-3	X-[8, 9, 16]	D007[16]	D007[24, 57]
			cyanide cleaning bath solutions	—	X-[9, 16]	F009[16]	F009[24, 57]
			cyanide plating bath solutions	—	X-[9, 16]	F007[16]	F007[24, 57]
			electroplating sludges	—	X-[9, 16]	F006[16]	F006[24, 57]
			ethyl benzene	100-41-4	X-[8, 9, 16, 24, 57]	See Note 2	N/A
			ethyl ether	60-29-7	X-[24, 57]	See Note 2	N/A
			lead	7439-92-1	X-[2, 9, 16]	D008[16]	D008[24, 57]
			mercury	7439-97-6	X-[9, 16]	D009[16]	D009[24, 57]
			methanol	67-56-1	X-[2, 16]	—	F003[57] See Note 2
			methylene chloride	75-09-2	X-[2, 8, 9, 16]	F002[16]	F001/F002[24, 57]
			nitrate	—	X-[16, 57]	See Note 2	N/A
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[9]	See Note 2	N/A
			selenium	7782-49-2	X-[9, 16]	D010[16]	D010[24, 57]
			silver	7440-22-4	X-[8, 9, 16]	D011[16]	D011[24, 57]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	F001[16]	F001/F002[24, 57]
			toluene	108-88-3	X-[8, 9, 16]	—	F005[24, 57]
			trichloroethylene (TCE)	79-01-6	X-[8, 9, 16]	—	F001/F002[24, 57]
			xylene	1330-20-7	X-[2, 8, 9, 16]	—	F003[57] See Note 2
RF, RF	801	SOLIDIFIED ORGANICS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8, 16]	F001[16]	F001/F002[46, 47]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8, 16]	F002[16]	F002[46, 47]
			1,2-dichloroethane	107-06-2	X-[46, 47]	D028[16]	D028[46, 47]
			1,1-dichloroethylene	75-35-4	X-[16]	D029[16]	D029[46, 47]
			2,4-dinitrotoluene	121-14-2	X-[16]	D030[16]	D030[46, 47]
			acetone	67-64-1	X-[16, 46]	F003[16] See Note 2	N/A

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			carbon tetrachloride	56-23-5	X-[2, 8, 16]	F001[16]	F001[46, 47]
			benzene	71-43-2	X-[46, 47]	—	F005[46, 47]
			beryllium (not beryllium powder)	7440-41-7	X-[46]	N/A	N/A
			carbon disulfide	75-15-0	X-[46, 47]	—	F005[46, 47]
			chloroform (trichloromethane)	67-66-3	X-[16]	D022[16]	D022[46, 47]
			chlorobenzene	108-90-7	X-[46, 47]	—	F002[46, 47]
			hexachlorobenzene	118-74-1	X-[16]	D032[16]	D032[46, 47]
			hexachloroethane	67-72-1	X-[16]	D034[16]	D034[46, 47]
			methanol	67-56-1	X-[16, 46, 47]	F003[16] See Note 2	N/A
			methylene chloride	75-09-2	X-[8, 16]	F002[16]	F002[46, 47]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[46, 47]	—	F005[46, 47]
			nitrobenzene	98-95-3	X-[16]	D036[16]	D036[46, 47]
			tetrachloroethylene (perclene)	127-18-4	X-[8, 16]	F002[16]	F002[46, 47]
			toluene	108-88-3	X-[8]	—	F005[46, 47]
			trichloroethylene (TCE)	79-01-6	X-[8, 16]	F002[16]	F002[46, 47]
			vinyl chloride	75-01-4	X-[16]	D043[16]	D043[46, 47]
			xylene	1330-20-7	X-[16]	F003[16] See Note 2	N/A
RF, RF	802	SOLIDIFIED LABORATORY WASTE	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[45]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[45]
			1,1-dichloroethylene	75-35-4	X-[45]	—	D029[45]
			benzene	71-43-2	X-[45]	—	F005[45]
			cadmium	7440-43-9	X-[45]	—	D006[45]
			carbon tetrachloride	56-23-5	X-[16]	—	F001[45]
			chromium	7440-47-3	X-[16]	—	D007[45]
			cyanide	57-12-5	X-[16, 45]	See Note 2	N/A
			cyclohexane (if waste contains free liquids)	110-82-7	X-[45]	See Note 2	N/A
			ethyl benzene	100-41-4	X-[16, 45]	See Note 2	N/A
			lead	7439-92-1	—	—	D008[45]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methanol	67-56-1	X-[16, 45]	See Note 2	—
			methylene chloride	75-09-2	X-[45]	—	F002[45]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[45]	—	F005[45]
			silver	7440-22-4	X-[8]	—	D011[45]
			tetrachloroethylene (perclene)	127-18-4	X-[45]	—	F001/F002[45]
			toluene	108-88-3	X-[16]	—	F005[45]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[45]
			xylene	1330-20-7	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[45]	—	F009[45]
			cyanide plating bath solutions	—	X-[45]	—	F007[45]
			electroplating sludges	—	X-[45]	—	F006[45]
RF, RF	803	SOLIDIFIED DCP SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[8, 16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2]	F001[25]
			1-butanol	71-36-3	X-[16, 25]	F003[2] See Note 2	N/A
			acetone	67-64-1	X-[16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-25	N/A	N/A
			1-butanol	71-36-3	X-[2, 16]	See Note 2	N/A
			cadmium	7440-43-9	X-[2, 16]	D006[2]	D006[25]
			carbon tetrachloride	56-23-5	X-[2, 8, 16]	F001[2]	F001[25]
			chromium	7440-47-3	X-[8, 16]	—	D007[25]
			chloroform (trichloromethane)	67-66-3	X-[16]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	F009[2]	F009[25]
			cyanide plating bath solutions	—	X-[16]	F007[2]	F007[25]
			electroplating sludges	—	X-[16]	F006[2]	F006[25]
			ethyl benzene	100-41-4	X-[2, 16]	F003[2] See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			lead	7439-92-1	X-[2, 16]	D008[2]	D008[25]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			mercury	7439-97-6	X-[16]	—	D009[25]
			methanol	67-56-1	X-[2, 16, 25]	F003[2] See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[2, 8, 16]	F002[2]	F002[25]
			potential corrosives if liquids exceed the WIPP-WAC limit	—	X-[8]	See Note 2	N/A
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001[25]
			toluene	108-88-3	X-[2, 8, 16]	F005[2]	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[25]
			xylene	1330-20-7	X-[2, 16, 25]	F003[2] See Note 2	N/A
RF, RF	806	SOLIDIFIED PROCESS SOLIDS	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 16]	F001[2]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			1-butanol	71-36-3	X-[2]	F003[2] See Note 2	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[2, 16]	F001[2]	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[2, 16]	D008[2]	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[2, 16]	F003 See Note 2	—
			methylene chloride	75-09-2	X-[2, 16]	F002[2]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—

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			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[2, 16]	F003[2] See Note 2	N/A
RF, RF	807a	BYPASS SLUDGE (After 3/21/87)	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 16]	F001[2]	F001[25]
			1,1,2,2-tetrachloroethane	79-34-5	X-[8, 16]	N/A	N/A
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 16]	F002[2]	F001[25]
			trans-1,3-dichloropropene	542-75-6	X-[8, 16]	N/A	N/A
			1-butanol	71-36-3	X-[2, 16]	F003[2] See Note 2	N/A
			acetone	67-64-1	X-[8, 16, 25]	See Note 2	N/A
			benzene	71-43-2	X-[8, 16]	—	F005[25]
			beryllium (not beryllium powder)	7440-41-7	X-[25]	N/A	N/A
			cadmium	7440-43-9	X-[2, 16]	D006[2]	D006[25]
			carbon tetrachloride	56-23-5	X-[2, 16]	F001[2]	F001[25]
			chromium	7440-47-3	X-[8, 16]	—	D007[25]
			cyanide	57-12-5	X-[8]	See Note 2	N/A
			cyanide cleaning bath solutions	—	X-[16]	F009[16]	F009[25]
			cyanide plating bath solutions	—	X-[16]	F007[16]	F007[25]
			electroplating sludges	—	X-[16]	F006[16]	F006[25]
			ethyl benzene	100-41-4	X-[2, 8, 16]	F0032 See Note 2	N/A
			hexachlorobenzene	118-74-1	X-[16]	—	D032[25]
			lead	7439-92-1	X-[2, 16]	D008[2]	D008[25]
			mercury	7439-97-6	X-[16]	—	D009[25]
			methanol	67-56-1	X-[2, 16, 25]	F0032 See Note 2	N/A
			methyl ethyl ketone (2-butanone)	78-93-3	X-[8, 16]	—	F005[25]
			methyl isobutyl ketone	108-10-1	X-[16]	See Note 2	N/A
			methylene chloride	75-09-2	X-[2, 16]	F002[2]	F002[25]
			selenium	7782-49-2	X-[8, 16]	—	D010[25]
			silver	7440-22-4	X-[16]	—	D011[25]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	F001[16]	F001[25]

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			toluene	108-88-3	X-[2, 8, 16]	F005[2]	F005[25]
			trichloroethylene (TCE)	79-01-6	X-[8, 16]	—	F001/F002[25]
			xylene	1330-20-7	X-[2, 8, 16, 25]	F0032 See Note 2	N/A
RF, RF	807b/ 696	CEMENTED INCINERATOR SLUDGE (Bldg 771 generated prior to March 21, 1987) **NOTE:** For purpose of data management within WTS, a surrogate IDC (RF-696) is being used to uniquely identify the IDC RF-807b subpopulation. Drum labeling and WDS data transfer will reflect IDC RF-696 to align with the AK and the WSPF.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	F001/F002[26, 95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	F001/F002[26, 95]
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[16]	—	N/A[26, 95] See Notes 1 and 2
			arsenic	7440-38-2	X-[16]	—	D004[26, 95]
			barium	7440-39-3	X-[16]	—	D005[26, 95]
			benzene	71-43-2	X-[16]	—	F005[26, 95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[16]	—	D006[26, 95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	—	F001[26, 95]
			chloroform (trichloromethane)	67-66-3	X-[16]	—	D022[26, 95]
			chromium	7440-47-3	X-[16]	—	D007[26, 95]
			cyanide cleaning bath solutions	—	X-[26, 72]	—	F009[26, 95] See Note 11
			cyanide plating bath solutions	—	X-[26, 72]	—	F007[26, 95] See Note 11
			electroplating sludges	—	X-[26, 72]	—	F006[26, 95] See Note 11
			lead	7439-92-1	X-[16]	—	D008[26, 95]
			mercury	7439-97-6	X-[16]	—	D009[26, 95]
			methanol	67-56-1	X-[16, 26]	—	N/A[26, 95] See Notes 1 and 2
			methyl ethyl ketone (2-butanone)	78-93-3	X-[95]	—	F005[95]
			methylene chloride	75-09-2	X-[16]	—	F002[26, 95]

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			selenium	7782-49-2	X-[16]	—	D010[26, 95]
			silver	7440-22-4	X-[16]	—	D011[26, 95]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	F001/F002[26, 95]
			toluene	108-88-3	X-[16]	—	F005[26, 95]
			trichloroethylene (TCE)	79-01-6	X-[16]	—	F001/F002[26, 95]
			xylene	1330-20-7	X-[16, 26]	—	N/A[26, 95] See Notes 1 and 2
RF, RF	817	CEMENTED SS AND C HEELS	chromium	7440-47-3	X-[8, 16]	D007[8, 16]	—
			nitrates	—	X-[8]	—	—
RF, RF	818	CEMENTED INCINERATOR ASH	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	F001/F002
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002[16]	F001/F002
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[8, 16]	See Note 2	N/A[95]
			benzene	71-43-2	X-[16]	—	F005[95]
			arsenic	7440-38-2	X-[8, 16]	—	D004[95]
			barium	7440-39-3	X-[8, 16]	—	D005[95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	—	N/A[95]
			cadmium	7440-43-9	X-[8, 16]	—	D006[95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	F001[16]	F001[95]
			chromium	7440-47-3	X-[8, 16]	—	D007[95]
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[95]
			mercury	7439-97-6	X-[8, 16]	—	D009[95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[95]
			methanol	67-56-1	X-[8, 16]	See Note 2	N/A[95]
			methylene chloride	75-09-2	X-[8, 16]	F002[16]	F002[95]
			selenium	7782-49-2	X-[8, 16]	—	D010[95]
			silver	7440-22-4	X-[8, 16]	—	D011[95]
			tetrachloroethylene (perclene)	127-18-4	X-95	—	F001/F002[95]

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			toluene	108-88-3	X-[8, 16]	—	F005[95]
			trichloroethylene (TCE)	79-01-6	—	—	F001/F002[95]
			xylene	1330-20-7	X-[8, 16]	See Note 2	N/A[95]
RF, RF	820	CEMENTED SOOT	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	F001/F002[95]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002[16]	F001/F002[95]
			1-butanol	71-36-3	X-[95]	See Note 2	N/A[95]
			acetone	67-64-1	X-[8, 16]	See Note 2	N/A[95]
			arsenic	7440-38-2	X-[8, 16]	D004[16]	D005[95]
			barium	7440-39-3	X-[8, 16]	D005[16]	D005[95]
			benzene	71-43-2	X-[16]	—	F005[95]
			beryllium (not beryllium powder)	7440-41-7	X-[95]	N/A	N/A[95]
			cadmium	7440-43-9	X-[8, 16]	D006[16]	D006[95]
			carbon disulfide	75-15-0	X-[95]	—	F005[95]
			carbon tetrachloride	56-23-5	X-[16]	F001[16]	F005[95]
			chromium	7440-47-3	X-[8, 16]	D007[16]	D007[95]
			lead	7439-92-1	X-[8, 16]	D008[16]	D008[95]
			mercury	7439-97-6	X-[8, 16]	D009[16]	D009[95]
			methanol	67-56-1	X-[8, 16]	See Note 2	N/A[95]
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	F005[95]
			methylene chloride	75-09-2	X-[8, 16]	F002	F002[95]
			selenium	7782-49-2	X-[8, 16]	D010[16]	D010[95]
			silver	7440-22-4	X-[8, 16]	D011[16]	D011[95]
			tetrachloroethylene (perclene)	127-18-4	X-[95]	—	F001/F002[95]
			toluene	108-88-3	X-[8, 16]	—	F005[95]
			trichloroethylene (TCE)	79-01-6	X-[95]	—	F001/F002[95]
			xylene	1330-20-7	X-[8, 16]	See Note 2	N/A[95]
RF, RF	822	CEMENTED RESINS	chloroform (trichloromethane)	67-66-3	X-[19, 43]	—	—
			1,2-dichloroethane	107-06-2	X-[43]	—	—
			1,1-dichloroethylene	75-35-4	X-[19, 43]	—	—

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			1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			nitrates	—	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	823	CEMENTED MISCELLANEOUS SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[8, 16]	F001[16]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[8]	F002[8]	—
			acetone	67-64-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[8, 16]	F001[8]	—
			chromium	7440-47-3	X-[8, 16]	—	—
			lead	7439-92-1	X-[16]	D008[8]	—
			mercury	7439-97-6	X-[16]	—	—
			methanol	67-56-1	X-[8, 16]	F003[8] See Note 2	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[8, 16]	F002[8]	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[8, 16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
			xylene	1330-20-7	X-[8, 16]	F003[8] See Note 2	—
RF, RF	831	DRY COMBUSTIBLES	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2, 8]	—
			1,1-dichloroethylene	75-35-4	X-[8]	—	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			cyclohexane	110-82-7	X-[8]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			ethyl benzene	100-41-4	X-[8]	—	—
			methylene chloride	75-09-2	X-[2, 8]	F002[2, 8]	—
			toluene	108-88-3	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	832	WET COMBUSTIBLES	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2,2-tetrachloroethane	79-34-5	X-[8]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2]	F002[2]	—
			1,2,4-trimethylbenzene	95-63-6	X-[8]	—	—
			benzene	71-43-2	X-[8]	—	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			chloroform (trichloromethane)	67-66-3	X-[8]	—	—
			cyclohexane	110-82-7	X-[8]	—	—
			ethyl benzene	100-41-4	X-[8]	—	—
			methane	74-82-8	X-[8]	—	—
			methylene chloride	75-09-2	X-[2, 8]	F002[2, 8]	—
			toluene	108-88-3	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	833	PLASTICS, TRU MIXED	1,1,1-trichloroethane (TCA)	71-55-6	X-[2, 8]	F001[2, 8]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[2, 8]	F002[2, 8]	—
			carbon tetrachloride	56-23-5	X-[2, 8]	F001[2, 8]	—
			Chloroform (trichloromethane)	67-66-3	X-[8]	—	—
			cyclohexane	110-82-7	X-[8]	—	—
			methylene chloride	75-09-2	X-[2]	F002[2]	—
			toluene	108-88-3	X-[8]	—	—
			trichloroethylene (TCE)	79-01-6	X-[8]	—	—
			xylene	1330-20-7	X-[8]	—	—
RF, RF	900	LSA PAPER, PLASTIC, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			1,1-dichloroethylene	75-35-4	X-[16]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[5]	D008	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[5, 16]	F002	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 16]	F001	—
			xylene	1330-20-7	X-[5]	F003 See Note 2	—
RF, RF	950	LSA METAL, GLASS, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	F002	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[1, 4, 5, 16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			Polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	—	—
			selenium	7782-49-2	X-[16]	—	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	960	CONCRETE, ASPHALT, ETC.	1,1,1-trichloroethane (TCA)	71-55-6	X-[16]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[16]	—	—
			arsenic	7440-38-2	X-[16]	—	—
			barium	7440-39-3	X-[16]	—	—
			cadmium	7440-43-9	X-[16]	—	—
			carbon tetrachloride	56-23-5	X-[16]	—	—
			chromium	7440-47-3	X-[16]	—	—
			lead	7439-92-1	X-[16]	—	—
			mercury	7439-97-6	X-[16]	—	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[16]	—	—
			nitrates	—	X-[16]	—	—
			selenium	7782-49-2	X-[16]	—	—
			silver	7440-22-4	X-[16]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[16]	—	—
RF, RF	970	WOOD	1,1,1-trichloroethane (TCA)	71-55-6	X-[5, 6, 16]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5, 16]	F002	—
			carbon tetrachloride	56-23-5	X-[5, 16]	F001	—
			lead	7439-92-1	X-[5]	D008	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[16]	—	—
			methylene chloride	75-09-2	X-[1, 16]	F002	—
			polychlorinated-biphenyls (ballast found in LLW box)	1336-36-3	X-[67]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			tetrachloroethylene (perclene)	127-18-4	X-[16]	—	—
			toluene	108-88-3	X-[16]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5, 6, 16]	F001	—
			xylene	1330-20-7	X-[5]	F003 See Note 2	—
RF, RF	976	BUILDING 776 PROCESS SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	F001	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	F002	—
			1,2-dichloroethylene	540-59-0	X-[5]	—	—
			1-butanol	71-36-3	X-[1]	F003 See Note 2	—
			cadmium	7440-43-9	X-[1, 5]	D006	—
			carbon tetrachloride	56-23-5	X-[1, 5]	F001	—
			chloroform (trichloromethane)	67-66-3	X-[5]	D022	—
			chromium	7440-47-3	X-[5]	D007	—
			lead	7439-92-1	X-[5]	D008	—
			mercury	7439-97-6	X-[5]	—	—
			methanol	67-56-1	X-[1]	F003 See Note 2	—
			methylene chloride	75-09-2	X-[1]	F002	—
			tetrachloroethylene (perclene)	127-18-4	X-[5]	F001	—
			trans-1,2-dichloroethylene	156-60-5	—	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	F001	—
			xylene	1330-20-7	X-[1]	F003 See Note 2	—
RF, RF	978	LAUNDRY SLUDGE	1,1,1-trichloroethane (TCA)	71-55-6	X-[5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[5]	—	—
			1-butanol	71-36-3	X-[5]	—	—
			beryllium (not beryllium powder)	7440-41-7	X-[5]	—	—
			cadmium	7440-43-9	X-[5]	—	—
			carbon tetrachloride	56-23-5	X-[5]	—	—
			chromium	7440-47-3	X-[5]	—	—
			lead	7439-92-1	X-[5]	—	—
			mercury	7439-97-6	X-[5]	—	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			methanol	67-56-1	X-[5]	—	—
			methylene chloride	75-09-2	X-[5]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[5]	—	—
			xylene	1330-20-7	X-[5]	—	—
RF, RF	980	EQUIPMENT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			lead	7439-92-1	X-[1, 5]	—	—
			methylene chloride	75-09-2	X-[1, 5]	—	—
RF, RF	990	DIRT	1,1,1-trichloroethane (TCA)	71-55-6	X-[1, 5]	—	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[1, 5]	—	—
			1-butanol	71-36-3	X-[1, 5]	—	—
			carbon tetrachloride	56-23-5	X-[1, 5]	—	—
			methanol	67-56-1	X-[1, 5]	See Note 2	—
			methylene chloride	75-09-2	X-[1]	—	—
			nitrobenzene	98-95-3	X-[1, 5]	—	—
			nitrates	—	X-[1, 5]	—	—
			tetrachloroethylene (perclene)	127-18-4	X-[1, 5]	—	—
			trichloroethylene (TCE)	79-01-6	X-[1, 5]	—	—
			xylene	1330-20-7	X-[1, 5]	—	—
RF, RF	995	SEWER SLUDGE	—	See Note 16	See Note 16	See Note 16	—
RF, RF	998	PITS 11 & 12 CARGOS AND BINS (WITHOUT ROASTER OXIDE)	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 10 [127]	See Note 10	—
RF, RF	999	PITS 11 & 12 CARGOS AND BINS WITH ROASTER OXIDE	polychlorinated-biphenyls (PCBs)	1336-36-3	See Note 10 [127]	See Note 10	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
RL, RL	712	HANFORD PLUTONIUM FINISHING PLANT DEBRIS (i.e., MFPDD)	arsenic	7440-38-2	X-[97,117]	D004[97,117]	—
			barium	7440-39-3	X-[97,117]	D005[97,117]	—
			cadmium	7440-43-9	X-[97,117]	D006[97,117]	—
			chromium	7440-47-3	X-[97,117]	D007[97,117]	—
			lead	7439-92-1	X-[97,117]	D008[97,117]	—
			mercury	7439-97-6	X-[97,117]	D009[97,117]	—
			selenium	7782-49-2	X-[97,117]	D010[97,117]	—
			silver	7440-22-4	X-[97,117]	D011[97,117]	—
			chloroform (trichloromethane)	67-66-3	X-[97,117]	D022[97,117]	—
			2,4-dinitrotoluene	121-14-2	X-[97,117]	D030[97,117]	—
			carbon tetrachloride	56-23-5	X-[97,117]	F001[97,117]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97,117]	F001/F002[97, 117,	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97,117]	F001/F002[97, 117]	—
			methylene chloride	75-09-2	X-[97,117]	F001/F002[97,117]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97,117]	F001/F002[97,117]	—
			trichlorofluoromethane	75-69-4	X-[97,117]	F001/F002[97,117]	—
			trichloroethylene (TCE)	79-01-6	X-[97,117]	F001/F002[97,117]	—
			nitrobenzene	98-95-3	X-[97,117]	F004[97,117]	—
			benzene	71-43-2	X-[97,117]	F005[97,117]	—
			carbon disulfide	75-15-0	X-[97,117]	F005[97, 117]	—
			pyridine	110-86-1	X-[97,117]	F005[97,117]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97,117]	F005[97,117]	—
			toluene	108-88-3	X-[97,117]	F005[97,117]	—
RL, RL	714	HANFORD RADIOCHEMICAL PROCESSING LAB 325 BLDG DEBRIS (i.e., RLM325D.001)	arsenic	7440-38-2	X-[97, 118]	D004[97, 118]	—
			barium	7440-39-3	X-[97, 118]	D005[97, 118]	—
			cadmium	7440-43-9	X-[97, 118]	D006[97, 118]	—
			chromium	7440-47-3	X-[97, 118]	D007[97, 118]	—
			lead	7439-92-1	X-[97, 118]	D008[97, 118]	—
			mercury	7439-97-6	X-[97, 118]	D009[97, 118]	—
			selenium	7782-49-2	X-[97, 118]	D010[97, 118]	—
			silver	7440-22-4	X-[97, 118]	D011[97, 118]	—
			chloroform (trichloromethane)	67-66-3	X-[97, 118]	D022[97, 118]	—

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,4-dichlorobenzene	106-46-7	X-[97, 118]	D027[97, 118]	—
			1,2-dichloroethane	107-06-2	X-[97, 118]	D028[97, 118]	—
			1,2-dichlorobenzene	95-50-1	X-[97, 118]	F002[97, 118]	—
			1,1-dichloroethylene	75-35-4	X-[97, 118]	D029[97, 118]	—
			2,4-dinitrotoluene	121-14-2	X-[97, 118]	D030[97, 118]	—
			hexachloroethane	67-72-1	X-[97, 118]	D034[97, 118]	—
			pentachlorophenol	87-86-5	X-[97, 118]	D037[97, 118]	—
			vinyl chloride	75-01-4	X-[97, 118]	D043[97, 118]	—
			carbon tetrachloride	56-23-5	X-[97, 118]	F001[97, 118]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97, 118]	F001/F002[97, 118]	—
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97, 118]	F001/F002[97, 118]	—
			1,1,2,2-tetrachloro-1,2-difluoroethane	79-34-5	X-[97, 118]	F001[97,, 118]	—
			methylene chloride	75-09-2	X-[97, 118]	F001/F002[97, 118]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97, 118]	F001/F002[97, 118]	—
			chlorobenzene	108-90-7	X-[97, 118]	F002[, 118]	—
			cresol	1319-77-3	X-[97, 118]	F004[97, 118]	—
			nitrobenzene	98-95-3	X-[97, 118]	F004[97, 118]	—
			2-nitropropane	79-46-9	—	F005[97, 118]	—
			benzene	71-43-2	X-[97, 118]	F005[97, 118]	—
			Isobutyl alcohol (isobutanol)	78-83-1	X-[97, 118]	F005[97, 118]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97, 118]	F005[97, 118]	—
			pyridine	110-86-1	X-[97, 118]	F005[97, 118]	—
			toluene	108-88-3	X-[97, 118]	F005[97, 118]	—
RL, RL	715	HANFORD HOMOGENEOUS SOLID WASTE	See Note 9 and 19[133]		See Note 9[133]	See Note 19[133]	
RL, RL	716	HANFORD 231-Z BUILDING DEBRIS (i.e., RLM321ZD.001)	cadmium	7440-43-9	X-[97, 119] See Note 9	D006[97, 119]	—
			chromium	7440-47-3	X-[97, 119]	D007[97, 119]	—
			lead	7439-92-1	X-[97, 119]	D008[97, 119]	—
			mercury	7439-97-6	X-[97, 119]	D009[97, 119]	—
			carbon tetrachloride	56-23-5	X-[97, 119]	F001[97, 119]	—
			1,1,1-trichloroethane (TCA)	71-55-6	X-[97, 119]	F001/F002[97, 119]	—

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Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
			1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	X-[97, 119]	F001/F002[97, 119]	—
			methylene chloride	75-09-2	X-[97, 119]	F001/F002[97, 119]	—
			tetrachloroethylene (perclene)	127-18-4	X-[97, 119]	F001/F002[97, 119]	—
			trichloroethylene (TCE)	79-01-6	X-[97, 119]	F001/F002[97, 119]	—
			benzene	71-43-2	X-[97, 119]	F005[97, 119]	—
			carbon disulfide	75-15-0	X-[97, 119]	F005[97, 119]	—
			methyl ethyl ketone (2-butanone)	78-93-3	X-[97, 119]	F005[97, 119]	—
RL, RL	720	HANFORD KE BASIN NORTH LOADOUT PIT SLUDGE	See Note 9 and 19[134]		See Note 9[134]	See Note 19[134]	
SL, SL	223	SNL LRRI HETEROGENEOUS DEBRIS	See Note 9 and 19[139]		See Note 9[139]	See Note 19[139]	
SL, SL	224	SNL HFC HETEROGENEOUS DEBRIS	See Note 9 and 19[140]		See Note 9[140]	See Note 19[140]	
SL, SL	227	SANDIA SOURCES	See Note 9 and 19[141]		See Note 9[141]	See Note 19[141]	xx
SR, SR	251	SRS BARNWELL SOLIDIFIED INORGANIC WASTE	See Note 9 and 19[136]		See Note 9[136]	See Note 19[136]	
SR, SR	252	SRS F-CANYON AND FB-LINE ABSORBED WASTES	See Note 9 and 19[137]		See Note 9[137]	See Note 19[137]	
SR, SR	253	SRS MOUND SITE INORGANIC PARTICULATES	See Note 9 and 19[138]		See Note 9[138]	See Note 19[138]	
SR, SR	835	SRS HIGH LEVEL CAUSTIC	See Note 9 and 19[135]		See Note 9[135]	See Note 19[135]	
SR, SR	842	SRS Mound Site Soil/Debris	See Note 9 and 19		See Note 9	See Note 19	

NOTE 1: *The 3100 m^3 Project conservatively assigned the F003 HWN to RF-292 and RF-696 within the WIPP-approved 3,100 m^3 Project WSP for this waste stream (i.e., ININW222). All HWNs previously assigned that are associated with the corrosivity (i.e., D002) and/or ignitability (i.e., D001/F003) characteristics will not exhibit that characteristic at the time of shipment to WIPP.*

NOTE 2: *A potential WIPP-prohibited characteristic HWN is associated with the hazardous constituent. The constituent was identified through historical generator information (i.e., AK). If applicable, prior to shipment, wastes with prohibited items/properties (e.g., the potential to exhibit the characteristic of ignitability, reactivity, and/or corrosivity undergo treatment and/or removal of the prohibited items/properties prior to shipment.*

NOTE 3: *Containers of waste remaining in storage at the TSA that have excess liquids will retain the applicable characteristic code (as indicated) until treatment takes place.*

NOTE 4: *General statement within AK records reflects that the waste may contain a constituent associated with F001, F002, or F005 (i.e., specific contaminant may not be identified).*

NOTE 5: *Waste is subject to peridodic change due to routine reciept of off-site waste. See off-site waste coordinator and AMWTP HWD for current list of HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*

Advanced Mixed Waste Treatment Project

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]
NOTE 6:	*These HWNs do not apply to this IDC; however, because the F006, F007, and F009 HWNs do apply to RF-376 and RF-490 filters and these wastes are included in BN211 approved WSPF, all filters shipped under the approved BN211 WSPF are assigned the F006, F007, and F009 HWNs at the time of shipment.*						
NOTE 7:	*The waste is currently being shipped by CCP. See CCP WSPF. The HWNs associated with RF-300 are the same as those assigned to RF-graphite waste.*						
NOTE 8:	*According to AK documentation the original generator did not assign a D001, D002, or D003 HWN (i.e., the waste was not classified by the generator as an ignitable, corrosive, or reactive waste).*						
NOTE 9:	*The constituents associated with AMWTP storage requirements.are identified in the AMWTP off-site waste profile supporting documentation*						
NOTE 10:	*This is an IDC assigned to the overpack containers (i.e., bins/cargo containers only) and is used to support AMWTP operations. The IDC reflects that the overpack containers include inner containers of legacy debris and non-debris wastes that have a high or low probability of roaster oxide (RF-999 [roaster oxide designator] and RF-998 roaster oxide not designated). The inner containers were retrieved from the INL SDA pits 11 and 12 during the timeframe 1974–1979. The bins and/or cargo containers may contain waste packaged within 30-gallon, 55-gallon, and/or 83-gallon drums. Inner containers removed from these bins/cargos will be assigned their appropriate IDC based on their physical form and container information. The inner waste containers may contain a variety of waste IDCs (e.g., RF-741, RF-742, RF-743, RF-744, RF-745, RF-750, and RF-751). One container noted during the April 1978 retrieval activities identified a container labeled with cyanidmide (**NOTE:** this container had a one month lag time from time of discovery to subsequent management of waste).* [111] *If the RF IDC cannot be assigned, UN-000, UN-00A, UN-00B, UN-00C or UN-00D may be assigned. Temporarily assigned HWNs are the same as RF wastes currently stored at the AMWTP and the BN510 list of HWNs.*						
NOTE 11:	*This HWN was assigned by the INL 3,100 m^3 Project due to the presence of Ful-Flo filters within RF-292.*						
NOTE 12:	*Roaster oxide has been determined to be non-hazardous if at the time of retrieval the container is intact. If the container is breached an evaluation of applicable EPA HWNs will be performed. HWNs will be assigned to breached containers on a case-by-case basis and will be based on the type and source of waste within close proximity of the parent container.*[73]						
NOTE 13:	*Temporarily-assigned HWNs are the same as those corresponding to post 1970 IDCs(i.e., RF-745 = RF-005). AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 14:	*Temporarily-assigned HWNs are the same as those associated with RF-003. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling. The waste is assumed to be PCB regulated.*						
NOTE 15:	*Temporarily- assigned HWNs are all BN510.1 list of HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 16:	*Temporarily-assigned HWNs are all BN-510 HWNs. AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling.*						
NOTE 17:	*Temporarily-assigned HWNs are the HWNs associated with ARP waste. (See IDC SD-704), to address non-RF waste that may be present in the AMWTP storage that are similar to the waste being retrieved from ARP, (e.g., INL sites). AK will determine applicable WIPP HWNs and hazardous constituents at the time of WIPP profiling*						
NOTE 18:	*IDC IW-179 is assigned to the overpack containers (bins) only and is used to support AMWTP operations. These bins contain inner containers of legacy waste from the Early Waste Retrieval Project. The waste was retrieved from the SDA during 1976-1978. The waste was originally generated prior to 1964 and subsequently disposed of in the RWMC SDA. The inner containers include 55- gallon, 83-gallon, and Tri-walls. The inner containers will be assigned applicable IDCs (e.g., IW-176, IW-177, or IW-178) when unpacked. If physical form is not identifiable the UN-000 is assigned. Eight drums retrieved during the the Early Waste Retrieval Project were labeled "Cluster fragmentation bombs" during the early retrieval activities; however, the drums were later evaluated and it was determined that they did not not contain "bombs" prior to placement on Pad R.*[74] *Temporarily assigned HWNs are the same RF HWNs associated with RF wastes currently stored at the AMWTP and the BN510 list of HWNs. Final list of HWNs will be determined at the time of inclusion into a WSP. Waste within the bins is subject to a case-by-case evaluation for PCBs.*						

AMWTP Waste Stream Designations

Generator Site, Area	IDC Numeric Code	Waste Description	Constituent/Compound	CAS	Potential Hazardous Constituent or Chemical Property (for supporting safe storage configurations)[HI, WG]	Initial Gen Assigned HWN[WG, PC]	WIPP WSPF Approved HWN[WS, AK]

NOTE 19: *See specific AMWTP off-site WSP for HWNs.*

NOTE 20: *Some containers within this IDC are classified as PCB and some are non-PCB. PCB status is determined based on information from CCP.*

NOTE 21: *The combustion/incineration of cyanide plating waste has not been confirmed by AMWTP AK. Prior profiling of the same waste by RF (i.e. the original generator) did not result in assignment of F006, F007, or F009 HWNs.*[9, 62]

NOTE 22: *Hazardous waste numbers and constituents are the same as BN-508.*

NOTE 23: *Temporarily-assigned HWNs same as RF-700 and RF-801*

NOTE 24: *Temporarily assigned HWNs the same as MD-848*

NOTE 25: See RPT-670 (P891A).

TBD Waste identified as TBD have not had HWN assigned.

WG Waste Generator's assignment of HWNs.

HI Hazardous constituent information relating to potential EPA hazardous constituent (e.g., listed or characteristic) or potential EPA hazardous characteristic property. The information is unconfirmed and was obtained from an interpretation of previously identified historical documents. Potential hazardous constituents do not necessarily reflect generator-assigned or final WIPP-assigned HWNs. These hazardous constituents were identified based on historical reviews of previously identified AK documents for purposes of supporting safe storage. The initial identification of potential hazardous constituents occurred prior to AMWTP AK/characterization confirmation and HWN assignment.

AK Confirmed AK information used to assign HWNs to an AMWTP waste stream, including any conservative HWN assignment that has been confirmed by AK. Previously assigned HWNs may be deleted due to a waste no longer exhibiting a characteristic property (e.g., D001, D002, F003, etc.) based on AMWTP treatment of a characteristic HWN or rejection of a prohibited item prior to shipment to WIPP, and/or confirmation test results.

WS WIPP-approved WSPF assigned HWNs.

PC Potential characterization. Unless otherwise noted, wastes with no generator assigned HWNs are considered to be a mixed waste and carry all the HWNs associated with the WMCG associated with the IDC for storage. Applicable WIPP HWNs will be assigned at the time of WIPP profiling.

Table A-2. Generator site and area acronyms used in Table A-1.

Gen Site	Area	Description
AE	—	Argonne National Laboratory-East
BC	—	Battelle Columbus Laboratory
BL	—	Bettis Atomic Power Laboratory
BW	—	Babcock and Wilcox
BX	—	Bendix-Grand Junction Operation Office (M&O Contractor)
GV	—	General Electric Vallecitos Nuclear Center
ID	AW	INL Materials and Fuels Complex (formerly called ANL-West)
ID	BN	INL Advanced Mixed Waste Treatment Facility (formerly called BNFL)
ID	IA	INL Auxiliary Reactor Area
ID	IC	INL Idaho Nuclear Technology and Engineering Center (formerly called Chemical Processing Plant)
ID	IF	INL Central Facilities Area
ID	IN	INL Naval Reactor Facility
ID	IP	INL Power Burst Facility
ID	IR	INL Reactor Technology Complex (formerly called Test Reactor Area)
ID	IT	INL Test Area North
ID	IW	INL Radioactive Waste Management Complex
ID	SD	INL Subsurface Disposal Area
JH	—	J. C. Haynes, Ohio businessman who irradiated diamonds with ^{241}Am
LA	—	Los Alamos National Laboratory
LB	—	Lawrence Berkeley National Laboratory
LL	—	Lawrence Livermore National Laboratory
MD	—	Mound Laboratory
MO	—	Monsanto-Dayton Laboratory
MX	—	^{241}Am waste from a smoke detector manufacturing company in Mexico
ND	—	Nuclear Radiation Development, LLC
NT	—	Nevada Test Site
OR	—	Oak Ridge National Laboratory
RF	—	Rocky Flats Plant
RL	—	Hanford
SL	—	Sandia National Laboratories
SR	—	Savannah River Site

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

B-2012-0219 RECORD JMC 10/16/12

Form-1068, Rev. 4 AK9
Effective: 01/08/09
Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: U334S	**2. Revision:** 0

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☐ Correspondence
- ☐ Discrepancy

4. Title/Description Information: Form 1066 - BN

Document Number: n
Revision: N/A
Author: AMWTP
Date: 10/10/2012

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:

9. Document Summary:

This is the Form 1066 for the AMWTP facility as of October 2012

10. Source Document Data Limitations (if any):

Docuement will change with time.

11. AK Expert:	Julie Collins (Print)	Julie Collins (Sign)	10/16/2012 (Date)

FOR INFORMATION ONLY

Implementing Document: MP-TRUW-8.13

Generator Site: AMWTP (BN)

AK Information	AK#<1>	Source Document Reference Number
Generator Site TRU Waste Management Program (WM) information		
Map of the site with the areas and facilities involved in TRU waste generation, treatment, and storage identified.	WM1	P1351A, P365A, P374A, P658A, P659A, P662A, P667A, P742S, P755A, P768A, P780S, P816A, P953A
Facility mission description as related to TRU mixed waste generation and management and as related to radionuclide-bearing materials and their management.	WM2	P1116S, P1141S, P1142S, P1351A, P386A, P393A, P400A, P658A, P659A, P662A, P667A, P744A, P860S, P868A
Description of the operations that generate TRU mixed waste at the site, and of the specific site locations and operations relative to the isotopic composition of the TRU wastes they generated.	WM3	C1010A, C1011A, C1018A, C1022A, C1051A, C191A, C207A, C503A, C522A, C790S, P1030A, P1092S, P1093S, P1094S, P1095S, P1096S, P1097S, P1099S, P1103S, P1104S, P1105S, P1106S, P1107S, P1112A, P1120S, P1121A, P1122A, P1123A, P1126A, P1127A, P1128S, P1129S, P1139S, P1223A, P1358A, P1365A, P387A, P388A, P389A, P390A, P391A, P392A, P393A, P400A, P403A, P404A, P405A, P413A, P414A, P415A, P416A, P433A, P439A, P595A, P612A, P613A, P614A, P615A, P616A, P617A, P618A, P619A, P620A, P658A, P659A, P662A, P667A, P740S, P744A, P753A, P758A, P768A, P807A, P841A, P859S, P953A
Waste identification or categorization schemes used at the facility including codes that correlate to a specific isotopic distribution and a description of the isotopic composition of each waste stream.	WM4	C453A, C454A, C459A, C507A, C522A, C546S, C566S, C840S, C841S, P1030A, P1089A, P1358A, P1404A, P141A, P1425A, P393A, P399A, P400A, P439A, P567A, P595A, P658A, P659A, P662A, P670A, P744A, P856A, P860S, P888A
Types and quantities of TRU waste generated, including historical generation through future projections.	WM5	C1011A, C1016A, C1018A, C1023A, C1051A, C191A, C507A, C535A, C618A, C850A, C869S, P1030A, P1099S, P1108A, P1358A, P1364A, P1365A, P364A, P365A, P393A, P394A, P395A, P400A, P439A, P567A, P595A, P612A, P613A, P614A, P615A, P616A, P617A, P618A, P619A, P620A, P654S, P655S, P658A, P659A, P662A, P743A, P744A, P745A, P753A, P755A, P758A, P768A, P816A, P841A, P859S, P860S
Correlation of waste streams generated from the same building and process, as appropriate.	WM6	C1018A, C1051A, C544A, D077A, P1030A, P1358A, P1364A, P1365A, P365A, P393A, P400A, P403A, P414A, P439A, P567A, P595A, P654S, P658A, P659A, P662A, P667A, P744A, P758A, P816A, P841A

Implementing Document: MP-TRUW-8.13

AK Information	AK#<1>	Source Document Reference Number
Generator Site TRU Waste Management Program (WM) information		
Assessment of operations to determine if the TRU waste materials at the generator site meet the definition of defense waste, High-Level waste or Spent Nuclear Fuel as specified in the WIPP WAC.	WM7	C1058S, C191A, C329A, C559S, P1030A, P1358A, P1425A, P330A, P400A, P417A, P418A, P439A, P649A, P650A, P658A, P659A, P662A, P744A, P757A, P841A, U216S
Waste certification procedures for retrievably stored and newly generated wastes to be sent to the Waste Isolation Pilot Plant (WIPP) facility.	WM8	C1048A, C1050A, C1053A, C1057A, C274A, C455A, C456A, C540S, C541S, C545S, C547S, C548S, C560S, C561S, C562S, C563S, C564S, C565S, C567S, C592S, C593S, C594S, C595S, C596S, C597S, C598S, C600S, C606S, C608S, C609S, C610S, C630S, C631S, C788S, C789S, C853S, C866S, C869S, C941A, C942A, C954S, P028A, P1118A, P1124S, P1358A, P1428S, P396A, P413A, P441A, P658A, P659A, P662A, P682S, P889S, U177A, U178A, U179A, U180A, U181A, U182A
<1> The AK#s are to be used in the Acceptable Knowledge Source Document Summary to aid in identifying the location of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Randall C. Morris Randall C Morris Date: 10/9/12
Print/Sign Date

Site Project Manager: Eric Schweinsberg Eric Schweinsberg Date: 10/9/12
Print/Sign

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

B-2012-0219
RECORD
JMC 10/16/12

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: U335S	2. Revision: 0

3. Category

- ☐ Published Documentation
- ☐ Correspondence
- ☑ Unpublished Documentation
- ☐ Discrepancy

4. Title/Description Information: Form 1066 for the Mound facility

Document Number: N/A
Revision: N/A
Author: AMWTP
Date: 10/10/2012

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:

9. Document Summary:

The document is the 2012 Form 1066 for the Mound facility

10. Source Document Data Limitations (if any):

Document will change with time

11. AK Expert:	Julie Collins	Julie Collins	10/16/2012
	Print	Sign	Date

FOR INFORMATION ONLY

Generator Site: Mound (MD)

AK Information	AK#<1>	Source Document Reference Number
Generator Site TRU Waste Management Program (WM) information		
Map of the site with the areas and facilities involved in TRU waste generation, treatment, and storage identified.	WM1	C601A, P380A, P418A, P463A, P469A, P522A, P523A, P524A, P551A, P777A, U133A
Facility mission description as related to TRU mixed waste generation and management and as related to radionuclide-bearing materials and their management.	WM2	C344A, C469A, C498A, P1088S, P1386S, P380A, P393A, P418A, P437A, P463A, P469A, P492A, P522A, P523A, P524A, P540A, P548A, P553A, P554A, P555A, P558A, P559A, P560S, P604A, P622A, P646A, P744A, P777A, P778A, U126A, U186A, U208A, U209A
Description of the operations that generate TRU mixed waste at the site, and of the specific site locations and operations relative to the isotopic composition of the TRU wastes they generated.	WM3	C377A, C382A, C446A, C508A, C517A, P1314A, P1386S, P307A, P319A, P380A, P385A, P393A, P400A, P418A, P423A, P437A, P463A, P469A, P474A, P492A, P518A, P522A, P523A, P524A, P525A, P536A, P558A, P604A, P622A, P646A, P648A, P744A, P777A, P778A, U060A, U126A
Waste identification or categorization schemes used at the facility including codes that correlate to a specific isotopic distribution and a description of the isotopic composition of each waste stream.	WM4	C356A, C507A, C546S, C566S, C840S, C841S, P024A, P1089A, P381A, P393A, P399A, P400A, P418A, P476A, P510A, P556A, P567A, P623A, P624A, P625A, P670A, P777A, U120A, U126A, U145A
Types and quantities of TRU waste generated, including historical generation through future projections.	WM5	C1023A, C507A, C535A, D050A, P024A, P1314A, P319A, P364A, P365A, P385A, P393A, P400A, P418A, P437A, P474A, P525A, P536A, P567A, P604A, P646A, P777A, U120A, U122A, U126A
Correlation of waste streams generated from the same building and process, as appropriate.	WM6	C552S, P1386S, P365A, P393A, P400A, P418A, P437A, P567A, P604A, P623A, P624A, P625A, P646A, P777A, P778A, U126A
Assessment of operations to determine if the TRU waste materials at the generator site meet the definition of defense waste, High-Level waste or Spent Nuclear Fuel as specified in the WIPP WAC.	WM7	C329A, C469A, C498A, C559S, P1314A, P380A, P400A, P418A, P437A, P463A, P469A, P492A, P522A, P523A, P524A, P558A, P559A, P604A, P646A, P648A, P757A, P777A, U126A, U129A, U186A, U216S
Waste certification procedures for retrievably stored and newly generated wastes to be sent to the Waste Isolation Pilot Plant (WIPP) facility.	WM8	C1057A, C274A, C276A, C340A, C341A, C376A, P028A, P385A, P396A, P418A, P465A, P469A, P474A, P525A, P536A, P777A
<1> The AK#s are to be used in the Acceptable Knowledge Source Document Summary to aid in identifying the location of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Randall C. Morris Randall C Morris Date: 10/9/12
Print/Sign Date

Site Project Manager: Eric Schweinsberg Eric Schweinsberg Date: 10/9/12
Print/Sign

Waste Stream or Waste Type Description: Supercompacted debris

Waste Stream or IDC Number: BN510.1

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C018A, C048A, C053A, C067A, C072A, C074A, C082A, C087A, C102A, C155A, C162A, C170A, C171A, C182A, C184A, C185A, C254A, C289A, C295A, C296A, C299A, C320A, C322A, C344A, C351A, C358A, C375A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C478A, C486A, C488A, C490A, C491A, C522A, C533A, C789S, C869S, C872A, C884A, C885A, C889A, C891A, C892A, C897A, C904A, C913A, C916A, C920A, C921A, C924A, C928A, C932A, C934A, D007A, D023A, D029A, D030A, D061A, D085A, P001A, P006A, P012A, P014A, P016A, P024A, P035A, P037A, P038A, P049A, P052A, P058A, P060A, P061A, P062A, P067A, P076A, P079A, P082A, P083A, P090A, P097A, P098A, P1000A, P1001A, P1002A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1016A, P1017A, P1019A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1029A, P1031A, P1033A, P1034A, P1036A, P1037A, P1039A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1056A, P1058A, P109A, P113A, P117A, P127A, P153A, P164A, P167A, P198A, P221A, P222A, P223A, P224A, P225A, P319A, P328A, P333A, P335A, P336A, P345A, P347A, P350A, P351A, P352A, P357A, P368A, P369A, P370A, P380A, P381A, P385A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P507A, P509A,

Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P525A, P526A, P527A, P540A, P544A, P545A, P546A, P550A, P551A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P733S, P736A, P744A, P746A, P816A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P928A, P932A, P936A, P941A, P950A, P953A, P954A, P957A, P964A, P965A, P966A, P969A, P972A, P974A, P975A, P976A, P977A, P978A, P979A, P981A, P982A, P983A, P984A, P985A, P986A, P987A, P988A, P990A, P991A, P993A, P995A, P996A, P997A, P998A, P999A, U013A, U032A, U043A, U047A, U052A, U056A, U059A, U069A, U077A, U126A, U139A, U141A, U145A, U146A, U148A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U198A, U202A, U203A, U204A, U207A, U244A, U248A, U256A, U261A, U267A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste stream volume and time period of generation.	WS2	C048A, C072A, C118A, C254A, C289A, C294A, C295A, C296A, C322A, C348A, C359A, C372A, C375A, C379A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C499A, C507A, C522A, C526A, C534A, C535A, C542S, C543S, C620A, C850A, C851A, C855A, C856A, C861A, C869S, C887A, C889A, C891A, C892A, C895A, C904A, C912A, C913A, C915A, C916A, C919A, C920A, C924A, C931A, C934A, D029A, D030A, D040A, D061A, P024A, P052A, P061A, P090A, P1000A, P1004A, P1007A, P1008A, P1009A, P1012A, P1014A, P1015A, P1016A, P1020A, P1022A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1031A, P1033A, P1034A, P1036A, P1039A, P1046A, P1051A, P1057A, P1058A, P113A, P127A, P153A, P164A, P205A, P221A, P222A, P223A, P224A, P225A, P237A, P246A, P318A, P319A, P328A, P333A, P354A, P357A, P364A, P365A, P368A, P380A, P400A, P417A, P418A, P442A, P443A, P461A, P462A, P469A, P482A, P486A, P487A, P496A, P499A, P501A, P505A, P506A, P507A, P509A, P511A, P517A, P519A, P522A, P523A, P524A, P567A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P671S, P717A, P743A, P744A, P746A, P826A, P838A, P853A, P854A, P855A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P954A, P958A, P960A, P963A, P964A, P972A, P976A, P978A, P981A, P983A, P985A, P986A, P990A, P997A, P998A, P999A, U022A, U059A, U069A, U122A, U126A, U127A, U139A, U141A, U142A, U146A, U148A, U154A, U159A, U166A, U187A, U197A, U198A, U202A, U207A, U218A, U235S, U248A, U249A, U255A, U257A, U258A, U261A, U264A, U266A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C005A, C008A, C014A, C018A, C050A, C053A, C061A, C082A, C087A, C100A, C171A, C175A, C180A, C181A, C184A, C185A, C254A, C257A, C258A, C260A, C444A, C458A, C466A, C473A, C481A, C872A, C879A, C880A, C888A, C894A, C897A, C904A, C912A, C925A, C926A, C934A, D037A, D080A, P001A, P012A, P014A, P015A, P016A, P024A, P035A, P037A, P038A, P039A, P049A, P052A, P053A, P055A, P056A, P058A, P059A, P060A, P061A, P062A, P067A, P070A, P076A, P078A, P079A, P081A, P082A, P083A, P092A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1014A, P1015A, P1018A, P1019A, P1022A, P1023A, P1024A, P1025A, P1026A, P1028A, P1029A, P103A, P1047A, P104A, P1050A, P1051A, P1052A, P1056A, P1057A, P1058A, P106A, P109A, P110A, P114A, P117A, P124A, P163A, P164A, P167A, P175A, P205A, P221A, P222A, P223A, P224A, P225A, P282A, P319A, P335A, P341A, P345A, P347A, P352A, P357A, P368A, P369A, P380A, P400A, P403A, P404A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P469A, P482A, P483A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P504A, P505A, P507A, P511A, P516A, P517A, P518A, P519A, P520A, P522A, P523A, P524A, P526A, P527A, P546A, P558A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P660A, P667A, P671S, P717A, P743A, P744A, P746A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P904A, P913A, P922A, P936A, P941A, P944A, P947A, P948A, P949A, P950A, P955A, P957A, P958A, P959A, P962A, P964A, P970A, P972A, P973A, P974A, P975A, P977A, P979A, P980A, P982A, P985A, P986A, P987A, P988A, P989A, P990A, P993A, P995A, P996A, P997A, P998A, P999A, U011A, U015A, U022A, U047A, U052A, U056A, U073A, U077A, U086A, U091A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U244A, U256A, U265A, U266A

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C027A, C041A, C050A, C051A, C060A, C063A, C064A, C070A, C072A, C076A, C078A, C081A, C083A, C084A, C086A, C090A, C091A, C093A, C094A, C095A, C096A, C099A, C100A, C101A, C102A, C105A, C107A, C119A, C123A, C155A, C162A, C178A, C179A, C181A, C184A, C186A, C187A, C198A, C205A, C245A, C246A, C251A, C253A, C255A, C257A, C258A, C259A, C260A, C261A, C262A, C263A, C269A, C322A, C342A, C344A, C349A, C350A, C354A, C356A, C359A, C373A, C375A, C385A, C409A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C486A, C488A, C489A, C490A, C493A, C496A, C505A, C533A, C546S, C871A, C872A, C889A, C890A, C891A, C892A, C898A, C900A, C901A, C902A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C925A, C926A, C927A, C937A, C940A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D061A, D070A, D076A, D082A, D083A, D084A, P002A, P006A, P015A, P016A, P021A, P024A, P033A, P035A, P037A, P038A, P052A, P053A, P056A, P060A, P061A, P062A, P067A, P068A, P076A, P078A, P079A, P081A, P083A, P091A, P092A, P094A, P098A, P1003A, P1004A, P1005A, P1007A, P1008A, P1009A, P1012A, P1013A, P1014A, P1015A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1034A, P1036A, P1039A, P1047A, P1048A, P1052A, P106A, P108A, P109A, P113A, P114A, P151A, P163A, P164A, P205A, P207A, P214A, P215A, P221A, P222A, P223A, P224A, P225A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P319A, P324A, P328A, P334A, P335A, P336A, P337A, P341A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P359A, P365A, P368A, P369A, P380A, P393A, P400A, P401A, P403A, P404A, P405A, P406A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P457A, P458A, P461A, P462A, P463A, P469A, P475A, P485A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P497A, P498A, P499A, P501A, P503A, P504A, P505A, P506A, P509A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P527A, P532A, P534A, P539A, P545A, P546A, P552A, P591A, P592A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P657S, P660A, P667A, P717A,

Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	P744A, P752A, P808S, P853A, P854A, P855A, P857A, P867S, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P896A, P900A, P902A, P903A, P904A, P905A, P908A, P913A, P914A, P915A, P916A, P917A, P918A, P919A, P920A, P921A, P922A, P925A, P926A, P930A, P931A, P935A, P937A, P947A, P948A, P949A, P950A, P951A, P958A, P960A, P961A, P963A, P965A, P972A, P973A, P974A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P989A, P990A, P991A, P993A, P994A, P995A, P998A, U005A, U013A, U019A, U020A, U022A, U030A, U032A, U043A, U047A, U062A, U086A, U097A, U113A, U126A, U132A, U140A, U141A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U192A, U195A, U197A, U202A, U204A, U205A, U208A, U218A, U244A, U247A, U248A, U251A, U252A, U253A, U255A, U257A, U263A, U265A, U266A

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C005A, C007A, C015A, C018A, C022A, C051A, C063A, C066A, C089A, C090A, C103A, C104A, C120A, C184A, C186A, C187A, C204A, C254A, C255A, C257A, C258A, C280A, C289A, C293A, C294A, C295A, C296A, C299A, C313A, C315A, C316A, C319A, C323A, C330A, C332A, C335A, C337A, C348A, C349A, C350A, C370A, C373A, C375A, C376A, C378A, C379A, C383A, C409A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C478A, C479A, C481A, C485A, C486A, C489A, C490A, C491A, C496A, C499A, C504A, C505A, C515A, C520A, C521A, C526A, C530A, C531A, C533A, C534A, C546S, C550S, C566S, C789S, C834A, C840S, C841S, C851A, C869S, C871A, C872A, C873A, C880A, C883A, C885A, C886A, C891A, C892A, C893A, C895A, C896A, C897A, C904A, C905A, C907A, C911A, C912A, C913A, C915A, C916A, C917A, C918A, C921A, C924A, C929A, D022A, D042A, D049A, D061A, D079A, D085A, P001A, P006A, P008A, P009A, P012A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P032A, P035A, P037A, P038A, P039A, P043A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P063A, P064A, P076A, P083A, P090A, P094A, P097A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1005A, P1006A, P1007A, P1008A, P1009A, P1010A, P1011A, P1013A, P1014A, P1016A, P1017A, P1023A, P1024A, P1026A, P1027A, P1028A, P1029A, P1033A, P1036A, P1039A, P1040A, P1041A, P1046A, P1047A, P1049A, P104A, P1050A, P1051A, P1052A, P1055A, P1056A, P113A, P116A, P117A, P141A, P154A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P282A, P283A, P305A, P306A, P316A, P319A, P328A, P333A, P334A, P335A, P336A, P342A, P343A, P344A, P345A, P347A, P350A, P351A, P354A, P356A, P357A, P365A, P368A, P370A, P372A, P380A, P381A, P384A, P385A, P393A, P399A, P400A, P403A, P405A, P417A, P418A, P423A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P465A, P469A, P475A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P498A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P516A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P594A, P599A, P604A, P610A, P621A, P632A, P633A, P635A,

Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	P636A, P637A, P638A, P649A, P650A, P654S, P657S, P660A, P667A, P670A, P717A, P736A, P744A, P746A, P752A, P816A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P897A, P906A, P911A, P914A, P915A, P916A, P917A, P918A, P919A, P921A, P922A, P931A, P947A, P948A, P957A, P963A, P964A, P968A, P969A, P970A, P971A, P972A, P973A, P974A, P977A, P978A, P979A, P980A, P981A, P982A, P983A, P985A, P986A, P989A, P991A, P993A, P995A, P996A, P997A, U004A, U009A, U022A, U028A, U097A, U113A, U126A, U139A, U141A, U145A, U146A, U153A, U154A, U156A, U157A, U159A, U166A, U175A, U176A, U184A, U187A, U189A, U190A, U191A, U192A, U195A, U197A, U198A, U204A, U205A, U206A, U207A, U208A, U218A, U219S, U230A, U243A, U244A, U246A, U247A, U248A, U250A, U252A, U255A, U263A, U266A

Generator site TRU waste stream (WS) - specific information		
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C021A, C048A, C060A, C064A, C070A, C076A, C078A, C079A, C081A, C083A, C084A, C091A, C093A, C094A, C095A, C096A, C099A, C101A, C102A, C107A, C117A, C119A, C123A, C192A, C199A, C205A, C245A, C253A, C255A, C257A, C258A, C260A, C261A, C262A, C263A, C299A, C313A, C320A, C354A, C458A, C481A, C493A, C509A, C566S, C607A, C840S, C841S, C883A, C889A, C890A, C906A, C908A, C909A, C912A, C913A, C914A, C915A, C916A, C917A, C920A, C921A, C924A, C926A, C927A, C932A, C938A, C939A, C940A, D005A, D008A, D009A, D013A, D014A, D015A, D016A, D017A, D018A, D020A, D024A, D025A, D027A, D035A, D036A, D037A, D041A, D045A, D047A, D048A, D052A, D053A, D055A, D059A, D064A, D070A, D076A, D077A, D078A, D081A, D082A, P009A, P012A, P013A, P015A, P016A, P017A, P021A, P022A, P023A, P035A, P038A, P049A, P052A, P053A, P056A, P058A, P060A, P061A, P062A, P067A, P079A, P080A, P094A, P1003A, P1012A, P1013A, P1015A, P1016A, P1023A, P1024A, P1025A, P1026A, P1027A, P1028A, P1029A, P1039A, P1045A, P1047A, P1052A, P108A, P114A, P151A, P205A, P207A, P211A, P212A, P213A, P214A, P215A, P216A, P221A, P222A, P223A, P224A, P225A, P237A, P239A, P282A, P283A, P284A, P285A, P305A, P306A, P307A, P308A, P310A, P313A, P316A, P324A, P334A, P335A, P336A, P337A, P351A, P356A, P357A, P365A, P368A, P380A, P393A, P400A, P417A, P418A, P435S, P442A, P443A, P444A, P448A, P449A, P450A, P451A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P486A, P487A, P489A, P490A, P491A, P492A, P503A, P505A, P506A, P509A, P512A, P517A, P519A, P520A, P527A, P532A, P539A, P592A, P594A, P599A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P717A, P733S, P743A, P744A, P756A, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P892A, P893A, P894A, P914A, P915A, P916A, P917A, P918A, P924A, P930A, P931A, P948A, P949A, P950A, P957A, P958A, P959A, P964A, P972A, P977A, P978A, P979A, P980A, P981A, P983A, P984A, P986A, P994A, U005A, U011A, U015A, U020A, U022A, U030A, U046A, U059A, U060A, U062A, U082A, U085A, U086A, U087A, U088A, U089A, U090A, U097A, U102A, U103A, U113A, U142A, U184A, U185A, U190A, U192A, U199A, U205A, U206A, U208A, U218A, U244A, U249A, U254A, U255A, U263A, U265A

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C002A, C072A, C130A, C134A, C137A, C174A, C180A, C184A, C210A, C221A, C255A, C256A, C281A, C285A, C291A, C338A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C373A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C453A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C489A, C490A, C491A, C494A, C505A, C506A, C508A, C517A, C523A, C551A, C552S, C566S, C840S, C841S, C867S, C871A, C874A, C884A, C889A, C891A, C892A, C893A, C894A, C895A, C896A, C899A, C903A, C905A, C910A, C911A, C912A, C913A, C915A, C917A, C919A, C920A, C921A, C922A, C923A, C925A, C932A, C938A, D022A, D051A, D079A, P016A, P024A, P035A, P038A, P053A, P056A, P061A, P062A, P067A, P076A, P078A, P079A, P081A, P083A, P090A, P092A, P094A, P098A, P1000A, P1001A, P1002A, P1003A, P1004A, P1006A, P1007A, P1008A, P1009A, P1010A, P1012A, P1013A, P1014A, P1015A, P1018A, P1020A, P1022A, P1023A, P1024A, P1025A, P1026A, P1027A, P1029A, P1033A, P1034A, P1035A, P1036A, P1040A, P1046A, P1047A, P1048A, P104A, P1051A, P1052A, P1054A, P1057A, P1058A, P115A, P117A, P155A, P156A, P163A, P164A, P189A, P190A, P194A, P195A, P198A, P221A, P222A, P223A, P224A, P227A, P230A, P231A, P232A, P233A, P234A, P235A, P236A, P240A, P282A, P283A, P294A, P295A, P305A, P306A, P307A, P319A, P322A, P348A, P349A, P353A, P354A, P355A, P357A, P368A, P380A, P381A, P385A, P398A, P400A, P417A, P418A, P423A, P435S, P442A, P443A, P448A, P449A, P452A, P453A, P454A, P455A, P456A, P461A, P462A, P463A, P467A, P469A, P472A, P482A, P486A, P487A, P489A, P490A, P491A, P492A, P493A, P499A, P501A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P517A, P518A, P519A, P520A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P594A, P604A, P610A, P611A, P621A, P622A, P632A, P633A, P635A, P636A, P637A, P638A,

Implementing Document: MP-TRUW-8.13

Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	P649A, P650A, P660A, P743A, P744A, P745A, P759S, P838A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, P893A, P894A, P913A, P928A, P929A, P936A, P937A, P939A, P949A, P950A, P954A, P957A, P958A, P960A, P961A, P963A, P964A, P965A, P969A, P970A, P972A, P973A, P974A, P975A, P977A, P978A, P979A, P980A, P982A, P983A, P984A, P986A, P987A, P988A, P989A, P990A, P991A, P993A, P994A, P996A, P998A, P999A, U022A, U047A, U073A, U126A, U137A, U139A, U141A, U142A, U147A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U166A, U168A, U169A, U170A, U172A, U173A, U184A, U185A, U187A, U189A, U190A, U192A, U195A, U198A, U199A, U202A, U203A, U205A, U208A, U235S, U243A, U244A, U247A, U248A, U249A, U250A, U251A, U252A, U253A, U255A, U257A, U259A, U260A, U262A, U263A, U264A, U265A, U266A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C198A, C199A, C214A, C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C511A, C516A, C530A, C531A, C532A, C568S, C613S, C614S, C615S, C616S, D035A, D070A, P001A, P012A, P013A, P014A, P015A, P016A, P017A, P021A, P022A, P024A, P053A, P063A, P215A, P221A, P222A, P223A, P224A, P225A, P237A, P319A, P356A, P357A, P358A, P368A, P370A, P372A, P385A, P399A, P400A, P403A, P405A, P412A, P417A, P418A, P442A, P443A, P461A, P462A, P465A, P486A, P487A, P492A, P525A, P604A, P610A, P632A, P633A, P635A, P636A, P637A, P638A, P649A, P650A, P660A, P667A, P733S, P744A, P853A, P854A, P855A, P857A, P883A, P884A, P885A, P888A, P892A, U113A, U126A

<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.

All required AK information has been compiled and tracking numbers assigned.

AK Expert: William J. Erhardt — Print/Sign — Date: 9-21-10

Site Project Manager: Steve Carpenter — Print/Sign — Date: 9.21.10

AMWTP Advanced Mixed Waste Treatment Project	TRU Waste Stream AK Documentation Checklist	Form-1067 Rev. 7 Effective: 07/10/09 Page 1 of 3

Implementing Document: MP-TRUW-8.13

Waste Stream or Waste Type Description: Cemented Sludge

Waste Stream or IDC Number: BN836		
AK Information	**AK#<1>**	**Source Document Reference Number**
Generator site TRU waste stream (WS) - specific information		
Information identifying the building(s) and/or area (s) from which TRU waste was or is generated.	WS1	C343A, C344A, C351A, C358A, C378A, C381A, C385A, C386A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C395A, C396A, C397A, C398A, C399A, C400A, C401A, C402A, C403A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C424A, C425A, C429A, C430A, C431A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C443A, C444A, C445A, C446A, C447A, C448A, C449A, C450A, C458A, C461A, C462A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C488A, C490A, P024A, P319A, P380A, P381A, P385A, P418A, P423A, P463A, P469A, P474A, P475A, P477A, P478A, P479A, P480A, P481A, P482A, P484A, P485A, P492A, P493A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P540A, P544A, P545A, P546A, P550A, P551A, P646A, P744A, U126A, U145A, U146A, U148A, U149A, U151A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U173A, U187A, U190A, U195A, U196A, U198A, U202A, U203A, U204A, U207A
Waste stream volume and time period of generation.	WS2	C348A, C359A, C372A, C379A, C411A, C424A, C461A, C463A, C465A, C467A, C472A, C485A, C534A, C535A, D040A, D050A, P024A, P364A, P365A, P380A, P400A, P418A, P469A, P482A, P505A, P506A, P507A, P509A, P511A, P519A, P522A, P523A, P524A, P567A, P646A, P744A, U122A, U126A, U127A, U134A, U142A, U146A, U148A, U149A, U154A, U159A, U187A, U197A, U198A, U202A, U207A
Waste generating process description for each building, including processes with U134 waste generation, if applicable and process flow diagrams. See instructions if process flow diagrams are not available.	WS3	C444A, C458A, C466A, C473A, C481A, P024A, P319A, P379A, P380A, P381A, P385A, P418A, P423A, P463A, P464A, P469A, P474A, P482A, P483A, P485A, P492A, P493A, P504A, P505A, P507A, P510A, P511A, P518A, P519A, P522A, P523A, P524A, P525A, P526A, P527A, P536A, P546A, P558A, P646A, P744A, U126A, U132A, U155A, U156A, U157A, U158A, U168A, U170A, U196A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Material inputs or other information identifying chemical content, and event or process that may have modified the chemical properties after generation. Include data for newly generated waste obtained through VE and/or radiography, information demonstrating neutralization of U134 waste and chemical composition that could affect the isotopic distribution.	WS4	C269A, C339A, C342A, C344A, C349A, C354A, C356A, C359A, C385A, C409A, C411A, C419A, C423A, C430A, C443A, C446A, C447A, C449A, C450A, C451A, C452A, C458A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C471A, C472A, C473A, C477A, C479A, C480A, C481A, C484A, C488A, C490A, C493A, C546S, D056A, D070A, P024A, P207A, P307A, P310A, P319A, P365A, P379A, P380A, P381A, P385A, P409A, P418A, P423A, P457A, P458A, P463A, P464A, P469A, P474A, P475A, P485A, P492A, P493A, P497A, P503A, P504A, P505A, P506A, P509A, P510A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P527A, P532A, P534A, P536A, P539A, P545A, P546A, P552A, P591A, P592A, P623A, P624A, P625A, P643A, P644A, P645A, P646A, P744A, U126A, U132A, U140A, U149A, U156A, U157A, U159A, U164A, U172A, U185A, U189A, U195A, U196A, U197A, U202A, U204A, U205A, U208A
Material inputs or other information identifying physical waste form, and event or process that may have modified the physical properties after generation. Include data obtained through RTR or VE of newly generated waste and physical composition that could affect the isotopic distribution.	WS5	C339A, C348A, C349A, C370A, C376A, C378A, C379A, C383A, C409A, C411A, C419A, C426A, C429A, C430A, C440A, C446A, C447A, C448A, C449A, C450A, C452A, C457A, C461A, C463A, C464A, C465A, C466A, C467A, C468A, C470A, C472A, C473A, C477A, C479A, C481A, C485A, C490A, C518A, C524A, C525A, C534A, C546S, P024A, P207A, P319A, P365A, P379A, P380A, P381A, P385A, P393A, P399A, P418A, P423A, P463A, P465A, P469A, P474A, P475A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P544A, P545A, P546A, P553A, P556A, P567A, P623A, P624A, P625A, P646A, P670A, P744A, U126A, U145A, U146A, U149A, U153A, U154A, U156A, U157A, U159A, U187A, U189A, U190A, U191A, U195A, U196A, U197A, U198A, U204A, U205A, U206A, U207A, U208A
EPA hazardous waste constituents in the waste stream and Hazardous Waste Numbers assigned.	WS6	C354A, C458A, C481A, C493A, D056A, D070A, P207A, P307A, P310A, P319A, P365A, P393A, P418A, P492A, P503A, P505A, P506A, P509A, P512A, P519A, P527A, P532A, P539A, P592A, P623A, P624A, P625A, P646A, P744A, P756A, U060A, U142A, U185A, U190A, U199A, U205A, U206A, U208A

AK Information	AK#<1>	Source Document Reference Number
Generator site TRU waste stream (WS) - specific information		
Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (241Am, 238PU, 239 Pu, 240 PU, 242Pu, 233U, 234U, 238 U, 90 Sr, and 137Cs) and the radionuclides comprising 95% of the hazard.	WS7	C291A, C348A, C351A, C354A, C358A, C368A, C370A, C371A, C378A, C379A, C380A, C381A, C383A, C384A, C385A, C387A, C388A, C389A, C390A, C391A, C393A, C394A, C396A, C400A, C401A, C402A, C404A, C405A, C406A, C408A, C409A, C410A, C411A, C412A, C413A, C414A, C416A, C417A, C418A, C419A, C420A, C421A, C422A, C423A, C425A, C426A, C427A, C428A, C429A, C430A, C431A, C432A, C433A, C434A, C435A, C436A, C437A, C438A, C439A, C440A, C441A, C442A, C445A, C446A, C447A, C448A, C449A, C450A, C452A, C464A, C465A, C466A, C467A, C468A, C469A, C470A, C471A, C472A, C477A, C479A, C485A, C488A, C490A, C494A, C508A, C517A, C519A, C551A, C552S, D050A, P024A, P319A, P381A, P385A, P398A, P418A, P423A, P463A, P464A, P467A, P469A, P472A, P474A, P482A, P492A, P493A, P502A, P503A, P504A, P505A, P506A, P507A, P509A, P510A, P511A, P512A, P513A, P514A, P518A, P519A, P521A, P522A, P523A, P524A, P525A, P526A, P527A, P532A, P536A, P539A, P540A, P543A, P544A, P545A, P546A, P547A, P548A, P549A, P550A, P551A, P553A, P554A, P555A, P558A, P611A, P622A, P623A, P624A, P625A, P646A, P744A, U126A, U137A, U142A, U147A, U149A, U153A, U154A, U155A, U156A, U157A, U158A, U159A, U160A, U161A, U162A, U168A, U169A, U170A, U172A, U173A, U185A, U187A, U189A, U190A, U195A, U196A, U198A, U199A, U202A, U203A, U205A, U208A
Documentation identifying the presence of prohibited items listed in Section B-1c of the WIPP-WAP.	WS8	C321A, C376A, C392A, C415A, C416A, C466A, C470A, C473A, C516A, D070A, P024A, P385A, P418A, P465A, P474A, P492A, P525A, P536A, P646A, P744A, U126A, U196A
<1> The AK#'s are to be used in the Acceptable Knowledge Source Document Summary to aid in the identification of program and waste stream-specific elements within a given document.		

All required AK information has been compiled and tracking numbers assigned.

AK Expert: Tim Vienneman Date: 7-22-09
Print/Sign Date

Site Project Manager: Steve Carpenter Date: 7.22.09
Print/Sign

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	B-2012-0219 RECORD JMC 10/16/12	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: U123A	2. Revision: 11

3. Category

- [ ] Published Documentation
- [x] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. **Title/Description Information:** AK Document Reference Inventory. AMWTP Form-1084.

Document Number: N/A
Revision: N/A
Author: N/A
Date: 10/16/2012

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
N/A			

9. **Document Summary:**

Listing of all Acceptable Knowledge source documents accumulated to date for accessibly- and retrievably-stored wastes to be characterized/treated at the AMWTP. List includes Tracking Number, Document Number, Document Title/Description, Document Author and Document Date.

10. **Source Document Data Limitations (if any):**

Listing includes documents that will be submitted to Records. These documents are identified as "reserved for".

11. AK Expert:	Julie Collins (Print)	Julie Collins (Sign)	10/16/2012 (Date)

Implementing Document: MP-TRUW-8.13

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C001A	TLC-1-83	Content Code 7 Waste (TLC-1-83)	T.L. Clements, Jr.	01/17/1983
C002A	N/A	P-Ci Calculations for WG Pu	D.L. Ziegler	11/30/1983
C003A	86-RF-1518	Rockwell Discussions with EG&G Idaho, Inc. (86-RF-1518)	W.D. Reinhart	05/08/1985
C004A	N/A	Memorandum to J. R. Nicks, Area Manager, RFAO. "Rockwell WIPP-WAC Nonconforming Sludge and Other Waste Management Concerns."	Joseph M. McGough	02/14/1985
C005A	TLC-11-86	Internal correspondence to L. A. Cook. "Addition of Content Code 303 to the Certifiable Waste Categories." (TLC-11-86)	Thomas L. Clements	01/23/1986
C006A	WIPP-0664-ICOR-0192	Internal Letter from A. C. Ficklin to W. D. Reinhart, D. M. Krieg, R. D. Gaskins, and G. J. Carnival. Box and Drum Identification to Meet WIPP Requirements. (WIPP-0664-ICOR-0192)	A. C. Ficklin	02/04/1986
C007A	JDW-08-86	External letter to Ann Ficklin, Manager Solid Waste Operations, Rockwell International. "Item Description Codes." (JDW-08-86)	J. D. Wells, RWMC/SWEPP Operations Support	03/27/1986
C008A	N/A	Internal correspondence from G.F. Jaskot to Distribution. "Certification Waste Documentation."	G. F. Jaskot	05/09/1986
C009A	TLC-40-86	Internal correspondence from T. L. Clements, Jr. to J. M. Bower. "Addition of Content Codes 312 and 377 to the Certifiable Waste Category." (TLC-40-86)	T. L. Clements, Jr.	05/19/1986
C010A	JDW-14-86	External letter from J. D. Wells (RWMC/SWEPP) to W. D. Reinhart (Waste Cert. RFP), Nonstandard Shipment Approval (JDW-14-86)	J.D. Wells	06/19/1986
C011A	N/A	Letter from G.F. Jaskot to Distribution. "TRU Waste Determination."	G. F. Jaskot	10/21/1986
C012A	WIPP-0057-RPTS-0192	Internal Correspondence from D. Vigil and W.A. Meisner to G. L. Hickle. "Diatomite-Cement-Sludge Mixture." (WIPP-0057-RPTS-0192)	D. Vigil and W. A. Meisner	12/15/1986
C013A	N/A	Letter from William F. Kane to Distribution. "TRU/LLW Determination for Waste to Meet the WIPP-WAC."	William F. Kane	02/18/1987
C014A	N/A	Internal correspondence from G.F. Jaskot to B.C. Barrett. IDC and WFN Revision.	G. F. Jaskot	03/24/1987

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C015A	WIPP-0095-RPTS-0192	Internal corrspondence from G.F. Jaskot to B. C. Barrett. "Certified IDC Update." (WIPP-0095-RPTS-0192)	G. F. Jaskot, Rockwell International	04/15/1987
C016A	RPB-59	Internal correspondence from R.P. Brugger to Waste Review Board. "Waste Container Tare Weights" (RPB-59)	R. P. Brugger	04/20/1987
C017A	N/A	Internal letter from C.D. Bretzke to B. A. Reynolds. "Solid Waste Information Management System Data Package."	C. D. Bretzke	05/06/1987
C018A	dk2	Internal letter from L. A. Abila (Waste Compliance & Planning - RFP) to W. D. Reinhart (Waste Certification-RFP), Guidelines for Repackaging Waste at Size Reduction (dk2)	L. A. Abila	06/02/1987
C019A	N/A	Internal correspondence to R. P. Brugger. "Drum Paint Requirements."	L. A. Bearly	07/06/1987
C020A	N/A	Facsimile transmissions from Jeff Paynter to Al Morgan, NMC. "Drums to be shipped as TRU Mixed Waste to 664."	Jeff Paynter	09/22/1987
C021A	WIPP-0643-ICOR-0192	Internal correspondence from J. K. Paynter to R. D. Mullet. "RCRA Mixed Waste IDCs." (WIPP-0643-ICOR-0192)	J. K. Paynter	10/12/1987
C022A	N/A	Internal correspondence from C.D. Bretzke to All Supervision. "New and Revised Waste Item Description Codes (IDCs)."	C. D. Bretzke	11/30/1987
C023A	N/A	Internal correspondence from C. D. Bretzke to W. D. Reinhart. "Funding EG&G Evaluation of Sludge Processing Techniques."	C. D. Bretzke	02/11/1988
C024A	N/A	Internal correspondence from C. D. Bretzke to Distribution. "Waste IDCs for Combustibles."	C. D. Bretzke	02/19/1988
C025A	MST-12-ARO-88-052	Internal correspondence from C. L. Foxx to B. T. Reich. "Air Sparging to Eliminate Pyrophoric Sodium." (MST-12-ARO-88-052)	C. L. Foxx	02/25/1988
C026A	TLC-22-88	External letter from T. L. Clements, Jr. to Jeff Paynter, Rocky Flats Plant. "Content Code Description Data for TRUPACT II Payload Compliance Plan." (TLC-22-88)	T. L. Clements, Jr	04/04/1988
C027A	N/A	Internal correspondence to E. A. Dicarlo from J. A. Hayden. "Disposal of Organic Lab Waste (DHDECMP in Xylene) from the Plutonium Lab, Bldg. 559."	J. A. Hayden	04/18/1988

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C028A	JLH/009/1197	External letter from Jeff Harrison to Sheila Hailey, LMITCO. "Comments on EDF RWMC-942, Rev 0; INEL/INT-97-00214, Rev. 0." November 14, 1997. (JLH/009/1197)	Jeff Harrison	11/14/1997
C029A		Internal correspondence from H. K. Fry to G. L. Aguero. "Counting IDCs 800 through 823 on Segmented Drum Counters." ()	H. K. Fry	04/29/1988
C030A	WIPP-0550-ICOR-0192	Internal correspondence C.D. Bretzke to Distribution. "Item Descripton Codes (IDCs) for Non-PSZ Combustible and Depleted Uranium Oxide." (WIPP-0550-ICOR-0192)	C. D. Bretzk	5/12/1988
C031A	N/A	Internal Correspondence from R.T. Scott to Distribution. "Line Generated Waste Drum Inspection."	R.T Scott	8/24/1988
C032A	88-RF-2813.	External Letter to J. N. Davis, Idaho National Engineering Laboratory. "Data Package Information Change for Drum D40197-0743-18283." (88-RF-2813.)	J. K. Paynter	9/9/1988
C033A	DMH-1-88.	External letter to J. Paynter, Rockwell International. "Content Code 700." (DMH-1-88.)	D. M. Hartley	12/22/1988
C034A	N/A	Memorandum to A. E. Whiteman, Area Manager, RFAO. "RFP Certification and QA Plan Formal Approvals and Reaudit."	E. K. Hunter	12/20/1988
C035A	89-RF-0195	External letter from J. K. Paynter to Marilyn Warrant, Sandia National Laboratories. "Assay Information for Current Content Code Assessment." (89-RF-0195)	J. K. Paynter	1/18/1989
C036A		Random Surveillance Implementation.	F. G. Trevino	1/30/1989
C037A	WCP7-28	Internal correspondence from C.D. Bretzke, et al. to Distribution. "New IDCs." WCP7-28. (WCP7-28)	C. D. Bretzke	2/8/1989
C038A	WCP7-29	Internal correspondence from C.D. Bretzke to C.E. Trump. "Deviation from WO-4034, 'Waste Packaging Requirements.'" (WCP7-29)	C.D. Bretzke	2/8/1989
C039A	WCP8-20.	Internal correspondence from J.K. Paynter to B.C. Barrett. "Radionuclide Information Required for TRUPACT II Shipments." WCP8-20. March 23, 1989. (WCP8-20.)	J. K. Paynter	3/23/1989
C040A	N/A	Internal correspondence from F. G. Trevino to Distribution. "Changes to Random Surveillance Program."	F. G. Trevino	4/10/1989

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C041A	TLC-65-89	External letter from T. L. Clements, Jr. to C. D. Bretzke, Rocky Flats Plant. "Transuranic Waste Stream Profile Statements." (TLC-65-89)	T. L. Clements, Jr.	5/8/1989
C042A	WCP8-85	Internal correspondence from C. D. Bretzke to R. C. Lerche. "Hazardous Constituent Information." WCP8-85. (WCP8-85)	C. D. Bretzke	5/30/1989
C043A	N/A	Internal correspondence from J. A. Detamore, et al. to Distribution. "New IDC/Revised IDCs."	J. A. Detamore, et al.	7/3/1989
C044A	WIPP-0477-ICOR-0192	External letter to Dale Wells. EG&G Idaho, Inc. "Information Request Concerning New IDCs and Resin in IDC 806." (WIPP-0477-ICOR-0192)	C. D. Bretzke	07/08/1989
C045A	PT-76	Internal correspondence to J. A. Detamore. "TRUPACT II Waste Requirements." (PT-76)	J. K. Paynter	7/25/1989
C046A	N/A	Use of Passive-Active Drum Counter. Presentation given by Dr. McKamy of the Safeguards Measurements Group, Rockwell International, Rocky Flats Plant.	Dr. McKamy	1988
C047A	N/A	Interview record and associated documentation from Mr. William V. Conner by T. Widner and J. Lamb	T. Widner, J. Lamb	8/13/1991
C048A	N/A	Interview Record of Mike Simmons by T. Widner and D. Herrick. August 6, 1991.	T. Widner and D. Herrick	8/6/1991
C049A	N/A	Interview Record of Ronald P. Teel by T. Widner and D. Herrick. August 7, 1991.	T. Widner and D. Herrick	8/7/1991
C050A	N/A	Informal memorandum from J. K. Paynter to Al Morgan, EG&G Rocky Flats, Inc. "Creation and deletion dates of IDCs."	J. K. Paynter	6/16/1994
C051A	N/A	Telecon between Jeff Paynter and Dick Saiki, EG&G RFP. "Composition of Rocky Flats Leaded Gloves."	Jeff Paynter	7/19/1994
C052A	N/A	Telecon between Jeff Paynter and Gary Dingham, EG&G RFP. "RTR Acceptance of Mixed IDCs."	Jeff Paynter	7/27/1994
C053A	N/A	Telecon between Jeff Paynter and Al Morgan, EG&G RFP. "Usage of IDC 481."	Jeff Paynter	1/23/1995
C054A	N/A	Internal correspondence from Sheila M. Hailey to Distribution. "Oakridge pH analysis."	Sheila M. Hailey	2/1/1996

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C055A	ED-AL-(MLA)-96-005	Internal correspondence from Mary L. Adamic to John Krsul. "pH Determination of Drum Free Liquids." ED-AL-(MLA)-96-005. (ED-AL-(MLA)-96-005)	Mary L. Adamic	2/16/1996
C056A	N/A	Telecon between Jeff Paynter and Jim Doktor, SafeSites. "Resolution of Solvent Usage with Graphite." March 25, 1996.	Jeff Paynter	3/25/1996
C057A	N/A	Drum gasket, liner usage at RFP compiled by Larry Bearly. 1989.	Larry Bearly	1989
C058A	N/A	Informal notes from Jeff Paynter regarding HEPA and Drum Repackaging at the Size Reduction Facility. Not dated.	Jeff Paynter	N/A
C059A	N/A	Excerpt from Rocky Flats Plant Quality Report August 1986. "Transuranic and Low Level Waste 1985 – 1986."	Rocky Flats Plant	1986
C060A	LSH/001/0496	Memorandum to File from L. S. Hendrickson. "Discrepancy Report on Graphite Waste Group." (LSH/001/0496)	L. S. Hendrickson	4/2/1996
C061A	jkp/000/0496	Memorandum to File. "Graphite Process Procedure from Building 707." (jkp/000/0496)	Jeff Paynter	4/1/1996
C062A	N/A	External letter from Jacqueline W. Sales, US EPA, to Frank Czigler, S&W Waste Inc.	Jacqueline W. Sales	5/20/1987
C063A	JDW-36-85	External letter from J. D. Wells to Ann Ficklin, Rockwell International Corporation. "Content Code Reconciliation." (JDW-36-85)	J. D. Wells	11/8/1985
C064A	DEK-10-86	Internal correspondence from D. E. Kudera to T. L. Clements, Jr. "Combustibility of Graphite." DEK-10-86. (DEK-10-86)	D. E. Kudera	12/2/1986
C065A	N/A	Telecon between Jeff Paynter and Mike Simmons, SMC. "Plating Wastes."	Jeff Paynter	4/8/1996
C066A	N/A	Telecon between Jeff Paynter and Steve Cunningham, WorldWide Security. "Declassification of Graphite Molds."	Jeff Paynter	4/23/1996
C067A	N/A	Telecon between Jeff Paynter and John Collins, RMRS. "IDC 301 Drums from Buildings 371 and 559."	Jeff Paynter	4/24/1996
C068A	N/A	Memorandum from Jeff Paynter and Linda Hendrickson. "WSRIC Processes that Began after 1989."	Jeff Paynter	4/25/1996
C069A	N/A	Internal correspondence from J. A. Detamore, et al. to Distribution. "New IDC/Revised IDCs."	J. A. Detamore, et al	7/3/1989

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C070A	N/A	Internal correspondence from R. D. Thiel to A. M. Faucette. "TCLP Analysis of Raschig Rings."	R. D. Thiel	2/24/1994
C071A	N/A	Rocky Flats Personnel Interview of John Morrison by Flack and Herrick.	Flack and Herrick	8/14/1991
C072A	N/A	Record of Conversation between Rod Hoffman, recorded by Doug Herrick and Jennifer Lamb	Doug Herrick, Jennifer Lamb	9/4/1991
C073A	N/A	Record of conversation of Maurie Maas, recorded by Doug Herrick and Jennifer Lamb, ChemRisk	Doug Herrick and Jennifer Lamb	
C074A	JKP/026/0496	External correspondence from Jeff Paynter to Don Kudera, Lockheed Idaho Technologies Company. "Information regarding Three IDC 301 Drums." (JKP/026/0496)	Jeff Paynter	4/24/1996
C075A	N/A	Telecon between Jeff Paynter and Don Kudera, Lockheed Idaho Technologies Company. "Prefixes for Organic Sludges."	Jeff Paynter	5/1/1996
C076A	MEMO/001/0596	Internal Memorandum to File. "Combustibles and Plastic Characterization" (MEMO/001/0596)	Jeff Harrison	5/23/1996
C077A	N/A	External Memorandum from R. B. Hoffman to K. C. Gerard, Lockheed Idaho Technology Company. "Classification Waste."	R. B. Hoffman	4/24/1996
C078A	MEMO/002/0596	Internal Memorandum to File from Jeff Harrison. "Combustibles and Plastic Characterization." (MEMO/002/0596)	Jeff Harrison	5/30/1996
C079A	N/A	Telecon between Wynn Eakins and Karlan Richards, EG&G Rocky Flats, Inc., Characteristic Codes for B774 Waste	Wynn Eakins	9/8/1994
C080A	N/A	Telecon between Wynn Eakins and Pam Edrich, EG&G Rocky Flats, Inc. "Characterization of Combustible Laboratory Waste."	Wynn Eakins	9/9/1994
C081A	MEMO/001/0596	Memorandum to file from Jeff Harrison (Wastren), Light Metal Characterization (MEMO/001/0596)	Jeff Harrison	5/29/1996
C082A	N/A	Telecon between Jeff Harrison and Al Morgan of SafeSites of Colorado. "Generation of Leached Light Metal (IDC 481)."	Jeff Harrison	5/28/1996
C083A	N/A	Telecon to Al Morgan, SafeSites of Colorado, from Jeff Harrison. "Generation of Leached Light Metal (IDC 481)."	Jeff Harrison	5/29/1996
C084A	N/A	Memorandum to File from Jeff Harrison. "Light Metal (IDC 480) Generated in Building 371 Analytical Laboratory."	Jeff Harrison	5/29/1996

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C085A	N/A	Memorandum from Thom Putney. "Historical Constituents of IDC 800/801."	Thom Putney	11/8/1993
C086A	N/A	Memorandum from Jeff Paynter to Pamela of IT Corporation. "Use of the Complexing Agent DHDECMP."	Jeff Paynter	2/7/1989
C087A	N/A	Telecon between Jeff Paynter and Carrie Wesley of RMRS. "Process Wastes Treated in Building 374."	Jeff Paynter	5/29/1996
C088A	N/A	Telecon between Jeff Paynter and Rod Hoffman/Bob Riddle of DOE RFFO Classification/SAIC. "Composition of "Grip" and ZPPR Fuel Elements."	Jeff Paynter	5/29/1996
C089A	N/A	Telecon between Jeff Harrison and Al Morgan of SafeSites of Colorado. Creation of IDCs 440, 441, 442, 444, and 855.	Jeff Harrison	6/3/1996
C090A	N/A	Telecon between Jeff Harrison and Ron Bowen of SafeSites of Colorado. "Raschig Ring Tanks in Building 371."	Jeff Harrison	6/3/1996
C091A	N/A	Memorandum to File from Jeff Harrison. "Glass Characterization."	Jeff Harrison	6/3/1996
C092A	JKP//0696	Memorandum to File from Jeff Paynter. "Resolution of Conflicting Characterization Information for Waste Group #4." (JKP//0696)	Jeff Paynter	6/4/1996
C093A	N/A	Letter assumed to have been written by David P. Simonson to Fred Dowsett of the Colorado Department of Health, and corresponding response letter. Discussion re. Definition of Hazardous Waste as defined by Colorado Hazardous Waste Regulations. November 9, 1989.	David P. Simonson	11/9/1989
C094A	N/A	DOE RFO Contact Record from David Maxwell to Ken Niswonger of Colorado Department of Health. "Confirm regulatory interpretation that listed waste codes on lab samples do not carry over to the waste generated from the analysis of the sample."	David Maxwell	9/9/1994
C095A	LCB-460-104	Waste Technical Support (WTS) Documentation of Guidance from L. C. Baaso to E. E. Ericson. "Leaded Glovebox Gloves." (LCB-460-104)	L. C. Baaso	6/9/1993
C096A	MSL-2507	External Letter from K. J. Grossaint to J. Long. "Identification and Thermal Studies of the Residue from Nitric Acid Reaction with Leaded Neoprene Gloves." (MSL-2507)	K. J. Grossaint	3/30/1973
C097A	N/A	External Letter to Michael S. Karol of DOE Rocky Flats Office. Discussion re. Reclassification of certain waste streams formerly classified as subject to Land Disposal Restrictions.	Frederick R. Dowsett	8/11/1993

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C098A	JKP/000/0696	Memorandum to File from Jeff Paynter. "Justification for not including DCHP in Building 371." (JKP/000/0696)	Jeff Paynter	6/7/1996
C099A	MEMO/001/0696	Memorandum to File from Jeff Harrison. "Discrepancy with Washing of Leaded Gloves and Aprons." (MEMO/001/0696)	Jeff Harrison	6/13/1996
C100A	N/A	Telecon between Jeff Harrison and Al Morgan of SafeSites of Colorado. "Washing of Leaded Gloves."	Jeff Harrison	6/13/1996
C1000S	N/A	Record of Communication Subject: No heat-sealed bags in containers from Building 232-Z	D.I. Rollsson	04/28/2008
C1001A	M4T00-TRU-08-078	Memorandum - Subject: AK Documentation of Prohibited Liquids in the MPFPD Waste Stream (M4T00-TRU-08-078)	M.I. Rollosson	06/11/2008
C1002A	N/A	Letter - Subject: ZPPR Pu Scrap from Dow	J.T. Christy, et.al.	07/10/1969
C1003S	N/A	Record of Communication Subject: Rad Pads	M. I. Rollosson	08/06/2008
C1004A	N/A	Email - Subject: RE: PFP Pu/Be Sources	T.J. Venetz	10/10/2006
C1005S	N/A	Email - Subject: Brief Discription of Disposition of Excess Sources, Standards, and Miscellaneous SNM	S. W. Bisping	09/03/2008
C1006A	N/A	Origin of Plutonium	D. C. Lini	10/29/2003
C1007S	N/A	Record of Communication - Subject: Historical Waste From PFP	R. J. Swan, et. al.	07/25/2007
C1008S	N/A	Disposition of Sources and Standards	C. S. Sutter	06/18/2008
C1009A	N/A	Fax To: R. Clinton Re: A-Lab Slag	E. G. Backlund	02/17/2000
C101A	MEMO/002/0696	Memorandum to File from Jeff Harrison. "Characterization of Lead Containing Waste (IDCs 320 and 339)." (MEMO/002/0696)	Jeff Harrison	06/17/1996
C1010A	N/A	Interview of Dave Preston, Coring & Solid Sampling SME Lead and Drum Treatment & Repackaging SME Lead, BBWI, by Carolyn Abbott, AK SME re: Clarification of waste container processing at AMWTP.	Carolyn Abbott, PhD	04/13/2011
C1011A	HWD 061410-01	Letter to File Re: HWD 061410-01 Supercompactor Squeezants (IDC BN-518 and BN-632) (HWD 061410-01)	Waste Services	02/17/2020
C1012A	N/A	Email correspondence between Kirk M. Green, ICP and Carolyn Abbott, AMWTP Re: NRF waste.	Kirk Green and Carolyn Abbott	01/09/2011

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C1013A	N/A	Email correspondence between Kirk M. Green, ICP and Pamela Fetzer and Carolyn Abbott, AMWTP re: Information for contents of Pad 1 Cells 1, 2 and Heavy Drum.	Kirk Green, Pamela Fetzer, and Caolyn Abbott	03/11/2009
C1014A	N/A	Email correspondence between Kirk Green, ICP and Carolyn Abbott, AMWTP re: SDA waste - RWMIS data.	Kirk Green and Carolyn Abbott	06/17/2009
C1015A	N/A	Email correspondence between Kirk Green, ICP and Carolyn Abbott, AMWTP re: data from RWMIS database for TSA 12/1/72 through 6/30/73 (Pad 1, Cell 5).	Kirk Green and Carolyn Abbott	04/04/2011
C1016A	WJE-001-11	Interoffice Memorandum, Estimated Number of Containers for the BN600 Polychlorinated Biphenyl Contaminated debris Waste Stream (WJE-001-11)	William J. Erhardt (AMWTP, AKE)	05/12/2011
C1017S	N/A	INTC050203 return to AMWTP	Elizabeth C. Thiel	01/09/2008
C1018A	HWD 041811-03	HWD 041811-03, WMF-676 PCB Contaminated Debris (BN-600), 7-20-11 (HWD 041811-03)	AMWTP Waste Services	07/20/2011
C1019A	RCM-001-2011	Memo to File, Waste Material Parameter (WMP) Weight per Unit Waste Calculations for the AMWTP WMF-676 PCB Contaminated Debris Waste Stream (RCM-001-2011)	Randall C. Morris	05/24/2011
C102A	N/A	Letter from Frederick R. Dowsett (Colorado Department of Health) to Michael S. Karol (DOE/Rocky Flats).	Frederick R. Dowsett (Colorado Department of Health)	8/11/1993
C1020S	N/A	Email correspondence between Kirk M. Green, ICP and Carolyn Abbott, AMWTP re: Pits 11 and 12 disposal data.	Kirk Green	05/16/2020
C1021A	ID-C101	Retrieval Area Chemical Evaluation and RCRA Hazards Analysis (ID-C101)	CCP	12/17/2010
C1022A	N/A	Email correspondence between Daniel L. Benedict and AKE: Timothy E. Venneman Re: BN-600 material (drum carcasses & liners) packaging.	Daniel Benedict	07/20/2011
C1023A	ECT-001-11	Estimated Waste Stream Volumes and Waste Material Parameter Weights for 2011 Annual Transuranic Waste Inventory Report Update - ECT-00l-11 (ECT-001-11)	Elizabeth C. Thiel	04/04/2011
C1024A	n/a	Environmental PCB Decontamination Steps (n/a)	Stephen Obert	06/15/2011
C1025A	8407-AGH-003	Intra-laboratory Memo re: IFR Fuels Work (8407-AGH-003)	A.G. Hins	08/13/1984

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C1026A	N/A	Correspondence to Mr. Em M. King, Oak Ridge National Laboratory re: ANL-E Radioactive Waste Categories and Descriptions	L.A. Neimark, ANL-E	04/10/2011
C1027S	N/A	Intra-laboratory memo to: ANL-E Environmental Compliance Representatives Re: Photo Processing Solutions - Waste Characterization	R. G. Kolzow and J. R. Thuot	12/19/1990
C1028S	N/A	Intra-laboratory Memo to M. J. Ryan re: Potentially Hazardous Materials in "Operational Clean Sweep"	L. A. Neimark, MST	03/21/1983
C1029A	N/A	Survey forms and follow-up communication Re: Building 212 waste stream generation	Noreen Keven and W. R. Livernash	05/31/1988
C103A	N/A	Telecon between Jeff Harrison and Al Morgan of SafeSites of Colorado. "Creation of Filter IDCs."	Jeff Harrison	6/6/1996
C1030S	N/A	Memo to C. A. DeLorenzo re: Safety Analysis for Handling Tritium-containing Compounds in the AGHCF.	L. A. Neimark	05/30/1984
C1031S	TLC-224-92	Letter to Mr. J. T. Case, US DOE, re: Strategy Plan for Long-Term Management and Storage of Remote-Handled (RH) Transuranic (TRU) Waste. Includes the revised Strategy Plan dated November 1992. (TLC-224-92)	T. L. Clements, Jr.	11/30/1992
C1032S	N/A	Intra-Laboratory Memo to Distribution re: Draft of the Hot-cell Survey	L. A. Neimark	08/20/1973
C1033S	N/A	Intra-Laboratory Memo to A. C. Smith Re: Chemical Forms in AGHCF Transuranic Wastes	L. A. Neimark	04/12/1989
C1034S	ANL-E-C130	Intra-Laboratory Memo to Waste Handling Procedures Manual Holders Re: Packaging of Intermediate Level* Radioactive Wastes for Disposal (Liquids) (ANL-E-C130)	C. L. Cheever, ANL-E Acting Waste Management Coordinator	09/12/1979
C1035A	8407-AGH-001	Intra-laboratory Memo re: IFR Fuels Development (8407-AGH-001)	A.G. Hins	07/06/1984
C1036A	8711-AGH-03	Intra-laboratory memo re: IFR Fuel Interdiffusion Studies (Davananda) Test Capsule Evaluation (8711-AGH-03)	Allan Hines	05/13/1988
C1037A	N/A	Intra-Laboratory Memo to IFR Distribution Re: Diffusion Couple Studies - As Received Materials Structures with Attached report "Metallographic Examination of As-Received Clad and Fuel Materials for IFR Diffusion Studies"	A. G. Hins	04/22/1985

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C1038S	N/A	Intra-Laboratory Memo To: L. A. Neimark Re: Bi-Monthly Report on Cermet Fuels - April/May 1987 Process Integration and Verification	H. R. Thresh	06/04/1987
C1039S	N/A	Intra-laboratory Memo to: Distribution Re: Fissile Scrap Passivation, Activity 41603	A. G. Hins	12/2//1977
C104A	N/A	Telecon between Jeff Harrison and Jack Weaver of SafeSites of Colorado. "CWS Filters."	Jeff Harrison	6/18/1996
C1040S	ANL-CMTI-8936	Safety Review. Proposed Experiment. Alpha Radiolysis of TRUEX-CCl4 with 241Am (ANL-CMTI-8936)	D. Kalina	05/23/1985
C1041A	ANL-CMTI-8955	Safety Review-PFP Waste Demonstration Run in G-117 (ANL-CMTI-8955)	R.A. Leonard	06/17/1985
C1042A	ANL-CMTI-9012	Safety Review of Facilities for the Determination of Hydrogen, Oxygen, and Nitrogen in Plutonium-Bearing Metals, Alloys, Oxides, Carbides, and Some Metal Compounds; Building 205, Room G-102 (ANL-CMTI-9012)	H.T. Goodspeed, R.R. Heinrich, D.G. Graczyk	09/16/1985
C1044A	N/A	Pad 1, Cells 1 and 2 Retrieval Containment Enclosure/Inner Containment Enclosure Newly Generated Waste - TV-001-12	Tim Venneman	03/28/2011
C1045A	MLJ- 003-11	Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN51O.1 Supercompacted Debris Waste Stream (MLJ- 003-11)	Micky L. Johnson, AKE	09/27/2011
C1046A	MLJ-004-11	Waste Material Parameter Weight per Unit Waste Calculations for Proposed BN421 Plutonium Recovery Ash Waste Stream (MLJ-004-11)	Micky L. Johnson	09/28/11
C1047A	ECT-001-10	Waste Container Inventories Not Included in Advanced Mixed Waste Treatment Project Transuranic Baseline Reports (ECT-001-10)	Elizabeth C. Thiel	12/16/2010
C1048A	JHK-002-11	Co-Located Core Sample Control Charts (JHK-002-11)	Jason Kettel	10/06/2011
C105A	N/A	Interview record of John Milner, Jr. by T. Widner and S. Flack. ChemRisk.	T. Widner and S. Flack	8/20/1991
C1050A	CBFO:OQA:CGF:MAG: 11-1975:UFC 2300.00	Interim Audit Report for Recertification Audit A-12-03 of the AMWTP (CBFO:OQA:CGF:MAG: 11-1975:UFC 2300.00)	Courtland G. Fesmire, PE	11/03/2011
C1051A	HWD 071511-01	HWD 071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508 (HWD 071511-01)	Jeremy Hampton, Treatment Manager	12/08/2011
C1052A	CKA-003-09	Interoffice memorandum, CKA-003-09,Acceptable Knowledge Telecon Interview Form. (CKA-003-09)	Carolyn Abbott	

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C1053A	CBFO:OQA:CF:CC:12-1338:UFC:2300.00	Transmittal of the Recertification Final Report for the Advanced Mixed Waste Treatment Project, Audit A-12-03. (CBFO:OQA:CF:CC:12-1338:UFC:2300.00)	Jose R. Franco, Manager, Carlsbad Field Office	03/16/2012
C1054S	N/A	Email from Roy P. Grant to Randall C. Morris re: Summary of our conversation yesterday	Roy P. Grant	03/28/2012
C1055S	RM-001-12	Memo to File: Correcting the IDC assignment of MFC waste with content codes 153, 154, and 155 (RM-001-12)	Randall C. Morris	04/03/2012
C1056S	N/A	Email from Roy P. Grant to Randall C. Morris RE: Another problem with the MFC Rad data	Roy P. Grant	04/11/2012
C1057A	CBFO:NTP:NC:GL:12-0483:UFC 2300.00	Advanced Mixed Waste Treatment Project - Recertification Audit A-12-03 (CBFO:NTP:NC:GL:12-0483:UFC 2300.00)	Jose R. Franco, Manager, Carlsbad Field Office	05/24/2012
C1058S	N/A	E-mail correspondence Re: Reciept of MLLW	BBWI/AMWTP	01/17/2008
C1059A	N/A	F039 HWN applicability to INL GEM Project	Brent Burton, CWI	06/27/2012
C106A	N/A	Telecon between Jeff Harrison and Al Morgan of SafeSites of Colorado. "CWS Filters."	Jeff Harrison	6/18/1996
C1060S	N/A	Argonne National Laboratory Intra-Laboratory Memo to D.C. Wade, re: Response to MC&A Questions in Support of HFEF-S Fuel Reprocessing Operations	R. Villarreal	01/24/1989
C1061S	ECS-EAG-950125	Transmittal of Draft Building 235-F Facilities Preliminary Hazards Analysis (U) (ECS-EAG-950125)	D.E. Rossi	06/08/1995
C1062S	N/A	Upcoming Lot 3 RH-TRU radioanalytical work	Laug, Jeffrey S.	09/06/0112
C1063S	N/A	Small dry electrical capacitors and transformers.	Carol R. Anderson	September
C1064S	N/A	INTEC questions	John M. Espinosa	07/25/2012
C1065A	JHK-001-11	Acceptable Knowledge Accuracy Assessment for July 1, 2010 to June 30, 2011 (JHK-001-11)	Jason Kettel	09/13/2011
C1066S	N/A	Box 10130773 and NCR# 72914	Marty Woodbury	10/03/2012
C1067A	JHK-002-12	Acceptable Knowledge Accuracy Assessment for July 1, 2011 to June 30, 2012 (JHK-002-12)	Jason Kettle	10/11/2012

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C107A	MEMO/001/0696	Memorandum to file. "Filters and Insulation Waste Characterization." (MEMO/001/0696)	Jeff Harrison	6/21/1996
C108A	N/A	Letter to R. E. Yoder from E. Vejvoda. "Tritium Balance for Buildings 771 and 774 Processing"	E. Vejvoda	8/6/1976
C109A	N/A	Letter to W. C. Bright, Rocky Flats, from B. L. Kelchner, DOW. "Emission of Carbon Tetrachloride Vapor from Building 774".	B. L. Kelchner	2/5/1971
C110A	N/A	Personnel interview of Dick Del Pizzo by Herrick & Flack.	Herrick & Flack	1/21/1992
C111A	N/A	Letter from Lisa A. Leehy, Envirodyne, to Peg Beatty, Weston.	Lisa A Leehy, Envirodyne	1/3/1990
C112A	N/A	Letter from E.L. D'Arnico, Rocky Flats, to Cal Ozaki.	E. L. D'Amico, Rocky Flats	5/6/1988
C113A	N/A	Interoffice Correspondence from M. T. Saba to S. A. Anderson. "Evaluation of Analytical Data for By-pass Sludge Sampled May 1990."	M. T. Saba	10/3/1990
C114A	MEMO/001/0796	Memorandum to File from Jeff Harrison. Historical Use of IDC 807. July 18, 1996. (MEMO/001/0796)	Documentation produced for INEEL Acceptable Knowledge records.	7/18/1996
C115A	N/A	Telecon between Jeff Harrison and Bill Connor of Kaiser-Hill LATO. "Generation of Americium Process Residue (IDC 241)."	Jeff Harrison	7/29/1996
C116A	N/A	Memorandum to file: "Resolution of Incinerator Waste Characterization Discrepancy."	Jeff Harrison	8/2/1996
C117A	N/A	Miscellaneous Correspondence and Draft Correspondence about Pyrochemical Salts.	N/A	1993-1995
C118A	N/A	R&D Activities Generating Sand, Slag, and Crucible (SS&C) Wastes (IDCs 391 and 393)	Jeff Harrison	8/13/1996
C119A	MEMO/001/0896	Discrepancy Report. "Evolution of the Characterization of Pyrochemical Salts and SS&C." August 14, 1996. (MEMO/001/0896)	Jeff Harrison	8/15/1996
C120A	N/A	Telecon between Jeff Harrison and Bill Connor of Kaiser-Hill LATO. "Grit Blasting in Building 771."	Jeff Harrison	8/15/1996
C121A	N/A	Telecon between Jeff Harrison and Carrie Wesley, RMRS. "Information on Building 374 Aqueous Waste Treatment."	Jeff Harrison	9/12/1996

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C122A	N/A	Memorandum to A. M. Faucette, SafeSites, from Y. B. Mazza and D. L. Remmington, Safe Sites. "Analysis of Cemented Bypass Sludge Samples for TCLP Extract Elements by ICP AES and GC/MS."	Y. B. Mazza and D. L. Remmington	9/12/1995
C123A	N/A	Telecon between Jeff Harrison and Bud Nannie, Rocky Flats Plant-retired. "Use of Carbon Tetrachloride and 1,1,1-Trichloroethane in Pyrochemical Operations."	Jeff Harrison	9/19/1996
C124A	ALS-328-91	Interoffice Correspondence from A.L. Schubert to Distribution. "Management of Spent Fluorescent Light Tubes." (ALS-328-91)	A. L. Schubert	10/8/1994
C125A	JAH-009-95	Interoffice Correspondence from John Hill, Kaiser Hill, LLC Rocky Flats to Distribution: "Environmental Compliance Directive No. 1: Spent Incandescent Bulbs to be Collected for Recycling." (JAH-009-95)	John Hill, Kaiser Hill	8/4/1995
C126A	N/A	Battery Characterization. Attachment 8 - Mercury Batteries.	Unknown	11/12/1996
C127A	N/A	Telecon between Norm Cypher of RMRS-Rocky Flats and Ann Quinn. "Aggregate Feed Streams to Building 374 Treatment processes."	Norm Cypher	11/13/1996
C128A	N/A	Telecon between Paul Pigion of RTG and Ann Quinn. "Permit Status and LDR Requirements for Building 374."	Paul Pigion	11/13/1996
C129A	ER-95-195	Informal memorandum from Jack Templeton of SAIC to Briand WU and others. Evaluation of ITS Water and Recommended Discharge Options. (ER -95-195)	Jack Templeton, SAIC	10/6/1995
C130A	RWMC-TWCP-1371	Fax to Jeff Paynter. Rocky Flats Plutonium Isotopic Levels. (RWMC-TWCP-1371)	Steve Cunningham, Rocky Flats	2/18/1992
C131A	774-10	Telecon between Andy Ledford, RMRS-Rocky Flats and Ann Quinn, "WSRIC Building Book 774 Upcoming Changes, Microwave Process (774-10)." (774-10)	Andy Ledford	1/15/1997
C132A	N/A	Telecon between Karlan Richards, RMRS-Rocky Flats and Ann Quinn. "WSRIC Building Book 774 Upcoming Changes."	Karlan Richards	1/13/1977
C133A	N/A	Telecon between Jim Hahn of Rocky Flats and Jeff Harrison. "Mercury Contaminated Combustibles from Building 125."	Jim Hahn	1/28/1997
C134A	N/A	Interview Record and associated documentation of several former Rocky Flats employees. Not dated.	N/A	N/A

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C135A	N/A	Interview record of Mike Simmons by T. Widner and D. Herrick, ChemRisk.	T. Widner and D. Herrick	N/A
C136A	N/A	Interview Record of Joe Risinger by T. Widner and D. Herrick.	N/A	8/29/1991
C137A	N/A	Interview Record of E. Putzier and E. Vejvoda by D. Herrick and J. Lamb.	D. Herrick and J. Lamb	9/5/1991
C138A	N/A	Interview Record of Joe Aldrich by Flack and Herrick.	Flack and Herrick	8/22/1991
C139A	N/A	Interview Record of C. Barrick by D. Herrick.	D. Herrick.	12/14/1990
C140A	N/A	Interview Record of N. Clark by D. Herrick.	D. Herrick	12/13/1991
C141A	N/A	Interview Record of L. R. Crisler by T. Widner and D. Herrick.	T. Widner and D. Herrick	8/27/1991
C142A	N/A	Interview Record of N. Cypher by D. Herrick.	D. Herrick	8/13/1991
C143A	N/A	Interview Record of R. Greinetz by D. Herrick.	D. Herrick	1/17/1992
C144A	N/A	Interview record of M. Maas by D. Herrick and J. Lamb. ChemRisk.	D. Herrick and J. Lamb.	N/A
C145A	N/A	Interview Record D. Del Pizzo by D. Herrick and Flack.	D. Herrick and Flack	1/21/1992
C146A	N/A	Interview Record of S. DeWitt by Flack and Herrick.	Flack and Herrick	8/15/1991
C147A	N/A	Interview Record of V. Dingman by T. Widner and D. Herrick.	T. Widner and D. Herrick	8/14/1991
C148A	N/A	Interview Record of J. Dorr by D. Herrick.	D. Herrick	1/22/1992
C149A	N/A	Interview Record of M. W. Beranek by T. Widner and D. Herrick.	T. Widner and D. Herrick	8/7/1991
C150A	N/A	Interview Record of C. Forrey by D. Herrick and J. Lamb.	D. Herrick and J. Lamb	8/23/1991
C151A	N/A	Interview Record of J. Hebert by D. Herrick.	D. Herrick	8/6/1991
C152A	N/A	Interview Record of F. McMenus by T. Widner and D. Herrick.	T. Widner and D. Herrick	8/7/1991
C153A	N/A	Interview record of J. Morrison by D. Herrick and Flack. ChemRisk	D. Herrick and Flack	N/A
C154A	N/A	Interview Record of William V. Conner by T. Widner and J. Lamb.	T. Widner, J. Lamb	8/13/1991
C155A	N/A	Interview Record of J.D. Weaver by T. Widner and J. Lamb.	T Widner and D. Lamb	8/15/1991
C156A	N/A	Interview Record of Dr. Ross Jackson by T. Widner and Jennifer Lamb.	T. Widner, Jennifer Lamb	8/13/1991
C157A	N/A	Interview Record of R. Gisler by T. Widner and Flack.	T. Widner and Flack	8/20/1991
C158A	N/A	Interview Record of R. Simmons by S. Flack.	S. Flack	11/21/1991

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C159A	N/A	Record of Conversation of Rod Hoffman, recorded by Doug Herrick and Jennifer Lamb.	Doug Herrick and Jennifer Lamb	9/4/1991
C160A	N/A	Interview Record of M. Delhierro	D. Herrick	8/13/1991
C161A	N/A	Interview Record of K. Freiberg by D. Herrick.	D. Herrick	5/9/1991
C162A	N/A	Interview Record of R. Hilbig by D. Herrick.	D. Herrick	8/13/1991
C163A	N/A	Interview Record of G. Ideker by T. Widner and S. Flack.	T. Widner and S. Flack	8/14/1991
C164A	N/A	Interview Record of Burt Kelchner by Doug Herrick and Jennifer Lamb.	D. Herrick and J. Lamb	9/6/1991
C165A	N/A	Interview Record of L. Martella by T. Widner and D. Herrick. August 7, 1991.	T. Widner and D. Herrick	8/7/1991
C166A	N/A	Interview Record of L. Martella by D. Herrick.	D. Herrick.	8/7/1991
C167A	N/A	Interview of Record of J Merriman by D. Herrick and J. Lamb.	D. Herrick and J. Lamb	8/20/1991
C168A	N/A	Interview Record of J. D. Morrison by T. Widner and D. Herrick.	T. Widner and D. Herrick	8/29/1991
C169A	N/A	Telecon between Al Morgan of Rocky Flats (retired) and Jeff Harrison. "Information Regarding Drum Prefix Usage and Plutonium Isotopic Composition.	Jeff Harrison	1/9/1997
C170A	N/A	Telecon with Al Morgan of Rocky Flats (retired): Information Regarding Drum Prefix Usage	Jeff Harrison	2/17/1997
C171A	N/A	Telecon between Bill Connor of Kaiser-Hill LATO and Jeff Harrison. "Nonroutine Radionuclide Work."	Jeff Harrison	2/13/1997
C172A	N/A	Interoffice correspondence between L.C. Basso and J.R. Ryan of RFETS. "Characterization of Tar-Like Substance."	L. C. Basso	5/10/1994
C173A	N/A	Telecon between Rick Wagner of RFETS and Jeff Harrison. "Graphite from Prefix 0743."	Jeff Harrison	2/28/1997
C174A	N/A	Telecon between Bob Fiore of RFETS and Jeff Harrison.	Jeff Harrison	2/28/1997
C175A	N/A	Telecon between Al Morgan of Rocky Flats (retired) and Jeff Harrison. "Building 776 Size Reduction Area."	Jeff Harrison	2/27/1997
C176A	N/A	Telecon between Bill Connor of Kaiser-Hill LATO and Jeff Harrison. "Nonroutine and R&D Operations." .	Jeff Harrison	2/27/1997

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C177A	N/A	Telecon between Al Morgan of Rocky Flats (retired) and Jeff Harrison. "Graphite Scarfing." February 26, 1997.	Jeff Harrison	2/26/1997
C178A	AMM-002-96	Interoffice Memorandum to A. J. Holifield of Safe Sites from A. M. Murray of Kaiser-Hill (AMM-002-96)	A. M. Murray	1/10/1996
C179A	AMM-014-96	Interoffice Memorandum to R. E. Wilson from A. M. Murray of Kaiser-Hill. (AMM-014-96)	A. M. Murray	3/19/1996
C180A	WVC-96-6	Informal Memorandum to J.M. Ball of SSOC from W.V. Connor of Kaiser Hill, Moisture Content of Non-Salt Residue IDCs. (WVC-96-6)	W.V. Connor	3/20/1996
C181A	WVC-96-7	Informal Memorandum to J. M. Ball of SSOC from W. V. Conner of Kaiser-Hill. (WVC-96-7)	W. V. Conner	4/4/1996
C182A	AMM-019-96, KAP-006-96	Interoffice Correspondence to K.A. Phillips from A.M. Murray. Information Regarding Item Description Code 416 - AMM-019-96 (AMM-019-96, KAP-006 -96)	Alice M. Murray	4/16/1996
C183A	N/A	Telecon between Mike West of LATO, Lynn McCurry of WI (ORNL), and Kevin Peters.	Kevin Peters	3/11/1997
C184A	N/A	Interview Record of Al Morgan by Jeff Harrison.	Al Morgan	3/19/1997
C185A	N/A	Telecon between Bill Connor of LAPO and Jeff Harrison. "Special Isotopes used in R&D Operations." March 20, 1997.	Jeff Harrison	3/20/1997
C186A	KAP-017-96	Interoffice Correspondence from K. Phillips of SSOC to J. Ball, SSOC. (KAP-017-96)	Karen Phillips	12/31/1996
C187A	KAP-012-96	Interoffice Correspondence from K. Phillips of SSOC to J. Ball, SSOC, "Interim Residue Characterization Status Report". (KAP-012-96)	Karen Phillips	7/22/1996
C188A	N/A	Telecon between Bill Conner of LAPO and Jeff Harrison. "Defense Versus Non-Defense Related Projects."	Jeff Harrison	4/3/1997
C189A	N/A	Telecon between Al Morgan of Rocky Flats (retired) and Jeff Harrison. "Americium Recovery and Purification." April 3, 1997.	Jeff Harrison	4/3/1997
C190A	N/A	Telecon between Bill Conner of Rocky Flats and Jeff Harrison. "Defense Versus Non-Defense Related Projects."	Jeff Harrison	5/19/1997

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C191A	N/A	Memorandum from DOE CAO to J. M. Roberson, RFFO and J. M. Wilcynski, INEEL. "Identification of Defense Waste Streams Generated at Rocky Flats Environmental Technology Site (RFETS)."	George E. Dials, DOE CBFO	05/20/1997
C192A	88-RF-0409	Letter to Albert E. Whiteman, Area Manager DOE, RFAO. "Classified Waste Characterization." (88-RF-0409)	E. R. Naimon, Rockwell International	2/10/1988
C193A	N/A	FAX to Jeff Harrison,Wastren. "Info on 1518-4 Containers."	Jeff Paynter, M. H. Chew & Associates	7/10/1977
C194A	N/A	Telecon between Jeff Harrison and Jeff Paynter, M.H. Chew & Associates. "General Discussion of NTS Inventory of Rocky Flats Waste."	Jeff Paynter	7/10/1997
C195A	N/A	Telecon between Jeff Harrison and Jeff Paynter, M.H. Chew & Associates. "Relation of Processes Generating Classified IDCs."	Jeff Paynter	7/17/1997
C196A	N/A	Facsimile Transmission from Pat Arnold, RMRS, to Jeff Harrison, WASTREN. "Density of Sludge Drums." March 18, 1997.	Pat Arnold	3/18/1997
C197A	N/A	Memorandum from Jeff Harrison to File. "Drum Prefix Discrepancies." August 12, 1997.	Jeff Harrison	8/12/1997
C198A	N/A	E-mail note from William Becker to Rodney Arbon, "Light Ballasts."	William Becker	4/19/2000
C199A	KJP/003/0501	External letter from Kevin Peters, WASTREN, to Sheila Hailey. "Resolution of Magnesium Oxide Crucibles (IDC 368) Characterization Discrepancy." (KJP/003/0501)	Kevin Peters	5/15/2001
C200A	KJP/004/0501	External letter from Kevin Peters, WASTREN, to Sheila Hailey. "Cyanide Content of Solidified Aqueous Sludge – Bldg. 774." (KJP/004/0501)	Kevin J. Peters	5/22/2001
C201A	N/A	Interview of Gregg Park, BBWI by Sheila Hailey. "Free Liquids in First/Second Stage Sludge Samples."	Sheila Hailey	5/22/2001
C202A	N/A	Telecon/Interview between Carolyn Abbott and Rick Erdheim/Paul Krehl.	Rick Erdheim, Paul Krehl	5/23/2001
C203A	N/A	Telecon/Interview between Joan Connolly/Carolyn Abbott and Mason Harrup.	Carolyn K. Abbott	5/23/2001
C204A	KJP/006/0501	External letter from Kevin Peters, WASTREN, to Sheila Hailey. "Reclassification of Certain Homogeneous Waste to Debris Waste." (KJP/006/0501)	Kevin Peters	5/25/2001
C205A	KJP/009/0601	External letter from Kevin Peters, WASTREN, to Sheila Hailey. "Resolution of Grit (IDC 372) Characterization Discrepancy." (KJP/009/0601)	Kevin Peters	6/22/2001

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C206A	N/A	Telecon between Betty Tolman and Kevin Peters/Jeff Paynter. "Beryllium Scrap in IDC 480 Waste Drum".	Kevin Peters, Jeff Paynter	10/2/2001
C207A	N/A	Summary of Review of PCB AK Sources (Reviewed 9/5/01)	Wastren	09/05/2001
C208A	N/A	External letter and Paper from R. H. Guyman to Brian R. Monson, Idaho Department of Environmental Quality. "Response to New Mexico Environment Department Concern with IDC 002."	R. H. Guyman	9/27/2001
C209A	N/A	N/A	N/A	N/A
C210A	N/A	INEEL Internal memorandum from Yale D. Harker to Sheila Hailey. MDC for Item Description Code – 337.	Yale D. Harker	11/29/2001
C211A	N/A	External letter from Brian R. Monson, Idaho Department of Environmental Quality to Jack Depperschmidt, DOE-ID. "Regarding the April 24, 1997, Position Paper on the Addition of Absorption Activities Exempt from Permitting and Interim Status Requirements (OPE-EP097-143) for the Idaho National Engineering and Environmental Laboratory."	Brian R. Monson	6/25/1997
C212A	N/A	External letter from Robert Bullock, Idaho Department of Environmental Quality, to Dave Wessman, DOE-ID. "Receipt of INEEL Response to New Mexico Environment Department, Concerns with IDC 002 at the Radioactive Waste Management Complex on the Idaho national Engineering Laboratory."	Robert Bullock	10/29/2001
C213A	N/A	Internal memorandum from Julie Hand to Joan Connolly. "Dilutions of TWCP Semivolatile Organic Analysis Data."	Julie Hand	1/7/2002
C214A	N/A	External Letter from Kevin Peters, WASTREN, to Lisa Frost. "PCB Label Research for NCR Number 26503."	Kevin Peters	3/4/2002
C215A	N/A	External Memorandum from Kerry Watson, (DOE-CBFO). "Approval of Idaho National Engineering and Environmental Laboratory Waste Stream Profile INW243.001."	Kerry Watson	3/28/2001
C216A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory Waste Stream Profile INW169.001." .	Kerry Watson	2/7/2002
C217A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory Waste Stream Profile INW198.001."	Kerry Watson	2/7/2002

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C218A	SMH-07-97	External letter and attachments from S. M. Hailey to C. C. Dwight, Argonne National Laboratory West. "Core Sample Plans for Miscellaneous Solidified Waste." (SMH-07-97)	S. M. Hailey	3/6/1997
C219A	WSR-01-01	Internal memorandum to Chris Brooks from Scott Roesener. "Radioassay System Certification Capabilities Implementation Inforamtion For Organic Setups Item Description Code 003." (WSR-01-01)	Scott Roesener	10/23/2001
C220A	WSR-05-02	Internal Memorandum to David Morgan from Scott Roesener. "Radioassay System Certification Capabilities Implementation for Miscellaneous Cemented Waste Item Description Codes 292, 432, 806, 817, 818, 820, 822, and 823." (WSR-05-02)	Scott Roesener	1/29/2002
C221A	WSR-01-02	Internal Memorandum to David Morgan from Scott Roesener. "Radioassay System Certification Capabilities Implementation Information for Plastic Waste Description Code 337." (WSR-01-02)	Scott Roesener	1/29/2002
C222A	WSR-03-02	Internal Memorandum to David Morgan from Scott Roesener. "Radioassay System Certification Capabilities Implementation Information for Solidified Organics and Special Setups Waste Item Description Codes 004, 700, 801, 802." (WSR-03-02)	Scott Roesener	1/29/2002
C223A	N/A	Interview/conference between BBWI and Physics Group. "Roadmap to Physics Databases." Includes Spectra data on CD and a subsequent e-mail from Cecilia Hoffman updating access locations to databases.	Cecilia Hoffman	4/8/2002
C224A	N/A	Letter to File prepared by Joan Connolly, North Wind Environmental. "The D002 HWN is not Applicable to First and Second Stage Sludge (INW216.001) and Building 374 Sludge (INW218.001) Waste Drums that Contain Excess Free Liquid."	Joan Connolly	4/19/2002
C225A	N/A	External Memorandum from Kerry Watson, DOE-CAO. "Approval of INEEL Waste Stream Profile Form INW276.003."	Kerry Watson	7/20/2000
C226A	N/A	External Memorandum from Kerry Watson, DOE-CAO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Revised Waste Stream Profile Form INW276.004, Rev. 1."	Kerry Watson	9/27/2000
C227A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Forms INW247.001R1 and INW296.001, Rev. 1."	Kerry Watson, DOE-CBFO	11/14/2000

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C228A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW211.001."	Kerry Watson, DOE-CBFO	4/24/2001
C229A	CBFO:NTP:KWW:VW:01-1007:UFC:5822	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW211.001, Rev. 1." (CBFO:NTP:KWW:VW:01-1007:UFC:5822)	Kerry Watson, DOE-CBFO	5/3/2001
C230A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW216.001."	Kerry Watson, DOE-CBFO	5/24/2001
C231A	CBFO:NTP:KWW:VW:01-1065:UFC:5822	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW218.001." (CBFO:NTP:KWW:VW:01-1065:UFC:5822)	Kerry Watson, DOE-CBFO	7/24/2001
C232A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW169.001."	Kerry Watson, DOE-CBFO	2/7/2002
C233A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW198.001."	Kerry Watson, DOE-CBFO	2/7/2002
C234A	N/A	External Memorandum from Kerry Watson, DOE-CBFO. "Approval of Idaho National Engineering and Environmental Laboratory (INEEL) Waste Stream Profile Form INW222.001."	Kerry Watson, DOE-CBFO	4/24/2002
C235A	N/A	Letter to File: Assignment of unique IDC (696) to IDC 807b waste containers.	Carolyn Abbott	7/12/2002
C236A	N/A	Letter to File prepared by Carolyn Abbott, North Wind. "Rocky Flats Waste Streams with 'split' IDCs."	Carolyn Abbott	6/11/2002
C237A	N/A	Fax of Telecon between Jeff Harrison, WASTREN, and Jan Fretthold, Rocky Mountain Remediation Services. "HEPA Filter Frame Material."	Jeff Harrison, WASTREN	4/8/1999
C238A	N/A	Letter to file prepared by Carolyn Abbott, North Wind. "Calculating and reporting the net waste weight in standard waste boxes to WIPP."	Carolyn Abbott	5/20/2002
C239A	N/A	Fax of Memorandum from Dr. Ines R. Triay, CBFO-DOE to Warren Bergholz, DOE-ID. "Annual Re-evaluation of INEEL TRU Waste Program Compliance."	Dr. Ines R. Triay	5/30/2002

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C240A	N/A	Correspondence and other documentation related to the disposition of tantalum targets and subtargets at the Rocky Flats Plant. March 1974 – September 2001.	Multiple authors	N/A
C241A	N/A	Telecon between Carolyn Abbott, North Wind, and Jeff Harrison, WASTREN. "Material in IDC 376 Drum."	Carolyn Abbott	7/18/2002
C242A	CCn 22123	Letter to L. S. Sygitowicz from T.H. Monk, BBWI. "Solidified Waste Residual Liquid De-watering Investigation at the Idaho National Engineering and Environmental Laboratory." CCN 22123. . (CCn 22123)	T.H. Monk	5/30/2001
C243A	JJE-10-2002	Letter to S. M. Edgett from J. J. Einerson, BBWI. "Update of RTR Miscertification Rate Due to Excess Free Liquids." JJE-10-2002. (JJE-10-2002)	J. J. Einerson	8/19/2002
C244A	TFF-005-02	Memorandum to T. H. Monk from T. F. Fallon. "CAR 02-078, Investigative Action 2." TFF-005-02. August 28, 2002. (TFF-005-02)	T. F. Fallon	8/28/2002
C245A	WCP02-31	Rocky Flats Internal Letter from J. K. Paynter to Distribution. "Hazardous Constituents of Rocky Flats Waste." WCP02-31. (WCP02-31)	J. K. Paynter	5/23/1989
C246A	N/A	Telecon between Rick Chavez, Westinghouse TRU Solutions, and Joan Connolly, North Wind, et.al. "Leaded Rubber Gloves and Aprons WSPF and New Target Analyte, Methyl Chloride."	Rick Chavez, Westinghouse TRU Solutions	8/26/2002
C247A	N/A	Telecon between Jeff Harrison, WASTREN, and Charles Marcinkiewicz, North Wind. "Leaded Rubber and Possible D006 and D007 HWNS."	Jeff Harrison	9/24/2002
C248A	N/A	N/A	N/A	N/A
C249A	CLW-180-93, CEX-061-96, WSS-C0 -01-0786	Internal Correspondence from J. A. Nesheim to F. M. Durel. "Classification Review Exemption – CLW-180-93." November 18, 1993. External letter to J. M. Schoen, RMRS, from J. A. Nesheim, Worldwide Security Services. "Classification Review Exemption CEX-061-96 for WSRIC Data." November 21, 1996. External letter to J. M. Schoen, RMRS, from J. A. Nesheim, Worldwide Security Services. "Electronic WSRIC Classification and UCNI Review Exemption (JAN-108-01) WSS-C0-01-0786." December 4, 2001. W (CLW-180-93, CEX-061-96, WSS-C0-01-0786)	Multiple authors	N/A

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C250A	N/A	Interoffice Memorandums from S. Hailey to T. H. Monk transmitting the Acceptable Knowledge Accuracy Assessments for First Quarter FY–2000, dated November 29, 2000 and Third Quarter FY–2001 dated July 19, 2001; and from L. Frost to T. H. Monk for FY–2002, Rev. 1, dated August 8, 2002, and to M. Sherick for Final FY–2002 assessment dated January 14, 2003. January 2003.	S. Hailey, L. Frost	N/A
C251A	N/A	Group Interview Record of Eugene Sands, Larry Stickel, Harley Toy, Max Berchtold, Mike Failey, and George Kirsch, BCL, conducted by Kevin Peters/Jeff Harrison, WASTREN, Inc.	Kevin Peters/Jeff Harrison, WASTREN, Inc.	5/13/1998
C252A	N/A	Interview Record of Harley Toy and George Kirsch, BCL, conducted by Kevin Peters, WASTREN, Inc.	Kevin Peters, WASTREN, Inc.	7/13/1998
C253A	168-WG-91	Internal correspondence to A. A. Church, EG&G Rocky Flats, Inc: Status of TCLP Analysis on Leaded Gloves and Leaded Glovebox Windows (168-WG-91)	D. L. Kidd, EG&G Rocky Flats, Inc.	3/13/1991
C254A	N/A	Monthly/Quarterly BCL Letter Reports to COO 1978 – 1982. September, 1982.	Battelle Columbus Laboratories	9/1/1982
C255A	C255A	Internal correspondence from Harley L. Toy to Steve Layendecker, BCL. May 22, 1998. (C255A)	Harley L. Toy	5/22/1998
C256A	N/A	Letter from Joseph Dettorre to James Fletcher, DOE Chicago Operations and Regional Office. August 25, 1981.	Joseph Dettorre of DOE Chicago Operations and Regional Office	8/25/1981
C257A	N/A	Interview Record of Larry Stickel and George Kirsch, BCL, conducted by Kevin Peters and Scott Smith, WASTREN, Inc. "Source and Components of Waste From Building JN-4."	Kevin Peters and Scott Smith of WASTREN	9/26/2000
C258A	N/A	Interview Record of J.B. Williamson, BCL, conducted by Kevin Peters and Scott Smith, WASTREN, Inc. "Historical Operations Conducted in JN-4." September 26, 2000.	Kevin Peters and Scott Smith, WASTREN, Inc.	9/26/2000
C259A	N/A	Interview Record of David Freas, BCL, conducted by Kevin Peters and Scott Smith, WASTREN, Inc. "Historical Operations in Building JN-4."	Kevin Peters and Scott Smith, WASTREN, Inc.	9/29/2000
C260A	N/A	Interview Record of William Pardue, BCL, conducted by Scott Smith, WASTREN, Inc. "Historical Operations in Building JN-4."	Scott Smith, WASTREN, Inc.	10/2/2000

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C261A	N/A	Letter to AK Record authored by Scott Smith, WASTREN, Inc. "TCLP Analysis of Incandescent, Fluorescent and Mercury Vapor Light Bulbs."	Scott Smith, WASTREN, Inc	7/6/2001
C262A	N/A	Letter to AK Record authored by Scott Smith, WASTREN, Inc. "RCRA Hazardous Constituents in Paint and Paint Related Products."	Scott Smith, WASTREN, Inc	12/7/2001
C263A	N/A	Letter to AK Record, "Clarification of Letter to AK Record dated December 7, 2001; Author: Scott M. Smith, Re: RCRA Hazardous Constituents in Paint Related Products," and responding concurrence from Scott Smith.	Carolyn Abbott, North Wind, Inc.	3/5/2003
C264A	AK-03-001	Acceptable Knowledge Resolution Checklist, AK-03-001. (AK-03-001)	Csrolyn Abbott	1/1/2003
C265A	TP:03:040010, AM-BN-L-5766, TP:03:04020	External letter from K. Jackson (TP:03:040010), Washington TRU Solutions, LLC, to Distribution. "Content Codes with Beryllium in Quantities Greater than 1 Percent." January 24, 2003. External letter from Eric Schweinsberg (AM-BN-L-5766), BNFL, to Kerry Watson. "Determination of Beryllium Contamination in Rocky Flats Plant Wastes Stored at the INEEL." April 3, 2003. External letter from M. L. Caviness (TP:03:04020), Washington TRU Solutions, to D. Pound, BNFL Inc. "Modification of ID 117/217 and ID 125/225 Chemical Lists for Beryllium." March 25, 2003. (TP:03:040010, AM-BN-L-5766, TP:03:04020)	K. Jackson; Eric Schweinsberg; M. L. Caviness	MULTIPLE
C266A	M4T00-PJC-02-076	Memorandum from R. Clinton, Fluor (Hanford) to P. J. Crane. "SR-90 to CS-137 Ratio for Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA." M4T00-PJC-02-076. April 11, 2002. (M4T00-PJC-02-076)	Sheila Hailey.	4/11/2002
C267A	N/A	Letter to AK Record and supporting documentation prepared by Jeff Harrison, WASTREN. "Review of Historical Rocky Flats Waste Shipment Records." January 31, 2003.	Jeff Harrsion	1/31/2003
C268A	N/A	Interoffice Memorandum and supporting data from M. J. Sherick to J. H. Pletscher, INEEL. "BNFL-RFI 2003-13 Special Trips Query, April 14, 2003."	M. J. Sherick	4/28/2003
C269A	N/A	E-mail from Sheila Hailey to Julia Bagley, et al., "Mound Waste – Packaging Materials."	Created for the AMWTP Project.	8/11/2003

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C270A	N/A	Memorandum from Betty Tolman to AK Record, "Confirmatory Testing performed by Bechtel BWXT, Inc. on Containers remaining in AMWTP Inventory."	Betty Tolman	8/20/2003
C271A	BJT-01-2003	Memorandum from Betty Tolman to Gina Tedford, "Cs137 and Sr90 in Rocky Flats-generated Waste." (BJT-01-2003)	Betty Tolman	9/4/2003
C272A	N/A	Memorandum from Sheila Hailey to Eric Scwheinsberg, Acceptable Knowledge Documentation of Plastic Round Bottom Liner – C272A, Dated	Sheila Hailey	3/10/2004
C273A	N/A	Interview with Vince Medina conducted by Betty Tolman. Packaging/Waste Configuration for First Stage Sludge.	Betty Tolman	3/15/2004
C274A	N/A	Untitled letter defining TRU waste, from EPA office of Air and Radiation to DOE CBFO. From Frank Marcinowski, Director EPA Radiation Protection Division, to Ines Triay, Manager CBFO.	Frank Marcinowski	8/8/2003
C275A	A-03-05	Letter from New Mexico Environment Department, Hazardous Waste Bureau, RE: NMED Approval of the AMWTP Final Audit Report, Audit A-03-05. From Sandra Martin, Acting Chief, Hazardous Waste Bureau to Ines Triay, Manager CBFO and Steven Warren Pres. Washington TRU Solutions LLC. (A-03-05)	Sandra Y. Martin, New Mexico Environment Department, Hazardous Waste Bureau	12/23/2003
C276A	N/A	BNFL Inc. Memorandum. Vent Date/Pack Date. From Eric Schweinsberg to AMWTP Chemists.	Eric Schweinsberg	2/17/2004
C277A	N/A	DOE CBFO Memorandum. Authority Granted to INEEL AMWTP for Characterization and Certification of Contact Handled Homogenous Solids Transuranic Waste. R. Paul Detwiler, Acting Manager CBFO, To Elizabeth Sellers, DOE-ID Manager.	R. Paul Detwiler, Acting Manager CBFO	3/9/2004
C278A	SH-007-2004	AK Accuracy Assessment. SH-007-2004. (SH-007-2004)	Sheila Hailey	8/16/2004
C279A	N/A	Telecons and e-mails relating to Florco, Sorbal, and Auto Dri absorbents.	Generated for the AMWTP Project.	8/23/2004
C280A	TLC-7-86	EG&G Idaho Interoffice correspondence from T. L. Clements, Jr. to L. A. Cook. "Assessment of Weight of Lead in Drums Processed by SWEPP" (TLC -7-86)	T. L. Clements, Jr.	1/22/1986

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C281A	JAC-023-04	Letter from John A. Ciucci to Joseph A. Legare, "Revision 2 For Resolution of Cesium-137 (Cs-137) Acceptable Knowledge (AK) Discrepancy Between Rocky Flats Environmental Technology Site (Site) and Idaho National Engineering and Environmental Laboratory (INEEL)", JAC-023-04. December 27, 2004. (JAC-023-04)	John A. Ciucci	12/27/2004
C282A	SPC-001-2005	Memorandum from Steve Carpenter to Assay Independent Technical Reviewers, "Be Contaminated Waste." (SPC-001-2005)	Steve Carpenter	1/13/2005
C283A	DGP-002-2005	Correspondence between Don Pound and M. L. Caviness regarding Content Code Addition for Beryllium-contaminated Waste. (DGP-002-2005)	Don Pound	1/12/2005
C284A	DGP-009-2004	Correspondence between Don Pound and M. L. Caviness regarding Modification of Content Code 111/211. April 5, 2004 (DGP-009-2004)	Don Pound	4/5/2004
C285A	EPS-085-2004	Letter from Eric Schweinsberg to Kerry Watson, "Acceptable Knowledge Revision (AKR) for Cesium-137 and Strontium-90." (EPS-085-2004)	Eric Schweinsberg	12/21/2004
C286A	MC-001-2005	Memorandum from Martin Clapham to Eric Schweinsberg, "Acceptable Knowledge Revision of Cesium-137 and Strontium-90." (MC-001-2005)	Martin Clapham	2/9/2005
C287A	N/A	Correspondence from T. Venneman to V. Sendelweck regarding Nitrate Compounds and Organic Material Contact in Retrieved Waste.	Tim Venneman	2/28/2005
C288A	EPS-081-2004	Memorandum from Eric Schweinsberg to Elvin Dumas, "Sampling Plan for BNINW216 – Lot 3." (EPS-081-2004)	Eric Schweinsberg	11/17/2004
C289A	N/A	Memorandum to file from Vivian Sendelweck, "Boxes of Rocky Flats Waste to be included in the Supercompacted Debris Waste (BN510), revised April 13, 2005.	Vivian Sendelweck	04/13/2005
C290A	N/A	Memorandum to file, "Estimation of percentage of ferrous and non-ferrous metals and cellulosic, plastic, and rubber (CPR) waste materials in the supercompacted debris waste (BN510)"	Vivian Sendelweck	3/2/2005
C291A	CKA-019-06	Memorandum to file from Carolyn K. Abbott, "Development of Default Mass Fraction Values for Mound, Battelle, Bettis, and the AMWTP Wastes," , (CKA -019-06)	Carolyn K. Abbott	4/12/2006
C292A	MLJ-001-07	Memorandum to file, Estimation of Generation Rate and Quantity to be Included in the Supercompacted Debris Waste (BN510). (MLJ-001-07)	Micky L. Johnson	6/26/2007

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C293A	N/A	Memorandum to file from Vivian Sendelweck, "Two IDCs (460 and 463) of Rocky Flats waste are not included in RFP AK baseline document"	Vivian Sendelweck	3/17/2005
C294A	N/A	Interview record of Eric D'Amico conducted by Kathy Zbryk, BNFL, Inc. on March 15, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988."	Kathy Zbryk, BNFL, Inc.	3/15/2009
C295A	N/A	Interview record of Pat Arnold conducted by Kathy Zbryk, BNFL, Inc. on March 17, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988."	Kathy Zbryk, BNFL, Inc.	3/17/2005
C296A	N/A	Interview record of Carl Trump conducted by Kathy Zbryk, BNFL, Inc. on March 18, 2005, titled "Interview Regarding Debris IDCs 488, 491, 831, 832, 833 Packaged into Metal Boxes at RFETS and Received at the INL October 1970 through 1988 and Debris IDCs 460 and 463 Packaged into Drums at RFETS and Received at the INL from October 1970 through 1988," Clarification email dated April 13, 2005.	Kathy Zbryk, BNFL, Inc.	4/13/2005
C297A	N/A	Letter to Frank Marcinowski, Director, Radiation Protection, EPA, from R. Paul Detwiler, Acting Manager, DOE, CBFO, dated March 5, 2004. re: Disposition of supercompacted waste from the Idaho National Environmental and Engineering Laboratory's Advanced Mixed Waste Treatment Project (AMWTP).	R. Paul Detwiler, Acting Manager, DOE, CBFO	3/5/2004
C298A	N/A	Letter from Kerry Watson, Director, Office of Characterization and Transporation, Department of Energy, Carlsbad Field Office, to James Bearzi, New Mexico Environment Department, Hazardous Waste Bureau, dated March 30, 2005	Kerry Watson	3/30/2005
C299A	KJP/002/0399	Correspondence from Kevin J. Peters to Rajib Bhatt, "Assessment of TRU Waste Box Inventory," (KJP/002/0399)	Kevin J. Peters	3/16/1999
C300A	DOE/WIPP-95-2125 Draft	Waste Isolation Pilot Plant Contact Handled (CH) Technical Safety Requirements, Draft TBD 2005, prepared for United States Department of Energy, Washington Group International, Energy and Environment, Washington TRU Solutions LLC. (DOE/WIPP-95-2125 Draft)	Washington TRU Solutions LLC	4/18/2005

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C301A	N/A	Memorandum from Kerry W. Watson, Director, Office of Characterization and Transportation to distribution, entitled "Method for Reporting HSG in 100-Gallon Drums Containing Supercompacted 55-Gallon Drums with Rigid Liners"	Kerry W. Watson	5/31/2005
C302A	N/A	Letter to file regarding plywood spacers in Mound waste identified as waste versus packaging. K. Zbryk, M. Clapham, E. Dumas,	K. Zbryk, M. Clapham, E. Dumas	2/24/2005
C303A	N/A	Memo re: Review of MD-835 Containers with Plywood Spacers	Barry Howes	6/23/2005
C304A	N/A	Memo (email) to File, Don Pound to Eric Schweinsberg, MD-835 CPR Evaluation, June 23, 2005.	Don Pound	6/23/2005
C305A	N/A	Enclosure 3 with letter (C297A). Effect of Waste Porosity Modeling on AMW Performance Assessment.	Clifford W Hansen, Joshua S. Stein, and Bill Zelinski, Sandia National Laboratories, Carlsbad Programs	3/4/2004
C306A	N/A	Enclosure 6 with letter (C297A). Effect of Naturally Occurring Sulfate on the MgO Safety Factor in the Presence of Supercompacted Waste and Heterogeneous Waste Emplacement. Joseph F. Kanney, Anna C. Snider, T. William Thompson, and Laurence H. Brush, Sandia National Laboratories, Carlsbad Programs.	Joseph F. Kanney, Anna C. Snider, T. William Thompson, and Laurence H. Brush, Sandia National Laboratories, Carlsbad Programs	3/5/2004
C307A	N/A	Enclosure 4 with letter (C297A). memorandum to Records, Effect of Increased Gas Viscosity on repository Pressures in the ANW Performance Assessment.	Joseph F. Kanney, William P. Zelinski, and Clifford W. Hansen. Sandia National Laboratories	3/3/2004
C308A	N/A	Enclosure 5 with letter (C297A). Memorandum to Records, Effect of TDOP stacking assumptions in analysis of supercompacted waste (Revision 1). Clifford W. Hansen and Anna Snider. Sandia National Laboratories.	Clifford W. Hansen and Anna Snider. Sandia National Laboratories	3/2/2004
C309A	N/A	Enclosure 2 with letter (C297A). Effect of Increased Iron Surface area from Supercompacted AMWTP Waste on Long-Term Repository Conditions as Modeled in Performance Assessment if the WIPP. Joshua S. Stein and William P. Zelinski, Sandia National Laboratories, Carlsbad Programs Group.	Joshua S. Stein and William P. Zelinski, Sandia National Laboratories, Carlsbad Programs Group	3/1/2004

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C310A	N/A	Enclosure 1 with letter (C297A). Discussion of Material Properties for AMW Waste. Francis D. Hansen, Sandia National Laboratories, Carlsbad Programs Group.	Francis D. Hansen, Sandia National Laboratories, Carlsbad Programs Group	3/1/2004
C311A	SPC-026-2005	Memorandum from Steve Carpenter, TRU Programs SPM/AKE Designee to Eric Schweinsberg, Site Project Manager, "Detection of 1,1-dichloroethylene in BNINW216 Rev. 1 Reconciliation Lots." (SPC-026-2005)	Steve Carpenter	4/19/2005
C312A	SPC-018-2005	Memorandum from Steve Carpenter, TRU Programs SPM/AKE Designee to Eric Schweinsberg, TRU Programs Site Project Manager, "Discrepancy Report D031A – Beryllium Greater than 1% by Weight in RF-IDC 800 Waste", SPC-018-2005 (SPC-018-2005)	Steve Carpenter, TRU Programs SPM/AKE Designee	3/14/2005
C313A	EPS-086-2004	Memorandum from Eric Schweinsberg, TRU Programs Site Project Manager (SPM) to File, "Discussion with RFETS Regarding Resolution of Discrepancy Between RFETS and INEEL Acceptable Knowledge on Cesium-137", EPS-086-2004. (EPS-086-2004)	Eric Schweinsberg, TRU Programs Site Project Manager (SPM)	12/15/2004
C314A	N/A	E-Mail correspondence from Jeffrey D. Mousseau to Carolyn Abbott "Write-up needed", June 21, 2005; E-Mail correspondence from Carolyn Abbott to Jeffrey D. Mousseau "Write-up needed", June 21, 2005	Jeffrey D. Mousseau, Carolyn Abbott	6/21/2005
C315A	N/A	E-Mail correspondence from Vincent J. Medina to Carolyn Abbott, "Certified weights for the AK record"	Vincent J. Medina	6/1/2005
C316A	N/A	E-Mail correspondence from Vincent J. Medina to Eric P. Schweinsberg, "Certified weight items to look-up table"	Vincent J. Medina	5/19/2005
C317A	EPS-087-2004	Memorandum from Eric P. Schweinsberg to Kerry Watson "Waste Stream Profile BNINW835, " EPS-087-2004 (EPS-087-2004)	Eric P. Schweinsberg	12/20/2004
C318A	SPC-025-2005	Memorandum from Steve Carpenter to Eric Schweinsberg, "Submittal to File: Instructions for BN835 Plywood Spacers as Waste or Packaging," SPC-025-2005 (SPC-025-2005)	Steve Carpenter	4/19/2005
C319A	N/A	Memorandum to Brian Edgerton, DOE-ID from Kerry W. Watson, CBFO re: CBFO Approval of AMWTP Procedure INST-FOI-17 Revision 3D	Kerry W. Watson, CBFO	12/17/2004
C320A	N/A	E-mail correspondence from Mike Papp to Micheline Johnson, "Container M00821."	Mike Papp	7/27/2005

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C321A	CBFO:OOM:IRT:VW:05-0031:UFC:5822	Memorandum to Jeff Snook, DOE-ID from Kerry W. Watson, Director, CBFO. Subject: Clarify a Proposed Method of Random Selection of Waste Containers for Coring (CBFO:OOM:IRT:VW:05-0031:UFC:5822)	Kerry W. Watson, Director, CBFO	06/09/2005
C322A	N/A	Memo correspondence from Norman Cypher to Ty Vess "Building 374 Operations."	Norman Cypher	7/13/1998
C323A	CKA-011-2005	Memorandum from Carolyn Abbott to File, "Estimated Percentages of Ferrous and Non-Ferrous Metals and Cellulosics, Plastic, and Rubber (CPR) in Filter Debris Waste Stream BN211." CKA-011-2005. (CKA-011-2005)	Carolyn Abbott	8/16/2005
C324A	VSS-001-2005	Memorandum to file from Vivian Sendelweck "Estimation Of Percentages Of Ferrous And Non-Ferrous Metal And Cellulosic, Plastic, And Rubber (CPR) Waste Materials In BN835 Waste Stream" VSS-001-2005 (VSS-001-2005)	Vivian Sendelweck	8/16/2005
C325A	VSS-002-2005	Memorandum to file from Vivian Sendelweck "Estimation Of Percentages Of Ferrous And Non-Ferrous Metal And Cellulosics, Plastic, And Rubber (CPR) Waste Materials In BNINW216 Waste Stream" VSS-002-2005 (VSS-002-2005)	Vivian Sendelweck	8/16/2005
C326A	VSS-003-2005	Memorandum to file from Vivian Sendelweck "Estimation Of Percentages Of Ferrous And Non-Ferrous Metal And Cellulosics, Plastic, And Rubber (CPR) Waste Materials In BNINW218 Waste Stream" VSS-003-2005 (VSS-003-2005)	Vivian Sendelweck	8/16/2005
C327A	CBFO:OCT:KWW:VW:05-1121:UFC:5822	Memorandum from Ines Triay, Acting Manager, Carlsbad Field Office to Elizabeth Sellers, DOE-ID Manager, Certification Authority Grange to INL AMWTP for Characterization and Certification of Contact handled TRU Debris Waste and Super-compacted Debris (S5000) Waste (A-05-08). (CBFO:OCT:KWW:VW:05-1121:UFC:5822)	Ines Triay, Acting Manager, Carlsbad Field Office	5/12/2005
C328A	SPC-026-2005	Memorandum to Eric Schweinsberg, Site Project Manager from Steve Carpenter, TRU Programs SPM/AKE Designee; Submittal to File: Detection of 1,1-dichloroethylene in BNINW216 Rev 1. Reconciliation Lots, SPC-026-2005. (SPC-026-2005)	Steve Carpenter, TRU Programs SPM/AKE Designee	4/19/2005
C329A	N/A	Memorandum to EM-13 (Stan Wolf, 301-903-7962) from Frank Marcinowski, Deputy Assistant Secretary for Logistics and Waste Disposition Enhancements, US DOE, Re: Process for TRU Waste Defense Determination, February 24, 2005.	Deputy Assistant Secretary for Logistics and Waste Disposition Enhancements, US DOE	02/24/2005

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C330A	MLJ-002-2005	Memorandum from M. L. Johnson to File, "Estimated Percentages of Ferrous and Non-Ferrous Metals and Cellulosics, Plastic, and Rubber in Metal Debris Waste Stream BN296." MLJ-002-2005. September 14, 2005. (MLJ-002-2005)	M.L. Johnson	9/14/2005
C331A	MLJ-003-2005	Memorandum to file from M. L. Johnson "Estimated Percentage of Plutonium in Metal Debris Waste Stream BN296, MLJ-003-2005, September 22, 2005." (MLJ-003-2005)	M. L. Johnson	9/22/2005
C332A	VSS-004-2005	Memorandum from Vivian Sendelweck to File, "Estimated Percentages of Ferrous and Non-Ferrous Metals and Cellulosics, Plastic, and Rubber (CPR) in Glass Debris Waste Stream BN243." September 14, 2005. (VSS-004-2005)	Vivian Sendelweck	9/14/2005
C333A	TV-010-2006	Memorandum to file from Tim Venneman "Estimated Percentage of Ferrous and Non-Ferrous Metals and CPR in Resin Waste Stream BN432" TV-010-2006 (TV-010-2006)	Tim Venneman	3/8/2006
C334A	TV-009-2006	Memorandum to file: Estimated Perecentage of Plutonium in Resin Waste Stream BN432. (TV-009-2006)	Tim Venneman	03/08/2006
C335A	VSS-006-2005	Memorandum to file from Vivian Sendelweck, "Estimated Percentage of Plutonium in Glass Debris Waste Stream BN243)," September 16, 2005. (VSS-006-2005)	Vivian Sendelweck	9/16/2005
C336A	N/A	Correspondence from Carolyn Abbott, Vivian Sendelweck, Tim Venneman to Ron Reeves and Rick Chaves "Method to handle PCBs in TRU wastes, how to describe in Waste Stream Summaries (WSS), document, label, TRUCON, 10 day notice, etc." September 16, 2005	Carolyn Abbott, Vivian Sendelweck, Tim Venneman	9/16/2005
C337A	VSS-008-2005	Memorandum to File, Estimated Percentages of Ferrous and Non-Ferrous Metals and Cellulosics, Plastic, and Rubber (CPR) in Leaded Rubber Debris Waste Stream BN252. (VSS-008-2005)	Vivian Sendelweck	9/20/2005
C338A	VSS-007-2005	Memorandum to file: Estimated Percentage of Plutonium in Leaded Rubber Debris Waste Stream BN252 (VSS-007-2005)	Vivian Sendelweck	9/23/2005
C339A	N/A	Monthly Reports For the TRU Waste Systems Office for the Pelletized Waste Form Demonstration Program	Miscellaneous Mound records transmitted to the AMWTP.	N/A

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C340A	N/A	Internal Memo From A. B. Combs, "WIPP Criteria."	Miscellaneous Mound records transmitted to the AMWTP.	8/31/1981
C341A	N/A	Mound WIPP Certification Program Plan for Newly Generated Contact Handled TRU Waste, from D. L. Gillis, dated December 15, 1983	D. L. Gillis	12/15/1983
C342A	N/A	Internal Memo from Safety and Loss Prevention, titled "Polychlorinated Biphenyls Annual Report for 1978."	Miscellaneous Mound records transmitted to the AMWTP.	6/25/1979
C343A	N/A	Memo to Mr. L. Leventhal From R. K. Blauvelt requesting information on EP toxicity testing capabilities.	R. K. Blauvelt	3/14/1985
C344A	HWP 84/42	Department of Energy memo to H. L. Turner from R. M. Munson, dated August 23, 1984, titled "Hazardous Chemical Defense Waste Management Program Site Visit Report (HWP 84/42)." (HWP 84/42)	R. M. Munson	8/23/1984
C345A	N/A	Fax from J. W. Guerror to R. K. Blauvelt of Mound on April 11, 1984, titled, "Defense Transuranic Waste Materials Program or Funding Source Questionnaire."	J. W. Guerror	4/11/1984
C346A	N/A	Internal Memo, dated June 18, 1984 sent from R. K. Blauvelt to L. J., titled "Monthly Report for TRU Waste Systems Office."	R. K. Blauvelt	6/18/1984
C347A	N/A	External Memo from A. Olding of CINN-Quipp, Inc. to R. K. Blauvelt, dated July 13, 1984, titled, "Neyra Industries, Inc. Resinex 60 Analysis of Soil Samples".	A. Olding	7/13/1984
C348A	TLC-8-81	External Memo from R. L. Clements to R. K. Blauvelt, dated May 5, 1981, titled "Stored Transuranic Waste Characterization – TLC-8-81." (TLC-8-81)	R. L. Clements	05/05/1981
C349A	TLC-9-84	External Memo from T. L. Clements to R. K. Blauvelt, dated July 2, 1984, titled "WIPP Immobilization Criterion Study – TLC-9-84." (TLC-9-84)	T. L. Clements	07/02/1984
C350A	N/A	Internal Memo from the D&D project Leader to V. E. Castleberry, dated February 4, 1980; titled "Informal Investigation of Foaming Incident on October 17, 1979."	Mound D&D project Leader	2/4/1980

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C351A	N/A	Internal Memo to H. Kresney from R. K. Blauvelt, dated August 20, 1985; titled "TRU Transportation Plan.	R. K. Blauvelt	8/20/1985
C352A	N/A	Memo to D.G. Carfasno from A.R. Campbell, dated June 4, 1979, titled "Cs-137 Content in Soil Samples."	A.R. Campbell	6/4/1979
C353A	78-RF-2021	External Memo from R. L. Olsen of Rocky Flats to R. K. Blauvelt of Mound, dated October 20, 1978; titled "Guidelines for Off-Site Contaminated Soil." (78-RF-2021)	R. L. Olsen	10/20/1978
C354A	N/A	Memo from R. K. Blauvelt to A. Reiser, US-DOE, dated October 25, 1984; titled "Mound Waste Streams."	R. K. Blauvelt	10/25/1984
C355A	N/A	Internal Memo from Safety and Loss Prevention, dated June 25, 1980; titled "Disposition of Spent Photo Fixer Solution."	Safety and Loss Prevention	6/25/1980
C356A	N/A	Internal Memo from A. H. Vaughters to Distribution, dated March 17, 1982; titled: "Chemical Waste Disposal Guidelines."	A. H. Vaughters	3/17/1982
C357A	N/A	Memo from US Atomic Energy Commission, dated March 31, 1971; titled "Criteria for Plutonium Storage Facilities."	US Atomic Energy Commission	3/31/1971
C358A	N/A	Internal Memo from A. F. Schmidt to D. A. Edling, dated June 19, 1972; titled "Packaging and Storage of Pu-238 Heat Sources in T-257."	A. F. Schmidt	6/19/1972
C359A	N/A	Memo from R. T. Braun to E. A. Walker, dated January 28, 1976; titled "Radioactive Wastes Shipped to INEL."	R. T. Braun	01/28/1976
C360A	N/A	Internal Memo from W. R. Harris to R. K. Blauvelt dated March 4, 1976; titled "Acid/Caustic TRU Waste Drums – Pressure Check (Interim Report)".	W. R. Harris	3/4/1976
C361A	N/A	Internal Memo from W. R. Harris to W. T. Cave, dated July 8, 1976; titled "Process Review 76-7."	W. R. Harris	07/08/1976
C362A	N/A	Internal Memo from D. Elding to F. Traino, dated February 21, 1975; titled "Disposition of High Level Radioactive Caustic and Acid TRU Drums."	D. Elding	2/21/1975
C363A	N/A	Internal Memo from F. A. Traino to T. C. Elswick, dated November 28, 1977; titled "Repackaging of Acid/Caustic Drums."	F. A. Traino	11/28/1977
C364A	N/A	Internal Memo from W. R. Harris to D. A. Edling, dated September 10, 1975; titled "TRU Drums shipped to Idaho."	W. R. Harris	09/10/1975

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C365A	N/A	Internal Memo from R. K. Blauvelt to A. G. Barnett, dated November 15, 1978; titled "Repackaging of Acid/Caustic Waste."	R. K. Blauvelt	11/15/1978
C366A	N/A	External memo from D. A. Edling to H. N. Hill, dated July 5, 1979; titled "Packaging of TRU Wastes for Shipment to INEL."	D. A. Edling	07/05/1979
C367A	N/A	Internal Memo to F. A. Traino, titled Radioactive Waste From Redrumming Operations.	D. A. Edling	1/15/1979
C368A	N/A	Internal Memo from W. H. Smith to A. R. Campbell, et all, dated November 15, 1978; titled "Acid/Caustic Drum Assay."	W. H. Smith	11/15/1978
C369A	N/A	External Memo from W. T. Cave to R. L. Wainwright, dated October 14, 1974; titled "Packaging of High Risk TRU Waste."	W. T. Cave	10/14/1974
C370A	N/A	Internal Memo from R. K. Blauvelt to B. R. Kokenge dated March 23, 1977; no title.	R. K. Blauvelt	3/23/1977
C371A	N/A	External Memo from J. A. Chacon, United States Energy Research and Development Administration, to J. E. Bradley, Monsanto Research Corporation, dated November 16, 1976; no title.	J. A. Chacon	11/16/1976
C372A	N/A	Waste Management Quarterly and Monthly Reports, Richard Blauvelt, December 1979 to December 1985.	Richard Blauvelt	MULTIPLE
C373A	N/A	External Memo from T. C. Jones DOE-ABQ, to H. Hill, dated July 2, 1978; titled "D&D TRU Waste Shipments to ID."	T. C. Jones, DOE-ABQ	7/2/1978
C374A	N/A	Internal Memo from R. K. Blauvelt to B. R. Kokenge, dated June 30, 1978; titled "Trip Report #150, Visit to Savannah River Site, Aiken, South Carolin 6/23/78."	R. K. Blauvelt	6/30/1978
C375A	N/A	Memorandum to D.A. Edling from J. R. Geichman, "Special TRU Containers," April 5, 1978.	J. R. Geichman	4/5/1978
C376A		External Memo to M. L. Mullins, Packaging Criteria for Transuranic Waste Shipments to INEL	H. N. Hill	7/25/1978
C377A	N/A	Internal Memo from V. L. Avona to W. W. Rodenburg, et all, dated March 15, 1968; titled "Movement of Fissionable Material into Room R131-133."	V. L. Avona	3/15/1968

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C378A	N/A	Internal Memo from R. M Watrous to R. K. Blauvelt dated October 3, 1977; titled "Operating Procedures and Criticality Precautions for the SW Cave Area, SW-22."	R. M Watrous	10/3/1977
C379A	N/A	Internal Memo from J. D. Hastings to W. P Davis, dated July 19, 1977; titled "Procedure for Handling and Testing Aluminum Clad U235 Fuel Plates".	J.D. Hastings	7/19/1977
C380A	N/A	Internal Memo from W. P. Davis to W. Bigler, et. al, dated March 28, 1977; titled "New Isotopes."	W. P. Davis	3/28/1977
C381A	N/A	Internal Memo from R. K. Blauvelt to W. T. Cave, dated November 24, 1976; titled "Report on the Formal Nuclear Criticality Safety Review.	R. K. Blauvelt	11/24/1976
C382A	N/A	Internal Memo from R. M Watrous to R. K. Blauvelt, dated September 9, 1976; titled "Operations in SW-22 After Proposed Thorium-229 Facility is in Operation."	R. M Watrous	9/9/1976
C383A	N/A	Internal Memo from W. Stringham to R. K. Blauvelt, dated January 9, 1976; titled "Repackaging U-233 Oxide."	W. Stringham	1/9/1976
C384A	N/A	Internal Memo from H. R. Kreider to B. E. Baughn, dated July 29, 1975; titled "Verification Program Procedures, Rocky Flats Samples."	H. R. Kreider	7/29/1975
C385A	N/A	Internal Memo from W. W. Rodenburg to R. K. Blauvelt, et all, dated April 3, 1974; titled "Nuclear Criticality Procedures for Calorimetry of Plutonium Nitrate Solutions."	W. W. Rodenburg	4/3/1974
C386A	N/A	Internal Memo from H. B. Kreider to H. F. Anderson, dated January 8, 1980; titled "Storage of Loaded MHW Shipping Containers."	H. B. Kreider	1/8/1980
C387A	N/A	Internal Memo from R. A. Wolfe to G. R. Grove, dated April 30, 1969; titled "Audit of the Nuclear Criticality Safety Practices and Procedures in the SW Building."	R. A. Wolfe	4/30/1969
C388A	N/A	Internal Memo from R. A. Wolfe to G. R. Grove, dated March 13, 1968; titled "Audit of the Nuclear Criticality Safety Practices and Procedures in the SW and R Buildings."	R. A. Wolfe	3/13/1968
C389A	N/A	Internal Memo from R. A. Wolfe to G. R. Grove, dated January 15, 1968; titled "Audit of the Nuclear Criticality Control Safety Practices and Procedures in the SW-Addition."	R. A. Wolfe	1/15/1968

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C390A	N/A	Internal Memo from J. S. Wahle to G. R. Grove, dated March 3, 1967; titled "Audit of the Nuclear Safety Procedures and Practices of the SM Building."	J. S. Wahle	3/3/1967
C391A	N/A	Internal Memo from J. B. Kahle to E. A. Renbold dated February 10, 1967; titled Audit of the Nuclear Safety Procedures and Practices in T-3.	J. B. Kahle	2/10/1967
C392A	N/A	Internal Memo from J. B. Kahle to G. A. Essig, dated February 10, 1967; titled "Audit of the Nuclear Safety Practices and Procedures in T-1 and T-4."	J. B. Kahle	2/10/1967
C393A	N/A	Internal Memo from J. B. Kahle to G. R. Grove, dated January 31, 1967; titled "Audit of the Nuclear Safety Procedures and Practices in R-143 and R-149."	J. B. Kahle	1/31/1967
C394A	N/A	Internal Memo from J. B. Kahle to L. B. Gnagey, dated January 16, 1967; titled, "Audit of the Nuclear Safety Procedures and Practices – Neutron Source Facility in the SW-Building."	J. B. Kahle	1/16/1967
C395A	N/A	Internal Memo from J. B. Kahle to J. R. Bradley, dated April 18, 1966; titled "Audit of Nuclear Safety Procedures and Practices of the SM-Building –SM-28, SM-39, SM-57, SM-58, SM-59 and SM-60."	J. B. Kahle	4/18/1966
C396A	N/A	Internal Memo from J. B. Kahle to G. A. Essig, dated March 12, 1965; titled "Criticality Audit – Storage Vaults."	J. B. Kahle	3/12/1965
C397A	N/A	Internal Memo from L. F. Rodriguez to W. T. Cave, dated September 24, 1973; titled "Report on Formal Criticality Safety Review."	L. F. Rodriguez	09/24/1973
C398A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez, dated August 22, 1973; titled "Criticality Procedure – Maintenance Work on Criticality Alarm Systems."	J. W. Doty	8/22/1973
C399A	N/A	Internal Memo from L. F. Rodriguez to R. A. Neff, dated July 19, 1973; titled "Operating Procedures for Building 42."	L. F. Rodriguez	7/19/1973
C400A	N/A	Internal Memo from R. A. Neff to L. F. Rodriguez dated June 22, 1973; no title.	R. A. Neff	6/22/1973
C401A	N/A	Internal Memo from L. F. Rodriguez to J. W. Doty dated July 19, 1973; titled Operating Procedures for SM-PP Bunker."	L. F. Rodriguez	7/19/1973
C402A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez, dated July 13, 1973; titled "Residue Storage, SM-PP Bunker."	J. W. Doty	07/13/1973

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C403A	N/A	Internal Memo from L. F. Rodriguez to R. U. McMannon, dated July 19, 1973; titled "Operating Procedures for R-199 and T-16."	L. F. Rodriguez	7/19/1973
C404A	N/A	Internal Memo from L. F. Rodriguez to J. W. Doty, dated July 19, 1973; titled "Operating Procedures for T-245 Storage Area."	L. F. Rodriguez	7/19/1973
C405A	N/A	Internal Memo from L. F. Rodriguez to W. W. Rodenburg dated July 16, 1973; titled "Criticality Informal Review."	L. F. Rodriguez	7/16/1973
C406A	N/A	Operating Procedures for West Criticality Vault – T-2W, Revised July, 1973	N/A	7/1/1973
C407A	N/A	Internal Memo from L. F. Rodriguez to D. R. Spangler, dated June 15, 1973; titled "SW Criticality Informal Review."	L. F. Rodriguez	6/15/1973
C408A	N/A	Internal Memo from R. S. Grimm to L. F. Rodriguez, dated June 12, 1973; titles "Criticality Procedure Building 23 MRC Pu-238 Scrap Declaration # 4."	L. F. Rodriguez	6/12/1973
C409A	N/A	Internal Memo from T. C. Elswick to L. F. Rodriguez, dated May 23, 1973; titled "Operating Descriptions of the A-2 Sphere Production Facility (PP-Building)."	L. F. Rodriguez	5/23/1973
C410A		Internal Memo from W. A. Arnold to R. D. Madding, dated July 10, 1969; titled "Nuclear Criticality Safety and Packaging Survey of Mound Laboratory." ()	W. A. Arnold	07/10/1969
C411A	N/A	Internal Memo from J. W. Doty to W. T. Cave, dated July 27, 1977; titled "TR # 161 Visit SRL on July 19, 1977 and ORNL on July 20, 1977."	J. W. Doty	7/27/1977
C412A	N/A	Internal Memo from R. K. Blauvelt to J. W. Doty dated March 23, 1977; titled "Building 50 Room 116 Storage Area."	R. K. Blauvelt	3/23/1977
C413A	N/A	Operating Procedure for Building 50 – Cell III, September 1977 and October 1979.	N/A	MULTIPLE
C414A	N/A	Internal Memo from C. O. Brewer to R. K. Blauvelt dated November 17, 1976; titled "Criticality Procedures – Criticality Committee."	C. O. Brewer	11/17/1976
C415A	TR-186	Internal Memo from K. V. Gilbert to D. P. Kelly, dated August 5, 1974; titled "TR-186 – Transuranic Waste Discussions, Idaho Operations Office, July 31-August 1, 1974." (TR-186)	K. V. Gilbert	8/5/1974

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C416A	N/A	External Memo to R. K. Flitcraft, Monsanto Research Corp: Shipment of Transuranic Waste From Mound Laboratory to the NRTS	D. Davis, US Atomic Energy Commission	08/14/1974
C417A	N/A	Internal Memo from T. C. Elswick to L. F. Rodriguez dated July 12, 1974; titled "Operating Procedures for A-2 (PP-Building) PuO2 Fuel Production Facility."	T. C. Elswick	7/12/1974
C418A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez, dated July 16, 1973; titled "Storage Room 27, SM/PP Area."	J. W. Doty	7/16/1973
C419A	N/A	Internal Memo from T. C. Elswick to L. F. Rodriguez, dated May 23, 1973; titled "Operating Descriptions of the A-2 Sphere Production Facility (PP-Building)."	T. C. Elswick	05/23/1973
C420A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez dated July 11, 1973; titled "PP-100 Storage Area."	J. W. Doty	7/11/1973
C421A	N/A	Internal Memo from J. W. Doty to D. A. Edling, dated November 15, 1971; titled "PP-100 Storage."	J. W. Doty	11/15/1971
C422A	N/A	Internal Memo from D. A. Edling to J. W. Doty, dated July 15, 1971; titled "Criticality Committee Review."	D. A. Edling	7/15/1971
C423A	N/A	Internal Memo from W. R. Harris to R. A. Wolfe, dated June 5, 1969; titled "Deviation of Technical Manual MD-10075 Criticality Precautions in the PP Building Request."	W. R. Harris	6/5/1969
C424A	N/A	Internal Memo from W. R. Amos to R. A. Wolfe, dated January 13, 1969; titled "Criticality Limits – PP A-3."	W. R. Amos	1/13/1969
C425A	N/A	Internal Memo from F D. Lonadier to R. A. Wolfe, dated March 3, 1967; titled "Increase of Criticality Limits for SM-37 Vault."	F D. Lonadier	3/3/1967
C426A	N/A	External Memo from R. K. Blauvelt of Mound to M. M. Warrant of Sandia National Laboratories, dated August 26, 1983; no title.	R. K. Blauvelt	08/26/1983
C427A	N/A	Internal Memo from J. F. Lemming to R. Blauvelt, dated July 24, 1979; titled "Analytical Sample Selection for Pu Isotopic Analysis of PuO2 samples DZO-35-09-001 and YEC."	J. F. Lemming	7/24/1979
C428A	N/A	External Memo from D. A. Edling of Mound to H. N. Hill of US-DOE, dated February 26, 1979; titled "Fissile Material Loading of TRU Shipments."	D. A. Edling	02/26/1979

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C429A	N/A	Internal Memo from J. V. Dichiaro to R. Blauvelt, dated May 8, 1978; titled "Pu-239 Experiments in PP-113."	J. V. Dichiaro	5/8/1978
C430A	N/A	Internal Memo from R. K. Blauvelt to R. A. Neff, dated November 1, 1977; titled "Nuclear Criticality Procedures for T-Building Room 245."	R. K. Blauvelt	11/1/1977
C431A	N/A	Internal memo from J. W. Doty to R. A. Wolfe, dated September 24, 1969; no title.	J. W. Doty	9/24/1969
C432A	N/A	Internal Memo from A. F. Schmidt to D. A. Edling dated May 23, 1972; titled 239Pu-Be Destructive Program."	A. F. Schmidt	5/23/1972
C433A	N/A	Internal Memo from A. F. Schmidt to D. A. Edling, dated June 7, 1972; titled "239Pu-Be neutron Sources Handling and Storage in T-242 and T-277."	A. F. Schmidt	6/7/1972
C434A	N/A	Internal Memo from A. F. Schmidt to D. A. Edling, dated January 22, 1973; titled "239-Pu-Be Neutron Source Handling and Storage Procedure for T-242."	A. F. Schmidt	1/22/1973
C435A	N/A	Internal Memo from L. F. Rodriguez to L. G. Musen, dated October 30, 1973; titled "Operating Procedures for T-16."	L. F. Rodriguez	10/30/1973
C436A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez, dated July 19, 1974; titled "T-242 Storage Area."	J. W. Doty	7/19/1974
C437A	N/A	Internal Memo from A. F. Schmidt to R. K. Blauvelt, dated October 18, 1976; titled "Pu-238 Relocation (T-242)".	A. F. Schmidt	10/18/1976
C438A	N/A	Internal Memo from H. B. Kreider to R. K. Blauvelt, dated October 3, 1978; titled "MWG Heat Sources."	H. B. Kreider	10/3/1978
C439A	N/A	Internal Memo from J. F. Lemming to R. K. Blauvelt, dated June 28, 1978; no title.	J. F. Lemming	6/28/1978
C440A	N/A	Internal Memo from J. W. Doty to L. F. Rodriguez, dated July 11, 1973; titled "T-245 Storage Area".	J. W. Doty	7/11/1973
C441A	N/A	Internal Memo from T. B. Rhinehammer to D. H. Wolfe, dated January 27, 1967; titled "High Wattage Water Bath Calorimeter".	T. B. Rhinehammer	1/27/1967
C442A	N/A	Internal Memo from T. B. Rhinehammer to R. A. Wolfe, dated February 2, 1967; titled "Operating Procedures for High Wattage Water Bath Calorimetry in T-316".	T. B. Rhinehammer	2/2/1967

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C443A	N/A	Internal Memo from E. T. Kirk to D. A. Edling, dated September 22, 1971; titled "SW Criticality Review Reply."	E. T. Kirk	9/22/1971
C444A	N/A	Internal Memo from D. A. Edling to D. P. Kelly, dated April 23, 1971; titled "Criticality Review of Operating Procedures."	D. A. Edling	4/23/1971
C445A	N/A	Internal Memo from D. A. Edling to W. W. Rodenburg, dated August 19, 1971; titled "Criticality Committee Review."	D. A. Edling	8/19/1971
C446A	N/A	Internal Memo from W. W. Rodenburg to Criticality Committee, dated November 4, 1971; titled "Revised Criticality Procedures for R-111".	W. W. Rodenburg	11/4/1971
C447A	N/A	Internal Memo from D. A. Edling to J. E. Selle, dated June 2, 1971; titled "Criticality Committee Review."	D. A. Edling	6/2/1971
C448A	N/A	Internal Memo from D. A. Edling to R. R. Jaeger, dated December 6, 1972; titled "Criticality Committee Review."	D. A. Edling	12/6/1972
C449A	N/A	Internal Memo from D. R. Rogers to D. A. Edling, dated November 13, 1972; titled "Pu-239 Criticality Procedure R-129."	D. R. Rogers	11/13/1972
C450A	N/A	Internal Memo from C. T. Bishop to R. A. Wolfe, dated December 13, 1967; titled "Preparation of Mixed Oxides of Plutonium 239 and Uranium 238."	C. T. Bishop	12/13/1967
C451A	N/A	Internal Memo from D. R. Billing to D. R. Spangler, dated May 11, 1971; titled "Decontamination of W55 and W56 Parts."	D. R. Billing	5/11/1971
C452A	N/A	Internal Memo from R. M. Watrous to R. A. Wolfe, dated January 17, 1969; no title.	R. M. Watrous	1/17/1969
C453A	TV-002-205	Memorandum to file from Tim Venneman "Estimated Percentage of Plutonium in Firebrick Debris Waste Stream BN161, November 30, 2005." (TV-002-205)	Tim Venneman	11/30/2005
C454A	N/A	Memorandum to file from Tim Venneman "Estimated Percentage of Ferrous and Non-Ferrous Metals and CPR in Firebrick Debris Waste Stream BN161, November 30, 2005"	Tim Venneman	11/30/2005
C455A	N/A	Letter from L. B. Sonnenberg, Miller Wilson Laboratory for Chemical Research to Neil Watson "Hydrogen Diffusivity Test of Eight Drill Filter Vents"	L. B. Sonnenberg	1/25/2003
C456A	N/A	Letter to Dr. Rod Arbon, "Hydrogen Diffusion Rates of NucFil-020/EG&G Drum Vent Filters Lots A through P"	Terry Wickland	8/9/2003

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C457A	MLJ-006-2005	Memorandum from M. L. Johnson to File, "Estimation of Percentages of Ferrous And Non-Ferrous Metals And Cellulosics, Plastic, And Rubber (CPR) Waste Materials In The Mound Debris Waste (BN304)." MLJ-006-2005, November 27, 2005. Revised as MLJ-008-2005, December 28, 2005. (MLJ-006-2005)	M. L. Johnson	12/28/2005
C458A	N/A	Interview of Ron Sohn, Mound Employee, Re: TRU Waste Generation. J. L. McTaggart, B. Gutierrez, June 4, 2003, revised June 8, 2004.	J. L. McTaggart, B. Gutierrez	6/8/2004
C459A	VSS-012-2005	Memorandum to file from Vivian Sendelweck "Estimated Percentage of Plutonium in Special Setups BN004 Waste Stream BN004." (VSS-012-2005)	Vivian Sendelweck	11/12/2005
C460A	VSS-013-2005	Estimated Percentages of Ferrous and Non-Ferrous Metals and Cellulosics, plastic, and Rubber (CPR) in Special Setups Waste Stream BN004 (VSS-013 -2005)	Vivian Sendelweck	11/12/2005
C461A	N/A	Interview with Bill Franze conducted by Jerri McTaggert, Ben Gutierrez, and Dick Blauvelt, dated March 4, 2003.	Jerri McTaggert, Ben Gutierrez, and Dick Blauvelt	03/04/2003
C462A	N/A	Interview with Dan Hopkins conducted by Ben Guttierrez, dated April 21-24, 2003 regarding Site History at Mound	Ben Guttierrez	04/21/2002
C463A	N/A	Interview with Dick Blauvelt, performed by Ben Gutierrez, dated April 21-24, 2003.	Ben Gutierrez	04/21/2002
C464A	N/A	Interview with Dr. Bernie Kokenge	Performed by Ben Gutierrez, Dick Blauvelt, and Jerri McTaggert	04/24/2003
C465A	CCP #: C008	Interview with Toby Elswick Regarding TRU Waste Generation/Management in SM/PPBuildings (CCP #: C008)	Jerri McTaggert, Ben Gutierrez, Dick Blauvelt, and John Rovansic	05/13/2003

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C466A	CCP #: C009	Interview with Paul Figgins performed by Ben Gutierrez, Jerri McTaggert, and Dick Blauvelt, dated May 15, 2003 and e-mail from Paul Figgins correcting the interview record. Interview recorded on CCP Record of Communication numbered C009 for Mound waste that was stored at SRS. The interview record and e-mail were provided by CCP. (CCP #: C009)	Ben Gutierrez, Jerri McTaggert, and Dick Blauvelt	05/15/2003
C467A	CCP #: C010	Interview with Clyde J Chong, performed by Ben Gutierrez, Jerri McTaggert, and Dick Blauvelt, dated May 14, 2003. (CCP #: C010)	Ben Gutierrez, Jerri McTaggert, and Dick Blauvelt	05/14/2003
C468A	N/A	Interview with Ron Goss, performed by Jerri McTaggert, dated March 21, 2003 and April 22, 2003.	Jerri McTaggert	03/21/2009
C469A	N/A	Miscellaneous Correspondence Regarding Plutonium-238 Programs, Various Authors, dated 1981.	Various Authors	DATED 1981
C470A		Interview with Al Combs, performed by Jerri McTaggert ()	Jerri McTaggert	05/15/2003
C471A	MB-0348-01	Memo to EPA, T. Martig; Re: PCBs in Oil (MB-0348-01)	R. B. Provencher, DOE-Ohio Field Office	4/23/2001
C472A	CCP #: C019	Interview with Mike Deaton, performed by Ben Gutierrez, Jerri McTaggert and Dick Blauvelt. (CCP #: C019)	Ben Gutierrez, Jerri McTaggert and Dick Blauvelt	06/05/2003
C473A	CCP #: C020	Interview with Don Luthey, performed by Ben Gutierrez, Jerri McTaggert and Dick Blauvelt, dated June 10, 2003. (CCP #: C020)	Ben Gutierrez, Jerri McTaggert and Dick Blauvelt	06/10/2003
C474A	N/A	List of different types of containers.	Greg Van Soest	NONE
C476A	N/A	Two memos to T. L. Clements, from R. N. Rogers titled "Reactivity of Resins (nitrated)". Memo's dated May 18, 1983 and June 9, 1983	R. N. Rogers	5/18/1983
C477A	CCP #: M002	External Memo titled "Chemical Compatibility and Materials List Data Requirements for TRUPACT II Authorized Payload Compliance Plan", to D. Hopkins from P. E. Drez, dated March 25, 1988. (CCP #: M002)	P. E. Drez	3/25/1988
C478A		Memo to R. L. Wainwright: Program to Reduce the Generation of TRU Contaminated Solid Waste.	J. R. McClain	1/23/1975
C479A		Memo to W. W. Hickman: Shipment of Mound Laboratory's Transuranic Wastes to the NRTS for Retrievable Storage	R. A. Wolfe	10/22/1973

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C480A	VSS-014-2005	Memorandum to Eric Schweinsberg, Guidance on Mound Plywood Spacers (VSS-014-2005)	Vivian Sendelweck	11/17/2005
C481A	CCP #: C012	Interview of Bill Davis, Mound Employee, Re: TRU Waste Management at Mound. (CCP #: C012)	B. Gutierrez, J. Mc Taggart, D. Blauvelt	4/25/2003
C482A	NR: IBO-05/023	Evaluation of Naval Reactors Facility Radioactive Waste Disposed of at the Radioactive Waste Management Complex, Forwarding of; S. L. Dunn, Manager Naval Reactors Idaho Branch Office; NR: IBO-05/023; February 3, 2005 (NR: IBO-05/023)	S. L. Dunn	02/03/2005
C483A		Idaho TRU Waste Criteria	R. K. Blauvelt	9/19/1980
C484A	RMS-61-81	Change Notice of Off Site Packaging Criteria Report IDO-10074 (RMS-61-81)	R. M. Schletter	5/13/1981
C485A		Memo to B. G. Twining: Mound TRU Waste Shipments to INEL	J. A. Morley	10/21/1988
C486A		WTS Line Removal Problems/Suggestions	W. P. Davis	10/23/1981
C487A		E-Mail Correspondence to Jeff Harrison re: SR-MD-SOIL supplemental Information	Steve Rose	8/10/2005
C488A		Memo to L. R. Baird: Comprehensive Environmental Response, Compensation and Liability Information System	R. M. Munson	03/00/1986
C489A		Memo to P. Porter: Transmittal of Mound Waste Box Evaluation	J. Biedscheid	7/14/2000
C490A	TGR-46-94	Letter to M. Gilliat: Transmittal of Tabled Writeup-93, and Revised Building 38 FASR Chapter 5 (TGR-46-94)	T. G. Ryan	11/30/1993
C491A		Memo to to J. R. Craig: TRU Waste Box, Safety Assessment	R. B. Provencher	12/3/2002
C492A		Discrepancy Report – Soil with Smaller Amounts of Debris, DR006	Jeff Harrison	8/30/2005
C493A	DR001	Discrepancy Report –EPA Codes (DR001)	J. Harrison	8/24/2005
C494A	DR005	CCP Discrepancy Report for all waste streams in SRS-AK-8 (DR005)	J. Harrison	8/24/2005
C495A		Internal Memo to W. P Davis and T. C. Elswick re: SAND Boxes	R. K. Blauvelt	9/3/1982
C496A		Memo to R. M. Schletter: Request for Approval	R. K. Blauvelt	2/27/1981
C497A	RHB-263-81	Letter to R. K. Blauvel: Change Notice of Offsite Packaging Criteria (IDO-10074) for Revised Metal Container Painting Requirements – (RHB-263-81)	R. H. Beers	8/11/1981

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C498A		E-mail to HERTFR@doe-md.gov: Regarding Emailing: space-desc	Hertweck (hertweck@brecnet.com)	2/1/2002
C499A	MLJ-004-08	Memo to File: Waste Stream Volumes and Waste Material Parameter Densities for Annual Transuranic Waste Inventory Report Update (MLJ-004-08)	M. L. Johnson	10/22/2008
C502A	CKA-012-2005	Memorandum to Jeff Mousseau, Acceptable Knowledge Accuracy Assessment (CKA-012-2005)	Steve Carpenter, Carolyn Abbott, Vivian Sendelweck	8/25/2005
C503A	RCM-001-2006	Reason for observation of octamethylcyclotetrasiloxane as a TIC in BN510 drums; Randall C. Morris and Jessie Melton; 01/30/2006 (RCM-001-2006)	Randall C. Morris and Jessie Melton	1/30/2006
C504A	N/A	Look-Up Table Additions	Vincent J Medina	1/31/2006
C505A		Record of interview/telecon with Dick Blauvelt, Unknown objects identified in waste drums generated at Mound Plant	Carolyn Abbott	2/17/2006
C506A	SPC-017-2005	Interoffice Memorandum to AMWTP Site Project Managers, "Guidelines for AK Verification of Cs-137 and Sr-90 in RFETS Waste per AKR-05-208" (SPC -017-2005)	Steve Carpenter	03/01/2005
C507A	EPS-007-2006	Interoffice Memorandum, "AMWTP Containers with a WTS Pack Date of 1/1/50,". (EPS-007-2006)	Eric Schweinsberg	3/24/2006
C508A	WRT-MTS-96-3026	Letter from J W. Congdon, Westinghouse Savannah River Company to Dr. James Herzog, Lockheed Idaho Tech, Co. Physical Behavior of Pu-238 Oxide (U), WRT-MTS-96-3026, October 17, 1996. (WRT-MTS-96-3026)	J W. Congdon	10/17/1996
C509A	CKA-010-2005	Memorandum from Carolyn Abbott and Steve Carpenter to Vince Medina, Rocky Flats (RF) Boxed Filter Waste, IDC 490 and Clarification of the RF Boxed Filter Waste (IDC RF 490) Issue (CKA-006-2005) (CKA-010-2005)	Steve Carpenter and Carolyn Abbott	9/8/2005
C510A	N/A	Roaster Oxide Information, from Julie Collins to distribution	Julie Collins	12/31/2005
C511A	N/A	Record of interview/telecon with Vince Medina, "Permeability of FibrePaks"	Randall C. Morris	3/22/2006

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C512A	CKA-003-2005	Memorandum from Carolyn Abbott (AKE) to Eric Schweinsberg (SPM), Addition of Methyl Chloride (Chloromethane) as a targe Analyte in Headspace Gas Analyses of BNINW216 and BNINW218 Waste (CKA-003-2005)	Carolyn Abbott	7/13/2005
C513A	CKA-004-2005	Memorandum from Carolyn Abbott (AKE) to Eric Schweinsberg (SPM), Addition of Methyl Chloride (Chloromethane) as a target Analyte in Headspace Gas Analyses of BN835 Waste (CKA-004-2005)	Carolyn Abbott and Eric Schweinsberg	7/14/2005
C515A	CKA-015-2005	Interoffice Memorandum from Carolyn Abbott (Acceptable Knowledge Expert), Waste Matrix code and Waste Parameter Guidance (CKA-015-2005)	Carolyn Abbott	9/30/2005
C516A	CKA-017-2006	Interoffice Memorandum from Carolyn Abbott (Acceptable Knowledge Expert) to E. Ned Doan, "Evaluation of Acceptable Knowledge Regarding the Presence of Shock Sensitive Materials in AMWTP Managed Waste Containers - CKA-017-2006" (CKA-017-2006)	Carolyn Abbott	3/1/2006
C517A	CKA-018-2006	Interoffice Memorandum from Carolyn Abbott (Acceptable Knowledge Expert), Steve Carpenter (Acceptable Knowledge Expert), and Martin Clapham (Nondestructive Assay Acceptable Knowledge Expert)to Dan Croft (Treatment Facility Manager), Charles Posegate (Nuclear Facility Manager), and Doug Wale (Operations Manager), "Mound Laboratory Plutonium-238 Containing Waste - CKA-018-2006" (CKA-018-2006)	Carolyn Abbott (Acceptable Knowledge Expert), Steve Carpenter (Acceptable Knowledge Expert), and Martin Clapham (Nondestructive Assay Acceptable Knowledge Expert)	3/14/2006
C518A	MLJ-001-06	Memorandum from M.L. Johnson to File, "Estimation of Percentages fo Ferrous and Non-Ferrous Metals and Cellulosics, Plastic, and Rubber in the Mound Cemented Sludge Waste (BN836)." (MLJ-001-06)	M.L. Johnson	4/25/2006
C519A	MLJ-002-06	Memorandum from M. L. Johnson to File, "Estimated Percentage of Plutonium in Cemented Sludge Waste Stream BN836," MLJ-002-06. April 25, 2006. (MLJ-002-06)	M. L. Johnson	4/24/2006
C520A	N/A	Correspondance from John Smith Ph.D, EPA, to Ms. Lynne Smith, WIPP Office Director, Re: Legacy Solidified TRU/PCB waste.	John H. Smith PhD	2/28/2002
C521A	N/A	Email to Steve Carpenter and Carolyn K. Abbott regarding Nylon Slings; Vincent J. Medina; May 1, 2006	Vincent J. Medina	5/1/2006

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C522A	GKT-001-06	Container Identification Changes as a Result of Sampling, packaging, Overpacking, Repackaging, and Unknowns from Cell 5 of the Transuranic Storage Area-1 (GKT-001-06)	Gina Tedford	5/15/2006
C523A	MLJ-007-06	Estimated Percentage of Plutonium in Mound Debris Waste Stream BN304, M. L. Johnson, MLJ-00X-06, 6/14/2006 (MLJ-007-06)	M. L. Johnson	6/14/2006
C524A	N/A	Correspondance from Mound Environmental personnel in reference to questions pertaining to MD836 wastes.	Tim Venneman	2/15/2006
C525A	N/A	Correspondence from Mound Environmental personnel in reference to questions pertaining to MD836 wastes. 2/15/06	Mound Environmental personnel	2/15/2006
C526A	CCN 06-20243, JDM-032-06	Letter to Mr. Kerry Watson with the subject: Contract No. DE-AC07-99ID13727 – Mound Debris Waste, Jeffrey D. Mousseau, JDM-032-06, 5/31/2006 (CCN 06-20243, JDM-032-06)	Jeffrey D. Mousseau	5/31/2006
C527A	CBFO:OCT:KWW:KJB:06-0411:UFC:5822	Letter to Elizabeth Sellers, DOE-ID Manager, Recertification of INL AMWTP Authority for Homogeneous Solids (S3000) Waste – Audits A-05-17 and A-05-21, David C. Moody, February 10, 2006 (CBFO:OCT:KWW:KJB:06-0411:UFC:5822)	David C. Moody	2/10/2006
C528A	CBFO:QA:MPN:LC:06-0282:UFC:2300	Letter to Mr. Steve Zappe, NMED, Transmittal of the Certification Audit Report for the AMWTP, Audit A-06-09, David C. Moody, April 20, 2006 (CBFO:QA:MPN:LC:06-0282:UFC:2300)	David C. Moody	4/20/2006
C529A	TV-013-06	Memorandum to file, Advanced Mixed Waste Treatment Project Acceptable Knowledge Accuracy Report 08/01/05 through 07/31/06 - TV-013-06, Tim Venneman, August 14, 2006 (TV-013-06)	Tim Venneman	8/14/2006
C530A	JWS-002-06	Memorandum to C. IK. Abbott, Visual Examination Confirmation of item description Code RF-339, J. W. Shainholtz, JWS-002-06, August 23, 2006 (JWS-002-06)	J. W. Shainholtz	8/23/2006
C531A	CKA-004-2006	Memorandum to File, Acceptable Knowledge Assessment of the Potential Presence of Prohibited Items in Waste Stream BN252 (Item Description Code DC 339 and Item Description Code 463) Leaded Rubber Debris, Carolyn Abbott (CKA-004-2006)	C.K.Abbott	9/12/2006
C532A	KL-001-2006	Memorandum to Certification Leads, et al., SPO Guidance – 30-gallon Drums in Mound Debris Containers Clarification (KL-001-2006)	Kathy Leonard	1/8/2006

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C533A	TV-014-06	Memorandum to File: Acceptable Knowledge Document for Potentially Asbestos-Contaminated Low-Level Waste (TV-014-06)	Tim Venneman	10/17/2005
C534A	TV-001-07	Memorandum to File: Waste Material Parameter (WMP)Weight Calculations and Supporting Data to Determine Waste Material Parameter Weight per Unit of Waste (TV-001-07)	T. Venneman	01/19/2007
C535A	MLJ-001-08	Memorandum from M L. Johnson to File, Estimated Number Of Drums For The Waste Isolation Pilot Plant Approved Direct Ship Waste Streams, MLJ-008-06, December 13, 2006 Revision to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-001-08, April 24, 2008 Revision Two to Estimated Number of Drums for Direct Ship Waste Streams, MLJ-001-08, June 25, 2008 (MLJ-001-08)	M L. Johnson	6/25/2008
C536A	N/A	Telecon/Interview of Lisa Frost/Ed Vejvoda re: Use of nitrobenzene at Rocky Flats, 2/2/06	Lisa Frost/Ed Vejvoda	02/02/2006
C537A	CBFO:QA:MN:GS:04-0099:UFC 2300.00	Letter from Martin P. Navarrete to Brian Edgerton, DOE-ID, "Audit Report A-04-12, INEEL, Advanced Mixed Treatment Project Audit of Additional Characterization Activities and Transportation Re-certification," April 26, 2004 (CBFO:QA:MN:GS:04-0099:UFC 2300.00)	Martin P. Navarrete	4/26/2004
C538A	CBFO:OCT:KWW:KJB:05-1624:UFC 5822.00	Letter from Lloyd L. Piper to Elizabeth Sellers, DOE-ID, "Recertification of INL AMWTP Authority for Homogeneous Solids (S3000) Waste – Audit A-04-22," October 25, 2005 (CBFO:OCT:KWW:KJB:05-1624:UFC 5822.00)	Lloyd L. Piper	10/25/2005
C539A	N/A	Letter from James P. Bearzi, NMED to Dr. Moody and Mr. Raaz "NMED Approval of the Advanced Mixed Waste Treatment Project Final Audit Report, Audit A-06-09," June 16, 2006	James P. Bearzi	6/16/2006
C540S		Letter from James P. Bearzi, NMED to Dr. Moody and Mr. Raaz "NMED Approval of the Advanced Mixed Waste Treatment Project Final Audit Report, Audit A-06-24," January 23, 2007	James P. Bearzi	1/23/2007
C541S	CBFO:NTP:CF:GS:07-0679:UFC 5822.00	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Recertification of INL AMWTP Authority for Solids (S3000) and Debris (S5000) Waste – Audits A-06-09, A-06-24, and A-06-25," February 26, 2007 (CBFO:NTP:CF:GS:07-0679:UFC 5822.00)	David C. Moody	2/26/2007

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C542S	N/A	Slide presentation regarding debris waste to be shipped to AMWTP from Hanford, 3/8/2007	Fluor Hanford	3/8/2007
C543S	CCN 07-30515, CKA-001-07	Memorandum to File: Estimate of compacted volume and number of product drums: Hanford debris waste waste and debris waste from Pits 11 and 12, and the volume of homogeneous solids waste retrieved from Pits 11 and 12. Carolyn K. Abbott, CCN 07-30515, CKA-001-07, August 13, 2007 (CCN 07-30515, CKA-001-07)	Carolyn Abbott	8/13/2007
C544A	N/A	Letter to file re: Contaminated Soil from Retrieval, dated 12/21/04.	B. Warner and Kevin Leavitt	12/21/2004
C545S	N/A	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Expansion of Certification Authority to Include Manual Drum Coring System Operations" May 23, 2007	David C. Moody	5/23/2007
C546S	CCN 07-30516, TV-001-07	Memorandum to file (CCN 07-30516): Advanced Mixed Waste Treatment Project Acceptable Knowledge Accuracy Assessment August 1, 2006 through June 30, 2007- TV-001-07, Tim Venneman, August 14, 2007 (CCN 07-30516, TV-001-07)	Tim Venneman	8/14/2007
C547S	JHK-002-07, CCN 07-30519	Memorandum to Eric Schweinsberg, Co-Located Core Sample Control Charts, JHK-002-07, CCN 07-30519, August 16, 2007 AMWTP correspondence. (JHK-002-07, CCN 07-30519)	Jason Kettel	8/16/2007
C548S	JHK-002-07, CCN 07-30519	Memorandum to Eric Schweinsberg, Co-Located Core Sample Control Charts, JHK-002-07, CCN 07-30519, August 16, 2007 AMWTP Correspondence (JHK-002-07, CCN 07-30519)	Jason Kettel	8/16/2007
C549A	N/A	Correspondence from C.K. Gaddis to R. Falconer. Transuranic Waste Characterization Questionnaires	C. K. Gaddis, Manager, DOE, Pittsburgh Naval Reactors Office	5/17/1993
C550S	N/A	Interview Record of Vince Medina, :Alternate packaging configuration of IDC RF graphite waste includes Kraft Tubes," September 24, 2007		9/24/2007
C551A	N/A	Estimated Percent of Plutonium in Rocky Flats, AMWTP, and Mound wastes.	Martin Clapham	7/5/2008
C552S	CKA-001-08	Memorandum to file: Acceptable Knowledge Evaluation of Containers with Historical Data Issues (CKA-001-08)	Carolyn K. Abbott, PhD	2/13/2008
C553S				

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C554S	N/A	Interview of Roger Haga, MFC Safeguards, Re: Traceability of Defense Materials to Casting Laboratory and Analytical Laboratory	Scott Smith and Dave Guerin	8/31/2005
C555S	N/A	Correspondence to Craig R. Tyler, Lockheed Martin Idaho Technologies Co. re: ANL Transuranic Waste - Definition as Defense Waste	D. S. Kirschner, Manager, Radiation, Fire and Safety	4/16/1997
C556A		Interview of Pam Crane, Analytical Laboratory, re: Analytical Laboratory Mission and Objectives		5/1/2005
C557A	N/A	Letter to Monte V. Davis, BBWI re: Evaluation of ANL-W Transuranic (TRU) Waste Stream, Identification Number ANL-WCA-553, Listed in the Site Treatment Plan.	R. P. Grant, NTD Environmental Programs, ANL -W	5/22/2001
C558A	N/A	Interview of Steve Hayes, Manager of Advanced Fuel Cycle Initiative	Scott Smith, Interviewer	8/22/2005
C559S	N/A	Correspondence to Mark Matthews, Chairman, Transuranic Waste Steering Committee, Carlsbad Area Office, re: Designation of TRU Waste as Defense or Non-Defense.	Raymond E. Lang, Senior Program Manager Support, Technology Development, and Waste Operations Division.	10/11/1994
C560S	JHK-005-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-005-07, November 1, 2007 AMWTP correspondence. (JHK-005-07)	Jason Kettel	11/1/2007
C561S	JHK-006-07	Memorandum to Eric Schweinsberg , Co-Located Core SampleF-Test Results , JHK-006-07, November 1, 2007 AMWTP correspondence. (JHK-006-07)	Jason Kettel	11/1/2007
C562S	JHK-007-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-007-07, December 12, 2007 AMWTP correspondence. (JHK-007-07)	Jason Kettel	12/12/2007
C563S	JHK-008-07	Memorandum to Eric Schweinsberg , Co-Located Core Sample F-Test Results (JHK-008-07)	Jason Kettel	12/12/2007
C564S	JHK-002-08	Memorandum to Eric Schweinsberg , Co-Located Core Sample Control Charts, JHK-002-08, September 2, 2008 AMWTP correspondence. (JHK-002-08)	Jason Kettel	9/2/2008

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C565S	JHK-001-08	Memorandum to Eric Schweinsberg , Co-Located Core Sample F-Test Results (JHK-001-08)	Jason Kettel	9/2/2008
C566S	JHK-003-08	Memorandum to Eric Schweinsberg, Acceptable Knowledge Accuracy Report for 7/1/07 to 6/30/08 (JHK-003-08)	Jason Kettel	9/4/2008
C567S	CBFO:NTP:NC:GS:08-0883:UFC 5822.00	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Expansion of AMWTP Recertification to include Container-in-Container Sampling Method – Audit A-08-09," Letter No. CBFO:NTP:NC:GS:08-0883:UFC 5822.00, September 24, 2008 (CBFO:NTP:NC:GS:08-0883:UFC 5822.00)	David C. Moody	9/24/2008
C568S	N/A	E-mail to Steve Carpenter (AMWTP AK TRU Programs): AMWTP Macro Rejects – PFNW	James B. Zovi (AMWTP Offsite LLW/MLLW Disposition Project)	10/2/2008
C569A				9/12/2000
C570A		Reserved for (get doc from NW): Memo to Paul Sentieri re: Pre-1970 RFP Waste		
C571A	C065	Memo to J. D. McKinney re: Non-Radiological Hazards Study (C065)	T. L. Clements, Jr.	1/22/1980
C572A	N/A	Letter to K.J. Holdren re: EPA Region 10 Requests	Ed Vejvoda	02/12/2002
C574S	N/A	Correspondence to Mr. Dennis Wilkinson, RWMC/SWEP re: TRU Waste at Argonne National Laboratory-East	J. R. Thuot, Manager, Waste Management	05/17/1990
C575A	N/A	Correspondance to Mr. Thomas W. Ortciger, Director, Illinois Department of Nuclear Safety and Mr. Thomas Skinner, Director, Illinois Environmental Protection Agency re: Proposed site Treatment Plan for Argonne National Laboratory (ANL)	Robert C. Wunderlich, Argonne Group Manager	12/22/2000
C576S	N/A	Email to Diane M. Hartley re: ANL-W containers with an IDC of 160.	Curtis M. Reece	8/16/2001
C577A		Reserved for Letter to Monte V. Davis, BBWI re: Evaluation of ANL-W Transuranic (TRU) Waste Stream, Identification Number ANL-WCA-553, Listed in the Site Treatment Plan.	R. P. Grant	5/22/2001
C578A	n/A	Email to Carolyn Abbott transmitting a Synopsis of 553.doc; CH_ANL_553.doc (n/A)	R. P. Grant	10/14/2008
C579A	N/A	Email to Carolyn Abbott transmitting a Synopsis of 553.doc; CH_ANL_553.doc.	R. P. Grant	10/14/2008

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C580A	N/A	Email to Carolyn Abbott transmitting background information on MLLW HFEF WCA Drums.	R. P. Grant	10/14/2008
C581A		Email to Kevin Streeper Requesting information re: the 21 "Resin Vaults" located in the TSA-RE, Pad-1, Cell 8 area.	Stephen Obert	4/16/2008
C582A		Reserved for Letter to Rod Thomas re: Your FAX 10-27-2000 – Discrepancy List for 1972 Data Set for Shipments Placed on Pad A (Get from NW or Lisa RF-C551A)	Ed Vejvoda	12/12/2000
C583A		Reserved for Letter to Mr. J. B. Whitsett re: Nonradiological Hazards Study, ENF-75-80. Get from Lisa or NW.		
C584A	N/A	Rod Thomas' notes on telephone conversations with Ed Vejvoda, LATA	Rod Thomas	6/20/2001
C585A	JRB-6-79	Interoffice Correspondence to J. D. McKinney re: Sludge Drums (JRB-6-79)	J. R. Bishoff	7/25/1979
C586S	N/A	Email to Carolyn K. Abbott re: IDC 157	Christopher Major	7/10/2001
C587A	N/A	Email to Carolyn Abbott re: Flowchart	Roy P. Grant, MFC	7/25/2008
C590S	CKA-015-2005	Interoffice Memorandum to Eric Schweinsberg and Steve Carpenter re: Management and Reporting of TRU Contaminated Light Ballast(s), Capacitors, and Transformers (CKA-015-2005)	Carolyn Abbott and Tim Venneman	10/12/2005
C592S	CBFO:NTP:KWW:JGW:04-1983:UFC:5822	Memorandum to Elizabeth Sellers, Amendment of Authority Granted to INEEL AMWTP for Characterization and Certification of Contact Handled Homogenous Solids Transuranic Waste (CBFO:NTP:KWW:JGW:04-1983:UFC:5822)	R. Paul Detwiler	9/17/2004
C593S	CBFO:QA:MPN:LC06-0280:UFC:2300	Memorandum to Guy Girard, QA and NDA Audit A-06-10 of the INL AMWTP Recertification Audit (CBFO:QA:MPN:LC06-0280:UFC:2300)	Martin P. Navarrete	4/12/2006
C594S	CBFO:QA:MPN:LC:06-1185:UFC:2300	Letter to Mr. Zappe, Transmittal of the Certification Audit Report for the AMWTP Audit A-06-24 (CBFO:QA:MPN:LC:06-1185:UFC:2300)	David C. Moody	10/12/2006
C595S	CBFO:QA:MPN:LC:06-1158:UFC:2300	Memorandum to Guy Girard, Audit Report for TRU Waste Characterization and Certification of the AMWTP at the INL (CBFO:QA:MPN:LC:06-1158:UFC:2300)	Martin P. Navarrete	9/14/2006
C596S	CBFO:QA:MPN:LC:07-0284:UFC:2300	Memorandum to Bill Lattin, CBFO Surveillance Report S-07-21 of the AMWTP Manual Drum Coring Operations (CBFO:QA:MPN:LC:07-0284:UFC:2300)	Martin P. Navarrete	4/12/2007

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C597S	CBFO:QA:DSM:LC:07-1627:UFC:2300	Memorandum to Bill Lattin, Audit Report A-07-15, TRU Waste Characterization and Certification of the AMWTP (CBFO:QA:DSM:LC:07-1627:UFC:2300)	Martin P. Navarrete	9/10/2007
C598S	CBFO:QA:MPN:LC:07-1647:UFC:2300	Letter to Mr. Zappe, Transmittal of the Certification Audit Report A-07-14 of the AMWTP (CBFO:QA:MPN:LC:07-1647:UFC:2300)	David C. Moody	9/27/2007
C599S		Letter to Dr. Moody and Mr. Sharif, NMED Approval of the Advanced Mixed Waste Treatment Project Final Audit Report, Audit A-07-14	James P. Bearzi	1/18/2008
C600S	CBFO:NTP:NC:GS:08-0611:UFC 2300.33	Memorandum from David C. Moody to Elizabeth Sellers, DOE-ID, "Recertification of INL AMWTP Audits A-07-14 and A-07-15," CBFO:NTP:NC:GS:08-0611:UFC 2300.33, February 20, 2008 (CBFO:NTP:NC:GS:08-0611:UFC 2300.33)	David C. Moody	2/20/2008
C601A		Letter to John Medema, DOE-ID, from William Franz, transmittal of maps of the Mound site, September 19, 2003	DOE-ID.	9/19/2003
C602A	JMB-16-87	Interoffice Correspondence to J. D. Wells, re: SWEPP Examination of B&W Greater than Class C. Waste. (JMB-16-87)	J. M. Bower	04/24/1987
C603A	N/A	Intra-Laboratory Memo to C. C. Dwight, ANL-W AK Preparation Project Manager from R. P. Grant and G. P. Hackett re: ANL-W Transuranic Waste Drums Sent to RWMC, January 18, 1999.	R. P. Grant and G. P. Hackett	1/18/1999
C604A	N/A	Intra-Laboratory Memo to W. P. Keeney re: Procurement of Uranium Feedstock for FMF Production	L. C. Walters and D. B. Tracy	9/15/1989
C605A	MLJ-002-2009	Memorandum to File, Waste Material Parameter Weight per Unit Waste Calculations for Proposed BN222 Waste Stream (MLJ-002-2009)	M.L. Johnson	09/15/2009
C606S	CBFO:QA:MPN:KBS:08-0376:UFC 2300.00	Memorandum to file, Letter from David C. Moody, CBFO to Mr. Steve Zappe, NMED, Transmittal of the Carlsbad Field Office Final Audit Report A-08-09 of the Advanced Mixed Waste Treatment Project, July 10, 2008. (CBFO:QA:MPN:KBS:08-0376:UFC 2300.00)	David C. Moody, CBFO	7/10/2008
C607A	N/A	Letter from the Fredrick R. Dowsett, State of Colorado to Ms. Florence J. Phillips, Kiaser-Hill Company. Use of F039 Listed Hazardous Waste Designation. February 21, 1996	Fredrick R. Dowsett, State of Colorado	2/21/1996

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C608S	CBFO:NTP:NC:GS:08-0883:UFC:5822.00	Memorandum to Elizabeth Sellers, Expansion of AMWTP Recertification to include Container –in-Container Sampling Method – Audit A-08-09 (CBFO:NTP:NC:GS:08-0883:UFC:5822.00)	David C. Moody	9/24/2008
C609S	CBFO:QA:MPN:KBS:08-1390:UFC:2300.00	Memorandum to Bill Lattin, Interim Audit Report for Recertification Audit A-08-19, Advanced Mixed Waste Treatment Program (CBFO:QA:MPN:KBS:08-1390:UFC:2300.00)	Martin P. Navarrete	10/10/2008
C610S	CBFO:QA:MPN:KBS:08-1535:UFC:2300.00	Letter to Mr. Zappe, Transmittal of the Certification Audit report for the Advanced Mixed Waste Treatment Program, Audit A-08-19 (CBFO:QA:MPN:KBS:08-1535:UFC:2300.00)	David C. Moody	11/25/2008
C613S	N/A	Interview of Mike Beranek (former Rocky Flats employee)	N/A	1/14/2009
C614S	N/A	Interview of Rick Moore (former Rocky Flats employee)	N/A	1/14/2009
C615S	N/A	Interview of Mike Brugger (former Rocky Flats employee)	N/A	1/20/2009
C616S	N/A	E-mail concerning RTR examinations of waste in Vollrath cans.	Steve Tallman	1/20/2009
C617A	N/A	Telephone Conversation with Robert J. Hudson, retired RWMC RCT.	Carolyn K. Abbott	02/26/2009
C618A	CKA-001-09	Memorandum to File: Summary of Retrieval Acceptable Knowledge (AK) for Pad R, Cell 1 Waste. (CKA-001-09)	Carolyn K. Abbott	05/21/2009
C620A	MLJ-001-09	Memo to Gina K. Tedford: Waste Stream Volumes and Waste Material Parameter Densities for Annual Transuranic Waste Inventory Report Update (MLJ-001-09)	M. L. Johnson	8/13/2009
C629A	N/A	New IDCs for Squeezants	Neil Brill and Darren Aitken	3/19/2009
C630S	JHK-005-08	Memorandum to Eric Schweinsberg, Co-located Core Sample Control Charts (JHK-005-08)	Jason Kettel	12/15/2008
C631S	JHK-006-08	Memorandum to Eric Schweinsberg: Co-Located Solid Sampling F-Test Results (JHK-006-08)	Jason Kettel	12/15/2008
C775A		Interview Record of Joe Risinger by T. Widner and D. Herrick.		8/29/1991
C777S	N/A	Letter to Bruce Becker re: Leaching Report - Charles Pelletier	Ed Vejvoda	7/12/2001
C781A	092908-1	Correspondance from Kevin Lundquist to AK personnl. Ref: Closure of NCR 44395 (092908-1)	Kevin Lundquist, Validation S.S.	4/2/2009

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C782A	121108-1	Correspondence from kevin Lundquist to AK personnel. Ref: NCR 44387 closure (121108-1)	Kevin Lundquist, Validation S.S.	4/2/2009
C783A	111208-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44386 (111208-1)	Kevin Lundquist, Validation S.S.	04/02/2009
C784A	092508-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44385 (092508-1)	Kevin Lundquist, Validation S.S.	04/02/2009
C785A	112008-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44384 (112008-1)	Kevin Lundquist, Validation S.S.	04/02/2009
C786A	NT070711R	Correspondence from Kevin Lundquist to AK personnel. Ref: Closure of NCR 44369 (NT070711R)	Kevin Lundquist, Validation S.S.	04/02/2009
C787A	110608-1	Correspondence from Kevin Lundquist to AK personnel. Ref: Closure of NCR 44420 (110608-1)	Kevin Lundquist, Validation S.S.	4/2/2009
C788S	CBFO:NTP:NC:GS:09-0835:UFC 2300.00	Memorandum to Richard Provencher, DOE-ID Assistant Manager, Recertification of INL AMWTP Audit A-08-19 (CBFO:NTP:NC:GS:09-0835:UFC 2300.00)	David C. Moody, CBFO	3/25/2009
C789S	C-2009-0101	Remote Handled Drum Evaluation--JHP-002-09 (C-2009-0101)	James H. Pletscher	3/5/2009
C790S	C-2009-0081	Remote Handled Drum Evaluation-JHP-001-09 (C-2009-0081)	James H. Pletscher	2/18/2009
C791A	111008-2	Correspondence from Kevin Lundquist to AK personnel. Ref: Closure of NCR 44419 (111008-2)	Kevin Lundquist, Valdiation S.S.	4/2/2009
C792A	103008-1	Corrspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44400 (103008-1)	Kevin Lundquist, Validation S.S.	4/2/2009
C793A	111808-1(B)	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR 44418 (111808-1(B))	Denny Gasper, Acting Level I Validation Lead	4/3/2009
C794A	112108-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR 44421 (112108-1)	Denny Gasper, Acting Level I Validation Lead	4/3/2009
C795A	091808-1 CC	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR 44436 (091808-1 CC)	Denny Gasper, Acting Level I Validation Lead	4/3/2009
C796A	092408-2	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR 44437 (092408-2)	Denny Gasper, Acting Level I Validation Lead	4/3/2009

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C797A	111408-1(B)	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR 44416 (111408-1(B))	Denny Gasper, Acting Level I Validation Lead	4/3/2009
C798A	101008-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44423 (101008-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C799A	100708-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44417 (100708-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C800A	100708-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44415 (100708-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C801A	102208-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44390 (102208-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C802A	092008-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44439 (092008-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C803A	102708-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44438 (102708-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C804A	10106108-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44435 (10106108-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C805A	111308-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44434 (111308-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C806A	102008-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44433, 44432, and 44429 (102008-1)	Kevin Lundquist, Validation S.S.	4/7/2009
C807A	101408-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44431 (101408-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C808A	111008-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCR 44397 (111008-1)	Kevin Lundquist, Validation S.S.	4/4/2009
C809A	100708-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44440. (100708-1)	Denny Gasper, Validation S.S.	4/5/2009
C810A	112208-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44462. (112208-1)	Denny Gasper, Validation S.S.	4/5/2009

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C811A	110508-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44461 (110508-1)	Denny Gasper, Validation S.S.	4/5/2009
C812A	112208-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44460. (112208-1)	Denny Gasper, Validation S.S.	4/5/2009
C813A	120108-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44458 (120108-1)	Denny Gasper, Validation S.S.	4/5/2009
C814A	102208-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44457 (102208-1)	Denny Gasper, Validation S.S.	4/5/2009
C815A	110808-1	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44456 (110808-1)	Denny Gasper, Validation S.S.	4/5/2009
C816A	102208-1(B)	Correspondence from Denny Gasper to AK personnel. Ref: closure of NCR-44466 (102208-1(B))	Denny Gasper, Validation S.S.	4/5/2009
C817A	N/A	Correspondence from Kevin Leavitt to AK personnel. HWN assignment BN-633	Kevin Leavitt, AMWTP Waste Services	4/6/2009
C818A	110608-1	Correspondence from Kevin Lundquist to AK personnel. Ref: closure of NCRs-44401, 44402, 44403. (110608-1)	Kevin Lundquist, Validation S.S.	4/7/2009
C820A	N/A	Interview of Dave Preston concerning variation of NT-212 inner packaging.	M. L. Johnson	4/20/2009
C821A	N/A	IDCs	Kevin leavitt and Darren Aitken, AMWTP Waste Services	4/16/2009
C822S	N/A	Pits 11 & 12		3/4/2009
C823A		Correspondence from AMWTP RTR personnel to AK personnel. Ref: closure of NCRs.	AMWTP RTR validation	5/19/2009
C824A	N/A	Telephone conversation with Yale Harker, PhD regarding AeroJet Nuclear drum marked CM.	Carolyn Abbott	3/2/2009
C825S	N/A	Cargo Container FGE	James Seamans	6/9/2009
C826A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb."	Franci Andrus	6/11/2009

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C827A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Franci Andrus	6/11/2009
C828A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Franci Andrus	6/11/2009
C829A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Franci Andrus	6/11/2009
C830A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Franci Andrus	6/11/2009
C831A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Jeff Mousseau	6/12/2009
C832A		Drums retrieved in 1978 from Trench 5 marked "Cluster Fragmentation Bomb"	Franci Andrus	6/11/2009
C834A	N/A	E-mail to Micky Johnson:Pre filter split	Dave Preston	6/3/2009
C836A	CKA-002-09	Acceptable Knowledge Pertinent to M-III Bins Over-packed with Waste Retrieved During the Early Waste Retrieval Project (CKA-002-09)	Carolyn Abbott, PhD	6/17/2009
C840S	JHK-001-09	Acceptable Knowledge Accuracy Assessment for July 1, 2008 to June 30, 2009 (JHK-001-09)	Jason Kettel	7/29/2009
C841S	JHK-004-08	Revised AK Accuracy Assessment for 7/1/07 to 6/30/08 (JHK-004-08)	Jason Kettel	11/3/2008
C842S	N/A	Pits 11 & 12	Kirk Green	10/20/2009
C843A	CKA-002-07	Containers Retrieved From The Transuranic Storage Area-Retrieval Enclosure Without Previous Historical Data in the Waste Tracking System. (CKA-002-07)	Carolyn Abbott, PhD	11/1/2007
C844A	N/A	U-233 Waste and the AMWTP Project. Correspondence from Rebecca Robbins to Cal Ozaki.	Rebecca Robbins	12/5/2000
C845A	OPE-AMWTP-69-98	Review of U-233 Wastes Stored at RWMC and Recommendations with Regards to AMWTP. Memorandum from Dr. John H. Kolts to Michael J. Bonkoski, Manager with AMWTP. (OPE-AMWTP-69-98)	Dr. John H. Kolts	12/22/1998
C846A	AM/OPA-SSD-SMM-94-105	RWMC/ILTSF U-233 Attractiveness Level, and associated correspondence. (AM/OPA-SSD-SMM-94-105)	D. R. Bell	9/19/1994

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C847A	LCV-73-94	Final Report on Issues and Objectives of U-233 Stored at the Radioactive Waste Management Complex (LCV-73-94)	L.C. Van Deusen	8/17/1994
C848S	KBW-01-98	Storage of Drums Containing U-233 at RWMC (KBW-01-98)	K.B. Woods	03/10/1998
C849A	N/A	1/26/10 CBFO conversation relating to segregation practices for MFC/INTEC-RWMC new gen waste	Tim Venneman	1/26/2010
C850A	MLJ-004-10	Memo to File, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream (MLJ-004-10)	M. L. Johnson	09/01/2010
C851A	MLJ-002-2010	Memo to File, Waste Material Parameter per Unit of Waste Cacluations for the BN510.1 Supercompacted Debris Waste Stream (MLJ-002-2010)	M. L. Johnson	03/10/2010
C852A	N/A	Email to Roy Grant in response to Email from Carolyn Abbott (abbock@amwtp.inl.gov) regarding HRA and WCA waste generation processes.	Scott D Lee, MFC	3/12/2010
C853S	CBFO:NTP:NC:GS:10-0748:UFC 2300.00	Memorandum to Richard Provencher, DOE-ID Assistant Manager, Recertification of INL AMWTP Audit A-09-19 (CBFO:NTP:NC:GS:10-0748:UFC 2300.00)	David C. Moody, CBFO	02/28/2010
C854A				
C855A	CKA-001-10	Letter to File Re: Pad 1, Cells 1 and 2 Waste (CKA-001-10)	Carolyn K. Abbott, PhD	03/17/2010
C856A	MLJ-003-10	Memorandum to Gina Tedford, Waste Stream Volumes and Waste Material Parameter Densities for 2010 Annual Transuranic Waste Inventory Report Update (MLJ-003-10)	M. L. Johnson	3/31/2010
C857S	N/A	Email correspondence to Carolyn Abbott, AMWTP re: MFC information	Roy P. Grant	4/14/2010
C858S	N/A	Email correspondence to Carolyn Abbott, AMWTP, regarding brine solution identified in the IWTS Material profile 3978P	Roy P. Grant, MFC,	5/6/2010
C859A	TLC-33-89	Letter to Mr. L. D. Witbeck, ANL-W RE: TRU Profile Statement Approval (TLC -33-89)	T. L. Clements, Jr., RWMC/SWEPP Technical Programs	3/21/1989
C860S	N/A	Application of P-listed EPA hazardous waste numbers to ARP wastes	David P. Hutchinson	9/15/2008
C861A	N/A	Email correspondence between Bruce R Adams, MFC and Carolyn Abbott, AMWTP Re: Waste shipped by CCP to MFC/ANL-W.	Bruce R. Adams	5/12/2010

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C862A	N/A	Memorandum to W. E. Keheley, OAK re: Plan to Continue the Plutonium Inventory Reduction Effort at the Lawrence Livermore National Laboratory (LLNL)	Charles J. Beers, Jr., Rear Admiral, U.S. Navy	4/10/1994
C863S	N/A	Transmittal of Visual Examination and Sampling Guidance; Letter to Scott D. Lee, Materials and Fuels Complex-BEA Idaho	Paul C. Gomez, SPM, Central Characterization Project	6/27/2005
C864S	N/A	Email correspondence between Roy P. Grant and Carolyn Abbott and Gina Tedford re: Interface agreement between ANL-W and RWMC	Roy P. Grant, MFC	5/4/2010
C865A	N/A	Email correspondence from Roy P Grant to Carolyn Abbott re: Three containers listed on IWTS material profile ANL505T	Roy P. Grant, MFC	11/10/2008
C866S	N/A	Correspondence to Dr. Moody concerning results of EPA's baseline inspection of TRU waste characterization program implemented by AMWTP	Juan Reyes, EPA Director Radiation Protection Division,Washinton D.C.	10/3/2006
C867S	N/A	Email RE: request to evaluate scalling factors used by Hanford	James V. Seamans	6/3/2010
C869S	N/A	Correspondence from the EPA to Donald C. Cadbury, Manager, National TRU Program CBFO.	Tom Peake, Director Center for Waste Management and Regulations	06/10/2010
C870S	CBFO:NTP:DCG:MAG:10-0883:UFC 5900.00	Correspondence from David C. Moody to James R. Cooper, Acting Deputy Manager, Idaho Cleanup Project and includes Attachments 1-4. (CBFO:NTP:DCG:MAG:10-0883:UFC 5900.00)	David C. Moody	6/11/2010
C871A	n/a	Hanford Building 325 Interview with Wayne Larson (n/a)	B. Crawford	9/11/2003
C872A	n/a	Hanford Building 325 Radiochemistry Laboratory Interviews with Various Waste Management Personnel (n/a)	B. Crawford and D. Guerin	10/16/2003
C873A	n/a	Waste Material Parameter Analysis for Containers Generated from the Building 325 Radiochemistry Lab and HLW Annexes (n/a)	D. Guerin	12/18/2003
C874A	n/a	Isotopic Analysis for Containers Generated from the Building 325 Radiochemistry Lab and HLW Annexes Assays (n/a)	D. Guerin	10/27/2003
C875S	RCM-001-10	Earliest pack date for Rocky Flats waste retrieved from Pits 11 and 12 (RCM-001-10)	Randall C. Morris, Ph.D.	07/05/2010
C876A	NDK-001-10	Estimation of Number of Drums for BN004 Waste Stream (NDK-001-10)	Nancy D. Kirk	7/5/2010

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C877A	CKA-002-10	Volume Estimate for BNINW216 First/Second Stage Sludge Waste Stream (CKA-002-10)	Carolyn K. Abbott, PhD	7/5/2010
C878A	97-EAP-589	Transmittal of Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit Part A (97-EAP-589)	J. E. Rasmussen	7/18/1997
C879A	N/A	Record of Communication Interview with Gary Lanham and Stan Bos	M. Conilogue	8/10/2006
C880A	N/A	Record of Communication for Heat Sealed Bags	M. Conilogue	10/25/2006
C881S	FH-0602938	Request for Approval of Waste Incidental to Reprocessing Determination for Hanford Site Transuranic Waste Stream RLM325D (FH-0602938)	R. G. Gallagher	11/28/2006
C882S	0700042	Contract No. DE-A06-96RL13200 - Approval of Waste Incidental to Reprocessing Determination for Hanford Site Transuranic Waste Stream RLM325D (0700042)	K. A. Klein	12/29/2006
C883A	N/A	231-Z Record of Communication - M. W. McCoy and V. C. Asmund Re: PCBs and Storage Boxes	R. Swan, M.E. Lakes, J.D. Anderson	12/18/2006
C884A	N/A	Interview of Michael Wesselman by Richard Clinton concerning Sr-90/Cs-137 Ratio Determination Wesselmen	R. Clinton	3/28/2002
C885A	N/A	Email from Scott Bisping to Magdalena I. Rollosson re: Heat-Sealed Bag Question and Clarification	S. W. Bisping	07/25/2007
C886A	N/A	Email From McCoy, M. W. To Waddoups, J. M. RE: 231-Z Facility	M. W. McCoy	2/16/2007
C887A	N/A	Email from Dan Moder To: M. I. Rollosson RE: Estimated # SWBs for 231-Z Waste	D. L. Moder	7/23/2007
C888A	N/A	Email Response from Elizabeth Curfman to Richard Clinton regarding Inquiry from Caroline Sutter concerning PFP Laboratory History	R. Clinton	1/12/2000
C889A	N/A	Record of Communication for Interview of Ted Venetz Regarding Plutonium Finishing Plant Wastes	P. H. Wicks, M. E. Lakes, R. J. Swan	4/26/2007
C890A	65452-82-159	Memo To: E. T. Abramowski From: S. G. Metcalf Re: Determination of PCB Concentration in Hydraulic Oils (65452-82-159)	S. G. Metcalf	8/25/1982
C891A	N/A	Record of Communication Interviewer: M. Lakes, P. Wicks Interviewee: J. Mejia Subject: PFP Soil (2736-ZB) Building.	M. E. Lakes and P. Wicks	12/19/2006

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C892A	N/A	Record of Communication Interviewer: M. Lakes, P. Wicks Interviewee: J. Aranda Subject: PFP Soil (2736-ZB) Building	M. E. Lakes and P. H. Wicks	12/6/2006
C893A	N/A	Record of Communication Interviewer: M. Watson Interviewee: J. Aranda Subject: E-mail response from Jose Aranda about PFP waste	M. Watson	9/13/1999
C894A	N/A	Record of Communication Interviewer: M. Watson Interviewee: D. Fazzari Subject: E-mail Response from Dennis Fazzari on PFP Waste Question	M. Watson	9/13/1999
C895A	ARH-2440	Final Low-Pressure Reactor Fuel Processing Campaign - PUREX Plant Contract AT (45-)-1 20 (ARH-2440)	R. P. Corlew	4/7/1972
C896A	TB-T-XX-00X	Mixed PFP Comprehensive Debris RLMPFPCD (TB-T-XX-00X)	N/A	12/19/2007
C897A	M4T00-DCD-03-029	Memo - From: D. C. DeRosa To: R. P. Dunn Subject: NPFPD and MPFPD Waste Streams (M4T00-DCD-03-029)	D. C. DeRosa	2/7/2003
C898A	N/A	Record of Communication Interviewer: R. E. Bolls Interviewee: T. Venetz Subject: Process description of past Sand, Slag, and Crucible waste generated at PFP.	R. E. Bolls	6/30/2005
C899A	3T000-PJC-01-043	Memorandum - From: R. Clinton To: P. J. Crane Subjects: Transmittal of AK Re-eval checklist for Waste Stream NPFPD (3T000-PJC-01-043)	R. Clinton	3/21/2001
C900A	N/A	Record of Communication: Interviewer: R. Clinton Interviewee: G. Krehel Subject: Stanley Works Torpedo Levels	R. Clinton	8/15/2001
C901A	N/A	Record of Communication Interviewer: R. Clinton Interviewee: Customer Service Representative Subject: Telephone Conversation with Consumer Representative of Shell Chemical Company	R. Clinton	8/15/2001
C902A	N/A	Record of Communication Interviewer: R. Clinton Interivewee: G. Krehel Subject: Email: "Inquiry" - Chemical Make-up of Fluid in Stanely Works Torpedo Levels	R. Clinton	7/18/2001
C903A	3T000-PJC-01-158	Memorandum From: R. Clinton To: P. J. Crane Subject: Disclosure of Information Concerning the Waste Designation of a Level Recorded in TRU-WRP-01NCR -100 for Drum RHZ-220-A21300 (3T000-PJC-01-158)	R. Clinton	10/9/2001
C904A	N/A	Record of Communication Interviewer: R. J. Swan Interviewee: D. A. Marsh Subject: Drums with soil from 216-Z-12 Crib	R. J. Swan	7/11/2005

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C905A	N/A	Record of Communication Interviewer: R. Clinton Interviewee: L. Djang Subject: Emails: U-234 and Sr-90 Evaluation	L. Djang	4/4/2002
C906A	3T000-PJC-00-172	Memorandum From: P. J. Crane To: L. F. Perkins Subject: TRU Site Project Office Transmittal for Notification of Possible Target Analyte Additions (3T000 -PJC-00-172)	P. Crane	9/8/2000
C907A	n/a	Email From: K. Husted To: M.I. Rollosson Subject: RE: 231-Z Isotopic Data (n/a)	K. Husted, Fluor Hanford	7/16/2007
C908A	3T000-PJC-00-203	Memorandum From: P. J. Crane To: L. F. Perikins Subject: TRU Site Project Office Transmittal for Notification of Target Analyte Additions (3T000-PJC-00-203)	P. Crane	10/26/2000
C909A	N/A	Record of Communication Interviewer: R. Clinton Interviewee: T. Cooper Subject: Process Chemistry	R. Clinton	8/28/1998
C910A	02-MNA-006	Memorandum From: N.M. Abdurrahman To: P.J. Crane Subject: Calculations of Hanford Sr-90 Isotopic Ratio Based on its Isotopic Ratio to Cs-137 (02-MNA-006)	N.M. Abdurrahman	8/14/2002
C911A	N/A	Record of Communication Interviewer: M. I. Rollosson Interviewee: K. Husted Subject: Detection of U-232 in trace amounts during NDA MPUREXD and MPFPD containers	M. I. Rollosson	10/12/2007
C912A	N/A	Letter To: G. A. Glover From: L. R. Strickling, R. J. Swan Subject: Review of Fiberglass Reinforced Plastic Plywood Box from the 231-Z Facility	L. R. Strickling and R. J. Swan	1/5/2007
C913A	n/a	Letter To: C. Girres From: J. Bolles - Waste Services Subject: PFP Debris Waste Designation (n/a)	J. Bolles	3/31/2004
C914A	N/A	Record of Communication Interviewer: R. J. Swan, M. S. Watson, and J. D. Anderson Interviewees: M. W. McCoy, L. K. Fetrow and V. C. Asmund	R. J. Swan, M. S. Watson, and J. D. Anderson	1/25/2005
C915A	231Z-DESDSI-02-01	Letter To: File From: M. Watson Subject: DSI for 231-Z TRU Debris waste Stream Designation FRPs (231Z-DESDSI-02-01)	M. Watson	5/17/2006
C916A	N/A	Email From: M. McCoy To: M. S. Watson Subject: Re: Questions about 213-Z Containers	M. McCoy	4/20/2004
C917A	231Z-DESDSI-03-00	231-Z TRU Debris waste Stream Designation for Cement Box Container (231Z-DESDSI-03-00)	J. Waddoups	3/14/2006

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C918A	N/A	Waste Material Parameter Analysis for Waste Stream RLM325D, 325 Building Radiochemical Processing Laboratory Transuranic Debris	S. Schafer	09/24/2008
C919A	N/A	WWIS Report Radionuclides for Waste Stream RLM325D	S. Schafer	09/25/2008
C920A	FH-0003830	Letter To: G.H. Sanders From: E.S. Aromi, P.J. Crane, E.M. Greager Subject: Debris Classification for Sand, Slag, and Crucible Waste (FH-0003830)	E.S. Aromi, P.J. Crane, E.M. Greager	7/27/2000
C921A	3T000-PJC-00-045	Interoffice Correspondence To: A.G. Miskho From: R. Clinton Subject: Proposed Waste Designation of Carbon Tetrachloride Used at the Plutonium Finishing Plant (3T000-PJC-00-045)	R. Clinton	04/10/2000
C922A	M4T00-PJC-02-077	Memorandum To: P.J. Crane From: R. Clinton Subject: U-234 to U-235 and U-238 Ratios for Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA (M4T00-PJC-02-077)	R. Clinton	4/11/2002
C923A	M4T00-PJC-02-076	Memorandum To: P.J. Crane From: R. Clinton Subject: Sr-90 to Cs-137 Ratio For Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA (M4T00-PJC-02-076)	R. Clinton	4/11/2002
C924A	n/a	Clarification on PFP Lead Lined Gloves (n/a)	C. Simiele	6/15/2000
C925A	7G330-MEJ-03-001	Interoffice Memo From: Closure Projects Engineering Support To: J.G. Kristofzki Subject: Summary of Bismuth Phosphate Process and Plutonium=Uranium Extraction Process Chemical Flowsheets (7G330-MEJ-03-001)	Closure Projects Engineering Support	12/11/2003
C926A	n/a	To: L.E. Stickling From: R.J. Swan. Subject: WRP Strategy For Managing Polychlorinated Biphenyl's Under the Toxic Substances Control Act (n/a)	R.J. Swan	01/30/2008
C927A	F9000-07-019	Memorandum: To: L.R. Stickling From: J.E. Hyatt Subject: Proposal to Delay Assignment of TSCA Status to Retrievably Stored Low-Level Waste (F9000-07-019)	J.E. Hyatt	06/25/2007
C928A	n/a	Email From: E.M. Greager To: sherinance@aol.com Subject: FW:PFP Building Numbers (n/a)	E.M. Greager	05/20/2009
C929A	n/a	Memorandum - TO: CCP Records From: S. Nance, CCP AKE RE: Waste Material Parameter Analysis for Waste Stream MPFPDD (n/a)	S. Nance	03/16/2010

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C930S	N/A	Email to Micky Johnson re: Request for data	Jim Vernon, WIPP	5/24/2010
C931A	n/a	Containers Received from Waste Stream RLM231Z.001 (n/a)	n/a	N/A
C932A	M4T00-TRU-070-148, M4T00-TRU-148.1	Data Quality Objective Reconciliation, HSG Analysis Report, and AK Confirmation for 17 containers from Waste Stream 231ZD. (M4T00-TRU-070-148, M4T00-TRU-148.1)	R.P. Dunn	08/30/2007
C933S	n/a	Record of Communication - Subject: Electroplating in 231-Z (n/a)	M. Doherty	04/08/2010
C934A	n/a	Record of Communication - Interviewers: S. Schafer, S. Nance Interviewees: R.J. Swan, M.E. Lakes Subject: Feed to the Building 232-Z Incinerator (n/a)	S. Schafer, S. Nance	05/04/2010
C935S	n/a	Email - From: E. Grohs To: R. Swan Subject: RE 231Z (n/a)	E. Grohs	05/12/2010
C936A	325-DES-01-00	325 Facility Debris Waste Stream Designation (325-DES-01-00)	R.J. Swan	07/27/2004
C937A	M4T00-TRU-06-639.1	Memorandum To: R.P. Dunn From: M.H. Conilogue Subj: Data Quality Objectives Reconciliation, Headspace Gas Analysis Report, Flammable VOC Report, and Acceptable Knowledge Confirmation Checklist for 24 Containers from Waste Stream R (M4T00-TRU-06-639.1)	M.H. Conilogue	07/09/2007
C938A	SE-PC-19	Memorandum Report: Purity of Product solutions from T-5-02 and T-5-03 Runs in the Isolation Building (231) (SE-PC-19)	P.W. Crane	04/23/1945
C939A	PFP-DES-02-00	Don't Say it - Write It! TO: File FROM: M. Lakes Subject: PFP PCB Debris Designation (PFP-DES-02-00) (PFP-DES-02-00)	M. Lakes	10/11/2006
C940A	n/a	Email - From: E.L. Grohs, To: S. Nance, J. Johannesen Subject: RE: Chemical Management System (n/a)	E. Grohs	07/17/2010
C941A	JHK-001-10	Memorandum to Eric Schweinsberg and Tom Fallon, Co-located Core Sample Control Charts (JHK-001-10)	Jason Kettel	7/6/2010
C942A	JHK-002-10	Memorandum to Eric Schweinsberg: Co-Located Solid Sampling F-Test Results (JHK-002-10)	Jason Kettel	7/6/2010
C943A	JHK-003-10	Acceptable Knowledge Accuracy Assessment for July 1, 2009 to June 30, 2010 (JHK-003-10)	Jason Kettel	8/11/2010
C944A	N/A	AMWTP Hazardous waste determination (HWD) for Organic Liquid from Maintenance Activities (BN-534)	AMWTP Waste Services	
C945A	SMS-018-2004	Determination of Beryllium Content of RFETS TRU Waste (SMS-018-2004)	Scott M. Smith	12/01/2004

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C946S	ECT-001-10	Waste Container Inventories Not Included in Advanced Mixed Waste Treatment Project Transuranic Baseline Reports - ECT-001-10 (ECT-001-10)	Elizabeth C. Thiel	12/16/2010
C947S				
C948S	KN-111-01	Response to Request for Additional Information on Environmental Protection Agency (EPA) Hazardous Waste "P" and "U" Codes relative to B374 Operations (KN-111-01)	Joseph A. Legare (DOE, RF)) and Karan North (Kaiser-Hill Company, LLC, RFETS)	08/29/2001
C949A	CBFO:ORC:CAZ:KJB 01-0793 UFC 5486	Legacy Solidified TRU/PCB Waste (CBFO:ORC:CAZ:KJB 01-0793 UFC 5486)	Cynthia Zvonar, Assistant Manager, office of Regulatory Compliance	06/21/2001
C950A	N/A	Letter from John H. Smith, Chemist, to Ms. Lynne Smith, WIPP Office Director. Response to the email message of August 16, 2001 from Ms. Cynthia Zvonar of the Carlsbad Field Office which describes certain DOE TRU wastes which contain non-liquid PCBs.	John H. Smith, Ph-D, Chemist, EPA	02/28/2002
C951S	N/A	C. Maupin's notebook page outlining AMWTP communications with EPA Region X on use and approval of Micro Cell-E absorbent for PCB waste.	Christian Maupin, AMWTP subcontractor for RCRA permitting	01/04/2010
C952S	n/a	E-mail Correspondence from Murthy Devarakonda to Michael Rivera. Subject: IDC 003 Packaging (n/a)	Murthy Devarakonda	08/03/2005
C953A	HWD 061604-01	Letter to File RE: Absorbed Supercompactor Squeezants (IDCs BN-507 and BN-514). HWD 061604-01 (HWD 061604-01)	AMWTP	01/31/2011
C954S	CBFO:NTP:NC:GS:11-0167:UFC 2300.00	Memorandum to Mark Searle, Acting Deputy Manager Idaho Cleanup Project, Recertification INL AMWTP Audit A-10-24 (CBFO:NTP:NC:GS:11-0167:UFC 2300.00)	Edward Ziemianski, Acting Manger, CFO	03/03/2011
C955A	HWD 021411-01	HWD 021411-01: TRU Shredder Boxes from the Advanced Mixed Waste Treatment Facility (IDC BN-539) (HWD 021411-01)	Darren Aitken	02/14/2011
C956A	WMP-400	Record of Communication for Packaging Cans Used in Hot Cell Facilities (WMP-400)	M.H. Conilogue	10/25/2006
C957A	231-Z	231-Z Carbon Tetrachloride Waste Code Change from D019 to F001 (231-Z)	J.M.Waddoups	02/14/2007
C958A	N/A	Solidfied 231-Z Waste	R.J. Swan	12/18/2006
C959A	N/A	Interview with Jose Aranda	R. Clinton	08/28/1998

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C960A	N/A	Interview with R. Gregory	R. Clinton	08/28/1998
C961A	N/A	Questionnaire	G. Backlund	06/04/1999
C962A	N/A	E-mail re: 224-T Wastes	J. Anderson	07/07/2007
C963A	N/A	Email from Aranda to Clinton re: Question About Heat Sealing	R. Clinton	12/02/1999
C964A	16300-AC90-041	Fax from Manthos to Hamilton re: Values used for WIPP Waste Calculations at PFP (16300-AC90-041)	E.J. Manthos	10/08/1990
C965A	N/A	Email from Fred Riedel	Fluor Federal Services	02/09/2000
C966A	N/A	Letter from P.J. Crane	R. Clinton	10/01/1998
C967A	N/A	Interview of J. Estey	M. Watson	10/03/2000
C968A	N/A	Interview of J.A. Mortenson re: Heat Sealed Packages	M. Watson	09/19/2000
C969A	N/A	Interview of R.D. William re: PFP Heat Sealed Packages	M. Watson	09/14/2000
C970A	N/A	Interview of R.E. Allenby re: PFP Heat Sealed Packages	M. Watson	09/14/2000
C971A	N/A	Interview of R. Lehrschall re: Heat Sealed Packages	M. Watson	09/27/2000
C972A	M4T00-PJC-02-076	Sr-90 To Cs-137 Ratio for Appendix E of Hanford Site Transuranlc Waste Certification Plan for NDA (M4T00-PJC-02-076)	R. Clinton	04/11/2002
C973A	3T000-PJC-01-156	Disclosure of Miscertification Information and Visual Examination Selection for Fiscal Year 2002 (3T000-PJC-01-156)	R. Clinton	10/09/2001
C974A	03-PTD-0010	Letter - Subject: Contract No. DE-AC06-96RL 13200 - DOE Approval for Termination of Safeguards on Specific Attractiveness D Mixed Oxide Scrap at the Plutonium Finishing Plant (03-PTD-0010)	M.H. Schlender	11/15/2002
C975A	03-PTD-0056	Letter- Subject: Contract No. DE-AC06-96RL 13200 - DOE Approval for Termination of Safeguards on Specific Attractiveness D Mixed Oxide Scrap at the Plutonium Finishing Plant (03-PTD-0056)	K.A. Klein	03/20/2003
C976A	N/A	Email From: M.M. Anderson To: M.I. Rollosson Subject: FW: Coffins from PFP – meeting notes	M.M. Anderson	08/02/2006
C977A	N/A	Email in Response to Questionnaire sent by M.S. Watson to Several Former Workers at PFP Regarding the Use of Sealer Bags Generating Heat Sealed Packages	R. R. Trainor	09/06/2000

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
C978A	65452-82-114	Internal Memo To: E. T. Abramowskl From: S.G. Metcalf Subject: PCB Determination Results in Contaminated Hydraulic Oils (65452-82-114)	S. G. Metcalf	05/19/1982
C979S	N/A	Email From: J. Anderson To: R.J. Swan Subject: RE: 231-Z Concrete Box Again	J. Anderson	03/14/2005
C980A	N/A	231-Z Record of Communication - Steve McGaughey	M. Watson	04/19/2006
C981A	M4T00-DCD-03-028	Memorandum - Subject: Acceptable Knowledge Documentation for the Determination of Beryllium Concentration in Waste Streams NPFPD and MPFPD (M4T00-DCD-03-028)	S. W. Bisping	02/06/2003
C982A	M2C00-02-026	Memo to C.S. Sutter re: PFP Residues Stabilization Activity Based Startup Plan for Group 2 Alloys (M2C00-02-026)	A. K. McDowell	02/25/2003
C983A	N/A	Designation of TRU Drums Containing Heat Sealed Inner Packages	L.J. Estey	05/07/1990
C984A	3T000-PJC-01-090	Transmittal of Acceptable Knowledge Confirmation Checklist for 19 Waste Containers from Waste Stream MPFPD (3T000-PJC-01-090)	R. Clinton	06/07/2001
C985S	BWH-FF-IA-FP-200001834	FY2000 Fire Protection Assessment - Buildings 231-Z (BWH-FF-IA-FP-200001834)	J. R. Bell	06/20/2000
C986A	15F00-96-068	Internal Memo From: Plutonium Process Support Laboratories To: L. Dayley Subject: Results of Sand, Slag, and Crucible Testing for Cementation Process (15F00-96-068)	S. A. Jones, J. L. Winstead	08/07/1996
C987A	N/A	Record of Communication with D. Guerin re: Isotopic Analysis for RLM325D	M. H. Conilogue	09/27/2006
C988S	33220-99-GCT-067	Internal Memo - Subject: Disclosure of Reference Sources Used in Compiling Acceptable Knowledge Documentation (33220-99-GCT-067)	R. Clinton	08/12/1999
C989A	N/A	Communication to R. Clinton re: Occurrence of Cs-137 and K-40 in Transuranic Waste	M. Cantaloub	02/20/2001
C990A	80132-89-069	Internal memo to R.L. Granberg re: Solvent Waste Designations (80132-89-069)	R. J. Landon	05/15/1989
C991A	HW-29200	Plutonium Purification and Fabrication Technical Manual (HW-29200)	T. Miskho	04/01/1954
C992A	N/A	Slurping Vacuum System and Analytical Laboratory Room 146 Repackaging Process	N. Seguin	09/22/1999

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C993A	15540-094-EJM-029	Disposal Request for Downloaded CCL4 - TBP Waste - PFP-94-000189 (15540-094-EJM-029)	E.J. Manthos	02/23/1994
C994A	8F000-SLF-00-23	Memorandum To: P. J. Crane Subject: Analysis of TICs with Respect to Possible Addition to Target Analyte List (8F000-SLF-00-23)	S.L. Fitzgerald	09/13/2000
C995A	231Z-DESDSI-01-01	231-Z TRU Debris Waste Stream Designation Revision 1 for Drums (231Z-DESDSI-01-01)	M. S. Watson	05/17/2006
C996A	15F0096-062	Internal Memo To: E. G. Backlund Subject: Corrosivity Test on Cemented Sand, Slag, and Crucible Items (15F0096-062)	M. L. Winstead	07/10/1996
C997A	N/A	Addendum to TSD Record	Joelle Stamm	12/13/2004
C998A	01-RCA-345	Submittal of Corrective Measures Report for Notice of Correction, Dated March 1, 2001, From the State of Washington Department of Ecology (01-RCA-345)	J. Hebdon	07/02/2001
C999A	N/A	Email from Ted Venetz re: Fab Oil Clarification	T. Venetz	04/10/2009
D001A	SH-05-2002	Assignment of Hazardous Waste Numbers D006 and D008 to RF IDC-802 (SH-05-2002)	Sheila Hailey	11/18/2002
D002A	SH-02-2002	Assignment of Hazardous Waste Number F003 to RF IDC-421 (SH-02-2002)	Sheila Hailey	11/18/2008
D003A	SH-03-2002	Removal of Hazardous Waste Numbers from RF IDC-409 and RF IDC-414 (SH-03-2002)	Sheila Hailey	11/18/2002
D004A	SH-04-2002	Assignment of Hazardous Waste Number D022 to RF IDC-978 (SH-04-2002)	Sheila Hailey	11/18/2002
D005A	SH-01-2002	Removal of Hazardous Waste Number D001 from RF IDC-33A, RF IDC-33B and RF IDC-339 (SH-01-2002)	Sheila Hailey	11/18/2002
D006A	SH-06-2002	Removal of Hazardous Waste Number D002 from RF IDC-001, RF IDC-002, RF IDC-800, RF IDC-007, RF IDC-803, and RF IDC-807a (SH-06-2002)	Sheila Hailey	12/11/2002
D007A	SH-09-2002	Correct RF IDC Assignment for Building 374 Wet Sludge-Cemented (SH-09-2002)	Sheila Hailey	12/11/2002
D008A	SH-08-2002	Addition of Hazardous Waste Numbers to RF IDC-339 (SH-08-2002)	Sheila Hailey	12/11/2002
D009A	SH-07-2002	Addition of Hazardous Waste Numbers F006, F007, and F009 to RF IDC-371 and RF IDC-377 (SH-07-2002)	Sheila Hailey	12/11/2002

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D010A	SH-19-2002	Application of D002 to RF IDC-292 Containers Containing Excess Free Liquids (SH-19-2002)	Sheila Hailey	12/18/2002
D011A	SH-11-2002	Assignment of HWN D011 to RF IDC-004 (SH-11-2002)	Sheila Hailey	12/18/2002
D012A	SH-12-2002	Assignment of HWN D029 to RF IDC-420 and RF IDC-421 (SH-12-2002)	Sheila Hailey	12/18/2002
D013A	SH-13-2002	Application of D001 to RF IDC-480 Containers Containing Excess Free Liquids or Compressed Gases (SH-13-2002)	Sheila Hailey	12/18/2002
D014A	SH-14-2002	Application of D002 to RF IDC-440 Containers Containing Excess Free Liquids (SH-14-2002)	Sheila Hailey	12/18/2002
D015A	SH-15-2002	Application of D002 to RF IDC-441 Containers Containing Excess Free Liquids (SH-15-2002)	Sheila Hailey	12/18/2002
D016A	SH-16-2002	Application of D002 to RF IDC-336 Containers Containing Excess Free Liquids (SH-16-2002)	Sheila Hailey	12/18/2002
D017A	SH-17-2002	Removal of Hazardous Waste Number (HWN) D002 from RF IDC-33A and HWNs D001 and D002 from RF IDC-44A (SH-17-2002)	Sheila Hailey	12/18/2002
D018A	SH-18-2002	Removal of Hazardous Waste Number D001 from RF IDC-48A (SH-18-2002)	Sheila Hailey	12/18/2002
D019A	SH-10-2002	Removal of Hazardous Waste Numbers from RF-432(Nonhazardous) (SH-10 -2002)	Sheila Hailey	12/18/2002
D020A	SH-20-2002	Assignment of HWNs to BC IDC-201, BC IDC-202, BC IDC-203, and BC IDC -204 (SH-20-2002)	Sheila Hailey	12/23/2002
D021A	SH-001-2003	Characterization of RF IDC-311 as a Nonhazardous Waste (SH-001-2003)	Sheila Hailey	1/18/2003
D022A	D022A	Telephone Interview Record of Scott Kitts and George Kirsch, BCL, conducted by Kevin Peters, WASTREN, Inc. "Discussions about JN-4 Waste Stored in JN-3." (D022A)	conducted by Kevin Peters, WASTREN, Inc	7/22/1998
D023A	D023A	Letter to AK Record authored by Scott Smith, WASTREN, Inc. "Discrepancy Report Relating to Building JN-4 Waste Inventory." (D023A)	Scott Smith, WASTREN, Inc.	2/18/2002
D024A	N/A	Correction of Invalid EPA HWN assigned in the Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory (BNFL-5232-RPT-TRUW-04)	Sheila Hailey	5/12/2003
D025A	N/A	Characterization of RF IDC 310 as a Nonhazardous Waste	Sheila Hailey	09/16/2003

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
D026A	N/A	Inclusion of Hazardous Waste Number F003 to RF IDCs 001, 002, and 800	Sheila Hailey	9/16/2003
D027A	N/A	Inclusion of Hazardous Waste Number F004 to RF IDC-374	William J. Erhardt	9/17/2003
D028A	N/A	Document Error for Box Dimensions Reported in P364A	Sheila Hailey	2/12/2004
D029A	BJT-001-2004	Generation Location for Prefix 0089 Wastes (BJT-001-2004)	Betty Tolman	7/22/2004
D030A	BJT-002-2004	Generation Location for Prefix 0090 Wastes (BJT-002-2004)	Betty Tolman	8/17/2004
D031A	SPC-018-2005	Beryllium Greater than 1% by Weight in RF-IDC 800 Waste (SPC-018-2005)	Steve Carpenter	3/14/2005
D032A	N/A	Generation dates for BN004	Vivian Sendelweck	7/31/2005
D033A	CKA-002-2005	Removal of Hazardous Waste Number (HWN) D029 from Rocky Flats (RF) Wastes IDC 420, IDC 421, and IDC 422 (CKA-002-2005)	Carolyn Abbott	07/20/2005
D034A	CKA-005-2005	Discrepancy Report D034A - New Packaging Configuration for Rocky Flats (RF) IDC 001 (First Stage Sludge) (CKA-005-2005)	Carolyn Abbott	8/3/2005
D035A	CKA-007-2005	Discrepancy Report D035A - Assessment of HWN D001 Assigned to Rocky Flats (RF) Filter Waste (IDCs 335, 338, 490) (CKA-007-2005)	Carolyn Abbott	8/9/2005
D036A	CKA-008-2005	Assessment of HWNs Assigned to Rocky Flats (RF) Filter Waste (IDCs 328) (CKA-008-2005)	Carolyn Abbott	8/9/2005
D037A	CKA-009-2005	Assessment of F-Listed EPA HWNs Associated with 1,1,2-Trichloro-1,2,2-trifluoroethane in the Rocky Flats (RF) Filter Waste (CKA-009-2005)	Carolyn Abbott	8/15/2005
D038A	N/A	Not Used	N/A	N/A
D039A	CKA-013-2005	Discrepancy Report D039A - Difference in the assignment of HWNs to Mound Acidic/Caustic Waste, IDCs MD 834 and MD 835 between AMWTP-RPT-TRUW-13 and AMWTP-RPT-TRUW-23 (CKA-013-2005)	Carolyn Abbott	9/1/2005
D040A	CKA-014-2005	Discrepancy in dates of waste generation reported for Mound Laboratory wastes in AMWTP-RPT-TRUW-13 (CKA-014-2005)	Carolyn Abbott	9/1/2005
D041A	MLJ-001-2005	Assessment of HWNs Assigned to Rocky Flats Metal Waste (MLJ-001-2005)	Micky L. Johnson	3/10/2005
D042A	MLJ-004-2005	Discrepancy Report D042A -Assessment of Acceptable Knowledge information in AMWTP-RPT-TRUW-05 for Rocky Flats metal waste (MLJ-004 -2005)	M.L. Johnson	9/15/2005

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
D043A	D043A	Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Description Code (IDCs): RF-292, RF-371 and RF-377 (D043A)	Tim Venneman	01/29/2009
D044A	TV-006-2006	Assessment of buildings that generated resin waste item description codes (IDCs): RF430, RF431, RF432 and RF822 (TV-006-2006)	Tim Venneman	2/1/2006
D045A	TV-003-2006	Assessment of hazardous waste numbers (HWNs) assigned to BN161 Waste Stream Profile [i.e., Item Description Codes (IDCs): RF371 and RF377] (TV-003-2006)	Tim Venneman	1/18/2006
D046A	TV-004-2006	Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Description Codes (IDCs): RF 432 and RF822 wastes (TV-004-2006)	Tim Venneman	1/18/2006
D047A	MLJ-005-2005	Assessment of Hazardous Waste Numbers Assigned to BN304 Waste stream profile, Mound Debris Stream (MLJ-005-2005)	Micky Johnson	11/30/2005
D048A	TV-001-2006	Assessment of buildings that generated firebrick debris waste item description codes (IDCs): ARF371 and RF377 (TV-001-2006)	Tim Venneman	1/18/2006
D049A	MLJ-007-2005	Discrepancy Report D049A - Assessment of Acceptable Knowledge information in AMWTP-RPT-TRUW-05 for Mound metal waste (MLJ-007-2005)	Micky L.Johnson	12/28/2005
D050A	MLJ-003-06	Estimate of Volumes for Cemented Sludge Waste (BN836) (MLJ-003-06)	M. L. Johnson	4/27/2006
D051A	CKA-020-2006	Assessment of the presence of 137Cs in Rocky Flats Plant Waste (CKA-020 -2006)	Carolyn Abbott	4/10/2006
D052A	N/A	CCP Acceptable Knowledge Source Document Discrepancy Resolution; Historical Assignment of EPA Hazardous Waste Numbers to Graphite Waste	Kevin Peters, Rick Chavez	5/5/2005
D053A	N/A	CCP Acceptable Knowledge Source Document Discrepancy Resolution; Waste Stream Number ID-RF-S5300-A; Historical Assignment of EPA Hazardous Waste Numbers to Combustibles and Plastic debris.	Jeff Harrison, Barbara Bloomfield	9/21/2005
D054A	N/A	CCP Acceptable Knowledge Source Document Discrepancy Resolution; Waste Stream Numbers ID-RF-S3114 and ID-RF-S3150-A; Historical Assignment of EPA Hazardous Waste Numbers to Organic Setups and Solidified Organics.	Jeff Harrison, Barbara Bloomfield	12/21/2005
D055A	N/A	CCP Acceptable Knowledge Source Document Discrepancy Resolution; Waste Stream Numbers ID-RF-S5100-A; Historical Assignment of EPA Hazardous Waste Numbers to Raschig Rings.	Jeff Harrison, Barbara Bloomfield	8/9/2005

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D056A	MLJ-006-06	Assessment Of Hazardous Waste Numbers Assigned to Cemented Sludge (BN836) (MLJ-006-06)	M.L. Johnson	5/10/2006
D058A	TV-011-06	Assessment of the hazardous waste number F003 identified for Rocky Flats IDCs: RF420, RF421, RF422, and RF425 (TV-011-06)	Tim Venneman	6/13/2006
D059A	CKA-002-06	Assessment of the hazardous waste number F003 identified for Rocky Flats IDC 339 (CKA-002-06)	Carolyn Abbott	8/2/2006
D060A	CKA-001-06	Discrepancy in the Acceptable Knowledge Information for Item Description Codes 806 and 823 Wastes Reported in the INEL-96.0280 Report, "Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste," Revision 03, Dated February 28, 2003, Section 17 and Acceptable Knowledge Documents in the Acceptable Knowledge Record (CKA-001-06)	Carolyn Abbott	8/2/2006
D061A	D061A	Prefix use, building numbers and process changes that occurred during the operational history at the Rocky Flats (RF) facility (D061A)	Randall C. Morris	7/14/2009
D062A	D062A	Volume Estimate for Waste Stream BN222, Solidified Plutonium Recovery Incinerator Waste. (D062A)	M. L. Johnson	06/28/2010
D063A	D063A	Advanced Mixed Waste Treatment Project (AMWTP), Rocky Flats Environmental Technology Site (RFETS) and Idaho National Laboratory's (INL) Accelerated Retrieval Project (ARP) Subsurface Disposal Area (SDA) hazardous waste determinations (HWDs)/Hazardous waste numbers (HWNs) for roaster oxide. (D063A)	Tim Venneman	8/27/2008
D064A	D061A	Discrepancy report to resolving the assignment of F039 to IDC RF-374. (D061A)	T. Venneman	8/26/2008
D070A	N/A	Advanced Mixed Waste Treatment Project (AMWTP) TRU and AMWTP mixed low-level waste (MLLW) program's hazardous waste determinations (HWDs)	Tim Venneman	6/11/2009
D073A	N/A	Assessment of Hazardous Waste Numbers Assigned to Rocky Flats Description Code (IDCs): RF-292 and 807b.	Tim Venneman	01/29/2009
D074A	N/A	Discrepancy resolution to resolve the F003 HWN assignment on IDCs: RF-292 and RF-807b/696	Tim Venneman	2/12/2009

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D075A	D075A	Identification of containers of roaster oxide (roasted depleted uranium)sent from Rocky Flats Plant to Idaho. (D075A)	Carolyn K. Abbott	10/20/2009
D076A	D076A	Discrepancy Report D076A, Resolution of the F003 HWN assignment between AK source documents and WIPP-approved WSPFs (D076A)	Bill Erhardt	9/19/2009
D077A	N/A	Discrepancy in assignment of HWNs D036/F004 to RF waste	Carolyn Abbott	07/14/2010
D078A	D078A	Assignment of EPA code P015 to IDC's RF-001, RF-002, RF-003, RF-007, and RF-372 (D078A)	Gina Tedford	03/16/2010
D079A	n/a	Email From: D. Guerin To: M.H. Conilogue Subject: AK Source Doc. C004 for Bldg. 325 (n/a)	D. Guerin	9/27/2006
D080A	n/a	Acceptable Source Document Deficiency - Interview: Mike Conilogue, Molly Anderson, Gary Lanham, and Sam Bos August 3, 2006 (n/a)	B. Crawford, R.J. Swan, R.E. Bolls, M.H. Conilogue, M.M. Anderson	8/3/2006
D081A	n/a	Acceptable Knowledge Source Document Discrepancy Resolution (n/a)	L. Porter, D.I. Rollosson, M. Rollosson	04/07/2010
D082A	n/a	Acceptable Knowledge Source Document Discrepancy Resolution (n/a)	N. McCants	04/22/2010
D083A	N/A	Acceptable Knowledge Source Document Discrepancy Resolution - RLM231ZD.001	N/A	04/13/2010
D084A	n/a	Acceptable Source Document Discrepancy Resolution (MPFPDD) (n/a)	S. Schafer, V. Waldram	05/10/2010
D085A	N/A	Acceptable Knowledge Source Document Discrepancy Resolution - RLM325D.001	S. Nance, V. Waldram	06/14/2010
D086A	N/A	Discrepancy Report D086A -Assignment of HWNs to Rocky Flats Organic Setup Wastes	AMWTP	???????
D087S	N/A	Discrepancy report addressing P-listed HWNs associated with INL SDA ARP activities.	AMWTP	08/20/2012
D088A	D088A	Estimate of Volume and Revision of Generation Start Date for Plutonium Recovery Ash Waste Stream (BN421) (D088A)	M. L. Johnson	05/06/2011
D089A	n/a	Discrepancy Resolution. Incorrect EPA Hazardous Waste Number. (n/a)	Scott Smith	03/11/2008
D090A	N/A	Discrepancy Form with Resolution that 231-Z Carbon Tetrachloride Designation Code should be F001 not D019, and related E-mail	M. I. Rollosson	07/11/2007

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D091A	N/A	AK Source Document Discrepancy	R. Clinton	05/20/1999
D092A	N/A	NaI Discrepancy	R. Clinton	07/15/1999
D093A	N/A	CCP NCR and CAR Logs for 2003 and 2004	M. M. Anderson	07/19/2009
D094A	D094A	Discrepency Report relating to ANL-E, INL and AMWTP historical waste identification using content code Vs IDC over time. (D094A)	Tim Venneman	01/30/2012
D095A	N/A	Discrepancy Report for Graphite Waste	AMWTP	10/20/2011
D096A	D096A	Discrepancy Report resolving the HWNs for AMWTP ANL-E legacy wastes. (D096A)	Tim Venneman	01/30/2012
D097A		Discrepancy Report for ANL-E waste volumes ()		
D098A	N/A	Discrepancy Report (D098A) for legacy waste associated with INL generators	Tim Venneman	09/01/2012
P001A	WO-4500-H	TRU Waste Compliance Program for WIPP-WAC (U). (WO-4500-H)	Rockwell International	1/16/1989
P002A	RFP-4095	Organic and Sludge Immobilization System. RFP-4095, Petersen, R.D. (RFP -4095)	Petersen, R.D.	N/A
P003A	WC-4500-D	Quality Assurance Program for TRU Waste Certification. WC-4500-D, Rockwell International (WC-4500-D)	Published by Rockwell Waste Certification. Obtained from EG&G Rocky Flats Transuranic Waste Program Files (J. O'Leary)	10/28/1988
P004A	N/A	Rocky Flats Plant Waste Management Site Plan	Rockwell Waste Operations	12/1/1987
P005A	Traffic 300-1	Procedure for Labeling and Marking Unclassified TRU Waste Containers for Shipment to INEL. Traffic 300-1, Rockwell International (Traffic 300-1)	Published by Rockwell Traffic. Obtained from Transuranic Waste Programs.	07/01/1988
P006A	RFP-3739	Gas Generation Results and Venting Study for Transuranic Waste Drums RFP-3739 (RFP-3739)	A. R. Kazanjian, P. M. Arnold, W. C. Simmons, and E. L. D'Amico	9/23/1985
P007A	WO-4000-A	Waste Operations Internal Document Control for Documents Pertaining to the WIPP-WAC. (WO-4000-A)	Rockwell Waste Operations	1/9/1989

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P008A	I-1002-C/0	Packaging and Handling Line- and Nonline-Generated Materials (U) (I-1002-C/0)	Rockwell International	4/26/1988
P009A	CSE 80-0017	Characterization and Categorization Study of TRU Waste for EG&G. CSE 80-0017, Luckett, L.L. and P.T. Faccini (CSE 80-0017)	Luckett, L.L. and P.T. Faccini	N/A
P010A	WC-4003-I	Solid Waste Inspection. WC-4003-I. Revisions A-I incorporated into document., Rockwell International (WC-4003-I)	Rockwell International, Copy obtained from Transuranic Waste Programs at RFP.	02/07/1990
P011A	N/A	FY-1987 Waste Operations Operating Plan, Rockwell International	Rockwell International	1987
P012A	DOE/WIPP 01-3194	TRUPACT-II Content Codes (TRUCON). 89-004, Rev. 6 (DOE/WIPP 01-3194)	DOE/WIPP	06/01/2005
P013A	PSD87-059	EG&G Sampling Program Results FY 1987. PSD87-059, Watson, L.E. (PSD87-059)	Rockwell International	12/1/1987
P014A	CO-4500-A	TRU Waste Certification Program for WIPP-WAC (U). (CO-4500-A)	Rockwell International	5/24/1983
P015A	EGG-WM-6503	TRU Waste Sampling Program: Volume I - Waste Characterization (EGG-WM-6503)	Clements, Thomas L. Jr., and Donald E Kudera	09/00/1985
P016A	INEL-95/0281	Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste (INEL-95/0281)	Wastren, Inc.	07/00/1995
P017A	RFP-4604	Preliminary Assessment of Real-Time Radiography and Visual Characterization for Selected Waste Categories. (RFP-4604)	Ziegler, D. L., and R. V. Harder.	10/22/1993
P018A	RFP-4311	Waste Drum Gas Generation Sampling Program at Rocky Flats During FY1988 (RFP-4311)	D.K. Roggenthen, T.L. McFeeters, R.G. Nieweg	2/11/1991
P019A	RFP-4171	HEPA Filter Optimization/Implementation (RFP-4171)	Nenni, J. A.	2/10/1998
P020A	RFP-3357	Characteristics of Transuranic Waste at Department of Energy Sites. (RFP-3357)	Jensen, R. T., and F. J. Wilkinson III.	05/00/1983
P021A	PSD86-061	EG&G Drum Sampling Program Results FY 1986 (PSD86-061)	P. M. Arnold	10/00/1986
P022A	PSD089-011	EG&G Sampling Program Results FY 1989. Watson. L. E. PSD89-011, (PSD089-011)	Watson. L. E.	2/1/1989

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P023A	N/A	(Task 5 Draft Report) Estimating Historical Emissions from Rocky Flats	Prepared by ChemRisk for the Colorado Department of Health.	11/1/1992
P024A	WM-F1-82-021	Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes (WM-F1-82-021)	T. L. Clements, Jr.	10/00/1982
P025A	N/A	Standard for DOT-17C 55 Gallon Drum. Rocky Flats Plant STD No. SX-200 (formerly P.E. No. P12413). Revisions A (original) through G incorporated into document. Original Issue: August 9, 1977. Revision G: June 30, 1986.	Rockwell International.	6/30/1986
P026A	WC-4003-A	Transuranic Solid Waste Inspection (U) (WC-4003-A)	Rockwell International	11/11/1985
P027A	WIPP/DOE - 069	TRU Waste Acceptance Criteria for the waste Isolation Pilot Plant. WIPP/DOE. WIPP/DOE-069. Rev. 3. Document's Forward describes Revisions 1, 2, and 3. (WIPP/DOE - 069)	Published by Westinghouse Electric Corporation. Obtained from WASTREN office library.	1/1/1989
P028A	WIPP-DOE-144	TRU Waste Certification Compliance Requirements for Acceptance of Newly Generated Contact-Handled Wastes to be Shipped to the Waste Isolation Pilot Plant. (WIPP-DOE-144)	Published by Westinghouse Electric Corporation	01/01/1989
P029A	RFP-3345.	Safety Analysis Report for Packaging – Corrugated Steel Container (SAND Box) for DOE Specification 7A Packaging. (RFP-3345.)	Ronald P. Brugger	5/16/1983
P030A	WPS 89-001	Drop Test of DOT Specification 7A Type A Metal Corrugated Box (SANDbox) with a ¾" Plywood Liner. (WPS 89-001)	L. A. Bearly and J. K. Paynter	6/7/1989
P031A	WPS 88-001	Full-Scale Drop-Impact Tests with DOT Specification 7A Waste Containers. (WPS 88-001)	L. A. Bearly, J. K. Paynter, and E. F. Lombardi.	12/9/1988
P032A	WC-4004-A	Waste Item Description Code Manual (WC-4004-A)	Published by Rockwell International Waste Certification.	04/01/1987
P033A	INEL-95/0397	Summary of Transuranic Waste Characterization Programs at the INEL (1979 -Present) (INEL-95/0397)	Sheila Hailey.	9/1/1995
P034A	HSE 21.01	Health, Safety & Environment Manual. Disposal of Excess Chemicals, Waste Oils, and Organic Solvents (HSE 21.01)	Published by Rockwell Energy Systems Group.	7/23/1982
P035A	N/A	Backlog Residues at the DOE Rocky Flats Plant: Residue IDC Descriptions.	DOE Rocky Flats Plant	9/1/1993

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P036A	IAEA-SR-10/26	Radioactive Waste Package Development at the Rocky Flats Plant. (IAEA-SR-10/26)	Richard J. Melini, David L. Cash, and Kazuji Terada.	N/A
P037A	N/A	Rocky Flats Environmental Technology Site 1995 Annual Land Disposal Restriction Progress Report.	Published by US DOE Rocky Flats Field Office.	3/31/1995
P038A	CE-010-001	Residue Elimination Project Residue Analysis Study. (CE-010-001)	EG&G Rocky Flats	10/22/1992
P039A	1-M12-WO-4034	Rocky Flats Plant Radioactive Waste Packaging Requirements. (1-M12-WO-4034)	Published by EG&G Rocky Flats Radioactive Waste Programs	9/1/1994
P040A	CO-4017-F	Operating the Building 771 Waste Collection System (Decontamination Shower and Process Sinks)(U). (CO-4017-F)	Rockwell Waste Operations.	9/24/1984
P041A	WO4026-A/O	Waste Receiving and Transferring, Second Stage Tanks (U) (WO4026-A/O)	Rockwell Waste Operations.	11/9/1987
P042A	WO-4004-A	Liquid Waste Processing (Second Stage) (U). (WO-4004-A)	Rockwell Waste Operations.	1/1/1987
P043A	WO-4500-F	TRU Waste Compliance Program for WIPP-WAC (U). (WO-4500-F)	Rockwell Waste Programs	1/19/1987
P044A	94-RF-06806	Evaluation of RFP TRU/TRU-Mixed Inventory for Compliance with Selected WIPP and TRAMPAC Requirements. (94-RF-06806)	Published by EG&G Rocky Flats.	6/22/1994
P045A	SX-231	Standard for Corrugated Metal Waste Container (Steel Box). (SX-231)	Published by Rockwell International.	8/28/1983
P046A	RFP-2444 (Draft).	ATMX-600 Rail Car Safety Analysis Report. (RFP-2444 (Draft).)	Published by Rockwell International Product Engineering and Nuclear Safety. Copy obtained from J. K. Paynter's files	10/1/1985
P047A	WO-5014	Filtering, Drying, Conveying, Cementing, and Packaging Sludge (U). (WO-5014)	Rockwell Waste Operations	1987.
P048A	WO-4040	Waste Operations Supplies (WO-4040)	Rockwell Waste Operations	10/22/1989
P049A	N/A	Annual Land Disposal Restriction Progress Report. Rocky Flats Plant. 1994.	Published by US Department of Energy Rocky Flat Office at Golden, CO.	3/31/1994

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P050A	WIPP-DOE-069	Waste Acceptance Criteria for the Waste Isolation Pilot Plant. (WIPP-DOE-069)	Published by DOE/WIPP. Copy obtained from WASTREN office library	12/1/1991
P051A	N/A	Rocky Flats Environmental Technology Site Proposed Site Treatment Plan. Background Volume and Compliance Plan Volume.	Published by U.S. DOE Rocky Flats Field Office at Golden, CO	3/30/1995
P052A	NA	Rocky Flats Environmental Technology Site (RFETS) Backlog Waste Reassessment Baseline Book (BWRBB) (NA)	Rocky Mountain Remediation Services, LLC	5/5/1994-3
P053A	N/A	(Tasks 3 & 4 Final Draft Report) Reconstruction of Historical Rocky Flats Operations and Identification of Release Points.	ChemRisk	8/1/1992
P054A	WO-4016-E	Handling Miscellaneous Wastes in Size Reduction Building 776. (WO-4016-E)	Published by Rockwell Waste Operations	8/15/1988
P055A	CO-3002	Inspection of Raschig Rings in Contaminated Tanks (CO-3002)	Rocky Flats Plant, Rockwell Operational Compliance and Controol.	11/3/1988
P056A	CO-3001	Removal and Replacement of Raschig Rings (CO-3001)	Rocky Flats Plant, Rockwell Operational Compliance and Control	10/9/1989
P057A	771.037	Operational safety analysis for Raschig ring inspection, removal, and replacement (771.037)	Rockwell Plutonium Operations	7/31/1989
P058A	N/A	Rocky Flats Plant Hazardous Waste Determination Status Report No. 2	Wastren, Inc.	9/16/1991
P059A	FO-0015	Graphite Process Operations in Building 707 (FO-0015)	Rocky Flats Technical Operations Control	1991
P060A	707-V3.2	Waste Stream and Residue Identification and Characterization Building 707 (707-V3.2)	Wastren, Inc.	1992
P061A	771-V3.2.	Waste Stream and Residue Identification and Characterization Building 771. 771-V3.2. 1992. (771-V3.2.)	WASTREN, Inc.	1992
P062A	779-V3.2	Waste Stream and Residue Identification and Characterization Building 779. 779-V3.2. (779-V3.2)	WASTREN, Inc.	1991.

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P063A	WO-4034-C	Packaging Wastes for Shipment Offsite (U). (WO-4034-C)	Rockwell Waste Operations	10/13/1986
P064A	WO-4034	Rocky Flats Plant Radioactive Waste Packaging Requirements (WO-4034)	Rocky Flats	7/8/1988
P065A	000195	Material Safety Data Sheet for Purifloc (R) A23 Flocculant. (000195)	Dow Chemical U.S.A. , Copy obtained from MSDS Book in Building 774.	3/1/1985
P066A	N/A	Material Safety Data Sheet for ENVIROSTONE (and related data).	United States Gypsum Company. Copy obtained from MSDS Book in Building 774.	5/12/1986
P067A	N/A	Waste Stream Identification and Characterization, Area 4, Volume 1.	U.S. D.O.E. -- Rocky Flats Plant	4/6/1987
P068A	N/A	Chemical Safety Bulletins Building 81 – 83. The Dow Chemical Company. Rev. 7-18-62.	The Dow Chemical Company	7/18/1962
P069A	6016-01	Nuclear Materials Control Elements printout. SAN Database. (6016-01)	Copy obtained from Al Morgan, Safe Sites of Colorado.	6/1/1984
P070A	774.001	Operational Safety Analysis (OSA). Waste Receipt and Processing No. 774.001. (774.001)	Copy obtained from Building 774 Operations.	4/19/1995
P071A	WO-2026	Waste Receiving and Transferring (Second Stage) Bldg. 774. (WO-2026)	RF Waste Operational control Systems	4/20/1990
P072A	WO-2010	EG&G Rocky Flats Plant Waste Operations Procedures Nuclear Safety Related Category 3. TRU Organic Sampling and Transferring, Buildings 707 and 777. (WO-2010)	EG&G RF	4/23/1991
P073A	A-008-LWTO	Process Qualifications Report for Miscellaneous Waste Handling and Solidification (Bottlebox) Building 774. (A-008-LWTO)	Copy obtained from Document Control.	9/15/1993
P074A	WO-4007-B	Plutonium Recovery Waste Collection System, Building 771. (WO-4007-B)	RF Liquid Waste Treatment Operations	10/12/1988
P075A	WO-4001-A	Liquid Waste Processing (First Stage). (WO-4001-A)	Waste Operations	10/12/1988
P076A	N/A	Waste Stream Residue Identification and Characterization Building 559. 559-V3.2.	WASTREN, Inc	1991.

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P077A	774-V3.2	Waste Stream Residue Identification and Characterization Building 774. 774-V3.2. 1992. (774-V3.2)	Prepared by WASTREN, Inc., for EG&G Rocky Flats, Inc. Copy obtained from RMRS microfilm records.	1992
P078A	776-V3.2	Waste Stream Residue Identification and Characterization Building 776. 776-V3.2 1992. (776-V3.2)	Prepared by WASTREN, Inc., for EG&G Rocky Flats, Inc. Copy obtained from RMRS microfilm records.	1992
P079A	777-V3.2	Waste Stream Residue Identification and Characterization Building 777. 777-V3.2. 1992. (777-V3.2)	N/A	1992
P080A	ISSN 0738-0232	RCRA Land Disposal Restrictions: A Guide to Compliance. 1995 Edition. The Hazardous Waste Consultant. Vol. 12, Issue 6. ISSN 0738-0232. October /November 1994. (ISSN 0738-0232)	Wastren, Inc.	OCT/NOV94
P081A	371-V3.2	Waste Stream Residue Identification and Characterization Building 371. 371-V3.2. 1992. (371-V3.2)	Prepared by WASTREN, Inc., for EG&G Rocky Flats, Inc. Copy obtained from RMRS microfilm records.	1992
P082A	374-V3.2	Waste Stream Residue Identification and Characterization Building 374. 374-V3.2. 1992. (374-V3.2)	Prepared by WASTREN, Inc., for EG&G Rocky Flats, Inc. Copy obtained from RMRS microfilm records.	1992
P083A	N/A	Waste Stream and Residue Identification and Characterization Database.	Rocky Mountain Remediation Services	1996
P084A	N/A	Material Safety Data Sheet for Varsol 1. Exxon Company, U.S.A. August 25 1986.	Exxon Chemical Company; Copy obtained from the WASTREN, Inc., library.	8/25/1986
P085A	RFP-3682	Waste Systems Progress Report March 1983 through February 1984. Gordon L. Hickle. RFP-3682. (RFP-3682)	Gordon L. Hickle	10/1/1984
P086A	RFP-2899	Neptunium Processing at the Rocky Flats Plant RFP-2899 (RFP-2899)	W. V. Conner, D. L. Baaso	9/20/1981
P087A	RFP-3256.	Nondestructive Radioassay for Waste Management – An Assessment. (RFP-3256.)	Rockwell International	6/1/1981

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P088A	RFP-1424	Glovebox Window Materials. Charles W. Jacoby. RFP-1424. 1970. (RFP-1424)	Charles W. Jacoby; Prepared by Rockwell International. Copy obtained from RFP library, Building 706.	3/13/1970
P089A	RFP-3871	Waste Stystems Progress Report March 1984 through February 1985. Gordon L. Hickle. RFP-3871. 1986. (RFP-3871)	Gordon L. Hickle; Prepared by Rockwell International. Copy obtained from RFP library, Building 706.	4/11/1986
P090A	RFP-3186	History of Rocky Flats Waste Streams (RFP-3186)	Lori L. Luckett, Alice A. Dickman, Charlene R. Wells, and Donald J. Vickery	3/10/1982
P091A	N/A	Materials Hazards Manual. Rocky Flats Hazardous Materials Committee. 1976.	Copy obtained from J. K. Paynter's files.	8/1/1976
P092A	CO-1026-T/0	Residue Dissolution (Lines 23 and 25) (CO-1026-T/0)	Rocky Flats Plant	10/1/1988
P093A	CO-1130-B/0	Residue Dissolution, Gloveboxes 1500 A, 1500 B, and 1515, Building 371 (U).CO-1130-B/0, Rev. 0. Version B of procedure. 1988. (CO-1130-B/0)	Produced by Operational Compliance and Control. Copy obtained from Source One Document Control, Building T130G.	10/1/1988
P094A	CO-2018-E/0	Special Recovery Operation, General Procedures (CO-2018-E/0)	Rocky Flats Plant	10/1/1988
P095A	CO-2017-B/0	Plutonium-Neptunium Separation (CO-2017-B/0)	Rocky Flats Plant	5/5/1987
P096A	CO-2010	Operating the Ion Columns (Special Recovery, Line MT-4) (CO-2010)	Operational Compliance and Control.	9/20/1989
P097A	CO-6017-C	HSA Incineration System, Scarfing and Grinding (CO-6017-C)	Rocky Flats Plant Recycle Operations	6/5/1984
P098A	CO-1027	Resin Cementing, Line 2 (CO-1027)	Rocky Flats Plant, Operational Compliance and Control	11/3/1988
P099A	CO-1012-G	Molten Salt (8%) Residue Process (line 30) (U). (CO-1012-G)	RF Operational Compliance and Control	12/22/1978
P100A	CO-1019-K/0	Leaching Tantalum Fixtures and Inserts (Line 5) (CO-1019-K/0)	Rocky Flats Plant	9/24/1988

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P1000A	CPS-Z-165-80716	Glovebox MT 6: Solution Clarification (CPS-Z-165-80716)	Plutonium Finishing Plant	NONE
P1001A	CPS-165-80701	Process Cell (CPS-165-80701)	Plutonium Finishing Plant	01/12/1995
P1002A	CPS-Z-165-80731	Slag and Crucible Processing Gloveboxes (CPS-Z-165-80731)	Plutonium Finishing Plant	09/19/1989
P1003A	ZO-160-040	Operate Glovebox 60 (ZO-160-040)	C.M. Kronvall	1981, 1987
P1004A	ZO-170-005	Handling of Plutonium Contaminated Acid and Water Soaked Rags (ZO-170-005)	Plutonium Finishing Plant	NONE
P1005A	n/a	Investigation of Chemical Explosion of an Ion Exchange Resin Column and Resulting Americium Contamination of Personnel inthe 242-Z Building (n/a)	n/a	N/A
P1006A	ZO-300-110	Sample Plutonium Bearing Powders for the International Atomic Energy Agency (IAEA) (ZO-300-110)	Plutonium Finishing Plant	08/21/1995
P1007A	ZO-200-505	Recan Plutonium-Bearing Recoverable Material (ZO-200-505)	EP Bonadie	09/11/1996
P1008A	ZO-170-014	Handle PFP Reactive Material (ZO-170-014)	C Barr, GB Chronister	Multiple
P1009A	ZO-170-015	Handle and Package TRU Solid Waste in 55 Gallon Drums (ZO-170-015)	Plutonium Finishing Plant Operations	N/A
P101A	CO-2005-K/0	Modified Purex Solvent Extraction Process (Special Recovery; Lines MT-3, MT-7) (CO-2005-K/0)	Rocky Flats Plant, Operational Compliance and Control.	10/1/1988
P1010A	ZL-100-323	Solid Waste Repackaging and Disposal (ZL-100-323)	PFP Analytical Laboratory	09/18/1998
P1011A	PNL-MA-860	Methods and models of the Hanford Internal Dosimetry Program (PNL-MA-860)	E.H. Carbaugh	01/31/2003
P1012A	n/a	Plutonium Process Support Laboratories (n/a)	D. Lini	06/21/2004
P1013A	HNF-30862	Engineering Evaluation/Cost Analysis for the Plutonium Finishing Plant Sub-Grade Structures and Installations (HNF-30862)	L. Oates, J.A. Teal, A.M. Hopkins, A.R. Sherwood, D.D. Lini	08/01/2006
P1014A	DOE/RL-93-104	D&D Assessment for the Waste Incineration Facility (Building 232-Z) Hanford Site, Washington (DOE/RL-93-104)	L.N. Dean	02/01/1994
P1015A	HNF-4371	241-Z-361 Sludge Characterization Sampling and Analysis Plan (HNF-4371)	F. R. Crawford	07/29/1999
P1016A	n/a	Clarification on PFP Lead Lined Gloves (n/a)	C. Simiele	06/15/2000

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P1017A	Z0-160-080	Plutonium Finishing Plant Stabilization Operations Technical Procedure - Pipe-N-Go Operations (Z0-160-080)	n/a	05/03/2006
P1018A	FSP-PFP-5-8	Nuclear Material Transfer and Control (FSP-PFP-5-8)	Plutonium Finishing Plant Administration	06/08/1998
P1019A	FSP-PFP-5-8	Nuclear Control General Requirements (FSP-PFP-5-8)	Plutonium Finishing Plant Administration	NONE
P102A	CO-1033-AA/0	Anion Exchange (Lines 42 and 43D) (CO-1033-AA/0)	Rocky Flats Plant	9/16/1988
P1020A	HNF-32534-FP	Contaminated Process Equipment Removal for the D&D of 232-Z Contaminated Waste Recovery Process Facility at the Plutonium Finishing Plant (HNF-32534-FP)	M.J. Minette	01/01/2007
P1021A	ERDA-1538	Final Environmental Statement, Waste Management Operations, Hanford Reservation, Richland, Washington (ERDA-1538)	J.L. Liverman	NONE
P1022A	BHI-00175	Z Plant Aggregate Area Management Study Technical Baseline Report (BHI-00175)	D.H. DeFord	NONE
P1023A	HNF-36515	Acceptable Knowledge Document for Richland Mixed Plutonium Finishing Plant Comprehensive Debris Waste Stream RLMPFPCD (HNF-36515)	D. Rollosson	06/05/2009
P1024A	HNF-6489	Acceptable Knowledge Document for Plutonium Finishing Plant Mixed Debris Waste Stream MPFPD (HNF-6489)	M. I. Rollosson	09/21/2006
P1025A	HNF-30810	Acceptable Knowledge Document for the 325 Building Radiochemistry Laboratory Mixed Debris Waste Stream RLM325D (HNF-30810)	M. Conilogue	07/17/2007
P1026A	HNF-32128	Acceptable Knowledge Document for Richland 231-Z Mixed Debris Waste Stream RLM231ZD (HNF-32128)	M. I. Rollosson	05/20/2008
P1027A	RHO-ST-44	216-Z-12 Transuranic Crib Characterization: Operational History and Distribution of Plutonium and Americium (RHO-ST-44)	R.B. Kasper	NONE
P1028A	WHC·WM·EV·023	Waste Minimization Plan PFP (WHC·WM·EV·023)	E. G. Backlund,	NONE
P1029A	PFD-Z-180-00001	PRF Solvent Extraction Depletion Flowsheet-High Uranium/High Fluoride Feed (PFD-Z-180-00001)	PFP Process Engineering Group	06/20/1988
P103A	CO-1005-J/O	Sand, Slag, and Crucible Size Reduction, Lines 43A and C (U). (CO-1005-J/O)	RF Operational Compliance and Control	10/28/1988

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P1030A	N/A	BN510.1 Supercompacted Debris Waste Stream Profile Package	AMWTP	09/10/2010
P1031A	RPT-TRUW-86	Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (RPT-TRUW-86)	AMWTP	CURR DATE
P1032S	RPT-TRUW-80	Waste Inventory Screening Methodologies and Justification (RPT-TRUW-80)	AMWTP	11/25/2008
P1033A	WHC-EP-0659	Characterization of Past and Present Solid Waste Streams from 231-Z (WHC -EP-0659)	D.R. Duncan, J.A. Pottmeyer	06/01/1993
P1034A	BNWL-CC-1924	Safety Analysis Report (BNWL-CC-1924)	C.S. Powers	03/01/1969
P1035A	BNWL-B-479, UC-70	Detailed Plan for the Decontamination and Restoration of the 231-Z Facility (BNWL-B-479, UC-70)	R.R. King	03/01/1976
P1036A	WHC-SD-W026-ES-013	Wrap Module 1 Sampling Strategy and Waste Characterization Alternatives Study (WHC-SD-W026-ES-013)	C.L. Bergeson, R.A. Hyre	09/01/1994
P1037A	WHC-MR-0425	Manhattan Project Building and Facilities at the Hanford Site, A Construction History (WHC-MR-0425)	M. S. Gerber	09/01/1993
P1038A	n/a	Hanford Facility Beryllium Fact Sheet (n/a)	K.H. Jaten	02/01/2004
P1039A	n/a	TRU Waste Decontamination: A Progress Update (1978 - 1980) (n/a)	R.P. Allen, H.W. Arrowsmith	01/01/1981
P104A	CO-1076-D	Scarfing Graphite (Line 43A) (CO-1076-D)	Rocky Flats Plant	9/29/1988
P1040A	WMP-370, Section 1.1.5	Review and Update of Isotope Data for Retrieval of Transuranic Waste (WMP -370, Section 1.1.5)	Fluor Hanford WSD Procedures/Waste Services	01/24/2005
P1041A	SAND2005-4331	An Analysis of Uranium Dispersal and Health Effects Using a Gulf War Case Study (SAND2005-4331)	Albert C. Marshall	07/01/2005
P1042A	n/a	Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy is Doing About it (n/a)	U.S. Department of Energy	01/01/1995
P1043A	n/a	231-Z TRU Debris Waste Stream Designation (n/a)	M.S. Watson	03/01/2005
P1044A	ARH-3032	Specifications and Standards for the Packaging, Storage and Disposal of Richland Operations Solid Wastes (ARH-3032)	J.D. Anderson	04/29/1974
P1045A	n/a	325 Radiochemical Processing Laboratory website (n/a)	G. Patello	12/18/2006

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P1046A	DUN-7243 RD	Experimental Isotopic Analysis of Point Exposure Data in Hanford Production Reactor (DUN-7243 RD)	H. Toffer, A.F. Kupinski	09/08/1970
P1047A	WHC-MR-0437	A Brief History of the PUREX and UO3 Facilities (WHC-MR-0437)	M.S. Gerber	11/01/1993
P1048A	ORAUT-TKBS-006-2	ORAU Team, NIOSH Dose Reconstruction Project, Technical Basis Document for the Hanford Site - Site Description. (ORAUT-TKBS-006-2)	J. Selby	12/29/2004
P1049A	DOE/RL-96-29	Historic American Engineering Record Reduction-Oxidation Complex Plutonium Concentration Facility (Building 233-S) (DOE/RL-96-29)	M.S. Gerber, D.W. Harvey	N/A
P105A	771.047	Operational Safety Analysis (OSA). Special Recovery Ion Exchange. No. 771.047. (771.047)	Rocky Flats Operational Compliance and Control	9/6/1989
P1050A	WHC-EP-0646	Characterization of Past and Present Solid Waste Streams from th Plutonium -Uranium Extraction Plant (WHC-EP-0646)	J.A. Pottmeyer, D.R. Duncan	N/A
P1051A	WHC-EP-0621	Characterization of Past and Present Solid Waste Streams from the Plutonium Finishing Plant (PFP) (WHC-EP-0621)	D.R. Duncan, B.A. Mayancsik	N/A
P1052A	HNF-10919	Plutonium Finishing Plant Plutonium-Uranium Oxide: Characterization of Items with <30 Weight Percent Plutonium (HNF-10919)	D.C. Lini and L.H. Rodgers	03/01/2002
P1053A	9650398	Tritium Production at the Fast Flux Test Facility (9650398)	D.B. Klos	02/01/1996
P1054A	M4T00-TRU-06-640	White Paper: Calculation of Isotopic Weight Percentages Using Tank Waste Information Network System (TWINS) Data for the PUREX facility (M4T00-TRU-06-640)	M.H. Conilogue	10/11/2006
P1055A	WRP1-OP-0908	Waste Receiving and Processing (WRAP) Facility Operating Procedure for Operation of the Drum Nondestructive Examination System (WRP1-OP-0908)	n/a	09/09/2008
P1056A	HNF-5597	Retrieval Process Description (HNF-5597)	n/a	03/31/2004
P1057A	HNF-4781	Transuranic (TRU) Waste Phase I Retrieval Plan (HNF-4781)	Kent McDonald	09/26/2000
P1058A	HNF-SD-W026-SAR-002	WRAP Final Safety Analysis Report (HNF-SD-W026-SAR-002)	T.A. Tomaszewski	07/01/2001
P106A	374-V5.0	Waste Stream Residue Identification and Characterization Building 374. 374-V5.0. (374-V5.0)	WASTREN,Inc.	

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P1061A	PFD-Z-190-00002	Process Flowsheet Document, Remote mechanical C (RMC) Line, PFP (PFD -Z-190-00002)	A. M. Stubbs, J.F. Durnil	06/18/1991
P1062A	BNWL-CC-1336	Preliminary FFTF Fuel Raw Materials Survey and Analysis (BNWL-CC-1336)	R.E. Beardsly	04/10/1976
P1063A	HW-10733	REDOX Process Waste Streams Approximate Quanitities and Compounds (HW-10733)	n/a	08/12/1948
P1064A	WHC-EP-0172	Westinghouse Hanford Company Inventory of Chemicals Used at Hanford Site Production Plants and Support Operations (1944-1980) (WHC-EP-0172)	J.T. Quigley	04/01/1990
P1065S	ZO-170-061	Package TRU/TRU Mixed Waste (ZO-170-061)	Plutonium Finishing Plant	04/28/2008
P1066A	HNF-SD-CP-TI-219	Plutonium Finishing Plant Chemical Hazard Assessment (HNF-SD-CP-TI-219)	G.R. Witman, E.V. Weiss	September
P1067A	CCP-AK-RL-003	Central Characterization Project Acceptable Knowledge Summary Report for Hanford Site 325 Radiochemistry Building Transuranic Debris (CCP-AK-RL-003)	D.H. Haar	11/26/2003
P1068A	n/a	Hanford Facility Beryllium Fact Sheet (n/a)	S.A. Seydel	06/30/2004
P1069A	03-ABD-0071	Safety Evaluation Report for the Stabilization Processing of High Chloride Bearing Plutonium Materials at the Plutonium Finishing Plant (03-ABD-0071)	K.A. Klein	04/17/2003
P107A	559-V5.0	Waste Stream Residue Identification and Characterization Building 559. 559-V5.0 (559-V5.0)	WASTREN, Inc.	11/18/1993
P1070A	WHC-SC-CP-TI-204	Stabilization of Polycubes Engineering Study Historical Use and Fabrication and Treatment Schemes (WHC-SC-CP-TI-204)	W.S. Lewis	07/08/1996
P1071S	SW-100-096	(TRU) Overpack Containers (SW-100-096)	n/a	11/12/2009
P1072A	HW-22604	RECUPLEX Process Chemical Flowsheets, RECUPLEX HW#1 and HW#2 (HW-22604)	C. Groot, R.E. Tomlinson, D.P. Granquist	11/01/1951
P1073A	RHO-CD-454	Safety Assessment Document-Z Plant RMA Oxide Line (RHO-CD-454)	D.L. Cahow, K.O. Fein, G.L. Hanson	September
P1074A	RHO-CD-644	Z Plant RMA Oxide Line Campaign Process Control Plan (RHO-CD-644)	R.L. Walser,R.E. Van der	1/1/79
P1075A	RHO-CD-616	Z Plant RMA Oxide Line Flowsheet Addendum-Filtrate Concentration (RHO-CD-616)	R.L. Walser, R.E. Van der Cook	02/01/1979

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P1076A	ZO-200-504	Plutonium Finish Plant Environmental Operations, Recan Plutonium Metal (ZO-200-504)	N/A	06/27/1994
P1077A	CPS-Z-165-80625	Criticality Prevention Specification, Incinerator Burning Hood Characterization and Disassembly Activities (CPS-Z-165-80625)	Westinghouse Hanford Company	05/08/1995
P1078A	CPS-Z-165-80012	Criticality Prevention Specification, Glovebox Clean-up Operations (CPS-Z-165-80012)	Westinghouse Hanford Company	05/08/1995
P1079A	M4TOO-TRU-04-472	Transmittal of the Waste Stream-Specific Document SS&C01 Rev. 5, for the Acceptable Knowledge Documentation Management Program for PFP Sand, Slag, and Crucible Waste. (M4TOO-TRU-04-472)	S.W. Bisping	06/17/2004
P108A	707-V5.0	Waste Stream and Residue Identification and Characterization Building 707. 707-V5.0. (707-V5.0)	Rocky Flats	1995
P1080A	N/A	Deactivation and Cleanout of the 308 Fuels Laboratory and the 232-Z Incinerator at the Hanford Site	Westinghouse Hanford Company	10/22/1999
P1081A	ARH-3079	Work Plan For Removal of Division of Military Application Equipment 234-5Z Building (ARH-3079)	H.E. Johnson	04/26/1974
P1082A	WHC-EP-0912	The History of the 200 Area Burial Ground Facilities (WHC-EP-0912)	J.D. Anderson	09/01/1996
P1083A	N/A	Nuclear Weapons Frequently Asked Questions, Chapter 8.0 The First Nuclear Weapons	C. Sublette	04/18/2007
P1084A	CPS-Z-165-80727	Room 27: Maintenance Glovebox (CPS-Z-165-80727)	Westinghouse Hanford Company	09/18/1989
P1085S	9528.1989(13)	Interim Status Requirements For NRC Licensees Managing Radioactive Mixed Waste, Clarification (9528.1989(13))	EPA, Office of Solid Waste and Emergency Response (OSWER)	10/15/2019
P1086S	N/A	10 CFR Part 962 BYPRODUCT MATERIAL	DOE	05/01/1987
P1087A	SD-CP-SAR-021	PFP Final Safety Analysis Report (SD-CP-SAR-021)	J. E. Shapely	01/06/1995
P1088S	N/A	Joint NRC-EPA Draft Storage Guidance for Low-Level Mixed Waste	EPA/NRC	08/01/1995
P1089A	EPA-600/2-80-076 (NTIS / PB80-221005)	A Method for Determining the Compatibility of Hazardous Wastes (EPA-600/2-80-076 (NTIS / PB80-221005))	H. K. Hatayama, J. J. Chen, E. R. de Vera	04/01/1980

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P109A	774-V5.0	Waste Stream Residue Identification and Characterization Building 774 (774-V5.0)	WASTREN, Inc.	1/19/1995
P1090A	RFP-1723	Evaluation of Methods to Recover Plutonium from Incinerator Ash (RFP-1723)	Donald L. Ziegler, John W. Lindsay, John K. Fraser	08/16/1971
P1091A	RFP-396	Recovery of Plutonium from Incinerator Ash (RFP-396)	F.E. Butler, J.D. Moseley, G.F. Molen	07/31/1964
P1092S	INST-OI-11	Waste Container Handling (INST-OI-11)	AMWTP	Cur Date
P1093S	INST-EC&P-7.28.1	AMWTP TSA-RE Soil Sampling Procedure (INST-EC&P-7.28.1)	AMWTP	Cur Date
P1094S	INST-OI-09	Retrieval Enclosure Waste Container Extraction (INST-OI-09)	AMWTP	Cure Date
P1095S	INST-OI-84	Waste Container Repair and Overpack (INST-OI-84)	AMWTP	Cur Date
P1096S	INST-OI-88	Spill / Leak Response and Cleanup (INST-OI-88)	AMWTP	Cur Date
P1097S	INST-OI-93	Inverting Boxes (INST-OI-93)	AMWTP	Cur Date
P1098S	N/A	Idaho National Laboratory Site Treatment Plan	Published by U.S. DOE Idaho Operations Office at Idaho Falls, ID	Current
P1099S	INST-FOI-32	Size Reduction of Large Items (INST-FOI-32)	AMWTP	Current
P110A	776-V5.0	Waste Stream Residue Identification and Characterization Building 776. 776-V5.0 (776-V5.0)	WASTREN, Inc.	11/18/1993
P1100A	RF135.01	RFETS WSP RF135.01, TRM Solidified Organic Waste (D022, D027, D029, D030, D032, D034, D036, D037, F001, F002) (RF135.01)	RFETS	03/23/2005
P1101A	RPT-TRUW-78	AMWTP Challenging Waste Forms and Disposition (RPT-TRUW-78)	AMWTP	11/28/2008
P1102A	RF107.07	RFETS WSP RF107.07, TRM Solidified Organic Waste (F001, F002, F005, F006, F007, F009, P030, P098, P099, P106, U003, U103, U108) (RF107.07)	RFETS	08/23/2004
P1103S	INST-OI-43	HGAS Sampling and Analysis Operations (INST-OI-43)	AMWTP	Current
P1104S	INST-OI-45	Drum Filter Installation (INST-OI-45)	AMWTP	Current
P1105S	INST-OI-50	WMF-615 Filter Insertion Operations (INST-OI-50)	AMWTP	Current
P1106S	INST-OI-92	Drum Filter Removal and Replacement Operations (INST-OI-92)	AMWTP	Current

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P1107S	INST-FOI-34	Shredder Pre-Filter Replacement (AFU-750-200 or AFU-750-201 ONLY) (INST-FOI-34)	AMWTP	Current
P1108A	RPT-TRUW-74	Decanted Liquid Chemical Compatibility and Hazard Evaluation (RPT-TRUW-74)	AMWTP	08/28/2007
P1109A	DOE/TRU-10-3425	Annual Transuranic Waste Inventory Report - 2010 (Data Cutoff Date 12/31/2009) (DOE/TRU-10-3425)	U. S. Department of Energy, Carlsbad Field Office Prepared by the Los Alamos National Laboratory – Carlsbad Operations (LANL-CO) TRU Waste Inventory Team	11/00/2010
P111A	777-V5.0	Waste Stream Residue Identification and Characterization Building 777. 777-V5.0. (777-V5.0)	WASTREN, Inc.	1992
P1110A	INST-FOI-25	Special-Case Waste Packet Monitor Operations (INST-FOI-25)	AMWTP; Owner J. Peter Hingston	Current
P1111S	PLN-015	Plan of Action for WMF-628 Drum Treatment Facility (Multi Function Enclosure) Readiness Assessment (PLN-015)	AMWTP (Douglas A. Wale owner)	05/31/2007
P1112A	FAC-SD-23	Special Case Waste (FAC-SD-23)	AMWTP	03/15/2007
P1113S	FAC-SD-25	Facility Packet Assay Monitors (FAC-SD-25)	AMWTP	06/12/2007
P1114S	INST-FOI-15	Low-Level Waste Export Operations (INST-FOI-15)	AMWTP	Current
P1115A	RPT-006	Using Mechanical Vibration to Enhance Liquid Availability and Treatment in Drums Containing Sludge (RPT-006)	Rod E. Arbon	11/15/2007
P1116S	INST-OI-80	Unpacking Overpack Containers (INST-OI-80)	AMWTP	Cur date
P1117A	INST-OI-91	Drum Re-Overpacking Facility Operations (INST-OI-91)	AMWTP	03/03/2011
P1118A	MP-TRUW-8.2	Quality Assurance Project Plan (MP-TRUW-8.2)	AMWTP (owner: T.G. Fallon)	Current
P1119S	MP-EC&P-7.4	HEPA Filter Management Procedure (MP-EC&P-7.4)	AMWTP	Current
P112A	779-V5.0	Waste Stream Residue Identification and Characterization Building 779. 779-V5.0. (779-V5.0)	WASTREN, Inc.	1991
P1120S	INST-MI-1070	System 234 Pre-Filter Replacement (INST-MI-1070)	AMWTP Maintenance	12/22/2009

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P1121A	INST-MI-1051	HVAC Pre-Filter Replacement (INST-MI-1051)	AMWTP	01/19/2008
P1122A	INST-MI-1001	Ventilation HEPA Filter Replacement (INST-MI-1001)	AMWTP	02/13/2007
P1123A	INST-MI-1082	System 235 Air Filter Replacement (INST-MI-1082)	AMWTP Maintenance	10/08/2010
P1124S	INST-OI-81	Real-Time Radiography Operations (for WIPP Certification of Boxes) (INST-OI-81)	AMWTP	12/29/2010
P1125S	INST-FOI-01	In-Plant Drum Assay Operations (INST-FOI-01)	AMWTP	12/02/2009
P1126A	INST-OI-73	Manual Drum Coring Operations (INST-OI-73)	AMWTP	Current
P1127A	INST-OI-75	Container-In-Container Sampling (INST-OI-75)	AMWTP	Current
P1128S	INST-MS-0111	Supercompactor Hydraulic Oil Change (INST-MS-0111)	AMWTP	05/21/2008
P1129S	INST-MS-0097	Removal of Maintenance Debris from the Supercompactor Glovebox Suite (INST-MS-0097)	AMWTP Maintenance	09/22/2009
P113A	N/A	Actinide Processing at Rocky Flats.	Rockwell North American Space Operations	1991
P1130S	N/A	Quintolubric 702-46, Quaker Chemical Corporation	Quaker Chemical Corporation	05/23/2002
P1131S	INST-OI-14	Drum Assay Operations (INST-OI-14)	AMWTP	Current
P1132S	INST-OI-15	Box Assay Operations (INST-OI-15)	AMWTP	Current
P1133S	6105 TSCA C-I-2 OS-ETSD-1O-005	Notification About a Change in the Type of Absorbent Used Under the Advanced Mixed Waste Treatment Project Risk-Based Disposal Approval (OS-ETSD-IO-005.) (6105 TSCA C-I-2 OS-ETSD-1O-005)	David L. Wessman, DOE TSCA Compliance Manager	01/07/2010
P1134S	SR-W026-221F-HOM	AMWTP Form-1900, DOE CH-TRU Waste Profile for Savannah River Site, Building 221F, Absorbed Waste (SR-W026-221F-HOM)	Mark Doherty, AKE	09/05/2010
P1135A	CCP-AK-SRS-3	Central Characterization Project Acceptable Knowledge Summary Report for Savannah River Site Waste Streams: SR-W026-221F-HET, SR-W026-221F-HOM, SR-W026-221F-HEPA, SR-W026-221F-HET-A (CCP-AK-SRS-3)	Larry Porter	04/26/2010

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P1136A	N/A	Approval of the Toxic Substance Control Act (TSCA) Risk-based Disposal Approval (RBDA) Application for management of transurancic Polychlorinated biphenyl (PCB) Remediation Waste at the Advanced mixed Waste Treatment Project (AMWTP) Facility		06/12/2007
P1137A	W0-4034-B	Packaging Waste for Shipment Offsite (W0-4034-B)	Rocky Flats Plant	01/31/1986
P1138A	RF107.0	Rocky Flats Environmental Technology Site WIPP Waste Stream Profile Form, TRU Solidified Organic Waste (RF107.0)	N/A	01/11/2005
P1139S	MP-RS&C-6.17	Use of Vacuum Cleaners and Portable Air Handling Equipment in Radiological Areas (MP-RS&C-6.17)	Radiological Control	Current
P114A	N/A	Federal Facilities Compliance Agreement Compliant Order Storage Report. 1990.	EG&G Rocky Flats Waste Programs.	5/1/1990
P1140S	INST-MS-0049	Replace Hydraulic Fluid in BROKK Manipulators (INST-MS-0049)	AMWTP Engineering & Maintenance	03/22/2005
P1141S	CCP-CM-013	CCP Transportation HSG Only - Flamable Gas Analysis (FGA) (CCP-CM-013)	Mark Pearcy, CCP	05/25/2007
P1142S	CCP-TP-082	CCP Waste Container Filter Vent Operations (CCP-TP-082)	Larry Porter, CCP	02/22/2011
P1143A	ID-ICP-MFC-Gloves	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-ICP-MFC-Gloves, EFL Lead Gloves (AW-225) (ID-ICP-MFC-Gloves)	R. Rod Kimmit, Senior Advisory Engr.	03/14/2011
P1145A	LANL-CIN01.001	AMWTP Form-1900, DOE CH-TRU Waste Profile for LANL-CIN01.001, Los Alamos National Laboratory Solidified Inorganics (LA-006) (LANL-CIN01.001)	Mark Doherty, CCP AKE	12/03/2009
P1146A	SNL-SA-T001-S5400	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SA-T001-S5400, Lovelace Respiratory Research Institute Heterogeneous Debris Stored at Sandia National Laboratories (SL-223) (SNL-SA-T001-S5400)	Mark Doherty, CCP AKE	12/06/2010
P1147A	CCP-PK-SNL-001	Central Characterization Project Process Knowledge Summary Report for Lovelace Respiratory Research Institute Contact-Handled Transuranic Waste Stored at Sandia National Laboratories/New Mexico, Waste Stream: SA-T001 (CCP-PK-SNL-001)	Larry Porter	07/22/2010
P1148A	SNL-HFC-S5400	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-HFC-S5400, Sandia National Laboratories Hot Cell Facility Heterogeneous Debris (SL-224) (SNL-HFC-S5400)	Mark Doherty, CCP AKE	12/06/2010

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P1149A	CCP-PK-SNL-002	Central Characterization Project Process Knowledge Summary Report for Sandia National Laboratories/New Mexico Hot Cell Facility Contact Handled Transuranic Waste (Debris), Waste Streams: SNL-HCF-S5400 (CCP-PK-SNL-002)	Larry Porter	06/03/2010
P115A	N/A	Solid Waste Information Management System Database.	Rocky Flats.	
P1150A	SNL-SOURCES-S5400	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SNL-SOURCES-S5400, Radioactive Sources from Sandia National Laboratory (SL-227) (SNL-SOURCES-S5400)	Mark Dohery, CCP AKE	03/16/2011
P1151A	CCP-PK-SNL-003	Central Characterization Project Process Knowledge Summary Report for Sandia National Laboratories/New Mexico TRU Radioactive Sources (Debris), Waste Streams: SNL-SOURCES-S5400 (CCP-PK-SNL-003)	Larry Porter	03/14/2011
P1152A	SR-AGNS-HOM	AMWTP Form-1900, DOE CH-TRU Waste Profile for SR-AGNS-HOM, Barnwell Solidified Inorganic Waste stored at Savannah River Site (IDC SR-251) (SR-AGNS-HOM)	Craig Simmons, CCP SPM	08/09/2010
P1153A	SR-MD-HOM-C	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-HOM-C, Mound Site Inorganic Particulates Stored at Savannah River Site (SR-253) (SR-MD-HOM-C)	Mark Doherty, CCP AKE	07/26/2011
P1154A	AECHHM-PK	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHHM-PK, Argonne CH Homogeneous Solids (AE-254); AMWTP Form-1906, Non - AMWTP Waste Profile Environmental Checklist for Profile ID AECHHM-PK; AMWTP Form-1907 Non AMWTP Waste Profile Radiological Controls Checklist for Profile ID AECHHM-PK; AMWTP Form-1908, Non-AMWTP Waste Profile Acceptable Knowledge Checklist for Profile ID AECHHM-PK; AMWTP Form-1910, Non AMWTP Waste Profile Industrial Safety/ Industrial Hygiene (IS/IH) Checklist for Profile ID AECHHM-PK; AMWTP Form-2005, Offsite Waste Profile nuclear Safety Checklist for Profile ID AECHHM-PK. (AECHHM-PK)	Mark Doherty, CCP	05/11/2011
P1155A	CCP-PK-ANLE-001	Central Characterization Project Process Knowledge Summary Report for Argonne Contact-Handled TRU Waste From Facility Maintenance and Laboratory Operations, Waste Streams: AECHDM-PK and AECHHM-PK (CCP-PK-ANLE-001)	Larry Porter	08/10/2010

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P1156A	ID-SDA-NO3	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for ID-SDA-NO3, SDA Waste Containing Nitrate Salts (IDC SD-703) (ID-SDA-NO3)	L. Davis, CWI	06/09/2009
P1157A	CCP-SO-INL-08-001	CCP Standing Order for ARP VE - Guidance for Roaster Oxides (CCP-SO-INL-08-001)	D Ploetz	05/08/2008
P1158A	ID-SDA-Sludge	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-SDA-Sludge, Inorganic and Organic Homogeneous Solids from the Subsurface Disposal Area (SD-704) (ID-SDA-Sludge)	Thomas H. Johnson, CH TRU STR, CWI	07/18/2011
P1159A	ID-SDA-Debris	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-SDA-Debris, Heterogeneous Debris from the Subsurface Disposal Area (SD-705) (ID-SDA-Debris)	Thomas H. Johnson, CWI CH TRU STR	07/18/2011
P116A	N/A	Federal Facilities Compliance Agreement/Compliance Order Inventory Report. 1989.	from WASTREN library (Rockwell International)	11/1/1989
P1160A	ID-SDA-SOIL	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for ID-SDA-SOIL, SDA Soil from the Subsurface Disposal Area (SD-706) (ID-SDA-SOIL)	Thomas H Johnson, SWI CH TRU STR	07/18/2011
P1161A	IW-LAB-S5490-221F	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for IW-LAB-S5490-221F, RWMC Laboratory U151 Heterogeneous Debris (IW-525) (IW-LAB-S5490-221F)	Sylvia Sing, WTS	01/12/2011
P1162A	IW-LAB-PCB-S5490	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-PCB-S5490, Laboratory PCB Debris (IW-526) (IW-LAB-PCB-S5490)	Sylvia Sing, WTS	02/08/2010
P1163A	IW-LAB-S5490	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S5490, Laboratory Non-PCB Debris (IW-527) (IW-LAB-S5490)	Sylvia Sing, WTS	02/08/2010
P1164A	IW-LAB-S3900-221F	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for IW-LAB-S3900-221F, RWMC Laboratory U151 Homogeneous Solids (IW-602) (IW-LAB-S3900-221F)	Sylvia Sing, WTS	01/13/2011
P1165A	IW-LAB-S3900	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for IW-LAB-S3900, Laboratory Homogeneous Solids (IW-603) (IW-LAB-S3900)	Sylvia Sing, WTS	02/08/2010
P1166A	CCP-AK-INL-018	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Lawrence Livermore National Laboratory Waste Streams: LL0-M001-S5400, LL-W019-S3900, LL-T004-S3141 (CCP-AK-INL-018)	Larry Porter	05/26/2011

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P1167A	CCP-AK-INL-019	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, General Electric Vallecitos Nuclear Center Hot Cell Debris Waste, Waste Stream: ID-GEVNC-02 (CCP-AK-INL-019)	Larry Porter	07/15/2010
P1168A	CCP-AK-INL-020	Central Characterization Project Acceptable Knowledge Summary Report for Lovelace Respiratory Research Institute Contact-Handled Transuranic Waste Stored at Sandia National Laboratories/New Mexico Shipped to Advanced Mixed Waste Treatment Project, Waste Stream: ID-SDA-T001 (CCP-AK-INL-020)	Larry Porter	05/16/2011
P1169A	CCP-AK-INL-021	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Sandia National Laboratories/New Mexico Hot Cell Facility Contact Handled Transuranic Waste (Debris), Waste Stream: ID-SNL-HCF-S5400 (CCP-AK-INL-021)	Larry Porter	05/12/2011
P117A	CO-1039-D	Sorting and Scarfing Firebrick (Line 48) (CO-1039-D)	Rocky Flats Plant	9/24/1988
P1170S		Material Safety Data Sheets for various Texaco oils and Shell Vitrea M oil ()	Texaco and Shell oil companies	
P1171A	PNNL-220-0001-00, -01, -02, -03	Waste Profiles for 300 Area PNNL Facilities (PNNL-220-0001-00, -01, -02, -03)	Hanford Waste Services Organization	Multiple
P1172A	PNNL-230-0002-03	Waste Profile for 300 Area PNNL Facilities (PNNL-230-0002-03)	Waste Services Organization	07/12/2006
P1173A	PNNL-240-0001-03	Waste Profile Sheet (PNNL-240-0001-03)	K. McDowell	06/28/2006
P1174A	RLM325D	Acceptable Knowledge Reevaluation Checklist RLM325D (RLM325D)	M. Conilogue	11/01/2006
P1175A	N/A	Backlog Waste Reassessment Baseline Books for Waste Forms 19 and 47	EG&G Rocky Flats, Inc.	01/04/1995
P1176A	RPL-OP-001	Routine Research Operations (RPL-OP-001)	G. J. Lumetta	03/01/2000
P1177A	APEL-PIP-5	Polishing of Ceramic Pellets and Glasses Using the MINIMET Polisher/Grinder (APEL-PIP-5)	R. D. Scheele	01/19/2000
P1178A	APEL-PIP-6	Profiling Ovens and Furnaces (APEL-PIP-6)	W. C. Buchmiller	06/01/2000
P1179A	PNL-10743 AD-940	1995 Baseline Solid Waste Management System Description (PNL-10743 AD -940)	G. S. Anderson, et.al	09/01/1995

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P118A	N/A	Material Safety Data Sheet for Supertemp 1900/Ramcote 1200.	Ramco Insulation, Inc., Richard A. Moss / Copy obtained from Chris Peppler, RMRS, Building T130C.	1/1/1991
P1180A	CSS 325-1	Temporary Variance 00-1 (CSS 325-1)	M. W. Urie	01/05/2000
P1181A	HNF-2599	Hanford Site Transuranic Waste Quality Assurance Project Plan (HNF-2599)	Fluor Hanford	09/22/2005
P1182A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	N/A	12/01/1995
P1183A	DOE M 435.1-1	Radioactive Waste Management (DOE M 435.1-1)	Office of Environmental Management	07/09/1999
P1184S	N/A	Nuclear Waste Policy Act	U. S. Department of Energy	01/01/2002
P1185A	DOE/WIPP-DRAFT-3004	Transuranic Waste Baseline Inventory Report-2004 (DOE/WIPP-DRAFT-3004)	N/A	N/A
P1186A	RHO-MA-222	Hanford Radioactive Solid Waste Packaging, Storage, and Disposal Requirements, Appendix D (RHO-MA-222)	D. P. Belgrair	06/01/1985
P1187A	PNL-MA-8	Waste Management & Environmental Compliance (PNL-MA-8)	J. M. Hobbs	08/01/1988
P1188A	WH-3-2583	The Elimination of Hydrogen Peroxide from Solutions Remaining After Isolation of Plutonium as Plutonium IV Peroxide (WH-3-2583)	W. O. Simon, et al.	06/04/1945
P1189A	Conf-791234	New Decontamination Technologies for Environmental Applications (Conf-791234)	M. W. McCoy, H. W. Arrowsmith, and R. P. Allen	02/01/1981
P119A	N/A	Material Safety Data Sheet for Metex Chemicals. McDermid Incorporated. 1985-1986.	MacDermid Incorporated - Prepared by Cherrie Gillis; Copies obtained from Rocky Flats MSDS binders in Building T130C.	1985 / 198
P1190A	www.wise-uranium.org/rup.html	Uranium Radiation Properties (www.wise-uranium.org/rup.html)	World Information Service on Energy	04/08/2005
P1191S	DOE/LLW-217	DOE Waste Treatability Group Guidance (DOE/LLW-217)	T. D. Kirkpatrick	01/01/1995
P1192A	BHI-01750	Data Quality Objectives Summary Report for D&D Waste Characterization of the 300 Area Building (BHI-01750)	R. A. Thoren	11/24/2004

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P1193S	N/A	Hanford Engineer Works Laboratory Manual 231 Methods Section	N/A	12/01/1945
P1194S	RHO-CD-278	The Alleged 231-Z Discharge of Plutonium to the 216-Z-19 Ditch February 1977 (RHO-CD-278)	R. E. Wheeler	03/15/1978
P1195S	HNF-SD-CP-PECR-001	231-Z Building Pre-Existing Conditions Report (HNF-SD-CP-PECR-001)	D. L. Wiegand	03/27/1997
P1196A	HNF-9767	231-Z Non-Destructive Assay Plan (HNF-9767)	J. E. Ham	02/19/2002
P1197A	PROC-0601980	Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (PROC-0601980)	N/A	06/01/1980
P1198A	WHC-SA-2772-FP	A History of Solid Waste Packaging at the Hanford Site (WHC-SA-2772-FP)	D. R. Duncan, et. al.	02/01/1995
P1199A	N/A	Data Quality Objectives for the Disposition of Sand, Slag and Crucible Materials Stored at the Plutonium Finishing Plant	N/A	04/24/2003
P120A	RFP-1354	Flammability of Leaded Dry-Box Gloves. The Down Chemical Company document RFP-1354 (RFP-1354)	The Dow Chemical Company	6/9/1969
P1200A	HNF-SD-CP-OCD-042	Basis Document Special Nuclear Material Storage (HNF-SD-CP-OCD-042)	E. P. Bonadie, et.al.	05/10/1999
P1201A	HNF-13971	Plutonium Finishing Plant Residual Chemical Hazards Assessment Data (HNF-13971)	A. M. Hopkins	12/01/2002
P1202A	PFO-Z-200-001	Plutonium Finish Plant Process Flow Document k- Sand, Slag, and Crucible Cementation Process Flow Document (PFO-Z-200-001)	A. M. Stubbs	N/A
P1203A	CPS-Z-165-80350	Criticality Prevention Specification: Plutonium Finishing Plant/Plutonium Metal Production (CPS-Z-165-80350)	N/A	01/09/1990
P1204A	DOE-0254	Plutonium Finishing Plant Historical Facts (DOE-0254)	U. S. DOE	04/01/1996
P1205A	N/A	216-Z-9 Crib At The Plutonium Finishing Plant	D. Lini, J. Teal	02/27/2004
P1206A	ARH-R-215	Decommissioning of Division of Military Application Equipment at Richland Operations Office: Quarterly Report (ARH-R-215)	Atlantic Richfield Hanford	09/03/1975
P1207A	ARH-R-215	Decommissioning of Division of Military Application Equipment at Richland Operations Office: Quarterly Report (ARH-R-215)	Atlantic Richfield Hanford	01/19/1976
P1208A	ARH-R-215	Decommissioning of Division of Military Application Equipment at Richland Operations Office: Quarterly Report (ARH-R-215)	Atlantic Richfield Hanford	04/22/1976

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P1209A	CPS-Z-165-80717	MT Transfer Glovebox (CPS-Z-165-80717)	PFP	09/24/1990
P121A	N/A	Waste Characterization Report Heavy Metals. Item Description Code 320. WASTREN, Inc. April 30, 1993	WASTREN	8/31/1993
P1210A	CPS-Z-165-83060	Alkaline Hydrolysis in Glovebox 60 (CPS-Z-165-83060)	PFP	07/31/1991
P1211A	CPS-Z-165-80709	Access Glovebox: 2nd Floor East (CPS-Z-165-80709)	Plutonium Finishing Plant	08/08/1989
P1212A	CPS-Z-165-80708	Access Glovebox: 1st Floor West (CPS-Z-165-80708)	Plutonium Finishing Plant	03/30/1994
P1213A	CPS-Z-165-80707	Access Glovebox: 1st Floor East (CPS-Z-165-80707)	Plutonium Finishing Plant	09/25/1989
P1214A	CPS-Z-165-80290	Sorting Glove box (CPS-Z-165-80290)	Plutonium Finishing Plant	09/12/1983
P1215A	ZO-170-823	Dismantle HEPA Filters (ZO-170-823)	Plutonium Finishing Plant	07/07/1994
P1216A	ZO-170-040	Repackage 55-Gallon Waste Drums (ZO-170-040)	Plutonium FInishing Plant	04/03/1989
P1217A	ZO-170-0299	Seal Out (ZO-170-0299)	G. Barr, et.al	08/20/1998
P1218A	ZL-100-326	PFP Analytical Laboratory Organic Waste Loadout (ZL-100-326)	N/A	01/14/1998
P1219A	HW-23487	The Isotopic Content and Specific Activity of Pile Produced Plutonium (HW-23487)	G. J. Alkire, H. R. Schmidt, E. M. Kinderman	02/25/1952
P122A	RFP-4148	Document title unknown. Exhibit 1 excerpt from RFP-4148. (RFP-4148)	Obtained from WASTREN files.	
P1220A	UNI-1983	Spent Fuel Isotopic Inventory counted by Fuel Elements (UNI-1983)	W. D. Wittekind, R. L. Richardson	02/22/1982
P1221A	ARH-1164 RD	26% Pu-240 Production Data (ARH-1164 RD)	F. C. Black, et.al.	02/27/1969
P1222A	SD-HS-SAR-011	Plutonium Finishing Plant Laboratory Safety Analysis Report (SD-HS-SAR-011)	G. L. Jones	03/01/1984
P1223A	CCP-TP-083	CCP Gas Generation Testing (CCP-TP-083)	D. K. Ploetz	03/27/2009
P1224A	LA-MIN04-S.001	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for LA-MIN04-S.001, Los Alamos Salt Waste from TA-55 (LA-005) (LA-MIN04-S.001)	Mark Doherty, CCP AKE	05/02/2011

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P1225A	HNF-22064	Plutonium Finishing Plant Operations Overview (1949-2004): Contamination Events and Plutonium Isotope Distributions of Legacy Holdup Material in Process Systems (HNF-22064)	R.C. Hoyt and J.A. Teal	8/0/2004
P1226A	FSP-PFP-IP-003	Radiological History of the Plutonium Finishing Plant (1954-1997) (FSP-PFP-IP-003)	A. L. Ehlert	04/01/1999
P1227A	WHC-88-245	FY 1988 Remote Mechanical C Line Campaign Blend Plan (WHC-88-245)	J.F. Durnil, E.V. Weiss	06/24/1988
P1228A	DO-100-039	T-Plant Operating Procedure Package Transuranic Waste (DO-100-039)	C. Martin	07/05/2005
P1229A	RHO-SS-SR-183-85-1	Remote Mechanical C (RMC) Line Material Balance and Laid Summary - June 27,1985 to December 11, 1985 (RHO-SS-SR-183-85-1)		01/30/1986
P123A	N/A	Packaging Rocky Flats Waste. Radioactive Waste. Article excerpted from Nuclear Technology, Volume 32. Charles E. Wickland. May 17, 1976.	from WASTREN files; Charles E. Wickland	5/17/1976
P1230A	ZL-100-326	Organic Waste Loadout (ZL-100-326)	J. M. Hieb	04/12/1996
P1231A	FDH-9855079R1	Tank 241-Z-361 Waste Characterization Data Quality Objective: Headspace and Tank Structure (FDH-9855079R1)	L. J. Olguin, A. M. Hopkins, D. L. Banning	N/A
P1232A	N/A	Recent Site-Wide Transport Modeling Related to the Carbon Tetrachloride Plume at the Hanford Site	M. P. Bergeron, C. R. Cole	09/01/2004
P1233A	ZL-191-322	Chemical and Radioactive Material Spill Clean Up (ZL-191-322)	Plutonium Finishing Plant	05/04/1998
P1234A	ZP-100-001	Seal Out-PPSL Glove boxes (ZP-100-001)	WS Lewis	01/18/2000
P1235A	N/A	RCRA/SUPERFUND/OUST Hotline Monthly Report Question October 1992	N/A	10/01/1992
P1236A	N/A	RCRA/SUPERFUND Hotline Question and Answers	N/A	05/01/1991
P1237A	FSP-PFP-5-8	Nuclear Material Control-Physical Inventory (FSP-PFP-5-8)	N/A	05/19/1988
P1238A	ZL-090-304	Receiving, Handling, and Disposal of Routine Laboratory Samples (ZL-090-304)	N/A	02/20/1998
P1239A	HNF-1692	Tank 241-Z-361, Cores 263 and 264 Analytical Results for the Final Report (HNF-1692)	R. A. Esch	05/01/2000
P124A	CRDL-950351-009.	A Survey of the Rocky Flats Division Waste Streams (CRDL-950351-009.)	C. E. Plock	6/30/1972

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P1240A	ZL-161-302	Seal in and Seal Out of Material from Glove box by Plastic bag or Sphincter (ZL-161-302)	N/A	12/11/1998
P1241A	n/a	Final Report for the Hydraulic Oil Samples Received from PFP, 234.5Z HA-23S, October 2007 (n/a)	G. P. Ritenour	11/29/2007
P1242A	WHC-EP-0845	Solid Waste Management History of the Hanford Site (WHC-EP-0845)	D. R. Duncan	03/01/95
P1243A	PNL-10507	Interim Plutonium Stabilization Engineering Study (PNL-10507)	PJ Sevigny,et.al.	08/01/1995
P1244A	DOE/WIPP-069	Waste Acceptance Criteria for the Waste Isolation Pilot Plant (DOE/WIPP-069)	N/A	04/01/1996
P1245A	WHC-SD-CP-TI-190	Technical Basis for Characterization of Plutonium for PFP (WHC-SD-CP-TI-190)	R.D. Crowe, R.W. Szempruch	02/01/1994
P1246A	N/A	Listing Background Document	Environmental Protection Agency	N/A
P1247A	DOE/WIPP-02-3122	Contact-Handled Transuranic Waste Acceptance Criteria For The Waste Isolation Pilot Plant (DOE/WIPP-02-3122)	N/A	03/01/2004
P1248A	LA-UR-96-3860	Hanford Tank Chemical and Radionuclide Inventories: HDW Model (LA-UR-96-3860)	S. Agnew	01/01/1997
P1249A	N/A	Dangerous Waste Regulations, Chapter 173-303 Washington Administrative Code (WAC)	Washington State Department of Ecology	11/01/1995
P125A	N/A	Waste Stream Residue Identification and Characterization Sampling and Analysis Database.	from WASTREN files	10/1/1994
P1250A	M4T00-DCD-02-159	Transmittal of the Waste Stream-Specific Documents (HNF-5482, Draft Rev 8, HNF-5481,Draft Rev 15 and HNF-6489, Draft Rev 12) for the Acceptable Knowledge Documentation Management Program for PFP Non-Mixed and Mixed Debris Waste (M4T00-DCD-02-159)	S.W. Bisping	06/17/2004
P1251A	HW-53433	Isotopic Composition and Specific Activity of Chalk River Plutonium (HW-53433)	F. P. Brauer	10/23/1957
P1252A	WHC-SD-WM-RPT-056	Solid Waste Stream Hazardous and Dangerous Components Study (WHC-SD-WM-RPT-056)	W. W. Olson	08/01/1992
P1253A	N/A	Medical Effects of Internal Contamination with Uranium	A. Durakovae	03/01/1999

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P1254A	HNF-3273	Hanford Defined Waste Model Limitations & Improvements (HNF-3273)	R. W. Harmsen, R. A. Watrous, J. W. Cammann, M. J. Kupfer, S. L. Lambert	12/01/1998
P1255A	N/A	Criticality Safety	N/A	04/03/1998
P1256A	PFD-Z-190-00002	Process Flowsheet Document, Remote Mechanical C (RMC) Line, Plutonium Finishing Plant (PFD-Z-190-00002)	G.T. Tassotti	11/16/1987
P1257A	RHO-MA-246	Plutonium Reclamation Facility Engineering Training Manual (RHO-MA-246)	J. D. Ludowise	09/01/1980
P1258A	PFD-Z-180-00003	Hydrolysis and Dissolution Flowsheet (PFD-Z-180-00003)	M. A. McNamar	12/16/1991
P1259A				
P126A	N/A	Waste Stream and Residue Identification and Characterization Building Valve Vaults. Version 3.2.	WASTREN files	9/1/1993
P1260A	INTC-S5-001	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S5-001, INTEC Waste Drum INTC050203 (BN-526) (INTC-S5-001)	Elizabeth C. Thiel	01/09/2008
P1261A	INTC-S3-001	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for INTC-S3-001, INTEC Waste Drum INTC0500032 (BN-603) (INTC-S3-001)	Elizabeth C. Thiel	01/21/2008
P1262A	HAN-73214-BK12	Memoranda for the File: S Department, Hanford Engineer Works (Book 12) (HAN-73214-BK12)	E. I. DuPont De Nemours & Co., Inc.	1944-1946
P1263A	N/A	Plan for Handling Newly Generated Contact-Handled Transuranic Solid Waste at Pacific Northwest Laboratory (PNL)	D. J. Sommer	05/01/1986
P1264A	DOE/WIPP-02-3122	Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (DOE/WIPP-02-3122)	Carlsbad Field Office Manager	11/15/2004
P1265A	WHC-EP-0225	Contact Handled Transuranic Waste Characterization Based on Existing Records (WHC-EP-0225)	B. C. Anderson, et. al.	02/01/1990
P1266A	ZO-170-301	Plutonium Finishing Plant Standard Practices, Seal In (ZO-170-301)	N/A	06/21/1994
P1267A	OSD-Z-184-00020	Contact Handled TRU Solid Waste Disposal (OSD-Z-184-00020)	Plutonium Finishing Plant Administration	05/10/1995
P1268A	N/A	Hawley's Condensed Chemicals	R. Lewis	1993
P1269A	SD-WM-TI-202	Waste Isolation Pilot Plant (WIPP) Certification Information Manual (SD-WM-TI-202)	L.D. Schwartz	01/28/1988

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P127A		INEL SWEPP Track Accessible Database. 1996	Obtained from Don Kudera at INEL.	1996
P1270A	HNF-SD-CP-HA-001	Plutonium Finishing Plant Chemical Hazard Assessment (HNF-SD-CP-HA-001)	G. R. Wittman, et. al.	08/01/1997
P1271A	DOE/RL-2005-14	Removal Action Work Plan for PFP Above-Grade Structures: Facility Deactivation (DOE/RL-2005-14)	S. E. Killoy	04/01/2005
P1272A	M2E00-03-027	Percentage of Mixed Plutonium-Uranium Oxide (MOX) Containing >10 and <30 Weight Percent Plutonium (M2E00-03-027)	D. Lini	07/11/1993
P1273A	ZA-211-331	Determination of Nitric Acid with Hydroxide using Colorimetric Endpoint (ZA-211-331)	S.T. Hurlbut	12/05/1995
P1274A	ZA-211-305	Caustic Demand of PFP Waste Solutions by Titration to Indicator Endpoint (ZA-211-305)	W. H. Sant	12/05/1995
P1275A	HNF-1989	Tank 241-Z-361 Process and Characterization History (HNF-1989)	S. A. Jones	07/30/1998
P1276A	N/A	Waste Information Data System General Summary Report (For Site Code: (216-Z-12 Crib))	N/A	07/21/2005
P1277A	WMP-34483	Acceptable Knowledge Evaluation and Summary Report for Mixed Transuranic Waste 218-W-4B, Trench 7, Module 2 (WMP-34483)	P. H. Wicks	08/01/2007
P1278A	WHC-IP-0791	Historical Report on the Retrievably Stored Division of Military Application Equipment at the Hanford Site (WHC-IP-0791)	J. A. Demiter, et.al.	12/11/1991
P1279S	HNF-40187	Hazard Evaluation for Use of Aspigel 100TM at PFP (HNF-40187)	D. M. Carson	01/01/2009
P128A	N/A	Material Safety Data Sheet for Mariko. Huntington Laboratories, Inc. September 11, 1986.	Obtained from WASTREN files.	9/11/1996
P1280A	PNNL-15410	Thermal Stability Studies of Candidate Decontamination Agents for Hanford's PFP Plutonium Contaminated Gloveboxes (PNNL-15410)	R. D. Scheele	09/01/2005
P1281A	RHO-CD-982	A-Button Line Terminal Process Clean Out (RHO-CD-982)	J. F. Durnil, J. D. Ludowise	unk
P1282A	N/A	Demonstration of RADPRO Decontamination Process	Environmental Alternatives, Inc.	08/01/2003
P1283A	AR-779	Plutonium Processing Manual (AR-779)	D. L. Uebelacker	12/01/1975

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P1284A	DOE/RL-2003-43	Radioactive Air Emissions Notice of Construction for Deactivation for PFP, 200 West Area, Hanford Site, Richland, Washington (DOE/RL-2003-43)	N/A	02/01/2004
P1285A	ZDD-1-002	RADPRO Chemical Decontamination of Equipment/Gloveboxes Containing Plutonium (ZDD-1-002)	M.D. Talbot	N/A
P1286A	HNF-29564	Plutonium Finishing Plant 2006 Layup Plan (HNF-29564)	S. A. Chistensen	04/01/2006
P1287A	MSDS #061847	MSDS - Sellars Bonded Rolls and Pads (MSDS #061847)	Sellars Wipers & Sorbents	03/15/1996
P1288A	MSDS # 057454	MSDS - UPR (MSDS # 057454)	Sorbent Products Company	02/23/2007
P1289A	CCP-PK-NRD-001	Central Characterization Project Process Knowledge Summary Report For NRD Mixed Heterogeneous Debris Waste Stream: NRD.1 (CCP-PK-NRD-001)	Larry Porter, CCP	02/08/2011
P129A		Material Safety Data Sheet for OX-Out 536. ChemClean Corporation. May 5, 1986.	Obtained from WASTREN files; Obtained from Rocky Flats(R1)	5/5/1986
P1290A	CCP-PK-LBNL-001	Central Characterization Project Process Knowledge Summary Report For ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY CONTACT-HANDLED TRU WASTE Waste Stream: LBNL-S5400 (CCP-PK-LBNL-001)	Larry Porter, CCP	03/30/2011
P1291S	MSDS-016	MSDS Allstar Crystal Glass Cleaner (U14825) (MSDS-016)	Unisource Worldwide, Inc.	01/17/2002
P1292S	MSDS-157	MSDS Orange Glo - Multi Purpose Cleaner (MSDS-157)	MF Distributions, Inc.	07/30/2004
P1293S	MSDS-020	MSDS: WD-40 Aerosol (MSDS-020)	WD-40 Company	08/05/2009
P1294S	MSDS-432	MSDS Acetone (MSDS-432)	Science Lab.com, Inc.	11/06/2008
P1295S	MSDS-228	MSDS: ReACT General Decontamination Agent: Low Foam Formula Low Foam Formula Concentrate (MSDS-228)	Uni-Chem Chemicals, Inc.	
P1296S	MSDS-209	MSDS 3M Hi-Strength Spray Adhesive 90 (aerosol) (MSDS-209)	3M Company	04/07/2009
P1297S	MSDS-023	MSDS: Alconox (MSDS-023)	Alconox, Inc.	04/20/2009
P1298S	MSDS-004	MSDS Simple Green All-Purpose Clean and Simple Green Scrubbing Pad (MSDS-004)	Sunshine Makers, Inc.	05/01/2009
P1299S	MSDS-988	MSDS: "Soil Sement" (MSDS-988)	Midwest Industrial Supply	06/30/2006

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P130A	N/A	TRIM SOL Material Safety Data Sheet.	Master Chemical Corporation.	2/27/1992
P1300S	MSDS-971	MSDS: DECON Gel 1101 (MSDS-971)	Cellular Bioengineering, Ind.	04/09/2007
P1301S	MSDS-281	MSDS: Stripcoat TLCL Free (MSDS-281)	Sanchem, Inc.	10/01/2003
P1302S	MSDS-779	MSDS: Clorox Disinfecting Wipes (MSDS-779)	The Clorox Company	09/01/1999
P1303S	MSDS-730	MSDS: Orange Hand Cleaner Pumice Lotion (MSDS-730)	Henkel Loctite Corporation	01/07/2003
P1304S	N/A	MSDS: ABC Asbestos Binding Compound	Fiberlock Technologies, Inc.	03/10/2009
P1305S	N/A	MSDS: Faultless Professional Spray Starch	Faultless Starch / Bon Ami Co.	02/15/2007
P1306S	N/A	MSDS: Faultless White Boxed Starch	Faultless Starch / Bon Ami Co.	10/19/2004
P1307S	N/A	MSDS: Magic Spray Starch	Faultless Starch / Bon Ami Co.	02/15/2007
P1308S	N/A	MSDS: Faultless Industrial Laundry Starch	Faultless Starch / Bon Ami Co.	10/13/2004
P1309S	MSDS-464	MSDS - Hexane (MSDS-464)	Fisher Scientific	10/26/2009
P131A	PB94-963603. OSWER 9938.4-03.	Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes. A Guidance Manual. (PB94-963603. OSWER 9938.4-03.)	U.S. EPA	4/1/1994
P1310S	MSDS-861	MSDS - Exeter (MSDS-861)	Sunrise Environmental Scientific	03/15/2001
P1312A	NRD.1	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for NRD.1, Nuclear Radiation Development Mixed Heterogeneous Debris (ND-228) (NRD.1)	Mark Doherty, CCP AKE	05/31/2011
P1313A	LBNL-S5400	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for LBNL-S5400, Lawrence Berkeley Mixed Heterogeneous Debris (LB-229) (LBNL-S5400)	Mark Doherty, CCP AKE	05/19/2011
P1314A	SR-MD-SOIL	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-MD-SOIL, Mound Site Soil/Debris Stored at SRS (SR-842) (SR-MD-SOIL)	Craig Simmons	05/19/2011
P1315A	EDF-8723	Allowable Nitrate Salt Concentration in ARP Waste (EDF-8723)	R.R. Kimmett	06/30/2010

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P1316S	MSDS-067	MSDS: Quaker Chemical Quintolubric 822-300 (MSDS-067)	Quaker Chemical Corp.	N/A
P1317S		Material Safety Data Sheets: Aldrich Chemical Co. benzene; Marmon brass; Eutecrod 157B; Castle Metals bronze; Cadmium compounds; Silver Solder, Brazing filler metal; Dynaloy silver filled epoxy resin; Metpolish; Micropolishi; Tin Lead Solder Solution; Turco Brass Dip; Turco Decon 4502; Turco-Solv; Skyblue SB-B, SB-G, SB-D; Kodak Photo-Glo 200 Solution; Crystalbond Mounting Wax; Krylon Spray; REACT #172; Dash Pot Oil; Koroseal; Octoil; Hyprez Os Lubricant; Permatex; Zeolite; Phenolic Powder; Bajekute Preforms;Diallyl Phthalate Powder ()	Multiple Manufacturers	1985-2001
P1318S	N/A	Argonne National Laboratory Liquid Waste Dispoal Record: 1 pint poly bottle of Pu contaminated hydrofluoric acid.	R. H. Bradley	11/01/1976
P1319A	IPS-2-00-00	AGHCF Operations Manual Section 11.0 Waste Management; (IPS-2-00-00)	ANL-East	09/16/1996
P132A	R-6078.	Predecisional Draft Transuranic Waste Characterization Acceptable Knowledge Guidance Document (R-6078.)	U.S. DOE	8/1/1995
P1320A	M4000-00250-SA-01	Safety Analysis Report for the Alpha-Gamma Hot Cell Facility (Bldg. 212) Materials Science and Technology Division Argonne National Laboratory (M4000-00250-SA-01)	W. D. Jackson	12/13/2019
P1321A	N/A	Safety Analysis for Twenty Year Retrievable Storage of Intermediate Gamma Level Transuranic Waste	W. D. Jackson	06/01/1976
P1322A	J0306-0033-SA	TRU-RH Waste Certification Plan for Waste Management Operations (J0306-0033-SA)	Ralph W. Ditch	06/09/1988
P1323A	N/A	Presentation to DOE Office of Nuclear Safety re AGHCF	N/A	07/19/1993
P1324A	M4000-004-SA-01	Engineering Test Plan for the Irradiation Testing of U3Si Dispersion Fuels. (M4000-004-SA-01)	R. F. Mattas	06/01/1980
P1325A	AGHCF-SORT	Procedure for Sorting Remote-Handled TRU Waste (30-Gallon Intermediate-Level Waste) (AGHCF-SORT)	Irradiation Performance Section	01/07/1987
P1326S	N/A	Waste Handling Procedures	C. L. Cheever	09/18/1986
P1327S	ANL-ms-912A	Examination Techniques for High Burnup U-Pu Fuel Elements for Fast Breeder Reactors (ANL-ms-912A)	B. J. Koprowski and F. L. Brown	06/30/1967
P1328S	RHO-RE-ST--31P	Review of Zirconium-Zircaloy Pyrophoricity (RHO-RE-ST--31P)	Thurman D. Cooper	11/01/2011

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P1329A	IPS-2-00-01	AGHCF Operations Manual, Section 7.15 Preparation of Metallographic Specimens. (IPS-2-00-01)	ANL-East	03/29/1990
P133A	CAO-94-1012	Quality Assurance Program Description (CAO-94-1012)	US Department of Energy INEL Files – Glen R. Hayes	6/1/1994
P1330A	N/A	RCRA Part A Application for ANL-E	David T. Goldman and E. Gale Pewitt	12/16/1985
P1331A	ANL-87-2	Final Report for the Light Water Breeder Reactor Proof-of-Breeding Analytical Support Project (ANL-87-2)	D. G. Graczyk, J. C. Hoh, F. J. Martino, R. E. Nelson, John Osudar, and N. M. Levitz	05/01/1987
P1332S	N/A	New Brunswick Laboratory Safety Analysis Report	NBL	10/01/1990
P1333S	ANL-84-26	Chemical Technology Division Annual Technical Report 1983 (ANL-84-26)	L. Burris, P. A. Nelson, D. L. Barney, and M. J. Steindler	04/01/1984
P1334S	ANL-85-9	Chemical Technology Division Annual Technical Report 1984 (ANL-85-9)	M. J. Steindler, P. A. Nelson, and L. Burris	02/01/1985
P1335S	ANL-88-19	Chemical Technology Division Annual Technical Report 1987 (ANL-88-19)	ANL-E	05/01/1988
P1336S	NBL-SP-Pu-1	Dissolution of Plutonium-Containing Materials Using Acid Digestion (NBL-SP-Pu-1)	NBL	Unk
P1337A				
P1338S	ANL-87-19	Chemical Technology Division Annual Technical Report 1986 (ANL-87-19)	Chemical Technology Division	06/01/1987
P1339A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	N/A	12/01/1995
P134A	DOE/WIPP 91-005.	Waste Isolation Pilot Plant RCRA Part B Permit Application. Appendix C9, TRU Waste Characterization Using Acceptable Knowledge (DOE/WIPP 91-005.)	U. S. DOE/WIPP	1/15/1996
P1340S		Frontiers Research Highlights 1946-1996 ()	Office of Public Affairs, Argonne National Laboratory	1996
P1341S	N/A	The Liquid Metal Fast Breeder Reactor: Promises and Uncertainties	Comptroller General of the United States	07/31/1975
P1342S		Light Metal Fast Breeder; Right Answer, Wrong Question ()	Adams Atomic Engines/Atomic Insights	10/01/1995

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P1343S	N/A	Materials Science and Technology Division Annual Review - 1983	MST	08/01/0198
P1344S	n/a	Materials Science and Technology Division Annual Review - 1982 (n/a)	ANL-E	11/01/1982
P1345A	SOP: ACL-032	Determination of Uranium in Solids, Sediments, and Sludges (SOP: ACL-032)	Alice M. Essling, Donald G. Graczyk	01/30/1987
P1346A	SOP: ACL-031	Sample Preparation and Separation of Pu, Th, and Am from Solid (Soils, Sediments, Sweepings) and Liquid (Waters, Milk) Environmental Samples for Analysis by Alpha-Spectrometry (SOP: ACL-031)	L. B. Gillis, F. Markin, L. L. Wetter	03/25/1993
P1347A	SOP: ACL-130	Standard Operating Procedure: Sample Preparation by Total Dissolution and Separation of Thorium, Plutonium, and Americium from Solid Environmental Samples for Analysis by A1pha-Spectrometry (SOP: ACL-130)	Lesa L. Wetter	04/08/1988
P1348A	SOP: ACL-132	Standard Operating Procedure: Sample Preparation and Separation of Plutonium, Americium, Uranium, and Strontium from Air Filters (SOP: ACL-132)	Tony TenKate, Lesa L. Wetter	04/05/1988
P1349A	SOP: ACL-113	Standard Operating Procedure: Determination of Strontium in Environmental Water Samples (SOP: ACL-113)	Lesa L. Wetter	07/31/1987
P135A	R-6157 Draft	Guidance for Preparing Transuranic Waste Sampling Plans (Draft). (R-6157 Draft)	US Department of Energy	11/95
P1350A	SOP: ACL-117	Standard Operating Procedure: Determination of Strontium in Environmental Soils and Vegetations (SOP: ACL-117)	Lesa L. Wetter	07/31/1987
P1351A	WM-PD-90-003	Inventory Analysis of Stored Transuranic (TRU) Waste at the Radioactive Waste Management Complex (RWMC) (WM-PD-90-003)	K. P. Guay, INEL, EG&G	04/30/1990
P1352A	SOP: ACL-124,	Standard Operating Procedure: Determination of Technetium-99 In Environmental Samples (SOP: ACL-124,)	Francis Markun,Lesa L. Wetter	10/23/1987
P1353A	M0001-0006-SP-01	Criticality Hazards Control Building 212, Wing D, Special Facility FD12, Materials Science Division (M0001-0006-SP-01)	A.G. Hins	02/22/1979
P1354A	CCP-AK-INL-022	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory, SANDIA NATIONAL LABORATORIES/NEW MEXICO TRU Radioactive Sources (Debris)Waste Streams:ID-SNL-SOURCES-S5400 (CCP-AK-INL-022)	Larry Porter	05/04/2011

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P1355A	CCP-AK-INL-023	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory, NRD Mixed Heterogeneous Debris Waste Stream: ID-NRD.1 (CCP-AK-INL-023)	Larry Porter	07/18/2011
P1356A	CCP-AK-INL-024	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory, Ernest Orlando Lawrence Berkeley National Laboratory Contact-Handled TRU Waste Waste Stream: ID-LBNL-S5400 (CCP-AK-INL-024)	Larry Porter, CCP	06/27/2011
P1357A	AECHDM-PK	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHDM-PK, Argonne CH Debris (AE-230); AMWTP Form-1906, Non -AMWTP Waste Profile Environmental Checklist for Profile ID AECHDM-PK; Email from Jeff Helms to Rand S. Watson, Re: form-1906 AECHDM-PK 7-07-2011.doc; AMWTP Form-1907 Non AMWTP Waste Profile Radiological Controls Checklist for Profile ID AECHDM-PK; Email from Roy K. Hansen to Rand S. Watson, Re: Form-1907 AECHDM PK.doc; AMWTP Form-1908, Non-AMWTP Waste Profile Acceptable Knowledge Checklist for Profile ID AECHDM-PK; AMWTP Form-1910, Non AMWTP Waste Profile Industrial Safety/ Industrial Hygiene (IS/IH) Checklist for Profile ID AECHDM-PK; Email from Robert B. Nash to Rand S. Watson, Re: Form-1910, AECHDM-PK.docx; AMWTP Form-2005, Offsite Waste Profile nuclear Safety Checklist for Profile ID AECHDM-PK; Email from Rod E. Arbon to Morris A. Hall, Rachelle Hubler, and Rand S. Watson, Re; Offsite waste approval (AECHDM-PK)	Mark Doherty	07/19/2011
P1358A	N/A	BN600 Waste Stream Profile package, AMWTP WMF-676 PCB contaminated Debris (BN600)	AMWTP	07/28/2011
P1359A	DOE/RL-2002-15	Removal Action Work Plan for the PFP Above-Grade Structures: Ancillary Facility Demolition (DOE/RL-2002-15)	none identified	none ident
P136A	R-6157	Guidance for Preparing Transuranic Waste Sampling Plans. (R-6157)	US Department of Energy	2/1/1996
P1360A	HNF-13940	Plutonium Finishing Plant Residual Chemical Hazards Assessment Data (HNF-13940)	A.M. Hopkins	12/01/2002
P1361A	DOE/TRU-2006-3344	Transuranic Waste Baseline Inventory Report-2004 (DOE/TRU-2006-3344)	U.S. Department of Energy Carlsbad Field Office	2004
P1362S	WMP-400-7.1.9	Acceptable Knowledge Documentation Management (WMP-400-7.1.9)	N/A	04/13/2007

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P1363A	Site Code: 216-Z-1&2	Waste Information Data System General Summary Report for 216-Z-1 and 216-Z-2 (Site Code: 216-Z-1&2)	Hanford	03/14/2007
P1364A	OS-ETSD-IO-005	Notification About a Change in the Type of Absorbent Used Under the Advanced Mixed Waste Treatment Project Risk-Based Disposal Approval (OS-ETSD-IO -005) (OS-ETSD-IO-005)	AMWTP	01/07/2010
P1365A	N/A	Risk-Based Disposal Approval request for PCBs contaminated with Radioisotopes at the AMWTP Facility	AMWTP	03/01/2007
P1366A	N/A	Contract No. DE-AC07-99ID13727, Request for Modification of the "Toxic Substance Control Act (TSCA) Risk-Based Disposal Approval (RBDA) Application for Management of Transuranic Polychlorinated Biphenyl (PCB) Remediation Waste at the Advanced Mixed Waste Treatment Project (AMWTP) Facility"-LSS-16-11	AMWTP	08/03/2011
P1367A	INEEL/EXT-98-01213	A Regulatory Analysis and Reassessment of U.S. Environmental Protection Agency Listed Hazardous Waste Numbers for Applicability to the INTEC Liquid Waste System (INEEL/EXT-98-01213)	kenneth L. Gilbert and Timothy E. Venneman	02/01/2011
P1368A	CCP-AK-SRS-6	Central Characterization Project Acceptable Knowledge Summary Report For Savannah River Site Waste Streams: SR-W027-235F-HET, SR-W027-235F-HOM, and SR-W027-235F-HEPA (CCP-AK-SRS-6)	Larry Porter	09/16/2010
P1369S	RPT-TRUW-21	Evaluation of Characterization Data Associated with 74 AMWTP Containers of Rocky Flats First/Second Stage Sludge Waste (RPT-TRUW-21)	BNFL	08/01/2004
P137A	CAO-94-1010	Transuranic Waste Characterization Quality Assurance Program Plan. (CAO-94-1010)	US DOE, CAO	11/15/1996
P1370S	RPT-TRUW-22	Evaluation of Characterization Data Associated with 29 AMWTP Containers of Rocky Flats Building 374 Sludge Waste (RPT-TRUW-22)	BNFL	08/01/2004
P1371S	RPT-TRUW-19	Population Determination for Waste Stream Profiles BNINW216 and BNINW218 (RPT-TRUW-19)	BNFL	07/30/2004
P1372A	INEEL/EXT-03-01139	Preliminary Determination of Hazardous Waste from Other Generators Co-located with Rocky Flats Plant Transuranic Waste in the OU 7-13/14 Subsurface Disposal Area (INEEL/EXT-03-01139)	Idaho Completion Project	05/01/2004

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P1374A	DOE/TRU-11-3425	Annual Transuranic Waste Inventory Report - 2011 (Data Cutoff Date 12/31/10) (DOE/TRU-11-3425)	U.S. Department of Energy - Los Alamos National Laboratory - Carlsbad Field Office (LANL-CO) Waste Inventory Team	11/02/2011
P1376S	MSD-014	Universal PIG® Absorbents (MSD-014) Material Safety Data Sheet (MSDS) (MSD-014)	PIG	10/10/2011
P1377S	MSD-016	Oil-Only PIG® Absorbents (MSD-016) Material Safety Data Sheet (MSDS) (MSD-016)	PIG	08/03/2011
P1378S	MSD-029	BLUE PIG® Sock Absorbents (MSD-029) Material Safety Data Sheet (MSDS) (MSD-029)	PIG	02/09/2011
P1379A	CCP-AK-INL-025	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory, Argonne Contact-Handled Transuranic Waste from Facility Maintenance and Laboratory Operations, Waste Streams: ID-AECHDM, ID-AECHHM (CCP-AK-INL-025)	Mike Ramirez	12/16/2011
P138A	DOE/WIPP-069, Revision 5, Draft D	Waste Acceptance Criteria for the Waste Isolation Pilot Plant. DOE/WIPP-069, Revision 5, Draft D (DOE/WIPP-069, Revision 5, Draft D)	US Dept. of Energy INEL files.	1/1/1996
P1380A	CCP-AK-ANLE-001	Central Characterization Project acceptable Knowledge Summary Report for Argonne National Laboratory – East Contact-Handled TRU Waste, Facility Maintenance and Laboratory Operations (CCP-AK-ANLE-001)	David H. Haar	12/31/2003
P1381A	CCP-AK-ANLE-500	CCP-AK-ANLE-500 Central Characterization Project Acceptable Knowledge Summary Report For Argonne Remote-Handled Debris Waste, Waste Stream: AERHDM (CCP-AK-ANLE-500)	Irene Quintana	12/21/2011
P1382A	ANL/D&D/TM-96/3	Decontamination and Decommissioning of 61 Plutonium Gloveboxes in D-Wing, Building 212, Argonne National Laboratory-East: Final Project Report (ANL/D&D/TM-96/3)	ANL-E (C.L. Cheever, R.W. Rose)	1996
P1383S	ID-AECHHM	CCP WSPF package for ANL-E homogeneous solids: ID-AECHHM (ID-AECHHM)	CCP	12/01/2011
P1384S	AE-P-068	Various Material Safety Data Sheets (MSDS) for ANL-E (AE-P-068)	CCP	1980-1990

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P1385S	Federal Register / Vol. 54, No. 223	ENVIRONMENTAL PROTECTION AGENCY, 40 CFR Part 300, [FRL 3681-4], National Priorities List for Uncontrolled Hazardous Waste Sites, Federal Register / Vol. 54, No. 223. (Federal Register / Vol. 54, No. 223)	Environmental Protection Agency	1989
P1386S	Administrative Docket Number:1088-06-120	Idaho National Engineering Laboratory ("INEL") Federal Facility Agreement and Consent Order (FFA/CO) (Administrative Docket Number:1088-06-120)	U.S. EPA	12/09/1991
P1387S	DOE/ID-11359	Record of Decision for Radioactive Waste Management Complex Operable Unit 7-13/14 (DOE/ID-11359)	DOE,EPA and IDEQ	09/01/2008
P1388A	EDF-5307	EDF-5307, Chemical Compatibility and Inventory Evaluation for the Accelerated Retrieval Project and the Accelerated Retrieval Project II (EDF-5307)	ICP	08/09/2006
P1389A	INEL-95/0310 (Formerly EGG-WM-10903)	A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 1, INEL (INEL-95/0310 (Formerly EGG-WM-10903))	INEL, Lockheed Idaho Technologies Company	08/01/1995
P139A	14-RF-04701	Reactivity of Pyrochemical Salts at Rocky Flats Plant. 14-RF-04701. EG&G Rocky Flats, Inc. (14-RF-04701)	EG&G Rocky Flats, Inc.,Obtained from WASTREN files.	4/1/1994
P1390A	INEL-95/0310 (Formerly EGG-WM-10903)	A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 2, INEL (INEL-95/0310 (Formerly EGG-WM-10903))	INEL, Idaho Lockheed Idaho Technologies Company	08/01/1995
P1391A	INEL-95/0310 (Formerly EGG-WM-10903)	A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 3, INEL (INEL-95/0310 (Formerly EGG-WM-10903))	INEL, Lockheed Idaho Technologies Company	08/01/1995
P1392A	INEL-95/0310 (Formerly EGG-WM-10903)	A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 4, INEL (INEL-95/0310 (Formerly EGG-WM-10903))	INEL, Lockheed Idaho Technologies Company	08/01/1995

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P1393A	INEL-95/0310 (Formerly EGG-WM-10903)	A Comprehensive Inventory of Radiological and Nonradiological Contaminants in Waste Buried in the Subsurface Disposal Area of the INEL RWMC During the Years 1952-1983, Volume 5, INEL (INEL-95/0310 (Formerly EGG-WM-10903))	INEL, Lockheed Idaho Technologies Company	08/01/1995
P1394A	N/A	ENVIRONMENTAL STATEMENT; WASTE MANAGEMENT OPERATIONS; NATIONAL REACTOR TESTING STATION, IDAHO	United States Atomic Energy Commission	01/01/1974
P1395A	N/A	Facility Waste Descriptions; Argonne-West	N/A	12/14/1973
P1396S	N/A	RADIOACTIVE WASTE MANAGEMENT at the EBR-II SITE	Donald C. Hampson	04/17/1969
P1397S	ANL-7471	Final Safety Analysis Report On The Zero Power Plutonium Reactor (ZPPR) Facility (ANL-7471)	H. Lawroski, R. G. Palmer, F. W. Thalgott, R. N. Curran, and R. G. Matlock	06/01/1972
P1398S	N/A	MSDS, Hg Absorb®	Lab Safety Supply, Inc.	05/18/2020
P1399S	N/A	MSDS A660 (N)absorbent	NOCHAR, INC	none
P140A	TDR-94-011	Analytical Methods for Determining the Reactivity of Pyrochemical Salts. TDR -94-011. (TDR-94-011)	A. G. Phillips and J. L. Stakebake; Obtained from WASTREN files.	4/18/1994
P1400S	N/A	MSDS Spill X-A	ANSUL, Inc.	09/01/2009
P1401S	N/A	MSDS Spill X-C	ANSUL Inc.	09/01/2009
P1402S	N/A	MSDS Spill X-5 absorbent	ANSUL Inc.	09/01/2009
P1403S	EGG-WTD-9438	A BRIEF ANALYSIS AND DESCRIPTION OF TRANSURANIC WASTES IN THE SUBSURFACE DISPOSAL AREA OF THE RADIOACTIVE WASTE MANAGEMENT COMPLEX AT INEL (EGG-WTD-9438)	D. A. Arrenholz J. L. Knight	11/22/1991
P1404A	DOE 5820.1	Management of Transuranic Contaminated Material - DOE Order 5820.1 (DOE 5820.1)	Department of Energy	09/30/1982
P1405A	INEL-95/0343	Work Plan for Operable Unit (OU) 7-13 & 7-14 Waste Area Group (WAG-7) Comprehensive Remedial Investigation Feasibility Study (RI/FS) - w/addendums (INEL-95/0343)	Bensen, T. A.	05/01/1996

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P1406A	N/A	Guidance for the Movement of MIII Bin that May Contain Explosive Ordnance	Joseph C. Cook	06/25/2009
P1407S		PUBLIC LAW 102-386 "Federal Facility Compliance Act of 1992" ()	U.S. Congress	10/06/1992
P1409S	SR-W027-773A-HOM	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-W027-773A-HOM, SRS Solidified Inorganics from 773A (SR-257) (SR-W027-773A-HOM)	Jim Vernon, CCP AKE	04/17/2012
P141A	RWMC-EDF-805; INEL-95/029	Matrix Parameter Category Groups (MPCG). RWMC-EDF-805; INEL-95/029. LMITCO. Rev. 0, December 13, 1995. Rev. 1, October 27, 1997. Rev. 2, April 12, 2001. Rev. 3, July 9, 2002. Rev. 4, September 13, 2002 (RWMC-EDF-805; INEL-95/029)	BBWI Document Control	9/13/2002
P1411S	INEEL/CON-02-00704	Overview of an Integrated Comprehensive Environmental Response, Compensation and Liability Act Evaluation of the Subsurface Disposal Area at the Idaho National Engineering and Environmental Laboratory. (INEEL/CON-02-00704)	K. J. Holdren	08/04/2002
P1412S	EGG-WM-9707	Radioactive Waste Management Complex Investigations Report, Volumes 1 through 4 (EGG-WM-9707)	M.L. Paarmann	1991
P1413S	SR-SDD-HOM-B	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-SDD-HOM-B, SRS Solidified Inorganics from 211-F (SR-259) (SR-SDD-HOM-B)	Jim Vernon, CCP AKE	04/17/2012
P1414S	SR-SDD-HOM-A	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for SR-SDD-HOM-A, SRS Solidified Organics from 211-F (SR-258) (SR-SDD-HOM-A)	Jim Vernon, CCP AKE	04/17/2012
P1415A	CCP-AK-SRS-7	Central Characterization Project Acceptable Knowledge Summary Report For Savannah River Site Waste Streams: SR-W027-773A-HET, SR-W027-773A-HOM (CCP-AK-SRS-7)	Mark Pearcy	08/12/2011
P1416A	CCP-AK-SRS-13	Central Characterization Project Acceptable Knowledge Summary Report For Savannah River Site Site Deactivation and Decommissioning Waste Waste Streams: SR-SDD-HOM-A, SR-SDD-HOM-B, SR-SDD-HET-A (CCP-AK-SRS-13)	Mike Ramirez	02/23/2012
P1417A	N/A	Pollution Prevention/Waste Minimization Plan	A. M. Collins	01/01/2004
P1418A	W0660-0055-KH	Analytical Laboratory Safety Analysis Report (W0660-0055-KH)	MFC	04/06/2006

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P1419A	W0660-0035-0P	Waste Preparation Procedure for Analytical Laboratory Waste Disposal (W0660-0035-0P)	J.R.Krsul	08/14/1991
P142A	N/A	Material Safety Data Sheet for ZL-30A Zyglo Penetrant. Magnaflux Corporation	Magnaflux Corporation; Obtained from WASTREN files.	4/4/1996
P1420S	PLN-2084	Project Execution Plan for the INTEC Area Cleanup Project (PLN-2084)	CH2M-WG Idaho	06/02/2008
P1421A	CCP-AK-LANL-010	Central Characterization Project Acceptable Knowledge Summary Report for Los Alamos National Laboratory, TA-21 DP West Facility. Waste Streams: LA -MHD04.001, LA-MSG04.001 (CCP-AK-LANL-010)	Mike Ramirez, CCP	05/21/2012
P1422S	PLN-2085	Project Execution Plan for the ICP Radioactive Waste Management Complex Project. Project Nos. 28338 and 23957 (PLN-2085)	CH2M-WG Idaho	07/30/2009
P1423S	LA-MSG04.001	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for LA-MSG04.001, Los Alamos National Laboratory, S4000, IDC LA-250 (LA-MSG04.001)	AMWTP	
P1424S	N/A	INL Integrated Waste Tracking System (IWTS) Container Profiles	INL	Variable
P1425A	LA-5645	Guidelines for the Interim Storage of AEC-Generated Solid Transuranic Wastes (LA-5645)	LANL	06/01/1974
P1426A	ORAUT-TKBS-0007-2	Idaho National Laboratory and Argonne National Laboratory-West – Site Description (ORAUT-TKBS-0007-2)	Oak Ridge Associated Universities, Dade Moeller, MJW Technical Services	08/02/2010
P1427S	DOE/EIS-0203-F-8A-03 - DOE/EIS-0290-8A-01	Remote-Handled Transuranic Waste Final Environmental Impact Statement for INTEC/CPP and the AMWTP (DOE/EIS-0203-F-8A-03 - DOE/EIS-0290-8A-01)	DOE	01/01/2006
P1428S	HWB 04-07	Termination of Settlement Agreement, No. HWB 04-07 (CO) (HWB 04-07)	State of New Mexico, General counsel, Ryan Flynn	08/16/2012
P1429S	WSRC-RP-89-575-VOL-6	Safety Analysis - 200F - Area; Savannah River Site; Building 235-F; Final Safety Analysis Reports (U); Volume 6 (WSRC-RP-89-575-VOL-6)	Westinghouse Savannah River Co.	11/01/1992

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P143A	N/A	Material Safety Data Sheet for Developer Fluid Contained in Film Pod. Polaroid Corporation.	Polaroid Corporation; Obtained from WASTREN files.	2/10/1986
P1430S	IAG-592	Roles and Responsibilities for Sludge Repackage Project Waste Transfers Between ITG and CWI (IAG-592)	Idaho Cleanup Project, INL	08/15/2012
P1431S	DPSTSA-200-10-1	Safety Analysis - 200 Area; Savannah River Plant; Separations Area Operations; 238PuO2 Fuel Form Facility (Sup. 1) (DPSTSA-200-10-1)	H.R. Haynes	06/01/1983
P1432S	SP-400	Material Safety Data Sheets (MSDS) WaterWorks SP-400 (SP-400)	WaterWorks America Inc	none
P1433S	DPSTSA-200-10; Sup. 15	Safety Analysis - 200 Area; Savannah River Plant; Building 235-F (DPSTSA-200-10; Sup. 15)	SAIC	08/01/1986
P1434S	SOP 235-F-3351J	Packaging and Sealing TRU Waste in 55-Gallon Drums (SOP 235-F-3351J)	Leroy Odum	06/12/2001
P1435S	IDO-17021-V1; TID-4500	Safety Analysis Report Advanced Test Reactor Vol. 1 of 2 (IDO-17021-V1; TID-4500)	D. R. deBoisblanc, S. Cohen	04/01/1965
P1436S	INEL-94/0113	Hazard Assessments for Facilities Located at the Test Reactor Area (TRA) (INEL-94/0113)	Don R. Chick, Mike O. Fryer, Doug J. Taylor, Luther D. Watson	07/01/1995
P1437S	INEL/EXT-99-00902	Characterization and Decision Analysis Report for Test Reactor Area 654 and 641 (INEL/EXT-99-00902)	J.D. Long	10/01/1999
P1438S	IN-1046	ETR Operations Branch Progress Report for Cycle No. 84, Sep 25, 1966 - Nov 6, 1966. (IN-1046)	E.H. Smith, et al.	12/16/1966
P1439S	IDO-17144	ETR operations Branch Progress Report for Cycle No.76, October 24, 1965 - December 5, 1965. (IDO-17144)	E.H. Smith, et al.	01/21/1966
P144A	N/A	Material Safety Data Sheet for KODAK Developer D019. CAT 146 4593, CAT 194 6045. Eastman Kodak Company	Eastman Kodak Company; Obtained from WASTREN files.	3/14/1984
P1440S	IDO-17184	ETR Operations Branch Progress Report for Cycle No. 79, 02/27/66 - 04/07/66 (IDO-17184)	E.H. Smith, et al.	06/15/1966
P1441S	IN-1037	ETR Operations Branch Progress Report for Cycle No. 83, 08/14/66 - 09/25/66 (IN-1037)	E.H. Smith, et al.	11/01/1966

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P1442S	IN-1071	ETR Operations Branch Progress Report for Cycle No. 86, 12/15/66 - 01/30/67 (IN-1071)	E.H. Smith, et al.	03/09/1967
P1443S	IN-1059	ETR Operations Branch Progress Report for Cycle No. 85, 11/06/66 - 12/15/66 (IN-1059)	E.H. Smith, et al.	01/31/1967
P1444S	DPSTSA-300-3A	Safety Analysis - 300 Area, Savannah River Plant, Raw Materials Area Operations, Fuel Fabrication Facility, Building 321-M (DPSTSA-300-3A)	A.J. Renwick, J.M. Low	06/01/1987
P1445S	DPSTSA-200-10-SUP-4	Safety Analysis - 200 Area, Savannah River Plant, F-Canyon Operations (U) (DPSTSA-200-10-SUP-4)	SAIC	02/01/1986
P1446S	DPSTSY-200-1F Vol. 1	Safety Analysis - 200 Area, Savannah River Plant, F-canyon Operations (DPSTSY-200-1F Vol. 1)	W.S. Durant, W.C. Perkins, T. F. Severynse	12/01/1983
P1447S	WSRC-RP-89-575-VOL-6	Safety Analysis - 200-F Area, Savannah River Site, Building 235-F, Final Safety Analysis Report (U) (WSRC-RP-89-575-VOL-6)	Westinghouse Savannah River Company	11/01/1992
P1448S	WSRC-SA-96-26	Central Laboratory Facility - Buildings 772-F, 772-1F, and 772-4F, Safety Analysis Report (WSRC-SA-96-26)	Savannah River Site	03/01/2008
P1449S	DPSTSY-200-11	Systems Analysis - 200 Area, Savannah River Plant, HB-Line Operations (DPSTSY-200-11)	H.M. Kelley, R.V. Slates, E.W. Holtzscheiter	05/01/1978
P145A	N/A	Material Safety Data Sheet for KODAK INDUSTREX Developer Replenisher, Part A. CAT 139 7215. Eastman Kodak Company	Eastman Kodak Company; Obtained from WASTREN files.	1/3/1985
P1450S	SRL-MRG-90-9018	Calculation Note: Risk Assessment for Recovery of Pu 242 from Mark 42 Assemblies (U) (SRL-MRG-90-9018)	Thomas P. Henry	06/05/1990
P1451S	300-TOP-6	Temporary Operating Procedure, Sampling TCE Solutions (300-TOP-6)	F.C. Rhode	09/18/1986
P1452S	300-TOP-8	Temporary operating Procedure: Transferring 1,1,1-Trichloroethane (1,1,1-TCE) to DOT-17C drums (300-TOP-8)	C.P. Breidenbach	09/21/1987
P1453S	321-STP-180	Special Test Procedure, Mark 41 Outer Target Development, Pilot Run (321-STP-180)	J.R. Hester	01/24/1975
P1454S	DPSOL 321-1345	Storing Tubes in Honeycomb Rack (DPSOL 321-1345)	Savannah River Site	06/07/1977
P1455S	DPSOL 321-1040; DPSOL 321-1055	Drawbench Tooling; Cleaning Tubes After Drawing or Straighting (DPSOL 321-1040; DPSOL 321-1055)	Savannah River Plant	04/28/1977

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P1456S	N/A	Material safety data sheets (MSDS) for IMBIBER BEADS®	IMBIBITIVE TECHNOLOGIES AMERICA	06/01/2012
P1457A	IW-LAB-S5490-221F	Form-1900 INTEC lab IW-LAB-S5490-221F, IDC: IW-525 (IW-LAB-S5490-221F)	AMWTP	01/12/2010
P1458A	IW-LAB-S3900-221F	Form 1900 IW-LAB-S3900-221F, IDC: IW-602 (IW-LAB-S3900-221F)	AMWTP	No date
P1459S	N/A	Upcoming Lot 3 RH-TRU radioanalytical work	Jeffery S. Laug	09/06/0112
P146A	N/A	Material Safety Data Sheet for KODAK INDUSTREX Developer. CAT 162 8528. Eastman Kodak Company.	Eastman Kodak Company; Obtained from WASTREN files.	8/27/1984
P1460S	N/A	Upcoming Lot 3 RH-TRU radioanalytical work	Jeffery S. Laug	09/06/0112
P1461S	N/A	Material Data Safety Sheet Drierite®, indicating 8 mesh (adsorbent)	Sciencelab.com, Inc.	06/09/2012
P147A	N/A	Material Safety Data Sheet for KODAK HRP Developer. CAT 140 1306. Eastman Kodak Company.	Eastman Kodak Company; Obtained from WASTREN files.	6/25/1984
P148A	N/A	Material Safety Data Sheet for KODAK RP X-OMAT Developer Replenisher. Eastman Kodak Company.	Eastman Kodak Company; Obtained from WASTREN files.	12/31/1985
P149A		Material Safety Data Sheet for AZ-3 Zyglo Emulsifier. Magnaflux Corporation	Magnaflux Corporation; Obtained from WASTREN files.	5/1/1986
P150A	N/A	Material Safety Data Sheet for ZP-Zyglo Aqueous Developer. Magnaflux Corporation.	Magnaflux Corporation; Obtained from WASTREN files.	11/13/1985
P151A	N/A	Safety Analysis Report for the TRUPACT-II Shipping Package. Volume 4, Appendix 3.6.8. Revision 14	Obtained from WASTREN files.	10/1/1994
P152A	N/A	"Plutonium Metal Feed Specification for Use in the Weapons Program." Volume I.	Rocky Flats	3/22/1985
P153A	N/A	Analytical Requirement Review of Saltcrete. Item Description Code 804. 96-RMRS-SSOC-0004.	Michael Connell and Steven Hughes; Ernie Garcia of RFETS.	2/20/1996

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P154A	INEL-95/0475	Uncertainty Analysis of the SWEPP Drum Assay System for Graphite. Content Code 300. INEL-95/0475. (INEL-95/0475)	Yale D. Harker, Larry G. Blackwood, and Teresa R. Meachum; LMITCO.	9/1/1995
P155A	INEL-96/0343	Uncertainty Analysis of the SWEPP PAN Assay System for Glass Waste. Content Codes 440, 441, and 442. (INEL-96/0343)	Larry G. Blackwood, Yale D. Harker, Teresa R. Meachum, and Woo Y. Yoon; LMITCO	10/1/1996
P156A	INEL 96/0257	Uncertainty Analysis of the SWEPP PAN Assay System for Combustible Waste. Content Codes 330 and 336. INEL 96/0257. (INEL 96/0257)	Yale D. Harker, Larry G. Blackwood, Teresa R. Meachum, and Woo Y. Yoon; LMITCO.	8/1/1996
P157A	N/A	Proceeding of the Non-Destructive Assay and Non-Destructive Examination Waste Characterization Conference. CONF-940216	Don Kudera, LMITCO. L.V. East and G.K. Becker	2/16/1994
P158A	EGG-PHY-9204	Matrix Effects in TRU Assays using the SWEPP PAN Assay System. EGG-PHY-9204. (EGG-PHY-9204)	J. R. Smith INEL.	8/1/1990
P159A	RWMC-657	SWEPP Non-Destructive Assay (NDA) Methodology for Waste Entrained Uranium. RWMC-657 (RWMC-657)	G. K. Becker; LMITCO.	9/1/1993
P160A	RWMC-EDF-658	Relative Isotopic Mass Ratio Gamma Measurements. RWMC-EDF-658 (RWMC-EDF-658)	W. Serrano; INEL.	6/28/1994
P161A	N/A	Dose Reconstruction Project Task 5. Estimating Historical Emissions from Rocky Flats. ChemRisk.	Colorado Department of Public Health and Environment (Prepared by ChemRisk)	11/1/1992
P162A	N/A	Dose Reconstruction Project Task 1. Identification of Chemicals and Radionuclides Used at Rocky Flats, Draft Report. ChemRisk.	ChemRisk for Colorado Department of Public Health and Environment.	1/1/1991
P163A	RT92-002	Rocky Flats Plant Plutonium Recovery Reference Process. (Including Historical References 1952 to 1991). RT92-002. (RT92-002)	Rocky Flats Plant	2/3/1992
P164A	RT92-003	A Comprehensive History of the Rocky Flats Plutonium/Actinide Recovery Operations 1952 to 1991. (RT92-003)	L. R. Crisler	2/3/1992
P165A	N/A	A Comprehensive History of the Rocky Flats Plutonium/Actinide Recovery Operations. 1952 – 1991.	Rocky Flats Plant, from BBWI Document Control	NOT DATED

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P166A	RF/03/00/85/0/5	Rocky Flats Risk Assessment Guide. RF/03/00/85/0/5. Safety Analysis Engineering. (RF/03/00/85/0/5)	Bob Meyer, Radiological Assessments Corporation, Ft. Collins, CO.	3/1/1995
P167A	RFP-2899	eptunium Processing at the Rocky Flats Plant. RFP-2899. William V. Conner and Donald L. Baaso (RFP-2899)	William V. Conner and Donald L. Baaso; Source:Bob Meyer, Radiological Assessments Corporation, Ft. Collins, CO.	9/20/1981
P168A	RFP-3061	Status of Americium-241 Recovery at Rocky Flats Plant. RFP-3061. (RFP-3061)	From Bob Meyer, Radiological Assessments Corporation, Ft. Collins, CO.; J. B. Knighton, P. G. Hagan, J. D. Navratil, and G. H. Thompson	3/18/1981
P169A	N/A	Plutonium Isotopic Ratios at Rocky Flats. .	P. W. Krey and B. T. Krajewski; from Bob Meyer, Radiological Assessments Corporation, Ft. Collins, CO.	NOT DATED
P170A	HS371	The Past 30 Years at Rocly Flats Plant. HS371. (HS371)		11/1/1982
P171A	RFP-4826, UC-721, DOE/OSTI-4500	Evaluation of Residue Drum Storage Safety Risks. RFP-4826, UC-721, DOE/OSTI-4500. (RFP-4826, UC-721, DOE/OSTI-4500)	William V. Conner. From Bill Conner, Los Alamos Programs Office.	6/17/1994
P172A	SMU-404	Standard for Cylindrical HEPA Filters. SMU-404 Original Issue: February 1, 1974. (SMU-404)	Document Control, Rocky Flats.	9/24/1991
P173A	SMU-401	Standard for HEPA Filters, General Purpose. SMU-401 (SMU-401)	Document Control, Rocky Flats.	10/1/1974
P174A	N/A	Building 374 Evaporator Feed Streams. WASTREN, Inc.	WASTREN, Inc.	4/1/1992
P175A	87-RF-1817	Conceptual Design Report – Plutonium Recovery Project. Volume II Part 3 – Technical Appendix: Specifications and Drawings. 87-RF-1817 (87-RF-1817)	Source: Vivian Sandalweek, RFETS, x8278	3/16/1987
P176A	SRM-012-022	Project Plan for Inspection, Sampling, and Characterization of Solid Residues. SRM-012-022 (SRM-012-022)	Karen Phillips, SSOC.	12/13/1995
P177A	Task 2 Final Report	(Task 2 Final Report) Selection of the Chemicals and Radionuclides of Concern. ChemRisk. (Task 2 Final Report)	ChemRisk. Copy obtained from CDPHE.	

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P178A	RFP-1311-A	Research and Development Quarterly Progress Report. October, November, and December 1968. RFP-1311-A (RFP-1311-A)	BBWI Document Control	1/31/1969
P179A	RFP-1406-A	Research and Development Quarterly Progress Report. April, May, and June 1969. RFP-1406-A (RFP-1406-A)	Rocky Flats Library (BBWI Document Control)	1989
P180A	RFP-1436-A	Research and Development Quarterly Progress Report. July, August, and September 1969. RFP-1436-A. (RFP-1436-A)	Rocky Flats Library.	10/31/1969
P181A	RFP-1519-A	Research and Development Quarterly Progress Report. January, February, and March 1970. RFP-1519-A (RFP-1519-A)	Rocky Flats Library	4/30/1970
P182A	RFP-1569-A	Research and Development Quarterly Progress Report. April, May, and June 1970. RFP-1569-A. (RFP-1569-A)	Held at BBWI Document Control	9/16/1970
P183A	RFP-1602-A	Research and Development Quarterly Progress Report. July, August, and September 1970 (RFP-1602-A)	M. A. Thompson, et al.	10/30/1970
P184A	RFP-1638-A	Research and Development Quarterly Progress Report. October, November, and December 1970 (RFP-1638-A)	Rocky flats	1/31/1971
P185A		Research and Development Quarterly Progress Report. January, February, and March 1971. RFP-1691-A.	From Rocky Flats Library	4/30/1971
P186A	RFP-1748-A	Research and Development Quarterly Progress Report. April, May, and June 1971 (RFP-1748-A)	Milton A. Thompson	7/30/1971
P187A	RFP-1790-A	Research and Development Quarterly Progress Report. July, August, and September 1971. (RFP-1790-A)	Milton A. Thompson	10/29/1971
P188A	RFP-1837-A	Research and Ecology Annual Report, Chemistry Research and Development. (RFP-1837-A)	M. A. Thompson	4/14/1972
P189A	RFP-1921-A	Research and Ecology Semi-Annual Progress Report. January-July 1972 (RFP-1921-A)	M. A. Thompson	8/30/1972
P190A	RFP-1837-A	Research and Ecology Semi-Annual Report. Chemistry Research and Development. July through December 1972. RFP-1837-A. (RFP-1837-A)	Rocky Flats Library	5/16/1973
P191A	RFP-2102-A	Research and Ecology Semi-Annual Report. Chemistry Research and Development. January-June 1973. RFP-2102-A. (RFP-2102-A)	Rocky Flats Library	8/13/1973
P192A	RFP-2200-A	Research and Ecology Semi-Annual Progress Report, July-December 1973 (RFP-2200-A)	R. D. Forest, et al.	3/18/1974

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P193A	RFP-2360-A	Research and Development Semi-Annual Progress Report for July through December 1974. RFP-2360-A. (RFP-2360-A)	Rocky Flats Library	2/24/1975
P194A	RFP-2417-A	Research and Development Semi-Annual Progress Report for January through June 1975 (RFP-2417-A)	R. H. Karlsson, et al.	8/29/1975
P195A	RFP-2680-A	Research and Developement Semiannual Progress Report for January through June, 1977 (RFP-2680-A)	F. J. Miner, et al.	10/21/1977
P196A	RFP-3180	Chemistry Research and Development Annual Progress Report, November 1, 1979 to October 31, 1980 (RFP-3180)	F. J. Miner, et al.	8/4/1981
P197A	RFP-3324	Chemistry Research and Development Annual Progress Report November 1, 1980 to September 30, 1981. RFP-3324. (RFP-3324)	Rocky Flats Library	8/11/1982
P198A	RFP-3511	Chemistry Research and Development Annual Progress Report November 1, 1981 to September 30, 1982. (RFP-3511)	N/A	9/16/1983
P199A	RFP-3654	Chemistry Research and Development Annual Progress Report, October 1, 1982 to September 30, 1983 (RFP-3654)	F. J. Miner, et al.	9/24/1984
P200A	RFP-3825	Chemistry Research and Development Annual Progress Report, October 1, 1983 to September 30, 1984 (RFP-3825)	K. V. Gilbert, et al	6/13/1986
P201A	RFP-3931	Chemistry Research and Development Annual Progress Report, October 1, 1984 through September 30, 1985 (RFP-3931)	K. V. Gilbert, et al.	8/18/1986
P202A	R&D 86-012	Chemistry R&D Monthly Progress Report. R&D 86-012. (R&D 86-012)	Rocky Flats Library.	1/1/1986
P203A	N/A	Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant.	Carlsbad Area Office	2/13/1997
P204A	DOE/EM-0319	Linking Legacies. Connecting the Code War Nuclear Weapons Production Processes to Their Environmental Consequences. DOE/EM-0319. (DOE/EM-0319)	US DOE Office of Environmental Management.	1/1/1997
P205A	INEEL/EXT-98-01137	Nonmixed Waste Determination for IDC 300 Waste (Graphite Molds) (INEEL/EXT-98-01137)	R. E. Arbon	2/1/1999

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P206A	INEEL/INT-98-01268, EDF-RWMC-1045	234U Activity with Respect to Total Alpha Activity (INEEL/INT-98-01268, EDF-RWMC-1045)	INEEL	2/2/1999
P207A	EDF-RWMC-803	RWMC HWMA/RCRA Permit. Permit Condition II.K.4 Semi-Annual Verification / Characterization Progress Report. This report includes EDF-RWMC-803, Rev. 3 (EDF-95/022, Rev. 3) in an appendix. (EDF-RWMC-803)	N/A	2/1/2000
P208A	N/A	Hydrogen permeability Through Taped and Untapped "Clam Shell" Containers Used at Rocky Flats Environmental Technology Site.	RFETS	11/11/1998
P209A	Drawing No.175603	Radioactive Waste Management Complex Area Map Drawing No.175603, Rev 7, February 24, 2000. Rev. 8, September 18, 2002. (Drawing No.175603)	RWMC Document Control.	9/18/2002
P210A	EDF-1242	Default Plutonium Mass Fractions for Rocky Flats Plant Waste. EDF-1242. (EDF-1242)	Historical Shipping Records	9/1/1999
P211A	CCN 00-011499; WSPF INW276.003	Waste Stream Profile form INW276.003 Graphite, transmittal letter (CCN 00-011499) from Thomas Monk to Jerry Wells, US DOE, dated July 25, 2000, and WSPF Update for WIPP Operating Record dated February 19, 2003. (CCN 00-011499; WSPF INW276.003)	TWCP Document Control, RWMC	2/19/2003
P212A	INW276.004; CNN 00-113770	Waste Stream Profile Form INW276.004 – Graphite, transmittal letter (CNN 00-113770) From Thomas Monk to Jerry Wells, US DOE, dated September 26, 2000, and WSPF Update for WIPP Operating Record, dated February 19, 2003. (INW276.004; CNN 00-113770)	TWCP Document Control RWMC.	2/19/2003
P213A	INW296.001 ; CNN 00-014770	Waste Stream Profile Form INW296.001 – Non-special Source Metals, transmittal letter (CNN 00-014770) from Thomas Monk to Jerry Wells, US DOE, dated October 23, 2000, and WSPF Update for WIPP Operating Record, not dated. (INW296.001 ; CNN 00-014770)	TWCP Document Control RWMC	10/23/2000
P214A	INW247.001	WIPP Waste Stream Profile Form INW247.001-Raschig Rings and Transmittal Letter (CCN 15439) to Jerry Wells, U.S. DOE (INW247.001)	Thomas Monk and Rodney Arbon	11/13/2000
P215A	CNN 19871	Waste Stream Profile Form INW 243.001 – Glass (except Raschig Rings), Transmittal letter (CNN 19871) from Thomas Monk to Jerry Wells, US DOE, dated March 26, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003. (CNN 19871)	Thomas Monk	3/26/2001

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P216A	INW211.001 ; CNN 21154	Waste Stream Profile Form INW 211.001 - Filters and Insulation, transmittal letter (CNN 21154) from Thomas Monk to Jerry Wells, US DOE, dated April 26, 2001, and WSPF Update for WIPP Operating Record, not dated. (INW211.001 ; CNN 21154)	TWCP Document Control RWMC.	4/26/2001
P217A	INW 216.001 ; CNN 21151	Waste Stream Profile Form INW 216.001 - First/Second Stage Sludge, transmittal letter (CNN 21151) from Thomas Monk to Jerry Wells, US DOE, dated May 24, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003. (INW 216.001 ; CNN 21151)	TWCP Document Control	2/19/2003
P218A	INW 218.001 ; CNN 23889	Waste Stream Profile Form INW 218.001 - Building 374 Sludge, transmittal letter (CNN 23889) from Thomas Monk to Jerry Wells, US DOE, dated July 19, 2001, and WSPF Update for WIPP Operating Record, dated February 19, 2003. (INW 218.001 ; CNN 23889)	TWCP Document Control RWMC.	2/19/2003
P219A	INEEL /EXT-01-00015	Hazardous Waste Code Determination for First / Second Stage Sludge Waste Stream (IDCs 001, 002, 800). INEEL /EXT-01-00015. Arbon, R. E., Bechtel BWXT Idaho, LLC, May 2001. (INEEL /EXT-01-00015)	R.E. Arbon, TWCP Document Control RWMC	5/1/2001
P220A	INEEL /EXT-01-00517	Hazardous Waste Code Determination for Rocky Flats Plant Building 374 Sludge Waste Stream (IDCs 007, 803, 807a). INEEL /EXT-01-00517. Rodney Arbon, Sheila Hailey, Joan Connolly, Carolyn Abbott. (INEEL /EXT-01-00517)	Rodney Arbon, Sheila Hailey, Joan Connolly, Carolyn Abbott. TWCP Document Control RWMC.	7/1/2001
P221A	EDF-1175	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Graphite. Bechtel BWT Idaho, LLC. EDF-1175, Rev. 0, July 19, 1999. Rev. 1, April 18, 2000. Rev. 2, June 26, 2000. Rev. 3, July 20, 2000. Rev. 4, September 6, 2000. Rev. 5, May 8, 2002. Rev. 6, August 6, 2002. Rev. 7, January 6, 2003. (EDF-1175)	TWCP Document Control, RWMC; Rev. 0-4 S.M. Hailey, Rev 5-6 B. Tolman, and Rev. 7 C. Marcinkiewicz.	1/6/2008
P222A	EDF-1686	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Light Metals. Rev. 0, October 24, 2000. Rev. 1, May 8, 2002. Rev. 2, August 6, 2002. Rev. 3, January 6, 2003. (EDF-1686)	TWCP Document Control, RWMC; Rev 3 - C. Marcinkiewicz,Rev 1,2 - B. Tolman, Rev 0 S.M. Haeley & B.J. Tolman.	1/6/2003

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P223A	EDF 1594	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Raschig Rings. Bechtel BWT Idaho, LLC. EDF 1594, Rev. 0. November 7, 2000. EDF 1594, Rev. 1 May 8, 2002. Rev. 2, August 6, 2002. Rev. 3, January 6, 2003. (EDF 1594)	TWCP Document Control, RWMC; Rev. 3 - C. Marcinkiewicz, Rev.1,2 B. Tolman, Rev. 0 - S.M. Hailey & B.J. Tolman	1/6/2008
P224A	EDF- 1926	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Glass (Except Raschig Rings) Rev. 0 March 26, 2001. EDF-1926, Rev. 1 May 8, 2002. Rev. 2, August 6, 2002. Rev. 3, January 6, 2003. (EDF- 1926)	TWCP Document Control, RWMC; Rev. 0 - S.M. Hailey, B.J. Tolman, Rev.1-2 B.J. Tolman, Rev. 3 - C. Marcinkiewicz.	1/6/2003
P225A	EDF 1927	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Filters and Insulation Rev. 0, May 3, 2001. Rev. 1, May 10, 2001. Rev. 2, June 13, 2001. Rev. 3, May 8, 2002. Rev. 4, August 6, 2002. Rev. 5, January 6, 2003. (EDF 1927)	TWCP Document Control, RWMC; Rev. 0,1,2 - B.J. Tolman & S.M. Hailey, Rev. 3,4 - B.J. Tolman, Rev. 5 - C. Marcinkiewicz	1/6/2003
P226A	EDF- 1809	INEEL Acceptable Knowledge Waste Stream Summary Sheet – First/Second Stage Sludge. Rev. 0, January 17, 2001. Rev. 1, May 24, 2001. Rev. 2, May 8, 2002. Rev. 3, August 6, 2002. Rev. 4, August 29, 2002. Rev. 5, January 6, 2003. (EDF-1809)	TWCP Document Control, RWMC; Rev. 0,1 - S.M. Hailey,B.J. Tolman, Rev. 2,3,4 - B.J. Tolman, Rev. 5 - C. Marcinkiewicz.	1/6/2003
P227A	EDF-1609	Plutonium Mass Fractions derived from SGRS Data. Bechtel BWXT Idaho, LLC. EDF-1609. (EDF-1609)	TWCP Document Control RWMC; Yale D. Harker	6/29/2000
P228A	INEEL/EXT-2001-00324	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Organic Setups Sludge Waste. Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum. INEEL/EXT-2001-00324, Rev. 0. May 2001. (INEEL/EXT-2001-00324)	Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum; Source: Scott Roesener	5/1/2001
P229A	INEEL/EXT-97-01273	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Solidified Aqueous Sludge Waste. Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum. INEEL/EXT-97-01273. April 2000. (INEEL/EXT-97-01273)	Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum. Source: : INEEL Electronic Document Management System	4/1/2000

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P230A	INEEL/EXT-97-00812	SWEPP PAN Assay System Uncertainty Analysis: Passive Mode Measurements of Graphite Waste. Blackwood, Larry T., Yale D. Harker, Teresa R. Meachum, Woo Y. Yoon.INEEL/EXT-97-00812. (INEEL/EXT-97-00812)	Teresa Meachum, INEEL TRU Waste Program.(Larry G. Blackwood, Yale D. Harker, Teresa R.Meachum, Woo Y. Yoon)	7/1/1997
P231A	INEEL/EXT-98-01215	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Graphite Waste. Blackwood, Larry G., Yale D. Harker. INEEL/EXT-98-01215. (INEEL/EXT-98-01215)	Teresa Meachum, INEEL TRU Waste Program. (Blackwood, Larry G., Yale D. Harker)	12/1/1998
P232A	INEEL/EXT-2000-01006	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Combustible Waste. Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon. INEEL/EXT-2000-01006, Rev 0, November 2000. INEEL/EXT-2000-01006, Rev 1. October 2001. (INEEL/EXT-2000-01006)	Electronic Document Management System. Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon	10/20/2008
P233A	INEEL/EXT-2001-01001	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Filter Waste. Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum, Woo Y Yoon. INEEL/EXT-2001-01001. January 2001. (INEEL/EXT-2001-01001)	INEEL Electronic Document Management System: Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum, Woo Y Yoon	1/1/2001
P234A	INEEL/EXT-2000-00969	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Glass Waste. Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon. INEEL/EXT-2000-00969. July 2000. (INEEL/EXT-2000-00969)	Teresa Meachum, TRU Waste Program; Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon.	7/1/2000
P235A	INEEL/EXT-2000-01000	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Raschig Rings Waste. Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon. INEEL/EXT-2000-01000. (INEEL/EXT-2000-01000)	Blackwood, Larry G., Yale D. Harker, Teresa R Meachum, Woo Y Yoon. Source: Teresa Meachum, TRU Waste Program	7/1/2000
P236A	INEEL/EXT-99-00939INEEL/EXT-99-00939	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Mixed Metal Waste. Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum, Woo Y Yoon. INEEL/EXT-99-00939. (INEEL/EXT-99-00939INEEL/EXT-99-00939)	Blackwood, Larry G., Yale D. Harker, Teresa R. Meachum, Woo Y Yoon. source: Teresa Meachum, TRU Waste Program.	10/1/2000

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P237A	INEEL/INT-98-01210; EDF-RWMC-1043	Characterization of Wastes Used in the 1991 through 1993 SWEPP Certified Waste Sampling Program. Lockheed Idaho Technologies Company. (INEEL/INT-98-01210; EDF-RWMC-1043)	C. B. Ransom	4/7/1999
P238A	EDF-2657	INEEL Acceptable Knowledge Waste Stream Summary Sheet – Building 374 Sludge. (EDF-2657)	C. Marcinkiewicz	1/6/2003
P239A	RWMC-EDF-942, INEL/INT-97-00214	Disagreement with the Assignment of EPA Hazardous Waste Numbers by the Acceptable Knowledge Document, INEL 96/0280 (RWMC-EDF-942, INEL/INT-97-00214)	D.E. Kudera, M.S. DeHaan	8/12/1997
P240A	EDF-RWMC-840	Document SWEPP NDA Compliance Development. Bechtel BWXT Idaho, LLC. EDF-RWMC-840, Rev. 2, March 6, 2000. Rev. 3, May 10, 2001. Rev. 4, August 6, 2002. (EDF-RWMC-840)	Ed Gulbransen (Rev. 4)BBWI Document Control.	8/6/2002
P241A	EDF-RWMC-843	TWCP WIPP WAC Nondestructive Assay Requirements and QAO Compliance Demonstration. EDF-RWMC-843, Rev. 0, June 25, 1997. Rev. 3, April 20, 2000. Rev. 4, November 29, 2001. (EDF-RWMC-843)	G.K. Becker, H.J. Dahlke, Gary W.Twedell - BBWI Document Control.	11/29/2001
P242A	EDF-RWMC-919	RTR Review Process to Support the Total Uncertainty Evaluation (EDF-RWMC-919)	P. J. Taylor, Y. D. Harker	9/22/1997
P243A	EDF-924	INEEL CH TRU Waste Certification Capabilities Implementation. EDF-924, Rev. 8, November 26, 2001. Rev. 9, April 8, 2002. Rev. 10, June 20, 2002. Rev. 11, July 18, 2002. Rev. 12, September 25. 2002. Rev. 13, March 3, 2003. (EDF-924)	BBWI Document Control. Rev. 10-12 by C.W. Brooks.	3/3/2003
P244A	EDF-973	Zero Matrix Calibration of the SWEPP PAN System. EDF-973, Rev. 3, November 29, 2001. Rev. 4, April 4, 2002. (EDF-973)	Y.D. Harker, G.W. Tweddell. BBWI Document Control.	4/4/2002
P245A	EDF-RWMC-1009	SWEPP Assay System Minimum Detectable Concentration for Solidified Aqueous Sludge Waste Forms. EDF-RWMC-1009. (EDF-RWMC-1009)	Y.D. Harker, G.W. Twedell, L.G.Blackwood, BBWI Document Control	2/2/1998
P246A	EDF 1402	Available Inventory for SWEPP Processing for the 3,100 m3 Project. EDF 1402, Rev. 3, March 7, 2002. Rev. 4, April 19, 2002. Rev. 5, March 14, 2003 (EDF 1402)	D.H. Van Haaften	3/14/2003
P247A	EDF-1769	MDC for Glass, Filters, Mixed Metals, Combustibles. EDF-1769 Rev. 0, December 20, 2000. Rev. 1, April 19, 2002. (EDF-1769)	Yale D. Harker	4/19/2002

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P248A	EDF 2670	Extension of the Stored Waste Examination Pilot Plant Passive-Active Neutron Drum Assay System Active-Mode Qualification Range to 47 Grams Plutonium Fissile Gram Equivalent for Solidified Inorganic Sludge Wastes. [Document name changed from Rev. 1, "SWEPP Assay Systems."] RWMC EDF 2670, Rev. 1, August 16, 2001. Rev. 2, June 27, 2002. (EDF 2670)	C.W. Brooks, L.G. Blackwood - BBWI Document Control.	6/27/2002
P249A	EDF-2721	WAGS Absolute Calibration, QAO, TMU, and MDC.EDF-2721, Rev. 0, March 15, 2002. Rev. 1, August 1, 2002. Rev. 2, September 3, 2002. (EDF-2721)	J.G. Fleissner, BBWI Document Control.	9/3/2002
P250A	EDF-2986	Generalized MDL-MDC for SWEPP PAN Active Mode. EDF-2986. (EDF-2986)	Y.D. Harker - BBWI Document Control.	2/11/2002
P251A	EDF-3068	Minimum Detectable Concentrations for IDC 004, IDC 700, IDC 801, and IDC 802. EDF-3068. (EDF-3068)	Y.D. Harker - BBWI Document Control.	2/12/2002
P252A	EDF 3107	Minimum Detectable Concentrations for Miscellaneous Cemented Sludges. EDF 3107, Rev. 0, March 13, 2002. Rev. 1, April 11, 2002. (EDF 3107)	Y.D. Harker - BBWI Document Control.	4/11/2002
P253A	EDF-3146	Minimum Detectable Concentrations for IDCs 320, 321, and 339. EDF-3146. (EDF-3146)	Y.D. Harker - BBWI Document Control.	2/19/2002
P254A	EDF-RWMC-1035	SAS Minimum Detectable Concentration for Inorganic Sludge Waste Forms. EDF-RWMC-1035. (EDF-RWMC-1035)	Y.D. Harker, L.G. Blackwood - BBWI Document Control.	7/27/1998
P255A	EDF-1104	Uncertainty Analysis for Non-300 Graphite Codes. EDF-1104. (EDF-1104)	Y.D. Harker, L.G. Blackwood, C.R. Hoffman - BBWI Document Control.	5/5/1999
P256A	EDF-1255	SAS Minimum Detectable Concentration for Mixed Metals Waste Forms. EDF-1255. (EDF-1255)	Yale D. Harker	10/19/1999
P257A	EDF-3147	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Lead-Containing Waste. EDF-3147. (EDF-3147)	Larry G. balckwood - BBWI Document Control.	2/19/2002
P258A	EDF-RWMC-1092	Bias Correction Parameters with Increased Significant Digits for PAN Active Mode Measurements for Graphite Waste. EDF-RWMC-1092. (EDF-RWMC-1092)	Larry G. Blackwood - BBWI Document Control.	4/22/1999

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P259A	INEEL/EXT-01-01204	Uncertainty Analysis of SWEPP Gamma-Ray Spectrometer System Absolute Plutonium Mass Measurements. Larry G. Blackwood, Yale D. Harker, Teresa R. Meachum, and E. Wayne Killian. INEEL/EXT-01-01204. (INEEL/EXT-01-01204)	Larry G. Blackwood, Yale D. Harker, Teresa R. Meachum, E. Wayne Killian	11/1/2001
P260A	INEEL/EXT-01-01392	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Plastic Waste. INEEL/EXT-01-01392. Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum. (INEEL/EXT-01-01392)	Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum - BBWI Document Control.	11/1/2001
P261A	INEEL/EXT-01-01590	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Solidified Organics and Special Setups Waste. INEEL/EXT-01-01590. Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum. (INEEL/EXT-01-01590)	Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum - BBWI Document Control.	12/1/2001
P262A	INEEL/EXT-01-01614	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements of Miscellaneous Cemented Waste. INEEL/EXT-01-01614. Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum. December 2001. (INEEL/EXT-01-01614)	Larry G. Blackwood, Yale D. Harker, and Teresa R. Meachum - BBWI Document Control.	
P263A		Radioassay Total Uncertainty Process using Modified Statistical Sampling Approach. MCP-2990, Rev. 2, February 29, 2000. Rev. 3, March 22, 2001. Rev. 4, November 20, 2002.	BBWI Document Control.	11/2/2009
P264A	MCP-2991	Radioassay Total Uncertainty Process using Statistical Sampling Approach. MCP-2991, Rev. 2, February 29, 2000. Rev. 3, March 22, 2001. Rev. 4, November 8, 2001. Rev. 5, June 5, 2002. Rev. 6, TBD. (MCP-2991)	BBWI Document Control.	6/5/2020
P265A	PLN-579	Certification of INEEL Contact-Handled Stored Transuranic Waste. PLN-579, Rev. 2, April 26, 2001. Rev. 3, April 4, 2002. Rev. 4, May 17, 2002. Rev. 5, July 15, 2002. (PLN-579)	M. Sherick - BBWI Document Control.	7/15/2002
P266A	INEEL/EXT-01-01365	SWEPP Absolute Gamma Analysis Package (SAP) Software Requirements Specification. E. W. Killian. INEEL/EXT-01-01365, Rev. 1. (INEEL/EXT-01-01365)	E.W. Killian - BBWI Document Control.	2/1/2002

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P267A	INEEL/EXT-01-01366	SWEPP Absolute Analysis Package (SAP) Software Design Description. E. W. Killian. INEEL/EXT-01-01366, Rev. 1. (INEEL/EXT-01-01366)	E.W. Killian - BBWI Document Control.	2/1/2002
P268A	INEEL/EXT-01-01367	SWEPP Absolute SWEPP Absolute Analysis Package (SAP) Calculation Methods. E. W. Killian, C. V. McIsaac. INEEL/EXT-01-01367, Rev. 0. (INEEL/EXT-01-01367)	E. W. Killian, C. V. McIsaac - BBWI Document Control.	2/1/2002
P269A		SWEPP Absolute Analysis Package (SAP) Software Test Plan and Report. C. R. Hoffman. INEEL/INT-01-01368, Rev. 2, February 2002. Rev. 3, April 02, 2002.	C. R. Hoffman - BBWI Document Control.	4/2/2002
P270A	INEEL/INT-01-01369	SWEPP Absolute Analysis Package (SAP) Users Guide. E. W. Killian. INEEL/INT-01-01369, Rev. 0. (INEEL/INT-01-01369)	E. W. Killian - BBWI Document Control.	2/1/2002
P271A	INEEL/INT-01-01537	User Guide for the Stand-Alone Version of SRAC. E. W. Killian. INEEL/INT-01-01537, Rev. 0. (INEEL/INT-01-01537)	E. W. Killian - BBWI Document Control.	1/1/2002
P272A	INEEL/EXT-98-00957	SWEPP Assay System Version 3.2 Software Requirements Specification. Larry V. East. INEEL/EXT-98-00957. Rev. 0, March 2000. Rev. 1, (INEEL/EXT-98-00957)	Larry V. East - BBWI Document Control.	5/18/2020
P273A	INEEL/EXT-98-00958	SWEPP Assay System Version 3.2 Design Description. Larry V. East. INEEL/EXT-98-00958. (INEEL/EXT-98-00958)	Larry V. East - BBWI Document Control.	3/1/2000
P274A	INEEL/INT-2000-00289	SWEPP Gamma Analysis Package (SGAP) Software Requirements Specification. L. Van Ausdeln, E. W. Killian, and L. O. Johnson. INEEL/INT-2000-00289, Rev. 0. (INEEL/INT-2000-00289)	L. Van Ausdeln, E. W. Killian, and L. O. Johnson - BBWI Document Control.	9/1/2000
P275A	TPR-1719	Calibration of SWEPP Radioassay Systems. TPR-1719, Rev. 16, November 30, 2001; Rev. 17, May 20, 2002; Rev. 18, May 20, 2002; Rev. 19, November 15, 2002. (TPR-1719)	BBWI Document Control.	11/1/2009
P276A	EDF-2019	IDC 339 Mass Attenuation Coefficient Table for SGAP. EDF-2019. (EDF-2019)	G.L. Jones - BBWI Document Control.	4/2/2002
P277A	EDF-3154	Generalized MDL/MDC for SWEPP Absolute Analysis Package (SAP) when Analyzing Spectra from the SWEPP Gamma-Ray Spectrometer (SGRS). EDF-3154, Rev. 0, April 2, 2002. Rev. 1, August 2, 2002. (EDF-3154)	Yale D. Harker - BBWI Document Control.	8/2/2009
P278A	EDF-3156	TWCP WIPP WAC Nondestructive Assay QAO Compliance Testing of the SWEPP Absolute Analysis Package. EDF-3156, Rev. 0, March 11, 2002. Rev. 1, April 2, 2002. (EDF-3156)	G.W. Twedell - BBWI Document Control.	4/2/2002

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P279A	EDF-1994	Uncertainty Analysis Gamma-Ray Spectrometer System Absolute Plutonium Mass Measurements. EDF-1994. April 2, 2002 (EDF-1994)	BBWI Document Control.	4/2/2002
P280A	EDF-3017	WAGS Absolute Technical Review Process. EDF-3017, Rev. 0, April 2, 2002. Rev. 1, July 18, 2002. Rev. 2, August 5, 2002. (EDF-3017)	BBWI Document Control.	8/5/2002
P281A	CI-IDA-NDA-013	WAGS Absolute System Acceptance Test Report. CI-IDA-NDA-013. (CI-IDA-NDA-013)	BBWI Document Control.	12/10/2001
P282A	EDF-2891	INEEL Acceptable Knowledge Waste Stream Summary Sheet–Combustibles. Bechtel BWXT Idaho, LLC. (EDF-2891)	C. Marcinkiewicz	1/6/2003
P283A	EDF-2944	INEEL Acceptable Knowledge Waste Stream Summary Sheet–Plastics. Bechtel BWXT Idaho, LLC (EDF-2944)	C. Marcinkiewicz	1/6/2003
P284A	CCN 29583/INW169.001	Waste Stream Profile Form INW169.001-Combustibles and Transmittal Letter (CCN 29583) from Thomas Monk to Jeff Cotton, Westinghouse TRU Solutions LLC. (CCN 29583/INW169.001)	For CCN 29583 - Thomas Monk;BBWI Document Control.	2/1/2002
P285A	INW198.001	Waste Stream Profile Form INW198.001-Plastics and Transmittal Letter (CCN 29583 from Thomas Monk to Jeff Cotton, Westinghouse TRU Solutions LLC. (INW198.001)	CNN 29583 - Thomas Monk; BBWI Document Control	2/1/2002
P286A	EDF-2722	INEEL Acceptable Knowledge Waste Stream Summary Sheet-Miscellaneous Cemented Sludges. Bechtel BWXT Idaho, LLC. EDF-2722, Rev. 1, April 11, 2002. Rev. 2, August 6, 2002. Rev. 3, August 29, 2002. Rev. 4, January 6, 2003. (EDF-2722)	Bechtel BWXT Idaho, LLC	1/6/2003
P287A	INEEL/EXT-02-00112	Characterization of Rocky Flats Plant Building Miscellaneous Cemented Sludge Waste Stream (IDCs 292 and 807b) (INEEL/EXT-02-00112)	Sheila Hailey, Joan Connolly, Carolyn Abbott, Christine Gomez, and Paul Gomez	3/1/2002
P288A	INW222.001	Waste Stream Profile Form INW222.001-Miscellaneous Cemented Sludges, Transmittal Letter (CCN 31196) to Jerry L. Wells, U.S. DOE, and WSPF Update for WIPP Operating Record (2/19/03) (INW222.001)	Thomas Monk	4/10/2002
P289A	EDF 1180	Waste Stream Profile Form and Associated Evaluations for IDC 300. EDF 1180. (EDF 1180)	S.M. Hailey - BBWI Document Control.	4/18/2000

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P290A	N/A	Disposition of Ash Residue Material from the 1969 Building 776 Fire at the Rocky Flats Environmental Technology Site. Prepared by IT Corporation for Safe Sites of Colorado. Cameron J. Freiboth and Frank E. Gibbs, PhD.	Cameron J. Freiboth and Frank E. Gibbs, PhD.	2/10/2000
P291A	EDF-RWMC-1045	234U Activity with Respect to Total Alpha Activity. EDF-RWMC-1045, Rev. 1. (EDF-RWMC-1045)	Cecilia R. Hoffman	3/17/1999
P292A	MCP-1815	RWMC Data Generation Level Data Validation. MCP-1815, Rev. 19, May 20, 2002. Rev. 20, August 7, 2002. Rev. 21, November 20, 2002. (MCP-1815)	BBWI Document Control.	11/20/2002
P293A	INEEL/INT-2000-00288	Description of SWEPP Gamma Analysis Package (SGAP) Software Calculation Methods. INEEL/INT-2000-00288, Rev. 0. (INEEL/INT-2000-00288)	C.V. McIsaac, E.W. Killian, L.O. Johnson - BBWI Document Control.	9/1/2000
P294A	INEEL/EXT-02-00287	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Firebrick Waste. INEEL/EXT-02-00287, Rev. 0. (INEEL/EXT-02-00287)	Larry G. Blackwood, Yale D. Harker, Teresa R. Meachum	3/1/2002
P295A	EDF-2059	SWEPP PAN Assay System Uncertainty Analysis: Passive and Active Mode Measurements of Firebrick Waste. EDF-2059, Rev. 0. (EDF-2059)	Larry G. Blackwood - BBWI Document Control.	5/1/2002
P296A	EDF-1553	SWEPP PAN Assay System Uncertainty Analysis: Active Mode Measurements Of Lead-Miscellaneous Cemented Waste. EDF-1553, Rev. 0. (EDF-1553)	Larry G. Blackwood - BBWI Document Control.	6/28/2002
P297A	EDF-2957	Surrogate Matrix Response Evaluation For The SWEPP PAN System. EDF-2957, Rev. 1. (EDF-2957)	C.V. Mcisaac, G.W. Twedell - BBWI Document Control.	4/19/2002
P298A	SDD-105	Waste Assay Gamma-Ray Spectrometer (WAGS) Absolute System Description. SDD-105, Rev. 0. (SDD-105)	BBWI Document Control.	4/5/2002
P299A	EDF-2775	Overview of SAS V3.3 Software Changes. EDF-2775, Rev. 0. (EDF-2775)	G.L. Jones, J.E. Brasler - BBWI Document Control.	2/7/2002
P300A	INEEL/INT-2000-00290	SWEPP Gamma Analysis Package (SGAP) Software Test Plan and Report. INEEL/INT-2000-00290, Rev. 1. (INEEL/INT-2000-00290)	L.A. Van Ausdeln, E.W. Killian, L.O. Johnson - BBWI Document Control.	1/1/2001
P301A	INEEL/EXT-2000-00287	SWEPP Gamma Analysis Package (SGAP) Software Design Description. INEEL/EXT-2000-00287, Rev. 0. September 2000 (INEEL/EXT-2000-00287)	E.W. Killian, C. V. McIsaac	9/1/2000
P302A	EDF-2018	Effect of Background on SGRS Assay Results and the Determination of Default Isotopic LLDs for the SGRS. EDF-2018, Rev. 0. (EDF-2018)	Y.D. Harker - BBWI Document Control.	8/2/2002

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P303A	RWMC-EDF-363	Description of the SWEPP Certified Waste Sampling Program. RWMC-EDF-363, Rev. 0, May 19, 1989. Rev. 7, April 16, 1997. Rev. 8, Not Dated. Rev. 9, Not Dated. Rev. 11, July 28, 1998. Rev. 12, April 20, 1999. Rev. 13, Not Dated. Rev. 14, March 28, 2000. Rev. 15, June 28, 2000. Rev. 16, December 5, 2000. Rev. 17, August 2, 2001. Rev. 18, August 2, 2002. Rev. 19, August 29, 2002. Rev. 20, October 22, 2002. Rev. 21, November 20, 2002. (RWMC-EDF-363)	J.J. Einerson (Rev 21) - BBWI Document Control and EDMS.	11/20/2002
P304A		Transuranic Waste Sampling Plan for the Idaho National Engineering and Environmental Laboratory. EDF-909. Rev. 0, November 18, 1996. Rev. 1, January 12, 1998. Rev. 2, September 3, 1998. Rev. 3, November 9, 2000.	J.J. Einerson, R.E. Arbon - BBWI Document Control.	11/9/2000
P305A	EDF-2981	Waste Stream Profile Form INW252.001-Leaded Rubber Gloves and Aprons; EDF-2981, Rev. 0, Waste Stream Summary Sheet–Leaded Rubber Gloves and Aprons (10/02/02); and Transmittal Letter (CCN 36785) from Thomas Monk to Jerry Wells. October 15, 2002. EDF-2981, Rev. 1, January 6, 2003. (EDF-2981)	Thomas Monk	10/15/2002
P306A	EDF-3019	Waste Stream Profile Form INW161.001-Fire Brick/Coarse Fire Brick; EDF-3019, Waste Stream Summary Sheet–Fire Brick/Coarse Fire Brick; and Transmittal Letter (CCN 35971) to Jerry Wells. (EDF-3019)	Thomas Monk and C. J. Marcinkiewicz	1/6/2003
P307A	EDF-RWMC-369	Hazardous Waste Constituents of INEL Contact-Handled Stored Transuranic Waste (EDF-RWMC-369)	D. E. Kudera	05/19/1989
P308A	RF124.01	RFETS Waste Stream Profile Form for Leaded Drybox Gloves, RF124.01, and associated Characterization Information Summaries and Waste Stream Summaries. (RF124.01)	BBWI Document Control.	8/14/2002
P309A	EDF-RWMC-759	Argonne National Laboratory-East Remote Handled Waste (EDF-RWMC-759)	W. Mahlon Heileson	08/29/1994
P310A	EDF-RWMC-421	EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes (EDF-RWMC-421)	EG&G Idaho, Inc.	04/01/1994

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P311A	EDF-RWMC-1051	Statistical Sampling Plan for Verifying Characterization of Drums with "Unknown" Contents. EDF-RWMC-1051, Rev. 0. (EDF-RWMC-1051)	C.L. Atwood - BBWI Document Control.	4/8/1999
P312A	INEEL/INT-99-00081, LMITCO.	Characterization of Wastes Generated at Argonne National Laboratory-West with IDCs of 161, 162, and 163 (INEEL/INT-99-00081, LMITCO.)	C. B. Ransom	04/07/1999
P313A	INEEL/INT-99-00226, LMITCO, EDF -RWMC-1062,	Characterization of Wastes Generated at Mound Laboratory with IDCs of 825, 847, and 848. (INEEL/INT-99-00226, LMITCO, EDF-RWMC-1062,)	C. B. Ransom	4/7/1999
P314A	EDF-RWMC-452	Retrieval and Disposition of United States Americium from Mexico. (EDF-RWMC-452)	RWMC	3/19/1991
P315A	EDF-RWMC-332	TRU Waste Assessment (for the J.C. Haynes TRU Waste Classification). (EDF-RWMC-332)	BBWI	8/10/1088
P316A	EDF-RWMC-1776	Characterization of Containers with Unknowns-Remnant Containers (EDF-RWMC-1776)	C. A. Major	2/12/2001
P317A	EDF-RWMC-1615	Characterization of Containers with Unknowns-Phase IV (EDF-RWMC-1615)	C. A. Major and J. Medeiros	10/2/2000
P318A	EDF-RWMC-1579	Characterization of Containers with Unknowns through Expert Committee Consensus (EDF-RWMC-1579)	C. A. Major, J. Medeiros, R. A. Nesmith, D. M. Hartley	10/02/2000
P319A	WM-F1-81-015	Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification. (WM-F1-81-015)	T.L. Clements, Jr.	09/00/1981
P320A	INEEL/EXT-99-00575	Characterization Plan for Existing Contact-Handled Waste Containers of Unknowns in RWMC HWMA/RCRA Permitted Storage Inventory. (INEEL/EXT-99-00575)	BBWI Document Control.	8/1/2000
P321A	EDF-2710	Comparison of Real Time Radiography (RTR) and Visual Examination Results of the Stored Waste Examination Pilot Plant Certified Waste Sampling Program, EDF-2710; and the associated RTR-VE Database CD dated 12/11/02. December 2002. (EDF-2710)		12/00/2002
P322A	EDF-3374	Radioassay Data Collected During 3100 Cubic Meter Project. EDF-3374, Rev. 0. January 2003. (EDF-3374)	N/A	1/1/2003
P323A	Course 7,Lesson 10	Course 7: Metals for Nuclear Power. Lesson Ten: Structural Materials. D. W. Lillie, BA, General Electric Research Laboratory (Course 7,Lesson 10)	D. W. Lillie, BA, General Electric Research Laboratory	1958

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P324A	N/A	Marine Strip Material Safety Data Sheet (MSDS). November 26, 1991.	Battelle Columbus West Jefferson files.	11/26/1991
P325A	N/A	The U.S. Government and Battelle, Partners in Nuclear Research, 1943 – Present	Battelle Columbus Laboratories.	1985.
P326A	100-00,101-00	West Jefferson Category 1 and 3 Low-Level Waste Summary. Battelle Columbus Laboratory Decommissioning Project. (100-00,101-00)	Battelle Columbus Laboratory Decommissioning Project	7/25/1997
P327A	N/A	Hot-Laboratory Facility and Summary of Capabilities	Battelle Columbus West	UNKNOWN
P328A	N/A	Decontamination of Battelle Columbus' Plutonium Facility. Final Report to U.S. DOE Chicago.	Ann Rudolph, George Kirsch, and Harley L. Toy.	11/12/1984
P329A	N/A	Finding of No Significant Impact and Environmental Assessment. Battelle Columbus Laboratories Decommissioning Project.	U.S. DOE Chicago Operations Office	6/1/1990
P330A	Microfiche 83-01-0029	Battelle-Columbus 40 Years of Energy Research for the U.S. Government. (Microfiche 83-01-0029)	Battelle Memorial Institute.	1985
P331A	N/A	Battelle Columbus Laboratory Decommissioning Project Baseline.	Battelle Columbus Laboratory - DOE Ohio Field Office, Columbus Environmental Management Project Library.	11/1/1992
P332A	N/A	Interim Guidance on Ensuring that Waste Qualifies for Disposal at the Waste Isolation Pilot Plant. February 13, 1997.	Battelle Columbus West Jefferson files.	2/13/1997
P333A	N/A	Plan for Fully Decontaminating The Battelle Plutonium Laboratory	UNKNOWN	5/1/1978
P334A		Topical Report on Decontamination of Plutonium-Contaminated Glove Boxes	D. E. Stellrecht, D. G. Freas, and J. F. Dettorre	6/1/1979
P335A	N/A	Topical Report on Volume Reduction Experiment (I) At Battelle's Plutonium Facility	J. F. Dettorre, D. G. Freas, and D. E. Stellrecht	2/23/1979
P336A	N/A	Fiscal Year 1978 Summary Report on Decontamination of Battelle-Columbus' Plutonium Facility.	W. J. Madia, J. F. Dettorre, D. G. Freas, and D. E. Stellrecht.	9/28/1979
P337A	Pu-DP-1.4	Stripping Paint From the Interior of Gloveboxes. Quality Assurance Document. Pu-DP-1.4 (Rev. 0). (Pu-DP-1.4)	D. E. Stellrecht	5/22/1978
P338A	Pu-DP-2.4	Loading of TRU-Contaminated Waste In DOT 7A Steel Boxes (ANL-M-III). Quality Assurance Document. Pu-DP-2.4 (Rev. 1) (Pu-DP-2.4)	D. E. Stellrecht.	3/9/1979

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P339A	Pu-DP-1.6	Retrievable TRU-Contaminated Waste Packaging In Molded Polyethylene-Lined DOT 17C Steel Drums. Quality Assurance Document. Pu-DP-1.6 (Rev. 1) (Pu-DP-1.6)	D. E. Stellrecht.	12/6/1978
P340A	Pu-DP-1.8	Detergent Cleaning and Rinsing of The Interior of Gloveboxes. Quality Assurance Document. Pu-DP-1.8 (Rev. 0) (Pu-DP-1.8)	D. E. Stellrecht.	10/10/1978
P341A	Pu-DP-1.9	Fixation of Residual Radioactive Contamination On Glovebox Interior Surfaces. Quality Assurance Document. (Rev. 0) (Pu-DP-1.9)	J. S. Furr.	10/19/1978
P342A	Pu-DP-4.7, Pu-DP-4.3	Glovebox Volume Reduction Sectioning Procedures. Disconnection of Gloveboxes From Stands. Quality Assurance Documents . Pu-DP-4.7 (Rev. 0) and Pu-DP-4.3 (Rev. 0). (Pu-DP-4.7, Pu-DP-4.3)	D. E. Stellrecht.	11/9/1978
P343A	Pu-DP-4.8	Handling and Packaging of Glovebox Sections for Disposal. Quality Assurance Document. Pu-DP-4.8 (Rev. 0) (Pu-DP-4.8)	D. E. Stellrecht	11/9/1978
P344A	Pu-DP-4.2	Removal and Packaging of Glovebox Exhaust Filters. Quality Assurance Document. Pu-DP-4.2 (Rev. 0 (Pu-DP-4.2)	D. E. Stellrecht.	10/30/1978
P345A	Pu-DP-4.1, Pu-DP-4.9	Construction of Glovebox Volume Reduction Tents. Dismantling of Glovebox Volume Reduction Tent. Quality Assurance Documents. Pu-DP-4.1(Rev. 0, November 9, 1978; Rev. 1 March 7, 1979) and Pu-DP-4.9 (Rev. 0, November 10, 1978). J. Wissinger and D. E. Stellrecht. November 10, 1978. (Pu-DP-4.1, Pu-DP-4.9)	J. Wissinger and D. E. Stellrecht	3/7/2001
P346A	Pu-DP-4.4, Pu-DP-4.5	Health Physics Procedures for Entering Tent Area III for Volume Reduction of Gloveboxes. Procedures for Exiting Glovebox Volume Reduction Tent Areas III, II, and I. Quality Assurance Documents (Pu-DP-4.4, Pu-DP-4.5)	J. Wissinger - Microfiche 83-01-0029 attached to Decontamination of Battelle-Columbus' Plutonium Facility, source document P033.	11/16/1978
P347A	Pu-DP-7, Pu-DP-8, Pu-DP-9	Ceiling Tile and Supporting Framework Removal and Packaging As Low Level Radioactive Waste. Glovebox Exhaust Systems Removal and Packaging as Low Level Radioactive Waste. Gas and Liquid Supply and Electrical Systems Removal and Packaging as Low Level Radioactive Waste. Quality Assurance Documents. (Pu-DP-7, Pu-DP-8, Pu-DP-9)	C. G. Postle and B. E. White - Microfiche 83-01-0029 attached to Decontamination of Battelle-Columbus' Plutonium Facility, source document P033.	2/19/1980

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P348A	Pu-DP-1.5 and Pu-DP-7.0	Preparation of Items To Be Assayed Using The Random Source Interrogation System. Operation of The Random Source Interrogation System. Quality Assurance Documents. (Pu-DP-1.5 and Pu-DP-7.0)	William R. Mouser.	3/13/1979
P349A	Pu-DP-3.2	Operation of the Davidson 1056 Multichannel Analyzer for Assaying Contaminated Gloveboxes. Quality Assurance Documents. (Pu-DP-3.2)	William R. Mouser and D. E. Stellrecht	5/2/1979
P350A	DOE/EA-0092	Environmental Assessment, Decommissioning and Decontamination Program, Battelle Plutonium Facility (DOE/EA-0092)	U.S. Department of Energy, Battelle Memorial Institute Columbus Division	9/1/1979
P351A	N/A	Renewal Application for Combined Special Nuclear Material and Byproduct License. Section 2, Plutonium Laboratory	Battelle Columbus Laboratories.	9/1/1977
P352A	N/A	Plutonium Procedures Manual	Battelle Memorial Institute. Edited by Harley L. Toy	7/1/1969
P353A	ANL-OHS/HP-85-103	Post-Remedial-Action Radiological Survey Report for The Plutonium Facility of The Battelle Memorial Institute, Columbus Division, West Jefferson Complex, West Jefferson, Ohio. (ANL-OHS/HP-85-103)	Occupational Health and Safety Division. health Physics Section. Argonne National Laboratory, Argonne, Illinois	6/1/1982
P354A	WM-F1-82-021	Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes. (WM-F1-82-021)	Thomas L. Clements, Jr. for Nuclear Fuel Cycle & Waste Management Division. DOE Idaho Operations Office	10/1/1982
P355A	NS-MS-1	Standards Preparation for Random Driver Plutonium Monitor Calibration (Standards Pu-RDS-1, -2, -3, -4). Quality Assurance Document. NS-MS-5.1 (NS-MS-1)	D. E. Stellrecht.	12/5/1978
P356A	WM-F1-81-015	Idaho National Engineering Laboratory Stored Transuranic Waste Characterization. WM-F1-81-015. T. L. Clements. EG&G Idaho, Inc (WM-F1-81-015)	Idaho National Engineering Laboratory Stored Transuranic Waste Characterization. WM-F1-81-015. T. L. Clements. EG&G Idaho, Inc	09/01/1981
P357A	TCP-98-04	Building JN-4 Plutonium Laboratory Acceptable Knowledge Document. TCP-98-04, Rev. 0. (TCP-98-04)	Prepared by K. Peters, Wastren, Inc.	11/1/1998

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P358A	EDF-3395	Summary RTR Data Collected During 3,100 m3 Project (EDF-3395)		2/3/2003
P359A	EDF-3396	Summary HSG Data Collected During 3,100 m3 Project. EDF-3396, Rev. 0. (EDF-3396)	C. Marcinkiewicz	2/3/2003
P360A	EDF-922	Identification of Transuranic Waste Streams. EDF-922. Rev. 1, July 9, 2002. Rev. 2, (EDF-922)	C.K. Abbott	12/18/2002
P361A	EDF-803	Chemical Constituents in Transuranic Storage Area (TSA) Waste. EDF-803, Rev. 0. June 12, 1995. Rev. 1, July 10, 1996. Rev. 2. August 12, 1997. Rev. 3. April 4, 1998. Rev. 4. October 30, 2000. Rev. 5. September 17, 2001. Rev. 6. August 1, 2002. Rev. 7. December 18, 2002. (EDF-803)	INEEL	12/18/2002
P362A	DOE/WIPP-02-3122	Contact-Handled Transuranic Waste Acceptance Criteria for The Waste Isolation Pilot Plant, Revision 0.1, DOE/WIPP-02-3122, July 25, 2002. Revision 2, November 15, 2004. (DOE/WIPP-02-3122)		11/15/2004
P363A	INEEL/INT-97-00919	EDF-980, Radiography and Visual Examination Results of the Stored Waste Examination Pilot Plant Certified Waste Sampling Program for Fiscal Years 1995 and 1996. (INEEL/INT-97-00919). (INEEL/INT-97-00919)	C. Loehr	
P364A	INEL-95/194 (RWMC EDF# 837)	Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA at Radioactive Waste Management Complex (RWMC) (INEL-95/194 (RWMC EDF# 837))	J. R. Wixson	08/24/1995
P365A	INEL-95/0412	Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory (includes Appendices A and B documents and a letter from John H. Kolts, DOE-ID to Frank Yaklich, BNFL Inc). (INEL-95/0412)	B. D. Raivo, G. K. Becker, T. H. Smith, and G. L. Anderson	12/01/1995
P366A	INEEL/EXT-99-00575	Characterization Plan for Existing Contact-Handled Waste Containers of Unknowns in RWMC HWMA/RCRA Permitted Storage Inventory. INEEL/EXT-99-00575. (INEEL/EXT-99-00575)	W. Mahlon Heileson	8/1/2000
P367A	9257	Procedure for Packaging and Handling Pu Waste and Residue Drums. (9257)	Dow Chemical USA	3/29/1974
P368A	INEL-96/0280	Acceptable Knowledge Document for INEEL Stored Transuranic Waste - Rocky Flats Plant Waste (INEL-96/0280)	INEEL Bechtel BWXT Idaho, LLC	02/28/2003
P369A	CHOP – 9248-80-03.	Pu Recovery Processing System. CHOP – 9248-80-03. (CHOP – 9248-80-03.)	W. H. James - Rockwell International, Energy Systems Group.	5/1/1980

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P370A	CO-1073-A	Packaging and Handling Plutonium Waste and Residues (U) (CO-1073-A)	Rocky Flats	8/8/1977
P371A	CO-4034-A	Packaging Wastes for Shipment Off-Site (U). (CO-4034-A)	RF	9/2/1977
P372A	WO-4034-A	Packaging Wastes for Shipment Off-Site (U) (WO-4034-A)	Rocky Flats	8/16/1985
P373A	N/A	Historical Release Report (HRR) for Buildings 371, 444, 447, 460, 707, 771, 776/777, 881, 883, and 991. EG&G Rocky Flats, Inc. November 1994.	Environmental Restoration Facilities Operations Management, EG&G Rocky Flats, Inc.	11/1/1994
P374A	n/a	RWMC/AMWTP site map (n/a)	AMWTP	
P375A	BNFL-5232-RPT-TRUW-01	Subpopulation Container Selection for RCRA Analyses. R. E. Arbon, J. J. Einerson, P. Carson, and T. R. Gatliffe. BNFL-5232-RPT-TRUW-01, Rev.0. (BNFL-5232-RPT-TRUW-01)	R.E. Arbon, J.J. Einerson, P. Carson, T.R. Gatliffe	8/26/2002
P376A	MD-21824	Technical Manual MD-21824, Issue 2 – Assay of Pu-238 Contaminated Waste In Boxes. (MD-21824)	Authorization: Richard K. Blauvelt, Tech. Resp. A.R. Campbell	8/28/1984
P377A	MD-21912	Technical Manual MD-21912, Issue 1 – Measurement Control Procedures: Segmented Drum Assay System. (MD-21912)	Tech. Resp. Allen R. Campbell - Source obtained from Bill Franz, LATA.	9/30/1986
P378A	MD-21825	Technical Manual MD-21825, Issue 1 – Assay of Pu-238 Contaminated Waste In Drums. (MD-21825)	Tech. Resp. Allen Campbell	11/28/1984
P379A	MD-70180	Technical Manual – Mound Facility Radioactivity Liquid Waste Disposal, dated 1/1/1981 through October 24, 1984 (MD-70180)		10/24/1984
P380A	N/A	Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management.	Department of Energy, Albuquerque Office	2/1/1993
P381A	MD-70205	Technical Manual TRU Waste Management, dated January 1, 1976 to December 19, 1988. (MD-70205)		12/19/1988
P382A	PD-80026	Determination of Plutonium in WD Sludge/Sand. PD-80026. (PD-80026)	Submitted by: C.T. Bishop, V.M. McAtee	12/3/1990
P383A	MD-70205	Removing Inline Process Waste From PP Building. Manual Number: 70205. Not dated. (MD-70205)		NOT DATED
P384A	MD-20734	Technical Manual – Plutonium Processing-Material Control. (MD-20734)		9/15/1973

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P385A	MD-10203	Technical Manual - Mound WIPP Certification Program For Newly Generated Contact Handled (CH) Waste (MD-10203)	J. A. Moreley, DOE/DAO (for R.J. Grandfield, DOE/DAO)	04/14/1989
P386A	RPT-PMP-01	Project Management Plan, AMWTP (RPT-PMP-01)	AMWTP	11/01/2009
P387A	INST-OI-34	Non-Facility Visual Examination Operations (INST-OI-34)	AMWTP	Cur date
P388A	INST-OI-24	Waste Packaging (INST-OI-24)	AMWTP	Cur Date
P389A	INST-OI-23	Soil Removal Operations (INST-OI-23)	AMWTP	Cur Date
P390A	MP-WM&M-13.2	Satellite Accumulation Areas, Rev. 5, BNFL Inc., MP-WM&M-13.2, 03/31/03. Rev. 6, 02/18/04. Rev. 7, 03/25/04 (MP-WM&M-13.2)	BNFL	3/25/2004
P391A	MP-WM&M-13.3	90-Day Temporary Accumulation Areas, Rev. 5, BNFL Inc., MP-WM&M-13.3 (MP-WM&M-13.3)	AMWTP	Current
P392A	MP-WM&M-13.9	Waste Characterization and Waste Services Management (MP-WM&M-13.9)	AMWTP	Current
P393A	RPT-TRUW-12	Advanced Mixed Waste Treatment Project Waste Stream Designations (RPT-TRUW-12)	AMWTP	CUR DATE
P394A	BNFL-5232-EDF-166	Container Flowsheet (BNFL-5232-EDF-166)	B. Holmes	11/14/2000
P395A	BNFL-5232-1-05-55-001	Process Flow Sheet (Volume Balance (BNFL-5232-1-05-55-001)	A. Hall	8/16/2000
P396A	MP-TRUW-8.1	Certification Plan for INEEL Contact-Handled Transuranic Waste (MP-TRUW -8.1)	AMWTP	12/2/2004
P397A	PRO-1582-PQP/PQR	Aqueous and Oil/Organic Liquid TRU Waste Solidification Method Test Plan and Report. PRO-1582-PQP/PQR, Rev. 0. September 12, 2002 (PRO-1582-PQP/PQR)	Rocky Flats Environmental Technology Site Information Source: Dave Preston	9/12/2002
P398A	RPT-TRUW-07	Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge (RPT-TRUW-07)	AMWTP	Cur date
P399A	RPT-TRUW-05	AMWTP Waste Matrix Code Reference Manual (RPT-TRUW-05)	Generated for the AMWTP Project.	CUR DATE
P400A	RPT-TRUW-06	AMWTP Baseline AK for Newly Generated Waste (RPT-TRUW-06)	AMWTP	CUR DATE

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P401A	N/A	Material Safety Data Sheet for Aquaset. Fluid Tech, Inc. August 1, 2001	Fluid Tech, Inc. Information Source: Dave Marquardt, AMWTP TRU Program.	8/1/2001
P402A	N/A	BNINW216 First/Second Stage Sludge Waste Stream Profile Package, Rev. 1, September 17, 2004, Change Notice #1, February 2, 2005, Change Notice #2, January 24, 2007, Change Notice #3, April 2, 2008 and Change Notice #4, August 6, 2010	AMWTP and CBFO	03/08/2004
P403A	INST-FOI-23	Special Case Waste Glovebox Operations (INST-FOI-23)	AMWTP	Current
P404A	MP-EC&P-7.10	Spill Response Procedure (MP-EC&P-7.10)	AMWTP	Current
P405A	INST-FOI-21	Drummed Waste Handling Operations (INST-FOI-21)	AMWTP	Current
P406A	RPT-ESH-014	Chemical Compatibility Evaluation of Wastes for the Advanced Mixed Waste Treatment Project (RPT-ESH-014)	AMWTP (N. Brill approval)	02/17/2009
P407A	INST-OI-12	Real-Time Radiography Operations (Drum) (INST-OI-12)	AMWTP (C. Sisson approval)	1/28/2009
P408A	INST-OI-41	Real-Time Radiography Operations (Box) (INST-OI-41)	AMWTP (C. Sisson approval)	CUR DATE
P409A	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis. (MP-TRUW-8.25)	AMWTP	3/12/2008
P410A	BNFL-5232-MP-WM&M-13.10	General Sampling, Rev. 4, BNFL-5232-MP-WM&M-13.10, 09/13/04 (BNFL-5232-MP-WM&M-13.10)	BNFL, Inc. Information Source: Penny Pink	9/13/2004
P411A	CO-1039-C	Sorting and Scarfing Firebrick (Line 48) (CO-1039-C)	N/A	1/12/1979
P412A	BNFL-5232-INST-FOI-26	AMWTF Waste Receipt and Storage, Rev. 10, BNFL-5232-INST-FOI-26, 12/21/04 (BNFL-5232-INST-FOI-26)	BNFL, Inc. Information Source: Martin Wheeler	12/21/2004
P413A	INST-OI-16	Drum Coring Operations (INST-OI-16)	AMWTP (C. Sisson approval)	CUR DATE
P414A	INST-FOI-20	Supercompactor and Post-Compaction Operations (INST-FOI-20)	AMWTP	CUR DATE
P415A	INST-FOI-16	Box Line Operations (INST-FOI-16)	AMWTP (G. McCain approval)	CUR DATE

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P416A	BNFL-5232-INST-OI-40	Liquid Absorption Operations (BNFL-5232-INST-OI-40)	BNFL, Inc. Information Source: Martin Wheeler	8/11/2004
P417A	RPT-TRUW-04	Acceptable Knowledge Document for the Battelle Columbus Laboratories, Building JN-4 Plutonium Laboratory (RPT-TRUW-04)	AMWTP	N/A
P418A	AMWTP-RPT-TRUW-13	Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste (AMWTP-RPT-TRUW-13)	AMWTP	CURR. DATE
P419A	EDF-2138	Engineering Design File for 83-Gal Recovery-Retrieval List. (EDF-2138)	INEEL, RWMC	7/18/2002
P420A	N/A	BNINW218 Building 374 Sludge Waste Stream Profile Package, Rev. 1 September 17, 2004, Change Notice #1, February 2, 2005, Change Notice # 2, June 14, 2007 and Change Notice # 3, April 2, 2008	AMWTP	03/19/2004
P421A	BNFL-5232-RPT-TRUW-21	Evaluation of Characterization Data Associated with 74 AMWTP Containers of Rocky Flats First/Second Stage Sludge Waste (BNFL-5232-RPT-TRUW-21)	INEEL, BNFL Inc. AMWTP, hard copy report	8/9/2004
P422A	BNFL-5232-RPT-TRUW-22	Evaluation of Characterization Data Associated with 29 AMWTP Containers of Rocky Flats Building 374 Sludge Waste (BNFL-5232-RPT-TRUW-22)	INEEL, BNFL Inc. AMWTP, hard copy report	8/9/2004
P423A	MD-22153	Mound Site Radionuclides By Location, Technical Manual, Issue 3. (MD-22153)	N/A	03/22/2001
P424A	BNFL-5232-RPT-TRUW-19	Lot Population Determination for Waste Stream Profiles BNINW216 and BNINW218 (BNFL-5232-RPT-TRUW-19)	Original lot lists obtained from DOE-ID from BBWI.	7/20/2004
P425A		Material Safety Data Sheets for Oakite 360 L, (May 18, 1992); Oakite Aluminum Cleaner 164, (January 4, 1990); Oakite Dynadet, (March 27, 1992); Oakite Super Rustripper (October 1, 1999).	Oakite Products	N/A
P426S	N/A	Material Safety Data Sheet for Oil-Dri Floor Absorbent.	Oil Dri Corporation of America	07/21/1988
P427A	N/A	Material Safety Data Sheets for Oil Dri. Portage, Broom, & Brush Co,Inc. Date Unknown	N/A	N/A
P428A		Material Safety Data Sheets for Polymer 1192.	Betz Laboratories, Inc.	8/1/1985
P429S	N/A	Material Safety Data Sheet(MSDS) for Portland Cement.	Lone Star Industries, Inc.	08/10/1994

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P430A	N/A	Material Safety Data Sheet for Purifloc® A23 Flocculant.	Van Waters & Rogers Inc. National MSDS Repository (Internet)	08/01/1989
P431A	RF107.01	Waste Stream Profile Form RF107.01. TRM Solidified Inorganic Waste. (RF107.01)	RFETS	6/8/2004
P432A	RF139.01	Waste Stream Profile Form RF139.01. Solid cemented sludge. (RF139.01)	RFETS	9/20/2004
P433A	INST-FOI-17	Facility Visual Examination Operations (INST-FOI-17)	AMWTP (J. P. Hingston owner)	Current
P434S	CO-4001	Salt Scrub Process Procedure (CO-4001)	RF, Operational Compliance and Control	9/25/1989
P435S	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site.	04/21/2005
P436A	RF/RMRS-97-018	RFETS TRU Waste Acceptable Knowledge Supplemental Information (RF/RMRS-97-018)	Rocky Flats Environmental Technology Site	4/21/2005
P437A	N/A	BN835 Solidified Acid/Caustic Waste Stream Profile Package, Change Notice #1, and Change Notice #2	AMWTP, CBFO	04/07/2005
P438S	CO-4001-L/O	Liquid Waste Processing (First Stage) (U) (CO-4001-L/O)	F. P. McMenus	9/2/1988
P439A	N/A	BN510 Supercompacted Debris Waste Stream Profile Package, May 26, 2005 Change Notice #1, January 24, 2007, Change Notice #2, July 5, 2007, Change Notice # 3, April 2, 2008	AMWTP, CBFO	09/11/2008
P440A		Memorandum from Eric Schweinsberg, TRU Program Manager, AMWTP to Kerry Watson Carlsbad Field Office, "Transmittal of Addendum to Waste Stream Profile BNINW216-EPS-069-2004", August 31, 2004	AMWTP, Eric Schweinsberg	8/31/2004
P441A	DWG-5232-53-9840	Joseph Laurman, BNFL DWG-5232-53-9840, Rev 5 "General Arragnement & Details 110 Gallon Puck Drum" (DWG-5232-53-9840)	Joseph Laurman	6/5/2003

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P442A	ICP/EXT-04-00632	Historical Background Report for Lead-Lined Rocky Flats Plant Waste Shipped to the Idaho National Laboratory from 1971 to 1988, compliled by Carolyn Abbott, Ph.D, ICP/EXT-04-00632, Rev. 0, February 2005. (ICP/EXT-04-00632)	Carolyn Abbott	2/1/2005
P443A	ICP/EXT-04-00248	Historical Background Report for Rocky Flats Plant Waste Shipped to the INEEL and Buried in the SDA from 1954 to 1971 (ICP/EXT-04-00248)	North Wind, Inc.	03/00/2005
P444A	Waste Form 54	Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, Waste Form 54, Filters and Filter Waste. (Waste Form 54)	Prepared by Rocky Mountain Remediation Services, L.L.C Copy of Controlled Copy provided by RFETS to BBWI.	1/4/1995
P445A	LA-13616-MS	Determination of H2 Diffusion Rates through Various Closures on TRU Waste Bag-Out Bags (LA-13616-MS)	Phillip D. Noll, Jr., E. Larry Callis, and Kirsten M. Norman	06/00/1999
P446A	N/A	MSDSs for materials used in the washing of the 100-gallon drums: Multi-Terj 2111, Johnson Diversey, Inc., 2/2/2004; Dubois 737 Rust Inhibitor, Dubois Chemicals, 10/16/1998; No. 2672-5 Contact Cement, Dural Company, Inc., 1/3/1998.	Skolnik Industries, Inc.	MULTIPLE D
P447A	SDS code: 013725-08	Material Safety Data Sheet (MSDS); Quintolubric 888-68 (SDS code: 013725 -08)	Quaker Chemical Corp.	3/26/2004
P448A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.23, TRM Filter Debris Wastes (D004 – D011, D022, D029, F001, F002, F005, F006, F007, F009, P030, P098, P099, P106, U003, U103, U108), Profile No. RF110.01. (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	5/25/2004
P449A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.10, TRM Filter Debris Wastes (D022, F001, F002), Profile No. RF110.05. (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	8/8/2003
P450A	N/A	Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, Waste Form 24, Metal, April 13, 2005.	Prepared by Rocky Mountain Remediation Services, L.L.C Copy of Controlled Copy provided by RFETS to BBWI.	4/13/2005

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P451A	N/A	Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, Waste Form 25, Heavy Metals, September 27, 2004.	Prepared by Rocky Mountain Remediation Services, L.L.C Copy of Controlled Copy provided by RFETS to BBWI.	9/27/2004
P452A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.15, TRM Metal Debris Wastes (D004 – D011, D022, D028, D029, F001, F002, F005, F006, F007, F009, P030, P098, P099, P106, U003, U103, U108), Profile No. RF102.01, Rev. 3, March 21, 2005 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site.	3/21/2005
P453A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.9, TRM Metal Debris with Lead Shielding (D008), Profile No. RF102.31, Rev. 0, February 13, 2003 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site.	2/13/2003
P454A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.18, TRM Glass Debris Wastes (D005, D008, D009, D022, F001, F002, F005)), Profile No. RF104.01, Rev. 1, April 27, 2004 (RMRS-WIPP-98-100)	RFETS TRU Programs	4/27/2004
P455A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.1, TRM Leaded Drybox Gloves (D008), Profile No. RF124.01, Rev. 15, July 10, 2002 (RMRS-WIPP-98-100)	RFETS TRU Programs	7/10/2002
P456A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.22, TRM Leaded Drybox Gloves (D008, D022, D028, F001, F002), Profile No. RF124.02, Rev. 2, May 11, 2004 (RMRS-WIPP-98-100)	RFETS TRU Programs	5/11/2004
P457A	P457A	Material Safety Data Sheets (MSDSs) for all Attapulgite Products, Calcined including FLORCO X. Email from Engelhard National Accounts Representative, Connie Genna, regarding Florco and Auto Dri constituents, 11/15/04. (P457A)	Engelhard Corporation	2/19/2004
P458A	P458A	Material Safety Data Sheet (MSDS) for Insta Gel Plus (P458A)	Packard BioScience B.V., Groningen, The Netherlands.	3/24/2004

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P460A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 6.15, TRU Resin Wastes (No HWNs), Profile No. RF031.01 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site.	06/14/2004
P461A	BN211	BN211 Filter Debris Waste Stream Profile Package (BN211)	AMWTP and CBFO	9/2/2005
P462A	BN296	BN296 Non-Special Source Metal Waste Stream Profile Package (BN296)	AMWTP and CBFO	9/21/2005
P463A	N/A	Mound Facility Waste Management Site Plan, June 19, 1975, August 15, 1978, November 1, 1981.	Miscellaneous Mound records transmitted to the AMWTP	11/01/1981
P464A		Chemical Engineering, "Isotope-Extraction Process Copes with Radioactive Waste."	Robert F. Althoff	3/11/1968
P465A	IDO-10074	Criteria for Packaging Transuranic Waste for Receipt at the Idaho National Engineering Laboratory Radioactive Waste Management Complex Offsite Generated Waste (IDO-10074)	Robert Y. Lowrey	06/00/1980
P466A	N/A	DOE Order 5480.2, dated December 13, 1982; title "Chapter II – Guidance for Managing radioactive Mixed Waste."	Miscellaneous Mound records transmitted to the AMWTP	12/13/1982
P467A	N/A	Status Report on the Cleanup of the SW Building Cave Area	B. R. Kokenge	07/29/1982
P468A	P84-05-494	Soils Agglomeration (P84-05-494)	Miscellaneous Mound records transmitted to the AMWTP	6/8/1984
P469A		Mound Implementation Plan for DOE Order 5820.2, Radioactive Waste Management, Revision 1, dated April 1985. ()	Mound	04/01/1985
P470A	77-04-148	TRU Waste Cyclone Drum Incinerator and Treatment System, Schedule 189c (77-04-148)	Miscellaneous Mound records transmitted to the AMWTP	4/11/1977
P471A	N/A	Radioactive Waste – Radiolytic and Chemically Induced Gas Generation in Radioactive Waste	Miscellaneous Mound records transmitted to the AMWTP	2/6/1976
P472A	MLM-1691	Plutonium-238 Isotopic Fuel Form Data Sheets (MLM-1691)	Miscellaneous Mound records transmitted to the AMWTP	10/31/1969
P473A	N/A	WD Soil Removal Project	Miscellaneous Mound records transmitted to the AMWTP	11/1/1974

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P474A		Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste	Mound	8/1/1983
P475A	N/A	Criticality Procedures PP Analytical Group	Miscellaneous Mound records transmitted to the AMWTP	8/4/1978
P476A	DOE/HWP-12	Hazardous Chemical Waste Defense Management Program, Annual Report FY1985 (DOE/HWP-12)	Miscellaneous Mound records transmitted to the AMWTP	9/26/1985
P477A	N/A	Room Layout Nuclear Non-Destructive Test Facility	Miscellaneous Mound records transmitted to the AMWTP	4/26/1971
P478A	N/A	Operating Procedures for the T Building, East Criticality Vault (T-4E), Revised November 1976, August 1978, October 1979, December 1979, and October 1980.	Miscellaneous Mound records transmitted to the AMWTP	10/30/1980
P479A	N/A	Operating Procedures for the T Building, West Criticality Vault-T-2W, August 18, 1978, November 1976	Miscellaneous Mound records transmitted to the AMWTP	08/18/1978
P480A	N/A	Nuclear Criticality Procedures for T-311	Miscellaneous Mound records transmitted to the AMWTP	N/A
P481A	N/A	Nuclear Criticality Procedures for T-310	Miscellaneous Mound records transmitted to the AMWTP	N/A
P482A	N/A	Procedures for Preparing and Handling PuO2 material For Automated Plutonium Assay Samples	Miscellaneous Mound records transmitted to the AMWTP	6/1/1977
P483A	N/A	Criticality Control Procedures for R-127 and R-145	Miscellaneous Mound records transmitted to the AMWTP	11/22/1971
P484A	N/A	Nuclear Safety Procedures for Reactor Fuels Laboratory	Miscellaneous Mound records transmitted to the AMWTP	10/29/1965
P485A	N/A	Criticality Precautions for Processing Uranium-233 in the SW Hot Cell Area	Ralph M. Watrous	8/28/1973
P486A	BN243	BN243 Glass Debris Waste Stream Profile Package (BN243)	AMWTP and CBFO	9/28/2005
P487A	BN252	BN252 Leaded Rubber Debris Waste Stream Profile Package (BN252)	AMWTP and CBFO	10/17/2005
P488A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 6.6, TRU LECO Crucible and Crucible Inserts, Profile No. RF006.01 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	6/24/2002

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P489A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 6.8, TRU Ceramic Crucible, Profile No. RF008.01 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	1/24/2005
P490A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.5, TRM Firebrick debris (D004-D011, F001, F002, F005), Profile No. RF115.01, Rev. 16, September 11, 2000 (RMRS-WIPP-98 -100)	RFETS	09/11/2000
P491A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.44, TRM Grit (D007), Profile No. RF117.01 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	1/19/2005
P492A	CCP-AK-SRS-008	Central Characterization Project Acceptable Knowledge Summary Report For Mound Site Transuranic Waste Stored at Savannah River Site. Waste Streams: SR-MD-HET; SR-MD-SOIL; SR-MD-HOM-A, SR-MD-HOM-B. (CCP-AK-SRS-008)	David H. Haar	09/23/2005
P493A	MLM-ML-90-48-001	Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, MLM-ML-90-48-001. August 15, 1990 (MLM-ML-90-48-001)	From Centralized Characterization Project Acceptable Knowledge record for Mound waste	8/15/1990
P494A	RMRS-WIPP-98-100	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.29, TRM Solidified Inorganic Waste (F001, F002, F005, F006, F007, F009, P030, P098, P16, U003, U103, U108). Profile No. RF107.07 (RMRS-WIPP-98-100)	Rocky Flats Environmental Technology Site	8/23/2004
P495A	Waste Form 60, Solidified Lab Waste	Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, Waste Form 60, Solidified Lab Waste. (Waste Form 60, Solidified Lab Waste)	Prepared by Rocky Mountain Remediation Services, L.L.C Copy of Controlled Copy provided by RFETS to BBWI.	5/16/2000
P496A	WO-4021-C	Miscellaneous Aqueous Waste Handling and Solidification (WO-4021-C)	Waste Operations	10/12/1988
P497A	N/A	1996 and 1998 Chemical Inventory and 1991 Carcinogen list	Centralized Characterization Project (CCP), AK Record P096 for SRS Mound waste.	5/25/2005

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P498A	N/A	Tools for Decontamination and Decommissioning of Nuclear Facilities	R. E. Hermatz, From Centralized Characterization Project (CCP), AK Record P015 for SRS Mound waste	11/16/1986
P499A	N/A	Mounds Decommissioning Experience, Tooling and Techniques	A B Combs, W P Davis, T C Elswick, JB Garner and J Gaichmon	10/14/1982
P500A	MLM-3517	The Mound Site Survey Project for the Characterization of Radioactive Materials in the Site Soils. (MLM-3517)	R. L. Stought, D. A. Edling, D. G. Draper,	5/16/1988
P501A		Reinvestigation of the January 1969 Pu-238 Waste Transfer Line Break.	Monsanto Research Corporation - Mound Laboratory	9/16/1974
P502A	INEL-95/0519	Addendum to MLM-ML-95-41-0001, Mound Building 38 FSAR: Pu-239 Repackaging, Phase 1, by INEL-95/0519, Rev. 3. (INEL-95/0519)	S. T. Khericha, S. Eide, L. N. Haney, T. K. Overlin, T. G. Ryan	6/1/1996
P503A		EG&G Mound Building 38 Accident Analysis of Internal (Operational) Events (Results and Findings)	J. L. Jones and T. G. Ryan	6/1/1994
P504A	MD-10537	Building 50 Radioisotopic Thermoelectric Generator Assembly and Testing Facility Final Safety Analysis Report (OUO). MD-10537, Issue 1, (MD-10537)	T. A. Frazier, R. E. Berry, and G. D. Miller.	7/25/2002
P505A	MD-10480	SW/R Complex Basis for Interim Operations. (MD-10480)	J. L. Allison and P. A. Craycraft.	9/30/2001
P506A	MLM-MU-75-63-0004	Estimated Discard Limits for Plutonium-238 recovery Processing in the PP Building, Document Number MLM-MU-75-63-0004, (MLM-MU-75-63-0004)	D. F. Luthy and W. H. Bond.	03/26/1975
P507A	MLM-MU-76-66-0001	Hazard Evaluation of the Special Metallurgical (SM) Building at Mound Laboratory (MLM-MU-76-66-0001)	T. M. Flanagan	08/06/1976
P508A	MLM-3848	Building WDA, Room 10 Glove Box Removal, Wall Removal, Characterization, and Cleanup Safety Assessment, MLM-3848, Issue 1, (MLM-3848)	C. White, R. Church, S. D. Rohrig	6/21/2001

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P509A	N/A	Executive Summary of TRU Waste at Mound, Author not identified.	Author not identified. Mound Laboratory	09/15/1993
P510A	MD-70205	Technical Manual – TRU Waste Management dated 1/1/1976 to 12/19/1988 (MD-70205)		12/19/1988
P511A	MLM-ML-95-0001	Final Safety Analysis Report for Building 38, Document number MLM-ML-95-0001, Revision 11 (MLM-ML-95-0001)	F. Mintz, M. D. Gilliat	11/09/1995
P512A	MD-10481	Waste Disposal Facility Auditable Safety Analysis, MD-10481, Revision 4, (MD-10481)	F. Schmaltz, D. Punch, C. White - From Centralized Characterization Project (CCP), AK Record P045 for Mound waste at SRS.	01/21/2003
P513A	WM-IWCP-00-007	Vent TRU Drums In CWPF, by W. Franz, Document Number WM-IWCP-00-007, Revision 1, no date of publication. (WM-IWCP-00-007)	W. Franz From Centralized Characterization Project (CCP), AK Record P048 for Mound waste at SRS.	
P514A	WSRC-PH-95-11	TRU Drum Venting Fact Sheet, TRU Drum Venting Procedure and TRU Drum Venting System Pre-Operational Process Hazards Review. WSRC-PH-95-11, Revision 2, (WSRC-PH-95-11)	From Centralized Characterization Project (CCP), AK Record P049 for Mound waste at SRS.	2/20/1996
P515A	NFT-SR-0001	TRU Waste Drum Venting and Purging System, Author is NFT Inc, Document Number NFT-SR-0001, Revision 14, (NFT-SR-0001)	From Centralized Characterization Project (CCP), AK Record P050 for Mound waste at SRS.	1/13/2000
P516A	MLM-2976	The Use of Urethane Foam in the Decontamination and Decommissioning of Nuclear Facilities, Document Number MLM-2976, by R. Hermetz; dated October 14, 1982. (MLM-2976)	Rudy E. Hermetz Mound Facility	10/14/1982
P517A	MLM-MU-77-66-0001	Ten Year Plan for Decontamination and Decommissioning for Mound, S. S. Freeman, MLM-MU-77-66-0001. (MLM-MU-77-66-0001)	Sam S. Freeman - Mound Laboratory	6/30/1977
P518A	MD-22153	Mound Site Radionuclides by Location. (MD-22153)	Wayne C King (Tech. Responsible)	6/22/1995

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P519A	N/A	A Summary Review of Mound Laboratory's Experience in D&D of Radioactive Facilities, 1949-1973; by JM Garner and WP Davis.	J.M. Garner and W.P. Davis From Centralized Characterization Project (CCP), AK Record P055 for Mound waste at SRS.	1975
P520A	DOE/EA-0683	Decontamination and Decommissioning Projects Findings of No Significant Impact, DOE/EA-0683, By DOE, (DOE/EA-0683)	US Department of Energy - From Centralized Characterization Project (CCP), AK Record P056 for Mound waste at SRS.	5/1/1995
P521A	MD-10167	Technical Manual, MD-10167, titled "D&D Operations Procedures". Revision 9. (MD-10167)	Mound Laboratory	4/18/1995
P522A		Mound Site Waste Management Reports and Site Plans 1977-1980. Authored by Monsanto Research Corp ()	Monsanto Research Corp. From Centralized Characterization Project (CCP), AK Record P058 for Mound waste at SRS.	10/01/1980
P523A	P523A	Mound Site Waste Management Reports and Site Plans 1972 to 1976 (P523A)	From Centralized Characterization Project (CCP), AK Record P063 for Mound waste at SRS.	06/01/1976
P524A	N/A	Mound Site Waste Management Reports and Site Plans 1981 to 1989, Monsanto Research Corp.	Monsanto Research Corp From Centralized Characterization Project (CCP), AK Record P064 for Mound waste at SRS	12/20/1989
P525A	MD-10203	Technical Manual, MD-10203, Issue 1, June 1, 1985; Mound WIPP Certification Program for Newly Generated Contact Handled Transuranic Waste. Also includes Issue 2 dated June 10, 1986; Issue 5 dated September 1, 1988; Issue 6 dated April 14, 1989. (MD-10203)	Mound Laboratory From Centralized Characterization Project (CCP), AK Record P065 for Mound waste at SRS.	4/14/1989

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P526A	SE/USQ-1995-0004	Revised U-233 Repack Project, R. L. Higgins, SE/USQ-1995-0004, Revision 2, (SE/USQ-1995-0004)	R.L. Higgins	1/17/1995
P527A		Final Safety Analysis Report for the SW/R Tritium Complex, T. L. Buxton,	T.L. Buxton - From Centralized Characterization Project Acceptable Knowledge record for Mound waste	2/4/1992
P528A	MD-10246	Technical Manual, MD-10246, Issue 4, On-Site Transportation and Handling of Radioactive and Hazardous Materials. W. R. Henderson, (MD-10246)	W.R. Henderson	12/4/2000
P529A	MD-10173	USERS Handbook: Waste Accountability Shipping and Packaging Handbook, Issue 13, August 4, 1998, W. E. Stalder. (MD-10173)	W.E. Stalder	8/4/1998
P530A	MD-81070	Technical Manual, MD-81070, Issue 1: Mound Plant Waste Acceptance Criteria, R. S. Tunning, 10-13-92. (MD-81070)	R.S. Tunning	10/13/1992
P531A	MD-70523	Management of hazardous waste, radioactive mixed waste, trash and recyclable metals. P E. Figgins, MD-70523, (MD-70523)	P.E. Figgins Mound Laboratory	3/28/1995
P532A	n/a	Fiscal Year 1997 Update to the Approved Site Treatment Plan – Background Volume for the Mixed Wastes at Mound Facility, Revision 10, December 18, 1997 (n/a)	Mound Laboratory, From Centralized Characterization Project (CCP), AK Record P081 for SRS Mound waste	12/18/1997
P533A	MLM-2249	Mound Laboratory Environmental Plutonium Study – 1974, MLM-2249. (MLM-2249)	D. R. Rogers From Centralized Characterization Project (CCP), AK Record P086 for Mound waste at SRS.	9/15/1975
P534A	N/A	List and directory of chemical Material Safety Data Sheets, 1996	Mound Laboratory	MULITPLE D
P535A	N/A	WD Soil Removal Project, H. A. Black,	H.A. Black	11/1/1974
P536A	N/A	Mound Quality Control Plan for the Control Of Radioactive Waste, Monsanto Research Corporation	Monsanto Research Corporation, Mound	10/1/1982
P537A	N/A	N/A	N/A	N/A

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P538A	DOE-E-5948	DOE-E-5948, Railcar Exemption, June 26, 2000 and December 13, 2001 (DOE-E-5948)	US Dept of Transportation - From Centralized Characterization Project (CCP), AK Record P109 for Mound waste at SRS.	MULTIPLE D
P539A	N/A	Site Treatment Plan for the Mixed Wastes at the Mound Facility	US Department of Energy	9/15/1995
P540A	N/A	Mound Site – United States Nuclear Forces Web Site, www.globalsecurity.org/wmd/facility/mound.htm August 22, 2002	John Pike	8/22/2002
P541A	ES-50421A	Drum Specification, 30 Gallon Drum, DOT-17H, WMP-572005 (ES-50421A)	Prepared by: B.B. Kaiser; orginiated by: E.W. Kendell	7/22/1981
P542A	ES-50393 A	Drum Specification, DOT 7A Steel Box for Idaho (ES-50393 A)	R. H. Schletter ; Prepared by B.B. Kaiser, Originated by E.W. Kendall	7/22/1981
P543A	N/A	Waste Characterization Services Report, Canberra Industries, Rev. 1, 2/1998.	Canberra Industries Special Services Group	2/1/1998
P544A	ERA-NRE-94-?	Criticality Safety Evaluation for Mound RTG Storage – DRAFT. (ERA-NRE-94-?)	J. L. Judd	3/1/1994
P545A	N/A	Predecisional DRAFT, SW/R Tritium Complex.	David R. Billings and Thomas M. Flanagan	11/4/1993
P546A	DOE/EH-0415,Volume 2, Appendix B, Part 7	DOE/EH-0415,Volume 2, Appendix B, Part 7: Mount Site Assessment Team Report on ES&H Vulnerabilities Associated with the Department's Plutonium Storage, authored by US-DOE. (DOE/EH-0415,Volume 2, Appendix B, Part 7)	US Department of Energy	9/1/1994
P547A	Report No. 74-13	Investigation Report No. 74-13, Plutonium Off-Site, Monsanto Research Corporation, not dated. (Report No. 74-13)	Monsanto Research Corporation.	NOT DATED
P548A	MLM-ML-76-49-0002	Mound Laboratory Fact Book, MLM-ML-76-49-0002 (MLM-ML-76-49-0002)	Monsanto Research Corporation	9/23/1976

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P549A		Radioisotopic Fuel Data, date and author unknown.	Author Unknown; From Centralized Characterization Project (CCP), AK Record I044 for Mound waste at SRS.	
P550A		DRAFT – On-Site Handling, Repackaging, and Transportation of Nuclear Materials Located in SW-19 and R-127: Preliminary Hazards and Accident Analysis.	T. Solack, D. Ullman, and C. Cox	9/1/1996
P551A	N/A	UGL Action Memo, Removal Action of Soil and Underground Waste Transfer Lines Leading to WD Building, CH2MHill.	Department of Energy Miamisburg Closure Project	9/1/2003
P552A	N/A	1996 and 1998 Chemical Inventory and 1991 Carcinogen list.	Mound Laboratory	1998
P553A	N/A	"Milliwatt Surveillance Program Ensures RTG Safety and Reliability," The Actinide Research Quarterly, Los Alamos National Laboratory, Winter 1994.	From Centralized Characterization Project (CCP), AK Record I003 for SRS Mound waste. Trent Latimer is Project Leader of the Milliwatt Surveillance Program.	1994
P554A	MLM-MU-76-63-0001	1975 Mound Laboratory Annual Report, "Pu-238 Heat Sources," Mound Laboratory, MLM-MU-76-63-0001, 1975. (MLM-MU-76-63-0001)	Mound Laboratory - From Centralized Characterization Project (CCP), AK Record I030 for Mound waste at SRS.	1975
P555A	N/A	Excerpts from the 1976 and 1977 Mound Laboratory Annual Reports, "Mound 76" and "Mound 77, Mound Facility Annual Report 30 Years of Growth," Mound Laboratory, 1976 and 1977.	From Centralized Characterization Project (CCP), AK Record I032 for Mound waste at SRS.	1975, 1976
P556A	MD-70205	Excerpts from MD-70205, "Material Type Codes," Mound Laboratory, Issue 3, not dated. (MD-70205)	Mound Laboratory - From Centralized Characterization Project (CCP), AK Record I081 for Mound waste at SRS.	NOT DATED

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P557A	ES-50365 B	Specification Drum 55 GAL DOT-17C, Thomas Edward Curry, ES-50365 B, EG&G Idaho, Inc., (ES-50365 B)	Thomas Edward Curry, Source: From Centralized Characterization Project (CCP), AK Record M036 for Mound waste at SRS.	7/22/1978
P558A	MLM-MU-75-70-0001	Mound Laboratory Annual Report CY 1974, R.K. Flitcraft, MLM-MU-75-70-0001, October 1975. (MLM-MU-75-70-0001)	From Centralized Characterization Project (CCP), AK Record P070 for Mound waste at SRS.	10/1/1975
P559A	P559A	"An Early History of U.S. Radioisotope Thermoelectric Generators," Nuclear News, (P559A)	Derived from excerpts adapted and edited - from a Dept. of Energy publication, "Atomic Power in Space: A History" prepared by Richard E. Engler	5/1/2003
P560S	DOE/OPA-0038	Nuclear Power in Space (DOE/OPA-0038)	U.S. DOE Office of Public Affairs	8/1/1978
P561A	WAPD-TM-588	Fabrication of Fuel Rods Containing U-233 Pelletized Oxide Fuels; W.L. Frankhouser, et. al.; Bettis Atomic Power Laboratory; (WAPD-TM-588)	W.L. Frankhouser, H.H. Crain, R.L. Fischer, J.H. Suldan, J.H. Eyler, E.L. Speer Documentation collected for Bettis AK record.	2/1/1967
P562A	WAPD-TM-1244 (L)	ThO2 and ThO2-233UO2 High Density Fuel Pellet Manufacture for the Light Water Breeder Reactor (LWBR Development Program (WAPD-TM-1244 (L))	J. Belle, et. al.	1/1/1976
P563A	WAPD-FE-1105	The Fabrication of Zircaloy-2 Clad U-Mo and U-Nb Rods For Irradiation In the Materials Testing Reactor; Bettis Atomic Power Laboratory, Westinghouse Electric Corporation; W. B. Haynes; (WAPD-FE-1105)	W. B. Haynes	10/31/1955
P564A	WAPD-RC/E(EE)-2838	Effluent and Environmental Monitoring Report for the Calendar Year 1992; Westinghouse Electric Corporation Bettis Atomic Power Laboratory; WAPD-RC/E(EE)-2838, not dated. (WAPD-RC/E(EE)-2838)	Westinghouse Electric Company - Documentation collected for Bettis AK record.	NOT DATED

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P565A	WAPD-T-3007	The Shippingport Pressurized Water Reactor and Light Waster Breeder Reactor; J.C. Clayton; Westinghouse Electric Corporation Bettis Atomic Power Laboratory, For Presentation at the 25th Central Regional Meeting, American Chemical Society, Pittsburgh, Pennsylvania; (WAPD-T-3007)	J.C. Clayton	OCTOBER 4-
P566A	EDF-RWMC-344	Identification of Bettis 6M Containers (EDF-RWMC-344)	R. L. Devries	9/30/1988
P567A	EDF-2550	INEEL Stored Contact-Handled Transuranic Waste Volumes; Idaho National Engineering and Environmental Laboratory; EDF-2550, Rev 0; September 30, 2002 (EDF-2550)	C.J. Barnard	09/30/2002
P568A	EDF-5159	TRU Waste Determination for Waste Containing U-233 Stored at the RWMC; Idaho National Engineering and Environmental Laboratory (EDF-5159)	Pui Kuan; Documentation collected for Bettis AK record.	9/15/2004
P569A	B-RC/E(EE)EMR-0500	Bettis - Pittsburgh Site Environmental Summary Report; Bechtel Bettis, Inc., Bettis Atomic Power Laboratory; (B-RC/E(EE)EMR-0500)	Bechtel Bettis Bettis Atomic Power Laboratory	8/1/1999
P570A	N/A	Region 3 GPRA Baseline RCRA Corrective Action Facility Bettis Atomic Power Laboratory; U.S. Environmental Protection Agency;	U.S. Environmental Protection Agency Region III, Contact Mr. Darius Ostrauskas	6/27/2005
P571A	N/A	The United States Navel Nuclear Propulsion Program Over 132 Million Miles Safely Steamed on Nuclear Power; Department of Energy and Department of Navy	US Department of Energy, US Department of the Navy, Documentation collected by CCP as part of Remote Handled program.	3/1/2005
P572A		Advanced Mixed Waste Treatment Project Bettis Atomic Power Laboratory Waste White Paper; R. A. Rickman; Waste Operations Technical Support;	R. A. Rickman Documentation collected for Bettis AK record.	6/9/2005
P573A	N/A	Excerpts from Bettis Employee Handbook; Bechtel Bettis, Inc.; W. C. Rogers	Bechtel Bettis, Inc., Documentation collected by CCP as part of remote-handled program.	08/01/2004
P574A	N/A	Material Safety Data Sheets (MSDSs) Associated with the Materials Examination Facility, various authors and dates.	Multiple Manufacturers MSDSs - Documentation collected by CCP as part of remote-handled program.	MULITPLE D

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P575A	INEEL/EXT-98-00336	INEEL Initial Site Assessment Report The Storage of U-233, Lewis, L. C. and Wilkinson, D. R., Lockheed Martin Idaho Technologies Company, INEEL/EXT -98-00336 (INEEL/EXT-98-00336)	Leroy C. Lewis, Dennis R. Wilkinson	3/1/1998
P576A	WAPD-TM-576	Fabrication of High and Low Density ThO2 Fuel Pellets; by CR Hutchinson and RGR Johnson; WAPD-TM-576, December 1966. (WAPD-TM-576)	C.R. Hutchison, R.G.R. Johnson	12/1/1966
P577A	WAPD-TM-577	Fabrication of Fuel Pellets from Pot Process Denitrated ThO2 Powder, by RGR Johnson, WAPD-TM-577, July 1966. (WAPD-TM-577)	R.G.R. Johnson	7/1/1966
P578A	WAPD-TM-578	Fabrication of Solid, Annular, and Dished-End Ceramic Fuel Pellets, by RGR. Johnson and HH Crain; WAPD-TM-578, May 1967 (WAPD-TM-578)	R.G.R. Johnson H.H. Crain	5/1/1967
P579A	WAPD-TM-581	Fabrication of Fuel Pellets from Sol-Gel Powders, by HH Crain and CR Hutchison, WAPD-TM-581, November 1966. (WAPD-TM-581)	H.H. Crain, C.R. Hutchison	11/1/1966
P580A	WAPD-TM-582	Removal of Iron and Boron During Fabrication of Ceramic Fuel Pellets; by H. H. Crain, Jr.; WAPD-TM-582, (WAPD-TM-582)	H.H. Crain, Jr.	6/1/1966
P581A	WAPD-TM-589	Fractional Factorial Experiment In Fabricating Thoria Fuel Pellets, W. L. Frankhouser; WAPD-TM-589, (WAPD-TM-589)	W. L. Frankhouser	2/1/1967
P582A	WAPD-TM-607	Single-Sinter Process for Manufacturing UO2-ZrO2 and UO2-ThO2 Fuel Pellets – A Feasibility Study, RT Davis and CR Hutchison, WAPD-TM-607, (WAPD-TM-607)	RT Davis and CR Hutchison	12/1/1966
P583A	WAPD-TM-721	Fabrication of Low Density Urania-Thoria Fuel Pellets (LWBR Development Program), GH Williams, MK Rodriguez, and RGR Johnson; WAPD-TM-721, (WAPD-TM-721)	G.H. Williams, M.K. Rodriguez, R.G.R. Johnson	6/1/1968
P584A	WAPD-TM-751	The Hot-Pressing Behavior of Sintered Low-Density Pellets of UO2, ZrUO2, ThO2, and ThO2-UO2 (LWBR Development Program), SF Kaufman; WAPD-TM-751, May 1969 (WAPD-TM-751)	S. F. Kaufman	5/1/1969
P585A	WAPD-TM-789	Planetary Ball Milling as a Method of Comminuting Presintered Thoria-Urania Granules (LWBR Development Program) (WAPD-TM-789)	T.J. Burke	4/1/1969
P586A	WAPD-TM-880	Effect of Carbowax Binder and Dextrose Additive on the Microstructure, Density, and Open Porosity of Thoria-Urania Fuel Pellets (LWBR Development Program); TJ Burke; WAPD-TM-880, (WAPD-TM-880)	T.J. Burke	11/1/1969

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P587A	WAPD-TM-909	Corrosion of Oxide Nuclear Fuels in High Temperature Water (LWBR Development Program), JM Markowitz and JC Clayton; WAPD-TM-909, (WAPD-TM-909)	JM Markowitz and JC Clayton	2/1/1970
P588A	WAPD-TM-908	The Thermal Conductivity of Polycrystalline Thoria and Thoria-Urania Solid Solutions (LWBR Development Program); RM Berman, TS Tully, J Belle, and I Goldberg; WAPD-TM-908, (WAPD-TM-908)	R.M. Berman, T.S. Tully, J. Belle, I. Goldberg	12/1/1972
P589A	WAPD-TM-1051	The Homogenization of ThO2-UO2 (LWBR Development Program), RM Berman; (WAPD-TM-1051)	R.M. Berman	12/1/1972
P590A	WAPD-TM-1600	Water Cooled Breeder Program Summary Report (LWBR Development Program), R. Atherton; (WAPD-TM-1600)	R. Atherton,Coordinator	10/1/1987
P591A	N/A	Material Safety Data Sheets (MSDS) for Micro® Detergents, International Products Corporation, March 30, 1990 and April 1, 1993.	Internet, International Products Corporation	4/1/1993
P592A	N/A	Material Safety Data Sheets (MSDS) for Paint Removers	W. M. Barr & Company	11/14/1993
P593A	RMRS-WIPP-98-100, Section 7.29	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries. RMRS -WIPP-98-100, Section 7.29, TRM Solidified Inorganic Waste, Profile No. RF107.07, Rev. 1, (RMRS-WIPP-98-100, Section 7.29)	Rocky Flats Environmental Technology Site.	8/23/2004
P594A	RMRS-WIPP-98-100, Section 6.17	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries, TRU Firebrick Debris Waste (RMRS-WIPP-98-100, Section 6.17)	Rocky Flats Environmental Technology Site.	11/4/2004
P595A	M4T00-DCD-03-062, RFETS01	Hanford Site Transuranic Waste Management Waste Specific Acceptable Knowledge Documentation for TRM Incinerator Ash from Rocky Flats Environmental Technology Site, Waste Stream RFETS01, M4T00-DCD-03-062, RFETS01, Revision 2. No date given. (M4T00-DCD-03-062, RFETS01)	Site AK files	N/A
P596A	EDF-4139	EDF-4139, Rev. 0; Hanford Ash Contribution to the RAL Radionuclide Inventory, September 10, 2003. (EDF-4139)		9/10/2003
P597A	M4T00-TRU-03-550, M4T00-TRU-03-488.1	WIPP Waste Stream Profile, RLMHASH.001, R. P. Dunn, TRU Program Director. (M4T00-TRU-03-550, M4T00-TRU-03-488.1)	R. P. Dunn, TRU Program Director.R. P. Dunn, TRU Program Director.	3/30/2004
P598A	RLRFETS.001	WIPP Waste Stream Profile Form (RLRFETS.001)		7/12/2004

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P599A	N/A	Rocky Flats Environmental Technology Site Backlog Waste Reassessment Baseline Book, Waste Form 46, Particulate Sludge	Rocky Mountain Remediation Services, L.L.C.	7/12/2004
P600A	N/A	Integrated Waste Tracking System Container Profile, INTC040571, INTC040572, INTC040573. MTRU Laboratory Analytical Waste-WIR by Citation. July 14, 2004		7/14/2004
P601A	2461	Waste Material Characterization Profile; MTRU Laboratory Analytical Waste-WIR by Citation (2461)	Sylvia Sing, IWTS	6/9/2009
P602A	ICP/EXT-05-00833	Supplement to Evaluation of Naval Reactors Facility Radioactive Waste Disposed of at the Radioactive Waste Management Complex from 1953 to 1999 (Draft) (ICP/EXT-05-00833)	John Giles, Jean Holdren and Arpad Lengyel	4/1/2005
P603A	N/A	Bettis Atomic Power Laboratory Hazardous Waste and Materials Preparedness, Preventionn, and Contingency Plan (PCCP)	N/A	8/1/2004
P604A	N/A	BN304 Mound Waste Stream Profile Package	AMWTP, CBFO	12/13/2005
P605A	INEEL/EXT-99-00400	Material Safety Data Sheet for Turco (INEEL/EXT-99-00400)	John F. Grainger	2/25/2005
P606A	N/A	Material Safety Data Sheet for Versene	N/A	12/4/1992
P607A	N/A	Information on Kepro Developer	N/A	N/A
P608A	RFP-1985 UC-4 CHEMISTRY TID-4500 - 56 Ed.	THE HEATS OF SOLUTION OF BERYLLIUM IN CHEMICAL MILLING SOLUTIONS (RFP-1985 UC-4 CHEMISTRY TID-4500 - 56 Ed.)	JAMES D. NAVRATIL FRANKLIN L. OETTING	1/24/1973
P609A	N/A	BN004 Special Setups Waste Stream Profile Package, December 28, 2005; Change Notice #1, February 15, 2007; Change Notice #2, April 2, 2008; and Change Notice #3, August 5, 2010.	AMWTP CBFO	12/28/2005
P610A	BN161 WSP	BN161 Firebrick Debris Waste Stream Profile Package (BN161 WSP)	AMWTP CBFO	12/20/2005
P611A	AMWTP-RPT-TRUW-03	Drum Assay Technical Review Report (AMWTP-RPT-TRUW-03)	AMWTP	CUR DATE
P612A	ACMM-9500	Sample Preparation for Semivolatile Organic Compounds and Polychlorinated Biphenyls, Idaho National Engineering and Environmental Laboratory (ACMM-9500)	INEEL	12/15/2004
P613A	ACMM-2810	Determination of Mercury by CVAA for TRU Waste Characterization (ACMM-2810)	Idaho National Engineering and Environmental Laboratory	1/27/2005

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P614A	ACMM-2901	Determination of Metals by ICP-AES for TRU Waste Characterization (ACMM -2901)	Idaho National Engineering and Environmental Laboratory	1/27/2005
P615A	ACMM-8909	Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel (ACMM-8909)	Idaho National Engineering and Environmental Laboratory	1/17/2006
P616A	ACMM-9260	Volatile Organic Compounds by Gas Chromatography Mass Spectrometry (ACMM-9260)	Idaho National Engineering and Environmental Laboratory	12/1/2005
P617A	ACMM-9270	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (ACMM-9270)	Idaho National Engineering and Environmental Laboratory	1/20/2005
P618A	ACMM-9441	Determination of Nonhalogenated Volatile Organics by Gas Chromatography (ACMM-9441)	Idaho National Engineering and Environmental Laboratory	12/22/2004
P619A	PLN-600	Analytical Laboratories Quality Assurance Plan for the TWCP (PLN-600)	Idaho National Engineering and Environmental Laboratory	4/18/2005
P620A	PLN-1258	Quality Program Plan for the TWCP, , PLN-1258, Revision 2, 4/3/05 (PLN-1258)	Idaho National Engineering and Environmental Laboratory	4/3/2005
P621A	LA-UR-05-3247*	A Technically Useful History of the Critical Mass Laboratory at Rocky Flats (LA-UR-05-3247*)	Robert E. Rothe	5/1/2005
P622A	N/A	Work Plan for Environmental Restoration of the DOE Mound Site, Mound 2000 Approach	Babcock and Wilcox of Ohio	2/1/1999
P623A	AMDM-000000002	Nevada Test Site Waste Profile Waste Stream (AMDM-000000002)	J.C. Miles, Babcock & Wilcox of Ohio	6/11/1998
P624A	AMDM-000000002	Nevada Test Site Waste Profile Waste Stream (AMDM-000000002)	J.C. Miles, Babcock & Wilcox of Ohio	6/11/1998
P625A	AMDM-000000002	Nevada Test Site Waste Profile Waste Stream AMDM-000000002 (AMDM-000000002)	James Fontaine	6/6/2002
P626A	WAPD-TM-1208	Design of the Shippingport Light Water Breeder Reactor (LWBR Development Program), (WAPD-TM-1208)	D.R. Conners S. Milani J.A. Fest R Atherton	1/1/1979
P627A	WAPD-TM-850	Gas Release from Thoria-Base Oxide Fuel Pellets (LWBR Development Program) (WAPD-TM-850)	R.J. Smid	4/1/1971

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P628A	BMI-X-10210	Fabrication, Characterization, and Thermal-Property Measurements of ThO2-UO2 Fuel Materials (LWBR Development Program) (BMI-X-10210)	J.R. Springer E.A. Eldridge M.U. Goodyear T.R. Wright J.F. Lagedrost	10/1/1967
P629A	ORNL-4755	Conversion of Uranium Nitrate to Ceramic-Grade Oxide for the Light Water Breeder Reactor: Process Development (ORNL-4755)	JM Leitnaker M.L. Smith C.M. Fitzpatrick	4/1/1972
P630A	NLCO-970	Summary Technical Report for the Period October 1, 1965 to December 31, 1965 (NLCO-970)	S. Marshall R Burgett	2/1/1966
P631A	ORNL-4731	Laboratory Development of a Pressurized Cation Exchange Process for Removing the Daughters of U-232 from U-233 (ORNL-4731)	R.H. Rainey	12/1/1972
P632A	CCP-AK-INL-002	Central Characterization Project Acceptable Knowledge Summary Report for the Idaho National Laboratory Rocky Flats Transuranic Graphite Debris Waste Stream: ID-RF-S5126 (CCP-AK-INL-002)	David H. Haar	10/20/2005
P633A	CCP-AK-INL-004	Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory: Waste Stream ID-RF-S5300-A (CCP-AK-INL-004)	David H. Haar	10/6/2005
P634A	CCP-AK-INL-005	Central Characterization Project Acceptable Knowledge Summary Report For Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory: Waste Streams ID-RF-S3114 and ID-RF-S3150-A (CCP-AK-INL-005)	Larry Porter	10/20/2009
P635A	CCP-AK-INL-006	Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Raschig Rings Stored at the Idaho National Laboratory: Waste Stream ID-RF-S5100-A; (CCP-AK-INL-006)	David H. Haar	10/20/2005
P636A	N/A	Central Characterization Project Waste Stream Profile Form; Waste Stream profile Number ID-RF-S5126	Barbara Broomfield	11/15/2005
P637A	N/A	Central Characterization Project Waste Stream Profile Form; Waste Stream profile Number ID-RF-S5300-A	Barbara Broomfield	11/15/2005

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P638A	N/A	Central Characterization Project Waste Stream Profile Form; Waste Stream profile Number ID-RF-S5100-A	Barbara Broomfield	11/15/2005
P640A	WM-PD-88-008	Waste Characterization Study on Greater Than Class "C" Radioactive Waste from the Monsanto-Dayton Laboratory. (WM-PD-88-008)	Dennis A. Peterson, EG&G Idaho, Inc.	1/1/1989
P641A	HNF-25697	Risk-Based Disposal Approval for North Loadout sludge Pit (HNF-25697)	Keith A. Kline	5/19/2005
P642A	N/A	Help from the Department of Defense.	N/A	4/27/2006
P643A	N/A	Health Risks of Fabric Softeners	website:http://www/littleplace.com/fabric.html	4/28/2006
P644A	N/A	Material Safety Data Sheet (MSDS), Proctor & Gamble	Proctor & Gamble	12/4/2002
P645A	N/A	Material Safety Data Sheet(MSDS)for fabric softner	U. S. Chemical Corporation	12/20/1999
P646A	N/A	BN836 Cemented Sludge Waste Stream Profile Package, April 28, 2006 Change Notice #1, January 24, 2007 Change Notice #2, April 2, 2008	AMWTP CBFO	04/28/2006
P647A	CCP-AK-INL-001	Central Characterization Project Acceptable Knowledge Summary Report for Waste Retrieved from Designated Areas within the Subsurface Disposal Area at the Idaho National laboratory (CCP-AK-INL-001)		CUR DATE
P648A	N/A	A nuclear jump-start for space power	Ben Iannotta	8/1/2002
P649A	RPT-TRUW-56	Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant (RPT-TRUW-56)	Advanced Mixed Waste Treatment Project	CUR DATE
P650A	RPT-TRUW-60	Acceptable Knowledge Document for INL Stored Transuranic Waste-Bettis Atomic Power Laboratory (RPT-TRUW-60)	AMWTP	CUR DATE
P651A	EPA-AMWTP-03.06-8	Waste Characterization Inspection Report, EPA Proposed Baseline Inspection No. EPA-AMWTP-03.06-8 of the Advanced Mixed Waste Treatment Project Facility at the Idaho National Laboratory, Docket No. A-98-49, II-A4-66 (EPA-AMWTP-03.06-8)	Unknown	7/1/2006
P652S	TREE-1286	Initial Drum Retrieval Final Report (TREE-1286)	Kirk B. McKinley Joseph D. McKinney	08/00/1978
P653S	TREE-1079	Initial Drum Retrieval Interim Report (July 1974 to September 1976) (TREE-1079)	D. H. Card D. K. Wang	05/00/1977

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P654S	TREE-1321	Early Waste Retrieval Final Report (TREE-1321)	James R. Bishoff Robert J. Hudson	08/00/1979
P655S	TREE-1061	Containment of Transuranic Contamination at the Early Waste Retrieval Project (TREE-1061)	Joseph L. Harness Joseph D. McKinney	01/01/1977
P656A	EDF-0135	Estimate of Number of SWBs to Ship Damaged Product Drums (EDF-0135)	Tamara Shokes	10/23/2006
P657S	N/A	Material Safety Data Sheets for Petroset II and Petroset IIG	Fluid Tech, Inc.	VARIOUS
P658A	HNF-28620	Acceptable Knowledge Document for Consolidated Babcock and Wilcox Parks Township Site Plutonium Facility Debris Waste Stream, RLCBWD (HNF-28620)	M.M. Anderson	9/28/2006
P659A	RLMPURX.001	RLMPURX.001 Transuranic Mixed Heterogeneous Debris Hanford Waste Stream Profile Package (RLMPURX.001)	M.M. Anderson	2/6/2004
P660A	RLMPDT.001	RLMPDT.001 Mixed Plutonium Finishing Plant Debris Hanford Waste Stream Profile Package (RLMPDT.001)		various
P661A	ID-SDA-DEBRIS	Central Characterization Project Waste Stream Profile Form; WSPF# ID-SDA -DEBRIS; (ID-SDA-DEBRIS)	Barbara Broomfield	2/21/2007
P662A	HNF-28514	Acceptable Knowledge Document for Hanford Site Solid Waste Operations Complex Debris Waste Stream, RLSWOCD.001, October 5, 2006 (HNF-28514)		10/5/2006
P663A	N/A	Fluid Tech, Inc., HAZCO Division, Product descriptions of AQUASET®, AQUASET II®, AQUASET II-H, PETROSET®, PETROSET-H®, PETROSET II®	N/A	N/A
P664A	TREE-1047	Early Waste Retrieval Interim Report (TREE-1047)	D. H. Card, Manager, Retrieval Operations	02/01/1977
P665A	N/A	Central Characterization Project Waste Stream Profile Form; Waste Stream profile Number ID-RF-S3150-A	Barbara Broomfield	11/15/2006
P666A	ID-RF-S3114,	Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-RF-S3114; Barbara Broomfield; November 15th, 2006 (ID-RF-S3114,)	Barbara Broomfield	11/01/2009
P667A	N/A	AMWTP RCRA Part B Permits and interim status documents.	N/A	N/A

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P668S	INEEL/EXT-01-01587	Evaluation of Chemical Compatibilities of the OU7-10 Glovebox Excavator Method Project (INEEL/EXT-01-01587)	John R. Dick and Brent N. Burton	6/1/2002
P669S	INEEL/EXT-03-00471	Nitrate Reaction Report for the OU7-10 Glovebox Excavator Method Project (INEEL/EXT-03-00471)	John R. Dick	6/1/2003
P670A	DOE/LLW-217	DOE Waste Treatability Group Guidance (DOE/LLW-217)	T. D. Kirkpatrick	01/01/1995
P671S	RS-090-065	Historical Material Balance Area (MBA) Designator Usage, and Isotope Inventory Review for: • Uranium 235 (235U) and 238 (238U) • Plutonium 238 (238Pu) • Neptunium 237 (237Np) • Californium 252 (252Cf) • Curium 244 (244Cm) • Thorium (Th) (RS-090-065)	R.S. Moment, F.E. Gibbs, C.J. Freiboth, IT Corporation, Los Alamos, NM	8/31/1999
P672A	CCP-PO-003	CCP Authorized Methods for Payload Control (CCP-CH-TRAMPAC) (CCP-PO-003)	Central Characterization Project.	11/16/2006
P673A	HNF-33244	Acceptable Knowledge Document for 300 Area Mixed Debris Waste Stream, RLM300D, HNF-3324 (HNF-33244)	Vivian Sendelwick, AK, Fluor Hanford, Inc	12/18/2007
P674S	W0660-0012-QP	Quality Assurance Plan, Analytical Laboratory Procedure (W0660-0012-QP)	D. D. Standfield	8/19/2003
P675A	PLN-8300	MFC CH-TRU Waste Certification Program Plan (PLN-8300)	Battelle Energy Alliance	10/27/2008
P677A	PADC-1995-01046	Excerpts from Rocky Flats Backlog Waste Reassessment Baseline Book (BWRBB) – Waste Form 2 and Waste Form 44. (cka) (PADC-1995-01046)	RFETS	5/16/2000
P678S	N/A	Advanced Fuel Cycle Initiative (AFCI) Program Plan	DOE Office of Nuclear Energy, Science and Technology	5/1/2005
P679A	ANL-NT-192	The Defense Programs Origin of Transuranic Waste at Argonne National Laboratory-West. (ANL-NT-192)	H. F. McFarlane	11/1/2001
P680A	CCP-AK-INL-008	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory Materials and Fuels Complex Contact-Handled TRU Debris, Waste Stream ID-MFC-S5400 (CCP-AK-INL-008)	Mark Pearcy	04/03/2007
P682S	LWP-8300	Transuranic Waste Handling (LWP-8300)	INL - Battelle Energy Alliance	DRAFT
P683S	W0630-0026-KP	Dissolution of Pu Metal (W0630-0026-KP)		5/22/2001
P684S	W0630-0041-KP	Determination of Isotopic Composition of Uranium and Plutonium Using Finnigan Mat 262 Thermal Ionization Mass Spectrometer (W0630-0041-KP)	M. Michlik and D. Standfield	5/7/2001

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P685S	W0630-0057-KP	Uranium and Plutonium Separation From Electrorefiner Salt for Mass Spectrometer Analysis (W0630-0057-KP)	J. Berg and D. Standfield	6/18/1996
P686S	W0630-0059-OP	Standard Test Methods for Determining Chemical Durability of Nuclear Waste Glasses and Ceramics - Product Consistency Test (W0630-0059-OP)	S. Johnson and D. Standfield	12/16/2003
P687S	W0630-0128-KP	Sample Preparation for Analysis of Boron and Gallium in Plutonium Oxide (W0630-0128-KP)		3/27/2003
P688S	W0630-0102-KP	Dissolution of SRM-B Eutectic Salt Reference Material (W0630-0102-KP)	J. Berg and D. Standfield	5/7/2001
P689A	W0650-0008-OP	Glovebox Bagout Bag Replacement and Waste/Material Bagout (W0650-0008-OP)	MFC	7/19/2005
P690S	W0650-0016-OP	Waste Form Testing Glovebox (W0650-0016-OP)	MFC	8/12/2005
P691S	W0650-0019-OP	Rusnok Milling Machine for Waste Form Testing Glovebox. (W0650-0019-OP)	MFC	9/1/2005
P692S	W0650-0025-OP	Special Projects Glovebox Operation (W0650-0025-OP)	MFC	7/11/2005
P693S	W0650-0058OP	Casting Laboratory Glovebox Thermolyne-21135 Model Furnace (W0650-0058OP)	MFC	10/1/2002
P694S	W0650-0059-OP	Casting Laboratory AAA Cladding Tube Loading/Welding (W0650-0059-OP)	R. Fielding and D. D. Standfield	4/23/1993
P695A	W0650-0062-KP	Dissolution of Plutonium Metal Samples for Silicon Analysis (W0650-0062-KP)	MFC	11/5/2002
P696S	W0650-0063KP	Dissolution of Plutonium Oxide Samples for Trace Metal Analysis (W0650-0063KP)	J. Berg and D.D. Peay	3/31/2004
P697S	W0650-0064-KP	Determination of Gallium in Plutonium Oxide by Inductively-Coupled-Plasma Mass Spectrometer (W0650-0064-KP)	MFC	3/26/2003
P698S	W0650-0065-KP	Determination of Boron in Plutonium Oxide by Inductively-Coupled-Plasma Atomic Emission Spectrometry (W0650-0065-KP)	D. Cummings and D. D. Standfield	3/26/2003
P699A	W0650-0070-OP	Fabrication and Characterization of Pu, Np, and Am-Bearing Metallic Alloy Specimens (W0650-0070-OP)	MFC	8/2/2005
P700S	W0660-0035-AP	General Laboratory Waste (W0660-0035-AP)	MFC	6/30/2005
P701S	W0660-0036-AP	Notebooks and Logkeeping (W0660-0036-AP)	J. Berg and D. D. Standfield	8/19/2003

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P702S	W0660-0072-AP	Safety and Hazards Analysis, Chemical Hygiene, and Waste Minimization Plan for Preparation of Accelerator Transmutation of Waste Test Specimens (W0660-0072-AP)	K. Weatherston, J. Stuart, and D. D. Standfield	10/2/2002
P703A	W0660-0078-AP	Accelerator Transmutation of Waste Project Thermal Analysis Studies on ATW-1 Samples in Analytical Laboratory (W0660-0078-AP)	J. R. Kennedy and D. D. Standfield	7/31/2002
P704S	BXQRN	MSDS Blue Windex (BXQRN)	S. C. Johnson Wax	5/17/1995
P705S	BPBPK	MSDS National Brands Inc. - - Fantastik All Purpose Cleaner (BPBPK)	National Brands Inc.	7/27/1992
P706S	CLJRB	MSDS Atomic Products Corp - - Radiacwash I (CLJRB)	Atomic Products Corp	2/22/1988
P707S	CJSPN	MSDS Atomic Products Corp - - Radiacwash II (CJSPN)	Atomic Products Corp	11/10/1999
P708A	IWTS 3527	IWTS Material Profile No. 3527, Analytical Lab TRU Waste, generated from ANL Bldg 752 Analytical Laboratory. Inactive (IWTS 3527)	IWTS	5/19/2008
P709A	3526	IWTS Material Profile No. 3526, Casting Lab TRU Waste, ANL Bldg. 752, Analytical Laboratory, 4-1-99 (3526)	Fedder, Jennifer	3/31/2010
P710A	3657P	IWTS Material Profile No. 3657P: Glovebox Debris from: Testing, Alpha, & Special Projects, Casting Labs, etc. (3657P)	R. Allen	10/27/08
P711A	IWTS 2815A	IWTS Material Profle No. 2815A, CH-MLLW Generated at HFEF-WCA (IWTS 2815A)	IWTS	5/12/1998
P712A	IWTS 3978P	IWTS Material and Waste Characterization Profile: HFEF CH-MTRU (GGE & Ash Stabilization Experiments clean-up). INACTIVE as of 4/2/07 (IWTS 3978P)	IWTS	9/9/2003
P713A	EDF-RWMC-746	Identification of ILTSF Waste Stored on Pad 2 (EDF-RWMC-746)	RWMC	8/10/1994
P714S		Non-AMWTP generator waste profile, AMWTP Form 1687 - ID-SDA-Sludge	Central Characterization Project	5/22/2008
P715A	5419N	IWTS Material Profile No. 5419N, LL TRU, >100 nCi/g generated from ANL-704: ANL Bldg 704, Fuel Manufacturing Facility. INACTIVATED 9/29/09 and Replaced by 5419N.R1 created for WGS transition to BEA (5419N)	IWTS	5/19/2008
P716A	5274N	IWTS Material Profile No. 5274N, Misc. Waste from Waste Form Testing, Alpha, & Special Projects Glovebox, etc., 3-9-07 INACTIVE (5274N)	R. Allen	3/31/2010

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P717A		Rocky Flats Environmental Technology Site (RFETS) Backlog Waste Reassessment Baselne Book (BWRBB) ()	Rocky Mountain Remediation Services, L.L.C.	3/31/95 TH
P718A	5185N	IWTS Material Profile No. 5185N, Casting Lab Pb Lined Gloves, Generated From Bldg. 752, Analytical Laboratory, 1/10/2007 (5185N)	Jonathan Jacobson	3/31/2010
P719S	W0650-0049-EP	Accelerator Transmutation of Waste Project Arc-Melting Activities (W0650-0049-EP)	R. J. Kennedy and D. D. Standfield	06/08/2001
P720S	W0650-0051-OP	Arc Melting Furnace (W0650-0051-OP)	J. Stuart and D. D. Standfield	5/2/2002
P721S	W0650-0054-OP	Fabrication and Characterization of Futurix Pu, Np and Am-Bearing Metallic Alloy Fuel Slugs (W0650-0054-OP)	D. Porter and D. D. Peay	8/9/2005
P722A	W0650-0043-OP	Operating Procedure for Decontaminating Glovebox (W0650-0043-OP)	P. Hansen and D. D. Standfield	6/24/2003
P723S	W0650-0030-OP	Glovebox Glove, Bagout Sleeve and Gloveport Blank Replacement (W0650-0030-OP)	J. Stuart and D. Peay	5/5/2005
P724A	W0660-0076-AP	Accelerator Transmutation of Waste Project Diffusion Couple FCCI Studies on ATW. (W0660-0076-AP)	J. R. Kennedy and D. D. Standfield	7/18/2002
P725A	W0650-0032-OP	Glovebox Operation (W0650-0032-OP)	J. Stuart and D. Peay	5/5/2005
P726S	N/A	Material Safety Data Sheets; Petroset II and Aquaset II-H	Fluid Tech, Inc.	1/1/2005
P727A	WHM-96-01	ANL-W Waste Handling Manual Update; Chapter 7.8 "Hazardous Waste Accumulation Areas" (WHM-96-01)	ANL-W	12/10/1996
P728A	IWTS 2815	IWTS Material and Waste Chaaracterization Profile: MLLW Generated at HFEF-WCA. INACTIVE as of 10/18/00 (IWTS 2815)	IWTS	12/1/1997
P729A	IWTS 3583T	Material and Waste Characterization Profile. WETP Process Waste IDC-164 INACTIVE as of 4/2/2007 (IWTS 3583T)	IWTS	7/24/2002
P730A	RFETS WSPF RF118.01	TRM Incinerator Ash (RFETS WSPF RF118.01)	RFETS, Kaiser-Hill	10/19/2001
P731A	RF119.01	WIPP Waste Stream Profile Form RF119.01 and RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries RMRS-WIPP-98-100, Section 7.37, TRM Incinerator Sludge (RF119.01)	RFETS	01/25/2005

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P733S	CO-04-06-23-01	Rocky Flats Environmental Technology Site (RFETS) RCRA permit. July 23, 2004 Electronic version of this revision of the RCRA permit was obtained from the State of Colorado personnel. (CO-04-06-23-01)	State of Colorado	7/23/2004
P734A	ANL503T	IWTS Material and Waste Characterization Profile No. ANL503T, HEPA Filters Contaminated with Characteristic Waste and TRU, Bldg 752 (ANL503T)	Nancy Stewart, MFC	2/18/1998
P735S	AL-5000-LI-003	Contact-Handled Transuranic Waste Handling (AL-5000-LI-003)	MFC Laboratory Instruction	8/19/2008
P736A	NWE-ID-2000-002	Characterization of Existing Contact-Handled Waste Containers of Unknowns at RWMC (NWE-ID-2000-002)	C. A. Major, North Wind Environmental	9/1/2001
P737S	RFP-2623	The Suspension of Plutonium and Americium from Pond Sediments at the Rocky Flats Plant (RFP-2623)	Terry F. Rees, J.C. Cleveland, W.C. Gottschall	N/A
P738S	NA	Status Report Waste Incineration and Fixation for Waste Management, Production, and Reprocessing Division of the Department of Energy (July-December 1976) (NA)	Donald L. Ziegler, Jim W. White, Andrew J. Johnson, Leong Q. Fong, Alton R. Teter, Seng F. Chung	1976
P739A	DOE/TIC-4500	Waste Systems Progress Report, March 1984 through February 1985 (DOE/TIC-4500)	Gordon L. Hickle	4/11/1986
P740S	EDF-RWMC-625	TSA-1 and TSA-2 Waste Stack Corrosion Rate Validation Plan. (EDF-RWMC-625)	Kevin J. Liekhus	3/18/1993
P741A	GDE-318	SDA Targeted and Non-Targeted Waste Identification Operator Guide. (GDE-318)	Idaho Cleanup Project (ICP), CH2M-WG Idaho, LLC	10/09/2008
P742S	DOE/ID-10202	Investigative Report of the Breached Transuranic Waste Box and Subsequent Spread of Contamination Discovered April 21, 1988, at the Radioactive Waste Management Complex. (DOE/ID-10202)	C. R. Enos, W. G. Hathaway, J. S. Klossner, T. D. Merkling	6/1/1988
P743A	CAO-94-1005	Waste Isolation Pilot Plant Transuranic Waste Baseline Inventory Report (CAO-94-1005)	WIPP Technical Assistance Contractor for U.S. Department of Energy	02/01/1995
P744A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	DOE/Carlsbad Area Office	12/00/1995

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P745A	DOE/CAO-95-1121	Transuranic Waste Baseline Inventory Report (DOE/CAO-95-1121)	DOE/CAO	06/01/1996
P746A	DOE/TRU-2006-3344	Transuranic Waste Baseline Inventory Report - 2004 (DOE/TRU-2006-3344)	U.S. Department of Energy, Carlsbad Field Office	NONE
P747A	DOE/TRU-2008-3379	Annual Transuranic Waste Inventory Report - 2007 (DOE/TRU-2008-3379)	Los Alamos National Laboratory - Carlsbad Operations (LANL-CO)	
P748A	CCP-PK-NTS-001	Central Characterization Project Process Knowledge Summary Report For Nevada Test Site Lawrence Livermore National Laboratory Waste, Waste Streams: NTLLNL-S5400 and NTLLNL-S3900 (CCP-PK-NTS-001)	D.K. Ploetz	11/21/2008
P749A	CCP-PK-NTS-003	Central Characterization Project Process Knowledge Summary Report For Nevada Test Site Lawrence Berkeley National Laboratory Waste, Waste Streams: NTLBL-S5400 and NTLBL-S3900 (CCP-PK-NTS-003)	D. K. Ploetz	11/6/2008
P750A	ANL142T	IWTS Material Profile No. ANL142T, Lead Contaminated Articles and Debris - TRU Contaminated, 2-13-98, Inactive as of 4-9-98 (ANL142T)	Nancy Stewart	3/31/2010
P751A	ANL505T.R1	IWTS #ANL505T.R1: Debris Contaminated with Characteristic Waste and MTRU, 3/11/2010 (ANL505T.R1)	Jonathan Jacobson, WGS	4/5/2010
P752A	HAER # CO-83-L	Historic American Engineering Record Rocky Flats Plant, Non-Nuclear Production Facility (Rocky Flats Plant, Building 444) (Rocky Flats Plant, Plant A) (Rocky Flats Plant, Building 44) (HAER # CO-83-L)	D. Jayne Aaron, Judith Berryman, Ph.D.	N/A
P753A	TREE-1265	Early Waste Retrieval Interim Report (TREE-1265)	Kirk B. McKinley and Joseph D. McKinney	05/01/1978
P754A	WMP 77-3	History of Buried Transuranic Waste at INEL (WMP 77-3)	D. H. Card, Manager, Retrieval Projects	3/1/1977
P755A	INEEL/EXT-02-01125	Ancillary Basis for Risk Analysis of the Subsurface Disposal Area (INEEL/EXT-02-01125)	K. Jean Holdren, Bruce H. Becker, Nancy L. Hampton, L. Don Koeppen, Swen O. Magnuson, T. J. Meyer, Gail L. Olson, A. Jeffrey Sondrup	09/27/2002
P757A	N/A	Nuclear Waste Policy Act of 1982	U.S. Congress	1982

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P758A	ACI-120	Solid Radioactive Waste Retrieval Test (ACI-120)	R. J. Thompson	05/01/1972
P759S	ICP/EXT-04-00717	Summary of Rocky Flats Plant Waste Buried in the Subsurface Disposal Area (ICP/EXT-04-00717)	Edward Vejvoda	04/01/2005
P761S	IDO-12040	Radioactive Waste Disposal Data for the National Reactor Testing Station. (IDO-12040)	Osloond, Joe H.	4/7/1965
P762A	N/A	Waste Identification and Location Database (WILD) Data Set, RFP-Pre-71 disposal	N/A	1/18/2005
P763S	RWMC-EDF-321	Volume of Transuranic (TRU) Waste and TRU contaminated Soil Subject to BWP Retrieval Operations. (RWMC-EDF-321)	Plessinger, M. P.	4/11/1988
P765S	INEEL/EXT-01-01587	Evaluation of Chemical Compatibilities of the OU7-10 Glovebox Excavator Method Project (INEEL/EXT-01-01587)	John R. Dick Brent N. Burton	6/1/2002
P766A	CCP-AK-LANL-004	Central Characterization Project for Los Alamos National Laboratory, TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids, Waste Streams: LA-MIN03-NC.001 and LA-CIN02.001 (CCP-AK-LANL-004)	Larry Porter, Central Characterization Project	08/26/2009
P767S	IDO-12040 Supplement No. 1	Radioactive Waste Disposal Data for the National Reactor Testing Station Idaho (IDO-12040 Supplement No. 1)	Osloond, Joe H. and Bruce L. Schmalz	8/1/1966
P768A	WM-F1-81-003	A History of the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory (WM-F1-81-003)	Laura S. Pendlebury	8/30/1985
P769A	LA-CIN02.001	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solid (LA-002) (LA-CIN02.001)	Candice Weston, Site Project Manager, LANL	8/6/2007
P770A	LA-MIN03-NC.001	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for Los Alamos National Laboratory TA-50 Radioactive Liquid Waste Treatment Facility Homogeneous Inorganic Solids (LA-003) (LA-MIN03-NC.001)	Sue Peterman, Site Project Manager, LANL	1/4/2007
P771A	CCP-AK-ORNL-001	Central Characterization Project for Nuclear Fuel Services Contact-Handled Transuranic Waste Stored at Oak Ridge National Laboratory, Waste Streams: OR-NFS-CH-HET and OR-NFS-CH-SOIL (CCP-AK-ORNL-001)	D. K. Ploetz, Central Characterization Project	8/11/2008
P772A	OR-NFS-CH-Soil Lot 1	AMWTP Form-1900, DOE CH-TRU Waste Profile for Nuclear Fuel Services Contact-Handled Transuranic Waste Soil Stored at Oak Ridge National Laboratory (OR-250) (OR-NFS-CH-Soil Lot 1)	Candice Weston, Site Project Manager for Central Characterization Project	12/07/2008

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P773A	TB-T-07-004	WMP Training Bulletin, Acceptable Knowledge Documentation Management, Plutonium Finishing Plant (PFP) Absorbed Plutonium Nitrate Solutions Waste Stream RLPUNIT (TB-T-07-004)	J. A. Stewart, Hanford Acceptable Knowledge R. P. Dunn, Site Project Manager	4/9/2008
P774A	RLPUNIT	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for Hanford PFP Absorbed Plutonium Nitrate Solutions RLPUNIT (RL-715) (RLPUNIT)	R. P Dunn, Hanford SPM	6/10/2008
P775A	TB-T-05-005	WMP Training Bulletin, Acceptable Knowledge Documentation Management, KE Basin Sludge Waste Stream (TB-T-05-005)	Dan Arrenholz, Hanford Acceptable Knowledge R. P. Dunn, Site Project Manager	1/19/2006
P776A	KEBASIN01	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for Hanford Grouted KE Basin North Loadout Pit Sludge (RL-720) (KEBASIN01)	Rick P Dunn, Hanford SPM	8/16/2007
P777A	CCP-AK-SRS-8	Central Characterization Project for Mound Site Transuranic Waste Stored at Savannah River Site, Waste Streams: SR-MD-HET, SR-MD-SOIL, SR-MD-HOM-A, SR-MD-HOM-B, and SR-MD-HOM-C (CCP-AK-SRS-8)	Larry Porter	10/18/2010
P778A	SR-MD-HOM-A	AMWTP Form-1900, DOE CH-TRU Waste Profile for Mound Plant Solidified Acid/Caustic Waste Stored at the Savannah River Site (SR-835) (SR-MD-HOM-A)	John Rovansek, Site Project Manager for Central Characterization Project	3/4/2009
P779S	WM-ERP-92-014	A Photographic Report of Disposal and Storage Activities at the Radioactive Waste Management Complex (WM-ERP-92-014)	C. M. Hiaring, R. B. Horton, M. J. Schlafman	6/1/1992
P780S	EDF RWMC-349	TSA-R Recovery Plan (EDF RWMC-349)	T. H. Johnsen	12/23/1988
P782A	09-MFC-01	Non-AMWTP Generator Waste Profile; Materials and Fuels complex Contact-Handled Transuranic Waste; Heterogeneous Debris for Supercompaction (09-MFC-01)	Roy Grant	1/12/2009
P783A	DOE/TRU-2008-3425	Annual Transuranic Waste Inventory Report - 2008 (DOE/TRU-2008-3425)	Los Alamos National Laboratory - Carlsbad Office (LANL-CO)	
P784A	CCP-PK-NTS-005	Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lynchburg Research Center Debris Waste, Waste Stream: NTLRC S5400 (CCP-PK-NTS-005)	D. K. Ploetz	12/11/2008

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P785A	CCP-AK-INL-009	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lawrence Livermore National Laboratory Waste, Waste Streams: ID-NTLLNL-S5400, ID-NTLLNL-S3900 (CCP-AK-INL-009)	D. K. Ploetz	05/19/2009
P786A	ID-SDA-NO3	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for SDA Waste Containing Nitrate Salts (ID-SDA-NO3)	L. Davis, CWI	6/9/2009
P788S	N/A	Proving the Principle	Susan M. Stacy	2000
P790A	CCP-PK-NTS-006	Central Characterization Project Process Knowledge Summary Report for Stored Contact-Handled Transuranic Debris Waste Generated by EG&G Energy Measurements, Inc. at the North Las Vegas Facility, Waste Stream NTS-EG&G-HET (CCP-PK-NTS-006)	D. K. Ploetz	4/9/2009
P791A	CCP-PK-NTS-007	Central Characterization Project Process Knowledge Summary Report for Tonopah Test Range/Roller Coaster Project Contact-Handled Transuranic Waste, Waste Stream: NTS-TTR-HET (CCP-PK-NTS-007)	D. K. Ploetz	4/9/2009
P792A	CCP-PK-NTS-4	Central Characterization Project Process Knowledge Summary Report for Contact-Handled Transuranic Waste from Decontaminating Rocky Flats Classified Waste at the Nevada Test Site, Waste Stream: NT-RF-DECON (CCP-PK-NTS-4)	D. K. Ploetz	4/15/2009
P793A	CCP-PK-NTS-008	Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Lawrence Livermore and Lawrence Berkeley National Laboratory Waste, Waste Stream: NTLLLBL-S5400 (CCP-PK-NTS-008)	D. K. Ploetz	4/15/2009
P794A	CCP-PK-NTS-009	Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Inhalation Toxicology Research Institute Waste, Waste Stream NTS-ITRI-S5310 (CCP-PK-NTS-009)	D. K. Ploetz	4/17/2009
P795A	CCP-PK-NTS-010	Central Characterization Project Process Knowledge Summary Report for Nevada Test Site Visual Examination and Repackaging Building Decon and Maintenance Waste, Waste Stream: NTVERB-S5400 (CCP-PK-NTS-010)	D. K. Ploetz	4/17/2009
P796A	AMWTP NTLBL-S5400	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTLBL-S5400, Lawrence Berkeley Heterogeneous Debris (NT-211) (AMWTP NTLBL-S5400)	Mark Doherty	11/25/2008
P797A	NTLLNL-S3900	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTLLNL-S3900, LLNL Solidified Sludge and Liquids (NT-212) (NTLLNL-S3900)	Mark Doherty	11/25/2008

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P798A	NTLLNL-S5400	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTLLNL-S5400, LLNL Heterogeneous Debris (NT-213) (NTLLNL-S5400)	Mark Doherty	11/25/2008
P799A	AMWTP NTRLC-S5400	Form-1900, DOE CH-TRU Waste Profile for NTRLC-S5400, NTS Lynchburg Heterogeneous Debris (NT-214) (AMWTP NTRLC-S5400)	Mark Doherty	01/13/2009
P800A	AMWTP NTLBL-S3900	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTLBL-S3900, NTS Berkeley Solidified Liquids (NT-210) (AMWTP NTLBL-S3900)	Mark Doherty	4/22/2009
P801A	AMWTP NTS-EG&G-HET	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTS-EG&G-HET, NTS EG&G Heterogeneous Debris (NT-215) (AMWTP NTS-EG&G-HET)	Mark Doherty	4/22/2009
P802A	AMWTP NTS-TTR-HET	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTS-TRR-HET, NTS Roller Coaster Debris (NT-216) (AMWTP NTS-TTR-HET)	Mark Doherty	4/22/2009
P803A	AMWTP NT-RF-DECON	AMWTP Form-1900, DOE CH-TRU Waste Profile for NT-RF-DECON, NTS RF Decon Debris (NT-217) (AMWTP NT-RF-DECON)	Mark Doherty	4/22/2009
P804A	AMWTP NTLLLBL-S5400	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTLLLBL-S5400, NTS Livermore and Berkeley Combined Debris (NT-218) (AMWTP NTLLLBL-S5400)	Mark Doherty	4/22/2009
P805A	AMWTP NTS-ITRI	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTS-ITRI-S5310, NTS ITRI Debris (NT-219) (AMWTP NTS-ITRI)	Mark Doherty	4/22/2009
P806A	AMWTP NTVERB-S5400	AMWTP Form-1900, DOE CH-TRU Waste Profile for NTVERB-S5400, NTS Decon and Maintenance Debris (NT-220) (AMWTP NTVERB-S5400)	Mark Doherty	4/22/2009
P807A	INST-OI-68	Drum Treatment Facility Operations (INST-OI-68)	AMWTP (D. Wirkus approval)	CUR DATE
P808S	N/A	Material Safety Data Sheet, MICRO CEL-E	Celite Corporation	01/17/2009
P809A	CCP-AK-INL-013	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site EG&G Energy Measurements, Inc. (North Las Vegas Facility) Debris Waste, Waste Stream: ID-NTS-EG&G-HET (CCP-AK-INL-013)	Larry Porter	5/19/2009
P810A	CCP-AK-INL-010	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lawrence Berkeley National Laboratory Waste, Waste Streams: ID-NTLBL-S5400, ID-NTLBL-S3900 (CCP-AK-INL-010)	D.K. Ploetz,Central Chararacerization Project, NTS	6/18/2009

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P811A	CCP-AK-INL-007	Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Ash Treated at the Brookhaven National Laboratory, Waste Stream ID-RF-BNL-ASH (CCP-AK-INL-007)	Mark Pearcy	4/18/2007
P812S	RFP-4873; CONF-9409181--9	The ignitability potential of uranium "Roaster Oxide." (RFP-4873; CONF-9409181--9)	Jerry L. Stakebake	11/1/1994
P813A	EDF-RWMC-746	Identification of ILTSF Waste Stored on Pad 2 (EDF-RWMC-746)	N/A	8/10/1994
P814A	EDF-RWMC-422	Development of Non-RFP Certification Plan (EDF-RWMC-422)	K.P. Guay	9/27/1990
P815A	W0096-0209-OR	Memorandum of Understanding between LITCo and Argonne-West for CH-TRU Waste Characterization Programs (W0096-0209-OR)	ANL-W	12/18/1995
P816A	ANL/CP- - 74106; DE92 007399	Characterization of Mixed CH-TRU Waste for the WIPP Experimental Test Program Conducted at ANL-W (ANL/CP- - 74106; DE92 007399)	C. C. Dwight, G. C. McClellan, K. P. Guay, J. C. Courtney, and M. J. Duff	1992
P817A	CCP-AK-LANL-006	Central Characterization Project Acceptable Knowledge Summary Report for Los Alamos National Laboratory TA-55 Mixed Transuranic Waste, Waste Streams: LA-MHD01.001, LA-CIN01.001, LA-MIN02-V.001 and LA-MIN04-S.001 (CCP-AK-LANL-006)	Larry Porter	05/04/2010
P818A	CCP-AK-INL-011	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Nevada Test Site Lynchburg Research Center Debris Waste, Waste Stream: ID-NTLRC-S5400 (CCP-AK-INL-011)	Larry Porter	8/13/2009
P819A	CCP-AK-INL-012	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Contact-Handled Transuranic Debris Waste from Decontaminating Rocky Flats Classified Waste at the Nevada Test Site, Waste Stream: ID-NT-RF-DECON (CCP-AK-INL-012)	Larry Porter	8/4/2009
P820A	CCP-AK-INL-014	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory, Tonopah Test Range/Roller Coaster Project Contact-Handled Transuranic Waste, Waste Stream: ID-NTS-TTR-HET. (CCP-AK-INL-014)	D.K. Ploetz	7/15/2009
P821A	CCP-AK-INL-015	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory Nevada Test Site Lawrence Livermore and Lawrence Berkeley National Laboratory Waste, Waste Stream: ID-NTLLLBL-S5400 (CCP-AK-INL-015)	Larry Porter	8/6/2009

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P822A	CCP-AK-INL-016	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory Nevada Test Site Inhalation Toxiology Research Institute Waste, Waste Stream: ID-NTS-ITRI-S5310 (CCP-AK-INL-016)	Larry Porter	7/27/2009
P823A	CCP-AK-INL-017	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory Nevada Test Site Visual Examination and Repackaging Building Decon and Maintenance Waste, Waste Stream: ID-NTVERB-S5400 (CCP-AK-INL-017)	Larry Porter	8/6/2009
P824A	EDF-RWMC-635	Overburden Excavation Plan (EDF-RWMC-635)	G.R. Berglund	6/9/1993
P825A	EDF-RWMC-745	Waste Box Liners at the INEL (EDF-RWMC-745)	M. M. Patterson	7/21/1994
P826A	EDF-370	TRU Waste Quantities and Composition (EDF-TWTF 21) (EDF-370)	R. L. Devries	6/12/1989
P827A	EDF-RWMC-690	Alpha Activity Distribution Due To Selected TRU and nonTRU Source Materials at 15 Years Post Purification Date (RWMC EDF 629 - Rev. 1) (EDF -RWMC-690)	G. K. Becker	12/3/1993
P828A	EDF-334	TSA-R Pad Stack Cover Safety Evaluation (EDF-334)	C. L. Miller	8/25/1988
P829A	EDF-154	<100 nCi/gm Waste in Retrievable Storage at the RWMC (EDF-154)	H. M. Batchelder and R. M. Brown	07/19/1983
P830A	N/A	Condition of TRU-Waste Containers at AMWTP	Rick Denning	N/A
P831A	N/A	Contact-Handled Transuranic Waste Packaging Instructions	DOE Office of Environmental Management's Office of Regulatory Compliance	10/08/2008
P832A	RF-P178 (RFP-446)	Evaluation and Treatment of an Acute Internal Exposure to Plutonium (RF-P178 (RFP-446))	The Dow Chemical Company	N/A
P834A	INEEL/EXT-02-00527	Radiological Acceptable Knowledge Report for Drums 728 through 737 (INEEL/EXT-02-00527)	Shaw Environmental	07/01/2002
P835A	N/A	RIBRA	N/A	2006
P836A	CCP-PK-GEV-400	Central Characterization Project Process Knowledge Summary Report For General Electric Vallecitos Nuclear Center Waste Stream: GEVNC.02 – Contact-Handled Hot Cell Debris Waste (CCP-PK-GEV-400)	Larry Porter	11/19/2009

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P837A	N/A	Material Safety Data Sheet for Carbowax	MetLab Corporation	1/1/2008
P838A	DOE/TRU-09-3425	Annual Transuranic Waste Inventory Report - 2009 (DOE/TRU-09-3425)	Los Alamos National Laboratory - Carlsbad Operations (LANL-CO)	NOT DATED
P839A	CCP-PK-LLNL-001	Central Characterization Project Process Knowledge Summary Report for Lawrence Livermore National Laboratory, Waste Streams: LL-MM001-S5400, LL-W019-S3900, LL-T004-S3141 (CCP-PK-LLNL-001)	Larry Porter, Central Characterization Project (CCP)	3/22/2010
P840A	N/A	MFC/ANL-W IWTS container Profiles; Filed by Corresponding IWTS Tracking Material and Characterization Profile Numbers.	MFC	MULTIPLE
P841A	N/A	Waste Stream Profile Package for Solidified Plutonium Recovery Incinerator Waste (BN222)	AMWTP	01/29/2010
P842A	INL-EXT-10-17600	Process Knowledge Summary Report for Materials and Fuels Complex Contact-Handled Transuranic Debris Waste. (INL-EXT-10-17600)	R. P. Grant, T.C. Couch, S. Butler-Materials and Fuels Complex (MFC)	02/01/2013
P843A	FMF-OI-015	MFC FMF Operation Instructions (OI), General Facility Waste (FMF-OI-015)	MFC	11/3/2008
P845A	5399N	IWTS Material and Waste Characterization Profile: Transuranic samples from the AL. (5399N)	Charlyss D. Lee	8/28/2007
P846A	RF-P222	Colormetric Determination of Iron in Plutonium Metal using a Nitrobenzene Extraction Technique. (RF-P222)	C.E. Plock and C.E. Caldwell	12/20/1967
P847S	EGG-WM-8727	Subsurface Disposal Area (SDA) Waste Identification (1952-1970 Emphasis) (EGG-WM-8727)	M. J. Vigil, Environmental Restoration Program, EG&G Idaho, Inc.	01/24/1990
P848A	3527.R1	IWTS Material and Waste Characterization Profile: Analytical Lab CH-TRU Waste. (3527.R1)	J. Jacobson	9/29/2009
P849A	5419N.R1	IWTS Material Profile No. 5419N.R1, TRU, >100 nCi/g, from FMF, Building 704, 9-29-09 (5419N.R1)	Jonathan Jacobsen, WGS	3/31/2010
P850A	5274N.R1	IWTS Material Profile No. 5274N.R1: Misc. Waste from Waste Form Testing, Alpha, & Special Projects Glovebox, etc., 9/29/09 (5274N.R1)	Matthew Allen	3/31/2010
P851A				

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P852A	DOE M 470.4-6	Nuclear Material Control and Accountability (DOE M 470.4-6)	U.S. Department of Energy	8/14/2006
P853A	CCP-PK-RL-101	Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: MPFPDD (CCP-PK-RL-101)	Larry Porter, Central Characterization Project (CCP)	6/4/2010
P854A	CCP-PK-RL-102	Central Characterization Project Process Knowledge Summary Report For The Hanford 325 Building Radiochemical Processing Laboratory Contact-Handled Transuranic Debris Waste, 85 Gallon Overpacked Drums, Waste Stream: RLM325D.001 (CCP-PK-RL-102)	Larry Porter, Central Characterization Project (CCP)	6/4/2010
P855A	CCP-PK-RL-103	Central Characterization Project Process Knowledge Summary Report For Hanford 231-Z Building Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: RLM231ZD.001 (CCP-PK-RL-103)	Larry Porter, Central Characterization Project (CCP)	6/4/2010
P856A	RPt-TRUW-03	Drum Assay Technical Review Report (RPt-TRUW-03)	AMWTP	12/7/2006
P857A	RPT-TRUW-82	Acceptable Knowledge Document for Hanford Debris Waste Shipped to AMWTP (RPT-TRUW-82)	AMWTP	XXXXXXXXXX
P858A	N/A	ANL-W Radiological Control Manual	Argonne National Laboratory - West	12/01/1994
P859S	RPT-82	Supercompactor Liquid Treatment Capabilities, Evaluation and Conclusion (RPT-82)	AMWTP	6/2/2009
P860S	N/A	Settlement Agreement: Public Service Company of Colorado v. Batt	State of Idaho	10/16/1995
P861A	AMWTP ID-MFC-S5490	AMWTP Form-1687, Non-AMWTP Generator Waste Profile for ID-MFC-S5490, MFC CH-TRU Heterogeneous Debris Waste (IDC AW-167) (AMWTP ID-MFC-S5490)	Roy P. Grant, Materials and Fuels Comples (MFC)	04/20/2010
P862S	www.globalsecurity.org/wmd/facility/idaho_inel-fac	Web site: Idaho National Laboratory, Materials & Fuels Complex (www.globalsecurity.org/wmd/facility/idaho_inel-fac)		4/19/2010
P863S	MCP-557	Idaho Cleanup Project Records Management (MCP-557)		9/30/2009
P864S	PLN-3318	Records Management Plan for Waste Generator Services (PLN-3318)	INL, BEA	10/15/2009
P865S	W0102-0164-AP	NT-AP-05 TWCP Training Plan (W0102-0164-AP)	Argonne National Laboratory - West, TRU Programs	11/1/2001

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P866S	MSDS 1003 and MSDS 1002	Material Safety Data Sheet, PIG Acid Encapsulating/neutralizing, absorbents, February 5, 2007; Material Safety Data Sheet, PIG Packing Material, absorbents, February 1, 2007 (MSDS 1003 and MSDS 1002)	New Pig Corp.	02/01/2007
P867S	MSDS-088, MSDS-092, MSDS-089	SPILL-X-S Agent; SPILL-X-A Agent; SPILL-X-C Agent; (MSDS-088, MSDS-092, MSDS-089)	ANSUL Inc.	9/1/2009
P868A	N/A	AMWTP Mission Statement for October 2009 through Jan 2010	AMWTP	NOT DATED
P869A	AMWTP GEVNC.02	AMWTP Form-1900, DOE CH-TRU Waste Profile for GEVNC.02, GEVNC Hot Cell 4 Debris (IDC GV-222) (AMWTP GEVNC.02)	Mark Doherty, Central Characterization Project (CCP)	4/19/2010
P870A	AMWTP LL-W019-S3900	AMWTP Form-1900, DOE CH-TRU Waste Profile for LL-W019-S3900, Lawrence Livermore National Laboratory Solidified Inorganics and Solidified Organics (LL-212) (AMWTP LL-W019-S3900)	Mark Doherty, Central Characterization Project (CCP)	5/4/2010
P871A	AMWTP LL-M001-S5400	Form-1900, DOE CH-TRU Waste Profile for LL-M001-S5400, Lawrence Livermore National Laboratory Heterogeneous Debris (LL-213) (AMWTP LL-M001-S5400)	Mark Doherty, Central Characterization Project (CCP)	5/4/2010
P872A	AMWTP LL-T004-S3141	AMWTP Form-1900, DOE CH-TRU Waste Profile for LL-T004-S3141, Lawrence Livermore National Laboratory Salts (LL-221) (AMWTP LL-T004-S3141)	Mark Doherty, Central Characterization Project (CCP)	5/4/2010
P873S	N/A	Ceramicrete: Chemically Bonded Ceramic, Technology Development and Commercialization WEB site page	U.S. Department of Energy, Office of Science, UChicago Argonne LLC	5/5/2010
P874A				
P875S	W0102-0165-AP	Collection, Review, and Management of Acceptable Knowledge (AK) for ANL -W TRU Waste (W0102-0165-AP)	ANL-W	6/12/1998
P876S	W0102-0170-AP	NT-AP-08, TWCP Waste Characterization Data Input and QA Release for TRIPS (W0102-0170-AP)	ANL-W	11/1/2001
P877S	W0102-0168-AP	NT-AP-09, TWCP Visual Exam Expert (VEE) Functions and Process (W0102 -0168-AP)	ANL-W	11/1/2001
P878S	N/A	MSDS Floor Absorbent (100300.0)(AKA Fullers Earth, Oil Dri)	Oil Dri Corporation of America	3/19/1999
P879S	0	Material Safety Data Sheet for Vermiculite absorbent. (0)	Therm-O-Rock West, Inc.	10/23/2001

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P880S	N/A	MSDS -- Petroset II/Petroset IIG	Fluid Tech, Inc.	8/1/2006
P881S	N/A	MSDS -- Fluid Tech, Aquaset (sodium montmorillonite) and Aquaset II-G (sepiolite)	Fluid Tech, Inc.	01/01/2005
P882S	N/A	MSDS -- Ultrasorb, Optisorb, 244, 248 and Diatomaceous Earth-RP	Moltan Company	8/22/1997
P883A	MPFPDD	AMWTP Form-1900, DOE CH-TRU Waste Profile for MPFPDD, Hanford Plutonium Finishing Plant (PFP) Heterogeneous Debris (RL-712) (MPFPDD)	Mark Doherty, Central Characterization Project (CCP)	06/08/2010
P884A	RLM325D.001	AMWTP Form-1900, DOE CH-TRU Waste Profile for RLM325D.001, 325 Building Heterogeneous Debris (RL-714) (RLM325D.001)	Mark Doherty, Central Characterization Project (CCP)	06/08/2010
P885A	RLM231ZD.001	AMWTP Form-1900, DOE CH-TRU Waste Profile for RLM231ZD.001, Hanford 231-Z Building Heterogeneous Debris (RL-716) (RLM231ZD.001)	Mark Doherty, Central Characterization Project (CCP)	06/08/2010
P887S	MCP-17000	Waste Generator Services Waste Management (MCP-17000)	INL BEA	10/20/2009
P888A	WM-PD-85-014	Waste Characterization for INEL Remote-Handled/Special-Case Stored Transuranic Wastes (WM-PD-85-014)	Dennis A. Peterson	11/1/1985
P889S	Docket No: A-98-49, II-A4-66	FINAL REPORT WASTE CHARACTERIZATION INSPECTION REPORT EPA BASELINE INSPECTION NO. EPA-AMWTP-03.06-8 OF THE ADVANCED MIXED WASTE TREATMENT PROJECT FACILITY AT THE IDAHO NATIONAL LABORATORY March 28–30, 2006 (Docket No: A-98-49, II-A4-66)	EPA	09/00/2006
P890A	RPT-TRUW-79	Acceptable Knowledge Document for Materials and Fuels Complex (MFC) Waste (RPT-TRUW-79)	AMWTP	6/27/2005
P891A	RPT-670	CH2M-WG Idaho Process Knowledge Summary Report for CH TRU Waste and Mixed Low-Level Waste Generated at INTEC and RWMC Analytical Laboratories in Support of AMWTP Sampling Activities, Waste Matrix Codes: S5490 and S3900 (RPT-670)	Idaho Cleanup Project	11/00/2010
P892A	CCP-AK-RL-101	Central Characterization Project AK Summary Report for Hanford Plutonium Finishing Plant (PFP) Contact-Handled Debris Waste From Decontamination and Decommission; Waste Stream MPFPDD (CCP-AK-RL-101)	Larry Porter, CCP	01/15/2010

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P893A	RLM325D.001	WSPF for Hanford mixed waste from Building 325 (RLM325D.001)	R. P. Dunn	05/16/2007
P894A	RLM231ZD.001	WSPF for Hanford mixed waste from Building 231-Z (RLM231ZD.001)	R. P. Dunn	08/30/2007
P895A	ID-GEVNC-02	GENERAL ELECTRIC VALLECITOS NUCLEAR CENTER HOT CELL DEBRIS WASTE Waste Stream: ID-GEVNC-02 (ID-GEVNC-02)		2010
P896A	HW 73112	325 Building Standard Operating Procedure (HW 73112)	E.A. Berreth	09/15/1962
P897A	325-HDLLW-1	Removal of High Dose Low Level Waste (Replaces PNL-ALO-701) (325-HDLLW-1)	R.T. Steele	09/30/1994
P898A	SAL-84-5	Disposal of Contaminated and Radioactive Wastes from the SAL (SAL-84-5)	R.T. Steele	04/13/1994
P899A	SAL-84-7	Handling and Opening Radioactive Material Shipments (SAL-84-7)	R.T. Steele	04/13/1994
P900A	136445	LAZAR Research Laboratories, Inc. - Instructions for PHR-146 Micro Combination pH Electrode (136445)	LAZAR Research Laboratories, Inc.	NONE
P901S	227296-001	Ross pH Electrodes Instruction Manual (227296-001)	Orion Research Inc.	1999
P902A	502700-031	Model 94-09, 96-09 Fluoride/Combination Fluoride Electrodes Instruction Manual (502700-031)	Orion Research Inc	1991
P903A	502700-078	Chloride/Chloride Combination Electrode Instruction Manual (502700-078)	Orion Research Inc	1999
P904A	325-PU-Purify-1	Purification of Plutonium using Lewatit UMP-950 Ion Exchange Resin (325-PU-Purify-1)	J. L. Ryan	06/12/1998
P905A	MCC-TP-19	Leaching Tests using the PCT Method (MCC-TP-19)	K. H. Olson	04/01/1993
P906A	RPL-PIP-Ceramic Test-1	Evaluation of Monolithic Radioactive Material Immobilization Form Behavior in Fume Hoods (RPL-PIP-Ceramic Test-1)	R.D. Scheele	05/01/2001
P907S	RPL-EMSP-1	Preparation and Viewing of Samples by Microscopy (RPL-EMSP-1)	R.D. Scheele	11/28/2000
P908A	D 1179-99	Standard Test Method for Fluoride in Water (D 1179-99)	N/A	02/01/1999
P909S	PNNL-RPG-268	Solids Analysis X-Ray Diffraction (Replaces PNL-ALO-268) (PNNL-RPG-268)	E.D. Jenson	02/01/2000
P910S	ASTM C1220-98	Plutonium Immobilization Project Exceptions to ASTM C1220-98 as Pertaining to Static Leach Testing of Monolithic Ceramic Specimens (ASTM C1220-98)	D. Strachan	11/01/2000

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
P911A	ICN-PNL-ALO-508R0.2	Laboratory Procedure for Operation of the Differential Scanning, Calorimeter (DSC), Thermo gravimetric Analyzer (TG), and High Temperature Differential Thermal Analyzer (DTA) and DSC (ICN-PNL-ALO-508R0.2)	R.D. Scheele	01/01/1998
P912S	RPL-PIP-1	Preparation, Processing and Testing of Radioactive Glass and Ceramics (RPL-PIP-1)	R.D. Scheele	07/01/2001
P913A	RPL-PIP-2	Fabrication of Ceramic Samples (RPL-PIP-2)	W.C. Buchmiller	04/01/1998
P914A	RPL-PIP-3	Flouride, Chloride, and pH Measurements with Specific Ion Electrode (RPL-PIP-3)	R.D. Scheele	06/01/2001
P915A	RPL-PIP-4	Mounting Radioactive Samples in PIP XRD sample holder base (RPL-PIP-4)	R.D. Scheele	08/01/2002
P916A	RPL-PIP-5	Measurement of Releases to a Static Aqueous System (3-Day MCC Static Leach Test) (RPL-PIP-5)	W.D. Buchmiller	06/01/2001
P917A	APEL-PIP-1	Evacuated Impregnation Method for Apparent Specific Gravity, Bulk Density, and Apparent Porosity Determinations of Consolidated Solids (APEL-PIP-1)	W.C. Buchmiller	01/01/1999
P918A	APEL-PIP-2	Geometric Density Determination of Consolidated Solids (APEL-PIP-2)	R.D. Scheele	05/01/2001
P919A	RPL-PIP-SPFT-1	Transfer of SPFT and PUF Vessels Containing Crushed Pu- or Pu-238 Containing Materials (RPL-PIP-SPFT-1)	V.L. LeGore	05/01/2000
P920A	RPL-MAS-NMR	Preparation of Nondispersible Solid Samples Containing Radioisotopes for Magic-Angle Spinning Nuclear Magnetic Resonance Spectroscopy Measurements (RPL-MAS-NMR)	H.M. Cho	08/01/2003
P921A	RPL-XRD-PIP	Operation of Scintag Pad-V X-Ray Diffractometer (RGD#62) (RPL-XRD-PIP)	H.T. Schaef	02/01/2003
P922A	GDSP-01-BET	Procedure for Surface Area Measurement using BET with the Quantachrome Gas Analyzer in the SAL (GDSP-01-BET)	E. Buck	01/01/2003
P923A	CCP-AK-SRS-11	Central Characterization Project Acceptable Knowledge Summary Report For Allied-General Nuclear Services Barnwell Nuclear Fuel Plant Transuranic Waste Stored at Savannah River Site (CCP-AK-SRS-11)	D. K. Ploetz	12/13/2007
P924A	n/a	MSDSs for Phosphoric acid, Sodium hydroxide and Quick-Zorb (n/a)	n/a	01/03/2006
P925A	MSDS # 0151938	MSDS for Dry Chemical Fire Extinguisher Powder (Ammonium Phosphate Monobasic) (MSDS # 0151938)	Fisher Scientific	08/31/2000
P926A	MSDS # 7653	MSDS Number 7653-2, SHELLSOL D60 (MSDS # 7653)	Shell Chemical Company	08/15/2001

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P927S	SAL-84-8	Bag/In and Out Operations Shielded Analytical Laboratory Glove Box (SAL-84-8)	R.T. Steele	04/13/1994
P928A	511-4	Operation of Gamma Spectroscopy Equipment (511-4)	G.J. Lumetta	01/01/1996
P929A	RPL-PIP-SPFT	Operation of Single Pass Flow Through Experiment (RPL-PIP-SPFT)	D.M. Wellman	05/01/2003
P930A	APEL-PIP-3	Archimedes (Buoyancy) Method for Apparent Specific Gravity Determinations of Consolidated Solids (APEL-PIP-3)	W.C. Buchmiller	01/01/1999
P931A	APEL-PIP-4	Gas Pycnometry Method for Apparent Specific Gravity Determinations of Consolidated Solids (APEL-PIP-4)	R.D. Scheele	08/01/2001
P932A	RPG-94-1	Response to Vacuum Alarms in RPL Glove boxes and Use of RPL Glove box Airlock (RPG-94-1)	R.D. Scheele	07/16/1999
P933S	325-A-20	Dry Waste Removal from the Cells Using the Drum Load Out Assembly (325-A-20)	G.H. Bryan	11/01/1995
P934A	RPL-PIP-SPFT-3	Installation of In-Line Back Flow Preventors and/or In-Line Isolation Valves on Single Pass Flow Through Systems (RPL-PIP-SPFT-3)	H.T. Schaef	
P935A	GEN-325-WM1	Routine Management, Storage and Disposal of Hazardous, Low-Level Radioactive or Mixed Waste (GEN-325-WM1)	W.B. Larson	03/27/1996
P936A	RAD-00006	Transmittal of Variance RAD-00006 (RAD-00006)	R.D. Scheele	02/01/2001
P937A	WHC-MR-0388	Past Practices Technical Characterization Study-300 Area-Hanford Site (WHC-MR-0388)	M.S. Gerber	12/01/1992
P938A	WHC-SA-2772-FP	A History of Solid Waste Packaging at the Hanford Site (WHC-SA-2772-FP)	D.R. Duncan, D.I. Weyns-Rollosson, J.A. Pottmeyer, T.J. Stratton	02/01/1995
P939A	PNL-7748	Safety Analysis Report for 325 Building (PNL-7748)	Pacific Northwest Laboratory	01/01/1992
P940A	WHC-EP-0696	Characterization of Past and Present Waste Streams from the 325 Radiochemistry Building (WHC-EP-0696)	D.R. Duncan, J.A. Pottmeyer, M.I. Weyns-Rolloson, K.D. Dicenso, and D.S. DeLorenzo	12/01/1993
P941A	PNL-MA-661	Facility Effluent Monitoring Plan for the 325 Facility (PNL-MA-661)	M.Y. Ballinger and T.D. Chikalla	11/01/1994

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P942A	DOE/RL-92-35	Hanford Facility Dangerous Waste Permit Application, 325 Hazardous Waste treatment Units (DOE/RL-92-35)	Pacific Northwest National Laboratory	07/01/1997
P943A	HNF-EP-0649	Characterization of the 618-11 Solid Waste Burial Ground, Disposed Waste, and Description of the Waste-Generating Facilities (HNF-EP-0649)	J.A. Demiter and W.O. Greenhalgh	10/01/1997
P944A	MG-28	Analytical Chemistry Laboratory Manual, Volume 2, Analytical Chemistry Methods for Mixed Uranium-Plutonium Oxide Fuel (MG-28)	W.L. Delvin	10/01/1978
P945A	HNF-EP-0063	Hanford Site Solid Waste Acceptance Criteria (HNF-EP-0063)	J.B. Bolles	05/01/2003
P946A	HNF-3461	Hanford Site Transuranic Waste Management Program Acceptable Knowledge Documentation for Retrievably Stored Contact-Handled Waste (HNF-3461)	R. Clinton	10/01/2006
P947A	PNNL-13341	Testing and Analysis of Consolidated Sludge Samples from the 105 K East Basin Floor (PNNL-13341)	P.R. Bredt, C.H. Delegard, A.J. Schmidt, K.L. Silvers	12/01/1999
P948A	PNNL-11738	Organic Analysis Progress Report FY 1997 (PNNL-11738)	S. A. Claus, K.E. Grant, V. Hoopes, G.M. Mong, R. Steele, D. Bellofatto, and A. Sharma	04/01/1998
P949A	n/a	Inorganic and Radiochemical Analysis of 241-C-104 Tank Waste (n/a)	S.K. Fisdum, C.J. Aringa, J.P. Bramson, K.J. Carson, J.R. DesChane, O.T. Farmer, L.R. Greenwood, F.V. Hoopes, R.T. Ratner, D.R. Sanders, M.J. Steele, R.T. St	NONE
P950A	PNNL-12157	Facility Effluent Monitoring Plan for the 325 Radiochemical Processing Laboratory (PNNL-12157)	PNNL	03/01/1999
P951A	n/a	MSDS for commercial products (n/a)	Various	Various
P952A	HNF-2600	Hanford Site Transuranic Waste Certification Plan (HNF-2600)	Hanford	12/29/2005
P953A	RPT-DSA-02	Documented Safety Analysis (RPT-DSA-02)	AMWTP	Current Da
P954A	HNF-EP-0924	History and Stabilization of the Plutonium Finishing Plant (PFP) Complex, Hanford Site (HNF-EP-0924)	M.S. Gerber	03/01/1997

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P955A	Vol. 35, No. 222	35 FR 17530-17533, 52 FR 5992-6001, 53 FR 17709, 58 FR 12342-12347, 58 FR 64783, 59 FR 10439 (Vol. 35, No. 222)	United States Government	1970
P956A	99-WPD-219	Low Level or Transuranic Waste Classification of Hanford Tank Waste Sample Test Residues (99-WPD-219)	T.L. Moore	03/01/1999
P957A	WA7890008967	Hanford Site Operating Permit, Operable Unit 5 - 325 Hazardous Waste Treatment Units (WA7890008967)	Fluor Hanford	01/01/2007
P958A	HNF-SD-WM-PLN-119	Tank Farms Solid Waste Characterization Guide with Sampling and Analysis Plan Attachment (HNF-SD-WM-PLN-119)	J.T. Quigley	03/01/1997
P959A	BNWL-460	Radioiodine Control During Reprocessing of Short-Cooled Irradiated Neptunium-237 Aluminum Alloy Target Elements (BNWL-460)	W.O. Greenhalgh	04/01/1967
P960A	WHC-MR-0435	The Hanford Site: An Anthology of Early Histories (WHC-MR-0435)	M.S. Gerber	10/00/1993
P961A	CP-14640	231-Z Building Documented Safety Analysis (CP-14640)	E.N. Dodd, III	10/00/2005
P963A	PNL-3336/UC-70	Vibratory Finishing as a Decontamination Process (PNL-3336/UC-70)	M.W. McCoy	10/01/1980
P964A	n/a	TRU Waste Packaging Requirements and Certification (n/a)	M.W. McCoy	07/01/1988
P965A	HNF-4022	231-Z Safety Analysis and Documentation for Characterization (HNF-4022)	R.W. Bailey	04/26/1999
P966A	HNF-SD-CP-BIO-001	231-Z Basis for Interim Operation (HNF-SD-CP-BIO-001)	R.W. Bailey	10/03/1997
P967A	N/A	Determining Whether Transuranic Waste is Defense Waste	R.P. Detwiler	04/00/2001
P968A	N/A	Finding a Balance at the Department of Energy, Proceedings of a Workshop held November 29, 1999	J. Weeks, ed.,	09/00/2000
P969A	WHC88-00032 ADD1	Addendum to Isotopics per Can for Mark IA and Mark IV Fuel (WHC88-00032 ADD1)	P. Dessaules	07/19/1988
P970A	PNL-10113/UC-802	Radiochemical Analyses of Several Spent Fuel Approved Testing Materials (PNL-10113/UC-802)	R.J. Guenther, D.E. Blahnik, N.J. Wildung	09/00/1994
P971A	WSRC-TR-2004-00016	Characterization of Uranium in Archived 2H Evaporator Scale (WSRC-TR-2004-00016)	M.C. Duff	02/24/2004
P972A	WHC-SD-CP-SAR-021	PFP Final Safety Analysis Report (WHC-SD-CP-SAR-021)	J.E. Shapley	N/A
P973A	PDF-Z190-00004	Thermal Stabilization Process Flowsheet Room 230A, 234-5 Building (PDF-Z190-00004)	G.R. Whittman	10/01/1994

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P974A	ZO-160-033	Plant Operating Procedure, Oxidize Plutonium Metal in Glovebox HC-21-C and HA-21-I (ZO-160-033)	Rockwell Hanford Operations	11/28/1987
P975A	ZO-160-032	Stabilize Reacitve Scrap (ZO-160-032)	n/a	08/26/1982
P976A	DOE/RL-2004-05	Engineering Evaluation/Cost Analysis for the Plutonium Finishing Plant Above-Grade Structures (DOE/RL-2004-05)	n/a	09/01/2004
P977A	DRAFT	242-Z Waste Treatment Facility - Draft (DRAFT)	D.C. Lini	12/23/2003
P978A	ARH-CD-239	Fabrication Oil Disposal (ARH-CD-239)	D.A. Dodd	02/17/1975
P979A	HNF-26402	Historical Information - PFP Liquid Organic Disposal as 20 Year Retrievable TRU Waste (HNF-26402)	M.W. Gibson	06/01/2005
P980A	HNF-10638	PFP Impure Plutonium Oxide: Characterization of Items with greater than 30 & less than 85 Weight Percent Plutonium (HNF-10638)	D.C. Lini and L.H. Rodgers	03/01/2002
P981A	RHO-LD-114	Existing Data on the 216-Z Liquid Waste Sites (RHO-LD-114)	K.W. Owens	05/01/1981
P982A	HNF-9734	Data Quality Objectives Process for Disposition of Sand, Slag, and Crucible Materials Stored at the Plutonium Finishing Plant (HNF-9734)	A.M. Hopkins	12/01/2003
P983A	DRAFT	242-Z Waste Treatment Facility (DRAFT)	D.C. Lini	12/29/2003
P984A	ZO-169-031	Handling of Pu Contaminated, Acid Soaked Rags in Hood 5 (ZO-169-031)	Plutonium Finishing Plant	01/01/1981
P985A	ARH-ST-141	Decommissioning of Division of Military Application (DMA) Equipment at Hanford - Summary Report: June 1977 (ARH-ST-141)	M.N. Raile	06/01/1977
P986A	ZO-160-030	Handling of Pu Contaminated, Acid Soaked Rags (ZO-160-030)	Plutonium Finishing Plant	Multiple
P987A	HW-82632	Critical Mass Specification, Waste Treatment Facility, Buildings 241-Z and 242-Z (HW-82632)	R.J. Sloat	06/04/1964
P988A	HW-76399	Process Design Basis for Fabrication Oil Storage and Sampling Facility, 234-5 Building (HW-76399)	D.D. Wodrich	02/13/1963
P989A	HW-74350	Recovery of Plutonium from Fabrication Oil (HW-74350)	R.S. Kingsley	08/01/1962
P990A	WHC-MR-0521	The Plutonium Production Story at the Hanford Site: Processes and Facilities History (WHC-MR-0521)	M.S. Gerber	06/01/1996

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P991A	WHC-IP-0791	Historical Report on the Retrievably Stored Division of Military Application Equipment at the Hanford Site (WHC-IP-0791)	J.A. Demiter, D.R. Duncan, W.E. Meeuwsen, R.W. Reddinger, M.S. Zvonar	12/11/1991
P992A	DOE/RL-97-1047	WST History of the Plutonium Production Facilities at the Hanford site Historic District 1943-1990 (DOE/RL-97-1047)	T.E. Marceau, D.W. Harvey	06/01/2002
P993A	ZO-160-034	Screen Dry Glovebox Scrap (1995) Stabilize Material Handling (1996) (ZO-160-034)	n/a	Multiple
P994A	OSD-Z-184-00006	Operating Specifications for Plutonium Finishing Plant: Thermal Stabilization Glovebox HC-21C (OSD-Z-184-00006)	M.W. Gibson	07/14/1994
P995A	PFD-Z-190-00001	Z-Plant RMA Oxide Line Flowsheet (PFD-Z-190-00001)	S.L. Yarbo	NONE
P996A	PFD-Z-190-0004	PFP Process Control Engineering (PFD-Z-190-0004)	M. Gibson	1998
P997A	WHC-EP-0829	Estimation and Characterization of D&D Solid Waste Expected from PFP (WHC-EP-0829)	J.S. Miller, J.A. Pottmeyer, T.J. Stratton, D.R. Duncan	01/01/1995
P998A	CPS-Z-165-82090	Scrap Stabilization and Calcination Glovebox 4, Room 41, 236-Z Building (CPS-Z-165-82090)	Plutonium Finishing Plant	05/04/1987
P999A	CPS-Z-80715	Glovebox MT-5: Dissolving and Leaching (CPS-Z-80715)	Plutonium Finishing Plant	NONE
U001A	N/A	The Rocky Flats Historical Public Exposure Studies Phase II: Toxicity Assessment and Risk Characterization (Draft). Technical Memorandum. Task 2. An analysis of Historical Source Term Estimates for Carbon Tetrachloride at the Rocky Flats Plant.	P. D. McGavran, K. R. Meyer, P. G. Voilleque, and M. Dreicer.	2/1/1996
U002A	RAC Report #2-CDPHE-RFP-1996-Draft	Rocky Flats Dose Reconstruction Project Phase II Toxicity Assessment and Risk Characterization (Draft). Task 2: The Rocky Flats Plant 903 Area Plutonium Source Term Development (RAC Report #2-CDPHE-RFP-1996-Draft)	H. R. Meyer, S. K. Rope, Terrol F. Winsor, P. G. Voilleque, K. R. Meyer, L. A. Stetar, J. E. Till, and J. M. Weber.	2/1/1996
U003A	N/A	Rocky Flats Plant TRU Mixed Waste Plan (Draft)	WASTREN, Inc	1/31/1990
U004A	RO 93-002	Evaluation of Residue Drum Storage Safety Risks (RO 93-002)	W. V. Conner.	9/27/1993
U005A	EDF-RWMC-563	Results of the SWEPP Certified Waste Sampling Program for FY-1991 (EDF-RWMC-563)	EG&G Idaho, Inc	08/01/1992

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U006A	N/A	Memorandum to W. D. Reinhart. "Waste Shipment Summary for April Cost Month 1987."	F. G. Trevino	4/27/1987
U007A	N/A	VOC Gas Chromatography/Mass Spectrometry Results. WIPP Experimental Waste Characterization Program data printout.	EG&G Rocky Flats, Inc.	6/3/1994
U008A	CRDL-950703-001	Improvements to a 55-Gallon DOT 17C Shipping Container for Alpha-Emitting Transuranium Waste. (CRDL-950703-001)	P. A. Patton and J. W. Lindsay.	12/29/1972
U009A	PSD 86-056	Characterization of Spent HEPA Filters from Rocky Flats Plant (PSD 86-056)	P. M. Arnold	9/1/1986
U010A	PSD88-038	OASIS Solidification and OFF Gas Analysis (PSD88-038)	R. V. Harder and A. J. Johnson.	9/1/1988
U011A	EDF RWMC-844	Results of the SWEPP Certified Waste Sampling Program for FY-94 (Draft). (EDF RWMC-844)	D.W. Parker	1996
U012A	N/A	Waste Processing Requests	N/A	1983-1984
U013A	UNC-AL-TR-24-01.	Rocky Flats Plant Computer Simulation. User Requirements for Aqueous Recovery Operations Building 771. (UNC-AL-TR-24-01.)	UNC Analytical Services Albuquerque Operations	1989
U014A	N/A	Information and Brief History of Waste Content Codes Associated with the Rocky Flats Plant (with supporting documentation).	Don Kudera	3/1/1995
U015A	RWMC-675	Results of the SWEPP Certified Waste Sampling Program for FY 1992 and FY 1993 (RWMC-675)	S.M. Hailey	1993
U016A	WIPP-0217-RPTS-0192	Quantification of Radionuclides. (WIPP-0217-RPTS-0192)	N/A	1988
U017A	N/A	J.K. Paynter personal log book excerpt	J.K. Paynter	7/7/1987
U018A	N/A	J.K. Paynter personal log book excerpt	J.K. Paynter	2/8/1989
U019A	N/A	J.K. Paynter personal log book excerpt	J.K. Paynter	8/28/1987
U020A	Lab Report No. AL586.0679.	Analytical Report for Filter Plenum Samples. (Lab Report No. AL586.0679.)	N/A	9/9/1986
U021A	N/A	History of RFP IDC Certification	EG&G Rocky Flats, Inc.	NOT DATED
U022A	89-RF-0713	Analytical reports, waste profile statements and external letter to Dale Wells (EG&G Idaho, Inc.): Additions to Rocky Flats Transuranic Waste Profiles (89-RF-0713)	J.K. Paynter	2/27/1989

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U023A	89-RF-1245	Waste profile statement sheets and external letter to Dale Wells, EG&G Idaho, Inc. "Additions to Rocky Flats Transuranic Waste Profiles." (89-RF-1245)	J.K. Paynter, Fax # WIPP-0129-RPTS-0192	4/6/1989
U024A	WIPP-0177-RPTS-0192	RTR Weight Estimations data and internal correspondence from K.S. Kosco to Jerry O'Leary. "Waste Calculations for Bin-Scale Test." (WIPP-0177-RPTS-0192)	K.S. Kosco	5/10/1991
U025A	4-A73-POPM-774-WO-2005.	Rocky Flats Environmental Technology Site Miscellaneous Aqueous Waste Handling and Solidification (Draft). (4-A73-POPM-774-WO-2005.)	Rocky Flats Remediation Services.	2/20/1996
U026A	N/A	"Rocky Flats Plant TRU Waste Thermal Power Characterization Incremented in 0.05 Watt Segments from 0.05 Watts through > 0.60 Watts." September 1985 through February 1990. Data table produced from SWIMS Database.	N/A	NOT DATED
U027A	WIPP-0132-RPTS-0192	"Rocky Flats Plant TRU Certified Containers." September,1985-August,1989. Data table from the SWIMS Database. (WIPP-0132-RPTS-0192)	N/A	7/20/1994
U028A	N/A	"X-Ray Radiography Station Data" and "WIPP Container Certification Document." Raw data. April 13 and 14,1993	N/A	4/13/1993
U029A	N/A	Volatiles Report 374 and 774 sludge	N/A	10/23/1988
U030A	N/A	VOC Gas Chromatography/Mass Spectrometry Results. WIPP Experimental Waste Characterization Program data printout. Data query March 27, 1996	N/A	3/27/1996
U031A	N/A	Rocky Flats Radioactive Waste Flow Diagram	N/A	10/00/1985
U032A	Report RWS09	WSRIC Waste Streams sorted by IDC. (Report RWS09)	N/A	9/1/1992
U033A	N/A	Building 774 First Stage Treatment Log Book.	N/A	1969
U034A	N/A	Building 774 First Stage Treatment Log Book.	N/A	1989
U035A	N/A	Building 774 First Stage Treatment Log Book.	N/A	1982
U036A	N/A	Building 774 Water Results Log Book.	N/A	1980-1983

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U037A	N/A	Building 774 Second Stage Treatment Log Book.	N/A	1981
U038A	N/A	Building 774 First Stage Treatment Log Book.	N/A	1984
U039A	N/A	Building 774 First Stage Flocculator Samples Log Book.	N/A	1968-1970
U040A	N/A	Building 774 Low Level Organic and TRU-Waste Organic Waste Log Book.	N/A	1976-1990
U041A	N/A	Building 774 Car Log Book.	N/A	1982
U042A	N/A	Building 774 Record Book.	N/A	1985
U043A	N/A	Building 774 Setup Logbook.	N/A	1973-1990
U044A	N/A	Building 774 Water Results Log Book.	N/A	1984-1995
U045A	N/A	Monthly Report – Liquid Waste Operations	N/A	1981–1991
U046A	N/A	Evaluation of the EPA Code D001, Ignitability; D002, Corrosivity; and D003, Reactivity; Designations for RFP IDCs that are Stored at the INEL.	D. Kudera.	2/29/1996
U047A	N/A	A History of the Rocky Flats Plutonium/Actinide Recovery Plant 1952 to 1991 (Draft 10/30/91).	L.R. Crisler	1991
U048A	N/A	Building 374 Log Book for Time Period 12/24/86 to 12/29/88.	N/A	1988
U049A	N/A	Building 374 Log Book for Time Period 12/26/82 to 12/24/85	N/A	1985
U050A	N/A	Building 374 Log Book for Time Period 04/12/91 to 09/27/93.	N/A	1993
U051A	N/A	Building 371 Log Book for Time Period 04/07/82 to 12/29/85.	N/A	1985
U052A	N/A	Graphite Waste – Rocky Flats Environmental Technology Site	N/A	NOT DATED
U053A	N/A	Building 374 Solidified Sludge, Rocky Flats Environmental Technology Site	N/A	NOT DATED

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U054A	TD94-018	Toxicity Characteristic Leaching Procedure Test Results of Cemented Surrogate Analytical Laboratory Solution Waste – Part 2 (TD94-018)	J. A. Phillips, G. B. Semones, T. R. Hergert, D. M. Saiki, and T. J. Satkowski	8/4/1994
U055A	N/A	Sorting of Radioactive Waste at Rocky Flats.	N/A	2/11/1970
U056A	N/A	Rocky Flats History of Filter Changes and Plenum Modifications	N/A	9/1/1975
U057A	N/A	Building 881, Presentation by Ernie English.	N/A	7/3/1996
U059A	N/A	Drum Prefix Numbers and Corresponding Material Balance Areas	N/A	1991, 1994
U060A	EDF-RWMC-803	Chemical Constituents in Transuranic Storage Area (TSA) Waste. This document has been changed to Source Document Tracking Number P756A. (EDF-RWMC-803)	C. K. Abbott	2002
U061A	1-100000-EQA	Sampling and Analysis Plan for Pyrochemical Salts (1-100000-EQA)	N/A	09/31/92
U062A	N/A	Presence of Chromium Pyrochemical Salt Residues at Rocky Flats Plant	Jack L Long (KMI Services) and Mike A. Rivera (LAMB Associates)	1993
U063A	N/A	Laboratory Analysis Results for Electrorefining Salt	J. K. Fraser	12/17/1987
U064A	N/A	Radioactive materials associated with Rocky Flats	N/A	4/4/1977
U065A	N/A	Radioactive materials associated with Rocky Flats.	N/A	3/1/1983
U066A	J003499	Radionuclide Quantities Received and Dispatched from RFP from 1941 to Present. (J003499)	N/A	NOT DATED
U067A	N/A	881-CSL Physical Inventory of Radionuclides	N/A	N/A
U068A	N/A	Analytical data from the Liquid Stabilization Database at Rocky Flats.	N/A	3/3/1997
U069A	N/A	Drum Prefix Issue Dates Log Book.	N/A	1987-1997
U070A	N/A	Handbook of the Rocky Flats Plan Production Non-Destructive Assay Systems	N/A	6/1/1984
U071A	N/A	Material Balance for Size Reduction Vault	N/A	1984-1985
U072A	N/A	Waste Stream and Residue Identification and Characterization of Building 371.	N/A	9/1/1990

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U073A	N/A	Waste Stream and Residue Identification and Characterization Building 559. Volume 1.	N/A	9/1/1990
U074A	N/A	Waste Stream and Residue Identification and Characterization Building 707 Volume 1	N/A	9/1/1990
U075A	N/A	Waste Stream and Residue Identification and Characterization Building 771, Volume 1	N/A	8/1/1990
U076A	N/A	Waste Stream and Residue Identification and Characterization Building 774	N/A	8/1/1990
U077A	N/A	Waste Stream and Residue Identification and Characterization Building 776	N/A	8/1/1990
U078A	N/A	Waste Stream and Residue Identification and Characterization Building 777	N/A	8/1/1990
U079A	N/A	Waste Stream and Residue Identification and Characterization Building 779	N/A	8/1/1990
U080A	N/A	Waste Stream and Residue Identification and Characterization Building 886	N/A	8/1/1990
U081A	N/A	Nuclear Material Transaction Report. Transfer Series: ARF-VAB-000197	N/A	1985-1988
U082A	1-10000-RQ	EG&G Rocky Flats Plant Radionuclide and Hazardous Consistuent Reportable Quantity Determination Guide (1-10000-RQ)	N/A	12/15/1992
U083A	N/A	Internal Memorandum from J.T. Gilmartin to J.K. Wrapp, Kaiser-Hill, "Redesignation of Item Description Code (IDC 393)" with unpublished document "Analysis of IDC 393 for the RCRA Designation D007 Based on Process and Storage Conditions Necessary for Formation and Continued Existence of Hexavalent Chromium (CR)".	J.T. Gilmartin	8/6/1997
U084A	N/A	Waste Stream and Residue Identification and Characterization Building 778.	N/A	1/1/1991
U085A	N/A	Analytical Data and Summary of Samples from IDC 310 and 312.	N/A	1/22/1998
U086A	KJP/108/0198	Analytical Data for IDC 411. Includes external correspondence "Assessment of RCRA Metal Contaminating Plutonium" from Kevin Peters to Pan Edrich, RMRS Waste Systems. (KJP/108/0198)	Kevin Peters	1/29/1998
U087A	KJP/003/0298	Discrepancy Report from Kevin J. Peters to Shiela Hailey, LMITCO "Graphite Waste". (KJP/003/0298)	Kevin J. Peters	2/3/1998
U088A	KJP/114/0298	Discrepancy Report: Evaluation of Potential Sources of RCRA Compounds Found in Graphite Waste Headspace (KJP/114/0298)	Kevin Peters	2/25/1998

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U089A	KPJ/004/0398	Discrepancy Report from Kevin J. Peters to Sheila Hailey, LMITCO,"Assessment of Graphite Waste Matrix and Solvent Usage". (KPJ/004/0398)	Kevin J. Peters	3/4/1998
U090A	ADR-081-98	Letter from Alan D. Rodgers to Tom Clements, "Characterization of Graphite Waste." (ADR-081-98)	Alan D. Rodgers	7/6/1998
U091A	N/A	Process Flow Diagrams for IDC 480, Rocky Flats Plant - Waste Stream and Residue Identification and Characterization	N/A	N/A
U092A	N/A	Inventory values as generated by TRIPS Change Request (TCR) 1821.	N/A	5/22/2001
U093A	N/A	Backlog Waste Rationale for Description Codes 001 and 800.	NA	NOT DATED
U094A	N/A	Ledger of Acceptable Knowledge (AK) Source Documents.	N/A	03/24/2003
U095A	N/A	Radiochemistry Data Packages by Waste Form and Site Project Office (SPO) File Location	N/A	4/8/2002
U096A	N/A	EDF 1242 Supporting Documentation. Compiled by Cecilia Hoffman. Held at DOE-ID as "Possibly UCNI."	Cecilia R. Hoffman	10/11/2001
U097A	N/A	White Paper Response to Inquiry Relating Directly to EDF-RWMC-942 Information and Additional Questions Associated with the EDF.	Kenneth L. Gilbert, Ph.D Timothy E. Venneman, M.S.	11/1/2001
U098A	N/A	Preliminary data for the IDC 003 waste stream.	N/A	10/1/2001
U099A	INW164.001	Draft Waste Stream Profile Form INW164.001-Solidified Organics and Supporting Documentation (INW164.001)	N/A	4/10/2002
U100A	EDF-2710	Radiography and Visual Examination Results of the Stored Waste Examination Pilot Plant (SWEPP) Certified Waste Sampling Program for Fiscal Years 1997, 1998, 1999, and 2000. (EDF-2710)	N/A	6/21/2001
U101A	N/A	Visual Data Packages for Miscertifications Due to Excess Liquids	N/A	10/21/1996
U102A	N/A	Acceptable Knowledge (AK) Final Evaluation Checklist INW161.001-Fire Brick/Coarse Fire Brick.	N/A	9/18/2002
U103A	N/A	Acceptable Knowledge (AK) Final Evaluation Checklist INW252.001-Leaded Rubber Gloves and Aprons.	N/A	10/25/2002

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U104A	N/A	Acceptable Knowledge (AK) Final Evaluation Checklist IN216.002-First and Second Stage Sludge Subpopulation.	N/A	10/25/2002
U105A	N/A	Apparent Cause Report for CAR-02-078: Solidified Waste Residual Liquid De -watering Investigation Not Referenced in Acceptable Knowledge Document.	N/A	9/3/2002
U106A	CNN 35661	Delegation of Site Project Manager Responsibility for Assessment of Flammability for Containers-3100 m3 Project. (CNN 35661)	Tom Monk	9/11/2002
U107A	N/A	Characterization of Rocky Flats Plant Special Setups Sludge Waste (IDCs 004, 802)	N/A	2002
U108A	N/A	RTR/VE Comparison Database for 1983 to 1994.	N/A	N/A
U109A	N/A	Buildings JN-1, JN-2, and JN-3 Summaries.	Unknown	UNKNOWN
U110A	N/A	Miscellaneous Documentation describing Radioanalytical Laboratory Operations.	N/A	1997-1998
U111A	N/A	TCLP metals data for leaded glass.	Rocky Flats Environmental Technology Site.	7/1/1998
U112A	N/A	Removal of Special Nuclear Materials From The Plutonium Laboratory.	R. E. Snider.	12/6/1978
U113A	N/A	Real-Time Radiography Data for 11 containers of Battelle-Columbus Waste	V.J. Technologies and Battelle Columbus Laboratories.	11/3/2000
U114A	N/A	Battelle-Columbus AK Source Document Reference Number Log.	N/A	4/1/2003
U115A	N/A	SDVO RCRA Tracking Database (CD-R)	N/A	2/1/2003
U116A	N/A	MTD-Drum Experiment System (CD-R)	N/A	2/1/2003
U117A	N/A	Crosswalk - AMWTP and BC assigned AK Source Document Numbers for Battelle Columbus Source Documents in AMWTP AK Inventory	N/A	4/1/2003
U118A	N/A	Fissile Distribution by Content Code - Query data November 8, 1995.	N/A	N/A
U119A	RWMC-EDF-761	(Draft) Rocky Flats Plant Characterization (1954-1980) (RWMC-EDF-761)	T. L. Clements, Jr. and G. Ross Darnell	7/18/1994
U120A	INEL-96/0308	Inventory Analysis of Stored Transuranic (TRU) Waste at the Radioactive Waste Management Complex (RWMC). (INEL-96/0308)	K. M. Croft and V. S. Scown.	11/00/1996

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U121A	N/A	Cross-walk- AMWTP and INEEL assigned AK Source Document Numbers for INEEL 3,100m3 Project Documents in AMWTP AK Inventory.	N/A	5/1/2003
U122A	N/A	Container Inventory Report for WMF-629 through WMF-633 (TRIPS report)	Richard NeSmith	12/24/2002
U123A	N/A	AK Document Reference Inventory. AMWTP Form 1084.	N/A	08/17/2009
U124A	N/A	Argonne-West Visual Examination Records for the Seven Experimental Test Bins.	N/A	VARIOUS
U125A	N/A	Waste Retrieval Project Databases. Two electronic files reportedly created circa 10/1994	N/A	10/11/1994
U126A	N/A	U. S. Department of Energy Mound Laboratory, Acceptable Knowledge for Transuranic Waste Shipped to Idaho National Engineering and Environmental Laboratory.	Bill Franz, Mound	NOT DATED
U127A	N/A	Data from the Transuranic Waste Management Information System (TWMIS).	N/A	UNKNOWN
U128A	N/A	Prefix Timeline for Rocky Flats Processes	WASTREN	2003
U129A	N/A	Defense Determination for AMWTP Waste	Ron Reeves	5/25/2005
U130A	N/A	Defense Waste Cyclone Incinerator Demonstration Program Summary.	N/A	NOT DATED
U131A	N/A	Pelletized Waste Form Demonstration Program Summary	N/A	NOT DATED
U132A	N/A	Mound Laboratory Radioactive Waste Process Flow Sheets	N/A	05/31/1977
U133A	N/A	Mound Map – Waste Management Facilities	N/A	2/26/1966
U134A	U134A	US DOE Hazardous Chemical Defense Waste Management Program Albuquerque Operations Mound Facility, Preliminary Data Base (U134A)	N/A	1/1/1983
U135A	N/A	Applicability of the Term "Byproduct Material" for Purposes of RCRA, to Waste Produced by Department of Energy Facilities	N/A	NOT DATED
U136A	N/A	Estimate of the Effect of Capture Gamma Rays on Glove Box Surface Doses for HEDL LGRA Study, , February 25, 1983	A. Shapiro	2/25/1983
U137A	N/A	Criticality Evaluation of Low Gamma Receiving Area	A. Shapiro	NOT DATED

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U138A	N/A	Shielding Study for LGRA and Calorimetry Laboratory	R.E. Wiencke	10/12/1982
U139A	N/A	Radioactive Waste Shipment	P.E. Figgins	8/10/1983
U140A	N/A	Resinex 60 Dust Control Agent	N/A	NOT DATED
U141A	N/A	Type I, Type II, Type III, and Type V TRU Waste Packages	N/A	N/A
U142A	N/A	Mixed Hazardous Waste Streams Generated at AL - Mound	N/A	11/1/2001
U143A	N/A	Authorization to Ship SS or Non-SS Material	D,A. Wiederecht	7/2/1979
U144A	N/A	Analysis of Hydraulic Oil for PCBs and other Major Chromatographable Species	Signature Illegible	12/11/1981
U145A	N/A	Nuclear Waste Program, Mound Laboratory	Monsanto Research Corporation	NOT DATED
U146A	N/A	Radioactive Waste Shipped from May,1980 - December 1986	N/A	12/1/1986
U147A	N/A	Storage Criteria for Unirradiated Enriched Uranium	N/A	6/9/1972
U148A	N/A	Year-End Status Report on Shipments of Radioactive Material	Multiple Authors	1/9/1973
U149A	N/A	WD Monthly Reports for December 1978 thru November 1981	N/A	11/1/1981
U150A	N/A	Acid and Caustic Inventory	N/A	1979
U151A	N/A	Mound Facility's Decontamination and Decommissioning Experience. April 15 -16, 1980	N/A	4/16/1980
U152A	N/A	TRU Package Thermal Evaluations	J. F. Griffin	3/7/1979
U153A	N/A	Nuclear Criticality Procedures for T Building Room 245	N/A	9/26/1977
U154A	N/A	Procedures for preparation of mixed oxide materials for the confirmatory assessment experiments.	N/A	9/13/1977
U155A	N/A	Summary of Informal Criticality Audit	R. K. Blauvelt	5/25/1977
U156A	N/A	Criticality Control Procedures for R-143	N/A	05/17/1971
U157A	N/A	Criticality Procedures for the PP Analytical Group	N/A	NOT DATED
U158A	NA	Summary of Informal Criticality Audit (NA)	Richard K. Blauvelt	6/28/1976
U159A	N/A	TRU Solid Waste Questionnaire	D. A. Edling	7/23/1978

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U160A	N/A	Criticality Committee Minutes	N/A	4/11/1980
U161A	N/A	Operating Procedures for T-1W Vault	N/A	3/12/1980
U162A	N/A	Criticality Committee Meeting Minutes	N/A	11/9/1973
U163A	N/A	Guidelines for Operating Procedures for Cage 8	N/A	N/A
U164A	N/A	Product Bulletins for Nutek Cleaning Products	N/A	N/A
U165A	N/A	Box Core Sample Results of Contaminated Soil from WD Hillside	N/A	N/A
U166A	N/A	Container Shipment Reports	N/A	N/A
U167A	N/A	TRU Waste Certification Task - Inline Liquid Waste Description	N/A	N/A
U168A	N/A	F-Line Refractory Encapsulation	Louis Rodriguez	7/10/1973
U169A	N/A	Operating Procedures for SM-37 Vault	N/A	10/01/1980
U170A	N/A	Criticality Safety Committe Report	R. R. Walston	10/01/1978
U171A	N/A	Criticality Evaluation of Radioactive Waste Incinerator Operation	N/A	3/3/1978
U172A	N/A	Appendix I - Criticality and Storage Procedures for Fissionable Material in T Building Calorimeters	N/A	N/A
U173A	N/A	Memo to R. A. Wolfe, No title	Paul E. Figgins	1/14/1969
U174A	N/A	INEL Transuranic Storage Cell Retrieval	Unknown	UNKNOWN
U175A	N/A	Visual Batch Summary Report for Drum #022580 (IDRF002301478), Batch WCV-022580 Revision 1.	N/A	3/13/2002
U176A	N/A	Visual Batch Summary Report for Drum #011625 (IDRF002301478), Batch WCV-011625, Revision 0	N/A	9/30/2002
U177A	N/A	Hydrogen diffusivity test data for the BNFLSS filters tested between October 7, 2003 and August 11, 2005	N/A	N/A
U178A	N/A	Hydrogen diffusivity test data for the BNFLLS filters tested between January 29, 2004 and June 25, 2004.	N/A	N/A
U179A	N/A	Hydrogen diffusivity test data for the BNFLSM filters tested between January 29, 2004 and August 24, 2004.	N/A	N/A

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U180A	N/A	Hydrogen diffusivity test data for the BNFLLM filters tested between January 29, 2004 and February 16, 2005.	N/A	N/A
U181A	N/A	Hydrogen diffusivity test data for the BNFLSP filters tested between December 19, 2003 and September 10, 2004.	N/A	N/A
U182A	N/A	Hydrogen diffusivity test data for the BNFLLP filters tested between January 29, 2004 and September 22, 2004.	N/A	N/A
U183A	n/a	E-Mail from J. Biedscheid to Cathy, titled "TRUPACT-II Shipment of Mound Pu-239 Material" (n/a)	J. Biedscheid	7/26/2000
U184A	N/A	Summary Report on Mound Boxes, e-mail to Clint Kelly from Murthy Devarakonda, dated March 31, 2000.	Murthy Devarakonda	3/31/2000
U185A	N/A	Fax to G. Siry from W. Franz regarding Mound Facility Background Volume STP FY-00	N/A	2/28/2001
U186A	N/A	Mound Laboratory - Classified Document Summary, ADC Unclassified, 4/1/03. Defense Processes at Mound	J. Rovansek	4/1/2003
U187A	N/A	List of Sources of TRU Waste from Mail Hill Tritium Project	Unknown	UNKNOWN
U188A	N/A	Process Knowledge for Old SD Project	D. Adkins	11/20/1997
U189A	N/A	E-mail to COLVRL from E. Howell, titled "Contaminated Precious Metals"	E. Howell	11/6/1997
U190A	DOE/CAO-95-1121	Portion of the Waste Baseline Inventory Report for 1995 (DOE/CAO-95-1121)	N/A	12/1/1995
U191A	N/A	Waste Examination Log for RTR Tapes, not dated, author unknown	N/A	N/A
U192A	N/A	Drum Container Tables, 3/30/2000	N/A	3/30/2000
U193A	N/A	TRAMPAC Requirements Matrix by Drum	N/A	N/A
U194A	N/A	Mound Compliance with TRUPACT-II Authorized Contents	N/A	4/1/2000
U195A	N/A	Spreadsheets of Waste	N/A	N/A
U196A	N/A	TRU Waste Certification Task: Sludge From the Waste Disposal Plant	Unknown	UNKNOWN
U197A	N/A	Regulatory Requirements Associated with Transfer of Mound's Transuranic Waste To Another DOE Site	Unknown	UNKNOWN
U198A	N/A	Mound Transuranic Waste Feasibility Study	L. Lyons	7/8/1998

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TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U199A	N/A	Verification Methods Matrix, 3/6/95.	Central Characterization Project	03/06/1995
U200A	N/A	Mound Site TRU Waste Data: Preliminary TRUPACT-II Transportation Compliance Evaluation	N/A	N/A
U201A	N/A	Container Approval Requests and Deviations for Shipment	G. Siry	11/12/2002
U202A	N/A	Tables of TRU Waste Packages	Unknown	UNKNOWN
U203A	N/A	Summary of Characterization Data	Benchmark Environmental Corp.	9/1/1999
U204A	N/A	Waste Category - TRU Boxes	N/A	N/A
U205A	N/A	Trash Categories, Content Codes, and Waste Categories	Unknown	UNKNOWN
U206A	N/A	List of Chemicals and Materials in TRU Waste Content Codes, Revision 2, 6/89.	Author Unknown	06/01/1989
U207A	N/A	List of Drums	N/A	5/24/1981
U208A	N/A	Excerpt from Draft Report Describing Waste Streams Generated at Mound	N/A	N/A
U209A	N/A	Notes from Interviews and Document Reviews. Interviews include Rob Robinson, Gary Morris, and Ron Sohn, February 19, 2003. Documents Identified Included Miscellaneous Correspondence, September, 1964, and Draft Report, WCB 2.	N/A	2/19/2003
U210A	Form-1066	TRU Waste Management AK Checklist, Advanced Mixed Waste Treatment Faciltiy, Rev. 0, May 10, 2005. Rev. 1, August 10, 2006, Rev. 2, August 13, 2007, and Rev. 3, August 11, 2010. (Form-1066)	AMWTP	10/04/2011
U211A	Form-1066	TRU Waste Management AK Checklist, Battelle Columbus Laboratories (Form-1066)	M. L. Johnson	8/10/2006
U212A	Form-1066	Form-1066, TRU Waste Management AK Checklist, Bettis Atomic Power Laboratory, Rev. 0, August 10, 2006 (Form-1066)	M. L. Johnson	8/10/2006
U213A	Form-1066	Form-1066, TRU Waste Management Ak Checklist, Mound Laboratory (Form -1066)	M. L. Johnson	08/21/2008

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U214A	Form-1066	Form 1066, TRUW Waste Management AK Checklist, Rocky Flats Plant, Rev. 0, August 11, 2003; Rev. 1a, March 1, 2004; Rev. 1b, March 9, 2004; Rev. 2, October 9, 2005; Rev. 3 October 13, 2005; Rev. 4 (with BN243) March 13, 2006; Rev. 5 (with BN252) March 13, 2006; Rev. 6 (with BN161) March 13, 2006; Rev. 7 (with BN004) March 30, 2006; Rev. 8 July 25, 2006; Rev. 9 August 13, 2007; Rev. 10, September 2, 2008; Rev. 11, August 11, 2010. (Form-1066)	AMWTP	10/04/2011
U215A	N/A	Excel Spreadsheets of Container Information from 1970, 1971 and 1972 RF Load Lists	Randall C. Morris	3/24/2009
U216S	N/A	Briefing Booklet for the National TRU Executive Committee, The Definition of Defense TRU Wastes Policy Recommendations.	N/A	1995
U217S	N/A	Casting Lab Sodium Loading Benchtop Procedure - Excerpt only	MFC	UNK
U218A	89-RF-1625	Waste statement sheets and external letter to Dale Wells, EG&G Idaho, Inc. Revisions to Rocky flats Transuranic Waste Profiles. (89-RF-1625)	J. K. Paynter, Fax WIPP-0129 -RPTS-0192	5/5/1989
U219S	N/A	Dimensions and volumes for Vollrath cans (e.g., 8801 and 8802) used to package RF waste.	N/A	N/A
U220S	N/A	Packaging Material Weights (Table 1.1, Waste Packaging Components and Weights)	R. E. Giebel, R.G. Leebl, J.A. Battaglino	11/12/1971
U221A	N/A	Proposal for the Disposition of Rocky Flats' Barrels	N/A	N/A
U223A	N/A	Rocky Flats Plant Load Lists to INEEL CY 1970	N/A	N/A
U224A	N/A	Rocky Flats Plant Load Lists to INEEL CY 1971	N/A	1971
U225A	n/a	Rocky Flats Plant Load Lists to INEEL CY 1972 (n/a)	n/a	1972
U226A	N/A	RWMIS Data for 1973 - 74	Received from Kirk Green	3/11/2009
U227S	3522T	IWTS Material and Waste Characterization Profile 3522T: AW162CH: ANL-W FMF EFL ZR-U-PU Fuel Casting Alloys Residues, STP: ID-ANL-162T (3522T)	IWTS	2/1/1989
U228S	3523T	IWTS Material and Waste Characterization Profile #3523t: AW163CH: ANL-W ACL cold Line Absorbed Liquid, Misc., Hardware and Poly, STP: ID-ANL-163T (3523T)	IWTS	9/14/1988

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U229S	3581T	IWTS Material and Waste Characterization Profile #3581T: ANL-W ALC Glassware, Paper, Poly , and Miscellaneous Hardware IDC-161, STP: ID-ANL-161. (3581T)	IWTS	5/13/1991
U230A	N/A	Rocky Flats Plant Item Description Codes List	n/a	9/1/1977
U231A	RF-U065	Versatile Search Report - INEEL (RF-U065)	N/A	2/21/2001
U232A	N/A	RWMIS Waste Disposal Report	Received from Kirk Green	01/05/2010
U233A				
U234A	N/A	Final Site Assessment for Safe Storage of U-233 at the INEEL	N/A	N/A
U235S	N/A	RWMIS Waste Disposal Report 1970 through 1971	INL	03/11/2009
U236S	3521T	IWTS Material Profile: Laboratory Waste, IDC-150, 3-19-81. INACTIVE (3521T)	MFC	4/14/2010
U237S	3531T	IWTS Material Profile 3531T: Laboratory Mixed Lead Waste IDC 150, 11/22/02 (3531T)	MFC	4/14/2010
U238S	n/a	Revised Crosswalk of CCP versus AMWTP AK information "Element" Assignments (n/a)	M. L. Johnson	01/20/2010
U239S	N/A	Weapons of Mass Destruction (WMD) Web site: Idaho National Laboratory, Materials & Fuels Complex. www.globalsecurity.org/wmd/facility/idaho_inel-facility-mfc.htm	DOE/ID	5/6/20010
U240A				
U241A				
U242A	N/A	Containers Certified by 3100 cubic meter Project and Shipped by BNFL	AMWTP	N/A
U243A	n/a	Excerpt from Tank Waste Information Network System Best Basis Inventory (n/a)	M.H. Conilogue	10/04/2006
U244A	PNNL-230-0001-01, PNNL-230-0001-02	Profile Checklist: Profile Number: PNNL-230-0001-01 (PNNL-230-0001-01, PNNL-230-0001-02)	Waste Services Organization	02/02/2004
U245A	RMIS Sccession # N1D0029918	Email From: R.J. Swan To: M.I. Rollosson Subject: This is it I think. 231-Z FACILITY EXTERIOR (RMIS Sccession # N1D0029918)	n/a	01/09/2007
U246A	ARH-1405 RD	D5 Plutonium and Neptunium Accountability Data (ARH-1405 RD)	J.D. Anderson	10/07/1969

Implementing Document: MP-TRUW-8.13

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U247A	n/a	231-Z Solid Waste Burial Records (n/a)	PNL/RHO	1972-1978
U248A	n/a	Shipping Records from Rockwell Hanford Operations, D&D - Addendum for 218-W-3A (n/a)	Rockwell Hanford	07/23/1980
U249A	14-1D-8LM-0401	Radioative Waste Storage/Disposal Analysis Record (14-1D-8LM-0401)	M.F. Pascual	09/16/1995
U250A	n/a	Addendum to TSD Record (SS&C) (n/a)	Joell Stamm	VARIOUS
U251A	n/a	Review of PFP Complex Effluents AK/Designation and Applicability of WAC 173-303-090(7) and 40 CFR 261.23 (n/a)	J.P. Evans	04/03/2008
U252A	n/a	Shipping Records: Solid Waste Burial Records for 231-Z to 218-W-4C (n/a)	Pacific Northwest Laboratory (PNL)/Rockwell Hanford Operations (RHO)	1978-1983
U253A	n/a	Shell Chemical Company-Solvents Technical Support-American Region-Fax On Demand System (n/a)	Shell Chemical Company	09/22/2000
U254A	PNL 186035	Transuranic Waste Storage Record for PIN # PNL 186035 (PNL 186035)	R.L. McDowell	VARIOUS
U255A	231Z-DES-05-01	231-Z TRU Debris Waste Stream Designation for 231-Z-DES-05-01 (231Z-DES-05-01)	M. Lakes	04/04/2007
U256A	Site Code: 231-Z	Waste Information Data System General Summary Report for 232-Z Waste Incineration Facility (Site Code: 231-Z)	N/A	03/14/2007
U257A	n/a	NDA Data for Containers from Hanford Waste Stream RLMPDT.001 (n/a)	WWIS	N/A
U258A	n/a	Current Volume Inventory for Hanford Waste Streams (n/a)	n/a	N/A
U259A	n/a	NDE BDR Data (n/a)	n/a	2008
U260A	n/a	NDA BDR Data (n/a)	n/a	N/A
U261A	n/a	Waste Container Projected Procurements for the Lifecycle of the PFP D&D Project (n/a)	n/a	2009
U262A	n/a	231Z INL Over-Pack Drum Data Sheets - PK shipment (n/a)	n/a	07/26/1977
U263A	n/a	RMIS Retrievals-Solid Waste Disposal Requests and Associated Waste Information (n/a)	Various PNNL personnel	NONE
U264A	n/a	Solid Waste Information Tracking System (SWITS)- Container Assay Data Dump for the Building 325 Radiochemistry Laboratory (n/a)	n/a	1986-2003

Implementing Document: MP-TRUW-8.13

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U265A	PNNL-325	Plutonium Oxide Characterization for MOX (PNNL-325)	C. Delegard	N/A
U266A	REPORT-111111	Waste Certification Summary (REPORT-111111)	n/a	N/A
U267A	n/a	Historic Property Inventory Form (n/a)	P.K. Houf, M.S. Gerber	05/01/1998
U272A	n/a	PFP INL Over Pack drum data sheets - PK shipment (n/a)	n/a	n/a
U273A	n/a	325 INL Over pack drum data sheets - PK shipment (n/a)	n/a	n/a
U274A	RPT-TRUW-49	Acceptable Knowledge Summary for Resin Debris Waste (BN317) (RPT-TRUW-49)	AMWTP	11/23/2005
U275A	0	RLM231ZD Container List (0)	M. I. Rollosson	12/01/2006
U276A	RLM231ZD	231-Z Excel Spreadsheet and Radcalc 1 Isotopic Calculations, RLM231ZD (RLM231ZD)	J. D. Anderson	07/07/2007
U277A	N/A	Hanford Site Battery Book - "HEHF MSDS's from Soft Reporting which Pertain to Alkaline Batteries"	T. C. Hughes	N/A
U278A	PFP-DES-07-00	Waste Designation Worksheet for PFP-DES-07-00 (PFP-DES-07-00)	P. Wicks	06/21/2007
U279A	PFP-DES-08-00	Waste Designation Worksheet for PFP-DES-08-00 (PFP-DES-08-00)	P. Wicks	06/21/2007
U280A	216Z12DES01 to 04, 241Z8DES-01-00	PFP Complex Effluent TRU Waste Designation (216Z12DES01 to 04, 241Z8DES-01-00)	M. Watson	04/01/2007
U281A	PFP-DES-03-00	Waste Designation Worksheet for Designation # PFP-DES-03-00 (PFP-DES-03-00)	P. Wicks	02/02/2007
U282A	N/A	Solid Waste Storage/Disposal Records	Plutonium Finishing Plant	N/A
U283A	PFP-DES-04-00	Waste Designation Worksheet for Designation # PFP-DES-04-00 (PFP-DES-04-00)	M. Lakes	02/05/2007
U284A	WMP-32150	Waste Designation Worksheet for Designation # PFP-DES-05-00 (WMP-32150)	P. H. Wicks	02/05/2007
U285A	N/A	Burial Records for PFP	N/A	03/14/1975
U286A	N/A	RMIS Solid Waste Record List for NPFPD and MPFPD	N/A	05/30/2001
U287A	RLMPFPCD	Burial Records for RLMPFPCD (RLMPFPCD)	M. Rollosson	06/18/2008
U288A	N/A	Low Level/TRU Waste Located at CWC	Serena Galstad	1984-1998

Implementing Document: MP-TRUW-8.13

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U289A	N/A	Addendum to TSD Record	N/A	12/13/2004
U290A	RLMPDT.001	Reevaluation of RLMPDT.001 Change Notice #3 (RLMPDT.001)	M. I. Rollosson	03/12/2007
U291A	N/A	Reevaluation MPFPD Organic matrix to Other Organic Matrix Material	M. I. Rollosson	2006-2007
U292A	N/A	Acceptable Knowledge Reevaluation Checklist	M. I. Rollosson	02/22/2007
U293A	# 014029	MSDS for Fryquel 220 Hydraulic Fluid (# 014029)	Supresta	04/24/2007
U294A	RLMPFPCD	Estimated Waste Material Parameters for the RLMPFPCD Waste Stream (RLMPFPCD)	N/A	09/16/2009
U295A	N/A	Barium Transport in Fluorescent Lamps	R. C. Garner	2000
U296S	MSDS 061824A,	MSDS for RadPro 0200 (MSDS 061824A,)	Environmental Alternatives, Inc.	02/10/2004
U297A	MSDS 27785	MSDSs - Talc and Mistron 500 (MSDS 27785)	Luzenac America, Inc.	10/07/1993
U298S	MSDS 065584	MSDS for Aspigel 100 (MSDS 065584)	N/A	04/04/2005
U299S	MSDS #061825	MSDS for RADPRO 0300 (MSDS #061825)	Environmental Alternatives, Inc.	02/10/2004
U300S	MSDS #061823A	MSDS for RADPRO 0100 (MSDS #061823A)	Environmental Alternatives, Inc.	03/20/2006
U301A	HNF-EP-0918	Solid Waste Integrated Forecast Technical (SWIFT) Report, FY2008 - FY2035 (HNF-EP-0918)	R.A. Barcot	01/01/2008
U302A	N/A	MPFPD Isotopes Data From SWITS	R. Clinton	06/07/2001
U303A	N/A	Addendum to TSD Record (canned ash)	J. Stamm	N/A
U304A	N/A	Hanford Site Plutonium Finishing Plant Residues/Legacy Holdup	N/A	N/A
U305A	n/a	INL Analytical Waste with RFETS P and U-Listed Waste (n/a)	M. L. Johnson	02/20/2008
U306S	N/A	RWMIS Waste Disposal Report pages	RWMC	05/04/2011
U307S	N/A	WILD database download of non-RFO Disposals in Pit 1, Pit 2, Trench 1, Trench 5, Trench 7, Trench 9 and Trench 10.	WILD	04/07/2002
U308S	N/A	Hydrogenous Liquid in Cell Areas I, II and III	N/A	1987-2001
U309S	N/a	Cell Areas I and III Hydrogeneous Liquid Inventory (N/a)	N/A	1987-2004

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U310A	NBL-SA-Pu(I)-1	Determination of the Isotopic Composition of Plutonium by Thermal Ionization Mass Spectometry (NBL-SA-Pu(I)-1)	New Brunswick Laboratory	NA
U311S	N/A	Excerpt from a report (Robinson Report) regarding the Isotopic Analysis of High Burnup Spent Nuclear Fuel.	ANL-E	unkown
U312S	N/A	Combustible Waste Contents	N/A	N/A
U313S	N/A	Decon & Repair Area Procedures for cleaning and repairing a manipulator (Waste operations work order dated Nov 15, 1984. AGHCF Decon Manipulator)	N/A	03/24/1987
U314S	N/A	Draft Proposal for: Alpha-Gamma Hot Cell Facility Waste Management Plan	ANL-E	unknown
U315S	N/A	Basis for Assessment of the Environmental Impact of the Expanded Program at Argonne-East	N/A	FY 1974
U316A	N/A	1985-1987 Intermediate Level waste from AGHCF	N/A	
U317A	NBL-SA-PP-1	Determination Of Weight Loss of Plutonium Oxide on Heating (NBL-SA-PP-1)	New Brunswick Laboratory	N/A
U318A	NBL-SA-PP-2	Determination of Specific Gravity and Density of Plutonium Solutions (NBL-SA-PP-2)	New Brunswick Laboratory	N/A
U319A	NBL-SA-Pu(E)-1	Determination of plutonium by controlled-potential coulometry (NBL-SA-Pu(E)-1)	New Brunswick Laboratory	N/A
U320S	WMHPM-0011	Radioactive Waste Management Manual (WMHPM-0011)	Waste Management Operations	unknown
U321A	n/a	WTS queries of prohibited items identified by RTR and VE examinations (n/a)	AMWTP WTS	06/30/2011
U322A		Burial of Radioactive Contaminated Waste on the Rocky Flats Plant Site ()	W. H. Lee	
U323S	BNFL-5232-RPT-TRUW-29	RPT-TRUW-29 Historical Fissle Gram Equivalent (FGE) Comparison Between The TRIPS Database and the AMWTP Waste Tracking System (WTS) (BNFL-5232-RPT-TRUW-29)	BNFL	11/04/2004
U324S				
U325S	N/A	ANL-E TWMIS	AMWTP	12/07/2011

Implementing Document: MP-TRUW-8.13

TRACKING NUMBER	DOCUMENT NUMBER	DOCUMENT TITLE/DESCRIPTION	DOCUMENT AUTHOR	DOCUMENT DATE
U326S	Pu-Fe(OH)3-LaF3-a	Separation of Plutonium by Ferric Hydroxide - Lanthanum Fluoride Precipitation (Pu-Fe(OH)3-LaF3-a)	MFC	01/01/1958
U327S	Pu-A	Plutonium by Lanthanum Fluoride (Pu-A)	MFC	N/A
U328S	ANL-CEN, U-Sum	A Summary of Uranium Analyses (ANL-CEN, U-Sum)	MFC	03/01/1963
U329A	N/A	Database information for INL Generators	Randall C. Morris	02/07/2012
U330S	ANL1505A	Integrated Waste Tracking System Container Profiles for ANL1505A, ANL1505B, and ANL1505C (ANL1505A)	N/A	07/22/2010
U331S	N/A	MD Assay Results 08-07-12	AMWTP	08/07/2012
U332S	N/A	Alloy Facility Removal and Burial	Frank Loudermilk, Jr.	07/01/1981
U333A	CCP-AK-INL-008	Central Characterization Project Acceptable Knowledge Summary Report for Idaho National Laboratory Materials and Fuels Complex Contact-Handled TRU Debris, Waste Stream ID-MFC-S5400, DRAFT E (CCP-AK-INL-008)	Scott Smith	
U334S	n	Form 1066 - BN (n)	AMWTP	10/10/2012
U335S	N/A	Form 1066 for the Mound facility	AMWTP	10/10/2012

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: C1051A	2. Revision: 0

RECORD
C1051A
SWALKER
12/20/2011

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☑ Correspondence
- ☐ Discrepancy

4. Title/Description Information: HWD 071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508

Document Number: HWD 071511-01

Revision: 0

Author: Jeremy Hampton, Treatment Manager

Date: 12/08/2011

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM3, WM5, WM6	BN	All	WS HWD for IDC BN-508. Document provides brief description of generating process and description of waste, identifies building, waste volume estimates, material inputs, packaging information, HWNs/constituents and PCB status.
WS1, WS2, WS3, WS4, WS5, WS6, WS8	BN-508	all	WS HWD for IDC BN-508. Document provides brief description of generating process and description of waste, identifies building, waste volume estimates, material inputs, packaging information, HWNs/constituents and PCB status.

9. Document Summary:

The document is the AMWTP HWD and associated Interoffice Memorandum for IDC BN-508. The documents identify applicable RCRA hazardous waste numbers, hazardous constituents, TSCA determinations (asbestos), waste generation activities, material inputs and packaging.

10. Source Document Data Limitations (if any):

The document may be updated in the future.

11. AK Expert:	Julie Collins	Julie Collins	12/19/2011
	Print	Sign	Date

AMWTP Advanced Mixed Waste Treatment Project	**AMWTP Waste Characterization Checklist**	Form-1086, Rev. 5 Effective: 09/05/08 Page 1 of 3

Implementing Document: MP-WM&M-13.9

]\Waste Stream Name: **Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508** **Hazardous Waste Determination #: 071511-01**

SECTION I: PROCESS KNOWLEDGE EVALUATION (Completed by the generator with assistance from Waste Services personnel, as needed)

1. Waste Generation Location: Building/Room: AMWTF Area: Zone 3 If applicable: Container #: N/A Type/size: N/A

2. Process and Waste Description: (Attachment Included: ☒ Yes ☐ No) LTF: Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508

3. Generation Status: ☐ Anticipated ☒ Existing ☒ Routine Operations ☒ Cleanup/Stabilization Activities ☐ One Time Only ☒ On-going ☐ Secondary

4. Sources used for process evaluation (e.g. MSDS, operational logs, procedures, RTR results, analyses): Process Knowledge, Acceptable Knowledge, RPT-TRUW-83

5. Physical Description (check all that apply): Color: Various ☒ Solid ☐ Organic Liquid ☐ Aqueous Liquid ☐ Sludge ☐ Aerosol ☐ Gas Cylinder ☐ Multi-Layered

6. Waste Characteristics:

Liquids		Solids		All	
a. pH (aqueous only): ☐ < 2 ☐ ≥ 12.5 ☐ > 2 or < 12.5 Exact	Method: ☒ NA	h. Asbestos: If yes, is it friable?	☒ Yes ☒ No ☐ NA ☐ Yes ☐ No ☒ NA	n. PCBs: If Yes, provide concentrations (actual & source) in composition table. PCBs Bulk Product? (40 CFR 761.62)?	☐ Yes ☒ No ☐ NA ☐ Yes ☐ No ☒ NA
b. Flash Point: ☒ NA	Method:	i. Pyrophoric (Water Reactive)	☐ Yes ☒ No ☐ NA	o. Sulfide ≥ 500 mg/kg	☐ Yes ☒ No ☐ NA
c. Total suspended solids <1%	☐ Yes ☐ No ☒ NA	j. Flammable Solid	☐ Yes ☒ No ☐ NA	p. Cyanide ≥ 250 mg/kg	☐ Yes ☒ No ☐ NA
d. Is total organic carbon <1%	☐ Yes ☐ No ☒ NA			q. Oxidizer, per 40 CFR 173.151	☐ Yes ☒ No ☐ NA
e. Fuming Acid/Acid Gases	☐ Yes ☐ No ☒ NA	k. Free liquids; If Yes, quantify: [ ] volume %	☐ Yes ☒ No ☐ NA	r. Treatment Residue	☐ Yes ☒ No ☐ NA
f. Pyrophoric (Air Reactive)	☐ Yes ☐ No ☒ NA	l. RCRA Debris (>60 mm) (≥ 50% by visual inspection) or non-RCRA Rubble	☒ Yes ☐ No ☐ NA ☐ Yes ☒ No ☐ NA	s. Explosive	☐ Yes ☒ No ☐ NA
g. Water Reactive	☐ Yes ☐ No ☒ NA	m. Pyrophoric (Air Reactive)	☐ Yes ☒ No ☐ NA	t. Radioactive	☒ Yes ☐ No ☐ NA

7. Waste Composition: (Must total 100%). Attachment Included: ☐ Yes ☐ No ☐ NA

Constituent	CAS No.	Analysis or PK	Range (If constituent is <1%, use mg/kg or mg/L, otherwise report in %)			Used as a Solvent? (Y/N)	Comments
			From	To	Units		
Iron-based metals/alloys, cellulosics, plastic (waste materials), inorganic materials, PPE (see LTF)	N/A	PK	0	100	%	N	
Discarded Hepa Vacuums (See LTF)	N/A	PK	0	100	%	N	
Non-Debris solids (particulates, dust, dirt)	N/A	PK	0	< 50	%	N	
Supercompactor Sweepings (debris)	N/A	PK	0	100	%	N	

]\Waste Stream Name: **Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508** **Hazardous Waste Determination #: 071511-01**

8. Radioisotopes: Are radioisotopes present? ☒ **Yes** ☐ **No**

SECTION II HAZARDOUS WASTE DETERMINATION (Completed by the generator with assistance from Waste Services personnel, as needed)

1. Is this a solid waste (per 40 CFR 261.2)? ☒ Yes ☐ No (If No, attach regulatory citation)

2. Is waste excluded from regulation under 40 CFR 261.4? ☐ Yes ☒ No If Yes, Regulatory citation:

3. Is this a Hazardous Waste (per 40 CFR 261.3)? ☒ Yes ☐ No

4. If hazardous, is the waste excluded for recycling in accordance with 40 CFR 261.2(e)(1)? ☐ Yes ☒ No If Yes, regulatory Citation:

5. Is waste listed in Subpart D of 40 CFR 261? ☒ Yes ☐ No (If Yes, provide waste codes, regulated hazardous constituent(s), and an explanation of determination.)
Attachment Included: ☒ Yes ☐ No Codes: See attached LTF

6. Is waste characteristic per Subpart C of 40 CFR 261? ☒ Yes ☐ No (If Yes, provide waste codes, regulatory subcategory, and an explanation of determination.)
Attachment Included: ☒ Yes ☐ No Codes: See attached LTF

7.[a] Is the waste prohibited from Land Disposal per 40 CFR 268 regulations? ☐ Yes ☒ No If Yes, is the waste a: ☐ Wastewater or ☐ Non Wastewater.
Is there a specified method of treatment? ☐ Yes ☒ No If Yes, list the specified method: If Waste assays as MTRU and destination is WIPP, then waste is exempt from LDRs. If waste assays as non-TRU (<100 nCi/g), then the MLLW is prohibited from land disposal per 40 CFR 268 regulations and would be a non-wastewater and could be treated via the alternative treatment standards for macroencapsulation.

8.[a] If any waste codes D001 (except for high-TOC Subcategory), D002, D003 (other than reactive cyanide or reactive sulfide), D004-D011, D012-D017(non-wastewaters) or D018-D043 apply, identify/list the underlying hazardous constituents reasonably expected to be present in the waste above Universal Treatment Standards (UTS)?
See item 7 above. AMWTP's LDR treatment standard for MLLW debris is macroencapsulation. ~~UTS~~ are not applicable to debris treated via the alternative treatment standards of macroencapsulation.
UHCs MRL 1/6/11

9. Is the waste mixed or low level? ☒ Yes ☐ No (If Yes, include attachment with isotopic information.)MTRU unless determined to be MLLW (< 100 nCi/g)

10. Is waste TSCA regulated for either of the following? PCBs: ☐ Yes ☒ No Asbestos: ☒ Yes ☒ No MRL 1/6/11

Summary of Waste Determination: ☐ Hazardous (see codes listed above) ☒ Mixed Low-Level (see codes listed above) ☐ Low-Level ☐ Non-Hazardous ☒Other (describe) **Waste is MTRU. If determined to be non-TRU, then MLLW.**

a. HWMA/RCRA Storage Permit/HWMA/RCRA TSA-IS Units requirement for complying with Land Disposal Restrictions.

]\Waste Stream Name:	Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508	Hazardous Waste Determination #: 071511-01

CERTIFICATIONS

I certify that the information in this form and the applicable attachments are fully disclosed and accurate. A good faith effort has been put forward to acquire and verify the information. Willful or deliberate omissions have not been made, and all known and suspected hazards have, to the best of my knowledge, been identified.

Brett Starr Waste Generator Name (Typed/Printed)	Waste Generator Signature	12/08/11 Date
G.O. Henrie Waste Services Specialist (WSS) Technical Reviewer (Typed/Printed)	Waste Services Specialist (WSS) WSS Technical Reviewer Signature	12/8/11 Date

WASTE SERVICES FACILITY LEAD REVIEW/
ENVIRONMENTAL COMPLIANCE AND REGULATORY AFFAIRS OVERSIGHT REVIEW

M. Russell Leavitt Facility Lead Name (Typed/Printed)	M. Russell Leavitt Facility Lead Signature	12/8/11 Date
Brett Garnett Environmental Compliance and Regulatory Affairs Manager (Typed/Printed)	Signature	12/8/11 Date

Idaho Treatment Group

INTEROFFICE MEMORANDUM

To: Distribution

From: Jeremy Hampton, Treatment Manager

Date: December 8, 2011

Subject: HWD 071511-01, Hazardous Debris from Zone 3 of the AMWTF generated under IDC BN-508.

The purpose of this letter to file is to document that a hazardous waste determination (HWD) has been completed in accordance with 40 CFR 262.11 for specific hazardous debris waste generated from the operation and maintenance of the AMWTF associated with radiological Zone 3 and waste generated from IDCs approved in RPT-TRUW-83 from Special Case Waste (SCW) and the Drummed Waste Packaging Glovebox (DWPG) within WMF-676 as identified in the discussion section below.
NOTE: Wastes generated outside of Zone 3 operations and/or wastes that are not included in this HWD include:

1. PCB contaminated, or;
2. Hepa/Pre-filters from WMF-676 and, or;
3. Drummed waste packaging glovebox (DWPG) and special case waste (SCW) repackaged debris that are not associated with authorized feedstock source containers (see RPT-TRUW-83)

Discussion:

IDC BN-508 waste is only generated within the AMWTP WMF-676 facility Zone 3 radiological areas and from the DWPG and SCW from feedstock approved in RPT-TRUW-83. Zone 3 is comprised of rooms 228B, 229B, 224B, 225A, 125B, 124B, 126C and 147. The DWPG and SCW are in room 236.

This HWD will encompass newly generated debris waste with the IDC of BN-508. Debris waste is defined as "Solid material exceeding a 60 mm particle size that intended for disposal and that is; a manufactured object; or plant or animal matter; or natural geologic material." This is debris waste generated in zone 3 areas of the AMWTF that is directly related to supercompactor operations (e.g. debris from box lines). It includes TRU debris waste generated during waste management, maintenance, and clean-up activities performed in WMF-676 Zone 3 in direct support of S/C operations (except for the Zone 3 HEPA and pre-filters generated from the WMF-676 ventilation systems), and includes TRU debris waste from repackaging waste in DWPG and SCW, with an IDC approved in RPT-TRUW-83.

The WMF-676 radiological Zone 3 debris waste is hazardous waste based on the Resource Conservation Recovery Act (RCRA) mixture, derived-from or the contained-in rules.

BN-508 includes non-PCB debris waste from:

1. Repackaging non-PCB debris from north or south box lines
2. Size reduction of non-PCB debris from north or south box lines
3. Repackaged non-PCB debris waste from the DWPG/SCW (if IDC is listed in RPT-83)
4. Cleanup operations associated with zone 3 of WMF-676.
5. Debris from supercompactor glovebox clean-out
6. Zone 3 maintenance/monitoring
7. Conducting spill cleanup operations within WMF-676 zone 3

The waste generated may include, but is not limited to, items such as PPE (bubble suits, tyvek, latex and leather gloves, etc.), drum lids, drum liners, plastic, hand tools, tape, dustpans, brooms, discarded vacuums, replaced equipment and parts and debris items present in the retrieved waste being processed (e.g., paper and rags; gloves; wipes; asbestos; PPE; plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete).

The debris waste may contain small amounts (i.e., less than 50% by volume) of non-debris waste such as: paint flakes, absorbed liquids, soil, dirt, sand, absorbent, or other similar homogeneous solids material. Only absorbents approved by Criticality Safety are to be added to transuranic waste. The approved absorbents include Aquaset, Petroset, and Micro-Cel E and may be used as needed per the applicable Operating Instruction. Only containers that contain > 50% debris waste by volume are associated with this HWD.

1. **Repackaged non-PCB debris from north and south box lines**
   Non-PCB debris waste that may contain minor amounts of non-debris waste is routinely generated as a result of repackaging box line waste. Authorized debris feedstock (as outlined within RPT-TRUW_83) is received into the WMF-676 box lines for processing/repackaging. Wastes are brought into the WMF-676 in boxes for sorting, sizing and repackaging. Wastes are placed in the south or north box line troughs and undergo visual examination. The waste is then repackaged into unlined 55s (i.e., silvers) for supercompaction. Repackaged debris from box line operations include paper and rags; gloves; wipes; asbestos; personal protective equipment (PPE); plastic and rubber items; filters; leaded gloves, aprons, bricks, and sheeting; metal with and without lead or cadmium; floor tiles, piping, sheet rock, insulation, and glass; raschig rings; crucibles; fire brick; wood; Plexiglas®; Benelex®; pieces of equipment and tools; graphite; grit; and asphalt and concrete.

2. **WMF-676 size reduction (plasma cutting)**
   Non-PCB debris that may contain minor amounts of non-debris waste is periodically generated as a result of conducting size reduction operations. Items that are too large to be processed through the supercompactor are sized reduced using a plasma torch in Rm 224 B. The metal debris items are size reduced and returned to the boxline where they are packaged into "silvers" and processed through the supercompactor. The waste generated during this operation may include but is not limited to, contaminated PPE, various metal debris and tools.

3. **Repackaged non-PCB debris waste from the DWPG/SCW (if IDC is listed in RPT-83).**
   Non-PCB debris Waste that may contain minor amounts of non-debris waste is periodically generated within the DWPG or SCW areas (rm 236) as a result of conducting repackaging and/or PI remediation operations. Authorized S/C feedstock debris waste (i.e., IDCs listed within RPT-TRUW-83) that require repackaging and/or require removal/treatment are transported to the DWPG/SCW areas and are opened. Depending upon the reason for transport the waste is removed/treated (as necessary) and repackaged. The wastes generated during this operation may include the same waste items identified within item #1.

4. **WMF-676 Zone 3 cleanup operations**
   Non-PCB debris that may contain minor amounts of non-debris waste is periodically generated as a result of conducting cleanup operations within zone 3(i.e., supercompactor related operations). These areas include the box line processing, lidding, transfer, and assay areas. Over time waste material and/or dust like particulates settle on the floor in these areas. These areas must be cleaned periodically and the waste disposed of. If the vacuums are discarded, they will be managed as debris, if the contents are removed and disposed of separately, the contents will be managed according to the predominant waste form (i.e. debris or non-debris). If the waste, at the point of generation is > 50% debris it will be generated and disposed of under this HWD. The waste generated during this operation may include but is not limited to, contaminated PPE, debris items, dustpans, brooms, discarded vacuums, etc.

5. **Supercompactor glovebox clean-out operations.**
   Non-PCB debris wastes that may contain minor amounts of non-debris waste accumulate in the supercompactor glovebox as a result of compaction operations. Periodic clean-out of the supercompactor glovebox is conducted to remove accumulated debris waste. The debris waste generated during this operation includes, but is not limited to: PPE, metal as well as other waste that meets the definition of debris. The waste is removed from the supercompactor, packet assayed and bulked into 55 gallon drums. The waste material may be a mixture of debris and non-debris type material. If the waste is predominantly debris (> 2.36 inches), BN-508 should be applied to the waste per this HWD. If the sweepings are predominantly non-debris, the waste should be assigned BN-516 per the applicable non-debris HWD.

6. **WMF-676 radiological Zone 3 maintenance and monitoring**
   Non-PCB debris waste that may contain minor amounts of non-debris may be generated within zone 3 areas of the WMF-676 as a result of conducting periodic maintenance and monitoring operations (e.g., replace components and/or evaluate radiological levels). This waste generated during this operation may include but is not limited to debris waste such as PPE, replaced equipment [e.g., HEPA filters not from WMF-676 off-gas system, supercompactor equipment parts]; absorbent PIGs, radiological swipes.

7. ***Spill cleanup operations within WMF-676 zone 3***
   Non-PCB debris waste that may contain minor amounts of non-debris may be generated within zone 3 areas of WMF-676 as a result of conducting spill clean-up operations. The debris waste from spill clean-up may include, but is not limited to: PIG® mats/blankets/pillows, paper and rags; gloves; wipes; PPE.

Waste generated under this HWD is not PCB contaminated and is not regulated under TSCA.

The waste is presumed to be Beryllium contaminated. Feed to the supercompactor is known to be beryllium contaminated to less than 1%. Beryllium contamination is expected to be < 1%.

Repackaged box line waste may contain asbestos.

Characterization basis:
The applicable RCRA HWNs are assigned based off of process knowledge of waste that is processed through the facility and RCRA requirements (i.e., RCRA derived-from, mixture and contained in rules). The HWNs are as follows.

F001	F006	D005	D009	D027	D034
F002	F007	D006	D010	D028	D037
F004	F009	D007	D011	D029	D043
F005	D004	D008	D022	D030	

F001	1,1,1-trichloroethane	F005	Toluene
	1,1,2-trichloro-1,2,2-trifluoroethane	F006	Electroplating waste
	1,1,2,2-tetrachloro-1,2-difluoroethane	F007	Electroplating waste
	Carbon tetrachloride	F009	Electroplating waste
	Methylene chloride	D004	Arsenic
	Tetrachloroethylene	D005	Barium
	Trichloroethylene	D006	Cadmium
	trichlorofluoromethane	D007	Chromium
F002	1,1,1-trichloroethane	D008	Lead
	1,1,2-trichloro-1,2,2-trifluoroethane	D009	Mercury
	1,2-dichlorobenzene	D010	Selenium
	Chlorobenzene	D011	Silver
	Methylene chloride	D022	Chloroform
	Tetrachloroethylene	D027	1,4-dichlorobenzene
	Trichloroethylene	D028	1,2-dichloroethane
	trichlorofluoromethane	D029	1,1-dichloroethylene
F004	Cresols	D030	2,4-dinitrotoluene
	nitrobenzene	D034	Hexachloroethane
F005	2-ethoxyethanol	D037	Pentachlorophenol
	2-nitropropane	D043	Vinyl chloride
	Benzene		
	Carbon disulfide		
	Isobutanol		
	Methyl ethyl ketone (MEK)		
	pyridine		

Material Input

Aquaset®, Aquaset II-G®, Petroset II®, Petroset IIG, Micro-Cel® E, PIG absorbents.

Windex and 409 cleaners used on windows of S/C

Packaging

Waste will be packaged in accordance with OI-24 (Radioactive Waste Packaging) or facility specific instructions (FOI's and TOI's) such as TOI-004 (Recovery of Holdup Material from 1st Floor Cells in WMF-676 using 55-gallon or larger drums that are DOT 7A Type A-approved or DOT IP-1-approved boxes (90 cu. ft. boxes manufactured by Premiere or Bull Run

Waste items will be single or double bagged using a 6-mil (or thicker) bag and/or placed in an open head drum with a 6-mil (or thicker) polyethylene drum bag liner.

A waste container may be lined or unlined (e.g., silvers), bulk loaded with un-bagged waste items, loaded with a single bagged item, or loaded with multiple bagged items.

Examples of packaging variation are as follows:

1. Repackaged non-PCB debris from north and south box lines are bulk loaded into a 55-gallon drum for compaction (i.e., "silvers").
2. WMF-676 size reduction (plasma cutting) wastes are bulk loaded into an unlined transfer cart (i.e., no drum bags or liners) and returned to the box line for processing (per INST-FOI-16)
3. Repackaged non-PCB debris wastes from the DWPG/SCW (if IDC is listed in RPT-83) may be bulk loaded or bagged items placed into a single bagged 55-gallon drum.
4. Waste from WMF-676 systems 335, 345, 370 and 390 cleanup operations may be bulk loaded or bagged items placed into single bagged 55-gallon drums and sent to the box lines for reprocessing.
5. Waste from Supercompactor glovebox clean-out operations may be bulk loaded or bagged items placed into a single bagged 55-gallon drum.
6. Wastes from WMF-676 radiological Zone 3 maintenance and monitoring operations may be bulk loaded or bagged items placed into a single bagged 55-gallon drum.
7. Waste items/material from spill cleanup operations within WMF-676 zone 3 may be single or double bagged. The waste may be placed inside a bag and then placed in a bagged 55-gallon drum or the waste may be double bagged prior to placing waste into a bagged 55-gallon drum.

Conclusion

Debris waste generated under this HWD is from a process or system directly related to supercompaction (as discussed above) and other radiological Zone 3 operations as noted in the purpose section will be assigned the IDC BN-508 (AMWTP Newly Generated Debris). If assay determines that this waste is < 100 nCi/g, it will be re-assigned the MLLW IDC BN-620, or If at the point of generation, waste items can be demonstrated to be contaminated < 5,000 dpm/100cm^2 and have been visually inspected and show no signs of significant material, the waste may be packaged with the IDC of BN-620.

References:

INST-FOI-16 (Boxline Operations), INST-FOI-17 (Facility Visual Examination Operations), INST-FOI-32 (Size Reduction of Large Items), INST-FOI-23 (Special Case Waste Operations), INST-OI-24 (Packaging Radioactive Waste), INST-OI-88 (Spill/Leak Response and Cleanup), MP-EC&P-7.10 Spill Response Procedure)

Reports: RPT-TRUW-83 (Acceptable Knowledge Summary for Supercompacted Debris Waste (BN-510.1), RPT-TRU-05 (Waste Matrix Code Reference Manual)

MSDSs: Aquaset® (147), Aquaset II-G® (523), Petroset II® (706), Petroset IIG, Micro-Cel® E (1096), PIG absorbents: White PIG Mat (016), White PIG Sock (014), Blue PIG Mat (029) and Blue PIG Sock (014).

Jh/hc

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AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	AMWTP Form1068 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

2006-0166
~~T-0578~~
Record
DB 7-13-05

Reference Number: C311A

AK Type:

- ☐ **Published Documentation**
- ☐ **Unpublished Data**
- ✓ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Memorandum from Steve Carpenter, TRU Programs SPM/AKE Designee to Eric Schweinsberg, Site Project Manager, "Detection of 1,1-dichloroethylene in BNINW216 Rev.1 Reconciliation Lots SPC-026-2005, April 19, 2005

Information Source: Steve Carpenter, TRU Programs SPM/AKE Designee

AK #[a]	AK Information Summary
WS4, WS6, WM4 – RF001, RF002, RF800	The memorandum identifies the detection of 1,1-Dichloroethylene (1,1-DCE) upper 90% Confidence Interval values of analyte HSG results above the PRQL during reconciliation of waste stream BNINW216 Rev. 1 data quality reconciliation lot BNINW216.26. The memorandum reflects that as indicated by the WIPP WAP language in permit attachment B4, Section B4-3b, page B4-12, where homogeneous solids (S3000) waste HSG results are not supported by analytical or AK information the D029 HWN does not have to be applied. As a result the D029 HWN was not to be assigned to this waste stream. The document also reflects that 1,1-DCE in HSG results could be due to radiolytic degradation of known constituents trichloroethylene and 1,1,1-trichloroethane. A foot note was to be added to reconciliation lots for the waste stream.

Source Document Data Limitations (if any): N/A

AK Expert:

Vivian Sendelweck / Vivian Sendelweck **Date:** 7/13/05

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

BNFL Inc.

Memorandum

To: Eric Schweinsberg,
Site Project Manager

Date: April 19, 2005
Pages: 2 page

From: Steve Carpenter,
TRU Programs SPM/AKE Designee

Subject: **Submittal to File: Detection of 1,1-dichloroethylene in BNINW216 Rev. 1 Reconciliation Lots**
SPC-026-2005

This memorandum is generated for notification regarding detection of 1,1-dichloroethylene (1,1-DCE) Upper 90 % Confidence Limit (UCL_{90}) values of analyte headspace gas results above the Program Required Quantitation Limits (PRQL) observed during reconciliation of waste stream BNINW216 Rev. 1 data quality reconciliation lot BNINW216.26.

1,1-DCE is a WAP target analyte and has an EPA hazardous waste code of D029 and is identified by RCRA as a toxicity characteristic waste. In the permit attachment B4, section B4-3b, page B4-12 states;

"Hazardous wastes associated with S3000 and S4000 waste streams will be verified based on the results of the total/TCLP analysis of a representative homogenous waste sample. If discrepancies between the results obtained from homogenous waste sampling and analysis and headspace-gas sampling and analysis exist (i.e., a VOC is detected in the solidified waste but not in the headspace), the most conservative results will be used to verify acceptable knowledge and assign hazardous waste codes, as applicable. As with headspace gas, if the total/TCLP results indicate that the concentration of a characteristic waste or non-toxic constituent of an F003 waste is below regulatory levels, the hazardous waste code assigned initially by acceptable knowledge may be changed as part of the confirmatory process. Otherwise, if an F-listed waste constituent is detected, the appropriate hazardous waste code shall be applied."

For S3000 waste, analytes with associated hazardous waste codes with UCL_{90} values greater than the PRQL, based on totals analysis but not supported by headspace-gas results, must still be applied. The inverse of this, i.e. headspace gas data without the confirmation by totals analysis, does not necessitate the assignment of a hazardous waste code for S3000 waste.

The following information is presented as evidence for not assigning the D029 HWN to the BNINW216 Rev. 1 waste stream:

AMWTP

- 1,1-DCE is not identified in the AMWTP AK, nor the Rocky Flats AK, as being used for solvent properties or used in the processes that generated the waste
- 1,1-DCE was not detected in the solids Totals VOC analysis for the waste stream BNINW216 Rev. 1, RCRA coring lots Lot 1, Lot 3 or Lot 4
- 1,1-DCE was not detected in the solids Totals VOC analysis for the same waste presented in Rocky Flats waste stream profiles RF139.01 and RF107.01
- 1,1-DCE was not detected in solids Totals VOC analysis for the same waste stream for the 3,100 m^3 project.

Based on the information presented in AK and evidence from the solids Totals VOC analysis, there is sufficient data available to justify that 1,1-DCE is not a constituent of the waste and therefore HWN D029 will not be assigned to the waste. The reconciliation lots will now provide a footnote for 1,1-DCE in the EPA Code column of Table 1A of the CIS indicating that HWN D029 will not be assigned to the waste stream based on the above bulleted items. The presence of 1,1-DCE in the headspace-gas is potentially due to degradation of known constituents trichloroethylene and 1,1,1-trichloroethane.

Please direct all questions or comments to Steve Carpenter at 557-7304.

Steve Carpenter, TRU Programs SPM/AKE Designee
Advanced Mixed Waste Treatment Project

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1,1-DICHLOROETHYLENE

CASRN: 75-35-4

For other data, click on the Table of Contents

Environmental Fate & Exposure:

Environmental Fate/Exposure Summary:

1,1-Dichloroethylene's production and use as a copolymer in various types of saran, in adhesives, and as a component of synthetic fibers may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 600 mm Hg at 25 deg C indicates **1,1-dichloroethylene** will exist solely as a vapor in the ambient atmosphere. Vapor-phase **1,1-dichloroethylene** will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 1.5 days. Products which are formed in the photooxidation of **1,1-dichloroethylene** in the presence of nitrogen oxides include chloroacetyl chloride, phosgene, formaldehyde, formic acid, hydrochloric acid, carbon monoxide, and nitric acid. If released to soil, **1,1-dichloroethylene** is expected to have high mobility based upon a Koc of 64. Volatilization from moist soil surfaces is expected to be an important fate process based upon a estimated Henry's Law constant of 2.61X10-2 atm-cu m/mole. If released into water, **1,1-dichloroethylene** is not expected to adsorb to suspended solids and sediment based upon the Koc. Aerobic biodegradation is not expected to be an important fate process, with **1,1-dichloroethylene** reaching 0% of its theoretical BOD in 4 weeks using the Closed Bottle Test. However, in anaerobic microcosms designed to simulate a groundwater environment, 50% of the **1,1-dichloroethylene** disappeared in 5-6 months. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 3 hrs and 4 days, respectively. A BCF range of 2.5 to <13 suggests bioconcentration in aquatic organisms is low. A hydrolysis half-life of 6-9 months has been observed with no significant difference in hydrolysis rate between pH 4.5 and 8.5. Occupational exposure to **1,1-dichloroethylene** may occur through inhalation and dermal contact with this compound at workplaces where **1,1-dichloroethylene** is produced or used. Monitoring data indicate that the general population may be exposed to **1,1-dichloroethylene** via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with this compound and other consumer products containing **1,1-dichloroethylene**, such as plastic wrap which contains residual monomer. (SRC)
PEER REVIEWED

Probable Routes of Human Exposure:

Humans are exposed to **vinylidene chloride** from ambient air, particularly near industrial sources and contaminated drinking water. Indoor air sometimes contains **vinylidene chloride** although its source is unknown. Exposure can also occur from ingestion of food wrapped in plastic that contains residue **vinylidene chloride** monomer(1).
[(1) Fishbein L; Sci Total Environ 11: 111-61 (1979)]**PEER REVIEWED**

Number of exposed workers not available; however, the estimated population residing near plants manufacturing monomers and polymers of **vinylidene chloride** in 1976 is 3,573,385(1,2). Levels of 8 mg/cu m (2 ppm) were reported to occur as contaminants in atmospheres of submarines, and levels of 0-2 ppm have been found in spacecraft(3).
[(1) Fishbein L; Sci Total Environ 11: 111-61 (1979) (2) Basu D et al; Health Assessment Document for Vinylidene Chloride USEPA External Review Draft p 7-1 to 7-21 (1983) (3) IARC; Monograph Some Monomers, Plastics and Synthetic Elastomers, and Acrolein 19: 439-59 (1979)]**PEER REVIEWED**

NIOSH (NOES Survey 1981-1983) has statistically estimated that 2,679 workers (291 of these are female) are potentially exposed to **1,1-dichloroethylene** in the US(1). Occupational exposure to **1,1-dichloroethylene** may occur through inhalation and dermal contact with this compound at workplaces where **1,1-dichloroethylene** is produced or used(SRC). Monitoring data indicate that the general population may be exposed to **1,1-dichloroethylene** via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with this compound and consumer containing **1,1-dichloroethylene** (SRC).
[(1) NIOSH; National Occupational Exposure Survey (NOES) (1983)]**PEER REVIEWED**

Body Burden:

12% of approximately 300 breath samples from residents of Elizabeth and Bayonne New Jersey contained quantifiable levels (0.2-2 ug/cu m) of **1,1-dichloroethylene**(1).
[(1) Wallace L et al; J Occup Med 28: 603-7 (1986)]**PEER REVIEWED**

Natural Pollution Sources:

Vinylidene chloride is not known to occur as a natural product(1).
[(1) IARC; Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans 39: 195-226 (1986)]**PEER REVIEWED**

Artificial Pollution Sources:

1,1-Dichloroethylene's production and use as a copolymer in various types of saran, in adhesives, and as a component of synthetic fibers(1) may result in its release to the environment through various waste streams(SRC). **1,1-Dichloroethylene** is formed by a minor pathway during the anaerobic biodegradation of trichloroethylene(4) and also by the hydrolysis of 1,1,1-trichloroethane(3). Therefore, there is a potential for it to form in groundwater that has been contaminated by chlorinated solvents. **1,1-Dichloroethylene** is also produced by the thermal decomposition of 1,1,1-trichloroethane, a reaction that is catalyzed by copper(2). 1,1,1-Trichloroethane is used as a degreasing agent in welding shops so there is a potential for **1,1-dichloroethylene** to be formed in these shops as well as in other industrial environments where 1,1,1-trichloroethane is used near sources of heat(2).
[(1) Lewis RJ Sr, ed; Hawley's Condensed Chemical Dictionary. 13th ed. NY, NY: John Wiley & Sons, Inc. p. 1170 (1997) (2) Glisson BT; Am Ind Hyg Assoc J 47: 427-35 (1986) (3) Cline PV, Delfino JJ; Am Chem Soc Div Environ Chem Natl Mtg, New Orleans LA 27: 577-9 (1987) (4) Fiorenza S et al; pp. 277-86 in Bioremediation of chlorinated polycyclic aromatic hydrocarbons. Hinchee RE, ed. Boca Raton, FL: Lewis (1994)]**PEER REVIEWED**

Environmental Fate:

TERRESTRIAL FATE: Based on a classification scheme(1), a Koc value of 64(2), indicates that **1,1-dichloroethylene** is expected to have high mobility in soil(SRC). Volatilization of **1,1-dichloroethylene** from moist soil surfaces is expected to be an important fate process(SRC) given a Henry's Law constant of 2.61X10-2 atm-cu m/mole(3). The potential for volatilization of **1,1-dichloroethylene** from dry soil surfaces may exist(SRC) based upon a estimated vapor pressure of 600 mm Hg(4). Biodegardation in soil is not an important environmental fate process(SRC) based a 0% theoretical BOD(5). However, anaerobic degradation may occur, with degradation occurring in 1-3 weeks under simulated landfill conditions(6).
[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Sabljic A et al; Chemosphere 31: 4489-514 (1995) (3) Gossett JM; Environ Sci Tech 21: 202-6 (1987) (4) Boublik T et al; The Vapour Pressures of Pure Substances. 2nd Rev Ed, Amsterdam: Elsevier p. 96

(1984) (5) Chemicals Inspection and Testing Institute; Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan. Japan Chemical Industry Ecology - Toxicology and Information Center. ISBN 4-89074-101-1 p. 2-23 (1992) (6) Hallen RT et al; Am Chem Soc Div Environ Chem 26th Natl Mtg 26: 344-6 (1986)]**PEER REVIEWED**

AQUATIC FATE: Based on a classification scheme(1), a Koc value of 64(2), indicates that **1,1-dichloroethylene** is not expected to adsorb to suspended solids and sediment(SRC). Volatilization from water surfaces is expected(3) based upon a Henry's Law constant of 2.61X10-2 atm-cu m/mole(4). Using this Henry's Law constant and an estimation method(3), volatilization half-lives for a model river and model lake are 2 hrs and 4 days, respectively(SRC). In water, the photooxidation of **1,1-dichloroethylene** is insignificant(5,6). A hydrolysis half-life of 6-9 months has been observed with no significant difference in hydrolysis rate between pH 4.5 and 8.5(7). According to a classification scheme (8), BCF values of 2.5 to <13(9), suggest bioconcentration in aquatic organisms is low(SRC). Biodegradation in water is not expected to be an important fate process, with **1,1-dichloroethylene** reaching 0% of its theoretical BOD in 4 weeks(9). However, in anaerobic microcosms designed to simulate a groundwater environment, 50% of the **1,1-dichloroethylene** disappeared in 5-6 months(10).
[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Sabljic A et al; Chemosphere 31: 4489-514 (1995) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 4-9, 15-1 to 15-29 (1990) (4) Gossett JM; Environ Sci Tech 21: 202-6 (1987) (5) Mabey WB et al; Aquatic Fate Process Data for Organic Priority Pollutants. USEPA 440/4-81-014 p. 157 (1981) (6) Callahan MA et al; Water-Related Environmental Fate of 129 Priority Pollutants. USEPA 440/4-79-029a p. 50-1 to 50-10 (1979) (7) Cline PV, Delfino JJ; Am Chem Soc Div Environ Chem Preprint New Orleans LA 27: 577-9 (1987) (8) Franke C et al; Chemosphere 29: 1501-14 (1994) (9) Chemicals Inspection and Testing Institute; Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan. Japan Chemical Industry Ecology - Toxicology and Information Center. ISBN 4-89074-101-1 p. 2-23 (1992) (10) Barrio-Lage G et al; Environ Sci Technol 20: 96-9 (1986)]**PEER REVIEWED**

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere(1), **1,1-dichloroethylene**, which has a vapor pressure of 600 mm Hg at 25 deg C(2), is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase **1,1-dichloroethylene** is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals(SRC); the half-life for this reaction in air is estimated to be 1.5 days(SRC), calculated from its rate constant of 1.09X10-11 cu cm/molecule-sec at 25 deg C(3). Under photochemical smog situations with nitrogen dioxide present, **1,1-dichloroethylene** decomposes rapidly (half-life <2 hr)(4).
[(1) Bidleman TF; Environ Sci Technol 22: 361-367 (1988) (2) Boublik T et al; The Vapour Pressures of Pure Substances. 2nd Rev ed, Amsterdam: Elsevier p. 96 (1984) (3) Kwok ESC, Atkinson R; Estimation of hydroxyl radical reaction rate constants for gas-phase organic compounds using a structure-reactivity relationship: an update. Riverside, CA: Univ CA, Statewide Air Pollut Res Ctr. CMA Contract No. ARC-8.0-OR (1994) (4) Edney E et al; Atmospheric Chemistry of Several Toxic Compounds. USEPA-600/53-82-092 (1983)]**PEER REVIEWED**

Environmental Biodegradation:

AEROBIC: **1,1-Dichloroethylene**, present at 9.7 mg/l, reached 0% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 2 mg/l and the Closed Bottle Test(1). In another study, 45-78% of the chemical was lost in 7 days when incubated with a wastewater inoculum; however, a sizeable fraction of the loss was due to volatilization(2). 97% of **1,1-dichloroethylene** was reported to be removed in a municipal wastewater plant(3) but again the fraction lost by evaporation is unknown (SRC). **1,1-Dichloroethylene** at a concn of 160 ug/l was degraded using continuous mixed, batch-fed

reactors at a 20-day operating solids retention time(4).
[(1) Chemicals Inspection and Testing Institute; Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan. Japan Chemical Industry Ecology - Toxicology and Information Center. ISBN 4-89074-101-1 p. 2-23 (1992) (2) Tabak HH et al; J Water Pollut Control Fed 53: 1503-18 (1981) (3) Patterson JW, Kodukala PS; Chem Eng Prog 77: 48-55 (1981) (4) Long JL et al; J Environ Eng 119: 300-20 (1993)] **PEER REVIEWED**

ANAEROBIC: Using microcosms designed to simulate the anaerobic conditions in groundwater(1) and landfills(2), **1,1-dichloroethylene** underwent reductive dechlorination to vinyl chloride. In the microcosms designed to simulate a groundwater environment, 50% of the **1,1-dichloroethylene** disappeared in 5-6 months(1). Under the simulated landfill conditions, degradation occurred in 1-3 weeks(2). In another anaerobic biodegradation study that used materials from an aquifer that receive municipal landfill leachate and is known to support methanogenesis, **1,1-dichloroethylene** disappeared in 40 weeks(3). However, no significant degradation occurred for 16 weeks. **1,1-Dichloroethylene** was formed from the municipal solid waste as a degradation product(3). An effluent concn of 2 ug/l was measured using continuous mixed, batch-fed reactors at a 53-day operating solids retention time with **1,1-dichloroethylene** influent at a concn of 120 ug/l(4).
[(1) Barrio-Lage G et al; Environ Sci Technol 20: 96-9 (1986) (2) Hallen RT et al; Am Chem Soc Div Environ Chem 26th Natl Mtg 26: 344-6 (1986) (3) Wilson BH et al; Environ Sci Technol 20: 997-1002 (1986) (4) Long JL et al; J Environ Eng 119: 300-20 (1993)]**PEER REVIEWED**

Environmental Abiotic Degradation:

The rate constant for the vapor-phase reaction of **1,1-dichloroethylene** with photochemically-produced hydroxyl radicals is 1.09X10-11 cu cm/molecule-sec at 25 deg C(1). This corresponds to an atmospheric half-life of about 1.5 days at an atmospheric concentration of 5X10+5 hydroxyl radicals per cu cm(1). The rate constant for the vapor-phase reaction of **1,1-dichloroethylene** with ozone has been estimated as 3.6X10-20 cu cm/molecule-sec at 25 deg C(SRC) using a structure estimation method(2). This corresponds to an atmospheric half-life of about 320 days at an atmospheric concentration of 7X10+11 ozone molecules per cu cm(3).
[(1) Kwok ESC, Atkinson R; Estimation of hydroxyl radical reaction rate constants for gas-phase organic compounds using a structure-reactivity relationship: an update. Riverside, CA: Univ CA, Statewide Air Pollut Res Ctr. CMA Contract No. ARC-8.0-OR (1994) (2) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993) (3) Atkinson R, Carter WPL; Chem Rev 84: 437-70 (1984)]**PEER REVIEWED**

Under photochemical smog situations with nitrogen dioxide present, **1,1-dichloroethylene** decomposes rapidly (half-life <2 hr)(2). Products which are formed in the photooxidation of **1,1-dichloroethylene** in the presence of nitrogen oxides include chloroacetyl chloride, phosgene, formaldehyde, formic acid, hydrochloric acid, carbon monoxide, and nitric acid(1,2). When adsorbed on silica gel, **1,1-dichloroethylene** undergoes photolysis; approximately 72% of it degrades on exposure to 170 hrs of sunlight(5). In water, the photooxidation of **1,1-dichloroethylene** is insignificant(3,4). A hydrolysis half-life of 6-9 months has been observed with no significant difference in hydrolysis rate between pH 4.5 and 8.5(6). This value differs markedly from the estimated hydrolytic half-life of 2 yr at pH 7(7). The environmental base-catalyzed hydrolysis half-life at 25 deg C and pH 7 for **1,1-dichloroethylene** was 1.2X10+8 yrs(8).
[(1) Edney E et al; Atmospheric Chemistry of Several Toxic Compounds. USEPA-600/53-82-092 (1983) (2) Gay BW et al; Environ Sci Technol 10: 58-67 (1976) (3) Mabey WB et al; Aquatic Fate Process Data for Organic Priority Pollutants. USEPA 440/4-81-014 p. 157 (1981) (4) Callahan MA et al; Water-Related Environmental Fate of 129 Priority Pollutants. USEPA 440/4-79-029a p. 50-1 to 50-10 (1979) (5) Parlar H; Fresenius Z Anal Chem 319: 114-8 (1984) (6) Cline PV, Delfino JJ; Am Chem Soc Div

Environ Chem Preprint New Orleans LA 27: 577-9 (1987) (7) Schmidt-Bleek F et al; Chemosphere 11: 383-415 (1982) (8) Jeffers PM et al; Environ Sci Technol 23: 965-9 (1989)]**PEER REVIEWED**

Environmental Bioconcentration:

BCFs of 2.5 to 6.4 and <13 were measured for **1,1-dichloroethylene** at concns of 0.5 and 0.05 mg/l, respectively(1). According to a classification scheme(2), these BCF values suggest bioconcentration in aquatic organisms is low(SRC).
[(1) Chemicals Inspection and Testing Institute; Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan. Japan Chemical Industry Ecology - Toxicology and Information Center. ISBN 4-89074-101-1 p. 2-23 (1992) (2) Franke C et al; Chemosphere 29: 1501-14 (1994)]**PEER REVIEWED**

Soil Adsorption/Mobility:

The Koc for **1,1-dichloroethylene** is 64(1). According to a classification scheme(2), this Koc value suggests that **1,1-dichloroethylene** is expected to have high mobility in soil.
[(1) Sabljic A et al; Chemosphere 31: 4489-514 (1995) (2) Swann RL et al; Res Rev 85: 17-28 (1983)]**PEER REVIEWED**

Volatilization from Water/Soil:

The Henry's Law constant for **1,1-dichloroethylene** is 2.61X10-2 atm-cu m/mole(1). This Henry's Law constant indicates that **1,1-dichloroethylene** is expected to volatilize rapidly from water surfaces(2). Based on this Henry's Law constant, the volatilization half-life from a model river (1 m deep, flowing 1 m/sec, wind velocity of 3 m/sec)(2) is estimated as 2 hours(SRC). The volatilization half-life from a model lake (1 m deep, flowing 0.05 m/sec, wind velocity of 0.5 m/sec)(2) is estimated as 4 days(SRC). **1,1-Dichloroethylene's** Henry's Law constant indicates that volatilization from moist soil surfaces may occur(SRC). The potential for volatilization of **1,1-dichloroethylene** from dry soil surfaces may exist (SRC) based upon a vapor pressure of 600 mm Hg(3).
[(1) Gossett JM; Environ Sci Tech 21: 202-6 (1987) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 15-1 to 15-29 (1990) (3) Boublik T et al; The Vapour Pressures of Pure Substances. 2nd Rev Ed, Amsterdam: Elsevier p. 96 (1984)]**PEER REVIEWED**

Environmental Water Concentrations:

GROUNDWATER: Contaminated drinking water wells in New Jersey, Massachusetts and Maine had maximum **1,1-dichloroethylene** concentrations of 280, 118, and 70 ppb, respectively(3). A 13-US city survey of raw groundwater supplies resulted in 15.4% pos, and 0.5 ppb avg and max(2). Miami, Florida had 0.1 ppb **1,1-dichloroethylene** in their raw drinking water supply(1). **1,1-Dichloroethylene** was detected in several domestic and industrial well water samples in Sacramento, CA(4). In a survey of 15 Japanese cities conducted in 1982, 10 of 1,083 shallow wells and 3 of 277 deep wells were found to contain **1,1-dichloroethylene**(5).
[(1) Coleman WE et al; pp. 305-27 in Analysis and Identification of Organic Substances in Water. Keith L, ed. Ann Arbor, MI: Ann Arbor Sci (1976) (2) Coniglio WA et al; The Occurrence of Volatile Organics in Drinking Water Exposure Assessment Project. Criteria and Standards Division, Science and Technology Branch (1980) (3) Burmaster DE; Environ 24: 6-13,33-6 (1982) (4) USEPA; Subst Risk Not, 8(e) 35 USEPA 560/11-80-020 (1980) (5) Tase N; Environ Geol Water 20: 15-20 (1992)]**PEER REVIEWED**

DRINKING WATER: In a nationwide survey, **1,1-dichloroethylene** was detected in 7.1% of finished supplies from groundwater sources(4). In 1979, the highest reported concn was 0.1 ppb(1,3). Of 103 USA cities sampled, 1.9% pos, 0.36 mean ppb mean, 0.2-0.51 ppb range in finished surface water(5). 13 USA cities sampled, 7.7% pos, 0.2 ppb mean and max, in finished groundwater(2,5). In a screening of 1174 community wells and 617 private wells in Wisconsin, 1 community and 3 private wells had detectable levels of **1,1-dichloroethylene**(6). According to the USA Groundwater Supply Survey (945 supplies derived from groundwater chosen both randomly and on the basis that they may contain VOCs) 24 samples were positive for **1,1-dichloroethylene**, with a max of 6.3 ppb(7). Mean and max conc of **1,1-dichloroethylene** in 2 New Jersey drinking water supplies serving roughly 100,000 persons each ranged from 0.1-0.2 and 0.9-2.5 ppb, respectively(8). **1,1-Dichloroethylene** was one of the most frequently detected pollutants in California public drinking water wells, sampled during 1984 and 1990 (9). It was present in 72 of 7,712 wells sampled at a max concn of 78 ug/l(9).
[(1) IARC; Monograph. Some Monomers, Plastics and Synthetic Elastomers, and Acrolein. 19: 439-59 (1979) (2) Council on Environmental Quality Contamination of Groundwater by Toxic Organic Chemicals (1981) (3) Fishbein L; Sci Total Environ 11: 111-61 (1979) Arbor Sci p 305-27 (1976) (4) Dyksen JE, Hess AF III; J Amer Water Works Assoc 74:394-403 (1982) (5) Coniglio WA et al; The Occurrence of Volatile Organics in Drinking Water Exposure Assessment Project. Criteria and Standards Division, Science and Technology Branch (1980) (6) Krill RM, Sonzogni WC; J Am Water Works Assoc 78: 70-5 (1986) (7) Westrick JJ et al; J Am Water Works Assoc 76: 52-9 (1984) (8) Wallace LA et al; Environ Res 43: 290-307 (1987) (9) Lam RHF et al; pp. 15-44 in Water Contamination and Health. Wang RGM, ed. NY, NY: Marcel Dekker (1994)]**PEER REVIEWED**

SURFACE WATER: **1,1-Dichloroethylene** was detected in 3 tributaries and 7 of 8 sites on the Ohio River (4972 samples, 343 pos): 304 samples 0.1 to 1.0 ppb, 36 samples 1.0 to 10 ppb, and 3 samples >10 ppb(3). 2 of 4 cities with surface water contaminated with industrial, municipal, agricultural, and natural waste, which also acted as a source of drinking water supply contained **1,1-dichloroethylene** in the raw water; of the pos supplies one contained <0.1 ppb and one was not quantified(1). In a survey of 105 USA cities using surface water supplies, no **1,1-dichloroethylene** was detected in the raw water(2). The reported concn of **1,1-dichloroethylene** in Quantico Creek water, off the Potomac River, VA collected in the spring of 1986 was <2 ug/l(4).
[(1) Coleman WE et al; pp. 305-27 in Analysis and Identification of Organic Substances in Water. Keith L, ed. Ann Arbor, MI: Ann Arbor Sci (1976) (2) Coniglio WA et al; The Occurrence of Volatile Organics in Drinking Water Exposure Assessment Project. Criteria and Standards Division, Science and Technology Branch (1980) (3) Ohio River Valley Water Sanit Comm; Assessment of water quality conditions, Ohio River Mainstream 1980-81 Cincinnati, OH (1982) (4) Hall LW Jr et al; Aquat Tox 10: 73-99 (1987)]**PEER REVIEWED**

Effluent Concentrations:

1,1-Dichloroethylene was detected, not quantified, in effluent from USA latex and chemical manufacturing plants(1,2). A concn of 32 ppb was detected in wastewater discharged from a chemical manufacturing plant in the Netherlands(1,2). Concns in samples from the 4 largest, publicly owned, treatment plants in Southern Calif were as follows: primary effluent, 3 of 4 pos, <10 to 20 ppb, secondary effluent, 2 of 3 pos, <10 ppb, 7 mile sludge and centrate, 2 of 3 pos, <10 ppb(3). It was detected in 1 of 2 municipal treatment plants(4). Industries with mean **1,1-dichloroethylene** effluent concn >100 ppb were as follows: metal finishing (760 ppb), non-ferrous metal mfg and organic chemicals mfg/plastics(5). 17% of 48 samples of influent to a sewage treatment plant in US tested positive, with 5.0 ppb being the avg concn when found above detection limit(4).
[(1) IARC; Monograph Some Monomers, Plastics and Synthetic Elastomers, and Acrolein 19: 439-59 (1979) (2) Fishbein L; Sci Total Environ 11: 111-61 (1979) (3) Young DR; Ann Rep Southern Calif Coastal Water Res Proj. pp. 103-12 (1978) (4) Callahan MA et

al; Proc Natl Conf Munic Sludge Manag. 8th pp. 55-61 (1979) (5) USEPA; Treatability Manual page I.12.24-1 to I.12.24-5 USEPA 600/2-82-001a (1981)]**PEER REVIEWED**

Atmospheric Concentrations:

URBAN/SUBURBAN: **1,1-Dichloroethylene** was detected in 325 USA samples at 8.0 parts/trillion mean, 5 parts/trillion median, with 25% of samples >7.5 parts/trillion and a max concn of 2400 parts/trillion(1). It was detected but not quantified in samples from representative cities in New Jersey (4,5). Samples from 3 western USA urban areas contained 4.9 to 28.8 parts/trillion mean concn(6). Samples from 5 unspecified US cities contained concns of 0-31 part/trillion avg, with 34-224 parts/trillion max(7).
[(1) Brodzinsky R, Singh HB; Volatile Organic Chemicals in the Atmosphere: An Assessment of Available Data 198 p SRI Inter Contract 68-02-3452 (1982) (4) Harkov R et al; Toxic and Carcinogenic Air Pollutants in New Jersey - Volatile Organic Substances, Unpublished work Trenton NJ: Office of Toxic Substances Res (1981) (5) Lioy PJ et al; J Water Pollut Control Fed 33: 649-57 (1983) (6) Singh HB et al; Atmos Environ 15: 601-12 (1981) (7) Singh HB et al; Environ Sci Technol 16: 872-80 (1982)]**PEER REVIEWED**

INDOOR AIR: **1,1-Dichloroethylene** was found in 4 of 15 samples of indoor air taken during the summer, concn range of 1.8-93.6 ppb, and 4 of 16 samples taken during the winter, concn range of 5.0-9.6 ppb(1). None of the chemical was found in parallel samples taken out of doors(1). No correlation was found between the presence of **1,1-dichloroethylene** in indoor air and structural characteristics of the dwelling or activity(1).
[(1) Pleil JD; Volatile Organic Compounds in Indoor Air: A Survey of Various Structures USEPA-600/D-85-100 (1985)]**PEER REVIEWED**

RURAL/REMOTE: **1,1-Dichloroethylene** was not detected in 2 unspecifed USA samples(1), but has been reported at <5 parts/trillion the rural northwest near Pullman, WA(2), and in the Grand Canyon, AR at 0.065 ppb(3).
[(1) Brodzinsky R, Singh HB; Volatile Organic Chemicals in the Atmosphere: An Assessment of Available Data. SRI Inter Contract 68-02-3452. pp. 198 (1982) (2) Grimsrud EP, Rasmussen RA; Atmos Environ 9: 1014-7 (1975) (3) Pellizzari ED; Quantification of Chlorinated Hydrocarbons in Previously Collected Air Samples USEPA-450/3-78-112 (1978)]**PEER REVIEWED**

SOURCE DOMINATED: 14 samples in the USA, location unspecified, showed a mean **1,1-dichloroethylene** concn of 3800 parts/trillion, a median of 3600 parts/trillion, and a max of 6700 parts/trillion(1). Samples from the Kin-Buc Disposal site, Edison, NJ contained a concn of 114-148 parts/trillion; **1,1-dichloroethylene** was not detected downwind of several petroleum facilities in Baton Rouge, LA(2). Samples from 5 Dow plant sites, one at Freeport, TX, four at Plaquemine, LA, contained **1,1-dichloroethylene** concns ranging from 9 to 249 parts/trillion(3). It was not detected at 7 other Dow sites at Plaquemine, LA(3). **1,1-Dichloroethylene** was detected in gas emitted from municipal landfill sanitary sites in the US at an avg concn of 130 ppb volume(4). **1,1-Dichloroethylene** represented 0.2% of the total non-methane organic compounds in the gas collection system from the Fresh Kills landfill in New York City, NY(5).
[(1) Brodzinsky R, Singh HB; Volatile Organic Chemicals in the Atmosphere: An Assessment of Available Data. SRI Inter Contract 68-02-3452. pp. 198 (1982) (2) Pellizzari ED; Quantification of Chlorinated Hydrocarbons in Previously Collected Air Samples USEPA-450/3-78-112 (1978) (3) Basu D et al; Health Assessment Document for Vinylidene Chloride. USEPA External Review Draft page 7-1 to 7-21 (1983) (4) Brosseau J, Heitz M; Atmos Environ 28: 295-93 (1994) (5) Eklund B et al; Environ Sci Technol 32: 2233-7 (1998)]**PEER REVIEWED**

Food Survey Values:

Although no monitoring data could be found, **vinylidene chloride** is a known contaminant in plastic wrap made from this monomer; the maximum amount possible that could be adsorbed by food from such food wraps has been estimated to be less than or equal to the detection limit (<10 ppb)(1).
[(1) Fishbein L; Sci Total Environ 11: 111-61 (1979)]**PEER REVIEWED**

Chemical/Physical Properties:

Molecular Formula:

C2-H2-Cl2
[Hansch, C. and A. Leo. The Log P Database. Claremont, CA: Pomona College, 1987., p. 21]**PEER REVIEWED**

Molecular Weight:

96.94
[Lide, DR (ed.). CRC Handbook of Chemistry and Physics. 81st Edition. CRC Press LLC, Boca Raton: FL 2000, p. 3-163]**PEER REVIEWED**

Color/Form:

Colorless liquid
[Lewis, R.J., Sr (Ed.). Hawley's Condensed Chemical Dictionary. 13th ed. New York, NY: John Wiley & Sons, Inc. 1997., p. 1170]**PEER REVIEWED**

Colorless liqid or gas (above 89 degrees F).
[NIOSH. NIOSH Pocket Guide to Chemical Hazards. DHHS (NIOSH) Publication No. 97-140. Washington, D.C. U.S. Government Printing Office, 1997., p. 332]**PEER REVIEWED**

Odor:

Mild, sweet odor resembling that of chloroform
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

Mild, sweet, chloroform-like odor.
[NIOSH. NIOSH Pocket Guide to Chemical Hazards. DHHS (NIOSH) Publication No. 97-140. Washington, D.C. U.S. Government Printing Office, 1997., p. 332]**PEER REVIEWED**

Boiling Point:

31.7 deg C @ 760 mm Hg
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

Melting Point:

-122.5 deg C
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

Corrosivity:

Vinylidene chloride may be corrosive or unstable in the presence of steel.
[USEPA; Air Pollution Assessment of Vinylidene Chloride p.1-74 (1978) EPA 68-02-1495]**PEER REVIEWED**

Critical Temperature & Pressure:

Critical temperature: 220.8 deg C; critical pressure: 5.21 MPa
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 23 (1983) 765]**PEER REVIEWED**

Density/Specific Gravity:

1.2129 @ 20 deg C/4 deg C
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

Heat of Combustion:

1095.9 kJ/mole @ 25 deg C
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 23 (1983) 765]**PEER REVIEWED**

Heat of Vaporization:

26.48 kJ/mole @ 25 deg C
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 23 (1983) 765]**PEER REVIEWED**

Octanol/Water Partition Coefficient:

log Kow = 2.13
[Hansch, C., Leo, A., D. Hoekman. Exploring QSAR - Hydrophobic, Electronic, and Steric Constants. Washington, DC: American Chemical Society., 1995., p.]**PEER REVIEWED**

Solubilities:

0.63 g/100 g water at 50 deg C (solubility at saturation vapor pressure)
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 14 (1981) 83]**PEER REVIEWED**

In water: 3.5 g/l at 4 deg C; 3.0 g/l at 16 deg C
[Dow Chem Co; Vinylidene Chloride Monomer: Safe Handling Guide (1980)]**PEER REVIEWED**

Soluble in ethanol, acetone, benzene, carbon tetrachloride; very soluble in ethyl ether, chloroform.
[Lide, D.R., G.W.A. Milne (eds.). Handbook of Data on Organic Compounds. Volume I. 3rd ed. CRC Press, Inc. Boca Raton ,FL. 1994., p. V3 2764]**PEER REVIEWED**

In water, 2,420 mg/l @ 25 deg C
[Horvath A et al; J Phys Chem Ref Data 128: 395-623 (1999)]**PEER REVIEWED**

Spectral Properties:

MAX ABSORPTION (VAPOR): LESS THAN 200 NM
[Weast, R.C. (ed.). Handbook of Chemistry and Physics. 60th ed. Boca Raton, Florida: CRC Press Inc., 1979., p. C-298]**PEER REVIEWED**

Index of refraction: 1.4249 @ 20 deg C/D
[Lide, DR (ed.). CRC Handbook of Chemistry and Physics. 81st Edition. CRC Press LLC, Boca Raton: FL 2000, p. 3-163]**PEER REVIEWED**

IR: 11632 (Sadtler Research Laboratories Prism Collection)
[Lide, D.R., G.W.A. Milne (eds.). Handbook of Data on Organic Compounds. Volume I. 3rd ed. CRC Press, Inc. Boca Raton ,FL. 1994., p. V3 2764]**PEER REVIEWED**

NMR: 6385 (Sadtler Research Laboratories Spectral Collection)
[Lide, D.R., G.W.A. Milne (eds.). Handbook of Data on Organic Compounds. Volume I. 3rd ed. CRC Press, Inc. Boca Raton ,FL. 1994., p. V3 2764]**PEER REVIEWED**

IR GRATING: 29675 (Sadtler Research Laboratories)
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 196 (1986)]**PEER REVIEWED**

MASS: NIST 888 (NIST/EPA/MCDC Mass Spectral Database 1990 version); WILEY 203 (Atlas of Mass Spectral Data)
[Lide, D.R., G.W.A. Milne (eds.). Handbook of Data on Organic Compounds. Volume I. 3rd ed. CRC Press, Inc. Boca Raton ,FL. 1994., p. V3 2763]**PEER REVIEWED**

IR: 2:55F (Aldrich Library of Infrared Spectra, Aldrich Chemical Co, Milwaukee, WI)
[Weast, R.C. and M.J. Astle. CRC Handbook of Data on Organic Compounds. Volumes I and II. Boca Raton, FL: CRC Press Inc. 1985., p. V2 434]**PEER REVIEWED**

Surface Tension:

24 DYNES/CM @ 15 DEG C (INHIBITED)
[U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5., p.]**PEER REVIEWED**

Vapor Density:

3.25 (air= 1)
[National Fire Protection Association. Fire Protection Guide on Hazardous Materials. 9th ed. Boston, MA: National Fire Protection Association, 1986., p. 49-38]**PEER REVIEWED**

Vapor Pressure:

600 mm Hg @ 25 deg C
[Boublik, T., Fried, V., and Hala, E., The Vapour Pressures of Pure Substances. Second Revised Edition. Amsterdam: Elsevier, 1984., p. 96]**PEER REVIEWED**

Relative Evaporation Rate:

... The evaporation half-life of a dilute aq soln of **vinylidene chloride** (1 ppm w/w) in an open container stirred at 200 rpm at 25 deg C /was/ 22 min, 90% of the cmpd was lost in 89 min.
[Dilling WL et al; Envir Sci Technol 9 (9): 833-38 (1975) as cited in USEPA; Phase I Document: Vinylidene Chloride p.29 (1981) EPA No. 68-01-6030]**PEER REVIEWED**

Viscosity:

0.3302 cP at 20 deg C
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Other Chemical/Physical Properties:

HEAT OF POLYMERIZATION: -185 CAL/G; VAPOR SPECIFIC GRAVITY: 3.3
[U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5., p.]**PEER REVIEWED**

The water/air partition coefficient at 20 deg C is 0.16.
[Pearson CR, McConnell G; Proc R Soc London Ser B 189: 305-32 (1975)]**PEER REVIEWED**

Heat of combustion: -4860 BTU/lb= -2700 cal/g
[U.S. Coast Guard, Department of Transportation. CHRIS - Hazardous Chemical Data. Volume II. Washington, D.C.: U.S. Government Printing Office, 1984-5., p.]**PEER REVIEWED**

Liquid density at 0 deg C: 1.2517 g/cu m
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-2 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Latent heat of vaporization at 25 deg C: 6328 cal/mol
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Latent heat of vaporization at boiling point: 6257 cal/mol.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Latent heat of fusion: 1557 cal/mol.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Specific heat: 0.275 cal/g.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-

031A]**PEER REVIEWED**

Dielectric constant 4.67 at 16 deg C.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Heat of polymerization: -18.0 Kcal/mol.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Heat of formation (liquid monomer): -6 kcal/mol; Heat of formation (gaseous monomer): 0.3 kcal/mol
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Heat capacity at 25.15 deg C (liquid monomer): 26.745 cal/mol/deg.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-3 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Heat capacity @ 25 deg C: 111.3 J/mole-K @ 1 atmosphere (liq); 67.4 J/mole-K @ 1 atmosphere (gas)
[Weast, R.C. (ed.) Handbook of Chemistry and Physics. 69th ed. Boca Raton, FL: CRC Press Inc., 1988-1989., p. D-174]**PEER REVIEWED**

Saturated concn in air: 2,640 g/cu m @ 20 deg C, 3,675 g/cu m @ 30 deg C
[Verschueren, K. Handbook of Environmental Data on Organic Chemicals. Volumes 1-2. 4th ed. John Wiley & Sons. New York, NY. 2001, p. V1 753]**PEER REVIEWED**

Solubility of water in monomer, @ 25 deg C, 0.035 wt%; critical vol: 218 cu m/mole
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 23 (1983) 765]**PEER REVIEWED**

Conversion factor: 1 mg/cu m= 0.25 ppm, 1 ppm= 3.97 mg/cu m
[Verschueren, K. Handbook of Environmental Data on Organic Chemicals. Volumes 1-2. 4th ed. John Wiley & Sons. New York, NY. 2001, p. V1 753]**PEER REVIEWED**

Dipole moment: 1.30 debye @ 25 deg C in benzene
[Dean, J.A. Handbook of Organic Chemistry. New York, NY: McGraw-Hill Book Co., 1987., p. 4-55]**PEER REVIEWED**

Gibbs energy of formation: 5.85 kcal/mole (liq), 5.78 kcal/mole (gas)
[Dean, J.A. Handbook of Organic Chemistry. New York, NY: McGraw-Hill Book Co., 1987., p. 5-13]**PEER REVIEWED**

Enthalpy of melting: 1.557 kcal/mole @ mp; enthalpy of sublimation: 6.328 kcal/mole @ 298 K
[Dean, J.A. Handbook of Organic Chemistry. New York, NY: McGraw-Hill Book Co., 1987., p. 5-52]**PEER REVIEWED**

Henry's Law constant = 2.61X10-2 atm-cu m/mole @ 24 deg C
[Gossett JM; Environ Sci Tech 21: 202-6 (1987)]**PEER REVIEWED**

Hydroxyl radical rate constant = 1.09X10-11 cu cm/molecule-sec @ 25 deg C
[Kwok ESC, Atkinson R; Estimation of hydroxyl radical rate constants for gas-phase organic Compounds using a structure-reactivity relationship: an update. Riverside, CA: Univ CA, Statewide Air Pollut Res Ctr., CMA contract no. AFC-8.0-OR (1994)] **PEER REVIEWED**

Manufacturing/Use Information:

Major Uses:

For **1,1-Dichloroethylene** (USEPA/OPP Pesticide Code: 600033) there are 0 labels match. /SRP: Not registered for current use in the U.S., but approved pesticide uses may change periodically and so federal, state and local authorities must be consulted for currently approved uses./
[U.S. Environmental Protection Agency/Office of Pesticide Program's Chemical Ingredients Database on 1,1-Dichloroethylene (75-35-4). Available from the Database Query page at http://www.cdpr.ca.gov/docs/epa/epamenu.htm as of May 24, 2001.] **PEER REVIEWED**

Used as comonomer, primarily with vinyl chloride.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 197 (1986)]**PEER REVIEWED**

... 1-chloro-1,1-difluoroethane, also known as (refrigerant 142b), is synthesized from 1,1-difluoroethane, **vinylidene chloride** and 1,1,1-trichloroethane.
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 11(80) 65]**PEER REVIEWED**

COMONOMER FOR MODACRYLIC FIBERS; UNISOLATED CHEMICAL INTERMEDIATE FOR 1,1,1-TRICHLOROETHANE.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V19 441 (1979)]**PEER REVIEWED**

Chemical intermediate in production of chloracetyl chloride.
[USEPA; Health Assessment Document: Vinylidene Chloride p.5-15 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Copolymerized with vinyl chloride or acrylonitrile to form various kinds of saran. Other copolymers are also made. Adhesives; component of synthetic fibers.
[Lewis, R.J., Sr (Ed.). Hawley's Condensed Chemical Dictionary. 13th ed. New York, NY: John Wiley & Sons, Inc. 1997., p. 1170]**PEER REVIEWED**

Intermediate in the production of "vinylidene polymer plastics" such as Saran and Velon.
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

Manufacturers:

Dow Chemical USA, 2030 Dow Center, Midland, MI 48674, (517) 832-1150; Production site: Freeport, TX 77541
[SRI International. 2000 Directory of Chemical Producers -- United States. SRI Consulting, Menlo Park: CA 2000, p. 962]**PEER REVIEWED**

PPG Industries, Inc., One PPG Place, 36 East, Pittsburgh, PA 15272, (412) 434-3131, Chemicals Group; Production site: Lake Charles, LA 70602
[SRI International. 2000 Directory of Chemical Producers -- United States. SRI Consulting, Menlo Park: CA 2000, p. 962]**PEER REVIEWED**

Methods of Manufacturing:

Produced commercially by the dehydrochlorination of 1,1,2-trichloroethane by lime or sodium hydroxide & is extracted from the reactor by distillation, with the removal of oxygen to prevent polymerization. An azetropic distillation column is used to dry the monomer. The monomethyl ether of hydroquinone is added to commercial grades of **vinylidene chloride** as an inhibitor.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 197 (1986)]**PEER REVIEWED**

... **Vinylidene chloride** has been prepared from vinyl chloride by successive chlorination and dehydrochlorination steps ... .
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 1(78) 246]**PEER REVIEWED**

Thermal dehydrochlorination of 1,1,1-trichloroethane (former commercial method).
[SRI, p.]**PEER REVIEWED**

Prepn from ethylene chloride: Reilly, US pat 2,140,548 (1938 to Dow.). By dechlorination of 1,1,2-trichloroethane: Conrad, Gould, US pat 2,989,570 (1961 to Ethyl Corp).
[Budavari, S. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Whitehouse Station, NJ: Merck and Co., Inc., 1996., p. 1706]**PEER REVIEWED**

General Manufacturing Information:

Vinylidene chloride monomer can be ... prepared in laboratory by reaction of 1,1,2-trichloroethane with aqueous alkali. ... Other /manufacturing/ methods are based on bromochloroethane, trichloroethyl acetate, tetrachloroethane, and catalytic cracking of trichloroethane.
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. 23(83) 764]**PEER REVIEWED**

Seven manufacturers in western Europe reported a combined capacity for vinylidene production of 352000 tons in 1983; Belgium (160000 tons), Federal Republic of Germany (100000), France (50000), The Netherlands (12000) & the UK (30000). In 1985 western European capacity had decreased to an estimated 130000 tons.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 197 (1986)]**PEER REVIEWED**

The monomethyl ether of hydroquinone is added to commercial grades of **vinylidene chloride** as an inhibitor.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 197 (1986)]**PEER REVIEWED**

Formulations/Preparations:

Liquid grade
[Kuney, J.H., J.M. Mullican (eds.). Chemcyclopedia. Washington, DC: American Chemical Society, 1994., p. 118]**PEER REVIEWED**

Impurities:

Water content (75 ppm), acetylene (25 ppm), acidity as hydrochloric acid (15 ppm), iron (0.5 ppm), methyl ether hydroquinone (180-220 ppm), trans-dichloroethylene (0.25%), 1,1-dichloroethane (0.25%), trichloroethylene (0.25%), ethylene dichloride (0.25%), peroxides (H2O2) (25 ppm).
[Dow Chem Co; Vinylidene Chloride Methyl Ether Hydroquinone (MEHQ) Inhibited. Quality Assurance Sales Specification Sheet (1970) as cited in USEPA; Phase I Document: Vinylidene Chloride p.5 (1981) EPA No. 68-01-6030]**PEER REVIEWED**

A typical analysis of commercial-grade vinylidene chloride monomer (excluding inhibitors) is as follows: vinylidene chloride 99.8%; trans-1,2-dichloroethylene 900 ppm; vinyl chloride 800 ppm; 1,1,1-trichloroethane 150 ppm; cis-1,2-dichloroethylene 10 ppm; and 1,1-dichloroethane, ethylene chloride, and trichloroethylene, each less than 10 ppm.
[USEPA; Health Assessment Document: Vinylidene Chloride p.3-5 (1983) EPA-600/8-83-031A]**PEER REVIEWED**

Dichloroacetylene has been reported to be an impurity in some commercial samples of vinylidene chloride.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 196 (1986)]**PEER REVIEWED**

Commercial product contains small proportion of inhibitor.
[Lewis, R.J., Sr (Ed.). Hawley's Condensed Chemical Dictionary. 13th ed. New York, NY: John Wiley & Sons, Inc. 1997., p. 1170]**PEER REVIEWED**

Consumption Patterns:

Virtually all of the vinylidene chloride produced is used in the production of copolymers with vinyl chloride or acrylonitrile. A small percentage (4%) of vinylidene chloride is used as chemical intermediates (1985).
[USEPA; Health Assessment Document for Vinylidene Chloride p.1-1 (1985) EPA/600/8-83/031A]**PEER REVIEWED**

U.S. Demand: 68,000 tonnes in 1987; was projected to be 79,000 tonnes in 1992
[Kirk-Othmer Encyclopedia of Chemical Technology. 4th ed. Volumes 1: New York, NY. John Wiley and Sons, 1991-Present., p. V5 (1993) 1018]**PEER REVIEWED**

Of all important chloroethanes and -ethylenes, vinylidene chloride has presently the smallest sales volume. Because of its unique applications in polymers for food containers, long-term demand will grow.
[Gerhartz, W. (exec ed.). Ullmann's Encyclopedia of Industrial Chemistry. 5th ed.Vol A1: Deerfield Beach, FL: VCH Publishers, 1985 to Present., p. VA6 (1986) 294]**PEER REVIEWED**

The annual production rate for the Western World amounts to about 150,000-200,000 tonnes, of which ca. 120,000 tonnes are used for poly(vinylidene chloride) and its copolymers. The rest is converted to 1,1,1-trichloroethane.
[Gerhartz, W. (exec ed.). Ullmann's Encyclopedia of Industrial Chemistry. 5th ed.Vol A1: Deerfield Beach, FL: VCH Publishers, 1985 to Present., p. VA6 (1986) 294]**PEER REVIEWED**

(1998) 14.029 billion pounds; (1999) 14.66 billion pounds; (2003) 17.82 billion pounds.
[ChemExpo; Chemical Profile Database on Vinyl chloride monomer (75-35-4). August 28, 2000. Available from the Database Query page at http://www.chemexpo.com/news/newsframe.cfm?framebody=/news/profile.cfm as of March

23 2001.]**PEER REVIEWED**

Polyvinyl chloride (PVC), 98 percent; miscellaneous, including copolymers with vinyl acetate, vinyl stearate and vinylidene chloride, and 1,1,1-trichloroethane, 2 percent.
[ChemExpo; Chemical Profile Database on Vinyl chloride monomer (75-35-4). August 28, 2000. Available from the Database Query page at http://www.chemexpo.com/news/newsframe.cfm?framebody=/news/profile.cfm as of March 23 2001.]**PEER REVIEWED**

U. S. Production:

(1977) 9.1X10+10 G MIN-MAY INCL CAPTIVE PRODN
[SRI, p.]**PEER REVIEWED**

(1980) 7.8X10+10 G (EST, EXCL CAPTIVE PRODN)
[SRI, p.]**PEER REVIEWED**

(1985) 8.08X10+10 g (capacity)
[USEPA; Health Assessment Document for Vinylidene Chloride p.1-1 (1985) EPA/600/8-83/031F]**PEER REVIEWED**

An estimated 90700 tons/yr of the monomer were produced in the USA during the early 1980s.
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work)., p. V39 197 (1986)]**PEER REVIEWED**

>90,700 metric tons in 1982
[Kirk-Othmer Encyclopedia of Chemical Technology. 3rd ed., Volumes 1-26. New York, NY: John Wiley and Sons, 1978-1984., p. V23 (1983) 787]**PEER REVIEWED**

U. S. Imports:

(1977) 1.63X10+7 G
[SRI, p.]**PEER REVIEWED**

(1982) 4.60X10+5 G
[SRI, p.]**PEER REVIEWED**

(1984) 1.81X10+7 g
[BUREAU OF THE CENSUS. US IMPORTS FOR CONSUMPTION AND GENERAL IMPORTS 1984 p.1-363] **PEER REVIEWED**

(1986) 2.17X10+8 lb
[BUREAU OF THE CENSUS. US IMPORTS FOR CONSUMPTION AND GENERAL IMPORTS 1986 P.1-530] **PEER REVIEWED**

(1998) 21 million pounds; (1999) 72 million pounds
[ChemExpo; Chemical Profile Database on Vinyl chloride monomer (75-35-4). August 28, 2000. Available from the Database Query page at http://www.chemexpo.com/news/newsframe.cfm?framebody=/news/profile.cfm as of March 23 2001.]**PEER REVIEWED**

U. S. Exports:

(1998) 1.979 billion pounds; (1999) 2.481 billion pounds
[ChemExpo; Chemical Profile Database on Vinyl chloride monomer (75-35-4). August 28, 2000. Available from the Database Query page at http://www.chemexpo.com/news/newsframe.cfm?framebody=/news/profile.cfm as of March 23 2001.]**PEER REVIEWED**

AMWTP
Advanced Mixed Waste Treatment Project

Requested Additional Information Submittal Form

Date: 10/15/12
Submitter's Name: Nancy Kirk
Audit Subject Area: AK
Requesting Auditor's Name: Dick Blauvelt
Item Submitting: C850A Memo to File, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream D050A Discrepancy Report D050A – Estimate of Volumes for Cemented Sludge Waste (BN836) – MLJ-003-06, M. L. Johnson, April 27, 2006 D077A, Discrepancy in assignation of HWNs D036/F004 to RF waste DCR No. 11607, RPT-TRUW-63, AK Summary for Cemented Sludge (BN836) MP-WM&M-13.9, Rev. 13, Waste Characterization and Waste Services Management NCR 20596, Container 10020352, liquids Screen shot of RTR, Container 10020352

B-2010-0280
RECORD
CC 9/20/10

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: C850A	2. Revision: 1

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☑ Correspondence
- ☐ Discrepancy

4. **Title/Description Information:** Memo to File, Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream

Document Number: MLJ-004-10
Revision: 0
Author: M. L. Johnson
Date: 9/1/2010

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM5	BN	All	Provides volume estimate for waste stream BN510.1
WS2	BN-550	All	Provides estimated number of 100-gallon drums for waste stream BN510.1

9. **Document Summary:**

Memo provides an estimate of the number of 100-gallon drums and SWBs for the BN510.1 supercompacted waste stream. List of assumptions is included in memo.

10. **Source Document Data Limitations (if any):**

The estimate is based on the best available information concerning the proposed supercompacted waste stream with Hanford waste (including volume of Hanford waste to be shipped to AMWTP and when BN510.1 will be implemented). List of other assumptions is included in memo.

11. AK Expert:	Tim Venneman		9/13/2010
	Print	Sign	Date

AMWTP
Advanced Mixed Waste Treatment Project

Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: September 1, 2010

To: File

From: M. L. Johnson
Acceptable Knowledge Expert

Subject: Revised Estimated Number of Containers for the BN510.1 Supercompacted Debris Waste Stream – MLJ-004-10

The following are the assumptions used to estimate the number of 100-gallon drums of supercompacted waste assigned Item Description Code (IDC) BN-550 that will be included in the BN510.1 supercompacted debris waste stream. This memo also document the assumptions made for the number of standard waste boxes (SWBs) that maybe used to package damaged 100-gallon drums of IDC BN-550. The estimate was revised to reflect a new start date for introducing Hanford waste as feedstock to the supercompactor.

	Compacted Volume (m^3)	Number of 100-gallon Drums
All debris waste (TRU and MLLW)	11,600 (1)	52,300 (2)
MLLW debris waste	2,500 (3)	- 11,300 (4)
TRU debris waste targeted to WIPP		41,000
Damaged 100-gallon drums		- 300 (5)
Estimated number of drums to WIPP		40,700
Number of TRU drums generated as IDC BN-510 prior to 9/1/2010		- 25,324 (6)
Estimated number of drums with supercompacted Hanford waste		+ 517 (7)
Estimated number of drums to shipped to WIPP as BN510.1		16,000 (8)
Estimated number of SWBs shipped to WIPP as BN510.1		105 (9)

Assumptions:

NOTE: *Drums are 100-gallon unless noted otherwise.*

1. As documented in BNFL drawing 1-05-55-001, Rev. 7, March 28, 2001 (P395A), the volume of supercompacted waste if all debris waste is compacted is identified as stream numbers 8 and 9 and reflects the volume of pucks (not the volume of 100-gallon drums).

2. As documented in DOE/TRU-2006-3344, Waste Isolation Pilot Plant Transuranic Waste Baseline Inventory Report issued in November 2006, the estimated volume of drums is 19,874.8 m^3 if all debris waste was compacted. This is equivalent to 52,300 drums assuming 0.38 m^3 per drum conversion factor. This results in a calculated fill factor of 58%.
3. It was assumed that 10,000 m^3 of un-compacted debris waste (2,500 m^3 if compacted) will not be TRU but will be dispositioned by the LLW/MLLW Program. This does not include the < 100 nCi/g waste packaged from boxes, subsequently compacted, and packaged with other waste into drums of TRU waste.
4. It was assumed that 10,000 m^3 of MLLW debris waste is equivalent to approximately 11,300 drums (using 0.38 m^3 per drum, 58% fill factor, and 4/1 compaction ratio).
5. Change Notice # 1 to BN510 waste stream identified a volume of 150 SWBs. These SWBs are used for damaged 100-gallon drums. It was assumed that 2 damaged drums were loaded per SWB and that 300 drums will be shipped in SWBs and will be reported as SWB volume instead of 100-gallon drum volume; therefore, the volume of drums was reduced by 300 drums.
6. Based on a WTS query, 25,324 TRU drums of IDC BN-510 were generated prior to 9/1/2010 and are included in the BN510 waste stream. Drums generated after Hanford was introduced in the supercompactor on 8/31/2010 will be identified as IDC BN-550 and are included in BN510.1 waste stream.
7. Assumed 1,034 drums of Hanford waste will be shipped to AMWTP in 85-gallon overpacks. Also assumed supercompacted waste from two 85-gallon drums overpacks (including compaction of the overpack drums) fits into one 100-gallon product drum.
8. Estimated value has been rounded up.
9. Based on WDS query, 41 SWBs were loaded prior to 8/31/2010. Assumed 4 more SWBs will be loaded with container of BN-510 and all 43 SWBs will be shipped under existing BN510 waste stream. Therefore, assumed the remainder of the 150 SWBs identified in assumption 5 will be used to package drums included in the BN510.1 waste stream (i.e., 105 SWBs will be used for BN510.1 waste stream).

cc: Carolyn Abbott
Steve Carpenter
Julie Collins
Bill Erhardt
Pam Fetzer
Caralea Hinkle-Daniel
Nancy Kirk
Randy Morris
Tim Venneman
AMWTP Correspondence Control

B-2010-0280

RECORD

CC 9/20/10

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: C869S	**2. Revision:** 1

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☑ Correspondence
- ☐ Discrepancy

4. Title/Description Information: Correspondence from the EPA to Donald C. Cadbury, Manager, National TRU Program CBFO.

Document Number: N/A

Revision: N/A

Author: Tom Peake, Director
Center for Waste Management and Regulations

Date: 6/10/2010

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM5, WM8	BN, RL	all	EPA tier determination and authorization for Hanford debris waste.
WS1, WS2, WS5	BN-550, RL-712, RL-714, RL-716	All	EPA tier determination and authorization for Hanford debris waste.

9. Document Summary:

The document approves a Tier 1 request for the inclusion of Hanford debris waste(i.e., MPFPD, M231ZD, M325D and RLMPFPCD (building 234-5Z only)for inclusion into the supercompactor feedstock.

Tier 1 evaluation report, EPA Docket No. A-98-49, II-A4-127, Eligibility of Hanford's Contact-Handled Legacy Debris Waste Streams: MPFPD, RLM231ZD, RLM325D, and RLMPFPCD for Inclusion in AMWTP's BN510 (Super-Compacted)Debris Waste Stream, is included in this record.

10. Source Document Data Limitations (if any):

None

11. AK Expert:	Tim Venneman		9/13/2010
	Print	Sign	Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 10 2010

OFFICE OF
AIR AND RADIATION

Donald C. Gadbury
Manager, National TRU Program
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Dear Mr. Gadbury:

The U.S. Department of Energy's Carlsbad Field Office (CBFO) submitted to the U.S. Environmental Protection Agency (EPA) a Tier 1 (T1) change request on March 2, 2010. The T1 change request was for the Advanced Mixed Waste Treatment Project (AMWTP) at the Idaho National Laboratory to accept Hanford-characterized debris waste from the Plutonium Finishing Plant (PFP) area. This waste consists of approximately 1,034 55-gallon drums overpacked in 85-gallon containers. Based on EPA's evaluation of the T1 change documentation (discussed in the enclosed report with EPA Air Docket No. A-98-49, II-A4-127), EPA approves the proposed T1 change, and the Central Characterization Project (CCP) at Hanford can ship these Hanford overpacks to AMWTP to characterize the waste in overpacks as BN510 waste.

Background:

Between 2001 and August 2009, the Hanford Site, using EPA-approved contact-handled (CH) transuranic (TRU) waste characterization processes, characterized and certified thousands of 55-gallon drums and several hundred standard waste boxes from MPFPD, M231ZD, and M325D waste streams. The Hanford TRU program shipped several thousand of the drums from these three debris waste streams while the program was active. However, several hundred of these 55-gallon drums were damaged and required to be placed in overpack containers before being shipped to the Waste Isolation Pilot Plant (WIPP). Some of these overpacks remain at Hanford requiring disposal at WIPP.

Prior to termination of the Hanford TRU program in August 2009, Hanford characterized an additional several thousand drums of debris waste in the RLMPFPCD waste stream but could not certify them for WIPP disposal. In May 2009, the CBFO approved the Hanford-prepared acceptable knowledge summary report for this waste stream. A few hundred of the 55-gallon drums from this waste stream also required overpacking before shipment to WIPP for disposal. To date, none of the RLMPFPCD drums have been disposed of at the WIPP.

Future activities at AMWTP resulting from the EPA T1 approval:

The AMWTP plans to process the following CH TRU legacy debris waste from the PFP at Hanford in overpacks as BN510 (super-compacted debris) waste from Hanford for further processing.

- 131 drums of mixed PFP debris (MPFPD);
- 66 drums of mixed 231Z building debris (M231ZD);
- 220 drums of mixed 325 building debris (M325D); and
- 617 drums of mixed PFP debris from 234-5Z building only (RLMPFPCD).

The AMWTP will re-package these overpacks into 55-gallon crushable drums and characterize them using the EPA-approved CH TRU waste characterization processes. The newly-characterized drums will be crushed into "pucks" and loaded in 100-gallon containers for disposal at the Waste Isolation Pilot Plant. The AMWTP must provide to EPA the items listed below to verify that the Hanford debris waste has been adequately characterized:

- Revised Acceptable Knowledge (AK) documentation for BN510 showing how Hanford AK and other documentation have been incorporated;
- The revised waste stream profile form for AMWTP's BN510 waste stream to include Hanford waste;
- Batch data reports from visual examination for physical contents and nondestructive assay for radiological contents of BN510 debris; and
- Tracking of Hanford debris waste in AMWTP's waste tracking system.

The EPA will review the above documentation while CBFO certifies the new BN510 waste stream for WIPP disposal.

If you have any questions regarding this approval, please contact Rajani Joglekar (202-343-9462) or Ed Feltcorn (202) 343-9422.

Sincerely,

Tom Peake, Director
Center for Waste Management and Regulations

Enclosure

cc: Electronic Distribution
Christine Gelles, DOE HQ
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Allison Pangle, CTAC
Wayne Ledford, CTAC

EPA DOCKET NO. A-98-49, II-A4-127

Tier 1 Evaluation
Eligibility of Hanford's Contact-Handled Legacy Debris Waste Streams: MPFPD, RLM231ZD, RLM325D, and RLMPFPCD for Inclusion in AMWTP's BN510 (Super-Compacted) Debris Waste Stream

U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
Center for Waste Management and Regulations
1200 Pennsylvania Avenue, NW
Washington, DC 20460

June 2010

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1.0 EXECUTIVE SUMMARY

This report supports U.S. Environmental Protection Agency's (EPA) approval of a Tier 1 (T1) change request submitted on March 2, 2010, by the U.S. Department of Energy's (DOE) Carlsbad Field Office (CBFO). The request is to include the following four Hanford's transuranic (TRU) contact-handled (CH) legacy debris waste streams in the BN510 (super-compacted debris) waste stream at the Advanced Mixed Waste Project (AMWTP):

- MPFPD, Mixed Plutonium Finishing Plant (PFP) debris (AK Report HNF-6489);
- RLM231ZD, Mixed 231Z Building debris (AK Report HNF-32218);
- RLM325D, Mixed 325 Building debris (AK Report HNF-30810); and
- RLMPFPCD, Mixed PFP comprehensive debris (AK Report HNF-36515)

The T1 change request was followed by submission of the acceptable knowledge (AK) documentation for the proposed waste streams.

The T1 change approval will result in the following two outcomes. First, the Hanford-generated legacy debris waste in approximately 1,034 85-gallon overpacks can be shipped to the AMWTP for processing. Second, AMWTP will repackage the waste into new 55-gallon crushable drums and repackage the waste from damaged 55-gallon drum overpacks into the 85-gallon containers. In addition, AMWTP, using the EPA-approved waste characterization processes for contact-handled transuranic (TRU) waste, will recharacterize these new drums as newly-generated waste BN510 waste. Once characterized, AMWTP will crush the drums into "pucks" and load the "pucks" in 100-gallon drums for shipment to and disposal at the Waste isolation Pilot Plant (WIPP). Since October 2006, AMWTP has been shipping the BN510, super-compacted debris waste stream to WIPP for disposal.

2.0 BACKGROUND

Until August 2009, Hanford characterized CH TRU waste using the CH TRU waste characterization processes with the original 2002 EPA approval and the subsequent baseline approval dated June 2008. (See the EPA Inspection Reports with an EPA Docket Nos. A-98-49, II-A4-25 and A-98-49, II-A4-106 respectively.) Upon termination of the Hanford program, the Central Characterization Project (CCP) took over Hanford's TRU waste characterization program.

In April, 2010, EPA performed a baseline inspection of CCP's implementation of their CH TRU waste characterization program at Hanford and the EPA decision will be announced later 2010. Since the end of 2009, Hanford-CCP has been disposing of the remaining Hanford-certified CH debris containers at WIPP. Hanford-CCP will ship to AMWTP the above-mentioned 1,034 85-gallon overpacks for processing the waste contents as the BN510 waste.

EPA's baseline approval of the AMWTP's CH TRU waste characterization program (Docket No: A-98-49, II-A4-66, September 2006) states that addition of any waste streams to the

approved waste stream BN510 outside of those already included[1] is a Tier 1 change requiring EPA approval prior to including them in the BN510 waste stream. Therefore, EPA's approval is necessary as a T1 change to allow inclusion of waste from the approximately 1,034 Hanford debris overpacks in the BN-510 waste stream.

BN510 is a newly-generated S5000 waste stream composed of waste from multiple sites (including Mound, RF, BCL and BAPL) and managed in the AMWTP facility. In this facility, retrievably-stored or pre-existing CH TRU debris in standard waste boxes or compromised 55-gallon drums are combined within the site box line facility, repackaged, while simultaneously being visually examined for estimating physical content weights, and then placed in new 55-gallon drums as newly-generated debris.

These new drums are characterized for radiological contents within the facility. The drums are then reduced in size by crushing in the facility supercompactor. The crushed drums that result from this process are referred to as "pucks". Depending on the weight and TRU content of individual drums, up to nine pucks of supercompacted 55-gallon drums of debris waste can be loaded into a single 100-gallon overpack container for disposal at the WIPP.

The following four waste streams are the subject of the T1 change request.

- MPFPD, Mixed Plutonium Finishing Plant (PFP) debris (AK Report HNF-6489);
- RLM231ZD, Mixed 231Z Building debris (AK Report HNF-32218);
- RLM325D, Mixed 325 Building debris (AK Report HNF-30810); and
- RLMPFPCD, Mixed PFP comprehensive debris (AK Report HNF-36515)

2.1 MPFPD, Mixed Plutonium Finishing Plant Debris Waste (AK Report HNF-6489):

The MPFPD waste stream is TRU mixed heterogeneous debris created by various production, maintenance, cleanout, stabilization, decontamination, and decommissioning (D&D) activities at PFP. This waste stream consists of mixed TRU debris waste generated between 1970 and the present in support of plutonium metal production operations and glove box activities associated with PFP. The glove boxes were used for defense and non-defense work, which was processed during the same time periods, and the waste stream is considered commingled. The waste consists of in-process and D&D waste, including inorganic and organic debris (S5400) and wastes from several buildings or facilities, i.e., PFP Building 234-5Z (including Remote Mechanical Line A, Remote Mechanical Line C, Laboratories), Building 236-Z-Plutonium Reclamation Facility (PRF), Building 232-Z (Incinerator), and Building 2736-ZB Repackaging and Assaying. The radionuclides associated with this waste are primarily ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, and ^{241}Pu generated from weapons and fuel-grade plutonium processing. The two most prevalent radionuclides by mass are expected to be ^{239}Pu and ^{240}Pu.

The waste in 55-gallon drums was generated from July 7, 1972 through December 29, 1989. The EPA originally approved the S5000 Summary Category Group (SCG) that includes this

[1] [Mound, Rocky Flats (RF), Battelle Columbus Laboratory (BCL), and Bettis Atomic Power Laboratory (BAPL)

waste stream in 2002 and again in 2008. A waste stream profile form (WSPF) for the MPFPD waste stream was approved by CBFO in July 2002.

2.2 RLM231ZD, 231 Z Building Waste (AK Report HNF-32128):

This waste stream was generated by metallurgical research and plutonium fabrication, D&D, technology development, and facility cleanout activities within Building 231-Z between 1970 and the present. It is composed of various metal, combustible, non-combustible, glass, and other debris. The radionuclides potentially present include weapons-grade plutonium (WG Pu) and fuel-grade plutonium (^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu), uranium (^{232}U, ^{233}U, ^{234}U, ^{235}U, ^{236}U, and ^{238}U), trace amounts of americium (^{241}Am and ^{243}Am), and ^{237}Np. Mixed fission/activation products such as ^{137}Cs, ^{90}Sr, ^{154}Eu and ^{60}Co, would be expected in trace amounts because the plutonium was purified prior to receipt at the facility. Plutonium and americium oxide residues remaining from metallurgical studies with plutonium and D&D of contaminated equipment are also assumed to be in the waste. The two predominant radionuclides by mass are ^{238}U and ^{239}Pu, and ^{241}Pu and ^{239}Pu are the two predominant radionuclides by activity.

The EPA initially approved the S5000 SCG that includes this waste stream in 2002 and again in 2008. A WSPF for the Hanford 231 Z Building waste stream was approved by CBFO in July 2007.

2.3 RLM325D, Hanford 325 Building Radiochemical Processing Laboratory Waste (AK Report HNF-30810)

This waste stream is CH debris (S5400) generated at the 325 Building Radiochemical Processing Laboratory. It was generated from September 28, 1972 through February 12, 1990 and is composed of laboratory-generated waste from glove boxes, fume hoods, and hot cells, and may contain inorganic debris, organic debris, various metals, protective clothing, filters, and other materials. All of the WIPP-tracked radionuclides (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{137}Cs, and ^{90}Sr) are expected to be present in this waste stream. Isotopic distributions for Pu, U and Am are assumed to be contaminated by PUREX[2]-derived waste, so isotopic distributions associated with PUREX tank waste were representative of this waste stream. The two predominant radionuclides by mass are ^{238}U and ^{239}Pu, and ^{241}Pu and ^{241}Am are the two predominant radionuclides by activity.

The EPA originally approved the S5000 SCG that includes this waste stream in 2002 and again in 2008. A WSPF for the 325 Building Radiochemical Processing Laboratory Waste was approved by CBFO in May 2007.

2.4 RLMPFPCD, Mixed PFP Comprehensive Debris (AK Report HNF-36515)

This is a mixed, heterogeneous S5400 debris waste stream generated from 1970 through the end of Hanford site's waste characterization program in support of PFP's plutonium production and stabilization activities. It is composed of a variety of inorganic, organic metal, and other debris

[2] PUREX is the name given to a plutonium-uranium extraction process whereby plutonium and uranium for weapons production was chemically separated from the irradiated fuel from the Hanford production reactors.

materials, and includes both process and D&D waste. All of the facilities included in the MPFPD waste stream are also in RLMPFPCD, which also includes the Building 242-Z- Waste Treatment Facility, 291-Z- Ventilation/Exhaust Air Stack Building, and PFP Ancillary Facilities. Plutonium (^{241}Pu, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu) is the main radionuclide in this waste, but there are also trace amounts of uranium (^{232}U, ^{233}U, ^{234}U, ^{235}U, ^{236}U, ^{238}U), ^{241}Am, ^{237}Np, ^{137}Cs, and ^{90}Sr. This waste stream may contain WG Pu (^{240}Pu weight percentage 0.9% to 7%) and fuel grade Pu (^{240}Pu weight percentage 8% to 27%). Based on historical processing loads, a major portion of the plutonium processed in PFP was approximately 12% ^{240}Pu. The two most prevalent TRU radionuclides by weight in this waste stream are ^{239}Pu and ^{240}Pu.

EPA did not receive any AK documentation for this waste stream while the Hanford's TRU program was still active. An AK Summary Report HNF-36515 was approved by CBFO in May 2009. No WSPF was approved for this waste stream.

3.0 EPA ASSESSMENT

3.1 EPA Evaluation of MPFPD, M231ZD, and M325D Waste Streams

EPA evaluated the four waste streams based upon AK information provided by CBFO. In addition, EPA referred to documentation obtained and reviewed during past Hanford site inspections performed between 2001 and 2007 for additional information. In particular, EPA examined EPA's original approval and baseline approval reports and some of the related references. EPA examined the MPFPD waste stream as part of the original 2002 Inspection, and the RLM325D and RLM231ZD waste streams were approved as part of EPA's S5000 Summary Category Group approval under both Hanford's original approval and EPA's later baseline approval. The drums belonging to these waste streams have been certified and disposed of at the WIPP. At the termination of the Hanford TRU program, a portion of certified drums from these three waste streams still remain at Hanford. The 55-gallon drums are being shipped to WIPP by Hanford-CCP. Some 85-gallon overpacks, however, remain at Hanford which will be sent to the AMWTP for managing the contents as the B510 waste.

3.2 EPA Analysis of the RLMPFPCD Waste Stream

During EPA's 2001-2008 data review, mentioned previously in Section 2.0 of this report, EPA did not identify any information pertaining to waste stream RLMPFPCD. EPA recently learned that Hanford had prepared AK Summary Report HNF-36515 which CBFO approved in May 2009. CBFO had provided an AK report for this waste stream as part of a Tier 2 change submission at the end of the 3rd quarter of fiscal year 2009, after Hanford's original characterization program had been terminated. No WSPF is available for this waste stream. The RLMPFPCD waste is presently contained in approximately 4,130 55-gal drums (859 m$^{3)}$ and 317 various-sized boxes (4,720 m^3) for a total volume of 5,579 m^3.

Hanford-CCP is currently responsible for characterizing CH TRU debris waste at Hanford and EPA inspected the program in late April 2010. As part of the proposed baseline approval, EPA is reviewing debris waste stream MPFPDD. This waste stream includes debris from the MPFPD and RLMPFPCD waste stream, so the origin and content of the CCP waste stream required

clarification and discussion with CBFO and CCP. EPA sent a series of emails to convey EPA's understanding and had a conference call to obtain further clarification. In addition, EPA and Hanford-CCP staff met to decipher the waste generation and AK specific to the RLMPFPCD waste stream. This discussion was useful and EPA learned the following details about RLMPFPCD waste stream:

- This waste stream:
  - Is a composite consisting of legacy debris from several locations within the PFP complex;
  - Has thousands of certified 55-gallon containers of legacy debris including the MPFPD waste stream from various PFP location; and
  - Has 617 certified 55-gallon containers overpacked into 85-gallon containers that do not include containers from the Building 242-Z- Waste Treatment Facility, 291-Z- Ventilation/Exhaust Air Stack Building, and PFP Ancillary Facilities. In other words, Hanford-CCP indicates that the 617 containers include only those that also fall under the MPFPD waste stream.
- The 617 85-gallon overpacks have debris waste from Building 234-5Z
- These 617 are the candidate containers for shipment to AMWTP.
- The debris from other PFP locations constituting the RLMPFPCD waste stream do not have waste drums in 85-gallon overpacks.

In addition, more importantly,

- Hanford-CCP's new MCPFPDD waste stream does not include any overpacked legacy debris waste from either the MPFPD or RLMPFPCD waste streams.
- Hanford-CCP is processing mostly newly-generated debris at this time.
- Hanford-CCP will continue to ship to WIPP the rest of the population of the Hanford-certified waste to WIPP for disposal that are not overpacked.
- Hanford-CCP will characterize for WIPP disposal debris drums from RLMPFPCD and MPFPD waste streams that are included into the new waste stream MPFPDD along with debris from other buildings within the PFP complex.

The above information was crucial in clarifying EPA's understanding of the RLMPFPCD waste stream as proposed in the Tier 1 request.

3.3 Comparison of Hanford AK Documentation with AMWTP's AK Documentation for BN510 Waste

EPA reviewed the following documents for this T1 evaluation:

- WIPP WSPF for RLM231ZD.001, dated July 30, 2007, and related attachments
- WIPP WSPF for RLM325D.001, dated May 16, 2007, and related attachments

- WIPP WSPF for RLMPDT.001 dated July 31, 2002, and related attachments, including Change Notices 1 (December 4, 2003) Change Notice 2 (August 22, 2005), and Change Notice 3 (March 6, 2007)
- AK Summary HNF-6489, Revision 1, MPFPD, unsigned and undated
- AK Summary HNF-36515, RLMPFPCD Revision 0, unsigned and undated
- AK Summary HNF- 32128 Revision 2, Acceptable Knowledge Document for Richland 231-Z Mixed Debris Waste Stream RLM231ZD, published May 2009
- AK Summary HNF-30810, Revision 1, Acceptable Knowledge Document for the 325 Building Radiochemistry Laboratory Mixed Debris Waste Stream, RLM325D, published July 2007
- RPT-TRUW-30, Revision 5, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510) Advanced Mixed Waste Treatment Project, Approved: (Signature on file. See DCR-6963.) May 6, 2008

While Hanford-CCP process knowledge transportation documents (i.e., "PK" reports) were provided as references, EPA's review focused on Hanford site documentation, namely Hanford's AK Reports, to determine whether the proposed four debris waste streams (summarized in the section above) generally fit into AMWTP's BN510 waste "envelope".

AMWTP's BN510 waste is a compilation of debris from various sites (e.g., Mound, and BCL). As stated in the AMWTP baseline approval, EPA must approve inclusion of any debris waste from a new source (e.g., Hanford) in BN510 that is outside of EPA's original AMWTP baseline approval. This section addresses only the determination that the information provided for the four waste streams generally fits the approved envelope of BN510, and does not include the adequacy of AMWTP's characterization process associated with these drums, including visual examination (VE), real time radiography (RTR), and integration of the data into the BN510 AK Summary.

EPA compared each waste stream against the original BN510 AK Summary Report RPT-TRUW-30, Revision 5, May 2008, to determine whether the four waste streams could be included in the BN510 "envelope" based on the following technical elements:

- Waste stream definition
- Radiological composition
- Physical composition including presence of prohibited items
- Defense origin
- Absence of spent nuclear fuel and high level waste
- TRU waste
- Load Management.

Based on the review, as indicated in Table 1, below, EPA determines that these four waste streams fit within the general definition of BN510 and are consistent with other offsite (e.g., Mound, BAPL and BCL) debris waste included in the BN510 approval as part of the AMWTP baseline approval given in September 2006.

Table 1. Waste Stream Evaluation Summary Table

Waste Stream	Waste Stream Definition	Radiological Characteristics	Physical Characteristics and Prohibited Items	Defense Origin	SNF/ HLW	TRU Waste	Load Management*
RLM231ZD.001	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RLM325D.001	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPFPD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RLMPFPCD	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*- AMWTP must inform EPA if these waste streams would be considered for load management requiring EPA review and approval.

3.4 Need for EPA to Verify AMWTP's Processing of Four Hanford Waste Streams

AMWTP must use EPA-approved CH TRU waste characterization program components, including VE, nondestructive assay, and AK, when incorporating the 1,034 overpacked debris containers from Hanford into the newly-generated BN510 waste stream. AMWTP must inform EPA when the characterization activities begin for the Hanford-originated debris waste and when EPA should expect to get the appropriate documents for verification. EPA will review physical and radiological contents information for BN510 drums characterized by AMWTP to verify completeness and technical adequacy with respect to the new BN510 waste stream upon AMWTP's incorporation of the debris from the four debris waste streams mentioned above. As part of these analyses, the AMWTP must provide to EPA for review the AK and WSPF for the new BN510.1 waste stream for technical adequacy. In addition, the AMWTP must provide a list of batch data reports (BDRs), once a sufficient number of these newly-generated waste drums are characterized to prepare such documents. EPA will select a few BDRs from the AMWTP-provided list for technical adequacy. The EPA verification will occur in an expedient manner recognizing the legal commitments the Idaho National Laboratory has made with the State of Idaho concerning the disposition of offsite-originated TRU waste.

4.0 CONCLUSION

The data and clarification provided by CBFO and CCP pertaining to the four waste streams satisfies EPA's Tier 1 change requirement. Based on an examination of the data and information conveyed through meetings and conference calls, EPA concludes that a total of 1,034 85-gallon overpacks containing waste from the four Hanford legacy debris waste streams may be shipped to AMWTP. The breakdown of the overpacks into four waste streams is as follows:

- 131 containers from MPFPD;
- 66 containers from M231ZD;
- 220 containers from M325D; and
- 617 containers from RLMPFPCD (from 234-5Z building)

It is AMWTP's responsibility to evaluate and accept the specified overpacks containing Hanford's legacy debris waste for further processing prior to disposal at the WIPP.

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: P853A	2. Revision: 1

RECORD
P853A R1
SWALKER
06/21/2010

3. **Category**

- [x] Published Documentation
- [ ] Unpublished Documentation
- [ ] Correspondence
- [ ] Discrepancy

4. **Title/Description Information:** Central Characterization Project Process Knowledge Summary Report For Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste, 85-Gallon Overpacked Drums, Waste Stream: MPFPDD

Document Number: CCP-PK-RL-101

Revision: 2

Author: Larry Porter, Central Characterization Project (CCP)

Date: 6/4/2010

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM1, WM2, WM3, WM4, WM5, WM6, WM7	RL	Section 4.0	All required waste management program information is addressed except for certification procedures. In some cases the information provided is minimal (e.g., waste identification and categorization scheme).
WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8	RL-712	Section 5	All required waste stream information is addressed. Information concerning WMPs and radionuclides are estimates. Report includes statements that containers with PIs or PCBs identified by RTR will be excluded from shipment to AMWTP.

9. **Document Summary:**

This PK summary report was written by CCP to summarize the information for debris waste generated at Hanford Site and to be shipped to AMWTP for supercompaction. This report addresses approximately 748 containers from the MPFPDD waste stream which were generated by the Plutonium Finishing Plant (PFP).

10. **Source Document Data Limitations (if any):**

The information on WMPs and radionuclide data contained in this report was for waste containers that were certified or shipped to WIPP from the same generating facility but are not for the waste containers to be shipped to AMWTP; therefore, the use of this information should reflect that this information are only estimates.

11. AK Expert:	Tim Venneman		6/7/2010
	Print	Sign	Date

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CCP-PK-RL-101

Central Characterization Project
Process Knowledge Summary Report
For

Hanford Plutonium Finishing Plant Contact-Handled Transuranic Debris Waste 85-Gallon Overpacked Drums

Waste Stream:
MPFPDD

REVISION 2

June 4, 2010

Larry Porter
Printed Name

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	03/22/2010	Initial issue.
1	04/15/2010	Revised to correct the Waste Material Parameter (WMP) table, Chemical table, and to address comments from Advanced Mixed Waste Treatment Plant (AMWTP).
2	06/04/2010	Revised to include references for nitrobenzene, address incinerator ash, update Figures 1 and 2, and to incorporate changes made during the Hanford certification audit.

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LIST OF ACRONYMS AND ABBREVIATIONS

AK	Acceptable Knowledge
ATWIR	Annual Transuranic Waste Inventory Report
AMWTP	Advanced Mixed Waste Treatment Plant
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	Contact-Handled
CWC	Central Waste Complex
D&D	Decontamination and Decommissioning
DMA	U.S. Department of Military Application
DOE	U.S. Department of Energy
EDF	Emergency Decontamination Facility
EPA	U.S. Environmental Protection Agency
HEHF	Hanford Environmental Health Foundation
HWN	Hazardous Waste Number
LLW	Low-Level Waste
MBA	Material Balance Area
MD	Materials Disposition
MSDS	Material Safety Data Sheet
MT	Miscellaneous Treatment
NDA	Nondestructive Assay
NDE	Nondestructive Examination
NWPA	*Nuclear Waste Policy Act of 1982*
PBM	Plutonium Bearing Material
PCB	Polychlorinated Biphenyl
PFP	Plutonium Finishing Plant
PK	Process Knowledge
PPE	Personal Protective Equipment
ppm	Part per million
PPSL	Plutonium Process Support Laboratories
PR	Product Receiver
PRF	Plutonium Recovery Facility
PUREX	Plutonium-Uranium Extraction (A Plant)
RCRA	Resource Conservation and Recovery Act of 1976
RECUPLEX	Recovery of Uranium and Plutonium by Extraction
REDOX	Reduction Oxidation (S Plant)
RFETS	Rocky Flats Environmental Technology Site
RG	Rubber Glove (line)
RMA	Remote Mechanical A (Line)
RMC	Remote Mechanical C (Line)
SAR	Safety Analysis Report
SGSAS	Segmented Gamma Scan Assay System

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

SNM	Special Nuclear Material
SS&C	Sand, Slag, and Crucible
SWITS	Solid Waste Information and Tracking System
TBP	Tri-Butyl Phosphate
TRAMPAC	Transuranic Authorized Methods for Payload Control
TRU	Transuranic
TRUCON	CH TRU Waste Content Code
TSCA	Toxic Substances Control Act of 1976
WDS	Waste Data Systems
WAC	Washington Administrative Code
WIPP	Waste Isolation Pilot Plant
WIPP-WAC	*Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*
WIPP-WAP	*Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, Attachment B-B6, *Waste Analysis Plan*
WMP	Waste Material Parameter
WRAP	Waste Receiving and Packaging
WWIS	WIPP Waste Information System

1.0 EXECUTIVE SUMMARY

This Process Knowledge (PK) Summary Report summarizes the information collected by the Central Characterization Project (CCP) to satisfy the transportation and waste acceptance requirements for the transfer of transuranic (TRU) waste between sites. The information collected includes documentation to be used by the receiving site to address acceptable knowledge (AK) requirements of the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, Attachments B-B6, *Waste Analysis Plan* (WIPP-WAP) (Reference 1) and DOE/WIPP 02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WIPP-WAC) (Reference 2). Additionally, this PK Summary Report provides the transportation information required for shipment of TRU waste in accordance with CCP-PO-401, *CCP Contact-Handled Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) for Intersite Shipments* (Reference 3).

This report has been prepared by CCP for contact-handled (CH) TRU waste generated at the Hanford Site to be shipped to the Advanced Mixed Waste Treatment Project (AMWTP). The debris waste described in this report has been generated by the Plutonium Finishing Plant (PFP) facilities at Hanford. This report is one of three PK summary reports developed by CCP that will provide the PK for approximately 1,000 85-gallon drums containing overpacked 55-gallon drums of Hanford debris waste. Approximately 748 containers in this population belong to the MPFPDD waste stream. This report addresses waste similar to that which is included in the Hanford waste streams described in HNF-6489, *Acceptable Knowledge Document for Plutonium Finishing Plant Mixed Debris Waste Stream, MPFPD* (Reference 4) and HNF-36515, *Acceptable Knowledge Document for the Richland Mixed Plutonium Finishing Plant Comprehensive Debris Waste Stream*, RLMPFPCD (Reference 5).

This PK Summary Report includes information relating to the mission and process operations of the PFP facilities, waste identification and characterization, and waste management. This report also includes information regarding the physical form, radiological characteristics, and chemical contaminants of the waste, as well as prohibited items and packaging configuration.

This document, along with the referenced supporting documentation, provides a defensible and auditable record of PK for the characterization of waste generated by operations in the PFP Complex. The source documents listed in Section 8.0 of this PK Summary Report and cited throughout the report are identified by alphanumeric designations (e.g., C001, M001, P001, U001, and DR001) corresponding to the Source Document Tracking Number using the following convention:

- C – Correspondence
- M – Miscellaneous data
- P – Published documents and Procedures
- U – Unpublished documents
- DR – Discrepancy resolutions

The CCP is tasked with development of PK for TRU waste for transportation from Hanford to AMWTP. Procedure CCP-TP-401, *CCP Process Knowledge Compilation for Preliminary Characterization* (Reference 6), describes how PK is compiled by the CCP. The PK records compiled during the implementation of CCP-TP-401 will be transmitted to AMWTP. CCP is responsible for providing to AMWTP all referenced documents associated with the PK document for the waste to be shipped to the AMWTP. The AMWTP will maintain responsibility for placing all referenced documents into the AMWTP AK record. The PK source documents are listed in Section 8.0.

2.0 Waste Stream Identification Summary

Generation and Storage Location

Hanford Site
P.O. Box 1000
Richland, Washington 99352-1000
U.S. Environmental Protection Agency (EPA) ID WA7890009867

Facility Where TRU Waste Was Generated

Plutonium Finishing Plant

Facility Mission:

The mission of the Hanford Site was plutonium (Pu) production for the nuclear weapons program during and following World War II. The mission of the 300 Area was research and development activities supporting fuel fabrication and reactor development programs. Irradiation of fuel elements took place in the 100 Area production reactors; and chemical dissolution and separation into plutonium, uranium, and various fission byproducts occurred in the 200 Area (Reference P153).

The mission of the PFP was to process plutonium into oxides and metal. Operations included supporting plutonium metal production for national defense. Since 1991, the mission of the PFP has changed from plutonium processing to preparation for deactivation, decommissioning, and demolition (Refer to Section 4.1).

Waste Stream:	MPFPDD
Summary Category Group:	S5000
Waste Matrix Code Group:	Heterogeneous Debris
Waste Matrix Code:	S5400, Heterogeneous Debris
CH TRU Waste Content Code (TRUCON):	RH125/RH 225, RH130/RH230
Maximum Layers of Confinement :	Six

Waste Stream Description:

The MPFPDD waste stream consists of TRU mixed heterogeneous debris resulting from production, maintenance, cleanout, stabilization, and decontamination and decommissioning (D&D) at the PFP. Based on a review of data generated previously by the Hanford TRU Waste Certification program at the PFP facility, examples of potential waste items in the MPFPDD waste stream are provided below (References C032, C039, C041, C042, C197, M043, M062, and P197):

- Iron-based Metals/Alloys: tools and scraps remaining after maintenance activities, spent equipment (e.g., pipes, pumps, tanks, hot plates, sample racks, stirrers, burners, slip-lid cans, untinned cans, torpedo levels, and grease guns)

- Aluminum-based Metals/Alloys: foil and mask filters, racks, containers, structural components, etc.

- Other Metals: leaded items (e.g., apron, seals, tape, lead chromate paint, and gloves) and fluorescent light bulbs (e.g., cadmium, barium, mercury, and silver)

- Other Inorganic Materials:

    - Glass: glovebox panels and laboratory equipment
    - Asbestos: pot liners
    - Ceramic: laboratory tools and equipment
    - Sand, slag, & crucible (SS&C)

- Cellulosics

    - Paper: cardboard and "ice cream" cartons to place tools in the gloveboxes at the glovebox seal-out and hood areas

    - Cloth: personal protective equipment (PPE) that could not be decontaminated and rags used for decontamination

    - Wood: ladders, brush handles, and framing material for filter media

    - Filter media

- Rubber: masks and gloves used for PPE (some leaded), plunger, stoppers, tubing

- Plastics (waste material and packaging materials): glovebox panels; bags used exclusively to bag out glovebox waste, load equipment and tools into gloveboxes, contamination control during and after bagging out waste, empty bags, poly jars, bottles, herculite bags, and Anti-Corrosive Rad Pad (polypropylene) used in the waste packaging of waste drums

- Organic Matrix: absorbed organic liquids contaminated with plutonium (e.g., lab chemicals, organic process solvents)

- Inorganic Matrix: absorbed inorganic liquids contaminated with process residues, diatomaceous earth, kitty litter, and vermiculite.

Legacy holdup is another type of waste potentially present in the MPFPDD waste stream. Hold-up nuclear material is that left in building systems such as gloveboxes, piping, process exhaust ducts, filters, sumps, pumps and other equipment (Reference 5).

The EPA hazardous waste numbers (HWNs) assigned to this debris waste stream are D004, D005, D006, D007, D008, D009, D010, D011, D022, D030, F001, F002, F004, and F005 (Refer to Section 5.3.3).

Plutonium isotopes (Pu-238, Pu-239, Pu-240, Pu-241, and Pu-242) are the main radionuclides present in the waste, but there are also trace amounts of uranium (U-232, U-233, U-234, U-235, U-236 and U-238), americium (Am-241), neptunium (Np-237), cesium (Cs-137), and strontium (Sr-90) (References 4, 5, C037, and C060).

Based on the review of the container documentation and waste management practices, prohibited items may be present in containers in waste stream MPFPDD. Waste management practices prohibited the packaging of free liquids or unused reagents; however, because liquids were neutralized, absorbed, and cemented, they may be present in residual amounts due to dewatering or condensation. The PK identified that cans greater than 4-liters in volume (e.g., 5-quart, 4-gallon, and 5-gallon cans) with crimped or taped lids may be present. Aerosol cans were not segregated from the waste until the early 1980s and may be present in containers generated prior to this time. Hanford has performed radiography on the 85-gallon overpack containers to verify the absence of prohibited items in the containers selected for shipment. Any drum found to contain a prohibited item during radiography at Hanford will be excluded from shipment to AMWTP (Refer to Section 5.3.4).

The containers to be shipped to AMWTP consist of 55-gallon drums overpacked in 85-gallon drums generated during waste management activities to correct drum integrity problems identified during retrieval and subsequent management of these containers. The current inventory of 85-gallon drums verified to be eligible for shipment to AMWTP is included in the PK Waste Containers List for waste stream MPFPDD.

3.0 PROCESS KNOWLEDGE DATA AND INFORMATION

This PK Summary Report summarizes the information collected by CCP to satisfy the transportation and waste acceptance requirements for the transfer of TRU waste between sites. The information collected includes documentation to be used by the receiving site to develop the AK required by the WIPP-WAP and WIPP-WAC (References 1 and 2). This report provides the transportation information required for shipment of TRU waste in accordance with the CCP CH-TRAMPAC (Reference 3).

This report has been prepared by CCP for CH TRU debris waste generated at the Hanford Site to be shipped to the AMWTP. The debris waste described in this report consists of overpacked 85-gallon drums containing 55-gallon drums retrieved by Hanford originally generated at the PFP.

A majority of the sources collected consist of the AK documentation compiled by the previously certified Hanford TRU Waste Program to develop the AK for HNF-6489 (Reference 4) and HNF-36515 (Reference 5). These Hanford sources include facility safety basis documentation, standard operating procedures, waste packaging documentation, generator records, storage facility waste records, materials safety data sheets (MSDSs), and interviews with facility personnel. Additionally, CCP has compiled and reviewed the Hanford characterization procedures and resulting documentation (i.e., radiography, headspace gas, and assay batch data reports) generated to supplement the data previously collected.

The DOE/TRU-2009-3425, *Annual Transuranic Waste Inventory Report* (ATWIR) – *2009*, identifies a similar CH debris waste stream for the PFP Complex (Reference 7):

- ATWIR Waste Stream Number: RLPFP-01
- ATWIR Waste Stream Name: 2345Z TRU Mixed Debris
- ATWIR Waste Stream Description: Combustible and noncombustible debris waste generated from operations, maintenance, and D&D activities at the PFP, which includes the 234-5Z, 232-Z, 236-Z, 236-ZB, 242-Z, and 291-Z Buildings. Combustible waste may include wood, plastics, paper, and rags. Noncombustible waste items may include metals, glass, concrete, and absorbed liquids.

4.0 REQUIRED PROGRAM INFORMATION

This section provides waste management program information, including a brief history of the PFP Complex, a summary of its missions, a discussion of the operations associated with the generation of TRU waste, and a description of the TRU waste management program.

4.1 Facility Location

The Hanford Site is located in southeastern Washington State, north of Richland, as shown in Figure 1, Location of Hanford Site. The PFP Complex is located in the 200 West Area of the Hanford Site. The locations of the PFP and other major areas of the Hanford Site are illustrated in Figure 2, Location of the Major Areas at the Hanford Site (References P052 and P191).

4.2 Facility Descriptions

4.2.1 PFP Complex

The PFP is a collection of facilities that have primarily been used to process plutonium nitrate to support national defense activities. The PFP buildings in which the MPFPDD waste stream was generated are 232-Z, 234-5Z, 236-Z, 242-Z, Emergency Decontamination Facility (EDF), 291-Z, and 2736-ZB. This waste stream also includes the TRU debris waste generated in the PFP's ancillary facilities (e.g., PFP effluent infrastructure). Table 4-1, Plutonium Finishing Plant Facilities, identifies the major processes that generated this waste stream and lists some of the equipment used in the process. A more detailed discussion of these facilities is provided below. Description of process operations in these areas is provided in Section 4.5 (References 4, 5, C117, P130, P191, and P239).

Table 4-1. Plutonium Finishing Plant Facilities

Building Number	Facility Name	Transuranic (TRU) Waste Generating Processes/Equipment
232-Z	Waste Incinerator Facility	Incinerator (e.g., Contaminated Waste Recovery)
234-5Z	Plutonium Finishing Plant (e.g., Z Plant, Plutonium Process and Storage Facility, 234-5 Building)	Rubber Glove (RG) Line Remote Mechanical A (RMA) Line Remote Mechanical C (RMC) Line RECUPLEX Analytical Laboratory (rooms 131-157A) Plutonium Process Support Laboratories (rooms 179-191, and room 202) Radiochemical Standards Laboratory (rooms 221-B, 221-C, 221-D, and 221-E) Scrap stabilization gloveboxes Plutonium nitrate feed load-in/load-out for RMC Line (room 227) Radioactive Acid Digestion Test Unit (room 235D) Thermal Stabilization (rooms 228C, 230, 230A, 230B) Nondestructive Assay (NDA) Counting (room 172)
236-Z	Plutonium Reclamation Facility	Process Cell East and West gloveboxes on 1st, 2nd, 4th, 5th, and 6th floors Miscellaneous Treatment (MT)
242-Z	Waste Treatment Facility	Waste Treatment Facility Americium Facility
EDF	Emergency Decontamination Facility	Personnel decontamination facility, Room 748 under direction of Hanford Environmental Health Foundation (HEHF)
2736-ZB	Product Shipping and Receiving Facility	Room 636 Repackaging Glovebox, Shipping and receiving areas, and NDA
291-Z	Ventilation/Exhaust Air Stack Building	Exhaust fans Mechanical service equipment Substation (auxiliary to the 291-Z Stack)
PFP Effluent Infrastructure and Ancillary Facilities	PFP Effluent Infrastructure • 241-Z Treatment and Storage Tanks • 241-Z-361 Settling Tank • 241-Z-8 Silica Slurry Tank • 216-Z-9 Crib • 216-Z-1A Crib/Tile Field Ancillary Facilities • 216-Z-12 Process Crib • 2904-ZA Monitoring Station	Piping Agitator motor Gearbox Hose

4.2.1.1 232-Z Waste Incinerator Facility

During 1959 to 1961, the 232-Z Waste Incinerator Facility (Figure 3, PFP Aerial View of the PFP) was constructed to recover plutonium from waste generated by the PFP. From 1961 until 1973, the facility was used to recover plutonium through incineration of plutonium-contaminated combustible scrap materials and leaching of non-combustible materials. The 232-Z Facility was closed in 1973. After D&D, the building was dismantled and the 232-Z above-grade structures were demolished to slab on grade in July 2006 (References M102, P194, P197, and P204).

The 232-Z Facility was located about 200 feet (ft) south of the main portion of Building 234-5Z and was approximately 37 ft wide by 57 ft long. The building was single-storied over the process and storage areas and two-storied over the service areas at the north end. The incinerator consisted of five gloveboxes (also sometimes referred to as hoods) used for sorting and drying contaminated materials; leaching or washing noncombustible materials; incinerating combustible materials and canning the ashes; and providing contamination barriers around the associated scrubbers and blowers (References P071 and P194).

4.2.1.2 234-5Z Building

The 234-5Z Building is the main facility at the PFP. The approximate dimensions of the building are 180 ft wide by 500 ft long; the building extends from 9.5 ft below grade to 47 ft above grade. Floor levels are designated as basement, first floor, duct level, second floor, and roof level (Reference P071 and P153).

The 234-5Z basement houses pipe tunnels carrying piping to sumps. The first floor consists of the plutonium processing lines RMA and RMC lines and control rooms; scrap stabilization gloveboxes; plutonium storage vaults; the plutonium nitrate feed load-in/load-out, blending, and storage facilities; the Analytical Laboratory; the Plutonium Process Support Laboratories; the Radiochemical Standards Laboratory; instrument maintenance shops; change rooms; and offices. Service piping, ventilation ducts, and filter boxes are located on the duct level and second floor. The lunchroom, conference room, materials storage room, chemical feed preparation and aqueous make-up rooms, are on the second floor. Change rooms and offices are on the first and second floors (References P071 and P153).

4.2.1.3 236-Z Plutonium Reclamation Facility

The 236-Z Plutonium Reclamation Facility (PRF) was constructed in 1963 and is located at the southeast corner of the 234-5Z Building and is connected to it by the 242-Z Building (Figure 3,). The PRF is a four-story structure surmounted by a two-story penthouse. It is also referred to as the Plutonium Nitrate Production Facility (Reference P239).

The PRF houses a single process equipment cell that is 32 ft wide by 52 ft long. The process cell has a 2 ft thick concrete wall between the cell and the "access" hoods. The access hoods are located on both sides of the cell on the first two floors and contain process piping, pumps, valves, flowmeters, and other equipment (Reference P239).

Maintenance shop facilities were located on the service (east) side of the building on the ground floor. The second floor of the service side was used for a maintenance glovebox and ventilation exhaust filters. Building service equipment and electrical switchgears were on the third floor of the service area. The fourth floor was used for chemical preparation and miscellaneous treatment. The fourth floor contained the operating control room; SS&C dissolver equipment; and a column room in which vertical sections of two liquid-liquid extraction columns (penetrating the room from above and below) were housed in a glovebox. A service elevator located within the east side of the building served the four floors (Reference P158).

4.2.1.4 242-Z Building Waste Treatment and Americium Facilities

The 242-Z Building, constructed in 1963, contains the Waste Treatment Facility and Americium Facility. The 242-Z Building is between the southeast corner of the 234-5Z Building and the 236-Z Building (Figure 3). Along its east side runs a corridor connecting the 234-5Z Building, 242-Z, and 236-Z Buildings. At its west end is an entrance enclosure for outside entry into both 242-Z and the Analytical Laboratory in 234-5Z (Reference P158).

The building's approximate dimensions are 40 ft wide, 26 ft long, and 23 ft high. The south portion is the tank room (tank cell). This room extends the full height of the building. The north portion, designated as the control room, has a mezzanine over its west half for chemical addition tanks. The tank room houses large process vessels, which are piped to the process gloveboxes on the control room. The 242-Z Building shares its ventilation with 234-5Z and 236-Z and is equipped with other the PFP utilities and services (Reference P158).

4.2.1.5 2736-ZB Building Product Shipping and Receiving Facility

The 2736-ZB Building, the Product Shipping and Receiving Facility, is located south of 234-5Z (Figure 3). It is adjacent to Building 2736-Z, the PFP Plutonium Storage Facility. The 2736-ZB Building was constructed from 1981 to 1983 to support storage vault operations. The 2736-ZB is a one-story building that is approximately 132 ft by 90 ft (Reference P130).

4.2.1.6 291-Z Ventilation/Exhaust Air Stack Building

The 291-Z Exhaust Air Stack Building is located south of the central part of the 234 5Z Building. The 291-Z was constructed in 1949 and is still operational. It is a

reinforced-concrete structure of irregular shape. It is approximately 74 ft wide by 143 ft long with an overall height of 23 ft, lying mostly below grade (References P130 and P405).

4.2.1.7 PFP Ancillary Facilities/Effluent Infrastructure

The PFP effluent infrastructure includes the 241-Z Treatment and Storage Tanks, 241-Z-361 Settling Tank, 241-Z-8 Silica Slurry Tank, 216-Z-9 Crib, 216-Z-1A Crib/Tile Field, 216-Z-12 Process Crib, and the 2904-ZA Monitoring Station. Throughout the PFP's operating history, several waste disposal facilities were used. Over the years, aqueous waste has been discharged to tile fields, ditches, cribs, trenches, French drains, diversion boxes, settling tanks, septic tanks, drain fields, and to a seepage basin and a reverse well (References P071, P153, and P209).

Aqueous waste streams from the PFP were discharged either to the 241-Z-8 Silica Slurry Tank (Recovery of Uranium and Plutonium by Extraction [RECUPLEX] operations); 216-Z-9 Crib (RECUPLEX solvent extraction process); 216-Z-1A, 216-Z-1, 216-Z-2, and 216-Z-3 Cribs (234-5Z process and laboratories, PRF, and 242-Z Americium Recovery); or the 241-Z Treatment and Storage Tanks at the PFP prior to transfer to the 241-Z-361 Settling Tank. From the 241-Z-361 Settling Tank, the aqueous waste was discharged to the 216-Z-1A and 216-Z-12 Cribs for disposal (Figure 5, Flow Diagram for Process Wastes). The cribs were underground structures that introduced aqueous wastes to soil through perforated underground piping or trenches. These cribs are also described as drain fields and/or tile fields. A layout of the PFP and its associated disposal sites is shown in Figure 6, Plutonium Reclamation Facility (References P209 and P210).

In 1962, the 216-Z-9 Crib was removed from service. From 1973 to 1989 all remaining cribs, ditches, and tile fields along with the 241-Z-361 Settling Tank were removed from service. Beginning in 1973, effluents were routed from 241-Z Treatment and Storage Tanks to the 242-T Evaporator at the tank farms. Aqueous waste discharged from the PFP was routed to double-shell underground storage tanks until 2004. Currently, only limited amounts of liquids are generated at the PFP; they are disposed of in labpacks that are not included in this waste stream (References P071, P153, and P209).

4.3 Facility Mission

The general mission of the Hanford Site and the specific mission of the PFP complex are discussed in the following sections.

4.3.1 Hanford Site

The mission of the Hanford Site was plutonium production for the nuclear weapons program during and following World War II. The primary mission of the Hanford Site pertaining to national defense and nuclear weapons production included fuel and target fabrication; plutonium production reactor operations; chemical separations; component

fabrication; and research, development, and testing. The mission of the 300 Area was research and development activities supporting fuel fabrication and reactor development programs. Irradiation of fuel elements took place in the 100 Area production reactors, and chemical dissolution and separation into plutonium, uranium, and various fission byproducts occurred in the 200 Area. Since the plutonium production mission ended, the Hanford Site mission has changed to environmental management "to safely clean up and manage the site's legacy waste" and to develop and deploy science and technology (References P052 and P153).

4.3.2 Plutonium Finishing Plant

The PFP began operations in several buildings in 1949. The mission of the PFP was to process plutonium and fabricate weapons parts. Operations included supporting plutonium metal production for national defense. The PFP converted plutonium nitrate to metal; performed casting and machining operations for weapons components; and recovered plutonium from waste and scrap generated at other Hanford and offsite facilities. The PFP began processing plutonium nitrate to create buttons in 1952, and in the late 1960s participated in extended programs that prepared plutonium oxides for commercial nuclear experiments and development. As the need for additional plutonium scrap recovery capabilities became greater, the PRF was established to replace the RECUPLEX facility, for recovering plutonium through incineration and solvent recovery from a range of scrap items, including incinerator ash, crucibles, and dissolver heels. Since 1991, the mission of the PFP has changed from plutonium material processing to preparation for deactivation, decommissioning, and continued safe storage of plutonium. Deactivation is the process of placing the facility in a safe and stable condition, including removing readily removable hazardous and radioactive materials. Decommissioning involves decontaminating and dismantling the equipment and structures (References P052 and P071).

In 1993, the United States implemented a major non-proliferation policy that sought to eliminate the accumulation of stockpiles of highly enriched uranium and plutonium. Thus, all the plutonium stored at the Hanford Site was declared 'surplus.' The plan to disposition Hanford's surplus plutonium was two-fold. The high assay plutonium material was stabilized and packaged for transfer to the U.S. Department of Energy (DOE) Office of Fissile Materials Disposition (MD) Program at the DOE Savannah River Site. The low assay plutonium residues were packaged for eventual shipment and disposal at the Waste Isolation Pilot Plant (WIPP) as separate residue waste streams (e.g., ash and mixed oxide). The remaining plutonium in the facility is considered legacy holdup, meaning it is residual waste remaining in gloveboxes, process equipment, process cells, etc. The legacy holdup plutonium is being cleaned out of the PFP as part of the facility's D&D and packaged as TRU waste (Reference P199). In 1996, DOE issued a formal shutdown order for the PFP and, since that time, various production, maintenance, cleanout, stabilization, and D&D activities have been performed.

4.4 Defense Waste, Spent Nuclear Fuel, and High Level Waste

4.4.1 Defense Waste Assessment

The WIPP-WAC (Reference 2) requires generator sites to use AK to determine if the TRU waste streams to be disposed at WIPP meet the definition of TRU "defense" waste. Based on guidance from the DOE, a TRU waste is eligible for disposal at WIPP if it has been generated in whole or part by one of the atomic energy defense activities listed in section 10101(3) of the *Nuclear Waste Policy Act of 1982* (NWPA) (Reference 8). Based on the review of AK, TRU waste generated by the PFP operations are contaminated with materials from atomic energy defense activities conducted in the facilities and contaminated with radiological materials from atomic energy defense activities for the following activities:

- Defense nuclear materials production processing and fabrication of plutonium metal for weapons activities
- Defense nuclear waste and materials by-products management
- Defense research and development

The mission of the PFP pertaining to national defense and nuclear weapons included radionuclide and chemical separations; component fabrication; and large scale plutonium and nuclear material development. Review of the AK sources clearly indicates that this waste stream resulted from the support of weapons development activities. The PFP facilities conducted defense activities as its mission was to process plutonium to support national defense activities. Several forms of special nuclear material (SNM) were utilized as feed including plutonium-bearing scrap, incinerator ash (including ash from Rocky Flats Environmental Technology Site [RFETS]), silicon nitride crucibles, plutonium-uranium mixtures, slag and crucible fragments, plutonium-beryllium sources, and unique plutonium-bearing solutions (e.g., Plutonium-Uranium Extraction Plant [PUREX] plutonium nitrate solution) (References P189, P239, and P405).

The plutonium nitrate feed materials used by the PFP primarily came from PUREX and the Reduction Oxidation (REDOX) Facility. The source of the PFP feed from the PUREX and Hanford defense production reactors allows the resulting waste stream to be considered defense waste (Reference P405).

4.4.2 Spent Nuclear Fuel and High-Level Waste Assessment

Public Law 102-579, *The Waste Isolation Pilot Plant Land Withdrawal Act* (Reference 9) prohibits the disposal of spent nuclear fuel and high-level waste as defined by the NWPA (Reference 8) at WIPP. According to the NWPA, spent nuclear fuel is "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing." The DOE Order 435.1, *Radioactive Waste Management* (Reference 10) expands on this definition to clarify that

"test specimens of fissionable material irradiated for research and development only, and not production of power or plutonium, may be classified as waste, and managed in accordance with the requirements of this Order when it is technically infeasible, cost prohibitive, or would increase worker exposure to separate the remaining test specimens from other contaminated material." High-level waste is defined by the NWPA as "the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations, and other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation."

As described in this report, the PFP mission included converting plutonium nitrate to metal; performing casting and machining operations for weapons components; and recovering plutonium from waste and scrap generated at Hanford and offsite facilities. The PFP was not a spent nuclear fuel reprocessing facility involving the separation or reprocessing of constituent elements from reactor fuel. The waste does not contain irradiated fuel elements withdrawn from a reactor, only unirradiated materials from testing. Therefore, the waste is not a spent nuclear fuel or high-level waste and is eligible for disposal at WIPP (References 2, 8, 9, and 10).

4.5 Description of PFP Waste Generating Operations

This section describes the waste generating activities that occurred at the PFP facilities. Section 5.3 describes the types of waste generated. Section 5.4 provides the packaging discussion. The chemicals used at the PFP are listed in Table 5-6, Waste Stream MPFPDD Material and Chemical Inputs, in Section 5.3.3.

Initial operations at the PFP were focused on the conversion of pure weapons grade plutonium nitrate solutions into plutonium metal and subsequent fabrication into weapons components. The feedstock (plutonium oxide and/or plutonium nitrate) to the PFP contained a number of minor impurities that may have contributed to the constituents in this waste stream, such as arsenic, beryllium, cadmium, chromium, lead, and silver (References C083 and P138).

There were three separate generations of plutonium conversion lines installed and operated within the PFP (the RG Line, RMA Line, and RMC Line). Another line, the Remote Mechanical B Line was installed, but became obsolete and was removed before ever initiating hot operations. A timeline of the major process systems and laboratories operated at the PFP is provided in Table 4-2, PFP Process Systems Timeline (Reference 5).

Table 4-2. PFP Process Systems Timeline

Process System or Activity	Operational Timeframe
Nitrate Blending	1949 – 2004
RG Line Task I, II, III, IV, V, VI, VII, & VIII	1949 – 1953
RMA Line Task I & Oxide Blending	1952 – 1964, 1968 – 1976, 1979
RMA Line Tasks II, III, IV, V, VI, VII, & VIII	1952 – 1964
RMC Line Tasks I, II, & III	1960 – 1973, 1985 – 1989
RMC Line Task IV	1960 – 1969
RMC Line Tasks V, VI, VII, & VIII	1960 – 1965
RMC Line Oxide Blending	1977 – 1978
RMA and RMC Line Thermal Stabilization	1979 – 1994
RECUPLEX Scrap Dissolvers & Solvent Extraction	1955 – 1962
Analytical Laboratory	1949 – 2009
Plutonium Process Support Laboratories	1949 – 2004
Radiochemical Standards Laboratory	Mid 1980s – 2009
PRF – Miscellaneous Treatment & Solvent Extraction	1964 – 1976, 1978 – 1979, 1984 – 1987
PRF – Sand, Slag, & Crucible Dissolvers	1964 – 1976
PRF – Filtrate Concentrator	1964 – 1976, 1978 – 1979, 1984 – 1988
242-Z Facility – Waste Treatment	1963 – 1976
Radioactive Acid Digestion Testing Unit	1978 – 1981
232-Z Facility – Incineration and Leaching	1961 – 1973
232-Z Facility – Waste Segregation and Repackaging Activities	1973 – 1984
232-Z Facility – Deactivation	1984- 2006
Oxide Washing for Chloride Removal	2003
Thermal Stabilization & Packaging – 234-5Z System	1994 – 2004
Thermal Stabilization, Packaging, & 3013 Packaging – 2736ZB Stabilization and Packaging Equipment	2000 – 2009
Solution Stabilization – Magnesium Hydroxide and Oxalate Precipitation	1999 – 2002
Non-Defense Oxide Quality Verification Testing	1970 – 1976
Fuels Grade Oxide Quality Assurance Laboratory	1968 – 1978

4.5.1 232-Z Waste Incinerator Facility

The 232-Z Incinerator was designed to recover plutonium from process wastes such as rags, gloves, containers, and other items by incinerating the combustible items and

leaching non-combustibles. It operated from December 1961 until May 1973 to recover plutonium from "various miscellaneous solid waste" generated at the PFP. The 232-Z Facility was closed in 1973. Between 1973 and 1983, following shutdown of the incinerator, the facility was used for waste segregation activities. The facility was then placed in retired inactive status in 1984. Deactivation was initiated in 1984, for a short period, to decontaminate and remove the process equipment. Over the next decade, packages containing SNM were removed from the building. Deactivation resumed in 2004 and the building was then dismantled and demolished to slab on grade in July 2006 (References P204, DR013, C364, and P071).

4.5.1.1 232-Z Process Description

Candidate feed materials to the 232-Z Building Incinerator furnace included the following combustible items: cartons, filters, rags, paper, gloves, special work clothing, other combustible items used, tools, and small equipment components. Non-combustible feeds included metal (References P071 and P197).

Plutonium-bearing materials (PBMs) received at 232-Z were first hand-sorted into combustible or leachable fractions. Combustible fractions were processed via the 232-Z incinerator. Non-combustible items were leached in nitric acid to recover plutonium (Reference P071).

Combustible materials were sent through a chopper, then routed to the incinerator via a conveyor belt, and incinerated in an externally heated incinerator with primary and secondary combustion chambers (Figure 4, 232-Z Process Flow Diagram). Electric elements maintained the temperature in the combustion chamber at a high temperature to ensure incineration of the feed materials; plutonium was then recovered from the ash. Incinerator gas was processed in an off-gas scrubber with a mixture of water, sodium hydroxide, and urea. The treated gas was heated and directed into the exhaust system. Spent scrubber solution was discarded to the 241-Z tank system. Condensate and cooling water was routed to the 216-Z-11 ditch for surface (crib) disposal. The exhaust was vented to the 291-Z ventilation system initially but in 1991 a dedicated stack and ducting were installed at 232-Z and the 232-Z exhaust was isolated from 291-Z (Reference P071).

Non-combustible materials were placed in leach pots, leached in heated nitric acid and aluminum nitrate nonahydrate, and rinsed in water. Resultant leach solutions were then transferred to RECUPLEX for solvent extraction recovery of plutonium. After RECUPLEX was closed these leach solutions were transferred to the PRF (236-Z Building) for solvent extraction recovery of plutonium (Reference P071).

Material balance and accountability for the incinerator were maintained by surveying feed material boxes with a "package" neutron counter located in the 234-5Z Building, Room 161, then surveying the dry, canned ash with another neutron counter. The PBM produced in the incinerator was designed for further reprocessing at PRF; however, the PFP ended up disposing of a lot of the ash as residues (Reference P071).

TRU debris waste was generated during replacement of hoods, scrubber parts, and miscellaneous equipment (e.g., off-gas heaters, fire brick, heating elements, bellows, belts, temperature indicators, pumps, filters, valves, and chopper blades) (Reference P071).

4.5.1.2 232-Z Decontamination and Decommissioning

After years of difficult operations and processing of more than 4,000 cubic feet of combustible solid waste, the 232-Z facility terminated operations in 1973. Preliminary isolation and terminal cleanout activities of 232-Z began in 1982. A deactivation activity initiated in 1984 resulted in the removal of three large gloveboxes. In 1994, during another cleanout campaign, moveable equipment, instruments, portions of contaminated piping, ductwork, and other parts were removed. Removal of the furnaces, conveyor, piping, and the cyclone air separators from the inside of the gloveboxes started in 2004. Further D&D involved removal of residual plutonium from the ventilation piping, gloveboxes, and filter boxes, followed by decontamination and removal of the process equipment (References P071, P123, P124, P134, P204, and P247).

The objective of the deactivation phase was to remove enough plutonium in process equipment to allow the facility to be disposed of as low level waste (LLW). Most of the 232-Z D&D waste was disposed of as LLW; however, the incinerator glovebox was unable to be decontaminated to LLW. It was packaged and sent to T Plant for size-reduction. Other solid waste determined to be TRU during the equipment-removal and building dismantlement of 232-Z included contaminated greenhouses, solidified liquid waste (i.e., remaining liquid in scrubber system and rinsate from the decontamination process), and any remaining TRU waste that was unable to be decontaminated (References P194 and P204).

At the conclusion of deactivation, the PFP workers applied a final fixative coating of Polymeric Barrier System (a non-hazardous, water-based solution that forms an impenetrable barrier around contaminated materials), to the interior surfaces of 232-Z to lock in contamination during demolition. The deactivation of the 232-Z Facility was completed on June 1, 2006 and the facility was transferred to a demolition team. The building was dismantled and the 232-Z above-grade structures were demolished to slab on grade in July 2006 (References P194 and P204).

4.5.2 234-5Z Building

The 234-5Z Building began operations in July 1949 to convert plutonium nitrate and plutonium oxalate into plutonium metal and plutonium products. Plutonium was removed from irradiated fuel elements at the Hanford Site's chemical separations plants (T Plant, B Plant, REDOX [S Plant], and PUREX [A Plant]) in the form of plutonium nitrate (References P071 and P153).

The three chemical separation processes used at Hanford were the bismuth phosphate batch, solvent extraction through reduction oxidation, and solvent extraction through

plutonium-uranium extraction. The final step at the chemical separations plants was to concentrate the plutonium nitrate solution into a paste. The plutonium nitrate paste was loaded out in product receiver (PR) cans and transferred to the 231-Z Building or the PFP for plutonium finishing. In 1955, the 233-S Building (the Plutonium Concentration Facility) was constructed and performed the concentration function for REDOX and operated until 1963 (References P071 and P153).

The 231-Z Building, constructed in 1944, was Hanford's original plutonium finishing facility. In 1956, PUREX began to provide plutonium nitrate directly to the PFP (References P071 and P153).

The PFP's main conversion processes, plutonium material stabilization and conversion, occurred initially in the RG Line, and later in the RMA Line and the RMC Line. By May 1976, some of the gloveboxes used for plutonium processing operations and some of the plutonium processing equipment were removed from the RMA and RMC lines and retrievably stored in the 200 Area burial grounds. The basic plutonium finishing operations carried out in the RG, RMA, and RMC Lines consisted of several standard steps known as "tasks." Table 4-3, PFP Production Task Number Designations identifies these tasks that directly related to the plutonium conversion work activities (References P071 and P130).

Task I was the precipitation of plutonium nitrate feed solution with oxalic acid and other agents. In Task II, hydrogen fluoride gas was diffused through the precipitate in a furnace at a very high temperature, producing plutonium tetrafluoride. In Task III, the plutonium tetrafluoride was combined with calcium and other agents, and then fired at high temperatures until it fused or "reduced" into plutonium metal. Sometimes gallium was added as a stabilizer. The plutonium metal chunk was called a button. During Task IV, the buttons were melted and cast into a mold shape called a "pit." In Task V, the pit was machined to precise dimensions and configuration. In Task VI, the machined pit was chemically degreased. Task VII was the application of a coating. During Task VIII, final inspection, the pit was measured for uniformity of neutron energy, isotopic content, dimensional precision, and cracking (Reference P071).

The Radioactive Acid Digestion Test Unit was a demonstration waste treatment testing unit aimed at reducing the volume of contaminated solid waste. Testing of the test unit began in 1978. Combustible waste was shredded and fed into a digester vessel where it was mixed with nitric and sulfuric acids. After dissolution, the solids were separated and the solution dried and packaged for disposal. The facility was closed in 1981 and most of the gloveboxes were removed in June 1983 (Reference P179).

The Plutonium Process Support Laboratories (PPSL), Analytical Laboratory, and Radiochemical Standards Laboratory were support laboratories located in 234-5Z. Also housed in 234-5Z was the RECUPLEX facility that used tri-butyl phosphate (TBP) diluted with carbon tetrachloride.

Table 4-3. PFP Production Task Number Designations

Task Number	Task Description
I	Oxalate Precipitation (Purification or Wet Chemistry)
II	Hydrofluorination (Dry Chemistry)
III	Reduction (to metal)
IV	Ingoting and Casting
V	Machining (Shaping)
VI	Cleaning
VII	Coating
VIII	Final Inspection
Reference:	P153

Building processes also included stabilization of non-organic plutonium-bearing solutions using the magnesium hydroxide and oxalic precipitation process in the RMC line area; packaging of plutonium metals and oxides in the Bagless Transfer System glovebox; plutonium nitrate feed load-in/load-out; and interim storage operations (Reference 5).

4.5.2.1 PFP RG Line

On July 5, 1949, the RG Line began processing plutonium nitrate. This initial plutonium metal production and weapons component fabrication line was a "hands-on" batch operations system (Reference P071).

Operations in the RG Line were manual and required operators to work in both open face hoods and in gloveboxes. Portions of the RG Line were used to support the later operational RMA Line. The RG Line operated until 1953 and final removal of the line occurred in early 1957.

4.5.2.2 Remote Mechanical A and Remote Mechanical C Lines

With the need for increased production over the RG Line, a new process line was designed. The RMA Line was constructed in 1951-1952 to augment plutonium production from the RG Line. On March 18, 1952, the RMA Line began to process the plutonium oxalate prepared in the 231-Z Building. The RMA Line consisted of a row of 30 interconnected stainless steel gloveboxes and was automated to minimize operator exposure. It used the same chemical and metallurgical processes as the RG Line and proved so efficient the RG line was phased out (References P071 and P153).

The RMC Line, another metal production and weapons component fabrication line, was installed in 1957-1959 to further increase production and to produce plutonium metal and weapons parts as did the RMA Line. The RMC Line became operational in 1960 and completed its last run in 1989. Operations and maintenance activities were performed to support these efforts. Some of the materials, including debris, that were used for these activities were removed from the gloveboxes as TRU waste (References P153 and P239).

RMA/RMC Line Process Description

The RMA and RMC lines processed plutonium nitrate feed in several steps (tasks), as identified in Tables 4-2 and 4-3 Nitrate and Oxide blending was performed as part of the feed preparation (Reference P153).

The PUREX Facility provided the bulk of the feed for the remote mechanical lines. The PUREX Facility processed irradiated fuel elements to separate plutonium from plutonium-bearing materials. The plutonium extraction process at PUREX used solvent extraction methods. The final plutonium product from PUREX was in the form of plutonium nitrate. The plutonium nitrate was loaded into containers, such as PR cans, and shipped to either 231-Z or the PFP for plutonium finishing. Plutonium nitrate was also loaded into FL-10, 10-L and L-10 containers (Reference P158).

The RG and RMA Lines at the PFP received plutonium oxalates from 231-Z or 233-S. Plutonium oxalate was in a cake-like form and transported to the PFP in a filter boat. Later the RMA and RMC Lines received plutonium nitrate solutions as feed from PUREX, REDOX, RECUPLEX, PRF, and T Plant. The plutonium nitrate feeds were usually received at the PFP in containers, and then loaded into a glovebox. The plutonium nitrate solutions were processed and converted to plutonium metal. The steps in this process are illustrated in Figure B-9 (Reference P071).

The plutonium metal was stored and later machined into weapons parts. The weapons parts were machined using lard oil as a lubricant and subsequently degreased with carbon tetrachloride. These two streams when mixed were called fabrication oil ("fab oil"). At times, isopropyl alcohol and carbon tetrachloride were used to degrease the weapons parts. Figures B-10, B-11, and B-12 show examples of the process (References C019, C084, P149, P150, and P239).

Initially the RMA Line started processing plutonium oxalate from 231-Z to produce weapons parts. In 1956, the RMA Line began processing plutonium nitrate into plutonium metal and weapons parts. The RMA Line closed for several years beginning in 1964. In 1968 the RMA Line process operated to produce only plutonium oxide. The plutonium oxide powder was collected, weighed, and stored (Reference P121, P134, and P156).

The RMC Line processed plutonium nitrate into weapons parts from 1960 to 1965. Weapons parts fabrication was terminated at the PFP in December 1965 so the RMC Line produced only plutonium metal until 1969. There were several additional plutonium metal RMC Line campaigns in the 1980s.

Throughout the decade from 1963 through mid-1973, the RMC line continued to operate on a mixed schedule producing some weapons grade metal (approximately 6 percent Pu-240), and an increasing amount of fuels grade metal (approximately 12 percent Pu-240), and oxides. Because the RMA Line produced only oxides from 1968 on and the RMC Line produced plutonium metal from 1965 on, Hanford Site personnel referred to the RMA Line as the "oxide line" and to the RMC Line as the "metal line." The final

RMC line button campaign took place from July 1988 through June 1989, making weapons grade metal (References P071 and P153).

The stabilization of reactive materials has been a function of the remote mechanical lines in one form or another since 1979. The SS&C from the remote mechanical lines were recovered and sent to the PRF for dissolution, purification, and extraction to obtain recoverable plutonium for recycle to plutonium production. Stabilizing reactive scrap was performed in Glovebox HA-21I in Room 235 in the RMA area in the 1980s. Terminal cleanout and layaway took place in 1983. Stabilization was the next mission for the RMA. Thermal stabilization was moved to and performed in Room 230 beginning in the 1980s. Thermal stabilization stabilizes reactive PBM. If required, chloride washing was performed prior to thermal treatment in Room 230C. The reactive PBMs were stabilized by being heated to oxidize and drive off all volatile components. The source of the materials was sludge from PRF, RMC oxalate and oxides, and scrap from the last production run in 1988 (References P127, P128, P154, P246, P405, and P1081).

Thermal stabilization of past production materials from RMC continued through the 1990s. The feeds were from the RMC Line oxalates and oxides, PRF sludge, and plutonium metal and scraps from previous production runs. The process took place in Rooms 228C, 230A, and 230-B. Plutonium bearing materials were sealed into a glovebox and placed into a container called a boat. The plutonium-bearing materials were transferred via the HC-2 conveyer glovebox to the HC-21C glovebox. The boat was placed into a muffle furnace and heating was started. A pre-programmed controller was used to ramp up and hold the furnace temperature at rates and temperature levels specific to the material being processed. A conveyor was used to transport the boat for product sieving, sampling, and canning. After canning, the product was stored while awaiting sample analysis for loss on ignition (References, P126, P127, P155, and P157).

In the 1990s, DOE recommended that plutonium materials be stabilized and packaged according to a new standard that was being developed "DOE Standard: Stabilization, Packaging, and Storage of Plutonium-Bearing Materials," DOE-STD-3013-2000. This standard recommended the stabilization of PBM using "bag-less" packaging in nested, hermetically sealed stainless-steel containers. In response, Thermal Stabilization and Packaging systems were installed in 234-5Z in the mid-1990s and in the 2736-ZB Facility in 2000. All the PFP material in inventory that required stabilization and packaging to this new standard was treated by April 2004.

During operation of the RMA and RMC Lines, numerous maintenance problems and failed equipment generated waste. This waste included failed or unusable equipment such as pumps, ducting, piping, electrical equipment, light fixtures, tools, glass, and metal scrap (Reference P153).

During 1995, other projects got under way to remove plutonium contaminated ductwork; stabilize low plutonium-bearing process residues with cement; and remediate nearby

soils, trenches, and sumps. Waste was also generated from maintenance and operation of the thermal stabilization process and various repackaging projects (Reference P071).

U.S. Department of Military Application Decommissioning

The U.S Department of Military Application (DMA) decommissioning of portions of the RMA and RMC Lines began in May 1974 and was essentially complete May 1976. During the DMA decommissioning, gloveboxes, associated equipment, and contaminated flooring were removed from the 234-5Z Building. Lead is present in the DMA waste in the form of lead metal that is contained in gloveboxes; lead sheeting placed on gloveboxes for shielding; leaded gloves; and leaded glass. During the DMA decommissioning, plastic containment tents (or greenhouses), and sleeves were used extensively. Sleeves placed around gloveboxes were sealed by "horsetailing." The DMA waste was packaged in 55-gal drums and burial boxes of various sizes (References P146, P152, P250, and P251).

Equipment Flushing to Remove PCBs

After the Resource Conservation and Recovery Act (RCRA) requirements for Polychlorinated Biphenyl (PCBs) were imposed in the mid-1980s, the RMA/RMC line hydraulic oil was identified as exceeding the PCB limits. The requirement resulted in flushing of the RMA/RMC line hydraulic systems. These flushed oils were slightly contaminated with plutonium and disposed as TRU waste. The majority of this waste is considered S3000 and is not part of the MPFPDD waste stream. However, some absorbed hydraulic oils are packaged with other debris as S5000 waste. The S5000 containers with *Toxic Substances Control Act* (TSCA)-regulated PCBs are identified in Solid Waste Information and Tracking System (SWITS). There are no drums in the candidate list for shipment to AMWTP identified as TSCA waste; therefore PCB waste is not part of this waste stream (References 2 and P134).

4.5.2.3 PFP Laboratories

Throughout the operation of the PFP the laboratories contributed to process improvements that enhanced both the quality of the product and the productivity of the plant, improvements in product measurement techniques, plutonium recovery and recycling techniques and support to PUREX and the uranium oxide (U03) Plant (Reference P153).

Plutonium Process Support Laboratories

The PPSL carried out numerous activities to improve operations, minimize waste, increase production, improve product quality, reduce occupational exposure, troubleshoot process operations, and develop successive generations of production operations. The PPSL was also known as the developmental laboratory, the plutonium chemistry laboratory, process improvement laboratory, research and development laboratory, and the chemical technology laboratory. The PPSL opened in 1949 at the

southwest corner of the PFP. A Metallurgy Laboratory occupied room 179 of the PPSL from 1952 until 1956 when it moved to the 231-Z Building. In 1958 the developmental laboratory expanded in an annex to the PFP (References P071, P153, and P189). The PPSL ceased operations in 2004.

Typical activities in the PPSL included dissolution; precipitation; chemical mixture preparation; chemical alteration reactions (e.g., hydrolysis of organic chemicals); calcination or similar decomposition; ion exchange studies; archive sample storage; particle size analyses; and equipment analysis, troubleshooting, and process control. Aqueous waste from the PPSL was sent for processing at the 241-Z Facility. One glovebox was dedicated to the PPSL radioactive thermal analysis system. Table 4-4, PPSL Room Functions, identifies some of the functions and equipment for the PPSL, the functions and equipment in the laboratories changed continuously over time, therefore this table is not all-inclusive (References P071, P158, and P239).

Table 4-4. PPSL Room Functions

Room	Function	Equipment Used
179	Pu and TRU analysis	Particle counter and thermo-gravimetric analysis instrument in one glovebox. Five other gloveboxes and three hoods for general alpha-radioactive chemistry projects. Glovebox contained electrically heated furnaces, hot plates, and small rotary mixers.
180	Rapid determination of isotopes	Inductively coupled plasma spectrometer
182	Examining minute quantities of solids	Scanning electron microscope
183/185	Scintillation counting and drummed waste storage	Scintillation counter
187	Smaller-scale and general Pu support. Dissolution; precipitation; chemical mixture preparations; chemical reactions; calcination or similar decompositions; ion exchange studies; sample preparation and storage; and equipment analysis, trouble shooting, and process control.	Five open-faced hoods. Equipment included hot plates, other heating devices, and centrifuges.
188	De-nitration of feed material to a stable, storable solid. Test materials of construction to contain those processes.	One glovebox, designated 188-1
189	Chromatography	Cold ion chromatograph
190	Stable SNM storage	Vault-type storage room
191	Non-radioactive analysis	Non-radioactive chemistry lab
202	Engineering Development Laboratory	Ceramics laboratory for fabricating crucibles for casting weapons shapes

The following is information about the kinds of activities that have been performed at the PPSL (References P071 and P239):

- During the 1950s, studies and tests conducted include: recycle techniques, cerium halide reduction operations in filter boats using Hastelloy "C" with

platinum liners, precipitation of plutonium (IV) oxalate from solutions, photometric determinations, metal and alloy transformations, corrosion of steel alloys, remote operations, tensile tests of plutonium-gallium alloys, examinations of alloys, and stress rupture trials and thermal cycling tests on reduction vessels. An explosion occurred in Room 179 in a hood during plutonium machining. Use of trichloroethane instead of trichloroethylene as a coolant resulted in the explosion (References P071 and P189).

- During the 1960s, the PPSL focused support toward work for the commercial nuclear industry and experimental reactor technology. Efforts were made to improve casting operations and continuous dissolution of slag and crucible residues. Extractant studies and investigation of plutonium removal from sump water were conducted. Also during the 1960s, methods of recovering plutonium from fabrication oil (a combination of lard oil and carbon tetrachloride), were investigated. Other studies include: the conversion of U-233 in nitrate form to oxide and metallic form, the reduction of plutonium trichloride to plutonium metal, "single contact" method for dissolving plutonium-bearing ash, alpha energy analysis to measure plutonium content of aqueous waste, and molten salt reduction of plutonium dioxide to plutonium metal.

- In 1976, Rooms 183, 184, 186, and 187 were equipped with new hoods, gloveboxes, laboratory benches, and cabinets.

- In late 1976, new criticality drains, fire detection, and suppression systems for the gloveboxes and hoods; constant air monitors; and fixed filters were installed.

- During 1977 to 1979, the PPSL worked to determine the optimal way for plutonium oxide conversion to take place. The new method used a horizontal bed screw calciner and co-calcined plutonium nitrate with calcium nitrate.

- In 1979 and 1980, the PPSL received (separate from the PFP), new ducts, dampers, and collection headers for the E-4 filters for laboratory gloveboxes and hoods.

- In 1985, worked to support three PRF and RMC line campaigns through the late 1980s and into the early 1990s. Engineering design had been initiated to rebuild or replace the most important 40 of 125 maintenance items.

- In the 1990s, the PPSL studied ways to analyze, verify, and stabilize the nearly 8,000 containers of plutonium-bearing scrap stored at the PFP.

The TRU waste was generated from past processing, routine maintenance, and various operating activities. The PPSL performed analytical and physical tests on samples from the PFP RMA and RMC lines and PRF production activities, conducted experiments, and provided laboratory and engineering support for numerous defense and non-defense related programs across the Hanford Site and, on occasion, other DOE Sites (Reference P158).

There is no documentation that indicates waste segregation and clean out in the laboratory hoods or gloveboxes was performed based on the grades of plutonium.

Analytical Laboratory

The PFP Analytical Laboratory began operating at the onset of the PFP operation in 1949. Its primary responsibilities included the radiochemical, chemical, and physical property characterization of process samples. The Analytical Laboratory analyzed samples from the RG, RMA and RMC Lines; PUREX; REDOX; PRF; and 232-Z. The Analytical Laboratory was located in 234-5Z Rooms 131 through 157. Lab supplies were stored at a small metal ancillary building (2727-Z), outside of the 234-5Z. Analyses were used for process control, process analysis, and assessing product quality with respect to required specifications. Table 4-5, Analytical Laboratory Room Functions, provides a functional description of the laboratory rooms (References P158 and P239).

Table 4-5. Analytical Laboratory Room Functions

Room	Function	Equipment Used
131	Dissolution and sample analysis for Pu concentration and product quality.	One three-sectioned glovebox
132	Mass Spectrometer Laboratory for isotopic analysis of extremely small samples of Pu and uranium.	Three thermal ionization spectrometers
133	Emission spectrometry and photographic development. No radioactive materials are allowed in this room.	Grating and camera portions of a 2-m emission spectrograph and film development equipment
134	Sample preparation for mass spectrometer analysis.	Three open-face hoods and one glovebox
134-A	Weighing room for mass spectrometer analysis.	Balance and a storage cabinet containing emission spectrometer standards, including natural uranium
135	Sample and equipment storage.	A 26-inch mercury vacuum, methane for an alpha counter
136	Trace element analyses of Pu and uranium product.	Spectrophotometer
137	Instrumentation for trace element analyses of Pu and uranium product.	2-m film spectrograph stand
139	Pu metal and oxide process and storage.	Six interconnected gloveboxes
141	Cold sample analysis. No radioactive material is allowed in the room.	Cold (nonradioactive material) hood, sink, water purifier, hot plate and muffle furnaces
142	Storage of radiochemical and analytical standards.	Four vented storage cabinets

Table 4-5. Analytical Laboratory Room Functions (Continued)

Room	Function	Equipment Used
143	Decontamination of equipment for the Radiochemical Standards Laboratory and Analytical Laboratory, handling of liquid waste not compatible with the waste recovery system, precipitation of low concentration Pu nitrate and oxalate, and disposal of low-level radioactive waste to the D-4 sump in the Waste Treatment Facility.	Four open-faced hoods and one glovebox
144	Analysis of Pu concentration, visual percent solids, americium concentration, and acid/base determination in support of the PFP, Pu Reclamation Facility, and Research and Engineering samples. Used xylene in sample extraction hood.	Eight hoods and one glovebox
145	Analysis of sinterability and bulk and tap density on Pu oxide, and preparation of Pu oxide standards for the emission spectrometer.	One glovebox
145-A, 147, 148, 150, 151	Supply and office facilities.	Not applicable
146	Analysis of Pu solution, Pu nitrate, and oxide materials and repackaging of waste from other Analytical Laboratory rooms.	One glovebox and four hoods
149	Dissolution of relatively large amounts of Pu compounds and packing and unpacking of shipping containers.	Open-faced hood and a hood converted into a glovebox
152	Reprocessing liquid laboratory waste.	Load-in hood and a glovebox
153	Surface area analysis of Pu oxide.	Four open-faced hoods and one glovebox
154	Carbon, sulfur, and nitrogen analysis.	One glovebox
155	Support of PRF, Remote Mechanical A, and PUREX Plant sample schedules.	Four hoods and associated equipment
156	Uranium analyses in support of Uranium Trioxide Plant operations.	One two-sectioned glovebox and two hoods
157	Support of Pu oxide work.	Two gloveboxes with furnaces and a sample cell

Analytical measurements included isotopic analysis for plutonium, uranium, and americium, fissile material content, impurity content, and particle size determinations. Analytical results were used to determine criticality safety and ensure that plutonium feeds and products were within specification. Over the years, research and metallurgical analytical activities were added. A brief summary of the Analytical Laboratory's evolving mission follows (References C018, P071, P158, and P239).

- In the 1950s, the Analytical Laboratory supported plutonium processing by performing as many as 3,550 determinations per month.

- Fuels and reactor grade metal work was added during the 1960s. To support this work, the laboratory installed new equipment, including an oxygen gas analyzer, a new induction furnace, and master-slave manipulators.

- In 1971, waste management practices were upgraded when a plutonium waste concentrator was installed. The unit concentrated laboratory waste and drove off chloride ions for feed to PRF recovery systems.

- In 1979 and 1980, the Analytical Laboratory was isolated from other PFP operations undergoing deactivation so that its continuing operation would not be affected.

- In 1984, the laboratory was upgraded pending restart of the RMC Line and to meet the high demand from PUREX, which performed irradiated fuel dissolution for uranium and plutonium extraction and recovery. Eight new gloveboxes were installed in the laboratory.

- PUREX and Uranium Oxide stopped sending samples over to the labs in 1985. The labs have supported stabilization efforts at the PFP since the late 1980s.

- In the 1990s, the laboratories studied ways to analyze, verify, and stabilize containers of plutonium-bearing scrap stored at the PFP.

Analytical Laboratory TRU debris waste is from routine maintenance and various operating activities associated with the analysis of samples collected from defense projects at the Hanford Site. The laboratory supported activities from the RG, RMA and RMC Lines; PUREX; REDOX; PRF; 232-Z; and a limited number of offsite plutonium sources; therefore, waste materials generated will consist of plutonium-bearing materials from those facilities. Final sorting, segregation, and repackaging activities for all Analytical Laboratory waste was performed in the Repackaging Room 146. The containers were not packaged with the intent to segregate wastes based on specific activities. Wastes from specific activities were packaged together with wastes from other activities. Also, containers were not packaged with the intent to segregate specific waste materials (e.g., plastic, paper, and metal). The containers are made up of a composite of materials. Segregation was based on whether the materials were debris, homogeneous solid, or soil. Wastes were further segregated based on TRU, TRU mixed, low level, or mixed determinations.

Radiochemical Standards Laboratory

The Radiochemical Standards Laboratory (Rooms 221-B, 221-C, 221-D, and 221-E) was located on the northeast end of the PFP. The Radiochemical Standards Laboratory provides formulation, verification, packaging, and distribution of the plutonium-containing standards needed throughout the PFP laboratories. The mission of this laboratory was to support the activities of the Analytical Laboratory and the PPSL (References P071 and P158).

Handling of PFP Laboratory Waste

Beginning in 1973, all cribs, ditches and tile fields were removed from service and the PFP effluents were routed from 241-Z Treatment and Storage Tanks to the 242-T Evaporator at the tank farms. Prior to 1973, because all of the laboratory waste was discharged into the 241-Z-361 settling tank and the laboratories tested the individual PFP processes (finishing and reclamation) on a bench-scale, the same types of organics were discharged through the tank as were generated from process activities. Waste from some of the PFP processes went through transfer lines to the Sump Tanks (241-Z-D4, 241-Z-D5, 241-Z-D7, and 241-Z-D8) in 241-Z Building. Waste from Sump Tank 241-Z-D6 went to Tank 241-Z-361, while waste streams from the other sump tanks were directly discharged to the appropriate cribs, trenches, and ditches (Figure B-13) (References P158 and P197).

Laboratory organic wastes were packaged as 20-year retrievable TRU waste during the 1970s and 1980s (Reference P134).

4.5.2.4 RECUPLEX Laboratories

In 1955, plant-scale recovery of RECUPLEX process equipment was emplaced in Room 221 of 234-5Z (where the RG Line had been). The RECUPLEX facility was the first consolidated scrap recovery and purification process at the PFP (Reference P071).

Prior to RECUPLEX, scrap recovery was accomplished in equipment located in the RG Line gloveboxes. This consolidated system included numerous dissolvers for the dissolution of solids and a solvent extraction process for plutonium nitrate purification of dissolver product, filtrate solutions, and infrequently provided final purification of feed from the separation plants (References P071 and P134).

Originally, the facility consisted of three large gloveboxes with plastic panels. Some feed was solid scrap in the form of slag and crucible fragments, magnesium oxide sand used as line material in the reduction crucibles, scrap powders from RMC-A line operations, plutonium dross from Task IV, oxidized turnings from Task V, and remnants from metal samples (Reference P071).

The RECUPLEX process was a solvent extraction system that recovered plutonium from many different types of scraps, wastes or residues such as ingot and casting skulls, slag and crucibles, button line supernatant, and fabrication oil. The purified concentrated product was returned as feed material and waste solutions were discharged to the 216-Z-9 crib. The aqueous waste stream was discharged to one of three waste tanks. After determining the plutonium content, the liquid waste was drained by gravity through the stainless steel inlet pipe to the 216-Z-9 crib (References P071, P134, and P150).

The RECUPLEX facility operated until 1962 when a criticality accident occurred. Designs were already in process for an improved scrap recovery process in the planned

236-Z Building, which then replaced the RECUPLEX activities. The 216-Z-9 crib received an estimated 1,000,000 gallons of aqueous and organic waste from July 1955 through June 1962 (References P071 and P134).

Following termination of activities, the facility was cleaned out and the equipment and gloveboxes were removed in 1967 (Reference P153).

4.5.3 236-Z Plutonium Reclamation Facility

The PRF in the 236-Z Building housed the scrap recovery process system, which replaced the RECUPLEX operation originally conducted in 234-5Z (Figure B-14). The PRF has housed plutonium reclamation as well as solid and liquid waste treatment, collection, and disposal equipment since 1964. The PRF was designed to concentrate liquid feeds, dissolve or otherwise process solid material, and to perform solvent extraction recovery of plutonium from aqueous streams. Some of the plutonium received from offsite (e.g., from another government site, the commercial industry, or another country) was impure and required purification prior to conversion into an oxide of metal product. The purification was accomplished through scrap dissolution and solvent extraction. The PRF process systems are inactive and are being prepared for D&D. The following is a brief history of the PRF (References P071, P128, and P134):

- During 1965, the PRF recovered and returned plutonium nitrate to the RMC line as feed.
- From the mid-1960s to the early 1970s, fuels and reactor grade plutonium production work in the PRF.
- In 1972, added plutonium/uranium partitioning to the plutonium recovery operation.
- In 1976, the PRF was shut down for 19 months to plan upgrades and plan hazards reviews.
- In 1978 through 1979, a cleanup campaign took place.
- From 1980 to 1981, the PRF was in standby. During this time, plans were made to process reactive scrap using PRF equipment and the RMA line for calcination into oxide form, but a decision was made not to start up the RMA.
- In 1982, Glovebox 5 in room 41 in 236-Z was used to stabilize reactive scrap.
- In 1984, 1985, 1986, and 1987, the PRF operated.
- In 1988 through 1989, the filtrate evaporator and some storage tanks at the PRF were utilized to support the RMC line.

- In mid-1994, a training run was conducted to demonstrate operator proficiency utilizing a prototype air-pulsed liquid-liquid extractor in the PRF.

The PRF presently houses the inactive PRF process equipment. It also has equipment for filtrate concentration, feed preparation, plutonium solvent extraction, product concentration, and waste treatment processes. The PRF received feed from the 232-Z Incinerator, SS&C from the RMA and RMC Lines, and other areas of the PFP. The plutonium nitrate feed was direct transferred from 234-5Z to PRF though a pipeline. Waste materials were generated during the operations and maintenance activities that reclaimed plutonium from feed products. The PRF was also used for storing in-process residues and solids that were waiting to be processed by thermal stabilization into vault-storable form. The PRF placed plutonium nitrate feed into containers, such as PR cans, for use in the RMA and RMC lines (References P158 and P239).

The plutonium recovery process converted various plutonium-bearing solid materials and aqueous feeds to a purified plutonium nitrate product suitable for conversion to plutonium metal or plutonium oxide. The process included recoverable material dissolution, scrap stabilization, and plutonium nitrate purification. Recoverable material dissolution and scrap stabilization included hydrolysis, clarification, and calcination. Plutonium purification involved feed preparation, solvent extraction using carbon tetrachloride and TBP, stripping, and organic cleanup. The process also involved concentration and clarification of the aqueous product and waste streams. Some of the processing steps took place within 234-5Z (Reference P239).

Feed preparation, solvent extraction and stripping, and organic cleanup were steps used for plutonium recovery and purification. The activities performed in the PRF that contributed to the TRU waste and the rooms they were performed in are identified in Table 4-6, PRF Room Functions (References P159, P162, P163, P167, P168, P239, and P254).

Table 4-6. PRF Room Functions

Room	Function	Equipment Used
43	Dissolving crushed SS&C from the PFP RMC Line	1st East Glovebox, 1st West Glovebox, and 2nd West Glovebox (feed chutes, charging tubes, dissolvers)
27	Supported maintenance, product handling, and storage shelving for packaged Pu containers.	Maintenance Glovebox (centrifuges, small tanks, motors, pumps, valves, filters, rotometers)
41	Chemical preparation and MT (inspecting, weighing, sampling, splitting, burning, repackaging, dissolving, precipitating, stabilizing, and storing operations).	Gloveboxes MT-1 through MT-6 (operating control room, SS&C dissolver equipment, and a column room)

Polycubes were handled at PRF in the miscellaneous treatment recovery process in the 1970s and 1980s. The polycubes were a mixture of plutonium and/or uranium and polystyrene, cast into the shape of cubes (approximately 1/2 in. by 2 in. by 2 in. up to

2 in. by 2 in. by 2 in. in size), and sealed with a coating of aluminum paint and/or tape. Polycube operations occurred in the pyrolysis furnace located in glovebox MT-4 (Reference P116).

The cubes were prepared for processing by cutting or scraping the paint and tape coating and size-reducing the large cubes. The cube pieces were then loaded into small boats and charged into the furnace. The first step was destructive distillation in a furnace operating in a nitrogen atmosphere. The off-gas was collected, cooled and scrubbed with a solution of carbon tetrachloride. After distillation, the boats were transferred and charged into the de-carbonization furnace. Oxygen was added to remove excess carbon. The resulting product was a free-flowing plutonium oxide powder (Reference P116).

Prior to 1973, contaminated oils from the PRF were either incinerated or cribbed. Cribbing of the oil was performed as part of the earlier PRF operations. The 232-Z Incinerator was permanently shut down in June 1973 and cribbing of liquid wastes was discontinued at the same time. Process organic solvent extraction chemical from the PRF were packaged as 20-year retrievable TRU waste during the 1970s and 1980s (Reference P134).

Operations in the PRF were restarted in the mid 1980s to support cold war plutonium production missions. These process activities resulted in maintenance debris waste, including hydraulic oils, laboratory waste, and process solvent extraction organic waste (Reference P134).

An effort to download solutions from the PRF to eliminate the risk of tank leaks was completed by 1995. Organic chemical solutions used for training PRF facility operators that were no longer needed were drained from the tanks in the PRF, put in glass bottles with absorbent pads, and packaged in steel drums (Reference P158).

4.5.4 242-Z Building

The 242-Z Building, constructed in 1963, houses the Waste Treatment Facility, also called the Americium Facility. The 242-Z Waste Treatment Facility (Figure B-15) was used to treat the PFP aqueous waste, including waste from the PRF, for further plutonium recovery. It was expanded in 1964 to accommodate americium recovery as a pure nitrate and in May 1965, 242-Z became operational for the recovery of americium (References P071 and P153).

A solvent extraction column and two ion-exchange columns were used to separate effluents into (1) a low-level radioactive waste routed for subsequent waste processing, (2) a plutonium-rich stream returned to production, and (3) an americium-rich aqueous product stream. Batch recovery of americium utilized dibutyl butylphosphonate in carbon tetrachloride to extract americium from the PRF solvent extraction waste stream. Later (1970-1976), a continuous countercurrent solvent extraction process was operated. The americium product was concentrated by adsorption on a strongly acidic cation exchange resin followed by elution with a small volume of nitric acid. The

resulting americium concentrate contained large amounts of iron, aluminum, and calcium impurities, and lesser amounts of plutonium, rare earths and other metal ions so that further purification of the americium was necessary (Reference P071, P140, P148, and P171).

On August 30, 1976, an explosion occurred during americium elution with nitric acid. An uncontrolled exothermic reaction led to the over-pressurization and failure of an ion exchange column used in the recovery of americium. The resin had been loaded with americium and plutonium and allowed to stand static for five months. Upon return to service, a rapid decomposition of the degraded resin occurred that resulted in a pressurization and rupture of the column. Gloves were blown off of a glovebox and some windows were blown out. The 242-Z was extensively contaminated and chemical operators were contaminated and injured. In the 1977–1980 time period, the 242-Z was stabilized and minor decontamination performed. The facility did not operate after the explosion in 1976 (Reference P171).

The EDF, also known as the 748 Building, adjacent to Kadlec Hospital in Richland provided emergency decontamination and medical care to persons who became radiologically contaminated (see figure 2). Activities at the EDF were under the direction of the HEHF.

Fifty-five drums of waste came from HEHF. These drums were accepted at the burial grounds from September 9, 1976, through October 8, 1976. These dates are shortly after the explosion at 242-Z, suggesting these waste was generated from decontamination, and from medical care of the operator injured in the explosion at 242-Z. The contamination in this waste should be similar to other waste from 242-Z because 242-Z was the source of any contaminants. Based on this relationship, the drums of waste from HEHF are considered part of the waste generated by 242-Z.

4.5.5 2736-ZB Building – Product Shipping and Receiving Facility

The 2736-ZB Building was constructed from 1981 to 1983 to support Building 2736-Z storage vault operations. The 2736-ZB Product Shipping and Receiving Facility accommodates shipping and receiving of containers for the PFP. In addition, the building provides an area for assaying and enclosed glovebox equipment for repackaging plutonium-bearing materials. Also, the building provided space for temporary storage and staging of storage containers. The 2736-ZB has been performing these functions from its inception. In 2000, a Thermal Stabilization and Packaging system was installed in to meet commitments of the Defense Nuclear Facilities Safety Board Recommendations 94-1 to stabilize and package PBMs in accordance with the new standard, DOE-STD-3013-2000. The materials repacked to this standard are referred to as "3013" packages. The 2736-ZB Building has provided and still provides support to facility stabilization (Reference P130).

The majority of shipping containers handled at the 2736-ZB contain plutonium oxide powder, plutonium metal, or miscellaneous solid scrap materials from various onsite

and offsite plutonium sources. In addition, containers that were unstable, had failed in storage, or were damaged in transit were transferred to the Repackaging Room (Room 636). Source containers were opened and verified using remote handling devices (Reference P158).

Repackaging activities included opening the non-solution storage containers, extracting the plutonium, placing it in a new container, sealing the new container, verifying the seals, and decontaminating the sealed container if necessary. In addition, in the Room 636 Repackaging Glovebox, plutonium metal from the PFP RMC Line was brushed with a paintbrush to remove loose oxides. The plutonium metal was weighed, re-canned, and bagged out into food cans. Waste generated as a result of Room 636 activities was TRU debris (References P122, P158, P172, P173, P174, and P239).

The NDA Lab (Room 637), provided plutonium isotopic determinations (relative weight percentages of each isotope present), and heat output (watts), of the shipping container contents. Isotopic determinations were made using a gamma energy analysis system (isotopic analysis system), to spontaneously detect emitted gamma radiation or one of two Segmented Gamma Scan Assay Systems (SGSAS) that use a lithium-drifted germanium detector, which requires liquid nitrogen for cooling and a selenium (Se)-75 source for density determination. After isotopic counting, can temperatures were adjusted in a pre-equilibrium bath using de-mineralized water as a heat sink and then placed into a calorimeter for determination of heat output (Reference P239).

Staging Room (Room 638), activities included inspection to determine stability. If the materials were determined to be unstable (e.g., gas evolution, liquid), a recovery plan was implemented to provide interim safe storage and stabilization. Shipping containers were weighed and tested (e.g., pneumatic, hydrostatic, leak), when necessary. Also, decontamination of empty shipping containers was performed. The functions of each room in the 2736-ZB Building are provided in Table 4-7, 2736-ZB Room Functions (Reference P158).

Table 4-7. 2736-ZB Room Functions

Room #	Room Description
602	Mechanical room
630	Decontamination room
636	Plutonium material packaging
637	NDA laboratory
638	Shipping and receiving/interim storage room. 638A storage area with steel security cage
639	International Atomic Energy Agency room
641	Shipping and receiving/interim storage room. Outer can weld room
641B	High Efficiency Particulate Air filter room
642	Shipping and receiving/interim storage room. Equipment room. Stabilization and Packaging Equipment
642B	Control room

Repackaged shipping containers were moved to the 2736-ZC dock, placed in cardboard reinforced tubes, and secured in trucks for shipment. Only solid, stable, PBMs were shipped offsite (Reference P239).

The MPFPDD waste generated in 2736-ZB resulted from past processing, routine maintenance, and various operating activities. Since the 2736-ZB Building has received containers from the remote mechanical lines, laboratories, PRF, and other sites (primarily for temporary storage), the waste generated consists of weapons, fuels, and reactor grade plutonium materials that may be commingled (Reference P239).

4.5.6 291-Z Ventilation/Exhaust Air Stack Building

The 291-Z Ventilation/Exhaust Air Stack Building houses the exhaust fans and plenums that provide ventilation exhaust for the 234-5Z, 242-Z, 236-Z, and 291-Z Buildings by way of exhaust ducting from those buildings. It also formerly provided ventilation exhaust for the 232-Z Building. Although the ductwork from the 232-Z Building remains physically connected to the 291-Z ventilation system, it was isolated from the 291-Z system in 1990, filled with grout, and replaced by dedicated ducting, fans and a stack for the 232-Z Building.

The 291-Z also houses electrical switchgear in room 252-Z-2. The electrical substation is located on the east side of the 291-Z Building. South of the switchgear room is a mechanical room containing two air compressors and two mercury-air-sample vacuum pumps. There is a plutonium-contaminated sump located in the northeast corner of the mechanical equipment room that has three electrical pumps, and one backup steam jet. The contamination in the sumps originates from the process vacuum pumps (previously removed). Contaminated process vacuum piping remains (Reference P130).

The ventilation fans and the inlet and exhaust plenums are the primary equipment in the 291-Z Building. The building has two fan rooms. The fan rooms contain electric motor-driven fans and a steam turbine-driven fan. The two exhaust plenums discharge to a common discharge plenum to the 291-Z-001 stack (Reference P130).

4.5.7 PFP Effluent Infrastructure and Ancillary Facilities

The PFP effluent/effluent infrastructure consists of the 241-Z Treatment and Storage Tanks, 241-Z-361 Settling Tank, 241-Z-8 Silica Slurry Tank, 216-Z-1A Crib/Tile Field (which includes the 216-Z-1, -2, and -3 cribs), 216-Z-9 Process Crib, 216-Z-12 Process Crib, and the 2904-ZA Monitoring Station. Processes generating waste can be categorized as one of the following:

- 1973 to 1978 debris from the PFP Complex effluent
- 1974 debris from around the 241-Z-8 Silica Slurry Tank associated with RECUPLEX operations

- 1976-1978 debris from 216-Z-9 mining operation (removing upper layer of contaminated soil from the trench floor)

- 1980 to 1981 debris from 216-Z-1A and 216-Z-12 soil sampling (PFP Complex effluent)

Subsurface characterization activities at the 216-Z-1A and 216-Z-12 Cribs from 1980 to 1981 were performed by a Hanford D&D team that was investigating inactive facilities around the PFP. Samples were collected through the soil column to determine plutonium and americium (Am) distribution as well as soil type and moisture content during drilling in the cribs. Table 4-8, Cribs, Ditches, and Trenches, identifies the cribs, trenches, and ditches used by the PFP and the processes that generated the waste (References C043, M044, P153, P209, P210, and P211).

Table 4-8. Cribs, Ditches, and Trenches

Number	Description	Service
Z-1 (Ditch)	Ditch (backfilled)	Cooling water, steam condensate
Z-1 (Crib)	Timbered cavern	Low-salt aqueous waste (D-6 waste)
Z-1A	Clay pipe title field	Reclamation salt waste (pipe trench) specific retention
Z-2	Timbered cavern	Low-salt aqueous waste (D-6 waste)
Z-3	Culvert pipe	Low-salt aqueous waste (D-6 waste)
Z-4	Unknown	231-Z lab waste
Z-5	Timbered cribs (two)	231-Z process waste
Z-6	Temporary trench	231-Z process waste
Z-7	Pipe trench	231-Z lab waste
Z-8	Tank and French drain	Silica waste form RECUPLEX dissolvers
Z-9	Trench with a concrete top	RECUPLEX salt waste
Z-10	Reverse well	231-Z waste
Z-11	Open ditch to swamp (backfilled)	Cooling water, steam condensate, vacuum pump sealing water
Z-12	Perforated clay pipe in gravel	Low-salt aqueous waste (D-6 waste)
Z-13	French drain	234-5 tunnel drain
Z-14	French drain	Evaporator condensate water
Z-15	French drain	Evaporator condensate water
Z-16	Pipe trench	231-Z lab waste
Z-17	Temporary trench	Unknown
Z-18	Five long pipe trenches with two perforated clay pipes in each trench	Reclamation salt waste (pipe trench) specific retention
Z-19	Open ditch to swamp	Cooling water, steam condensate, vacuum pump sealing water

4.6 Waste Identification and Categorization

Assignment of waste to waste streams is performed using a review of burial ground records, markings on the drums, drum numbering, and generator documentation. Frequently the generating building and material balances area are included as part of the drum number.

4.7 TRU Waste Management

The PFP used material balance areas (MBAs) to control plutonium materials. Each MBA had at least one custodian that maintained the physical inventory of the waste in their designated area. The inventory was strictly monitored, and all material and plutonium gram quantities were accounted. The material being transferred between MBAs was documented (References P179, P202, and P203).

All radioactive solid waste generated at the PFP was segregated at the point of generation depending on waste category. Solid waste removed from gloveboxes and other waste potentially contaminated with TRU elements was segregated as TRU waste (hood and room waste). Glovebox waste is generally TRU waste that was generated by the disposal of materials used during maintenance and operations activities to support production and stabilization. Most other solid waste generated within radiation control areas is segregated as LLW (References C028, P239, and P405).

The use of standardized burial record began in about 1968. The generators were responsible for preparing various container-specific documentation to demonstrate compliance with the applicable Hanford disposal waste acceptance criteria in force at that time. This historical documentation includes burial records, databases, process knowledge documents, and historical waste management documentation. Throughout the past 40 years a number of documents and databases have been used to archive waste content data and track waste containers. Records from the early 1970s include information on radioactive contents, drum weight, and generator. Later burial records contain physical content descriptions and, since 1987, information on the non-radioactive chemical waste constituents has been required. The SWITS database is used to track the radioactive solid waste that has been buried or stored in the 200 Area burial grounds and waste storage facilities. Information on SWITS has been derived from the historic burial records. Information that can be tracked by SWITS for an individual waste container includes generator, container type and size, storage or burial location, radioactive contents, chemical contents, and waste form information (Reference P1079).

As illustrated in Figure 6, prior to retrieval of the containers from the burial ground, documentation was collected for each container, including information from the SWITS database, burial records, location maps, and supplemental generator records. Careful review of this documentation was performed and compared to the observations during container retrieval to assure proper assignment of the container to the appropriate waste stream and assure proper characterization for subsequent storage and processing of the containers in the Central Waste Complex (CWC), Waste Receiving and Packaging (WRAP), and T-Plant facilities (References P411, P414, P415, P1079, and P1090).

4.7.1 Correlation of Waste Streams Generated from the Same Building and Process

The WIPP-WAP defines a waste stream as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. One CH TRU debris waste stream has been delineated for the PFP facility according to this definition. The MPFPDD waste stream consists of mixed heterogeneous debris generated by production, maintenance, cleanout, stabilization, and D&D activities in the PFP Buildings 232-Z, 234-5Z, 236-Z, 242-Z, 2736-ZB, 291-Z and the Ancillary Facilities (Reference DR010). The majority of the historical drum records do not specifically identify the point of waste generation within the PFP complex.

The basis and rationale for delineating this waste stream is as follows:

- Waste streams MPFPD and RLPFPCD, generated by the previous Hanford certified TRU Waste Program, were combined into a single waste stream based on the fact that the activities that generated the waste were similar for all the facilities at the PFP (Refer to Section 4.5).

- Debris waste in MPFPDD was generated from similar processes and activities that are similar in material, physical form and hazardous constituents and constitute a single waste stream (Refer to Section 5.3.1).

4.7.2 Types and Quantity of TRU Waste Generation

The waste stream described by this report is characterized as TRU mixed waste under RCRA. The specific containers in this waste stream are provided in the Container Tracking List. The number of containers in the waste stream is provided in Section 5.2.

5.0 WASTE STREAM INFORMATION

This section presents waste stream specific information for the TRU debris waste (waste stream MPFPDD), generated in the PFP facility, including the physical, radiological, and chemical characterization. This section also addresses waste packaging and prohibited items.

5.1 Area and Building of Generation

Waste stream MPFPDD originated from the PFP facility operations. The areas and buildings that encompass the PFP facility which generated the MPFPDD waste stream are described in Section 4.3.2. Review of the available container documentation and database information is performed to verify the generation location for each drum to be shipped to AMWTP (Reference M303).

5.2 Waste Stream Volume and Period of Generation

Waste Stream MPFPDD consists of debris waste generated at the PFP. Containers of waste have been generated from May 1970 to present with the candidate populations ranging from July 7, 1972 through December 29, 1989. The containers to be shipped to AMWTP consist of 55-gallon drums overpacked in 85-gallon drums generated during waste management activities to correct drum integrity problems identified during retrieval from the Hanford burial grounds and subsequent management of these containers. Waste stream MPFPDD is one of three Hanford debris waste streams included in an approximately 1,000 drum population of drums being prepared for shipment to AMWTP. There are approximately 748 candidate drums in this waste stream. Other PK Summary Reports will describe the debris waste generated at the 231-Z Building (waste stream RLM231ZD) and 325 Building Radiochemical Processing Laboratory (waste stream RLM325D). The current inventory of 85-gallon drums verified to be eligible for shipment to AMWTP is included in the PK Waste Containers List for waste streams RLM325D, RLM231ZD, and MPFPDD (References P414 and P415).

5.3 Types of Waste Generated

This section describes the waste materials based on process inputs and outputs, waste matrix code assignment, waste material parameter weight estimates, radionuclide contaminants, hazardous waste determinations and prohibited items for waste stream MPFPDD.

5.3.1 Materials Related to Physical Form

Waste stream MPFPDD will be comprised primarily of numerous organic and inorganic debris waste items. Waste stream materials were determined based on information from 5856 containers that have been generated at the PFP facility, and certified or shipped to WIPP from June 8, 2000 to April 30, 2009. Waste items that potentially could be in the waste stream are listed in Table 5-1, Waste Stream MPFPDD Waste Materials.

Table 5-1. Waste Stream MPFPDD Waste Materials

Metal Tools	Metal Tanks	Metal Pipes	Pumps
Glass Glovebox Panels	Hot Plates	Sample Racks	Stirrers
Burners	Slip Lid Cans	Un-tinned Cans	Torpedo Levels
Grease Guns	Aluminum Foil	Mask Filters	Leaded Aprons
Leaded Gloves	Lead Tape	Lead Chromate Paint	Lead Seals
Fluorescent Light Bulbs (Cadmium, Barium, Mercury, and Silver)	Scraps (Maintenance Activities)	Glass Thermometers (Mercury)	SS&C
Glass Tubes	Glass Vials	Glass Stirrers	Glass Beakers
Asbestos Pot Liners	Ceramic	Kitty Litter	Vermiculite
Cardboard	"Ice-Cream" Cartons	PPE	Rags
Wood Ladders	Wood Brush Handles	Wood Framing Material for Filter Media	Filter Media
Rubber Masks	Rubber Gloves	Rubber Plunger	Rubber Stoppers
Rubber Tubing	Plastic Glovebox Panels	Plastic Bags	Poly Jars and Bottles
Anti-Corrosive Rad Pad	Absorbed Organic Liquids	Organic Process Solvents	Absorbed Inorganic Liquids
White Mineral Oil	Soil	Process Exhaust Ducts	Filters
References: 5, C026, C027, C032, C039, C040, C041, C042, C197, M043, and M062			

5.3.1.1 Waste Matrix Code

As shown in the previous section, waste stream MPFPDD is comprised primarily of numerous organic and inorganic debris waste items and generally consists of cellulosics (e.g., paper, cloth), plastic, rubber, glass, and metal. The Waste Matrix Code Group, S5000, Heterogenous Debris, was assigned to this waste stream based on the evaluation of AK information from data from this waste steam generated by the previous Hanford certified TRU Waste Program, such as MPFPD, which came from the PFP facility. AK information from the previous Hanford certified TRU waste program was used due to the fact that the waste is expected to be similar to the previous PFP waste streams. Based on an evaluation of previous Hanford waste streams, the waste stream is comprised of greater than 50 percent of heterogeneous inorganic and organic debris. The Hanford waste stream profile form was approved in 2002. For the MPFPDD waste stream, Hanford certified 5,336 containers and shipped 4,528 containers (Reference 4).

Due to the high degree of variability in the amount of combustible waste, Waste Matrix Code S5400, Heterogeneous Debris, is applied to this waste stream. The definition of this Waste Matrix Code is provided in the DOE/LLW-217, *DOE Waste Treatability Group Guidance* (Reference 11). This category includes waste that is at least 50 percent, by volume, debris materials that do not meet the criteria for assignment as either an Inorganic Debris (S5100) or Organic Debris (S5300).

5.3.1.2 Waste Material Parameters

To estimate the Waste Material Parameters (WMPs) for waste stream MPFPDD, WMPs were evaluated for waste streams that have come from the PFP facility that were processed under the previous Hanford certified TRU Waste Program. Existing Hanford WIPP Waste Information System (WWIS)/Waste data Systems (WDS) data was evaluated and a range was generated based on the WWIS/WDS data and the nondestructive examination (NDE) information included in HNF-36515. The WMP data is presented in Table 5-2, Waste Stream MPFPDD Waste Material Parameters (References 5 and C200).

Table 5-2. Waste Stream MPFPDD Waste Material Parameters

WMP Description	Average Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	48%	0 - 100%
Aluminum-based Metals/Alloys	< 1%	0 - 83%
Other Metals	5%	0 - 87%
Other Inorganic Materials	8%	0 - 100%
Cellulosics	12%	0 - 92%
Rubber	9%	0 - 91%
Plastics (waste materials)	18%	0 - 100%
Organic Matrix	< 1%	
Inorganic Matrix	< 1%	
Soils/gravel	< 1%	
TOTAL INORGANIC	61%	
TOTAL ORGANIC	39%	

5.3.2 Radiological Characterization

To produce Table 5-4, Waste Stream MPFPD WWIS Reported Radionuclides, WWIS/WDS data were obtained for waste stream MPFPD: RLMPDT.001 (Reference M106). The actual isotopes present in individual containers may vary significantly and therefore NDA analyses will provide the official inventory and mass distributions for each container. The waste is contaminated mainly with plutonium (Pu-238, Pu-239, Pu-240, Pu-241, and Pu-242), and lesser quantifies of uranium (U-232, U-233, U-234, U-235, U-236 and U-238), americium (Am-241), neptunium (Np-237), cesium (Cs-137), and strontium (Sr-90) (References 5, C037, and C060).

Hanford initially produced weapons grade plutonium with a Pu-240 weight percentage between approximately 0.9 percent and 7 percent. Weapons grade plutonium metals and oxides were in high demand up to the mid 1960s, but beginning in the mid-1960s, the need for fuels grade plutonium began to increase. The Hanford mission began turning toward fuels grade plutonium production to support reactor research. Hanford processed fuels grade material with Pu-240 concentrations varying from approximately 8 percent to 27 percent for experimental reactor technology (e.g., Fast Flux Test Reactor), and other reactors. Because of the wide range of isotopic mixtures of material

handled in the PFP, single isotopic spectrum would not be representative of all materials handled. However, based on historical processing loads, a major portion of the plutonium processed in the PFP was approximately 12 percent Pu-240 (References C030, P239, and P253).

Plutonium product specifications allowed for elemental impurity concentrations from between 50 and 500 parts per million (ppm). Trace elements include americium (Am-243), californium (Cf-249), thorium (Th-228 and Th-232), and other isotopes of calcium, carbon, iron, nickel, neptunium, and uranium. Although these isotopes are typically present in trace amounts, various research projects may have resulted in isotopic concentrations that varied by container. Potassium (K-40) is found in soil, cement, limestone and wood and should be expected to be naturally occurring within the waste stream (Reference C037). Although not specifically identified as process contaminants, documentation from NDA measurements performed in 2007 identified the presence of the following trace isotopes: barium (Ba-133), cobalt (Co-60), europium (Eu-152 and Eu-154), curium (Cm-243), niobium (Nb-94), radium (Ra-226), and sodium (Na-22) (Reference M106).

The expected Am-241 that is presented in the tables in the following section is based upon the decay of the Pu-241 present in the waste. It should be noted that Am-241 is the daughter of Pu-241 and over a relatively short period of time the Pu-241 will decay away since it has a half life of 14.4 years. Consequently the Am-241 (with a half life of 432 years), will increase. In addition, the Am-241 alpha-decays to Np-237, which has a half life (2.14 E+6 years), longer than Pu-239. As a result there are trace quantities of Np-237 present, but its activity is orders of magnitude lower compared to the Am-241. The peak buildup in activity of Am-241 from Pu-241 is approximately 2.9 percent of the initial Pu-241 content. Since Am-241 might have also been present in the waste stream from the processing area of the PFP, it is very possible that there could be more Am-241 present than is indicated in the tables (References 5 and C031).

Uranium was an impurity in the plutonium that was received from the various operating facilities, which ranged from slightly depleted (about 0.6 percent U-235) to slightly enriched (less than 1 percent U-235). As a result, a range of values has been estimated for the waste streams. The actual uranium present in individual containers may vary significantly from the values listed in Table 5.3, based on the radiation history and the enrichment process that produced the uranium and the composition when manufactured. For example, the U-236 could vary from 0.07 percent to a high of 0.08 percent. This variance depends on the radiation history as well as the source of the uranium (e.g., was it produced from natural uranium or recycled uranium). These estimated weight percent distributions are provided in Table 5-3, Plutonium and Uranium Isotopic Distributions (References 5, P183, and P278).

Table 5-3. Plutonium and Uranium Isotopic Distributions

Pu and Associated Distributions		Uranium Distributions	
Isotope	**Wt % Distribution**	**Isotope**	**Wt % Distribution**
Pu-238	0.01 – 0.05%	U-232	Trace
Pu-239	74.78 – 97.77%	U-233	Trace
Pu-240	2.13 – 20.72%	U-234	0.006 – 0.008%
Pu-241	0.02 – 0.81%	U-235	0.57 – 0.97%
Pu-242	0.001 – 0.66%	U-236	0.07 – 0.08%
Am-241	0.07 – 2.88%	U-238	98.95 – 99.35%
Np-237	0.00 – 0.09%	---	---

Additional acceptable knowledge was obtained for Sr-90 and U-234 to comply with WIPP-WAC reporting requirements, based on data generated previously by the Hanford waste certification program. Acceptable knowledge was needed to quantify the amount of Sr-90 and U-234 expected in individual containers. Scaling factors (or isotopic ratios), were determined or developed using historical data to estimate these isotopes. The U-234 is estimated based on the measured activity of U-235 or U-238 and any Sr-90 present can be estimated from measured Cs-137. The ratios are not exact and may vary significantly based on the radiation history and the process that produced the Pu and uranium. The scaling factors for these activity relationships are as follows:

- Cs-137 to Sr-90 is 1.1:1 (Reference C013 and C071)
- U-234 to U-235 is 30:1 (References C053 and C100)
- U234 to U-238 is 2:1 (Reference C100)

To further evaluate the radiological characteristics of waste stream MPFPDD, data were obtained from the WWIS/WDS database as of 05/21/2009 from data generated previously under the Hanford Waste Certification Program.

To present a summary of the WWIS/WDS reported data, the total gram value for each individual reported radionuclide was divided by the total mass of all radioactive constituents for the 5,856 drums and converted to a percentage. As shown in Table 5-4, U-238 and Pu-239 are the two predominant radionuclides by mass, and Pu-239 and Pu-241 are the predominant radionuclides by activity. Table 5-4 presents a historical representation of the reported nuclides that have come from the PFP facility (Reference M106).

Table 5-4. Waste Stream MPFPD WWIS Reported Radionuclides

Nuclide	Drums with Values	Total Nuclide Wt.%[1]	Total Nuclide Ci%[2]	Nuclide Weight% Range for Individual Drums[3]	Nuclide Ci% Range for Individual Drums[4]	Expected Present (Yes/No)	Ave. Ci/Drum[5]
WIPP Required Radionuclides							
Am-241	5856	0.63%	7.13%	0% - 61.93%	0.03% - 87.45%	Yes	7.13E-01
Pu-238	5834	0.04%	2.02%	0% - 6.24%	0% - 47.33%	Yes	2.02E-01
Pu-239	5856	**67.34%**	**13.73%**	0% - 97.72%	0.70% - 78.85%	Yes	1.37E00
Pu-240	5856	6.19%	4.62%	0% - 45.61%	0.40% - 69.60%	Yes	4.62E-01
Pu-242	5839	0.07%	<0.01%	0% - 2.65%	0% - 0.05%	Yes	8.54E-05
U-233	73	0.03%	<0.01%	0% - 98.41%	0% - 63.67%	Yes	8.32E-05
U-234	334	<0.01%	<0.01%	0% - 0.76%	0% - 15.83%	Yes	7.42E-06
U-238	315	**24.65%**	<0.01%	0% - 99.92%	0% - 10.47%	Yes	2.72E-06
Cs-137	239	<0.01%	<0.01%	0% - 0.01%	0% - 2.72%	Yes	4.25E-06
Sr-90	232	<0.01%	<0.01%	0% - <0.01%	0% - 2.48%	Yes	3.86E-06
Additional Radionuclides							
Am-243	38	<0.01%	<0.01%	0% - 0.50%	0% - 0.09%	Yes	5.72E-07
Ba-133	1	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	2.00E-10
Cf-249	2	<0.01%	<0.01%	0% - 0.02%	0% - 0.52%	Yes	2.90E-09
Cm-243	17	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	4.14E-08
Co-60	18	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	1.04E-09
Eu-152	22	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	3.08E-09
Eu-154	13	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	3.81E-09
K-40	150	0.01%	<0.01%	0% - 79.60%	0% - 0.01%	Yes	1.52E-08
Na-22	1068	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	1.84E-07
Nb-94	18	<0.01%	<0.01%	0% - <0.01%	0% - <0.01%	Yes	7.72E-10
Np-237	1810	0.11%	<0.01%	0% - 99.23%	0% - 23.31%	Yes	2.61E-05
Pu-241	5855	0.22%	**72.50%**	0% - 2.38%	0% - 91.88%	Yes	7.25E00
Ra-226	1	<0.01%	<0.01%	0% - <0.01%	0% - 0.04%	Yes	2.72E-09
Th-228	1	<0.01%	<0.01%	0% - <0.01%	0% - 0.13%	Yes	9.12E-09
Th-232	8	0.37%	<0.01%	0% - 98.89%	0% - Trace	Yes	1.35E-08
U-232	781	<0.01%	<0.01%	0% - <0.01%	0% - 0.57%	Yes	1.31E-06
U-235	326	0.34%	<0.01%	0% - 80.65%	0% - 0.40%	Yes	2.39E-07

1. This listing indicates the total weight percent of each radionuclide over the entire Waste Stream.
2. This listing indicates the total activity (curie) percent of each radionuclide over the entire Waste Stream.
3. This listing is the weight percent range of each radionuclide on a container-by-container basis. Containers with "0" listed as the lower range did not have the specified radionuclide reported.
4. This listing is the curie percent range of each radionuclide on a container-by-container basis.
5. This is the average curie activity for each radionuclide in the 5856 drums evaluated.

5.3.3 Chemical Content Identification – Hazardous Constituents

This section describes the characterization rationale for assignment of EPA HWNs to waste stream MPFPDD. The assignment of EPA HWNs is based on data generated previously by the Hanford Waste Certification Program for waste streams that have come from the PFP facility and MPFPD (References 4 and 5). The EPA HWNs assigned to this waste stream are summarized in Table 5-5, Waste Stream MPFPDD Hazardous Waste Characterization Summary (Reference DR010).

Table 5-5. Waste Stream MPFPDD Hazardous Waste Characterization Summary

EPA Hazardous Waste Number	Constituent
Toxicity Characteristic Metals	
D004	Arsenic
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
Toxicity Characteristic Organics	
D022	Chloroform
D030	2,4-Dinitrotoluene
F-Listed Organic Solvents	
F001	Carbon tetrachloride
F001, F002	1,1,1-Trichloroethane
F001, F002	1,1,2-Trichloro-1,2,2-trifluoroethane
F001, F002	Methylene chloride
F001, F002	Tetrachloroethylene
F001, F002	Trichlorofluoromethane
F001, F002	Trichloroethylene
F004	Nitrobenzene
F005	Benzene
F005	Carbon disulfide
F005	Pyridine
F005	Methyl ethyl ketone
F005	Toluene

To assign EPA HWNs, the available AK documentation (including previous AK reports, analytical procedures, chemical inventories, waste disposal records, site databases, MSDSs), was reviewed to identify chemical usage and potentially hazardous materials that may be present in the waste stream. Table 5-6, summarizes the chemicals and commercial products identified during the review of AK documentation.

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs

Chemical	Use	Source Document	EPA HWN
1-Naphthyamine sulfuric acid	Cleaning and drying	P130	NA
1,1,1-Trichloroethane	Solvent/degreaser		F001, F002
1,1,2-trichloro-1,2, 2-trifluoroethane	Degreasing; ultrasonic cleaning; density determination	P130, P239, P196,	F001, F002
(1,2-cyclohexylenedinitro) tetraacetic acid	Constituent identified in the PFP debris designation	C074	NA
1,2,4-Trichlorobenzene	Suspected tank sludge constituent	P196	NA
2-bromo-2-nitro-1, 3-propanediol	Detected in headspace gas samples	M054	NA
2,4-dinitrotoluene	Compound in sludge	C074, M054	D030
Acetic acid	Coulometry solution, sample preparation, buffer. Drying agent, solvent. VOC in tank samples; suspected tank sludge constituent	M054, P239, P196, P258	NA
Acetone	Rinsing electrodes, cleaning filaments and glassware, cell decontamination, drying agent, solvent. VOC in tank sample	C019, P239, P116, P196, P258	NA
Aluminum	Heating blocks, foil, capsules and standard solutions; impurity; SS&C; ingredient in contamination control paint; suspected tank sludge constituent	C074, M054, P116, P132, P135, P138, P140, P196,	NA
Aluminum hydroxide	RECUPLEX process	P137,	NA
Aluminum nitrate nonahydrate (ANN)	RECUPLEX process; Standard solutions	C074, M054, P239, P130, P132, P135, P137, P140, P151	NA
Aluminum oxide	Laboratory reagent (refractory)	C074, M054, P130, P137	NA
Aluminum sulfate	RECUPLEX process	P137	NA
Ammonia	Reagent inventory, Nessler's reagent	P196	NA
Ammonium chloride	solvent	C074, M054	NA
Ammonium nitrate	Solvent, Ion exchange wash	P239, P130, P151	NA
Ammonium oxalate	Chelating agent	P196	NA
Ammonium phosphate, dibasic	Dry chemical powder used in fire extinguishers	M026	NA
Antimony	Constituent identified in the PFP debris designation	C074, M054	NA
Arsenic	SS&C; suspected tank sludge constituent, inventory chemical	C074, M054, P138, P196, P258	D004

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Asbestos	Insulation, Flame protection for glove box floors, and lab ware	C074, M054, P130, P196	NA
Barium (oxide)	Suspected tank sludge constituent	C074, M054, P130, P196, P258	D005
Barium (chloride, acetate, carbonate, hydroxide, nitrate)	Precipitating reagent and inventory chemicals	P151	NA
Benzene	Carbonization of mass spectrometric filaments, cleaning agent, etching agent; suspected tank sludge constituent	P116, P130, P196, P258	F005
Beryllium (oxide)	Machining, grinding, welding; SS&C; Standard materials	C074, M054, P130, P138, P196, P258	NA
Bis-(2-ethylhexyl) phthalate (DOP)	HEPA flow test reagent	C074, M054	NA
Bismuth	Suspected tank sludge constituent	C074, P196	NA
Bismuth nitrate	Extraction reagent	P151	NA
Bismuth phosphate	Chemical separation	P151, P196	NA
Borated polyethylene	Raschig rings for ion exchange packing	P132, P140	NA
Boric acid	Sample preparation	P239, P151	NA
Boron (oxide)	SS&C; suspected tank sludge constituent	P130, P138, P196	NA
Bromide	Inventory reagent	P196	NA
Bromobenzene	Used in density bath	C019	NA
Bromocresol purple	Suspected tank sludge constituent	P196	NA
Butane, n-	VOC in tank sample	P196	NA
Butyl alcohol, n- (n-butanol)	Suspected tank sludge constituent; degradation product	P130, P135, P196	NA
Cadmium metal and compounds	Emission spectrometric standard material, ion exchange column liner, neutron shielding, inventory chemicals, SS&C, NiCad batteries, paint, suspected tank sludge constituent	C074, M054, P130, P132, P138, P140, P196, P258	D006
Cadmium (nitrate, choride)	RECUPLEX process; Poison used for contaminated soil removal; Emission spectrometric standard material	P130, P137	D006
Calcium (metal, nitrate)	RECUPLEX process; impurity; SS&C; Standard element	C074, M054, P239, P132, P137, P138, P140, P196	NA
Calcium carbonate	Cement ingredient	M054	NA
Calcium chloride	Process chemical	P135	NA
Calcium fluoride	Compound in sludge; process chemical; SS&C	P130, P135, P137, P138	N/A
Calcium hydroxide	Constituent identified in the PFP debris designation	C074, M054	NA
Calcium iodide	Slag that was part of metal buttons; SS&C	P135, P138	NA
Calcium oxide	Cement ingredient	P130	NA
Calcium sulfate	RECUPLEX process	P138	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Carbon	SS&C; Suspected tank sludge constituent	C074, M054, P138, P196	NA
Carbon disulfide	Identified as a TIC	C054, C055	F005
Carbon tetrachloride	Measuring density of Pu specimens; fabrication oil; Metal and sample cleaning RECUPLEX ion exchange extractant with tributylphosphate; VOC in tank sample	C019, C058, C074, M054, P239, P116, P126, P130, P132, P133, P134, P135, P137, P140, P150, P159, P196, P258	F001
Cerium (nitrate, oxide)	Suspected tank sludge constituent	P130, P196	NA
Cesium	Suspected tank sludge constituent	P196	NA
Chloroform	Cleaning agent; VOC in tank sample	P196	D022
Chloromethane	Identified as a TIC in previous Hanford waste	C054, C055	NA
Chromium (oxide, nitrate, choride)	Inventory chemical, Cement constituent; SS&C; suspected tank sludge constituent	C074, M054, P130, P138, P196	D007
Chlorodifluoromethane (gas)	Coolant, chemical inventory	P239	NA
Citric acid	Constituent associated with the PFP waste stream	P130	NA
Cobalt	Standard metal; suspected tank sludge constituent	P196	NA
Conweb Absorbent Pads	Absorption	P134	NA
Copper (metal, oxides) and copper salts	Tubing and used in sulfur combustion methods. Copper for density analysis. Suspected tank sludge constituent	C074, M054, P239, P130, P196	NA
Cyclohexanone	Inventory chemical	P234	NA
Decane	Suspected tank sludge constituent	P196	NA
Diatomaceous earth	Absorbent material in Diasorb, MicroCell-E, and other absorbents	C029, C074, M046, M054, P133, P134, P146	NA
Dibutyl butyl phosphonate (DBBP)	Extractant used in ion exchange; suspected tank sludge constituent	P130, P132, P134, P137, P140, P196	NA
Dibutylphosphate (DBP)	RECUPLEX Solvent; suspected tank sludge constituent	C074, M054, P130, P134, P135, P196	NA
Dichlorodifluormethane (gas)	Compound detected in sludge	P239, P196	NA
Di-n-butyl phosphoric acid	Suspected tank sludge constituent	P130	NA
Dipotassium dichromate	Constituent identified in the PFP debris designation	C074, M054	D007
Divinylbenzene	Ion exchange resin	P132	NA
Dodecane, n-	Compound in sludge	P196	NA
Dysprosium	Constituent associated with the PFP waste stream	P130	NA
Ethanol	Etching reagent	P130	NA
Ethanolamine	Cleaning filaments and glassware, cell decontamination	C074, M046, M054	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Ethylbenzene	Organic constituent in polycube stabilization	P116	NA
Ethylene glycol	Used in ventilation and air conditioning equipment and for flushing floor drains; antifreeze	P130, P196	NA
Europium	Constituent associated with the PFP waste stream	P130	NA
Ferric ammonium sulfate	Ion specific electrode methods for chloride	P151	NA
Ferric nitrate	Spectrometric standard material; RECUPLEX process; waste treatment	C074, M054, P239, P130, P137	NA
Ferric oxide	Cement and sludge constituent	M054, P126	NA
Ferrous ammonium sulfate	Determination of Plutonium by potentiometry and sample preparation	C074, M054, P239, P130, P151	NA
Ferrous sulfamate	Ion exchange reagent; fabrication oil stripping	P239, P132, P135, P140, P150	NA
Gadolinium	Waste stabilizer	P130	NA
Gallium	SS&C, Contaminant in sludge	P138, P196	NA
Gallium oxide	Impurities by emission spectrometry	P130	NA
Graphite	Crucibles, electrodes	C074, M054, P135	NA
Hydrazine	Process chemical (PUREX), Ion exchange; suspected tank sludge constituent	P130, P196, P258	NA
Hydrobromic acid	Constituent identified in the PFP debris designation	C074, M054, P258	NA
Hydrochloric acid	Electrochemical solution and sample preparation; impurity analyses; radiolysis product	C074, M054, P239, P130, P134, P135, P137, P258	NA
Hydrofluoric acid	Oxidizing reactions, sample preparation; fabrication oil stripping	P239, P130, P133, P135, P137, P258	NA
Hydrogen peroxide	Oxidizing agent	C074, M054, P239, P115, P117, P120, P130, P135, P151, P156, P258	NA
Hydroiodic acid	Inventory reagent	P138, P258	NA
Hydroxylamine nitrate	Process chemical	C074, M054, P130, P135	NA
Hydroxylamine sulfate	Constituent associated with the PFP waste stream	P130	NA
Iodine	Laboratory reagent	P239, P130, P135, P196	NA
Iron	Standard material; suspected tank sludge constituent	C074, M054, P130, P132, P138, P140, P196	NA
Iron nitrate	RECUPLEX process	P138	NA
Iron oxide	RECUPLEX process; Fixative and cement ingredient	C074, M054, P126	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Isopropanol	Constituent associated with the PFP waste stream	P130	NA
Kerosene	Constituent identified in the PFP debris designation	C074, M054	NA
Lanthanum fluoride	Carrier agent for Pu precipitation	P151	NA
Lanthanum nitrate	Constituent associated with the PFP waste stream	P130	NA
Lard oil	Fabrication oil	P133, P134 P150, P137, P196	NA
Lead and lead compounds	Spectrometric standard material, batteries, shielding, circuit boards, solder, leaded gloves, leaded glass, bricks, pigs; paint ingredient; suspected tank sludge constituent	C032, M054, P239, P115, P130, P196, P258	D008
Lead chromate and lead chromate oxide	Constituent identified in the PFP debris designation	C074, M054	D007 D008
Lithium (oxide)	Fuel experiments; SS&C; process chemical; suspected tank sludge constituent	P239, P130, P138, P196	NA
Manganate	Suspected tank sludge constituent	P196	NA
Magnesium and magnesium compounds	Spectrometric standard material; SS&C; process chemical; suspected tank sludge constituent	P135, P138, P196	NA
Magnesium chloride	Process chemical	P239, P135	NA
Magnesium hydroxide	Oxalic precipitation process	P130, P137	NA
Magnesium nitrate hexahydrate	Laboratory reagent; RECUPLEX process	P117, P121, P137	NA
Magnesium oxide	SS&C; Fire extinguishing chemical; Cement ingredient; Laboratory reagent	C074, M054, P239, P117, P127, P130, P135, P138	NA
Manganese (oxide)	SS&C; suspected tank sludge constituent	C074, M054, P130, P138, P196	NA
Manganese chloride	Process chemical	P135	NA
Manganese silica oxide	Ingredient of Mistron acid neutralizer	P132, P140	NA
Manganese silicate	Anti-emulsifying agent	P135	NA
Mercury metal and compounds	Electrodes, thermometers, batteries, inventory chemicals, catalyst, check void volume in casting molds, suspected tank sludge constituent	C074, M054, P239, P130, P135, P156, P196, P258	D009
Methanol	Cleaning and drying glassware, cleaning Ph electrodes, suspected tank sludge constituent	P239, P151, P196, P258	NA
Methyl ethyl ketone	Ingredient in paint and thinners	P114	F005
Methylene chloride	Reagent, solvent, component of TURCO paint remover	P239, P116, P196	F001, F002
Methyl Isobutyl Ketone	Reagent, paint ingredient	P130	NA
Molybdenum (oxide)	Spectrometric standard material; SS&C; suspected tank sludge constituent	C074, M054, P130, P135, P138, P196	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Monobromobenzene	Density measurement	P130, P135	NA
Monobutylphosphate	Suspected tank sludge constituent	C074, M054, P130, P134, P196	NA
Naphthalylamine	Constituent associated with the PFP waste stream	P130	NA
Nickel hydroxide, nickel monoxide	NiCad batteries	C074, M046, M054	NA
Nickel	Cement contamination; SS&C; suspected tank sludge constituent	C074, M054, P239, P138, P196	NA
Niobium	SS&C; suspected tank sludge constituent	P138, P196	NA
Nitric acid	Sample dissolution, eluant for ion exchange, electrode cleaning, cell decontamination, contamination from spills	C026, M054, P239, P115, P117, P120, P121, P130, P132, P133, P135, P140, P141, P150, P151, P156, P162, P167, P196	NA
Nitrobenzene	Reagent	P234, P514	F004
Oleic acid	Die Lubricant; suspected tank sludge constituent	P196	NA
Oxalic acid	Chelating acid, scrap stabilization, suspected tank sludge constituent	C074, M054, P239, P115, P117, P120, P121, P126, P128, P130, P135, P138, P151, P156, P196	NA
Paraffin hydrocarbon normal	Used as diluent	P134	NA
Pentachloroethane	Compound in sludge, VOC in tank sample	P196	NA
Pentane, n-	Suspected tank sludge constituent	P196	NA
Petroleum hydrocarbons	Oils used in hydraulic equipment and pumps	P134, P146	NA
Petroleum distillates	Cleaners; naphtha solvent in ShellSol 140, Shellsol D60, and ISOPAR H	C039, C040, C041, C042, M043	NA
Phosphoric acid	Used in potentiometric methods; degradation product	M014, M054, P239, P130, P135, P151	NA
Phosphorus (oxide)	Inventory reagent	P239, P130, P196	NA
Phthalic acid, p-	Suspected tank sludge constituent	P196	NA
Platinum	Cathodes, beads, crucibles, sample boats	P196	NA
Polychlorinated biphenyls (PCBs)	Light ballasts; suspected tank sludge constituent and oils	C019, M054, P130, P134, P196, P258	NA
Polypropylene	Used in filters to keep phosphoric acid bath clean, Anti-Corrosion Rad Pad	C029	NA
Polystyrene (vinyl benzene)	Fabrication of Plutonium polycubes; suspected tank sludge constituent	P116, P135, P196	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Polyvinylidene fluoride	Component of Kynar Raschig rings and Intalox saddles used for ion exchange packing	P132, P140	NA
Potassium (oxide, sulfate)	Suspected tank sludge constituent; process chemical	P130, P135, P196	NA
Potassium fluoride	Constituent identified in the PFP debris designation	C074, M054	NA
Potassium hydroxide	Electrolyte fuel cells; waste treatment; dissolved Zircoly-2	C074, M046, M054, P239, P130, P135, P151	NA
Potassium nitrate	Laboratory reagent	P117, P121	NA
Potassium permanganate	Laboratory reagent, decontamination agent	P239, P115, P120, P121, P130, P135, P151, P156	NA
Pyridine	Inventory chemical		F005
Samarium	Constituent associated with the PFP waste stream	P130	NA
Selenium	Constituent identified in the PFP debris designation	C074, M054	D010
Silicon	SS&C; suspected tank sludge constituent	P138, P196	NA
Silica gel	dehydrating agent	P126, P128, P133, P134	NA
Silicon (di)oxide	Reaction byproduct; SS&C	C074, M054, P117, P121, P130, P137, P138	NA
Silver and silver compounds	Suspected tank sludge constituent	P239, C074, M054, P196, P258	D011
Sodium	Fuel specimen component. Process chemical; suspected tank sludge constituent	P130, P135, P196, P258	NA
Sodium bicarbonate, sodium carbonate, sodium nitrate, sodium sulfate	Wash solutions; Contaminant in waste matrix; RADPRO sodium carbonate decontamination solution	M046, M054, P239, P130, P132, P135, P140, P151	NA
Sodium acetate, sodium bisulfate, sodium chloride	Process chemicals	C074, M054, P239, P135	NA
Sodium bismuthate	Oxidizing agent	P239, P151	NA
Sodium dichromate	Extraction reagent	P239, P151	NA
Sodium fluoride	Neutralization reaction product	P196	NA
Sodium hydroxide	Decontamination; Solution preparation and pH adjustments Neutralize acidic waste; ingredient in Easy Off Oven Cleaner	M014, M046, M054, P239, P130, P132, P140, P147, P151, P169, P170, P196	NA
Sodium iodide	Laboratory reagent, radiation counter	C029, P146, P179	NA
Sodium nitrite	Corrosion inhibitor, waste stabilizer	P130, P132, P140	NA
Styrene	Organic constituent in polycube stabilization	P116	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Sucrose	Moderator; dinitration agent; suspected tank sludge constituent	C074, P117, P120, P121, P196	NA
Sulfamic acid	Processing and dissolution reagent	, P239, P196	NA
Sulfonated polystyrene/divinylbenzene copolymer	Material in DOWEX 50W 8X cation exchange resin	P132, P140	NA
Sulfur	Contaminant in sludge	P196	NA
Sulfuric acid	Used in 234-5Z digester	M054, P130	NA
Tantalum (oxide, chloride)	Casting material; SS&C; Standard Element; suspected tank sludge constituent	P130, P138, P196	NA
Tartaric acid	Inventory chemical	P239	NA
Tetrabromoethane	Suspected tank sludge constituent	P196	NA
Tetrachloroethylene	VOC in tank sample and suspected tank sludge constituent, inventory chemical	P239, P130, P196	F001, F002
Thenoyltrifluoro acetone	Suspected tank sludge constituent	P196	NA
Thorium oxide	Fabrication material	P130, P135	NA
Thymolphtaleic	Suspected tank sludge constituent	P196	NA
Tin (monoxide)	Inventory chemical	C074, M054, P130	NA
Titanium (oxide)	Constituent associated with the PFP waste stream	P239, P130	NA
Toluene	Organic constituent in polycube stabilization; paint ingredient; VOC in tank sample, suspected tank sludge constituent	P239, P116, P130, P196, P258	F005
Tributylphosphate (TBP)	Liquid-liquid extraction and studies of PUREX and RECUPLEX processes; suspected tank sludge constituent	C074, M054, P239, P121, P126, P130, P132, P134, P135, P140, P155, P196	NA
Trichloroethylene	Coolant in PPSL; Inventory Chemical: VOC in tank samples	P189, P196	F001, F002
Trichlorofluoromethane	Inventory Chemical	P130, P239	F001, F002
Tri-iso-octylamine	Suspected tank sludge constituent	P196	NA
Triethylamine	Constituent associated with the PFP waste stream	P130	NA
Tris-(hydroxymethyl)-amino methane	Suspected tank sludge constituent	P196	NA
Tungsten (oxide)	SS&C; suspected tank sludge constituent	P138, P196, P258	NA
Uranyl nitrate	Process chemical	P130	NA
Vanadium	Constituent associated with the PFP waste stream	P130	NA
Varsol	Inventory chemical	P239	NA
Vermiculite	(Absorbent) Absorbent (kitty litter)	C036, M049, P133, P134, P179, P180	NA
Xylene	Fixative ingredient; Solvent; suspected tank sludge constituent	P239, P130, P134, P196, P258	NA

Table 5-6. Waste Stream MPFPDD Material and Chemical Inputs (Continued)

Chemical	Use	Source Document	EPA HWN
Yttrium	Constituent identified in the PFP debris designation	C074, M054	NA
Zinc and zinc compounds	Constituent identified in the PFP debris designation	C074, M054	NA
Zinc (oxide)	Hydraulic press contaminant; process chemical; suspected tank sludge constituent	M054, P239, P130, P135, P196	NA
Zirconium (oxide)	Fines; SS&C; suspected tank sludge constituent	P130, P135, P138, P196	NA

The PFP Safety Analysis Report (SAR) lists the following chemicals as paints and thinners: acetone (F003), methanol (F003), toluene (F005), and xylene (F003). Acetone (F003), carbon tetrachloride (F001), methanol (F003), methylene chloride (F001 and F002), toluene (F005), and xylene (F003) were identified in the SAR as laboratory chemicals. AK also identified the following chemicals were used at the PFP in unspecified processes: 1,1,1-trichloroethane (F001 and F002), 1,1,2,2-tetrachloroethylene (f001 and F002), 1,1,2-trichloro-1,2,2-trifluoroethane (F001 and F002), carbon disulfide (F005), nitrobenzene (F004), pyridine (F005), trichlorofluoromethane (F002), and n-butyl alcohol (F003). The PFP SAR did indicate that n-butyl alcohol was a radiolytic and chemical degradation product of TBP used in the solvent extraction process. Additional discussion on the assignment of hazardous waste numbers is provided at the beginning of this section (Section 5.3.3) (References 5, C054, C055, C061, C079, C080, M101, P116, P189, P196, P197, P239, P405, and U202).

5.3.3.1 F-Listed Constituents

F003-listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability because the solvents are not in liquid form. Therefore, this waste stream is not an F003-listed hazardous waste. The following F-listed HWNs are assigned to this waste stream:

- F001 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluorothane, 1,1,2,2-tetrachloroethylene, carbon tetrachloride, methylene chloride, trichloroethylene, and trichlorofluromethane)

- F002 (1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, Tetrachloroethylene, methylene chloride, trichloroethylene, and trichlorofluoromethane)

- F004 (nitrobenzene)

- F005 (benzene, carbon disulfide, Methyl ethyl ketone, pyridine, and toluene)

- F001 code is being carried forward for this waste to be consistent with similar, previous Hanford waste characterization for waste that has already been shipped to WIPP, and due to the potential mixture and/or contamination with other F001 waste, such as ash from RFETS (Reference DR010)

- F003 constituents, including acetone, n-butyl alcohol, methanol, cyclohexanone, methyl Isobutyl ketone and xylene are listed soley because these solvents are ignitable in the liquid form. The waste stream will not exhibit the characteristic of ignitability because it is not liquid; therefore, F003 is not assigned (Reference DR010)

5.3.3.2 Toxicity Characteristics Constituents

Based on the review of chemicals identified for the PFP and AK reports describing previous waste streams generated at the PFP, the following toxicity characteristic metal and organic chemical waste codes have been assigned to this waste stream (References C074, DR010, M054, and P196):

- D004 (arsenic)
- D005 (Barium)
- D006 (Cadmium)
- D007 (Chromium)
- D008 (Lead)
- D009 (Mercury)
- D010 (Selenium)
- D011 (Silver)
- D022 (chloroform)
- D030 (2,4-dinitrotoluene)

5.3.3.3 U-, P-, and K- Listed Wastes

Waste materials from operations from the PFP were determined not to be mixed with hazardous waste from specific sources (40 CFR 261.32), a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof (40 CFR 261.33). P- and U-listed reagents including acetone (U002), beryllium (P015), and xylene (U239) were managed by the laboratory; however, no pure product or unused chemicals would have been placed into the TRU waste stream (Reference 4).

There is a potential for beryllium to be present in the MPFPDD waste stream as a trace impurity in the plutonium and plutonium oxides. Small quantities of beryllium were used in the PFP laboratories in the form of metal and oxides. The PFP also used beryllium tools that were removed and placed under separate control. A review of solid waste storage and disposal records indicates the presence of beryllium in trace amounts (i.e., less than one weight percent) (References 2, P189, P411, and P1079).

Based on a review of PK documentation, the waste stream is not contaminated with hydrofluoric acid (U134).

Although hydrofluoric acid is identified, it is not U134 listed. The material in waste stream MPFPDD is not a hazardous waste from any of the sources specified in 40 CFR 261.32. Waste stream MPFPDD is therefore not assigned a K-listed HWN.

5.3.3.4 Ignitables, Corrosives, and Reactives

The debris material in the MPFPDD waste stream does not meet the definition of ignitability as defined in 40 CFR 261.21. The waste stream is comprised of debris materials and is not liquid. The waste is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes. This material is not a compressed gas or an oxidizer as defined in 40 CFR 261.21. Because the materials within this waste stream are not considered to be ignitable, D001 HWN was not applied to this waste stream (References 4, 5, and 14).

The debris in this waste stream is not liquid and does not contain any unreacted corrosive chemicals; therefore, it does not meet the definition of corrosivity (D002) found in 40 CFR 261.22. Corrosive liquids that were used at the PFP were neutralized and stabilized prior to packaging. Therefore, the D002 HWN was not applied to the waste stream.

The debris material in the MPFPDD waste stream does not meet the definition of reactivity in 40 CFR 261.23. Based on waste acceptance procedures and experience with the materials at Hanford, the materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, nor generate toxic gases, vapors, or fumes when mixed with water. Reactive metals and alloys were reacted prior to disposal and potentially reactive reagents were not placed in the waste to ensure acceptance with the Hanford Site Solid Waste Acceptance Criteria for storage at Hanford. As a result, the materials within this waste stream are not considered reactive and the D003 HWN was not applied (References M056, P411, and P1079).

5.3.3.5 Polychlorinated Biphenyls

Based on the review of historical data reviewed for TRU Solid Waste and TRU Mixed Waste, there is a possibility of trace amounts of PCBs being included in waste stream MPFPDD in the form of hydraulic oils that have been absorbed and also as trace impurities in the plutonium and plutonium oxides. The candidate drums in this waste stream are not designated as TSCA waste under 40 CFR 761. The primary source for PCBs in this waste stream is from absorbed hydraulic oils and the drums in the candidate list are not designated as TSCA waste; therefore, PCBs are not expected. Containers that contain these PCBs items that were identified during the Hanford program's radiography will not be included in the waste stream for shipment to AMWTP (References P134, P411, and P1079).

5.3.4 Prohibited Items

Based on the review of the procedures for handling and packaging TRU Solid Waste and TRU Mixed Waste, as well as container inventory, burial records, and previous waste shipped to WIPP for waste generated during the production, maintenance, cleanout, stabilization, and D&D of the PFP, there should be no prohibited items

included in the MPFPDD waste stream, that cannot be identified by radiography (References P411, P414, P415, and P416).

Prior to shipment to AMWTP, Hanford performed radiography on the 85-gallon overpack containers. Any drum found to contain a prohibited item during radiography at Hanford will be excluded from shipment to AMWTP. Hanford radiography will verify the absence of the following prohibited items (Reference P411):

- Liquid Waste: Waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., standard waste box or 55-gallon drum) must be less than 1 percent volume of that container. Residual liquids containing PCBs are prohibited at WIPP. Payload containers with U134 waste shall have no discernable liquid.
- Pyrophorics
- Non-TRU hazardous wastes
- Incompatible wastes (wastes that are incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials and/or other wastes)
- Explosives
- Compressed gases
- Sealed containers greater than 4-liters
- Corrosives (D002)
- Ignitables (D001)
- Reactive waste (D003)
- Sharp or heavy objects in the waste that are not blocked, braced, or suitably packaged as necessary to provide puncture protection for the payload container packaging those objects
- Pressurized containers (e.g., aerosol cans)
- PCB waste not authorized under a U.S. EPA PCB disposal authorization

Additionally, based on a review of the PK documentation and Hanford waste management practices, waste stream MPFPDD will not contain:

- Oxidizers
- Department of Transportation Class 1 explosives
- Reactive metals or forbidden materials identified in 40 CFR 173.21

The candidate drums in this waste stream are not designated as TSCA waste under 40 CFR 761. Containers found or identified as containing PCB will not be included in the waste stream for shipment to AMWTP.

5.4 Waste Packaging

Waste handling and packaging has been performed by Hanford personnel through production, maintenance, cleanout, stabilization, and D&D of the PFP facility. It is estimated that there can be up to six layers of confinement in any container.

5.4.1 Drum Filter Vents

Beginning in 1980, drums were required to be equipped with a vent clip if there was the potential for gas generation. The 85-gallon drums have been vented using NFT007L, NFT019D, NFT15DS, or NFT013 filters. All drums will be vented with a WIPP-approved filter vent before being certified for shipment to AMWTP (References M303, P411, and P1079).

6.0 CONTAINER SPECIFIC INFORMATION

Historic container documentation reviewed for containers in waste stream MPFPDD including SWITS database information, Solid Waste Disposal Requests, Waste Disposal Records, Contents Inventory Sheets, and miscellaneous spreadsheets compiled from this documentation is maintained in PK Source M303. Relevant radiography and assay documentation for each container is maintained in PK Source M303. The list of candidate containers for shipment to AMWTP is provided in the Container Tracking List.

The list of containers included in waste stream MPFPDD, based on a review of the available PK documentation, is included in the current PK Containers List as required by CCP-TP-401 (Reference 6). As required by CCP-TP-401 a Container Tracking Spreadsheet will be prepared from the PK Containers List and posted on the CCP File Transfer Protocol site containing, at a minimum, the following information:

- Container Identification
- Waste Stream Identification
- Generation Date
- Vent Date
- Change Reason
- New Closure Date
- New Vent Date
- Container Type

7.0 REFERENCES

1. *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, Attachments B-B6, *Waste Analysis Plan*, New Mexico Environment Department, Santa Fe, New Mexico

2. DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, Carlsbad, New Mexico, U.S. Department of Energy

3. CCP-PO-401, *CCP Contact-Handled Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) for Intersite Shipments*

4. HNF-6489, *Acceptable Knowledge Document for Plutonium Finishing Plant Mixed Debris Waste Stream, MPFPD*, WIPP Waste Stream Profile Form, Waste Stream Profile Number RLMPDT.001

5. HNF-36515, *Acceptable Knowledge Document for the Richland Mixed Plutonium Finishing Plant Comprehensive Debris Waste Stream*, RLMPFPCD

6. CCP-TP-401, *CCP Process Knowledge Compilation for Preliminary Characterization*, Carlsbad, New Mexico, Washington TRU Solutions, LLC.

7. DOE/TRU-2009-3425, *Annual Transuranic Waste Inventory Report – 2009*, U.S. Department of Energy

8. 42 U.S.C 10101, *Nuclear Waste Policy Act of 1982*

9. Public Law 102-579, *The Waste Isolation Pilot Plant Land Withdrawal Act* (as amended)

10. DOE Order 435.1, *Radioactive Waste Management,* U.S. DOE, Environmental Management

11. DOE/LLW-217, *DOE Waste Treatability Group Guidance*

12. CCP-AK-RL-101, *CCP AK Summary Report for Hanford Plutonium Finishing Plant (PFP) Contact-Handled Debris Waste From Decontamination and Decommission; Waste Stream MPFPDD*, Carlsbad, New Mexico, Washington TRU Solutions, LLC.

13. CCP-TP-005, *CCP Acceptable Knowledge Documentation*, Carlsbad, New Mexico, Washington TRU Solutions, LLC.

14. 40 CFR 261, *Identification and Listing of Hazardous Waste*, U.S. Environmental Protection Agency

15. Washington Administrative Code (WAC) 173-303-100(5), *Dangerous waste regulations*, Washington State Legislature

8.0 PK SOURCE DOCUMENTS

Source Document Number	Title	Document Number	Author	Date
C013	Interview of Michael Wesselman by Richard Clinton concerning Sr-90/Cs-137 Ratio Determination	NA	R. Clinton	03/28/2002
C016	231-Z Facility	NA	JM Waddoups	2/16/2007
C018	Email Response from Elizabeth Curfman to Richard Clinton regarding Inquiry from Caroline Sutter concerning PFP Laboratory History	NA	E. Curfman	01/10/2000
C019	Record of Communication for Interview of Ted Venetz Regarding Plutonium Finishing Plant Wastes	NA	P.H. Wicks, M.E. Lakes, and R.J. Swan	04/26/2007
C020	Determination of PCB Concentration in Hydraulic Oils	65452-82-159	S.G. Metcalf	8/25/82
C026	PFP Soil Record of Communication with Jose Mejia	NA	M.E. Lakes and P.H. Wicks	12/19/2006
C027	PFP Soil Record of Communication with J. Aranda	NA	M.E. Lakes and P.H. Wicks	12/6/2006
C028	E-Mail response from Jose Aranda on PFP waste question	NA	Jose Aranda	09/13/1999
C029	E-mail response from Dennis Fazzari on PFP waste	NA	Dennis Fazzari	9/13/1999
C030	Final Low-Pressure Reactor Fuel Processing Campaign - PUREX Plant Contract AT (45-)-1 20	ARH-2440	R.P. Corlew	04/07/1972
C031	Email From Karl Husted re: Two most prevalent isotopes in RLMPFPCD waste originating in 242-Z	NA	K.I. Husted	12/19/2007
C032	Memo from D. C. DeRosa, dated February 7, 2003, Subject: NPFPD and MPFPD Waste Streams	M4T00-DCD-03-029	D.C. DeRosa	02/07/2003
C036	Record of Communication with Ted Venetz	NA	RE Bolls	6/30/2005
C037	Memorandum from R. Clinton to P.J. Crane concerning Transmittal of AK Re-eval checklist for Waste Stream NPFPD	3T000-PJC-01-043	R. Clinton	03/21/2001
C039	Interview of Gregg Krehl by Richard Clinton regarding Stanley Works Torpedo Levels	NA	R. Clinton	08/15/2001
C040	Interview of Customer Representative of Shell Chemical Company by Richard Clinton regarding ShellSol 140	NA	R. Clinton	08/15/2001
C041	Email from Richard Clinton to Gregg Krehel regarding and inquiry of the Chemical Make-up of Fluid in Stanley Works Torpedo Levels	NA	R. Clinton	07/18/2001
C042	Disclosure of Information Concerning the Waste Designation of a Level Recorded in TRU-WRP-01NCR-100 for Drum RHZ-220-A21300	3T000-PJC-01-158	R. Clinton	NA
C043	Record of Communication with DA Marsh	NA	RJ Swan	NA

Source Document Number	Title	Document Number	Author	Date
C053	Email from Lincoln P. Djang to David C. DeRosa and Paul J. Crane Concerning U-234 and Sr-90 in Characterization Data from the Tank Farms Database, TWINS	NA	L. Djang	02/27/2002
C054	Memorandum from Paul J. Crane to L.F. Perkins concerning TRU Site Project Office Transmittal for Notification of Possible Target Analyte Additions	3T000-00-172	PJ Crane	9/8/2000
C055	Memorandum from Paul J. Crane to L.F. Perkins concerning TRU Site Project Office Transmittal for Notification of Possible Target Analyte Additions	3T000-00-203	PJ Crane	10/26/2000
C058	Interview with Thurman Cooper	NA	R Clinton	8/28/1998
C060	Record of Communication with Karl Husted 10/12/07 re: Adding U-232 as a trace radionuclide to MPUREXD and MPFPD AK	NA	M.I. Rollosson	10/12/2007
C061	Review of a Fiberglass Reinforced Plastic Plywood Box from the 231-Z Facility	NA	RJ Swan, LR Strickling	1/5/2007
C071	Memorandum from N.M. Abdurrahman to P.J. Crane concerning Calculations of Hanford Sr-90 Isotopic Ratio Based on its Isotopic Ratio to Cs-137	02-NMA-006	N.M. Abdurrahman	08/14/2002
C074	PFP Debris Waste Designation	NA	J. Bolles	03/31/2004
C079	231-Z TRU Debris Waste Stream Designation for FRP	231Z-DES-02-01	M Watson	5/17/2006
C080	231-Z TRU Debris Waste Stream Designation for Cement Box Counter	231Z-DES-03-00	J Waddoups	3/14/2006
C083	Debris Classification for Sand, Slag, and Crucible Waste	FH-0003830	E.S. Aromi and P.J. Crane	NA
C084	Proposed Waste Designation of Carbon Tetrachloride Used at the Plutonium Finishing Plant	3T000-PJC-00-045	R. Clinton	04/10/2000
C100	U-234 to U-235 and U-238 Ratios for Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA	M4T00-PJC-02-077	R. Clinton	04/11/2002
C104	241-Z-361 Sludge Characterization Sampling and Analysis Plan	HNF-4371	F.R. Crawford	07/29/1999
C117	PFP Building Numbers	NA	D.R. Corriell	05/20/2009
C200	WMP Memo	TBD	S. Nance	3/16/2010
C364	Interview with R. Swan and M. Lakes	NA	S. Shafer and S. Nance	05/24/2010
DR010	Discrepancy Resolution for Waste Stream Delineation and Assignment of EPA HWN	NA	S. Schafer	03/21/2010
DR013	Discrepancy Resolution for Incinerator Feed (Building 232-Z)	NA	S. Schafer	05/10/2010
M014	MSDS Sheets	NA	M Watson	4/19/2006
M016	Purity of Product Solutions from T-5-02 and T-5-03 Runs in the isolation Building	IN-3135	PW Crane	4/25/1945
M026	MSDS For Dry Chemical Fire Extinguisher Powder	51938	Fisher Scientific	8/31/2000
M043	MSDS Number 7653-2, SHELLSOL D60	NA	Shell Chemical Company	NA
M044	Solid Waste Burial Records - Addendum for 218-W-3A	NA	NA	7/23/1980

Source Document Number	Title	Document Number	Author	Date
M046	Radioactive Waste Storage/Disposal Analysis Record	14-1D-8LM-0401	MF Pascual	9/16/95
M049	Addendum to TSD Record (canned ash)	NA	J Stamm	NA
M054	PFP PCB Debris Designation	PFP-DES-02-00	M Lakes	10/11/2006
M056	Review of PFP Complex Effluents AK/Designation and Applicability of WAC 173-303-090(7) and 40 CFR 261.23	NA	J.P. Evans	04/03/2008
M062	Shell Chemical Company-Solvents Technical Support-American Region-Fax On Demand System	NA	Shell Chemical Company	09/22/2000
M101	231-Z Debris Waste Designation	231Z-DES-05-01	M Lakes	10/2007
M102	Waste Information Data System General Summary Report for 232-Z Waste Incineration Facility	Site Code: 232-Z	NA	NA
M105	Waste Container Projected Procurements for the Lifecycle of the PFP D&D Project	NA	NA	2009
M106	NDA Data for Containers from Hanford Waste Stream RLMPDT.001	NA	WWIS	05/21/2009
M303	PFP Overpack Container Data	NA	NA	NA
P052	Hanford Site Transuranic Waste Management Program Acceptable Knowledge Documentation for Retrievably Stored Contact-Handled Waste	HNF-3461, Rev. 7	R. Clinton	NA
P071	History and Stabilization of the PFP Complex, Hanford Site	HNF-EP-0924	M.S. Gerber	March 1997
P090	TRU Waste Packaging Requirements and certification of TRU waste	NA	MW McCoy	4/1/1998
P091	An Anthology of Early Histories	WHC-MR-0435	MS Gerber	10/1/1993
P095	231-Z Safety Analysis and Documentation for Characterization	HNF-4022	EN Dobb	4/26/1999
P114	PFP Final Safety Analysis Report	WHC-SD-CP-SAR-021	J.E. Shapley	NA
P115	Process Flowsheet Document, Remote Mechanical C (RMC) line, PFP	PFD-Z-190-00002	AM Stubbs, JF Durnil	6/10/1993
P116	Stabilization of Polycubes Engineering Study Historical Use and Fabrication and Treatment Schemes	WHC-SC-CP-TI-204	W.S. Lewis	7/8/1996
P117	Safety Assessment Document- Z Plant RMA Oxide Line	RHO-CD-454, Rev. 1	Cahow, Fine, and Hanson	9/11/79
P120	Z Plant RMA Oxide Line Dampaign Process Control Plan	RHC-CD-644	RL Walser, RE Van der Cook	1/29/1972
P121	Z Plant RMA Oxide Line Flowsheet Addendum-Filtrate Concentration	RHO-CD-616, ADD	R.L. Walser and R.E. Van der Cook	NA
P122	Plutonium Finish Plant Environmental Operations, Recan Plutonium Metal	ZO-200-504	NA	06/27/1994
P123	Criticality Prevention Specification, Incinerator Burning Hood Characterization and Disassembly Activities	CPS-Z-165-80625	WHC	5/8/2005
P124	Criticality Prevention Specification, Glovebox Clean-up Operations	CPS-Z-165-80012	WHC	5/8/2005
P126	Thermal Stabilization Process Flowsheet Room 230A, 234-5 Building	PFD-Z-190-00004, Rev. A-0	G.R. Wittman	October 1994

Source Document Number	Title	Document Number	Author	Date
P127	Plant Operating Procedure, Oxidize Plutonium Metal in Glovebox HC-21-C and HA-21-I	ZO-160-033, Rev. A-7	Rockwell Hanford Operations	NA
P128	Stabilize Reactive Scrap (Operate HC-21C Muffle Furnace)	ZO-160-032	NA	08/26/1982
P130	Engineering Evaluation/Cost Analysis for the Plutonium Finishing Plant Above-Grade Structures	DOE/RL-2004-05, Rev. 1	NA	NA
P132	242-Z waste treatment facility	NA	DC Lini	12/29/2003
P133	Fabrication Oil Disposal	ARH-CD-239	DA Dodd	2/17/1975
P134	PFP Liquid Organic Disposal as 20 Year Retrievable TRU Waste	HNF-26402	M.W. Gibson and L.H. Rodgers	NA
P135	PFP Impure Plutonium Oxide: Characterization of items with Greater than 30 and less than 85 Weight Percent Plutonium	HNF-10638	DC Lini, LH Rodgers	9/11/2002
P137	Existing Data in the 216-Z Liquid Waste Sites	RHO-LD-114	KW Owens	5/1981
P138	Data Quality Objectives Process for Disposition of Sand, Slag, and Crucible Materials Stored at the Plutonium Finishing Plant	HNF-9734, Rev. 2	A.M. Hopkins	December 2003
P140	242-Z Waste Treatment Facility	NA	D.C. Lini	12/29/2003
P141	Handling of Pu Contaminated, Acid Soaked Rags in Hood 5	ZO-160-031	PFP	12/5/1980
P146	Decommissioning of Division of Military Application (DMA) Equipment at Hanford - Summary Report: June 1977	ARH-ST-141	M.N. Raile	June 1977
P147	Handling of Pu Contaminated, Acid Soaked Rags	ZO-160-030	PFP	1977-1980
P148	Critical Mass Specification, Waste Treatment Facility, Buildings 241-Z and 242-Z	HW-82632	R.J. Sloat	NA
P149	Process Design Basis for Fabrication Oil Storage and Sampling Facility, 234-5 Building.	HW-76399	D.D. Wodrich	02/13/1963
P150	Recovery of Plutonium from Fabrication Oil	HW-74350	R.S. Kingsley	08/01/1962
P151	The Plutonium Production Story at the Hanford Site: Processes and Facilities History	WHC-MR-0521	MS Gerber	6/1996
P152	Historical Report on the Retrievably Stored Division of Military Application Equipment at the Hanford Site	WHC-IP-0791	J.A. Demiter, D.R. Duncan, and W.E. Meeuwsen	12/11/1991
P153	WST History of the Plutonium Production Facilities at the Hanford Site Historic District 1943-1990	DOE/RL-97-1047	T.E. Marceau, D.W. Harvey, et. al.	June 2002
P154	Stabilize Material Handling	ZO-160-034, Rev. B-0, D-1	NA	02/22/1995
P155	Operating Specifications for Plutonium Finishing Plant: Thermal Stabilization Glovebox HC-21C	OSD-Z-184-00006	M.W. Gibson	07/14/1994
P156	Z-Plant RMA Oxide Line Flowsheet	PFD-Z-190-00001	S.L. Yarbo	NA
P157	PFP Process Control Engineering	PFD-Z-190-00004	M. Gibson	NA

Source Document Number	Title	Document Number	Author	Date
P158	Estimation and Characterization of D&D Solid Waste Expected from PFP	WHC-EP-0829, Rev. 0	J.S. Miller, J.A. Pottmeyer, T.J. Stratton, and D.R. Duncan	January 1995
P159	Scrap Stabilization and Calcination Glovebox 4, Room 41, 236-Z Building	CPS-Z-165-82090, Rev. C-0	PFP	05/04/1987
P162	Glovebox MT-5: Dissolving and Leaching	CPS-Z-165-80715, Rev. A-3	PFP	NA
P163	Glovebox MT 6: Solution Clarification	CPS-Z-165-80716, Rev. C-1	PFP	NA
P167	Process Cell	CPS-165-80701, Rev. A-1	PFP	01/12/1995
P168	Slag and Crucible Processing Gloveboxes	CPS-Z-165-80731, Rev. A-0	PFP	09/19/1989
P169	Operate Glovebox 60	ZO-160-040	CM Kronvall	1981, 1987
P170	Handling of Pu Contaminated Acid and Water Soaked Rags	ZO-170-005	Rockwell Hanford	5/1980
P171	Investigation of Chemical Explosion of an Ion Exchange Resin Column and Resulting Americium Contamination of Personnel in the 242-Z Building	NA	NA	NA
P172	Sample Plutonium Bearing Powders for the International Atomic Energy Agency (IAEA)	ZO-300-110, Rev. A-2	PFP	08/21/1995
P173	Recan Plutonium-Bearing Recoverable Material	ZO-200-505, Rev. J-2	E.P. Bonadie	09/11/1996
P174	Handle PFP Reactive Material	ZO-170-014, Rev. D-0, E-2	C. Barr and G.B. Chronister	1993, 1996
P179	Handle and Package TRU Solid Waste in 55 Gallon Drums	ZO-170-015	PFP	NA
P180	Solid Waste Repackaging and Disposal	ZO-170-015	PFP	9/18/1998
P183	Methods and Models of the Hanford Internal Dosimetry Program	PNL-MA-860	E.H. Carbaugh	01/31/2003
P189	Plutonium Process Support Laboratories	NA	D. Lini	06/21/2004
P191	Engineering Evaluation/Cost Analysis for the Plutonium Finishing Plant Sub-Grade Structures and Installations	HNF-30862	L. Oates, J.A. Teal, A.M. Hopkins, A.R. Sherwood, and D.C. Lini	August 2006
P194	D&D Assessment for the Waste Incineration Facility (Building 232-Z) Hanford Site, Washington	DOE/RL-93-104	L.N. Dean	February 1994
P196	241-Z-361 Sludge Characterization Sampling and Analysis Plan	HNF-4371, Rev. 1	F.R. Crawford	07/29/1999
P197	Clarification on PFP Lead Lined Gloves	NA	C. Simiele	NA
P199	Plutonium Finishing Plant Stabilization Operations Technical Procedure - Pipe-N-Go Operations	ZO-160-080, Rev. C-17	NA	05/03/2006
P202	Nuclear Material Transfer and Control	FSP-PFP-5-8, Vol. 1, Chapter 4.5, Rev. 8	PFP	06/08/1998
P203	Nuclear Material Control General Requirements	FSP-PFP-5-8, Vol. 2, Chapter 4.3, Rev. 5	PFP	NA
P204	Contaminated Process Equipment Removal for the D&D of 232-Z Contaminated Waste Recovery Process Facility at the Plutonium Finishing Plant	HNF-32534-FP, Rev. 0	M.J. Minette, et al.	January 2007
P209	Final Environmental Statement, Waste Management Operations, Hanford Reservation, Richland, Washington	ERDA-1538	J.L. Liverman	NA
P210	Z Plant Aggregate Area Management Study Technical Baseline Report	BHI-00175	D.H. DeFord	NA

Source Document Number	Title	Document Number	Author	Date
P211	216-Z-12 Transuranic Crib Characterization: Operational history and Distribution of Plutonium and Americium	RHA-ST-44	RB Kasper	NA
P234	Waste Minimization Plan PFP	WHC-WM-EV-023	E.G. Backlund	NA
P239	PFP Final Safety Analysis Report	WHC-SD-CP-SAR-021, Rev. 0	J.E. Shapely	NA
P246	Transmittal of the Waste Stream-Specific Document SS&C01 Rev. 5, for the Acceptable Knowledge Documentation Management Program for PFP Sand, Slag, and Crucible Waste.	M4T00-TRU-04-472	S.W. Bisping	06/17/2004
P247	Deactivation and Cleanout of the 308 Fuels Laboratory and the 232-Z Incinerator at the Hanford Site	NA	WHC	10/22/1999
P250	Work Plan For Removal of Division of Military Application Equipment 234-5Z Building	ARH-3079	H.E. Johnson	04/26/1974
P251	The History of the 200 Area Burial Ground Facilities	WHC-EP-0912	J.D. Anderson	September 1996
P253	Nuclear Weapons Frequently Asked Questions, Chapter 8.0 The First Nuclear Weapons	NA	C. Sublette	04/18/2007
P254	Room 27: Maintenance Glovebox	CPS-Z-165-80727, Rev. A-0	PFP	NA
P256	Safety Analysis Report 231-Z Building	BNWL-CC-1924	PNL	3/1969
P278	Experimental Isotopic Analysis of Point Exposure Data in Hanford Production Reactor	DUN-72443 RD	H. Toffer and A.F. Kupinski	09/08/1970
P405	Characterization of Past and Present Solid Waste Streams from the Plutonium PFP	WHC-EP-0621	D.R. Duncan and B.A. Mayancsik	NA
P411	WRAP Facility Operating Procedure; Operation of the Drum Nondestructive Examination System	WRP1-OP-0908, Rev. J-2	9/9/2008	P411
P414	Retrieval Process Description	HNF-5597, Rev. 3	NA	03/31/2004
P415	TRU Waste Phase I Retrieval Plan	HNF-4781, Rev. 1	K. McDonald	09/26/2000
P416	Waste Receiving and Processing Facility final Safety Analysis Report	HNF-SD-W026-SAR-002, R2	NA	4/25/00
P510	Package TRU/TRU Mixed Waste	ZO-170-061	PFP	4/28/2008
P514	Technical Data: Plutonium Finishing Plant Chemical Hazard Assessment	HNF-SD-CP-TI-219	G.R. Witman, E.V. Weiss	09/26/1997
P1079	Hanford Facility Fact Sheet, 234-5Z	N/A	N/A	N/A
P1090	(TRU) Overpack Containers	SW-100-096	DJ Birchenough	10/2005 – 11/2009
P1081	Safety Evaluation Report for Stabilization Processing of High Chloride Bearing Plutonium Materials at the Plutonium Finishing Plant	03-ABD-0071	A.J. Colburn, PJ Garcia, SJ Olinger	4/14/03
U202	Waste Certification Summary – Radionuclides Reported in SWITS	NA	NA	NA

Figure 1. Location of Hanford Site

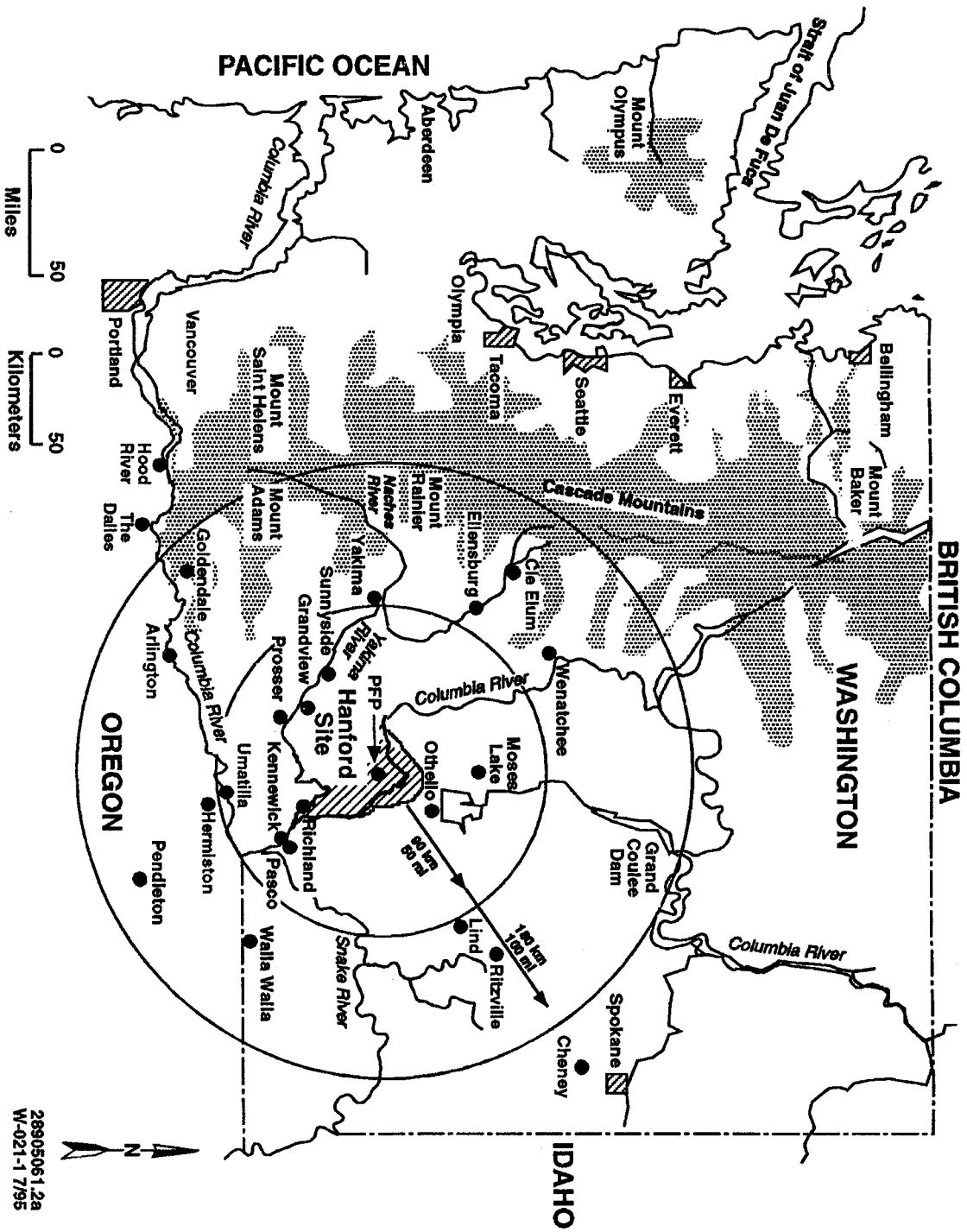


Figure 2. Location of the Major Areas at the Hanford Site

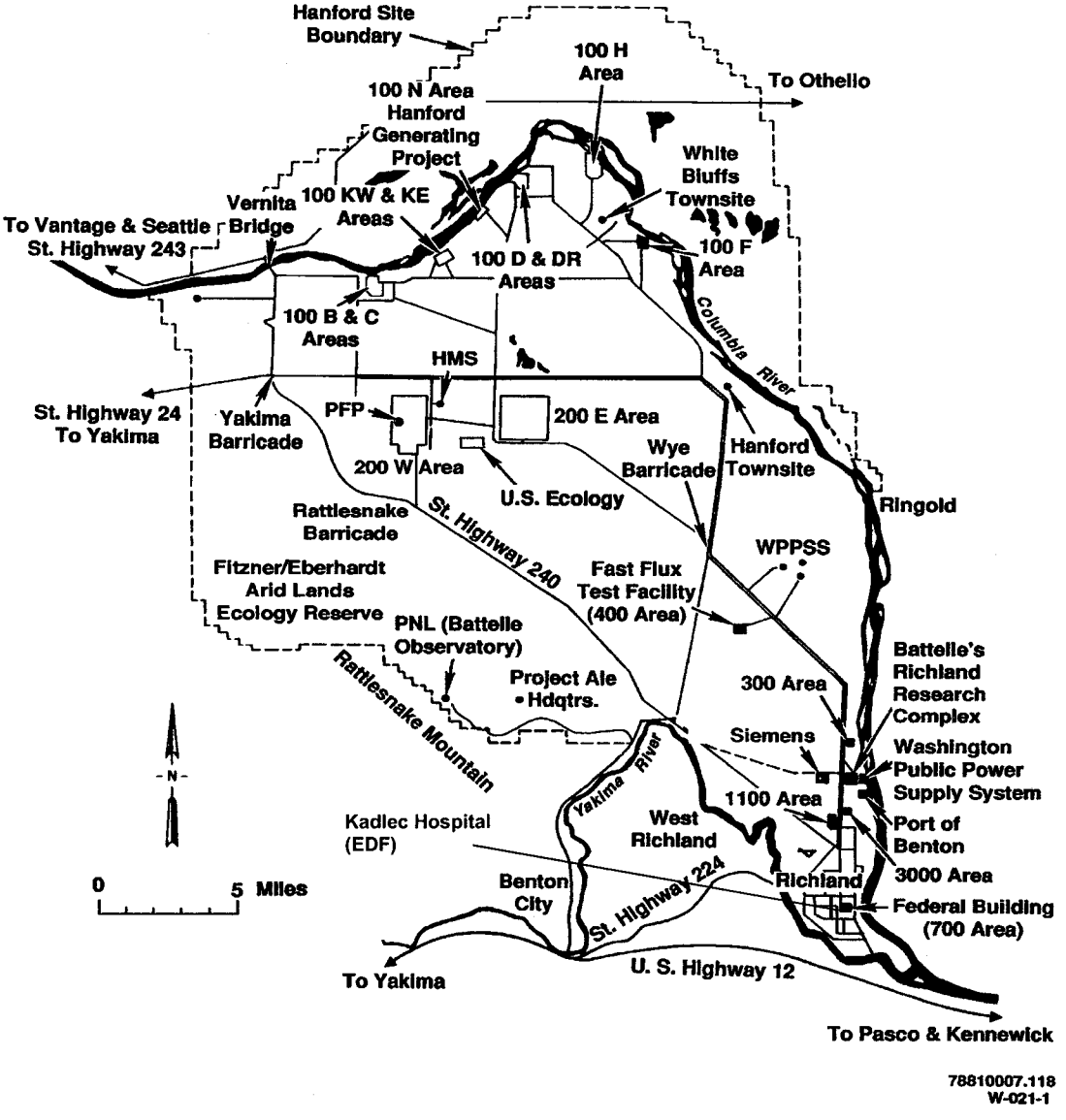


Figure 3. PFP Aerial View of the PFP

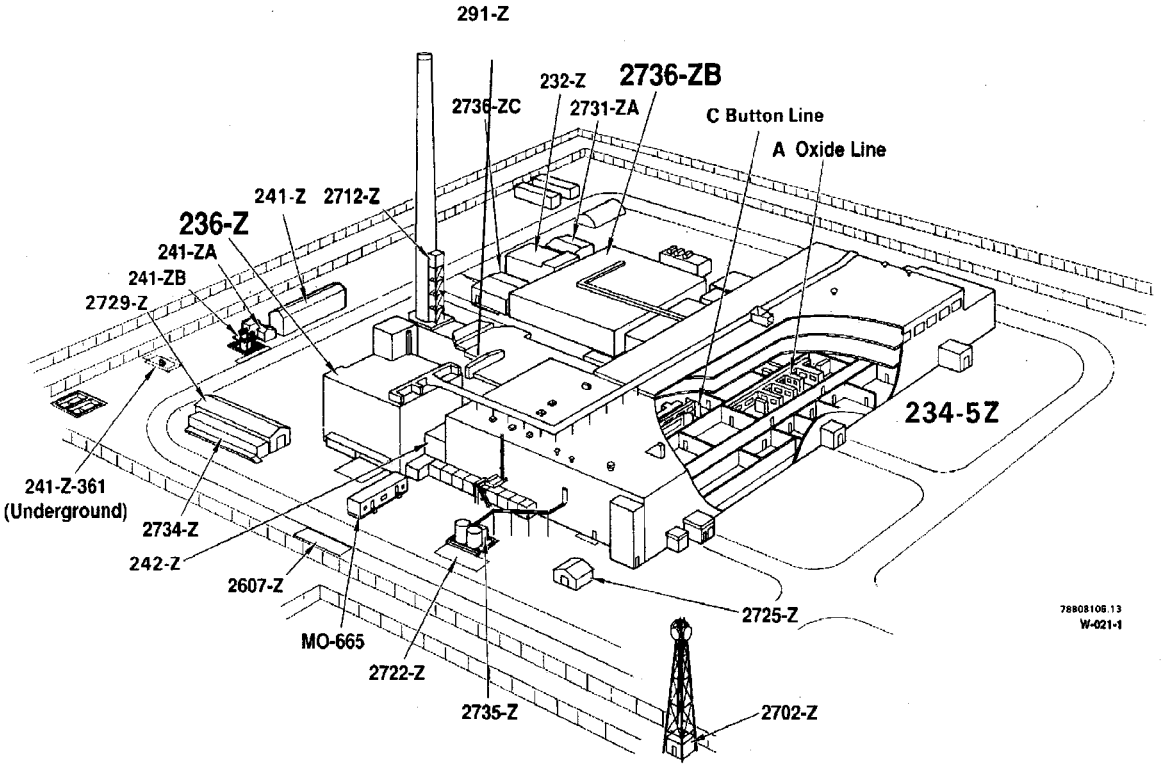


Figure 4. 232-Z Process Flow Diagram

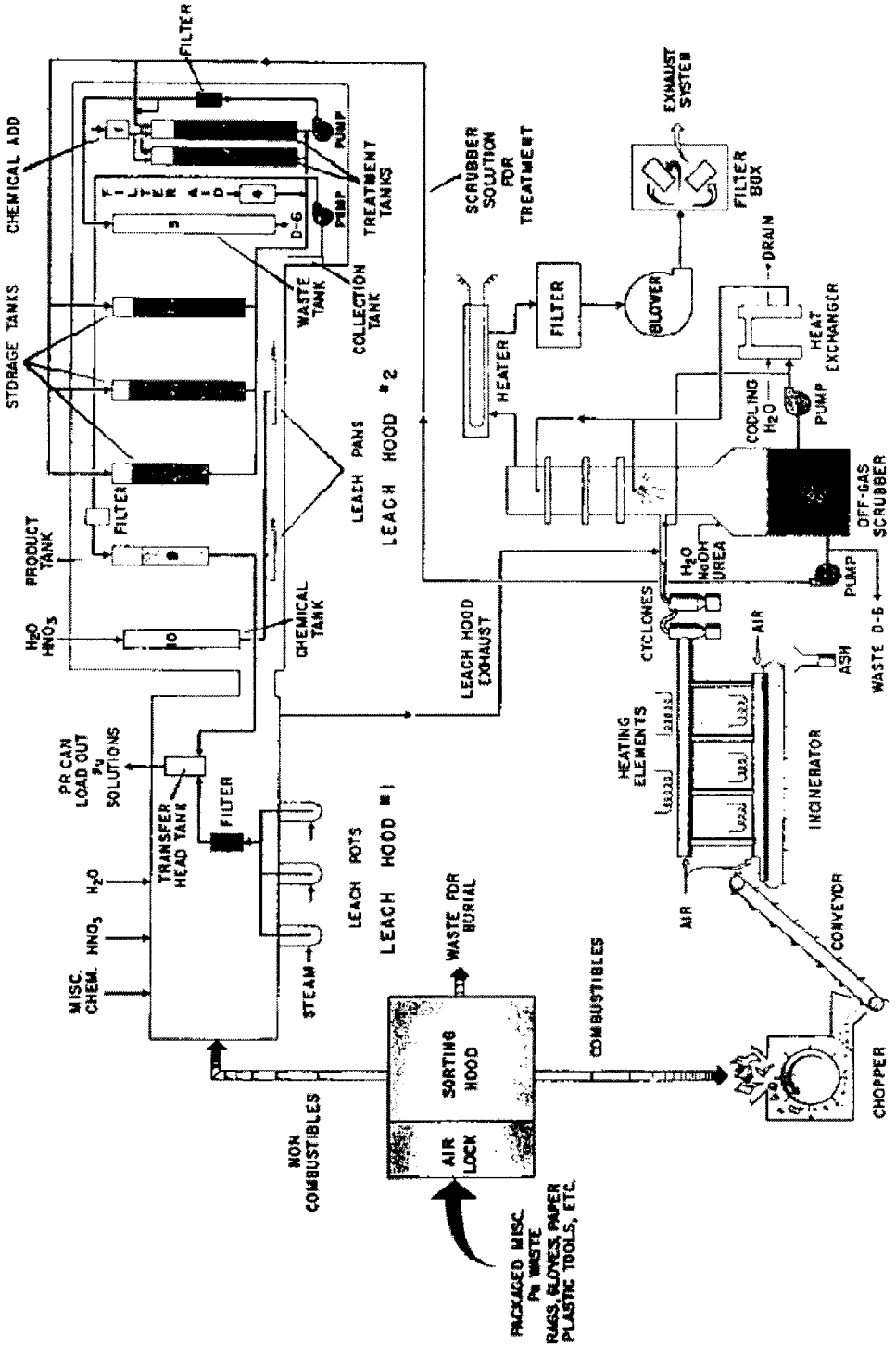


Figure 5. Flow Diagram for Process Wastes

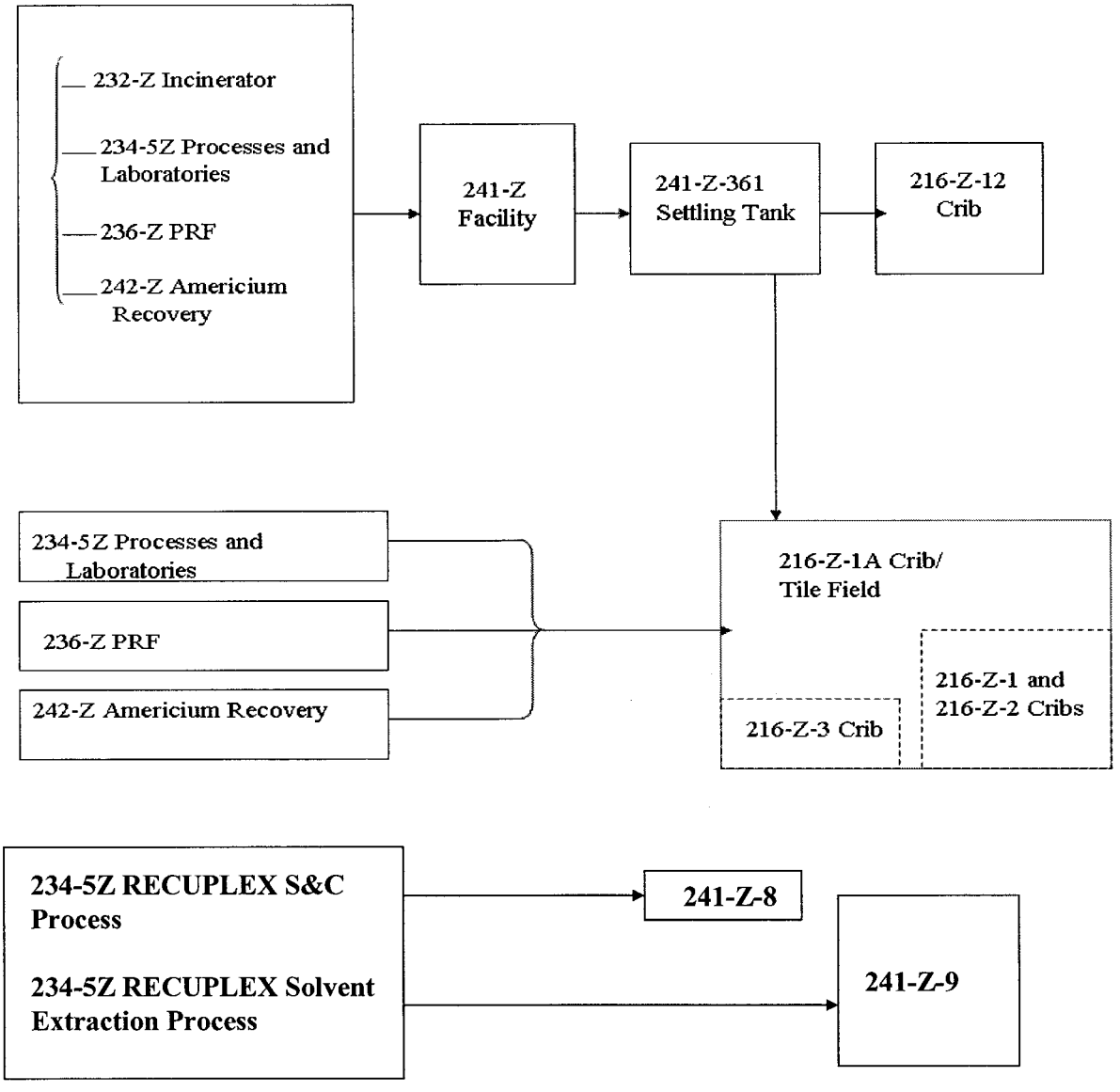


Figure 6. Plutonium Reclamation Facility

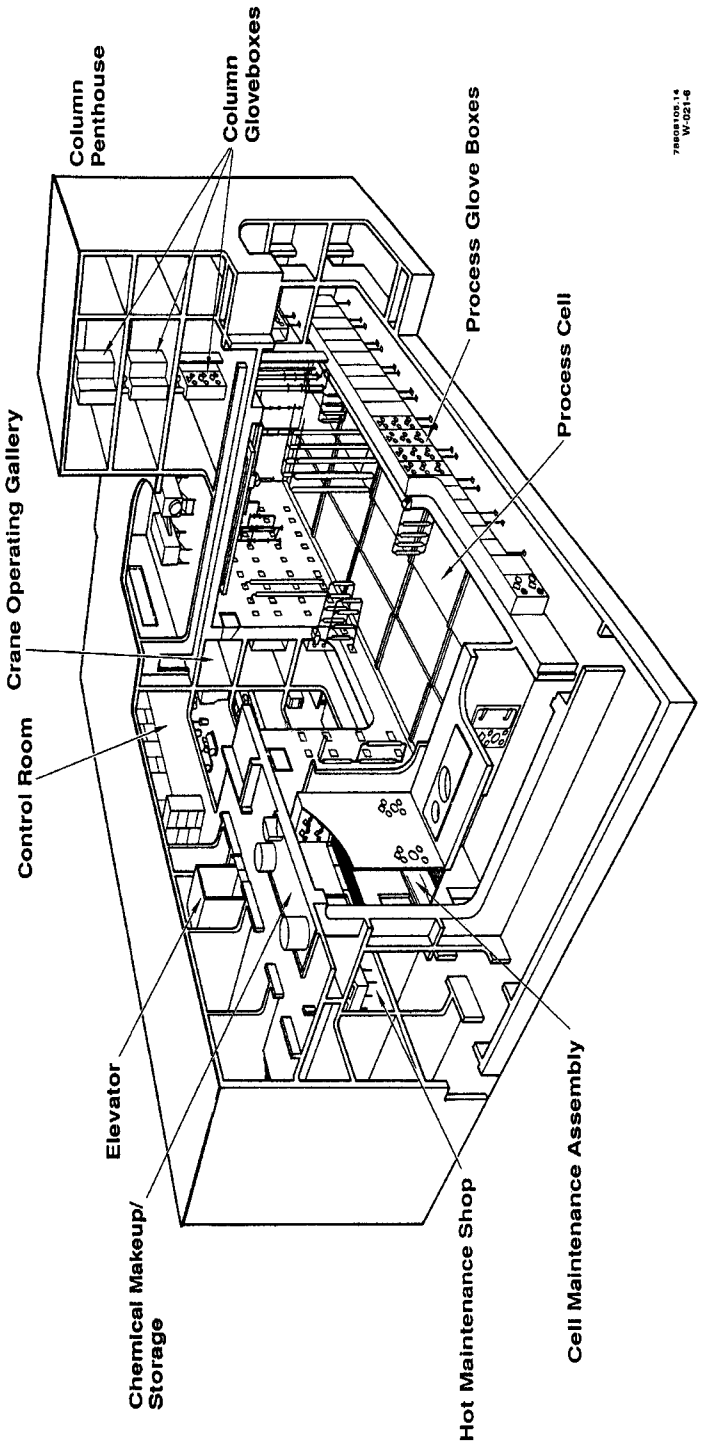
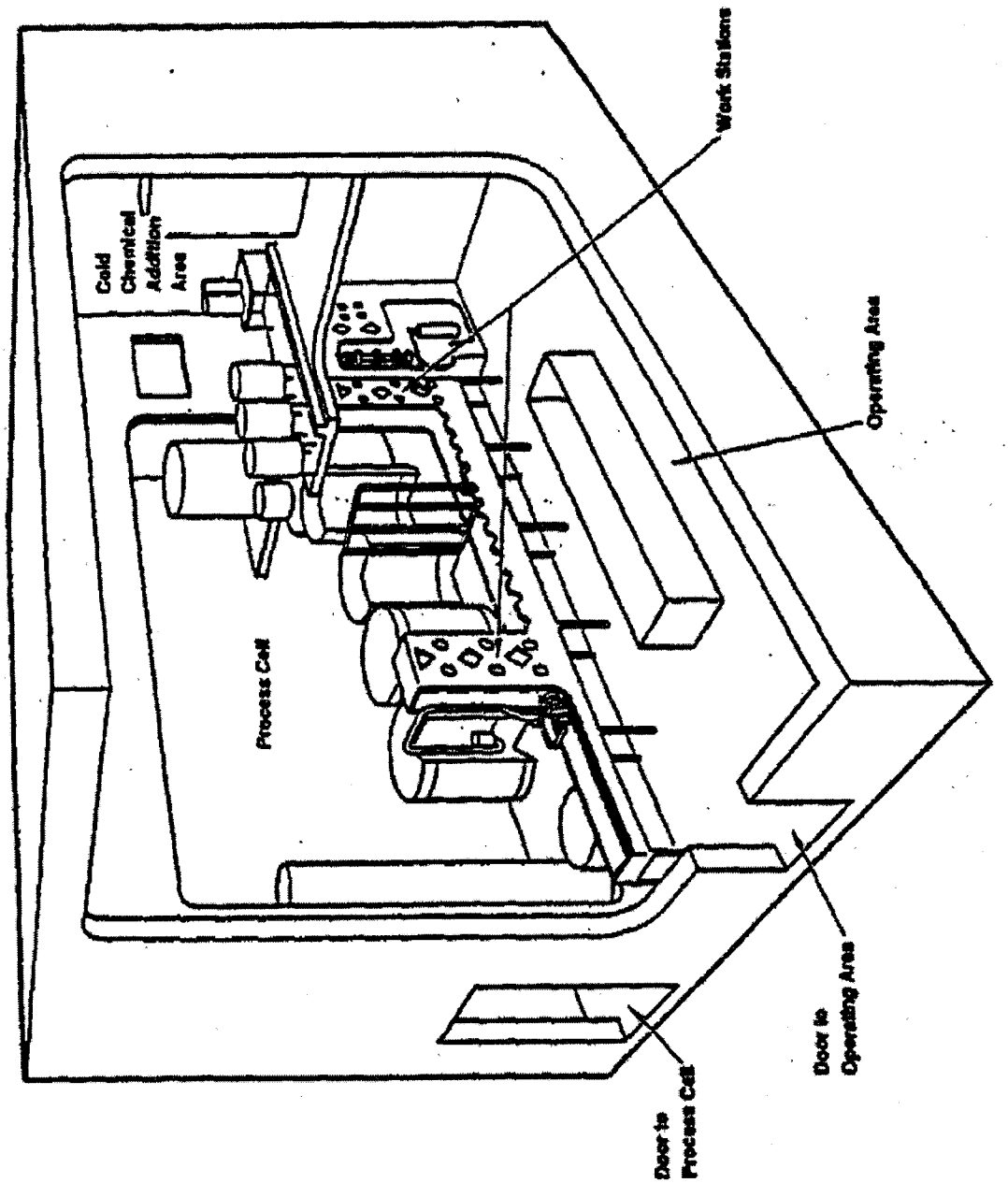


Figure 7. 242-Z Waste Treatment Facility



T-1242
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DB 3/16/06

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	**AMWTP Form 1068, Rev. 2** **Effective Date: 02/07/06** **MP-TRUW-8.13** **Page 1 of 1**

Reference Number: U199A

AK Type:

- ☐ **Published Documentation**
- ☑ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Verification Methods Matrix, 3/6/95.

Information Source: From Centralized Characterization Project (CCP), AK Record 1067 for Mound waste at SRS.

AK #[a]	AK Information Summary
WS6 WS7 All MD IDCs	Document developed in response to 1995 letter. Waste stream descriptions, including hazardous waste codes, for Mound waste at INL: - Glove box gloves: IDC 801: dry box gloves and o-rings. D008 - Metals: IDC 803: metal, equipment, pipes, valves, etc. D009 - Filters: IDC 805: Asbestos Filters. D001, D002, D009 - Glass: IDC 810: Glass flasks, sample vials, etc. D009 - Un-cemented Inorganic Sludge: IDC 811: Evaporator and Dissolver Sludge. D001, D009 - Glass: IDC 813: Glass filters and fiberglass. D001, D002, D009. - Non-Metal Molds and Crucibles: IDC 814: Contaminated mercury or graphite crucibles. D009 - Unknown: IDC 815: Classified Parts. TBD - Miscellaneous (Paper, Metal, etc): IDC 824: Non-combustible Equipment Boxes: D005, D006, D007, D008, D009, D010, D011. - Combustibles: IDC 826: Combustible equipment boxes or Floor-sweepings and rust. D009 - Combustibles: IDC 827: Combustible equipment drums. D008, D009 - Cemented Sludge: IDC 834: High level acid. D001, D002 - Cemented Sludge: IDC 835: High-level caustic. D002 - Cemented Sludge: IDC 836: High-level Sludge/cement. D002, D006-D011, F001, F003 - Unknown: IDC 838: <10 nCi/g noncombustible. TBD - Particulate Wastes: IDC 842: Contaminated Soil: D002, D006-D011 - Unknown: IDC 847: (<100 nCi/g combustible): TBD Unknown: IDC 848: (<100 nCi/g noncombustible): TBD

Source Document Data Limitations (if any):
Document does not indicate volume of each waste type.

AK Expert:

M. L. Johnson / M L Johnson — **Date: 3/8/2006**

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

I-067

VERIFICATION METHODS MATRIX

This Verification Methods Matrix has been provided in response to the Operating Permits Bureau January 27, 1995, letter concerning the Volume 5 RCRA Part B Permit Application Third Notice of Deficiency Response, Item C-1.4. The following describes the contents of each column of the matrix. This matrix has ten columns. Some information has been provided, in addition to the information requested by OPB in Item C-1.4, in an effort to present a more comprehensive summary of information. Any variations from the information requested by the OPB in Item C-1.4 are described in this text. The detailed chemical and physical analysis information requested in Item C-1.4 has not been provided. Detailed chemical and physical analysis has been performed for only eight of the waste streams in storage at the Transuranic Storage Area (TSA). These waste streams are described in the response to Item C-1.1. Therefore, these data have not been presented in the table.

Only RCRA-regulated mixed waste streams and suspect mixed waste streams currently in storage at the TSA portion of the Radioactive Waste Management Complex (RWMC) are listed in this matrix. Most of the information presented in this matrix was extracted from the Idaho National Engineering Laboratory (INEL) DRAFT Proposed Site Treatment Plan (DPSTP), DOE/ID-10494, December 9, 1994. Additional information was extracted from the following references.

REFERENCES

1. Lockheed Idaho Technologies Company (LITCO) DRAFT Engineering Design File (EDF)-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste.

2. LITCO DRAFT EDF-746, Status of Waste Stored on ILTSF Pad 2 as of August 10, 1994.

3. LITCO DRAFT EDF-RWMC-797 R-0, NOMAD Conversion for RPCIS.

4. Transuranic Waste Management Information System (TWMIS) database.

5. Idaho Mixed Waste Information (IMWI) System database.

6. TRU Waste Programs WIPP Experimental Test Program (WETP) data files.

7. Content Code Assessments for the INEL Contact-Handled Stored Transuranic Wastes, WM-F1-82-021, October 1982.

8. Department of Energy, INEL Proposed Site Treatment Plan (PSTP), DOE/ID-10493, March 6, 1995.

COLUMN CONTENTS DESCRIPTION

Column 1

Column 1 lists Item Description Codes (IDCs), Waste Stream Identification numbers (IDs), and reference numbers (if applicable) for each waste stream. The IDC was used for some waste streams instead of the content code, as requested in Item C-1.4, because, in some cases, more detailed information is available for waste streams identified with an IDC. The IDCs were assigned to each waste stream primarily by the waste stream generator. The Waste Stream IDs, which were extracted from the INEL DPSTP, are designations assigned to each INEL waste stream specifically for the INEL DPSTP. The INEL PSTP assigned new Waste Stream IDs to most of the waste streams in storage at the TSA portion of the RWMC. Attachment A, extracted from reference 8, identifies the new INEL PSTP INEL Waste Stream ID numbers and the correlation to the INEL DPSTP Waste Stream ID numbers. The information in Column 1 was extracted primarily from the INEL DPSTP and reference 5. If the primary source of information for the IDC was not the DPSTP or reference 5, then the source is indicated by reference number.

Column 2

Column 2 identifies the waste generator location, primarily by DOE site, and briefly describes the waste stream category and/or waste stream type. This additional information is necessary because in some cases, different waste streams from different generators have been assigned the same IDC number. In addition, this information is provided to present a more comprehensive overview of the mixed waste streams currently in storage at the TSA portion of the RWMC. The information in this column was extracted from the INEL DPSTP, from reference 5, or as indicated by reference number in Column 1.

Column 3

Column 3 identifies the Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs) assigned to each waste stream, if available, as requested by Item C-1.4. If no EPA HWNs have been assigned to a given waste stream, then the waste stream is identified as TBD ("to be determined"). Currently, these waste streams are considered to be potential mixed waste streams. The information in this column was extracted from the INEL DPSTP, from reference 5, or as indicated by the reference number in Column 1.

Column 4, 5 and 6

These columns identify the estimated number of mixed waste containers per waste stream currently in storage at the TSA portion of the RWMC. This additional information allows for a comparison between the total number of mixed waste containers in storage and the number of mixed waste containers which have undergone verification presented in Columns 7, 8, 9 and 10. This

comparison provides a comprehensive overview of the relevance of the verification data. This information was extracted primarily from references 2, 3, and 4 and the INEL OPSTP.

Column 4, "ASBs/WSF," lists the combined estimated number of mixed waste containers currently in storage in the Certification and Segregation Building (C&S), the Air Support Building-2 (ASB-II), and the Type II storage modules of the Waste Storage Facility (WSF), unless a different storage location is identified (i.e., ILTSF). The C&S and the ASB-II have been identified as the Air Support Buildings (ASBs).

Column 5, titled "ECS" for earthen-covered storage, lists the combined estimated number of mixed waste containers currently in storage on the earthen-covered storage area portion of TSA Pads 1 and 2 and the mixed waste containers currently in storage on TSA Pad R.

Column 6, "Total," provides the summation of the numbers of mixed waste containers listed in Columns 4 and 5. This number represents the estimated number of mixed waste containers per waste stream currently in storage at the TSA portion of the RWMC.

Column 7, 8, 9, and 10

These columns summarize the verification methods used, the calendar years the verification activities were performed, and the number of mixed waste containers or head space gas samples processed per calendar year per verification method used. All of the verification information was consolidated into calendar year groups in an effort to present the information in a more understandable manner. Since over 17,000 containers have undergone waste verification, at least that many lines of text would be required to present these data if it were organized by the date of each verification activity.

This information was extracted primarily from references 3, 4, 6, and 7. All of the data compiled regarding verification activities performed during the years prior to and during calendar year 1985 are summarized and included in the Column 7 1985 summary information. If no verification activities have been performed to date for the waste stream identified or if the verification activity data are not currently available for the waste stream identified, then **NTD** ("none to date") appears in Column 7.

Columns 8, 9 and 10 provide the number of containers or head space gas samples processed per calendar year using the verification method specified. This information is presented as such to make the matrix more understandable and user friendly.

Column 7, "Year," identifies the calendar year that verification activities listed in columns 8, 9, and 10 were performed.

Column 8, titled "HSGA" for head space gas sampling and analysis, identifies the number of head space gas samples processed for analysis for the assigned

IDC during the calendar year identified. About 970 head space gas samples have been extracted from an estimated 800 containers. Duplicate head space gas samples have been taken from some containers to meet the Quality Assurance Objectives for the TRU Waste Characterization Program. Various methodologies for head space gas sampling and analysis verification activities have been used in the past. Detailed information regarding these methodologies is in references 1, 6, and 7.

Column 9, "Visual," identifies the number of containers that were opened and the contents visually inspected for waste form verification during the calendar year identified. Detailed information regarding these visual inspections is in references 6 and 7.

Column 10, titled "RTR" for real-time radiography, identifies the number of containers processed through the RTR for waste form verification during the calendar year identified. Detailed information regarding the RTR system can be found in references 4, 6, and 7 and the INEL RCRA Part B Permit Application - Volume 5, Revision 3, Section C-1d.

VERIFICATION METHODS MATRIX

March 6, 1995

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable) (1)	Waste Generator Location/ Waste Stream Description (2)	EPA HWNs assigned (3)	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF (4)	ECS (5)	Total (6)	Year (7)	HSGA (8)	Visual (9)	RTR (10)
491 (1)	ROCKY FLATS/ PLENUM PREFILTERS	F001, F002	3	0	3	NTD			
700 ID-EGG-112T-700	ROCKY FLATS/ CEMENTED SLUDGES: ORGANIC AND SLUDGE IMMOBILIZATION SYSTEM WASTE	D022, F001 F003	60	0	60	NTD			
800 (1)	ROCKY FLATS/ SOLIDIFIED SLUDGE BLDG 774	D006, D008 F001, F002 F003	1,490	95	1,585	1994	8		
801 ID-EGG-288T-801	MOUND/ UNKNOWN: PLASTIC, TYGON, MANIPULATOR BOOT, ETC.	TBD	4	31	35	NTD			
801 (1)	ROCKY FLATS/ SOLIDIFIED ORGANICS: GREASE - CEMENTED	F001	767	29	796	1994	5		
802 ID-EGG-120T-802	MOUND/ GLOVEBOX GLOVES: DRY BOX GLOVES AND O-RINGS	D008	32	89	121	NTD			
802 (1)	ROCKY FLATS/ SPECIAL SETUPS - CEMENTED	TBD	77	1	78	1994	4		

TBD = TO BE DETERMINED
NTD = NONE TO DATE

VERIFICATION METHODS MATRIX

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable) (1)	Waste Generator Location/ Waste Stream Description (2)	EPA HWNs assigned (3)	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF (4)	ECS (5)	Total (6)	Year (7)	HSGA (8)	Visual (9)	RTR (10)
803 ID-EGG-132-803 ID-EGG-132T-803	MOUND/ METALS: METAL, EQUIPMENT, PIPES, VALVES, ETC.	D009	51	129	180	NTD			
803 (1)	ROCKY FLATS/ SOLIDIFIED DCP SLUDGE: WET SLUDGE - CEMENTED	D006, D008 F001, F002 F003, F005	163	1	164	1994	1		
805 ID-EGG-118T-805	MOUND/ FILTERS: ASBESTOS FILTERS	D001, D002 D009	7	31	38	NTD			
806 (1)	ROCKY FLATS/ SOLIDIFIED PROCESS SOLIDS	D008, F001 F002, F003	41	0	41	NTD			
807 (1)	ROCKY FLATS/ SOLIDIFIED BYPASS SOLIDS	D006, D008 F001, F002 F003, F005	1,166	89	1,255	1994	3		
810 ID-EGG-119T-810	MOUND/ GLASS: GLASS, FLASKS, SAMPLE VIALS, ETC.	D009	4	9	13	NTD			
811 ID-EGG-102T-811	MOUND/ UNCEMENTED INORGANIC SLUDGE: EVAPORATOR AND DISSOLVER SLUDGE	D001, D009	0	4	4	NTD			

TBD = TO BE DETERMINED
NTD = NONE TO DATE

VERIFICATION METHODS MATRIX

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable) (1)	Waste Generator Location/ Waste Stream Description (2)	EPA HWNs assigned (3)	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF (4)	ECS (5)	Total (6)	Year (7)	HSGA (8)	Visual (9)	RTR (10)
813 ID-EGG-118T-813	MOUND/ GLASS: GLASS FILTERS AND FIBERGLASS	D001, D002 D009	0	3	3	NTD			
814 ID-EGG-137T-814	MOUND/ NONMETAL MOLDS AND CRUCIBLES: CONTAMINATED MERCURY OR GRAPHITE CRUCIBLES	D009	0	2	2	NTD			
815 ID-EGG-288T-815	MOUND/ UNKNOWN: CLASSIFIED PARTS	TBD	2	0	2	NTD			
817 (1)	ROCKY FLATS/ CEMENTED SAND, SLAG AND CRUCIBLE HEELS	D008, F001 F002, F003	27	0	27	NTD			
818 (1)	ROCKY FLATS/ CEMENTED ASH	D008, F001 F002, F003	8	0	8	1994	2		
820 (1)	ROCKY FLATS/ CEMENTED SOOT	D008, F001 F002, F003	27	1	28	NTD			
822 (1)	ROCKY FLATS/ CEMENTED RESIN	TBD	30	1	31	1994	2		

TBD = TO BE DETERMINED
NTD = NONE TO DATE

VERIFICATION METHODS MATRIX

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable) (1)	Waste Generator Location/ Waste Stream Description (2)	EPA HWNs assigned (3)	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF (4)	ECS (5)	Total (6)	Year (7)	HSGA (8)	Visual (9)	RTR (10)
823 (1)	ROCKY FLATS/ CEMENTED MISCELLANEOUS SLUDGE	F001, F003	18	0	18	NTD			
824 ID-EGG-134-824 ID-EGG-134T-824	MOUND/ MISCELLANEOUS (PAPER, METAL, ETC.): NONCOMBUSTIBLE EQUIPMENT BOXES	D005, D006 D007, D008 D009, D010 D011	38	343	381	NTD			
826 ID-EGG-114-826 ID-EGG-114T-826	MOUND/ COMBUSTIBLES: COMBUSTIBLE EQUIPMENT BOXES OR FLOOR SWEEPINGS AND RUST	D009	12	21	33	NTD			
827 ID-EGG-114T-827	MOUND/ COMBUSTIBLES: COMBUSTIBLE EQUIPMENT DRUMS	D008, D009	5	4	9	NTD			
831 (1)	ROCKY FLATS/ DRY COMBUSTIBLES TRU MIXED	F001, F002	71	0	71	NTD			
832 (1)	ROCKY FLATS/ COMBUSTIBLES, WET	F001, F002	96	0	96	NTD			
833 (1)	ROCKY FLATS/ PLASTICS TRU MIXED	F001, F002	9	1	10	NTD			

TBD = TO BE DETERMINED
NTD = NONE TO DATE

VERIFICATION METHODS MATRIX

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable) (1)	Waste Generator Location/ Waste Stream Description (2)	EPA HWNs assigned (3)	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF (4)	ECS (5)	Total (6)	Year (7)	HSGA (8)	Visual (9)	RTR (10)
834 ID-EGG-112-834 ID-EGG-112T-834	MOUND/ CEMENTED SLUDGES: HIGH-LEVEL ACID	D001, D002	42	859	901	NTD			
835 ID-EGG-112-835 ID-EGG-112T-835	MOUND/ CEMENTED SLUDGES: HIGH-LEVEL CAUSTIC	D002	462	1,213	1,675	NTD			
836 ID-EGG-112-836 ID-EGG-112T-836	MOUND/ CEMENTED SLUDGES: HIGH-LEVEL SLUDGE/CEMENT	D002, D006 D007, D008 D009, D010 D011, F001 F003	994	3,184	4,178	NTD			
838 ID-EGG-288-838	MOUND/ UNKNOWN: < 10 nCi/g NONCOMBUSTIBLE	TBD	0	1	1	NTD			
842 ID-EGG-141-842 ID-EGG-141T-842	MOUND/ PARTICULATE WASTES: CONTAMINATED SOIL	D002, D006 D007, D008 D009, D010 D011	3	36	39	NTD			
847 ID-EGG-288-847 ID-EGG-288T-847	MOUND/ UNKNOWN: LOW SPECIFIC ACTIVITY (<100 nCi/g) COMBUSTIBLE	TBD	216	525	741	NTD			

TBD = TO BE DETERMINED
NTD = NONE TO DATE

VERIFICATION METHODS MATRIX

Item Description Code (IDC)/ Waste Stream ID (Reference number, if applicable)	Waste Generator Location/ Waste Stream Description	EPA HWNs assigned	Estimated number of mixed waste containers currently in storage at the TSA			Number of mixed waste containers or head space gas samples processed per Calendar Year using the following verification methods			
			ASBs/WSF	ECS	Total	Year	HSGA	Visual	RTR
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
848 ID-EGG-288-848 ID-EGG-288T-848	MOUND/ UNKNOWN: LOW SPECIFIC ACTIVITY (<100 nCi/g) NONCOMBUSTIBLE	TBD	8	126	134	NTD			
900 ID-EGG-114-900 ID-EGG-114T-900	ROCKY FLATS/ COMBUSTIBLES: LOW SPECIFIC ACTIVITY PLASTICS, PAPER, ETC.	D008, F001 F002, F003	27	329	356	1985 1987 1988	4	3	 11 14
950 ID-EGG-134-950 ID-EGG-134T-950	ROCKY FLATS/ MISCELLANEOUS (PAPER, METAL, ETC): LOW SPECIFIC ACTIVITY METAL, GLASS, ETC.	D008	7	436	443	1985 1987 1988	1	1	 3 1
970 ID-EGG-114-970 ID-EGG-114T-970	ROCKY FLATS/ COMBUSTIBLES: WOOD	D008, F001 F002, F003	12	72	84	1985 1987 1988	4	3	 2 1
976 ID-EGG-112-976 ID-EGG-112T-976	ROCKY FLATS/ CEMENTED SLUDGES: BLDG 776 PROCESS SLUDGE	D002, D006 D007, D008 D009, D022 D028, F001 F002, F003	0	27	27	NTD			

TBD = TO BE DETERMINED
NTD = NONE TO DATE

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

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8.15.06

Reference Number: C289A, R1 (Supersedes Form 1068 only)

AK Type:

- ☐ **Published Documentation**
- ☐ **Unpublished Data**
- ☑ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Memorandum to file from Vivian Sendelweck, "Boxes of Rocky Flats Waste to be included in the Supercompacted Debris Waste (BN510), revised April 13, 2005.

Information Source: AWMTP AKE

AK #[a]	AK Information Summary
WM3 RF **WS2, WS5** **BN** 508, 510 **WS1, WS2, WS5** **RF** 330, 336, 337, 338, 371, 374, 376, 440, 441, 442, 480, 481, 488, 490, 491, 831, 832, 833, 950, 970, 33A, 33B, 44A, 48A	This memo to file addresses the boxed waste from Rocky Flats Plant. Although boxed waste was listed in revision 2 of the Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste (P368A), it was not described in either revision 2 or 3. The memo includes a list of the boxed waste by type and generation date. The IDCs that were not included in the AK document P368A are defined in the memo (IDCs 488, 491, 831, 832, 833, 33A, 33B, 44A, 48A). An error in the TRIPS database for generation date for RFP waste is also corrected. R1 issued to add IDCs for AMWTP waste.

Source Document Data Limitations (if any):
Memo to file is not dated or signed.

AK Expert:

M. L. Johnson / M L Johnson **Date:** 8/10/2006

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

C289A Memo to file

Boxes of Rocky Flats Waste to be included in the
Supercompacted Debris Waste (BN 510)

1. INTRODUCTION

Some Rocky Flats debris waste was packaged in standard and oversize waste boxes as summarized by waste type in Table 1. A list of the boxes sorted by IDC is attached.

The wastes were shipped to the INL and are included in the retrievable and above ground waste inventory. These containers were included in the waste container inventory included in the Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280. (P368A)

The RFP boxed waste was not targeted for shipment to WIPP during the 3,100 m^3 Project and were not included in the RFP baseline document. This memo will address the boxed waste. IDCs (488, 491, 831, 832, and 833) were identified for the boxed waste and were not included in the previously compiled AK baseline report. WIPP Experimental Test Program (WETP) Bin Program wastes were compared to their original IDCs. This memo will become an addendum to the RFETS AK baseline report to ensure that the boxed waste is documented as part of the AK record.

Table 1. Total of RFP Waste packaged in boxes by Waste Type. (P368A, TRIPS)

Waste Type	Box Count	Minimum Generation Date	Maximum Generation Date
COMBUSTIBLES[1]	924	~~1/1/1950~~ 1970	6/16/1993
FILTERS	179	5/17/1972	7/11/1989
GRAPHITE	0	N/A	N/A
HETEROGENEOUS[1]	11	~~1/1/1950~~ 1970	7/22/1980
INORGANIC NON-METAL	57	6/8/1972	7/21/1993
LEAD/CADMIUM METAL[1]	600	~~1/1/1950~~ 1970	7/12/1993
UNCATEGORIZED METAL	0	N/A	N/A
Total Number of Boxes	1771		

[1] Minimum generation date as reported in TRIPS (P368A).

Some containers of Rocky Flats heterogeneous and lead/cadmium metal wastes (IDCs 337, 374, 480 and 488) are identified in the BBWI database (TRIPS) with a January 1, 1950 generation date. This is a data entry error. RFP was not in existence in 1950. The earliest generation date for RFP waste in retrievable and above ground storage at RWMC is 1970.

2. BACKGROUND

The types of boxes including dimensions, volume, and net weight that contain RFP wastes identified as present in either the TSA (retrievable) or in above ground storage are listed in Table 2 by the code used in the TRIPS database.

Type 2. Type of Boxes containing RFP waste.

Code	Box Type	Volume (m^3)	Weight (lb)	Dimensions (length, width, height)
008	SAND Type-2 box	3.17	217.72	84 x 48 x 48 in.
009	SAND Type-1 box	4.21	244.94	88 x 54 x 54 in.
010	Standard Waste Box (SWB)	1.88	287.12	71 x 54 ½ x 36 3/16 in.
CBX	Cakebox	4.64	546.58	92 x 56 x 55 in.
E	Fiberglass Reinforced Plywood (FRP) box	3.17	281.23	84 x 48 x 48 in.
TXB	TX-4 Oversize steel box	5.18	503.49	92 x 56 x 56¾in.

SANDboxes (Sandia boxes) are metal corrugated boxes used for packaging radioactively contaminated waste. Fiberboard (0.051 in.) and PVC (0.01 in.) liners were traditionally used. Later in the shipping program ¾ in. plywood liners were also used for metal wastes (IDCs 480 and 488).

Standard waste boxes (SWBs) are metal waste boxes used for packaging radioactively contaminated waste. The boxes contain drums of waste or directly loaded waste. Waste was routinely repackaged into boxes in the B776 size reduction vault. Wastes were collected in 55 gallon drums from the plutonium facilities, assayed, then transferred to B776 size reduction area and repackaged into standard-sized waste boxes in order to reduce waste void spaces present while shipping and/or storing drums. SWBs were lined with an 11-mil polyvinyl chloride (PVC) liner for contamination control and an inner fiberboard liner was added for puncture resistance. The maximum gross weight for waste boxes was 6000 lbs for plutonium-contaminated waste. (P372A)

Cakeboxes are metal waste boxes used for the overpacking of contaminated drums or boxes of waste at INL. These metal boxes have a metal pallet upon which the contaminated container is placed. A lid or cakebox type top is placed over the contaminated container and the unit is bolted together.

TRU fiberglass reinforced plywood (FRP) waste boxes used for packaging radioactively contaminated waste were lined with an 11-mil polyvinyl chloride (PVC) liner for contamination control and an inner fiberboard liner was added for puncture resistance. Boxes were prepared with one or more box liners. The lid of the fiberboard liner was placed on top of the waste and the box liner flaps were folded over the fiberboard liner lid and taped. The wood lid was placed on the box, sealed with construction adhesive and secured with nails and three steel bands wound vertically around the box. The maximum

gross weight for waste boxes was 6000 lbs for plutonium-contaminated waste and 5000 lbs for uranium- and beryllium-contaminated waste. The fissile gram limit for a 4 x 4 x 7 foot waste box was 350 grams.[P371A, P372A]

The terms "waste box" and "waste crate" were synonymous at Rocky Flats. TRU waste boxes were lined with an 11-mil polyvinyl chloride (PVC) liner for contamination control and a fiberboard liner for puncture resistance. High-level gamma waste required a lead liner placed between the box and liner to assure a surface dose rate of less than 200 mrem/hr. [P372A]

TX-4 oversize steel boxes are steel boxes whose larger size was used to contain or overpack radioactively contaminated waste that would not fit into other boxes.

Items (e.g., gloveboxes, cabinets, air ducts, hoods, pipelines, etc.) too large to fit into drums were sent for size reduction in Building 776. Waste was washed, cleaned, and drained before packaging. Any waste item(s) that may have caused a handling hazard were repackaged as required (e.g., sharp edges taped, heavy equipment packaged in reinforced boxes). The waste was wrapped in poly sheeting or bagged and sealed with tape before placement in the prepared boxes.

Before 1971, non-combustible waste items from the americium line or from uranium-233 processing too large for 55-gallon drums were packaged in lead lined boxes. The lead liners consist of 1/16 inch to 1/8 inch thick lead sheeting placed between the box and the polyethylene or poly vinyl chloride box liners, or wrapped around individual inner-bagged waste. Some waste was individually wrapped before placement in boxes. Around 1985 lead liners were used for high level gamma waste if necessary to assure dose rates of less than 200 mrem/hr surface and 10 mrem/hr at 1 meter.[P372A]

Some of the IDCs (488, 491, 831, 832, and 833) identified for the boxed RFETS waste were not included in the previously compiled AK baseline report. AK for the boxed wastes for these additional IDCs is summarized in the following subsections by waste type as delineated in RPT-TRUW-12.

3. BOXED WASTE BY WASTE TYPE

3.1 Combustibles

Combustibles were generated in every major building at RFETS. Combustible wastes were produced by materials handling and cleanup from production, research and development (R&D), laboratory, utility, custodial, and maintenance activities.

Line and nonline generated wastes were normally segregated; the wastes assigned 300-series IDCs were sent to the drum counter for assay where they were assigned the appropriate combustible or plastic 800-series IDCs.

Table 3. Summation of Boxed RFP Combustible Waste by IDC. (P368A, TRIPS)

Combustibles	Box Count	Minimum Generation Date	Maximum Generation Date
IDC 330	430	4/17/1975	4/13/1988
IDC 336	307	7/9/1985	4/13/1988
IDC 337	7	~~1/1/1950~~[1] 1970	6/19/1987
IDC 33A	1	6/3/1993	6/3/1993
IDC 33B	1	6/16/1993	6/16/1993
IDC 831	71	4/6/1988	7/12/1989
IDC 832	94	12/12/1987	3/23/1989
IDC 833	10	7/7/1988	12/1/1988
IDC 970	4	5/8/1971	3/5/1973
	925	~~1/1/1950~~[1] 1970	6/16/1993

[1] Minimum generation date as reported in TRIPS (P368A).

IDC 831 Combustibles, Dry, TRU Mixed Waste (NMC, NDA, and Non-PA)
Dry combustibles such as cloth, paper, and wood. IDC 330 was changed to 821, 831, 851, or 861 at the point of assay, depending upon radiological content. (P052A)

IDC 832 Combustibles, Wet, TRU Mixed Waste (NMC, NDA, and Non-PA)
Wet combustibles are materials such as paper, cloth, and wood, which contain a discernible amount of moisture. The waste materials were drained or wrung out prior to packaging to prevent and accumulation of free liquid. IDC 336 was changed to 822, 832, 833, or 862 at the point of assay. (P052A)

IDC 833, Plastic TRU Mixed Waste (NMC, NDA, and Non-PA)
Polyvinylchloride (PVC) sheeting, poly bottles, supplied-air suits, polyethylene, and other plastics are components of IDC 833. IDC 337 was changed to 825, 833, 853, or 863 at the point of assay. (P052A)

IDCs RFP 33A and RFP 33B

These IDCs represent a combination of IDC 330, 335, 336, 337, and 339 wastes that were repackaged into bins during the WETP Bin Program. Individual wastes drums from RFETS were repacked into SWBs at INL for the program. IDCs 330, 336, and 337 are combustible wastes. IDC 335 is absolute drybox filters. IDC 339 is leaded rubber gloves. Further descriptions of these wastes can be found in the Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280. (P368A)

3.2 Filters

This waste group consists of filters generated by the production, recovery, laboratory, treatment, maintenance, and research and development activities associated with plutonium operations. Processed Insulation and Filter Media (IDC 376), Insulation and

CWS Filter Media (IDC 338), and Chemical Warfare Service (CWS) Filters (IDC 490) are also contained in drums and described in AK documents. (P016A, P368A) IDC 491, Plenum Prefilters, is a boxed waste and described below.

Table 4. Summation of Boxed RFP Waste by Waste Type. (P368A, TRIPS)

Filters	Box Count	Minimum Generation Date	Maximum Generation Date
IDC 338	1	6/13/1980	6/13/1980
IDC 376	2	7/22/1980	7/22/1980
IDC 490	172	5/17/1972	7/11/1989
IDC 491	3	10/2/1987	12/15/1987
	178	5/17/1972	7/11/1989

IDC 491 Plenum Prefilters

The material in this IDC is a variety of plenum prefilters used in the ventilation systems at RFETS. Plenum prefilters have been and are used in all of the buildings that contain plutonium processing activities. These prefilters are used in large plenums that filter the room and glovebox air. Used prefilters were removed from their position in the ventilation system and packaged for further processing.

IDC 491 plenum prefilters range from furnace-type filters to pleated fiberglass filters and can be as large as 24" x 24" x 12". The filter medium consists of fiberglass packing or paper that may be more or less dense, depending on filtering needs. Wire mesh can be used to hold the media in place. The frame material for these prefilters is cardboard.

IDC 491 plenum prefilters in this backlog population consist of filters from Buildings 371, 374, 444, 559, 707, 771, 776, 777, 779, 865, and 883. None of these filters contain hazardous constituents, although evaporated solvents may have contacted them. Although filters from Plenums 804A or 804B in Building 374 have contacted hazardous constituents from the Saltcrete Process, the backlog filters from Building 374 were not generated from this plenum.(P052A)

3.3 Heterogeneous

Heterogeneous debris is described in the AK documentation. Only IDC 374, (Blacktop, Concrete, Dirt, and Sand) was present in the query for boxed waste. Information about the specific IDC can be found in the AK documentation. (P368A)

Table 5. Summation of Boxed RFP Waste by Waste Type. (P368A, TRIPS)

Heterogeneous	Box Count	Minimum Generation Date	Maximum Generation Date
IDC 374	11	~~1/1/1950~~[1] 1970	2/31/1977
	11	~~1/1/1950~~[1] 1970	7/22/1980

[1] Minimum generation date as reported in TRIPS (P368A).

3.4 Inorganic Non-Metal

Glass, firebrick, crucible, and other inorganic, non-metals were generated by production, recovery, purification, laboratory, treatment, maintenance, and research and development activities associated with plutonium operations at RFP. Activities that produced the waste listed below are described in the AK documentation. The WETP Bin program used glass wastes from those activities to produce IDC 44A. IDC 44A is discussed below.

Table 6. Summation of Boxed RFP Waste by Waste Type. (P368A, TRIPS)

Inorganic Non-Metal	Box Count	Minimum Generation Date	Maximum Generation Date
IDC 371	1	6/8/1972	6/8/1972
IDC 440	22	12/6/1985	2/19/1988
IDC 441	2	12/31/1977	7/7/1986
IDC 442	22	2/19/1986	6/25/1993
IDC 44A	2	7/14/1993	7/21/1993
IDC 950	8	12/28/1972	4/2/1973
	57	6/8/1972	7/21/1993

IDC RFP 44A, ***WETP Bin Program – Glass (IDCs 440 and 442)***

This IDC was a combination of IDCs 440 and 442 in the WETP Bin Program. Individual wastes drums from RFETS were repacked into SWBs at INEEL for the program. IDC 440 is glass waste (except Raschig rings) and IDC 442 is Raschig rings. Further descriptions of these wastes can be found in the Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280. (P368A)

3.5 Metal Wastes (Lead/Cadmium, Light Metals, etc.)

Metal wastes could have been generated in any plutonium activity on site. IDC 480 and 481, light metal and light metal prepared for leach are described in AK documentation.(P368A) IDC 488, glovebox parts with lead, could also have come from any plutonium building on site. IDC 48A was generated during the WETP Bin Program. The later two IDCs are discussed below.

Table 7. Summation of Boxed RFP Waste by Waste Type. (P368A, TRIPS)

Metal Wastes	Box Count	Minimum Generation Date	Maximum Generation Date
LEAD/CADMIUM METAL			
IDC 480	594	~~1/1/1950~~[1] 1970	7/12/1993
IDC 481	1	11/11/1985	11/11/1985
IDC 488	4	~~1/1/1950~~[1] 1970	7/14/1988
IDC 48A	1	7/2/93	7/2/1983
	600	~~1/1/1950~~[1]	7/12/1993

Metal Wastes	Box Count	Minimum Generation Date	Maximum Generation Date
		1970	

[1] Minimum generation date as reported in TRIPS.(P368A)

IDC 488, Glovebox Parts w/Lead
This waste could come from any building onsite. These waste are generated when existing glovebox parts require replacement, when modification are made, or when one or more complete gloveboxes are decommissioned. The lead metal sheet is attached to the stainless-steel glovebox structure using a permanent bonding method (adhesive or mechanical) or a semi-permanent technique (lead tape). In either case, separation of the lead from the base metal is impractical, so the materials are packaged for disposal as mixed wastes. Small parts and pieces of scrap are collected in standard waste drums while complete gloveboxes are size-reduced as necessary and packaged in plywood crates or metal boxes.((P052A)

IDC 48A, WETP Bin Program – Metals (IDCs 480 and 481)
This IDC is a combination of IDCs 480 and 481waste repackaged during the WETP Bin Program. Individual wastes drums from RFETS were repacked into SWBs at INEEL for the program. IDC 480 is light metal waste and IDC 481 is light non-SS metal prepared for leach. Further descriptions of these wastes can be found in the Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste, INEL-96/0280. (P368A)

4. CONCLUSION

RFETS wastes were shipped to the INL in boxes as well as drums. The boxed wastes were generated from the same or similar processes, and do not contain chemical or radiological constituents different from the waste packaged in drums. Waste material parameters identified for waste drums are also applicable for boxed waste.

REFERENCES

AMWTP REF #	TITLE/DESCRIPTION	DATE
P016A	Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste. INEL-95/0281.	July 1995
P052A	Excerpts from the Backlog Waste Reassessment Baseline Book.	1995
P368A	Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste. INEL-96/0280. Rev. 0, October 1996; Rev. 1, August 19, 1997; Rev. 2, January 23, 1998; Rev. 3, February 28, 2003.	1996
P371A	Packaging Wastes for Shipment Off-Site (U). CO-4034-A.	September 2, 1977
P372A	Packaging Wastes for Shipment Offsite (U). WO-4034-A.	August 16, 1985

CONTAINER_I	IDC	TYPE	GenDate
10000780	330	COMBUSTIBLES	4/17/1975
10001210	330	COMBUSTIBLES	4/22/1975
10000781	330	COMBUSTIBLES	6/2/1975
10001045	330	COMBUSTIBLES	6/6/1975
10001194	330	COMBUSTIBLES	7/2/1975
10000799	330	COMBUSTIBLES	7/11/1975
10019694	330	COMBUSTIBLES	7/16/1975
10000811	330	COMBUSTIBLES	7/24/1975
10000789	330	COMBUSTIBLES	7/25/1975
10000820	330	COMBUSTIBLES	7/25/1975
10001209	330	COMBUSTIBLES	7/25/1975
10001187	330	COMBUSTIBLES	8/4/1975
10000823	330	COMBUSTIBLES	8/6/1975
10035465	330	COMBUSTIBLES	8/7/1975
10008352	330	COMBUSTIBLES	8/11/1975
10000815	330	COMBUSTIBLES	8/20/1975
10035225	330	COMBUSTIBLES	8/20/1975
10019692	330	COMBUSTIBLES	8/21/1975
10000788	330	COMBUSTIBLES	9/4/1975
10000790	330	COMBUSTIBLES	9/4/1975
10001203	330	COMBUSTIBLES	9/4/1975
10001192	330	COMBUSTIBLES	9/5/1975
10001053	330	COMBUSTIBLES	9/12/1975
10000818	330	COMBUSTIBLES	9/26/1975
10001201	330	COMBUSTIBLES	9/26/1975
10001197	330	COMBUSTIBLES	10/6/1975
10001199	330	COMBUSTIBLES	10/6/1975
10000868	330	COMBUSTIBLES	10/9/1975
10000793	330	COMBUSTIBLES	10/14/1975
10000786	330	COMBUSTIBLES	10/15/1975
10000855	330	COMBUSTIBLES	10/15/1975
10001037	330	COMBUSTIBLES	10/21/1975
10001125	330	COMBUSTIBLES	10/21/1975
10000796	330	COMBUSTIBLES	10/23/1975
10035455	330	COMBUSTIBLES	10/31/1975
10035459	330	COMBUSTIBLES	11/4/1975
10035464	330	COMBUSTIBLES	11/6/1975
10035463	330	COMBUSTIBLES	11/10/1975
10035458	330	COMBUSTIBLES	11/12/1975
10019696	330	COMBUSTIBLES	12/2/1975
10008343	330	COMBUSTIBLES	9/23/1976
10008346	330	COMBUSTIBLES	10/1/1976
10008348	330	COMBUSTIBLES	10/4/1976
10019703	330	COMBUSTIBLES	10/5/1976
10019704	330	COMBUSTIBLES	10/8/1976
10032762	330	COMBUSTIBLES	2/16/1977
10032755	330	COMBUSTIBLES	5/4/1977
10032766	330	COMBUSTIBLES	6/22/1977
10032770	330	COMBUSTIBLES	9/10/1977
10032757	330	COMBUSTIBLES	10/7/1977
10032768	330	COMBUSTIBLES	10/14/1977
10032763	330	COMBUSTIBLES	11/2/1977
10032764	330	COMBUSTIBLES	11/2/1977

CONTAINER_ID	IDC	TYPE	GenDate
10000825	330	COMBUSTIBLES	12/31/1977
10008267	330	COMBUSTIBLES	7/27/1979
10008278	330	COMBUSTIBLES	8/9/1979
10008279	330	COMBUSTIBLES	8/13/1979
10008282	330	COMBUSTIBLES	9/28/1979
10009690	330	COMBUSTIBLES	4/17/1980
10006797	330	COMBUSTIBLES	6/5/1980
10006798	330	COMBUSTIBLES	6/5/1980
10008274	330	COMBUSTIBLES	6/5/1980
10008276	330	COMBUSTIBLES	6/5/1980
10008289	330	COMBUSTIBLES	6/5/1980
10008382	330	COMBUSTIBLES	6/5/1980
10008414	330	COMBUSTIBLES	6/5/1980
10009311	330	COMBUSTIBLES	6/5/1980
10009314	330	COMBUSTIBLES	6/5/1980
10034420	330	COMBUSTIBLES	6/5/1980
10006802	330	COMBUSTIBLES	6/13/1980
10006804	330	COMBUSTIBLES	6/13/1980
10008287	330	COMBUSTIBLES	6/13/1980
10008389	330	COMBUSTIBLES	6/13/1980
10009694	330	COMBUSTIBLES	6/13/1980
10034425	330	COMBUSTIBLES	6/13/1980
10001655	330	COMBUSTIBLES	6/19/1980
10008290	330	COMBUSTIBLES	6/19/1980
10008386	330	COMBUSTIBLES	6/19/1980
10034424	330	COMBUSTIBLES	6/19/1980
10001656	330	COMBUSTIBLES	6/26/1980
10008288	330	COMBUSTIBLES	6/26/1980
10008269	330	COMBUSTIBLES	7/16/1980
10008385	330	COMBUSTIBLES	7/16/1980
10009693	330	COMBUSTIBLES	7/16/1980
10034421	330	COMBUSTIBLES	7/16/1980
10002181	330	COMBUSTIBLES	7/29/1980
10006792	330	COMBUSTIBLES	7/29/1980
10006795	330	COMBUSTIBLES	7/29/1980
10006801	330	COMBUSTIBLES	7/29/1980
10008273	330	COMBUSTIBLES	7/29/1980
10008283	330	COMBUSTIBLES	7/29/1980
10034419	330	COMBUSTIBLES	7/29/1980
10008280	330	COMBUSTIBLES	7/31/1980
10006805	330	COMBUSTIBLES	8/12/1980
10008268	330	COMBUSTIBLES	8/12/1980
10008270	330	COMBUSTIBLES	8/12/1980
10008272	330	COMBUSTIBLES	8/12/1980
10008275	330	COMBUSTIBLES	8/12/1980
10008281	330	COMBUSTIBLES	8/12/1980
10008388	330	COMBUSTIBLES	8/12/1980
10009689	330	COMBUSTIBLES	8/12/1980
10022642	330	COMBUSTIBLES	8/17/1985
10020779	330	COMBUSTIBLES	9/9/1985
10013638	330	COMBUSTIBLES	9/11/1985
10013973	330	COMBUSTIBLES	9/28/1985
10033374	330	COMBUSTIBLES	10/22/1985

CONTAINER_ID	IDC	TYPE	GenDate
10033141	330	COMBUSTIBLES	11/7/1985
10022613	330	COMBUSTIBLES	11/27/1985
10024792	330	COMBUSTIBLES	12/2/1985
10020759	330	COMBUSTIBLES	12/4/1985
10010673	330	COMBUSTIBLES	12/5/1985
10024484	330	COMBUSTIBLES	12/7/1985
10010604	330	COMBUSTIBLES	12/8/1985
10013645	330	COMBUSTIBLES	12/8/1985
10010603	330	COMBUSTIBLES	12/9/1985
10024287	330	COMBUSTIBLES	12/10/1985
10024777	330	COMBUSTIBLES	12/12/1985
10020710	330	COMBUSTIBLES	12/15/1985
10024780	330	COMBUSTIBLES	12/16/1985
10024790	330	COMBUSTIBLES	12/24/1985
10024489	330	COMBUSTIBLES	1/3/1986
10020758	330	COMBUSTIBLES	1/6/1986
10024286	330	COMBUSTIBLES	1/8/1986
10002514	330	COMBUSTIBLES	1/9/1986
10020714	330	COMBUSTIBLES	1/9/1986
10020756	330	COMBUSTIBLES	1/10/1986
10034107	330	COMBUSTIBLES	1/10/1986
10024806	330	COMBUSTIBLES	1/14/1986
10010949	330	COMBUSTIBLES	1/15/1986
10024824	330	COMBUSTIBLES	1/20/1986
10017626	330	COMBUSTIBLES	1/21/1986
10024810	330	COMBUSTIBLES	1/22/1986
10017024	330	COMBUSTIBLES	1/24/1986
10010059	330	COMBUSTIBLES	1/25/1986
10034106	330	COMBUSTIBLES	1/25/1986
10020713	330	COMBUSTIBLES	1/30/1986
10025838	330	COMBUSTIBLES	1/31/1986
10024800	330	COMBUSTIBLES	2/3/1986
10018401	330	COMBUSTIBLES	2/4/1986
10024474	330	COMBUSTIBLES	2/4/1986
10013437	330	COMBUSTIBLES	2/5/1986
10020736	330	COMBUSTIBLES	2/14/1986
10024483	330	COMBUSTIBLES	2/14/1986
10024815	330	COMBUSTIBLES	2/14/1986
10002502	330	COMBUSTIBLES	2/15/1986
10024786	330	COMBUSTIBLES	2/15/1986
10024830	330	COMBUSTIBLES	2/15/1986
10020742	330	COMBUSTIBLES	2/16/1986
10033387	330	COMBUSTIBLES	2/16/1986
10020754	330	COMBUSTIBLES	2/17/1986
10024494	330	COMBUSTIBLES	2/17/1986
10024773	330	COMBUSTIBLES	2/17/1986
10000123	330	COMBUSTIBLES	2/21/1986
10011699	330	COMBUSTIBLES	2/21/1986
10033371	330	COMBUSTIBLES	3/1/1986
10013337	330	COMBUSTIBLES	3/4/1986
10015361	330	COMBUSTIBLES	3/4/1986
10012583	330	COMBUSTIBLES	3/5/1986
10014409	330	COMBUSTIBLES	3/5/1986

CONTAINER_I	IDC	TYPE	GenDate
10012484	330	COMBUSTIBLES	3/6/1986
10018344	330	COMBUSTIBLES	3/6/1986
10024822	330	COMBUSTIBLES	3/7/1986
10012488	330	COMBUSTIBLES	3/10/1986
10015297	330	COMBUSTIBLES	3/11/1986
10011952	330	COMBUSTIBLES	3/12/1986
10020761	330	COMBUSTIBLES	3/14/1986
10024809	330	COMBUSTIBLES	3/14/1986
10002517	330	COMBUSTIBLES	3/17/1986
10014404	330	COMBUSTIBLES	3/17/1986
10011114	330	COMBUSTIBLES	3/20/1986
10033390	330	COMBUSTIBLES	3/22/1986
10014362	330	COMBUSTIBLES	3/27/1986
10024734	330	COMBUSTIBLES	4/2/1986
10011104	330	COMBUSTIBLES	4/4/1986
10013446	330	COMBUSTIBLES	4/4/1986
10013334	330	COMBUSTIBLES	4/7/1986
10002492	330	COMBUSTIBLES	4/10/1986
10017269	330	COMBUSTIBLES	4/10/1986
10002519	330	COMBUSTIBLES	4/11/1986
10013481	330	COMBUSTIBLES	4/14/1986
10014006	330	COMBUSTIBLES	4/15/1986
10034120	330	COMBUSTIBLES	4/16/1986
10013823	330	COMBUSTIBLES	4/23/1986
10002489	330	COMBUSTIBLES	4/24/1986
10011998	330	COMBUSTIBLES	4/24/1986
10024785	330	COMBUSTIBLES	5/2/1986
10002498	330	COMBUSTIBLES	5/6/1986
10027874	330	COMBUSTIBLES	5/7/1986
10012590	330	COMBUSTIBLES	5/12/1986
10024781	330	COMBUSTIBLES	5/13/1986
10024962	330	COMBUSTIBLES	5/13/1986
10002521	330	COMBUSTIBLES	5/14/1986
10023858	330	COMBUSTIBLES	5/19/1986
10002504	330	COMBUSTIBLES	5/20/1986
10011950	330	COMBUSTIBLES	5/20/1986
10018414	330	COMBUSTIBLES	5/21/1986
10034104	330	COMBUSTIBLES	5/21/1986
10020757	330	COMBUSTIBLES	5/22/1986
10034117	330	COMBUSTIBLES	6/2/1986
10023202	330	COMBUSTIBLES	6/5/1986
10020741	330	COMBUSTIBLES	6/6/1986
10021646	330	COMBUSTIBLES	6/9/1986
10025593	330	COMBUSTIBLES	6/10/1986
10017642	330	COMBUSTIBLES	6/11/1986
10010612	330	COMBUSTIBLES	6/12/1986
10033589	330	COMBUSTIBLES	6/18/1986
10002506	330	COMBUSTIBLES	6/19/1986
10013029	330	COMBUSTIBLES	6/20/1986
10002491	330	COMBUSTIBLES	6/24/1986
10012588	330	COMBUSTIBLES	6/24/1986
10020778	330	COMBUSTIBLES	6/25/1986
10010892	330	COMBUSTIBLES	6/26/1986

CONTAINER_I	IDC	TYPE	GenDate
10013965	330	COMBUSTIBLES	7/8/1986
10020747	330	COMBUSTIBLES	7/8/1986
10011184	330	COMBUSTIBLES	7/9/1986
10016546	330	COMBUSTIBLES	7/10/1986
10010676	330	COMBUSTIBLES	7/11/1986
10014407	330	COMBUSTIBLES	7/11/1986
10013837	330	COMBUSTIBLES	7/14/1986
10018405	330	COMBUSTIBLES	7/16/1986
10021620	330	COMBUSTIBLES	7/17/1986
10013999	330	COMBUSTIBLES	7/18/1986
10020775	330	COMBUSTIBLES	7/21/1986
10002499	330	COMBUSTIBLES	7/22/1986
10002505	330	COMBUSTIBLES	7/23/1986
10013436	330	COMBUSTIBLES	7/23/1986
10012487	330	COMBUSTIBLES	7/30/1986
10033412	330	COMBUSTIBLES	7/31/1986
10034130	330	COMBUSTIBLES	8/1/1986
10033415	330	COMBUSTIBLES	8/4/1986
10024284	330	COMBUSTIBLES	8/6/1986
10034110	330	COMBUSTIBLES	8/6/1986
10014007	330	COMBUSTIBLES	8/8/1986
10011115	330	COMBUSTIBLES	8/12/1986
10024476	330	COMBUSTIBLES	8/13/1986
10002586	330	COMBUSTIBLES	8/15/1986
10013483	330	COMBUSTIBLES	8/20/1986
10015366	330	COMBUSTIBLES	8/21/1986
10025596	330	COMBUSTIBLES	8/23/1986
10002583	330	COMBUSTIBLES	8/26/1986
10013983	330	COMBUSTIBLES	8/26/1986
10015160	330	COMBUSTIBLES	8/27/1986
10010610	330	COMBUSTIBLES	8/28/1986
10012736	330	COMBUSTIBLES	8/28/1986
10013971	330	COMBUSTIBLES	8/28/1986
10013477	330	COMBUSTIBLES	9/3/1986
10012494	330	COMBUSTIBLES	9/5/1986
10024297	330	COMBUSTIBLES	9/7/1986
10013485	330	COMBUSTIBLES	9/9/1986
10023813	330	COMBUSTIBLES	9/10/1986
10023836	330	COMBUSTIBLES	9/10/1986
10023187	330	COMBUSTIBLES	9/12/1986
10023806	330	COMBUSTIBLES	9/14/1986
10033378	330	COMBUSTIBLES	9/22/1986
10013972	330	COMBUSTIBLES	9/23/1986
10020764	330	COMBUSTIBLES	9/23/1986
10023853	330	COMBUSTIBLES	9/23/1986
10013801	330	COMBUSTIBLES	9/24/1986
10027426	330	COMBUSTIBLES	9/25/1986
10010950	330	COMBUSTIBLES	9/30/1986
10013816	330	COMBUSTIBLES	10/1/1986
10020773	330	COMBUSTIBLES	10/1/1986
10010602	330	COMBUSTIBLES	10/2/1986
10020769	330	COMBUSTIBLES	10/2/1986
10013824	330	COMBUSTIBLES	10/3/1986

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10033403	330	COMBUSTIBLES	10/9/1986
10013648	330	COMBUSTIBLES	10/10/1986
10013815	330	COMBUSTIBLES	10/10/1986
10013343	330	COMBUSTIBLES	10/14/1986
10017043	330	COMBUSTIBLES	10/14/1986
10021634	330	COMBUSTIBLES	10/15/1986
10013474	330	COMBUSTIBLES	10/16/1986
10013769	330	COMBUSTIBLES	10/16/1986
10033588	330	COMBUSTIBLES	10/21/1986
10013649	330	COMBUSTIBLES	10/22/1986
10022646	330	COMBUSTIBLES	10/27/1986
10013438	330	COMBUSTIBLES	10/28/1986
10021648	330	COMBUSTIBLES	10/29/1986
10025839	330	COMBUSTIBLES	10/30/1986
10013486	330	COMBUSTIBLES	11/4/1986
10018394	330	COMBUSTIBLES	11/4/1986
10021642	330	COMBUSTIBLES	11/4/1986
10033134	330	COMBUSTIBLES	11/6/1986
10023803	330	COMBUSTIBLES	11/7/1986
10018141	330	COMBUSTIBLES	11/10/1986
10027412	330	COMBUSTIBLES	11/10/1986
10021650	330	COMBUSTIBLES	11/11/1986
10023181	330	COMBUSTIBLES	11/19/1986
10024304	330	COMBUSTIBLES	11/20/1986
10024498	330	COMBUSTIBLES	12/1/1986
10033136	330	COMBUSTIBLES	12/2/1986
10013864	330	COMBUSTIBLES	12/8/1986
10023859	330	COMBUSTIBLES	12/10/1986
10024299	330	COMBUSTIBLES	12/12/1986
10017037	330	COMBUSTIBLES	12/21/1986
10020707	330	COMBUSTIBLES	1/8/1987
10011701	330	COMBUSTIBLES	1/13/1987
10024289	330	COMBUSTIBLES	1/14/1987
10024306	330	COMBUSTIBLES	1/16/1987
10024802	330	COMBUSTIBLES	1/20/1987
10015026	330	COMBUSTIBLES	1/21/1987
10024966	330	COMBUSTIBLES	1/21/1987
10020774	330	COMBUSTIBLES	1/22/1987
10021626	330	COMBUSTIBLES	1/23/1987
10018400	330	COMBUSTIBLES	2/5/1987
10033595	330	COMBUSTIBLES	2/5/1987
10013442	330	COMBUSTIBLES	2/6/1987
10011105	330	COMBUSTIBLES	2/9/1987
10013795	330	COMBUSTIBLES	2/10/1987
10011957	330	COMBUSTIBLES	2/11/1987
10033402	330	COMBUSTIBLES	2/13/1987
10018147	330	COMBUSTIBLES	2/17/1987
10021641	330	COMBUSTIBLES	2/17/1987
10013475	330	COMBUSTIBLES	2/23/1987
10013355	330	COMBUSTIBLES	2/24/1987
10013818	330	COMBUSTIBLES	3/3/1987
10016342	330	COMBUSTIBLES	3/3/1987
10023176	330	COMBUSTIBLES	3/10/1987

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10010537	330	COMBUSTIBLES	3/13/1987
10022620	330	COMBUSTIBLES	3/14/1987
10013476	330	COMBUSTIBLES	3/17/1987
10010842	330	COMBUSTIBLES	3/18/1987
10014750	330	COMBUSTIBLES	3/19/1987
10022647	330	COMBUSTIBLES	3/19/1987
10014364	330	COMBUSTIBLES	3/20/1987
10013787	330	COMBUSTIBLES	3/23/1987
10010606	330	COMBUSTIBLES	3/24/1987
10015358	330	COMBUSTIBLES	3/25/1987
10013863	330	COMBUSTIBLES	3/26/1987
10010836	330	COMBUSTIBLES	4/3/1987
10033413	330	COMBUSTIBLES	4/3/1987
10013829	330	COMBUSTIBLES	4/6/1987
10023180	330	COMBUSTIBLES	4/8/1987
10027413	330	COMBUSTIBLES	4/10/1987
10022639	330	COMBUSTIBLES	4/14/1987
10020771	330	COMBUSTIBLES	4/16/1987
10033593	330	COMBUSTIBLES	4/16/1987
10012732	330	COMBUSTIBLES	4/22/1987
10015164	330	COMBUSTIBLES	4/27/1987
10018359	330	COMBUSTIBLES	4/28/1987
10018730	330	COMBUSTIBLES	4/28/1987
10012919	330	COMBUSTIBLES	5/4/1987
10017022	330	COMBUSTIBLES	5/5/1987
10018637	330	COMBUSTIBLES	5/5/1987
10021614	330	COMBUSTIBLES	5/6/1987
10018645	330	COMBUSTIBLES	5/7/1987
10010481	330	COMBUSTIBLES	5/12/1987
10010839	330	COMBUSTIBLES	5/13/1987
10013353	330	COMBUSTIBLES	5/19/1987
10017034	330	COMBUSTIBLES	5/21/1987
10010029	330	COMBUSTIBLES	6/2/1987
10011954	330	COMBUSTIBLES	6/2/1987
10010031	330	COMBUSTIBLES	6/4/1987
10013473	330	COMBUSTIBLES	6/10/1987
10002515	330	COMBUSTIBLES	6/13/1987
10014379	330	COMBUSTIBLES	6/17/1987
10013792	330	COMBUSTIBLES	6/20/1987
10023197	330	COMBUSTIBLES	6/20/1987
10012745	330	COMBUSTIBLES	6/23/1987
10014335	330	COMBUSTIBLES	6/30/1987
10013781	330	COMBUSTIBLES	7/1/1987
10021611	330	COMBUSTIBLES	7/13/1987
10023198	330	COMBUSTIBLES	7/15/1987
10015030	330	COMBUSTIBLES	7/16/1987
10022630	330	COMBUSTIBLES	7/16/1987
10021622	330	COMBUSTIBLES	7/17/1987
10013828	330	COMBUSTIBLES	7/21/1987
10013857	330	COMBUSTIBLES	7/24/1987
10013785	330	COMBUSTIBLES	8/5/1987
10021645	330	COMBUSTIBLES	8/5/1987
10015035	330	COMBUSTIBLES	8/6/1987

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10002588	330	COMBUSTIBLES	8/7/1987
10010611	330	COMBUSTIBLES	8/12/1987
10018642	330	COMBUSTIBLES	8/12/1987
10013783	330	COMBUSTIBLES	8/17/1987
10023189	330	COMBUSTIBLES	8/19/1987
10010034	330	COMBUSTIBLES	8/21/1987
10015359	330	COMBUSTIBLES	8/25/1987
10033407	330	COMBUSTIBLES	9/2/1987
10013788	330	COMBUSTIBLES	9/9/1987
10022645	330	COMBUSTIBLES	9/10/1987
10023190	330	COMBUSTIBLES	9/17/1987
10011117	330	COMBUSTIBLES	9/21/1987
10012913	330	COMBUSTIBLES	9/21/1987
10018640	330	COMBUSTIBLES	9/22/1987
10019058	330	COMBUSTIBLES	9/22/1987
10017041	330	COMBUSTIBLES	9/28/1987
10014403	330	COMBUSTIBLES	10/1/1987
10017624	330	COMBUSTIBLES	10/7/1987
10033411	330	COMBUSTIBLES	10/7/1987
10018406	330	COMBUSTIBLES	10/9/1987
10018399	330	COMBUSTIBLES	10/16/1987
10013859	330	COMBUSTIBLES	10/19/1987
10013794	330	COMBUSTIBLES	10/21/1987
10013862	330	COMBUSTIBLES	11/2/1987
10014752	330	COMBUSTIBLES	11/2/1987
10021618	330	COMBUSTIBLES	11/4/1987
10000127	330	COMBUSTIBLES	11/5/1987
10013861	330	COMBUSTIBLES	11/13/1987
10022635	330	COMBUSTIBLES	11/13/1987
10025840	330	COMBUSTIBLES	11/15/1987
10023842	330	COMBUSTIBLES	11/18/1987
10000118	330	COMBUSTIBLES	11/24/1987
10033138	330	COMBUSTIBLES	11/25/1987
10014753	330	COMBUSTIBLES	12/3/1987
10027408	330	COMBUSTIBLES	12/8/1987
10013028	330	COMBUSTIBLES	12/11/1987
10033137	330	COMBUSTIBLES	12/15/1987
10012701	330	COMBUSTIBLES	12/17/1987
10024823	330	COMBUSTIBLES	12/23/1987
10010838	330	COMBUSTIBLES	12/24/1987
10014010	330	COMBUSTIBLES	1/6/1988
10020743	330	COMBUSTIBLES	1/11/1988
10034118	330	COMBUSTIBLES	1/12/1988
10013854	330	COMBUSTIBLES	1/14/1988
10027424	330	COMBUSTIBLES	1/19/1988
10033129	330	COMBUSTIBLES	1/27/1988
10015584	330	COMBUSTIBLES	2/10/1988
10010120	330	COMBUSTIBLES	2/18/1988
10010389	330	COMBUSTIBLES	2/22/1988
10017036	330	COMBUSTIBLES	3/3/1988
10017029	330	COMBUSTIBLES	3/7/1988
10010257	330	COMBUSTIBLES	3/10/1988
10012490	330	COMBUSTIBLES	3/18/1988

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10018636	330	COMBUSTIBLES	3/21/1988
10010124	330	COMBUSTIBLES	3/23/1988
10014009	330	COMBUSTIBLES	3/29/1988
10018346	330	COMBUSTIBLES	4/8/1988
10018361	330	COMBUSTIBLES	4/8/1988
10018638	330	COMBUSTIBLES	4/13/1988
10012741	336	COMBUSTIBLES	7/9/1985
10023810	336	COMBUSTIBLES	9/27/1985
10024771	336	COMBUSTIBLES	9/29/1985
10011120	336	COMBUSTIBLES	10/3/1985
10013974	336	COMBUSTIBLES	10/4/1985
10013980	336	COMBUSTIBLES	10/15/1985
10024288	336	COMBUSTIBLES	10/30/1985
10002488	336	COMBUSTIBLES	12/3/1985
10010060	336	COMBUSTIBLES	12/6/1985
10021624	336	COMBUSTIBLES	12/6/1985
10023801	336	COMBUSTIBLES	12/11/1985
10024488	336	COMBUSTIBLES	12/11/1985
10024782	336	COMBUSTIBLES	12/13/1985
10024296	336	COMBUSTIBLES	12/16/1985
10024814	336	COMBUSTIBLES	12/16/1985
10013964	336	COMBUSTIBLES	12/23/1985
10024799	336	COMBUSTIBLES	1/5/1986
10017639	336	COMBUSTIBLES	1/9/1986
10024479	336	COMBUSTIBLES	1/9/1986
10033139	336	COMBUSTIBLES	1/9/1986
10010888	336	COMBUSTIBLES	1/10/1986
10023203	336	COMBUSTIBLES	1/11/1986
10027420	336	COMBUSTIBLES	1/11/1986
10020737	336	COMBUSTIBLES	1/13/1986
10020763	336	COMBUSTIBLES	1/13/1986
10020748	336	COMBUSTIBLES	1/14/1986
10024807	336	COMBUSTIBLES	1/20/1986
10013840	336	COMBUSTIBLES	1/22/1986
10024813	336	COMBUSTIBLES	1/22/1986
10013351	336	COMBUSTIBLES	1/23/1986
10013969	336	COMBUSTIBLES	1/24/1986
10029663	336	COMBUSTIBLES	1/29/1986
10011703	336	COMBUSTIBLES	1/30/1986
10020858	336	COMBUSTIBLES	1/30/1986
10024774	336	COMBUSTIBLES	1/31/1986
10002513	336	COMBUSTIBLES	2/5/1986
10023856	336	COMBUSTIBLES	2/5/1986
10010608	336	COMBUSTIBLES	2/6/1986
10024477	336	COMBUSTIBLES	2/6/1986
10027427	336	COMBUSTIBLES	2/6/1986
10013821	336	COMBUSTIBLES	2/7/1986
10034134	336	COMBUSTIBLES	2/7/1986
10002516	336	COMBUSTIBLES	2/8/1986
10020709	336	COMBUSTIBLES	2/8/1986
10024784	336	COMBUSTIBLES	2/11/1986
10034108	336	COMBUSTIBLES	2/11/1986
10010541	336	COMBUSTIBLES	2/15/1986

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10024811	336	COMBUSTIBLES	2/15/1986
10024735	336	COMBUSTIBLES	2/16/1986
10013445	336	COMBUSTIBLES	2/17/1986
10013819	336	COMBUSTIBLES	2/18/1986
10025578	336	COMBUSTIBLES	2/18/1986
10014406	336	COMBUSTIBLES	2/20/1986
10025582	336	COMBUSTIBLES	2/20/1986
10013455	336	COMBUSTIBLES	2/21/1986
10011121	336	COMBUSTIBLES	2/27/1986
10024795	336	COMBUSTIBLES	2/27/1986
10013339	336	COMBUSTIBLES	2/28/1986
10024798	336	COMBUSTIBLES	2/28/1986
10020708	336	COMBUSTIBLES	3/2/1986
10015357	336	COMBUSTIBLES	3/3/1986
10022622	336	COMBUSTIBLES	3/4/1986
10024820	336	COMBUSTIBLES	3/6/1986
10024812	336	COMBUSTIBLES	3/10/1986
10013441	336	COMBUSTIBLES	3/11/1986
10023794	336	COMBUSTIBLES	3/11/1986
10024480	336	COMBUSTIBLES	3/13/1986
10013462	336	COMBUSTIBLES	3/14/1986
10010543	336	COMBUSTIBLES	3/18/1986
10024963	336	COMBUSTIBLES	3/19/1986
10034121	336	COMBUSTIBLES	3/19/1986
10012737	336	COMBUSTIBLES	3/22/1986
10024789	336	COMBUSTIBLES	3/22/1986
10023830	336	COMBUSTIBLES	3/24/1986
10022628	336	COMBUSTIBLES	3/31/1986
10027429	336	COMBUSTIBLES	3/31/1986
10011999	336	COMBUSTIBLES	4/1/1986
10013822	336	COMBUSTIBLES	4/1/1986
10015165	336	COMBUSTIBLES	4/1/1986
10033376	336	COMBUSTIBLES	4/2/1986
10002523	336	COMBUSTIBLES	4/8/1986
10013836	336	COMBUSTIBLES	4/9/1986
10013639	336	COMBUSTIBLES	4/14/1986
10010891	336	COMBUSTIBLES	4/17/1986
10013448	336	COMBUSTIBLES	4/18/1986
10024793	336	COMBUSTIBLES	4/21/1986
10024797	336	COMBUSTIBLES	4/21/1986
10027414	336	COMBUSTIBLES	4/22/1986
10024829	336	COMBUSTIBLES	4/23/1986
10013460	336	COMBUSTIBLES	4/24/1986
10020765	336	COMBUSTIBLES	4/30/1986
10023849	336	COMBUSTIBLES	4/30/1986
10020706	336	COMBUSTIBLES	5/4/1986
10013839	336	COMBUSTIBLES	5/5/1986
10011112	336	COMBUSTIBLES	5/15/1986
10020712	336	COMBUSTIBLES	5/15/1986
10024733	336	COMBUSTIBLES	5/22/1986
10029657	336	COMBUSTIBLES	5/23/1986
10034102	336	COMBUSTIBLES	5/27/1986
10014375	336	COMBUSTIBLES	6/2/1986

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10033590	336	COMBUSTIBLES	6/2/1986
10013450	336	COMBUSTIBLES	6/3/1986
10022643	336	COMBUSTIBLES	6/5/1986
10023841	336	COMBUSTIBLES	6/6/1986
10033594	336	COMBUSTIBLES	6/6/1986
10011106	336	COMBUSTIBLES	6/10/1986
10013838	336	COMBUSTIBLES	6/10/1986
10013345	336	COMBUSTIBLES	6/18/1986
10016331	336	COMBUSTIBLES	6/20/1986
10024744	336	COMBUSTIBLES	6/25/1986
10002526	336	COMBUSTIBLES	7/10/1986
10033372	336	COMBUSTIBLES	7/16/1986
10014005	336	COMBUSTIBLES	7/17/1986
10015364	336	COMBUSTIBLES	7/18/1986
10034124	336	COMBUSTIBLES	7/18/1986
10013354	336	COMBUSTIBLES	7/19/1986
10017622	336	COMBUSTIBLES	7/22/1986
10021627	336	COMBUSTIBLES	7/24/1986
10013793	336	COMBUSTIBLES	7/31/1986
10015303	336	COMBUSTIBLES	7/31/1986
10023812	336	COMBUSTIBLES	8/6/1986
10012691	336	COMBUSTIBLES	8/7/1986
10015305	336	COMBUSTIBLES	8/7/1986
10033375	336	COMBUSTIBLES	8/7/1986
10012587	336	COMBUSTIBLES	8/13/1986
10010539	336	COMBUSTIBLES	8/18/1986
10017044	336	COMBUSTIBLES	8/18/1986
10012695	336	COMBUSTIBLES	8/19/1986
10017643	336	COMBUSTIBLES	8/19/1986
10021612	336	COMBUSTIBLES	8/20/1986
10010055	336	COMBUSTIBLES	8/21/1986
10002585	336	COMBUSTIBLES	8/27/1986
10013454	336	COMBUSTIBLES	8/29/1986
10012485	336	COMBUSTIBLES	9/2/1986
10033373	336	COMBUSTIBLES	9/3/1986
10015614	336	COMBUSTIBLES	9/10/1986
10023848	336	COMBUSTIBLES	9/11/1986
10024808	336	COMBUSTIBLES	9/11/1986
10033414	336	COMBUSTIBLES	9/11/1986
10010843	336	COMBUSTIBLES	9/12/1986
10013826	336	COMBUSTIBLES	9/12/1986
10024817	336	COMBUSTIBLES	9/18/1986
10022614	336	COMBUSTIBLES	9/24/1986
10023807	336	COMBUSTIBLES	9/24/1986
10010893	336	COMBUSTIBLES	9/25/1986
10013439	336	COMBUSTIBLES	9/25/1986
10033397	336	COMBUSTIBLES	9/26/1986
10013482	336	COMBUSTIBLES	9/30/1986
10014333	336	COMBUSTIBLES	10/2/1986
10023840	336	COMBUSTIBLES	10/10/1986
10013642	336	COMBUSTIBLES	10/17/1986
10013784	336	COMBUSTIBLES	10/17/1986
10022648	336	COMBUSTIBLES	10/17/1986

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10023850	336	COMBUSTIBLES	10/17/1986
10023809	336	COMBUSTIBLES	10/30/1986
10013470	336	COMBUSTIBLES	11/5/1986
10024300	336	COMBUSTIBLES	11/7/1986
10016046	336	COMBUSTIBLES	11/10/1986
10023837	336	COMBUSTIBLES	11/12/1986
10024305	336	COMBUSTIBLES	11/17/1986
10023182	336	COMBUSTIBLES	11/18/1986
10025595	336	COMBUSTIBLES	11/19/1986
10025837	336	COMBUSTIBLES	11/19/1986
10011111	336	COMBUSTIBLES	11/20/1986
10021644	336	COMBUSTIBLES	11/21/1986
10013844	336	COMBUSTIBLES	12/2/1986
10024750	336	COMBUSTIBLES	12/5/1986
10013796	336	COMBUSTIBLES	12/8/1986
10024796	336	COMBUSTIBLES	12/8/1986
10002590	336	COMBUSTIBLES	12/9/1986
10023834	336	COMBUSTIBLES	12/10/1986
10023833	336	COMBUSTIBLES	12/12/1986
10024819	336	COMBUSTIBLES	12/16/1986
10024827	336	COMBUSTIBLES	12/17/1986
10016047	336	COMBUSTIBLES	12/18/1986
10033386	336	COMBUSTIBLES	12/23/1986
10000125	336	COMBUSTIBLES	12/24/1986
10023831	336	COMBUSTIBLES	1/13/1987
10025594	336	COMBUSTIBLES	1/15/1987
10023854	336	COMBUSTIBLES	1/16/1987
10002487	336	COMBUSTIBLES	1/22/1987
10024301	336	COMBUSTIBLES	1/27/1987
10024821	336	COMBUSTIBLES	1/27/1987
10033597	336	COMBUSTIBLES	1/28/1987
10033398	336	COMBUSTIBLES	2/3/1987
10002509	336	COMBUSTIBLES	2/6/1987
10013463	336	COMBUSTIBLES	2/9/1987
10014408	336	COMBUSTIBLES	2/10/1987
10013467	336	COMBUSTIBLES	2/13/1987
10014365	336	COMBUSTIBLES	2/19/1987
10014332	336	COMBUSTIBLES	2/23/1987
10018410	336	COMBUSTIBLES	3/4/1987
10010844	336	COMBUSTIBLES	3/13/1987
10017218	336	COMBUSTIBLES	3/15/1987
10033586	336	COMBUSTIBLES	3/15/1987
10013830	336	COMBUSTIBLES	3/16/1987
10016344	336	COMBUSTIBLES	3/17/1987
10021619	336	COMBUSTIBLES	3/17/1987
10021625	336	COMBUSTIBLES	3/17/1987
10021633	336	COMBUSTIBLES	3/17/1987
10023193	336	COMBUSTIBLES	3/17/1987
10021617	336	COMBUSTIBLES	3/18/1987
10023183	336	COMBUSTIBLES	3/20/1987
10010675	336	COMBUSTIBLES	3/24/1987
10014401	336	COMBUSTIBLES	3/25/1987
10022634	336	COMBUSTIBLES	3/26/1987

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10013468	336	COMBUSTIBLES	4/6/1987
10025597	336	COMBUSTIBLES	4/10/1987
10011955	336	COMBUSTIBLES	4/15/1987
10015999	336	COMBUSTIBLES	4/20/1987
10033599	336	COMBUSTIBLES	4/20/1987
10013967	336	COMBUSTIBLES	4/21/1987
10013340	336	COMBUSTIBLES	4/27/1987
10018643	336	COMBUSTIBLES	4/28/1987
10012729	336	COMBUSTIBLES	5/4/1987
10033400	336	COMBUSTIBLES	5/5/1987
10014363	336	COMBUSTIBLES	5/8/1987
10023194	336	COMBUSTIBLES	5/14/1987
10012582	336	COMBUSTIBLES	5/18/1987
10010061	336	COMBUSTIBLES	5/21/1987
10010837	336	COMBUSTIBLES	5/21/1987
10020776	336	COMBUSTIBLES	5/26/1987
10010033	336	COMBUSTIBLES	6/3/1987
10010384	336	COMBUSTIBLES	6/3/1987
10020772	336	COMBUSTIBLES	6/8/1987
10010834	336	COMBUSTIBLES	6/10/1987
10013466	336	COMBUSTIBLES	6/10/1987
10033604	336	COMBUSTIBLES	6/12/1987
10017625	336	COMBUSTIBLES	6/14/1987
10021647	336	COMBUSTIBLES	6/19/1987
10010484	336	COMBUSTIBLES	6/20/1987
10010672	336	COMBUSTIBLES	7/2/1987
10033598	336	COMBUSTIBLES	7/6/1987
10013790	336	COMBUSTIBLES	7/7/1987
10021631	336	COMBUSTIBLES	7/8/1987
10012914	336	COMBUSTIBLES	7/13/1987
10033417	336	COMBUSTIBLES	7/13/1987
10013782	336	COMBUSTIBLES	7/17/1987
10015162	336	COMBUSTIBLES	7/17/1987
10015363	336	COMBUSTIBLES	7/22/1987
10015997	336	COMBUSTIBLES	7/23/1987
10023200	336	COMBUSTIBLES	7/24/1987
10020767	336	COMBUSTIBLES	7/25/1987
10015032	336	COMBUSTIBLES	8/5/1987
10015616	336	COMBUSTIBLES	8/8/1987
10015998	336	COMBUSTIBLES	8/11/1987
10015618	336	COMBUSTIBLES	8/12/1987
10015028	336	COMBUSTIBLES	8/18/1987
10017049	336	COMBUSTIBLES	8/19/1987
10015038	336	COMBUSTIBLES	8/26/1987
10013646	336	COMBUSTIBLES	9/2/1987
10021649	336	COMBUSTIBLES	9/2/1987
10018413	336	COMBUSTIBLES	9/7/1987
10020738	336	COMBUSTIBLES	9/8/1987
10022636	336	COMBUSTIBLES	9/9/1987
10022617	336	COMBUSTIBLES	9/10/1987
10022638	336	COMBUSTIBLES	9/11/1987
10017635	336	COMBUSTIBLES	9/14/1987
10015619	336	COMBUSTIBLES	9/21/1987

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10018403	336	COMBUSTIBLES	9/28/1987
10023205	336	COMBUSTIBLES	9/29/1987
10013447	336	COMBUSTIBLES	10/1/1987
10010106	336	COMBUSTIBLES	10/5/1987
10013832	336	COMBUSTIBLES	10/12/1987
10015031	336	COMBUSTIBLES	10/21/1987
10012586	336	COMBUSTIBLES	10/22/1987
10016341	336	COMBUSTIBLES	10/27/1987
10018416	336	COMBUSTIBLES	10/27/1987
10021640	336	COMBUSTIBLES	11/4/1987
10013856	336	COMBUSTIBLES	11/5/1987
10013780	336	COMBUSTIBLES	11/14/1987
10024495	336	COMBUSTIBLES	11/16/1987
10024783	336	COMBUSTIBLES	11/25/1987
10033140	336	COMBUSTIBLES	12/8/1987
10011700	336	COMBUSTIBLES	12/9/1987
10034131	336	COMBUSTIBLES	12/10/1987
10013026	336	COMBUSTIBLES	12/16/1987
10013465	336	COMBUSTIBLES	1/4/1988
10027416	336	COMBUSTIBLES	1/4/1988
10015996	336	COMBUSTIBLES	1/6/1988
10018159	336	COMBUSTIBLES	1/8/1988
10015613	336	COMBUSTIBLES	1/13/1988
10018149	336	COMBUSTIBLES	1/15/1988
10013350	336	COMBUSTIBLES	1/16/1988
10033393	336	COMBUSTIBLES	1/19/1988
10012589	336	COMBUSTIBLES	1/22/1988
10015296	336	COMBUSTIBLES	1/23/1988
10024292	336	COMBUSTIBLES	1/23/1988
10011116	336	COMBUSTIBLES	2/1/1988
10033395	336	COMBUSTIBLES	2/4/1988
10010123	336	COMBUSTIBLES	2/12/1988
10010548	336	COMBUSTIBLES	2/19/1988
10010385	336	COMBUSTIBLES	2/23/1988
10023800	336	COMBUSTIBLES	2/24/1988
10010099	336	COMBUSTIBLES	2/25/1988
10017077	336	COMBUSTIBLES	3/7/1988
10010116	336	COMBUSTIBLES	3/8/1988
10010100	336	COMBUSTIBLES	3/14/1988
10013993	336	COMBUSTIBLES	3/14/1988
10013996	336	COMBUSTIBLES	3/14/1988
10010560	336	COMBUSTIBLES	3/16/1988
10010547	336	COMBUSTIBLES	3/23/1988
10013997	336	COMBUSTIBLES	3/31/1988
10010186	336	COMBUSTIBLES	4/7/1988
10017045	336	COMBUSTIBLES	4/7/1988
10010122	336	COMBUSTIBLES	4/11/1988
10017031	336	COMBUSTIBLES	4/13/1988
10013770	337	COMBUSTIBLES	1/1/1950
10034112	337	COMBUSTIBLES	1/27/1973
10023186	337	COMBUSTIBLES	8/5/1986
10013451	337	COMBUSTIBLES	8/23/1986
10023847	337	COMBUSTIBLES	9/10/1986

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10013786	337	COMBUSTIBLES	4/13/1987
10010108	337	COMBUSTIBLES	6/19/1987
10009490	33A	COMBUSTIBLES	6/3/1993
10009488	33B	COMBUSTIBLES	6/16/1993
10010127	831	COMBUSTIBLES	4/6/1988
10010184	831	COMBUSTIBLES	4/13/1988
10014016	831	COMBUSTIBLES	4/13/1988
10017220	831	COMBUSTIBLES	4/20/1988
10016333	831	COMBUSTIBLES	4/21/1988
10017224	831	COMBUSTIBLES	4/22/1988
10017025	831	COMBUSTIBLES	4/26/1988
10013978	831	COMBUSTIBLES	5/2/1988
10017021	831	COMBUSTIBLES	5/4/1988
10010387	831	COMBUSTIBLES	5/5/1988
10010546	831	COMBUSTIBLES	5/10/1988
10012690	831	COMBUSTIBLES	5/13/1988
10010545	831	COMBUSTIBLES	5/27/1988
10010119	831	COMBUSTIBLES	5/31/1988
10010557	831	COMBUSTIBLES	6/1/1988
10014014	831	COMBUSTIBLES	6/1/1988
10013981	831	COMBUSTIBLES	6/2/1988
10018641	831	COMBUSTIBLES	6/2/1988
10012917	831	COMBUSTIBLES	6/8/1988
10020863	831	COMBUSTIBLES	6/10/1988
10018639	831	COMBUSTIBLES	7/25/1988
10018729	831	COMBUSTIBLES	7/25/1988
10019059	831	COMBUSTIBLES	7/25/1988
10013805	831	COMBUSTIBLES	8/23/1988
10020854	831	COMBUSTIBLES	8/23/1988
10017080	831	COMBUSTIBLES	8/30/1988
10010386	831	COMBUSTIBLES	9/1/1988
10012922	831	COMBUSTIBLES	9/2/1988
10010188	831	COMBUSTIBLES	9/6/1988
10018960	831	COMBUSTIBLES	9/6/1988
10017250	831	COMBUSTIBLES	9/8/1988
10010390	831	COMBUSTIBLES	9/9/1988
10017640	831	COMBUSTIBLES	9/9/1988
10017268	831	COMBUSTIBLES	9/13/1988
10017032	831	COMBUSTIBLES	9/15/1988
10017271	831	COMBUSTIBLES	9/15/1988
10025834	831	COMBUSTIBLES	9/19/1988
10020781	831	COMBUSTIBLES	9/21/1988
10010558	831	COMBUSTIBLES	9/23/1988
10017079	831	COMBUSTIBLES	9/23/1988
10015298	831	COMBUSTIBLES	9/28/1988
10010041	831	COMBUSTIBLES	10/3/1988
10010394	831	COMBUSTIBLES	10/3/1988
10018358	831	COMBUSTIBLES	10/5/1988
10015583	831	COMBUSTIBLES	10/7/1988
10017620	831	COMBUSTIBLES	10/24/1988
10013989	831	COMBUSTIBLES	11/7/1988
10016332	831	COMBUSTIBLES	11/15/1988
10010167	831	COMBUSTIBLES	11/18/1988

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10010048	831	COMBUSTIBLES	11/28/1988
10010256	831	COMBUSTIBLES	12/5/1988
10018352	831	COMBUSTIBLES	12/13/1988
10010039	831	COMBUSTIBLES	12/15/1988
10020862	831	COMBUSTIBLES	1/11/1989
10010173	831	COMBUSTIBLES	1/16/1989
10010399	831	COMBUSTIBLES	1/17/1989
10010485	831	COMBUSTIBLES	1/20/1989
10010182	831	COMBUSTIBLES	1/25/1989
10010177	831	COMBUSTIBLES	1/31/1989
10010176	831	COMBUSTIBLES	2/2/1989
10010052	831	COMBUSTIBLES	2/7/1989
10010170	831	COMBUSTIBLES	2/7/1989
10016340	831	COMBUSTIBLES	2/7/1989
10010180	831	COMBUSTIBLES	2/11/1989
10012592	831	COMBUSTIBLES	2/24/1989
10010174	831	COMBUSTIBLES	3/15/1989
10010051	831	COMBUSTIBLES	3/20/1989
10014017	831	COMBUSTIBLES	3/20/1989
10010171	831	COMBUSTIBLES	5/3/1989
10010397	831	COMBUSTIBLES	5/11/1989
10024741	831	COMBUSTIBLES	7/12/1989
10014370	832	COMBUSTIBLES	12/12/1987
10010117	832	COMBUSTIBLES	4/15/1988
10017256	832	COMBUSTIBLES	4/20/1988
10014002	832	COMBUSTIBLES	5/3/1988
10010114	832	COMBUSTIBLES	5/4/1988
10020864	832	COMBUSTIBLES	5/19/1988
10023799	832	COMBUSTIBLES	5/20/1988
10025842	832	COMBUSTIBLES	5/21/1988
10017040	832	COMBUSTIBLES	5/23/1988
10014378	832	COMBUSTIBLES	5/25/1988
10017030	832	COMBUSTIBLES	5/31/1988
10013806	832	COMBUSTIBLES	6/2/1988
10010115	832	COMBUSTIBLES	6/3/1988
10016335	832	COMBUSTIBLES	6/6/1988
10014018	832	COMBUSTIBLES	6/7/1988
10017252	832	COMBUSTIBLES	6/9/1988
10025602	832	COMBUSTIBLES	6/10/1988
10013970	832	COMBUSTIBLES	6/14/1988
10010046	832	COMBUSTIBLES	6/15/1988
10013992	832	COMBUSTIBLES	6/17/1988
10012918	832	COMBUSTIBLES	6/18/1988
10016339	832	COMBUSTIBLES	6/18/1988
10015585	832	COMBUSTIBLES	6/19/1988
10014372	832	COMBUSTIBLES	6/28/1988
10014015	832	COMBUSTIBLES	7/8/1988
10018993	832	COMBUSTIBLES	7/8/1988
10027421	832	COMBUSTIBLES	7/12/1988
10020855	832	COMBUSTIBLES	7/13/1988
10012920	832	COMBUSTIBLES	7/14/1988
10010253	832	COMBUSTIBLES	7/16/1988
10020859	832	COMBUSTIBLES	7/16/1988

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10025598	832	COMBUSTIBLES	7/16/1988
10017082	832	COMBUSTIBLES	7/18/1988
10017628	832	COMBUSTIBLES	7/22/1988
10012686	832	COMBUSTIBLES	7/25/1988
10013643	832	COMBUSTIBLES	7/25/1988
10012591	832	COMBUSTIBLES	7/26/1988
10013994	832	COMBUSTIBLES	8/2/1988
10025600	832	COMBUSTIBLES	8/4/1988
10025841	832	COMBUSTIBLES	8/5/1988
10017270	832	COMBUSTIBLES	8/10/1988
10025835	832	COMBUSTIBLES	8/10/1988
10018363	832	COMBUSTIBLES	8/11/1988
10017035	832	COMBUSTIBLES	8/12/1988
10017266	832	COMBUSTIBLES	8/12/1988
10017261	832	COMBUSTIBLES	8/16/1988
10017222	832	COMBUSTIBLES	8/24/1988
10025586	832	COMBUSTIBLES	8/24/1988
10025590	832	COMBUSTIBLES	8/25/1988
10018991	832	COMBUSTIBLES	8/30/1988
10017265	832	COMBUSTIBLES	8/31/1988
10025852	832	COMBUSTIBLES	8/31/1988
10013804	832	COMBUSTIBLES	9/1/1988
10027419	832	COMBUSTIBLES	9/1/1988
10023798	832	COMBUSTIBLES	9/6/1988
10010393	832	COMBUSTIBLES	9/7/1988
10020857	832	COMBUSTIBLES	9/8/1988
10025836	832	COMBUSTIBLES	9/9/1988
10027418	832	COMBUSTIBLES	9/13/1988
10018348	832	COMBUSTIBLES	9/16/1988
10025850	832	COMBUSTIBLES	9/16/1988
10027417	832	COMBUSTIBLES	9/19/1988
10010126	832	COMBUSTIBLES	9/21/1988
10013808	832	COMBUSTIBLES	9/21/1988
10013811	832	COMBUSTIBLES	9/21/1988
10018364	832	COMBUSTIBLES	9/26/1988
10012489	832	COMBUSTIBLES	10/3/1988
10017219	832	COMBUSTIBLES	10/11/1988
10013814	832	COMBUSTIBLES	10/14/1988
10025589	832	COMBUSTIBLES	10/14/1988
10025591	832	COMBUSTIBLES	10/17/1988
10018158	832	COMBUSTIBLES	10/20/1988
10018353	832	COMBUSTIBLES	10/20/1988
10015302	832	COMBUSTIBLES	10/21/1988
10025587	832	COMBUSTIBLES	10/21/1988
10015299	832	COMBUSTIBLES	10/26/1988
10017260	832	COMBUSTIBLES	10/26/1988
10013982	832	COMBUSTIBLES	11/2/1988
10018415	832	COMBUSTIBLES	11/4/1988
10016336	832	COMBUSTIBLES	11/9/1988
10018350	832	COMBUSTIBLES	11/9/1988
10017251	832	COMBUSTIBLES	11/14/1988
10016547	832	COMBUSTIBLES	11/15/1988
10025588	832	COMBUSTIBLES	11/16/1988

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10025851	832	COMBUSTIBLES	11/16/1988
10017221	832	COMBUSTIBLES	11/18/1988
10010175	832	COMBUSTIBLES	11/28/1988
10020852	832	COMBUSTIBLES	12/3/1988
10013991	832	COMBUSTIBLES	12/6/1988
10013975	832	COMBUSTIBLES	12/13/1988
10018989	832	COMBUSTIBLES	1/13/1989
10010178	832	COMBUSTIBLES	1/25/1989
10010043	832	COMBUSTIBLES	3/23/1989
10010400	832	COMBUSTIBLES	3/23/1989
10010187	833	COMBUSTIBLES	7/7/1988
10012492	833	COMBUSTIBLES	7/16/1988
10016334	833	COMBUSTIBLES	7/21/1988
10010258	833	COMBUSTIBLES	9/2/1988
10012495	833	COMBUSTIBLES	10/27/1988
10017255	833	COMBUSTIBLES	10/27/1988
10015612	833	COMBUSTIBLES	10/28/1988
10012731	833	COMBUSTIBLES	10/31/1988
10017633	833	COMBUSTIBLES	11/2/1988
10013990	833	COMBUSTIBLES	12/1/1988
10000813	970	COMBUSTIBLES	5/8/1971
10027875	970	COMBUSTIBLES	7/11/1972
10033635	970	COMBUSTIBLES	1/26/1973
10027857	970	COMBUSTIBLES	3/5/1973
10006796	338	FILTERS	6/13/1980
10033418	376	FILTERS	7/22/1980
10034423	376	FILTERS	7/22/1980
10033746	490	FILTERS	5/17/1972
10034155	490	FILTERS	10/4/1972
10033638	490	FILTERS	1/12/1973
10034141	490	FILTERS	1/29/1973
10027865	490	FILTERS	3/12/1973
10033738	490	FILTERS	3/12/1973
10029661	490	FILTERS	3/30/1973
10027841	490	FILTERS	4/2/1973
10034136	490	FILTERS	4/2/1973
10034126	490	FILTERS	4/17/1973
10000785	490	FILTERS	5/1/1975
10000869	490	FILTERS	5/1/1975
10001043	490	FILTERS	5/28/1975
10001047	490	FILTERS	6/17/1975
10000783	490	FILTERS	6/24/1975
10001206	490	FILTERS	7/10/1975
10001207	490	FILTERS	7/10/1975
10008350	490	FILTERS	7/31/1975
10000857	490	FILTERS	8/21/1975
10000861	490	FILTERS	8/21/1975
10001041	490	FILTERS	8/21/1975
10001050	490	FILTERS	8/21/1975
10001126	490	FILTERS	8/21/1975
10001129	490	FILTERS	9/5/1975
10001127	490	FILTERS	9/8/1975
10000795	490	FILTERS	10/13/1975

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10008341	490	FILTERS	9/23/1976
10032769	490	FILTERS	10/25/1977
10000871	490	FILTERS	12/31/1977
10001188	490	FILTERS	12/31/1977
10009312	490	FILTERS	7/27/1979
10008277	490	FILTERS	9/28/1979
10008390	490	FILTERS	9/28/1979
10034426	490	FILTERS	10/4/1979
10006791	490	FILTERS	6/5/1980
10006793	490	FILTERS	6/5/1980
10008285	490	FILTERS	6/19/1980
10009707	490	FILTERS	6/19/1980
10002180	490	FILTERS	6/26/1980
10006806	490	FILTERS	6/26/1980
10008271	490	FILTERS	6/26/1980
10008384	490	FILTERS	6/26/1980
10006803	490	FILTERS	7/16/1980
10008284	490	FILTERS	7/16/1980
10008387	490	FILTERS	7/16/1980
10009691	490	FILTERS	7/16/1980
10009705	490	FILTERS	7/16/1980
10006799	490	FILTERS	7/31/1980
10008412	490	FILTERS	8/12/1980
10008413	490	FILTERS	8/12/1980
10024794	490	FILTERS	10/10/1985
10010890	490	FILTERS	12/2/1985
10013977	490	FILTERS	12/2/1985
10024740	490	FILTERS	12/17/1985
10013478	490	FILTERS	12/18/1985
10024748	490	FILTERS	1/6/1986
10020762	490	FILTERS	1/8/1986
10024738	490	FILTERS	2/6/1986
10010674	490	FILTERS	2/13/1986
10013443	490	FILTERS	2/18/1986
10024487	490	FILTERS	2/18/1986
10013461	490	FILTERS	2/20/1986
10013968	490	FILTERS	2/20/1986
10024776	490	FILTERS	2/20/1986
10011961	490	FILTERS	2/22/1986
10012694	490	FILTERS	2/22/1986
10013489	490	FILTERS	2/22/1986
10010894	490	FILTERS	2/26/1986
10013342	490	FILTERS	2/26/1986
10013344	490	FILTERS	2/27/1986
10024743	490	FILTERS	2/27/1986
10010607	490	FILTERS	3/3/1986
10010895	490	FILTERS	4/9/1986
10021643	490	FILTERS	4/16/1986
10013817	490	FILTERS	4/18/1986
10013469	490	FILTERS	5/1/1986
10033135	490	FILTERS	5/6/1986
10024497	490	FILTERS	5/9/1986
10033410	490	FILTERS	5/9/1986

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10010901	490	FILTERS	5/19/1986
10011110	490	FILTERS	6/18/1986
10011702	490	FILTERS	6/18/1986
10033132	490	FILTERS	6/25/1986
10011103	490	FILTERS	6/26/1986
10000131	490	FILTERS	7/10/1986
10024294	490	FILTERS	7/10/1986
10006269	490	FILTERS	7/25/1986
10013789	490	FILTERS	7/25/1986
10023802	490	FILTERS	7/25/1986
10013027	490	FILTERS	7/29/1986
10025583	490	FILTERS	8/14/1986
10024747	490	FILTERS	8/18/1986
10010109	490	FILTERS	9/8/1986
10010063	490	FILTERS	9/24/1986
10010107	490	FILTERS	10/23/1986
10012699	490	FILTERS	10/23/1986
10010105	490	FILTERS	11/5/1986
10012486	490	FILTERS	1/8/1987
10010062	490	FILTERS	1/13/1987
10012698	490	FILTERS	1/26/1987
10012697	490	FILTERS	1/28/1987
10023191	490	FILTERS	2/4/1987
10010064	490	FILTERS	2/16/1987
10013820	490	FILTERS	2/19/1987
10014340	490	FILTERS	2/23/1987
10013346	490	FILTERS	2/24/1987
10013352	490	FILTERS	3/19/1987
10015995	490	FILTERS	3/19/1987
10013835	490	FILTERS	3/26/1987
10017641	490	FILTERS	3/26/1987
10022629	490	FILTERS	4/8/1987
10022621	490	FILTERS	4/9/1987
10018411	490	FILTERS	4/14/1987
10033605	490	FILTERS	4/22/1987
10010835	490	FILTERS	5/8/1987
10014749	490	FILTERS	5/14/1987
10012923	490	FILTERS	5/26/1987
10014751	490	FILTERS	6/12/1987
10023199	490	FILTERS	6/16/1987
10012693	490	FILTERS	6/22/1987
10020745	490	FILTERS	7/14/1987
10014405	490	FILTERS	7/23/1987
10013338	490	FILTERS	8/20/1987
10018143	490	FILTERS	9/17/1987
10018395	490	FILTERS	9/17/1987
10033585	490	FILTERS	9/17/1987
10013865	490	FILTERS	10/13/1987
10002589	490	FILTERS	10/14/1987
10014402	490	FILTERS	10/14/1987
10023192	490	FILTERS	10/14/1987
10002507	490	FILTERS	10/16/1987
10022623	490	FILTERS	10/30/1987

CONTAINER_ID	IDC	TYPE	GenDate
10021615	490	FILTERS	11/2/1987
10025580	490	FILTERS	11/18/1987
10024302	490	FILTERS	11/19/1987
10000128	490	FILTERS	11/23/1987
10015360	490	FILTERS	12/7/1987
10024778	490	FILTERS	12/17/1987
10016452	490	FILTERS	1/28/1988
10033142	490	FILTERS	2/2/1988
10033394	490	FILTERS	2/24/1988
10033396	490	FILTERS	2/24/1988
10010101	490	FILTERS	3/9/1988
10010396	490	FILTERS	3/10/1988
10018362	490	FILTERS	3/11/1988
10010391	490	FILTERS	4/22/1988
10017047	490	FILTERS	4/26/1988
10010551	490	FILTERS	4/27/1988
10017259	490	FILTERS	6/8/1988
10010181	490	FILTERS	6/15/1988
10010553	490	FILTERS	6/20/1988
10010049	490	FILTERS	6/21/1988
10010058	490	FILTERS	6/21/1988
10018345	490	FILTERS	7/19/1988
10025599	490	FILTERS	8/16/1988
10010103	490	FILTERS	8/22/1988
10012743	490	FILTERS	8/22/1988
10023796	490	FILTERS	8/31/1988
10017258	490	FILTERS	9/8/1988
10020850	490	FILTERS	9/8/1988
10010395	490	FILTERS	10/12/1988
10018343	490	FILTERS	10/12/1988
10012739	490	FILTERS	10/17/1988
10017264	490	FILTERS	10/17/1988
10015586	490	FILTERS	10/18/1988
10016343	490	FILTERS	11/29/1988
10018354	490	FILTERS	11/29/1988
10018990	490	FILTERS	11/29/1988
10018417	490	FILTERS	2/8/1989
10018644	490	FILTERS	2/10/1989
10015589	490	FILTERS	3/23/1989
10010053	490	FILTERS	7/11/1989
10018142	491	FILTERS	10/2/1987
10012483	491	FILTERS	10/9/1987
10014004	491	FILTERS	12/15/1987
10013768	374	HETEROGENEOUS	1/1/1950
10013778	374	HETEROGENEOUS	1/1/1950
10013779	374	HETEROGENEOUS	1/1/1950
10033740	374	HETEROGENEOUS	3/28/1973
10027839	374	HETEROGENEOUS	3/29/1973
10000798	374	HETEROGENEOUS	9/23/1976
10008345	374	HETEROGENEOUS	9/24/1976
10000808	374	HETEROGENEOUS	9/30/1976
10019700	374	HETEROGENEOUS	9/30/1976
10008342	374	HETEROGENEOUS	10/5/1976

CONTAINER_ID	IDC	TYPE	GenDate
10009084	374	HETEROGENEOUS	12/31/1977
10027873	371	INORGANIC NON-META	6/8/1972
10023811	440	INORGANIC NON-META	12/6/1985
10000130	440	INORGANIC NON-META	1/16/1986
10024749	440	INORGANIC NON-META	3/3/1986
10002490	440	INORGANIC NON-META	3/19/1986
10029651	440	INORGANIC NON-META	4/24/1986
10013464	440	INORGANIC NON-META	7/3/1986
10034113	440	INORGANIC NON-META	7/24/1986
10020766	440	INORGANIC NON-META	8/5/1986
10033385	440	INORGANIC NON-META	8/29/1986
10012496	440	INORGANIC NON-META	10/1/1986
10024818	440	INORGANIC NON-META	10/30/1986
10020750	440	INORGANIC NON-META	11/19/1986
10023204	440	INORGANIC NON-META	1/29/1987
10014748	440	INORGANIC NON-META	3/11/1987
10018393	440	INORGANIC NON-META	5/11/1987
10010383	440	INORGANIC NON-META	6/13/1987
10015166	440	INORGANIC NON-META	6/30/1987
10012504	440	INORGANIC NON-META	7/27/1987
10021637	440	INORGANIC NON-META	11/3/1987
10020705	440	INORGANIC NON-META	12/11/1987
10022641	440	INORGANIC NON-META	1/14/1988
10023805	440	INORGANIC NON-META	2/19/1988
10000865	441	INORGANIC NON-META	12/31/1977
10015306	441	INORGANIC NON-META	7/7/1986
10024492	442	INORGANIC NON-META	2/19/1986
10024961	442	INORGANIC NON-META	3/18/1986
10034123	442	INORGANIC NON-META	4/15/1986
10011959	442	INORGANIC NON-META	4/17/1986
10024285	442	INORGANIC NON-META	5/1/1986
10010605	442	INORGANIC NON-META	6/14/1986
10002527	442	INORGANIC NON-META	8/28/1986
10024775	442	INORGANIC NON-META	1/20/1987
10018155	442	INORGANIC NON-META	2/3/1987
10021629	442	INORGANIC NON-META	8/6/1987
10023178	442	INORGANIC NON-META	9/11/1987
10002510	442	INORGANIC NON-META	10/13/1987
10023804	442	INORGANIC NON-META	12/10/1987
10014361	442	INORGANIC NON-META	1/7/1988
10018398	442	INORGANIC NON-META	1/14/1988
10018397	442	INORGANIC NON-META	1/16/1988
10022627	442	INORGANIC NON-META	1/19/1988
10033131	442	INORGANIC NON-META	1/22/1988
10033128	442	INORGANIC NON-META	1/24/1988
10033391	442	INORGANIC NON-META	2/12/1988
10010254	442	INORGANIC NON-META	3/18/1988
10009504	442	INORGANIC NON-META	6/25/1993
10009505	44A	INORGANIC NON-META	7/14/1993
10009503	44A	INORGANIC NON-META	7/21/1993
10033734	950	INORGANIC NON-META	12/28/1972
10034139	950	INORGANIC NON-META	1/2/1973
10027870	950	INORGANIC NON-META	1/24/1973

CONTAINER_ID	IDC	TYPE	GenDate
10033727	950	INORGANIC NON-META	1/24/1973
10027840	950	INORGANIC NON-META	3/8/1973
10027852	950	INORGANIC NON-META	3/9/1973
10029659	950	INORGANIC NON-META	3/9/1973
10029654	950	INORGANIC NON-META	4/2/1973
10013775	480	LEAD/CADMIUM METAL	1/1/1950
10013777	480	LEAD/CADMIUM METAL	1/1/1950
10027407	480	LEAD/CADMIUM METAL	2/11/1972
10027850	480	LEAD/CADMIUM METAL	3/22/1972
10027872	480	LEAD/CADMIUM METAL	5/17/1972
10034129	480	LEAD/CADMIUM METAL	7/11/1972
10034416	480	LEAD/CADMIUM METAL	7/28/1972
10034154	480	LEAD/CADMIUM METAL	9/28/1972
10033735	480	LEAD/CADMIUM METAL	10/4/1972
10034146	480	LEAD/CADMIUM METAL	10/26/1972
10029662	480	LEAD/CADMIUM METAL	10/31/1972
10027846	480	LEAD/CADMIUM METAL	11/1/1972
10027847	480	LEAD/CADMIUM METAL	11/1/1972
10027876	480	LEAD/CADMIUM METAL	11/9/1972
10033732	480	LEAD/CADMIUM METAL	11/10/1972
10027409	480	LEAD/CADMIUM METAL	11/17/1972
10027871	480	LEAD/CADMIUM METAL	11/17/1972
10033729	480	LEAD/CADMIUM METAL	11/17/1972
10033737	480	LEAD/CADMIUM METAL	11/22/1972
10034128	480	LEAD/CADMIUM METAL	12/1/1972
10034138	480	LEAD/CADMIUM METAL	12/4/1972
10027867	480	LEAD/CADMIUM METAL	12/6/1972
10027859	480	LEAD/CADMIUM METAL	12/7/1972
10034145	480	LEAD/CADMIUM METAL	12/13/1972
10033742	480	LEAD/CADMIUM METAL	12/21/1972
10027861	480	LEAD/CADMIUM METAL	1/2/1973
10029656	480	LEAD/CADMIUM METAL	1/11/1973
10027868	480	LEAD/CADMIUM METAL	1/24/1973
10027877	480	LEAD/CADMIUM METAL	1/29/1973
10033741	480	LEAD/CADMIUM METAL	1/29/1973
10027863	480	LEAD/CADMIUM METAL	1/30/1973
10027866	480	LEAD/CADMIUM METAL	1/31/1973
10034143	480	LEAD/CADMIUM METAL	2/9/1973
10027849	480	LEAD/CADMIUM METAL	2/14/1973
10027879	480	LEAD/CADMIUM METAL	2/14/1973
10027880	480	LEAD/CADMIUM METAL	2/14/1973
10034125	480	LEAD/CADMIUM METAL	2/14/1973
10034142	480	LEAD/CADMIUM METAL	2/14/1973
10027845	480	LEAD/CADMIUM METAL	2/20/1973
10027864	480	LEAD/CADMIUM METAL	2/20/1973
10033730	480	LEAD/CADMIUM METAL	2/20/1973
10033739	480	LEAD/CADMIUM METAL	2/20/1973
10033736	480	LEAD/CADMIUM METAL	3/5/1973
10027853	480	LEAD/CADMIUM METAL	3/9/1973
10027862	480	LEAD/CADMIUM METAL	3/9/1973
10027406	480	LEAD/CADMIUM METAL	3/12/1973
10027410	480	LEAD/CADMIUM METAL	3/12/1973
10027848	480	LEAD/CADMIUM METAL	3/12/1973

CONTAINER_I	IDC	TYPE	GenDate
10029653	480	LEAD/CADMIUM METAL	3/12/1973
10034114	480	LEAD/CADMIUM METAL	3/13/1973
10027878	480	LEAD/CADMIUM METAL	3/14/1973
10027856	480	LEAD/CADMIUM METAL	3/15/1973
10034148	480	LEAD/CADMIUM METAL	3/15/1973
10029655	480	LEAD/CADMIUM METAL	3/20/1973
10034115	480	LEAD/CADMIUM METAL	3/20/1973
10027851	480	LEAD/CADMIUM METAL	3/21/1973
10034144	480	LEAD/CADMIUM METAL	3/21/1973
10034133	480	LEAD/CADMIUM METAL	3/22/1973
10027858	480	LEAD/CADMIUM METAL	3/23/1973
10033728	480	LEAD/CADMIUM METAL	3/25/1973
10033636	480	LEAD/CADMIUM METAL	3/26/1973
10033731	480	LEAD/CADMIUM METAL	3/27/1973
10027855	480	LEAD/CADMIUM METAL	3/28/1973
10033637	480	LEAD/CADMIUM METAL	3/28/1973
10034137	480	LEAD/CADMIUM METAL	3/29/1973
10033745	480	LEAD/CADMIUM METAL	3/30/1973
10027860	480	LEAD/CADMIUM METAL	4/2/1973
10034127	480	LEAD/CADMIUM METAL	4/4/1973
10034132	480	LEAD/CADMIUM METAL	4/4/1973
10029652	480	LEAD/CADMIUM METAL	4/6/1973
10034147	480	LEAD/CADMIUM METAL	4/6/1973
10034415	480	LEAD/CADMIUM METAL	4/6/1973
10033743	480	LEAD/CADMIUM METAL	4/9/1973
10027838	480	LEAD/CADMIUM METAL	4/10/1973
10027854	480	LEAD/CADMIUM METAL	4/12/1973
10033744	480	LEAD/CADMIUM METAL	4/16/1973
10034135	480	LEAD/CADMIUM METAL	4/16/1973
10034140	480	LEAD/CADMIUM METAL	4/18/1973
10001121	480	LEAD/CADMIUM METAL	8/15/1974
10001049	480	LEAD/CADMIUM METAL	4/8/1975
10000870	480	LEAD/CADMIUM METAL	4/15/1975
10001189	480	LEAD/CADMIUM METAL	4/24/1975
10000822	480	LEAD/CADMIUM METAL	4/28/1975
10000877	480	LEAD/CADMIUM METAL	4/30/1975
10000867	480	LEAD/CADMIUM METAL	5/21/1975
10001044	480	LEAD/CADMIUM METAL	6/5/1975
10001046	480	LEAD/CADMIUM METAL	6/9/1975
10001048	480	LEAD/CADMIUM METAL	6/12/1975
10000779	480	LEAD/CADMIUM METAL	6/24/1975
10000784	480	LEAD/CADMIUM METAL	6/24/1975
10000854	480	LEAD/CADMIUM METAL	7/11/1975
10000827	480	LEAD/CADMIUM METAL	7/24/1975
10000859	480	LEAD/CADMIUM METAL	7/25/1975
10000853	480	LEAD/CADMIUM METAL	7/29/1975
10001193	480	LEAD/CADMIUM METAL	7/29/1975
10001208	480	LEAD/CADMIUM METAL	7/29/1975
10019693	480	LEAD/CADMIUM METAL	7/31/1975
10000821	480	LEAD/CADMIUM METAL	8/12/1975
10008351	480	LEAD/CADMIUM METAL	8/12/1975
10000824	480	LEAD/CADMIUM METAL	8/13/1975
10001191	480	LEAD/CADMIUM METAL	8/13/1975

CONTAINER_I	IDC	TYPE	GenDate
10000787	480	LEAD/CADMIUM METAL	8/18/1975
10001052	480	LEAD/CADMIUM METAL	8/18/1975
10000816	480	LEAD/CADMIUM METAL	8/19/1975
10000863	480	LEAD/CADMIUM METAL	8/19/1975
10001051	480	LEAD/CADMIUM METAL	8/19/1975
10000826	480	LEAD/CADMIUM METAL	8/22/1975
10035462	480	LEAD/CADMIUM METAL	8/22/1975
10000817	480	LEAD/CADMIUM METAL	9/8/1975
10001202	480	LEAD/CADMIUM METAL	9/19/1975
10001128	480	LEAD/CADMIUM METAL	9/25/1975
10001200	480	LEAD/CADMIUM METAL	9/25/1975
10001124	480	LEAD/CADMIUM METAL	10/1/1975
10001196	480	LEAD/CADMIUM METAL	10/1/1975
10001123	480	LEAD/CADMIUM METAL	10/3/1975
10001130	480	LEAD/CADMIUM METAL	10/6/1975
10001038	480	LEAD/CADMIUM METAL	10/9/1975
10000862	480	LEAD/CADMIUM METAL	10/10/1975
10001039	480	LEAD/CADMIUM METAL	10/10/1975
10019699	480	LEAD/CADMIUM METAL	10/13/1975
10000812	480	LEAD/CADMIUM METAL	10/14/1975
10001122	480	LEAD/CADMIUM METAL	10/14/1975
10001040	480	LEAD/CADMIUM METAL	10/16/1975
10000792	480	LEAD/CADMIUM METAL	10/17/1975
10000810	480	LEAD/CADMIUM METAL	10/17/1975
10001198	480	LEAD/CADMIUM METAL	10/17/1975
10002411	480	LEAD/CADMIUM METAL	10/23/1975
10035456	480	LEAD/CADMIUM METAL	10/29/1975
10002412	480	LEAD/CADMIUM METAL	11/18/1975
10019695	480	LEAD/CADMIUM METAL	11/18/1975
10002413	480	LEAD/CADMIUM METAL	11/19/1975
10019697	480	LEAD/CADMIUM METAL	11/26/1975
10019698	480	LEAD/CADMIUM METAL	9/23/1976
10008344	480	LEAD/CADMIUM METAL	9/28/1976
10019702	480	LEAD/CADMIUM METAL	9/29/1976
10019701	480	LEAD/CADMIUM METAL	9/30/1976
10008347	480	LEAD/CADMIUM METAL	10/6/1976
10032758	480	LEAD/CADMIUM METAL	1/25/1977
10032759	480	LEAD/CADMIUM METAL	1/25/1977
10032756	480	LEAD/CADMIUM METAL	4/19/1977
10032765	480	LEAD/CADMIUM METAL	10/7/1977
10032767	480	LEAD/CADMIUM METAL	10/17/1977
10032771	480	LEAD/CADMIUM METAL	10/21/1977
10032761	480	LEAD/CADMIUM METAL	10/28/1977
10000814	480	LEAD/CADMIUM METAL	12/31/1977
10000860	480	LEAD/CADMIUM METAL	12/31/1977
10000866	480	LEAD/CADMIUM METAL	12/31/1977
10000872	480	LEAD/CADMIUM METAL	12/31/1977
10000873	480	LEAD/CADMIUM METAL	12/31/1977
10000874	480	LEAD/CADMIUM METAL	12/31/1977
10001036	480	LEAD/CADMIUM METAL	12/31/1977
10001042	480	LEAD/CADMIUM METAL	12/31/1977
10001190	480	LEAD/CADMIUM METAL	12/31/1977
10001195	480	LEAD/CADMIUM METAL	12/31/1977

CONTAINER_I	IDC	TYPE	GenDate
10001204	480	LEAD/CADMIUM METAL	12/31/1977
10001205	480	LEAD/CADMIUM METAL	12/31/1977
10008695	480	LEAD/CADMIUM METAL	12/31/1977
10009313	480	LEAD/CADMIUM METAL	8/9/1979
10001654	480	LEAD/CADMIUM METAL	6/5/1980
10006794	480	LEAD/CADMIUM METAL	6/10/1980
10009704	480	LEAD/CADMIUM METAL	6/10/1980
10009698	480	LEAD/CADMIUM METAL	6/13/1980
10009701	480	LEAD/CADMIUM METAL	6/19/1980
10006800	480	LEAD/CADMIUM METAL	7/16/1980
10008286	480	LEAD/CADMIUM METAL	7/16/1980
10008383	480	LEAD/CADMIUM METAL	7/16/1980
10034422	480	LEAD/CADMIUM METAL	7/16/1980
10008415	480	LEAD/CADMIUM METAL	7/29/1980
10022616	480	LEAD/CADMIUM METAL	2/18/1985
10034109	480	LEAD/CADMIUM METAL	8/19/1985
10033143	480	LEAD/CADMIUM METAL	10/31/1985
10015356	480	LEAD/CADMIUM METAL	11/11/1985
10012685	480	LEAD/CADMIUM METAL	11/15/1985
10024787	480	LEAD/CADMIUM METAL	11/25/1985
10020780	480	LEAD/CADMIUM METAL	12/4/1985
10033133	480	LEAD/CADMIUM METAL	12/4/1985
10002524	480	LEAD/CADMIUM METAL	12/5/1985
10024791	480	LEAD/CADMIUM METAL	12/15/1985
10002518	480	LEAD/CADMIUM METAL	12/16/1985
10024772	480	LEAD/CADMIUM METAL	12/19/1985
10013349	480	LEAD/CADMIUM METAL	12/28/1985
10002525	480	LEAD/CADMIUM METAL	1/4/1986
10024307	480	LEAD/CADMIUM METAL	1/6/1986
10024486	480	LEAD/CADMIUM METAL	1/11/1986
10024825	480	LEAD/CADMIUM METAL	1/11/1986
10012742	480	LEAD/CADMIUM METAL	1/13/1986
10023852	480	LEAD/CADMIUM METAL	1/15/1986
10024805	480	LEAD/CADMIUM METAL	1/16/1986
10012728	480	LEAD/CADMIUM METAL	1/20/1986
10023879	480	LEAD/CADMIUM METAL	1/25/1986
10024739	480	LEAD/CADMIUM METAL	1/27/1986
10034103	480	LEAD/CADMIUM METAL	1/27/1986
10024746	480	LEAD/CADMIUM METAL	1/28/1986
10024960	480	LEAD/CADMIUM METAL	1/28/1986
10024745	480	LEAD/CADMIUM METAL	1/31/1986
10034427	480	LEAD/CADMIUM METAL	1/31/1986
10024478	480	LEAD/CADMIUM METAL	2/1/1986
10024816	480	LEAD/CADMIUM METAL	2/7/1986
10024801	480	LEAD/CADMIUM METAL	2/8/1986
10024826	480	LEAD/CADMIUM METAL	2/8/1986
10002584	480	LEAD/CADMIUM METAL	2/18/1986
10013335	480	LEAD/CADMIUM METAL	2/19/1986
10024779	480	LEAD/CADMIUM METAL	2/19/1986
10020752	480	LEAD/CADMIUM METAL	2/24/1986
10013449	480	LEAD/CADMIUM METAL	2/25/1986
10013831	480	LEAD/CADMIUM METAL	2/26/1986
10017634	480	LEAD/CADMIUM METAL	3/1/1986

CONTAINER_I	IDC	TYPE	GenDate
10024493	480	LEAD/CADMIUM METAL	3/3/1986
10014371	480	LEAD/CADMIUM METAL	3/5/1986
10013843	480	LEAD/CADMIUM METAL	3/6/1986
10024485	480	LEAD/CADMIUM METAL	3/6/1986
10033392	480	LEAD/CADMIUM METAL	3/6/1986
10011956	480	LEAD/CADMIUM METAL	3/10/1986
10010480	480	LEAD/CADMIUM METAL	3/12/1986
10025558	480	LEAD/CADMIUM METAL	3/12/1986
10010889	480	LEAD/CADMIUM METAL	3/13/1986
10020749	480	LEAD/CADMIUM METAL	3/13/1986
10013457	480	LEAD/CADMIUM METAL	3/20/1986
10021630	480	LEAD/CADMIUM METAL	3/25/1986
10024736	480	LEAD/CADMIUM METAL	3/26/1986
10013841	480	LEAD/CADMIUM METAL	3/27/1986
10034105	480	LEAD/CADMIUM METAL	4/1/1986
10024737	480	LEAD/CADMIUM METAL	4/7/1986
10034430	480	LEAD/CADMIUM METAL	4/7/1986
10013640	480	LEAD/CADMIUM METAL	4/8/1986
10024496	480	LEAD/CADMIUM METAL	4/10/1986
10012734	480	LEAD/CADMIUM METAL	4/15/1986
10002520	480	LEAD/CADMIUM METAL	4/17/1986
10020849	480	LEAD/CADMIUM METAL	4/18/1986
10024742	480	LEAD/CADMIUM METAL	4/22/1986
10013480	480	LEAD/CADMIUM METAL	4/24/1986
10011118	480	LEAD/CADMIUM METAL	4/28/1986
10014410	480	LEAD/CADMIUM METAL	4/29/1986
10020711	480	LEAD/CADMIUM METAL	4/29/1986
10025581	480	LEAD/CADMIUM METAL	5/1/1986
10012926	480	LEAD/CADMIUM METAL	5/2/1986
10024803	480	LEAD/CADMIUM METAL	5/2/1986
10011102	480	LEAD/CADMIUM METAL	5/5/1986
10014377	480	LEAD/CADMIUM METAL	5/5/1986
10020751	480	LEAD/CADMIUM METAL	5/13/1986
10023839	480	LEAD/CADMIUM METAL	5/14/1986
10000126	480	LEAD/CADMIUM METAL	5/15/1986
10002501	480	LEAD/CADMIUM METAL	5/20/1986
10033416	480	LEAD/CADMIUM METAL	5/20/1986
10002486	480	LEAD/CADMIUM METAL	6/4/1986
10013807	480	LEAD/CADMIUM METAL	6/10/1986
10015304	480	LEAD/CADMIUM METAL	6/10/1986
10020744	480	LEAD/CADMIUM METAL	6/11/1986
10033408	480	LEAD/CADMIUM METAL	6/12/1986
10010042	480	LEAD/CADMIUM METAL	6/13/1986
10024308	480	LEAD/CADMIUM METAL	6/23/1986
10033409	480	LEAD/CADMIUM METAL	6/23/1986
10012733	480	LEAD/CADMIUM METAL	6/30/1986
10013459	480	LEAD/CADMIUM METAL	7/3/1986
10027430	480	LEAD/CADMIUM METAL	7/3/1986
10012498	480	LEAD/CADMIUM METAL	7/7/1986
10012738	480	LEAD/CADMIUM METAL	7/7/1986
10017637	480	LEAD/CADMIUM METAL	7/9/1986
10021638	480	LEAD/CADMIUM METAL	7/17/1986
10015362	480	LEAD/CADMIUM METAL	7/19/1986

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10023857	480	LEAD/CADMIUM METAL	8/5/1986
10021616	480	LEAD/CADMIUM METAL	8/6/1986
10011109	480	LEAD/CADMIUM METAL	8/7/1986
10023201	480	LEAD/CADMIUM METAL	8/8/1986
10024965	480	LEAD/CADMIUM METAL	8/8/1986
10023855	480	LEAD/CADMIUM METAL	8/12/1986
10002493	480	LEAD/CADMIUM METAL	8/19/1986
10018148	480	LEAD/CADMIUM METAL	8/19/1986
10034432	480	LEAD/CADMIUM METAL	8/19/1986
10018154	480	LEAD/CADMIUM METAL	8/21/1986
10013440	480	LEAD/CADMIUM METAL	8/25/1986
10023851	480	LEAD/CADMIUM METAL	8/25/1986
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10013834	480	LEAD/CADMIUM METAL	8/27/1986
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10012499	480	LEAD/CADMIUM METAL	9/3/1986
10024291	480	LEAD/CADMIUM METAL	9/4/1986
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10017027	480	LEAD/CADMIUM METAL	9/6/1986
10023793	480	LEAD/CADMIUM METAL	9/8/1986
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10013341	480	LEAD/CADMIUM METAL	9/12/1986
10013484	480	LEAD/CADMIUM METAL	9/13/1986
10012925	480	LEAD/CADMIUM METAL	9/16/1986
10014373	480	LEAD/CADMIUM METAL	9/16/1986
10017638	480	LEAD/CADMIUM METAL	9/17/1986
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10020755	480	LEAD/CADMIUM METAL	9/18/1986
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10018157	480	LEAD/CADMIUM METAL	9/29/1986
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10024475	480	LEAD/CADMIUM METAL	10/24/1986
10024290	480	LEAD/CADMIUM METAL	10/27/1986
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10020739	480	LEAD/CADMIUM METAL	3/17/1987
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10018408	480	LEAD/CADMIUM METAL	4/2/1987
10022624	480	LEAD/CADMIUM METAL	4/2/1987
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10011953	480	LEAD/CADMIUM METAL	4/3/1987

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10023188	480	LEAD/CADMIUM METAL	4/11/1987
10015033	480	LEAD/CADMIUM METAL	4/13/1987
10017046	480	LEAD/CADMIUM METAL	4/13/1987
10033384	480	LEAD/CADMIUM METAL	4/13/1987
10018156	480	LEAD/CADMIUM METAL	4/15/1987
10002512	480	LEAD/CADMIUM METAL	4/21/1987
10014367	480	LEAD/CADMIUM METAL	4/21/1987
10033592	480	LEAD/CADMIUM METAL	4/23/1987
10018360	480	LEAD/CADMIUM METAL	4/28/1987
10021621	480	LEAD/CADMIUM METAL	4/28/1987
10012744	480	LEAD/CADMIUM METAL	5/4/1987
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10021613	480	LEAD/CADMIUM METAL	5/4/1987
10033601	480	LEAD/CADMIUM METAL	5/4/1987
10002508	480	LEAD/CADMIUM METAL	5/5/1987
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10015617	480	LEAD/CADMIUM METAL	5/5/1987
10018367	480	LEAD/CADMIUM METAL	5/5/1987
10018396	480	LEAD/CADMIUM METAL	5/5/1987
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10013797	480	LEAD/CADMIUM METAL	5/27/1987
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10023184	480	LEAD/CADMIUM METAL	7/8/1987
10022631	480	LEAD/CADMIUM METAL	7/10/1987
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10013833	480	LEAD/CADMIUM METAL	8/5/1987
10022619	480	LEAD/CADMIUM METAL	8/7/1987
10013791	480	LEAD/CADMIUM METAL	8/8/1987
10018145	480	LEAD/CADMIUM METAL	8/13/1987
10015029	480	LEAD/CADMIUM METAL	8/14/1987
10021636	480	LEAD/CADMIUM METAL	8/14/1987
10016048	480	LEAD/CADMIUM METAL	8/18/1987
10010609	480	LEAD/CADMIUM METAL	8/19/1987
10018402	480	LEAD/CADMIUM METAL	8/20/1987
10010104	480	LEAD/CADMIUM METAL	8/21/1987
10015039	480	LEAD/CADMIUM METAL	8/27/1987
10015591	480	LEAD/CADMIUM METAL	9/1/1987
10012735	480	LEAD/CADMIUM METAL	9/9/1987
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10018151	480	LEAD/CADMIUM METAL	9/11/1987
10021628	480	LEAD/CADMIUM METAL	9/14/1987
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10022618	480	LEAD/CADMIUM METAL	9/29/1987
10015036	480	LEAD/CADMIUM METAL	10/1/1987
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10015161	480	LEAD/CADMIUM METAL	10/8/1987
10010542	480	LEAD/CADMIUM METAL	10/16/1987
10013803	480	LEAD/CADMIUM METAL	10/22/1987
10016045	480	LEAD/CADMIUM METAL	10/27/1987
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10033603	480	LEAD/CADMIUM METAL	10/29/1987
10013799	480	LEAD/CADMIUM METAL	11/3/1987
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10013800	480	LEAD/CADMIUM METAL	11/16/1987
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10034428	480	LEAD/CADMIUM METAL	11/17/1987
10013798	480	LEAD/CADMIUM METAL	11/20/1987
10034431	480	LEAD/CADMIUM METAL	11/24/1987
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10014001	480	LEAD/CADMIUM METAL	1/4/1988
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10034122	480	LEAD/CADMIUM METAL	1/27/1988
10033144	480	LEAD/CADMIUM METAL	2/5/1988
10012493	480	LEAD/CADMIUM METAL	2/11/1988
10033388	480	LEAD/CADMIUM METAL	2/12/1988
10033379	480	LEAD/CADMIUM METAL	2/15/1988
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10015590	480	LEAD/CADMIUM METAL	2/23/1988
10018365	480	LEAD/CADMIUM METAL	2/25/1988
10016314	480	LEAD/CADMIUM METAL	3/2/1988
10017033	480	LEAD/CADMIUM METAL	3/8/1988
10010185	480	LEAD/CADMIUM METAL	3/9/1988
10014008	480	LEAD/CADMIUM METAL	3/9/1988
10010544	480	LEAD/CADMIUM METAL	3/14/1988
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10010118	480	LEAD/CADMIUM METAL	3/22/1988
10010555	480	LEAD/CADMIUM METAL	3/28/1988
10010098	480	LEAD/CADMIUM METAL	4/13/1988
10013644	480	LEAD/CADMIUM METAL	4/13/1988
10023795	480	LEAD/CADMIUM METAL	4/13/1988
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10016338	480	LEAD/CADMIUM METAL	4/26/1988
10013998	480	LEAD/CADMIUM METAL	5/3/1988
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10017039	480	LEAD/CADMIUM METAL	6/3/1988
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10010054	480	LEAD/CADMIUM METAL	6/16/1988
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10017078	480	LEAD/CADMIUM METAL	6/28/1988

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10018357	480	LEAD/CADMIUM METAL	7/6/1988
10012491	480	LEAD/CADMIUM METAL	7/13/1988
10010047	480	LEAD/CADMIUM METAL	7/14/1988
10025844	480	LEAD/CADMIUM METAL	7/19/1988
10017267	480	LEAD/CADMIUM METAL	7/21/1988
10017272	480	LEAD/CADMIUM METAL	7/21/1988
10020865	480	LEAD/CADMIUM METAL	7/22/1988
10013809	480	LEAD/CADMIUM METAL	7/26/1988
10013813	480	LEAD/CADMIUM METAL	7/26/1988
10025845	480	LEAD/CADMIUM METAL	7/28/1988
10010259	480	LEAD/CADMIUM METAL	8/11/1988
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10020851	480	LEAD/CADMIUM METAL	9/2/1988
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10015587	480	LEAD/CADMIUM METAL	9/13/1988
10010398	480	LEAD/CADMIUM METAL	9/20/1988
10012921	480	LEAD/CADMIUM METAL	9/20/1988
10010388	480	LEAD/CADMIUM METAL	9/23/1988
10025833	480	LEAD/CADMIUM METAL	9/23/1988
10017038	480	LEAD/CADMIUM METAL	9/26/1988
10015300	480	LEAD/CADMIUM METAL	10/6/1988
10013995	480	LEAD/CADMIUM METAL	10/7/1988
10018992	480	LEAD/CADMIUM METAL	10/10/1988
10018988	480	LEAD/CADMIUM METAL	10/14/1988
10010044	480	LEAD/CADMIUM METAL	10/17/1988
10010550	480	LEAD/CADMIUM METAL	10/19/1988
10013976	480	LEAD/CADMIUM METAL	10/19/1988
10016044	480	LEAD/CADMIUM METAL	10/20/1988
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10027422	480	LEAD/CADMIUM METAL	10/28/1988
10010183	480	LEAD/CADMIUM METAL	11/1/1988
10025601	480	LEAD/CADMIUM METAL	11/14/1988
10019057	480	LEAD/CADMIUM METAL	11/22/1988
10017253	480	LEAD/CADMIUM METAL	11/28/1988
10020856	480	LEAD/CADMIUM METAL	11/28/1988
10020861	480	LEAD/CADMIUM METAL	12/5/1988
10012584	480	LEAD/CADMIUM METAL	12/7/1988
10017627	480	LEAD/CADMIUM METAL	12/8/1988
10010166	480	LEAD/CADMIUM METAL	12/9/1988
10010261	480	LEAD/CADMIUM METAL	12/13/1988
10010486	480	LEAD/CADMIUM METAL	12/14/1988
10018994	480	LEAD/CADMIUM METAL	12/14/1988
10010113	480	LEAD/CADMIUM METAL	12/15/1988
10017028	480	LEAD/CADMIUM METAL	1/12/1989
10017042	480	LEAD/CADMIUM METAL	1/17/1989
10015620	480	LEAD/CADMIUM METAL	1/19/1989
10010172	480	LEAD/CADMIUM METAL	1/20/1989

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10017263	480	LEAD/CADMIUM METAL	2/11/1989
10017223	480	LEAD/CADMIUM METAL	2/21/1989
10010179	480	LEAD/CADMIUM METAL	2/27/1989
10017262	480	LEAD/CADMIUM METAL	2/27/1989
10010165	480	LEAD/CADMIUM METAL	3/20/1989
10010168	480	LEAD/CADMIUM METAL	3/20/1989
10015588	480	LEAD/CADMIUM METAL	3/22/1989
10010057	480	LEAD/CADMIUM METAL	4/6/1989
10017629	480	LEAD/CADMIUM METAL	4/10/1989
10012740	480	LEAD/CADMIUM METAL	4/16/1989
10010169	480	LEAD/CADMIUM METAL	4/24/1989
10015582	480	LEAD/CADMIUM METAL	7/5/1989
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10013647	480	LEAD/CADMIUM METAL	7/11/1989
10009489	480	LEAD/CADMIUM METAL	7/12/1993
10012497	481	LEAD/CADMIUM METAL	11/11/1985
10013774	488	LEAD/CADMIUM METAL	1/1/1950
10010164	488	LEAD/CADMIUM METAL	7/9/1988
10012916	488	LEAD/CADMIUM METAL	7/12/1988
10014003	488	LEAD/CADMIUM METAL	7/14/1988
10009487	48A	LEAD/CADMIUM METAL	7/2/1993

AK12

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RECORD
DB 3-16-06

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

Reference Number: C464A

AK Type:

- ☐ **Published Documentation**
- ☐ **Unpublished Data**
- ☑ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Interview with Dr. Bernie Kokenge, performed by Ben Gutierrez, Dick Blauvelt, and Jerri McTaggert, on April 24, 2003.

Information Source: From Centralized Characterization Project (CCP), AK Record C007 for Mound waste at SRS

AK #[a]	AK Information Summary
WS1 WS4 WS5 WS7 All MD IDCs	Dr. Kokenge worked at Mound from 1965 to 1986 in Buildings SM, R, PP and 50. He was involved in developing Fuel Forms Pu-238, RTG program, tritium process development and nuclear weapons components. Dr. Kokenge provided a description of the work performed R Building, Rooms 145, 149 and 127, PP-Building, SM Building. He also identified chemicals used (acids, solvents).

Source Document Data Limitations (if any):

Dr. Kokenge managed the projects and was not always directly involved with the actual work. His recall of the projects and activities was from memory and he did not refer to any log books or notes.

AK Expert:

M. L. Johnson / MLJohnson
Print **Sign**

Date: 3/7/2006

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

Attachment 2 – Record of Communication

Waste Stream Numbers:	Corresponding Source Document #: C007	
Interviewer B. Gutierrez, J. Mc Taggart, D. Blauvelt	Date: 04/24/03 Revised 06/08/04 B.S.G.	Time: 9:00 p.m. Holiday Inn Tele-Conference in Miamisburg
Interviewees Dr. Bernie Kokenge	Group/Organization: Job Title: Mound Retired in 1990	Phone: (937) 696-2939 Email: bernardkokenge@aol.com

Subject: TRU Waste Management at Mound

Dr. Bernie Kokenge (Manager)
Worked at Mound 1965 to 1986
Buildings he worked at SM, R, PP and 50.

Projects:

- Developing Fuel Forms Pu-238
- RTG program
- Tritium process development
- Nuclear weapons components

R BUILDING rooms 145,149, and, 127
In R Building, research and development work took place in the 1950's. In the early 1960's they started handling Pu-238 isotopic fuels for use in heat sources for space and terrestrial applications producing TRU waste. PP started operations in the late 60's or early 70's and R building continued to support the heat source program. The milli watt heat source program and associated fuels production program was moved to TA-55 at LANL and partial D&D of the PP Building commenced in the 70's. The RTG Program, including assembly and testing of RTGs for the US` space program, was initiated in the early 80s and remained at Mound in Building 50 until 2003, when it was moved to Idaho Falls.

As part of Pu-238 fuels production in the 70s in R-Building, Room 145 had a vacuum hot press for producing isotopic fuel forms using Pu oxide particles coated with molybdenum.

PP-BUILDING

They used some hydrofluoric acid in the dissolution process in SM and PP Buildings.

There was a possibility solvents were used at a minimum in PP building. Trichloroethylene and Acetone were used for degreasing. Plutonium oxide fuel forms were prepared by precipitating plutonium-238 from a nitric acid solution as a hydroxide. In PP building the pressed material was encapsulated and sent to Teledyne or GE Valley Forge, PA for RTG manufacturing in the 70s. In the 80s, Building 50 received plutonium-238 heat sources that were produced at LANL. TRU waste was generated from PP building but not building 50.

SM BUILDING

Dr Kokenge stated he was not very involved in SM building but felt there was a good possibility that solvents were used. SM Building was used for the Heat Source Program but this work was transferred to PP building in the late 60s or early 70s. Dr, Kokenge felt most of the waste we are dealing with was from PP building due to the time frame. He also felt solvents from SM buildings should be applied to PP building. All three building (R, SM, PP) produced TRU waste.

OTHER CONTACS:
Clayton Marsh
Don Luthy
Dick Valle

Data Limitations:
Dr. Kokenge was trying to recall information as far back as the early 1970's. His information was anecdotal at best due to the time frame when this work was done. He did not have any lab books or notes to reference past work. Dr, Kokenge managed the projects and did not always work them.

Acceptable Knowledge Expert: John M. Jaffat Date: 5/25/05

T-1242
RECORD
DB 3-16-06

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	**AMWTP Form 1068, Rev. 2** **Effective Date: 02/07/06** **MP-TRUW-8.13** **Page 1 of 1**

Reference Number: U206A

AK Type:

- ☐ **Published Documentation**
- ☑ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): List of Chemicals and Materials in TRU Waste Content Codes. Revision 2, 6/89. Author Unknown

Information Source: From Centralized Characterization Project (CCP), AK Record U003 for Mound waste at SRS.

AK # [a]	AK Information Summary
WS5 WS6 All MD IDCs	The estimated levels of components is identified for the following waste groups: Content Code MD 111A. IDE 836: Solidified Aqueous Waste: Aqueous effluent from D&D activities in former Pu-238 processing areas in WD Building. The waste is placed in 55 gallon drums with 90 mil liners. There are no other bags or added confinements. Content Code MD 111B , IDC 842: Contaminated Soil: The waste consists of soil contaminated to TRU levels of Pu-238 from pipeline breaks and spills. It is packaged in SWBs that are utilized with no sealed liner when loading contaminated soil. There are no layers of confinement. Content Code MD 116A, IDC 827: Combustible Waste: Consists of paper, plastic, rags, cardboard, and wood from generated from glove box operations and the D&D program. It originated from the PP, R, and SM Buildings. It is packaged in 55 gallon drums with 90 mil liners. Content Code MD 117A, IDC 824: Non-Combustible Waste: Content Code MD 111/211, Solidified Aqueous Waste and Contaminated Soil

Source Document Data Limitations (if any):
Concentration levels are estimated.

AK Expert:

M. L. Johnson / M L Johnson — **Date:** 3/8/2006

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

U003

Rev. 2, June 1989

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111A
IDC 836

SOLIDIFIED AQUEOUS WASTE - S

GROUP 1: ACIDS, MINERAL, NON-OXIDIZING
(Constituents reacted prior to loading in payload containers.)

HYDROCHLORIC ACID	T1
HYDROFLUORIC ACID	T2
NITRIC ACID	T1
SULFURIC ACID (<70%)	T

GROUP 2: ACIDS, MINERAL, OXIDIZING
(Constituents reacted prior to loading in payload containers.)

HYPOCHLOROUS ACID	T2

GROUP 3: ACIDS, ORGANIC
(Constituents reacted prior to loading in payload containers.)

LACTIC ACID	T2
OXALIC ACID	T2

GROUP 4: ALCOHOLS AND GLYCOLS

ETHANOL	T1
METHANOL	T1
PROPANOL	T1

GROUP 10: CAUSTICS
(Constituents reacted prior to loading in payload containers.)

AMMONIUM HYDROXIDE	T1
SODIUM CARBONATE	T
SODIUM HYDROXIDE	T
SODIUM HYPOCHLORITE	T1

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

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Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111A
(Continued)
IDC 836

SOLIDIFIED AQUEOUS WASTE

GROUP 15: FLUORIDES, INORGANIC
(Constituents reacted prior to loading in payload containers.)

HYDROFLUORIC ACID	T2

GROUP 17: HALOGENATED ORGANICS

1,1,1-TRICHLOROETHANE	T2
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	T1
TRICHLOROETHYLENE	T1 0.5 ppm (mg/L) - 1040

GROUP 19: KETONES

ACETONE	T1

GROUP 21: METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS
(Constituents reacted prior to loading in payload containers.)

CALCIUM	T2
MAGNESIUM	T2
POTASSIUM	T2
SODIUM	T2

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T2
COBALT	T2
MAGNESIUM	T2
MANGANESE	T2
MERCURY (VAPOR)	T2 - 0.2 ppm - 2009
NICKEL	T2
THORIUM	(M)
TITANIUM	T2
URANIUM	(T)

D = Dominant Component (>10 % by wt.)
M = Minor Component (1 - 10 % by wt.)
T = Trace Component (<1 % by wt.)
T1 = Trace Component (<0.1 % by wt.)
T2 = Trace Component (low PPM range)
T3 = Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111A
(Continued)
IDC 836

SOLIDIFIED AQUEOUS WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS OR SPONGES (CONTINUED)

ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T2
CADMIUM	T2 - 1.0 ppm. vol.
CARBON	M
CHROMIUM	T2 - 5.0 ppm
COBALT	T2
COPPER	T2
IRON	T
LEAD	T1 - 5.0 ppm - D008
MANGANESE	T
SELENIUM	T2 - 1.0 ppm - D010
SILICON	T1
SILVER	T2 - 5 ppm
THORIUM	M
TIN	T
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BERYLLIUM	T - possible POIS? as powder
CADMIUM	T2
CHROMIUM	T2
COBALT	T2
COPPER	T2
LEAD	T1
MANGANESE	T

D = Dominant Component (>10 % by wt.)
M = Minor Component (1 - 10 % by wt.)
T = Trace Component (<1 % by wt.)
T1 = Trace Component (<0.1 % by wt.)
T2 = Trace Component (low PPM range)
T3 = Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111A
(Continued)
IDC 836

SOLIDIFIED AQUEOUS WASTE

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC (CONTINUED)

MERCURY	T
NICKEL	T
SELENIUM	T2
STRONTIUM	T2
THORIUM	M
TITANIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CARBON, SPENT, ACTIVATED	T
OIL	T
POLYBUTADIENE	T2
POLYSTYRENE	T1

GROUP 104: OXIDIZING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

HYDROGEN PEROXIDE	T2
SODIUM NITRATE	T

GROUP 105: REDUCING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

PHOSPHORUS	T
SODIUM	T2

GROUP 106: WATER AND MIXTURES CONTAINING WATER

AQUEOUS SOLUTIONS AND MIXTURES	T
WATER	T

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111A
(Continued)
IDC 836

SOLIDIFIED AQUEOUS WASTE

GROUP 107: WATER REACTIVE SUBSTANCES
(Constituents reacted prior to loading in payload containers.)

PHOSPHOROUS	T
SODIUM	T2

OTHER INORGANICS

ASH	M
CALCIUM CHLORIDE	M
FERRIC HYDROXIDE	M

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

ASH	M
CEMENT (Hydrated)	D
FLORCO	M
SLUDGE	D
SURFACTANTS	T
VERMICULITE	T

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111B
IDC 842

CONTAMINATED SOIL

GROUP 21: METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS
(Constituents reacted prior to loading in payload containers.)

CALCIUM	T2

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

THORIUM	M
URANIUM	T

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

CADMIUM	T2
CHROMIUM	T2
COPPER	T2
IRON	T
LEAD	T1
MERCURY	T2
SELENIUM	T2
SILVER	T2
THORIUM	T
URANIUM	T

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

CADMIUM	T2
CHROMIUM	T2
COPPER	T2
LEAD	T1
MERCURY	T2
SELENIUM	T2

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 111B
(Continued)
IDC 842

CONTAMINATED SOIL

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
CELLULOSE	T
WOOD	T
GROUP 106: WATER AND MIXTURES CONTAINING WATER	
WATER	T
OTHER INORGANICS	
SAND	M
SOIL	D
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS	
FLORCO	M

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116A
IDC 827

COMBUSTIBLE WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

THORIUM	T

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

LEAD	T1
MERCURY	T2
THORIUM	T

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

LEAD	T1
MERCURY	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CELLULOSE	M
GREASE	T
OIL	T
PAPER	D
POLYBUTADIENE	T
POLYETHYLENE	D
POLYPROPYLENE	M
POLYSTYRENE	M
POLYURETHANE	T
POLYVINYL CHLORIDE	D
RUBBER GLOVES	M
RUBBER GLOVES, LEADED	T
SYNTHETIC RUBBER	M
WOOD	M

D = Dominant Component (>10 % by wt.)
M = Minor Component (1 - 10 % by wt.)
T = Trace Component (<1 % by wt.)
T1 = Trace Component (<0.1 % by wt.)
T2 = Trace Component (low PPM range)
T3 = Trace Component (<1 PPM range)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116A
(Continued)
IDC 827

COMBUSTIBLE WASTE

GROUP 106: WATER AND MIXTURES CONTAINING WATER

WATER	T1

OTHER INORGANICS

HEPA FILTERS	T

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

FLORCO	M

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

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Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117A
IDC 824

NON-COMBUSTIBLE WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T1
NICKEL	T1
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T
BARIUM	T2
CADMIUM	T2
COPPER	T
IRON	D
LEAD	T
SELENIUM	T2
SILVER	T2
STAINLESS STEEL	D
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BARIUM	T2
CADMIUM	T2
CHROMIUM	T
COPPER	T
LEAD	T
MERCURY	T1
SELENIUM	T2
ZIRCONIUM	T2

D - Dominant Component (>10 % by wt.)
M - Minor Component (1 - 10 % by wt.)
T - Trace Component (<1 % by wt.)
T1 - Trace Component (<0.1 % by wt.)
T2 - Trace Component (low PPM range)
T3 - Trace Component (<1 PPM range)

CONTENT CODE: MD 111 (See Waste Packaging Description and Configuration Tables)

CONTENT DESCRIPTION: (MD 111A) Solidified Aqueous Waste and (MD 111B) Contaminated Soil

GENERATING SITE: Mound Laboratory (Mound)

WASTE DESCRIPTION: (MD 111A) Aqueous effluent from decontamination and decommissioning activities in former Pu-238 processing areas is treated in WD Building. The sludge, which contains 20-25% solids, is mixed with cement. (MD 111B) The waste consists of soil contaminated to TRU levels with Pu-238 from pipeline breaks and spills. The contaminated fluids are aqueous solutions with a maximum of trace levels of organics in the fluids (if any is present).

GENERATING SOURCE: (MD 111A) The waste originates from SM Building, PP Building, and R Building at Mound. (MD 111B) The waste originates from the WD hillside, pipeline removal at Mound.

WASTE FORM: (MD 111A) The sludge is produced through a standard batch type precipitation process. After pH adjustment, $CaCl_2$, $FE_2(SO_4)_3$ and carbon are added. The effluent is filtered, sampled and discharged. The resultant sludge is solidified with approximately two bags of cement. Solids are primarily ferric hydroxides. (MD 111B) The waste is typically clayey soil that has been contaminated by a pipeline break or other type of spill. The soil is removed by hand digging or with a backhoe. It may include small rocks, but usually no large boulders.

WASTE PACKAGING: Details of the waste packaging for each code are presented in the following table:

WASTE PACKAGING DESCRIPTION TABLE

Code	Description
MD 111A	The waste is placed in a 55-gallon drum with a 90-mil high density polyethylene liner. There are no other bags or added confinements. If drums are overpacked in SWBs, no closed liner bags are used in the SWB.
MD 111B	The contaminated soil waste is packaged in SWBs that are utilized with no sealed liner when loading contaminated soil.

Specific waste packaging configurations for the codes and corresponding shipping categories are shown in the following table:

WASTE PACKAGING CONFIGURATION TABLE

Code	Layers of Confinement	Hydrogen Diffusivity of Filter on Primary Payload Container* (mol/s/mol fraction) ($\times 10^{-6}$)	Shipping Category		
			Drum	SWB Overpack	SWB
MD 111A	No layers of confinement	1.9	10 0130 0147	10 0130 0207	NA
		3.7	10 0130 0111	10 0130 0172	NA

Code	Layers of Confinement	Hydrogen Diffusivity of Filter on Primary Payload Container* (mol/s/mol fraction) ($x 10^{-6}$)	Shipping Category		
			Drum	SWB Overpack	SWB
MD 111B	No layers of confinement	1.9	NA	NA	NA
		3.7	NA	NA	10 0130 0034

* See Introduction for explanation of hydrogen diffusivity of filter on primary payload container.
NA = Not applicable.

ASSAY: (MD 111A) A sample of the sludge is taken from each batch, and the type and quantity of radionuclides present are determined using standard radiochemical techniques. Assay results are used to calculate Pu-239 fissile gram equivalent (plus two times the error) and decay heat (plus error). (MD 111B) Several representative samples are removed from the box after loading and are evaluated utilizing Mound-developed instrumental assay. An average value is used for the entire box and used to calculate Pu-239 fissile gram equivalent and decay heat.

FREE LIQUIDS: (MD 111A) WD sludge is solidified with cement in accordance with documented written procedures. This operation is periodically audited by QA personnel, as described in the QA plan. Cold samples of this waste form have been examined for the presence of free liquid in or on the concrete matrix, and none was found. These test results are on file at Mound. (MD 111B) A study of water content of a variety of soils likely to be encountered at Mound was performed. The results of this study describe the amount of "Florco" absorbent required to absorb all free liquid created by packing compression. Procedures in Mound manuals document how the absorbent is to be added to the container.

EXPLOSIVES/COMPRESSED GASES: (MD 111A) The sludge waste form has been analyzed and found to contain no explosive items or explosive compounds or material capable of forming explosive mixtures. Areas where TRU waste is generated typically contain no explosive wastes. Administrative controls are in place which preclude the introduction of explosives into TRU waste packages. Administrative controls exist that ban the introduction of cylinders of compressed gases into the waste containers. Aerosol cans are punctured before being discarded as waste. (MD 111B) Criterion not applicable. Mound soils do not contain explosives or compressed gases.

PYROPHORIC: (MD 111A) Analytical procedures have been performed on the sludge, and the results included in this document indicate the absence of pyrophorics in the waste stream. In addition, the solidification operation assures that any small quantities of pyrophorics that might be present are rendered safe by dispersion in the concrete matrix. (MD 111B) Criterion not applicable. Pyrophoric materials and combinations of potentially pyrophoric materials do not exist in Mound soils. Underground piping that may have leaked originated from buildings that did not contain or dispose of pyrophoric materials in this piping.

CORROSIVES: (MD 111A) No corrosive materials have been identified in the aqueous effluent sludge waste per 40 CFR 261 criteria. (MD 111B) Contaminated soils at Mound are primarily the result of leaks in process or transfer lines. While the initial spill might possibly have contained materials that could be classified as hazardous wastes, these materials were changed as the liquid evaporated, leaving the plutonium residue behind such that the remaining material has been rendered nonhazardous. If there is any reason to suspect the presence of hazardous wastes in the TRU-contaminated soils, an analysis will be performed to determine if the waste fails any of the four EPA characteristic tests.

CHEMICAL COMPATIBILITY: A chemical compatibility study has been performed on this content code, and all waste is chemically compatible for materials in greater than trace (>1% weight) quantities. The chemicals found in this content code are attached and are restricted to the allowable chemical lists for each waste material type found in Appendix 1.3.7 of the SAR.

ADDITIONAL CRITERIA: In accordance with Appendix 1.3.5 of the SAR, each drum is fitted with a minimum of one filter, and the rigid liner (if present) will be punctured. Each SWB is fitted with at least two and up to four filters.

SHIPPING CATEGORY: (See Waste Packaging Configuration Table)

ANALYTICAL CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattages for analytical category waste are specified in Appendix 1.3.7 of the SAR. For information purposes, the following table summarizes the maximum allowable wattages for content code MD 111.

MAXIMUM ALLOWABLE WATTAGE TABLE

Content Code	Shipping Category	Maximum Allowable Wattage Per Payload Container
MD 111A	10 0130 0147 (Drum) 10 0130 0111(Drum) 10 0130 0207 (SWB Overpack) 10 0130 0172 (SWB Overpack)	0.2536 0.3343 0.1793 0.2158
MD 111B	10 0130 0034 (SWB)	1.1240

TEST CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattage for test category waste, as specified in Appendix 1.3.7 of the SAR, is 10 per drum and per packaging.

CORRELATION TABLE: This content code has previously been identified as the following IDCs:

IDC	DESCRIPTION	WASTE GENERATOR
836	Solidified Sludge	Mound Laboratory
842	Contaminated Soil	Mound Laboratory

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111A, MD 111B
IDCs 836, 842

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 1:	ACIDS, MINERAL, NON-OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYDROCHLORIC ACID	T1
	HYDROFLUORIC ACID	T2
	NITRIC ACID	T1
	SULFURIC ACID (<70%)	T
GROUP 2:	ACIDS, MINERAL, OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYPOCHLOROUS ACID	T2
GROUP 3:	ACIDS, ORGANIC (Constituents reacted prior to loading in payload containers.)	
	LACTIC ACID	T2
	OXALIC ACID	T2
GROUP 4:	ALCOHOLS AND GLYCOLS	
	ETHANOL	T1
	METHANOL	T1
	PROPANOL	T1
GROUP 10:	CAUSTICS (Constituents reacted prior to loading in payload containers.)	
	AMMONIUM HYDROXIDE	T1
	SODIUM CARBONATE	T
	SODIUM HYDROXIDE	T
	SODIUM HYPOCHLORITE	T1
GROUP 15:	FLUORIDES, INORGANIC (Constituents reacted prior to loading in payload containers.)	
	HYDROFLUORIC ACID	T2
GROUP 17:	HALOGENATED ORGANICS	
	1,1,1-TRICHLOROETHANE	T2
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	T1
	TRICHLOROETHYLENE	T1

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111A, MD 111B
(Continued)
IDCs 836, 842

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 19: KETONES

ACETONE	T1

GROUP 21: METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS
(Constituents reacted prior to loading in payload containers.)

CALCIUM	T2
MAGNESIUM	T2
POTASSIUM	T2
SODIUM	T2

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T2
COBALT	T2
MAGNESIUM	T2
MANGANESE	T2
MERCURY (VAPOR)	T2
NICKEL	T2
THORIUM	M
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T2
CADMIUM	T2
CARBON	M
CHROMIUM	T2
COBALT	T2
COPPER	T2
IRON	T
LEAD	T1
MANGANESE	T
MERCURY	T2
SELENIUM	T2
SILICON	T1
SILVER	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111A, MD 111B
(Continued)
IDCs 836, 842

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC. (CONTINUED)

THORIUM	M
TIN	T
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BERYLLIUM	T
CADMIUM	T2
CHROMIUM	T2
COBALT	T2
COPPER	T2
LEAD	T1
MANGANESE	T
MERCURY	T
NICKEL	T
SELENIUM	T2
STRONTIUM	T2
THORIUM	M
TITANIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CARBON, SPENT, ACTIVATED	T
CELLULOSE	T
OIL	T
POLYBUTADIENE	T2
POLYSTYRENE	T1
WOOD	T

GROUP 104: OXIDIZING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

HYDROGEN PEROXIDE	T2
SODIUM NITRATE	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111A, MD 111B
(Continued)
IDCs 836, 842

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 105: REDUCING AGENTS, STRONG (Constituents reacted prior to loading in payload containers.)	
PHOSPHOROUS	T
SODIUM	T2
GROUP 106: WATER AND MIXTURES CONTAINING WATER	
AQUEOUS SOLUTIONS AND MIXTURES	T
WATER	T
GROUP 107: WATER REACTIVE SUBSTANCES (Constituents reacted prior to loading in payload containers.)	
PHOSPHOROUS	T
SODIUM	T2
OTHER INORGANICS	
ASH	M
CALCIUM CHLORIDE	M
FERRIC HYDROXIDE	M
SAND	M
SOIL	D
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS	
ASH	M
CEMENT (Hydrated)	D
FLORCO	M
SLUDGE	D
SURFACTANTS	T
VERMICULITE	T

Refer to Introduction for a description of the designations used in this chemical list.

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD-111A, MD-111B
~~IDCs 836, 842~~

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 1: ACIDS, MINERAL, NON-OXIDIZING
(Constituents reacted prior to loading in payload containers.)

HYDROCHLORIC ACID	T1
HYDROFLUORIC ACID	T2
NITRIC ACID	T1
SULFURIC ACID (<70%)	T

GROUP 2: ACIDS, MINERAL, OXIDIZING
(Constituents reacted prior to loading in payload containers.)

HYPOCHLOROUS ACID	T2

GROUP 3: ACIDS, ORGANIC
(Constituents reacted prior to loading in payload containers.)

LACTIC ACID	T2
OXALIC ACID	T2

GROUP 4: ALCOHOLS AND GLYCOLS

ETHANOL	T1
METHANOL	T1
PROPANOL	T1

GROUP 10: CAUSTICS
(Constituents reacted prior to loading in payload containers.)

AMMONIUM HYDROXIDE	T1
SODIUM CARBONATE	T
SODIUM HYDROXIDE	T
SODIUM HYPOCHLORITE	T1

GROUP 15: FLUORIDES, INORGANIC
(Constituents reacted prior to loading in payload containers.)

HYDROFLUORIC ACID	T2

GROUP 17: HALOGENATED ORGANICS

1,1,1-TRICHLOROETHANE	T2
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	T1
TRICHLOROETHYLENE	T1

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes
111/211
Content Codes MD ~~111A, MD 111B~~
(Continued)
~~IDCs 836, 842~~

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 19: KETONES

ACETONE	T1

GROUP 21: METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS
(Constituents reacted prior to loading in payload containers.)

CALCIUM	T2
MAGNESIUM	T2
POTASSIUM	T2
SODIUM	T2

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T2
COBALT	T2
MAGNESIUM	T2
MANGANESE	T2
MERCURY (VAPOR)	T2
NICKEL	T2
THORIUM	M
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T2
CADMIUM	T2
CARBON	M
CHROMIUM	T2
COBALT	T2
COPPER	T2
IRON	T
LEAD	T1
MANGANESE	T
MERCURY	T2
SELENIUM	T2
SILICON	T1
SILVER	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111A, MD 111B
(Continued)
~~IDCs 836, 842~~

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC. (CONTINUED)

THORIUM	M
TIN	T
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BERYLLIUM	T
CADMIUM	T2
CHROMIUM	T2
COBALT	T2
COPPER	T2
LEAD	T1
MANGANESE	T
MERCURY	T
NICKEL	T
SELENIUM	T2
STRONTIUM	T2
THORIUM	M
TITANIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CARBON, SPENT, ACTIVATED	T
CELLULOSE	T
OIL	T
POLYBUTADIENE	T2
POLYSTYRENE	T1
WOOD	T

GROUP 104: OXIDIZING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

HYDROGEN PEROXIDE	T2
SODIUM NITRATE	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD ~~111A, MD 111B~~ 111/211
(Continued)
~~IDCs 836, 842~~

SOLIDIFIED AQUEOUS WASTE and
CONTAMINATED SOIL

GROUP 105: REDUCING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

PHOSPHOROUS	T
SODIUM	T2

GROUP 106: WATER AND MIXTURES CONTAINING WATER

AQUEOUS SOLUTIONS AND MIXTURES	T
WATER	T

GROUP 107: WATER REACTIVE SUBSTANCES
(Constituents reacted prior to loading in payload containers.)

PHOSPHOROUS	T
SODIUM	T2

OTHER INORGANICS

ASH	M
CALCIUM CHLORIDE	M
FERRIC HYDROXIDE	M
SAND	M
SOIL	D

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

ASH	M
CEMENT (Hydrated)	D
FLORCO	M
SLUDGE	D
SURFACTANTS	T
VERMICULITE	T

Refer to Introduction for a description of the designations used in this chemical list.

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 1:	ACIDS, MINERAL, NON-OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYDROCHLORIC ACID	T1
	HYDROFLUORIC ACID	T2
GROUP 2:	ACIDS, MINERAL, OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYPOCHLOROUS ACID	T2
	NITRIC ACID	T1
	SULFURIC ACID (<70%)	T
GROUP 3:	ACIDS, ORGANIC (Constituents reacted prior to loading in payload containers.)	
	LACTIC ACID* ?	T2
	OXALIC ACID	T2
GROUP 4:	ALCOHOLS AND GLYCOLS	
	ETHANOL	T1
	METHANOL	T1
	PROPANOL	T1
GROUP 10:	CAUSTICS (Constituents reacted prior to loading in payload containers.)	
	AMMONIUM HYDROXIDE	T1
	SODIUM CARBONATE	T
	SODIUM HYDROXIDE	T
	SODIUM HYPOCHLORITE	T1
GROUP 15:	FLUORIDES, INORGANIC (Constituents reacted prior to loading in payload containers.)	
	HYDROFLUORIC ACID	T2
GROUP 17:	HALOGENATED ORGANICS	
	1,1,1-TRICHLOROETHANE* ?	T2
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE * ?	T1
	TRICHLOROETHYLENE	T1

Checked against EDA "A Method for Determining the Compatibility of Hazardous Waste" (1980)

bH 3-23-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 19: KETONES

ACETONE	T1

GROUP 21: METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS
(Constituents reacted prior to loading in payload containers.)

add nickel ? not in EPA list TMN 9/24/01

CALCIUM	T2
MAGNESIUM	T2
POTASSIUM	T2
SODIUM	T2

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

add selenium. no indication of vapor/powder TMN 9/24/01

ALUMINUM	T2
COBALT	T2
MAGNESIUM	T2
MANGANESE	T2
~~MERCURY (VAPOR)~~	T2
NICKEL	T2
THORIUM	M
TITANIUM	T2
URANIUM ✗?	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

move to "Other Inorganics" ← No - See master list of Chemicals not found in EPA list TMN 9/24/01

ALUMINUM	T2
CADMIUM	T2
CARBON STEEL	M
CHROMIUM	T2
COBALT	T2
COPPER	T2
IRON	T
LEAD	T1
MANGANESE	T
~~MERCURY~~	T2
SELENIUM	T2
SILICON ✗?	T1
SILVER ✗?	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC. (CONTINUED)

THORIUM	M
TIN ¥?	T
TITANIUM	T2
URANIUM¥?	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BERYLLIUM	T
CADMIUM	T2
CHROMIUM add calcium	T2
COBALT	T2
COPPER	T2
LEAD	T1
MANGANESE	T
MERCURY	T
NICKEL	T
SELENIUM	T2
STRONTIUM	T2
THORIUM	M
TITANIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CARBON, SPENT, ACTIVATED	T
CELLULOSE	T
OIL ¥? which type?	T
POLYBUTADIENE	T2
POLYSTYRENE	T1
WOOD	T

GROUP 104: OXIDIZING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

HYDROGEN PEROXIDE	T2
SODIUM NITRATE	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 105: REDUCING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

PHOSPHOROUS	T
SODIUM	T2

GROUP 106: WATER AND MIXTURES CONTAINING WATER

AQUEOUS SOLUTIONS AND MIXTURES	T
WATER	T

GROUP 107: WATER REACTIVE SUBSTANCES
(Constituents reacted prior to loading in payload containers.)

~~CALCIUM~~	add sulfuric acid.	T2
PHOSPHOROUS		T
SODIUM	add potassium.	T2

OTHER INORGANICS

ASH	M
CALCIUM CHLORIDE	M
FERRIC HYDROXIDE	M
SAND	M
SOIL	D

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

ASH	M
CEMENT (Hydrated)	D
FLORCO	M
SLUDGE	D
SURFACTANTS	T
VERMICULITE	T

Refer to Introduction for a description of the designations used in this chemical list.

CP4
TNBR
9-24-01
Comparison to CP3

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 1:	ACIDS, MINERAL, NON-OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	Hydrochloric acid	T1
	Hydrofluoric acid	T2
GROUP 2:	ACIDS, MINERAL, OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	Hypochlorous acid	T2
	Nitric acid	T1
	Sulfuric acid (<70%)	T
GROUP 3:	ACIDS, ORGANIC (Constituents reacted prior to loading in payload containers.)	
	Lactic acid	T2
	Oxalic acid	T2
GROUP 4:	ALCOHOLS AND GLYCOLS	
	Ethanol	T1
	Methanol	T1
	Propanol	T1
GROUP 10:	CAUSTICS (Constituents reacted prior to loading in payload containers.)	
	Ammonium hydroxide	T1
	Sodium carbonate	T
	Sodium hydroxide	T
	Sodium hypochlorite	T1
GROUP 15:	FLUORIDES, INORGANIC (Constituents reacted prior to loading in payload containers.)	
	Hydrofluoric acid	T2
GROUP 17:	HALOGENATED ORGANICS	
	1,1,1-Trichloroethane	T2
	1,1,2-Trichloro-1,2,2-trifluoroethane	T1
	Trichloroethylene	T1
GROUP 19:	KETONES	
	Acetone	T1

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 21:	METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS (Constituents reacted prior to loading in payload containers.)	
	Calcium	T2
	Magnesium	T2
	Potassium	T2
	Sodium	T2
GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Aluminum	T2
	Cobalt	T2
	Magnesium	T2
	Manganese	T2
	Mercury (Vapor)	T2
	Nickel	T2
	Thorium	M
	Titanium	T2
	Uranium	T
	Zirconium	T2
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Aluminum	T2
	Cadmium	T2
	Carbon steel	M
	Chromium	T2
	Cobalt	T2
	Copper	T2
	Iron	T
	Lead	T1
	Manganese	T
	~~Mercury~~ not listed in 23 (not solid)	~~T2~~
	Selenium	T2
	Silicon	T1
	Silver	T2
	Thorium	M
	Tin	T
	Titanium	T2
	Uranium	T
	Zirconium	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Beryllium	T
	Cadmium	T2
	Chromium Calcium - T2	T2
	Cobalt	T2
	Copper	T2
	Lead	T1
	Manganese	T
	Mercury	T
	Nickel	T
	Selenium	T2
	Strontium	T2
	Thorium	M
	Titanium	T2
	Zirconium	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Carbon (Spent, Activated)	T
	Cellulose	T
	Oil	T
	Polybutadiene	T2
	Polystyrene	T1
	Wood	T
~~Group 102~~ Calcium - T2		
GROUP 104:	OXIDIZING AGENTS, STRONG	
	(Constituents reacted prior to loading in payload containers.)	
	Hydrogen peroxide	T2
	Sodium nitrate	T
GROUP 105:	REDUCING AGENTS, STRONG	
	(Constituents reacted prior to loading in payload containers.)	
	Calcium	T2
	Phosphorous	T
	Sodium	T2
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	Aqueous solutions and mixtures	T
	Water	T
GROUP 107:	WATER REACTIVE SUBSTANCES	
	(Constituents reacted prior to loading in payload containers.)	
	Calcium Potassium - T2	T2
	Phosphorous	T
	Sodium Sulfuric Acid - T	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

OTHER INORGANICS	
Ash	M
Calcium chloride	M
Ferric hydroxide	M
Sand	M
Soil	D
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS	
Ash	M
Cement (Hydrated)	D
Florco	M
Sludge	D
Surfactants	T
Vermiculite	T

Refer to Introduction for a description of the designations used in this chemical list.

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 1:	ACIDS, MINERAL, NON-OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYDROCHLORIC ACID	T1
	HYDRO[redacted]IC ACID	T2
	NI[redacted]ACID	T1
	[redacted]URIC ACID (<70%)	T
GROUP 2:	ACIDS, MINERAL, OXIDIZING (Constituents reacted prior to loading in payload containers.)	
	HYPOCHLOROUS ACID	T2
GROUP 3:	ACIDS, ORGANIC (Constituents reacted prior to loading in payload containers.)	
	LACTIC ACID	T2
	OXALIC ACID	T2
GROUP 4:	ALCOHOLS AND GLYCOLS	
	ETHANOL	T1
	METHANOL	T1
	PROPANOL	T1
GROUP 10:	CAUSTICS (Constituents reacted prior to loading in payload containers.)	
	AMMONIUM HYDROXIDE	T1
	SODIUM CARBONATE	T
	SODIUM HYDROXIDE	T
	SODIUM HYPOCHLORITE	T1
GROUP 15:	FLUORIDES, INORGANIC (Constituents reacted prior to loading in payload containers.)	
	HYDROFLUORIC ACID	T2
GROUP 17:	HALOGENATED ORGANICS	
	1,1,1-TRICHLOROETHANE	T2
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	T1
	TRICHLOROETHYLENE	T1

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~~June 1999~~

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 19:	KETONES	
	ACETONE	T1
GROUP 21:	METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS (Constituents reacted prior to loading in payload containers.)	
	CALCIUM	T2
	MAGNESIUM	T2
	POTASSIUM	T2
	SODIUM	T2
GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	ALUMINUM	T2
	COBALT	T2
	MAGNESIUM	T2
	MANGANESE	T2
	MERCURY (VAPOR)	T2
	NICKEL	T2
	THORIUM	M
	TITANIUM	T2
	URANIUM	T
	ZIRCONIUM	T2
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	ALUMINUM	T2
	CADMIUM	T2
	CARB[redacted]	M
	CHROMIUM	T2
	COBALT	T2
	COPPER	T2
	IRON	T
	LEAD	T1
	MANGANESE	T
	MERCURY	T2
	SELENIUM	T2
	SILICON	T1
	SILVER	T2

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC. (CONTINUED)

THORIUM	M
TIN	T
TITANIUM	T2
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BERYLLIUM	T
CADMIUM	T2
CHROMIUM	T2
COBALT	T2
COPPER	T2
LEAD	T1
MANGANESE	T
MERCURY	T
NICKEL	T
SELENIUM	T2
STRONTIUM	T2
THORIUM	M
TITANIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CARBON, SPENT, ACTIVATED	T
CELLULOSE	T
OIL	T
POLYBUTADIENE	T2
POLYSTYRENE	T1
WOOD	T

GROUP 104: OXIDIZING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers.)

HYDROGEN PEROXIDE	T2
SODIUM NITRATE	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Codes MD 111/211
(Continued)

SOLIDIFIED AQUEOUS WASTE AND CONTAMINATED SOIL

GROUP 105: REDUCING AGENTS, STRONG
(Constituents reacted prior to loading in payload containers)

PHOSPHOROUS	T
SODIUM	T2

GROUP 106: WATER AND MIXTURES CONTAINING WATER

AQUEOUS SOLUTIONS AND MIXTURES	T
WATER	T

GROUP 107: WATER REACTIVE SUBSTANCES
(Constituents [redacted] prior to loading in payload containers)

CALCIUM [redacted]	T2
PHOSPHOROUS	T
SODIUM	T2

OTHER INORGANICS

ASH	M
CALCIUM CHLORIDE	M
FERRIC HYDROXIDE	M
SAND	M
SOIL	D

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

ASH	M
CEMENT (Hydrated)	D
FLORCO	M
SLUDGE	D
SURFACTANTS	T
VERMICULITE	T

Refer to Introduction for a description of the designations used in this chemical list.

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June 1999

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116/216

COMBUSTIBLE WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	THORIUM	T
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	LEAD	T1
	MERCURY	T2
	THORIUM	T
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	LEAD	T1
	MERCURY	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	CELLULOSE	M
	GREASE	T
	OIL	T
	PAPER	D
	POLYBUTADIENE	T
	POLYETHYLENE	D
	POLYPROPYLENE	M
	POLYSTYRENE	M
	POLYURETHANE	T
	POLYVINYL CHLORIDE	D
	RUBBER GLOVES	M
	RUBBER GLOVES, LEADED	D
	SYNTHETIC RUBBER	M
	WOOD	M
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	WATER	T1
OTHER INORGANICS		
	HEPA FILTERS	T
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	FLORCO	M

Refer to Introduction for a description of the designations used in this chemical list.

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Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116/216

COMBUSTIBLE WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

THORIUM	T

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

LEAD	T1
~~MERCURY~~	T2
THORIUM	T

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

LEAD	T1
MERCURY	T2

add thorium

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

CELLULOSE	M
GREASE	T
OIL x? - which type	T
PAPER	D
POLYBUTADIENE	T
POLYETHYLENE	D
POLYPROPYLENE	M
POLYSTYRENE	M
POLYURETHANE	T
POLYVINYL CHLORIDE	D
RUBBER GLOVES x?	M
RUBBER GLOVES, LEADED x?	D
SYNTHETIC RUBBER	M
WOOD	M

GROUP 106: WATER AND MIXTURES CONTAINING WATER

WATER	T1

OTHER INORGANICS

HEPA FILTERS	T

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

FLORCO	M

Refer to Introduction for a description of the designations used in this chemical list.

Checked against EPA "A Method for Determining the Compatibility of Hazardous Waste" (1980)

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Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD ~~116A~~ 116/216
~~IDC 827~~

COMBUSTIBLE WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	THORIUM	T
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	LEAD	T1
	MERCURY	T2
	THORIUM	T
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	LEAD	T1
	MERCURY	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	CELLULOSE	M
	GREASE	T
	OIL	T
	PAPER	D
	POLYBUTADIENE	T
	POLYETHYLENE	D
	POLYPROPYLENE	M
	POLYSTYRENE	M
	POLYURETHANE	T
	POLYVINYL CHLORIDE	D
	RUBBER GLOVES	M
	RUBBER GLOVES, LEADED	~~T~~ D
	SYNTHETIC RUBBER	M
	WOOD	M
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	WATER	T1
OTHER INORGANICS		
	HEPA FILTERS	T
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	FLORCO	M

Refer to Introduction for a description of the designations used in this chemical list.

per attached site visit notes ↑ 4/27/99

Checked against Rev. 11 (8/97)
BH 3-14-01.

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Discussion Points for Mound
(Continued)

5. [MD 111] Is "T" the correct designation for items in Group 106?

Bill to check on these.

Follow-up Chem List

6. [MD 116] Should "Rubber Gloves, Leaded" in Group 101 be more than trace?

Change to "D" on the chemical list.

Chem List

7. [MD 117] TRUCON code 117 does not require a solidifier or absorbent. Why "concrete" in the *Other Solidification Material/Absorbents* Group?

Move "concrete" to "Other Inorganic" category.

Chem List

Much work is needed at Mound to prepare the waste for shipment. Contact will be maintained with site representatives to support their TRU waste activities.

CONTENT CODE: MD 116 (See Waste Packaging Description and Configuration Tables)

CONTENT DESCRIPTION: Combustible Waste

GENERATING SITE: Mound Laboratory (Mound)

WASTE DESCRIPTION: TRU combustible wastes consist of paper, plastics, rags, cardboard, and wood generated from glovebox operations and the decontamination and decommissioning program.

GENERATING SOURCES: The waste originates from the PP Building, R Building, and SM Building at Mound.

WASTE FORM: The paper is typically Kimwipes. Plastics consist of gloves, shoecovers, bags, and bubblesuits. Wood is usually plywood or 2 x 4. The 90-mil HDPE drum liner is also considered as part of the combustible loading.

WASTE PACKAGING: Details of the waste packaging for each code are presented in the following table:

WASTE PACKAGING DESCRIPTION TABLE

Code	Description
MD 116A	The waste is packaged in 55-gallon drums with a 90-mil HDPE liner. Combustible waste is typically double bagged in 8-mil PVC. A 4-mil polyethylene bag is used to line the 90-mil HDPE drum liner. All bag closures are by the twist and tape method. If drums are overpacked in SWBs, no closed liner bags are used in the SWB.

Specific waste packaging configurations for the codes and corresponding shipping categories are shown in the following table:

WASTE PACKAGING CONFIGURATION TABLE

Code	Layers of Confinement	Hydrogen Diffusivity of Filter on Primary Payload Container* (mol/s/mol fraction) ($\times 10^{-6}$)	Shipping Category	
			Drum	SWB Overpack
MD 116A	Maximum of 3 plastic bag layers, one of which is a liner bag	1.9	30 0340 0506	30 0340 0546
		3.7	30 0340 0481	30 0340 0521

* See Introduction for explanation of hydrogen diffusivity of filter on primary payload container.

ASSAY: After loading, each drum is surveyed using an SGS counter. Assay results are used to calculate Pu-239 fissile gram equivalent (plus two times the error) and decay heat (plus error).

FREE LIQUIDS: Absorbent is placed into the TRU waste containers for absorption of any minor liquid residue that may be present. The only potential source of free liquids in combustibles are damp rags or Kimwipes, and operations with these are controlled to ensure that no free liquids can develop. Administrative control to preclude the presence of free liquids in TRU waste containers is accomplished by compliance with procedures.

EXPLOSIVES/COMPRESSED GASES: Explosives are not normally handled in areas where TRU combustible waste is packaged. Administrative procedures are in place that control the introduction of such materials into TRU waste containers.

PYROPHORIC: Pyrophoric materials are not normally handled in areas where combustible TRU waste is generated. Pyrophoric materials and combinations of potentially pyrophoric materials are not allowed to be mixed with TRU combustible wastes. The radioactive materials present in the waste (PuO_2) are essentially nonpyrophoric. Administrative control to preclude presence of pyrophoric material from TRU waste containers is accomplished by compliance with Mound procedures.

CORROSIVES: Mound technical manuals document the administrative controls that prohibit the introduction of materials into TRU combustible waste packages which could be considered as RCRA hazardous wastes. In rare cases where RCRA hazardous and TRU wastes are commingled, the quantities will be reported in the data package, and the waste package will be properly marked and labeled. Any corrosive materials are rendered noncorrosive before packaging.

CHEMICAL COMPATIBILITY: A chemical compatibility study has been performed on this content code, and all waste is chemically compatible for materials in greater than trace (>1% weight) quantities. The chemicals found in this content code are attached and are restricted to the allowable chemical lists for each waste material type found in Appendix 1.3.7 of the SAR.

ADDITIONAL CRITERIA: In accordance with Appendix 1.3.5 of the SAR, each drum is fitted with a minimum of one filter, and the rigid liner (if present) will be punctured. Each SWB is fitted with at least two and up to four filters.

SHIPPING CATEGORY: (See Waste Packaging Configuration Table)

ANALYTICAL CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattages for analytical category waste are specified in Appendix 1.3.7 of the SAR. For information purposes, the following table summarizes the maximum allowable wattages for content code MD 116.

MAXIMUM ALLOWABLE WATTAGE TABLE

Content Code	Shipping Category	Maximum Allowable Wattage Per Payload Container
MD 116A	30 0340 0506 (Drum)	0.0280
	30 0340 0481 (Drum)	0.0295
	30 0340 0546 (SWB Overpack)	0.0260
	30 0340 0521 (SWB Overpack)	0.0272

TEST CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattage for test category waste, as specified in Appendix 1.3.7 of the SAR, is 20 per drum and per packaging.

CORRELATION TABLE: This content code has previously been identified as the following IDC:

IDC	DESCRIPTION	WASTE GENERATOR
827	Combustible Waste	Mound Laboratory

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116A
IDC 827

COMBUSTIBLE WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	THORIUM	T
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	LEAD	T1
	MERCURY	T2
	THORIUM	T
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	LEAD	T1
	MERCURY	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	CELLULOSE	M
	GREASE	T
	OIL	T
	PAPER	D
	POLYBUTADIENE	T
	POLYETHYLENE	D
	POLYPROPYLENE	M
	POLYSTYRENE	M
	POLYURETHANE	T
	POLYVINYL CHLORIDE	D
	RUBBER GLOVES	M
	RUBBER GLOVES, LEADED	T
	SYNTHETIC RUBBER	M
	WOOD	M
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	WATER	T1
OTHER INORGANICS		
	HEPA FILTERS	T
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	FLORCO	M

Refer to Introduction for a description of the designations used in this chemical list.

CPS
TN
9-25-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116/216

COMBUSTIBLE WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Thorium	T
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Lead	T1
	Thorium	T
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Lead	T1
	Mercury	T2
	Thorium	T
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Cellulose	M
	Grease	T
	Oil	T
	Paper	D
	Polybutadiene	T
	Polyethylene	D
	Polypropylene	M
	Polystyrene	M
	Polyurethane	T
	Polyvinyl chloride	D
	Rubber gloves	M
	Rubber gloves (Leaded)	D
	Synthetic rubber	M
	Wood	M
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	Water	T1
OTHER INORGANICS		
	HEPA Filters	T
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	Florco	M

Refer to Introduction for a description of the designations used in this chemical list.

CP4
TN 18h
9-24-01

Comparison
to CP3

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 116/216

COMBUSTIBLE WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Thorium	T
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Lead	T1
	~~Mercury~~ not in group 23 (not solid)	~~T2~~
	Thorium	T
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Lead	T1
	Mercury Thorium-T	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Cellulose	M
	Grease	T
	Oil	T
	Paper	D
	Polybutadiene	T
	Polyethylene	D
	Polypropylene	M
	Polystyrene	M
	Polyurethane	T
	Polyvinyl chloride	D
	Rubber gloves	M
	Rubber gloves (Leaded)	D
	Synthetic rubber	M
	Wood	M
GROUP 106:	WATER AND MIXTURES CONTAINING WATER	
	Water	T1
OTHER INORGANICS		
	HEPA Filters	T
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	Florco	M

Refer to Introduction for a description of the designations used in this chemical list.

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes
Content Code ~~MD 117A~~ MD 117/217
IDC 824

NON-COMBUSTIBLE TRU WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T1
NICKEL	T1
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T
BARIUM	T2
CADMIUM	T2
COPPER	T
IRON	D
LEAD	T
SELENIUM	T2
SILVER	T2
STAINLESS STEEL	D
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BARIUM	T2
CADMIUM	T2
CHROMIUM	T
COPPER	T
LEAD	T
MERCURY	T1
SELENIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

BENELEX	T
PLEXIGLAS	T

Checked against Rev. 11 (8/97)
BH 3-14-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD ~~117A~~ 117/217
(Continued)
~~IDC 824~~

NON-COMBUSTIBLE TRU WASTE

OTHER INORGANICS

ASH	T1
GLASS, LABWARE	M
~~OTHER SOLIDIFICATION MATERIAL/ABSORBENTS~~	
CONCRETE	M

Refer to Introduction for a description of the designations used in this chemical list.

per site visit notes of 4/27/99

CONTENT CODE: MD 117 (See Waste Packaging Description and Configuration Tables)

CONTENT DESCRIPTION: Non-combustible TRU Waste

GENERATING SITE: Mound Laboratory (Mound)

WASTE DESCRIPTION: Non-combustible waste consists of glass, metal, and masonry.

GENERATING SOURCE: The waste originates from the PP Building, R Building, and SM Building at Mound.

WASTE FORM: Non-combustible wastes are composed of glass, metal, and masonry, and are generated during routine glovebox operations and during decontamination and decommissioning activities. Glass consists of analytical glassware and occasional reagent bottles. Metal includes tools, laboratory apparatus, gloveboxes, fumehoods, duct work, electrical wire and conduit, piping, pumps, fittings, sheet metal, and other miscellaneous metallic objects. Masonry consists of bricks, concrete block, pieces of poured walls or floors, and plaster.

WASTE PACKAGING: Details of the waste packaging for each code are presented in the following table:

WASTE PACKAGING DESCRIPTION TABLE

Code	Description
MD 117A	The waste is placed in both 55-gallon drums and SWBs. Drum Preparation: The drum is a 55-gallon drum with a 90-mil HDPE drum liner. Non-combustible waste is typically double bagged in 8-mil PVC. A 4-mil polyethylene bag is used to line the 90-mil HDPE drum liner. All bag closures are by the twist and tape method. Box Preparation: Larger metal items are wrapped in polyethylene for contamination control and placed in an SWB. The plastic sheeting is wrapped around the waste and is not taped or closed off like a bag. The box is equipped with at least two filters.

Specific waste packaging configurations for the codes and corresponding shipping categories are shown in the following table:

WASTE PACKAGING CONFIGURATION TABLE

Code	Layers of Confinement	Hydrogen Diffusivity of Filter on Primary Payload Container* (mol/s/mol fraction) ($\times 10^{-6}$)	Shipping Category		
			Drum	SWB Overpack	SWB
MD 117A	For drums, maximum of 3 plastic bag layers, one of which is a liner bag. For SWBs, no plastic bag layers.	1.9	20 0170 0506	20 0170 0546	NA
		3.7	20 0170 0481	20 0170 0521	20 0170 0028

* See Introduction for explanation of hydrogen diffusivity of filter on primary payload container.
NA = Not applicable.

ASSAY: After loading, both drums and SWBs are assayed by an SGS counter. Assay results are used to calculate Pu-239 fissile gram equivalent (plus two times the error) and decay heat (plus error).

FREE LIQUIDS: All containers (e.g., tanks, bottles, cans, pumps, etc.) are opened and thoroughly drained of all liquids prior to packaging per procedures documented in Mound technical manuals. In addition, absorbent materials are placed into the TRU waste container for absorption of any minor liquid residue that may remain. Administrative control to preclude presence of other free liquids in addition to those mentioned above is accomplished by compliance with Mound procedures.

EXPLOSIVES/COMPRESSED GASES: All containers (e.g., tanks, cylinders, etc.) are vented to remove all compressed and/or explosive gases. Valve and closure mechanisms are removed to prevent repressurization or entrapment of gases. Areas where TRU waste is generated typically contain no explosive wastes. Administrative controls are in place that preclude the introduction of explosives into TRU waste packages. Administrative control to preclude presence of explosives and compressed gases from TRU waste containers is accomplished by compliance with procedures.

PYROPHORIC: Pyrophoric materials are typically not handled in areas where Pu-238 waste is generated. Pyrophoric materials and combinations of potentially pyrophoric materials are not allowed to be mixed with TRU noncombustible wastes. The radioactive materials present in the waste (PuO_2) are essentially nonpyrophoric. Administrative control to preclude presence of pyrophoric material from TRU waste containers is accomplished by compliance with Mound procedures.

CORROSIVES: Administrative controls are exercised to preclude the introduction of materials into TRU noncombustible waste packages that could possibly be classified as hazardous waste per the RCRA definition. Any corrosive materials are rendered noncorrosive before packaging.

CHEMICAL COMPATIBILITY: A chemical compatibility study has been performed on this content code, and all waste is chemically compatible for materials in greater than trace (>1% weight) quantities. The chemicals found in this content code are attached and are restricted to the allowable chemical lists for each waste material type found in Appendix 1.3.7 of the SAR.

ADDITIONAL CRITERIA: In accordance with Appendix 1.3.5 of the SAR, each drum is fitted with a minimum of one filter, and the rigid liner (if present) will be punctured. Each SWB is fitted with at least two and up to four filters.

SHIPPING CATEGORY: (See Waste Packaging Configuration Table)

ANALYTICAL CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattages for analytical category waste are specified in Appendix 1.3.7 of the SAR. For information purposes, the following table summarizes the maximum allowable wattages for content code MD 117.

MAXIMUM ALLOWABLE WATTAGE TABLE

Content Code	Shipping Category	Maximum Allowable Wattage Per Payload Container
MD 117A	20 0170 0506 (Drum)	0.0561
	20 0170 0481 (Drum)	0.0590
	20 0170 0546 (SWB Overpack)	0.0520
	20 0170 0521 (SWB Overpack)	0.0545
	20 0170 0028 (SWB)	1.0206

TEST CATEGORY - MAXIMUM ALLOWABLE WATTAGE: The maximum allowable wattage for test category waste, as specified in Appendix 1.3.7 of the SAR, is 20 per drum and per packaging.

CORRELATION TABLE: This content code has previously been identified as the following IDC:

IDC	DESCRIPTION	WASTE GENERATOR
824	Noncombustible TRU Waste	Mound Laboratory

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117A
IDC 824

NON-COMBUSTIBLE TRU WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T1
NICKEL	T1
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T
BARIUM	T2
CADMIUM	T2
COPPER	T
IRON	D
LEAD	T
SELENIUM	T2
SILVER	T2
STAINLESS STEEL	D
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BARIUM	T2
CADMIUM	T2
CHROMIUM	T
COPPER	T
LEAD	T
MERCURY	T1
SELENIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

BENELEX	T
PLEXIGLAS	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117A
(Continued)
IDC 824

NON-COMBUSTIBLE TRU WASTE

OTHER INORGANICS

ASH	Tl
GLASS, LABWARE	M

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

CONCRETE	M

Refer to Introduction for a description of the designations used in this chemical list.

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217

NON-COMBUSTIBLE TRU WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T1
NICKEL	T1
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T
BARIUM	T2
CADMIUM	T2
COPPER	T
IRON	D
LEAD	T
SELENIUM	T2
SILVER	T2
STAINLESS STEEL	D
THORIUM	T
URANIUM	T
ZIRCONIUM	T2

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BARIUM	T2
CADMIUM	T2
CHROMIUM	T
COPPER	T
LEAD	T
MERCURY	T1
SELENIUM	T2
ZIRCONIUM	T2

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

BENELEX	T
PLEXIGLAS	T

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217
(Continued)

NON-COMBUSTIBLE TRU WASTE

OTHER INORGANICS

ASH	T1
GLASS, LABWARE	M
~~CONCRETE~~	~~M~~

Refer to Introduction for a description of the designations used in this chemical list.

OTHER SOLIDIFICATION MATERIAL/AB SORBENTS

CONCRETE

#3 6-26-00

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217

NON-COMBUSTIBLE TRU WASTE

GROUP 22: METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES

ALUMINUM	T1
NICKEL	T1
THORIUM	T
URANIUM * ?	T
ZIRCONIUM	T2

Add selenium.) no indication of powder TMN 9/24/01

GROUP 23: METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.

ALUMINUM	T
~~BARIUM~~	T2
CADMIUM	T2
COPPER	T
IRON	D
LEAD	T
SELENIUM	T2
SILVER * ?	T2
STAINLESS STEEL	D
THORIUM	T
URANIUM * ?	T
ZIRCONIUM	T2

← add chromium. - OK

← move to "Other Inorganics"

no - See master List of Chemicals not found in EPA List

TMN 9/24/01

GROUP 24: METALS AND METAL COMPOUNDS, TOXIC

BARIUM	T2
CADMIUM	T2
CHROMIUM	T
COPPER	T
LEAD	T
MERCURY	T1
SELENIUM	T2
ZIRCONIUM	T2

add thorium OK

Add nickel OK

GROUP 101: COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS

BENELEX * ?	T
PLEXIGLAS * ?	T

Checked against EPA "A Method for Determining the Compatibility of Hazardous Waste" (1980)

BH 3-23-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217
(Continued)

NON-COMBUSTIBLE TRU WASTE

OTHER INORGANICS

ASH	T1
GLASS, LABWARE	M

OTHER SOLIDIFICATION MATERIAL/ABSORBENTS

CONCRETE	M

Refer to Introduction for a description of the designations used in this chemical list.

CP4 TNBOSH 9-24-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217

Comparison to CP3

NON-COMBUSTIBLE TRU WASTE

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Aluminum	T1
	Nickel	T1
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Aluminum	T
	Barium	T2
	Cadmium Chromium - T	T2
	Copper	T
	Iron	D
	Lead	T
	Selenium	T2
	Silver	T2
	Stainless Steel	D
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Barium	T2
	Cadmium	T2
	Chromium	T
	Copper Nickel - T1	T
	Lead	T
	Mercury Thorium - T	T1
	Selenium	T2
	Zirconium	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Benelex	T
	Plexiglas	T
OTHER INORGANICS		
	Ash	T1
	Glass, labware	M
OTHER SOLIDIFICATION MATERIAL/ABSORBENTS		
	Concrete	M

Refer to Introduction for a description of the designations used in this chemical list.

CP6
11-30-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217

NON-COMBUSTIBLE TRU WASTE

GROUP 21:	METALS, ALKALI AND ALKALINE EARTH, ELEMENTAL AND ALLOYS	
	Barium	T2
GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Aluminum	T1
	Nickel	T1
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Aluminum	T
	Cadmium	T2
	Chromium	T
	Copper	T
	Iron	D
	Lead	T
	Selenium	T2
	Silver	T2
	Stainless Steel	D
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Barium	T2
	Cadmium	T2
	Chromium	T
	Copper	T
	Lead	T
	Mercury	T1
	Nickel	T1
	Selenium	T2
	Thorium	T
	Zirconium	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Benelex	T
	Plexiglas	T
GROUP 107:	WATER REACTIVE SUBSTANCES	
	Barium	T2

CPS TN 9-25-01

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content Code MD 117/217

NON-COMBUSTIBLE TRU WASTE

GROUP 21 Barium (per EPA)

GROUP 22:	METALS, OTHER ELEMENTAL AND ALLOYS IN THE FORM OF POWDERS, VAPORS, OR SPONGES	
	Aluminum	T1
	Nickel	T1
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 23:	METALS, OTHER ELEMENTAL AND ALLOYS, AS SHEETS, RODS, MOLDINGS, DROPS, ETC.	
	Aluminum	T
	~~Barium~~ — Not in group 23 - per EPA 3B 11-30-01	T2
	Cadmium	T2
	Chromium	T
	Copper	T
	Iron	D
	Lead	T
	Selenium	T2
	Silver	T2
	Stainless Steel	D
	Thorium	T
	Uranium	T
	Zirconium	T2
GROUP 24:	METALS AND METAL COMPOUNDS, TOXIC	
	Barium	T2
	Cadmium	T2
	Chromium	T
	Copper	T
	Lead	T
	Mercury	T1
	Nickel	T1
	Selenium	T2
	Thorium	T
	Zirconium	T2
GROUP 101:	COMBUSTIBLE AND FLAMMABLE MATERIALS, MISCELLANEOUS	
	Benelex	T
	Plexiglas	T
	OTHER INORGANICS	
	Ash	T1
	Glass, labware	M
	OTHER SOLIDIFICATION MATERIAL/ABSORBENTS	
	Concrete	M

GROUP 107 Barium (per EPA)

Mound Laboratory
List of Chemicals and Materials
in TRU Waste Content Codes

Content(Continued)
Code MD 117/217

NON-COMBUSTIBLE TRU WASTE

Refer to Introduction for a description of the designations used in this chemical list.

T-1489

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	5.10.06	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

Reference Number: U126A R1 – supersedes 1068 form only

AK Type:

- ☐ Published Documentation
- ☑ Unpublished Data
- ☐ Correspondence
- ☐ Discrepancy Report

Title of Source Document (including author(s), document and revision number, date, etc.): U. S. Department of Energy Mound Laboratory, Acceptable Knowledge for Transuranic Waste Shipped to Idaho National Engineering and Environmental Laboratory. Draft. Bill Franz, Mound. Not dated; provided to BNFL in 2003.

Information Source: Created for the AMWTP Project.

AK #[a]	AK Information Summary
WM2 WM3 WM4 WM5 WM6 WM7 MD	Draft summaries of acceptable knowledge (AK) for waste generated at Mound Laboratory that was sent to the INEEL for storage. The summary includes information relating to the Laboratory history, process operations, and waste-specific data. This source consists of two summaries. The first addresses IDCs 834, 835, and 836. The second summary (Phase II) addresses IDCs 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, and 842.
WS1, WS2, WS3, WS4, WS5, WS7, WS8	These summaries will be used to develop the formal Acceptable Knowledge baseline document for Mound Laboratory waste stored at the RWMC.
801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 834, 835, 836, 838, 842	1068 Form updated to reflect that this document also address IDC 836.

Source Document Data Limitations (if any):

Provides an overview and description of Mound processes and the waste generated, but in its present form does not sufficiently address all AK-required elements.

AK Expert:

M. L. Johnson / [signature] Date: 5/5/06

Print Sign

[a] Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form1068 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 2

Reference Number: U126A

Record
OB 10.29.03

AK Type:

- ☐ **Published Documentation**
- ☒ **Unpublished Data**
- ☐ **Correspondence**
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WM2 WM3 WM4 WM5 WM6 WM7 WS1 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835 WS2 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835 WS3 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835 WS4 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835	Draft summaries of acceptable knowledge (AK) for waste generated at Mound Laboratory that was sent to the INEEL for storage. The summary includes information relating to the Laboratory history, process operations, and waste-specific data. This source consists of two summaries. The first focuses on IDCs 834 and 835. The second summary (Phase II) addresses IDCs 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, and 842. These summaries will be used to develop the formal Acceptable Knowledge baseline document for Mound Laboratory waste stored at the RWMC.

Reference Number: U126A

WS5 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835 WS7 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842, 834, 835 WS8 – 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, 842	

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AK Expert:

Betty J. Tolman — Betty J. Tolman — Date: 9/17/03

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

4/14/03

U. S. Department of Energy Mound Laboratory
Acceptable Knowledge for Transuranic Waste Shipped to
Idaho National Engineering and Environmental Laboratory

1 Scope and Summary

1.1 Scope of Assessment

This assessment provides a review and documentation of Acceptable Knowledge of transuranic (TRU) waste generated at the Mound Laboratory and shipped to the DOE facility now known as the Idaho National Engineering and Environmental Laboratory (INEEL). Phase I presented here addresses three content codes assigned by Mound: 834, High Level Acids, 835, High Level Caustics, and 836, Solidified Sludge/Liquids. Mound shipped contact-handled (CH) TRU waste to INEEL from late 1974 through early 1988. Prior to that time, Mound TRU waste was shipped to a number of U. S. disposal sites.

Document inventory is listed in Section 4. The following summary is based primarily on "Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management" and personal knowledge.

1.2 Mound Laboratory Mission

The Mound mission began in several Dayton area facilities as part of the Manhattan Engineering District and continued with the construction of the Mound Laboratory in Miamisburg, Ohio as one of the original Atomic Energy Commission (AEC) facilities, beginning in 1946. The original mission of the facility was extraction of polonium-210. Over the years, a number of missions have been assigned Mound, including several isotope extraction projects; plutonium research and other weapons program support, tritium engineering and development, explosives research, and the manufacture of radioisotopic thermoelectric generators (RTGs).

Mound is built around a valley, named Test Fire Valley for the explosives work performed there. A map of the Mound site shows three key areas associated with generation of TRU wastes. To the southeast of Test Fire Valley is the "plutonium hill" with laboratory and production facilities devoted to plutonium work. The key facility is the Plutonium Processing (PP) Building, also called Building 38. It is often referred to in conjunction with its predecessor the Special Metallurgical (SM) Building as SM/PP. However, operations had stopped in SM and the facility dismantled in 1972.

To the north of Test Fire Valley are a group of buildings dominated by the Research or R Building, Semi-Works (SW) Building, and Technical or T Building. During the period of interest, work in SW/R and T focused on tritium. However, areas of SW/R contained laboratory and engineering areas devoted to plutonium and rare isotope work. These areas generated TRU waste. In this case, content codes 834 and 835 were generated in Building 38 and in SW/R.

On the north slope of the valley, just below SW/R, is the Waste Disposal (WD) Building where liquid wastes were gathered and processed. Other building processes will be discussed, but WD is the generator of content code 836 waste form.

1.3 Defense Related Wastes

Mound performed work that was strictly defense related, that is research, engineering, and support of weapons programs. It also contributed to non-defense areas, since RTGs were and continue to be used in both defense and civilian space programs. Details of the defense work are not within the scope of this unclassified report, but, particularly for the content codes reviewed in Phase I, the plutonium and other transuranic isotopes of interest are commingled. This point will be developed in the following sections.

2 High Level Acid and Caustic 834/835

2.1 Mound Generation Locations

2.1.1 Building 38 (PP)

Completed in December 1967, Building 38 replaced SM for processing plutonium oxide for RTGs. The material used was "heat source" plutonium, primarily Pu-238. In 1974, a modification was completed, including the waste solidification (WS) facility for high-risk waste streams. Prior to 1967, high-risk waste was processed at SM. From 1967 until 1974, this waste was handled in an annex to WD, WDA. Building 38 handled unencapsulated plutonium oxide until early 1979 when Savannah River began supplying encapsulated sources. Plutonium recovery continued until 1982.

Key facilities in Building 38 were F-Line, a shielded facility for assembly of generator units containing higher levels of gamma emitting isotopes; A-Line, the primary plutonium processing glovebox line in Room 113; and a smaller glovebox line for metallurgical laboratory operations in Room 111.

2.1.2 SW/R

Because they are physically joined, SW, R, and related facilities are considered as the SW/R complex. Historically, R Building was built in 1948 with missions of tritium recovery, plutonium development work, and analytical support. SW was built in 1950 and has undergone 13 major additions. SW missions included tritium recovery and purification, tritium component development, component evaluation, materials analysis, and research on plutonium, actinium, radium, uranium, thorium, and protactinium.

R includes a "hot" and a "cold" side. Note that, during decommissioning, several gloveboxes from the R-140 laboratory area were characterized as TRU waste.

For purposes of the ongoing decommissioning, SW has been divided into areas. Area A is the accountable tritium area, and includes tritium component evaluation. Area B includes the effluent recovery system (ERS) and a thermal diffusion system associated with tritium work. Area C contained the Nuclear Component Development and Pre-production Facility (NCDPF), which, in the mid-60's, performed tritium development, environmental testing, and weld development. Area C included the "new cave" where transuranic processing was performed, and recently U-233 repack operations. SW-22 in Area C generated the only TRU glovebox in SW during decommissioning. Area D is a non-radiological area. Area E was a metallographic laboratory. Area F contained Tritium Operations, including a mass spectrometry laboratory and processing and disassembly of components. This area included a large vertical lathe in SW-19. Area G

includes the "old cave", an entombed facility under SW-13, -18, and –19, and an alpha filter bank. The "old cave" was historically used for actinium processing.

2.2 Volume and Timing of Generation

Data provided by INEEL for this study indicates 901 containers (55 gal. drums) of High Level Acid 834 packed from 14Jan1975 through 23Mar1980, and 1675 containers of High Level Caustic packed from 05Nov1974 through 08Apr1985. Note that acid and caustic liquid wastes from plutonium production and recovery processes were mixed after December 1976, with the result generally basic. While this was not the only source of 834, the volume of acid waste generated was reduced.

Besides plutonium recovery, component cleaning, assay standards, and possibly other processes generated these content codes, though in smaller volumes. For example, containers remaining at Mound following the halt in shipping in 1988 included 4 drums of 834, one packed 30Mar1979 in PP-52 and believed to be an assay standard, and three packed between 07Aug1979 and 20Oct1980 in R-149 with no description beyond the code. There were 3 drums of 835, one packed on 20Apr1984 in R-140 described as "cleaning solution" and two packed 06May1987 in PP-13 described as "Caustic and Florco". (Based on historic waste input forms.)

Note that some drums may have been repacked because of damage to the original drum or for other reasons. The record date is then the repack date, and the history is often not available.

2.3 Generation Processes

The processes that generated content code 834 and 835 TRU waste can be summarized as pressed plutonium oxide (PPO) sphere or plutonium-molybdenum cermet (PMC) production, plutonium and other isotope recovery, cleaning or leaching of items, and construction of assay standards. In some cases, such as the leaching of plutonium from leaded gloves, the solution was probably introduced to the recovery process. The number of standards containers is small, and observation of containers remaining at Mound indicates that these are usually identified on the Waste Input Form.

Although these processes occurred earlier in SM and WDA, for the period of interest beginning in late 1974, it appears that these processes occurred in Building 38 (PP) and in R Building. Likewise, although plutonium metal was used in RTGs, it was discontinued prior to the period of interest.

2.3.1 Building 38 PPO and PMC Production

The PPO process shown in Figure 2.3 of the OU 9 report involved either a microsphere or shard process for which all but a few steps were identical. The process began by transferring Pu-238 oxide into the glovebox. The oxide was unloaded from its container and dissolved in a mixture of nitric and hydrofluoric acids to provide a 2.0 to 2.5 normal (N) hydrogen ion concentration. If necessary, a valence adjustment was made, and the resulting solution was treated with ammonium hydroxide to precipitate a plutonium hydroxide. The solution was filtered, and the plutonium precipitate was washed with dilute ammonium hydroxide solution. Note that liquid waste was generated at this step. The washed precipitate was then vacuum dried for 1 to 2 hours and air dried overnight. The dried plutonium precipitate was crushed to produce a fine powder. The ratio of isotopes in the final production was 80% Pu-238, 16% Pu-239, 3% Pu-240, 0.8% Pu-

241, and 0.2% Pu-242, "heat source" plutonium. The subsequent microsphere process did not produce liquid waste and is not discussed here.

The PMC process used as a heat source a cermet consisting of a sintered granular plutonium dioxide coated with molybdenum. The cermet was processed to produce a solid material that could be machined. The PMC process is shown in Figure 2.4 of the OU 9 report, and is identical to the PPO process to the point in which the precipitate is sintered. Again note that the filtrate is a liquid waste, and this flow chart illustrates the separation of liquid exceeding the economic discharge limit that is sent to recovery, and the liquid below the limit, which sent to waste disposal. The WD in these charts signifies waste disposal, not necessarily at WD Building.

2.3.2 Building 38 Plutonium Recovery

Plutonium production activities resulted in line-generated byproducts and waste materials that were evaluated for appropriate treatment, recovery, and disposition. The recovery of plutonium for production activities represented a significant element of the program. The following discussion addresses the processing that was conducted in Building 38 beginning in 1967.

The plutonium recovery processes are shown in Figure 2.6 of the OU 9 report as they had developed by 1973. In gloveboxes, solid objects contaminated with plutonium would be washed or leached in water or acid solutions with the aid of ultrasonic cleaning equipment. Following this step, the objects would be gamma scanned or wiped and counted. They were then returned to their original use or, based on the activity, they were declared high- or low-risk waste. The wash water and leachate were sent to plutonium recovery. High temperature-fired oxide and ceramic RTG materials not meeting product specifications were dissolved in a mixture of nitric and hydrofluoric acid or underwent fusion with pyrosulfate. Glass fiber filters were dissolved in a hydrofluorinator-pressurized vessel, and the volatile silicon tetrafluoride generated in the process was removed via a caustic scrubber. The highly acidic solutions containing plutonium were sent to the plutonium recovery process. The caustic scrubber solutions were designated as recoverable, high-risk, or low-risk waste, based on the economic discard limit, and either sent to recovery or waste treatment. Other solid materials containing recoverable plutonium or off-specification RTG material that resisted efforts at dissolution would undergo pyrosulfate fusion followed by dissolution.

2.3.3 R Building Plutonium and Other Isotope Recovery

U-234 was extracted from aged Pu-238 in R and SM from 1962 to 1972. The process utilized tri-n-octylphosphine (TOPO), which was recycled and finally absorbed on Florco in one and four-liter plastic bottles and shipped as waste. Given the time frame, it is unlikely this material was shipped to INEEL.

2.3.4 Other Processes Generating 834/835

Research activities, metallography, and decontamination of laboratory equipment and components using acid or caustic material in SW/R and Building 38 also generated small amounts of content code 834 and 835. Chemical analysis of samples in R also generated small amounts.

Assay standards are also known to have been constructed by adding solutions of known plutonium contend to absorbent in small (1, 2, and 4-l) plastic bottles placed in 55-gal drums to simulate waste drums.

2.4 Form and Content

2.4.1 Physical Form

In every case, 834/835 wastes are absorbed on vermiculite, Florco, Autodri, or Sorbal. Autodri and Sorbal are Fuller's Earth based, that is they contain diatomaceous earth. The calcium carbonate was found to react with acids to generate carbon dioxide, which presented an off gassing problem that delayed closure of waste containers. These absorbents were discontinued in 1976. Vermiculite is mentioned only in connection with WDA, which discontinued processing high-risk waste in 1974. Florco, absorbent clay, is the primary absorbent used, and the only one after 1976.

The absorbed material was packed in 55-gal drums containing rigid high-density polyethylene (HDPE) liners 90-mil thick. The liner lids were punctured to allow release of gas, and the drum closed with a lid held in place by a bolted ring. The drums were vented either through a permeable gasket or a sintered carbon filter installed in the lid. In some cases, particularly where small amounts of waste were being disposed, the absorbent was placed in 1, 2 or 4-l plastic bottles.

Procedures ensured that sufficient absorbent was used to eliminate the possibility of free liquid in the containers. Real time radiography (RTR) of 4 drums of 834 and 2 drums of 835 conducted in 2000 at Mound on legacy TRU verified no free liquid. The subject drums had been packed between 30Mar1979 and 06May1987.

Observation of legacy waste at Mound between 1999 and 2001 indicates that waste drums were on some occasions placed in waste boxes. It is unknown whether any drums of 834/835 were so overpacked.

2.4.2 Radionuclide Content

In the plutonium recovery process, solutions at various points in the process were sampled and analyzed using alpha spectroscopy in Building 38 or R. This step was key to separate materials to be recycled from those below the discard limit to be sent to waste disposal. It provided an accurate determination of the radionuclides. As noted earlier, "heat source" material comprises the bulk of the waste. Its plutonium isotopes would normally be split: 80% Pu-238, 16% Pu-239, 3% Pu-240, 0.8% Pu-241, and 0.2% Pu-242. Am-241 would also be present and has been detected in most legacy TRU containers at Mound. Note, however, that weapons grade material comprising primarily Pu-239 and research materials with other isotopic ratios may be present in the waste. Pu-238: Pu-239 ratios indicating this have been observed in gamma spectroscopy of legacy TRU containers at Mound.

Again reviewing gamma spectroscopy of legacy TRU at Mound, U-234 and U-238 were measured only in one drum of "orphan sources". However, U-234 is expected in the aged plutonium. U-233 was measured in the orphan source drum, in drums originating in SW-22, and in the dismantled Building 38 corrosive vapor system that collected fumes from the gloveboxes. Cs-137 was measured in the same containers plus boxes of the

dismantled Building 38 A-Line, the production glovebox. Sr-90 was not reported, but would be expected to be present where Cs-137, also a fission product, was observed.

Because cleaning and decontamination of components in all of the alpha areas generated 834/835 wastes, any of the WIPP isotopes may be expected in these waste content codes. The plutonium isotopes will dominate, ~~however.~~

2.4.3 Hazardous Constituents.

The following chemicals are identified in the plutonium recovery process: nitric acid, hydrofluoric acid, hydroxylamine, sodium carbonate, ferrous sulfamate, and sodium hydroxide. No mention of heavy metals in the high-risk waste is made, however low risk waste may include small amounts of tantalum, molybdenum, iron, chromium, nickel, and lead. Since high and low risk wastes differ only in their plutonium content, these metals could be expected in high-risk waste as well. Lead gloves were leached to remove plutonium in Building 38, so lead cannot be ruled out.

3 Solidified Sludge/Liquid 836

3.1 Mound Generation Location

Waste content code 836 Solidified Sludge/Liquid was generated in the Waste Disposal (WD) Building. Inputs to WD, however, were from many site locations. During the time period of interest, these include:

- Until 1976, pipeline from Building 38 for low risk waste
- From 1976 on, tanker truck bringing low risk waste from Building 38
- Drains, sumps, showers, and laboratory sinks from SW/R
- WD drains, sumps, and laboratory sinks
- H Building (laundry) drains
- Building 23 (mixed waste storage) sump (in drums)
- Drummed water from T and HH.

T and HH drums go to the beta waste water system, not to the alpha system generating 836. Building 23 would send sump waste only in the event of a spill after sampling and analysis. No such inputs have been identified.

3.2 Volume and Timing of Generation

Data provided by INEEL for this study indicates 4178 containers (55 gal. drums) of Solidified Sludge/Liquids packed from 22Nov1974 through 13Jun1985.

3.3 Generation Processes

3.3.1 WD Processes

Figure 4.2 of the OU 9 report shows the process flow for the alpha wastewater in the WD Building. There are four 30,000-gallon influent tanks constructed of epoxy-coated steel outside the north wall of the WD Building in a belowground concrete vault. These tanks served as feed tanks for the clariflocculators in the alpha wastewater treatment system. Alpha-contaminated wastewater was pumped into the tanks through pipelines from the H, R, SW, and WD buildings and delivered by tanker trucks from the SM/PP Building complex. The pH was adjusted from 11.0 to 11.5 by the addition of sodium hydroxide to the tanks. Activated carbon, calcium chloride, and ferric sulfate were added in varying predetermined quantities to provide absorption, flocculation, scavenging, and phosphate

precipitation. Two mixers in each tank to provided agitation and kept the solids from settling. The wastewater was then pumped from the tanks to the clariflocculators.

The heart of the low-risk alpha wastewater treatment system consisted of two clariflocculators, two sand filters, two bone char columns, four effluent storage tanks, two sludge pits, and a sludge solidification and drumming unit. The bone char filters were used for about 20 years. In 1973, Mound received a patent for the bone char process. The filters consisted of natural calcium hydroxapatite, a product prepared from cattle bones. Wastewater treated with additives (carbon, calcium chloride), flocculent (ferric sulfate, Nalco 676), and pH-adjusting chemicals (sodium hydroxide) was discharged into one of two 60,000-gallon clariflocculators for settling. The remaining clariflocculator was a standby unit.

The sludge from the clariflocculators was pumped into two 1,000-gallon sludge pits where it was sampled on a batch basis to determine activity level, specific gravity, and solids content. The sludge was then discharged to the sludge solidification and drumming unit where it was solidified with cement in 55-gallon steel (17C) drums lined with high-density polyethylene TRU liners. If the analytical results showed that the sludge was non-TRU, the sludge was solidified with cement in 55-gallon (17H) drums with no liners. The solidified sludge was staged in Building 23 for shipment and off-plant disposal. See MD-70180, Mound Radioactive Liquid Waste Disposal, Operation 705, Sludge Sample Analysis.

3.3.2 Processes Inputting to WD

There were several sources of alpha wastewater at Mound, including the H, R, SW, SM, and WD buildings, Building38, and the old alpha waste line. The SW and R buildings are addressed as the SW/R complex. Similarly, the SM Building and Building 38 now shared the same system for the disposal of alpha wastewater and will be addressed as the SM/PP complex.

Floor drains in these buildings discharged materials to the alpha wastewater treatment system. Materials common to the building's floor drains included soapy shower water, mop and plutonium decontamination water, cleansers and detergents, oils, paint, alcohol, and acetone. Approximately 200 pounds per year of acids (nitric, sulfuric, hydrochloric, and hydrofluoric) were discharged into drains from laboratory sinks. Sources from the individual buildings are discussed in the following subsections.

The H Building housed the laundry facilities for both uncontaminated (cold) and historically contaminated (hot) clothing for Mound. All of the water generated at the H Building from the laundry, the floor drains, and a sink was collected in a holding tank on the "hot side" of the building. The water then drained through a pipe to a lift station at the SW Building. From the lift station, the H Building water was pumped to the WD Building alpha wastewater influent tanks.

Products used in the H Building that entered this waste stream included liquid soap that contained ethylene glycol monobutyl ether and sodium hydroxide, powdered soap that contained ammonium bicarbonate and sodium hexametaphosphate, and fabric softener.

Although the SW/R complex was mainly devoted to tritium processing, a small section, known as the alpha side, handled alpha-emitting radionuclides such as plutonium-238 and –239. The sink and floor drains from these laboratories are connected to a sump

equipped with a steam lift pump that pumped the wastewater to the R Building and then to the WD Building alpha influent tanks. Mound personnel report that they have not been used since 1989 or 1990. (For the last several years that the area was in operation, the wastes were pumped from the sump to 30-gallon drums, then transported to the WD Building.) When the area was in use, it served as a research and development laboratory, mostly involving solvent extraction. Chemicals used included carbon tetrachloride, dichloromethane, trichloroethane, organophosphate, nitric acid, and sulfuric acid.

Yearly estimates of waste materials sent to the WD Building from the R Building laboratories included hydrogen peroxide; ammonium hydroxide; hydrofluoric, nitric, sulfuric and lactic acids (approximately 7 pints total); methanol, propanol, mineral oil, ethanol, acetone and trichlorethylene (approximately 5 pints total); sodium sulfite solution (approximately 1 pint); and 86 pounds of various chemicals including potassium and copper sulfates and carbonates and sodium hydroxide/lime.

Building 38 wastewater sources included floor drains, shower water, sinks, and a laboratory. Wastewater from these sources drained to two 500-gallon sumps in Building 38. This sump water was then pumped to a 10,000-gallon tank on the west side of Building 38. From this tank, the water was pumped to a 5,000-gallon tanker truck, which transported it to the WD Building. At the WD Building, the tanker truck contents were pumped into the WDA Building tanks for treatment. The tanker truck transported waste approximately once per week. The hauling capacity of the truck was administratively limited to 3,500 gallons.

The laboratory in Building 38 performed a variety of analytical procedures, such as mass spectrometry, calorimetry, ion exchange, radiochemical separations, liquid scintillation, gamma spectroscopy, and plating of alpha samples for counting. With the exception of liquid scintillation vials, which were bagged for pickup by Mound waste management personnel as mixed wastes and sent to Building 23, all spent chemicals were assumed to be radioactively contaminated and are poured down the sink drains. The drains are connected to the Building 38 10,000-gallon tank. Chemicals used in the laboratory included acetone, nitric acid, sulfuric acid, sodium hydroxide, and acetic acid. Trichloroethane was once used in the SM/PP complex as a degreaser for metal parts.

With the exception of the toilets, which were connected to the sanitary sewer system, all of the floor and sink drains in the WD Building were connected to the sumps in the basement of the building. The basement and sub-basement each had sumps that were connected to the four 30,000-gallon influent storage tanks. Similarly, the floor drains in the WDA Building were connected to a sump in the WDA basement. This sump was then connected to two 3,750-gallon tanks. These two tanks were pumped to one of the four 30,000-gallon WD alpha influent tanks.

There was a small laboratory in the WD Building where the alpha and beta waste streams were analyzed and a small amount of other work was done. The laboratory was used to perform pH analyses, sludge moisture analyses, and influent and effluent scintillation counts. This laboratory was not used on a routine basis, but the sink was connected to the WD sumps described above. Hazardous compounds used in the laboratory included Instagel, which has a xylene base. Liquid scintillation analysis was also performed in this laboratory, and a container of the cocktail mixture was kept in a

fume hood. After use, the vials were bagged as mixed wastes for collection by the Mound waste management department and taken to Building 23 for storage.

3.4 Form and Content

All 836 waste is a cemented solid. Content is as described above.

4 Mound AK Document Inventory IDC 834, 835, 836

Technical Manual MD-20734, Plutonium Processing – Material Control, Issue 4, September 15, 1973.

Technical Manual MD-70205, TRU Waste Management, Issues 5 (marked Issue 4), 6, 7, 11, 12, 13, and 20, February 2, 1989.

Technical Manual MD-21825, Issue 1, Assay of Pu-238 Contaminated Waste in Drums, April 19, 1985.

Technical Manual MD-21912, Issue 1, Measurement Control Procedures: Segmented Drum Assay System, October 2, 1986.

Technical Manual MD-21824, Issue 2, Assay of Pu-238 Contaminated Waste in Boxes, November 21, 1984.

Technical Manual MD-10203, Issue 1 + Issue 6, Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste, June 1, 1985 and April 14, 1989.

Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, Mound Plant, Miamisburg, Ohio, February 1993, Department of Energy Albuquerque Field Office.

MD-70180, Mound Radioactive Liquid Waste Disposal, all 700 operations, including Operation 705, Sludge Sample Analysis, Issues 1, 2, 3, 5, and 6.

PD-80026, Standard Analytical Procedures, Operation 815, Determination of Plutonium-238 in WD Sludge.

U. S. Department of Energy Mound Laboratory
Acceptable Knowledge for Transuranic Waste Shipped to
Idaho National Laboratory
Phase II

1 Scope and Summary

1.1 Scope of Assessment

This assessment provides a review and documentation of Acceptable Knowledge of transuranic (TRU) waste generated at the Mound Laboratory and shipped to the DOE facility now known as the Idaho National Laboratory (INL). Phase II presented here addresses content codes assigned by Mound: 801, 802, 803, 804, 805, 810, 811, 813, 814, 815, 824, 825, 826, 827, 838, and 842. Mound shipped contact-handled (CH) TRU waste to INEEL from late 1974 through early 1988. Prior to that time, Mound TRU waste was shipped to a number of U. S. disposal sites.

The following summary is based primarily on "Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management" and personal knowledge. Some general information is repeated from the Phase I report for clarity. No additional documentation is included.

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The Mound mission began in several Dayton area facilities as part of the Manhattan Engineering District and continued with the construction of the Mound Laboratory in Miamisburg, Ohio as one of the original Atomic Energy Commission (AEC) facilities, beginning in 1946. The original mission of the facility was extraction of polonium-210. Over the years, a number of missions have been assigned Mound, including several isotope extraction projects, plutonium research and other weapons program support, tritium engineering and development, explosives research, and the manufacture of radioisotopic thermoelectric generators (RTGs).

Mound is built around a valley, named Test Fire Valley for the explosives work performed there. A map of the Mound site shows three key areas associated with generation of TRU wastes. To the southeast of Test Fire Valley is the "plutonium hill" with laboratory and production facilities devoted to plutonium work. The key facility is the Plutonium Processing (PP) Building, also called Building 38. It is often referred to in conjunction with its predecessor the Special Metallurgical (SM) Building as SM/PP.

To the north of Test Fire Valley are a group of buildings dominated by the Research or R Building, Semi-Works (SW) Building, and Technical or T Building. During the period of interest, work in SW/R and T focused on tritium. However, areas of SW/R contained laboratory and engineering areas devoted to plutonium and rare isotope work. These areas generated TRU waste.

On the north slope of the valley, just below SW/R, is the Waste Disposal (WD) Building where liquid wastes were gathered and processed.

1.3 Defense Related Wastes

Mound performed work that was strictly defense related, that is research, engineering, and support of weapons programs. It also contributed to non-defense areas, since

RTGs were and continue to be used in both defense and civilian space programs. Details of the defense work are not within the scope of this unclassified report, but the plutonium and other transuranic isotopes of interest are commingled. This point will be developed in the following sections.

2 Mound Generation Locations

2.1 Building 38 (PP)

Completed in December 1967, Building 38 replaced SM for processing plutonium oxide for RTGs. The material used was "heat source" plutonium, primarily Pu-238. In 1974, a modification was completed, including the waste solidification (WS) facility for high-risk waste streams. Prior to 1967, high-risk waste was processed at SM. From 1967 until 1974, this waste was handled in an annex to WD, WDA. Building 38 handled unencapsulated plutonium oxide until early 1979 when Savannah River began supplying encapsulated sources. Plutonium recovery continued until 1982.

Key facilities in Building 38 were F-Line, a shielded facility for assembly of generator units containing higher levels of gamma emitting isotopes; A-Line, the primary plutonium processing glovebox line in Room 113; and a smaller glovebox line for metallurgical laboratory operations in Room 111.

2.2 SW/R

Because they are physically joined, SW, R, and related facilities are considered as the SW/R complex. Historically, R Building was built in 1948 with missions of tritium recovery, plutonium development work, and analytical support. SW was built in 1950 and has undergone 13 major additions. SW missions included tritium recovery and purification, tritium component development, component evaluation, materials analysis, and research on plutonium, actinium, radium, uranium, thorium, and protactinium.

R includes a "hot" and a "cold" side. Note that, during decommissioning, several gloveboxes from the R-140 laboratory area were characterized as TRU waste.

For purposes of the ongoing decommissioning, SW has been divided into areas. Area A is the accountable tritium area, and includes tritium component evaluation. Area B includes the effluent recovery system (ERS) and a thermal diffusion system associated with tritium work. Area C contained the Nuclear Component Development and Pre-production Facility (NCDPF), which, in the mid-60's, performed tritium development, environmental testing, and weld development. Area C included the "new cave" where transuranic processing was performed, and recently U-233 repack operations. SW-22 in Area C generated the only TRU glovebox in SW during decommissioning. Area D is a non-radiological area. Area E was a metallographic laboratory. Area F contained Tritium Operations, including a mass spectrometry laboratory and processing and disassembly of components. This area included a large vertical lathe in SW-19. Area G includes the "old cave", an entombed facility under SW-13, -18, and –19, and an alpha filter bank. The "old cave" was historically used for actinium processing.

2.3 Soil Areas

3 Volume and Timing of Generation

Data provided by INL for this study indicates the following subject containers:

IDC	Description	Number	Package Dates
801	Rags, paper, wood, etc.	35	25-Feb-1977 to 18-Nov-1982
802	Dry box gloves and O-rings	121	21-Feb-1975 to 09-Oct-1981
803	Metal, equipment, pipe, valves, etc.	180	27-Dec-1974 to 12-Mar-1982
804	Plastic, tygon, boots, etc.	220	21-Mar-1976 to 08-Jan-1982
805	Asbestos filters	38	20-Mar-1975 to 08-Jan-1982
810	Glass, flasks, sample vials, etc.	13	18-Mar-1976 to 21-Feb-1980
811	Evaporator and dissolver sludge	4	02-Nov-1976 to 26-Mar-1977
813	Glass filters and fiberglass	3	14-Oct-1976
814	Graphite	2	22-Jul-1976 to 24-Jun-1977
815	Classified parts	2	16-Jul-1981 to 08-Jan-1982
824	Equipment boxes, noncombustible	381	23-Apr-1975 to 06-Jun-1986
825	Equipment drums, noncombustible	236	28-Feb-1975 to 13-Nov-1985
826	Equipment boxes, combustible	33	13-Mar-1981 to 08-Jan-1988
827	Equipment drums, combustible	9	20-Sep-1982 to 11-Jun-1985
838	< 10 nCi/g, noncombustible	1	06-Jan-1975
842	Contaminated soil	39	12-Mar-1975 to 28-Jan-1987

The OU-9 report estimates a total of 141,000 ft^3 (4000 m^3) of TRU waste was shipped from Mound to Idaho. Assuming 0.2 m^3 for a drum and 4 m^3 for a box, the IDCs described in Phase I comprise about 1400 m^3, the Phase II IDCs 2000 m^3 shipped to Idaho between February 1975 and January 1988. The difference may be due to the change in TRU definition from 10 nCi/g to 100 nCi/g in 1982.

4 Generation Processes

The processes that generated these content codes waste can be summarized as pressed plutonium oxide (PPO) sphere or plutonium-molybdenum cermet (PMC) production, plutonium and other isotope recovery, laboratory activities, soil remediation, and facility demolition. There were also classified activities that are not included in this report.

Although these processes occurred earlier in SM and WDA, for the period of interest beginning in late 1974, it appears that these processes occurred in Building 38 (PP) and in R Building. Likewise, although plutonium metal was used in RTGs, it was discontinued prior to the period of interest.

4.1 Building 38 PPO and PMC Production

The PPO process shown in Figure 2.3 of the OU 9 report involved either a microsphere or shard process for which all but a few steps were identical. The process began by transferring Pu-238 oxide into the glovebox. The oxide was unloaded from its container and dissolved in a mixture of nitric and hydrofluoric acids to provide a 2.0 to 2.5 normal (N) hydrogen ion concentration. If necessary, a valence adjustment was made, and the resulting solution was treated with ammonium hydroxide to precipitate a plutonium hydroxide. The solution was filtered, and the plutonium precipitate was washed with dilute ammonium hydroxide solution. The washed precipitate was then vacuum dried for 1 to 2 hours and air dried overnight. The dried plutonium precipitate was crushed to

produce a fine powder. The ratio of isotopes in the final production was 80% Pu-238, 16% Pu-239, 3% Pu-240, 0.8% Pu-241, and 0.2% Pu-242, "heat source" plutonium.

The PMC process used as a heat source a cermet consisting of a sintered granular plutonium dioxide coated with molybdenum. The cermet was processed to produce a solid material that could be machined. The PMC process is shown in Figure 2.4 of the OU 9 report, and is identical to the PPO process to the point in which the precipitate is sintered.

4.2 Building 38 Plutonium Recovery

Plutonium production activities resulted in line-generated byproducts and waste materials that were evaluated for appropriate treatment, recovery, and disposition. The recovery of plutonium for production activities represented a significant element of the program. The following discussion addresses the processing that was conducted in Building 38 beginning in 1967.

The plutonium recovery processes are shown in Figure 2.6 of the OU 9 report as they had developed by 1973. In gloveboxes, solid objects contaminated with plutonium would be washed or leached in water or acid solutions with the aid of ultrasonic cleaning equipment. Following this step, the objects would be gamma scanned or wiped and counted. They were then returned to their original use or, base on the activity, they were declared high- or low-risk waste. The wash water and leachate were sent to plutonium recovery. High temperature-fired oxide and ceramic RTG materials not meeting product specifications were dissolved in a mixture of nitric and hydrofluoric acid or underwent fusion with pyrosulfate. Glass fiber filters were dissolved in a hydrofluorinator-pressurized vessel, and the volatile silicon tetrafluoride generated in the process was removed via a caustic scrubber. The highly acidic solutions containing plutonium were sent to the plutonium recovery process. The caustic scrubber solutions were designated as recoverable, high-risk, or low-risk waste, based on the economic discard limit, and either sent to recovery or waste treatment. Other solid materials containing recoverable plutonium or off-specification RTG material that resisted efforts at dissolution would undergo pyrosulfate fusion followed by dissolution.

U-234 was also recovered from Pu-238 in Building 38 thru 1972 (see 4.3)

4.3 SW/R Building Operations

U-234 was recovered from Pu-238 using a solvent extraction process involving nitric acid, aluminum nitrate, and tri-n-octylphosphine oxide (TOPO). See Figure 2.11 in the OU-9 report. This generated solid waste paper, glassware, metal, spent ion exchange resin, rubber, and leaded gloves.

Small-scale plutonium recovery operations were conducted in R until 1967 (see 4.2). Research and development solvent extraction continued, using carbon tetrachloride, dichloromethane, trichloroethane, organophosphate, nitric acid, and sulphuric acid.

4.4 Laboratory Operations

Research activities, metallography, and decontamination of laboratory equipment and components using acid or caustic material were conducted in SW/R and Building 38. Chemical analysis of samples was performed in R.

4.5 Soils

The primary source of soils was the waste transfer system (WTS) pipeline from the SM/PP complex to WD Building. In 1969, the high-risk line ruptured near WD, creating a highly contaminated spill area. Legacy soil remaining at Mound from this spill had levels as high as 540 nCi/g, primarily Pu-238. In addition, the entire WTS and associated soil was removed. Contaminated soil, including some concrete and rebar, was removed from the SM foundation during demolition. Most was below TRU levels, but this is a possible source of TRU soil.

4.6 Facility Demolition

The OU-9 report states that all TRU waste generated since 1980 is "D&D" waste resulting from decontamination, decommissioning, and demolition of alpha facilities. The subject facilities in Building 38 (PP), SW/R, or SM were glovebox lines and support equipment. The WTS pipeline, which ran from SM/PP to WD was also removed. Waste generated included gloveboxes, piping and ductwork, in-line equipment, filters, conveyors, framing, clothing, rags, Kimwipes, shoe covers, leaded gloves, etc,

5 Form and Content

5.1 Physical Form

The physical form of each IDC is described below along with the reference providing the description. Note that several IDCs were not found in the referenced material. All materials were packed in coated one-gallon cardboard cartons or half-gallon paint cans and plastic bags, unless otherwise noted.

Category 801-Combustibles was originally intended for incineration on-site and includes easily burned material, such as wood, rags, paper, and cartons. Polyvinyl chloride was excluded, as was bulk polyethylene. Plastic sheeting was allowed. Tygon tubing was excluded. (MD-20734)

Category 802-Gloves included only alpha-box gloves, not rubber or other gloves. The original instruction was to separate the more highly contaminated glove hand and package separately from the arm, but observation of later packages indicates that this was not always the case. (MD-20734)

Category 803-Noncombustibles includes metal objects, equipment, pipes, and valves, all metal. (MD-20734)

Category 804-Noncombustibles includes plastics, tygon tubing, rubber gloves, and non-burnables. Alpha-box gloves, metal, and glass are excluded. (MD-20734)

Category 805-Internal Box Filters includes both supply and exhaust filters from gloveboxes. These filters were primarily asbestos, and so other asbestos waste was allowed in this IDC. (MD-20734)

Category 810-Noncombustibles includes glass vials, beakers and other glassware exclusively. (MD-20734)

Category 811-Processing Sludge includes oven-dried sludge from evaporators (acidic) and filters (caustic). This material was packed in stainless steel half-gallon paint cans. (MD-20734)

Category 813-Glass Filters are spun glass, either in bulk, in four-inch or ten-inch filters. (MD-20734)

IDCs 814 and 815 were not identified in the documentation obtained for this report.

Category 824-Boxed Contaminated Equipment originally included equipment too large to fit in a drum (MD-20734). Gloveboxes and windows are given as examples. Later documents (MD-70205, Issue 7) include all non-combustibles in this category. The lower-numbered IDCs discussed above are no longer mentioned in this document.

Category 825-Drummed Contaminated Equipment originally included equipment too large to fit in a carton (MD-20734). Later documents (MD-70205, Issue 7) include all non-combustibles in this category. The lower-numbered IDCs discussed above are no longer mentioned in MD-70205.

Category 826-Equipment Boxes, Combustible and Category 827-Equipment Drum, Combustible include all combustible materials (MD-70205, Issue 7).

Note: "General" IDCs 824-827 are likely to be combinations of others. Review of waste input forms for TRU waste recently shipped from Mound to Savannah River indicates IDC 825 drums containing 802, 803, 804, 805, 810, and 811. IDC 827 drums include 802, 803, and 804 in their contents.

Category 842-Soils includes soil, primarily from the WD hillside and WTS pipeline, but may include concrete and rebar from the SM foundation.

5.2 Radionuclide Content

In the plutonium recovery process, solutions at various points in the process were sampled and analyzed using alpha spectroscopy in Building 38 or R. This step was key to separate materials to be recycled from those below the discard limit to be sent to waste disposal. It provided an accurate determination of the radionuclides. As noted earlier, "heat source" material comprises the bulk of the waste. Its plutonium isotopes would normally be split: 80% Pu-238, 16% Pu-239, 3% Pu-240, 0.8% Pu-241, and 0.2% Pu-242. Am-241 would also be present and has been detected in most legacy TRU containers at Mound. Note, however, that weapons grade material comprising primarily Pu-239 and research materials with other isotopic ratios may be present in the waste. Pu-238: Pu-239 ratios indicating this have been observed in gamma spectroscopy of legacy TRU containers at Mound.

Again reviewing gamma spectroscopy of legacy TRU at Mound, U-234 and U-238 were measured only in one drum of "orphan sources". However, U-234 is expected in the aged plutonium. U-233 was measured in the orphan source drum, in drums originating in SW-22, and in the dismantled Building 38 corrosive vapor system that collected fumes from the gloveboxes. Cs-137 was measured in the same containers plus boxes of the dismantled Building 38 A-Line, the production glovebox. Sr-90 was not reported, but would be expected to be present where Cs-137, also a fission product, was observed.

Because soil contamination resulted from spills of liquid waste, any of the WIPP isotopes may be expected in IDC 842.

5.3 Hazardous Constituents.

Homogeneous IDCs (811 and 842) may contain hazardous constituents. Mound tested remaining 842 soils prior to blending with low-level soil for shipment to NTS and found no hazardous materials. However, as noted in the Phase I report, any material used in a process generating liquid waste may be found in the liquid and subsequently in the soil. The plutonium recovery process generated IDC 811. The following chemicals are identified in the plutonium recovery process: nitric acid, hydrofluoric acid, hydroxylamine, sodium carbonate, ferrous sulfamate, and sodium hydroxide. No mention of heavy metals in the high-risk waste is made, however low risk waste may include small amounts of tantalum, molybdenum, iron, chromium, nickel, and lead. Since high and low risk wastes differ only in their plutonium content, these metals could be expected in high-risk waste as well.

The remaining waste forms are debris. Two known hazardous materials present are lead, primarily in glovebox gloves, and mercury. Mercury was used in Teplar pumps in some gloveboxes, and the author observed and removed liquid mercury from TRU drums in storage at Mound.

No PCB material is reported in the OU-9 report, but recently a press that used PCB oil as hydraulic fluid and a small amount of solidified PCB oil were shipped to Savannah River from Mound. The press had been used at the SM/PP complex.

The issue of debris waste and the solvents and chemicals used in various processes has been discussed at Mound and with the Ohio Environmental Protection Agency. With the exceptions noted above, no debris TRU waste or TRU soil has been considered mixed waste, and the stored TRU that remained at Mound following the end of shipments to Idaho in 1988 is reasonably representative of TRU shipped to Idaho. Refer to the Phase I report for a discussion of the substances used in plutonium processing and recovery and in laboratory operations.

6 Mound AK Document Inventory Phase II

The following documents were provided with the Phase I report:

Technical Manual MD-20734, Plutonium Processing – Material Control, Issue 4, September 15, 1973.

Technical Manual MD-70205, TRU Waste Management, Issues 5 (marked Issue 4), 6, 7, 11, 12, 13, and 20, February 2, 1989.

Technical Manual MD-10203, Issue 1 + Issue 6, Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste, June 1, 1985 and April 14, 1989.

Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, Mound Plant, Miamisburg, Ohio, February 1993, Department of Energy Albuquerque Field Office.

T-1242
RECORD
DB31606

AMWTP	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

Reference Number: U196A

AK Type:

- ☐ **Published Documentation**
- ☑ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): TRU Waste Certification Task: Sludge From the Waste Disposal Plant; author and date unknown.

Information Source: From Centralized Characterization Project (CCP), AK Record 1045 for Mound waste at SRS.

AK #[a]	AK Information Summary
WS1 WS3 WS4 WS5 WS7 WS8 MD836	Liquid waste generated via general building drains, showers, laboratory process waste solutions from development groups and analytical operations are treated for removal of Pu-238 with the resulting sludge containing the Pu-238 being mixed with cement for solidification and shipped to Idaho for burial since September 1974. Trace amounts of waste chemicals and low level radioactive waste (U-233, Np-237, Am-241) are present. Table 1 identifies the list of materials that make up the bulk of the influent to the WD Building. All alpha contaminated waste solutions are collected in four influent tanks, 30 thousand gallons each, at the WD Building. The waste water is sampled, treated, and prepared for processing inside these tanks. Chemicals are added to the influent tanks and mixed. The average treatment consists of 7-10 bags (100 lbs) each of calcium chloride, 2-4 bags (35 lbs) each of amorpous carbon and sodium hydroxide to maintain a pH of 11.0-11.5. The sludge is pumped in to hold tanks and after dewatering, sampled for % solids and Pu-238 contents. Then the sludge is pumped into 55 gallon TRU packages, solidified with cement, and shipped to Idaho. Table 2 contains a flow chart describing the liquid waste and sludge process. Table 3 contains a list of chemicals used, their purpose and the forms. Table 4 contains a timeline with the volume of sludge, chemicals used, and Pu-238 mCi/drum. Appendix 6 contains a comparison of the WD sludge with WIPP criteria.

Source Document Data Limitations (if any):
Document does not identify how many drums of solidified sludge were sent to Idaho.

AK Expert:

M. L. Johnson / M L Johnson — **Date:** 3/8/2006

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

I-045

TRU WASTE CERTIFICATION TASK

SLUDGE FROM THE WASTE DISPOSAL PLANT

Liquid waste generated via general building drains, showers, laboratory process waste solutions are treated for remove of Pu-238, with the resulting sludge containing the Pu-238 being mixed with cement for solidifcation and shipped to Idaho for burial since September, 1974.

The liquid waste is generated primarily by showers, decontamination processes, laundry, development groups, and analytical operations. Trace amounts of waste chemicals and low-level radioactive waste (U-233, Np-237, Am-241) are present. Some are added to the influent and some are solidifed in cement without pretreatment.

NOTE: Mound Facility Manual MD-70180 covers procedures used by the Waste Disposal (WD) group for processing radioactive liquid-waste produced on site.

Table I illustrates the types of chemicals, solids, and nuclear wastes (some quantities are estimates) that are dumped to the WS Facility and processed yearly by waste treatment and immobilized in cement.

TABLE I

The following list of materials make up the bulk of the influent to the WD Building.

I. BUILDING FLOOR DRAIN INPUT: PP, WS, and R Common Materials

Shower water plus soap
Mop and decontamination water - Pu-238, H^3
Bowmans cleanser - trace
Micro® - detergent - trace
Wax, wax stripper
Bowel cleaner
Windex - trace
J-Jax - trace
Alcohol - trace
Oil - trace
Saw dust
Paint
HNO_3 - HN_4OH
Acetone - trace

II. THE LAUNDRY:

An alkaline detergent Decon 4324® is used. About 210 lbs. per week is the current amount used.

III. THE FOLLOWING ESTIMATED AMOUNTS OF CHEMICAL AND RADIOACTIVE WASTES FROM RESEARCH BUILDING (R) LAB SINKS, ON A YEARLY BASIS.

H_2O_2, HNO_3, H_2SO_4, NH_4OH, H.F., and Lactic Acid = 7 pints

Methanol, Porpanol, Mineral oil, Ethanol, Acetone, and Trichloro Ethylene = 5 pints

Sodium Sulphite Solution = 1 pint

(continued on next page)

III. (continued)

Estimated amount of chemical solids that enter the Waste Stream from the R Building lab sinks:

CHEMICAL	AMOUNTS IN lbs.
K_2CO_3	4
K_2SO_4	1
$CuSO_4$	1
$CaCO_3$	3
OXALIC ACID	1
LiCL	2
ZrO_2	2.5
$NaCo_3$	0.25
Caustic Soda and Lime	60
Potassium Pyrosulfate	5
KBr	2.5
$NiSO_4$	4
Asbestos Fiber	1
Methylene Blue	1

IV. THE FOLLOWING CHEMICALS ARE THE ESTIMATED AMOUNTS USED IN THE VARIOUS ANALYTICAL LABS THROUGH SINKS:

HNO_3	63
HCL	60.7
H_2SO_4	74.5
$HCLO_4$	9
HF (hydrofluroric acid)	3.5

Also less than 50 grams per year of the follow:

CN^-, Hg, Pb and Be

PROCESS DESCRIPTION

All alpha-contaminated waste solution are collected in four interconnected influent tanks, 30 thousand gallons each, at the WD Building. The waste water is sampled, treated, and prepared for processing inside these tanks.

NOTE: See Table 2 for the Waste Disposal Flow Diagram for Low Risk Radioactive Liquid Waste Treatment

The untreated water may have from 50 to 1000 disintegrations/minute/millilitter (D/M/ML) with a pH of 7. Waste water is then filtered through two sheets of No. 42 Whatman filter paper, prepared and counted in a liquid scintillation counter. The count may range from < 1.0 - 10.0. With a count of 1.0 d/m/ml or less the batch does not require further chemical treatment, other than pH, adjustments during the completion of the cycle.

If the d/m/ml is >2, a simulated influent tank treatment by jar test is run in the WD lab. This is done by taking two 90ml samples of raw waste water and treating them in the WD lab.with specified amounts of chemicals that represent two different production scale treatments. If one of these samples after these tests count 1.0 d/m/ml or less, that production size treatment is used.

At this point, the chemicals are added to the influent tank and mixed. The average treatment consists of 7 to 10 bags (100 lb.) each of calcium chloride, 2 to 4 bags (35 lb.) each of amorpous carbon and sodium hydroxide to maintain a pH of 11.0 to 11.5.

NOTE: See Table #3 for chemicals used and purpose.

The treated waste water is pumped into a clariflocculator where the major portion of the radioactive material is removed through coprecipitation/absorbtion and collected in the bottom of the clariflocculator as a sludge.

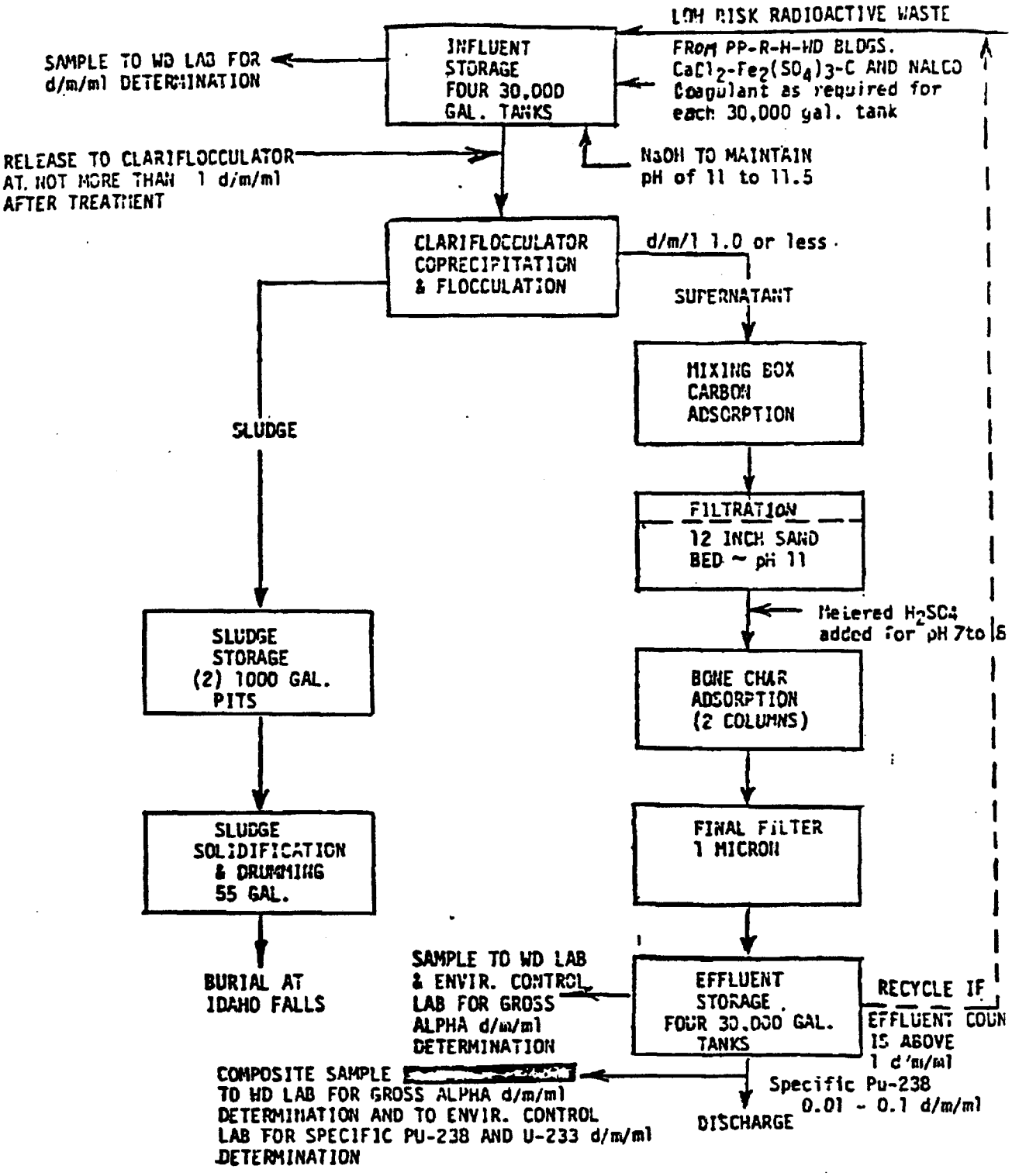
This sludge is pumped into one of (2) 1000 gallon hold tanks. At appropriate times, after dewatering, this sludge is sampled for % solids and Pu-238 content. Then the sludge is pumped into 55 gallon TRU packages, solidified with cement, and shipped to Idaho Falls, Idaho for burial.

The supernatant water with the level of radioactivity greatly reduced, overflows the clariflocculator and flows into sandfilters, where waste water is further filtered to remove the suspended minute particulate matter or precipitate. At this point, metered sulfuric acid is added to bring the pH down to 7.0 to 8.0.

The sandfilter effluent water flows through a bone char adsorption column and a final micropolishing filter into one of four interconnecting 30 thousand gallon effluent tanks.

TABLE 2

MONSANTO RESEARCH CORPORATION
MOUND FACILITY



WASTE DISPOSAL FLOW DIAGRAM
FOR LOW RISK RADIOACTIVE LIQUID WASTE

TABLE 3

CHEMICALS USED	PURPOSE	FORMS
C-Carbon	Adsorbent of Pu-238	Amorpous - C
$CaCL_2$-Calcium Chloride	Detergents, Oxalic Acid	$CaCO_3$,$CaPO_4$
$Fe_2(So_4)_3$-Ferris Sulfate	Flocking Agent	FeOH
NALCO-676-Organic Polymer	Aids in separation	
NaOH-Sodium Hydroxide	pH Adjustment	pH 11.3
H_2SO_4-Sufuric Acid	pH Adjustment	pH 7.0-8.0
Cement	to solidify sludge	
Bone Char	Pu-238 adsorption at pH of 7.0-8.0	

V. RADIOACTIVE SOLUTIONS FROM DEVELOPMENT GROUPS IN THE WD BUILDING TO INFLUENT TANKS:

1. Trace amounts of U-233, Np-237, Am-241, and Pu-238
2. Trace amounts of radioactivity discarded directly to the liquid sludge in the past. Co-60, Cs-137, Sr-90
   Now it is added directly to cement.
3. Solutions added directly to the sludge without treatment in the WD Bldg. Sodium Carbonate, Sodium Chloride with trace amounts of Pu-238 from incinerator (development). Estimated 200 gallons over a 3-month period.

4. Other sludge from WD production type incinerator WD Building. 15% fly ash in NaCL Solid.
   Years 1974 through 1976: None due to cold testing.

	GALLONS	TYPE	TREATMENT
1977	350	sludge	none
1978	425	"	"
1979	162	"	"
1980 Jan-June	81	"	"

5. Incinerator scrubber solution to WD influent tank.
   Contents: Water nearly saturated with NaCl and other salts, plus various amounts of suspended solids.

	VOLUME IN GALLONS
1974	None
1975	150
1976	300
1977	1600
1978	1900
1979	500
1980 Jan - June	None at that time
1980 Oct 1	Incinerator to start daily operations

After each effluent tank is filled, the treated waste water is sampled for pH and alpha in the WD and a sample is sent to the Analytical Department for specific plutonium-238, u-234, and H-3.

When a specific plutonium-238 count of 1.0 d/m/ml or less and all other discharge standards are met, the waste water is discharged. Effluent waste water that does not meet discharge standards is reprocessed through the waste disposal system.

Sludge Sampling and Specifications

A sample of sludge is taken from the sludge storage tank and submitted for % solids and Pu-238 mci/kg. In past years, the percentage of solids was 17-20% when a large amount of iron was used in treatment, but now with less iron in the process the solids are in the 25-30% range. An analysis of a recent sludge batch is as follows:

Moisture	-	58.3 wt%
Volatiles	-	14.3 "
Carbon	-	7.2 "
Ash	-	20.2 "

pH range = 10.5 to 11.5

Emission spec. analysis in % of a dried sample are:

Si,P,AL,Fe	=	.6
Mg,Ca,Sr	=	.6
Co,B,Zr	=	.01
Na	=	0.6
Cr	=	0.08
Ni	=	0.08
Cu	=	0.09
V	=	0.05
Ti	=	0.05
Mn	=	0.03
Pb	=	0.01
Sn	=	0.01
Density	=	1.1gms/cc

THESE ELEMENTS FOUND TO BE IN THE SLUDGE DUE TO PRECIPITATION OR ADSORPTION.

The following Table 4 list the amount of influent, chemicals used, drums of sludge produced, and the mciPu-238 since 1974.

TABLE 4

INFLUENT GALLONS X1000		CHEMICAL USED/LBS.	DRUMS OF SLUDGE	Pu-238mci/Drum RANDOM BATCHES
1974	18,000	C = 915 Ca = 5775 Fe = 2900 3 month period	400	estimated 250mci
1975	3,264	C = 9020 Ca = 26400 Fe = 17200	1588	Batch - 19 = 250 mci " 39 = 180 " " 73 = 110 "
1976	2,260	C = 4000 Ca = 48700 Fe = 9500	427	Batch - 89 = 38 mci " 92 = 82 "
1977	2552	C = 7000 Ca = 59300 Fe = 11200	200	Batch - 94 = 120 mci " 99 = 50 "
1978	2614	C = 12300 Ca = 63400 Fe = 8020	455	Batch -101 = 71 mci
1979	2544	C = 8300 Ca = 71900 Fe = 2400	373	estimated ave. = 30 mci
1980 Jan - June	952	C = 3325 Ca = 30900 Fe = 1500	51	estimated ave. = 40 mci

Report 2

EXPERIMENTAL RESULTS ON THE WD SLUDGE/CEMENT WASTE FORMS

E. L. Lewis

INTRODUCTION

High risk plutonium-contaminated WD sludge was obtained in March 1980 and various properties of the sludge were measured. The density was determined to be 1.1 g/cc, the pH was approximately 11, and the alpha concentration was approximately 2.5×10^5 dpm/g sludge, most of which was in the solids. The sludge was filtered and separated into liquid (72 wt %) and solids (28 wt %). Pellets and castings were then manufactured using uncalcined sludge solids, Portland 1A cement, and sludge filtrate. The pellets/castings were allowed to cure and then tested for compressive strength, leachability, and gas generation.

SLUDGE/CEMENT CASTINGS

Two sizes of castings were manufactured, one 3/4" diameter by 3/4" length and another 7/16" diameter by 1/2" length. Two larger castings containing 35 wt % sludge solids/65 wt % cement were dry-cured (open atmosphere, ambient temperature) for three weeks and then subjected to compressive strength tests. The average compressive strength was 165 psi (L/D = 0.9 and density = 1.2 g/cc). All compressive testing was accomplished by applying a load to the flat ends of the cylindrical castings/pellets.

Three of the smaller size castings (35% sludge solids/65% cement) were tested for gas generation. The pellets were put into a sealed container

for a period of 14 days and gas samples were then taken. Mass spectrometric results indicated that no gases were produced.

A static leachability test was conducted using one small size casting (35% sludge solids/65% cement). The casting was leached at ambient temperature for 14 days in 60 ml of deionized water. The casting weight was found to have increased approximately 31% after soaking 14 days. The amount of residue in the leaching solution was measured and found to be 0.07 g which represented 4.4% of the starting casting weight.

SLUDGE/CEMENT PELLETS

Eighteen pellets containing various ratios of sludge solids/cement were manufactured. All pellets were pressed at 25,000 psi, were approximately 1/2" in diameter, and had L/D ratios ranging from 0.8 to 1.2. Compressive strength tests were conducted after approximately 2-1/2 weeks of dry-curing (open atmosphere, ambient temperature) to determine the effects of L/D ratio and pellet composition on compressive strength. For 50% sludge solids/50% cement pellets, the pellet compressive strength was found to increase with a decrease in L/D ratio (see Figure 1). Also for a given L/D ratio, the 35% sludge solids/65% cement pellets were, in general, the strongest and the 65% sludge solids/35% cement the weakest (Figure 1). The density of the 35% sludge solids/65% cement pellets was measured and determined to be approximately 1.9 g/cc.

Two sludge solids/cement pellets of different composition were leached (static) at ambient temperature in 60 ml of deionized water for 14 days. The 50% sludge solids/50% cement pellets experienced a 9.7% weight increase and the 35% sludge solids/65% cement pellets a 12.9% weight increase. As

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far as residue in the leaching solutions, the 50/50 leach solution contained 0.07 gram of residue representing 2.3% of the starting pellet weight. On the other hand, the 35/65 leach solution contained 0.06 gram residue representing 1.9% of the starting pellet weight.

Two 50% sludge solids/50% cement pellets were put into a sealed container to determine gas generation. After 14 days of testing, gas samples were taken and analyzed. As determined previously with castings, no gases were produced.

CONCLUSIONS

1. No gaseous products were generated from either uncalcined WD sludge solids/cement castings or pellets. Therefore, no pressurization of sealed storage containers should occur.

2. The compressive strength of pellets is much greater than that of castings. For example, the 35% sludge solids/65% cement castings (L/D = 0.9) had a compressive strength approximately one-tenth that of 35% sludge solids/65% cement pellets of identical L/D.

3. As expected, the strength of 50% sludge solids/50% cement pellets increases with a decrease in L/D ratio. Castings, although not tested, should exhibit the same behavior.

4. The densities of pellets and castings of identical composition are much different. For example, the 35/65 pellets have a density 57% greater than that of 35/65 castings. Therefore, more sludge can be loaded per unit volume if it is first pelletized.

5. Castings are more porous than pellets and absorb more water. For example, the 35/65 casting absorbed 2-1/2 times the water that the 35/65

pellet did. Also, the residue leached from the casting was 2-1/3 times that leached from the pellet. Based on this data, one would expect more radioactive material to leach from a casting than from a pellet.

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APPENDIX 6

COMPARISON OF THE WD SLUDGE WITH WIPP CRITERIA

The WD sludge waste form was examined against the WIPP criteria. In conducting this review the proposed Waste-Certification Mechanism document developed by Rocky Flats personnel and dated August 28, 1980 was used for information and reference. The WIPP criteria wording was extracted from this document verbatim.

Following the criteria description, comments are made concerning the sludge form as it pertains to this criteria.

Nuclear Criticality

Updated Acceptance Criteria

The fissile isotope content of individual CH TRU waste containers is limited to 200 grams (g) of fissile isotope per 55-gallon (0.21 m^3) or larger drum, 100 g per 30-gallon (0.11 m^3) drum, 500 g per DOT 6M container, 350 g per 4 x 4 x 7 ft (1.2 x 1.2 x 2.1 m) FRP DOT 7A box or 5 g in any ft^3 (0.028 M^3) in other boxes.

Meets The Criteria

The WD sludge is generated from a batch operation in the WD Building where the low level liquid waste making up the batch is analyzed for Pu content. The primary contaminant is Pu-238. The assayed amount is averaged among all the waste containers resulting from that batch. Individual amounts per waste container are typically ≤.002 grams. This information is entered on a package data sheet and signed off. In addition, each drum is subjected to an individual gamma scan with calibrated instruments.

Surface Contamination

Updated Acceptance Criteria

Removable surface contamination levels for CH TRU waste packages to be accepted at the repository shall not exceed 50 picocuries per 100 cm^2 for alpha emitting isotopes and 450 picocuries per 100 cm^2 for beta-gamma emitting isotopes.

Meets The Criteria

All sludge packages are surveyed by Health Physics personnel using the wipe techniques and calibrated instrumentation. Contaminated packages are cleaned and re-surveyed. The Health Physics personnel enter this data on the package data sheet and sign it.

Surface Dose Rate

Updated Acceptance Criteria

The repository will contact handle only those waste packages which have a surface dose rate of 200 mrem/hr, or less. CH TRU packages with surface dose rates of more than 10 mrem/hr, but not greater than 200 mrem/hr, must be prominently color coded in accordance with the repository operating requirements.

Meets The Criteria

All sludge packages are surveyed by Health Physics personnel with a calibrated instrument. The dose at the surface and at 3 feet is recorded on the data sheet and is signed off. In addition, a second survey is done during the loading of the waste for shipment. Sludge containers are typically <0.5 mr/hr at the surface.

Thermal Power

Updated Acceptance Criteria

As mentioned previously, each batch of liquid generating the sludge is analyzed prior to solidification. The thermal power can then be calculated from this assay. Typical values would be in the range of .0005 watts per container.

Explosives and Compressed Gases

Updated Acceptance Criteria

Explosives and compressed gases shall not be shipped to the repository for emplacement. Aerosol cans will be considered compressed gas unless punctured.

Meets The Criteria

The in-flow into the WD sludge process has been analyzed and contains no explosives. Process personnel in the WD area are responsible for the analysis.

Pyrophoric Materials

Updated Acceptance Criteria

Pyrophoric materials, other than radionuclides, may be shipped to the repository only if they have been rendered safe by mixing with chemically stable materials (e.g., concrete, glass, etc.) or processed to remove their hazardous properties. Also, up to 1% by weight of the waste in each package may contain pyrophoric forms of radionuclide metals provided they are dispersed in the waste.

Meets The Criteria

The WD sludge contains no significant qualities of pyrophoric materials, if any, based upon the analytical work. In addition, any material which must be inadvertently introduced is rendered safe by the cement solidification process.

Toxic and Corrosive Materials

Updated Acceptance Criteria

TRU-contaminated toxic substances may be shipped to the repository provided that the toxic materials are identified and the repository operator is notified and grants approval prior to shipment. TRU-contaminated corrosive materials must be neutralized or otherwise rendered non-corrosive. Waste packages containing toxic materials shall be color coded in accordance with the repository requirements.

Meets The Criteria (In Intent)

The WD sludge waste form contains no known toxic materials. The sludge itself has been shown to be slightly caustic before the solodification step with cement. However, the pH range is typically less than that considered to be a corrosion problem. It appears that the criteria at this point may need more specific definition.

Sludges

Updated Acceptance Criteria

Sludges shall not be shipped to the repository. Other waste forms containing readily desorbable water at reference repository conditions shall not be shipped to the repository.

Reference Conditions: 70°C, 710 mm Hg.

Meets The Criteria

The WD sludge is not a sludge per the above definition, since it is solidified by mixing with cement.

Free Liquid

Updated Acceptance Criteria

Free liquids shall not be shipped to the repository for emplacement.

Meets The Criteria

The sludge process is carefully controlled by trained operators. Measured amounts of sludge and cement are added and mixed with a commercial stirrer. Samples of the solidified waste form have been broken apart and no evidence of free liquid has been discovered.

Gas Generation

Updated Acceptance Criteria

Gas generation by all mechanisms shall not exceed 10 moles per cubic meter of storage room volume per year under reference repository conditions. In terms of waste composition, this criterion may be interpreted to mean that the average (over waste volumes up to 3000 m^3 or 106,000 ft^3) organic content of CH TRU waste may not exceed 220 kg/m^3 (14 lb/ft^3) for waste in 210-liter drums and 100 kg/m^3 (6 lb/ft^3) for waste in other containers.

Meets The Criteria

The WD sludge has been analyzed and does not contain more than 14 lb/ft^3 of organics

Immobilization

Updated Acceptance Criteria

Dry powders, ashes, and similar particulate waste materials shall not be shipped to the repository unless they have been immobilized. Immobilized material shall not contain more than 1% of the waste matrix weight in the form of dry particles below 10 microns in diameter.

Granulated materials are acceptable if they meet the above size criteria.

Meets The Criteria

The WD sludge is solidified with cement to form a hard concrete mass. There may be a very small amount of flaking of the cement, but it would be much less than 1% of the matrix weight or approximately 6 lb.

Combustibility

Updated Acceptance Criteria

Combustible TRU waste materials in approved containers are acceptable for shipment to the repository.

Meets The Criteria

The cemented sludge is clearly not combustible.

Waste Package Weight

Updated Acceptance Criteria

Any CH TRU waste packages or package assemblies shipped to the repository shall not weigh more than 25,000 pounds (11,300 kg).

Meets The Criteria

Each drum containing solidified WD sludge is weighed on a calibrated scale. The typical gross weights are 600-650 lb. The weight of each container is written on its lid in non-smearable marker.

Waste Package Size

Updated Acceptance Criteria

All CH TRU waste packages or package assemblies to be accepted at the repository must not exceed 12 x 8 x 8.5 ft (3.7 x 2.4 x 2.5 m) in overall L x W x H dimensions.

Meets the Criteria

All WD sludge is packaged in 55-gallon TRU drum sets (90 mil high density polyethylene liner inside of a 17C steel drum). This package is clearly within the WIPP criteria dimensional requirements.

Waste Package Handling

Updated Acceptance Criteria

All waste packages shall be provided with cleats, offsets, chimes, or skids, that allow handling by means of fork trucks, cranes, or similar handling devices. Lifting rings and other auxiliary lifting devices on the package are permissible, provided they are recessed, offset, or hinged, in a manner which does not inhibit stacking the packages. This item will be included in the type acceptance of the container.

Meets The Criteria

The 55-gallon drum used for packaging the WD sludge has chimes that permit handling by standard drum handling devices.

Color-Coding

Updated Acceptance Criteria

The repository operator will develop a simple waste package color-coding system whereby shippers can identify waste packages having high thermal generation or radiation levels or containing combustible, flammable, gas producing, or toxic materials, and can be readily identifed at a distance.

Meets The Criteria

The WD sludge requires none of these color codes, but would be so marked if required. Waste Management representatives would be responsible for developing the code and insuring its compliance.

Labeling

Updated Acceptance Criteria

In addition to Federal labeling requirements, each waste package or waste package assembly will uniquely identified by means of a label which permanently attached in a conspicuous location. Information obtainable from the label will include the following:

- Package identification number (to be standardized)
- Radiation levels: mrem/hour of neutron and beta-gamma radiation, at the surface and at a point 1 m from the surface
- Weight in kg.

Meets The Criteria

AT the staging area prior to shipment, a waste management representative inspects each package for proper labeling. He will assure that the above information has been entered on the label.

Data Package

Updated Acceptance Criteria

Prior to shipment to the repository, a data package for each Contact Handled TRU waste package in the shipment shall be transmitted to the repository. A typical data package would include the following, as appropriate:

- Package identification number
- Certification statement
- Waste generation site
- Date of packaging
- Radiation levels
- Weight
- Container type
- Physical description of waste
- Assay information
- Hazardous materials (non-radionuclide)
- Estimated potential moles of gas production
- Measured or calculated thermal power (if over .1 watt/ft^3)
- Date of shipment
- Carrier identification
- Other information considered significant by the shipper.

Meets The Criteria

This information listed in this criteria is developed during the package generation and entered into a computer program at Mound. When shipments are made the data packages required are transmitted to the burial site via SACNET. The current data base does not contain inforamtion on the following:

1) Hazardous materials.
2) Estimated potential moles of gas production
3) Calculated thermal power.

These items could be added to the data packet, however, they are not important for the WD sludge waste form.

APPENDIX 7

REVIEW OF TRU WASTE CONTAINERS

I. TRU CONTAINERS

A. Drum Assembly

1. Drum - DOT 17C, cold rolled steel container, 16 gauge wall and heads, 12 gauge closure ring, cadmium plated boldt, 1/2" neoprene rubber gasket, interior coated with rust inhibiting epoxy paint, exterior primed and painted.
   a. All welded seams and 360° of chime on each drum individually leak tested at 15 psi by vendor. Sample of five per lot leak tested by buyer at buyer's site.
   b. Each drum visually inspected by vendor. Sample of 42 units per lot inspected by buyer at buyer's site.
   c. Dimensions checked by vendor at start and at end of each run. Sample of five inspected dimensionally by buyer at at buyer's site for each lot.
   d. Vendor to conduct 4 ft. drop test and 20 psi hydrostatic pressure tests at least once each fourth month of operation. Latest tested drum must be saved until next test series is complete.
   e. Drums touched up after filling and sealing and prior to shipment (paint).
2. Drum liner - High density cross-linked, polyethylene (HDPE) such as CL-100-B-55 by Phillips Petroleum Co., snap-on-lid, minimum wall, 0.090" snap-on-lid.
   a. Each line leak tested, functionally fit and dimensionally inspected by vendor. Lids custom fit by vendor and identified for assigned liner.
   b. Low temperature, -20°F (-30°C) dart impact test conducted on randomly selected samples. The occurrence of a single failure required that 100% of lot be tested for this attribute. Test sample taken from waste sheet which is obtained when the top of the liner is cut out to functionally fit the lid. This test measures the environmental stress crack resistance (ESCR) and provides an indication of long term integrity under stress. Since processing parameters (time and temperature) affect this attribute, the dart impact test also provides some assurance that the proper molding cycle times and temperatures were used.

c. The leak test is conducted on each liner by the vendor and on a randomly selected sample by the buyer. This test is performed on the liner before the removal of the wastes sheet. This permits higher pressures (5 psi) to be used for the test and eliminates the possibility of leaks occurring in the mechanical seal between the lid and body of the liner assembly which could interfere in the detection of small leaks near the top of the liner body.

d. Wall thickness measurements are conducted by the vendor and on random samples by the buyer. Both the vendor and the buyer use ultrasonic thickness gauges to make these measurements.

e. Liner lids are checked for porosity using a high intensity mercury vapor lamp in a opague container. Any trace of light through the liner lid is cause for rejection of that lid. Vendor inspects 100% of his lids. Buyer uses a random sample plan.

f. All testing is conducted at the vendor's site. This minimizes the possibility of having reject material on the buyer's site and thereby minimizes the possibility of utilizing defective materials. If any unit is found to fail any one of the tests, 100% of the lot represented by the sample must be tested for the particular attribute that the sample failed.

B. Fiberglass Coated Boxes

1. Plywood boxes may be cleated or framed with dimension lumber. The size of the framing lumber generally increases with the size of the box. Standard boxes (about 4'x4'x7') are fitted with a single sheet of 3/4" plywood for the lid, while the oversize boxes (up to about 6'x9'x11') will use stress panel design for the lids. The plywood must be "C" or better for all plies, must be exterior type plywood and must, for the oversize boxes, be stress grade S-2, Group 1, Species 1. All dimension lumber must be #1 grade southern pine or equal.

2. The fiberglass reinforced polyester (FRP) coating is 0.125" minimum thickness except up to 10% may be as thin as 0.090". The resin is a flame resistant polyester without fillers, pigments or dyes. One type of resin found satisfactory is CoRezyn 1664 produced by the Commercial Resins Division of Interplastic Corporation. The resin is reinforced with noncontinuous roving fiberglass with a red tracer. Strand length is between 0.5 and 2.0 inches.

3. Tests-buyer inspects 100% of product. Failure to meet any required attribute is cause for rejection of that item.
   a. Dimensional inspection includes nail and stud spacing, lumber size outside dimensions of wood box and panel fit per the appropriate drawing.
   b. Eddy current test equipment is used to determine nail location after FRP coat has been applied.
   c. Ultrasonic thickness gauge is used to determine fiberglass reinforced polyester thickness.
   d. Visual inspection includes verification of plywood grade, framing lumber quality, concentration of fiberglass in FRP coating, number and size of voids in the FRP coating, and the overall workmanship put into each assembly.
   e. Barcol hardness is measured on each box in at least two locations on each surface.
   f. A two foot square test panel is required for each lot of resin used to produce the FRP coated boxes. A special burn test is conducted in duplicate on a portion of each panel.
      1. The burn test is conducted on a nominal 6"x6" square panel by placing the sample 1 1/2" above a gas-oxygen blast burner with a 1/4" to 3/8" high blue flame. The sample is allowed to remain in this position for 1 minute, removed from the flame and the time required for the flame to extinguish itself is measured. This procedure is repeated twice on each of the duplicate samples. If the flame persists, after removal from the flame, for more than 14 seconds, the sample is considered to have failed the test. Failure of the sample to pass this test is cause for rejection of boxes coated with this lot of resin.
   g. A Type II certification of physical properties, glass content and flammability is required from the vendor on each lot of resin.

APPENDIX 8

COMMENTS ON OTHER TRU WASTE FORMS

Criteria

Nuclear Criticality - No apparent problems with Mound's TRU waste forms.

Surface Contamination- No apparent problems with Mound's TRU waste forms.

Surface Dose Rate - No apparent problems with Mound's TRU waste forms.

Thermal Power - No apparent problems with Mound's TRU waste forms.

Waste Containers and Overpacks - It would seem that problems could be incurred in certifying that waste packages retrieved from Idaho would have a 10-year design life. In addition, all of Mound's FRP boxes, both standard and oversize would require a metal overpack before emplacement.

Explosives and Compressed Gases - No apparent problems with Mound's TRU waste forms.

Pyrophoric Materials - No apparent problems with Mound's TRU waste forms.

Toxic and Corrosive Materials - Mound's acid and caustic TRU waste form would not meeth this criteria.

Free Liquid - No apparent problems with Mound TRU waste forms.

Gas Generation - Some of Mound's in-line combustible waste and all of the compacted 10-100 nc/g combustible waste would not meet this criteria.

Immobilization - TRU waste forms absorbed on FLORCO absorbent material may not meet this criterion.

Combustibility - FRP boxes must be overpacked.

Waste Package Weight - No apparent problems with Mound's TRU waste containers.

Waste Package Size - Mound's largest FRP container slightly exceeds the height limitation.

Waste Package Handling - No apparent problems with Mound's TRU waste containers.

Color Coding - No apparent problems with Mound's TRU waste containers.

Labeling - No apparent problems with Mound TRU waste containers.

Data Package - Not all of this information is currently generated, but could be.

2007-0250

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

Reference Number: P474A, R1 (Supersedes Form 1068 only) 8/19/06 T-1717 Record

AK Type:

- ☑ **Published Documentation**
- ☐ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste, dated August 1983.

Information Source: Miscellaneous Mound records transmitted to the AMWTP

AK #[a]	AK Information Summary
WM3, WM5, WM8 MD WS1, WS3, WS4, WS5, WS7, WS8 MD 836	The Mound WIPP Certification Plan describes the process to certify TRU waste for shipment to WIPP. Most of Mound's Pu-238 oxide contaminated TRU waste came from D&D operations on former radioisotope thermoelectric generators production operations in the Plutonium Processing and Research Building. Describes waste certification of cemented sludges as well as chemicals present in the influent liquids. NOTE: P474A, R1 issued to update the information on the Form 1068

Source Document Data Limitations (if any):
Specific locations for waste generation activities not identified. Waste certification procedures specific to solidified sludge. Plan also identified soil, combustible and non combustible wastes but did not provide any details. It does not go into specifics of how much waste was generated but does describe the type of waste generated. This document was issued subsequent to the generation date for most of the Mound waste stored at INL.

AK Expert:

M. L. Johnson / MD Johnson **Date:** 8/1/2006

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

DOE/AL
MRC/MOUND

P414A

MOUND WIPP CERTIFICATION PROGRAM

FOR

NEWLY GENERATED CONTACT HANDLED (CH)
TRANSURANIC WASTE

August, 1983

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I. PURPOSE AND FEATURES

A. Purpose and Requirements For Certification

The purpose of this document is to describe the certification plan that Mound uses for certifying newly generated contact handled TRU waste for ultimate receipt at the WIPP Facility. This plan has been prepared in accordance with the latest approved issues of the following documents and guides.

- TRU Waste Certification Compliance Requirements for Newly-generated Contact handled Wastes for Shipment to the WIPP DOE-114.
- TRU Waste Acceptance Criteria for the Waste Isolation Pilot plant, WIPP-DOE-069.
- Quality Assurance Requirements for Certification of TRU Waste to WIPP Compliance Requirements, WIPP-DOE-120.
- 49 CFR 172-177 Department of Transportation Tariff.
- DOEM 5820 Radioactive Waste Management.
- DOEM 5480.1 Chapter 3 Safety Standards for the Packaging of Fissile and Other Radioactive Materials.
- MD 70180 Mound Facility Radioactive Liquid Waste Disposal.
- MD 70205 TRU Waste Management.
- IDO 10074 Criteria for Packaging Transuranic Waste for Receipt at the Idaho National Engineering Laboratory Radioactive Waste Management Complex-Off-site Generated Waste.

B. Overview of Waste Generating Operations

Starting in FY-1980, the majority of the Pu-238 oxide contaminated transuranic waste generated at Mound arose from Decontamination and Decommissioning (D&D) operations on former Radioisotope Thermoelectric Generators (RTG) production operations in the Plutonium Processing (PP) and Research (R) Buildings. Other major D&D efforts currently underway include the removal of underground piping which formerly transmitted Pu contaminated liquid waste from the processing area to the waste water treatment facility and the complete demolition of the SM Building which has already been partially decommissioned. This facility was utilized in early work in the Heat Source Program ad still contains some TRU waste.

TRU alpha wastes are generated from decontamination operations in these Plutonium Processing areas and from the Laundry operations. This liquid is transferred to the Waste Disposal (WD) facility for treatment, including precipitation of the Pu-238 contaminant and solidification of the sludge with cement. Large quantities of line generated solid wastes, including gloveboxes, fume hoods, piping, tools and other non-burnables, as well as rags, chem-wipes and other combustible waste is being, and will be, generated by the PP&R Buildings' Decommissioning and Decontamination Project.

Solid wastes which are not line generated are segregated administratively as TRU or non-TRU waste and are collected in 55-gallon drums situated in the buildings. In addition to cemented sludge, non-combustible and combustible wastes, significant quantities of TRU contaminated soils will be generated during the decommissioning of the Waste Transfer System (WTS) an underground pipe line which formerly carried Pu-238 contaminated liquids from PP to WD.

C. Scope and Organization of the Certification Plan

The following sections of the Certification Plan describe, with appropriate reference to documented controls and supporting data, various site-specific activities relating to the TRU-Waste Certification Program. Specifically, the Certification Plan first (1) describes the QA program to be applied to the Waste Certification Plan, then (2) outlines and illustrates by organization chart the structures, management responsibilities and authorities, and interfaces of the waste generating, processing, and supporting organizations that participate in the Certification Program; then (3) describes, in general, the data collecting and archiving methods, and records control; (4) describes the procurement and handling of waste containers, and related control methods; and finally (5) describes, in general, the waste generating and processing operations, and lists certifiable and noncertifiable waste forms. It is important to note that specific certification procedures, including data management, are prepared for each certifiable waste form as separate Attachments to the Certification Plan. The individual Attachments detail, for each certifiable waste form, the specific waste generating, processing, packaging and handling operations and their related technical and administrative controls, and discusses the waste flow chart.

II. IMPLEMENTATION OF CERTIFICATION QA REQUIREMENTS

A. Purpose and Scope

The purpose of the QA Plan detailed in Part B of this section is to demonstrate that TRU waste containers, packages and forms generated at Mound do meet the WIPP criteria. The Plan describes the overall QC Program in place at Mound. Specific elements of the program are addressed during the discussion of each particular criterion as it applies to individual waste forms. It should be noted that the QC plan described in Part B can, and is also applied to non-TRU waste activities. The ANSI/ASME NQA-1-1979 outline was used as a guide in developing the structure of the Plan.

B. Certification QA Requirements

I. ORGANIZATION

Product quality and adherence to related policy is a plant-wide responsibility, including all individuals and departments. Administration, coordination, and evaluation of the quality program is delegated to the appropriate Quality Control and Reliability organization. The Quality Control Engineering, Nuclear Products group is charged with the responsibility, and has the commensurate authority to make objective judgments, recommendations, and decisions, including the initiation of stop work action, if necessary, within the plant policy and program as described in Mound document MD-10058 "Quality Policy".

The waste management and quality control structure at Mound are presented in Figure 1.

A. Administrative Services

1. Establishes policy for packaging, shipping, and disposal.

2. Determines supportive goals.

3. Performs handling and disposal functions of packaged wastes.

4. Communicates internally and externally by providing reports and information as appropriate.

5. Provides assistance in specialized waste management, packaging, and transportation functions.

B. Nuclear Operations

1. Establishes policy for handling and treatment for radioactive wastes.

2. Performs specific functions during waste generation and packaging.

3. Procures the packaging for waste materials.

4. Provides waste treatment.

5. Provides Nuclear Material accountability.

6. Provides waste generation forecasts.

C. Engineering

1. Develops appropriate packaging.

2. Performs specific functions of waste transportation.

3. Provides specialized waste forecasting.

Persons performing quality verification activities report to an individual not directly responsible for performing the work being inspected.

D. Quality Control Engineering, Nuclear Products

The Supervisor, QC Engineering, Nuclear Products, is responsible for assuring that the overall quality requirements are met. QC Engineering is independent of Nuclear Operations supervision.

QC Engineer(s) are assigned to the various aspects of the waste management program. In fulfilling these various assignments, the QC Engineer will ensure that:

- quality requirements are defined
- drawings, specifications and procedural documents are followed and engineering changes are approved
- purchase orders for material and hardware are reviewed and quality requirements are established
- vendors are audited at the beginning and at intervals through service to Mound
- Mound operations are providing annual audits.

Final waste certification is provided by the Waste Certification official at Mound.

II. QUALITY CONTROL PLAN

Quality Plans are in place for materials used in the packaging, handling, and transportation of waste. The elements covered and the extent are: design information, review and change control, procurement, inspection, fabrication materials and raw materials, material control, nonconforming material, supplier selection, inspection, measuring and test equipment, quality records, corrective actions, personnel training, and audits. Individual quality plans are found in Enclosure I. Quality control of processes are referenced in Sections IX and XVIII.

Each Quality Plan is reviewed and approved by the Director of the Nuclear Operations Department (generators), the Quality Coordinator (QC Engineer), the Program Manager for the specific program being supported by the waste management effort, and a responsible individual who would normally be the first line supervisor of the operation being supported and intimately familiar with the operations.

III. DESIGN CONTROL

Current containment process design information such as manuals and specifications are maintained by a drawing and specification control system in a master file in the QC Engineering office. The master file is updated as changes and revisions are received and prints are obtainable.

Operating instructions[1][2] are required for use by QA Engineering which describes systems, processes, inspection methods, testing, data analysis, and policy procedures. These instructions are kept current and are available for the appropriate operational sequence. A current file of operating instructions is maintained by QC Engineering to provide traceability for fabrication and inspection processes of products.

Drawings, specifications, and manual changes are controlled by use of the Engineering Change Notice. The directions for its use are found in manual MD-10095[3]. These changes are maintained on a current basis through the use of a Waste Management Product Index File[4] which reflects the status of the item involved. These items are: Engineering Change Request (ECR), Advance Change Order (ACO), Final Change Order (FCO), Special Instructions Engineering Change Notice (SIECN), and Special Instructions Engineering Release (SIER).

Guidance in the initiation of these various manuals is provided by reference[5].

An independent process review of new or modified operations is provided for by the Loss Prevention and Environmental Control Review as described in reference[6].

(1) Technical Manual MD-70180, Mound Facility Radioactive Liquid Waste Disposal.

(2) Technical Manual MD-70205, TRU Waste Management.

(3) Technical Manual MD-10095, Engineering Change Notice Preparation Instructions.

(4) Technical Manual MD-10120 Product Index System.

(5) Technical Manuals System MD-10001.

(6) MRC/Mound Safety Manual MD-10117, Section G.

IV. PROCUREMENT DOCUMENT CONTROL

Services and supplies are obtained from subcontractors. Approved vendors are any suppliers who have been approved to provide a service to supply material and/or to manufacture special components. Technical support and control over procurement services are maintained to ensure that services and supplies conform to specified requirements.(7) Monitoring of subcontractors is performed by Quality Control Engineering to ensure necessary quality controls are maintained during the period in which service is being performed or material is being produced and delivered. Evaluation records are maintained for 5 years without re-auditing as long as the subcontractor is a current or prospective procurement source.

Selected vendors' standards, such as temperature and pressure gages, are calibrated(8) by Mound or an approved source.

(7) Purchasing Manual System 701, Volume 1, Procurement Policies and Procedures.

(8) MD-10096 - Mound Standards and Calibration System.

V. INSTRUCTIONS, PROCEDURES, AND DRAWINGS

Specific technical documents have been published that cover all significant activities relative to certification from procurement of containers, collection and containment of waste, staging and shipping of waste packages to handling of noncomforming material.[2] Specific procedures are described covering liquid waste disposal operations.[1] A complete list of pertinent technical manuals, specifications, and drawings is found in Enclosure II of this manual.

VI. DOCUMENT CONTROL

Pertinent design information is maintained by a drawing and specification control system in a master file in the QC Engineering office. The master file is updated as changes and revisions are received and prints are obtainable from Mound Drawing Control Department.

Operating instructions are generated which describe systems, processes, inspection methods testing, data analysis, and policy procedures. The operating instructions are kept current and are available for the appropriate operational sequence.

A list of applicable operating instructions, drawings, and specifications is found in Enclosure of this manual.

VII. CONTROL OF PURCHASED ITEMS AND SERVICES

Quality of purchased materials and services is controlled by such activities as:

- Inspection as necessary to ensure conformance with requirements of applicable drawings and specifications.

- Monitoring of purchase orders to ensure incorporation of pertinent technical and quality requirements.

- Examination of certified test reports demonstrating the conformance of material to requirements as directed by the purchase order.

- Maintenance of test records, such as those called for in the DOT Type A packaging requirements for 25 years.

- Notification of the subcontractor whenever nonconforming materials are received and corrective action is required of the subcontractor.

- Records management are provided by Quality Control for the procurement of containers, operating procedures, calibrations, test results and vendor certifications records.

- The Quality Control Engineer conducts random surveys for the purpose of evaluating vendors.

VIII. IDENTIFICATION AND CONTROL OF ITEMS

All items requiring identification and control are specified in the appropriate technical manual. Each waste container/package is given a unique number. A batch identification number is assigned for each batch of sludge drummed.

A users' handbook has been prepared as a guide for generating input data for the Waste Accountability Shipping and Packaging (WASP) computer system.[9] The WASP system provides a system of control for the waste containers that are available for use, and data storage for the containers filled with nuclear waste. The system will provide inventory listings of empty containers and filled units. Any container that is rejected will be flagged by the computer. No additional transaction will be accepted against it unless the reject status is lifted.

All pertinent data required by WIPP can be entered on the WASP system for each waste container. At various steps in the program the WASP system will perform edit checks to assure that the waste package data is in agreement with the WIPP criteria. For example, the data base will only accept QC approved waste containers. If a package with an ID number from a non-approved lot is entered, the system will reject it. The program will not generate hard copy paperwork for shipment unless all information on the waste package data sheet has been filled out and entered into the base. In addition, this data must fall within the acceptable bounds of WIPP or the package cannot be shipped. The WASP system provides an excellent control to assist in assuring the criteria are met.

(9) MD-10173, Users' Handbook: Waste Accountability Shipping and Packaging (WASP).

IX. CONTROL OF PROCESSES

All processes are controlled by written operating procedures which are audited by Quality Control personnel. QC Engineering personnel also ensure that correct tests and procedures are used, that personnel are adequately trained, that suitable sampling and test frequencies are used, and pertinent equipment is standardized and calibrated. Corrective action, such as use of overpacks, reprocessing, or re-examination of a process, is implemented when non-conforming waste forms or packages are produced. Tests are run to assure the absence of free liquid, sludge and cement are examined and analyzed for consistency of material on each batch.

Supervisors have the responsibility of assuring that personnel within their group are familiar with all procedures to which they are assigned.

X. INSPECTION

The various inspection organizations* provide: (1) acceptance inspection on designated raw materials, pieceparts, and vendor manufactured components, (2) inspection - as required - of any supplies or services rendered under a purchase contract at the vendor's source, (3) routine inspection and testing of in-process materials and completed materials to ensure conformance to applicable drawings and specifications, and (4) surveillance over preservation, marking, packing, and shipping to ensure compliance with requirements and to prevent damage, deterioration, loss or substitution.

Specifications have been established by Mound's Engineering Department for the various elements of TRU waste containers. These specifications, as well as DOT Specifications, where applicable, are outlined in Figure 2.

*See Enclosure I, Quality Plan, Element 3.

FIGURE 2

CONTAINER SPECIFICATIONS

-17C Drum	Drawing Number: SPA740947(1) DOT Specification 17C 49 CFR 178.115
-17H Drum	Drawing Number: SPA750046(1) DOT Specification 17H 49 CFR 178.115
-HDPE Liner for 17C Drum	Drawing Numbers: AYD770581(1) SPA740918 SPA750048
-Steel Box	Drawing Numbers: Rocky Flats Specification SX-231 : LLBL Specification PLM82-612-005D

The high-density polyethylene (HDPE) TRU liners are inspected according to the sampling plan in SPA750048.

(1) Latest issues of these specifications may be obtained from Drawing Control.

XI. TEST CONTROLS

A certification statement is submitted by the supplier of drum liners and closures and steel boxes as indicated in the acceptance specifications. This statement certifies that specific physical properties of the material or container have been tested and have met minimum standards. Drum liners are inspected and dispositioned at vendor's site using a random sample during an in-process test as described in Container Specification of TRU Waste Management[3] technical manual. Test controls on metal boxes are TBD.

Assay[10][11] is made for isotope content by Nuclear Operations Analytical and/or Health Physics personnel prior to release for shipment by QC Engineering. If the isotope content is over the established limits, the package is rescanned for verification. If the results are still over limtis, the package will be returned to the area of origination for repackaging.

Nuclear Quality Control personnel review all forms for completion and to assure that the package is an accepted lot or number. Only packages that have been accepted by Nuclear Quality Control can be moved for shipping off site.

(10) DOE Manual 5480.1. Requirements for Radiation Protection.

(11) Technical Manual MD-21361 Nuclear Radiation Safety Manual.

XII. CONTROL OF MEASURING AND TEST EQUIPMENT

Calibration of measurement devices[8] used during manufacture, inspection and/or testing of equipment is performed by Mound Standards laboratory. Calibration intervals are not to exceed two years and are based on device usage, manufacturer's requirements and importance of the measurement to certification. Instruments, gages, and testers are compared with measurement standards of suitable range and accuracy. Certification of these standards is consistent with requirements of AL Standardization Program. Calibration records are maintained on a master list found in AL Standardization Program Handbook, AL Appendix 72XF, as evidence that proper control is provided.

The equipment user is notified by the Standards Laboratory when recalibration work is required. Records of certification are retained by the Standards Laboratory for five years on both active and inactive instruments.

Instruments found to be out of calibration are replaced or repaired. Waste certified by the instruments will be reviewed for action. The point and time of specific waste generation is identified in WASP Data Base System.

Comparison of this information with the calibration data (period of defectiveness) will identify those packages that may be affected by the out-of-tolerance instruments.

XIII. HANDLING, STORAGE AND SHIPPING

Handling of nuclear waste packages is performed in such a manner as to ensure safety of personnel and integrity of package (reference 2).

Storage of all nuclear waste is in designated protected areas to minimize environmental effects on containers. Each and every package is monitored by Health Physics to assess the integrity of the package (reference 2).

Shipment of nuclear waste is in accordance with U. S. Department of Transportation regulations, DOE M5480.1 CHP. 3 and IDO 10074 burial site criteria. Proper loading and storing practices are used to ensure safe transport of packages as described in the above referenced manual (reference 2).

XIV. INSPECTION, TEST AND OPERATING STATUS

The Waste Accountability Shipping and Packaging (WASP)[9] computer system provides a system of status control for the containers (metal drums, liners, and boxes) that are available for use in containing radioactive waste. The WASP system also provides a system of control and data storage for the drums and boxes that have been filled with nuclear waste. The system will provide inventory listings of empty containers and filled units. The engineering inspector conducts physical and dimensional analyses of all boxes and drums. Quality Control personnel audits and inspects drum liners and other containers. Audit inspection reports are issued and material disposition/inspection summary forms provided before containers are used. All waste packages are inspected by the Certifying Official before being released for shipment.

XV. CONTROL OF NONCOMFORMING ITEMS

Methods and facilities are established for controlling the identification, handling, and storage of noncomforming material. The extent of variation from engineering requirements and/or quality standards is determined. A form is prepared describing the nonconforming material and submitted to a Material Review Board for review and disposition of material. If a unanimous decision is not reached, a "scrap" disposition is automatically declared. The identification number(s) is entered into the WASP computer system. The nonconforming item(s) will then be flagged. No additional transaction will be accepted against the container(s) until it has been reactivated. The cause of the non-conformance will be determined and corrective action implemented.

XVI. CORRECTIVE ACTION

Whenever non-conforming materials are received, as identified by audits and inspections, the subcontractor or department is notified and corrective action is required. Identification, cause, and specific corrective action needed is documented by QC Engineering and reported to management. Follow-up action is taken by QC Engineering to verify implementation of corrective action by the specific organization or individual responsible for the deviant condition. A corrective action request system [12] is established to assure that non-conformances are corrected in a timely and effective manner to minimize repetition of the discrepancy. Follow-up to assure implementation of corrective action and identification of the impact of non-conformance will be conducted.

[12] MD-10177. Quality Program Plan for the GPHS and RTG for the Galileo and International Solar Polar.

XVII. CERTIFICATION RECORDS

In addition to the WASP computer system for waste accountability, records are kept by QC Engineering of vendor data and certification, inspection results, calibration and test results, procedures and drawings, and audits including corrective action results. These records are subject to review and are maintained for a minimum of 25 years unless determined by Mound or WIPP that further retention time is required.

Record security is provided[13] against unauthorized use and also against damage from natural causes, e.g., heat, water, dust, etc. The certifying official will assure that all appropriate records are created and maintained.

[13] Records Retention and Disposal Manual-Systems Manual 201.

XVIII. AUDITS

Audits are independent random reviews performed by QC Engineering in all phases of waste management - procurement of materials, manufacturing of containers, packaging and shipment preparation. Results of audits are documented and sent to the area responsible for these activities for review and any necessary corrective action. These audits are performed to assure the overall quality of the containment of waste and WIPP requirements as shipped from Mound. Quality Control Engineering maintains the file of surveys, audits, inspections, and corrective actions for 25 years subject to review by WIPP and DOE/DAO. Audit schedules are determined by QC personnel, and are based on the importance of the audited activity to certification. Scheduled follow-ups to audit findings are documented.

XIX. DATA RETENTION AND ARCHIVING

Refer to Section IV - Data Collection and Archiving.

ENCLOSURE I

PROGRAM TRU FRP Coated Boxes (Standard Size)

DEPARTMENT APPROVAL

QUALITY COORDINATOR Rick Hangsel, Q.C. Engineer

QUALITY PLAN

August 1983

RESPONSIBLE INDIVIDUAL [signature] DATE 10/24/83

PROGRAM MANAGER Ralph R Jaeger DATE 10/24/83

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent
1. Design Information, Review and Change Control			√	Box design shall be as indicated in SPA740082. This document and the associated drawings shall be controlled by Drawing Control. ECN's shall be used to initiate all changes required.
2. Procurement			√	All purchase orders shall be reviewed by Quality Control. Vendor certifications, as required, shall be reviewed and filed by Quality Control. Unfavorable survey reports of a particular vendor shall preclude the purchase of material from the referenced vendor.
3. Inspection			√	Maintenance Support Engineering (MSE) shall inspect each box at the vendors site and issue report to Quality Control for review and disposition of product. MSE shall also inspect the sealing of each box and report to Q.C.. The user shall visually inspect each box prior to use.
4. Fabrication Materials and Raw Materials			√	Boxes to be inspected at vendors site. Raw materials to be certified by the vendor. MSE to check raw materials used at Mound for proper labeling.
5. Material Control			√	Boxes shall be controlled by serial number. There is no special storage space required but each box shall be protected from moisture.if it is stored outdoors.
6. Nonconforming Material			√	Nonconforming material is cause for rejection of product. Corrective action may be taken provided it is approved by the Material Review Board.
7. Supplier Selection			√	Supplier selection to be based on survey results. Surveys to be conducted by Quality Control Engineer who may be accompanied by the Packaging Engineer and the Purchasing Agent. Survey reports to be filed by Quality Control and the Purchasing Dept.
8. Manufacturing	√	There is no manufacturing involved at Mound for this program		
9. Construction			√	The sealing of the boxes after they have been filled shall be controlled through inspections by MSE and audits by Quality Control.
10. Inspection, Measuring and Test Equipment			√	Instruments used for inspection shall be calibrated before use by the inspector. Gage Laboratory calibrations are not required for these measurments.
11. Quality Records			√	Quality Control shall maintain a file of material certifications, inspection reports surveys and audits as well as reports of nonconforming material and corrective actions. Records to be kept twenty years.
12. Corrective Actions			√	Corrective action for nonconforming material shall be approved by representatives of the Solid Waste Reduction Group, Health Physics,Engineering and D&D Operations, (MRB).Q. C. shall be represented at all MRB meetings.
13. Personnel Training			√	Inspectors shall be instructed in the proper use of the related equipment. Mound FRP workers to be instructed in the proper FRP layup procedures and in the proper disposal of the catalyst contaminated equipment.
14. Audits			√	The Quality Control Engineer shall conduct random surveys to cover vendor operations and audits to cover Mound operations. Q.C. to maintain file of surveys, audits, inspections, corrective actions for twenty years.
15. Other	√	No other special controls required.		

MRC-ML-6663

August 1983

QUALITY PLAN

PROGRAM TRU 55-Gallon Drums

DEPARTMENT APPROVAL

QUALITY COORDINATOR Rick Hampel, Q.C. Engineer

RESPONSIBLE INDIVIDUAL [signature] DATE 10/24/83

PROGRAM MANAGER Ralph R Jaeger DATE 10/24/83

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent
1. Design Information, Review and Change Control			✓	Formal specifications shall be processed through Drawing Control. Specifications to be reviewed by Quality Control Engineer.
2. Procurement			✓	All purchase orders for fabricated and raw material shall be reviewed by Quality Control.
3. Inspection			✓	Drum inspection shall be based on the sample plan outlined in MD-70205 pp 24 and shall be conducted at Mound Facility by Maintenance Support Eng. Reports to be submitted to Quality Control for review and approval.
4. Fabrication Materials and Raw Materials			✓	Certification by vendor is through markings on bottom head of each drum.
5. Material Control			✓	Material is controlled through lots. Once liners are placed inside drums to form a TRU package, the package shall be given a serial number and individual control shall be initiated.
6. Nonconforming Material			✓	Nonconforming material is cause for rejection of product. Corrective action may be taken provided the assigned Material Review Board approves the proposed action (See item 12)
7. Supplier Selection			✓	Supplier Selection shall be based on the vendor survey results. Vendor surveys shall be conducted by the Quality Control Engineer. The Project Engineer, the Packaging Engineer and/or the Purchasing Agent may assist. The file shall be maintained by Quality Control and Purchasing.
8. Manufacturing	✓	There is no Manufacturing involved at Mound for this Program		
9. Construction	✓	There is no Construction involved at Mound for this Program		
10. Inspection, Measuring and Test Equipment			✓	The pressure gauge used to measure the air pressure during the leak test shall be calibrated. Other inspection equipment is not required to be calibrated.
11. Quality Records			✓	Quality Control shall maintain a file of inspection results and audit reports. Individual drums shall be traceable to manufacturer and date of manufacture. Records to be kept twenty years.
12. Corrective Actions			✓	Corrective actions for nonconforming material shall be approved by the Material Review Board consisting of representatives of the Solid Volume Reduction Group, Health Physics, D&D Operations and the Packaging Engineer. QC shall be represented at the meetings.
13. Personnel Training			✓	The inspectors shall be instructed in the proper use of the required inspection equipment.
14. Audits			✓	The Quality Control Engineer shall conduct random surveys and audits to cover vendor operations, receiving inspection and storage.
15. Other	✓	No other special controls are required		

PROGRAM TRU HDPE Liners

DEPARTMENT APPROVAL

QUALITY COORDINATOR Rick Hampel, Q.C. Engineer

QUALITY PLAN

August 1983

RESPONSIBLE INDIVIDUAL Guy W. Doty DATE 10/24/83

PROGRAM MANAGER Ralph A Jaeger DATE 10/24/83

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent
1. Design Information, Review and Change Control			✓	Formal drawings shall be processed through Drawing Control. Drawings and Specifications to be reviewed by Quality Control.
2. Procurement			✓	All purchase orders for fabricated and raw materials shall be reviewed by Quality Control. Vendor certifications, as required, shall be reviewed and filed by Quality Control.
3. Inspection			✓	HDPE liners to be inspected at vendors' site by TRU liner inspection team. Users of liners shall visually and functionally inspect liners prior to use.
4. Fabrication Materials and Raw Materials			✓	Raw materials and manufacturing process to be certified by the vendor. Time and temperature control charts to be submitted by the vendor with each lot of product.
5. Material Control			✓	Liners shall be controlled by serial number to be affixed to the liner by the vendor. Liners to be controlled and assembled to form TRU drum packages by the Solid Volume Reduction Group.
6. Nonconforming Material			✓	Nonconforming material is cause for rejection of the product. Corrective action may be taken provided the assigned material review board approves the proposed actions.
7. Supplier Selection			✓	Supplier selection shall be based on the vendor survey results. Vendor Surveys shall be conducted by the QC Engineer, who may be accompanied by the Packaging Engineer and/or the Purchasing Agent. The file shall be maintained by Quality Control and Purchasing.
8. Manufacturing	✓	There is no manufacturing conducted at Mound for this program		
9. Construction	✓	No construction is involved at Mound for this program		
10. Inspection, Measuring and Test Equipment			✓	The temperature read-out equipment and HDPE thickness standards will be calibrated by the E and E Standards Lab. Dimensional checks to be achieved through functional fits.
11. Quality Records			✓	Quality Control shall maintain a file of material certifications and inspection records along with the traceability of the final package back to the liner. Quality Control files shall also include vendor survey reports, reports of nonconforming material and corrective action reports. Records to be kept twenty years.
12. Corrective Actions			✓	Corrective actions for nonconforming material shall be approved by Representatives of the Solid Volume Reduction Group, Health Physics, D and D operations and Engineering (Material Review Board). QC shall be represented at all MRB meetings.
13. Personnel Training			✓	Inspectors shall be instructed in the proper use of the associated equipment.
14. Audits			✓	The Quality Control Engineer shall conduct random surveys to cover vendor operations. Survey Reports to be issued in a timely manner. Quality Control to maintain the file of audits and actions.
15. Other	✓	No other special controls required		

MRC-ML-6663

August 1983

PROGRAM TRU FRP Coated Boxes (Oversize)

QUALITY PLAN

DEPARTMENT APPROVAL

RESPONSIBLE INDIVIDUAL [signature] DATE 10/24/83

QUALITY COORDINATOR Rick Hampel, Q.C. Engineer

PROGRAM MANAGER [signature] DATE 10/24/83

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent (Comments)
1. Design Information, Review and Change Control			✓	Formal drawings shall be processed through Drawing Control. Drawings and specifications to be reviewed by Quality Control.
2. Procurement			✓	All purchase orders for fabricated and raw materials shall be reviewed by Quality Control. Vendor certifications, as required, shall be reviewed and filed by Quality Control.
3. Inspection			✓	Construction inspection at vendor's site, receiving inspection and final closing inspection to be conducted by Maintenance Support Engineering. Reports to be submitted to Quality Control Engineer for review and disposition.
4. Fabricated Materials and Raw Materials			✓	Boxes to be inspected at vendor's site both before and after FRP application. Resin and glass to be certified by vendor and these lot numbers to be checked by the inspector.
5. Material Control			✓	Boxes to be identified by serial number and manufacturer. Identification to be permanently applied to the boxes. Items to be controlled by serial number.
6. Nonconforming Material			✓	Nonconforming material is cause for rejection of product. Corrective action may be taken provided the Project Engineer, the Quality Control Engineer and the user approve the actions proposed.
7. Supplier Selection			✓	Supplier selection will be based on the survey results. Surveys to be conducted by the Quality Control Engineer who may be accompanied by the Project Engineer and the Purchasing Agent. Survey reports shall prepared by the Quality Control Engineer. The file shall be maintained by Q.C. and Purchasing.
8. Manufacturing	✓	Construction is is involved rather than manufacturing		
9. Construction			✓	Construction shall be controlled through inspections by Maintenance Support Engineering and audits by Quality Control Engineer.
10. Inspection Measuring and Test Equipment			✓	Instruments used for measurments shall be calibrated by the inspector before use. Gage Laboratory calibrations are not required for these measurments.
11. Quality Records			✓	Quality Control shall maintain a file of material certifications and inspection records along with reports of nonconforming material and corrective actions. Records to be kept 20 years.
12. Corrective Actions			✓	Corrective actions for nonconforming material shall be approved by the Quality Control Engineer, the Product Engineer and the User.
13. Personnel Training			✓	The Inspector shall be instructed in the proper use of the inspection equipment used for this program. MRC supervisors shall be assured that the personnel performing operations on the boxes are properly instructed in the techniques to be used.
14. Audits			✓	The Quality Control Engineer shall conduct random audits to cover construction, loading and sealing of the FRPcoated boxes.
15. Other	✓	No other special elements required		

PROGRAM Shipment of TRU Waste

DEPARTMENT APPROVAL

QUALITY COORDINATOR Rick Hampel, Q.C. Engineer

QUALITY PLAN

August 1993

RESPONSIBLE INDIVIDUAL Daniel P. Hopkins DATE 10/24/93

PROGRAM MANAGER Richard L Blaunt DATE

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent
1. Design Information, Review and Change Control			✓	Formal Spec, (MD 70205) shall be processed through Drawing Control for packages used by Mound Facility. Specifications to be reviewed by Quality Control Engineer.
2. Procurement			✓	See individual TRU component Quality Plans (55 gal drums, HDPE liners, FRP coated box)
3. Inspection			✓	See individual TRU component Quality Plans.
4. Fabrication Materials and Raw Materials	✓	No fabrication apparatus required		
5. Material Control			✓	Each completed package has a unique identification which is maintained by Nuclear Accountability.
6. Nonconforming Material			✓	No non-conforming package is to be shipped.
7. Supplier Selection	✓	There are no outside suppliers of waste involved		
8. Manufacturing	✓	No manufacturing operations required		
9. Construction	✓	No construction operations required		
10. Inspection, Measuring and Test Equipment			✓	Inspection of packages to be conducted by the Technical Services Group. Special Materials Control personnel to review documentation of each package to be shipped and sign, if approved.
11. Quality Records			✓	Quality records to be kept by Nuclear Accountability. Audit Records to be kept by Special Materials Control.
12. Corrective Actions			✓	Corrective actions for non-conforming material shall be approved by the Technical Services Group and Quality Control Engineer.
13. Personnel Training			✓	Quarterly communication sessions with all personnel involved with packaging TRU waste. Min biannual training relating to labeling and plackarding.
14. Audits			✓	Audits to be conducted by Special Materials Control personnel.
15. Other	✓			

MRC-ML-6663

PROGRAM INTERIM STORAGE OF WASTE AT MOUND FACILITY

DEPARTMENT APPROVAL

QUALITY COORDINATOR Nick Hampel, Q.C. Engineer

QUALITY PLAN

August 1983

RESPONSIBLE INDIVIDUAL Toby C. Elswick DATE 10/25/83

PROGRAM MANAGER Toby C. Elswick DATE 10/25/83

Quality Plan Elements	Not Applicable	Reason	Applicable	Extent
1. Design Information, Review and Change Control			✓	Maximum quanities permitted in each location shall be documented on the standard report form and shall be agreed upon by the responsible individual.
2. Procurement	✓	No material is purchased for this program		
3. Inspection			✓	Responsible individuals shall inspect areas assigned to them and be aware of the contents of these storage areas at all times.
4. Fabrication Materials and Raw Materials	✓	No material is fabricated for this program		
5. Material Control	✓	No Material Control is required		
6. Nonconforming Material			✓	Deviations to the permitted quanities shall be reported to Management as well as to the responsible individual. Corrective actions to be included in the Management report, if possible, otherwise corrective action report must follow.
7. Supplier Selection	✓	No material is purchased		
8. Manufacturing	✓	No material is manufactured for this program		
9. Construction	✓	No material is constructed for this program		
10. Inspection, Measuring and Test Equipment	✓	No physical tests or other measurments required		
11. Quality Records			✓	Reports which are issued to the Director of Nuclear Operations are to be filed with Quality Control. Corrective actions are also filed by Quality Control.
12. Corrective Actions			✓	Quality Control shall follow through to assure that responsible individuals correct devient conditions.
13. Personnel Training			✓	Persons responsible for specific areas shall be advised of the limits permitted in their areas.
14. Audits			✓	Sites to be audited at least six times each year.
15. Other	✓	No other special controls required		

MRC-ML-6663

August, 1983

ENCLOSURE II

DOCUMENTS

WASTE MANAGEMENT

RADIOACTIVE MATERIAL SHIPPING CONTAINERS AND PROCESSES

TECHNICAL MANUALS

MD-10173	Users Handbook: Waste Accountability Shipping and Packaging (WASP)
MD-70205	TRU Waste Management
MD-70180	Radioactive Liquid Waste Disposal
MD-21358	Tritiated Liquid Waste Packaging Procedure
MD-70152	Loading Procedures (5790/5791).

SPECIFICATIONS

SPA-820139	Fiberglass Reinforced Polyester Fire Test Procedure
ES-50655	Sponge Rubber Gasket DOT-17C, 55-gallon Drum
SPA-740082	Plywood Box Fabrication and Application of FRP Laminate
SPA-780114	Special TRU Waste Shipping Container Specifications
SPA-740119	Plastic Liner for Plywood Box Specification
SPA-750048	Testing and Inspection Specification - Open Head Polyethylene Drum Liner
SPA-800385	Plywood Box Fabrication
SPA-740120	Fiberboard Liner for Plywood Box Specification
SPA-740947	Procurement Specification - DOT 17C, 55-Gallon Steel Drum
SPA-750046	Procurement Specification - DOT 17H, 55-Gallon Steel Drum
SPA-740918	Procurement Specification - Open-head Polyethylene, 55-Gallon Drum Liner
SPA-810871	Drum Liner, Shipping Container - Closed Head Polyethylene, 26 Gallon
SPA-760592	Procurement Specification - DOT 25, 27 Gal. - Polyethylene Drum Liner

DRAWINGS

AYD-750375	TRU Waste Plywood Box Assembly
AYD-780117	Special TRU Waste Shipping Container - Container Type I Box Subassembly
AYD-780119	Special TRU Waste Shipping Container - Container Type I Top and End Panel Subassemblies
AYD-780115	Special TRU Waste Shipping Container - Container Type I Container Assembly
AYD-780120	Special TRU Waste Shipping Container - Container Type III Top and End Panel Subassemblies
AYD-780118	Special TRU Waste Shipping Container - Container Type III Box Subassembly
AYD-780116	Special TRU Waste Shipping Container - Container Type III Container Assembly
AYD-780179	Special TRU Waste Shipping Container - Container Type IV Box Subassembly

DRAWINGS (Cont'd)

AYD-780178	Special TRU Waste Shipping Container - Container Type IV Container Assembly
AYD-780180	Special TRU Waste Shipping Container - Container Type IV Top and End Panel Subassemblies
AYD-780181	Special TRU Waste Shipping Container - Container Type V Container Assembly
AYD-780182	Special TRU Waste Shipping Container - Container Type V Box Subassembly
AYD-780183	Special TRU Waste Shipping Container - Container Type V Top and End Panel Subassemblies
AYD-800385	LSA Waste Plywood Box Assembly
AYD-770581	Liner - Rigid - 55-Gallon Drum

III. WASTE GENERATION AND MANAGEMENT: ORGANIZATIONAL STRUCTURES AND INTERFACES

A. General Organization Charts

The following organization charts delineate departments of the facility involved in the TRU waste certification effort. Three major departments are involved:

Nuclear Operations - the generator
Advanced Devices - QC program administration
Administrative Services - Waste Management policy and administration, Health Physics and data retention

WIPP CERTIFICATION TASK FORCE

R. K. Blauvelt
Administrative Services
Chairman

R. B. Hampel Advanced Devices	J. W. Doty Nuclear Operations	D. R. Hopkins Administrative Services

The WIPP Certification Task Force is responsible for development of the certification plan.

In addition, R. K. Blauvelt is the certifying official for Mound and will provide the final sign-off that a shipment of TRU waste meets the WIPP criteria.

IV. DATA COLLECTION AND ARCHIVING

Mound has a formal records retention program as described in Systems Manual 201 "Records Retentional and Disposal".

Records may be retained for specified periods of time up to and including permanent retention. The program was established to

1) Preserve records which are of long term value.

2) Promptly dispose of records which do not warrant further retention.

3) To retire to economical storage those records which are no longer needed in current business, but are not eligible for immediate disposal.

The following records are subject to review and are maintained for a minimum of 25 years unless determined by Mound, or WIPP, that further retention time is required.

Item	Initiating Organization
• Vendor Certification Reports	Q.C.
• Container Inspection Reports	Q.C.
• Container Purchase Orders	N.O.
• Container Test Results	Admin.Serv.
• Materials P.O.	N.O.
• Materials Testing	N.O.
• Operational Logs	N.O.
• Waste Package Data Form	N.O.
• Operations Audit Reports	Q.C.
• Assay of Batch Operations	N.O.
• Calibration of Instruments	N.O.
	Admin. Serv.
	Q.C.

Materials would include materials utilized in container fabrication and materials used during waste treatment operations. Operational logs are records kept of processing operations.

V. CONTAINER PROCUREMENT AND HANDLING

A. Description of Waste Containers

All transuranic waste generated at Mound must be packaged in 55-gallon drums or metal boxes. Mound has adopted the containers originally developed by Rocky Flats. The drum set consists of a 55-gallon Spec. 17C steel drum with a 90 mil high density polyethylene liner. The liner has a press fit lid which is further held in place with an adhesive. The drum has been demonstrated to meet the DOT Spec 7A requirements.

Examples of the types of waste which are packaged in these drum sets from D&D operations include:

1) in-line equipment, filters, residues
2) in-line waste, paper, gloves, plastic bags
3) cemented sludge resulting from treatment of low-level liquid wastes at the Waste Disposal Plant
4) TRU compacted trash.

Mound utilizes metal boxes of a bolt-on lid type for shipping TRU wastes that will not fit into 55-gallon drums. These containers are of the standard sizes specified in DOE 5820.

B. Control Methods

The following pages describe the WIPP criteria which are applicable to the waste containers. Discussion follows each criterion to demonstrate how Mound's program assures that the criterion is met.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Not applicable PAGE NO. 40

WIPP CRITERION Waste Containers PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

Waste containers for emplacement at the WIPP shall be noncombustible and meet all the applicable requirements of 49 CFR 173.398(b) for Type A packaging. In addition, they shall have a design life of at least 15 years after emplacement, including labeling and color-coding.

Any waste containers which appear to be bulged or otherwise damaged shall be over-packed in a container meeting the above requirements.

INTENT:

The purpose for this criterion is to provide protection to personnel from the potential failure of waste containers and the release of contamination during shipping and handling, including retrieval if required.

CONTROLLED PROPERTY:

- Container design and fabrication.
- Physical condition of container.

DISCUSSION:

Mound utilizes metal drums and boxes which have been subjected to the DOT Spec 7A requirements. Tests and engineering evaluations conducted by Idaho and Sandia personnel indicate that the 15-yr lifetime is exceeded as reported in SAND 1859. The following procedures assure high quality containers meeting the above specs. These operations are conducted by the QC personnel as referenced in the Q.A. Plan. Inspection reports will be retained.

When drums and boxes have been approved by the QC function, they are entered into the Waste Accountability Shipping and Packaging (WASP) data base as approved shipping containers. Each container, including the 90 mil HDPE liner, has a unique identification number. Containers which have not been approved by QC cannot be shipped, since the generation of the data package for that container will not be performed by the computer. Thus, the QC inspection, coupled with the WASP system for generation of shipping papers and the data package assures that only containers which meet the WIPP container criteria are shipped.

I. TRU CONTAINERS

A. Drum Assembly

1. Drum - DOT 17C, cold rolled steel container, 16 gauge wall and heads, 12 gauge closure ring, cadmium plated bolt, 1/2" neoprene rubber gasket, interior coated with rust inhibiting epoxy paint, exterior primed and painted.

a. All welded seams and 360° of chine on each drum individually leak tested at 15 psi by vendor. Sample of five per lot leak tested by QC at buyer's site.

b. Each drum visually inspected by vendor. Sample of 42 units per lot inspected by buyer at buyer's site.

c. Dimensions checked by vendor at start and at end of each run. Sample of five inspected dimensionally by buyer at buyer's site for each lot.

d. Vendor to conduct 4 ft. drop test and 20 psi hydrostatic pressure tests at least once each fourth month of operation. Latest tested drum must be saved until next test series is complete.

e. Drums touched up after filling and sealing and prior to shipment (paint).

f. The lot size is controlled.

2. Drum Liner - High density cross-linked, polyethylene (HDPE) such as C1-100-B-55 by Phillips Petroleum Co., snap-on lid, minimum wall, 0.090" snap-on-lid.

   a. Each liner leak tested, functionally fit and dimensionally inspected by vendor. Lids custom fit by vendor and identified for assigned liner.

   b. Low temperature, -20°F (-30°F) dart impact test conducted on randomly selected samples. The occurrence of a single failure required that 100% of lot be tested for this attribute. Test sample taken from waster sheet which is obtained when the top of the liner is cut out to functionally fit the lid. This test measures the environmental stress crack resistance (ESCR) and provides an indication of long term integrity under stress. Since processing parameters (time and temperature) affect this attribute, the dart impact test also provides some assurance that the proper molding cycle times and temperatures were used.

   c. The leak test is conducted on each liner by the vendor and on a randomly selected sample by the buyer. This test is performed on the liner before the removal of the wasters sheet. This permits higher pressures (5 psi) to be used for the test and eliminates the possibility of leaks occurring in the mechanical seal between the lid and body of the liner assembly, which could interfere in the detection of small leaks near the top of the liner body.

   d. Wall thickness measurements are conducted by the vendor and on random samples by the buyer. Both the vendor and the buyer use ultrasonic thickness gauges to make these measurements.

   e. Liner lids are checked for porosity using a high intensity mercury vapor lamp in an opaque container. Any trace of light through the liner lid is cause for rejection of that lid. Vendor inspects 100% of his lids. Buyer uses a random sample plan.

   f. All testing is conducted at the vendor's site. This minimizes the possibility of having reject material on the buyer's site and, thereby, minimizes the possibility of utilizing defective materials. If any unit is found to fail any one of the tests, 100% of the lot represented by the sample must be tested for the particular attribute that the sample failed.

B. Metal Boxes

Mound will make the transition to bolted closure metal boxes in FY-1984. New specs and inspection criteria to be developed by Mound.

WIPP TRU WASTE CERTIFICATION

MOUND — DATE August, 1983

WASTE FORM Not Applicable — PAGE NO. 44

WIPP CRITERION Combustibility — PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

3.2 CRITERION: COMBUSTIBILITY

Combustible TRU waste materials shall be packaged in noncombustible containers. Packages containing more than 25 volume percent of combustible waste shall be color coded.

INTENT:

The purpose for this criterion is to minimize the spread of fire and the release of radioactive materials in the event of a fire.

CONTROLLED PROPERTY:

- Waste container material.

DISCUSSION:

Mound will utilize only metal drums and boxes for packaging of TRU waste. These metal containers will be taken from the inventory of QC approved containers in the WASP data base. Combustible containers will not be added by QC personnel to this data base.

The solidified sludge waste form referenced in this document consists of a non-combustible concrete monolith. See Section VII for details on the waste form.

WIPP TRU WASTE CERTIFICATION

MOUND

DATE August, 1983

WASTE FORM Not Applicable

PAGE NO. 45

WIPP CRITERION Waste Package Size

PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

TRU waste packages or package assemblies shall not exceed 12 x 8 x 8.5 feet (3.7 x 2.4 x 2.5 m) in overall L x W x H dimensions.

INTENT:

The purpose for this criterion is to prevent exceeding the size limitations of handling equipment, facilities, and transportation hardware.

CONTROLLED PROPERTY:

- Waste package size

DISCUSSIONS:

The 55-gallon drums and standard metal boxes which Mound uses to package TRU waste fall well within the maximum container size approved at the WIPP. Container specifications are checked for proper sizing and during lot inspection, dimensional requirements are verified. Containers which do not meet the size specs are rejected and not entered on the WASP container inventory by Q.C. personnel.

The applicable drawings and specs are as follows:

55-gallon 17C Drum	Dwg. Nos. PA 740947	DOT Spec.-17C 49 CFR 178.115
HDPE Liner	Dwg. No. AYD 770581 and SPA 750048	Spec. No. SPA 740918
Metal Box	To be issued	

WIPP TRU WASTE CERTIFICATION

MOUND — DATE August, 1983

WASTE FORM Not Applicable — PAGE NO. 46

WIPP CRITERION Waste Package Handling — PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

All waste packages shall be provided with cleats, offsets, chines, or skids, for handling by means of fork trucks, cranes, or similar handling devices. Lifting rings and other auxiliary lifting devices on the packages, if provided, shall be recessed, offset, or hinged in a manner which does not inhibit stacking the packages.

INTENT:

The purpose for this criterion is to permit the use of standard methods for waste package handling.

CONTROLLED PROPERTY:

- Container configuration and design features.

DISCUSSION:

Mound utilizes standard 55-gallon drums which are amenable to standard handling devices. The other waste container which Mound will use is a standard metal container of the bolt on lid design. Mound Q.C. personnel will inspect all metal drums and boxes for proper formed chines and lifting straps. Only containers meeting this handling criterion will be entered into the WASP container inventory.

Drawings and specifications which support this criterion are as follows:

55-gallon 17C Drum	Dwg. Nos. PA 740947	DOT Spec.-17C 49 CFR 178.115
HDPE Liner	Dwg. No. AYD 770581 and SPA 750048	Spec. No. SPA 740918
Metal Box	To be issued	

VI. WASTE GENERATION AND TREATMENT

A. List of Mound Generated TRU Waste Forms.

Cemented sludges and liquids - low activity, non-combustible highly immobile.

Non-combustible - low activity, non-combustible, immobile.

Combustible - well defined, low activity.

Soil - Particle size requirements are met.

VII. SPECIFIC CERTIFICATION PROCEDURES

A. Waste Form - Solidified Sludge (Mound).

TRU WASTE CERTIFICATION TASK

SLUDGE FROM THE WASTE DISPOSAL PLANT

Liquid waste generated via general building drains, showers, laboratory process waste solutions are treated for removal of Pu-238, with the resulting sludge containing the Pu-238 being mixed with cement for solidification and shipped to Idaho for burial since September, 1974.

The liquid waste is generated primarily by showers, decontamination processes, laundry, development groups, and analytical operations. Trace amounts of waste chemicals and low-level radioactive waste (U-233, Np-237, Am-241) are present. Some are added to the influent and some are solidified in cement without pretreatment. All of the sludge generated from the Waste Disposal Building (WD) process is solidified with cement.

Note: Mound Facility Manual MD-70180 covers procedures used by the Waste Disposal (WD) group for processing radioactive liquid-waste produced on site. These procedures include control points and sample frequencies on the influent, sludge and cement. Sampling is done on each batch.

Table I illustrates the types of chemicals, solids, and nuclear wastes (some quantities are estimates) that are dumped to the WD Facility and processed yearly by waste treatment and immobilized in cement.

Table II provides data on amount of chemicals added to the process, drums of sludge generated and average curie content.

An experimental program was conducted on the cemented sludge waste form to verify certifiability to WIPP criteria, such as immobilization and gas generation. This data is documented in reference (14).

(14) TRU Waste Certification: Experimental Data and Results - July 1983
E. L. Lewis

TABLE I

The following list of materials make up the bulk of the influent to the WD Building.

1. BUILDING FLOOR DRAIN INPUT: PP, WD, and R Common Materials

   Shower water, plus soap
   Mop and decontamination water - Pu-238
   Bowmans cleanser - trace
   Micro® - detergent - trace
   Wax, wax stripper
   Bowl cleaner
   Windex - trace
   J-Jax - trace
   Alcohol - trace
   Oil - trace
   Saw dust
   Paint
   HNO_3-HN_4OH
   Acetone - trace

2. THE LAUNDRY:

   An alkaline detergent Decon 4324® is used. About 210 lbs. per week is the current amount used.

3. THE FOLLOWING ESTIMATED AMOUNTS OF CHEMICAL AND RADIOACTIVE WASTES FROM RESEARCH BUILDING (R) LAB SINKS, ON A YEARLY BASIS

   H_2O_2, HNO_3, H_2SO_4, NH_4OH, H.F., and Lactic Acid = 7 pints

   Methanol, Propanol, Mineral Oil, Ethanol, Acetone, and Trichloro Ehtylene = 5 pints

   Sodium Sulphite Solution = 1 pint

(continued on next page)

3. (cont'd.)

CHEMICAL	AMOUNTS IN LBS.
K_2CO_3	4
K_2SO_4	1
$CuSO_4$	1
$CaCO_3$	3
Oxalic Acid	1
LiCL	2
ZrO_2	2.5
$NaCO_3$	0.25
Caustic Soda and Lime	60
Potassium Pyrosulfate	5
KBr	2.5
$NiSO_4$	4

4. THE FOLLOWING CHEMICALS ARE THE ESTIMATED AMOUNTS USED IN THE VARIOUS ANALYTICAL LABS THROUGH SINKS:

HNO_3	63
HCl	60.7
H_2SO_4	74.5
$HClO_4$	9
HF (hydrofluoric acid)	3.5

Also less than 50 grams per year of the following:

CN^-, Hg, Pb and Be

5. CHEMICALS USED IN TREATMENT

CHEMICALS USED	PURPOSE	FORMS
C-Carbon	Adsorbent of Pu-238	Amorphous-C
$CaCl_2$-Calcium Chloride	Detergents, Oxalic Acid	$CaCO_3$,$CaPO_4$
$Fe_2(SO_4)_3$ Ferrous Sulfate	Floccing Agent	FeOH
Nalco-676-Organic Polymer	Aids in separation	
NaOH-Sodium Hydroxide	pH Adjustment	pH 11.3
H_2SO_4-Sulfuric Acid	pH Adjustment	pH 7.0=8.0
Cement	To solidify sludge	
Bone Char	Pu-238 adsorption at pH of 7.0-8.0	

6. ANALYTICAL DATA OF TYPICAL SLUDGE SAMPLE

Si,P,Al, Fe	=	.6	
Mg,Ca,Sr	=	.6	
Co,B,Zr	=	.01	
Na	=	0.6	
Cr	=	0.08	These elements found to be
Ni	=	0.08	in the sludge due to pre-
Cu	=	0.09	cipitation or adsorption.
V	=	0.05	
Ti	=	0.05	
Mn	=	0.03	
Pb	=	0.01	
Sn	=	0.01	
Density	=	1.1 gms/cc	

TABLE II

INFLUENT GALLONS X1000		CHEMICAL USED/LBS.	DRUMS OF SLUDGE	Pu-238 MILLICURIES/ DRUM RANDOM BATCHES
1974	18,000	C = 915 C = 5775 Fe = 2900 3 month period	400	Estimated 250 mci
1975	3,264	C = 9020 Ca = 26400 Fe = 17200	1588	Batch - 19 = 250 mci Batch - 39 = 180 mci Batch - 73 = 110 mci
1976	2,260	C = 4000 Ca = 48700 Fe = 11200	427	Batch - 89 = 38 mci Batch - 92 = 83 mci
1977	2,552	C = 7000 Ca = 59300 Fe = 11200	200	Batch - 94 = 120 mci Batch - 99 = 50 mci
1978	2,614	C = 12300 Ca = 63400 Fe = 8020	455	Batch -101 = 71 mci
1979	2,544	C = 8300 Ca = 71900 Fe = 2400	373	Estimated ave. = 30 mci
1980	1,869	C = 6020 Ca = 65700 Fe = 2400	76	Estimated ave. = 40 mci
1981	2,305	C = 6715 Ca = 63500 Fe = 1400	525	Estimated ave. = 29 mci
1982 (Jan. to June)	1,526	C = 4020 Ca = 28700 Fe = 500 6 month period	159	Estimated ave. = 20 mci

GAS GENERATION RESULTS ON THE WD SLUDGE/CEMENT WASTE FORMS

High risk plutonium-contaminated WD sludge was obtained in March, 1980 and various properties of the sludge were measured. The density was determined to be 1.1 g/cc, the pH was approximately 11, and the alpha concentration was approximately 2.5×10^5 dpm/g sludge, most of which was in the solids. The sludge was filtered and separated into liquid (72 wt %) and solids (28 wt %). Pellets and castings were then manufactured using uncalcined sludge solids, Portland 1A cement, and sludge filtrate. The pellets/castings were allowed to cure and then tested for compressive strength, leachability and gas generation.

There were no gaseous products generated from either the uncalcined WD sludge solids/cement castings or pellets (Reference 14).

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 55

WIPP CRITERION Immobilization PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

Powders, ashes and similar particulate waste materials shall be immobilized if more than 1 wt % of the waste matrix weight is in the form of particles below 10 microns in diameter, or if more than 15 wt % is in the form of particles below 200 microns in diameter.

INTENT:

The purpose for this criterion is to reduce: (a) the quantity of potentially respirable fines, and (b) the dispersibility of radioactive material, in the event of container failure.

CONTROLLED PROPERTIES:

- Quantity, size, and density of particles in waste.
- Durability of waste particle sizes.
- Stability of immobilized waste.

DISCUSSION:

Sludge from the WD operation is solidified by mixing with cement in accordance with specific written procedures described in MD-70180 "Mound Facility Radioactive Liquid Waste Disposal". These operations are periodically audited by QC personnel at Mound as described in the Q.A. plan. The resultant waste form is a concrete monolithic/oxide of a 55-gallon 17-C drum and 90 mil high density polyethylene liner. Cold samples of this waste form have been examined for flaking and dusting. They have been subjected to handling simulating over the road transport experience, plus on-site movements. These test results are on file at Mound (reference 14). They show that a very minute amount of flaking can occur, but much less than the 1 wt % or approximately 6 lb. called for in the criterion. The actual weight of the particulate collected was 0.008 wt. percent of the total mass. For a 600 lb. drum, this would be less than 1 oz.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 56

WIPP CRITERION Free Liquids PREPARED BY

APPROVED BY

APPROVED BY

TRU waste shall contain no free liquids.

INTENT:

The purpose for this criterion is to reduce the dispersibility of radionuclide materials in the event of waste container failure.

CONTROLLED PROPERTY:

- Quantity of free liquids present in waste.
- Stability of solidified liquids.

DISCUSSION:

WD Sludge is solidified with cement in accordance with documented written procedures. This operation is periodically audited by Q.C. personnel as described in the Q.A. Plan. Cold samples of this waste form have been examined for the presence of free liquid in/on the concrete matrix and none was found. These test results are on file at Mound (reference 14).

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 57

WIPP CRITERION Sludges PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

TRU waste sludges shall be packaged such that internal corrosion protection is provided for the waste container.

INTENT:

The purpose for this criterion is to preclude container failure and the potential release of contamination because of container reactions with waste sludges.

CONTROLLED PROPERTY:

- Waste package design.

DISCUSSION:

It should be noted that in solidifying the WD sludge with cement at Mound, the properties of the sludge that could result in container failure are removed. Nevertheless all WD sludge is placed in TRU drum sets containing 90 mil HDPE liners which precludes attack of the container from within during the expected performance life at WIPP.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 58

WIPP CRITERION Pyrophoric Material PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

Pyrophoric materials, other than radionuclides, shall be rendered safe by mixing with chemically stable materials (e.g. concrete, glass, etc.) or processed to remove their hazardous properties. No more than 1% by weight of the waste in each package may be pyrophoric forms of radionuclides metals and these shall be generally dispersed in the waste.

INTENT:

The purpose for this criterion is to reduce the possibility of fire originating from spontaneous combustion.

CONTROLLED PROPERTIES:

- Quantity of potentially pyrophoric material present in waste.
- Degree of dispersion of potentially pyrophoric material in waste.
- Combinations of potentially pyrophoric material and waste matrix.

DISCUSSION:

Analytical procedures performed on the sludge and included in this document indicate the absence of pyrophorics in the waste stream. Periodic sampling (every batch), of the sludge will be performed and documented to demonstrate continued absence of these materials (reference 1). In addition, the solidification operation assures that any small quantities of pyrophorics that might be present are rendered safe by dispersion in the concrete matrix.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 59

WIPP CRITERION Explosives & Compressed Gases PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

TRU waste shall contain no explosives or compressed gases as defined by 49 CFR 173, Subparts C and G.

INTENT:

The purpose for this criterion is to reduce personnel risk from possible explosions and the potential release of contamination from failed waste containers.

CONTROLLED PROPERTY:

- Presence of explosive items and quantity of selected chemical compounds in waste.
- Presence of pressurized vessel in waste.

DISCUSSION:

The sludge waste form has been analyzed and found to contain no explosive items or explosive compounds or material capable of forming explosive mixtures. Periodic inspections will be performed and documented to assure continued absence of these materials (reference 1).

WIPP TRU WASTE CERTIFICATION

MOUND

DATE August, 1983

WASTE FORM Solidified Sludge

PAGE NO. 60

WIPP CRITERION Toxic & Corrosive Material

PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

TRU waste shall contain no toxic substances defined here as Poison A or Poison B by 49 CFR 173, Subpart H, unless they exist as co-contaminants with transuranics. For shipping purposes, prior authorization of such shipment is required from the WIPP operator. TRU contaminated corrosive materials must be neutralized or otherwise rendered noncorrosive. Waste packages containing toxic materials shall be color-coded.

INTENT:

The purposes for this criterion are: (1) to ensure that operating personnel are aware of potential hazards in the event of a waste container failure, and (2) to preclude the possibility of container failure through the potential retrieval period because of attack by corrosive materials.

CONTROLLED PROPERTY:

- Identification of Poison A or Poison B material.
- Form and packaging of corrosive materials.
- Waste package design.

DISCUSSION:

The WD sludge has been analyzed for constituents and these compared against the list of Poison A, Poison B materials as listed in 49 CFR 172.101, 49 CFR 173.326 and 49 CFR 173.343. No poisons were identified in the sludge. This analytical work will be performed periodically and documented.

Any corrosive properties that might be exhibited by the concrete waste form are rendered noncorrosive by the use of the 90 mil high density polyethylene liner in packaging of the sludge. Only Q.C. approved drum sets are entered into the data base which assures that the sludge must be packaged into this corrosion resistant package.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 61

WIPP CRITERION Waste Package Weight PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

CH TRU waste packages or package assemblies shall weigh no more than 25,000 pounds (11,300 kg).

INTENT:

The purpose for this criterion is to prevent overloading of waste package handling equipment.

CONTROLLED PROPERTY:

- Waste package weight.

DISCUSSION:

All sludge drums are weighed after loading and the weight is marked in indelible pen on the top of the container. In addition, this weight is entered on the data package for that drum. The scales are calibrated annually by the Mound standards group and a calibration seal is applied. The drums of solidifed sludge typically weighs 650-680 lbs.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 62

WIPP CRITERION Nuclear Criticality PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

The fissile isotope content of individual CH TRU waste containers shall be no more than 200g of fissile isotope per 55-gallon (0.21 m^3) or larger drum, 100g per 30-gallon (0.11 m^3) drum, 500g per DOT 6M container, 350g per 4x4x7 ft. (1.2m x 1.2m x 2.1 m) FRP DOT 7A box or 5g in any ft^3 (0.028 m^3) in other boxes.

INTENT:

The purpose for this criterion is to prevent the occurrence of a criticality incident within a waste package or package array.

CONTROLLED PROPERTY:

- Fissile material content of the waste package.

DISCUSSION:

Each batch of water to be processed for radionuclide removal is analyzed for fissile content, using written procedures documented in MD-70180. The primary radionuclide is Pu-238 and its average concentration is in the range of 50-1000 disintegrations per minute per milliliter. Analysis of the sludge batches have shown a range from 30 to 250 millicuries of Pu-238 per drum. Fissile content of each batch of waste water will continue to be analyzed and documented, using approved analytical procedures. This operation is periodically audited by Q.C. personnel.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 63

WIPP CRITERION Surface Dose Rate PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

Waste packages shall have a maximum surface dose rate at any point no greater than 200 mRem/hr. CH TRU packages with surface dose rates of more than 10 mRem/hr, but not greater than 200 mRem/hr, shall be color-coded.

INTENT:

The purpose of this criterion is to control the radiological exposure to operating personnel.

CONTROLLED PROPERTY:

- Surface radiation levels.

DISCUSSION:

Each package of solidified sludge is surveyed by a Health Physics surveyor using an approved and documented survey procedure (reference 11). This procedure is periodically audited by Q.C. personnel. This survey instrument is calibrated using a standard source before and after the survey of a batch of solidified sludge drums. This data is recorded on the drum data packet and the surveyor affixes his name and Health Physics number to the data packet. Sludge drums dose rates are typically <0.5 mRem/hr at the surface.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August 1983

WASTE FORM Solidified Sludge PAGE NO. 64

WIPP CRITERION Surface Contamination PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

CH TRU waste packages or package assemblies shall have a removable surface contamination no greater than 50 picocuries per 100 cm^2 for alpha emitting isotopes and 450 picocuries per 100 cm^2 for beta-gamma emitting isotopes.

INTENT:

The purpose for this criterion is to limit radiological exposure to operating personnel and to reduce the potential for the contamination of the WIPP.

CONTROLLED PROPERTY:

- Surface contamination levels

DISCUSSION:

Each drum of solidified sludge is wiped by a Health Surveyor following an approved and documented survey procedure (reference 11). These wipes are counted in instruments which are calibrated against standard sources on a daily basis. These calibrations are documented. The wipe number is entered on the data packet for each drum and the surveyor signs the sheet and enters his Health Physics number. Drums must wipe at levels less than 10 picocuries/100 cm^2 to be released per Mound standards.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 65

WIPP CRITERION Thermal Power PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

Individual CH TRU waste packages in which the average thermal power density exceeds 0.1 watt/ft^3 (3.5 w/m^3) shall have the the thermal power recorded in the data package.

INTENT:

The purpose for this criterion is to control the thermal loading at the WIPP.

CONTROLLED PROPERTY:

- Identification of waste package thermal power.

DISCUSSION:

Each batch of sludge is analyzed for the average concentration of radionuclide using written and approved analytical procedures (reference 1). Results of these analyses are documented. The primary radionuclide is Pu-238, which has a thermal power of approximately 0.55 watts/gram. The thermal power density of each drum of sludge can then be calculated and this number entered on the data packet for each drum. A typical value for sludge drum would be 1.3×10^{-4} watts/ft^3.

WIPP TRU WASTE CERTIFICATION

MOUND

DATE August, 1983

WASTE FORM Solidified Sludge

PAGE NO. 66

WIPP CRITERION Gas Generation

PREPARED BY

APPROVED BY

APPROVED BY

To be determined.

INTENT:

To be determined.

CONTROLLED PROPERTIES:

- Identification and control of process generating explosive mixtures of gases.

DISCUSSION:

Sludge batches have been analyzed for organic content prior to solidification. Cellulostics are normally associated with gas generation problems. The contents of the cement matrix does not include cellulostic materials. Therefore, the organic content of a solidified sludge drum is represented solely by the weight of the 90 mil HDPE. In addition, gas generation experiments were performed on samples of solidified sludge. The writeup of the experiments are included in the Plan as backup information. There was no detectable gas generation (reference 14).

WIPP TRU WASTE CERTIFICATION

MOUND DATE August 1983

WASTE FORM Solidified Sludge PAGE NO. 67

WIPP CRITERION Labeling PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

In addition to Federal labeling requirements, each waste package shall be uniquely identified by means of a label permanently attached in a conspicuous location. The following information shall be included on the label:

Package identification number (to be standardized) in characters at least 1" high.

Weight in kg.

INTENT:

The purpose for this criterion is to provide information to operating personnel.

CONTROLLED PROPERTY:

- Durable labeling methods.
- Unique identification number.

DISCUSSION:

Each sludge drum is marked and labeled in accordance with DOT regulations by Health Physics personnel. This individual then signs the data packet for the drum and affixes his Health Physics number (reference 11). This operation is periodically audited by Mound Q.C. personnel. In addition, the certifying official inspected each drum to assure that it has been properly labeled and marked before affixing his signature.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 68

WIPP CRITERION Color Coding PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

CH TRU waste packages shall be color-coded to identify the range of surface dose rate, combustibles over 25 volume percent, or reportable quantities of toxic materials. The color-coding shall be as prescribed by the WIPP operator.

INTENT:

The purpose for this criterion is to provide visible warning to operating personnel of potential hazards associated with waste packages.

CONTROLLED PROPERTY:

- Presence of adequate color-coding.

DISCUSSION:

Each solidified sludge drum data package will be examined by the area waste coordinator for the necessity of color coding. Sludge drums requiring color coding will be so indicated on the paper work. The corresponding drums will be pulled and the proper color coding applied by an area painter. The area waste coordinator will then check the drums before requesting QC approval. These drums will be surveyed by the certifying official before affixing his signature. Based upon current and proposed sludge drumming operations there should be no color coding required.

WIPP TRU WASTE CERTIFICATION

MOUND DATE August, 1983

WASTE FORM Solidified Sludge PAGE NO. 69

WIPP CRITERION Data Package PREPARED BY _____

APPROVED BY _____

APPROVED BY _____

There shall be transmitted to the WIPP operation in advance of shipment and a copy included with each waste package shipment, a Data Package/Certification attesting to the fact that the waste package meets the requirements of these criteria. This data Package/Certification shall be based upon a quality assurance program subject to audit and verification and shall provide information on the items specified below:

- Package identification number.
- Certification statement that the waste content and packaging is in accordance with the WIPP-WAC, and the waste is unclassified.
- Waste generation site.
- Date of packaging for shipment to WIPP.
- Maximum surface dose rate.
- Weight.
- Container type.
- Physical description of waste.
- Assay information.
- Toxic or corrosive materials (non-radionuclide) content.
- Weight of organic materials content.
- Measured or calculated thermal power (if over 0.1 watt/ft^3).
- Date of shipment.
- Carrier identification.
- Other information considered significant by the shipper.

INTENT:

The purpose for this criterion is to provide documentation on waste shipped to the WIPP.

DISCUSSION:

Each drum has with it a data packet which will contain all of the information required by this WIPP criterion. Individuals responsible for filling in data on this form will sign, initial and/or affix their Health Physics number to the sheet to provide traceability. The format for this data sheet is described a document prepared by Mound and issued by WIPP (reference 15). There is the required traceability for all data input to this form. There is also provision for independent review and a QC sign-off.

(15) Data Package Format For Certified Transuranic Waste For the Waste Isolation Pilot Plant (WIPP) WIPP-DOE-157 March 1983.

T-1379

RECORD

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

2007-0250

Reference Number: P379A, R1 (Append to Record)

AK Type:

- ☑ **Published Documentation**
- ☐ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Technical Manual MD-70180 – Mound Facility Radioactivity Liquid Waste Disposal.

Information Source: Source obtained from Bill Franz, LATA.

AK #[a]	AK Information Summary
WS3 WS4 WS5	This is a Mound facility Technical Manual describing the procedures used by the Waste Disposal (WD) Group for processing radioactive liquid waste produced in various areas of the facility.
MD 836	This source is a compilation of several issues of MD-70180 that includes various revisions of several operations: 1) Technical Manual MD-70180 Op. 704 July 13, 1981 2) Technical Manual MD-70180 Op. 704 & 705 October 5, 1983 3) Posted Operation – Clariflocculator Sludge Processing Op. 701-706 August 15, 1983 4) Clariflocculator Sludge Processing Op. 701-705 January 1, 1981 5) Posted Operation – Clariflocculator Sludge Processing Op. 701-702 & 704-706 October 24, 1984 P379A, R1 – changes 1068 Form only to identify WS elements for cemented sludge (IDC 836) and to update limitations.

Source Document Data Limitations (if any): The source does not include information on waste generation data, but does give specific information about radioactive liquid waste disposal procedures and sludge processing requirements.

AK Expert:

M. L. Johnson / M L Johnson **Date:** 4/6/06

Print **Sign**

[a] Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	AMWTP Form1068 Effective Date: 07/17/02, Rev. 1 MP-TRUW-8.13 Page 1 of 1

Reference Number: P379A

AK Type:

- [X] **Published Documentation**
- [ ] **Unpublished Data**
- [ ] **Correspondence**
- [ ] **Discrepancy Report**

Record
QB 6-25-03

Title of Source Document (including author(s), document and revision number, date, etc.): Technical Manual MD-70180 – Mound Facility Radioactivity Liquid Waste Disposal.

Information Source: Source obtained from Bill Franz, LATA.

AK # [a]	AK Information Summary
N/A	This is a Mound facility Technical Manual describing the procedures used by the Waste Disposal (WD) Group for processing radioactive liquid waste produced in various areas of the facility. This source is a compilation of several issues of MD-70180 that includes various revisions of several operations: 1) Technical Manual MD-70180 Op. 704 July 13, 1981 2) Technical Manual MD-70180 Op. 704 & 705 October 5, 1983 3) Posted Operation – Clariflocculator Sludge Processing Op. 701-706 August 15, 1983 4) Clariflocculator Sludge Processing Op. 701-705 January 1, 1981 5) Posted Operation – Clariflocculator Sludge Processing Op. 701-702 & 704-706 October 24, 1984

Source Document Data Limitations (if any): The source does not include information on actual data, only gives specific information about radioactive liquid waste disposal procedures and sludge processing.

AK Expert:

Betty J. Tolman / Betty J Tolman **Date:** 6/12/03
Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

MONSANTO RESEARCH CORPORATION
MOUND FACILITY

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	701

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
Fred A. Krause	UNCLASSIFIED	1-1-81	NONE

OPERATION TITLE
SLUDGE DEPTH MEASUREMENT — POSTED OPERATION

1. Put on pair of disposable plastic or rubber gloves.

2. Stop rotation of clariflocculation paddles and carriage plow at switch on end of clarifloculator bridge.

3. Move depth measuring device along carriage rail until near inner wall.

4. Remove locking pin from depth measuring rod.

5. Lower rod slowly into water in outer chamber at inner chamber wall until a resistance is felt as rod bottom contacts top of sludge layer in chamber.

6. Read scale at point red engraved ring on rod is in line with depth marker on calibrated bar scale of the measuring device.

7. Record this value or reading on any scrap of paper.

8. Repeat depth measurement 3 more times at new locations closer to outer wall as described in steps 5 and 6.

9. Record these 3 scale readings.

NOTE: The 4 scale readings will vary due to depth pattern formed during sludge accumulation while plow is rotating in clarifloculator.

10. Measure sludge level at several points around circumference of outer chamber wall to determine if the sludge level is uniform.

11. Raise rod into position, and replace locking pin.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	2 of 3	MD-70180	701

12. Start rotation of clarifloculator paddles and carriage plow.

13. Remove gloves and discard in HOT WASTE container.

14. Determine average scale reading in feet and inches by adding the 4 readings together and dividing this sum by 4.

15. Use Table I to determine total volume of sludge in gallons in clarifloculator.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	3 of 3	MD-70180	701

TABLE I

GALLONS OF SLUDGE IN CLARIFLOCCULATOR

SCALE READING feet & inches		VOLUME gallons		SCALE READING feet & inches		VOLUME gallons
8	2	14,313		9	9	5,953
8	3	13,873		9	10	5,513
8	4	13,433		9	11	5,073
8	5	12,993		10	0	4,633
8	6	12,553		10	1	4,193
8	7	12,113		10	2	3,767
8	8	11,673		10	3	3,376
8	9	11,233		10	4	3,006
8	10	10,793		10	5	2,666
8	11	10,353		10	6	2,357
9	0	9,913		10	7	2,067
9	1	9,473		10	8	1,804
9	2	9,033		10	9	1,567
9	3	8,593		10	10	1,348
9	4	8,153		10	11	1,156
9	5	7,713		11	0	977
9	6	7,273		11	1	819
9	7	6,833		11	2	681
9	8	6,393		11	3	559

MONSANTO RESEARCH CORP.
MOUND FACILITY

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 2	MD-70180	702

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
Fred A. Trimmo	UNCLASSIFIED	1-1-81	NONE

OPERATION TITLE

PUMPING SLUDGE FROM CLARIFLOCCULATOR INTO SLUDGE-HOLDING TANK

POSTED OPERATION

1. Pump sludge from bottom discharge of either clarifloccculator to either 1000-gallon sludge-holding tank (A or B) using the following procedure.

1.1. Open selected clarifloccculator sludge discharge valve in WD-1.

1.2. Open selected sludge-holding tank inlet valve over sludge tank in WD-101.

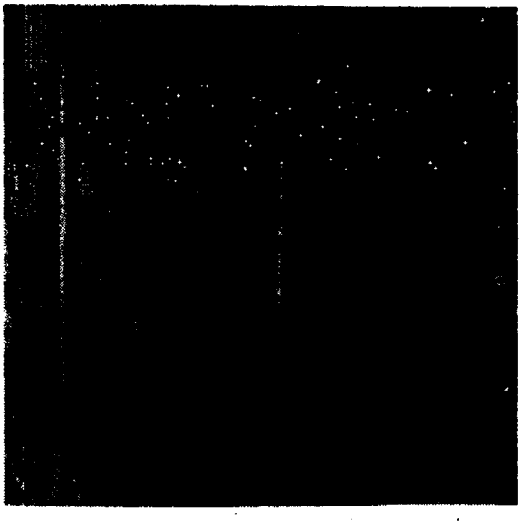

Figure 1: Sludge-Holding Tank Controls

1.3. Start one of the two Dorr-Oliver diaphragm slurry pumps (WD-1) and set required valves to pump sludge from chosen clarifloccculator to chosen sludge-holding tank.

1.4. Regulate pumping rate of Dorr-Oliver pump by adjusting timer mechanism controlling frequency of pump stroke if viscosity of sludge is higher (thicker) than normal.

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Pumping Sludge from Clarifloccu-lator Into Sludge-Holding Tank	2 of 2	MD-70180	702

2. Start mixing material in sludge-holding tank as soon as sludge covers blades of agitator.

IMPORTANT

Sludge level in clarifloccu-lator should never drop below ZERO DATUM line that corres-ponds to bottom of flocculating chamber portion of clarifloccu-lator.

3. Check sludge level in clariflocculator (Operation 701) occasionally to know when to stop sludge removal.

4. Close clariflocculator sludge discharge valve when holding-tank is about full, or sludge-level in clariflocculator is near ZERO DATUM line.

5. Stop Dorr-Oliver pump when line sounds empty.

6. Close holding tank inlet valve.

7. Stop agitator after about one hour of mixing time, or at end of workday.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 1	MD-70180	703

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
Fred A. Travis	UNCLASSIFIED	1-1-81	NONE

OPERATION TITLE

DE-WATERING SLUDGE — POSTED OPERATION

1. Remove clear supernatant water--standing above settled sludge--using siphon pump to empty supernatant water back into clarifloccculator.

2. After dewatering, remix remaining sludge in holding tank with holding tank agitator for about an hour, and then let the sludge settle again.

3. Add fresh sludge to holding tank from clarifloccculators (see Operation 702) if space available.

4. Repeat the dewatering and sludge-addition process on this holding tank until tank is filled with sludge that cannot be de-watered.

MONSANTO RESEARCH CORP.
MOUND FACILITY

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 10	MD-70180	704

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
Fred H. Franco	UNCLASSIFIED	1-1-81	

OPERATION TITLE

SLUDGE DRUMMING — POSTED OPERATION

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management, Operation 216: Drumming Low-Risk Sludge, for original procedure.

1. Inspect TRU drums and lids plus polyethylene liners and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return to Material Control.

2. Initiate a Form 5591, TRU Input Data (figure 1), for each accepted container, and

   - check box for WD Drum Input Data,
   - record drum and liner number under #13 Container Dates, and
   - record inspection results of step 1 under #9 Physical Inspection.

3. Prepare about 25 drums as follows.

3.1. Spray any drum interior that is not plastic-coated with WD-40 rust inhibitor (MF-stock #14-0034).

3.2. Install a 4-mil polyethylene bag (MF-stock #2-1160) over base and walls of TRU drum.

3.3. Position each drum package on an individual drum dolly.

4. Sample sludge as follows.

4.1. Turn on agitator and mix sludge for about 30 minutes.

4.2. Turn off agitator, and fill a 4-ounce sample bottle a little above 1/2 full of sludge.

4.3. Give sample to WD Processing Laboratory for analysis (see Operation 705).

NOTE: Do not proceed with procedure until WD Processing Laboratory gives permission to drum sludge.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Drumming	2 of 10	MD-70180	704

TRU INPUT DATA

✓ Check One	TRU Input Forms	Complete Following Sections	
MUS050	CONTAINER INPUT DATA	Originator: 1,2,3,7,9,10,11, 13-16	Surveyor: 12
MUS052	LSA SURVEY INPUT DATA	Originator: 1,2,3,4,7,9,10,11, 13-16	Surveyor: 12
MUS054	WS DRUM INPUT DATA	Originator: 1,2,3,4,5,7,8a,9,10,11, 13-16	Surveyor: 12
MUS056	COMPACTOR LSA INPUT DATA	Originator: 1,2,3,4,6,7,9,10,11, 13-16	Surveyor: 12
MUS058	WD DRUM INPUT DATA	Originator: 1,2,3,4,5,7,8b,9,10,11, 13-16	Surveyor: 12

1 UNIT I.D. (7–12)

2 CONTAINER (18–21)
- 30 Gal. — 30GA
- 55 Gal. — 55GA
- Box — BOX
- Other
- Size (22–27) X X

3 LOCATION (28–30) **ROOM** (31–34)
- HH
- PP
- R
- SM
- WD
- WS
- Other

4 MATERIAL TYPE **MTC NO.** (35–37)
- High Level Acid — 834
- High Level Caustic — 835
- Sludge — 836
- 10NC Grams Combust — 837
- 10NC Grams Non-Combi — 838
- 100NC Grams Combust — 841
- 100NC Grams Non-Comb — 848

Analytical Reference

5 BATCH I.D # (38–45)

6 COMPACTOR RATIO
- Drums In
- Drums Out

7 SS I.D. (49–50)
- 83 Pu-238
- Other

(51–55) Major Ratio
(56–60) Minor Ratio

8a CHEMICAL ATTRIBUTES
- Concentration MG M.L (61–65)
- Acid Caustic Vol. L (66–69)
- Total Grain Drum G (70–73)

8b
- Micrograms Drum (61–65)
- Sludge Weight KG (66–69)
- Total Grain Drum G (70–73)

9 PHYSICAL INSPECTION
- No Significant Dents
- No Significant Rust
- No Holes
- No Cracks

Comments

10 SEALING REQUIREMENTS
- Liner Sealed & Cured
- Drum Torque 40 Ft. Lbs.
- Unit I.D. No. Applied

11 PHYSICAL DATA
- Volume (M Cubed) (74–79)
- Gross Wt. (80–84)
- Tare Wt. (KG) (85–89)
- Net Wt. (KG) (90–94)

12 HEALTH PHYSICS DATA
- Wipe (D M) 100 (CM) SQ. (95–99)
- MREM HR (100–104)
- 10 MMREM HR (105–109)
- Shipping Labels Applied
- Instruments Used
  - Y
  - N

13 CONTAINER DATES
- Liner #
- Cont #
- Date Container Filled (M M D D Y Y)
- Date Liner Sealed (M M D D Y Y)
- Date Container Sealed (M M D D Y Y)

Surveyor's Signature

Originator's Signature

14 ACCT NO. (111–114)

15 HP NO (115–118)

16 CURRENT DATE M M D D Y Y (119–124)

DISTRIBUTION: 1 = RSS ACCOUNTABILITY; 2 = DATA PROCESSING; 3 = HEALTH PHYSICS; 4 = ORIGINATOR

SEE BACK PAGE FOR CONVERSION TABLES

MRC ML 1079A

Figure 1: Form 5991, TRU Input Data

Issue 1

5. Load sludge into TRU drums as follows.

5.1. Check lid identification and drum identification numbers (see figure 2).

5.2. Push drum into fume hood (see figure 3), and locate drum under splash protection collar and lid (see figure 4*).

Figure 2: Drum & Lid Numbering

Figure 3: Drum in Fume Hood

5.3. Carefully place collar and lid over drum and liner.

Figure 4: Splash Protection Collar & Lid

* Figure 4 is for clarity only. Drum has been pulled from inside fume hood to show how splash collar and lid fit on drum during this procedure.

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5.4. Insert sludge discharge flexible tube in splash protection lid (see figure 5).

5.5. Open control valve (see figure 6) and fill drum with sludge until fill-gage on splash lid starts to raise; then close sludge flow control valve.

Figure 5: Sludge Discharge Tubing Outlet

Figure 6: Sludge Discharge Control Valve

5.6. Remove sludge discharge tube and place in holder.

5.7. Raise splash protection collar and place on tray.

6. Determine actual total sludge weight in each drum as follows.

6.1. Roll sludge-filled drum to weighing area.

6.2. Weigh drum, liner, and sludge using electric hoist and and scales (see figure 7).

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6.3. Subtract weight of drum and liner from total weight shown on scales.

6.4. Record sludge weight in drum on Form 5591 under #8b of Chemical Attributes as Sludge Weight KG.

6.5. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows.

7.1. Roll drum package back into fume hood and locate under mixer (see figure 8).

Figure 7: Weighing Drum of Sludge

Figure 8: Cement and Sludge Drum

7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood, and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge, and start mixer motor.

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7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until about two bags of cement have been added, and slurry formed shows a thorough mixing of sludge and cement. About 10 minutes of mixing will be required.

NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor, and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use 2 complete bags of cement per drum of sludge.)

8. Weigh filled drum as follows.

8.1. Roll filled drum package out of fume hood to weighing area.

8.2. Lift drum with electric hoist and scales (figure 9).

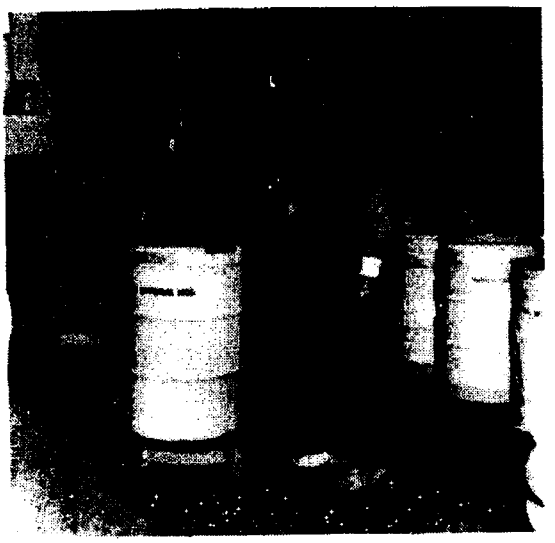

Figure 9: Final Weighing

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8.3. Carefully remove 4-mil bag from drum and discard in special trash bag.

8.4. Record total weight of drum package on Form 5591 under #11 Physical Data as Gross Weight.

9. Seal rigid polyethylene lid to liner as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 212.

9.1. Paint mating surfaces of liner body and liner lid with a coat of Raycohesive B-2 adhesive (MF stock #19-0008).

9.2. Inspect mating surfaces of liner and lid to ensure adequate coating with adhesive. Repaint any portion of mating surface if a void is visible.

9.3. Snap liner lid into place in liner body (see figure 10).

Figure 10: Snapping Lid Onto Container

9.4. Cover liner body to lid interface with a heavy coat of adhesive to ensure an airtight seal and allow adhesive to cure for 24 hours (see figure 11).

10. Seal TRU drum as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 213.

10.1. Paint gasket-retaining groove of drum lid with a heavy coat of Raycohesive B-2 adhesive (see figure 12).

Figure 11: Coating Liner/Lid Interface with Adhesive

Figure 12: Coating Gasket Groove of Drum Lid with Adhesive

10.2. Insert lid gasket into retaining groove of lid and press down firmly.

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10.3. Insert wood spacers to fill gap between drum liner lid and drum lid (see figure 13).

10.4. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

10.5. Screw retaining bolt into ring lug.

10.6. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

10.7. Use torque wrench to ensure retainer bolt is tightened to a minimum of 40 foot-pounds.

CAUTION

Ensure this 40 foot-pounds of pressure is not reduced while securing retainer nut.

10.8. Attach, tighten, and secure retainer nut against ring lug on opposite end of bolt from bolt head.

11. Finish paper work on Form 5591, TRU Input Data (figure 14) as follows.

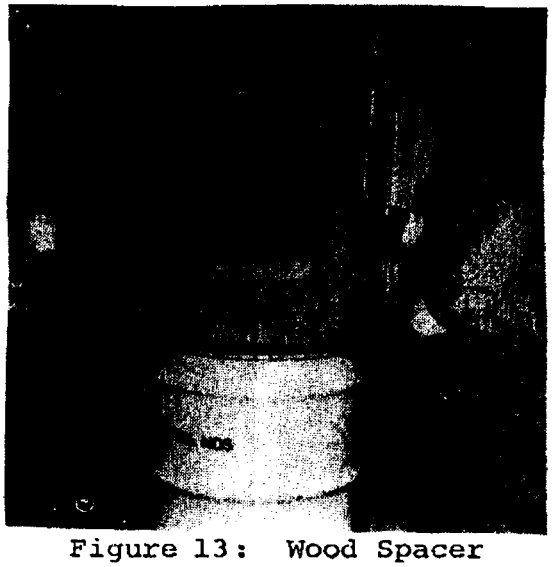

Figure 13: Wood Spacer Inserted

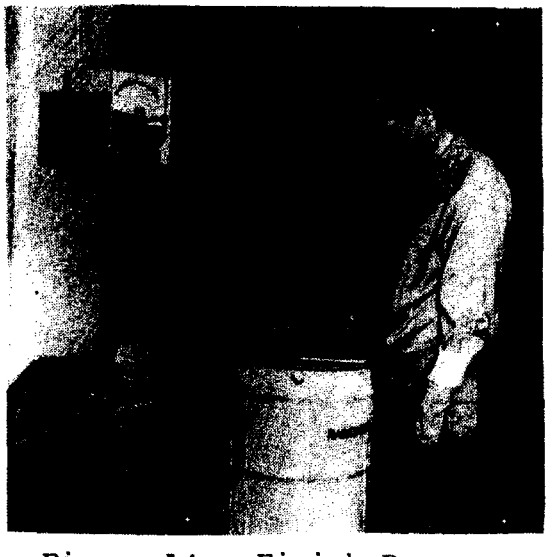

Figure 14: Finish Paper Work

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Drumming	10 of 10	MD-70180	704

11.1. Record under #10 Sealing Requirements a check mark for:

- Liner Sealed and Cured,
- Drum Torque 40 ft. lb., and
- Unit I.D. No. Applied.

11.2. Record under #13 Container Dates

- Liner # (if not recorded earlier),
- Cont. # (if not recorded earlier),
- Date Container Filled,
- Date Liner Sealed, and
- Date Container Sealed.

11.3. Record under #5 Batch ID # the sludge batch number.

11.4. Record under #8b Chemical Attributes the Millicuries/Drum value.

12. Give forms to your Supervisor for further handling of sludge drums by Health Physics Survey and Shipping Coordinator.

MONSANTO RESEARCH CORPORATION
MOUND FACILITY

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	705

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
Lloyd A. Franco	UNCLASSIFIED	1-1-81	NONE

OPERATION TITLE
SLUDGE SAMPLE ANALYSIS — POSTED OPERATION

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management, Operation 217: Analyzing Sludge, for original procedure.

1. Determine gamma count of Pu-238 in sludge as follows.

1.1. Record sludge batch number on Form 6989B, WD Process Laboratory Daily Report (Figure 1).

NOTE: Use WD Daily Log to obtain operating day number.

1.2. Tare weight 2 liquid scintillation vials.

1.3. Use a clean disposable pipet to transfer 10 to 15 ml of sludge into each vial.

1.4. Reweigh vials to obtain net-weight of sludge in each vial.

1.5. Mark each vial with batch number and net-weight of sludge in vial.

1.6. Fill in a Form 139, Request for Analysis, with date, location, batch number, and sludge weights.

1.7. Submit sample vials to R-Building Counting Laboratory.

NOTE: Counting Laboratory will perform a Pu-238 determination by gamma counting as described in Technical Manual, PD-80026, Standard Analytical Procedures, Operation 135, Determination of Parts Per Million Quantities of Americium-241 in Plutonium-238.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Sample Analysis	2 of 3	MD-70180	705

WD PROCESSING LABORATORY
DAILY REPORT

Date _____ Analyst _____ Operating Day # _____

SLUDGE DATA

1. Batch # _____
2. Pu-238 Determination
   a. Net weight of sludge sample _____ grams
   b. Gamma count from Form 139 _____ mCi/kgrams
3. Solids Content
   a. Gross weight of sludge, water, and dish _____ grams
   b. Tare weight of dish _____ grams
   c. Net weight of sludge and water _____ grams
   d. Net weight of dry sludge _____ grams
   e. Calculate (d/c X 100) = _____ % solids

TRITIATED WASTEWATER DATA

1. Sample # _____
2. Dilution _____
3. Analytical count (from Form 139) X dilution _____ μCi/liter
4. $\frac{(\mu Ci/liter)\ (3.78\ liters/gallon)\ (25\ gallons/drum)}{10^6\ \mu Ci/curie}$ = _____ Ci/drum

Remarks: _____

MRC ML 6989B

Figure 1: Form 6989B, WD Processing Laboratory Daily Report

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Sample Analysis	3 of 3	MD-70180	705

1.8. Upon return of Form 139 from Counting Laboratory, record millicuries of Pu-238 per kilogram of sludge on Form 6989B in _____mCi/k grams.

1.9. Record Operating Day number and Sludge Batch number on Form 139, and file form in Sludge Log Book in chronological order.

2. Determine percentage of solids in sludge batch as follows.

2.1. Place a disposable aluminum dish on Ohaus moisture balance, and adjust balance tare to zero.

2.2. Use a clean disposable pipet (reuse pipet from step 1.3 if desire) to transfer 20 to 30 ml of sludge into dish.

2.3. Weigh dish and wet sludge; record as gross weight on Form 6989B.

2.4. Heat sludge for 1 hour ±10 minutes at 130 ±15°C.

2.5. Allow sludge to cool to less than 50°C.

2.6. Record weight of dried sludge on Form 6989B.

3. Determine viscosity of sludge.

4. Decide if sludge should be drummed mostly on sludge viscosity and percent solids content.

5. Notify operators that sludge is:

- "thick" enough to be drummed, or
- "thin" enough that it should dewater for several more days.

MOUND FACILITY

MRC-ML-6872 (11-80)

Technical Manual
MD-70180
MOUND FACILITY RADIOACTIVITY LIQUID WASTE DISPOSAL

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Drawing Control
Technical Manuals

CHANGES INCORPORATED

- [•] REPLACE Op. 704
- [ ] INSERT (NEW PAGES)
- [ ] REMOVE
- [ ] COMPLETE REPRINT

AUTHORIZATION

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TR TECHNICAL RESPONSIBILITY E EDITOR PE PRODUCT ENGINEER

CC 583 T&D#106(Op.704)

P379A

MRC-ML-6873 (2-80)

PUBLICATION RECORD

MANUAL ISSUE NUMBER	DATE
1	7-13-81

OPERATION SHEET NUMBER	ISSUE	EFFECTIVITY	OPERATION TITLE
100 series titled Influent Wastewater Processing			
101	1	1-1-81	Daily Startup Procedure
102	1	1-1-81	Influent Tank Sampling
103	1	1-1-81	Influent Tank Sample Analysis
104	1	1-1-81	Influent Tank Treatment by Simulated Jar Test
105	1	1-1-81	Influent Tank Treatment
106	1	1-1-81	pH Control Treatment Prep.
107	1	1-1-81	Treated Wastewater Transfer to Clariflocculator
200 series titled Clariflocculator Wastewater Processing			
201	1	1-1-81	Clariflocculator Process Control
300 series titled Sandfilter Wastewater Processing			
301	1	1-1-81	Sandfilter Carbon Slurry Treatment Preparation
302	1	1-1-81	Sandfilter Backwashing Proc.
303	1	1-1-81	Sandfilter Process Control
400 series titled Effluent Wastewater Processing			
401	1	1-1-81	Effluent Tank Sampling
402	1	1-1-81	Eff. Tank Composite Sample Analysis
403	1	1-1-81	Eff. Tank Discharge
404	1	1-1-81	Eff. Recycle to Influent Tank
500 series titled Building 41 Contaminated Wastewater Processing			
501	1	1-1-81	Transfer Line Test Procedure
502	1	1-1-81	Tran. Water to WDA Influent Tanks
503	1	1-1-81	Tran. Water to WD Influent Tanks
600 series titled Special Alpha Wastewater Procedures			
601	1	1-1-81	Unloading Wastewater from PP Bldg. Tank Truck
602	1	1-1-81	System Shutdown at End of Work Day
700 series titled Clariflocculator Sludge Processing			
701	1	1-1-81	Sludge Depth Measurement
702	1	1-1-81	Pump Sludge to Sludge Tank
703	1	1-1-81	De-Watering Sludge
704	1	1-1-81	Sludge Drumming
705	1	1-1-81	Sludge Sample Analysis
800 series titled Beta Waste Processing			
801	1	1-1-81	Drumming Low-level Beta Wastewater
802	1	1-1-81	Low-level Beta Wastewater Sampling
803	1	1-1-81	Tritium Analysis Sample Prep.
804	1	1-1-81	Overpack Drumming High-level Beta Wastewater
805	1	1-1-81	Inlet Line Pressure Test

COST IMPACT
Does change effect Labor Standards, Bills of Material or any other element of cost?
[ ] Yes [X] No
If Yes, does change involve a QER'd product? [ ] Yes [ ] No

MD-70180

MRC-ML-6873 (2-80)

PUBLICATION RECORD

MANUAL OPERATION SHEET

ISSUE NUMBER	DATE	NUMBER	ISSUE	EFFECTIVITY	OPERATION TITLE
1 (continued)		900 series titled Emergency Procedures			
		901	1	1-1-81	Emergency Shutdown Checklist
		902	1	1-1-81	Electrical Power Failure Emergency Procedures
		903	1	1-1-81	Nonworking Hours Emergency Procedures
		1000 series titled Reports and Records			
		1001	1	1-1-81	Monthly Report
2 JUL 12 1982		704	2	6-1-82	820540-MD-C

QC ENGINEER	DATE	PROD. ENGINEER	DATE	TECH. RESP.	DATE	MANUAL NUMBER
A B Kreider Jr	4/14/81	Fred A Trine	6-15-81	Ronald Deats	6/17/81	MD-70180

MRC ML 5393 (9-77)

*DENOTES CHANGE

MOUND FACILITY
RADIOACTIVE
LIQUID WASTE DISPOSAL

1. PURPOSE

This manual describes procedures used by Waste Disposal (WD) Group for processing radioactive liquid waste that is produced in various areas of the facility.

2. SCOPE

2.1. All low-level radioactive wastewater from R, and SW-buildings, plus contaminated water from H-building eventually drains into WD-building for processing.

2.2. Low-level radioactive wastewater from PP-building is transported to WD by tanker truck.

2.3. Ground water collecting in building 41 is potentially contaminated. This water is pumped automatically through a double high density polyethylene line into two WD-Annex (WDA) influent tanks.

2.4. After various treatments to decontaminate the water to meet specific discharge specifications, the WD processed water is pumped into the Great Miami river.

2.5. Low-level tritiated water from SW-building is solidified in drums and shipped to a specified burial location.

3. PROCESS DESCRIPTION

3.1. All alpha contaminated waste solutions are collected in 4 interconnected influent tanks (30,000-gallons each) that are located on the north side of WD-building.

3.2. This wastewater is sampled, treated, and prepared for processing inside these tanks.

MONSANTO RESEARCH CORPORATION
MOUND FACILITY

WD

OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 10	MD-70180	704

AUTHORIZATION	CLASSIFICATION	EFFECTIVITY	ECN(S) INCORPORATED
C 22-82 Fred A Turcio	UNCLASSIFIED	6-1-82	820540-MDC

OPERATION TITLE: SLUDGE DRUMMING — POSTED OPERATION

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management, Operation 216: Drumming Low-Risk Sludge, for original procedure.

1. Inspect TRU drums and lids plus polyethylene liners and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return to Material Control.

2. Initiate a Form 5591, TRU Input Data (figure 1), for each accepted container, and

   - o check box for WD Drum Input Data,
   - o record drum and liner number under #13 Container Dates, and
   - o record inspection results of step 1 under #9 Physical Inspection.

3. Prepare about 25 drums as follows:

3.1. Install a 4-mil polyethylene bag (MF-stock #2-1160) over base and walls of TRU drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows:

4.1. Turn on agitator and mix sludge for about 30 minutes.

4.2. Turn off agitator, and fill a 4-ounce sample bottle a little above 1/2 full of sludge.

4.3. Give sample to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed with procedure until WD Processing Laboratory gives permission to drum sludge.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Drumming	2 of 10	MD-70180	704

TRU INPUT DATA

✓ Check One	TRU Input Forms	Complete Following Sections	
MUS050	CONTAINER INPUT DATA	Originator: 1,2,3,7,9,10,11, 13-16	Surveyor: 12
MUS052	LSA SURVEY INPUT DATA	Originator: 1,2,3,4,7,9,10,11, 13-16	Surveyor: 12
MUS054	WS DRUM INPUT DATA	Originator: 1,2,3,4,5,7,8a,9,10,11, 13-16	Surveyor: 12
MUS056	COMPACTOR LSA INPUT DATA	Originator: 1,2,3,4,6,7,9,10,11, 13-16	Surveyor: 12
MUS058	WD DRUM INPUT DATA	Originator: 1,2,3,4,5,7,8b,9,10,11, 13-16	Surveyor: 12

1 UNIT I.D. (7–17)

2 CONTAINER (18–21)
- 30 Gal. — 30GA
- 55 Gal. — 55GA
- Box — BOX
- Other

Size (22–27): ___ X ___ X ___

3 LOCATION (28–30) **ROOM** (31–34)
- HH
- PP
- R
- SM
- WD
- WS
- Other

4 MATERIAL TYPE **MTC NO.** (35–37)
- High Level Acid — 834
- High Level Caustic — 835
- Sludge — 836
- 10 NC/Grams Combust. — 837
- 10 NC/Grams Non-Comb. — 838
- 100 NC/Grams Combust. — 847
- 100 NC/Grams Non-Comb. — 848

Analytical Reference

5 BATCH I.D. # (38–48)

6 COMPACTOR RATIO
Drums In ___ Drums Out ___

7 SS I.D. (49–50)
- 83 Pu-238
- Other

(51–55) Major Ratio
(56–60) Minor Ratio

8a CHEMICAL ATTRIBUTES
- Concentration MG/ML (61–65)
- Acid Caustic Vol. L (66–69)
- Total Gram Drum G. (70–73)

8b
- Millicuries Drum (61–65)
- Sludge Weight KG (66–69)
- Total Gram Drum G. (70–73)

9 PHYSICAL INSPECTION
- No Significant Dents
- No Significant Rust
- No Holes
- No Cracks

Comments _____

10 SEALING REQUIREMENTS
- Liner Sealed & Cured
- Drum Torque 40 Ft. Lbs.
- Unit I.D. No. Applied

11 PHYSICAL DATA
- Volume (M Cubed) (74–79)
- Gross Wt. (80–84)
- Tare Wt. (KG) (85–89)
- Net Wt. (KG) (90–94)

12 HEALTH PHYSICS DATA
- Wipe (D M)/100 (CM) SQ. (95–99)
- MREM/HR (100–104)
- 0.91M MREM/HR (105–109)

☐ Shipping Labels Applied
Instruments Used:
Y _____
N _____

13 CONTAINER DATES
- Liner # _____
- Cont # _____
- Date Container Filled (M M D D Y Y)
- Date Liner Sealed (M M D D Y Y)
- Date Container Sealed (M M D D Y Y)

14 ACCT NO. (110–114)

15 HP NO. (115–118)

16 CURRENT DATE M M D D Y Y (119–124)

Surveyor's Signature _____

Originator's Signature _____

DISTRIBUTION
1 SS ACCOUNTABILITY
2 DATA PROCESSING
3 HEALTH PHYSICS
4 ORIGINATOR

SEE BACK PAGE FOR CONVERSION TABLES

MRC-ML-1079A

Figure 1: Form 5991, TRU Input Data

Issue 2

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Drumming	3 of 10	MD-70180	704

5. Load sludge into TRU drums as follows.

5.1. Check lid identification and drum identification numbers (see figure 2).

5.2. Move drum near fumehood within reach of sludge discharge flexible tube (see figure 3).

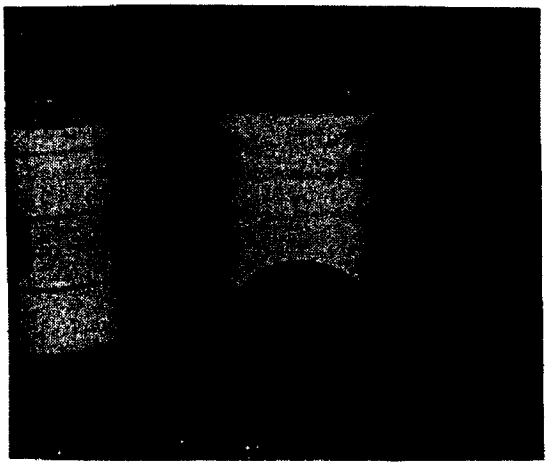

FIGURE 2: DRUM & LID NUMBERING

5.3. Carefully place collar and lid over drum and liner.

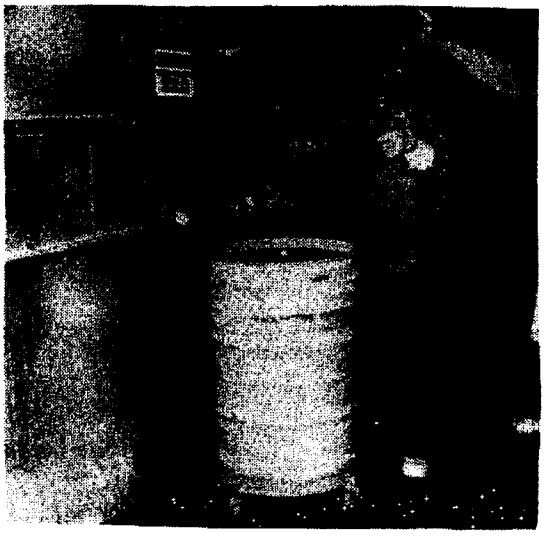

FIGURE 3: SPLASH PROTECTION COLLAR & LID

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5.4. Insert sludge discharge flexible tube in splash protection lid.

5.5. Open control valve and fill drum with sludge until fill-gage on splash lid starts to raise; then close sludge flow control valve.

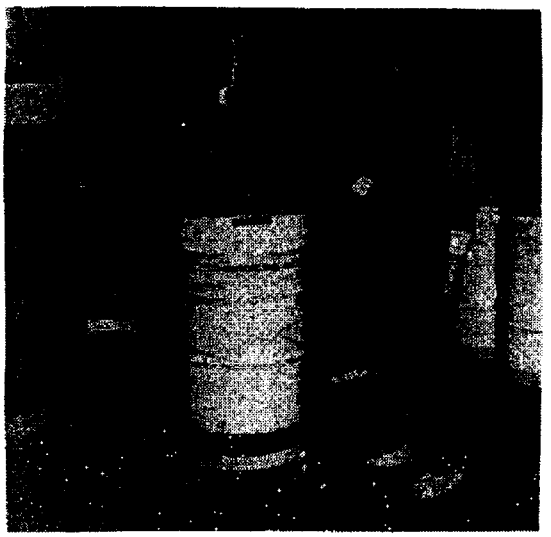

FIGURE 4: WEIGHING DRUM OF SLUDGE

5.6. Remove sludge discharge tube and place in holder.

5.7. Raise splash protection collar and place on tray.

6. Determine actual total sludge weight in each drum as follows:

6.1. Roll sludge-filled drum to weighing area.

6.2. Weigh drum, liner, and sludge using electric hoists and scales (see figure 4).

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6.3. Subtract weight of drum and liner from total weight shown on scales.

6.4. Record sludge weight in drum on Form 5591 under #8b of Chemical Attributes as Sludge Weight KG.

6.5. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows.

7.1. Roll drum package back into fume hood and locate under mixer (see figure 5).

FIGURE 5: CEMENT AND SLUDGE DRUMMING

7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood, and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge, and start mixer motor.

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7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until about 2 bags of cement have been added, and slurry formed shows a thorough mixing of sludge and cement. About 7 to 10 minutes of mixing will be required.

NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use 2 complete bags of cement per drum of sludge.

8. Weigh filled drum as follows:

8.1. Roll filled drum package out of fume hood to weighing area.

8.2. Lift drum with electric hoist and scales (figure 6).

FIGURE 6: FINAL WEIGHING

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8.3. Carefully remove 4-mil bag from drum and discard in special trash bag.

8.4. Record total weight of drum package on Form 5591 under #11 Physical Data as Gross Weight.

9. Seal rigid polyethylene lid to liner as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 212.

9.1. Paint mating surfaces of liner body and liner lid with a coat of Raycohesive B-2 adhesive (MF stock #19-0008).

9.2. Inspect mating surfaces of liner and lid to ensure adequate coating with adhesive. Repaint any portion of mating surface if a void is visible.

9.3. Snap liner lid into place in liner body (see figure 7).

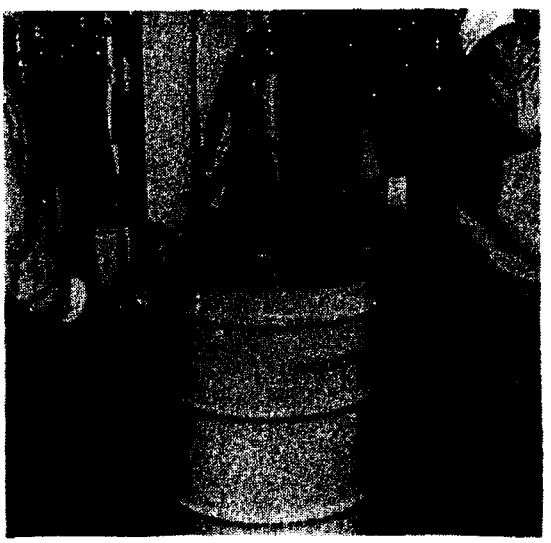

FIGURE 7: SNAPPING LID ONTO CONTAINER

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9.4. Cover liner body to lid interface with a heavy coat of adhesive to ensure an airtight seal and allow adhesive to cure overnight (see figure 8).

10. Seal TRU drum as follows:

IMPORTANT

This procedure is also described in MD-70205, Operation 213.

10.1. Paint gasket-retaining groove of drum lid with a heavy coat of Raycohesive B-2 adhesive (see figure 9).

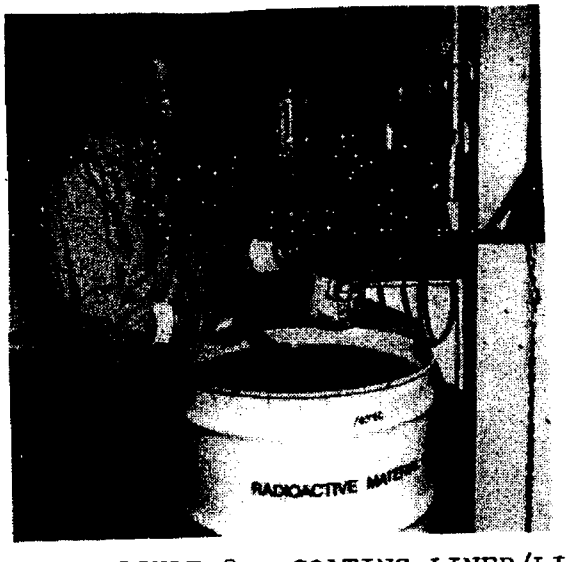

FIGURE 8: COATING LINER/LID INTERFACE WITH ADHESIVE

FIGURE 9: COATING GASKET GROOVE OF DRUM LID WITH ADHESIVE

10.2. Insert lid gasket into retaining groove of lid and press down firmly.

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10.3. Insert wood spacers to fill gap between drum liner lid and drum lid (see figure 10).

10.4. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

10.5. Screw retaining bolt into ring lug.

10.6. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

10.7. Use torque wrench to ensure retainer bolt is tightened to a minimum of 40 foot-pounds.

CAUTION

Ensure this 40 foot-pounds of pressure is not reduced while securing retainer nut.

10.8. Attach, tighten, and secure retainer nut against ring lug on opposite end of bolt from bolt head.

11. Finish paper work on Form 5591, TRU Input Data (figure 11) as follows:

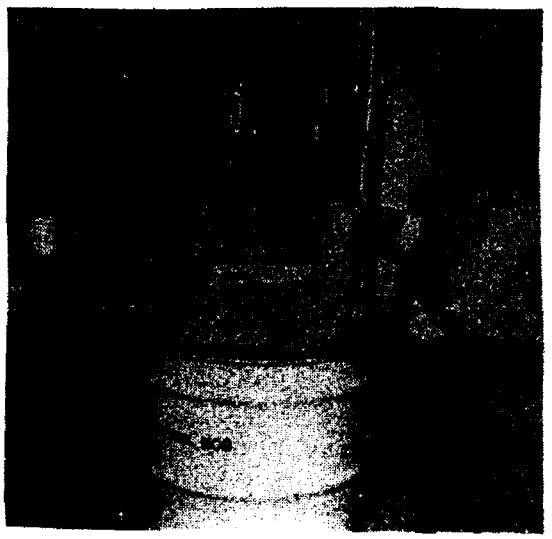

FIGURE 10: WOOD SPACER INSERTED

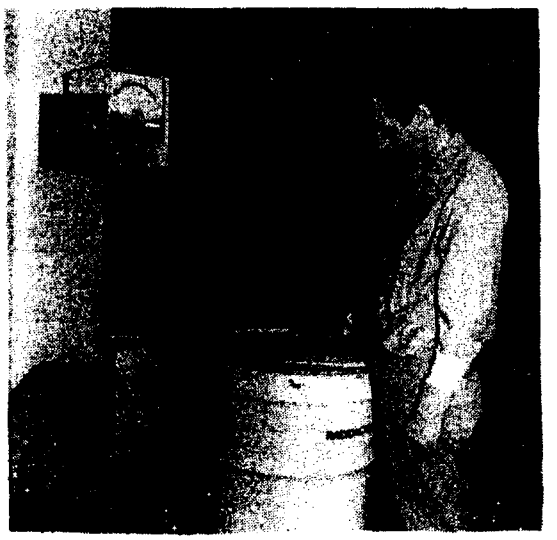

FIGURE 11: FINISHING PAPER WORK

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Drumming	10 of 10	MD-70180	704

11.1. Record under #10 Sealing Requirements a check mark for:

- o Liner Sealed and Cured,
- o Drum Torque 40 ft. lb., and
- o Unit I.D. No. Applied

11.2. Record under #13 Container Dates

- o Liner # (if not recorded earlier),
- o Cont. # (if not recorded earlier),
- o Date Container Filled,
- o Date Liner Sealed, and
- o Date Container Sealed.

11.3. Record the sludge batch number under #5 Batch ID #.

11.4. Record the Millicuries/Drum value under #8b Chemical Attributes.

12. Give forms to your Supervisor for further handling of sludge drums by Health Physics Survey and Shipping Coordinator.

MONSANTO RESEARCH CORP.
MOUND

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	701

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
[signature] 7/15/83	[signature] 7-17-83	8-15-83	831089-MD-C

OPERATION TITLE
Sludge Depth Measurement

1. Put on disposable plastic or rubber gloves.

2. Stop rotation of clariflocculator paddles and carriage plow with switch on end of clariflocculator bridge (figure 701-1).

FIGURE 701-1: CLARIFLOCCULATOR PADDLE AND CARRIAGE PLOW SWITCH

3. Move depth measuring device along carriage rail until near inner wall.

4. Remove locking pin from depth measuring rod.

5. Lower rod slowly into water in outer chamber at inner chamber wall until a resistance is felt as rod bottom contacts top of sludge layer in chamber.

INDEX	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	ISSUE	2	2	2																	

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	2 of 3	MD-70180	701

6. Read scale at point where red-engraved ring on rod is in line with depth marker on calibrated bar scale of the measuring device.

7. Record this reading.

8. Repeat depth measurement 3 more times at new locations closer to outer wall as described in steps 5 and 6.

9. Record these 3 scale readings.

NOTE: The 4 scale readings will vary because of depth pattern formed during sludge accumulation while plow is rotating in clariflocculator.

10. Measure sludge level at several points around circumference of outer chamber wall to determine if the sludge level is uniform.

11. Raise rod into position and replace locking pin.

12. Start rotation of clariflocculator paddles and carriage plow.

13. Remove gloves and discard in a LSA waste container.

14. Determine average scale reading in feet and inches by adding the 4 readings together and dividing this sum by 4.

15. Use Table I to determine total volume, in gallons, of sludge in clariflocculator.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	3 of 3	MD-70180	701

TABLE I

GALLONS OF SLUDGE IN CLARIFLOCCULATOR

SCALE READING (feet & inches)		VOLUME (gallons)	SCALE READING (feet & inches)		VOLUME (gallons)
8	2	14,313	9	9	5,953
8	3	13,873	9	10	5,513
8	4	13,433	9	11	5,073
8	5	12,993	10	0	4,633
8	6	12,553	10	1	4,193
8	7	12,113	10	2	3,767
8	8	11,673	10	3	3,376
8	9	11,233	10	4	3,006
8	10	10,793	10	5	2,666
8	11	10,353	10	6	2,357
9	0	9,913	10	7	2,067
9	1	9,473	10	8	1,804
9	2	9,033	10	9	1,567
9	3	8,593	10	10	1,348
9	4	8,153	10	11	1,156
9	5	7,713	11	0	977
9	6	7,273	11	1	819
9	7	6,833	11	2	681
9	8	6,393	11	3	559

MONSANTO RESEARCH CORP.
MOUND

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 2	MD-70180	702

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
[illegible] 5/26/83	[illegible] 7-19-83	8-15-83	831089-MD-C

OPERATION TITLE
Pumping Sludge from Clariflocculators into Sludge-Holding Tank

1. Pump sludge from bottom discharge of either clariflocculator to either 1,000-gallon sludge-holding tank (A or B) using the following procedure.

* 1.1. Open selected clariflocculator sludge discharge valve located in pit area WD-8.

1.2. Open selected sludge-holding tank inlet valve over sludge tank in WD-101.

1.3. Start one of the two Dorr-Oliver diaphragm slurry pumps located in pit area WD-8 and set required valves to pump sludge from chosen clariflocculator to chosen sludge-holding tank located in WD-101 (see figure 702-1).

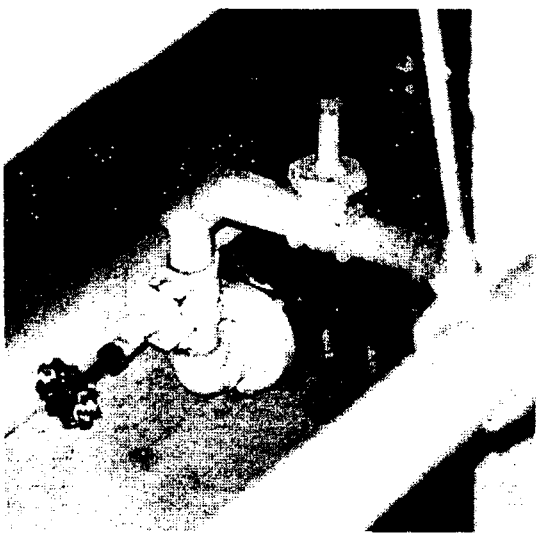

FIGURE 702-1: DORR-OLIVER DIAPHRAGM SLURRY PUMPS

INDEX	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	ISSUE	2	2																		

MRC-ML-6444A (5-83)

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Pumping Sludge from Clarif-floculators into Sludge-Holding Tank	2 of 2	MD-70180	702

* 2. Immediately after sludge covers blades of agitator, start agitator by turning on switch located in WD-101 (see figure 702-2).

FIGURE 702-2: SLUDGE-HOLDING TANK CONTROLS

*

NOTE: Sludge level in clarifloculator should never drop below ZERO DATUM line that corresponds to bottom of flocculating chamber portion of clarifloculator.

3. Check sludge level in clarifloculator (Operation 701) occasionally to determine when to stop sludge removal.

4. Close clarifloculator sludge discharge valve when holding tank is about full, or sludge-level in clarifloculator is near ZERO DATUM line.

5. Stop Dorr-Oliver pump when line becomes empty.

6. Close holding tank inlet valve.

7. Stop agitator after approximately one hour of mixing time or at end of workday.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 1	MD-70180	703

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
[signature]	[signature]	8-15-83	831089-MD-C

OPERATION TITLE
Dewatering Sludge

* 1. Remove clean supernatant water standing above settled sludge using aspirator. Siphon supernatant water back into clariflocculator (see figure 703-1).

* NOTE: Aspirator is located in the sludge pit area of WD-101.

2. After dewatering, remix remaining sludge in holding tank with holding tank agitator for approximately one hour, and then let the sludge settle again.

3. Add fresh sludge to holding tank from clariflocculators (see Operation 702) if space available.

4. Repeat the dewatering and sludge-addition process on this holding tank until tank is filled with sludge that cannot be dewatered.

FIGURE 703-1: ASPIRATOR PUMP

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WD

OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 9	MD-70180	704

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Floyd Doty 9/26/83	Rick B. Hampel 9-19-83	8-15-83	831089-MD-C

OPERATION TITLE

TRU Sludge Drumming

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management; Operation 216, Drumming Low-Risk Sludge, for original procedure.

1. Inspect TRU drums and lids plus polyethylene liners and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return to Material Control.

2. Initiate a Form 7042B, TRU Waste Input Form (see figure 704-1), for each accepted container, and:

   - o fill in box for CREATE LOCATION,
   - o record drum and liner number under unit ID and LINER NUMBER, and
   - o record inspection results of step 1 under PHYSICAL INSPECTION.

3. Prepare 25 drums as follows.

3.1. Install a 4-mil polyethylene bag (Stock No. 2-1160) over base and walls of TRU drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows.

4.1. Turn on sludge-holding tank agitator; mix sludge for approximately 30 minutes.

4.2. Turn off agitator and add sludge to 4-ounce sample bottle (a little above 1/2 full) and to a 1000-milliliter graduated cylinder (full).

4.3. Give samples to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed until WD Processing Laboratory gives permission to drum sludge.

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
TRU Sludge Drumming	2 of 9	MD-70180	704

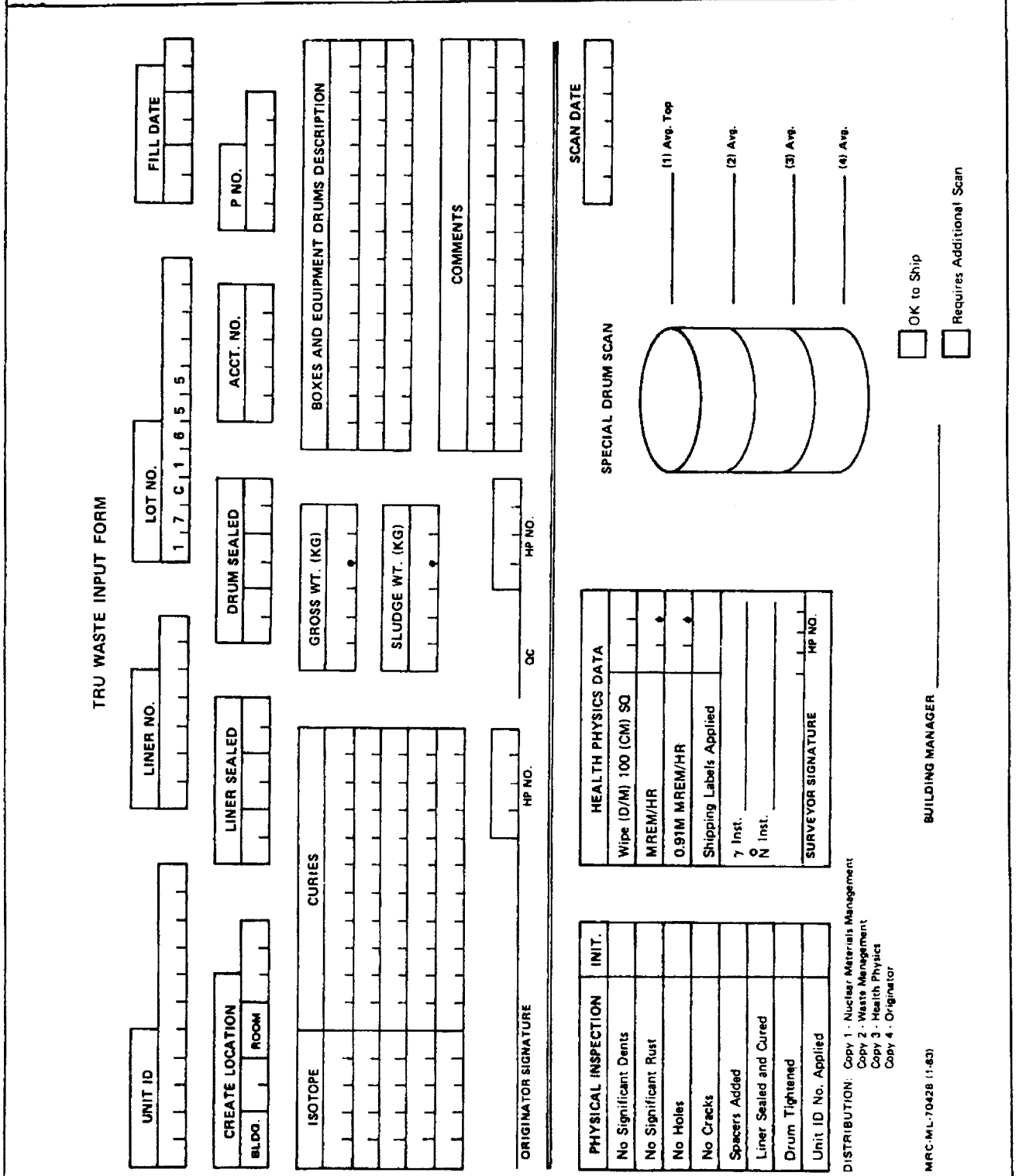

FIGURE 704-1: FORM 7042B, TRU WASTE INPUT

MRC-ML-1079A

5. Load sludge into TRU drums as follows.

5.1. Check lid identification and drum identification numbers (see figure 704-2).

5.2. Move drum near fumehood within reach of sludge discharge flexible tube (see figure 704-3).

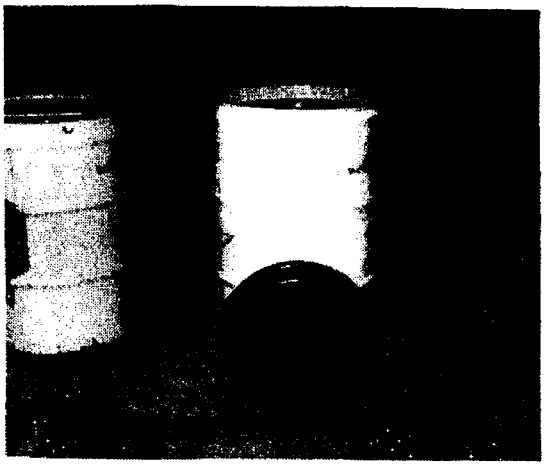

FIGURE 704-2: DRUM AND LID NUMBERING

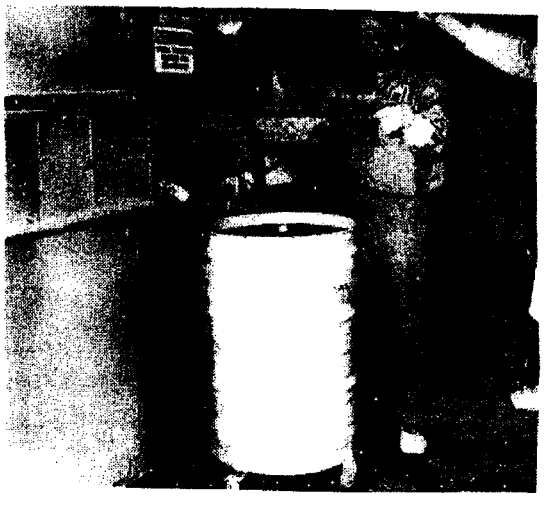

FIGURE 704-3: SPLASH PROTECTION COLLAR AND LID

5.3. Carefully place splash protection collar and lid over drum and liner.

5.4. Insert sludge discharge flexible tube in splash protection lid.

5.5. Open control valve and fill drum with sludge until fill-gage on splash lid starts to raise; then close sludge flow control valve.

5.6. Remove sludge discharge tube and place in holder.

5.7. Raise splash protection collar and place on tray.

* 6. Determine actual total sludge weight in each drum as follows.

6.1. Tare weigh empty drum and empty liner by setting load cell to read zero.

6.2. Roll sludge-filled drum to weighing area.

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6.3. Weigh drum, liner, and sludge using electric hoists and scales (see figure 704-4).

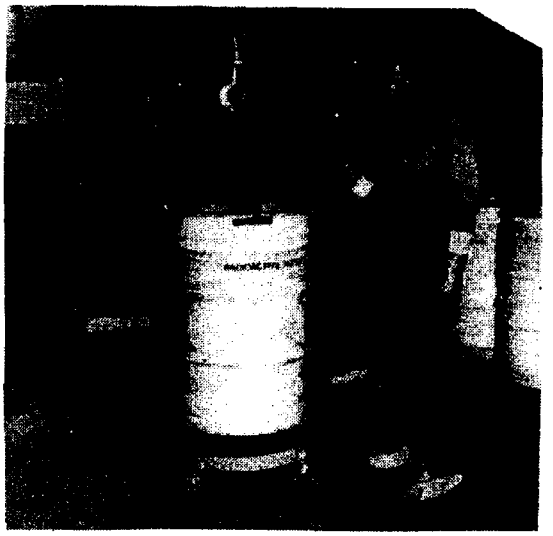

FIGURE 704-4: WEIGHING DRUM OF SLUDGE

6.4. Record sludge-filled drum weight on Form 7042B under SLUDGE WT. (KG).

6.5. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows.

7.1. Roll drum back into fume hood and locate under mixer (see figure 704-5).

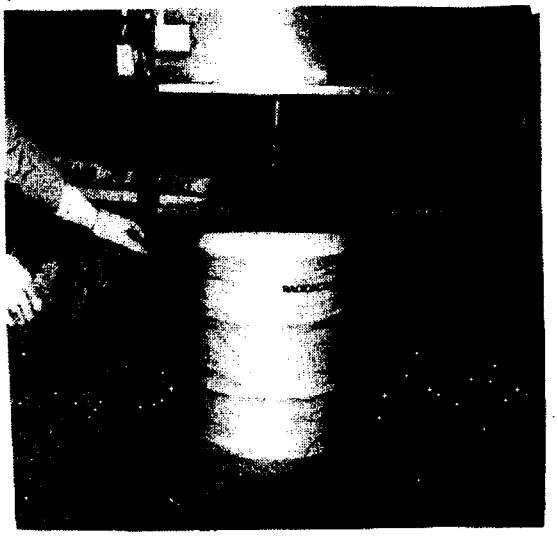

FIGURE 704-5: CEMENT AND SLUDGE DRUMMING

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7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge and start mixer motor.

7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until approximately two bags of cement have been added and slurry formed shows a thorough mixing of sludge and cement. Approximately 7 to 10 minutes of mixing will be required.

NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use two complete bags of cement per drum of sludge.)

7.10. Leave drum uncapped overnight and check for liquid before capping.

8. Weigh sludge-filled drum as follows.

8.1. Roll sludge-filled drum package out of fume hood to weighing area.

8.2. Lift sludge-filled drum with electric hoist and scales (see figure 704-6).

8.3. Carefully remove 4-mil bag from drum and discard in special trash bag.

8.4. Record total weight of drum package on Form 7042B under GROSS WT. (KG).

FIGURE 704-6: FINAL WEIGHING

9. Seal rigid polyethylene lid to liner as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 212.

9.1. Paint mating surfaces of liner body and liner lid with a coat of special contact adhesive (Stock No. 19-0008).

9.2. Inspect mating surfaces of liner and lid to ensure adequate coating with adhesive. Repaint any portion of mating surface if a void is visible.

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9.3. Snap liner lid into place in liner body (see figure 704-7).

FIGURE 704-7: SNAPPING LID ONTO CONTAINER

9.4. Cover liner body to lid interface with a heavy coat of adhesive to ensure an airtight seal and allow adhesive to cure overnight (see figure 704-8).

10. Seal TRU drum as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 213.

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10.1. Paint gasket-retaining groove of drum lid with a heavy coat of special contact adhesive (see figure 704-9).

FIGURE 704-8: COATING LINER/LID INTERFACE WITH ADHESIVE

FIGURE 704-9: COATING GASKET GROOVE OF DRUM LID WITH ADHESIVE

10.2. Insert lid gasket into retaining groove of lid and press down firmly.

10.3. Insert wood spacers to fill gap between drum liner and drum lid (see figure 704-10).

10.4. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

10.5. Screw retaining bolt into ring lug.

10.6. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

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11. Finish paper work on Form 7042B, TRU WASTE Input Form (see figure 704-11) as follows.

FIGURE 704-10: WOOD SPACER INSERTED

FIGURE 704-11: FINISHING PAPER WORK

11.1. Record, using appropriate responses, that the following steps were performed:

- o liner sealed, and
- o unit ID NO. applied

11.2. Record the following information:

- o fill date,
- o date liner sealed, and
- o date drum sealed.

11.3. Record the sludge batch under COMMENTS.

11.4. Record the millicuries/drum value under ISOTOPE and CURIES.

11.5. Originator signs with HP number.

12. Give forms to your Supervisor for further handling of sludge drums by HP Survey and Shipping Coordinator.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	705

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Terry W. Doty 8/26/83	Rick B. Hampel 9-19-83	8-15-83	831089-MD-C

OPERATION TITLE
Sludge Sample Anaylsis

[redacted]

Refer to Technical Manual MD-70205, TRU Waste Management, Operation 217, Analyzing Sludge, for original procedure.

* 1. After receiving sludge sample from chemical operators, determine gamma count of Pu-238 in sludge as follows.

1.1. Record sludge batch number on Form 6989B, WD Processing Laboratory Daily Report (see figure 705-1).

NOTE: Use WD Daily Log to obtain Operating Day Number.

1.2. Tare weigh 1 liquid scintillation vial.

1.3. Use a clean disposable pipet to transfer 10 to 15 milliliters (approximately 10 grams) of sludge into vial.

1.4. Reweigh vial to obtain net weight of sludge.

1.5. Mark vial with batch number and net weight of sludge.

1.6. Fill in Form 5878, Request for Analysis, with date, location, batch sample, and sludge weight.

1.7. Submit sample vial to E-107 Counting Laboratory.

NOTE: Counting Laboratory will perform a Pu-238 determination by gamma counting as described in Technical Manual PD-80026, Standard Analytical Procedures, Operation 135, Determination of Parts Per Million Quantities of Americium-241 in Plutonium-238.

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Sample Analysis	2 of 3	MD-70180	705

WD PROCESSING LABORATORY
DAILY REPORT

Date _____ Analyst _____ Operating Day # _____

SLUDGE DATA

1. Batch # _____
2. Pu-238 Determination
   a. Net weight of sludge sample _____ grams
   b. Gamma count from Form 139 _____ mCi/kgrams
3. Solids Content
   a. Gross weight of sludge, water, and dish _____ grams
   b. Tare weight of dish _____ grams
   c. Net weight of sludge and water _____ grams
   d. Net weight of dry sludge _____ grams
   e. Calculate (d/c X 100) = _____ % solids

TRITIATED WASTEWATER DATA

1. Sample # _____
2. Dilution _____
3. Analytical count (from Form 139) X dilution _____ μCi/liter
4. $\frac{(\mu Ci/liter)\ (3.78\ liters/gallon)\ (25\ gallons/drum)}{10^6\ \mu Ci/curie}$ = _____ Ci/drum

Remarks: _____

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FIGURE 705-1: FORM 6989B, WD PROCESSING LABORATORY DAILY REPORT

* 1.8. When Form 5878 is returned from Counting Laboratory, record millicuries of Pu-238 per kilogram of sludge on Form 6989B in _____mCi/k grams.

1.9. File Form 5878 in Sludge Log Book in chronological order.

2. Determine percentage of solids in sludge batch as follows.

2.1. Place a disposable aluminum dish on Ohaus moisture balance, and adjust balance tare to zero.

2.2. Use a clean disposable pipet (reuse pipet from step 1.3 if desired) to transfer 20 to 30 milliliters (approximately 40 grams) of sludge into dish.

2.3. Weigh dish and wet sludge; record as gross weight on Form 6989B.

2.4. Heat sludge for 1 hour ±10 minutes at 130 ±15°C.

2.5. Allow sludge to cool to less than 50°C.

2.6. Record weight of dried sludge on Form 6989B.

* 3. Determine specific gravity of sludge as follows.

3.1. Insert hydrometer into 1,000-milliliter graduated cylinder filled with sludge sample received from chemical operators. When the hydrometer stops sinking into the sludge, take the reading off the hydrometer and record this value on Form 6989B (see figure 705-1).

4. Decide if sludge should be drummed based on sludge viscosity and percent solids content data.

5. Notify operators that sludge is one of the following:

- o "thick" enough to be drummed, or
- o "thin" enough that it should dewater for several more days.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 7	MD-70180	706

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Ray W Doty 8/26/83	Rick B. Hampel 9-19-83	8-15-83	831089-MD-C

OPERATION TITLE

LSA Sludge Drumming

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management, Operation 216, Drumming Low-Risk Sludge, for original procedure.

* 1. Inspect LSA drums and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return to Material Control.

* 2. Initiate a Form 7042A, Non-TRU Waste Input Form (see figure 706-1), for each accepted container, and:

*
- o fill in box for CREATE LOCATION,
- o record drum number under unit ID, and
- o record inspection results of step 1 under PHYSICAL INSPECTION.

3. Prepare 25 drums as follows.

3.1. Install a 4-mil polyethylene bag (Stock No. 2-1160) over base and walls of LSA drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows.

4.1. Turn on sludge-holding tank agitator; mix sludge for approximately 30 minutes.

* 4.2. Turn off agitator and add sludge to 4-ounce sample bottle (a little above 1/2 full) and 1,000-milliliter graduated cylinder (full).

4.3. Give samples to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed until WD Processing Laboratory gives permission to drum sludge.

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
LSA Sludge Drumming	2 of 7	MD-70180	706

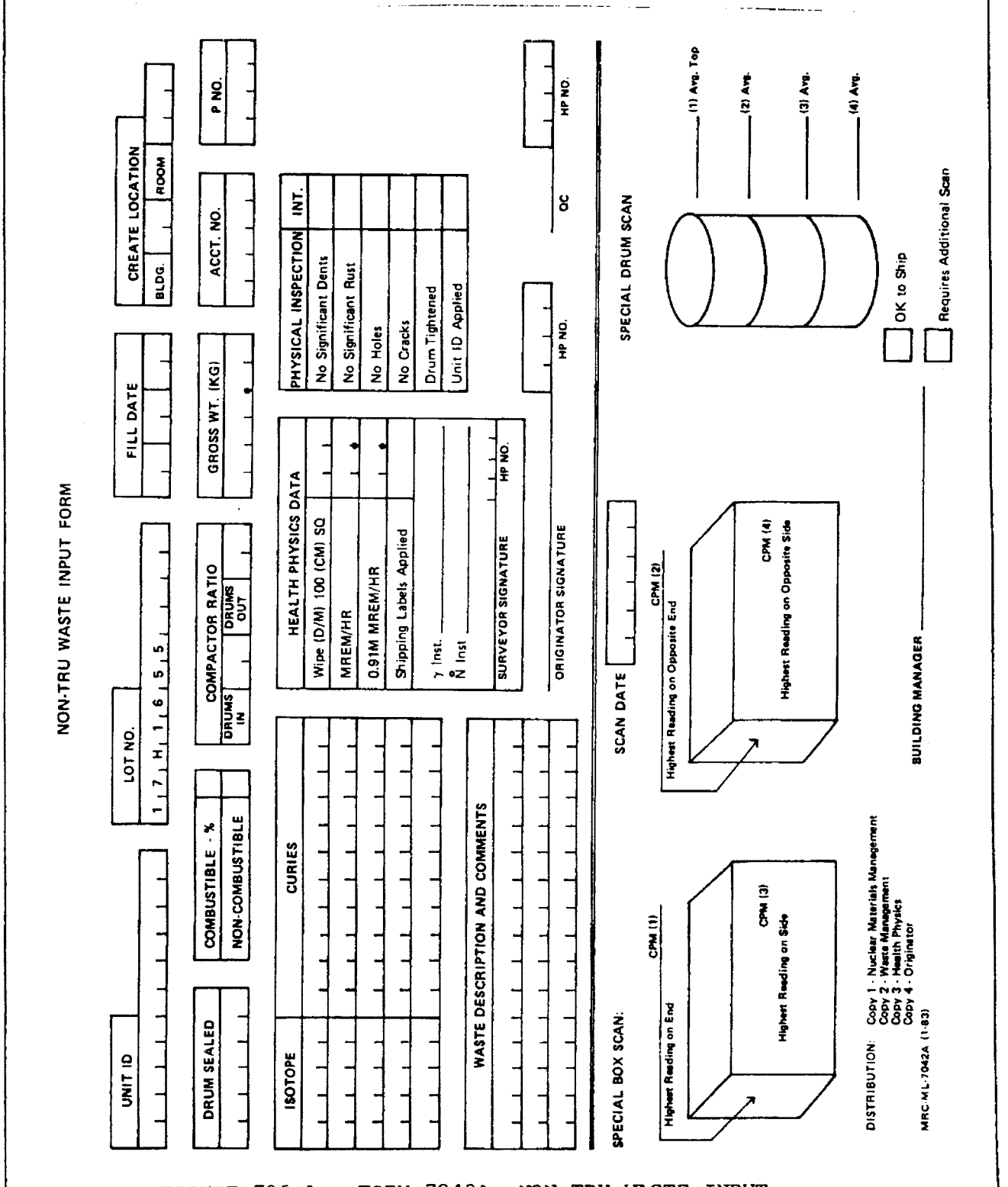

FIGURE 706-1: FORM 7042A, NON-TRU WASTE INPUT

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
LSA Sludge Drumming	3 of 7	MD-70180	706

5. Load sludge into LSA drums as follows.

* 5.1. Move drum near fumehood within reach of sludge discharge flexible tube (see figure 706-2).

FIGURE 706-2: SPLASH PROTECTION COLLAR AND LID

* 5.2. Carefully place splash protection collar and lid over drum.

5.3. Insert sludge discharge flexible tube in splash protection lid.

5.4. Open control valve and fill drum with sludge until fill-gage on splash lid starts to raise then close sludge flow control valve.

5.5. Remove sludge discharge tube and place in holder.

5.6. Raise splash protection collar and place on tray.

6. Determine actual total sludge weight in each drum as follows.

* 6.1. Tare weigh empty drum by setting load cell to read zero.

6.2. Roll sludge-filled drum to weighing area.

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6.3. Weigh sludge-filled drum using electric hoists and scales (see figure 706-3).

* 6.4. Record sludge-filled weight on Form 7042A, Non-TRU Waste Imput, under WASTE DESCRIPTION AND COMMENTS as SLUDGE WT. (KG).

6.5. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows:

7.1. Roll sludge-filled drum back into fume hood and locate under mixer (see figure 706-4).

FIGURE 706-4: CEMENT AND SLUDGE DRUMMING

7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge and start mixer motor.

7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until approximately two bags of cement have been added and slurry formed shows a thorough mixing of sludge and cement. Approximately 7 to 10 minutes of mixing will be required.

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NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use two complete bags of cement per drum of sludge.)

* 7.10. Leave drum uncapped overnight and check for liquid before capping.

8. Weigh sludge-filled drum as follows.

8.1. Roll sludge-filled drum package out of fume hood to weighing area.

8.2. Lift sludge-filled drum with electric hoist and scales (see figure 706-3).

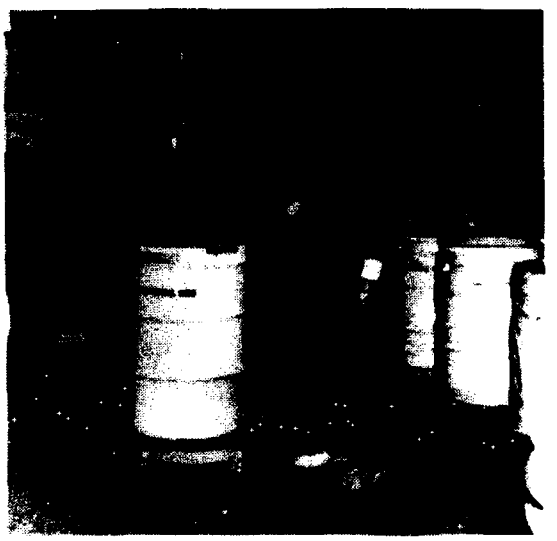

FIGURE 706-3: WEIGHING DRUM OF SLUDGE

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8.3. Carefully remove 4-mil bag from drum and discard in special trash bag.

8.4. Record total weight of drum package on Form 7042A under GROSS WT. (KG).

9. Seal LSA drum as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 213.

9.1. Insert lid gasket into retaining groove of lid and press down firmly.

9.2. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

9.3. Screw retaining bolt into ring lug.

9.4. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

10. Finish paper work on Form 7042A, (see figure 706-5).

FIGURE 706-5: FINISHING PAPER WORK

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
LSA Sludge Drumming	7 of 7	MD-70180	706

* 10.1. Record a check mark for:

- o unit ID No. applied.

* 10.2. Record the following information:

- o date container filled,
- o date drum sealed,
- o isotope,
- o curies, and
- o batch No. - waste description

* 10.3. Originator signs with HP number.

* 11. Give forms to your Supervisor for further handling of sludge drums by HP Survey and Shipping Coordinator.

HISTORICAL RECORD

MOUND

MRC-ML-6872 (3-82)

Technical Manual
MD-70180
MOUND RADIOACTIVE LIQUID WASTE DISPOSAL

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K. C. Good
R. S. Grimm
R. B. Hampel (2)
R. F. Herbert
R. R. Jaeger

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CHANGES INCORPORATED

[•] Replace Op. 704, Pages 1,7,9.
Op. 705, Complete

[ ] Insert (New Pages)
[ ] Remove
[ ] Complete Reprint

AUTHORIZATION

B. R. Kokenge, Director, Nuclear Operations Department

TR - TECHNICAL RESPONSIBILITY cc 583 D# 52 E - EDITOR PE - PRODUCT ENGINEER QCE - QC ENGINEER

P379A

COST IMPACT
Does change effect Labor Standards, Bills of Material or any other element of cost?
[ ] Yes [X] No
If Yes, does change involve a QER'd product? [ ] Yes [ ] No

MD-70180

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PUBLICATION RECORD

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MONSANTO RESEARCH CORP.
MOUND

WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 9	MD-70180	704

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Ray W Doty 11/30/84	R.B. Hempael 10/25/84	9-17-84	841738MD-C

OPERATION TITLE
TRU Sludge Drumming

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management; Operation 216, Drumming Low-Risk Sludge, for original procedure.

1. Inspect TRU drums and lids plus polyethylene liners and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return to Material Control.

2. Initiate a Form 7042B, TRU Waste Input Form (see figure 704-1), for each accepted container, and:

   - o fill in box for CREATE LOCATION,
   - o record drum and liner number under unit ID and LINER NUMBER, and
   - o record inspection results of step 1 under PHYSICAL INSPECTION.

3. Prepare 25 drums as follows.

3.1. Install a 4-mil polyethylene bag (Stock No. 2-1160) over base and walls of TRU drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows.

4.1. Turn on sludge-holding tank agitator; mix sludge for approximately 30 minutes.

4.2. Turn off agitator and add sludge to 4-ounce sample bottle (a little above 1/2 full) and to a 1000-milliliter graduated cylinder (full).

4.3. Give samples to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed until WD Processing Laboratory gives permission to drum sludge.

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9.3. Snap liner lid into place in liner body (see figure 704-7).

FIGURE 704-7: SNAPPING LID ONTO CONTAINER

9.4. Cover liner body to lid interface with a heavy coat of adhesive to ensure an airtight seal and allow adhesive to cure overnight (see figure 704-8).

* 9.5. Prior to sealing TRU drum, inspect the liner lid-body interface area for signs of poor sealing. If reseal is required, repeat steps 9.2 through 9.4.

10. Seal TRU drum as follows.

IMPORTANT

This procedure is also described in MD-70205, Operation 213.

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11. Finish paper work on Form 7042B, TRU WASTE Input Form (see figure 704-11) as follows.

FIGURE 704-10: WOOD SPACER INSERTED

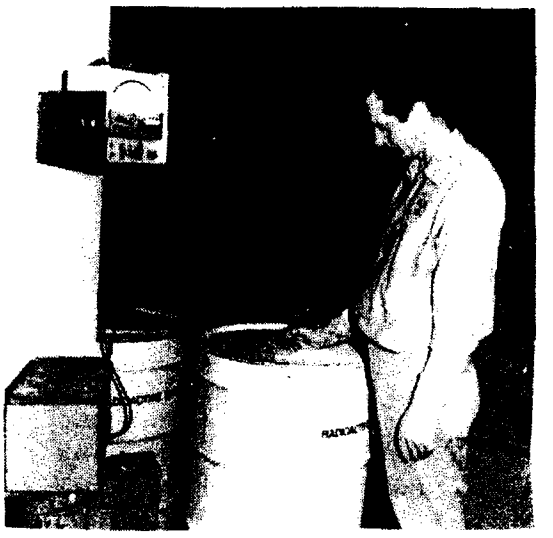

FIGURE 704-11: FINISHING PAPER WORK

*11.1. Record, using appropriate responses, that the following steps were performed:

- o liner sealed,
- o unit ID NO. applied, and
- o spacers added.

11.2. Record the following information:

- o fill date,
- o date liner sealed, and
- o date drum sealed.

11.3. Record the sludge batch under COMMENTS.

11.4. Record the millicuries/drum value under ISOTOPE and CURIES.

11.5. Originator signs with HP number.

12. Give forms to your Supervisor for further handling of sludge drums by HP Survey and Shipping Coordinator.

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MONSANTO RESEARCH CORP.
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WD

OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	705

ECN. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
[signature] 11/30/84	R. B. Hampel 10/25/84	9-17-84	841738MD-C

OPERATION TITLE
Sludge Sample Anaylsis

IMPORTANT

Refer to Technical Manual MD-70205, TRU Waste Management; Operation 217, Analyzing Sludge, for original procedure.

1. After receiving sludge sample from chemical operators, determine gamma count of Pu-238 in sludge as follows.

1.1. Record sludge batch number on Form 6989B, WD Processing Laboratory Daily Report (see figure 705-1).

NOTE: Use WD Daily Log to obtain Operating Day Number.

*1.2. Tare weigh 5 liquid scintillation vials.

*1.3. Use a clean disposable pipet to transfer 10 to 15 milliliters (approximately 10 grams) of sludge into each vial.

*1.4. Reweigh each vial to obtain net weight of sludge.

*1.5. Mark each vial with batch number and net weight of sludge.

1.6. Fill in Form 5878, Request for Analysis, with date, location, batch sample, and sludge weight.

*1.7. Submit 4 sample vials each with Form 5878 to E-107 Counting Laboratory.

NOTE: Counting Laboratory will perform a Pu-238 determination by gamma counting as described in Technical Manual PD-80026, Standard Analytical Procedures; Operation 135, Determination of Parts Per Million Quantities of Americium-241 in Plutonium-238.

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OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Sample Analysis	2 of 3	MD-70180	705

WD PROCESSING LABORATORY
DAILY REPORT

Date _____ Analyst _____ Operating Day # _____

SLUDGE DATA

1. Batch # _____
2. Pu-238 Determination
   a. Net weight of sludge sample _____ grams
   b. Gamma count from Form 139 _____ mCi/kgrams
3. Solids Content
   a. Gross weight of sludge, water, and dish _____ grams
   b. Tare weight of dish _____ grams
   c. Net weight of sludge and water _____ grams
   d. Net weight of dry sludge _____ grams
   e. Calculate (d/c X 100) = _____ % solids

TRITIATED WASTEWATER DATA

1. Sample # _____
2. Dilution _____
3. Analytical count (from Form 139) X dilution _____ μCi/liter
4. $\frac{(\mu Ci/liter)\ (3.78\ liters/gallon)\ (25\ gallons/drum)}{10^6\ \mu Ci/curie}$ = _____ Ci/drum

Remarks: _____

MRC-ML-6989B

FIGURE 705-1: FORM 6989B, WD PROCESSING LABORATORY DAILY REPORT

* 1.8. When Form 5878 is returned from Counting Laboratory, record millicuries of Pu-238 per kilogram of sludge on Form 6989B in _____mCi/k grams. Retain 5th sample vial for historical sample if analysis indicated sludge to be above LSA discard limit.

* 1.9. File Form 5878 in Sludge Log Book in chronological order. Retain sample for a maximum of one year from date of origin.

2. Determine percentage of solids in sludge batch as follows.

2.1. Place a disposable aluminum dish on Ohaus moisture balance, and adjust balance tare to zero.

2.2. Use a clean disposable pipet (reuse pipet from step 1.3 if desired) to transfer 20 to 30 milliliters (approximately 40 grams) of sludge into dish.

2.3. Weigh dish and wet sludge; record as gross weight on Form 6989B.

2.4. Heat sludge for 1 hour ±10 minutes at 130 ±15°C.

2.5. Allow sludge to cool to less than 50°C.

2.6. Record weight of dried sludge on Form 6989B.

3. Determine specific gravity of sludge as follows.

3.1. Insert hydrometer into 1,000-milliliter graduated cylinder filled with sludge sample received from chemical operators. When the hydrometer stops sinking into the sludge, take the reading off the hydrometer and record this value on Form 6989B (see figure 705-1).

4. Decide if sludge should be drummed based on sludge viscosity and percent solids content data.

5. Notify operators that sludge is one of the following:

- o "thick" enough to be drummed, or
- o "thin" enough that it should dewater for several more days.

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OPERATION SHEET

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POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 3	MD-70180	701

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Tracy W Lantz 11/15/85	Rick Hampel 2-4-85	10/24/84	841985MD-C

OPERATION TITLE
Sludge Depth Measurement

* 1. Put on disposable protective gloves.

2. Stop rotation of clariflocculator paddles and carriage plow with switch on end of clariflocculator bridge (figure 701-1).

FIGURE 701-1: CLARIFLOCCULATOR PADDLE AND CARRIAGE PLOW SWITCH

3. Move depth measuring device along carriage rail until near inner wall.

4. Remove locking pin from depth measuring rod.

5. Lower rod slowly into water in outer chamber at inner chamber wall until a resistance is felt as rod bottom contacts top of sludge layer in chamber.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	2 of 3	MD-70180	701

6. Read scale at point where red-engraved ring on rod is in line with depth marker on calibrated bar scale of the measuring device.

7. Record this reading.

8. Repeat depth measurement 3 more times at new locations closer to outer wall as described in steps 5 and 6.

9. Record these 3 scale readings.

NOTE: The 4 scale readings will vary because of depth pattern formed during sludge accumulation while plow is rotating in clarifloculator.

10. Measure sludge level at several points around circumference of outer chamber wall to determine if the sludge level is uniform.

11. Raise rod into position and replace locking pin.

12. Start rotation of clarifloculator paddles and carriage plow.

13. Remove gloves and discard in a LSA waste container.

14. Determine average scale reading in feet and inches by adding the 4 readings together and dividing this sum by 4.

15. Use Table I to determine total volume, in gallons, of sludge in clarifloculator.

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
Sludge Depth Measurement	3 of 3	MD-70180	701

TABLE I

GALLONS OF SLUDGE IN CLARIFLOCCULATOR

SCALE READING (feet & inches)		VOLUME (gallons)	SCALE READING (feet & inches)		VOLUME (gallons)
8	2	14,313	9	9	5,953
8	3	13,873	9	10	5,513
8	4	13,433	9	11	5,073
8	5	12,993	10	0	4,633
8	6	12,553	10	1	4,193
8	7	12,113	10	2	3,767
8	8	11,673	10	3	3,376
8	9	11,233	10	4	3,006
8	10	10,793	10	5	2,666
8	11	10,353	10	6	2,357
9	0	9,913	10	7	2,067
9	1	9,473	10	8	1,804
9	2	9,033	10	9	1,567
9	3	8,593	10	10	1,348
9	4	8,153	10	11	1,156
9	5	7,713	11	0	977
9	6	7,273	11	1	819
9	7	6,833	11	2	681
9	8	6,393	11	3	559

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 2	MD-70180	702

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Jay W Watts 11/5/85	Rick Hampel 2-4-85	10-24-84	841985MD-C

OPERATION TITLE

Pumping Sludge from Clarifloccculators into Sludge-Holding Tank

1. Pump sludge from bottom discharge of either clarifloccculator to either 1,000-gallon sludge-holding tank (A or B) using the following procedure.

* 1.1. Open selected clarifloccculator sludge discharge valve located in pit area WD-8.

1.2. Open selected sludge-holding tank inlet valve over sludge tank in WD-101.

1.3. Start one of the two Dorr-Oliver diaphragm slurry pumps located in pit area WD-8 and set required valves to pump sludge from chosen clarifloccculator to chosen sludge-holding tank located in WD-101 (see figure 702-1).

FIGURE 702-1: DORR-OLIVER DIAPHRAGM SLURRY PUMPS

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2. Immediately after sludge covers blades of agitator, start agitator by turning on switch located in WD-101 (see figure 702-2).

FIGURE 702-2: SLUDGE-HOLDING TANK CONTROLS

NOTE: Sludge level in clarifloculator should never drop below ZERO DATUM line that corresponds to bottom of flocculating chamber portion of clarifloculator.

*

3. Close clarifloculator sludge discharge valve when holding tank is about full, or sludge-level in clarifloculator is near ZERO DATUM line.

4. Stop Dorr-Oliver pump when line becomes empty.

5. Close holding tank inlet valve.

6. Stop agitator after approximately one hour of mixing time or at end of workday.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 9	MD-70180	704

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Jay W. Doty 1/15/85	Rick Hampel 2-4-85	10/24/84	841985MD-C

OPERATION TITLE
TRU Sludge Drumming

*

* 1. Inspect TRU drums and lids plus polyethylene liners and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return and notify supervisor for corrective action.

2. Initiate a Form 7042B, TRU Waste Input Form (see figure 704-1), for each accepted container, and:

- o fill in box for CREATE LOCATION,
- o record drum and liner number under unit ID and LINER NUMBER, and
- o record inspection results of step 1 under PHYSICAL INSPECTION.

3. Prepare 25 drums as follows:

3.1. Install a 4-mil polyethylene bag (Stock No. 2-1160) over base and walls of TRU drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows:

4.1. Turn on sludge-holding tank agitator; mix sludge for approximately 30 minutes.

4.2. Turn off agitator and add sludge to 4-ounce sample bottle (a little above 1/2 full) and to a 1000-milliliter graduated cylinder (full).

4.3. Give samples to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed until WD Processing Laboratory gives permission to drum sludge.

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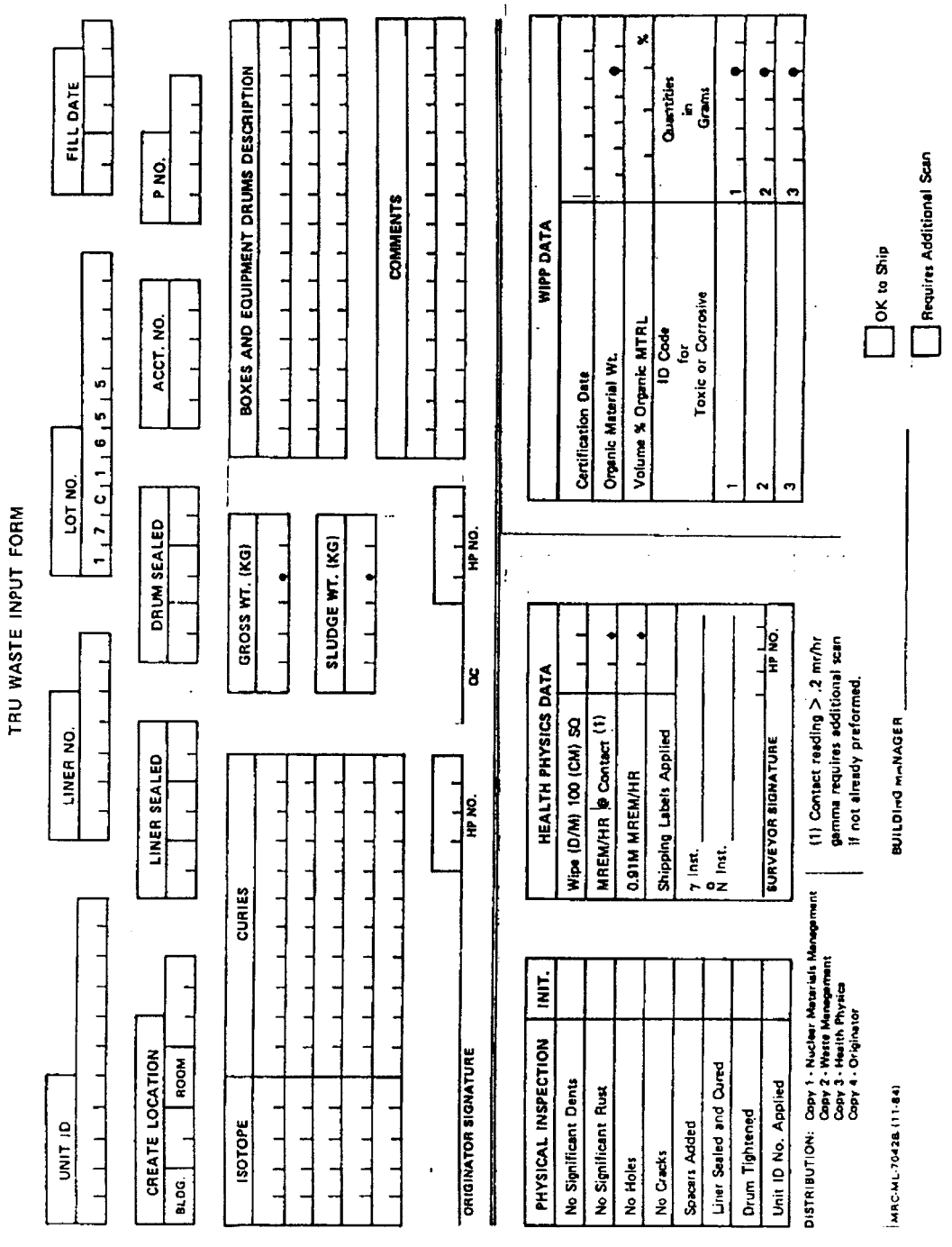
TRU Sludge Drumming	2 of 9	MD-70180	704



* FIGURE 704-1: FORM 7042B, TRU WASTE INPUT

5. Load sludge into TRU drums as follows:

5.1. Check lid identification and drum identification numbers (see figure 704-2).

5.2. Move drum near fumehood within reach of sludge discharge flexible tube (see figure 704-3).

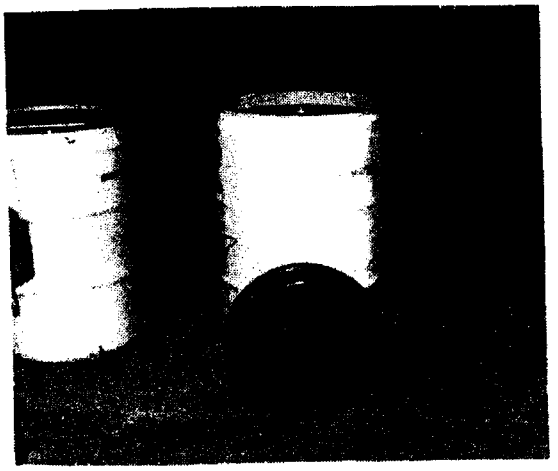


FIGURE 704-2: DRUM AND LID NUMBERING

FIGURE 704-3: SPLASH PROTECTION COLLAR AND LID

5.3. Carefully place splash protection collar and lid over drum and liner.

5.4. Insert sludge discharge flexible tube in splash protection lid.

5.5. Open control valve and fill drum with sludge until fill-gage on splash lid starts to raise; then close sludge flow control valve.

5.6. Remove sludge discharge tube and place in holder.

5.7. Raise splash protection collar and place on tray.

6. Determine actual total sludge weight in each drum as follows:

* 6.1. Tare weigh empty drum and empty liner by setting calibrated scale to read zero.

* 6.2. Load sludge into TRU drum as outlined in Step 5.

6.3. Roll sludge-filled drum to weighing area.

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6.4. Weigh drum, liner, and sludge using electric hoists and scales (see figure 704-4).

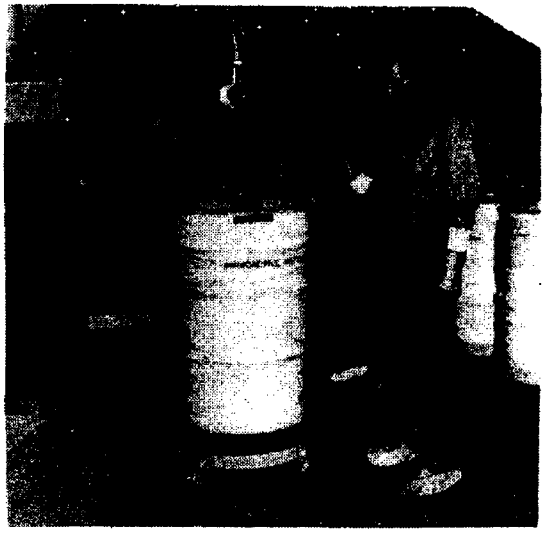

FIGURE 704-4: WEIGHING DRUM OF SLUDGE

6.5. Record sludge-filled drum weight on Form 7042B under SLUDGE WT. (KG).

6.6. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows.

7.1. Roll drum back into fume hood and locate under mixer (see figure 704-5).

FIGURE 704-5: CEMENT AND SLUDGE DRUMMING

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7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge and start mixer motor.

7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until approximately two bags of cement have been added and slurry formed shows a thorough mixing of sludge and cement. Approximately 7 to 10 minutes of mixing will be required.

NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use two complete bags of cement per drum of sludge.)

7.10. Leave drum uncapped overnight and check for liquid before capping.

* 7.11. Carefully remove 4-mil polyethylene bag from drum.

*

*

8. Seal rigid polyethylene lid to liner as follows:

*

8.1. Paint mating surfaces of liner body and liner lid with a coat of special contact adhesive (Stock No. 19-0008).

8.2. Inspect mating surfaces of liner and lid to ensure adequate coating with adhesive. Repaint any portion of mating surface if a void is visible.

8.3. Snap liner lid into place in liner body (see figure 704-6).

FIGURE 704-6: SNAPPING LID ONTO CONTAINER

8.4. Cover liner body to lid interface with a heavy coat of adhesive to ensure an airtight seal and allow adhesive to cure overnight (see figure 704-7).

* 8.5. Prior to sealing TRU drum, inspect the liner lid-body interface area for signs of poor sealing. If resealing is required, repeat steps 8.2 through 8.4.

9. Seal TRU drum as follows:

*

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9.1. Paint gasket-retaining groove of drum lid with a heavy coat of special contact adhesive (see figure 704-8).

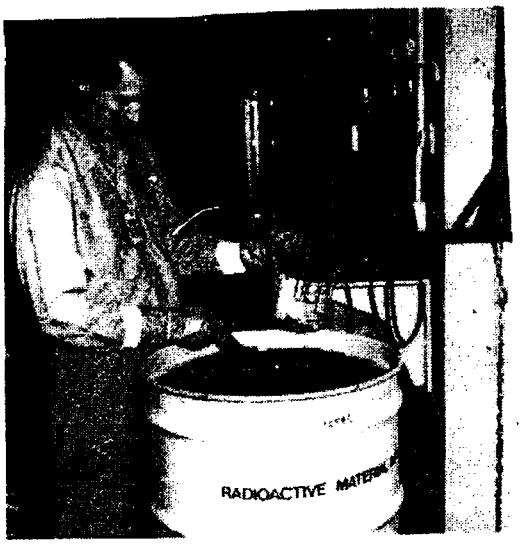

FIGURE 704-7: COATING LINER/LID INTERFACE WITH ADHESIVE

FIGURE 704-8: COATING GASKET GROOVE OF DRUM LID WITH ADHESIVE

9.2. Insert lid gasket into retaining groove of lid and press down firmly.

9.3. Insert wood spacer(s) to fill gap between drum liner and drum lid (see figure 704-10).

9.4. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

9.5. Screw retaining bolt into ring lug.

9.6. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

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10. Weigh sludge-filled drum as follows:

* 10.1. Roll sealed drum package to weighing area.

* 10.2. Adjust scales to read zero weight.

* 10.3. Lift drum package with electric hoist and scales (see figure 704-9).

* 10.4. Record total weight of drum package on Form 7042B under GROSS WT. (KG).

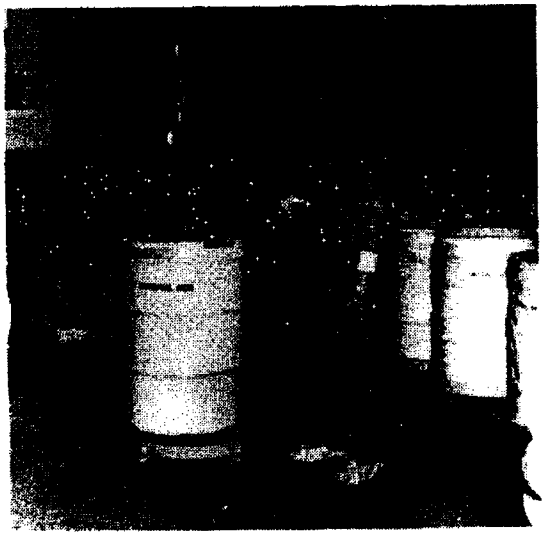

FIGURE 704-9: FINAL WEIGHING

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11. Finish paper work on Form 7042B, TRU WASTE Input Form (see figure 704-11) as follows:

FIGURE 704-10: WOOD SPACER INSERTED

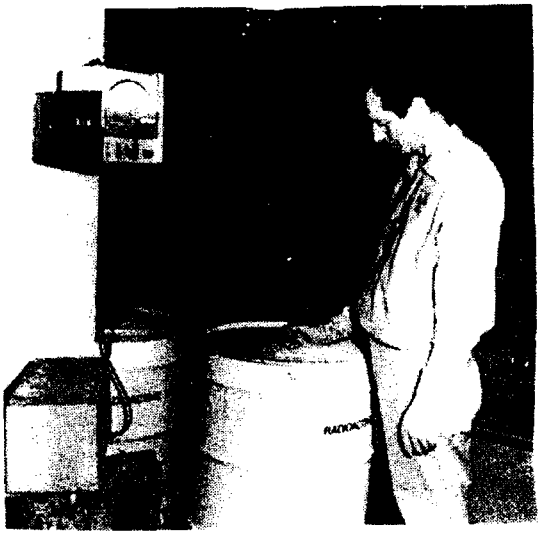

FIGURE 704-11: FINISHING PAPER WORK

11.1. Record, using appropriate responses, that the following steps were performed:

- o liner sealed,
- o spacers added, and
- * o unit ID NO. applied.

11.2. Record the following information:

- o fill date,
- o date liner sealed, and
- o date drum sealed.

11.3. Record the sludge batch under COMMENTS.

11.4. Record the millicuries/drum value under ISOTOPE and CURIES.

11.5. Originator signs with HP number.

* 12. Return forms to WD Laboratory for further handling of sludge drums by HP Survey and Shipping Coordinator.

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OPERATION SHEET

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TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Jerry W. Whitty 1/15/85	Rick Hampel 2-4-85	10-24-84	841985MD-C

OPERATION TITLE
Sludge Sample Anaylsis

*

1. After receiving sludge sample from chemical operators, determine gamma count of Pu-238 in sludge as follows:

1.1. Record sludge batch number on Form 6989B, WD Processing Laboratory Daily Report (see figure 705-1).

NOTE: Use WD Daily Log to obtain Operating Day Number.

1.2. Tare weigh 5 liquid scintillation vials.

1.3. Use a clean disposable pipet to transfer 10 to 15 milliliters (approximately 10 grams) of sludge into each vial.

1.4. Reweigh each vial to obtain net weight of sludge.

1.5. Mark each vial with batch number and net weight of sludge.

1.6. Fill in Form 5878, Request for Analysis, with date, location, batch sample, and sludge weight.

1.7. Submit 4 sample vials each with Form 5878 to E-107 Counting Laboratory.

NOTE: Counting Laboratory will perform a Pu-238 determination by gamma counting as described in Technical Manual PD-80026, Standard Analytical Procedures; Operation 815, Determination of Plutonium-238 in WD Sludge.

*

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WD PROCESSING LABORATORY
DAILY REPORT

Date _____ Analyst _____ Operating Day # _____

SLUDGE DATA

1. Batch # _____
2. Pu-238 Determination
   a. Net weight of sludge sample _____ grams
   b. Gamma count from Form 139 _____ mCi/kgrams
3. Solids Content
   a. Gross weight of sludge, water, and dish _____ grams
   b. Tare weight of dish _____ grams
   c. Net weight of sludge and water _____ grams
   d. Net weight of dry sludge _____ grams
   e. Calculate (d/c X 100) = _____ % solids

TRITIATED WASTEWATER DATA

1. Sample # _____
2. Dilution _____
3. Analytical count (from Form 139) X dilution _____ μCi/liter
4. $\frac{(\mu Ci/liter)\ (3.78\ liters/gallon)\ (25\ gallons/drum)}{10^6\ \mu C i/curie}$ = _____ Ci/drum

Remarks _____

MRC ML 6989B

FIGURE 705-1: FORM 6989B, WD PROCESSING LABORATORY DAILY REPORT

1.8. When Form 5878 is returned from Counting Laboratory, record millicuries of Pu-238 per kilogram of sludge on Form 6989B in _____mCi/k grams. Retain 5th sample vial for historical sample if analysis indicated sludge to be above LSA discard limit.

1.9. File Form 5878 in Sludge Log Book in chronological order. Retain sample for a maximum of one year from date of origin.

2. Determine percentage of solids in sludge batch as follows.

2.1. Place a disposable aluminum dish on Ohaus moisture balance, and adjust balance tare to zero.

2.2. Use a clean disposable pipet (reuse pipet from step 1.3 if desired) to transfer 20 to 30 milliliters (approximately 40 grams) of sludge into dish.

2.3. Weigh dish and wet sludge; record as gross weight on Form 6989B.

*2.4. Heat sludge for 1 hour ±10 minutes or until dry.

*2.5. Allow sludge to cool to room temperature.

2.6. Record weight of dried sludge on Form 6989B.

3. Determine specific gravity of sludge as follows.

3.1. Insert hydrometer into 1,000-milliliter graduated cylinder filled with sludge sample received from chemical operators. When the hydrometer stops sinking into the sludge, take the reading off the hydrometer and record this value on Form 6989B (see figure 705-1).

4. Decide if sludge should be drummed based on sludge viscosity and percent solids content data.

5. Notify operators that sludge is one of the following:

- "thick" enough to be drummed, or
- "thin" enough that it should dewater for several more days.

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WD OPERATION SHEET

PROGRAM	SHEET	MANUAL NUMBER	OPERATION
POSTED OPERATION - CLARIFLOCCULATOR SLUDGE PROCESSING	1 of 7	MD-70180	706

TECH. RESP. / DATE	QC ENG. / DATE	EFFECTIVITY	ECN(S) INCORPORATED
Jon W White 11/5/85	Rick Hampel 2-4-85	10-24-84	841985MD-C

OPERATION TITLE
LSA Sludge Drumming

*

*1. Inspect LSA drums and lids for rust, dents, cracks, and holes. Set aside any faulty containers for return and notify supervisor for corrective action.

2. Initiate a Form 7042A, Non-TRU Waste Input Form (see figure 706-1), for each accepted container, and:

- o fill in box for CREATE LOCATION,
- o record drum number under unit ID, and
- o record inspection results of step 1 under PHYSICAL INSPECTION.

3. Prepare 25 drums as follows.

3.1. Install a 4-mil polyethylene bag (Stock No. 2-1160) over base and walls of LSA drum.

3.2. Position each drum package on an individual drum dolly.

4. Sample sludge as follows.

4.1. Turn on sludge-holding tank agitator; mix sludge for approximately 30 minutes.

4.2. Turn off agitator and add sludge to 4-ounce sample bottle (a little above 1/2 full) and 1,000-milliliter graduated cylinder (full).

4.3. Give samples to WD Processing Laboratory for analysis (see Operation 705).

NOTE: DO NOT proceed until WD Processing Laboratory gives permission to drum sludge.

INDEX	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	ISSUE	2	2	2	2	2	2	2													

OPERATION TITLE	SHEET	MANUAL NUMBER	OPERATION
LSA Sludge Drumming	2 of 7	MD-70180	706

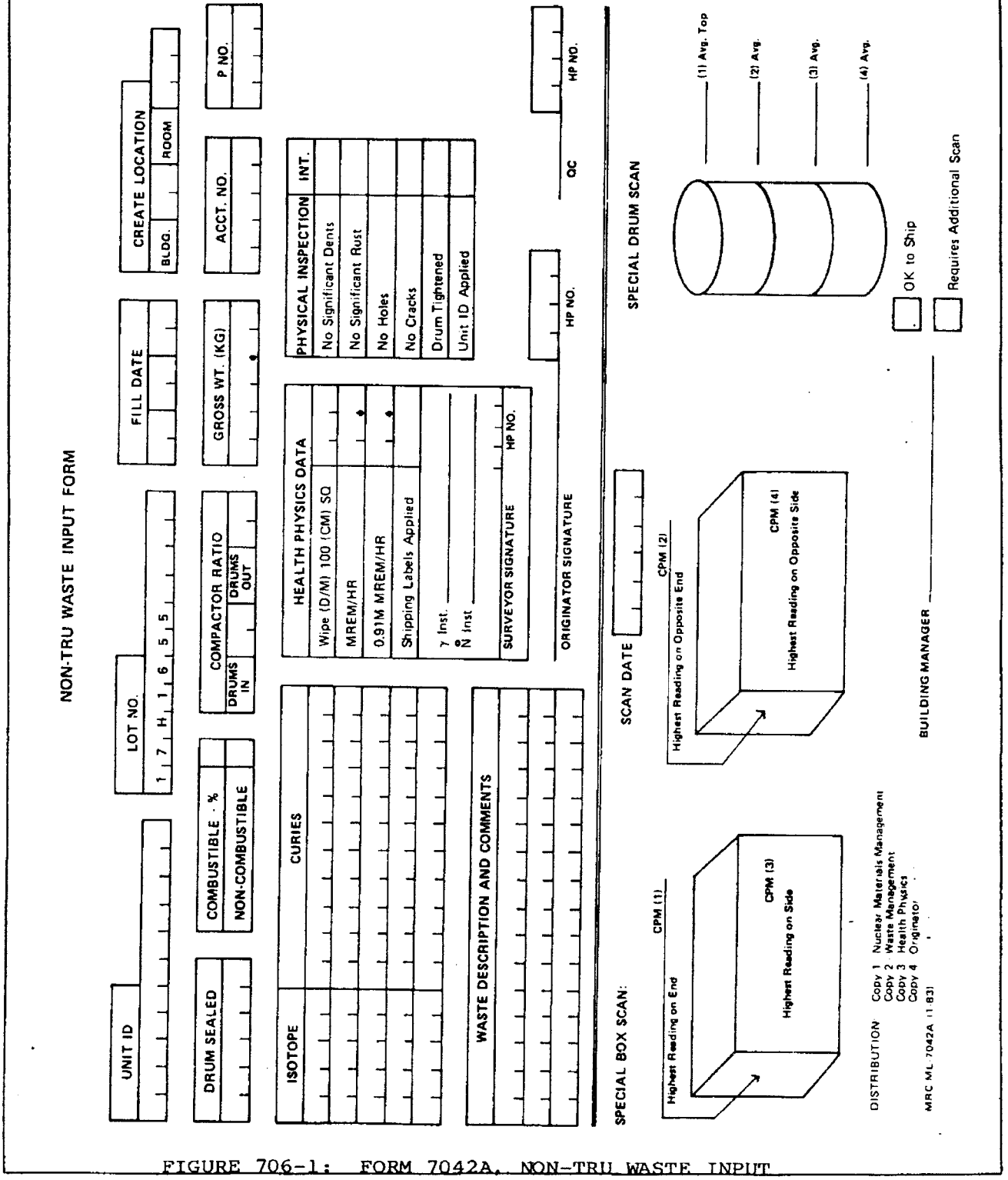

FIGURE 706-1: FORM 7042A, NON-TRU WASTE INPUT

MRC-ML-1079A

5. Load sludge into LSA drums as follows.

5.1. Move drum near fumehood within reach of sludge discharge flexible tube (see figure 706-2).

FIGURE 706-2: SPLASH PROTECTION COLLAR AND LID

5.2. Carefully place splash protection collar and lid over drum.

5.3. Insert sludge discharge flexible tube in splash protection lid.

5.4. Open control valve and fill drum with sludge until fill-gage on splash lid starts to raise then close sludge flow control valve.

5.5. Remove sludge discharge tube and place in holder.

5.6. Raise splash protection collar and place on tray.

6. Determine actual total sludge weight in each drum as follows:

*6.1. Tare weigh empty drum by setting calibrated scale to read zero.

*6.2. Load sludge into LSA drum as outlined in step 5.

6.3. Roll sludge-filled drum to weighing area.

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6.4. Weigh sludge-filled drum using electric hoists and scales (see figure 706-4).

6.5. Record sludge-filled weight on Form 7042A, Non-TRU Waste Input, under WASTE DESCRIPTION AND COMMENTS as SLUDGE WT. (KG).

6.6. Replace sludge-filled drum on dolly.

7. Solidify sludge with cement as follows:

7.1. Roll sludge-filled drum back into fume hood and locate under mixer (see figure 706-3).

FIGURE 706-3: CEMENT AND SLUDGE DRUMMING

7.2. Close metal doors and slide plastic window to open position.

7.3. Load cement bag conveyor on left of fume hood and bring one 94-pound cement bag into position extending through fume hood opening so that contents can be poured into drum of sludge.

7.4. Slit cement bag.

7.5. Lower mixer into sludge and start mixer motor.

7.6. Slowly add cement while working mixer up and down through sludge-cement mixture.

7.7. Continue adding cement until approximately two bags of cement have been added and slurry formed shows a thorough mixing of sludge and cement. Approximately 7 to 10 minutes of mixing will be required.

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NOTE: Sludge containing high solids content (above 25%) will require less cement. Determine actual amount of cement to be added by observing absorption of cement in slurry.

7.8. Stop mixer motor and slowly raise mixer blades to top position above drum.

7.9. Add remainder of unmixed cement to top of sludge-cement mixture by scattering unmixed cement over top of mixture in drum. (Always use two complete bags of cement per drum of sludge.)

7.10. Leave drum uncapped overnight and check for liquid before capping.

*7.11. Carefully remove 4-mil polyethylene bag from drum.

*

8. Seal LSA drum as follows:

8.1. Insert lid gasket into retaining groove of lid and press down firmly.

8.2. Position drum lid on drum body and install bolt retaining ring on drum with ring lugs positioned down.

8.3. Screw retaining bolt into ring lug.

8.4. Use mallet to tap retaining ring into position while tightening retaining bolt with impact wrench.

9. Weigh sludge-filled drum as follows:

9.1. Roll sealed drum package to weighing area.

9.2. Adjust scales to read zero weight.

9.3. Lift drum package with electric hoist and scales (see figure 706-4).

FIGURE 706-4: WEIGHING DRUM OF SLUDGE

9.4. Record total weight of drum package on Form 7042A under GROSS WT. (KG).

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10. Finish paper work on Form 7042A, (see figure 705-5).

FIGURE 706-5: FINISHING PAPER WORK

10.1. Record a check mark for:

- o unit ID No. applied.

10.2. Record the following information:

- o date container filled,
- o date drum sealed,
- o isotope,
- o curies, and
- o batch No. - waste description

10.3. Originator signs with HP number.

*11. Return forms to WD Laboratory for further handling of sludge drums by HP Survey and Shipping Coordinator.

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AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

Reference Number: **P380A, R2 (Supersedes Form 1068 only)** 8/10/06 Record T.1710

AK Type:

- ☑ **Published Documentation**
- ☐ **Unpublished Data**
- ☐ **Correspondence**
- ☐ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management. February 1993.

Information Source: Source obtained from Bill Franz, LATA.

AK # [a]	AK Information Summary
WM1, WM2 WM3, WM7 MD **WS1, WS2, WS3, WS4, WS5, WS7** All MD IDCs **WS4, WS5, WS6, WS7** BN 508, 510	Background information pertinent to the Mound Plant remedial investigation/feasibility study (RI/FS) submitted to US EPA under the terms of the FFA. Process descriptions and waste management practices are described for each building. P380A, R2 – changes 1068 Form only to update list of IDCs and identification of elements.

Source Document Data Limitations (if any): Radionuclides present at Mound are identified; however, specific information regarding the isotopic ratios for waste contaminated with weapons grade plutonium or heat source plutonium is not included. Waste generation is not identified by waste type or by a content code; however waste generation by physical form is described. In some cases, document provides a very general description of the waste generation processes.

AK Expert:

M. L. Johnson / MS Johnson

Print **Sign**

Date: 8/1/06

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 9
SITE SCOPING REPORT:
VOLUME 7 - WASTE MANAGEMENT

MOUND PLANT
MIAMISBURG, OHIO

February 1993

DEPARTMENT OF ENERGY
ALBUQUERQUE FIELD OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL

P380A

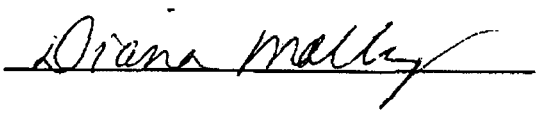
Signature Page

This report is Volume 7 of a multiple-volume Site Scoping Report providing the background information pertinent to the remedial investigation/feasibility study (RI/FS) of the Mound Plant. Under the terms of the Federal Facility Agreement between DOE and US EPA, this report is submitted to US EPA for approval.

This report is approved by US EPA only for the purposes of scoping the RI/FS, and approval does not imply concurrence with the interpretations presented herein. It is recognized that additional information will be collected during the RI/FS and may supersede information contained in this report.

APPROVED:

Diana Mally
Remedial Project Manager
U.S. Environmental Protection Agency
Region V



Signature Page

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APPROVED: Diana Mally
Remedial Project Manager
U.S. Environmental Protection Agency
Region V

Diana Mally

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	Overflow Pond Section Station 3 +00	Drawing No. FS 16977

Overflow Pond Section Station 3 +50	Drawing No. FS 16978
Overflow Pond Section Station 4 +00	Drawing No. FS 16979
Overflow Pond Construction Profile	Drawing No. FS 16989
Overflow Pond Test Borings	Drawing No. FS 16994
Overflow Pond Typical Details	Drawing No. FS 17044
Hot Waste Burial Areas	Drawing No. SK-2281
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Floor Plan and Trenches	Drawing No. 4-1172
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ACRONYMS

ADP	Advanced Devices Plastics
ADS	air detritiation system
AEC	Atomic Energy Commission
ALARA	as low as reasonably achievable
ALO	Albuquerque Operations Office (U.S. DOE)
ANL	Argonne National Laboratory
ANPP	Aircraft Nuclear Propulsion
BNA	base-neutral acid
BTU	British Thermal Unit
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CP	perchlorate
D&D	decontamination and decommissioning
DEHPA	di-2-ethylhexyl-phosphoric acid
DIBC	diisobutyl carbinal
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DSBPP	di-sec-butylphenyl phosphonate
ECS	emergency containment system
EG&G-MAT	EG&G Mound Applied Technologies
EP	extraction procedure
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration (Program)
ERDA	Energy Research and Development Administration
ERS	effluent removal system
FFA	Federal Facility Agreement
FP/IA	fission products/induced activity
FS	feasibility study
FWCU	feedwater cleanup system
FWPCA	Federal Water Pollution Control Act
GADS	glove box atmosphere detritiation system
GP	general purpose (building)
HEPA	high efficiency particulate air
HISS	hydrogen isotope separation system
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,6-tetrazocine
HNS	hexanitrostil benecyclo-tetramethylenetetranitramine
HSWA	Hazardous and Solid Waste Amendment of 1984
ICC	Interstate Commerce Commission
INEL	Idaho National Engineering Laboratory
LDR	land disposal restrictions
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
LSA	low specific activity
MCC	Monsanto Chemical Company
MCL	maximum contaminant level
MRC	Monsanto Research Corporation
MTR	materials test reactor
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NPDES	National Pollution Discharge Elimination System
NPL	National Priority List

NRC	Nuclear Regulatory Commission
NTS	Nevada Test Site
ORNL	Oak Ridge National Laboratory
PBX	plastic bonded explosive
PCB	polychlorinated biphenyl
PETN	pentaerythritol tetranitrate (explosive)
PMC	plutonium-molybdenum cermet
PPO	pressed plutonium oxide
PR	preliminary review
PVC	polyvinyl chloride
RAPCA	Regional Air Pollution Control Agency
RCG	radioactivity concentration guide
RCRA	Resource Conservation and Recovery Act
RDX	hexahydro-1,3,5-trinitro-s-triazine cyclotetratmethylene-tetranitramine
RFA	RCRA Facility Assessment
RI	remedial investigation
RTG	radioisotopic thermoelectric generator
SALE	Safeguards Analytical Laboratory Exchange
SNAP	space nuclear auxiliary power
SRDS	storm water retention and discharge system
SRP	Savannah River Plant
SWMU	solid waste management unit
TAWRS	tritium aqueous waste recovery system
TDF	thermal diffusion facility
TOPO	tri-n-octylphosphine oxide
TRC	tritium recovery column
TRU	transuranic (waste)
TRUPACT	Transuranic Package Transporter-11
VSI	visual site inspection
WIPP	Waste Isolation Pilot Plant
WTS	Waste Transfer System

1. INTRODUCTION

The U.S. Department of Energy (DOE) Mound Plant, Miamisburg, Ohio, was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list (also known as the Superfund National Priority List (NPL)) on November 21, 1989 (54 Federal Register 48184). Pursuant to its NPL status, the DOE signed a CERCLA Section 120 Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA), which became effective October 11, 1990. A similar agreement is in negotiation between the DOE and the Ohio EPA (December 1990). The terms of the FFA require that the DOE develop and implement remedial investigations (RIs) and feasibility studies (FSs) and conduct interim remedial actions in order to ensure that environmental impacts associated with past and present activities at the Site are thoroughly investigated and appropriate action is taken to protect the public health and welfare and the environment.

The Albuquerque Operations Office of the DOE established the Environmental Restoration (ER) Program in 1984 to collect and assess environmental data in order to develop a conceptual site model, to assess both the nature and extent of contamination, and to identify potential exposure pathways and potential human and environmental receptors. These activities have been conducted under DOE policy for all facilities to comply with applicable environmental regulations. In order to provide EPA with sufficient information and data gathered during these previous investigations, a multi-volume scoping report, providing background information, has been prepared. The Site Scoping Report will provide descriptions and summaries of the current conditions and characteristics of Mound Plant and will consist of at least the following volumes:

1. Groundwater Data: February 1987 - July 1990
2. Geologic Log and Well Information Report
3. Radiological Site Survey Report
4. Engineering Map Series
5. Topographic Map Series
6. Photo History Report
7. Waste Management
8. Environmental Monitoring Data
9. Annotated Bibliography
10. Permits and Enforcement Actions
11. Spills and Response Actions

4. WASTE TREATMENT FACILITIES

On-plant treatment of wastes generated by Mound production, research, and development activities has generally been limited to the processing of the liquid LLW from the polonium-210 and plutonium-238 processes, although other waste treatment processes such as incineration and liquid LLW solidification have been used. The liquid LLW from the polonium-210 and plutonium-238 processes was treated on-plant to produce a surface water effluent and solid LLW sludge. The solid LLW sludge was generally shipped off-plant, but was incinerated on-plant in the mid-1970s. Tritiated wastewater was historically diluted and released as a surface water effluent; but, since 1971, it has been solidified and shipped off-plant. Trial burns of a glass melter furnace were conducted in the mid-1980s as a mixed waste treatment process. The LLW sediments resulting from surficial erosion of plant soils are not truly treated, but are allowed to settle in the engineered ponds, reducing the suspended sediment load of the plant's surface water effluent. Hazardous wastes, some LLW wastes, and classified explosive wastes were historically destroyed by open burning. The following subsections provide detailed descriptions of these and other treatment facilities used over the history of Mound. Figure 4.1 shows the locations of the waste treatment facilities.

4.1. ALPHA WASTEWATER TREATMENT FACILITIES

4.1.1. WD Building

The central facility for the treatment of liquid radioactive wastes at Mound is the WD Building (Figure 4.1), which houses the alpha and beta wastewater treatment systems. The WD Building was constructed as part of the original plant design in 1948 and became operational in February 1949. It was originally designed to accept all liquid wastes generated from process operations and research activities; but, in practice, most wastewater was pretreated to remove the highest percent of solids possible or was treated independently of WD. Since its beginnings, alpha wastewater treatment has been the core of WD operations, supporting the polonium operations until 1971 and plutonium operations since. Alpha wastewater sources include the process operations in the SW and R buildings and Building 38 and the wastewater sumps in the WD Building. Historical alpha wastewater sources included the B, HH, H, and SM buildings. The beta wastewater facility was installed in the mid-1960s. Beta wastewater sources included the SW, R, T, and HH buildings.

The alpha treatment system has always treated only dilute low-risk wastewater. The low-risk wastewater originated outside the process glove boxes from sources such as floor moppings, and high-risk wastewater originated within the glove box systems. During the era of polonium production, the supernatant liquid from the coprecipitation processes in the HH and T buildings was piped to WD for

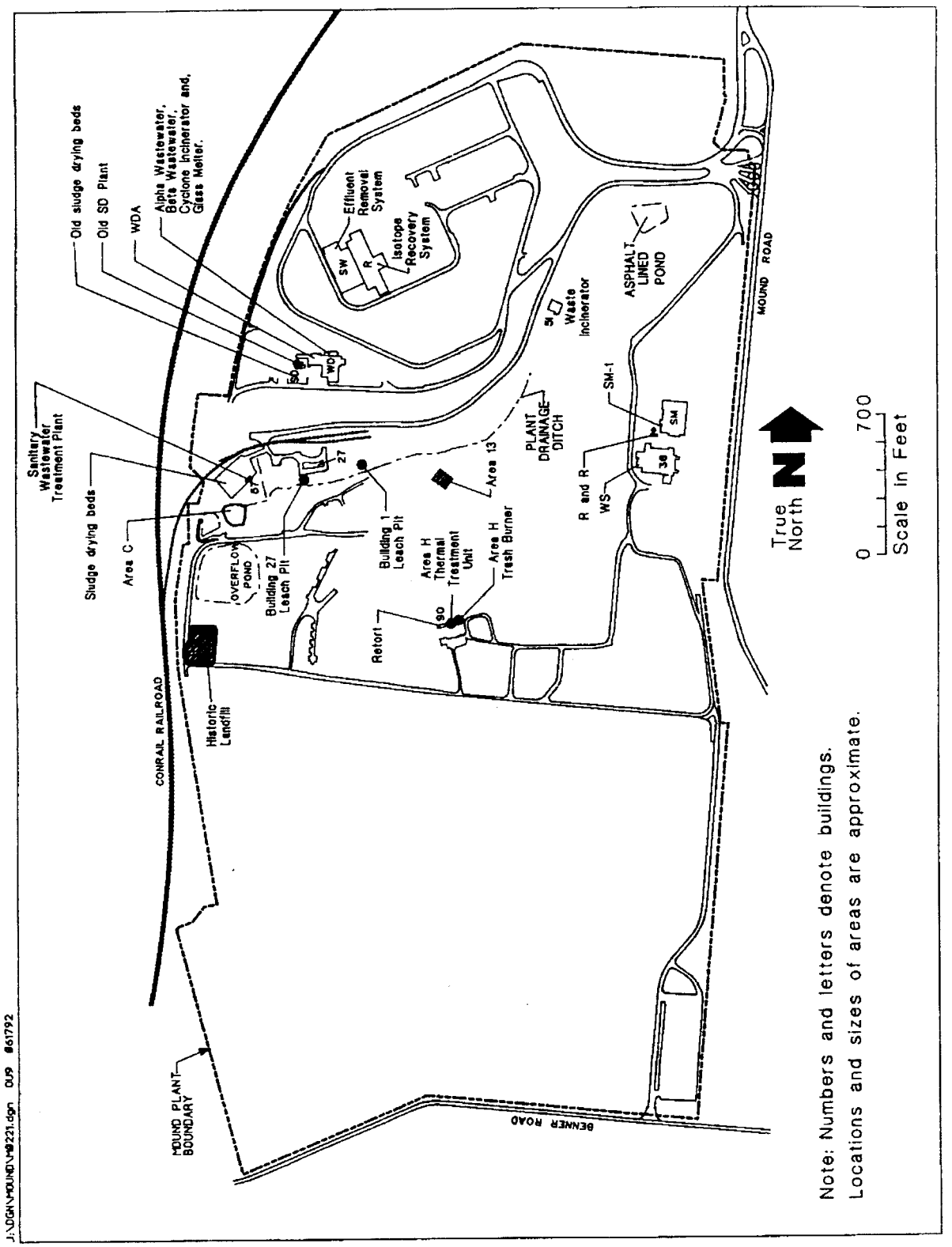

Figure 4.1 Waste treatment facilities.

further treatment before being released to the Great Miami River. The precipitation sludges were drummed directly in the HH Building. Other polonium wastewater sources included the R Building and the laundry in the H Building. When the plutonium production began in the SM Building in 1961, the wastewater treatment facilities in WD were augmented by a separate similar facility in the SM Building, described below. In 1966, the WDA was constructed to accept the plutonium wastewater from SM operations. Treatment of the low-risk plutonium wastewater at the WDA began in August 1967, upon completion of the WTS pipeline from the SM complex to WDA. The WDA facility was used for low-risk plutonium wastewater until 1971 when the polonium operations ceased and the larger WD facility was renovated for the treatment of plutonium wastewater.

Currently, low-risk plutonium wastewater from the D&D of the plutonium facilities is the main source of alpha wastewater. Both the high- and low-risk plutonium wastewater consisted primarily of plutonium-238 and plutonium-239 with americium-241, neptunium-237, uranium-235, and uranium-234 at trace concentrations.

4.1.1.1. WD Alpha Wastewater Treatment System Process

The low-risk alpha wastewater is treated in a precipitation, coagulation, filtration, and solidification process that has been the core of WD Building processing operations since it was built. The low-risk wastewater originates from the process operations in the SW, R, and H buildings, Building 38, and wastewater sumps in the WD Building. Historically, the WD Building received wastewater from the B, HH, and SM buildings.

Figure 4.2 shows the process flow for the alpha wastewater in the WD Building. The chemical extraction process was summarized by Althoff in 1968. There are four 30,000-gallon influent tanks constructed of epoxy-coated steel outside the north wall of the WD Building in a below-ground concrete vault (DOE 1991b). These tanks serve as feed tanks for the clariflocculators in the alpha wastewater treatment system. Alpha-contaminated wastewater is currently pumped into the tanks through pipelines from the H, R, SW, and WD buildings and is delivered by tanker trucks from the SM/PP Building complex. The pH is adjusted from 11.0 to 11.5 by the addition of sodium hydroxide to the tanks. Activated carbon, calcium chloride, and ferric sulfate are added in varying predetermined quantities to provide absorption, flocculation, scavenging, and phosphate precipitation. Two mixers are installed in each tank to provide agitation and keep the solids from settling. The wastewater is then pumped from the tanks to the clariflocculators (MRC 1983). The vault surrounding the four wastewater influent tanks is equipped with a visual leak detection system. The leak detection system is part of the original construction. Each influent tank is a steel tank within a concrete vault. A space between the two allows any leakage from the steel tank to collect in the sloped floor of the concrete tank and drain through an opening to a collection bottle inside the building. Any liquid leaking from

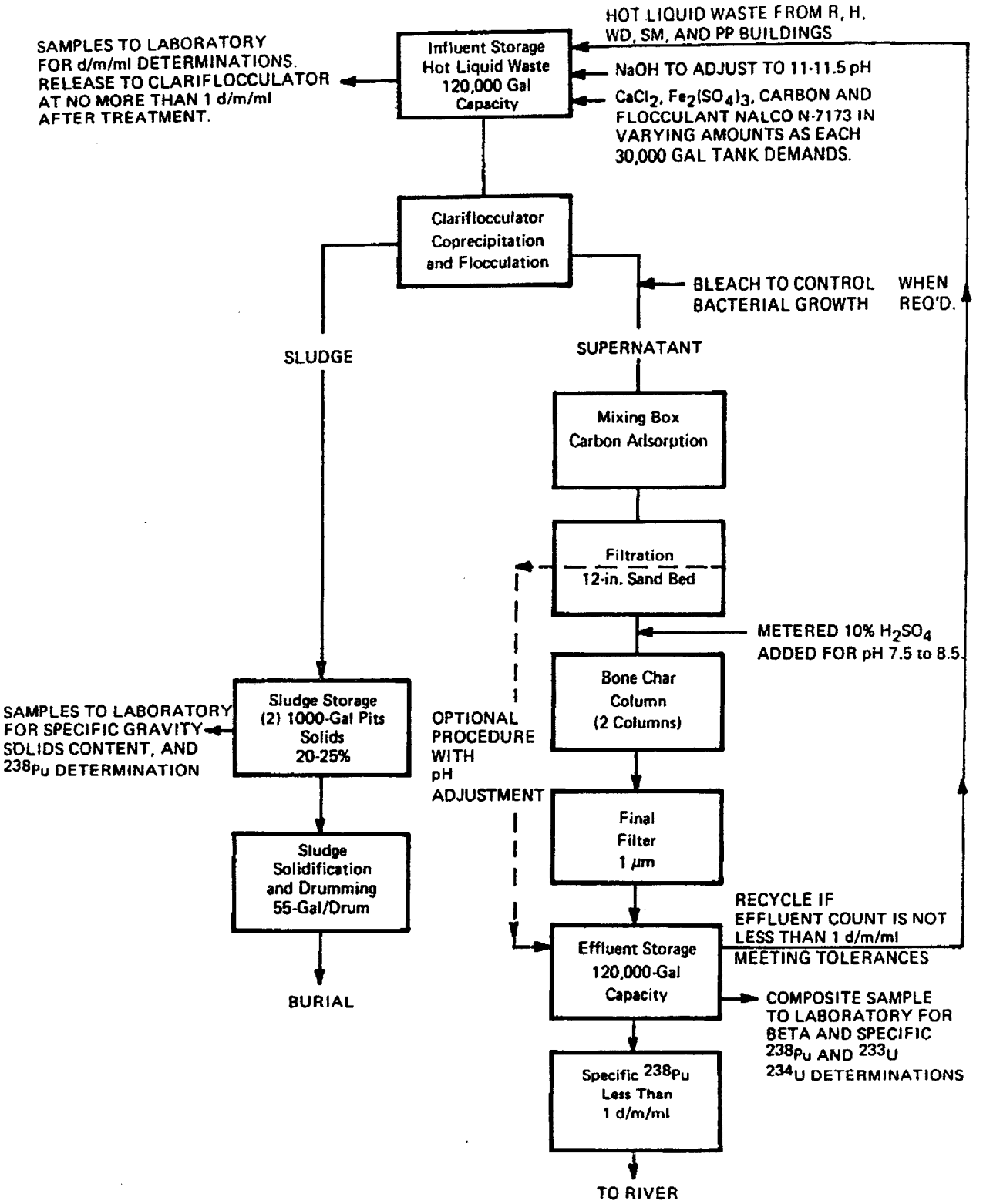

Figure 4.2. Waste disposal process flow diagram (MRC 1984b).

the tanks or pipes inside the vault is observed in the collection bottle. No leaks have ever been found (Mills 1991).

The heart of the low-risk alpha wastewater treatment system consists of two clariflocculators, two sand filters, two bone char columns, four effluent storage tanks, two sludge pits, and a sludge solidification and drumming unit. The bone char filters have been used for about the past 20 years. In 1973, Mound received a patent for the bone char filter process. The filters consist of natural calcium hydroxyapatite, a product prepared from cattle bones. Wastewater treated with additives (carbon, calcium chloride), flocculent (ferric sulfate, Nalco 676), and pH-adjusting chemicals (sodium hydroxide) is discharged into one of two 60,000-gallon clariflocculators for settling (DOE 1991b). The remaining clariflocculator is used as a standby unit.

The sludge from the clariflocculators is currently pumped into two 1,000-gallon sludge pits where it is sampled on a batch basis to determine activity level, specific gravity, and solids content. The sludge is then discharged to the sludge solidification and drumming unit where it is solidified with cement in 55-gallon steel (17C) drums lined with high-density polyethylene TRU liners. If the analytical results show that the sludge is non-TRU, the sludge is solidified with cement in 55-gallon (17H) drums with no liners. The solidified sludge is staged in Building 23 for shipment and off-plant disposal.

The supernatant from the clariflocculator is filtered through sand beds, a bone char filter, and a 1-micron filter prior to discharge into four 30,000-gallon effluent storage tanks (DOE 1991b). The effluent in the storage tanks is neutralized with sulfuric acid to a pH of 7 to 8 prior to being discharged to the Great Miami River. Effluent that does not meet discharge criteria is recycled back into the treatment system (MRC 1983). These tanks are currently provided with a visual leak detection system. Liquid that may leak from the tanks or piping inside the vault flows back into a container in the sub-basement inside the WD Building to provide a visual indication of a leak (Mills 1991).

All units of the treatment system are on the first floor of the WD Building with the exception of the sludge pits that are on the second floor. The sidewalls of the clariflocculators extend from the first floor to several feet above the second floor. All units are underlain with a concrete floor and are covered by the building roof.

4.1.1.2. WD Alpha Wastewater Treatment System: Historical Perspective

The WD facility began operation in February 1949 largely in support of the polonium processing operations. The treatment process had been researched through a pilot plant phase at the Dayton Project, but it took considerable effort before the treatment process was perfected. The supernatant

liquids from the polonium processes in the HH Building, as well as other wastewater from the research activities in the B and R buildings, were transferred through underground pipes to the WD influent tanks. Influent included organic chemicals with alpha and beta activity from chemical research, detergents from the laundry, digested tissue, animal hair, organic solvents from biological research, and process wastes (MCC 1952a). Samples of the tank contents were taken to determine treatment requirements. Tank contents were neutralized with sulfuric acid to a pH of 7.0 to 7.5 and treated with sodium sulfide, aqua regia, calcium chloride, and/or barium chloride solutions. The contents of the tanks were metered to the clariflocculators where aluminum sulfate and sodium hydroxide were added. The pH was maintained at 8.8. Solids precipitated out in the clariflocculators, producing a sludge blanket.

The sludge was transferred to two tanks where it was sampled and the solids content determined. Sludge under 5% solids was dewatered in Eimco rotary drum filters. Sludge over 5% solids was transferred to Pfaudler reaction vessels where the sludge was treated with bismuth trichloride in 6N hydrochloric acid and was contacted with hydrogen sulfide gas. The sludge was stirred in the reaction vessel and subsequently discharged to 30-gallon drums. The separable liquid was withdrawn by vacuum through a Moore-type basket filter and transferred into a holding tank. When the drum was full of dewatered sludge, it was sealed and shipped for off-plant burial (Stringham 1952). The filtrate was monitored and if the count exceeded 2,500 d/m/mL (i.e., 112.5 nCi/m/mL), it was recycled back to the Pfaudler reaction vessels. If the activity was low enough, it was mixed with water to dilute the acid and pumped to the Great Miami River for disposal (Huddleston 1953).

The supernatant from the clariflocculator was filtered through sand and transferred to the four 30,000-gallon effluent tanks. The filtered effluent was sampled and either recycled back into the influent tanks for reprocessing or diluted in a mix box with water and sent to the Great Miami River for disposal (Harris 1950b). The estimated activity level in the effluent was 12 to 13 d/m/mL (Mead 1950), or about 4.5 pCi/mL.

Operation of the WD facility from February 1949 to late 1950 proved to be very inefficient. By April 1950, it was apparent that the count in the effluent, particularly the beta activity, was not being reduced to a satisfactory level. An intensive series of pilot plant tests was conducted. Treating the influent was studied; influent tests included adding treatment agents (clay, iron, copper, powder, diatomaceous earth, bismuth-chloride) and filtering, distillation, coated filtering, multiple precipitations with bismuth-chloride, precipitation with bismuth-chloride and alum, displacement deposition on metals, and electrodeposition. None of these tests proved beneficial (Harris 1950a). Effluent from the clariflocculators was cloudy and contained considerable activity. From September 1950 to October 1950, the average activity in the effluent was 1,404 counts/minute/milliliter (c/m/mL) (630 pCi/mL).

The sand filters were not performing as efficiently as expected. They were caked in some areas, which allowed carbon and colloidal material to pass through. Average activity in the sand filter effluent during September to October 1950 was 264 c/m/mL (118 pCi/mL), which was an order of magnitude above the removal goal (Harris 1950b).

Pretreatment methods were inefficient and not successful in precipitating the activity. Some chemicals were added to the influent tanks through the tank top by hand. Control of the alum addition rate to the clariflocculator was performed manually and resulted in varying clariflocculator concentrations as the influent rate varied.

In October 1950, the Research Division took control of the WD facility from the Operations Division. A pretreatment technique was developed shortly thereafter, and the operation of the process became satisfactory (Huddleston 1953a). Undiluted contaminant concentrations in the process effluent were reduced to levels of 36 d/m/mL (16 pCi/mL) (Rauscher 1950).

Laboratory work continued on methods to improve the performance of the operation. Tests were performed on improving the sludge system efficiency, and various experiments were completed to increase volume reduction or remove activity from the sludge. Nitric acid was investigated as a replacement for hydrochloric acid to improve the sludge filtration characteristics and increase the volume reduction. Sludge freezing was investigated as a method to increase volume reduction by increasing the sludge-water phase separation. Tests were performed to determine the effectiveness of leaching the activity from the sludge using hydrochloric, nitric, or sulfuric acid, or aqua regia. High temperature, high vacuum volatilization, and the use of chelating agents (Versene and thenoyltrifloro acetone) were studied as alternative methods for removing activity from the sludge. It was found that if a stronger acid was used in the Pfaudler reaction vessel, a more dilute input slurry could be tolerated. In January 1951, the hydrochloric acid used in the reaction vessels was changed to sulfuric acid and the Eimco drum filters were bypassed (Rauscher 1950).

Process improvements continued. In 1954, an acid-carbon treatment and a pH change were implemented to reduce the quantity of suspended solids in the clariflocculator effluent prior to entering the sand filters. A slurry of activated carbon in sulfuric acid was added to the clariflocculator effluent. This process reduced the aluminum complexes in the carryover to the sand filters. The carbon acted as an excellent adsorbent for floc formation, and the change in pH helped in the formation of aluminum floc. Changes were also made in the treatment chemicals added to the 30,000-gallon influent tanks, such as the sodium hydroxide now added to adjust the pH and the ferric sulfate flocculent. As described above, in the early 1970s, bone char columns were added downstream of the sand filters to remove alpha activity.

Cleaning of the tanks and equipment in the WD Building has occurred several times. In 1953, decontamination work was conducted on the influent tanks. At least one tank had contained some actinium wastes. The interior was prepared for relining by wet sandblasting (Bradley 1953d). The overflow tanks on the sand filters were cleaned in 1954, and 30 drums of contaminated sand were shipped to ORNL for burial (Bradley 1954c). In 1956, the large clariflocculator tanks were emptied (Meyer 1956c), cleaned, and painted (Meyer 1957 c,e). In 1958, the influent tanks were again cleaned and repaired (Meyer 1958a). In 1964, the large tanks were again sandblasted and treated with epoxy paint. The sandblasting wastes were buried onsite in Area 6 (see discussion elsewhere in this report).

4.1.1.3. WD Building Wastewater Sources

WDA Basement Wash Sump

The WDA basement wash sump is a 600-gallon, polyvinyl chloride (PVC)-lined, steel tank. The sump collects alpha wastewater from floor and sink drains in the WDA and drains it to two 3,750-gallon alpha influent tanks, also located in the WDA basement, prior to draining to the 30,000-gallon alpha-wastewater influent tanks in the WD Building (DOE 1991b).

WDA Alpha Influent Tanks

The WDA alpha influent tanks are two 3,750-gallon, PVC-lined, double concrete/steel tanks that collect influent alpha wastewater from the WDA basement wash sump. The tanks drain to the 30,000-gallon alpha wastewater influent tanks in the WD Building (DOE 1991b).

WDA Alpha Effluent Tanks

Three 3,750-gallon, PVC-lined, steel WDA effluent tanks were formerly used to collect effluent alpha wastewater. Although still in place, the tanks were reportedly last used in 1975 (DOE 1991b).

Building R Alpha Wastewater Tank

The Building R alpha wastewater tank is a 500-gallon, double-walled fiberglass tank with the exterior set in concrete. The tank collects alpha wastewater generated in the R Building. After reaching a specified level, the wastewater is automatically pumped to the 30,000-gallon alpha wastewater influent tanks at the WD Building (DOE 1991b).

Building 41 Alpha Wastewater Tanks (Historical)

The Building 41 alpha wastewater tanks were two 3,466-gallon, PVC-lined, steel tanks that were part of the WTS from the SM Building to the WD Building. These tanks received wastewater via gravity flow. One tank received the high-risk wastewater and the other received the low-risk wastewater. From these tanks, the wastewaters were pumped through 1-1/2-inch, flanged steel pipes to the WD Building. The tanks and other equipment at Building 41 were taken out of service in 1982 and removed in October 1987 by the D&D Program (DOE 1991b).

SM Building Alpha Wastewater Tanks (Historical)

Four SM Building alpha wastewater tanks had capacities of 5,000, 3,000, 1,000, and 1,000 gallons. These tanks were used to collect alpha wastewater from the plutonium processing operations. The tanks drained by gravity flow to the Building 41 tanks as part of the WTS to the WD Building. All four tanks were taken out of service and removed in 1986 and 1987 (DOE 1991b).

HH Building Alpha Wastewater Sump (Historical)

The HH Building alpha wastewater sump is in the southeastern corner of the original HH Building. It was used for the collection of supernatant liquid from the polonium processing operations in the 1950s. This liquid was piped to the sump and then to the WD Building for treatment. The sump was the link to the 3-inch steel pipe from the HH Building to the WD Building. The sump would have received any wastewater within the HH Building that was destined for the WD Building, including process water from the Purex pilot plant (1953) and the protactinium-231 program (1956).

4.1.2. WDA Alpha Wastewater Treatment System (Historical)

The WDA alpha wastewater treatment facility was constructed in 1966 on the west side of the WD Building for the treatment of plutonium wastewater from the SM Building and Building 38 plutonium operations. The facility was designed as both a high-risk drumming station and a low-risk wastewater treatment system. The WDA facility replaced the treatment facilities in SM-1. In August 1967, the low-risk wastewater facility was first used in conjunction with the WTS pipeline (McMannon et al. 1967). The high-risk portion of the pipeline was not operational until April 1968 (MRC 1974d). In 1970, the WDA facility was placed in standby status, and the main facility in the adjacent WD Building was renovated for the processing of low-risk plutonium wastewater. Much of the WDA facility currently remains inactive, although some of the influent tanks have been used for collection of tritiated wastewater.

The WDA equipment and processes for low-risk plutonium wastewater were similar in operation to the WD facility, only smaller in scale. The four 3,750-gallon influent tanks fed two 6,000-gallon clariflocculator tanks that, in turn, fed through sand filters to three 3,750-gallon effluent tanks (Creamer 1964). Activity levels were measured in the effluent tanks; if activity was below the release limit of 5×10^{-6} μCi/mL, the effluent was discharged to the plant drainage ditch; if not, the water was recycled back through the system. The WDA effluent may have contributed small amounts of plutonium contamination to the drainage ditch (MRC 1974a).

After 1971, when the low-risk plutonium wastewater treatment was moved to the WD Building, the WDA alpha influent tanks were converted to use in the beta wastewater treatment. Two 3,750-gallon influent tanks were replumbed to accept tritiated wastewater, as described below.

4.1.3. SM-1 Alpha Wastewater Treatment Facility (Historical)

The SM Building (Figure 4.3) was constructed in 1960 to house the facilities for plutonium-238 production operations. The building included facilities for research and development, analytical laboratories, wastewater treatment, and plutonium recovery.

The SM Building consisted of a steel superstructure with fiberboard-cored aluminum panel walls. The building had a drop ceiling that concealed piping, ventilation ducts, process gas lines, building vacuum system lines, liquid waste transfer lines, and steam lines. In 1964, the SM Annex (SMA) was constructed with walls of concrete block on the north end. The plutonium production area contained over 500 linear ft of alpha glove boxes. The glove box and fume hood exhausts and the laboratory exhaust were handled by a set of HEPA filters. The SMA filter bank contained prefilters and one set of HEPA filters.

The SM waste treatment facility was located in room SM-1 and was used to process low- and high-risk wastes generated by plutonium production and plutonium recovery operations. The SM Building was phased out in 1967-1968 with the completion of a new plutonium facility in Building 38, also known as the PP Building (Flanagan 1976). Plutonium production in SM and SMA ceased at this time, and phase 1 of D&D of the building began in August 1968. The treatment plant was in operation from the start of plutonium operations in 1961 until the waste transfer pipelines were installed from the SM to the WDA buildings in 1967. Few records of the facility actually remain in existence. Much of the information for this report was obtained through personnel interviews, including interviews with process operators and supervisors, and from health physics and engineering records. All process records are believed to have been destroyed during the D&D of the SM Building, as they were found to be contaminated.

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

AK13

NCR #: 20596

Title: WIPP RTR Data Excess Liquids

Originator: Oldham, Edwin	**Date Opened:** 02/07/06
Responsible Dept: Plant Manager	**Batch #:** RTR06-00104
Container ID: 10020352	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Edwin Oldham	**Originator Sign Date:** 02/07/06

Production Comments: **Approved Remediation:** **Treatment Tent**

About 36 pints of liquid on top of the waste.
Treatment complete
Container 10020352 was treated in the 628-tent and repackaged into 55-gl drum 10392309. During treatment all identified liquids were absorbed. GTB 1/9/2011

Performed By: Ryan Cottrell	**Performed Date:** 01/06/11

Waste Programs Evaluation/Verification:

Container 10020352 was treated in the 628-tent and repackaged into 55-gl drum 10392309. During treatment all identified liquids were absorbed. Container 10392309 is slated for characterization (RTR) and any outstanding nonconformances will be identified per OI-12. All required actions have been completed and this NCR is recommended for closure. GTB 1/9/2011

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 01/09/11
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment: Verified in WTS 10020352 was processed through 628-tent with "all visible liquids absorbed". WTS also shows the waste from this container was repackaged into 10392309 and both containers have been assigned historical ID IDMD740002937. Task List shows 10392309 is scheduled for RTR examination. Corrective actions taken are acceptable for NCR closure. LR011011

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Lyle Ryman	**QA Verification Comp Date:** 01/10/11

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 67707

Title: RTR Characterization

Originator: Moore, Dianna	**Date Opened:** 12/21/11
Responsible Dept: Plant Manager	**Batch #:** RTR11-00433
Container ID: 10033348	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Dianna Moore	**Originator Sign Date:** 12/21/11

Production Comments: **Approved Remediation:** **SDOP**

Liquid is at the bottom of 55 gallon drum in a small poly bottle. Approx.5 pints

Performed By: George Byram	**Performed Date:** 04/26/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45 note prior to section 3.1.8 and step 3.1.11, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.11.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-221-12 (see attached). Actions required for closure of this NCR are complete.
Note: Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR. GTB 4/25/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 04/26/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA Closure Comment: Verified container data for 10033348 is correct and listed appropriately on Form-1862 which is attached to this NCR in the supporting document section. Closure of this NCR 67707 in accordance with MP-TRUW-8.45 is required to allow placement of this container into an SDOP. These actions are necessary to allow the container to enter the AMWTP facility and to remediate the prohibited item in this container. G. LaBruyere 04/27/12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Gary Labruyere	**QA Verification Comp Date:** 04/26/12

FOR INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 54579

Title: RTR Characterization

Originator: Atwell, Aaron	**Date Opened:** 07/29/10
Responsible Dept: Plant Manager	**Batch #:** RTR10-00147
Container ID: 10368869	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Aaron Atwell	**Originator Sign Date:** 07/29/10

Production Comments: **Approved Remediation:** **SDOP**

Muiltiple poly bottles with liquid above bottom chine to bottom of drum, also some liquid in bagging.

Performed By: George Byram	**Performed Date:** 04/26/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45 note prior to section 3.1.8 and step 3.1.11, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.11.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-221-12 (see attached). Actions required for closure of this NCR are complete.
Note: Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR. GTB 4/25/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 04/26/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA Closure Comment: Verified container data for 10368869 is correct and listed appropriately on Form-1862 which is attached to this NCR in the supporting document section. Closure of this NCR 54579 in accordance with MP-TRUW-8.45 is required to allow placement of this container into an SDOP. These actions are necessary to allow the container to enter the AMWTP facility and to remediate the prohibited item in this container. G. LaBruyere 04/27/12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Gary Labruyere	**QA Verification Comp Date:** 04/26/12

FOR INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR # 71293

Title: RTR Characterization

Originator: Duke, Jace	**Date Opened:** 06/12/12
Responsible Dept: Plant Manager	**Batch #:** RTR12-00103
Container ID: 10233822	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Jace Duke	**Originator Sign Date:** 06/12/12

Production Comments: **Approved Remediation:** SDOP

unable to penetrate through the metal sheeting

Performed By: George Byram	**Performed Date:** 09/24/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.12.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-661-12 (see attached). Actions required for closure of this NCR are complete.
Note: Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR. GTB 9/24/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/24/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10233822 has been assigned IDC RF-480 and meets debris feedstock requirements.
2) Inner drums' FGE plus two sigma error sum is <325 g for the virtual SDOP.
3) Gross weight of the SDOP does not exceed 6,000 lb.
4) RTR and assay characterization have been completed. No prohibited items were identified that prevents container movement into the facility.
5) Form-1862 is attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.
Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 09-25-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/25/12

FOR INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR # 26595

Title: Sealed container > 4 liters

Originator: Johnston, Dallas	**Date Opened:** 03/17/07
Responsible Dept: Plant Manager	**Batch #:** RTR07-01441
Container ID: 10106880	**Tag Applied:** No

Characterization Problem:

Originator Sign By: Dallas Johnston	**Originator Sign Date:** 03/17/07

Production Comments: **Approved Remediation:** SDOP

Large poly bottle sealed > 4 liters. dj 03/17/07

Performed By: George Byram	**Performed Date:** 12/20/11

Waste Programs Evaluation/Verification:

For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45 note prior to section 3.1.8 and step 3.1.11, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.11.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-275-11 (see attached). Actions required for closure of this NCR are complete.
Note: "Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR." GTB 12/20/11.

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 12/20/11
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10106880 has been assigned IDC RF-336 and meets debris feedstock requirements.
2) Inner drums' FGE plus two sigma error sum is <325 g for the virtual SDOP.
3) Gross weight of the SDOP does not exceed 6,000 lb.
4) RTR and assay characterization have been completed. No prohibited items were identified that prevents container movement into the facility.
5) Form-1862 is attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.
Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 12-21-11

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 12/21/11

ONLY

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 71315

Title: RTR Characterization

Originator: Jordan, Shawn	**Date Opened:** 06/13/12
Responsible Dept: Plant Manager	**Batch #:** RTR12-00103
Container ID: 10234765	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Shawn Jordan	**Originator Sign Date:** 06/13/12

Production Comments: **Approved Remediation:** SDOP

Aerosol can between top and middle chine of drum. SJ. 06/13/12

Performed By: George Byram	**Performed Date:** 09/24/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.12.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-661-12 (see attached). Actions required for closure of this NCR are complete.
Note: Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR. GTB 9/24/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/24/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10234765 has been assigned IDC RF-330 and meets debris feedstock requirements.
2) Inner drums' FGE plus two sigma error sum is <325 g for the virtual SDOP.
3) Gross weight of the SDOP does not exceed 6,000 lb.
4) RTR and assay characterization have been completed. No prohibited items were identified that prevents container movement into the facility.
5) Form-1862 is attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.
Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 09-25-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/25/12

REFERENCE ONLY

AK14

T-1488

RECORD

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

R5.10.06

2007-0250

Reference Number: D050A

AK Type:

- ☐ **Published Documentation**
- ☐ **Unpublished Data**
- ☐ **Correspondence**
- ☑ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.): Discrepancy Report D050A – Estimate of Volumes for Cemented Sludge Waste (BN836) – MLJ-003-06, M. L. Johnson, April 27, 2006

Information Source: Generated for AMWTP Project

AK # [a]	AK Information Summary
WM5 MD **WS2, WS7** MD836	Memo issued to document basis for estimating the volume of candidate containers for waste stream BN836, Cemented Sludge. The memo also documents the revised estimate of the percentage of containers with TRU alpha activity at levels greater than 100 nCi/g.

Source Document Data Limitations (if any):
Estimates are based on best available data.

AK Expert:

M. L. Johnson / M L Johnson
Print **Sign**

Date: 5/5/2006

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

FOR INFORMATION ONLY

T-1462-1488 RECORD 4.27.06 5.10.06

AMWTP Advanced Mixed Waste Treatment Project
INTEROFFICE MEMORANDUM
Bechtel BWXT Idaho, LLC

Date: April 27, 2006

To: Eric Schweinsberg, Site Project Manager
Steve Carpenter, Acceptable Knowledge/Alternate Site Project Manager

From: M. L. Johnson
Acceptable Knowledge Expert

Subject: Discrepancy Report D050A – Estimate Of Volumes For Cemented Sludge Waste (BN836) - MLJ-003-06

SUMMARY:
This discrepancy report provides the rationale for selecting 4,323 for the estimated number of candidate containers of cemented sludge in waste stream BN836. Additionally, this discrepancy report provides the basis for the determination that the estimated percentage of containers greater than 100 nCi/g Transuranic (TRU) activity is 50% for this waste stream. This waste stream is comprised of containers of Item Description Code (IDC) MD 836 cemented sludge.

RESOLUTIONS/ACTIONS:
Based on the current information as presented below, the maximum estimated number of candidate containers for waste stream BN836 is 4,323 of which 50% are estimated to contain TRU alpha activity at levels greater than 100 nCi/g. These estimates will be used for the waste stream profile BN836. In addition, AMWTP-RPT-TRUW-07 and AMWTP-RPT-TRUW-13 will be updated to reflect the revised estimated percentage by TRU activity.

DISCUSSION:
The number of candidate containers was estimated based on a re-evaluation of the available Acceptable Knowledge (AK) documentation, container inventory information, and expert technical review of the assay data.

Based on the review and comparison of the data, additional inventory was identified as shown below. This maximum number of containers will be used to estimate number of candidate containers for waste stream BN836.

Data Source	# of Containers >100 nCi/g	# of Containers <100 nCi/g	Total # of Containers
INEL-95/0412[1]	26	4,152	4,178
INEL-95/194 and U122A[2, 3]	N/A	N/A	4,192
Current Container Inventory[4]	N/A	N/A	4,323

NOTE: The inventory information from INEL-95/0412 is the basis for the information presented in AMWTP-RPT-TRUW-06, AMWTP-RPT-TRUW-07, and AMWTP-RPT-TRUW-13.

Historically, the percentage of containers with TRU alpha activity at levels greater than 100 nCi/g was estimated to be less than 1%.[1] Based on the review of the available radioassay data, the Nondestructive Assay (NDA) Subject Matter Expert (SME) has estimated that

approximately 50% of the IDC MD 836 containers contain TRU alpha activity at levels greater than 100 nCi/g.[5] The NDA SME estimate of 50% will be used as the estimated percentage for BN836.

The volume information for the cemented sludge waste in AMWTP-RPT-TRUW-06, AMWTP-RPT-TRUW-07, and AMWTP-RPT-TRUW-13 do not need to be updated since these documents present the historical inventory information. [6, 7, 8]

References:

1. Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory, INEL-95/0412, December 1995. (P365A)
2. Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA for Radioactive Waste Management Complex, RMWC-EDF-837, INEL-95/194, August 24, 1995. (P364A)
3. Container Inventory Report for WMF-629 thru WMF-633, December 24, 2002. (U122A)
4. E-mail from E.K. Torres, MD-836 Population Estimate, dated April 10, 2006. (attached)
5. E-mail from M. Clapham, MD836 TRU Waste, dated April 11, 2006. (attached)
6. AMWTP TRU Waste Management Acceptable Knowledge Elements: AMWTP Baseline AK for Newly Generated Waste, AMWTP-RPT-TRUW-06, Rev. 6, April 2006
7. Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge, AMWTP-RPT-TRUW-07, Rev. 9, April 2006
8. Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste, AMWTP-RPT-TRUW-13, Rev. 4, March 2006

Attachments

MLJ:at

cc: Carolyn Abbott
Rod Arbon
Reed Ashby
Julia Bagley
Neil Brill
Tim Brown
Ken Burnside
Martin Clapham
Elvin Dumas
Bobby Eschenbaum
Tom Fallon
Mike Griffin
Jason Lance
Kathy Leonard
Kevin Lundquist
Lyle Ryman
Ingrid Siddoway
Patricia Utley
Marie Whitehead
Robert Widhalm

Enrique K Torres/TORREK/BBWI/AMWTP

04/10/2006 08:15 AM

To Micky L Johnson/JOHNML/BBWI/AMWTP@AMWTP

cc Carolyn K Abbott/ABBOCK/BBWI/AMWTP@AMWTP, Eric Schweinsberg

bcc

Subject MD-836 POPULATION ESTIMATE

History: This message has been forwarded.

Micky,
Sorry for the delay. Below is the backup behind the population estimate. I calculated population 2 ways and used the higher, more conservative, value.

Method 1 - Query Result from "INEL-95/0412" (Raivo Report referenced in our Contract)

CONTENT_CODE	SumOfQUANTITY	TYPECONT
"MD-836"	4178	DRUM

Method 2 - Current WTS Inventory plus Inventory remaining in EDF-837 "Estimated inventory in TSA"

WTS Active Inventory as of 3/27/2006 =	2,911 drums
EDF-837 remaining to be retrieved =	1,412 drums
Total Inventory =	4,323 drums

Therefore,
I recommend showing the remaining inventory of MD-836 drums to be **4,323 drums**

Thanks,

Kiki Torres
208-557-6454

Martin Clapham/CLAPMJ/BBWI/AMWTP	To	Micky L Johnson/JOHNML/BBWI/AMWTP@AMWTP
	cc	
04/11/2006 01:33 PM	bcc	
	Subject	MD836 TRU waste

Micky,

From our reviews of the MD-836 waste we estimate that approximately 50% of the containers in the MD-836 waste stream contain TRU alpha activity at levels greater than 100nCi/g.

I hope that this is what you need. If you do need any further information from me with regards to this issue please let me know.

==========

Martin Clapham
Senior Physicist
BIL Solutions Inc.

AMWTP Phone 208 557 6325
Cell Phone 208 680 3924

T-1499
RECORD
5.15.06

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 1

2007-0250

Reference Number: D056A

AK Type:

- ☐ **Published Documentation**
- ☐ **Unpublished Data**
- ☐ **Correspondence**
- ☑ **Discrepancy Report**

Title of Source Document (including author(s), document and revision number, date, etc.):
Discrepancy Report D056A – Assessment Of Hazardous Waste Numbers Assigned to Cemented Sludge (BN836), MLJ-004-06, April 27, 2006, Rev. 1 MLJ-005-06, May 1, 2006, Rev. 2 MLJ-006-06, May 10, 2006

Information Source: Generated for AMWTP Project

AK #[a]	AK Information Summary
WS4, WS6 MD836	Summary of AK evaluation which provides the basis for the conservative assignment of EPA HWNs D004-D011, F001, F002, and F005 to BN836, cemented sludge from Mound. Evaluation performed to address incorporation of additional Mound AK source documents into the AK record and to resolve discrepancies between documented information for cemented sludge generated at Mound concerning the appropriate EPA HWN assignments. Rev. 1 issued to correct regulatory citation on page 5. Rev. 2 issued to document justification for not assigning HWN F003 that had been previously identified as a potential HWN for this waste and to clarify that the hazardous constituents associated with the conservatively assigned HWNs D004-D011, F001, F002, and F005 had been identified by AK.

INFORMATION ONLY

Source Document Data Limitations (if any):
Resolution is based on several sources of acceptable knowledge documentation. This conservative assignment of HWNs applies only to the waste containers included in waste stream BN836 designated for disposal at WIPP and may not be applicable to the non-WIPP shipments (e.g., TCLP data not available and the waste was generated from a wastewater treatment system eligible for applicable RCRA regulatory exclusions identified in 40 CFR 261.3).

AK Expert:

M. L. Johnson / ML Johnson
Print **Sign**

Date: 5/10/06

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

T-1503 1499 ER 5.15.06
RECORD
ER 5.15.06

AMWTP
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: May 10, 2006

To: Eric Schweinsberg, Site Project Manager
Steve Carpenter, Acceptable Knowledge/Alternate Site Project Manager SC

From: M. L. Johnson MLJohnson
Acceptable Knowledge Expert

Subject: Discrepancy Report D056A – Assessment Of Hazardous Waste Numbers Assigned to Cemented Sludge Waste (BN836) Rev 2 - MLJ-006-06

SUMMARY:
An evaluation of the Mound acceptable knowledge (AK) was completed to address the incorporation of additional Mound AK source documents into the AK record and to resolve discrepancies between documented information for the cemented sludge waste generated at Mound concerning the appropriate EPA hazardous waste number (HWN) assignments. The results of this evaluation provide the basis for the characterization of the cemented sludge waste stream BN836 designated for disposal at WIPP. The HWN assignments for the BN836 waste stream for WIPP-designated shipments may not be applicable to the non-WIPP shipments due to the conservative characterization applied to the waste shipped to WIPP.

RESOLUTIONS/ACTIONS:
The hazardous constituents associated with EPA HWNs D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, and F005 were identified based on AK and confirmed to be present in the cemented sludge waste based on the sampling and analysis of headspace gas and solid samples performed in accordance with the WIPP waste analysis plan. With the exception of barium (D005), the calculated 90 percent upper confidence limit values of the mean concentrations for toxicity characteristic metals were below their associated regulatory limits and the volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were not detected above the method detection limit in the solid samples. The VOCs 1,1,1-trichloroethane and trichloroethylene (F001, F002); tetrachloroethylene (F002); and benzene and toluene (F005) were detected in headspace gas samples and were identified in AK. Although these results did not confirm the applicability of all the HWNs, EPA HWNs D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, and F005 will be conservatively assigned to the TRU cemented sludge waste stream BN836 for disposal at WIPP. AMWTP Waste Stream Designations (AMWTP-RPT-TRUW-12) will be updated to reflect the revised characterization upon approval of the waste stream profile by CBFO.

DISCUSSION:
The BN836 waste stream is comprised of TRU containers of IDC 836, High-level Sludge/Cement waste generated at Mound between 1974 and 1985 that are currently stored at INL and to be shipped to WIPP by AMWTP. Some of the waste is expected to be characterized as LLW and will be shipped to non-WIPP facilities. Additional AK source documents were collected and incorporated into the AK record. These documents and the previously collected AK were evaluated to determine the appropriate HWN assignments for the waste stream to be shipped to WIPP. Comparison of the characterizations by Mound and a preliminary characterization by INEL for the cemented sludge waste revealed inconsistencies as described below.

The generator (Mound) characterized the waste as nonhazardous when the waste was shipped to Idaho prior to 1986. This characterization is documented in AMWTP-RPT-TRUW-12, Appendix B. [1] Mound also characterized the waste stream MD-T001 (a proposed direct shipment of cemented sludge waste by Mound to WIPP) as nonhazardous. This characterization is documented in the TRU Waste Baseline Inventory Report (TWBIR). [2] However, Mound identified EPA HWNs D004-D011 as applicable to the waste shipped to Idaho (waste stream MD-2) in a draft document provided to DOE in 1984. [3] Contact made with Mound personnel in 2006 revealed that Mound personnel never officially declared the waste to be mixed and continued to ship Mound cemented sludge through 2002 to NTS as non-hazardous LLW. [26, 27, 28] INEL developed a preliminary hazardous waste characterization for the Mound cemented sludge waste stored at INL to be shipped to WIPP and identified potential HWNS D006, D007, D008, D009, D010, D011, F001 (1,1,1-trichloroethane and trichloroethylene), F002 (1,1,2-trichloro-1,2,2-trifluoroethane) and F003 (acetone and methanol). This characterization is documented in AMWTP-RPT-TRUW-12, Appendix B. [1]

Tables 1 and 2 provide summaries of the chemicals identified based on the evaluation of the Mound AK source documents. Table 1 presents the chemicals/contaminates that were identified in Mound Source documents as being present in the alpha-contaminated wastewater treated in the Waste Disposal (WD) Building. Table 2 presents the chemicals that were used in the Mound plutonium production and recovery, laboratory, R&D, and D&D activities located in the alpha-contaminated areas and may be contaminants in the wastewaters that were treated in the WD Building.

Conclusion
Based on the AK, the cemented sludge waste has the potential to exhibit toxicity characteristics for the following metals: arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011). The AK also indicates that minor amounts of organics (approximately 5 pints total per year), including trichloroethylene, were disposed of in the alpha- contaminated wastewater system. [7, 8, 9, 11] The wastewater treatment system was regulated by a Clean Water Act point source discharge permit and was eligible for applicable RCRA regulatory exclusions identified in 40

CFR 261.3. However, the HWNs F001, F002 and F005 are conservatively being applied to the TRU waste to be disposed of at WIPP. Acetone, methanol, and xylene were used as solvents in the laboratory and productions operations, but the cemented sludge waste stream BN836 is not a liquid waste. Therefore EPA HWN F003 is not assigned because the waste is not ignitable.

Table 1
Chemical Contaminants That May Be Present in the Cemented Sludge Waste

Chemical Types	Chemical Compounds
Chemicals used in wastewater treatment processes	Activated carbon, calcium chloride, ferric sulfate, barium chloride, aluminum sulfate, sulfuric acid, sodium hydroxide , sodium hypochlorite, Nalco C-627 and Nalco N-7173 (organic polymers, polyelectrolyte flocculants), and bone char. [4, 5, 6]
Chemicals identified in liquids sent to the wastewater treatment process.	Acetone, acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, oxalic, sulfuric), alcohols (methanol, ethanol, and propanol), ammonia, ammonium bicarbonate and sodium hexamethaphosphate (powdered soap), ammonium hydroxide, asbestos fiber, beryllium, calcium carbonate, caustic soda and lime, copper sulfate, cyanides, ethylene glycol monobutyl ether and sodium hydroxide (liquid soap), hydrogen peroxide, lead, lithium chloride, mercury, methylene blue, mineral oil, nickel sulfate, paint, potassium bromide, potassium carbonate, potassium pyrosulfate, potassium sulfate, sodium carbonate, sodium chloride, sodium hydroxide, sodium sulfite, trichloroethylene, and zirconium oxide.[7, 8, 9, 10]
Materials used in waste solidification processes	Cement and Florco absorbent (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents). [7, 11, 12]

Table 2
Chemical Used in Production, Recovery, Laboratory, R&D, and D&D activities

Chemical Types	Chemical Compounds
Halogenated solvents used for cleaning/degreasing	Methylene chloride, 1,1,1-trichloroethane, 1,1,2 trichloro-1,2,2-trifluoroethane (Freon TF), and trichloroethylene. [7, 11, 13, 14, 15, 16, 17, 18]
Nonhalogenated solvents used for cleaning/degreasing	Acetone, methanol, toluene, and xylene. [7, 13, 14, 15, 16, 17, 18, 19, 20]
Organic solvents used in laboratories	Acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, dichloromethane, ethanol, methanol, methyl ethyl ketone, methylene chloride, propanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, and Insta Gel (contains xylenes). [7, 8, 11, 13, 21, 22]
Chemicals used in plutonium processing and recovery operations	Acids (nitric, sulfuric, acetic, hydrofluoric, and oxalic) ammonium hydroxide, aluminum nitrate, dimethyloxalate ferrous sulfamate, hydroxylamine nitrate, sodium carbonate, sodium hydroxide, and tri-n-octylphosphine (TOPO). [7, 8, 11, 21]
Chemicals used in laboratory operations	Acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, and sulfuric), ammonium hydroxide, carbon tetrachloride, copper sulfate, hydrogen peroxide, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), mineral oil, organophosphate, potassium carbonate, potassium sulfate, sodium hydroxide, sodium sulfite. [7, 8, 11, 21, 23]
Chemicals used in D&D operations	Acid solutions, detergent (e.g., Micro® detergents, nonsolvent based cleaners with no identified RCRA regulated hazardous constituents), hypochlorite, polyurethane foam, RTV rubber, and paint remover (e.g., methylene chloride or methyl ethyl ketone). [7, 13, 24, 25]
Absorbents used in packaging	Florco (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents), Auto-Dri and Dri-Rite (calcium carbonate). [7, 8, 11, 12, 23]

References:

1. AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6, March 2006
2. Waste Baseline Inventory Report 1995 (Mound Plant only), December 1995. (U190A)
3. Mound Waste Streams, from R. K. Blauvelt to A. Reiser, US-DOE, October 25, 1984. (C354A)
4. Mound Site Waste Management Reports and Site Plans 1972 to 1976. [P523A]
5. Mound Laboratory Radioactive Waste Management Site Plans 1977 to 1980. [P522A]
6. Mound Site Waste Management Reports and Site Plans 1981 to 1989. [P524A]
7. Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, February 1993. [P380A]
8. Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification, WM-F1-81-015, September 1981. [P319A]
9. Mound WIPP Certification Program for Newly Generated Contact Handled TRU Waste, MD-10203, Issue 1 June 1, 1985, Issue 2 June 10, 1986, Issue 5 September 1, 1988, and Issue 6 April 15, 1989. [P525A]
10. TRU Waste Certification Task Sludge From the Waste Disposal Plant, undated. [U196A]
11. AMWTP-RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste, Rev. 4, March 2006.
12. Material Safety Data Sheets (MSDS); Engelhard Corporation for All Attapulgite Products, Calcined including FLORCO X, Engelhard Corporation, February 19, 2004. [P457A]
13. Central Characterization Project Acceptable Knowledge Summary Report For Mound Site Transuranic Waste Stored at Savannah River Site. Waste Streams: SR-MD-HET; SR-MD-SOIL; SR-MD-HOM-A, SR-MD-HOM-B, Revision 2, September 23, 2005. [P492A]
14. Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, MLM-ML-90-48-001, August 15, 1990. [P493A]
15. CCP Record of Communication: Interview with Dr. Bernie Konenge, June 24, 2003. [C464A]
16. EG&G Mound Building 38 Accident Analysis of Internal (operational) Events (Results and Findings), June, 1994. [P503A]
17. CCP Record of Communication: Interview with Clyde J. Chong, May 14, 2003. [C467A]
18. CCP Record of Communication: Interview with Paul Figgins, May 15, 2003. [C466A]
19. CCP Record of Communication: Interview with Mike Deaton, June 5, 2003. [C472A]
20. CCP Record of Communication: Interview with Toby Elswick, May 13, 2003. [C465A]

21. U. S. Department of Energy Mound Laboratory, Acceptable Knowledge for Transuranic Waste Shipped to Idaho National Engineering and Environmental Laboratory, Draft. [U126A]
22. Material Safety Data Sheet (MSDS); Insta Gel Plus, Packard BioScience B.V., Groningen, The Netherlands, March 24, 2004. [P458A]
23. Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, WM-F1-82-021, October 1982. [P024A]
24. Material Safety Data Sheets (MSDSs) for Micro® detergents, International Products Corporation, March 30, 1990 and April 1, 1993. [P591A]
25. Material Safety Data Sheets (MSDS) for Paint Removers. [P592A]
26. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 3 (Solidified Alpha Sludge), J. C. Miles, Babcock & Wilcox of Ohio March 9, 1998, Revised June 11, 1998. [P623A]
27. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 4 (Solidified Alpha Sludge), J. C. Miles, Babcock & Wilcox of Ohio, March 9, 1998, Revised June 11, 1998. [P624A]
28. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 5 (Solidified Alpha Sludge), June 6, 2002. [P625A]

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AMWTP
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC

T-1463
RECORD
R 4-27-06

INTEROFFICE MEMORANDUM

Date: April 27, 2006

To: Eric Schweinsberg, Site Project Manager
Steve Carpenter, Acceptable Knowledge/Alternate Site Project Manager SC

From: M. L. Johnson MLJohnson
Acceptable Knowledge Expert

Subject: Discrepancy Report D056A – Assessment Of Hazardous Waste Numbers Assigned to Cemented Sludge Waste (BN836) - MLJ-004-06

SUMMARY:
A reevaluation of the acceptable knowledge (AK) was completed to incorporate additional Mound AK source documents and to resolve discrepancies between documented characterization information for the cemented sludge waste generated at Mound. The reevaluation also provided the characterization for the cemented sludge waste stream BN836 projected for disposal at WIPP. The HWNs for the BN836 waste stream for WIPP-designated shipments may not be applicable to the non-WIPP shipments due to the conservative characterization applied to the waste shipped to WIPP.

RESOLUTIONS/ACTIONS:
Although most solid sample results did not confirm the EPA HWNs D004, D005, D006, D007, D008, D009, D010, D011, F001, F002, and F005 applicability; these HWNs will be conservatively assigned to the cemented sludge waste stream BN836 for purposes of disposal at WIPP. The hazardous constituents associated D004 through D011 were identified based on AK. With the exception of HWN D005, the toxicity characteristic metals were below the regulatory limit. The hazardous constituents associated with HWNs F001, F002, and F005 were identified based on those constituents detected in headspace gas samples: 1,1,1-trichloroethane and trichloroethylene (F001, F002); tetrachloroethylene (F002); and benzene and toluene (F005). Solid sampling of BN836 for VOCs and SVOCs did not reveal detectable amounts above the MDL. This conservative characterization will be used for the TRU waste stream BN836 for disposal at WIPP. AMWTP-RPT-TRUW-12 will be updated to reflect the revised characterization upon approval of the waste stream profile by CBFO.

DISCUSSION:
The BN836 waste stream is comprised of TRU containers of IDC 836, High-level Sludge/Cement generated at Mound between 1974 and 1985 that are currently stored at INL and will be shipped to WIPP by AMWTP. Some of the waste is expected to be characterized as LLW and will be shipped to non-WIPP facilities. Discrepancies exist between the non-hazardous waste characterization by the generator (Mound) at the time that the waste was shipped to Idaho, a draft hazardous waste characterization by the generator site (Mound), and

the preliminary hazardous waste characterization by INEL. A reevaluation of the AK was completed to resolve these discrepancies and to incorporate the additional Mound AK source documents, and subsequently compared to recently obtained sample results.

The generator (Mound) characterized the waste as nonhazardous as documented in AMWTP-RPT-TRUW-12. [1] The generator non-hazardous characterization was also documented in the TRU Waste Baseline Inventory Report (TWBIR) for Mound waste stream MD-T001, direct shipment of cemented sludge waste by Mound to WIPP. [2] In 1984, Mound provided a draft document to DOE that identified D004-D011 as applicable to the waste stream MD-2 (Waste Treatment Cemented Sludge that was shipped to Idaho). [3] Contact made with Mound personnel in 2006 revealed that Mound personnel never officially declared the waste to be mixed and continued to ship Mound cemented sludge through 2002 to NTS as non-hazardous LLW. [26, 27, 28]

A preliminary hazardous waste characterization for the Mound cemented sludge waste was completed by INEL which identified potential HWNS D006, D007, D008, D009, D010, D011, F001 (1,1,1-trichloroethane and trichloroethylene) and F002 (1,1,2-trichloro-1,2,2-trifluoroethane) as documented in AMWTP-RPT-TRUW-12, Appendix B. [1]

Tables 1 and 2 provide summaries of the chemicals identified based on the incorporation of additional Mound AK source documents. Table 1 presents the chemicals/contaminates that were identified in Mound Source documents as being present in the wastewater treated in the Waste Disposal (WD) Building. Table 2 presents the chemicals that were used in the Mound plutonium production and recovery, laboratory, R&D, and D&D activities and may be contaminants in the alpha-contaminated wastewaters.

Table 1
Chemical Contaminants That May Be Present in the Cemented Sludge Waste

Chemical Types	Chemical Compounds
Chemicals used in wastewater treatment processes	Activated carbon, calcium chloride, ferric sulfate, barium chloride, aluminum sulfate, sulfuric acid, sodium hydroxide , sodium hypochlorite, Nalco C-627 and Nalco N-7173 (organic polymers, polyelectrolyte flocculants), and bone char. [4, 5, 6]
Chemicals identified in liquids sent to the wastewater treatment process.	Acetone, acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, oxalic, sulfuric), alcohols (methanol, ethanol, and propanol), ammonia, ammonium bicarbonate and sodium hexamethaphosphate (powdered soap), ammonium hydroxide, asbestos fiber, beryllium, calcium carbonate, caustic soda and lime, copper sulfate, cyanides, ethylene glycol monobutyl ether and sodium hydroxide (liquid soap), hydrogen peroxide, lead, lithium chloride, mercury, methylene blue, mineral oil, nickel sulfate, paint, potassium bromide, potassium carbonate, potassium pyrosulfate, potassium sulfate, sodium carbonate, sodium chloride, sodium hydroxide, sodium sulfite, trichloroethylene, and zirconium oxide.[7, 8, 9, 10]
Materials used in waste solidification processes	Cement and Florco absorbent (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents). [7, 11, 12]

Table 2
Chemical Used in Production, Recovery, Laboratory, R&D, and D&D activities

Chemical Types	Chemical Compounds
Halogenated solvents used for cleaning/degreasing	Methylene chloride, 1,1,1-trichloroethane, 1,1,2 trichloro-1,2,2-trifluoroethane (Freon TF), and trichloroethylene. [7, 11, 13, 14, 15, 16, 17, 18]
Nonhalogenated solvents used for cleaning/degreasing	Acetone, methanol, toluene, and xylene. [7, 13, 14, 15, 16, 17, 18, 19, 20]
Organic solvents used in laboratories	Acetone, benzene, carbon disulfide, carbon tetrachloride, chloroform, dichloromethane, ethanol, methanol, methyl ethyl ketone, methylene chloride, propanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, and Insta Gel (contains xylenes). [7, 8, 11, 13, 21, 22]
Chemicals used in plutonium processing and recovery operations	Acids (nitric, sulfuric, acetic, hydrofluoric, and oxalic) ammonium hydroxide, aluminum nitrate, dimethyloxalate ferrous sulfamate, hydroxylamine nitrate, sodium carbonate, sodium hydroxide, and tri-n-octylphosphine (TOPO). [7, 8, 11, 21]
Chemicals used in laboratory operations	Acids (acetic, hydrochloric, hydrofluoric, lactic, nitric, and sulfuric), ammonium hydroxide, carbon tetrachloride, copper sulfate, hydrogen peroxide, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver), mineral oil, organophosphate, potassium carbonate, potassium sulfate, sodium hydroxide, sodium sulfite. [7, 8, 11, 21, 23]
Chemicals used in D&D operations	Acid solutions, detergent (e.g., Micro® detergents, nonsolvent based cleaners with no identified RCRA regulated hazardous constituents), hypochlorite, polyurethane foam, RTV rubber, and paint remover (e.g., methylene chloride or methyl ethyl ketone). [7, 13, 24, 25]
Absorbents used in packaging	Florco (Montmorillonite and Attapulgite clay with no identified RCRA regulated hazardous constituents), Auto-Dri and Dri-Rite (calcium carbonate). [7, 8, 11, 12, 23]

A reevaluation of AK (including the chemicals identified in Tables 1 and 2) indicates the cemented sludge waste has the potential to exhibit the may contain toxicity characteristic for the following metals: arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), and silver (D011). The AK also indicates that minor amounts of organics (approximately 5 pints total per year), including trichloroethylene, were disposed of in the alpha- contaminated wastewater system. [7, 8, 9, 11] The wastewater treatment system was regulated by a Clean Water Act point source discharge

permit and was eligible for applicable RCRA regulatory exclusions identified in 40 CFR ~~261.4.~~ However, the listed HWNs F001, F002 and F005 are conservatively being applied to the TRU waste to be disposed of at WIPP.

References:

1. AMWTP Waste Stream Designations, AMWTP-RPT-TRUW-12, Rev. 6, March 2006
2. Waste Baseline Inventory Report 1995 (Mound Plant only), December 1995. (U190A)
3. Mound Waste Streams, from R. K. Blauvelt to A. Reiser, US-DOE, October 25, 1984. (C354A)
4. Mound Site Waste Management Reports and Site Plans 1972 to 1976. [P523A]
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6. Mound Site Waste Management Reports and Site Plans 1981 to 1989. [P524A]
7. Operable Unit 9 Site Scoping Report: Volume 7 – Waste Management, February 1993. [P380A]
8. Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification, WM-F1-81-015, September 1981. [P319A]
9. Mound WIPP Certification Program for Newly Generated Contact Handled TRU Waste, MD-10203, Issue 1 June 1, 1985, Issue 2 June 10, 1986, Issue 5 September 1, 1988, and Issue 6 April 15, 1989. [P525A]
10. TRU Waste Certification Task Sludge From the Waste Disposal Plant, undated. [U196A]
11. AMWTP-RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste, Rev. 4, March 2006.
12. Material Safety Data Sheets (MSDS); Engelhard Corporation for All Attapulgite Products, Calcined including FLORCO X, Engelhard Corporation, February 19, 2004. [P457A]
13. Central Characterization Project Acceptable Knowledge Summary Report For Mound Site Transuranic Waste Stored at Savannah River Site. Waste Streams: SR-MD-HET; SR-MD-SOIL; SR-MD-HOM-A, SR-MD-HOM-B, Revision 2, September 23, 2005. [P492A]
14. Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, MLM-ML-90-48-001, August 15, 1990. [P493A]
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17. CCP Record of Communication: Interview with Clyde J. Chong, May 14, 2003. [C467A]
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19. CCP Record of Communication: Interview with Mike Deaton, June 5, 2003. [C472]
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21. U. S. Department of Energy Mound Laboratory, Acceptable Knowledge for Transuranic Waste Shipped to Idaho National Engineering and Environmental Laboratory, Draft. [U126A]
22. Material Safety Data Sheet (MSDS); Insta Gel Plus, Packard BioScience B.V., Groningen, The Netherlands, March 24, 2004. [P458A]
23. Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes, WM-F1-82-021, October 1982. [P024A]
24. Material Safety Data Sheets (MSDSs) for Micro® detergents, International Products Corporation, March 30, 1990 and April 1, 1993. [P591A]
25. Material Safety Data Sheets (MSDS) for Paint Removers. [P592A]
26. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 3 (Solidified Alpha Sludge), J. C. Miles, Babcock & Wilcox of Ohio March 9, 1998, Revised June 11, 1998. [P623A]
27. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 4 (Solidified Alpha Sludge), J. C. Miles, Babcock & Wilcox of Ohio, March 9, 1998, Revised June 11, 1998. [P624A]
28. Nevada Test Site Waste Profile Waste Stream AMDM-000000002, Revision 5 (Solidified Alpha Sludge), June 6, 2002. [P625A]

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B-2010-0230
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JEK 07/27/10

AMWTP Advanced Mixed Waste Treatment Project	AK Source Document Review Summary	Form-1068, Rev. 4 Effective: 01/08/09 Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: D077A	2. Revision: 0

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☐ Correspondence
- ☑ Discrepancy

4. Title/Description Information: Discrepancy in assignation of HWNs D036/F004 to RF waste

Document Number: N/A
Revision: 0
Author: Carolyn Abbott
Date: 7/14/2010

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WM6	RF, BN	3-5	Relationship/correlation of wastes used to determine whether assignment of HWN was appropriate.
WS6	BN-500, BN-520, BN-521, BN-604, RF-001, RF-002, RF-003, RF-004, RF-090, RF-374, RF-374a/697, RF-741, RF-742, RF-743, RF-744, RF-746, RF-747, RF-750, RF-753, RF-760, RF-990, SD-704, SD-705	5	Summary of the resolution with whether a HWN (D036 or F004) are determined appropriate for each IDC.

FOR INFORMATION ONLY

9. Document Summary:

Resolution of assignment of HWN for nitrobenzene to AMWTP wastes. The hazardous waste numbers (HWNs) D036/F004 for nitrobenzene are inconsistently identified and/or assigned in AK documents for Rocky Flats Plant waste: RF-003, RF-090, RF-374, RF-374a/696 and RF-990. Resolution of this discrepancy is needed to provide support for the addition of the Pits 11 and 12 soil, sludge and debris wastes (e.g., IDCs: RF-741, RF-742, RF-743, RF-744, RF-746, RF-747, RF-750 and RF-753) and Pad 1 debris waste (all RF debris IDCs including RF-760) into current AMWTP waste stream profiles.

10. Source Document Data Limitations (if any):

None

11. AK Expert:	Carolyn Abbott (Print)	Carolyn Abbott (Sign)	7/14/2010 (Date)

AMWTP Advanced Mixed Waste Treatment Project	Acceptable Knowledge Discrepancy Report	Form-1784, Rev. 1 Effective: 09/24/09 Page 1 of 6

Implementing Document: MP-TRUW-8.13

Waste Generator: Rocky Flats Plant (RF)	
Source Document Tracking Number: D077A	Revision No.: 0
Document Title/Description: Discrepancy in assignation of HWNs D036/F004 to RF waste	
References:	

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
C536A	Telecon/Interview of Lisa Frost/Ed Vejvoda re: Use of nitrobenzene at Rocky Flats, 2/2/06	N/A / N/A	Lisa Frost/Ed Vejvoda	2/2/2006	1-4
C930S	Email to Micky Johnson re: Request for data	N/A / 0	Jim Vernon, WIPP	5/24/2010	1
D054A	CCP Acceptable Knowledge Source Document Discrepancy Resolution; Waste Stream Numbers ID-RF-S3114 and ID-RF-S3150-A; Historical Assignment of EPA Hazardous Waste Numbers to Organic Setups and Solidified Organics.	N/A / 1	Jeff Harrison, Barbara Bloomfield	12/21/2005	1-10
P016A	Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste	INEL-95/0281 / N/A	Wastren, Inc.	07/00/1995	Pgs 53 (3-21),
P024A	Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes	WM-F1-82-021 / N/A	T. L. Clements, Jr.	10/00/1982	Page 21
P052A	Rocky Flats Environmental Technology Site (RFETS) Backlog Waste Reassessment Baseline Book (BWRBB)	NA / Multiple	Rocky Mountain Remediation Services, LLC	5/5/1994-3	WF 23, WF 47

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
P307A	Hazardous Waste Constituents of INEL Contact-Handled Stored Transuranic Waste	EDF-RWMC-369 / N/A	D. E. Kudera	5/19/1989	Pgs 48, 61, 128
P310A	EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes	EDF-RWMC-421 / 4	EG&G Idaho, Inc.	4/1/1994	10, 13, 26, 38
P361A	Chemical Constituents in Transuranic Storage Area (TSA) Waste. EDF-803, Rev. 0. June 12, 1995. Rev. 1, July 10, 1996. Rev. 2. August 12, 1997. Rev. 3. April 4, 1998. Rev. 4. October 30, 2000. Rev. 5. September 17, 2001. Rev. 6. August 1, 2002. Rev. 7. December 18, 2002.	EDF-803 / 7	INEEL	12/18/2002	A12, A14, A25,
P368A	Acceptable Knowledge Document for INEEL Stored Transuranic Waste - Rocky Flats Plant Waste	INEL-96/0280 / 3	INEEL Bechtel BWXT Idaho, LLC	2/28/2003	Section 25
P435S	RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries	RMRS-WIPP-98-100 /	Rocky Flats Environmental Technology Site.	4/21/2005	Pg 526
P633A	Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory: Waste Stream ID-RF-S5300-A	CCP-AK-INL-004 / 1	David H. Haar	10/6/2005	9, 18, 30-32
P634A	Central Characterization Project Acceptable Knowledge Summary Report For Rocky Flats Immobilized Organic Liquids Stored at the Idaho National Laboratory: Waste Streams ID-RF-S3114 and ID-RF-S3150-A	CCP-AK-INL-005 / 1	David H. Haar	1/4/2006	Table 2-1, pg 9

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
P647A	Central Characterization Project Acceptable Knowledge Summary Report for Waste Retrieved from Designated Areas within the Subsurface Disposal Area at the Idaho National laboratory	CCP-AK-INL-001 / Cur Rev		CUR DATE	18-20, 138
P666A	Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-RF-S3114; Barbara Broomfield; November 15th, 2006	ID-RF-S3114, / 1	Barbara Broomfield	11/1/2009	15
P717A	Rocky Flats Environmental Technology Site (RFETS) Backlog Waste Reassessment Baselne Book (BWRBB)	/ Multiple	Rocky Mountain Remediation Services, L.L.C.	3/31/95 TH	WF47-1 through
P846A	Colormetric Determination of Iron in Plutonium Metal using a Nitrobenzene Extraction Technique.	RF-P222 / 0	C.E. Plock and C.E. Caldwell	12/20/1967	All

Nature of Discrepancy: The hazardous waste numbers (HWNs) D036/F004 for nitrobenzene are inconsistently identified and/or assigned in AK documents for Rocky Flats Plant waste: RF-003, RF-090, RF-374, RF-374a/696 and RF-990. Resolution of this discrepancy is needed to provide support for the addition of the Pits 11 and 12 soil, sludge and debris wastes (e.g., IDCs: RF-741, RF-742, RF-743, RF-744, RF-746, RF-747, RF-750 and RF-753) and Pad 1 debris waste (all RF debris IDCs including RF-760) into current AMWTP waste stream profiles.

The documents listed above were reviewed in respect to the identification of nitrobenzene and/or assignment of HWNs D036 or F004 for nitrobenzene associated with RF wastes (i.e., RF-003, RF-090, RF-374, and RF-990). Notes regarding each document are attached to this report. Pertinent data from these documents are presented below:

Nitrobenzene was procured and used at RF prior to 1969 including use as a solvent in 1967. (C536A, P024A, P647A, P846A) It was also procured and used after 1967 but there is no documentation how it was used or that is was used for its solvent properties. (P016A, P368A, P052A, P435S, P633A, P634A, P666A, P717A)

Nitrobenzene was not used for routine processing but was a non-routine compound used in the Production Support Laboratory. RFETS did not identify nitrobenzene contaminated waste as listed waste, and assigned the toxicity characteristic HWN D036 conservatively to solidified organic waste generated prior to 1985. (P052A, P435A, P717A)

F004 for nitrobenzene was identified in some INL documents for RF grease/organic setups waste (RF-003/Prefix 743). (P307A, P310A, P361A)

It was assumed by the INL that soil (IDCs RF-090 and RF990) and blacktop, concrete, dirt, and sand (IDC RF-374) wastes were potentially contaminated with nitrobenzene from the organic materials and the HWN F004 was identified. (P016A, P307A, P310A, P361A)

Rocky Flats identified nitrobenzene contamination in "5 or fewer drums of solidified organic waste (RF-003)." (P024A, P052A)

Grease Plant process waste (RF-003) generated prior to 1985 was assigned D036 by RFETS. OASIS process waste (RF-801) generated after 1985 was not assigned HWN D036 by RFETS. (P052A, P435S, P717A)

Rocky Flats did not identify nitrobenzene as a potential constituent for any other TRU waste type. (P052A, P717A)

The Central Characterization Project (CCP) also manages and characterizes RF solidified organic waste, specifically RF-003, RF-007 and RF-801 and have assigned the toxicity characteristic HWN D036 for nitrobenzene. (D054A, C930S, P634A, P666A). CCP at one time managed RF combustible and plastic waste (RF-300, RF-336, and RF-337) retrieved from the TSA-RE for AMWTP and did not assign D036 or F004. (P633A)

Nitrobenzene has not been detected above the PRQL in any waste streams retrieved from TSA-RE and sampled by 3,100 m3 Project, AMWTP, or CCP (C930S, P368A)

For the sludge, soil and debris wastes retrieved from the INL Subsurface Disposal Area (SDA), CCP has assigned F004 for the presence of nitrobenzene because nitrobenzene was identified in waste from the INL INTEC (CPP) laboratory as well as the RF laboratory waste. (P647A)

CONCLUSION
Historically (1980's and mid 90's) the F-listed HWN F004 for nitrobenzene was identified in INL documents regarding RF-003, (Organic Setups, Oil Solids), RF-090 (Dirt), RF-374 (Blacktop, Concrete, Dirt and Sand), and RF-990 (Dirt). (P016A, P307A, P310A, P361A) These assignments conflict with the determinations made by Rocky Flats, the original generator.

Subsequently, waste profiled in compliance with WIPP criteria during the 3,100 m3 Project and currently by CCP, has been assigned the HWN toxicity characteristic HWN D036 for nitrobenzene to solidified organic waste only. (P052A, P368A, D054A, P435S, P634A, P666A, P717A). Neither HWN D036 nor F004 were assigned to any debris or homogeneous solid waste retrieved from the TSA-RE by 3,100 m3 Project, AMWTP, or CCP.

For this resolution it was assumed that the difference in the assignment of the HWNs for nitrobenzene is because of the difference in the interpretation of RCRA and the application of RCRA for assignment of WIPP only EPA waste codes.

Resolution: RESOLUTION
Based on the re-evaluation of the AK/PK for nitrobenzene in RF wastes, the resolution of the discrepancy of the assignment of HWN for nitrobenzene is to continue assignment of the D036 HWN for certain RF wastes as well as for some of the newly generated AMWTP waste as described below:

The listed HWN F004 is not applicable to the RF wastes retrieved from the TSA-RE (including waste retrieved from Pits 11 and 12 and waste retrieved from Pad 1, Cells 1 and 2). As documented in various AK source documents (i.e., D054A, P052A, P061A, P368A, P435S, P634A, P633A, P666A, and P717S), there is no documentation that identifies the use of nitrobenzene as a solvent for the waste retrieved from TSA-RE.

RF First/Second Stage Sludge Waste Stream (BNINW216) and Special Setups Waste Stream (BN004) including the Pits 11 and 12 waste (IDCs RF-741, RF-742, and RF-744) do not include nitrobenzene and will not be assigned either HWN F004 or D036. None of the AK documentation identifies these wastes as receiving nitrobenzene waste.

AMWTP will manage the Pits 11 and 12 retrieved RF-743 and RF-746 (903 pad Oil Drums) waste containers that do not meet the RCRA definition of empty the same as the RF-003as profiled by CCP due to the waste being generated from the same RF generation process (i.e. Grease Plant). The waste will be assigned the D036 HWN.

There is no AK justification for the assignment of either D036 or F004 for nitrobenzene to the RF soil (RF-090, RF-374A/697, RF-753 and RF-990) and RF debris waste RF-374 (blacktop, concrete, dirt and sand), The AMWTP will not apply the D036 HWN to RF-090, RF-753, RF-990 RF-374a/697 and RF-374.

Pits 11 and 12 Miscellaneous Sludge (RF-747) is defined in RPT-TRUW-05 as drums of sludge generated at RFP prior to October 1972 with container prefixes other than 741 through 746 that were retrieved from Pits 11 and 12. HWNs will be determined for the IDC RF-747 waste when sufficient characterization data are available.

There is no AK justification for the addition of either HWN for nitrobenzene to the Pits 11 or 12 RF debris (RF-750) or Cells 1 and 2, Pad 1 RF debris (all debris IDCs including IDC RF-760).

Loose or un-containerized newly generated debris waste from the Pits 11 and 12 containers (e.g., BN-500, BN-604) will be assigned the D036 HWN as a conservative measure due to potential cross contamination with RF-743 solidified organic waste.

Loose or un-containerized newly generated homogenous solids and soil will be evaluated on a case-by-case basis prior to profiling.

Newly generated waste (e.g., BN-520 and BN-521) generated as a result of sampling the CCP managed SDA waste (e.g., SD-704 and SD-705) will be assigned the F004 HWN based on the CCP characterization of the SDA waste.

Discrepancy Resolved?: ☑ Yes ☐ No

AK Personnel:	Carolyn Abbott	Carolyn Abbott	7-14-10
	Print	Sign	Date

Discrepancy Report AK Document Notes regarding the Assignment of Hazardous Waste Number (D036 or F004) for Nitrobenzene (by Year)

Note: Document language is quoted below. Only observations were made (i.e., no constituents listed, or no references). Interpretations of the data were not made in this paper.

1967 P846A, Colorametric Determination of Iron in Plutonium Metal using a Nitrobenzene Extraction Technique

Nitrobenzene used to extract iron from plutonium samples. Although better precision was obtained, the extraction results were consistently lower.

1982 P024A, WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes

Page 21; Content Code 3, Organic Setups (prefix 743); trace concentrations of miscellaneous organic laboratory wastes (included nitrobenzene). HWNs were not identified. No references

Page 52, Content Codes 90 and 990, waste consists of dry dirt or soil generated from cleanup of spills, leaks, etc. from any plutonium area. No constituents or HWNs were identified. No references.

Page 198, Content Code 374, Blacktop, Concrete, Dirt, and Sand generated by any plutonium area primarily from cleanup of spills and leaks, process changes, maintenance, and decontamination or decommissioning operations. No constituents or HWNs were identified. No references.

1989 P307A, EDF-RWMC-369, Hazardous Waste Constituents of INEL Contact-Handled Stored Transuranic Waste

Identified hazardous constituents expected to be present in waste stored at the RWMC. Identified P024A and attached letter from RFP for newly generated waste as sources for information.

Page 58 Content Code 3, Grease – Bldg. 774; F004 No constituents listed

Page 61 Code 3; Organic Setups (prefix 743). Miscellaneous organic laboratory waste occasionally contained nitrobenzene - F004

Page 128 Code 90 and 990; spills or leaks could be from a variety of hazardous materials. Therefore it is assumed that any of the below listed materials (including nitrobenzene) could be present it this content code. Nitrobenzene (F004) was occasionally used in the Production Support Laboratory.

Page 133 Code 374; a variety of hazardous materials could have been included in this waste since it involved cleanup operations. Therefore, it is assumed that any of the below listed materials

(including nitrobenzene) could be present it this content code. Nitrobenzene (F004) was occasionally used in the Production Support Laboratory.

Page 156 RFP letter, Content code 113, Solidified Organics, only F001 identified. Page 162, IDC 374, only F001 and F002 identified.

1995 P016A, INEL-95-0281, Idaho National Engineering Laboratory Code Assessment of the Rocky Flats Transuranic Waste

Page 53 (3-21) Solidified Organics analytical results – Nitrobenzene not measured. HWNs F001 and F002 assigned.

Page 390 (3-352) Blacktop/Concrete/Dirt IDC-374; Applicable EPA codes include D004-D011, F001-F007, F009 and F039. Chemical constituents were not identified. Generation included cleanup (rubble, soil and debris) and construction/demolition activities. Buildings 371, 374, 559, 707, 771, 774, 776 and 779. The reference for this characterization is revision 1(prior to ref. P052A) of the Backlog Baseline Book for Soil and Cleanup Debris.

1996 P310A, EDF-RWMC-421, EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes

RCRA hazardous constituents and characteristics identified may be contained in the waste. Best information available at the time of the document.

Page 10, IDC 003 Organic Setups, Oil Solids nitrobenzene HWN F004

Page 13, IDC 090 Dirt, nitrobenzene HWN F004

Page 39, IDC 990 Dirt, nitrobenzene HWN F004

Specific data not referenced. References listed included P307A.

2000 P052A Rocky Flats Environmental Technology Site (RFETS) Backlog Waste Reassessment Baseline Book (BWRBB)

The RFETS BWRBB: The project purpose for this document was to reassess EPA HWN assignments including a past practice to assign EPA codes based on the presence of the constituent rather than the use of the constituent.

WF23:
Waste Form (WF) 23 addresses IDCs RF 374. WF 23 addresses soil and cleanup debris RF-374). Nitrobenzene was not identified as a contaminant for the soils that remained at RFP after shipment to INL were discontinued.
IDCs RF 090 and RF 990 were not included in this document.

WF47:

Waste Form (WF) 47 addresses RF-003 and RF-801. WF47 identifies the presence of nitrobenzene in five or fewer drums of solidified organic waste; however there was no documentation specifying the individual drums. WF 47 documents the assignment of HWN

D036 (nitrobenzene) to solidified organics generated before November 1985 (e.g., RF-003) because nitrobenzene was a contaminant in non-routine laboratory waste and was introduced into five or fewer drums (prior to 1982) but the waste stream as a whole would not exhibit the toxicity characteristic for nitrobenzene. Table 2-2, addresses analytical results for nitrobenzene; however, the footnote indicates that nitrobenzene was "not measured." The majority of the RF-003 waste was shipped to INL and only 11 TRU drums remained at RFP and these 11 drums were generated after 1982 (P435S). The solidified organics population, as a whole, does not exhibit the toxicity characteristic for nitrobenzene.

801 represents OASIS process waste generated after November 11, 1985 and was assigned the same EPA codes as previously identified for IDC 003 waste.

Revised (P717A below) in 1996 and 2005 D036 was conservatively assigned to RF-003by RFETS because of diluted non-detects (MDL) were above the PRQL for nitrobenzene.

2002 P361A, EDF-803 -*Chemical Constituents in Transuranic Storage Area (TSA) Waste*

The document states that it is a comprehensive list of chemical constituents determined to be present in, or suspected to be present in, transuranic (TRU) waste stored at the Transuranic Storage Areas (TSA) of the Radioactive Waste Management Complex (RWMC). The document notes that HWNs assigned in compliance with the WIPP WAP were not based on RCRA requirements (40 CFR 261) and are only conservative assignments to satisfy WIPP requirements. Lists F004 as an INEEL Potential HWN for RF 090, RF 003, RF 374 and RF 990.

2003 P368A, INEL-96/0280, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste

Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Rocky Flats Plant Waste INEL-96/0280, Rev. 3 2/28/03 includes INEL characterizations

Section 25: RF-003 Organic Setups Proposed EPA HWNs D022, D029, D036, F001, F002, F003 and F005

Historical AK indicated potential toxicity characteristic for nitrobenzene = due to use of non-routine laboratory waste (small amounts of this compound may have been introduced into five or fewer drums of organic setups (003) prior to October 1982. D036 assigned based on AK only.

RF-700 and RF-801 Proposed EPA HWNs D021, D022, D028-D030, D032, D034, D036, D043, F001, F002 and F003 D036 assigned based on: historical AK indicated potential toxicity characteristic for nitrobenzene = analytical results for nitrobenzene – calculated UCL90 greater than the RTL, but no samples above MDL.

Debris waste streams: None of the debris waste characterized during 3100 m3 Project carried the D036 or an F004 HWN for nitrobenzene. Section 8, Page 8-4 "There is no documentation indicating the presence or use of F004-listed solvents in the areas or processes generating blacktop, concrete, dirt, and sand wastes. Therefore this waste group is not F004-listed hazardous waste." D036 was not identified.

2003 D027A, Inclusion of Hazardous Waste Number F004 to RF IDC-374

Quoted 96/0280: There is no documentation indicating the presence or use of F004-listed solvents in the areas or processes generating blacktop, concrete, dirt, and sand wastes. Therefore this waste group is not F004-listed hazardous waste.

2005 D054A, CCP-RF-D005 Discrepancy Resolution for EPA Hazardous Waste Number Assignments for Waste Streams ID-RF-S3114 and ID-RF-S3150-A, Rev. 1

AK sources were identified for nitrobenzene (D036); Homogeneous solids sampling and analysis of organic setups was conducted by both the RF and INL 3100 m^3 TRU Waste Programs. D036 was assigned to RF-003, RF-700 and RF-801 wastes by RF and identified in the INL 3100 m^3 Project AK baseline report for the waste.

Analytical data review of the non-detect observations for the homogeneous solids data, the MDL exceeded the PRQL for nitrobenzene due to dilution. Dilution of the samples was due to high hydrocarbon content in the waste that caused difficulties in analysis. A potential source for nitrobenzene was identified in AK and the D036 HWN for nitrobenzene was assigned conservatively.

2005 P435S, RMRS-WIPP-98-100, RFETS Acceptable Knowledge TRU/TRM Waste Stream Summaries

page 556 Grease plant sludge RF-003: assignment of nitrobenzene (D036)
Subsequent review and reconsideration of AK (including headspace data) confirmed that there is no indication that this waste became contaminated with cresols, 1.2-dichlorobenzene, 1,2-dichlorobenzene, 2,4-dinitrotoluene, 2,4-dinitrophenol, hexachlorobenzene, hexachloroethane, pentachlorophenol, and nitrobenzene. The inability of the analytical laboratory to achieve the Program Required Quantitation Limits (PRQLs) can be attributed to the matrix of the sampled material (i.e.,high hydrocarbon content in the waste matrix). However, in accordance with Section B4-3d of the WIPP WAP, EPA Hazardous Waste Numbers D026, D027, D030, D032, D036, and D037 were conservatively added to this waste stream.

page 375, OASIS Solidified Organics – Building 774, RF-801, RFETS assigned HWNs D022, D028, D029, D030, D032, D034, F001, F002, and F005. HWN D028 was assigned due to headspace gas sampling. HWNs D030 and D032 were assigned because the diluted non-detects (MDL) were above their PRQLs. HWN D036 was not assigned to this solidified organic waste by RFETS.

2005 P717A, Rocky Flats Environmental Technology (RFETS) Backlog Waste Reassessment Baseline Book (BWRBB)

WF 23, Soil and Cleanup Debris November 21, 1996; (pages dated 5/25/05), pages 343-382 IDC 374 (WF23-3 through WF23-35): Earliest generation date of IDC 374 is June 8, 1987. Neither D036 nor F004 were identified for RF-374.

WF 47, Solidified Organics June 15, 1995: pages 720-734(47-3 through WF47-12); For Solidified Organics Generated Before November 1985: Due to method detection limits (MDL) above the PRQL for the SVOC solid sampling data package, which includes all wastes in Subpopulation 47A (IDC 003), HWNs D022, F001, and F002 and WIPP only EPA Waste Codes for D026, D027, D030, D032, D034, D036, and D037 will be assigned to these wastes. Solidified

organics generated after 1985 (IDC RF-801) were assigned HWNs D022, D034, F001 and F002 and WIPP only EPA Waste Codes for D028, D029, D030, D032, and D034.

2006 C536A, Telecon/Interview of Lisa Frost/Ed Vejvoda re: Use of nitrobenzene at Rocky Flats

Ed Vejvoda: RF used nitrobenzene in the early 50s for density measurements in Buildings 71 and 76 but it was not used for an extended period of time due to safety issues."

2006 P634A, CCP-AK-INL-005, Rev 4, 10/29/09 (Waste streams: ID-RF-S3114 and ID-RF-S3150-A)

ID-RF-S3114 (RF-003) Organic Setups: D022, D026, D027, D028, D029, D030, D032, D034, D036, D037, F001, F002, F005 – PCBs
Page 31, Waste Stream ID-RF-S3114 exhibits the characteristic of toxicity for organic compounds as defined in 40 CFR 261, Subpart C (40 CFR 261.24). As shown in Tables 4-1 and 4-2, chloroform (D022); 1,2-dichloroethane (D028); 1,1-dichloroethylene (D029); and nitrobenzene (D036) were identified as potential organic constituents in organic setups waste. Therefore, EPA hazardous waste numbers D022, D028, D029, and D036 are assigned to Waste Stream ID-RF-S3114 (Reference D005).

Page 31Although nitrobenzene (D036) is also an F004-listed constituent, there is no indication that nitrobenzene was ever used as a solvent at Rocky Flats. Nitrobenzene used as a laboratory reagent; non-solvent use (Reference P052).

Page 33, Nitrobenzene, an F004-listed constituent, was used at Rocky Flats but not for its solvent properties. Therefore, this waste stream is not an F004-listed hazardous waste.

ID-RF-S3150-A (RF-700 & 801): D022, D028, D029, D039, D032, D034, D036, D043, F001, F002, F005
Page 48 Waste Stream ID-RF-S3150-A exhibits the characteristic of toxicity for organic compounds as defined in 40 CFR 261.24. As shown in Tables 4-1 and 4-2, chloroform (D022); 1,2-dichloroethane (D028); 1,1-dichloroethylene (D029); and nitrobenzene (D036) were identified as potential organic constituents in solidified organics waste. Therefore, EPA hazardous waste numbers D022, D028, D029, and D036, are assigned to Waste Stream ID-RF-S3150-A (Reference D005).

Page 48 Although nitrobenzene (D036) is also an F004-listed constituent, there is no indication that nitrobenzene was ever used as a solvent at Rocky Flats.

Page 50 Nitrobenzene, an F004-listed constituent, was used at Rocky Flats but not for its solvent properties. Therefore, this waste stream is not an F004-listed hazardous waste.

2006 P633A, CCP- AK-INL-004, Rev 2, 11/16/2006 (Waste Stream: ID-RF-S5300-A)

ID-RF-5300-A (RF-330, RF-336, RF-337) Combustibles and Plastics: (D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D029, F001, F002, F005, F006, F007, F009
Table 5-7 Chemical Usage: Nitrobenzene was not listed

Page 41. "There is no documentation indicating the presence or use of F004-listed solvents in the areas or processes that generated the combustibles and plastic wastes. Therefore, this waste stream is not an F004-listed hazardous waste.

2006 P666A, ID-RF-S3114, Central Characterization Project Waste Stream Profile Form; Waste Stream Profile Number ID-RF-S3114

CCP WSPF ID-RF-S3114 provides solid sampling results for RF 003. The F004 HWN was not assigned to RF-003. The analytical results reflect that UCL_{90} for nitrobenzene was below the PRQL; however, D036 was conservatively applied to nitrobenzene based on the inconclusive analytical results and the identification of potential sources of nitrobenzene in the waste in the AK documentation.

2009 P647A, CCP-AK-INL-001, Rev. 8, Central Characterization Project Acceptable Knowledge Summary Report for Waste Retrieved from Designated Areas within the Subsurface Disposal Area at the Idaho National Laboratory (Original approval date 11/18/2004)

Waste exhumed and packaged for disposal at WIPP include waste from RF, ANL-W, ARA, CFA, CPP, NRF, PER, TAN, TRA, and several off-site facilities. Identified nitrobenzene in Table 5-5 (pg. 138) as used in laboratories (RFP buildings 123, 559, 771, 881 and at the INL CPP laboratory). Rocky Flats determined that the method detection limit exceeded the program required quantification limit for nitrobenzene (D036) due to dilution. The dilution was due to high hydrocarbon content in the waste matrix that caused difficulties in analysis per required methodology (RFETS WSPF RF135.01). Nitrobenzene is a toxicity characteristic compound that is also an F-listed solvent. F004 was assigned to the waste and therefore D036 was not assigned.

IN-ID-SDA Sludge S3000/S3900, Pg 18, HWNs assigned included F004 for nitrobenzene (pg 168)

IN-ID-SDA Soil S4000/S4200, Pg 19, HWNs assigned included F004 for nitrobenzene (pg 168)

IN-ID-SDA Debris S5000/S5400, Pg 20, HWNs assigned included F004 for nitrobenzene (pg 168)

2010 C930S, Email from Jim Vernon (WIPP) to Micky Johnson re: Request for data

Out of the ID-RF-S3114 drums that have gone through solid sampling analysis, only one drum has a reported value for Nitrobenzene. Nitrobenzene was not detected above the PRQL level. The EPA Hazardous Waste Number for Nitrobenzene D036 is assigned to the ID-RF-S3114 waste stream based on AK due to the use of Nitrobenzene used in buildings where the organic waste was generated at Rocky Flats.

Nitrobenzene (toxic combustible compound) used in the production of other organic compounds, refining (e.g., oils, soaps, etc.), as a preservative, and as an extraction solvent (oil refining). (HSDB; CASRN: 98-95-3)

B-2012-0048
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AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

Form-1068, Rev. 4
Effective: 01/08/09

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: D096A	2. Revision: 1

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☐ Correspondence
- ☑ Discrepancy

4. **Title/Description Information:** Discrepancy Report resolving the HWNs for AMWTP ANL-E legacy wastes.

Document Number: D096A
Revision: N/A
Author: Tim Venneman
Date: 01/30/2012

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WS1, WS3, WS4, WS5, WS6, WS8	AE-100, AE-101, AE-102, AE-104, AE-105, AE-106, AE-107, AE-110, AE-111, AE-120, AE-121	All	The document discusses the various RCRA characerization (and determinations that have ocurred over time with AMWTP ANL-E legacy wastes (S3000 and S5000). ANL-E waste have been classified as both non-hazardous and hazardous and has had various HWNs applied depending upon the characterization group.

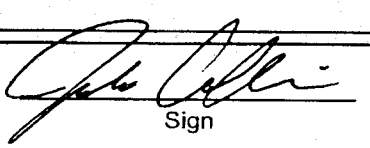
9. Document Summary:

The document discusses the various RCRA characterizations (and determinations) performed by various organizations that have occurred over time for AMWTP ANL-E legacy wastes (S3000 and S5000). ANL-E legacy waste have been classified as non-hazardous and hazardous and has had various HWNs applied depending upon the characterization group.

Resolution is noted as: AMWTP will manage, treat and ship the waste as TRU mixed waste with the following HWNs: D004, D005, D006, D007, D008, D009, D010, D011, D019, D027, D028, D029, D030, D037, F002, F004, and F005.

10. Source Document Data Limitations (if any):

None identified.

11. AK Expert:	Julie Collins		3/22/2012
	Print	Sign	Date

FOR INFORMATION ONLY

AMWTP Advanced Mixed Waste Treatment Project	**Acceptable Knowledge Discrepancy Report**	Form-1784, Rev. 1 Effective: 09/24/09 Page 1 of 4

Implementing Document: MP-TRUW-8.13

Waste Generator: AMWTP (BN)

Source Document Tracking Number: D096A	Revision No.: N/A

Document Title/Description: Discrepancy Report resolving the HWNs for AMWTP ANL-E legacy wastes.

The following information discusses the various RCRA characterization (and determinations that have occurred over time with ANL-E wastes (S3000 and S5000). Contact handled debris waste was generated from multiple locations across the ANL-E site and was initially identified and managed based on the content codes. Management by content code does not take into consideration the generator level operation that may have generated the absorbed waste. As a result some containers will have debris and non-debris wastes that originated from multiple locations within the same container.

ANL-E legacy waste was not routinely segregated by waste type (e.g., for processes that generated small volumes of waste; early in the program). Beginning in early 1970's, debris was separated into combustible and non-combustible; however several waste generating areas did not segregate their waste (debris and/or homogeneous solids) due to the low volume of waste generated. As a result some containers will have both debris and non-debris wastes within the same container.

The WMO also routinely commingled waste from various ANL-E primary waste generators, including Buildings 200, 205, 212, 315/316, and 350, as well as small quantities of waste from minor waste generating buildings. Commingling of liquid wastes during neutralization, solidification and absorption operations have been conducted. In addition, the WMO has also commingled heterogeneous debris waste received in small quantities into single containers (e.g., 55-gallon drums).

Due to the commingling of ANL-E legacy waste the applicable ANL-E HWNs/constituents associated with ANL-E homogeneous solids and heterogeneous debris waste are the same.

References:

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
P024A	Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes	WM-F1-82-021 / N/A	T. L. Clements, Jr.	10/00/1982	All

D096A

Implementing Document: MP-TRUW-8.13

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
P1154A	AMWTP Form-1900, AMWTP Offsite Waste Stream Profile for AECHHM-PK, Argonne CH Homogeneous Solids (AE-254); AMWTP Form-1906, Non-AMWTP Waste Profile Environmental Checklist for Profile ID AECHHM-PK; AMWTP Form-1907 Non AMWTP Waste Profile Radiological Controls Checklist for Profile ID AECHHM-PK; AMWTP Form-1908, Non-AMWTP Waste Profile Acceptable Knowledge Checklist for Profile ID AECHHM-PK; AMWTP Form-1910, Non AMWTP Waste Profile Industrial Safety/ Industrial Hygiene (IS/IH) Checklist for Profile ID AECHHM-PK; AMWTP Form-2005, Offsite Waste Profile nuclear Safety Checklist for Profile ID AECHHM-PK	AECHHM-PK / 0	Mark Doherty, CCP	05/11/2011	All
P1379A	Central Characterization Project Acceptable Knowledge Summary Report For Idaho National Laboratory, Argonne Contact-Handled Transuranic Waste from Facility Maintenance and Laboratory Operations, Waste Streams: ID-AECHDM, ID-AECHHM	CCP-AK-INL-025 / 1	Mike Ramirez	12/16/2011	All
P1380A	Central Characterization Project acceptable Knowledge Summary Report for Argonne National Laboratory – East Contact-Handled TRU Waste Facility Maintenance and Laboratory Operations	CCP-AK-ANLE-001 / 1	David H. Haar	12/31/2003	

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D096A

Implementing Document: MP-TRUW-8.13

Associated Source Document Tracking Number	Source Document Title	Document No./ Rev. No.	Author	Date	Page No.
P1381A	CCP-AK-ANLE-500 Central Characterization Project Acceptable Knowledge Summary Report For Argonne Remote-Handled Debris Waste, Waste Stream: AERHDM	CCP-AK-ANLE-500 / 9	Irene Quintana	12/21/2011	
P310A	EPA Hazardous Waste Codes Found in INEL Stored TRU Waste Content Codes	EDF-RWMC-421 / 4	EG&G Idaho, Inc.	04/01/1994	All
P319A	Idaho National Engineering Laboratory Stored Transuranic Waste Characterization: Nonradiological Hazards Identification.	WM-F1-81-015 / N/A	T.L. Clements, Jr.	09/00/1981	All
P361A	Chemical Constituents in Transuranic Storage Area (TSA) Waste, EDF-803, Rev. 0, June 12, 1995, Rev. 1, July 10, 1996, Rev. 2, August 12, 1997, Rev. 3, April 4, 1998, Rev. 4, October 30, 2000, Rev. 5, September 17, 2001, Rev. 6, August 1, 2002, Rev. 7, December 18, 2002	EDF-803 / Z	INEEL	12/18/2002	All
P393A	Advanced Mixed Waste Treatment Project Waste Stream Designations	RPT-TRUW-12 / Cur Rev	AMWTP	CUR DATE	All
P888A	Waste Characterization for INEL Remote-Handled/Special Case Stored Transuranic Wastes	WM-PD-85-014 / 0	Dennis A. Peterson	11/1/1985	All

Nature of Discrepancy: ANL-E wastes (S3000 and S5000) have been classified as non-hazardous and hazardous and depending upon the time frame in question has had various HWNs applied by multiple organizations.

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AMWTP Advanced Mixed Waste Treatment Project	Acceptable Knowledge Discrepancy Report	Form-1784, Rev. 1 Effective: 09/24/09 Page 4 of 4

D096A

Implementing Document: MP-TRUW-8.13

Resolution: ANL-E wastes will be classified by AMWTP as mixed waste. ANL-E wastes were not sufficiently segregated during the early years and as a result cross contamination from constituents associated with ANL-E laboratory operation has occurred. Due to the commingling of various ANL-E wastes the applicable ANL-E HWNs/constituents associated with ANL-E waste are a composite of HWNs associated with ANL-E TRU waste.

The following HWNs will be applied to all legacy ANL-E wastes: D004, D005, D006, D007, D008, D009, D010, D011, D027, D028, D029, D030, D037, F001, F002, F004, and F005.

Discrepancy Resolved?: ☑ Yes ☐ No

AK Personnel: Julie Collins (Print) — Julie Collins (Sign) — 3/22/12 (Date)

AMWTP Advanced Mixed Waste Treatment Project

Acceptable Knowledge Resolution (AKR) Checklist

Effective: 05/24/2006
Page 1 of 1
Implementing Document: MP-TRUW-8.13

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AKR-12-735
SWALKER
09/27/2012

Waste Stream or IDC: IDC RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

Evaluation Criteria	Yes	No	Documentation
1. Does the inconsistency require a change to the waste matrix code (WMC) or IDC, if appropriate? If yes, ensure that a NCR has been issued and complete evaluation items 4 through 9.	X		See attached
2. Does the inconsistency require the potential addition of a hazardous waste number (HWN) to an approved waste stream? If yes, complete items 7 and 8.		X	
3. Does the inconsistency require a change to the radionuclides associated with a waste stream? If yes, complete item 9.		X	
If items 1 through 3 are no, answer no for the rest of the evaluation and attach justification for items 1 and 2.	**Reevaluation required?**		
	Yes	**No**	
4. Verify and document that the waste materials to be reassigned a WMC were generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during radiography or visual examination.	X		See attached
5. Review existing information based on the historical container identification number and document all differences in HWN assignments and acceptable layers of confinement.	X		See attached
6. If inconsistencies exist in the acceptable knowledge (AK) information for the reassigned WMC, document the disposition of this container, and define the actions necessary to fully characterize the waste.		X	Not applicable
7. Reassess and document all sampling and analytical data associated with the waste.		X	Not applicable
8. If differences exist in the HWNs that were assigned, reassess and document all required AK information associated with the new designation. If a HWN needs to be added to an approved waste stream, ensure that an NCR has been issued.		X	Not applicable
9. Reassess and document AK associated with new radionuclide content determination and new waste stream designation.		X	Not applicable

Resolution: AK recommends an IDC change from RF-337 to RF-490.

Record required changes to AK record. (This includes updating reference data in WTS):

AK Expert: Randall C Mann 3rd 01/04/12
(signature) (date)

NOTE: *AKRs that address major actions require an NCR or CAR if actions are not complete before signature date.*

FOR INFORMATION ONLY

Waste Stream or IDC: ID-RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

References

1. RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual (P399A)
2. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes (P024A)
3. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste–Rocky Flats Plant (P649A)
4. RPT-TRUW-12, AMWTP Waste Stream Designations (P393A)
5. BN510.1 Supercompacted Debris Waste Stream Profile Package (P1030A)
6. RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements: AMWTP Baseline AK for Newly Generated Waste (P400A)
7. BN211 Filter Debris, Waste Stream Profile Package (P461A)
8. CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory: Waste Stream ID-RF-S5300-A, Rev. 1 (P633A)
9. RPT-TRUW-86, Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (P1031A)

Container Information:

Container	RTR Batch	Historical ID	Prefix Date Range for IDC RF-490 [9]	Historical Pack Date	Historical Gross Weight (lb)	Scale Weight (lb)	NCR	AKR Rev.
10245486	RTR11-00442	IDRFP1C3B0037	*	06/05/72	138	132.3	68025	0

* This container does not have a historical prefix because the historical information was degraded during storage.

Background:

The Rocky Flats (RF) waste drum identified above was examined by RTR. Because of the observed container contents, the RTR operators recommended an IDC change from the historical IDC RF-337, Plastics, Teflon, Washables, PVC, to RF-490, HEPA Filters and CWS Filters.

Justification and/or Rationale

AK indicates that IDC RF-337 waste consists of plastic and non-leaded rubber waste including debris items in the form of empty bottles, piping, tubing, glovebox windows, bags, tape, sheeting, and protective clothing (e.g., supplied air suits, surgeon's gloves, booties, respirator masks, parts and cartridges, and non-leaded glovebox gloves), etc. The types of plastic include polyethylene, polypropylene, PVC, Teflon, tygon, and Plexiglas. The types of rubber include latex, neoprene, Hypalon and Viton). RF-490 waste may also contain any amounts of cloth, paper and wood products including items such as wipes and paper. The waste may only contain < 50% by volume glass and metal debris items (e.g., metal respirator cartridges, raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). [1, 2, 3, 8] AK indicates that IDC RF-490 waste includes primarily whole 24 x 24 x 12 inch HEPA filters. Pre-1976 waste includes CWS (Chemical Warfare Service) filters. RF-490 waste also includes Absolute 8 x 8-in glovebox filters, prefilters, insulation, and respirator filters. Filter media include asbestos type, fiberglass and paper types. The waste may also contain cellulosic and plastic debris items (e.g., cardboard). [1, 2, 3, 7] The container contents identified by RTR are more consistent with the RF-490 waste than with the RF-337 waste.

Waste Stream or IDC: ID-RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

The packaging identified by RTR is consistent with expected variation of the packaging configuration for IDC RF-490 waste. [1, 2, 3]

The historical data are consistent with the recommended IDC change to RF-490. The container pack date is within the historical pack date range for RF-490 (January 1971 – July 1989). [6] The historical weight and the AMWTP scale weight are not significantly different.

IDC RF-337 is assigned WMC S5300 (Organic Debris); IDC RF-490 is assigned WMC S5410 (Composite Filters) which more accurately reflects the physical form of the waste identified in the RTR. [1] Both IDCs are included in the supercompactor feedstock, BN510.1. [5]

The HWNs assigned to IDC RF-337 under direct-ship WSPF ID-RF-S5300-A are identical to those assigned to IDC RF-490 (D004 – D011, D022, D028, D029, F001, F002, F005 – F007, and F009) are a subset of those assigned to IDC RF-490 under direct-ship WSPF BN211 . [4, 7, 8] Both wastes are also included in the Supercompactor feedstock debris wastes (BN510.1) where they are assigned HWNs D004 – D011, D022, D027 – D030, D034, D037, D043, F001, F002, F004 – F007, and F009. [5]

Resolution and Corrective Actions

AK recommends an IDC change from RF-337 to RF-490 for the container listed above. This recommendation is based on the AK information, historical drum information, and the RTR observations. This AKR will be used to close the related NCR.

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 68025

Title: AK Characterization

Originator: Morris, Randall	**Date Opened:** 01/04/12
Responsible Dept: Waste Programs	**Batch #:** RTR11-00442
Container ID: 10245486	**Tag Applied:** Yes

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Randall Morris	**Originator Sign Date:** 01/04/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

RTR recommended an IDC change from RF-337 to RF-490 for container 10245486. This is a change in WMC from S5300 to S5410, which requires an NCR (MP-TRUW-8.13, Rev. 24). RCM 01/04/12

AK concurs with the recommended IDC change from RF-337 to RF-490 for container 10245486. AKR-12-735 was attached to NCR 68025 to support this change. RCM 01/05/12

Performed By: Randall Morris	**Performed Date:** 01/05/12

Waste Programs Evaluation/Verification:

This container has been successfully characterized as part of RTR11-00442. The IDC associated with the container has been changed to RF-490, and AK review has been completed as required. Al required actions have been completed and this NCR is recommended for closure. GTB 3/28/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 03/28/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

AK concurs with the recommended IDC change from RF-337 to RF-490 for container 10245486. AKR-12-735 was attached to NCR 68025 to support this change. RCM 01/05/12

QA Comment: Verified in WTS that container 10245486 shows an IDC of RF-490 and a WMC of S5410, which is in accordance with the approved and attached AKR-12-735. Verified that the RTR analysis shows the "Is IDC Correct" question answered as "Yes". This NCR is closed. C. Robison 03-28-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 03/28/12

FOR INFORMATION ONLY

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

RECORD
CMC 02/02/2012

Batch Number: See attached Container ID: See attached

Inconsistency: Change the IDC from MD-848 to MD-836 based on RTR data.

Evaluation Criteria	Yes	No	Documentation
1. Does the inconsistency require a change to the waste matrix code (WMC) or IDC, if appropriate? If yes, ensure that a NCR has been issued and complete evaluation items 4 through 9.	X		See attached
2. Does the inconsistency require the potential addition of a hazardous waste number (HWN) to an approved waste stream? If yes, complete items 7 and 8.		X	
3. Does the inconsistency require a change to the radionuclides associated with a waste stream? If yes, complete item 9.		X	
If items 1 through 3 are no, answer no for the rest of the evaluation and attach justification for items 1 and 2.	**Reevaluation required?**		
	Yes	**No**	
4. Verify and document that the waste materials to be reassigned a WMC were generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during radiography or visual examination.	X		See attached
5. Review existing information based on the historical container identification number and document all differences in HWN assignments and acceptable layers of confinement.	X		See attached
6. If inconsistencies exist in the acceptable knowledge (AK) information for the reassigned WMC, document the disposition of this container, and define the actions necessary to fully characterize the waste.	X		See attached
7. Reassess and document all sampling and analytical data associated with the waste.		X	Not Applicable
8. If differences exist in the HWNs that were assigned, reassess and document all required AK information associated with the new designation. If a HWN needs to be added to an approved waste stream, ensure that an NCR has been issued.		X	Not Applicable
9. Reassess and document AK associated with new radionuclide content determination and new waste stream designation.		X	Not Applicable

Resolution: Change the IDC to MD-836.

FOR INFORMATION ONLY

Record required changes to AK record. (This includes updating reference data in WTS):
No AK documents need to be revised based on this change.

AK Expert: Caralea Huckle-Darnell (signature) 2-1-12 (date)

NOTE: *AKRs that address major actions require an NCR or CAR if actions are not complete before signature date*

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

Batch Number: See Table Container ID: See Table

Inconsistency: IDC change from MD-848 to MD-836 based on RTR data

References:

1. RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual [P399A]
2. RPT-TRUW-12, AMWTP Waste Stream Designations [P393A]
3. RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements: AMWTP Baseline AK for Newly Generated Waste [P400A]
4. RPT-TRUW-13, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste [P418A]
5. BN304 Mound Debris Waste Stream Profile Package [P604A]
6. BN510.1 Supercompacted Debris Waste Stream Profile Package (P1030A)
7. RPT-TRUW-86, Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (P1031A)
8. BN836 Mound Cemented Sludge, Waste Stream Profile Package (P646A)

Container Information:

Container No.	Batch No.	Historical ID	Pack Date	Historical Gross Weight (lb)	AMWTP Scale Weight (lb)	NCR No.	AKR Rev No.
10120214	RTR11-00434	IDMD740001485	01/15/75	639.34	648.27	68706	0

Background:

The Mound Laboratory (MD) waste containers in the table above were examined by RTR. The RTR operators recommended an IDC change from the historical IDC of MD-848, LSA< 100 nCi/g Non-combustible, to MD-836, High Level Sludge/Cement. The listed container was subjected to an AK evaluation of historical information including pack dates, gross weights, packaging, and hazardous waste numbers (HWNs).

Justification and/or Rationale:

AK indicates that IDC MD-848 waste includes non-line generated noncombustible wastes such as tools, pipe, equipment, metal, glass, concrete, plaster, bricks, and dirt. MD-848 may also contain limited amounts of combustible wastes (paper, rags, etc.). [1, 4] AK indicates that IDC MD-836 contains cemented sludge (sometimes called solidified sludge/liquid) generated from processing all low-level, alpha contaminated liquids wastes (shower water and soap, decontamination water, cooling water, some acids and caustics, etc.) from building floor drains, laundry and labs. The waste was generated by mixing approximately 40-gallons of dewatered sludge with 2 to 2 ½ bags of Portland cement resulting in a solidified waste. [1, 2, 4, 8] This AK information was used as the basis for the waste stream description for waste stream profile MD-836, Mound Cemented Sludge. [8]

IDC MD-848 is assigned the Waste Matrix Code (WMC) S5490 (Unknown/Other Heterogeneous Debris). [1] IDC MD-836 is assigned WMC S3121 (Wastewater Treatment Sludges) which more accurately reflects the physical form of the waste identified in the RTR.

The historical data are consistent with the recommended IDC change. The packaging identified by RTR in the listed containers is consistent with expected variation of the packaging configuration for MD-836 waste. The

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

Batch Number: See Table Container ID: See Table

Inconsistency: IDC change from MD-848 to MD-836 based on RTR data

historical weights and the AMWTP scale weights are not significantly different. The listed containers have pack dates within the generation date range for IDC MD-836 (January 1974 – June 1985). [8]

The HWNs assigned to MD-836 under direct-ship WSPF BN836 are D004 – D011, F001, F002, and F005. [8] Hazardous waste numbers (HWNs) assigned to IDC MD-848 in accordance with approved AMWTP Waste Stream Profile Form (WSPF) BN304 include: F001, F002, F005, F007, F009, D004 through D011, D022 and D029. [2, 4, 5] Hazardous waste numbers assigned to supercompacted waste (i.e., TRU waste) in accordance with approved WSPF BN510.1 include: F001, F002, F004, F005, F006, F007, F009, D004 through D011, D022, D0027, D028 and D029, D030, D034, D037, and D0043. [6]

Resolution and Corrective Actions:

This AKR supports the IDC change to IDC MD-836 for the listed container and can be used to close the above listed NCRs. No changes need to be made in the AK record.

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 68706

Title: AK Characterization

Originator: Hinkle-Daniel, Caralea	**Date Opened:** 02/01/12
Responsible Dept: Waste Programs	**Batch #:** RTR11-00434
Container ID: 10120214	**Tag Applied:** No

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Caralea Hinkle-Daniel	**Originator Sign Date:** 02/01/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

RTR recommended an IDC change from MD-848 to MD-836 for container 10120214. This is a change in WMC from S5490 to S3121, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 2/1/12

AK concurs with the recommended IDC change from MD-848 to MD-836 for container 10120214. AKR-12-745 was attached to NCR 68706 to support this change. CHD 2/1/12

Performed By: Caralea Hinkle-Daniel	**Performed Date:** 02/01/12

Waste Programs Evaluation/Verification:

SPM Verification: I have verified that AK evaluation was completed on 2/1/2012. The AKE concurred with the IDC change and attached AKR-12-275 to support the IDC change. I have verified in WTS, that the IDC for container 10120214 is MD-836 and the Waste Matrix Code is S3121. All required actions have been completed. S. Caniff 9/27/2012

SPM Verification Complete By: Sean Caniff	**SPM Verification Complete Date:** 09/27/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

RTR recommended an IDC change from MD-848 to MD-836 for container 10120214. This is a change in WMC from S5490 to S3120, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 2/1/12

AK concurs with the recommended IDC change from MD-848 to MD-836 for container 10120214. AKR-12-745 was attached to NCR 68706 to support this change. CHD 2/1/12

QA Closure Comment: Verified in WTS that container 10120214 has an IDC of MD-836 and a WMC of S3121 as required by the approved/attached AKR-12-745. No further action is required of this NCR. C. Robison 09-27-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/27/12

FOR INFORMATION ONLY

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AK Resolution Ledger.xls

10/9/2012, 10:57 AM

AKR	AKR "Year" (i.e., AKR-###)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
8	03	6/11/2003			B Erhardt	RF-All	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	6/12/2003	1	1	11/6/2003	Np-237 identified in all Rocky Flats waste streams.
9	03	6/23/2003			B Erhardt	RF-All	All RF Waste	Radionuclide	Superseded by AKR-05-208	6/23/2003	1	1	12/1/2003	SUPERSEDED. SEE AKR-05-208. Cs-137 and Sr-90 identified in all Rocky Flats waste streams.
10	03	6/23/2003			B Erhardt	RF-All	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	6/23/2003	1	1	12/1/2003	K-40 identified in all Rocky Flats waste streams.
11	03	9/25/2003			B Erhardt	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC	9/29/2003	1	1	11/2/2006	Metal debris found in RF-IDC-374. RPT 05 addresses action item
12	03	9/29/2003			B Erhardt	RF-330	BNINW169	Unexpected Materials	Use as is. No impact to WMC	9/29/2003	1	1	3/19/2006	Oil-Dri identified outside of expected quantity of AK Document.
13	03	9/29/2003			B Erhardt	RF-376	BNINW211	Unexpected Packaging	Use as is. No impact to WMC	10/3/2003	1	1	11/2/2006	Layers of containment exceed AK document. RPT 05 addresses issue.
14	03	10/1/2003			B Erhardt	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC	10/1/2003	1	1	3/19/2006	Vermiculite identified outside of expected quantity of AK document.
15	03	10/1/2003			B Erhardt	RF-337	BNINW198	Unexpected Materials	Use as is. No impact to WMC	10/1/2003	1	1	3/19/2006	Oil-Dri identified outside of expected quantity of AK Document.
16	03	10/1/2003			B Erhardt	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC	10/1/2003	1	1	3/19/2006	Oil-Dri identified outside of expected quantity of AK Document.
17	03	10/9/2003			C Abbott	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC	10/9/2003	1	1	2/19/2005	Ceiling tiles identified in RF-IDC-374 drum during RTR, TRUW-05 updated.
18	03	10/14/2003			S Hailey	RF-001	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	10/14/2003	1	1	3/4/2004	Filtering bag identified during VE; twist/tie expected bag method.
19	03	10/14/2003			B Erhardt	RF-371	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	10/14/2003	1	1	11/2/2006	Miscellaneous metal identified in RF-IDC-371 (Fire Brick). RPT 05 and BN161 addresses issue.
20	03	10/21/2003			B Tolman	RF-330	BNINW169	IDC Change	Change IDC from RF-330 to RF-480	10/21/2003	2	2	2/21/2006	IDC Change in WTS; update WSS for IDC 480 to include prefix 0389. AK Documentation updated.
21	03	10/21/2003			B Tolman	RF-336	BNINW169	IDC Change	Change IDC from RF-336 to RF-480	10/27/2003	2	2	11/2/2000	IDC Change in WTS; update WSS for IDC 480 to include prefix 0389 as gen loc. TRUW-56 addresses issue 480 updated
22	03	10/22/2003			B Tolman	RF-All	All RF Waste	Unexpected Packaging	Use as is. No impact to WMC to HWN	10/23/2003	2	2	11/2/2006	Filtering bag identified during VE or RTR; twist/tie expected bag method. RPT 05 addresses issue
23	03	10/28/2003			B Tolman	BN-512	BN510	Other	Generate new IDC for liquid absorption secondary waste	10/29/2003	5	5	11/2/2006	Created IDC 512; Add to RPT-TRUW-06 and -12. RPT 05 rev.11 reflects IDC is no longer needed.
24	03	11/4/2003			B Tolman	RF-374	BN510	Other	Add Prefix 0017 to RF-374	11/10/2003	1	1	11/2/2006	Prefix 0017 acceptable as prefix for IDC 374; pkg date indicates Bldg. 776 as gen bldg
25	03	11/11/2003	1	3/1/2004	B Tolman	RF-001	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	11/11/2003	2	2	3/4/2004	Absence of rigid liner does not impact WMC or HWN. AK Documentation updated.
26	03	11/12/2003			B Tolman	RF-007	BNINW218	Unexpected Materials	Add Oil-Dri as acceptable absorbent	11/12/2003	2	2	3/17/2004	Add Oil-Dri as acceptable absorbent for IDC 007 containers.
27	03	11/25/2003			C Major	RF-374	BN510	Unexpected Materials	Metal is sometimes observed in IDC-374 debris waste.	11/25/2003	1	1	11/2/2006	Specifically list metal as an acceptable item for IDC 374 debris waste. RPT 05 addresses issue.
28	03	12/3/2003			B Erhardt	RF-337	BNINW198	Other	Add Prefix 0032 to RF-337	12/3/2003	1	1	3/12/2006	Prefix 0032 acceptable for RF-337
29	---	12/3/2003			C Major	Not used			NOT USED - CANCELLED AKR	12/4/2003	0	0		Replaced with AKR-05-327
30	03	12/4/2003			B Erhardt	RF-All	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	12/4/2003	1	1	3/12/2006	Am-243 identified in all Rocky Flats (RF) waste streams.
31	03	12/9/2003			B Erhardt	RF-440	BNINW243	Other	Add Prefix 0018 to RF-440	12/9/2003	1	1	3/12/2006	Prefix 0018 acceptable for RF-440
32	03	12/9/2003			B Tolman	RF-490	BNINW211	IDC Change	Change IDC from RF-490 to RF-480	12/10/2003	2	2	11/2/2006	IDC Change in WTS; update WSS for IDC 480 to include prefix 0389 as gen loc. WTS and RTP 56 updated.
33	03	12/10/2003			B Tolman	RF-All	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	12/10/2003	1	1	3/12/2006	Cm-245 identified in all Rocky Flats waste streams
34	03	12/15/2003			B Tolman	RF-002	BNINW216	IDC Change	Change IDC from RF-002 to RF-371	12/15/2003	1	1	12/26/2005	Retain IDC 002 due to insufficient AK; restore 002 data in WTS; drum to be VE'd. NCR closed on 12/26/05. TS updated
35	03	12/17/2003	1	2/8/2004	B Tolman	RF-007	BNINW218	Unexpected Packaging	Use as is. No impact to WMC or HWN	12/17/2003	1	1	3/17/2004	Drum bagging absent in IDC 007 drums. AK Summaries updated.
36	03	12/17/2003	1	2/19/2004	B Tolman	RF-007	BNINW218	Unexpected Materials	Use as is. No impact to WMC or HWN	12/17/2003	1	1	3/17/2004	R1 - 803 drums too. Vermiculite may be present in IDC 007 drums. AK Summaries updated.
37	03	12/17/2003			B Erhardt	RF-007	BNINW218	Unexpected Materials	Use as is. No impact to WMC or HWN	12/17/2003	1	1	3/17/2004	Unspecified absorbent material may be present in RF-007 containers. TRUW-15 updated.
38	03	12/17/2003	1	2/4/2004	B Tolman	RF-001	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	12/17/2003	1	1	3/4/2004	Rev 1 Drum bagging absent in IDC 001, 002, and 800 drums. AK Documentation updated.
39	03	12/23/2003			B Tolman	RF-807	BNINW218	Unexpected Packaging	Use as is. No impact to WMC or HWN	12/23/2003	1	1	3/17/2004	Drum bagging absent in IDC 807 drums. AK Documentation updated.
40	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
41	04	1/6/2004	1	1/21/2004	C Major	RF-All	All RF Waste	Unexpected Packaging	Use as is. No impact to WMC or HWN	1/21/2004	1	1	7/31/2005	Rev 1 "Stub bag" - applicable to cntnrs that have undergone VE or coring. AK Documention updated.
42	04	1/6/2004	1	8/15/2004	B Tolman	RF-004	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	1/6/2004	2	2	11/2/2006	R1 - Vermiculite or Oil Dri outside of expected time frames. RPT 05 addresses issue
43	04	1/6/2004			B Tolman	RF-004	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	1/6/2004	2	2	11/15/2006	Residual liquids may be present in IDC 004 waste
44	04	1/7/2004			B Tolman	RF-330	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	1/7/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issue
45	04	1/7/2004			B Tolman	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	1/7/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issue
46	04	1/8/2004			B Tolman	RF-001	BNINW216	Unexpected Materials	Use as is. No impact to WMC or HWN	1/8/2004	1	1	7/31/2005	Absorbent (Oil Dri, vermiculite) outside of expected time frames. AK Documentation updated.
47	04	1/13/2004	1	1/21/2004	C Major	RF-007	BNINW218	Unexpected Packaging	Use as is. No impact to WMC or HWN	1/21/2004	1	1	7/31/2005	R1 >2 layers of cntnmnt may be found in Bldg 374 sludges (see 10005779). AK Documentation updated.
48	04	1/14/2004			B Tolman	RF-807	BNINW218	Unexpected Materials	Use as is. No impact to WMC or HWN	1/14/2004	1	1	7/31/2005	Oil-Dri may be present in IDC 807 drums. AK Documentation updated.
49	04	1/20/2004			B Tolman	RF-All	All RF Waste	Unexpected Packaging	Use as is. No impact to WMC or HWN	1/20/2004	1	1	7/31/2005	Drum bagging absent in RF drums (all IDCs). AK Documentation updated.
50	04	1/20/2004	1	3/10/2004	B Tolman	RF-001	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	1/20/2004	2	2	7/31/2005	Round bottom liner in lieu of 90-mil rigid liner. AK Documentation updated.
51	04	1/24/2004	1	5/30/2005	S Hailey	RF-001	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	5/31/2005	1	1	7/31/2005	Rev. 1 applies to RF-IDC-002. More than 2 layers of containment
52	---	1/29/2004			B Erhardt	Not used	N/A	Other	NOT USED - CANCELLED AKR		0	0		
53	04	1/31/2004			B Tolman	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	1/31/2004	2	2	11/2/2006	Absorbent (Oil Dri, vermiculite) outside of expected time frames. RPT 05 addresses issue
54	04	1/31/2004	1	2/8/2004	B Tolman	RF-480	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	1/31/2004	2	2	2/21/2006	Rev 1 Liner absence of unexpected liner type does not impact characterization
55	04	2/2/2004	1	4/27/2004	B Tolman	RF-376	BN510	IDC Change	Change IDC from RF-330 to RF-376	2/2/2004	2	2	5/19/2005	IDC Change in WTS; operator recommended 338, but more approp IDC is 376. See NCR 4017 for container 10006796.
56	04	2/2/2004			B Tolman	RF-330	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	2/2/2004	2	2	11/2/2006	Absorbent (Oil Dri, vermiculite) outside of expected time frames. RPT 05 addresses issue

AKR	AKR "Year" (i.e., AKR-##)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
57	04	2/2/2004			B Tolman	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	2/2/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issue
58	04	2/2/2004			B Tolman	RF-371	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/2/2004	2	2	11/2/2006	Cardboard liner used after 1972; includes 90 mil liner. RPT 05 addresses issue
59	04	2/7/2004			C Major	RF-004	BN004	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/7/2004	2	2	11/2/2006	3 layers of packing found. RPT 05 addresses issue
60	04	2/8/2004			B Tolman	RF-480	BN510	IDC Change	Change IDC from RF-480 to RF-970	2/8/2004	2	2	11/2/2006	IDC Change in WTS; associate IDC 970 with prefix 1371 in applicable documentation
61	04	2/8/2004			B Tolman	RF-374	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/8/2004	2	2	11/2/2006	Cardboard liner used after 1972 instead of rigid liner. RPT 05 addresses issue
62	04	2/8/2004			B Tolman	RF-337	BNINW198	Unexpected Materials	Use as is. No impact to WMC or HWN	2/8/2004	2	2	11/2/2006	Absorbent (Oil Dri, vermiculite) outside of expected time frames. RPT 05 addresses issue
63	04	2/9/2004			B Tolman	RF-696	BNINW222	Unexpected Materials	Use as is. No impact to WMC or HWN	2/9/2004	2	2	11/2/2006	Absorbent (Oil Dri, vermiculite) outside of expected time frames.RPT 05 addresses issue
64	04	2/9/2004			B Tolman	RF-800	BNINW216	Unexpected Materials	Use as is. No impact to WMC or HWN	2/9/2004	1	1	7/31/2005	Absorbent (Oil Dri, vermiculite) outside of expected time frames. AK Documentation updated.
65	04	2/9/2004			B Tolman	RF-300	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	2/9/2004	2	2	11/2/2006	Cardboard liner used after 1972. RPTs 05 and 56 addresses issue
66	04	2/10/2004			B Tolman	RF-330	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	2/10/2004	2	2	11/2/2000	Absence of rigid liner does not impact WMC or HWN.RPT 05 addresses issue
67	04	2/10/2004	1	3/7/2004	B Tolman	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	2/10/2004	2	2	11/2/2006	Rev 1 Liner type (cardboard or rigid) does not impact WMC or HWN. RPT 05 addresses issue
68	04	2/15/2004			B Tolman	RF-337	BNINW198	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/15/2004	2	2	11/2/2006	Liner absence or unexpected liner type does not impact characterization. RPT 05 addresses issue
69	04	2/15/2004			B Tolman	RF-336	BNINW169	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/15/2004	2	2	11/2/2006	More than 4 layers of containment. RPT 05 addresses issue
70	04	2/18/2004			B Tolman	RF-376	BNINW211	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/18/2004	2	2	11/2/2006	Liner type (cardboard or rigid) does not impact WMC or HWN. RPT 05 addresses issue
71	04	2/18/2004			B Tolman	RF-480	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	2/18/2004	2	2	11/2/2006	Wet Cell lead battery with verifiable liquids less than 1" (excludes non-verifiable batteries)
72	04	2/22/2004			B Tolman	RF-337	BNINW198	Unexpected Materials	Use as is. No impact to WMC or HWN	2/22/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issue
73	04	3/3/2004			B Tolman	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	3/3/2004	1	1	11/2/2006	Poly bottles do not impact WMC or HWN assignments. RPT 05 addresses issue
74	04	3/7/2004			B Tolman	RF-336	BNINW169	Unexpected Materials	Use as is. No impact to WMC or HWN	3/7/2004	2	2	11/2/2006	Fiber packs may be present in IDC 336 waste. RPT 05 addresses issue
75	04	3/8/2004	1	1/24/2008	B Tolman	RF-300	BN510	Unexpected Materials	No impact to WMC or HWN.	3/8/2004	1	1	2/14/2008	Revised to identify Kraft Tubes may be present in IDC 300 waste.
76	04	3/10/2004			B Tolman	RF-001	UNK	Unexpected Packaging	Change IDC from RF-001 to UN-00B	3/10/2004	3	3	11/2/2006	Drums are inconsistent with known AK. (Update: Retained IDC RF-001)
77	04	5/18/2004			S Hailey	RF-001	BNINW216	Unexpected Packaging	Change IDC from RF-001 to RF-290	5/18/2004	4	4	11/2/2006	IDC Changes recommended for container within container IDC 001s. WTS and RPT 05 addresses issues (Update: Retained IDC RF-001)
78	04	6/2/2004			S Hailey	RF-696	BNINW222	IDC Change	Change IDC from RF-292 to RF-696	6/9/2004	0	0		IDC Change recommended for container labeled as IDC 007. Historical IDC of 292
79	04	6/3/2004			B Tolman	RF-320	BN510	IDC Change	Change IDC from RF-480 to RF-320	6/3/2004	1	1	11/2/2006	Drum contains >50% volume IDC 320. WTS updated
80	04	6/3/2004	1	2/27/2006	C Major	MD-All	BN835	Radionuclide	Use as is. No impact to WMC or HWN	10/17/2004	1	1	7/31/2005	K-40 detected during RA of MD waste; identify across all MD waste streams.R1 2/27/06
81	---	6/7/2004			C Major	Not used	BN290	Other	NOT USED - CANCELLED AKR		0	0		
82	04	6/9/2004			B Tolman	RF-All	All RF Waste	Other	Use as is. No impact to WMC or HWN	6/9/2004	3	3	7/31/2005	Prefixes RD93, RD94, RD95, BN91, BN92, and BN93 acceptable for RF waste
83	04	6/9/2004			B Erhardt	RF-807	BNINW218	Unexpected Materials	Use as is. No impact to WMC or HWN	6/9/2004	1	1	7/31/2005	Vermiculite is an acceptable absorbent type for RF-807 containers. AK Documentation updated.
84	04	6/10/2004			B Tolman	RF-002	BNINW216	Unexpected Materials	Use as is. No impact to WMC or HWN	6/10/2004	1	1	7/31/2005	Vermiculite outside of expected time frames. AK Documentation updated.
85	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
86	04	6/10/2004	1	10/21/2008	S Hailey	RF-425	BN425	IDC Change	Change IDC from RF-292 to RF-425	6/15/2004	1	1	11/2/2006	IDC Change recommended from 292 to UN-00B. AKR determined RF-425 to be appropriate. WTS and RPT 05 addresses issues
87	04	6/14/2004			C Major	RF-292	BNINW222	Unexpected Packaging	Use as is. No impact to WMC or HWN	6/15/2004	3	3	11/2/2006	More than 4 layers of containment. RPT 05 addresses issues
88	04	6/15/2004			S Hailey	RF-001	BNINW216	IDC Change	Change IDC from RF-290 to RF-001	6/15/2004	1	1	11/2/2006	IDC Change recommended by operator as 290. AKR determined IDC should go back to 001. WTS and RPT 05 addresses issues
89	04	6/15/2004			S Hailey	RF-440	BN510	IDC Change	Change IDC from RF-337 to RF-440	6/16/2004	0	0		SEE AKR-04-206R1!! IDC Change recommended on 3 drums from an RF-337 to an RF-440.
90	04	6/16/2004			S Hailey	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	6/16/2004	0	0		IDC Change recommended from RF-330 to RF-480. NCR 4764
91	04	6/16/2004			S Hailey	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	6/17/2004	0	0		IDC Change recommended from RF-330 to RF-480. NCR 5040
92	04	6/17/2004			S Hailey	RF-425	BN425	IDC Change	Change IDC from RF-480 to RF-425	6/17/2004	1	1	11/2/2006	IDC Change recommended from RF-480 to RF-292. Final IDC of RF-425 NCR-4885. WTS addresses issues
93	04	6/17/2004			S Hailey	RF-440	BN510	IDC Change	Change IDC from RF-336 to RF-440	6/17/2004	0	0		IDC Change recommended from RF-336 to RF-440. NCR 4887
94	04	6/17/2004			S Hailey	RF-960	BNINW510	IDC Change	Change IDC from RF-960 to RF-336	6/17/2004	0	0		IDC Change recommended from RF-960 to RF-336. NCR 4888
95	04	6/17/2004			S Hailey	RF-440	BNINW510	IDC Change	Change IDC from RF-440 to RF-330	6/17/2004	0	0		IDC Change recommended from RF-440 to RF-330. NCR 4889
96	04	6/17/2004			S Hailey	RF-440	BNINW510	IDC Change	Change IDC from RF-440 to RF-336	6/17/2004	0	0		IDC Change recommended from RF-440 to RF-336. NCR 5033
97	04	6/17/2004			S Hailey	RF-950	BNINW510	IDC Change	Change IDC from RF-900 to RF-950	6/17/2004	0	0		IDC Change recommended from RF-900 to RF-950. NCR 4893
98	04	6/17/2004			S Hailey	UN-00A	BNINW510	IDC Change	Change IDC from UN-00A to RF-337	6/21/2004	1	1	11/2/2006	IDC Change recommended from RF-336 to unknown. Final IDC of 337 NCR 4894. WTS addresses issues
99	04	6/21/2004	1	8/31/2004	S Hailey	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-480	10/28/2004	0	0		Rev 1. IDC Change recommended from RF-337 to RF-480. NCR 4895
100	04	6/30/2004			B Erhardt	RF-003	BN003	Unexpected Materials	Use as is. No impact to WMC or HWN	6/30/2004	1	1	11/2/2006	Vermiculite in RF-IDC-003 waste different than expected quantities of AK documentation. RPT 05 addresses issues
101	04	7/1/2004			B Erhardt	RF-441	BN247	Other	Add Prefix 0012 and 0047 to RF-441	7/8/2004	1	1	3/15/2006	Prefix 0012 and 0047 acceptable for RF-441
102	04	7/8/2004			B Tolman	RF-376	BN510	IDC Change	Change IDC from RF-376 to RF-970	7/8/2004	1	1	11/2/2006	IDC Change recommended from RF-376 to RF-970. Add Prefix 0002 to AK. NCR 5042
103	04	7/8/2004			B Erhardt	RF-464	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	7/8/2004	1	1	11/2/2006	Oil-Dri identified outside of expected quantity of AK Document. RPT 05 addresses issues
104	04	7/14/2004			S Hailey	RF-480	BN510	IDC Change	Change IDC from RF-337 back to RF-480	8/31/2004	1	1	11/2/2006	IDC Change recommended from RF-337 to RF-480. NCR 5045, NCR 6394. WTS updated

AKR	AKR "Year" (i.e., AKR-##)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
105	04	7/14/2004			B Tolman	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-335	7/14/2004	1	1	11/2/2006	IDC Change recommended from RF-337 to RF-335. Add Prefix 0004 to AK. NCR 5323
106	04	7/15/2004			B Tolman	RF-432	BN432T	IDC Change	Change IDC from RF-337 to RF-432	2/28/2005	1	1	11/2/2006	Investigate historical ID before completing AKR. NCR 5331. Historical ID cannot be verified. Historical verified WTS updated
107	04	7/16/2004			B Erhardt	RF-338	BN510	Other	Add Prefix 0089 to RF-338	7/16/2004	1	1	3/15/2006	Prefix 0089 acceptable for RF-338
108	04	7/16/2004			B Erhardt	RF-960	BN510	Other	Add Prefix 0089 to RF-960	7/16/2004	1	1	3/15/2006	Prefix 0089 acceptable for RF-960
109	04	7/18/2004			B Erhardt	RF-480	BN510	Other	Add Prefix 0089 to RF-480	7/18/2004	1	1	3/15/2006	Prefix 0089 acceptable for RF-480
110	04	7/19/2004			B Erhardt	RF-371	BNINW161	Other	Add Prefix 0076 to RF-371	7/19/2004	1	1	11/2/2006	Prefix 0076 acceptable for RF-371. RPT 56 updated
111	04	7/19/2004			B Erhardt	RF-337	BNINW198	Other	Add Prefix 0012 to RF-337	7/19/2004	1	1	3/12/2006	Prefix 0012 acceptable for RF-337
112	04	7/22/2004	1	8/6/2004	B Tolman	RF-004	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	R1 - Absence/variable quants of absorbent acceptable - applies to both Oil-Dri & vermiculite. RPT 05 addresses issues
113	04	7/22/2004			B Tolman	RF-817	BN817	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issues
114	04	7/22/2004			B Tolman	RF-004	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	Plastic bagging identified. RPT 05 addresses issues
115	04	7/22/2004	1	8/8/2004	B Tolman	RF-004	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	R1 - Miscellaneous metals (including Pb tape) identified. RPT 05 addresses issues
116	04	7/22/2004	1	8/13/2004	B Tolman	RF-003	BN003	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	R1 - Absence/variable quantities of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issues
117	04	7/22/2004			B Tolman	RF-822	BN432T	Unexpected Materials	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite. RPT 05 addresses issues
118	04	7/22/2004			B Tolman	RF-003	BN003	Unexpected Packaging	Use as is. No impact to WMC or HWN	7/22/2004	2	2	11/2/2006	Unexpected packaging configuration (no bag)., RPT 05 addresses issues
119	---	7/23/2004			B Tolman	Not used	BN836	Unexpected Materials	NOT USED - CANCELLED AKR		0	0		
120	04	7/26/2004			B Erhardt	RF-440	BNINW243	Other	Add Prefix 0744 to RF-440	7/26/2004	1	1	3/12/2006	Prefix 0744 acceptable for RF-440
121	04	7/26/2004			B Erhardt	RF-292	BNINW222	Unexpected Materials	Iron Based or Other Metals for paint cans	7/26/2004	1	1	11/2/2006	Iron-Based Metals/Alloys or Other Metals acceptable to describe paint cans. RPT 05 addresses issues
122	04	7/26/2004			B Erhardt	RF-335	BNINW211	Other	Add Prefix 0011 to RF-335	7/27/2004	1	1	11/2/2006	Prefix 0011 acceptable for RF-335
123	04	7/27/2004			B Erhardt	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	7/27/2004	1	1	11/2/2006	Oil-Dri identified outside of expected quantity of AK Document. RF-374. RPT 05 addresses issues
124	04	7/27/2004			B Erhardt	RF-480	BN510	Other	Add Prefix 0067 to RF-480	7/27/2004	1	1	3/12/2006	Prefix 0067 acceptable for RF-480
125	04	8/7/2004			B Tolman	RF-802	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	8/13/2004	2	2	11/2/2006	Absence of absorbent acceptable - applies to Oil-Dri, vermiculite, and Portland cement. RPT 05 addresses issues
126	04	8/8/2004			B Tolman	RF-801	BN801	Unexpected Packaging	Use as is. No impact to WMC or HWN	8/13/2004	2	2	11/2/2006	Rev 1 Unexpected packaging configuration - > 2 layers containment. RPT 05 addresses issues
127	04	8/8/2004	1	9/24/2004	C Major	RF-330	BNINW169	Other	Use as is. No impact to WMC or HWN	9/24/2004	1	1	3/19/2006	R1 - Container pack dates expanded to include April 1972 to Oct. 1976 for prefix 0090
128	04	8/13/2004			B Tolman	RF-004	BN004	Unexpected Packaging	Use as is. No impact to WMC or HWN	8/13/2004	2	2	11/2/2006	Unexpected packaging configuration. RPT 05 addresses issues
129	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
130	04	8/13/2004			B Tolman	RF-802	BN004	Unexpected Materials	Use as is. No impact to WMC or HWN	8/13/2004	2	2	11/2/2006	Miscellaneous metals identified. RPT 05 addresses issues
131	04	8/13/2004			B Tolman	RF-960	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	8/13/2004	2	2	11/2/2006	Oil Dri outside of expected quantities. RPT 05 addresses issues
132	04	8/14/2004			B Tolman	RF-All	All RF Waste	Unexpected Packaging	Use as is. No impact to WMC or HWN	8/14/2004	1	1	7/31/2005	Twist/tied bag closure method ID'd during RTR; twist/taped expected. AK Documentation updated.
133	04	8/14/2004			B Tolman	RF-801	BN801	Unexpected Packaging	Use as is. No impact to WMC or HWN	8/14/2004	2	2	11/2/2006	Drum bagging absent in IDC 801 drums. RPT 05 addresses issues
134	04	8/14/2004			B Tolman	RF-801	BN801	Unexpected Materials	Use as is. No impact to WMC or HWN	8/14/2004	2	2	11/2/2006	Plastic waste present in IDC 801 waste. RPT 05 addresses issues
135	04	8/21/2004			S Carpenter	RF-374	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	8/21/2004	1	1	11/2/2006	Blacktop, concrete and dirt in IDC 336, NCR 5569, update pack dates prefix 0002. RPT 56 updated
136	04	8/21/2004	1	3/12/2005	S Carpenter	RF-464	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	8/21/2004	1	1	11/2/2006	Plexiglass waste in IDC 375 Oil-Dri, NCR 5636, add prefix 0029 as generation
137	04	8/21/2004	1	10/27/2004	C Major	RF-003	BN003	Unexpected Materials	Use as is. No impact to WMC or HWN	8/21/2004	2	2	11/2/2006	Plastic (poly bottles) identified in waste. RPT 05 addresses issues
138	04	8/23/2004			B Tolman	RF-All	All RF Waste	Other	Use as is. No impact to WMC or HWN	8/23/2004	2	2	11/2/2006	Prefix 0056 RF-All: have identified radionuclides of concern; previously unknown. RPT 07 addresses radionuclides
139	04	8/31/2004			S Hailey	RF-001	BNINW216	IDC Change	Change IDC from RF-290 to RF-001	8/31/2004	1	1	11/9/2006	IDC Change from 290 to 001. NCR 4699
140	04	8/31/2004			S Hailey	RF-007	BNINW218	IDC Change	Change IDC from UN-00B to RF-007	8/31/2004	0	0		IDC Change from UN-00B to RF-007. NCR 5699
141	---	9/1/2004			S Carpenter	Not used			NOT USED - CANCELLED AKR		0	0		Replaced with AKR-05-327
142	---	9/1/2004			S Carpenter	Not used			NOT USED - CANCELLED AKR		0	0		Replaced with AKR-05-327
143	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
144	04	9/4/2004			B Erhardt	RF-338	BN510	Other	Add Prefix 0076 to RF-338	9/4/2004	1	1	3/12/2006	Prefix 0076 acceptable for RF-338
145	04	9/4/2004			B Erhardt	RF-337	BNINW198	Other	Add Prefix 0011 to RF-337	9/4/2004	1	1	3/12/2006	Prefix 0011 acceptable for RF-337
146	04	9/5/2004	1	9/23/2004	B Erhardt	MD-836	BN836	Radionuclide	Use as is. No impact to WMC or HWN	9/5/2004	1	1	2/27/2006	R1 - MD-IDC-835. R0 - Co-60 identified in MD-IDC-836 waste
147	04	9/6/2004			S Carpenter	RF-440	BN510	IDC Change	Change IDC from RF-330 to RF-440	9/6/2004	1	1	3/12/2006	3 affected containers, NCRs: 9132, 8600, 7784, add prefix 0017 as generation
148	04	9/6/2004			S Carpenter	RF-440	BN510	IDC Change	Change IDC from RF-330 to RF-440	9/6/2004	1	1	3/12/2006	10015096, NCR 8614, prefix 0002 package dates update
149	04	9/6/2004			S Carpenter	RF-440	BN510	IDC Change	Change IDC from RF-330 to RF-440	9/7/2004	1	1	3/12/2006	10026027, NCR 9089, prefix 0744 package dates update
150	04	9/6/2004			S Carpenter	RF-337	BN510	IDC Change	Change IDC from RF-330 to RF-337	9/7/2004	1	1	11/9/2006	10021700, NCR 8596, no changes to AK
151	04	9/6/2004			S Carpenter	RF-337	BN510	IDC Change	Change IDC from RF-330 to RF-337	9/7/2004	1	1	3/12/2006	10026025, NCR 9090, update prefix 0746 package dates
152	04	9/6/2004			S Carpenter	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	9/7/2004	1	1	11/9/2006	10020221, NCR 9365, no changes to AK
153	04	9/8/2004			B Tolman	RF-440	BN510	IDC Change	Change IDC from RF-336 to RF-480	9/8/2004	1	1	11/9/2006	Change approved. NCR 5041.
154	04	9/8/2004	1	9/1/2005	S Carpenter	MD-All	All MD Waste	Unexpected Packaging	Absent plywood spacers	9/1/2005	1	1	2/19/2006	REV 1: Absence of plywood spacer is acceptable for all MD IDCs. AK Documentation updated.
155	04	9/8/2004			B Tolman	MD-All	BN835	Unexpected Materials	Use as is. No impact to WMC or HWN	9/9/2004	1	1	7/31/2005	"Oil-Dri" can be used in RTR to describe clay absorbents in MD waste. AK Documentation updated.
156	04	9/9/2004			N Kirk	RF-960	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/9/2004	2	2	11/9/2006	Rigid liner absent for drums packed 12/26/72 and 1/10/73.
157	04	9/9/2004			N Kirk	RF-900	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	9/9/2004	2	2	11/9/2006	"Oil-Dri" found in quantities outside of expected quantities.
158	04	9/9/2004			P Fetzer	RF-950	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	9/9/2004	2	2	11/9/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite

AKR	AKR "Year" (i.e., AKR-###)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
159	04	9/13/2004			B Erhardt	RF-432	BN432M	Unexpected Materials	Use as is. No impact to WMC or HWN	9/13/2004	1	1	11/9/2006	Oil-Dri identified outside of expected quantity of AK Document. RF-432
160	04	9/14/2004			P Fetzer	RF-950	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	9/14/2004	2	2	11/9/2006	Unexpected material (metal debris, cellulosics) identified
161	04	9/14/2004			P Fetzer	RF-371	BNINW161	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/14/2004	2	2	11/9/2006	Unexpected packaging; no 90 mil liner, cardboard liner identified
162	04	9/14/2004			P Fetzer	RF-960	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/14/2004	2	2	11/9/2006	Unexpected packaging; no 90 mil liner, cardboard liner identified
163	04	9/14/2004			B Tolman	RF-480	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/14/2004	2	2	2/21/2006	Absence of rigid liner does not impact WMC or HWN. AK Documentation updated.
164	04	9/15/2004			P Fetzer	RF-425	BN425	Radionuclide	Use as is. No impact to WMC or HWN	9/16/2004	2	2	11/9/2006	Prefix 0075 includes Enriched Uranium for IDC 425
165	04	9/15/2004			N Kirk	RF-374	BN510	Other	Use as is. No impact to WMC or HWN	9/15/2004	1	1	11/9/2006	Pack date for IDC RF-374, Prefix 0746 outside of expected time frame
166	04	9/15/2004	1	11/6/2004	N Kirk	RF-376	BNINW211	Other	Add Prefix 0076 to RF-376	11/6/2004	1	1	11/9/2006	Rev 1 Prefix 0076 acceptable for RF-376; Rev. 1 included pack dates
167	04	9/15/2004			P Fetzer	RF-All	BN510	Other	Use as is. No impact to WMC or HWN	9/16/2004	2	2	11/9/2006	Prefix 0088 RF-All: have identified radionuclides of concern; previously unknown
168	---	9/17/2004			P Fetzer	Not used		Other	NOT USED - CANCELLED AKR		1	1	11/9/2006	Revised historical information. AKR not required. Determined to be MD-836
169	04	9/17/2004			N Kirk	RF-441	BNINW247	Other	Add Prefix 0002 to RF-441	9/17/2004	1	1	3/15/2006	Prefix 0002 acceptable for RF-441
170	04	9/17/2004			B Tolman	RF-292	BN510	IDC Change	Change IDC from RF-292 to RF-328	9/17/2004	2	2	3/15/2006	IDC Change 10024125; NCR 8800
171	04	9/19/2004			B Erhardt	RF-441	BNINW247	Other	Add Prefix 0005 to RF-441	9/19/2004	1	1	3/15/2006	Prefix 0005 acceptable for RF-441
172	04	9/19/2004			B Erhardt	RF-481	BNINW296	Other	Add Prefix 0041 to RF-481	9/19/2004	1	1	3/12/2006	Prefix 0041 acceptable for RF-481
173	04	9/22/2004	1	2/15/2005	C Major	RF-336	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	9/22/2004	2	2	11/9/2006	D-cells batteries observed in RF-336 (just like -330 and -337 waste).
174	04	9/24/2004			N Kirk	RF-432	BN432M	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/24/2004	2	2	11/9/2006	Absence of absorbent acceptable - applies to both Oil-Dri and vermiculite
175	04	9/24/2004	2	10/16/2004	C Major	MD-835	BN835	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/24/2004	1	1	7/31/2005	R2 - Also for MD-IDC 834. Absence of drum bagging (layers of cntnmnt). AK Documentation updated.
176	04	9/24/2004	2	6/7/2005	P Fetzer	MD-835	BN835	Unexpected Materials	Use as is. No impact to WMC or HWN	9/24/2004	1	1	7/31/2005	R2 - rubber and plastic debris (gasket, gloves) found in MD-IDC 834 & -835.
177	04	9/26/2004			B Erhardt	RF-339	BNINW252	Other	Add Prefix 0021 to RF-339	9/26/2004	1	1	3/12/2006	Prefix 0021 acceptable for RF-339
178	04	9/27/2004			B Erhardt	RF-330	BNINW169	Other	Add Prefix 0033 to RF-330	9/27/2004	1	1	3/12/2006	Prefix 0033 acceptable for RF-330
179	04	9/27/2004			B Erhardt	RF-All	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	9/27/2004	1	1	3/12/2006	Cm-244 identified in all Rocky Flats waste streams
180	04	9/27/2004			B Erhardt	RF-338	BN510	Other	Add Prefix 0001 to RF-338	9/27/2004	1	1	11/9/2006	Prefix 0001 acceptable for RF-338
181	04	9/28/2004			B Erhardt	RF-338	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	9/28/2004	2	2	11/9/2006	Absence of rigid liner does not impact WMC or HWN
182	04	10/2/2004			C Major	RF-976	BN976	Unexpected Materials	Use as is. No impact to WMC or HWN	10/2/2004	1	1	11/9/2006	Unexpected absorbent (Oil-Dri) found in RF-976 sludge
183	---	10/2/2004			N Kirk	Not used	N/A	Other	NOT USED - CANCELLED AKR		0	0		
184	04	10/2/2004			B Tolman	RF-001	BNINW216	Unexpected Materials	Use as is. No impact to WMC or HWN	10/2/2004	1	1	7/31/2005	Unexpected material (glass debris) identified. AK Documentation updated.
185	04	10/6/2004			B Erhardt	RF-320	BN510	Unexpected Packaging	No Impact to WMC or HWN	10/6/2004	1	1	3/15/2006	Container pack date of 12-18-75 acceptable for IDC 320 with prefix 0002
186	04	10/7/2004			B Erhardt	RF-339	BNINW252	Other	Add Prefix 0071 to RF-339	10/7/2004	1	1	3/12/2006	Prefix 0071 acceptable for RF-339
187	04	10/7/2004			B Erhardt	RF-338	BN510	Other	Expand pack date range for RF-338	10/15/2004	2	2	3/12/2006	Expand expected pack date range for RF-338, prefix 0076. No other impacts.
188	04	10/15/2004			B Erhardt	RF-007	BNINW218	IDC Change	Change IDC from Unknown to RF-007	10/15/2004	0	0		IDC Change for container 10013157. See NCR 5700
189	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
190	04	10/15/2004			B Erhardt	RF-330	BNINW169	Other	Add Prefix 0031 to RF-330	10/15/2004	1	1	3/12/2006	Prefix 0031 acceptable for RF-330
191	04	10/15/2004			B Erhardt	RF-001	BNINW216	IDC Change	Change IDC from Unknown to RF-001	10/15/2004	1	1	11/9/2006	IDC Change for container 10013160. See NCR 5701
192	04	10/16/2004			P Fetzer	RF-432	BN432T	Other	Add Prefix 0087 to RF-432	10/16/2004	1	1	11/9/2006	Prefix 0087 acceptable for RF-432
193	04	10/16/2004			P Fetzer	RF-All	BNINW510	Other	Use as is. No impact to WMC or HWN	10/16/2004	2	2	11/9/2006	Prefix 0087 RF-All: have identified radionuclides of concern; previously unknown
194	04	10/16/2004	1	10/30/2004	B Erhardt	RF-336	BN510	Other	Expand pack date range for RF-336	10/30/2004	1	1	11/9/2006	Rev 1 Expand expected pack date range for RF-336, prefix 0090. No other impacts.
195	04	10/17/2004			N Kirk	RF-292	BNINW222	Other	Expand pack date range for RF-292	10/17/2004	2	2	11/9/2006	Expand expected pack date range for RF-292, prefix 0002. No other impacts.
196	04	10/17/2004			N Kirk	RF-002	BNINW216	Unexpected Packaging	Use as is. No impact to WMC or HWN	10/17/2004	2	2	7/31/2005	Absence of rigid liner does not impact WMC or HWN. AK Documentation updated.
197	04	10/19/2004			P Fetzer	RF-320	BN510	Other	Use as is. No impact to WMC or HWN	10/17/2004	1	1	3/12/2006	Prefix 0087 acceptable for RF-320
198	04	10/20/2004			B Erhardt	RF-374	BN510	IDC Change	Change IDC from RF-330 to RF-374	10/20/2004	0	0		IDC Change for container 10015096. See NCR 8614
199	04	10/24/2004			P Fetzer	MD-836	BN836	Other	Use as is. No impact to WMC or HWN	10/26/2004	1	1	11/9/2006	Ac-227 identified in MD-IDC-836 waste
200	04	10/26/2004			P Fetzer	RF-All	BN510	Other	Use as is. No impact to WMC or HWN	10/27/2004	2	2	11/9/2006	Prefix 0035 RF-All: have identified radionuclides of concern; previously unknown
201	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
202	04	10/26/2004			B Tolman	RF-All	RF BN ALL	Other	Use U127A for RF prefix and pack dates	10/27/2004	1	1	11/9/2006	Prefixes and pack dates for RF waste will be verified from U127A database
203	04	10/28/2004				Not used			NOT USED - CANCELLED AKR		0	0		
204	---	10/29/2004			B Erhardt	Not used	BN510	IDC Change	NOT USED - CANCELLED AKR		0	0		
205	04	10/30/2004			B Erhardt	RF-330	BNINW169	Other	Expand pack date range for IDC 330, prefix 0076	10/30/2004	2	2	11/9/2006	Expand expected pack dates to include 8-27-71 to 3-5-86 for RF-330, prefix 0076
206	04	10/30/2004	1	3/31/2005	B Erhardt	RF-337	BN510	IDC Change	Change IDC from RF-440 to RF-337	10/30/2004	0	0		IDC Change for container 10003892. See NCR 10310. R1 adds 10015197, NCR 10312 (3-30-05)
207	04	11/6/2004	1	10/21/2008	B Erhardt	RF-425	BN510	IDC Change	Change IDC from RF-292 to RF-425	11/6/2004	1	1	11/9/2006	IDC Change for container 10003226. See NCR 10071
208	05	1/14/2005			B Tolman	RF-All	All RF Waste	Radionuclide	Expectation of Cs-137 and Sr-90 in WSS	2/28/2005	8	8	7/31/2005	Cs-137/Sr-90 expected only in RF-004 and 480 wastes. SUPERSEDES AKR-03-9. AK updated.
209	05	2/26/2005			S Carpenter	RF-320	BN510	Unexpected Packaging	Use as is. No impact to WMC or HWN	2/26/2005	2	2	11/9/2006	>4 layers of confinement may be expected for IDC 320 (Heavy Non-SS Metal)
210	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
211	05	3/9/2005			B Tolman	RF-001	BNINW216	Other	Use as is. No impact to WMC or HWN	3/9/2005	1	1	4/9/2005	IDCs 001, 002, 800 - Use HGAS flammable VOC results for WWIS reporting
212	05	3/9/2005			B Tolman	RF-007	BNINW218	Other	Use as is. No impact to WMC or HWN	3/9/2005	1	1	7/31/2005	IDCs 007, 803, 807b - Use HGAS flammable VOC results for WWIS reporting. AK Documentation updated.
213	05	3/18/2005			C Major	RF-330	BNINW247	IDC Change	Change IDC from RF-330 to RF-441	3/18/2005	0	0		IDC Change for container 10000967. See NCR 7538
214	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
215	05	3/21/2005			V Sendelweck	RF Box Waste	BN510	Other	Use 1970 as minimum RF generation date	8/27/2005	1	1	11/9/2006	Use 1970 as RFP minimum generation date for boxed waste
216	05	3/24/2005			C Major	BNINW216	BNINW216	HWN	Use as is. Statistics applied to WS vs lot	3/24/2005	0	0		1,1 Dichloroethylene UCL90 above PRQL; below PRQL applied to WS
217	05	3/24/2005			B Erhardt	RF-003	BN003	Unexpected Materials	Use as is. No impact to WMC or HWN	3/24/2005	2	2	11/9/2006	Unexpected material (metal debris) identified during RTR.
218	05	3/24/2005			B Erhardt	RF-375	BN510	Unexpected Materials	Use as is. No impact to WMC or HWN	3/24/2005	2	2	11/9/2006	Unexpected material (leaded glass) identified during RTR.
219	05	3/30/2005			B Tolman	RF-802	BN004	Unexpected Packaging	Use as is. No impact to WMC or HWN	3/30/2005	2	2	11/9/2006	Unexpected packaging configuration
220	05	3/31/2005			B Tolman	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-480	3/31/2005	0	0		IDC Changed from RF-337 to RF-480 based on RTR examination
221	---	3/31/2005			B Tolman	Not used			NOT USED - CANCELLED AKR	3/31/2005	0	0		Replaced with AKR-05-327
222	05	4/6/2005			B Erhardt	RF-002	BNINW216	IDC Change	Change IDC from RF-001 to RF-002	4/6/2005	0	0		IDC Change for container 10021738 from RF-001 to RF-002
223	05	4/7/2005			B Erhardt	RF-440	BN510	IDC Change	Change IDC from RF-004 to RF-440	4/7/2005	1	1	11/9/2006	IDC Change for container 10021281 from RF-004 to RF-440

AKR	AKR "Year" (i.e., AKR-####)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
224	05	4/7/2005			J Dye	MD-834-836	BN835	Unexpected Materials	Use as is. No impact to WMC or HWN	4/8/2005	1	1	7/31/2005	Vermiculite identified in IDC MD-834, 835, 836 waste. AK Documentation updated.
225	05	4/11/2005			B Tolman	BNINW216	BNINW216	HWN	Use as is. Statistics applied to WS	4/11/2005	0	0		1,1-Dichloroethane UCL90 above PRQL for lot; below PRQL applied to WS
226	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
227	05	4/14/2005			B Erhardt	MD-834	BN835	Unexpected Packaging	Use as is. No impact to WMC or HWN	4/14/2005	1	1	7/31/2005	Absence of rigid liner does not impact WMC or HWN. AK Documentation updated.
228	---	4/22/2005			B Erhardt	Not used			NOT USED - CANCELLED AKR		0	0		Replaced with AKR-05-327
229	---	8/20/2008				Not used			NOT USED - CANCELLED AKR		0	0		
230	05	4/26/2005			B Tolman	BN-510	BN510	HWN	Use as is. No impact to WMC or HWN	4/26/2005	0	0		Determines D035 (MEK) is not applicable to this waste stream/IDC
231	05	4/28/2005			N Kirk	RF-337	BN510	IDC Change	Change IDC from RF-330 to RF-337	4/28/2005	1	1	11/9/2006	IDC Change for container 10026027 from RF-330 to RF-337
232	05	5/2/2005			B Tolman	BNINW216	BNINW216	Other	2-Propanol, 2-methyl- not included as a target analyte	5/2/2005	0	0		Data for the waste stream shows detection of 2-Propanol, 2-methyl- well below 25%
233	05	5/10/2005			B Tolman	RF-Debris	All RF Waste	Radionuclide	Use as is. No impact to WMC or HWN	5/11/2005	5	5	3/19/2006	Acceptability of Cs/Sr in RF-Debris based on feedstock line (BN-508/510).
234	05	5/10/2005			B Tolman	MD-Debris	BN510	Other	Change WMC to 5490 for MD-Debris	5/11/2005	5	5	3/19/2006	Acceptable to change WMC for MD-Debris based of AKR justifications
235	05	5/18/2005	1	8/23/2007	B Tolman	RF-All	BN510	HWN	Remove D032 for Hexachlorobenzene	5/18/2005	3	3	11/9/2006	No data to support application of D032 to RF debris wastes and BN-510
236	05	5/18/2005	2	2/2/2006	S Carpenter	RF-292	BN510	IDC Change	Change IDC back to RF-292	6/15/2005	1	1	11/9/2006	Change IDC back to RF-292
237	05	5/19/2005			V Sendelweck	RF-310	BN310 or BNINW273T	Other	WMC change to S5126	6/6/2005	5	5	3/12/2006	Change WMC to S5126
238	05	5/25/2005			B Erhardt	RF-All	All RF Waste	Unexpected Packaging	Use as is. No impact to WMC or HWN	5/25/2005	1	1	3/12/2006	Absence of 90 ml liner in RF waste (all IDCs)
239	05	6/2/2005	1	11/14/2006	V Sendelweck	RF-372	BN161	HWN	WMC change to S5123, HWN D007 added	6/6/2005	5	5	11/9/2006	IDC 372 grit changed to S5123, HWN D007 added; rev 1 changed WMC to S5490 based on AK (e.g. walnut shells)
240	05	6/2/2005	2	1/3/2006	V Sendelweck	RF-430	BN317 or BN510	Other	revised: WMC change to S5390 for IDCs 430 and 431 changed back to S3211 for IDCs 432 and 822	6/6/2005	7	7	11/9/2006	revised 1/3/06 Resin IDCs 430&431 changed to S5390 and Cemented Resin IDCs 432&822 back to S3211
241	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
242	05	6/9/2005	2	11/29/2005	J Lance	IDC All	All	Unexpected Packaging	Use as is for plastic tie.	8/9/2005	1	1	3/12/2006	Plastic tie & folded & taped bag closure; includes Mound , Revised 8/9/05 R2
243	05	6/9/2005			K Zbryk	MD-834-835	BN835	Other	Removal of spacer and relidding documented in Filter Event Screen	6/9/2005	1	1	7/31/2005	Removal of spacer and relidding will not be recorded on the RTR?VE BDR
244	05	6/14/2005			S Carpenter	RF-330	BNINW222	IDC Change	Change IDC back to RF-330	6/16/2005	1	1	3/12/2006	IDC change for container 10003189 back to original IDC RF-330 based on AK. AK Documentation updated.
245	05	6/15/2005			V Sendelweck	RF-393	BN361	Other	Use as is for absorbent but change WMC to S3119	7/15/2005	5	5	11/9/2006	Container 10015573 WMC should be changed to S3119.
246	05	6/18/2005	4	2/28/2006	C Abbott	MD-834-835	BN835	Unexpected Materials	1,1-dichloroethylene & PERC detected	6/22/2005	2	2	7/31/2005	1,1-dichloroethylene = radiolytic; add PERC to F001/F002 constituents. R4 2-28-06 supersedes.
247	05	6/21/2005	1	6/26/2005	C Abbott	MD-834-835	BN835	Unexpected Packaging	Use as is prior to 3-19, rework after	6/22/2005	0	0		Plywood spacers as packaging and not waste.
248	05	6/24/2005			C Abbott	MD-834-835	BN835	Other	Resolve plywood spacer weight issue	6/24/2005	0	0		Plywood spacers vary in weights dependent on size and thickness of spacer.
249	05	6/29/2005	1	2/27/2006	C Abbott	MD-804	BN510	Unexpected Materials	Change IDC to MD-802	6/30/2005	0	0		WMCs do not change - Containers 10033347 and 10033352 (NCRs 15789, 15746) R1 2/27/06 update Cas
250	05	6/30/2005			C Abbott	RF-480	BN510	Other	No historical information in WTS	6/30/2005	3	3	7/31/2005	Review of RTR and NDA data to determine appropriate identification of containers
251	05	7/9/2005			C Abbott	BN-510	Recon lot BN510.21	Other	Isopropyl alcohol detected >25% of lot	7/9/2005	0	0		% detects of isopropyl alcohol for waste stream <25% - use data as is
252	05	7/10/2005			C Major	RF-374	BN510	IDC Change	Change IDC from RF-374 to RF-480	8/11/2005	2	2	11/9/2006	IDC change for container 10031632.
253	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
254	05	7/18/2005			C Major	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	7/18/2005	2	2	11/9/2006	Change IDC from RF-330 to RF-480
255	05	7/21/2005	1	8/28/2005	C Abbott	BN-508	BN510	Other	WMC change from S5420 to S5490 due to majority of material	7/21/2005	4	4	3/19/2006	WMC changed from S55420 to S5490 to better describe the repackaged waste
256	05	7/28/2005	1	9/3/2005	V Sendelweck	RF-432	BN317	Unexpected Materials	Liquid okay. Change WMC from S3211 to S5313	7/29/2005	3	3	9/3/2005	<1 inch liquid okay. WMC changed from S3211 to S5313 R1 corrects to S5390
257	05	7/29/2005			C Abbott	RF-393		Unexpected Materials	Use as is - no effect to IDC or WMC	8/11/2005	4	4	11/9/2006	Oil Dri greater than 2 quarts in 3 containers.
258	05	7/30/2005			V Sendelweck	RF-All	All RF Waste	Unexpected Materials	Use as is. No impact to IDC or WMC if absorbent <50%.	8/11/2005	2	2	11/9/2006	Absence/variable quantities of absorbent acceptable - applies to both Oil-Dri and vermiculite
259	05	9/21/2005			C Abbott	RF-374	BN510 or BN296	IDC Change	Change IDC from RF-374 to RF-480	9/22/2005	1	1	11/9/2006	Container 10031632 changed IDC 374 to 480- NCR 16050
260	05	8/2/2005			C Abbott	MD-834-835	BN835	Other	Inconsistent identification of NHVOCs	8/11/2005	1	1	3/19/2006	Lot 2 report states no NHVOCs; AK Summary identified acetone and methanol, no HWNs change required
261	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
262	05	8/5/2005			C Abbott	MD-802	BN510	IDC Change	Change IDC from MD-802 to MD-804	8/17/2005	0	0		Container 10035007 found to have >50% various plastic in cardboard cartons and bagged..
263	05	8/5/2005			C Abbott	MD-801	BN510	IDC Change	Change IDC from MD-801 to MD-802	8/18/2005	0	0		Container 10033263 >50% leaded rubber gloves, containerized in sealed metal cans and bagged
264	05	9/24/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-376	9/24/2005	0	0		Container 10005565 ccontents did not match IDC descrption. (NCR 5938).
265	05	8/5/2005			C Abbott	RF-374	BN510	IDC Change	Change IDC to RF-374	9/15/2005	0	0		Container 10000914 was identified as containing metal RTR reflects blacktop and concrete NCR 7779
266	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
267	05	8/5/2005			C Abbott	RF-441	BN510	IDC Change	Change IDC from RF-441 to RF-374	9/23/2005	0	0		Container 10002749 did not have glass it contained blacktop and concrete (NCR 5748)
268	05	8/5/2005			C Abbott	RF-374	BN243	IDC Change	Change IDC from RF-374 to RF-440	9/30/2005	0	0		Container 10010317 - NCR 7762
269	---	8/5/2005			C Abbott	Not used			NOT USED - CANCELLED AKR		0	0		Replaced with AKR-05-327
270	05	8/5/2005			C Abbott	MD-803	BN510	IDC Change	Change IDC from MD-803 to MD-805	12/5/2005	0	0		IDC did not match description of 803, review of video reflects an 805 NCR 14804
271	05	8/6/2005			C Abbott	RF-004	BN510	IDC Change	Change IDC from RF-004 to RF-337	8/11/2005	0	0		Container had less than 50% special setup waste, empty poly bottles, teflon (NCR 5808)
272	05	8/6/2005	1	11/23/2005	C Abbott	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-441	8/10/2005	0	0		Container has less than 50% glass (non rashig rings), > 50% rashig rings NCR 6035 R1 added NCR 18768
273	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
274	05	9/22/2005	1	3/10/2007	C Abbott	MD-835	MD-835	Other	Verified IDC MD-835	9/23/2005	0	0		Historical information was not noted in WTS. VE of container verified IDC (NCR 16688)
275	05	10/8/2005			C Abbott	RF-441	BN296 OR BN510	IDC Change	Change IDC from RF-441 to RF-480	10/15/2005	0	0		NCR 15198
276	05	8/8/2005			V Sendelweck	MD-801	BN510	IDC Change	Change IDC from MD-801 to MD-802	8/18/2005	0	0		Containers 10033270 and 10033337 leaded rubber gloves NCRS 13295, 13296

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277	05	8/8/2005	1	2/15/2006	C Abbott	MD-All	All MD Waste	Unexpected Packaging	difference in absorbent & inner pkg.	8/11/2005	2	2	7/31/2005	use of absorbent material (0 to 56 pints) and 0 to 3 layers of confinement
278	05	8/18/2005			C Abbott	RF-336	BN510	Other	Container contents did not match RTR	10/8/2005	0	0		Container 10035352 held empty plastic bottles (NCR 12672
279	05	8/18/2005			C Abbott	MD-827		IDC Change	Container contents did not match RTR	10/15/2005	0	0		Container 10028576 held metal and metal debris (NCR 14834)
280	05	8/18/2005			C Abbott	MD-825		IDC Change	Container contents did not match RTR	10/25/2005	0	0		Container 10034595 held 100% plastic (NCR 16423)
281	05	8/18/2005	1	11/11/2005	V Sendelweck	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-374	8/19/2005	0	0		Container 10032591 held floor tile (NCR 17115) R1 added 10023673 (NCR 7784) issued 11/11/05
282	05	8/18/2005			V Sendelweck	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	8/19/2005	0	0		Container 10032580 held plastic (NCR 14521)
283	---	8/19/2005			V Sendelweck	Not used			NOT USED - CANCELLED AKR	8/21/2005	0	0		Replaced with AKR-05-327
284	05	8/19/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	10/1/2005	0	0		Container 10035177 held metal cans (NCR 13870)
285	05	8/19/2005			V Sendelweck	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	3/11/2006	0	0		Container 10032907 held poly bottles (NCR 13896)
286	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
287	05	8/19/2005	1	2/27/2006	C Abbott	MD-All	All MD Waste	Unexpected Packaging	Unexpected presence of plywood spacers	8/20/2005	1	1	7/31/2005	Plywood spacers may be expected in any of the Mound drums (debris or sludge). R1 2/27/06 correct IDC
288	05	8/19/2005	2	7/9/2009	M. Johnson	BN-510	BN510	Unexpected Packaging	Add in catch pan weight for direct ship	8/24/2005	1	1	7/9/2009	Catch pan packaging on drums prior to compacting/placing in product drums - revised 10-25-05, need to revise RPT-06. Verified RPT-TRUW-05 was revised.
289	05	8/20/2005	1	11/29/2005	C Major	MD-802,847	BN510	Unexpected Materials	Unexpected presence of metal can	8/20/2005	3	3	11/9/2006	RTR - container 10032602 held a metal can; R1 containers (Mound)-Misc metal and glass Include MD-847
290	05	9/23/2005			C Abbott	RF-337	BN510	IDC Change	Change IDC back to original	9/23/2005	0	0		NCR 10314, container 10015244
291	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
292	---	8/22/2005			C Abbott	Not used			NOT USED - CANCELLED AKR		0	0		
293	05	8/23/2005			C Abbott	RF-950	BN510	IDC Change	Change WMC from S5490 to S5300	8/24/2005	0	0		Change IDC from RF-950 to RF-337. CCP Container 10015210, NCR 5043. Drum transferred to CCP.
294	05	8/25/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	8/25/2008	0	0		NCR 15194 for container 10031133, WMC change
295	---	8/25/2005			C Abbott	Not used	BN510	Unexpected Materials	NOT USED - CANCELLED AKR		0	0		
296	05	9/1/2005			C Major	MD-802	BN510	IDC Change	Change IDC from MD-825 to MD-804	9/2/2005	0	0		Container 10034740 needs IDC changed from MD-825 to MD-804.
297	05	9/3/2005			V Sendelweck	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	9/3/2005	1	1	3/19/2006	Container 10029196 (NCR 14876) RTR shows plastic bottles.
298	05	9/3/2005			V Sendelweck	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-440	9/3/2005	1	1	3/19/2006	Container 10035180 (NCR 13275) RTR shows glass bottles
299	05	9/6/2005	2	9/20/2005	M. Johnson	RF-432	BN317	Other	Change WMP designated in RPT-05	9/7/2005	2	2	9/9/2005	RPT-05 Rev 4 changed the WMP from organic matrix to plastic, will change back - rev2 issued 9-20-05
300	05	9/9/2005			C Abbott	MD-825	BN510	Unexpected Materials	Add inner pkgs of MD832	9/17/2005	3	3	11/9/2006	NCR 16230 - RPT 05 did not indicate inner packages of Hg (IDC MD-832) in containers of MD-825.
301	05	9/9/2005			C Abbott	RF-376	BN211	IDC Change	Retain original IDC of RF-376	9/9/2005	2	2	11/9/2006	IDC changed to IDC 361 by RTR - AK does not support - IDC 376 should be retatined
302	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
303	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
304	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
305	05	9/11/2005	1	10/5/2005	C Major	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-420	10/5/2005	0	0		Changed IDC of Container 10032906 in RTR05-00843 from RF-330 to RF-420 Rev 1
306	05	9/11/2005			C Major	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-335	9/12/2005	0	0		Changed IDC of Container 10028143 in RTR05-02604 from RF330 to RF335
307	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
308	05	9/12/2005			R. Osborne	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	9/12/2005	0	0		Container 10028862 - NCR 15247
309	---	9/12/2005			C Abbott	Not used	BN510	IDC Change	NOT USED - CANCELLED AKR		0	0		
310	05	9/12/2005			C Abbott	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-337	9/12/2005	0	0		Container 10035199 - NCR 13251
311	05	9/23/2005			M. Johnson	MD-Debris	BN510	IDC Change	Re: IDCs for CD containers	9/23/2005	1	1	2/19/2006	Container 1003497 NCR 13111 and all Mound debris with small inner packages. TRUW-5 updated
312	05	9/22/2005			C Abbott	RF-376	BN211	Unexpected Packaging	Filtered bags	9/23/2005	0	0		Filtered bag discovered as method of closure for container 10016436
313	05	9/23/2005			C Abbott	RF-All	All RF Waste	Unexpected Packaging	Use as is. AKR-05-312 NOT 313	9/23/2005	2	2	11/9/2006	Identification of filtered bags used as packaging at RFP prior to shipment to Idaho.
314	---	9/26/2005			C Abbott	Not used			NOT USED - CANCELLED AKR		0	0		
315	05	9/29/2005			V Sendelweck	RF-440	BN243	Other	Add chloromethane & cyclohexane as target analyte	9/29/2005	1	1	3/19/2006	BN 243.01 had chloromethane & cyclohexane >25% above PRQL added as target analyte for waste stream
316	05	10/1/2005	1	11/8/2007	C Abbott	BN-509	BN	Other	Provide initial AK	10/1/2005	2	2	11/15/2006	NCR 16839 Container 10045297 (assigned wrong IDC, WMC, etc). Provide AK and proper assignments
317	05	10/6/2005			C Abbott	RF-480	BN510	IDC Change	Change IDC from RF-480 to RF-490	10/6/2005	0	0		Container 10004919 not consistent with RF-480, change to RF-490 (NCR 15184)
318	05	10/7/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	10/8/2005	0	0		Container 10028899 not consistent with RF-330 change to RF-337. (NCR 14945)
319	05	10/7/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	10/8/2005	0	0		Container 10030280 not consistent with RF-330 change to RF-337 (NCR 15236)
320	05	10/12/2005			V Sendelweck	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-480	10/12/2005	0	0		Container 10005455 not consistent with RF-337 change to RF-480 (NCR 9317)
321	05	10/15/2005			V Sendelweck	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-374	10/15/2005	0	0		Container 10031367 not consistent with RF-337 change to RF-374 (NCR18174)
322	05	10/15/2005			V Sendelweck	RF-320	BN510	Other	Change back to original historical ID	11/20/2005	0	0		Container 10014766 historical changed to get a pack date, change back (NCR 17411)
323	05	10/21/2005	1	5/2/2007	C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-374	10/21/2005	0	0		NCR 18379, 27203, containers 10014655, 10156586
324	05	10/22/2005			C Major	BN-603	BN510	IDC Change	Change IDC from BN-603 to BN-508	10/22/2005	0	0		Container 10064946 not consistent with BN-IDC 603. change to RF-508 (NCR 18645)
325	05	11/4/2005			C Abbott	RF-481	BN252	IDC Change	Change IDC from RF-481 to RF-339	11/4/2005	0	0		Container 10062418 - NCR 18382
326	05	11/6/2005	1	11/10/2005	C Abbott	MD-836		Other	Incorrect hist drum number correction	11/10/2005	0	0		Containers 10002215, 10002216, 10002217; NCRs 18381, 18488, and 18490
327	05	11/10/2005	4	9/15/2008	C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-374	11/10/2005	0	0		1000907I; 20480; 21702; 22352, 22717; 22719; 23551; 33249
328	05	11/10/2005	2	6/30/2006	C Abbott	RF-697		IDC Change	Standing AKR. Change IDC from RF-374 to RF-697 (WMC change)	6/30/2006	0	0		STANDING AKR FOR IDC CHANGES FROM RF-374 TO RF-697 (>50% DIRT)
329	05	11/14/2005			C Major	MD-847	BN510	Unexpected Packaging	Use as is. No impact to WMC	11/14/2005	3	3	11/9/2006	Container 10063947 has 4 layers of confinement.
330	05	11/14/2005			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-302	11/14/2005	1	1	11/9/2006	Container 10020478, NCR 6503
331	05	11/17/2005	1	3/1/2006	C Abbott	MD-All	All MD waste	Unexpected Packaging	Florco absorbent weight calculation	11/17/2005	2	2	11/9/2006	Calculated weight of Florco absorbent per pint REVISED
332	05	11/18/2005			V Sendelweck	MD-All	All MD waste	Unexpected Packaging	1.2 lb per 1/4 inch thickness	11/20/2005	2	2	11/9/2006	Plywood spacers - use 1.2 lb/quarter inch thickness, SDCR and RTR/VE training
333	05	11/19/2005			V Sendelweck	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-480	11/19/2005	0	0		Container 10056514 IDC change RF-440 to RF-480, NCR 18741
334	05	11/19/2005	1	1/7/2006	V Sendelweck	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-847	11/19/2005	0	0		Container 10064003 NCR 19118; 10035277 NCR 19343

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335	05	11/27/2005			C Abbott	MD-825	BN510	IDC Change	Change IDC from MD-825 to MD-802	11/27/2005	0	0		Container 10034638 IDC change NCR 19303
336	05	11/27/2005			C Abbott	RF-370		IDC Change	Change IDC from RF-370 to RF-320	11/28/2005	0	0		Container 10052149 IDC change NCR 19226
337	05	11/28/2005			C Abbott	MD-826		IDC Change	Change IDC from MD-826/UN-00A to MD-836	11/28/2005	0	0		container 10026286 NCR 19206
338	05	11/28/2005			C Abbott	RF-481	BN252	IDC Change	Change IDC from RF-481 to RF-339	11/29/2005	0	0		container 10063776 NCR 18459
339	05	11/28/2005			C Abbott	MD-847		IDC Change	Change IDC from MD-847 to MD-848	11/29/2005	0	0		container 10063752 NCR 19173
340	05	11/28/2005			C Abbott	MD-803	BN304	IDC Change	Change IDC from MD-803 to MD-805	11/29/2005	0	0		container 10036168 NCR 19302bi-207
341	05	11/28/2005	2	6/29/2006	C Abbott	MD-834	BN835	Other	Standing AKR. Historical Drum number	12/15/2005	3	3	11/9/2006	STANDING AKR FOR BN835 HIST ID ISSUE RESOLUTIONS
342	---	11/29/2005			C Abbott	Not used		IDC Change	NOT USED - CANCELLED AKR		0	0		Replaced with AKR-07-500
343	05	11/30/2005	1	3/30/2006	C Abbott	RF-001	BNINW216	Other	Standing AKR. Historical Drum number. RF001, RF002, RF800	2/10/2006	1	1	11/9/2006	STANDING AKR FOR BNINW216 HIST ID ISSUE RESOLUTIONS
344	05	12/1/2005			C Abbott	MD-847	BN304	IDC Change	Change IDC from MD-847 to UN-00A	12/1/2005	0	0		NCR 19187 Container 10035409
345	05	12/4/2005	1	3/28/2006	C Abbott	MD-835	BN835	Other	Assign correct Hist ID	12/4/2005	0	0		10002675 NCR 19344 SDCR 674
346	05	12/4/2005	1	12/13/2005	C Abbott	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-847	12/4/2005	0	0		10055352 NCR 19143
347	05	12/4/2005			C Abbott	MD-847	BN304	IDC Change	Change IDC from MD-847 to MD-848	12/4/2005	0	0		10035277 NCR 19343
348	05	12/9/2005	1	2/2/2006	M. Johnson	MD-825	BN304	IDC Change	Change IDC from MD-825 to MD-805	12/9/2005	0	0		10034724 NCR 19434
349	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
350	---	12/12/2005				Not used			NOT USED - CANCELLED AKR		0	0		
351	05	12/31/2005	1	7/28/2008	C Major	MD-All	All MD Waste	Radionuclide	Use as is. No impact to WMC or HWN	12/31/2005	2	2	11/9/2006	U-232 found in MD-836 waste; it may also be found in other MD waste streams, revised to clarify AIs
352	---	2/12/2006			V Sendelweck	Not used		IDC Change	NOT USED - CANCELLED AKR		0	0		
353	05	2/20/2006			T Venneman	RF-371	BN161	HWN	Add D022, D028 and D029	2/20/2006	0	0		Container 10000655 (RF-371) had HSG hits for VOCs associated with D022, D028 and D029
354	06	2/20/2006			M. Johnson	MD-All	All MD Waste	Radionuclide	Use as is. No impact to WMC or HWN	2/28/2006	2	2	11/9/2006	Bi-207 detected in assay; however, AK source document also identifies Bi-207 can be expected at MD
355	06	2/21/2006			C Abbott	RF-970	BN510	IDC Change	Change IDC from RF-970 to RF-480 - Box	2/21/2006	0	0		NCR 20746 Container 10076993
356	06	2/21/2006			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-490 - Box	2/21/2006	0	0		NCR 20381 Container 10075551
357	06	2/24/2006			J Davis	RF-481	BN252	IDC Change	Change IDC from RF-481 to RF-339	2/24/2006	0	0		Container 10060576 not consistent with IDC RF-481. Change IDC to RF-339 (NCR 20520)
358	06	2/24/2006	2	12/6/2006	J Davis	MD-Debris	BN304	Unexpected Materials	Add description of previously unidentified items to Mound AK documents	2/24/2006	3	3	11/15/2006	Unexpected dense items ("pigs" or "source containers") identified in Mound BN304 debris drums
359	06	3/9/2006	3	3/17/2007	C Abbott	RF-330	BN510 BN296	IDC Change	Change IDC from RF-330 to RF-480	3/17/2006	0	0		NCR 20692 for 10032898, NCR 26529 for 10106617. It doesn't appear that Rev 2 of this AKR was ever issued.
360	06	3/13/2006	2	8/10/2006	R. Morris	RF-All	All RF Waste	Other	When any AKR requires a change to INEL-96/0280 or TRUW-56, appropriate changes will be included in waste management documents instead.	3/15/2006	0	0		AKR required changes to INEL-96/0280 or AK Summaries will be included in TRUW-56 or other docs. Revised (2) to say no changes to TRUW-56 either. All changes to waste management documents only.
361	06	3/16/2006			C Abbott	RF-336	BN510	IDC Change	RF IDCs assigned to re-packaged waste	3/16/2006	0	0		VE of one drum (RF-336) resulted in 3 drums assigned RF-IDCs 337& 336- prior to procedure change
362	06	3/17/2006			C Abbott	MD-825	BN304	IDC Change	Change IDC from MD-825 to MD-827	3/20/2006	0	0		NCR 14798 Container 10029105
363	06	3/20/2006			C Abbott	RF-480	BN510	IDC Change	Change IDC from UN-000 to RF-480	3/20/2006	0	0		Box 10076998 NCR 20523
364	06	3/20/2006			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-490	3/20/2006	0	0		Box 10078431 NCR 20526
365	06	3/24/2006			C Abbott	RF-371	BN510	IDC Change	Change IDC from RF-371 to RF-480	3/20/2006	0	0		NCR 21016 for container 10080111
366	06	3/24/2006			M. Johnson	MD-836	BN836	Unexpected Materials	Use as is. No impact to WMC or HWNs	3/27/2020	1	1	4/5/2006	RTR identification of plastic waste on top of cemented sludge in IDC MD-836 containers
367	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
368	06	3/29/2006	1	10/22/2008	C Abbott	MD-804	BN811	IDC Change	Change IDC from MD-804 to MD-811	3/29/2006	0	0		NCR 20505 container 10031412
369	06	3/29/2006			C Abbott	MD-836	BN804	IDC Change	Change IDC from MD-836 to MD-805	3/29/2006	0	0		NCR 20273 container 10054243
370	06	3/29/2006			C Abbott	MD-836	BN804	IDC Change	Change IDC from MD-836 to MD-810	3/29/2006	0	0		NCR 21362 container 10021976
371	06	3/31/2006			V Sendelweck	MD-803	BN304	IDC Change	Change IDC from MD-803 to MD-814	3/31/2006	0	0		NCR 20521 container 10043870
372	06	4/1/2006			J Davis	RF-480	BN296	IDC Change	Change IDC from RF-480 to R-337	4/1/2006	0	0		NCR 21123 container 10083569
373	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
374	06	4/3/2006			M. Johnson	MD-836	BN836	Unexpected Packaging	Use as is. No impact to WMC or HWNs	4/4/2006	1	1	4/5/2006	RTR identification of unexpected packaging (plastic drum bag) in IDC MD-836 containers
375	06	4/3/2006			M. Johnson	MD-836	BN836	Other	Use as is. No impact to WMC or HWNs	4/4/2006	1	1	4/5/2006	"Cement cap" and variable layers of solidification discovered during coring of IDC MD-836 drums
376	06	4/4/2006	25	10/21/2010	C Abbott	RF-002	BNINW216	Radionuclide	Standing AKR. Detection-137Cs (source)10054673	2/10/2007	3	3	2/10/2007	"Standing" AKR for containers identified by NDA as having 137Cs sources. To track AIs
377	06	4/8/2006			J Davis	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-441	4/9/2006	0	0		NCR 21410 for drum 10088701 and NCR 21412 for drum 10088578
378	06	4/8/2006			J Davis	MD-802	BN510	IDC Change	Change IDC from MD-802 to MD-810	4/9/2006	0	0		NCR 20742 for container 10022021
379	06	4/8/2006			J Davis	RF-004	BN510	IDC Change	Change IDC from RF-004 to RF-337	4/9/2006	0	0		NCR 21323 for container 10087871
380	06	6/12/2006			T Venneman	RF-480	BN510	Unexpected Materials	Large PCB items in box of RF-480	8/15/2006	3	3	8/15/2006	Box number 10078345 contained leaking large liquid filled PCB capacitors. Information not in AK records.
381	06	5/8/2006			R. Morris	MD-815	BN304	IDC Change	Change IDC from MD-815 to MD-804	5/8/2006	0	0		NCR 21761 10027343 & NCR 21764 10027344
382	06	5/11/2006			C Abbott	RF-001	BNINW216	Other	Hist ID not in WTS	5/11/2006	0	0		NCR 17098 10039233 - Add hist data to WTS
383	06	5/12/2006			C Abbott	MD-825	BN510	IDC Change	Change IDC from MD-825 to MD-824 - Box	5/12/2006	0	0		NCR 10295 10025562
384	---	9/4/2008				Not Used			NOT USED - CANCELLED AKR		0	0		
385	06	6/27/2006			R. Morris	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-480	6/27/2006	0	0		NCR 22244 for container 10090736
386	06	6/29/2006			C Abbott	UNK-000	BN510	IDC Change	Change IDC from UN-000 to RF-480 - Box	7/20/2006	0	0		NCR 22073 for container 10091156 Box
387	06	6/29/2006			C Abbott	RF-374	BN211	IDC Change	Change IDC from RF-374 to RF-490	8/2/2006	0	0		NCR 22187 10095600

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388	06	6/29/2006			C Abbott	RF-480	BN243	IDC Change	Change IDC from RF-480 to RF-440	8/2/2006	0	0		NCR 22263 10097417
389	06	6/29/2006			J Davis	RF-339	BN510	IDC Change	Change IDC from RF-339 to RF-330	8/2/2006	0	0		NCR 22599 for container 10101791
390	06	6/29/2006			R. Morris	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-337	8/8/2006	0	0		NCR 22600 10104588
391	06	7/17/2006			T Venneman	UNK-000	BN480	IDC Change	Change IDC from UN-000 to RF-480 - Box	7/20/2006	0	0		NCR 22116 for containers 10091268 - Box
392	06	7/17/2006			T Venneman	RF-330	BN296	IDC Change	Change IDC from RF-330 to RF-480 -Box	7/20/2006	0	0		NCR 20913 for container 10079912 - Box
393	06	7/17/2006			T Venneman	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-336	7/20/2006	0	0		NCR 22671 for container 10080121 - Box
394	06	7/17/2006	1	10/9/2006	T Venneman	UNK-000	BN211	IDC Change	Change IDC from UN-000 to RF-490	7/20/2006	0	0		NCR 22158 and for container 10090549 - Box
395	06	8/3/2006	1	10/22/2008	R. Morris	MD-825	BN304	IDC Change	Change IDC from MD-825 to MD-811, S5000 to S3000	8/10/2006	1	1	8/10/2006	NCR 22282 for container 10034610 (VVE06-00089)
396	06	7/24/2006	1	7/31/2006	C Abbott	RF-480	BN243	IDC Change	Change IDC from RF-480 to RF-440	7/31/2006	0	0		Multiple NCRs for multiple containers, WMC change
397	06	7/24/2006			C Abbott	RF-440	BN296	IDC Change	Change IDC from RF-440 to RF-480	7/24/2006	0	0		NCR 22697 for container 10097507
398	06	8/3/2006			R. Morris	RF-339	BN252	IDC Change	Change IDC from RF-339 to RF-335	8/3/2006	0	0		NCR 22949 for container 10108775
399	06	8/8/2006			R. Morris	RF-338	BN211	IDC Change	Change IDC from RF-338 to RF-490, no WMC change	9/20/2006	0	0		NCRs 22818 and 22904 for container 10088727 and 10100045
400	---	8/8/2006			C Abbott	Not used	BN252	IDC Change	NOT USED - CANCELLED AKR		0	0		Replaced with AKR-06-398
401	06	8/8/2006			R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-374	8/9/2006	0	0		NCR 22990 for container 10111382
402	---	8/14/2006			R. Morris	Not used		IDC Change	NOT USED - CANCELLED AKR		0	0		
403	---	8/15/2006			R. Morris	Not used	BN296	IDC Change	NOT USED - CANCELLED AKR		0	0		
404	06	8/15/2006			R. Morris	RF-335	BN211	IDC Change	Change IDC from RF-335 to RF-338, no WMC change	8/15/2006	0	0		NCR 22767 for container 10100366
405	06	8/21/2006	1	8/28/2006	T Venneman	RF-CCP	CCP waste streams	Other	Change of WMCs	8/21/2006	0	0		Change of WMCs in WTC to reflect WMCs assigned by CCP for waste streams ID-RF-S5100-A and ID-RF-S5300-A
406	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
407	06	9/14/2006	1	6/7/2007	M. Johnson	RF-374	BN374	Other	Change of WMC from S5420 to S5490	9/14/2006	3	3	7/17/2007	NCR 23756 to document change of WMC for IDC 374 from S5420 to S5490. NCR required per Form 1070
408	06	9/18/2006	1	10/29/2008	M. Johnson	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	10/2/2006	1	1	10/26/2006	NCR 23749 for container 10107483, NCR 23821 for container 10095610, NCR 24031 for 11 other containers
409	06	9/21/2006			M. Johnson	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-370	10/5/2006	0	0		NCR 23822 for container 10110783
410	06	10/2/2006	10	5/30/2007	M. Johnson	RF-480	BN296	IDC Change	Standing AKR. Change IDC from RF-480 to RF-337	10/4/2006	2	2	8/14/2007	Standing AKR (IDC 480 - primarily respirators) NCRs 23895, 25264, 25489, 26545, etc.
411	06	10/4/2006			M. Johnson	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-697	10/4/2006	1	1	10/26/2006	NCR 23932 for container 10088762, revise RPT-05 to identify soil in IDC RF-371
412	06	10/12/2006			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	10/14/2006	0	0		NCR 24156 for container 10097495
413	06	10/16/2006			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	10/16/2006	0	0		NCR 23991 for container 10089179
414	06	10/19/2006			C Abbott	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	10/19/2006	0	0		NCR 24168 for container 10009241
415	06	10/19/2006			C Abbott	RF-440	BN510	Other	Assign RF-374 to container w/historical ID issue	10/23/2006	0	0		Drum mistakenly sent to CCP, who characterized it as a 330 but contents were floor tiles NCR 23616
416	06	10/23/2006	10	6/22/2007	C Abbott	Boxes	BN510	IDC Change	Standing AKR. Various changes of IDC for boxes	7/3/2007	0	0		Standing AKR: Boxes with NCRs for IDC change - grouped - various IDCs; Superceded by AKR-07-493
417	06	10/26/2006	1	11/13/2006	C Abbott	MD-836	BN836	IDC Change	Change IDC from MD-835 to MD-836	1/26/2006	0	0		NCR 24328 for container 10019817
418	06	10/30/2006			C Abbott	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-374	10/30/2006	0	0		NCR 23376 for container 10102604
419	06	10/30/2006	14	8/7/2007	C Abbott	MD-848		IDC Change	Standing AKR. Change IDC from MD-848 to MD-847	3/3/2007	0	0		Standing AKR: See AKR R1 for list of NCRs and corresponding containers.
420	06	10/30/2006			C Abbott	RF-440		IDC Change	Change IDC from RF-440 to RF-441	10/30/2006	0	0		NCR 24274 10120398 WG; NCR23840 10116582 WG and NCR 23415 10111281 LLD
421	06	10/30/2006	1	12/12/2006	C Abbott	RF-339		IDC Change	Change IDC from RF-339 to RF-330	10/30/2006	0	0		NCR 24172 for container 10106805
422	06	10/30/2006	2	5/1/2007	C Abbott	RF-480	BN243	IDC Change	Change IDC from RF-480 to RF-440	10/30/2006	0	0		NCR 23995, 27406 for container 10112085, 10146799
423	06	12/11/2006			M. Johnson	RF-002	BNINW216	Unexpected Materials	Address bottle of waste buried in sludge	12/12/2006	1	1	4/4/2007	RTR recording for container 10109346, identify small containers buried in IDC RF-002
424	06	12/13/2006	1	9/10/2007	M. Johnson	RF-374	BN510	Other	Retain IDC RF-374, reject RTR change to 697	12/14/2006	0	0		NCR 23359 for container 10048730
425	---	1/11/2007			C Abbott	Not used	BN510	IDC Change	NOT USED - CANCELLED AKR		0	0		
426	07	3/7/2007			C Abbott	RF-339	BN510	Other	Address historical data issue	3/7/2007	0	0		NCR 22057 for container 10095988
427	06	10/31/2006			M. Johnson	RF-368,370	BN510	Other	Change WMC from S5123 to S5190	11/14/2006	0	0		WMC change for crucible debris waste (IDCs 368 and 370)
428	06	10/31/2006			M. Johnson	RF-391,392	BN510	Other	Change WMC from S5129 to S5190	11/14/2006	0	0		WMC change for crucible and sand debris waste (IDCs 391 and 392)
429	06	10/31/2006			M. Johnson	RF-950	BN510	Other	Change WMC from S5112 to S5490	11/14/2006	0	0		WMC change for RF debris waste that is heterogeneous based on information in AK
430	06	11/1/2006			C Abbott	RF-440		IDC Change	Change IDC from RF-440 to RF-337	11/15/2006	0	0		NCR 24270 for container 10109201
431	---	11/15/2006			C Abbott	Not used		IDC Change	NOT USED - CANCELLED AKR		0	0		
432	06	11/15/2006	6	7/13/2010	C Abbott	RF-481	BN252	IDC Change	Change IDC from RF-481, RF-480 to RF-339	9/6/2007	1	1	10/8/2007	Multiple NCRs for multiple containers, WMC change
433	06	11/15/2006			C Abbott	RF-440		IDC Change	Change IDC from RF-440 to RF-336	11/22/2006	0	0		NCR 24455 for container 10118907
434	07	2/3/2007	10	4/25/2007	T Venneman	RF-440		IDC Change	Standing AKR. Change IDC from RF-440 to RF-441 or RF-442	2/3/2007	0	0		Standing" AKR for containers identified as RF440 and IDC change to RF-441 or RF-442. WMC change S5122 to S5100
435	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
436	07	2/6/2007			C Abbott	RF-463	BN296	Other	Change IDC from RF-463 to RF-480 - DS	3/21/2007	0	0		NCR 25710, 10135851
437	07	2/6/2007	1	2/8/2007	T Venneman	RF-004	BN004	IDC Change	Change IDC from RF-004 to RF-337, WMC change	2/7/2007	0	0		RTR07-00601 - container 10124390, WMC change
438	07	2/6/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	2/7/2007	1	1	10/8/2007	NCR 25802, revise RPT-6 for generation dates for RF-374
439	07	2/8/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	2/8/2007	0	0		NCR 25919 for container 10127008
440	---	2/9/2007			P Fetzer	Not used	BN243	IDC Change	NOT USED - CANCELLED AKR		0	0		
441	07	2/22/2007	9	9/21/2007	C Abbott	RF, MD	BN510	IDC Change	Standing AKR. Accepting IDC changes for debris to debris-510	9/6/2007	1	1	10/8/2007	Standing AKR for debris to the super compactor 510, revise pack date range. See AKR for NCRs and container numbers
442	07	2/26/2007			T Venneman	RF-480	BN510	IDC Change	Change IDC from RF-480 to RF-490	2/27/2007	0	0		NCR 25988 for container 10124685. WMC change RF-480 to RF-490
443	07	2/26/2007	1	12/10/2007	T Venneman	RF-320	BN510	IDC Change	Change IDC from RF-320 to RF-337	2/27/2007	0	0		Multiple NCRs for multiple containers, WMC change
444	07	3/14/2007			M. Johnson	RF-374	BN510	IDC Change	Change IDC from RF-374 to RF-432	3/15/2007	0	0		NCR 23025 for container 10100992, IDC change - SCG change

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445	07	3/5/2007			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-375	3/26/2007	0	0		NCR 26600 for container 10124377, SCG change
446	---	3/7/2007			C Abbott	Not used	BN510 or BN252	IDC Change	NOT USED - CANCELLED AKR		0	0		
447	07	3/12/2007			R. Morris	MD-847	BN304	IDC Change	Change IDC from MD-847 to MD-835	3/12/2007	0	0		NCR 26239 for container 10146952, WMC change
448	07	3/19/2007			T Venneman	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-421	3/26/2007	0	0		NCR 26590 for container 10057937, WMC change
449	07	3/26/2007			R. Morris	RF-481	BN296	IDC Change	Change IDC from RF-481 to RF-337	3/26/2007	0	0		NCR 26237 for container 10145934, WMC change
450	07	3/27/2007			R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-337	3/27/2007	0	0		NCR 26672 for container 10146860, WMC change - Not respirators
451	07	3/28/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-337	4/5/2007	0	0		NCR 26913 for container 10153055, WMC change
452	07	4/19/2007	1	5/1/2007	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-480	4/19/2007	0	0		NCR 27147 for container 10154633, WMC change
453	07	4/11/2007			T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-970	6/20/2007	1	1	10/8/2007	NCR 28186 for container 10093731, WMC change, revise RTP-56 for pack date range
454	07	4/19/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	4/19/2007	0	0		NCR 27141 for container 10153648, WMC change
455	---	4/13/2007			P Fetzer	Not used	BN004	IDC Change	NOT USED - CANCELLED AKR		0	0		
456	07	4/16/2007			R. Morris	MD-847	BN304	IDC Change	Change IDC from MD-847 to MD-835	4/16/2007	0	0		NCR 26333 for container 10145638, IDC change from MD847 to MD848.
457	07	4/16/2007			R. Morris	RF-336	BN296	IDC Change	Change IDC from RF-336 to RF-480	4/16/2007	0	0		NCR 27054 for container 10127005, WMC change
458	07	4/19/2007	1	5/21/2007	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-490	4/19/2007	0	0		Multiple NCRs for multiple containers, WMC change
459	07	4/24/2007			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	4/24/2007	0	0		NCR 27134 for container 10153865, WMC change
460	07	4/25/2007	1	5/2/2007	T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-337	4/25/2007	0	0		Multiple NCRs for multiple containers, WMC change
461	07	4/25/2007			R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-337	4/25/2007	0	0		NCR 27288 for container 10156343, WMC change
462	07	4/25/2007			T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	4/25/2007	0	0		NCR 27179 for container 10150436, WMC change
463	07	4/26/2007	2	6/5/2007	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-970	4/26/2007	0	0		NCR 27307 for container 10153583, WMC change
464	07	4/30/2007			J Collins	RF-480	BN211	IDC Change	Change IDC from RF-480 to RF-338	4/30/2007	0	0		NCR 24610 for container 10117016. VE recommended a change to RF-360. AK recommends a change to RF-338.
465	07	4/30/2007			R. Morris	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-339	4/30/2007	0	0		NCR 27369 for container 10156518, WMC change
466	07	5/1/2007			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-335	5/1/2007	0	0		NCR 27383 for container 10146965
467	07	5/1/2007	1	1/3/2008	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-480	5/1/2007	0	0		Multiple NCRs and Containers, WMC change, LLD
468	07	5/7/2007			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	5/7/2007	0	0		NCR 27439 for container 10160292, WMC change, LLD
469	07	5/8/2007	2	6/7/2007	M. Johnson	RF-338	BN211	IDC Change	Change IDC from RF-338 to RF-374	5/8/2007	0	0		NCR 27070 for container 10153843, WMC change, LLD
470	07	5/8/2007			M. Johnson	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	5/8/2007	0	0		NCR 27076 for container 10153825, WMC change, TRU with prohibited liquids
471	07	5/8/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-337	5/8/2007	0	0		NCR 27149 for container 10154587, WMC change
472	07	5/8/2007			T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-300	5/9/2007	0	0		NCR 26068 for container 10136786, WMC change
473	07	5/8/2007			T Venneman	RF-463	BN252	IDC Change	Change IDC from RF-463 to RF-330	5/10/2007	0	0		NCR 26174 for container 10136834, WMC change
474	07	5/15/2007			T Venneman	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441	5/15/2007	0	0		NCR 27545 for container 10126368, WMC change
475	07	5/15/2007			R. Morris	RF-480	BN211	IDC Change	IDC change from RF-480 to RF-441	5/15/2007	0	0		NCR 27589 for container 10151777, WMC change
476	07	5/15/2007	1	5/29/2007	R. Morris	RF-337	BN510	IDC Change	IDC change from RF-337 to RF-374	5/15/2007	0	0		NCR 27573 for container 10151503, WMC change
477	07	5/15/2007	9	11/15/2007	R. Morris	RF-330	BN510	IDC Change	Standing AKR. Change IDC from RF-330 to RF-480	5/15/2007	1	1	10/8/2007	Standing AKR, WMC change, revise prefix dates, continued in AKR-07-532
478	07	5/21/2007	10	8/25/2009	R. Morris	RF-330	BN510	IDC Change	Standing AKR. Change IDC from RF-330 to RF-374	5/21/2007	0	0		Multiple NCRs and Containers, WMC change
479	07	5/22/2007	9	1/3/2008	T Venneman	RF-330	BN510	IDC Change	Standing AKR. Change IDC from RF-330 to RF-970	5/23/2007	2	2	10/8/2007	Multiple NCRs and Containers, WMC change, revise RPT-56 for prefix information
480	07	5/23/2007			C Abbott	SD-704		IDC Change	Change IDC from SD-706 to SD-704	5/29/2007	0	0		Incorrect data (i.e., IDC & WMC) entered for an ARP sludge waste drum to be cored.
481	07	5/24/2007	1	10/11/2007	T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-440	5/30/2007	0	0		Multiple NCRs for multiple containers, WMC change
482	07	6/7/2007			R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-360	6/7/2007	1	1	10/8/2007	NCR 26834 for container 10153057, WMC change, add RF-360 to prefix 0031
483	07	5/31/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-090	5/31/2007	1	1	10/8/2007	NCR 27447 for container 10159926, WMC change, LLD, change pack date range for RF-990
484	07	5/31/2007			T Venneman	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	6/4/2007	0	0		NCR 27072 for container 10153225, WMC change
485	07	6/8/2007	10	11/9/2009	T Venneman	MD-848	BN304	IDC Change	Standing AKR. Change IDC from MD-848 to MD-847	8/2/2007	0	0		Multiple NCRs for multiple containers. No WMC change
486	07	6/12/2007			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-292	6/12/2007	1	1	10/8/2007	NCR 27996 for container 10107397, WMC change, prefix date range extension
487	07	6/13/2007	6	1/3/2008	R. Morris	RF-480	BN296	IDC Change	Standing AKR. Change IDC from RF-480 to RF-337	6/13/2007	1	1	10/8/2007	New Standing AKR - replaces AKR-06-410, WMC change, LLD, revise prefix date range
488	07	6/14/2007			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-337	6/14/2007	0	0		Multiple NCRs for multiple containers, LLD
489	07	6/19/2007			R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441	6/19/2007	0	0		NCR 28086 for container 10088695, WMC change
490	07	6/21/2007	10	3/26/2008	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-480	6/21/2007	0	0		Multiple NCRs for multiple containers, WMC change
491	07	6/25/2007	9	1/21/2008	R. Morris	RF-440	BN243	IDC Change	Standing AKR. Change IDC from RF-440 to RF-441	6/25/2007	2	2	10/8/2007	New Standing AKR - replaces AKR-07-434, WMC change
492	07	6/25/2007			T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-970	6/25/2007	1	1	6/25/2007	NCR 28100 for container 10162633, WMC change.
493	07	6/25/2007	11	11/8/2007	C Abbott	Boxes	BN510	IDC Change	Standing AKR. Various changes of IDC for boxes	7/10/2007	0	0		Supercedes AKR-06-416; Standing AKR: Boxes with NCRs for IDC change - grouped - various IDCs
494	07	7/2/2007	2	8/20/2009	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-374	7/2/2007	0	0		Multiple NCRs and containers, WMC change
495	07	7/3/2007	9	1/31/2008	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-480	7/3/2007	0	0		Standing AKR, WMC change
496	07	7/9/2007	1	2/11/2008	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-970	7/9/2007	0	0		Multiple NCRs and containers, WMC change
497	07	7/10/2007	1	8/7/2007	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-300	7/10/2007	0	0		NCR 28689 for container 10119563, WMC change; R1 - NCR 29055 for container 10095560
498	07	7/12/2007	2	7/19/2011	R. Morris	RF-336	BN510	IDC Change	Standing AKR. Change IDC from RF-336 to RF-360	7/12/2007	1	0		Multiple NCRs for multiple containers, WMC change
499	07	7/12/2007			R. Morris	RF-300	BN510	IDC Change	Change IDC from RF-300 to RF-336	7/12/2007	0	0		NCR 28732 for container 10156306, WMC change, LLD
500	07	7/12/2007			R. Morris	RF-292	BN222	IDC Change	Change IDC from UN-00A toRF-336	7/12/2007	0	0		NCR 18877 for container 10056358, WMC change, LLD, VEC, temporarily passed through UN-00A
501	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		

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502	---	9/4/2008				Not used			NOT USED - CANCELLED AKR		0	0		
503	07	7/23/2007			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-375	7/23/2007	0	0		NCR 28931 for container 10063996, WMC change
504	07	7/24/2007	6	2/6/2012	R. Morris	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-480	7/24/2007	0	0		Multiple NCRs for multiple containers, WMC change
505	07	8/6/2007	2	1/21/2009	R. Morris	RF-374	BN510	IDC Change	Change IDC from RF-374 to RF-292	8/21/2007	0	0		Standing AKR, WMC Change, VEC
506	07	8/6/2007			R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-970	8/7/2007	0	0		NCR 28935 for container 10170260, WMC change
507	07	8/7/2007	2	11/24/2008	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-375	8/7/2007	2	2	10/8/2007	Multiple NCRs for multiple containers, WMC change, SCG change, add IDC RF-375 to prefix 0089
508	07	8/14/2007			R. Morris	RF-300	BN510	IDC Change	Change IDC from RF-300 to RF-480	8/14/2007	0	0		NCR 30104 for container 10054117, WMC change
509	---	9/10/2007			T Venneman	Not used	BN510	IDC Change	NOT USED - CANCELLED AKR		0	0		
510	07	9/12/2007			T Venneman	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-328	9/12/2007	0	0		NCR 28814, for container 10089620, WMC change
511	07	9/20/2007	10	1/14/2008	R. Morris	RF-371	BN161	IDC Change	Standing AKR.Change IDC from RF-371 to RF-960	9/20/2007	0	0		Standing AKR, WMC change
512	07	9/20/2007	2	8/2/2011	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	9/20/2007	0	0		Multiple NCRs and Containers, WMC change
513	07	9/20/2007	1	9/26/2007	C Abbott	RF-371	BN510	IDC Change	Change IDC from RF-330 to RF-371	9/20/2007	0	0		NCR 27418 for container 10160098, WMC change
514	07	9/20/2007			M. Johnson	BN-505	BN511	IDC Change	Change IDC from BN-505 to BN-511	10/10/2007	0	0		NCR 35067 for container 10128912, IDC change
515	07	9/27/2007			P Fetzer	RF-376	BN211	Radionuclide	Use as is. No impact to WMC or HWN	9/27/2007	0	0		Cs present in container 10000386, IDC 376, Prefix 0041
516	07	10/3/2007	7	5/4/2011	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-490	10/3/2007	0	0		Standing AKR, WMC change
517	07	10/8/2007	9	6/23/2009	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-337	10/8/2007	0	0		Multiple NCRs and Containers, WMC change
518	07	10/10/2007			R. Morris	RF-463	BN252	IDC Change	Change IDC from RF-463 to RF-440	10/10/2007	0	0		NCR 35052 for container 10183999, WMC change
519	07	10/11/2007	1	5/9/2008	J Collins	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-960	10/11/2007	0	0		NCR 35076 for container 10184032, WMC change; second change to 10184032; supercedes AKR-07-517, NCR 39173 for container 10212761
520	07	10/15/2007			R. Morris	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-490	10/15/2007	0	0		NCR 35061 for container 10184019, WMC change
521	07	10/16/2007	1	4/13/2007	T Venneman	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-371	10/17/2007	0	0		NCR 35094 for container 10184741, WMC change
522	07	10/22/2007			M. Johnson	RF-001	BNINW216	Other	Use as is. Statistics applied to WS	10/25/2007	0	0		bis(2-ethylhexyl)phthalate UCL90 above PRQL for Lot 17; below PRQL when caclucated across entire waste stream
523	07	10/29/2007	11	9/13/2010	T Venneman	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-337	10/31/2007	0	0		Standing AKR, WMC change
524	07	10/30/2007	3	11/12/2009	T Venneman	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-440	6/19/2008	0	0		Multiple NCRs and containers, IDC change
525	07	10/30/2007			R. Morris	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-375	10/30/2007	1	1	1/21/2008	NCR 35266 for container 10187666, WMC change; extend prefix date range for RF-375
526	07	10/31/2007	9	4/19/2010	T Venneman	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-330	10/31/2007	0	0		Multiple NCRs and containers, WMC change
527	07	11/1/2007	7	2/2/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-990	7/7/2008	3	3	1/21/2008	Standing AKR. Multiple NCRs and containers, WMC change
528	07	11/13/2007			R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-360	11/19/2007	0	0		NCR 35774 for container 10190643, WMC change
529	07	11/13/2007	3	1/25/2011	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-330	11/13/2007	0	0		Multiple NCRs for multiple containers, WMC change
530	07	11/26/2007	1	3/3/2008	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 (RF-480) to RF-330	11/26/2007	0	0		NCR 35794 for container 10190315, WMC change
531	---	11/26/2007				Not used			NOT USED - CANCELLED AKR		0	0		
532	07	11/27/2007	6	12/16/2008	R. Morris	RF-330	BN510	IDC Change	Standing AKR.Change IDC from RF-330 to RF-480	11/27/2007	0	0		Standing AKR, WMC change, continues AKR-07-477
533	07	11/27/2007	3	11/18/2008	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-960	11/27/2007	1	1	1/14/2008	Multiple NCRs for multiple containers, WMC change; extend prefix date range for RF-960
534	07	11/28/2007	10	5/9/2008	P Fetzer	Boxes	BN510	IDC Change	Standing AKR. Various changes of IDC for boxes w/known gen	11/28/2007	0	0		Standing AKR: Boxes w/NCRs for IDC change various IDCs. Separate from 493-on hold for unknown generators
535	07	11/28/2007			M. Johnson	BN-510	BN510	Other	Use as is - Statistics applied to WS	11/29/2007	0	0		chloromethane UCL90 above PRQL for BN510 LDF lot 1, below PRQL when cacluated across entire waste stream
536	07	11/29/2007	1	12/4/2007	R. Morris	RF-441	BN510	IDC Change	Change IDC from RF-441 to RF-480	11/29/2007	0	0		Multiple NCRs for multiple containers, WMC change
537	07	11/29/2007			M. Johnson	BN-510	BN510	Other	Use as is - Statisitcs applied to WS	11/29/2007	0	0		1,1-dichloroethane UCL90 above PRQL for BN510 LDF lot 2, below PRQL when cacluated across entire waste stream
538	07	11/29/2007			P Fetzer	RF-330	BN510	Radionuclide	Cs in RF-330	12/4/2007	0	0		Cs present in container 10194966, IDC 330, Prefix 0012
539	07	12/4/2007			P Fetzer	RF-002	BNINW216	IDC Change	Change IDC from UN-00A to RF-002	12/4/2007	0	0		NCR 26944 for container 10150493, WMC change
540	07	12/5/2007			R. Morris	RF-441	BN510	IDC Change	Change IDC from RF-441 to RF-432	12/5/2007	0	0		NCR 35923 for container 10096322, WMC change
541	07	12/6/2007	8	5/15/2008	C Abbott	RF, MD Boxes	BN510	Other	Rationale used for Boxes with insufficient AK	12/6/2007	0	0		NCR 34663
542	07	12/7/2007	2	1/18/2008	P Fetzer	boxes	BN510	IDC Change	VE recommend IDC change for Boxes	12/7/2007	0	0		Multiple boxes IDC change - AK no recommend
543	07	12/11/2007	1	9/22/2008	M. Johnson	RF-960	BN510	Other	WMC from S5420 to S5490	12/12/2007	1	1	1/14/2008	WMC change for RF debris waste that is heterogeneous based on information in AK - need to update RPTs-05 and 12
544	07	12/11/2007	1	9/22/2008	M. Johnson	RF-241	BN510	Other	WMC from S5420 to S5490	12/12/2007	1	1	1/14/2008	WMC change for RF debris waste that is heterogeneous based on information in AK - need to update RPTs-05 and 12
545	07	12/26/2007	1	1/31/2008	C Abbott	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-480	12/26/2007	0	0		NCR 36764 for container 10182257 (LLD)
546	07	12/27/2007	5	5/15/2011	C Abbott	RF-960		IDC Change	Change IDC from RF-960 to RF-990 Dirt	6/12/2008	1	1	6/10/2008	Multiple NCRs and containers, WMC change. Change prefix date range for 0089.
547	07	1/9/2008			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-339	1/9/2008	0	0		NCR 36786 for container 10108703, WMC change
548	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
549	08	1/3/2008			R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-336	1/3/2008	0	0		Multiple NCRs and containers, WMC change
550	07	1/3/2008	3	6/8/2011	R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-330	1/3/2008	0	0		Multiple NCRs and containers, WMC change
551	07	1/7/2008			R. Morris	RF-441	BN510	IDC Change	Change IDC from RF-441 to RF-440	1/7/2008	0	0		NCR 36935 for container 10123061, WMC change
552	07	1/7/2008			R. Morris	RF-441	BN510	IDC Change	Change IDC from RF-441 to RF-375	1/7/2008	1	1	9/22/2008	NCR 37059 for container 10057823, WMC change
553	07	1/8/2008			R. Morris	RF-320	BN296	IDC Change	Change IDC from RF-320 to RF-480	1/8/2008	0	0		NCR 37078 for container 10200735, LLD
554	07	1/14/2008	9	5/13/2020	J Collins	RF-371	BN161	IDC Change	Standing AKR. Change IDC from RF-371 to RF-960	1/14/2008	3	3	3/31/2008	Standing AKR, WMC change, continues AKR-07-511
555	08	1/14/2008			R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-371 to RF-960 and then to RF-337	1/14/2008	0	0		NCR 36973 for container 10189336, WMC change
556	07	1/21/2008	3	4/13/2010	R. Morris	RF-320	BN296	IDC Change	Change IDC from RF-320 to RF-337	1/21/2008	1	1	1/21/2008	Multiple NCRs and containers, WMC change
557	07	1/21/2008	2	12/22/2009	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-440	1/21/2008	0	0		Multiple NCRs for multiple containers, WMC change
558	08	1/21/2008	4	6/11/2012	J Collins	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-371	1/21/2008	0	0		Multiple NCRs and containers, IDCand WMC change

AKR	AKR "Year" (i.e., AKR-##)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
559	07	1/21/2008			C Abbott	BN-510	BN510	IDC Change	Change IDC from BN-510 to BN-701	1/22/2008	0	0		75 product drums with less than 100 nCi/g; per request of SPM; Rev 1 was going to be drafted to delete 7 containers on 11/6/08. Per evaluation on 07/02/09, AKR Rev 1 does not need to be issued because the containers have already been updated. JMC 07/02/09
560	07	1/22/2008	9	2/15/2011	l gouldthorpe	RF, MD boxes	BN510	IDC Change	Rationale used for Boxes with non debris waste	1/24/2008	0	0		Standing AKR: Boxes w/NCRs for IDC change various IDCs. Waste is soil or sludge and can't be supercompacted
561	07	1/28/2008	9	6/5/2008	J Collins	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441	1/28/2008	1	1	3/11/2008	New Standing AKR - replaces AKR-07-491, WMC change. Change prefix date range.
562	08	1/31/2008	7	5/9/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-480	1/31/2008	0	0		Multiple NCRs for multiple containers, WMC change
563	---	8/21/2008				Not used			NOT USED - CANCELLED AKR		0	0		
564	08	2/7/2008			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-441	2/7/2008	0	0		Multiple NCRs and containers, WMC change
565	08	2/7/2008	9	10/2/2008	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-480	2/7/2008	0	0		Standing AKR, WMC change, continues AKR-07-495
566	08	2/7/2008			R. Morris	RF-300	BN510	IDC Change	Change IDC from RF-300 to RF-337	2/7/2008	0	0		NCR 28335 for container 10163210, WMC change
567	08	2/11/2008			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-335	2/11/2008	0	0		NCR 37818 for container 10153207, WMC change
568	08	2/18/2008			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-090	2/18/2008	1	1	3/18/2008	NCR 37991 for container 10191562, WMC change
569	08	2/26/2008	1	8/11/2008	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-292	2/26/2008	0	0		NCR 38093 for container 10107386, WMC change
570	08	2/26/2008	3	6/17/2010	R. Morris	RF-480	BN510	IDC Change	Change IDC from RF-480 to RF-441	2/26/2008	1	0		Multiple NCRs for multiple containers, WMC change
571	08	2/26/2008	1	5/26/2008	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-335	2/26/2008	0	0		NCR 38096 for container 10158512, NCR 39539 for container 10214240, WMC change
572	08	3/3/2008	1	2/21/2011	R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-090	4/28/2008	0	0		Multiple NCRs for multiple containers, WMC change
573	08	3/11/2008			R. Morris	RF-900	BN510	IDC Change	Change IDC from RF-900 to RF-480	3/11/2008	0	0		NCR 38274 for container 10212883, WMC change
574	08	3/13/2008	2	10/6/2008	P Fetzer	BN-620	N/A	IDC Change	Change IDC from unknown and RF-337 to BN-620	3/13/2008	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes.
575	08	3/27/2008			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-481	3/27/2008	0	0		NCR 38448 for container 10189684, WMC change
576	08	4/28/2008	2	5/13/2008	J Collins	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-440	4/28/2008	0	0		Standing AKR, Multiple NCRs and containers, WMC change
577	08	5/8/2008			R. Morris	RF-464	BN510	IDC Change	Change IDC from RF-464 to RF-970	5/8/2008	0	0		NCR 39158 for container 10221616, WMC Change, <LLD
578	08	7/10/2008	10	9/24/2008	B Erhardt	RF, MD boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-07-534	5/10/2008	0	0		Revision 3 added 6 new boxes. R4 added 2 boxes. R5 added 4 boxes.
579	08	5/15/2008	2	1/19/2010	P Fetzer	RF, MD boxes	BN510	IDC Change	Standing AKR. Changes IDC-Boxes w/no hist data Rev of AKR-07-541	5/22/2008	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes.
580	08	5/19/2008	9	12/2/2008	J Collins	RF-371	BN161	IDC Change	Standing AKR. IDC change from RF-371 to RF-960	5/19/2008	0	0		Standing AKR, WMC change, continues AKR-07-554
581	08	5/19/2008			R. Morris	MD-838	BN510	IDC Change	Change IDC from MD-838 to MD-847	5/19/2008	0	0		Multiple NCRs and containers, IDC change
582	08	5/21/2008	10	12/6/2010	R. Morris	RF-004	BN004	IDC Change	Change IDC from RF-004 to RF-337	5/21/2008	0	0		Multiple NCRs and containers, WMC change
583	08	5/22/2008			J Collins	RF-007	BNINW218	IDC Change	Change IDC from RF-007 to MD-836	5/29/2008	0	0		NCR 39454 for container 10063174, Generator change from Rocky Flats to Mound
584	08	5/22/2008			R. Morris	MD-836	BN836	IDC Change	Change IDC from no IDC to MD-836	5/22/2008	0	0		Multiple NCRs and containers, IDC change
585	08	5/27/2008			J Collins	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-360	5/27/2008	0	0		NCR 39566 for container 10214209, WMC change
586	08	6/5/2008	1	7/3/2008	J Collins	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-337	6/12/2008	0	0		Multiple NCRs and containers, IDC change
587	08	6/9/2008	9	2/23/2010	J Collins	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	6/9/2008	0	0		Multiple NCRs and containers, IDC change
588	08	6/9/2008			J Collins	RF-480	BN510	IDC Change	Change IDC from RF-480 to RF-490	6/12/2008	0	0		NCR 39826 for container 10220010, WMC change
589	08	6/18/2008			J Collins	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-960	6/19/2008	0	0		NCR 39997 for container 10220512, WMC change
590	08	6/25/2008			T Venneman	RF-970	BN510	IDC Change	Change IDC from RF-970 to RF-490	6/26/2008	0	0		NCR 40053 for container 10012993, WMC change
591	08	6/25/2008	2	12/15/2009	T Venneman	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-432	6/30/2008	0	0		Multiple NCRs and containers, IDC change
592	08	6/25/2008	9	12/1/2009	M. Johnson	RF-440	BN510	IDC Change	Change IDC from RF-440 to RF-441 or RF-442	6/26/2008	1	1	6/4/2009	New standing AKR, multiple NCRs, IDC change from RF-440 to RF-441 or 442, need to update prefix dates
593	---	6/26/2008			T Venneman	Not used	BN510	IDC Change	NOT USED - CANCELLED AKR		0	0		
594	08	7/2/2008	3	5/9/2012	J Collins	RF-990	BN510	IDC Change	Change IDC from RF-990 to RF-960	7/7/2008	0	0		Multiple NCRs and containers, WMC change
595	08	7/23/2008	1	9/22/2008	C Abbott	RF-debris	BN510	Radionuclide	Detection of 137Cs in RF-debris	7/23/2008	0	0		137 Cs detected in IDC RF-336 and IDC RF-371 waste.
596	08	7/31/2008			J Collins	UN-00B	BN510	IDC Change	Change IDC from UN-00B to RF-960	7/31/2008	0	0		NCR 25516 for container 10126507, WMC change
597	08	8/5/2008	1	8/6/2008	R. Morris	RF-320	BN296	IDC Change	Change IDC from RF-320 to RF-440	8/5/2008	0	0		NCR 40628 for container 10239207, WMC change
598	08	8/5/2008	3	5/10/2012	R. Morris	RF-900	BN510	IDC Change	Change IDC from RF-900 to RF-950	8/5/2008	0	0		Multiple NCRs and containers, IDC change
599	08	8/13/2008			R. Morris	RF-900	BN510	IDC Change	Change IDC from RF-900 to RF-990	8/13/2008	0	0		Multiple NCRs and containers, IDC change, <LLD
600	08	5/17/2010	3	8/12/2010	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-441	8/19/2008	2	2	5/17/2010	Multiple NCRs for multiple containers, WMC change
601	08	8/21/2008	1	10/16/2008	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-463	8/21/2008	0	0		NCR 41027 for container 10218588, WMC change
602	08	8/21/2008			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-300	8/21/2008	0	0		NCR 41031 for container 10233162, WMC change
603	08	9/4/2008	1	1/19/2012	R. Morris	RF-900	BN510	IDC Change	Change IDC from RF-900 to RF-960	9/4/2008	0	0		NCR 41216 for container 10083478, WMC change
604	08	9/9/2008			R. Morris	Not used			NOT USED - CANCELLED AKR	9/9/2008	0	0		NCR 41260 for container 10226772, WMC change, <LLD - Cancelled AKR
605	08	9/9/2008			R. Morris	RF-464	BN296	IDC Change	Return to historical IDC (RF-480) after incorrect change to RF-464	9/9/2008	1	1	9/15/2008	NCR 24912 for container 10132503, WMC change, <LLD, Requires an RTR/VE Update to change.
606	08	9/9/2008			R. Morris	MD-836	N/A	IDC Change	Change IDC from MD-836 to MD-804 after incorrect change to MD-847	9/9/2008	1	1	9/14/2008	NCR 19886 for container 10060198, WMC change, Requires an RTR/VE Update to change.
607	08	9/15/2008			R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-336	9/15/2008	0	0		NCR 41335 for container 10147039, WMC change
608	08	9/16/2008	10	11/14/2008	P Fetzer	RF, MD Boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-08-608	9/16/2008	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes.
609	08	9/18/2008	4	1/5/2009	R. Morris	RF-697	N/A	IDC Change	Create Historical IDs and assign RF-697 to unknown containers	9/18/2008	0	0		Multiple containers, no NCRs, <LLD
610	08	9/18/2008	5	1/5/2009	R. Morris	UN-00x	N/A	IDC Change	Assign UN-00x to unknown containers	9/18/2008	0	0		Multiple containers and NCRs, <LLD, Further AK analysis required
611	08	9/29/2008			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-338	9/29/2008	0	0		NCR 41499 for container 10088951, WMC change
612	08	10/21/2008			R. Morris	UN-00A	N/A	IDC Change	Change IDC from UN-00A to MD-835	10/21/2008	0	0		NCR 41754 for container 10035409, WMC change, <LLD, Follow on to AKR-05-344
613	08	10/27/2008	2	6/29/2009	R. Morris	RF-464	BN510	IDC Change	Change IDC from RF-464 to RF-490	10/27/2008	0	0		Multiple NCRs for multiple containers, WMC change
614	---	10/30/2008			P Fetzer	Not used	N/A	Radionuclide	NOT USED - CANCELLED AKR		0	0		137 Cs detected in IDC RF-697 waste. Container 10019752. This AKR is cancelled, pending reassay per Jim Seamans.pff 7/9/09

AKR	AKR "Year" (i.e., AKR-##)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
615	08	11/13/2008			R. Morris	MD-847	BN510	IDC Change	IDC change from RF-847 to RF-825	11/13/2008	1	1	7/9/2009	NCR 42077 for container 10145629, waste stream change, pack date range adjustment required.
616	08	11/17/2008			R. Morris	RF-336	BN510	IDC Change	IDC change from RF-336 to RF-490	11/17/2008	0	0		NCR 42106 for container 10184738, WMC change
617	08	11/25/2008	10	2/23/2009	P Fetzer	RF, MD Boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-08-608	12/1/2008	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes.
618	08	12/16/2008	7	12/29/2011	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-480	12/16/2008	0	0		Multiple NCRs and containers, WMC change
619	08	12/17/2008			R. Morris	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-836	12/16/2008	0	0		NCR 42508 for container 10002220, WMC change. Note: the historical ID for this container not MD-848, but rather MD-836. A supervisory Overide was performed to change MD-848 to MD-836. AKR-08-619 document clarifies the historical ID issue and WTS was verified to ensure the correct historical ID is IDMD740003906
620	08	12/18/2008			R. Morris	BN-508	BN510	IDC Change	Change IDC from BN-508 to RF-002	12/18/2008	0	0		NCR 42529 for container 10107578, WMC change
621	08	12/22/2008	1	5/17/2012	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-320	12/22/2008	1	1	12/22/2008	NCR 42579 for container 10029327, WMC change
622	08	12/22/2008	1	3/5/2011	R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-960	12/22/2008	0	0		Multiple NCRs for multiple containers, WMC change
623	08	12/23/2008	11	3/26/2012	R. Morris	RF-374	BN510	IDC Change	Change IDC from RF-374 to RF-697	12/23/2008	0	0		Multiple NCRs for multiple containers, WMC change
624	08	12/29/2008			R. Morris	RF-422	N/A	IDC Change	Change IDC from RF-422 to RF-820	12/29/2008	0	0		Multiple NCRs for Multiple containers, WMC change
625	08	12/31/2008			R. Morris	MD-847	BN510	IDC Change	Change IDC from MD-847 to MD-848	12/31/2008	0	0		NCR 42744 for container 10145601, Waste Stream change
626	08	12/31/2008	1	1/6/2009	R. Morris	RF-960	BN510	Other	Add IDC RF-960 to prefix 0007 with a one day date range, 11/07/73	12/31/2008	1	1	12/31/2008	Add IDC RF-960 to prefix 0007 with a one day date range, 11/07/73
627	09	1/7/2009			R. Morris	MD-825	BN304	IDC Change	Change IDC from MD-825 to MD-804	1/7/2009	0	0		NCR 16557 for container 10034692, Not strictly required - cleaning up an old NCR.
628	09	1/12/2009	10	9/10/2009	P Fetzer	RF, MD Boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen; AK disagrees w/RTR recommend	1/13/2009	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes.
629	09	1/13/2009			R. Morris	RF-464	BN510	IDC Change	Change IDC from RF-464 to RF-440	1/13/2009	0	0		NCR 42900 for container 10110755, WMC change
630	09	1/13/2009			R. Morris	MD-811	N/A	IDC Change	Change IDC from MD-811 to MD-803	1/13/2009	0	0		NCR 42909 for container 10029119; NCR 42910 for container 10029118, WMC change
631	09	1/20/2009			R. Morris	UN-00B	N/A	IDC Change	Change IDC from UN-00B to RF-001	1/20/2009	0	0		NCR 43099 for container 10013159; WMC change
632	09	1/29/2009	1	9/28/2010	R. Morris	RF-337	BN510	IDC Change	Change IDC from RF-337 to RF-440	2/2/2009	0	0		Multiple NCRs for multiple containers, WMC change
633	09	2/16/2009	4	3/1/2010	J Collins	RF-241	N/A	IDC Change	Change IDC from RF-241 to RF-432	3/17/2009	0	0		Multiple NCRs for multiple containers, WMC change
634	09	2/19/2009			P Fetzer	RF-339	BN510	IDC Change	Change IDC from RF-339 to RF-300	2/23/2009	0	0		NCR 43763 for container 10267967; WMC change
635	09	3/5/2009			P Fetzer	RF-004	BN004	IDC Change	Change IDC from RF-004 to RF-480	3/6/2009	0	0		NCR 43965 for container 10013767; WMC change
636	09	3/10/2009	9	12/16/2009	P Fetzer"	RF, MD boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-09-628	3/17/2009	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes. Continuation of AKR-09-628.
637	09	4/14/2009			R. Morris	BN-508	BN510	IDC Change	Change IDC from BN-508 to RF-800	4/14/2009	0	0		NCR 44526 for container 10017771; WMC change
638	09	5/27/2009	2	8/16/2010	R. Morris	RF-751	N/A	IDC Change	Change IDC from RF-751 to RF-750	5/27/2009	1	1	5/27/2009	NCR 45561 for container 10140581; WMC change
639	09	6/25/2009	1	7/23/2009	R. Morris	IC-603	N/A	IDC Change	Change IDC from IC-603 to IC-526	6/25/2009	0	0		Multiple NCRs for multiple containers, WMC change
640	09	7/8/2009			C Abbott	RF-005	BNINW216	IDC Change	Change IDC from RF-005 to RF-001	7/9/2009	0	0		NCR 38208 for container 10124862; WMC change
641	09	8/11/2009			R. Morris	RF-004	BN004	IDC Change	Change IDC from RF-004 to RF-337	8/11/2009	0	0		NCR 46737 for container 10233561, WMC change
642	09	10/5/2009	7	5/30/2012	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-480	10/5/2009	0	0		Multiple NCRs for multiple containers, Waste Stream Change
643	09	10/6/2009			R. Morris	UN-00A	N/A	IDC Change	Change IDC from UN-00A to MD-836	10/6/2009	0	0		NCR 20715 for container 10026404, WMC change
644	09	10/8/2009			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to UN-00A	10/8/2009	0	0		NCR 47607 for container 10170821, WMC change
645	09	11/10/2009	10	5/24/2012	R. Morris	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-847	11/10/2009	0	0		Multiple NCRs for multiple containers, Waste Stream Change
646	09	11/12/2009			R. Morris	RF-000	N/A	IDC Change	Change IDC from RF-000 to RF-432	11/12/2009	1	1	11/12/2009	NCR 48568 for container 10194306
647	09	11/24/2009	3	1/11/2012	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-440	11/24/2009	0	0		Multiple NCRs for multiple containers, WMC Change
648	09	11/24/2009			R. Morris	RF-980	N/A	IDC Change	Change IDC from RF-980 to RF-290	11/24/2009	1	1	11/24/2009	NCR 48960 for container 10166784, WMC change
649	09	11/25/2009			R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-328	11/25/2009	1	1	11/25/2009	NCR 48996 for container 10190521, WMC change
650	09	12/1/2009	9	6/2/2010	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441 or RF-442	12/1/2009	1	1	2/2/2010	Multiple NCRs for multiple containers, WMC change
651	09	12/3/2009			R. Morris	BL-020	N/A	IDC Change	Change IDC from BL-020 to BL-010	12/3/2009	0	0		NCR 49276 for container 10030135, WMC change
652	09	12/3/2009			R. Morris	BL-010	N/A	IDC Change	Change IDC from BL-010 to BL-020	12/3/2009	0	0		NCR 49284 for container 10021604, WMC change
653	09	12/4/2009	3	8/30/2011	R. Morris	RF-750	BN510	IDC Change	Change IDC from RF-750 to RF-753	12/4/2009	0	0		Multiple NCRs for multiple containers, WMC change
654	09	12/7/2009			R. Morris	BL-010 or BL-020	N/A	IDC Change	Change IDC from BL-010 or BL-020 to BL-030	12/21/2009	0	0		Multiple NCRs for multiple containers, WMC change
655	09	12/7/2009			R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-290	12/7/2009	1	1	12/7/2009	Multiple NCRs for multiple containers, WMC change
656	09	12/7/2009	8	4/26/2010	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-090	12/7/2009	0	0		Multiple NCRs for multiple containers, WMC change
657	09	12/8/2009	11	5/25/2010	N Kirk	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-960	12/9/2009	1	1	2/22/2010	Multiple NCRs for multiple containers, WMC change
658	09	12/10/2009	1	9/15/2010	R. Morris	RF-300	BN510	IDC Change	Change IDC from RF-300 to RF-480	12/10/2009	0	0		Multiple NCRs for multiple containers, WMC change
659	09	12/14/2009			R. Morris	Not used	N/A	Other	NOT USED - CANCELLED AKR		0	0		Accumulation of AK information for BL IDCs
660	09	12/21/2009	10	6/8/2010	P Fetzer	RF, MD boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-09-636	12/22/2009	0	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes. Continuation of AKR-09-636.
661	10	1/13/2010	2	3/5/2011	R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-371	1/13/2010	1	1	1/13/2010	Multiple NCRs for multiple containers, WMC change
662	---					Not used			NOT USED - CANCELLED AKR		0	0		Cancelled
663	10	11/10/2010			R. Morris	RF-003	N/A	IDC Change	Change IDC from RF-003 to RF-330	11/10/2010	1	1	10/11/2010	NCRs 56749, 50800, 50662 for container 10026035, WMC change
664	10	1/20/2010			R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-463	1/20/2010	0	0		NCR 50808 for container 10205956, WMC change
665	10	1/20/2010			R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-241	1/20/2010	1	1	1/20/2010	NCR 50832 for container 10334015, WMC change
666	10	1/28/2010			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-463	1/28/2010	1	1	1/28/2010	NCR 50913 for container 10339150, WMC change
667	10	2/3/2010			R. Morris	RF-460	BN510	IDC Change	Change IDC from RF-460 to RF-463	2/3/2010	0	0		NCR 51179 for container 10196198, WMC change
668	10	2/3/2010	6	8/20/2012	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-374	2/3/2010	0	0		Multiple NCRs for multiple containers, WMC change
669	10	2/9/2010			R. Morris	RF-960	BN510	IDC Change	Change IDC from RF-960 to RF-320	2/10/2010	1	1	2/9/2010	NCR 51136 for container 10335871, WMC change
670	10	2/16/2010			R. Morris	RF-490	BN211	IDC Change	Change IDC from RF-490 to RF-440	2/16/2010	0	0		NCR 51147 for container 10339100 WMC change
671	10	2/18/2010			R. Morris	RF-752	N/A	IDC Change	Change IDC from RF-752 to RF-754	2/18/2010	0	0		NCR 51606 for container 10308390, WMC change
672	10	2/18/2010			R. Morris	RF-750	N/A	IDC Change	Change IDC from RF-752 to RF-747	2/18/2010	0	0		Multiple NCRs for multiple containers, WMC change
673	10	2/23/2010	1	9/20/2010	R. Morris	RF-330	BN296	IDC Change	Change IDC from RF-330 to RF-320	2/23/2010	0	0		NCR 51767 for container 10339411, WMC change
674	10	2/24/2010	3	5/25/2010	R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-960	2/24/2010	0	0		Multiple NCRs for multiple containers, WMC change

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675	—					Not used			NOT USED - CANCELLED AKR		0	0		Cancelled
676	10	3/1/2010	9	10/14/2010	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	3/1/2010	1	1	3/1/2010	Multiple NCRs for multiple containers, WMC change, Successor to AKR-08-587
677	10	3/1/2010			R. Morris	RF-336	BN510	IDC Change	Change IDC from RF-336 to RF-371	3/1/2010	0	0		NCR 51905 for container 10341305, WMC change
678	10	3/2/2010	9	10/11/2010	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-960	3/2/2010	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-09-657
679	10	3/3/2010			R. Morris	RF-001	BNINW216	IDC Change	Change IDC from RF-001 to RF-336	3/3/2010	1	0		Multiple NCRs for multiple containers, WMC change
680	10	3/11/2010	2	5/29/2012	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-338	3/11/2010	1	1	3/11/2010	NCR 52059 for container 10021917, WMC change
681	10	3/11/2010			R. Morris	RF-241	N/A	IDC Change	Change IDC from RF-241 to UN-00B	3/11/2010	0	0		No NCR required; Container 10230700, WMC change
682	10	3/15/2010	6	1/18/2012	R. Morris	RF-330	BN296	IDC Change	Change IDC from RF-330 to RF-960	3/15/2010	0	0		Multiple NCRs for multiple containers, WMC change
683	10	4/27/2010	6	6/13/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-330	4/27/2010	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-07-526
684	10	5/18/2010	2	1/4/2012	R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-090	5/18/2010	1	1	5/18/2010	NCR 53340 for container 10342359, WMC change
685	10	5/25/2010	7	1/4/2012	R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-960	2/24/2010	0	0		Multiple NCRs for multiple containers, WMC change
686	10	6/3/2010	1	6/7/2010	R. Morris	RF-All	N/A	Other	Change the prefix date range based on container information	6/3/2010	1	1	6/3/2010	Change the prefix date range based on container information, multiple containers
687	10	6/17/2010			R. Morris	RF-300	BN510	IDC Change	Change IDC from RF-300 to RF-320	6/17/2010	1	1	6/17/2010	NCR 53659 for container 10116587, WMC change
688	10	6/17/2010	4	4/11/2012	P Fetzer	RF, MD boxes	BN510	IDC Change	Standing AKR. Changes IDC-boxes w/known gen Rev of AKR-09-660	7/12/2010	1	0		Boxes with missing or incomplete hist data. Multiple NCRs and multiple boxes. Continuation of AKR-09-660.
689	10	6/24/2010	9	1/11/2012	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-337	6/24/2010	2	1	6/16/2011	Multiple NCRs for multiple containers, WMC change, Successor to AKR-07-523.
690	10	7/6/2010	2	5/23/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-337	7/6/2010	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-07-517.
691	10	8/3/2010	9	8/2/2011	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441 or RF-442	7/4/2011	1	0		Multiple NCRs for multiple containers, WMC change. Successor to AKR-09-650
692	10	8/4/2010			R. Morris	RF-370	BN510	IDC Change	Change IDC from RF-370 to RF-480	8/4/2010	0	0		NCR 54650 for container 10367383, WMC change
693	10	9/21/2010	1	6/12/2012	R. Morris	RF-950	BN510.1	IDC Change	Change IDC from RF-950 to RF-900	9/21/2010	0	0		NCR 55638 for container 10368648, WMC change
694	10	9/23/2010			R. Morris	RF-370	BN510.1	IDC Change	Change IDC from RF-370 to RF-337	9/23/2010	0	0		NCR 55667 for container 10364203, WMC change
695	10	9/23/2010			R. Morris	RF-370	BN510.1	IDC Change	Change IDC from RF-370 to RF-330	9/23/2010	0	0		NCR 55674 for container 10370462, WMC change
696	10	10/6/2010	1	12/21/2011	R. Morris	RF-950	BN510.1	IDC Change	Change IDC from RF-950 to RF-441	10/6/2010	1	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-10-676
697	10	10/20/2010	3	9/7/2011	R. Morris	RF-330	BN510	IDC Change	Change IDC from RF-330 to RF-480	10/20/2010	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-10-676
698	10	10/21/2010	7	5/30/2012	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-330	10/21/2010	0	0		Multiple NCRs for multiple containers, WMC change
699	10	10/28/2010			R. Morris	RF-995	N/A	IDC Change	Change IDC from RF-995 to RF-337	10/28/2010	1	1	10/28/2010	NCR 56520 for container 10294011, WMC change
700	10	11/1/2010			N Kirk	N/A	BN510	HWN	1,1-Dichloroethane UCL90 above PRQL for Lot 4	11/1/2010	0	0		1,1-Dichloroethane UCL90 above PRQL for Lot 4
701	10	11/29/2010	3	12/29/2011	R. Morris	RF-004	BN004	IDC Change	Change IDC from RF-004 to RF-337	11/29/2010	0	0		Multiple NCRs and containers, WMC change. Successor to AKR-08-582
702	11	2/15/2011			B Erhardt	N/A	All Hanford waste	Radionuclide	Detection of Cm-245 in Hanford debris	2/17/2011	0	0		Cm-245 detected in Hanford debris waste during NDA.
703	11	2/22/2011	10	2/13/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-960	2/22/2011	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-10-678
704	11	3/7/2011	1	6/15/2011	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-300	3/7/2011	2	2	6/16/2011	Multiple NCRs for multiple containers, WMC change,
705	11	5/14/2011			R. Morris	BN-508	BN510.1	IDC Change	Change IDC from BN-508 to RF-337	5/14/2011	1	1	5/14/2011	NCR 62674 for container 10066948, WMC change
706	11	6/9/2011	1		R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-339	6/9/2011	2	1	6/9/2011	Multiple NCRs for multiple containers, WMC change,
707	11	6/16/2011			R. Morris	RF-464	BN510.1	IDC Change	Change IDC from RF-464 to RF-463	6/16/2011	0	0		NCR 63477 for container 10205972, WMC change
708	11	6/20/2011	1	7/26/2011	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-337	6/20/2011	1	1	6/20/2011	NCR 63579 for container 10154767, NCR 64091 for container 10205946, WMC change
709	11	6/20/2011			R. Morris	RF-442	BN510.1	IDC Change	Change IDC from RF-442 to RF-339	6/20/2011	1	1	6/20/2011	NCR 63582 for container 10154396, WMC change
710	11	8/1/2011			N Kirk	RF-480	BN510.1	IDC Change	Change IDC from RF-480 to RF-328	8/3/2011	1	1	10/19/2011	NCR 64632 for container 10177919, WMC change
711	—					Not used			NOT USED - CANCELLED AKR		0	0		Cancelled
712	11	8/3/2011			R. Morris	RF-464	BN510.1	IDC Change	Change IDC from RF-464 to RF-337	8/3/2011	0			NCR 64678 for container 10206565
713	11	8/17/2011			R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-330	8/17/2011	0			NCR 64677 for container 10183833
714	11	8/23/2011	3	1/5/2012	R. Morris	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-441-442	8/24/2011	1	1	8/23/2011	Multiple NCRs for multiple containers, WMC change, Successor to AKR-10-691
715	11	8/30/2011			R. Morris	RF-002	BNINW216	IDC Change	Change IDC from RF-002 to RF-337	8/30/2011	1	1	8/30/2011	NCR 65246 for container 10360624, WMC change
716	11	8/30/2011			R. Morris	RF-441	BN510.1	IDC Change	Change IDC from RF-441 to RF-330	8/30/2011	0	0		NCR 65321 for container 10185934, WMC change
717	11	9/5/2011			N Kirk	RF-376	BN510.1	IDC Change	Change IDC from RF-376 to RF-337	9/5/2011	1	1	9/5/2011	NCR 65472 for container 10059367, WMC change
718	11	9/6/2011	2	6/12/2012	R. Morris	RF-960	BN510.1	IDC Change	Change IDC from RF-960 to RF-090	9/6/2011	0			NCR 65486 for container 10206550, WMC change
719	11	9/7/2011			N Kirk	RF-744	BN004	IDC Change	Change IDC from RF-744 to RF-750	10/8/2011	1	1	10/8/2011	Multiple NCRs for multiple containers, WMC change
720	11	9/13/2011			T Venneman	RF-744	BN004	IDC Change	Change IDC from RF-744 to RF-750	9/26/2011	0	0		NCRs 65983 and 65984 for container 10322684, WMC change
721	11	9/14/2011	3	12/19/2011	R. Morris	RF-750	BN510.1	IDC Change	Change IDC from RF-750 to RF-753	9/14/2011	2	2	10/25/2011	Multiple NCRs for multiple containers, WMC change
722	11	10/8/2011	5	4/16/2012	R. Morris	RF-750	BN510.1	IDC Change	Change IDC from RF-750 to RF-751	10/8/2011	1	1	10/8/2011	Multiple NCRs for multiple containers, WMC change
723	11	10/25/2011			R. Morris	RF-750	BN510.1	IDC Change	Change IDC from RF-750 to RF-747	10/25/2011	1	1	10/25/2011	NCR 66420 for container 10325245, WMC change
724	11	10/31/2011			R. Morris	RF-750	BN510.1	IDC Change	Change IDC from RF-750 to RF-752	10/31/2011	1	1	10/31/2011	NCR 66490 for container 10339622
725	11	11/8/2011			R. Morris	RF-300	BN510.1	IDC Change	Change IDC from RF-300 to RF-311	11/8/2011	1	1	11/8/2011	NCR 66649 for container 10206548, WMC change
726	11	11/9/2011	1	12/29/2011	R. Morris	RF-752	N/A	IDC Change	Change IDC from RF-752 to RF-754	11/9/2011	1	1	11/9/2011	Multiple NCRs for multiple containers, WMC change
727	11	11/21/2011			R. Morris	RF-970	BN510.1	IDC Change	Change IDC from RF-970 to RF-960	11/21/2011	0	0		NCR 66923 for container 10156324, WMC change
728	11	11/29/2011			N Kirk	RF-750	BN510.1	IDC Change	Change IDC from RF-750 to RF-742	11/29/2011	1	0		NCR 67041 for container 10323855, WMC change
729	11	12/7/2011			N Kirk	RF-440	BN243	IDC Change	Change IDC from RF-440 to RF-376	12/8/2011	1	0		NCR 67275 for container 10154417, WMC change
730	11	12/12/2011	6	5/28/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	12/12/2011	0	0		NCR 67413 for container 10148006, WMC change
731	11	12/13/2011			R. Morris	RF-391,392	BN510.1	IDC Change	Change IDC from RF-391 to RF-440	12/13/2011	1	1	12/13/2011	NCR 67431 for container 10060382, WMC change
732	11	12/27/2011			R. Morris	BN-508	BN510.1	IDC Change	Change IDC from BN-508 to BN-600	12/27/2011	0	0		Multiple NCRs for multiple containers, Waste Stream Change
733	12	1/3/2012	9	9/20/2012	R. Morris	RF-330	BN510.1	IDC Change	Change IDC from RF-330 to RF-480	1/3/2012	0	0		NCR 67997 for container 10190435, WMC Change
734	12	1/4/2012	1	2/1/2012	C Hinkle-Daniel	RF-371	BN510.1	IDC Change	Change IDC from RF-371 to RF-440	1/4/2012	0	0		NCR 68022 for container 10344189, WMC Change
735	12	1/4/2012			R. Morris	RF-337	BN510.1	IDC Change	Change IDC from RF-337 to RF-490	1/4/2012	0	0		NCR 68025 for container 10245488, WMC Change
736	12	1/5/2012	4	5/28/2012	C Hinkle-Daniel	RF-336	BN510.1	IDC Change	Change IDC from RF-336 to RF-480	1/16/2012	0	0		Multiple NCRs for multiple containers, WMC change
737	12	1/5/2012			C Hinkle-Daniel	RF-337	BN510.1	IDC Change	Change IDC from RF-337 to RF-339	1/16/2012	1	1	1/16/2012	NCR 68040 for container 10202100, WMC Change
738	12	1/11/2012			C Hinkle-Daniel	RF-432	N/A	IDC Change	Change IDC from RF-432 to RF-374	1/16/2012	1	1	1/16/2012	NCR 68193 for container 10090702, WMC Change
739	12	1/12/2012			R. Morris	UN-00B	N/A	Other	Change IDC from UN-00B to RF-751 for debris container.	1/12/2012	0	0		NCR 68206 for container 10319004, WMC change
740	12	1/17/2012	1	5/28/2012	C Hinkle-Daniel	RF-336	BN510.1	IDC Change	Change IDC from RF-336 to RF-338	1/17/2012	0	0		NCR 68314 for container 10160086, WMC change

AKR	AKR "Year" (i.e., AKR-###)	Date Initiated	Revision Number	Revision Date	Initiator	IDC	Waste Stream or Lot	Description of Discrepancy	Description of Resolution	Date Signed	Number of Action Items	Number of AIs completed	Date All AIs Incorporated	Comments
741	12	1/17/2012			R. Morris	RF-990	N/A	IDC Change	Change IDC from RF-990 to RF-970	1/17/2012	1	1	1/17/2012	NCR 68312 for container 10135348, WMC change
742	12	1/19/2012			C Hinkle-Daniel	950	BN510.1	IDC Change	Change IDC from RF-950 to RF-336	1/19/2012	0	0		NCR 68361 for container 10233356, WMC change
743	12	1/23/2012			C Hinkle-Daniel	RF-374	BN510.1	IDC Change	Change IDC from RF-374 to RF-330	1/23/2012	1	1	1/23/2012	NCR 68454 for container 10132087, WMC change
744	12	1/25/2012	3	5/28/2012	R. Morris	RF-480	BN296	IDC Change	Change IDC from RF-480 to RF-337	1/25/2012	1	1	2/21/2012	Multiple NCRs for multiple containers, WMC change, Successor to AKR-10-689
745	12	2/1/2012			C Hinkle-Daniel	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-836	2/1/2012	0	0		NCR 68706 for container 10120214, WMC change
746	12	2/2/2012			R. Morris	RF-360	BN211	IDC Change	Change IDC from RF-360 to RF-480	2/2/2012	0	0		NCR 68729 for container 10062288, WMC Change
747	12	2/8/2012	1	6/4/2012	C Hinkle-Daniel	RF-374	BN510.1	IDC Change	Change IDC from RF-374 to RF-371	2/8/2012	0	0		NCR 68871 for container 10107447, WMC Change
748	12	2/8/2012	5	6/18/2012	C Hinkle-Daniel	RF-371	BN510.1	IDC Change	Change IDC from RF-371 to RF-697	2/8/2012	4	4	6/11/2012	Multiple NCRs for multiple containers, WMC change
749	12	2/9/2012			C Hinkle-Daniel	RF-336	BN510.1	IDC Change	Change IDC from RF-336 to RF-990	2/9/2012	1	1	2/9/2012	NCR 68889 for container 10135728, WMC Change
750	12	3/20/2012			R. Morris	RF-330	BN510.1	IDC Change	Change Box IDC from RF-330 to RF-480	3/2/2012	0	0		Multiple NCRs for multiple containers, WMC change
751	12	3/20/2012	13	8/6/2012	R. Morris	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-960	3/20/2012	0	0		Multiple NCRs for multiple containers, WMC change, Successor to AKR-11-703
752	---					not used			NOT USED - CANCELLED AKR		0	0		Cancelled
753	12	4/2/2012	6	10/1/2012	C Hinkle-Daniel	RF-374	BN510.1	IDC Change	Change IDC from RF-374 to RF-697	4/2/2012	3	3	10/1/2012	NCR 69881 for container 10166746, WMC Change
754	12	4/30/2012			C Hinkle-Daniel	RF-338	BN510.1	IDC Change	Change IDC from RF-338 to RF-374	5/1/2012	1	1	5/1/2012	NCR 70470 for container 10104464, WMC Change
755	12	5/29/2012			C Hinkle-Daniel	RF-371	BN510.1	IDC Change	Change IDC from RF-371 to RF-441	5/30/2012	0	0		NCR 71015 for container 10154340, WMC Change
756	12	5/31/2012	2	6/18/2012	C Hinkle-Daniel	RF-960		IDC Change	Change IDC from RF-960 to RF-990 Dirt	5/31/2012	2	2	6/18/2012	Multiple NCRs for multiple containers, WMC change,
757	12	6/4/2012			C Hinkle-Daniel	MD-848	BN304	IDC Change	Change IDC from MD-848 to MD-842	6/4/2012	0	0		NCR 71103 for container 10147665, WMC Change
758	12	6/5/2012			C Hinkle-Daniel	RF-370		IDC Change	Change IDC from RF-370 to RF-990	6/5/2012	1	1	6/5/2012	NCR 71134 for container 10367990, WMC Change
759	12	6/5/2012			C Hinkle-Daniel	RF-950	BN510.1	IDC Change	Change IDC from RF-950 to RF-760	6/5/2012	0	0		Multiple NCRs for multiple containers, WMC change,
760	12	6/7/2012	2	10/1/2012	C Hinkle-Daniel	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-374	6/7/2012	1	1	6/7/2012	Multiple NCRs for multiple containers, WMC change,
761	12	6/12/2012	1	7/10/2012	C Hinkle-Daniel	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-090	6/12/2012	1	1	6/12/2012	Multiple NCRs for multiple containers, WMC change,
762	12	6/18/2012	1	10/1/2012	C Hinkle-Daniel	RF-371	BN510.1	IDC Change	Change IDC from RF-371 to RF-697	6/18/2012	1	1	10/1/2012	Multiple NCRs for multiple containers, WMC change,
763	12	6/18/2012			C Hinkle-Daniel	RF-330	BN510.1	IDC Change	Change IDC from RF-330 to RF-990	6/18/2012	0	0		NCR 71405 for container 10233818, WMC change
764	12	6/25/2012			C Hinkle-Daniel	RF-005	BN510.1	IDC Change	Change IDC from RF-005 to RF-760	6/25/2012	0	0		NCR 71469 for container 10366219, WMC change
765	12	8/7/2012			C Hinkle-Daniel	RF-371	BN510.1	IDC Change	Change IDC from RF-371 to RF-330	8/7/2012	0	0		NCR 48220 for container 10146774, WMC change
766	12	8/28/2012			C Hinkle-Daniel	RF-371	BN161	IDC Change	Change IDC from RF-371 to RF-375	8/28/2012	0	0		NCR 72310 for container 10124144, WMC change
767	12	9/26/2012			R. Morris	RF-480	BN296	IDC Change	Change Box IDC from RF-480 to RF-490	9/26/2012	0	0		No NCR Required, WMC Change

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10452385		ASY12-02195		VEB12-00649	BN510.1.0157
10452372		ASY12-02201		VEB12-00650	BN510.1.0157
10452244		ASY12-02201		VEB12-00651	BN510.1.0157
10452162		ASY12-02195		VEB12-00649	BN510.1.0157

Container	IDC	ASY BDR	RTR BDR	Recon Lot	Solid Sampling	ALD	HSG	Comment
10123139	MD-836	ASY06-03161	RTR06-00548	Lot 4	SSC07-00101	ALD07011S		SS&A Drum
						ALD07007N		
						ALD07018M		
						ALD07014V		
10059943	MD-836	ASY06-00194	RTR06-00062	BN836.87			HS407-00202	Random Pick

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1	10025026	MD836	MD836	APPROVED_CERT	09/21/06
2	10001015	MD836	MD836	EMPLACED_CNTR	06/19/75
3	10001019	MD836	MD836	EMPLACED_CNTR	07/01/75
4	10001020	MD836	MD836	EMPLACED_CNTR	05/20/75
5	10001021	MD836	MD836	EMPLACED_CNTR	06/12/75
6	10001022	MD836	MD836	EMPLACED_CNTR	06/23/75
7	10001023	MD836	MD836	EMPLACED_CNTR	06/19/75
8	10001024	MD836	MD836	EMPLACED_CNTR	06/23/75
9	10001027	MD836	MD836	EMPLACED_CNTR	06/19/75
10	10001170	MD836	MD836	EMPLACED_CNTR	06/23/75
11	10001171	MD836	MD836	EMPLACED_CNTR	06/19/75
12	10001174	MD836	MD836	EMPLACED_CNTR	06/12/75
13	10001175	MD836	MD836	EMPLACED_CNTR	04/30/75
14	10001176	MD836	MD836	EMPLACED_CNTR	05/01/75
15	10001177	MD836	MD836	EMPLACED_CNTR	07/11/75
16	10001178	MD836	MD836	EMPLACED_CNTR	07/03/75
17	10001181	MD836	MD836	EMPLACED_CNTR	06/16/75
18	10001182	MD836	MD836	EMPLACED_CNTR	06/25/75
19	10001494	MD836	MD836	EMPLACED_CNTR	06/23/75
20	10001495	MD836	MD836	EMPLACED_CNTR	06/19/75
21	10001497	MD836	MD836	EMPLACED_CNTR	07/03/75
22	10001498	MD836	MD836	EMPLACED_CNTR	06/19/75
23	10001499	MD836	MD836	EMPLACED_CNTR	06/25/75
24	10001500	MD836	MD836	EMPLACED_CNTR	06/25/75
25	10001501	MD836	MD836	EMPLACED_CNTR	04/30/75
26	10001502	MD836	MD836	EMPLACED_CNTR	04/30/75
27	10001518	MD836	MD836	EMPLACED_CNTR	06/03/75
28	10001519	MD836	MD836	EMPLACED_CNTR	06/03/75
29	10001544	MD836	MD836	EMPLACED_CNTR	10/22/80
30	10001545	MD836	MD836	EMPLACED_CNTR	02/23/81
31	10001548	MD836	MD836	EMPLACED_CNTR	04/13/81
32	10001551	MD836	MD836	EMPLACED_CNTR	08/18/81
33	10001552	MD836	MD836	EMPLACED_CNTR	04/27/81
34	10001554	MD836	MD836	EMPLACED_CNTR	10/22/80
35	10001555	MD836	MD836	EMPLACED_CNTR	10/22/80
36	10001557	MD836	MD836	EMPLACED_CNTR	10/08/84
37	10001558	MD836	MD836	EMPLACED_CNTR	05/19/81
38	10001560	MD836	MD836	EMPLACED_CNTR	04/27/81
39	10001561	MD836	MD836	EMPLACED_CNTR	02/23/81
40	10001566	MD836	MD836	EMPLACED_CNTR	05/12/81
41	10001568	MD836	MD836	EMPLACED_CNTR	04/27/81
42	10001569	MD836	MD836	EMPLACED_CNTR	02/23/81
43	10001570	MD836	MD836	EMPLACED_CNTR	10/22/80
44	10001571	MD836	MD836	EMPLACED_CNTR	05/06/81
45	10001575	MD836	MD836	EMPLACED_CNTR	10/22/80
46	10001576	MD836	MD836	EMPLACED_CNTR	06/02/80
47	10001577	MD836	MD836	EMPLACED_CNTR	10/08/84
48	10001580	MD836	MD836	EMPLACED_CNTR	04/13/81
49	10001663	MD836	MD836	EMPLACED_CNTR	06/13/85
50	10001666	MD836	MD836	EMPLACED_CNTR	05/12/81
51	10001669	MD836	MD836	EMPLACED_CNTR	01/30/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
52	10001673	MD836	MD836	EMPLACED_CNTR	02/23/81
53	10001679	MD836	MD836	EMPLACED_CNTR	10/31/84
54	10001680	MD836	MD836	EMPLACED_CNTR	10/31/84
55	10001681	MD836	MD836	EMPLACED_CNTR	05/26/81
56	10001682	MD836	MD836	EMPLACED_CNTR	02/03/83
57	10001683	MD836	MD836	EMPLACED_CNTR	05/26/81
58	10001685	MD836	MD836	EMPLACED_CNTR	07/22/81
59	10001687	MD836	MD836	EMPLACED_CNTR	05/26/81
60	10001688	MD836	MD836	EMPLACED_CNTR	07/22/81
61	10001691	MD836	MD836	EMPLACED_CNTR	03/02/81
62	10001695	MD836	MD836	EMPLACED_CNTR	02/23/81
63	10001696	MD836	MD836	EMPLACED_CNTR	05/19/81
64	10001699	MD836	MD836	EMPLACED_CNTR	05/26/81
65	10001705	MD836	MD836	EMPLACED_CNTR	04/01/81
66	10001706	MD836	MD836	EMPLACED_CNTR	04/01/81
67	10001710	MD836	MD836	EMPLACED_CNTR	05/19/81
68	10001711	MD836	MD836	EMPLACED_CNTR	03/02/81
69	10001712	MD836	MD836	EMPLACED_CNTR	02/16/81
70	10001713	MD836	MD836	EMPLACED_CNTR	02/23/81
71	10001714	MD836	MD836	EMPLACED_CNTR	02/16/81
72	10001715	MD836	MD836	EMPLACED_CNTR	02/23/81
73	10001716	MD836	MD836	EMPLACED_CNTR	07/22/81
74	10001717	MD836	MD836	EMPLACED_CNTR	02/23/81
75	10001718	MD836	MD836	EMPLACED_CNTR	05/07/85
76	10001749	MD836	MD836	EMPLACED_CNTR	06/03/75
77	10001750	MD836	MD836	EMPLACED_CNTR	06/03/75
78	10001751	MD836	MD836	EMPLACED_CNTR	05/29/75
79	10001752	MD836	MD836	EMPLACED_CNTR	05/29/75
80	10001753	MD836	MD836	EMPLACED_CNTR	04/23/75
81	10001756	MD836	MD836	EMPLACED_CNTR	05/29/75
82	10001759	MD836	MD836	EMPLACED_CNTR	05/20/75
83	10001766	MD836	MD836	EMPLACED_CNTR	05/20/75
84	10001936	MD836	MD836	EMPLACED_CNTR	04/30/75
85	10001937	MD836	MD836	EMPLACED_CNTR	04/30/75
86	10001938	MD836	MD836	EMPLACED_CNTR	04/28/75
87	10001944	MD836	MD836	EMPLACED_CNTR	04/28/75
88	10001945	MD836	MD836	EMPLACED_CNTR	04/28/75
89	10001972	MD836	MD836	EMPLACED_CNTR	07/17/75
90	10001973	MD836	MD836	EMPLACED_CNTR	07/17/75
91	10001974	MD836	MD836	EMPLACED_CNTR	07/17/75
92	10001975	MD836	MD836	EMPLACED_CNTR	07/17/75
93	10001982	MD836	MD836	EMPLACED_CNTR	07/17/75
94	10001983	MD836	MD836	EMPLACED_CNTR	07/17/75
95	10001984	MD836	MD836	EMPLACED_CNTR	06/27/75
96	10001985	MD836	MD836	EMPLACED_CNTR	06/25/75
97	10001993	MD836	MD836	EMPLACED_CNTR	07/01/75
98	10001994	MD836	MD836	EMPLACED_CNTR	06/27/75
99	10001995	MD836	MD836	EMPLACED_CNTR	06/27/75
100	10001996	MD836	MD836	EMPLACED_CNTR	06/27/75
101	10001998	MD836	MD836	EMPLACED_CNTR	06/25/75
102	10001999	MD836	MD836	EMPLACED_CNTR	06/27/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
103	10002004	MD836	MD836	EMPLACED_CNTR	04/30/75
104	10002005	MD836	MD836	EMPLACED_CNTR	04/30/75
105	10002007	MD836	MD836	EMPLACED_CNTR	06/23/75
106	10002008	MD836	MD836	EMPLACED_CNTR	07/03/75
107	10002009	MD836	MD836	EMPLACED_CNTR	06/19/75
108	10002010	MD836	MD836	EMPLACED_CNTR	06/19/75
109	10002011	MD836	MD836	EMPLACED_CNTR	06/12/75
110	10002013	MD836	MD836	EMPLACED_CNTR	06/23/75
111	10002060	MD836	MD836	EMPLACED_CNTR	08/14/75
112	10002061	MD836	MD836	EMPLACED_CNTR	08/14/75
113	10002062	MD836	MD836	EMPLACED_CNTR	12/31/77
114	10002063	MD836	MD836	EMPLACED_CNTR	08/14/75
115	10002064	MD836	MD836	EMPLACED_CNTR	07/09/75
116	10002082	MD836	MD836	EMPLACED_CNTR	07/17/75
117	10002083	MD836	MD836	EMPLACED_CNTR	07/17/75
118	10002084	MD836	MD836	EMPLACED_CNTR	07/17/75
119	10002085	MD836	MD836	EMPLACED_CNTR	07/17/75
120	10002086	MD836	MD836	EMPLACED_CNTR	07/17/75
121	10002087	MD836	MD836	EMPLACED_CNTR	07/01/75
122	10002091	MD836	MD836	EMPLACED_CNTR	07/01/75
123	10002092	MD836	MD836	EMPLACED_CNTR	06/27/75
124	10002093	MD836	MD836	EMPLACED_CNTR	06/27/75
125	10002094	MD836	MD836	EMPLACED_CNTR	07/01/75
126	10002095	MD836	MD836	EMPLACED_CNTR	07/01/75
127	10002200	MD836	MD836	EMPLACED_CNTR	07/17/75
128	10002201	MD836	MD836	EMPLACED_CNTR	07/17/75
129	10002202	MD836	MD836	EMPLACED_CNTR	07/01/75
130	10002207	MD836	MD836	EMPLACED_CNTR	07/01/75
131	10002208	MD836	MD836	EMPLACED_CNTR	06/25/75
132	10002209	MD836	MD836	EMPLACED_CNTR	07/17/75
133	10002210	MD836	MD836	EMPLACED_CNTR	07/17/75
134	10002213	MD836	MD836	EMPLACED_CNTR	04/30/75
135	10002215	MD836	MD836	EMPLACED_CNTR	04/30/75
136	10002216	MD836	MD836	EMPLACED_CNTR	04/28/75
137	10002217	MD836	MD836	EMPLACED_CNTR	04/28/75
138	10002218	MD836	MD836	EMPLACED_CNTR	06/23/75
139	10002219	MD836	MD836	EMPLACED_CNTR	06/17/75
140	10002220	MD836	MD836	EMPLACED_CNTR	06/10/75
141	10002288	MD836	MD836	EMPLACED_CNTR	07/09/75
142	10002289	MD836	MD836	EMPLACED_CNTR	08/14/75
143	10002290	MD836	MD836	EMPLACED_CNTR	08/14/75
144	10002291	MD836	MD836	EMPLACED_CNTR	07/09/75
145	10002292	MD836	MD836	EMPLACED_CNTR	08/14/75
146	10002293	MD836	MD836	EMPLACED_CNTR	07/09/75
147	10002311	MD836	MD836	EMPLACED_CNTR	05/29/75
148	10002312	MD836	MD836	EMPLACED_CNTR	05/20/75
149	10002314	MD836	MD836	EMPLACED_CNTR	05/20/75
150	10002315	MD836	MD836	EMPLACED_CNTR	05/27/75
151	10002316	MD836	MD836	EMPLACED_CNTR	05/29/75
152	10002317	MD836	MD836	EMPLACED_CNTR	05/20/75
153	10002318	MD836	MD836	EMPLACED_CNTR	05/27/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
154	10002319	MD836	MD836	EMPLACED_CNTR	05/27/75
155	10002320	MD836	MD836	EMPLACED_CNTR	04/17/75
156	10002321	MD836	MD836	EMPLACED_CNTR	05/20/75
157	10002331	MD836	MD836	EMPLACED_CNTR	06/16/75
158	10002332	MD836	MD836	EMPLACED_CNTR	06/16/75
159	10002333	MD836	MD836	EMPLACED_CNTR	06/16/75
160	10002344	MD836	MD836	EMPLACED_CNTR	07/17/75
161	10002430	MD836	MD836	EMPLACED_CNTR	07/09/75
162	10002431	MD836	MD836	EMPLACED_CNTR	07/09/75
163	10002432	MD836	MD836	EMPLACED_CNTR	08/14/75
164	10002433	MD836	MD836	EMPLACED_CNTR	08/14/75
165	10002457	MD836	MD836	EMPLACED_CNTR	05/27/75
166	10002458	MD836	MD836	EMPLACED_CNTR	05/27/75
167	10002460	MD836	MD836	EMPLACED_CNTR	05/27/75
168	10002461	MD836	MD836	EMPLACED_CNTR	05/27/75
169	10002475	MD836	MD836	EMPLACED_CNTR	05/20/75
170	10002476	MD836	MD836	EMPLACED_CNTR	05/20/75
171	10002532	MD836	MD836	EMPLACED_CNTR	06/16/75
172	10002533	MD836	MD836	EMPLACED_CNTR	06/17/75
173	10002534	MD836	MD836	EMPLACED_CNTR	06/16/75
174	10002535	MD836	MD836	EMPLACED_CNTR	05/13/75
175	10002537	MD836	MD836	EMPLACED_CNTR	06/16/75
176	10002540	MD836	MD836	EMPLACED_CNTR	06/25/75
177	10002541	MD836	MD836	EMPLACED_CNTR	05/27/75
178	10002550	MD836	MD836	EMPLACED_CNTR	05/27/75
179	10002597	MD836	MD836	EMPLACED_CNTR	06/25/75
180	10002598	MD836	MD836	EMPLACED_CNTR	05/27/75
181	10002599	MD836	MD836	EMPLACED_CNTR	06/25/75
182	10002600	MD836	MD836	EMPLACED_CNTR	05/22/75
183	10002601	MD836	MD836	EMPLACED_CNTR	06/16/75
184	10002602	MD836	MD836	EMPLACED_CNTR	05/08/75
185	10002603	MD836	MD836	EMPLACED_CNTR	06/16/75
186	10002604	MD836	MD836	EMPLACED_CNTR	06/16/75
187	10002677	MD836	MD836	EMPLACED_CNTR	06/27/75
188	10002678	MD836	MD836	EMPLACED_CNTR	06/27/75
189	10002679	MD836	MD836	EMPLACED_CNTR	07/11/75
190	10002680	MD836	MD836	EMPLACED_CNTR	06/27/75
191	10002681	MD836	MD836	EMPLACED_CNTR	07/01/75
192	10002682	MD836	MD836	EMPLACED_CNTR	06/27/75
193	10002683	MD836	MD836	EMPLACED_CNTR	06/27/75
194	10002684	MD836	MD836	EMPLACED_CNTR	07/17/75
195	10002726	MD836	MD836	EMPLACED_CNTR	05/29/75
196	10002727	MD836	MD836	EMPLACED_CNTR	06/16/75
197	10002736	MD836	MD836	EMPLACED_CNTR	06/25/75
198	10002737	MD836	MD836	EMPLACED_CNTR	06/25/75
199	10002760	MD836	MD836	EMPLACED_CNTR	08/14/75
200	10002762	MD836	MD836	EMPLACED_CNTR	07/09/75
201	10002775	MD836	MD836	EMPLACED_CNTR	05/20/75
202	10002776	MD836	MD836	EMPLACED_CNTR	05/20/75
203	10002779	MD836	MD836	EMPLACED_CNTR	05/20/75
204	10002780	MD836	MD836	EMPLACED_CNTR	05/22/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
205	10007682	MD836	MD836	EMPLACED_CNTR	04/30/75
206	10007683	MD836	MD836	EMPLACED_CNTR	04/30/75
207	10007684	MD836	MD836	EMPLACED_CNTR	04/25/75
208	10007685	MD836	MD836	EMPLACED_CNTR	04/28/75
209	10007686	MD836	MD836	EMPLACED_CNTR	04/28/75
210	10007687	MD836	MD836	EMPLACED_CNTR	04/30/75
211	10007688	MD836	MD836	EMPLACED_CNTR	04/30/75
212	10008668	MD836	MD836	EMPLACED_CNTR	06/12/75
213	10008669	MD836	MD836	EMPLACED_CNTR	04/30/75
214	10008670	MD836	MD836	EMPLACED_CNTR	06/23/75
215	10008687	MD836	MD836	EMPLACED_CNTR	06/19/75
216	10008688	MD836	MD836	EMPLACED_CNTR	06/12/75
217	10008689	MD836	MD836	EMPLACED_CNTR	06/10/75
218	10008690	MD836	MD836	EMPLACED_CNTR	06/23/75
219	10008691	MD836	MD836	EMPLACED_CNTR	05/01/75
220	10008692	MD836	MD836	EMPLACED_CNTR	05/01/75
221	10008693	MD836	MD836	EMPLACED_CNTR	04/25/75
222	10008699	MD836	MD836	EMPLACED_CNTR	04/25/75
223	10008701	MD836	MD836	EMPLACED_CNTR	04/28/75
224	10008710	MD836	MD836	EMPLACED_CNTR	04/30/75
225	10008719	MD836	MD836	EMPLACED_CNTR	04/28/75
226	10008720	MD836	MD836	EMPLACED_CNTR	04/25/75
227	10008747	MD836	MD836	EMPLACED_CNTR	05/01/75
228	10008770	MD836	MD836	EMPLACED_CNTR	05/01/75
229	10008771	MD836	MD836	EMPLACED_CNTR	07/03/75
230	10008837	MD836	MD836	EMPLACED_CNTR	06/27/75
231	10008838	MD836	MD836	EMPLACED_CNTR	06/27/75
232	10008841	MD836	MD836	EMPLACED_CNTR	06/27/75
233	10008842	MD836	MD836	EMPLACED_CNTR	07/01/75
234	10008843	MD836	MD836	EMPLACED_CNTR	07/01/75
235	10008844	MD836	MD836	EMPLACED_CNTR	07/01/75
236	10008845	MD836	MD836	EMPLACED_CNTR	07/01/75
237	10008846	MD836	MD836	EMPLACED_CNTR	07/01/75
238	10008847	MD836	MD836	EMPLACED_CNTR	07/01/75
239	10008848	MD836	MD836	EMPLACED_CNTR	06/27/75
240	10008849	MD836	MD836	EMPLACED_CNTR	06/27/75
241	10010438	MD836	MD836	EMPLACED_CNTR	04/25/75
242	10010440	MD836	MD836	EMPLACED_CNTR	06/19/75
243	10010441	MD836	MD836	EMPLACED_CNTR	06/23/75
244	10010442	MD836	MD836	EMPLACED_CNTR	04/25/75
245	10010443	MD836	MD836	EMPLACED_CNTR	06/25/75
246	10010902	MD836	MD836	EMPLACED_CNTR	03/24/81
247	10010903	MD836	MD836	EMPLACED_CNTR	08/18/81
248	10011123	MD836	MD836	EMPLACED_CNTR	05/07/85
249	10011127	MD836	MD836	EMPLACED_CNTR	08/17/84
250	10011128	MD836	MD836	EMPLACED_CNTR	02/15/81
251	10011133	MD836	MD836	EMPLACED_CNTR	02/23/81
252	10011135	MD836	MD836	EMPLACED_CNTR	05/07/85
253	10011137	MD836	MD836	EMPLACED_CNTR	06/13/85
254	10011139	MD836	MD836	EMPLACED_CNTR	06/08/81
255	10011143	MD836	MD836	EMPLACED_CNTR	01/30/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
256	10011298	MD836	MD836	EMPLACED_CNTR	06/22/81
257	10011299	MD836	MD836	EMPLACED_CNTR	01/18/82
258	10011300	MD836	MD836	EMPLACED_CNTR	05/20/81
259	10011301	MD836	MD836	EMPLACED_CNTR	05/05/82
260	10011302	MD836	MD836	EMPLACED_CNTR	03/24/81
261	10011303	MD836	MD836	EMPLACED_CNTR	12/06/84
262	10011312	MD836	MD836	EMPLACED_CNTR	01/18/82
263	10011313	MD836	MD836	EMPLACED_CNTR	09/14/82
264	10011314	MD836	MD836	EMPLACED_CNTR	09/14/82
265	10011315	MD836	MD836	EMPLACED_CNTR	06/22/81
266	10011316	MD836	MD836	EMPLACED_CNTR	06/22/81
267	10011317	MD836	MD836	EMPLACED_CNTR	04/27/81
268	10011318	MD836	MD836	EMPLACED_CNTR	06/04/81
269	10011319	MD836	MD836	EMPLACED_CNTR	09/14/82
270	10011320	MD836	MD836	EMPLACED_CNTR	06/22/81
271	10011324	MD836	MD836	EMPLACED_CNTR	06/29/81
272	10011325	MD836	MD836	EMPLACED_CNTR	08/21/79
273	10011328	MD836	MD836	EMPLACED_CNTR	08/31/81
274	10011329	MD836	MD836	EMPLACED_CNTR	09/14/82
275	10011331	MD836	MD836	EMPLACED_CNTR	04/22/81
276	10011332	MD836	MD836	EMPLACED_CNTR	07/08/82
277	10011344	MD836	MD836	EMPLACED_CNTR	01/30/85
278	10011345	MD836	MD836	EMPLACED_CNTR	06/29/81
279	10011349	MD836	MD836	EMPLACED_CNTR	06/22/81
280	10011352	MD836	MD836	EMPLACED_CNTR	10/21/81
281	10011353	MD836	MD836	EMPLACED_CNTR	03/16/81
282	10011356	MD836	MD836	EMPLACED_CNTR	01/18/82
283	10011360	MD836	MD836	EMPLACED_CNTR	11/14/84
284	10011361	MD836	MD836	EMPLACED_CNTR	06/29/81
285	10011362	MD836	MD836	EMPLACED_CNTR	04/27/81
286	10011368	MD836	MD836	EMPLACED_CNTR	09/14/82
287	10011370	MD836	MD836	EMPLACED_CNTR	03/16/81
288	10011372	MD836	MD836	EMPLACED_CNTR	10/27/81
289	10011373	MD836	MD836	EMPLACED_CNTR	06/29/81
290	10011374	MD836	MD836	EMPLACED_CNTR	04/20/81
291	10011375	MD836	MD836	EMPLACED_CNTR	06/29/81
292	10011378	MD836	MD836	EMPLACED_CNTR	08/17/84
293	10011394	MD836	MD836	EMPLACED_CNTR	08/18/81
294	10011395	MD836	MD836	EMPLACED_CNTR	03/24/81
295	10011396	MD836	MD836	EMPLACED_CNTR	10/08/84
296	10011397	MD836	MD836	EMPLACED_CNTR	10/21/81
297	10011398	MD836	MD836	EMPLACED_CNTR	06/21/82
298	10011399	MD836	MD836	EMPLACED_CNTR	06/21/82
299	10011400	MD836	MD836	EMPLACED_CNTR	04/27/81
300	10011401	MD836	MD836	EMPLACED_CNTR	06/29/81
301	10011402	MD836	MD836	EMPLACED_CNTR	03/24/81
302	10011403	MD836	MD836	EMPLACED_CNTR	11/14/84
303	10011404	MD836	MD836	EMPLACED_CNTR	07/24/79
304	10011405	MD836	MD836	EMPLACED_CNTR	02/25/82
305	10011406	MD836	MD836	EMPLACED_CNTR	05/21/82
306	10011409	MD836	MD836	EMPLACED_CNTR	10/27/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
307	10011410	MD836	MD836	EMPLACED_CNTR	06/21/82
308	10011412	MD836	MD836	EMPLACED_CNTR	06/21/82
309	10011413	MD836	MD836	EMPLACED_CNTR	06/21/82
310	10011414	MD836	MD836	EMPLACED_CNTR	06/29/81
311	10011415	MD836	MD836	EMPLACED_CNTR	09/14/82
312	10011416	MD836	MD836	EMPLACED_CNTR	06/22/81
313	10011418	MD836	MD836	EMPLACED_CNTR	06/22/81
314	10011419	MD836	MD836	EMPLACED_CNTR	04/20/81
315	10011421	MD836	MD836	EMPLACED_CNTR	06/22/81
316	10011422	MD836	MD836	EMPLACED_CNTR	09/14/82
317	10011423	MD836	MD836	EMPLACED_CNTR	05/05/82
318	10011441	MD836	MD836	EMPLACED_CNTR	03/24/81
319	10011442	MD836	MD836	EMPLACED_CNTR	08/18/81
320	10011443	MD836	MD836	EMPLACED_CNTR	09/14/82
321	10011446	MD836	MD836	EMPLACED_CNTR	05/21/82
322	10011447	MD836	MD836	EMPLACED_CNTR	06/21/82
323	10011448	MD836	MD836	EMPLACED_CNTR	08/18/81
324	10011450	MD836	MD836	EMPLACED_CNTR	08/18/81
325	10011451	MD836	MD836	EMPLACED_CNTR	06/04/81
326	10011452	MD836	MD836	EMPLACED_CNTR	06/21/82
327	10011453	MD836	MD836	EMPLACED_CNTR	02/25/82
328	10011454	MD836	MD836	EMPLACED_CNTR	04/27/81
329	10011506	MD836	MD836	EMPLACED_CNTR	08/17/84
330	10011507	MD836	MD836	EMPLACED_CNTR	07/22/81
331	10011508	MD836	MD836	EMPLACED_CNTR	06/04/81
332	10011509	MD836	MD836	EMPLACED_CNTR	06/29/81
333	10011510	MD836	MD836	EMPLACED_CNTR	08/17/84
334	10011511	MD836	MD836	EMPLACED_CNTR	10/08/84
335	10011512	MD836	MD836	EMPLACED_CNTR	06/29/81
336	10011513	MD836	MD836	EMPLACED_CNTR	12/06/84
337	10011514	MD836	MD836	EMPLACED_CNTR	08/17/84
338	10011516	MD836	MD836	EMPLACED_CNTR	06/29/81
339	10011517	MD836	MD836	EMPLACED_CNTR	06/29/81
340	10011518	MD836	MD836	EMPLACED_CNTR	08/17/84
341	10011519	MD836	MD836	EMPLACED_CNTR	10/08/84
342	10011522	MD836	MD836	EMPLACED_CNTR	08/17/84
343	10011523	MD836	MD836	EMPLACED_CNTR	02/12/84
344	10011526	MD836	MD836	EMPLACED_CNTR	03/24/81
345	10011528	MD836	MD836	EMPLACED_CNTR	06/29/81
346	10011529	MD836	MD836	EMPLACED_CNTR	02/12/84
347	10011531	MD836	MD836	EMPLACED_CNTR	12/06/84
348	10011532	MD836	MD836	EMPLACED_CNTR	10/08/84
349	10011534	MD836	MD836	EMPLACED_CNTR	08/18/81
350	10011553	MD836	MD836	EMPLACED_CNTR	10/31/84
351	10011555	MD836	MD836	EMPLACED_CNTR	03/24/81
352	10011556	MD836	MD836	EMPLACED_CNTR	10/08/84
353	10011557	MD836	MD836	EMPLACED_CNTR	12/06/84
354	10011558	MD836	MD836	EMPLACED_CNTR	12/06/84
355	10011561	MD836	MD836	EMPLACED_CNTR	12/06/84
356	10011563	MD836	MD836	EMPLACED_CNTR	08/17/84
357	10011564	MD836	MD836	EMPLACED_CNTR	03/16/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
358	10011565	MD836	MD836	EMPLACED_CNTR	10/08/84
359	10011569	MD836	MD836	EMPLACED_CNTR	10/08/84
360	10011570	MD836	MD836	EMPLACED_CNTR	08/18/81
361	10011571	MD836	MD836	EMPLACED_CNTR	08/18/81
362	10011586	MD836	MD836	EMPLACED_CNTR	01/30/85
363	10011587	MD836	MD836	EMPLACED_CNTR	04/20/81
364	10011588	MD836	MD836	EMPLACED_CNTR	10/16/81
365	10011589	MD836	MD836	EMPLACED_CNTR	06/29/81
366	10015079	MD836	MD836	EMPLACED_CNTR	06/23/75
367	10015081	MD836	MD836	EMPLACED_CNTR	06/23/75
368	10015082	MD836	MD836	EMPLACED_CNTR	06/17/75
369	10015083	MD836	MD836	EMPLACED_CNTR	06/17/75
370	10015084	MD836	MD836	EMPLACED_CNTR	06/27/75
371	10015085	MD836	MD836	EMPLACED_CNTR	04/08/75
372	10015086	MD836	MD836	EMPLACED_CNTR	06/23/75
373	10015087	MD836	MD836	EMPLACED_CNTR	04/25/75
374	10015088	MD836	MD836	EMPLACED_CNTR	04/08/75
375	10015090	MD836	MD836	EMPLACED_CNTR	06/19/75
376	10015091	MD836	MD836	EMPLACED_CNTR	06/23/75
377	10015092	MD836	MD836	EMPLACED_CNTR	06/25/75
378	10015093	MD836	MD836	EMPLACED_CNTR	06/16/75
379	10015094	MD836	MD836	EMPLACED_CNTR	06/23/75
380	10015098	MD836	MD836	EMPLACED_CNTR	06/17/75
381	10015099	MD836	MD836	EMPLACED_CNTR	05/01/75
382	10015101	MD836	MD836	EMPLACED_CNTR	06/23/75
383	10015719	MD836	MD836	EMPLACED_CNTR	04/25/75
384	10016458	MD836	MD836	EMPLACED_CNTR	05/22/75
385	10016460	MD836	MD836	EMPLACED_CNTR	05/20/75
386	10016461	MD836	MD836	EMPLACED_CNTR	06/03/75
387	10016462	MD836	MD836	EMPLACED_CNTR	06/25/75
388	10016463	MD836	MD836	EMPLACED_CNTR	06/19/75
389	10016464	MD836	MD836	EMPLACED_CNTR	06/19/75
390	10016465	MD836	MD836	EMPLACED_CNTR	06/25/75
391	10016466	MD836	MD836	EMPLACED_CNTR	06/19/75
392	10016467	MD836	MD836	EMPLACED_CNTR	06/12/75
393	10016468	MD836	MD836	EMPLACED_CNTR	06/19/75
394	10016469	MD836	MD836	EMPLACED_CNTR	06/12/75
395	10016480	MD836	MD836	EMPLACED_CNTR	04/30/75
396	10016481	MD836	MD836	EMPLACED_CNTR	05/01/75
397	10016482	MD836	MD836	EMPLACED_CNTR	05/01/75
398	10016483	MD836	MD836	EMPLACED_CNTR	05/01/75
399	10016484	MD836	MD836	EMPLACED_CNTR	04/30/75
400	10016485	MD836	MD836	EMPLACED_CNTR	05/01/75
401	10016486	MD836	MD836	EMPLACED_CNTR	05/01/75
402	10016487	MD836	MD836	EMPLACED_CNTR	05/01/75
403	10016488	MD836	MD836	EMPLACED_CNTR	05/01/75
404	10016489	MD836	MD836	EMPLACED_CNTR	05/01/75
405	10016490	MD836	MD836	EMPLACED_CNTR	04/30/75
406	10016491	MD836	MD836	EMPLACED_CNTR	04/30/75
407	10016492	MD836	MD836	EMPLACED_CNTR	04/30/75
408	10016493	MD836	MD836	EMPLACED_CNTR	04/30/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
409	10016494	MD836	MD836	EMPLACED_CNTR	06/10/75
410	10016495	MD836	MD836	EMPLACED_CNTR	06/23/75
411	10016496	MD836	MD836	EMPLACED_CNTR	06/23/75
412	10016498	MD836	MD836	EMPLACED_CNTR	06/19/75
413	10016499	MD836	MD836	EMPLACED_CNTR	05/01/75
414	10016500	MD836	MD836	EMPLACED_CNTR	05/01/75
415	10016501	MD836	MD836	EMPLACED_CNTR	04/30/75
416	10016503	MD836	MD836	EMPLACED_CNTR	05/01/75
417	10016504	MD836	MD836	EMPLACED_CNTR	05/01/75
418	10016505	MD836	MD836	EMPLACED_CNTR	05/01/75
419	10016506	MD836	MD836	EMPLACED_CNTR	05/01/75
420	10016507	MD836	MD836	EMPLACED_CNTR	05/01/75
421	10016508	MD836	MD836	EMPLACED_CNTR	04/30/75
422	10016510	MD836	MD836	EMPLACED_CNTR	05/01/75
423	10016515	MD836	MD836	EMPLACED_CNTR	05/27/75
424	10016516	MD836	MD836	EMPLACED_CNTR	05/27/75
425	10016521	MD836	MD836	EMPLACED_CNTR	06/19/75
426	10016522	MD836	MD836	EMPLACED_CNTR	06/23/75
427	10017792	MD836	MD836	EMPLACED_CNTR	03/03/76
428	10017811	MD836	MD836	EMPLACED_CNTR	06/19/75
429	10017812	MD836	MD836	EMPLACED_CNTR	06/25/75
430	10017813	MD836	MD836	EMPLACED_CNTR	04/08/75
431	10017814	MD836	MD836	EMPLACED_CNTR	07/11/75
432	10017815	MD836	MD836	EMPLACED_CNTR	06/25/75
433	10018225	MD836	MD836	EMPLACED_CNTR	05/07/85
434	10018384	MD836	MD836	EMPLACED_CNTR	03/02/81
435	10018386	MD836	MD836	EMPLACED_CNTR	03/24/81
436	10018387	MD836	MD836	EMPLACED_CNTR	03/16/81
437	10018388	MD836	MD836	EMPLACED_CNTR	05/05/82
438	10018389	MD836	MD836	EMPLACED_CNTR	06/29/81
439	10018390	MD836	MD836	EMPLACED_CNTR	05/05/82
440	10018391	MD836	MD836	EMPLACED_CNTR	03/24/81
441	10018392	MD836	MD836	EMPLACED_CNTR	05/07/85
442	10018732	MD836	MD836	EMPLACED_CNTR	03/03/76
443	10018742	MD836	MD836	EMPLACED_CNTR	02/09/76
444	10018745	MD836	MD836	EMPLACED_CNTR	02/13/76
445	10018746	MD836	MD836	EMPLACED_CNTR	02/13/76
446	10018747	MD836	MD836	EMPLACED_CNTR	02/13/76
447	10018748	MD836	MD836	EMPLACED_CNTR	02/13/76
448	10018749	MD836	MD836	EMPLACED_CNTR	02/13/76
449	10018750	MD836	MD836	EMPLACED_CNTR	02/13/76
450	10018753	MD836	MD836	EMPLACED_CNTR	03/16/76
451	10018755	MD836	MD836	EMPLACED_CNTR	03/16/76
452	10018756	MD836	MD836	EMPLACED_CNTR	03/16/76
453	10018757	MD836	MD836	EMPLACED_CNTR	03/16/76
454	10018963	MD836	MD836	EMPLACED_CNTR	03/02/81
455	10018964	MD836	MD836	EMPLACED_CNTR	04/13/81
456	10018966	MD836	MD836	EMPLACED_CNTR	04/06/81
457	10018968	MD836	MD836	EMPLACED_CNTR	04/06/81
458	10018974	MD836	MD836	EMPLACED_CNTR	02/15/81
459	10018978	MD836	MD836	EMPLACED_CNTR	10/22/80

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
460	10018981	MD836	MD836	EMPLACED_CNTR	04/27/81
461	10018995	MD836	MD836	EMPLACED_CNTR	03/02/81
462	10018997	MD836	MD836	EMPLACED_CNTR	04/13/81
463	10019002	MD836	MD836	EMPLACED_CNTR	04/13/81
464	10019003	MD836	MD836	EMPLACED_CNTR	04/06/81
465	10019008	MD836	MD836	EMPLACED_CNTR	05/06/81
466	10019010	MD836	MD836	EMPLACED_CNTR	08/31/81
467	10019012	MD836	MD836	EMPLACED_CNTR	11/20/81
468	10019013	MD836	MD836	EMPLACED_CNTR	10/27/81
469	10019014	MD836	MD836	EMPLACED_CNTR	10/16/81
470	10019015	MD836	MD836	EMPLACED_CNTR	02/25/82
471	10019016	MD836	MD836	EMPLACED_CNTR	10/27/81
472	10019017	MD836	MD836	EMPLACED_CNTR	04/27/81
473	10019018	MD836	MD836	EMPLACED_CNTR	05/05/82
474	10019019	MD836	MD836	EMPLACED_CNTR	04/20/81
475	10019020	MD836	MD836	EMPLACED_CNTR	08/31/81
476	10019021	MD836	MD836	EMPLACED_CNTR	05/05/82
477	10019023	MD836	MD836	EMPLACED_CNTR	02/25/82
478	10019024	MD836	MD836	EMPLACED_CNTR	01/18/82
479	10019025	MD836	MD836	EMPLACED_CNTR	01/18/82
480	10019028	MD836	MD836	EMPLACED_CNTR	04/20/81
481	10019030	MD836	MD836	EMPLACED_CNTR	08/31/81
482	10019031	MD836	MD836	EMPLACED_CNTR	06/22/81
483	10019032	MD836	MD836	EMPLACED_CNTR	01/18/82
484	10019034	MD836	MD836	EMPLACED_CNTR	06/04/81
485	10019035	MD836	MD836	EMPLACED_CNTR	03/16/81
486	10019036	MD836	MD836	EMPLACED_CNTR	08/31/81
487	10019040	MD836	MD836	EMPLACED_CNTR	08/31/81
488	10019041	MD836	MD836	EMPLACED_CNTR	10/21/81
489	10019042	MD836	MD836	EMPLACED_CNTR	08/31/81
490	10019043	MD836	MD836	EMPLACED_CNTR	05/07/85
491	10019044	MD836	MD836	EMPLACED_CNTR	01/18/82
492	10019045	MD836	MD836	EMPLACED_CNTR	01/18/82
493	10019046	MD836	MD836	EMPLACED_CNTR	10/21/81
494	10019047	MD836	MD836	EMPLACED_CNTR	04/27/81
495	10019048	MD836	MD836	EMPLACED_CNTR	12/06/84
496	10019051	MD836	MD836	EMPLACED_CNTR	03/24/81
497	10019054	MD836	MD836	EMPLACED_CNTR	03/24/81
498	10019055	MD836	MD836	EMPLACED_CNTR	05/07/85
499	10019109	MD836	MD836	EMPLACED_CNTR	02/13/76
500	10019110	MD836	MD836	EMPLACED_CNTR	02/09/76
501	10019113	MD836	MD836	EMPLACED_CNTR	02/09/76
502	10019114	MD836	MD836	EMPLACED_CNTR	02/09/76
503	10019116	MD836	MD836	EMPLACED_CNTR	02/09/76
504	10019176	MD836	MD836	EMPLACED_CNTR	07/09/75
505	10019187	MD836	MD836	EMPLACED_CNTR	08/14/75
506	10019189	MD836	MD836	EMPLACED_CNTR	08/14/75
507	10019190	MD836	MD836	EMPLACED_CNTR	08/14/75
508	10019191	MD836	MD836	EMPLACED_CNTR	08/14/75
509	10019193	MD836	MD836	EMPLACED_CNTR	08/14/75
510	10019194	MD836	MD836	EMPLACED_CNTR	08/14/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
511	10019195	MD836	MD836	EMPLACED_CNTR	08/14/75
512	10019196	MD836	MD836	EMPLACED_CNTR	08/14/75
513	10019197	MD836	MD836	EMPLACED_CNTR	07/09/75
514	10019198	MD836	MD836	EMPLACED_CNTR	08/14/75
515	10019199	MD836	MD836	EMPLACED_CNTR	08/14/75
516	10019200	MD836	MD836	EMPLACED_CNTR	08/14/75
517	10019201	MD836	MD836	EMPLACED_CNTR	07/11/75
518	10019202	MD836	MD836	EMPLACED_CNTR	08/14/75
519	10019203	MD836	MD836	EMPLACED_CNTR	08/14/75
520	10019204	MD836	MD836	EMPLACED_CNTR	08/14/75
521	10019223	MD836	MD836	EMPLACED_CNTR	06/19/75
522	10019224	MD836	MD836	EMPLACED_CNTR	06/23/75
523	10019225	MD836	MD836	EMPLACED_CNTR	06/27/75
524	10019226	MD836	MD836	EMPLACED_CNTR	06/17/75
525	10019227	MD836	MD836	EMPLACED_CNTR	06/17/75
526	10019228	MD836	MD836	EMPLACED_CNTR	06/17/75
527	10019229	MD836	MD836	EMPLACED_CNTR	06/17/75
528	10019230	MD836	MD836	EMPLACED_CNTR	06/17/75
529	10019231	MD836	MD836	EMPLACED_CNTR	06/17/75
530	10019232	MD836	MD836	EMPLACED_CNTR	06/16/75
531	10019233	MD836	MD836	EMPLACED_CNTR	06/17/75
532	10019234	MD836	MD836	EMPLACED_CNTR	06/17/75
533	10019235	MD836	MD836	EMPLACED_CNTR	06/17/75
534	10019236	MD836	MD836	EMPLACED_CNTR	06/19/75
535	10019237	MD836	MD836	EMPLACED_CNTR	06/25/75
536	10019238	MD836	MD836	EMPLACED_CNTR	07/11/75
537	10019239	MD836	MD836	EMPLACED_CNTR	06/17/75
538	10019240	MD836	MD836	EMPLACED_CNTR	06/27/75
539	10019241	MD836	MD836	EMPLACED_CNTR	07/09/75
540	10019242	MD836	MD836	EMPLACED_CNTR	06/17/75
541	10019243	MD836	MD836	EMPLACED_CNTR	04/25/75
542	10019244	MD836	MD836	EMPLACED_CNTR	04/25/75
543	10019245	MD836	MD836	EMPLACED_CNTR	04/25/75
544	10019246	MD836	MD836	EMPLACED_CNTR	04/25/75
545	10019247	MD836	MD836	EMPLACED_CNTR	07/01/75
546	10019248	MD836	MD836	EMPLACED_CNTR	06/17/75
547	10019249	MD836	MD836	EMPLACED_CNTR	06/17/75
548	10019250	MD836	MD836	EMPLACED_CNTR	06/25/75
549	10019251	MD836	MD836	EMPLACED_CNTR	06/27/75
550	10019252	MD836	MD836	EMPLACED_CNTR	06/23/75
551	10019259	MD836	MD836	EMPLACED_CNTR	02/13/76
552	10019261	MD836	MD836	EMPLACED_CNTR	02/13/76
553	10019262	MD836	MD836	EMPLACED_CNTR	02/13/76
554	10019263	MD836	MD836	EMPLACED_CNTR	02/13/76
555	10019264	MD836	MD836	EMPLACED_CNTR	02/13/76
556	10019265	MD836	MD836	EMPLACED_CNTR	02/13/76
557	10019266	MD836	MD836	EMPLACED_CNTR	02/13/76
558	10019274	MD836	MD836	EMPLACED_CNTR	03/03/76
559	10019312	MD836	MD836	EMPLACED_CNTR	03/03/76
560	10019313	MD836	MD836	EMPLACED_CNTR	03/16/76
561	10019314	MD836	MD836	EMPLACED_CNTR	03/03/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
562	10019315	MD836	MD836	EMPLACED_CNTR	03/03/76
563	10019320	MD836	MD836	EMPLACED_CNTR	03/03/76
564	10019321	MD836	MD836	EMPLACED_CNTR	03/03/76
565	10019324	MD836	MD836	EMPLACED_CNTR	03/16/76
566	10019327	MD836	MD836	EMPLACED_CNTR	03/03/76
567	10019338	MD836	MD836	EMPLACED_CNTR	03/16/76
568	10019339	MD836	MD836	EMPLACED_CNTR	03/16/76
569	10019342	MD836	MD836	EMPLACED_CNTR	02/13/76
570	10019343	MD836	MD836	EMPLACED_CNTR	02/13/76
571	10019344	MD836	MD836	EMPLACED_CNTR	02/13/76
572	10019345	MD836	MD836	EMPLACED_CNTR	02/13/76
573	10019346	MD836	MD836	EMPLACED_CNTR	02/13/76
574	10019676	MD836	MD836	EMPLACED_CNTR	07/03/75
575	10019677	MD836	MD836	EMPLACED_CNTR	07/03/75
576	10019678	MD836	MD836	EMPLACED_CNTR	07/03/75
577	10019679	MD836	MD836	EMPLACED_CNTR	07/03/75
578	10019680	MD836	MD836	EMPLACED_CNTR	07/09/75
579	10019681	MD836	MD836	EMPLACED_CNTR	07/09/75
580	10019682	MD836	MD836	EMPLACED_CNTR	07/09/75
581	10019683	MD836	MD836	EMPLACED_CNTR	07/09/75
582	10019714	MD836	MD836	EMPLACED_CNTR	07/03/75
583	10019716	MD836	MD836	EMPLACED_CNTR	07/03/75
584	10019723	MD836	MD836	EMPLACED_CNTR	07/03/75
585	10019724	MD836	MD836	EMPLACED_CNTR	07/09/75
586	10019725	MD836	MD836	EMPLACED_CNTR	07/09/75
587	10019726	MD836	MD836	EMPLACED_CNTR	07/09/75
588	10019727	MD836	MD836	EMPLACED_CNTR	07/09/75
589	10019728	MD836	MD836	EMPLACED_CNTR	07/09/75
590	10019729	MD836	MD836	EMPLACED_CNTR	07/09/75
591	10019730	MD836	MD836	EMPLACED_CNTR	07/09/75
592	10019763	MD836	MD836	EMPLACED_CNTR	03/16/76
593	10019769	MD836	MD836	EMPLACED_CNTR	03/16/76
594	10019770	MD836	MD836	EMPLACED_CNTR	03/16/76
595	10019775	MD836	MD836	EMPLACED_CNTR	03/16/76
596	10019776	MD836	MD836	EMPLACED_CNTR	03/16/76
597	10019777	MD836	MD836	EMPLACED_CNTR	03/16/76
598	10019778	MD836	MD836	EMPLACED_CNTR	03/16/76
599	10019798	MD836	MD836	EMPLACED_CNTR	03/16/76
600	10019799	MD836	MD836	EMPLACED_CNTR	03/16/76
601	10019800	MD836	MD836	EMPLACED_CNTR	03/16/76
602	10019802	MD836	MD836	EMPLACED_CNTR	03/16/76
603	10019814	MD836	MD836	EMPLACED_CNTR	03/03/76
604	10019921	MD836	MD836	EMPLACED_CNTR	06/23/75
605	10019922	MD836	MD836	EMPLACED_CNTR	07/09/75
606	10019923	MD836	MD836	EMPLACED_CNTR	07/03/75
607	10019924	MD836	MD836	EMPLACED_CNTR	07/03/75
608	10019925	MD836	MD836	EMPLACED_CNTR	07/03/75
609	10019926	MD836	MD836	EMPLACED_CNTR	07/03/75
610	10019927	MD836	MD836	EMPLACED_CNTR	07/03/75
611	10019928	MD836	MD836	EMPLACED_CNTR	07/09/75
612	10019929	MD836	MD836	EMPLACED_CNTR	07/03/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
613	10019930	MD836	MD836	EMPLACED_CNTR	07/03/75
614	10019931	MD836	MD836	EMPLACED_CNTR	07/03/75
615	10019932	MD836	MD836	EMPLACED_CNTR	07/03/75
616	10019933	MD836	MD836	EMPLACED_CNTR	07/09/75
617	10019934	MD836	MD836	EMPLACED_CNTR	07/03/75
618	10019935	MD836	MD836	EMPLACED_CNTR	07/03/75
619	10019936	MD836	MD836	EMPLACED_CNTR	07/03/75
620	10019937	MD836	MD836	EMPLACED_CNTR	07/03/75
621	10019938	MD836	MD836	EMPLACED_CNTR	07/09/75
622	10019954	MD836	MD836	EMPLACED_CNTR	12/05/75
623	10019955	MD836	MD836	EMPLACED_CNTR	12/05/75
624	10019958	MD836	MD836	EMPLACED_CNTR	12/05/75
625	10019959	MD836	MD836	EMPLACED_CNTR	12/05/75
626	10019960	MD836	MD836	EMPLACED_CNTR	12/02/75
627	10019961	MD836	MD836	EMPLACED_CNTR	12/02/75
628	10019962	MD836	MD836	EMPLACED_CNTR	12/02/75
629	10019963	MD836	MD836	EMPLACED_CNTR	12/03/75
630	10019964	MD836	MD836	EMPLACED_CNTR	12/02/75
631	10019965	MD836	MD836	EMPLACED_CNTR	12/02/75
632	10019966	MD836	MD836	EMPLACED_CNTR	12/02/75
633	10019967	MD836	MD836	EMPLACED_CNTR	12/02/75
634	10019968	MD836	MD836	EMPLACED_CNTR	12/02/75
635	10019969	MD836	MD836	EMPLACED_CNTR	12/02/75
636	10019970	MD836	MD836	EMPLACED_CNTR	12/02/75
637	10019971	MD836	MD836	EMPLACED_CNTR	12/02/75
638	10019972	MD836	MD836	EMPLACED_CNTR	12/02/75
639	10019973	MD836	MD836	EMPLACED_CNTR	12/02/75
640	10020045	MD836	MD836	EMPLACED_CNTR	12/02/75
641	10020100	MD836	MD836	EMPLACED_CNTR	07/01/75
642	10020116	MD836	MD836	EMPLACED_CNTR	07/11/75
643	10020121	MD836	MD836	EMPLACED_CNTR	12/02/75
644	10020122	MD836	MD836	EMPLACED_CNTR	12/02/75
645	10020123	MD836	MD836	EMPLACED_CNTR	12/02/75
646	10020124	MD836	MD836	EMPLACED_CNTR	12/02/75
647	10020125	MD836	MD836	EMPLACED_CNTR	12/02/75
648	10020126	MD836	MD836	EMPLACED_CNTR	12/02/75
649	10020127	MD836	MD836	EMPLACED_CNTR	12/02/75
650	10020128	MD836	MD836	EMPLACED_CNTR	12/02/75
651	10020129	MD836	MD836	EMPLACED_CNTR	12/05/75
652	10020130	MD836	MD836	EMPLACED_CNTR	12/02/75
653	10020131	MD836	MD836	EMPLACED_CNTR	12/05/75
654	10020132	MD836	MD836	EMPLACED_CNTR	12/05/75
655	10020133	MD836	MD836	EMPLACED_CNTR	12/05/75
656	10020134	MD836	MD836	EMPLACED_CNTR	12/05/75
657	10020259	MD836	MD836	EMPLACED_CNTR	07/17/75
658	10020260	MD836	MD836	EMPLACED_CNTR	07/17/75
659	10020261	MD836	MD836	EMPLACED_CNTR	07/17/75
660	10020262	MD836	MD836	EMPLACED_CNTR	07/17/75
661	10020263	MD836	MD836	EMPLACED_CNTR	07/01/75
662	10020264	MD836	MD836	EMPLACED_CNTR	07/01/75
663	10020265	MD836	MD836	EMPLACED_CNTR	07/01/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
664	10020266	MD836	MD836	EMPLACED_CNTR	07/01/75
665	10020267	MD836	MD836	EMPLACED_CNTR	07/17/75
666	10020268	MD836	MD836	EMPLACED_CNTR	07/01/75
667	10020274	MD836	MD836	EMPLACED_CNTR	11/07/75
668	10020284	MD836	MD836	EMPLACED_CNTR	11/07/75
669	10020285	MD836	MD836	EMPLACED_CNTR	11/07/75
670	10020290	MD836	MD836	EMPLACED_CNTR	11/06/75
671	10020302	MD836	MD836	EMPLACED_CNTR	11/06/75
672	10020303	MD836	MD836	EMPLACED_CNTR	11/06/75
673	10020306	MD836	MD836	EMPLACED_CNTR	11/07/75
674	10020308	MD836	MD836	EMPLACED_CNTR	11/07/75
675	10020310	MD836	MD836	EMPLACED_CNTR	11/07/75
676	10020390	MD836	MD836	EMPLACED_CNTR	02/13/76
677	10020391	MD836	MD836	EMPLACED_CNTR	02/09/76
678	10020392	MD836	MD836	EMPLACED_CNTR	02/09/76
679	10020394	MD836	MD836	EMPLACED_CNTR	02/09/76
680	10020509	MD836	MD836	EMPLACED_CNTR	11/06/75
681	10020510	MD836	MD836	EMPLACED_CNTR	11/06/75
682	10020569	MD836	MD836	EMPLACED_CNTR	11/06/75
683	10020600	MD836	MD836	EMPLACED_CNTR	12/05/75
684	10020601	MD836	MD836	EMPLACED_CNTR	12/05/75
685	10020975	MD836	MD836	EMPLACED_CNTR	04/28/75
686	10020976	MD836	MD836	EMPLACED_CNTR	04/28/75
687	10020977	MD836	MD836	EMPLACED_CNTR	04/25/75
688	10020978	MD836	MD836	EMPLACED_CNTR	04/28/75
689	10020979	MD836	MD836	EMPLACED_CNTR	04/25/75
690	10020980	MD836	MD836	EMPLACED_CNTR	04/28/75
691	10020981	MD836	MD836	EMPLACED_CNTR	04/25/75
692	10020982	MD836	MD836	EMPLACED_CNTR	04/25/75
693	10020983	MD836	MD836	EMPLACED_CNTR	12/05/75
694	10020984	MD836	MD836	EMPLACED_CNTR	07/11/75
695	10020985	MD836	MD836	EMPLACED_CNTR	04/25/75
696	10020986	MD836	MD836	EMPLACED_CNTR	04/25/75
697	10020987	MD836	MD836	EMPLACED_CNTR	04/25/75
698	10020988	MD836	MD836	EMPLACED_CNTR	04/25/75
699	10020989	MD836	MD836	EMPLACED_CNTR	04/30/75
700	10020990	MD836	MD836	EMPLACED_CNTR	04/17/75
701	10020991	MD836	MD836	EMPLACED_CNTR	07/11/75
702	10020992	MD836	MD836	EMPLACED_CNTR	07/11/75
703	10020993	MD836	MD836	EMPLACED_CNTR	07/11/75
704	10020994	MD836	MD836	EMPLACED_CNTR	12/05/75
705	10020995	MD836	MD836	EMPLACED_CNTR	04/25/75
706	10020996	MD836	MD836	EMPLACED_CNTR	04/25/75
707	10020997	MD836	MD836	EMPLACED_CNTR	07/11/75
708	10020998	MD836	MD836	EMPLACED_CNTR	12/05/75
709	10021017	MD836	MD836	EMPLACED_CNTR	07/11/75
710	10021018	MD836	MD836	EMPLACED_CNTR	07/11/75
711	10021019	MD836	MD836	EMPLACED_CNTR	07/11/75
712	10021020	MD836	MD836	EMPLACED_CNTR	07/11/75
713	10021021	MD836	MD836	EMPLACED_CNTR	04/25/75
714	10021022	MD836	MD836	EMPLACED_CNTR	04/25/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
715	10021387	MD836	MD836	EMPLACED_CNTR	05/12/81
716	10021388	MD836	MD836	EMPLACED_CNTR	10/21/81
717	10021394	MD836	MD836	EMPLACED_CNTR	10/31/84
718	10021396	MD836	MD836	EMPLACED_CNTR	10/31/84
719	10021398	MD836	MD836	EMPLACED_CNTR	02/12/84
720	10021399	MD836	MD836	EMPLACED_CNTR	05/07/85
721	10021402	MD836	MD836	EMPLACED_CNTR	04/13/81
722	10021407	MD836	MD836	EMPLACED_CNTR	06/29/81
723	10021409	MD836	MD836	EMPLACED_CNTR	10/21/81
724	10021410	MD836	MD836	EMPLACED_CNTR	02/25/82
725	10021411	MD836	MD836	EMPLACED_CNTR	05/06/81
726	10021431	MD836	MD836	EMPLACED_CNTR	06/08/81
727	10021432	MD836	MD836	EMPLACED_CNTR	10/21/81
728	10021433	MD836	MD836	EMPLACED_CNTR	08/31/81
729	10021434	MD836	MD836	EMPLACED_CNTR	10/22/80
730	10021435	MD836	MD836	EMPLACED_CNTR	02/25/82
731	10021436	MD836	MD836	EMPLACED_CNTR	02/25/82
732	10021437	MD836	MD836	EMPLACED_CNTR	05/21/82
733	10021440	MD836	MD836	EMPLACED_CNTR	05/21/82
734	10021442	MD836	MD836	EMPLACED_CNTR	06/22/81
735	10021444	MD836	MD836	EMPLACED_CNTR	12/06/84
736	10021445	MD836	MD836	EMPLACED_CNTR	05/26/81
737	10021446	MD836	MD836	EMPLACED_CNTR	08/31/81
738	10021447	MD836	MD836	EMPLACED_CNTR	01/30/85
739	10021448	MD836	MD836	EMPLACED_CNTR	04/06/81
740	10021449	MD836	MD836	EMPLACED_CNTR	02/15/81
741	10021451	MD836	MD836	EMPLACED_CNTR	02/23/81
742	10021452	MD836	MD836	EMPLACED_CNTR	12/06/84
743	10021453	MD836	MD836	EMPLACED_CNTR	10/08/84
744	10021454	MD836	MD836	EMPLACED_CNTR	02/23/81
745	10021456	MD836	MD836	EMPLACED_CNTR	04/06/81
746	10021457	MD836	MD836	EMPLACED_CNTR	05/06/81
747	10021459	MD836	MD836	EMPLACED_CNTR	04/27/81
748	10021461	MD836	MD836	EMPLACED_CNTR	04/27/81
749	10021462	MD836	MD836	EMPLACED_CNTR	05/26/81
750	10021465	MD836	MD836	EMPLACED_CNTR	05/12/81
751	10021468	MD836	MD836	EMPLACED_CNTR	05/06/81
752	10021470	MD836	MD836	EMPLACED_CNTR	06/21/82
753	10021472	MD836	MD836	EMPLACED_CNTR	04/01/81
754	10021475	MD836	MD836	EMPLACED_CNTR	06/02/80
755	10021477	MD836	MD836	EMPLACED_CNTR	05/21/82
756	10021484	MD836	MD836	EMPLACED_CNTR	02/15/81
757	10021485	MD836	MD836	EMPLACED_CNTR	02/16/81
758	10021490	MD836	MD836	EMPLACED_CNTR	12/06/84
759	10021493	MD836	MD836	EMPLACED_CNTR	05/21/82
760	10021495	MD836	MD836	EMPLACED_CNTR	05/26/81
761	10021500	MD836	MD836	EMPLACED_CNTR	05/19/81
762	10021503	MD836	MD836	EMPLACED_CNTR	07/11/79
763	10021504	MD836	MD836	EMPLACED_CNTR	05/07/85
764	10021511	MD836	MD836	EMPLACED_CNTR	05/12/81
765	10021512	MD836	MD836	EMPLACED_CNTR	10/22/80

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
766	10021513	MD836	MD836	EMPLACED_CNTR	04/27/81
767	10021517	MD836	MD836	EMPLACED_CNTR	12/06/84
768	10021520	MD836	MD836	EMPLACED_CNTR	05/21/82
769	10021521	MD836	MD836	EMPLACED_CNTR	05/06/81
770	10021522	MD836	MD836	EMPLACED_CNTR	04/06/81
771	10021526	MD836	MD836	EMPLACED_CNTR	06/21/82
772	10021527	MD836	MD836	EMPLACED_CNTR	05/21/82
773	10021528	MD836	MD836	EMPLACED_CNTR	10/31/84
774	10021534	MD836	MD836	EMPLACED_CNTR	10/08/84
775	10021538	MD836	MD836	EMPLACED_CNTR	06/21/82
776	10021540	MD836	MD836	EMPLACED_CNTR	08/18/81
777	10021543	MD836	MD836	EMPLACED_CNTR	11/14/84
778	10021545	MD836	MD836	EMPLACED_CNTR	02/03/83
779	10021546	MD836	MD836	EMPLACED_CNTR	08/17/84
780	10021549	MD836	MD836	EMPLACED_CNTR	02/15/81
781	10021552	MD836	MD836	EMPLACED_CNTR	03/02/81
782	10021553	MD836	MD836	EMPLACED_CNTR	06/02/80
783	10021554	MD836	MD836	EMPLACED_CNTR	05/19/81
784	10021555	MD836	MD836	EMPLACED_CNTR	11/14/84
785	10021561	MD836	MD836	EMPLACED_CNTR	06/02/80
786	10021565	MD836	MD836	EMPLACED_CNTR	07/11/79
787	10021574	MD836	MD836	EMPLACED_CNTR	11/14/84
788	10021575	MD836	MD836	EMPLACED_CNTR	06/22/81
789	10021576	MD836	MD836	EMPLACED_CNTR	10/08/84
790	10021577	MD836	MD836	EMPLACED_CNTR	02/25/82
791	10021580	MD836	MD836	EMPLACED_CNTR	03/02/81
792	10021582	MD836	MD836	EMPLACED_CNTR	05/21/82
793	10021583	MD836	MD836	EMPLACED_CNTR	08/31/81
794	10021584	MD836	MD836	EMPLACED_CNTR	08/18/81
795	10021585	MD836	MD836	EMPLACED_CNTR	07/11/79
796	10021589	MD836	MD836	EMPLACED_CNTR	06/21/82
797	10021590	MD836	MD836	EMPLACED_CNTR	01/30/84
798	10021592	MD836	MD836	EMPLACED_CNTR	05/21/82
799	10021596	MD836	MD836	EMPLACED_CNTR	04/06/81
800	10021597	MD836	MD836	EMPLACED_CNTR	02/23/81
801	10021599	MD836	MD836	EMPLACED_CNTR	08/17/84
802	10021601	MD836	MD836	EMPLACED_CNTR	05/07/85
803	10021602	MD836	MD836	EMPLACED_CNTR	04/06/81
804	10021605	MD836	MD836	EMPLACED_CNTR	02/25/82
805	10021657	MD836	MD836	EMPLACED_CNTR	05/19/81
806	10021658	MD836	MD836	EMPLACED_CNTR	06/21/82
807	10021659	MD836	MD836	EMPLACED_CNTR	03/02/81
808	10021661	MD836	MD836	EMPLACED_CNTR	07/11/79
809	10021664	MD836	MD836	EMPLACED_CNTR	04/13/81
810	10021665	MD836	MD836	EMPLACED_CNTR	06/03/80
811	10021667	MD836	MD836	EMPLACED_CNTR	03/16/81
812	10021669	MD836	MD836	EMPLACED_CNTR	06/21/82
813	10021670	MD836	MD836	EMPLACED_CNTR	05/21/82
814	10021673	MD836	MD836	EMPLACED_CNTR	05/19/81
815	10021676	MD836	MD836	EMPLACED_CNTR	05/19/81
816	10021677	MD836	MD836	EMPLACED_CNTR	12/06/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
817	10021681	MD836	MD836	EMPLACED_CNTR	12/06/84
818	10021682	MD836	MD836	EMPLACED_CNTR	05/21/82
819	10021683	MD836	MD836	EMPLACED_CNTR	02/25/82
820	10021684	MD836	MD836	EMPLACED_CNTR	06/21/82
821	10021813	MD836	MD836	EMPLACED_CNTR	04/08/75
822	10021814	MD836	MD836	EMPLACED_CNTR	12/05/75
823	10021815	MD836	MD836	EMPLACED_CNTR	04/17/75
824	10021816	MD836	MD836	EMPLACED_CNTR	07/11/75
825	10021817	MD836	MD836	EMPLACED_CNTR	04/28/75
826	10021818	MD836	MD836	EMPLACED_CNTR	04/28/75
827	10021819	MD836	MD836	EMPLACED_CNTR	05/01/75
828	10021820	MD836	MD836	EMPLACED_CNTR	07/11/75
829	10021821	MD836	MD836	EMPLACED_CNTR	07/11/75
830	10021822	MD836	MD836	EMPLACED_CNTR	07/11/75
831	10021823	MD836	MD836	EMPLACED_CNTR	04/28/75
832	10021824	MD836	MD836	EMPLACED_CNTR	04/28/75
833	10021825	MD836	MD836	EMPLACED_CNTR	04/28/75
834	10021826	MD836	MD836	EMPLACED_CNTR	04/28/75
835	10021827	MD836	MD836	EMPLACED_CNTR	04/28/75
836	10021828	MD836	MD836	EMPLACED_CNTR	04/28/75
837	10021829	MD836	MD836	EMPLACED_CNTR	07/11/75
838	10021830	MD836	MD836	EMPLACED_CNTR	07/11/75
839	10021831	MD836	MD836	EMPLACED_CNTR	07/11/75
840	10021832	MD836	MD836	EMPLACED_CNTR	07/11/75
841	10021833	MD836	MD836	EMPLACED_CNTR	12/05/75
842	10021834	MD836	MD836	EMPLACED_CNTR	06/17/75
843	10021835	MD836	MD836	EMPLACED_CNTR	07/16/75
844	10021837	MD836	MD836	EMPLACED_CNTR	05/01/75
845	10021838	MD836	MD836	EMPLACED_CNTR	07/11/75
846	10021839	MD836	MD836	EMPLACED_CNTR	12/05/75
847	10021840	MD836	MD836	EMPLACED_CNTR	12/05/75
848	10021841	MD836	MD836	EMPLACED_CNTR	07/11/75
849	10021842	MD836	MD836	EMPLACED_CNTR	07/11/75
850	10021957	MD836	MD836	EMPLACED_CNTR	04/06/81
851	10021959	MD836	MD836	EMPLACED_CNTR	02/12/84
852	10021960	MD836	MD836	EMPLACED_CNTR	08/17/84
853	10021961	MD836	MD836	EMPLACED_CNTR	08/18/81
854	10021962	MD836	MD836	EMPLACED_CNTR	06/08/81
855	10021964	MD836	MD836	EMPLACED_CNTR	07/11/79
856	10021979	MD836	MD836	EMPLACED_CNTR	02/03/83
857	10021980	MD836	MD836	EMPLACED_CNTR	10/08/84
858	10021981	MD836	MD836	EMPLACED_CNTR	08/18/81
859	10021989	MD836	MD836	EMPLACED_CNTR	08/31/81
860	10021992	MD836	MD836	EMPLACED_CNTR	08/18/81
861	10021993	MD836	MD836	EMPLACED_CNTR	04/06/81
862	10021995	MD836	MD836	EMPLACED_CNTR	04/06/81
863	10022000	MD836	MD836	EMPLACED_CNTR	02/16/81
864	10022001	MD836	MD836	EMPLACED_CNTR	01/30/85
865	10022002	MD836	MD836	EMPLACED_CNTR	06/29/81
866	10022003	MD836	MD836	EMPLACED_CNTR	03/24/81
867	10022004	MD836	MD836	EMPLACED_CNTR	04/06/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
868	10022007	MD836	MD836	EMPLACED_CNTR	02/16/81
869	10022008	MD836	MD836	EMPLACED_CNTR	02/16/81
870	10022009	MD836	MD836	EMPLACED_CNTR	06/02/80
871	10022011	MD836	MD836	EMPLACED_CNTR	06/08/81
872	10022012	MD836	MD836	EMPLACED_CNTR	02/03/83
873	10022013	MD836	MD836	EMPLACED_CNTR	08/18/81
874	10022017	MD836	MD836	EMPLACED_CNTR	04/27/81
875	10022018	MD836	MD836	EMPLACED_CNTR	06/08/81
876	10022019	MD836	MD836	EMPLACED_CNTR	06/08/81
877	10022022	MD836	MD836	EMPLACED_CNTR	05/19/81
878	10022028	MD836	MD836	EMPLACED_CNTR	12/01/81
879	10022030	MD836	MD836	EMPLACED_CNTR	10/27/81
880	10022033	MD836	MD836	EMPLACED_CNTR	02/03/83
881	10022036	MD836	MD836	EMPLACED_CNTR	12/06/84
882	10022038	MD836	MD836	EMPLACED_CNTR	08/18/81
883	10022039	MD836	MD836	EMPLACED_CNTR	06/22/81
884	10022040	MD836	MD836	EMPLACED_CNTR	05/05/82
885	10022042	MD836	MD836	EMPLACED_CNTR	05/05/82
886	10022044	MD836	MD836	EMPLACED_CNTR	05/05/82
887	10022045	MD836	MD836	EMPLACED_CNTR	04/20/81
888	10022048	MD836	MD836	EMPLACED_CNTR	07/08/82
889	10022050	MD836	MD836	EMPLACED_CNTR	02/03/83
890	10022052	MD836	MD836	EMPLACED_CNTR	08/31/81
891	10022056	MD836	MD836	EMPLACED_CNTR	08/18/81
892	10022057	MD836	MD836	EMPLACED_CNTR	04/20/81
893	10022059	MD836	MD836	EMPLACED_CNTR	01/18/82
894	10022063	MD836	MD836	EMPLACED_CNTR	05/07/85
895	10022190	MD836	MD836	EMPLACED_CNTR	04/13/81
896	10022191	MD836	MD836	EMPLACED_CNTR	04/27/81
897	10022199	MD836	MD836	EMPLACED_CNTR	05/06/81
898	10022203	MD836	MD836	EMPLACED_CNTR	05/19/81
899	10022204	MD836	MD836	EMPLACED_CNTR	04/27/81
900	10022210	MD836	MD836	EMPLACED_CNTR	02/12/84
901	10022216	MD836	MD836	EMPLACED_CNTR	05/06/81
902	10022217	MD836	MD836	EMPLACED_CNTR	04/01/81
903	10022218	MD836	MD836	EMPLACED_CNTR	04/13/81
904	10022219	MD836	MD836	EMPLACED_CNTR	04/27/81
905	10022222	MD836	MD836	EMPLACED_CNTR	05/06/81
906	10022224	MD836	MD836	EMPLACED_CNTR	05/06/81
907	10022225	MD836	MD836	EMPLACED_CNTR	10/21/81
908	10022235	MD836	MD836	EMPLACED_CNTR	02/23/81
909	10022236	MD836	MD836	EMPLACED_CNTR	05/12/81
910	10022249	MD836	MD836	EMPLACED_CNTR	04/20/81
911	10022256	MD836	MD836	EMPLACED_CNTR	05/19/81
912	10022261	MD836	MD836	EMPLACED_CNTR	02/23/81
913	10022265	MD836	MD836	EMPLACED_CNTR	10/21/81
914	10022314	MD836	MD836	EMPLACED_CNTR	03/16/76
915	10022315	MD836	MD836	EMPLACED_CNTR	03/16/76
916	10022318	MD836	MD836	EMPLACED_CNTR	03/03/76
917	10022319	MD836	MD836	EMPLACED_CNTR	03/03/76
918	10022320	MD836	MD836	EMPLACED_CNTR	03/03/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
919	10022715	MD836	MD836	EMPLACED_CNTR	03/03/76
920	10023128	MD836	MD836	EMPLACED_CNTR	05/19/76
921	10023129	MD836	MD836	EMPLACED_CNTR	05/19/76
922	10023130	MD836	MD836	EMPLACED_CNTR	06/10/76
923	10023131	MD836	MD836	EMPLACED_CNTR	06/10/76
924	10023132	MD836	MD836	EMPLACED_CNTR	05/19/76
925	10023133	MD836	MD836	EMPLACED_CNTR	05/19/76
926	10023134	MD836	MD836	EMPLACED_CNTR	05/19/76
927	10023135	MD836	MD836	EMPLACED_CNTR	05/19/76
928	10023136	MD836	MD836	EMPLACED_CNTR	05/19/76
929	10023137	MD836	MD836	EMPLACED_CNTR	05/19/76
930	10023138	MD836	MD836	EMPLACED_CNTR	05/14/76
931	10023139	MD836	MD836	EMPLACED_CNTR	05/05/76
932	10023140	MD836	MD836	EMPLACED_CNTR	05/19/76
933	10023141	MD836	MD836	EMPLACED_CNTR	05/05/76
934	10023142	MD836	MD836	EMPLACED_CNTR	05/05/76
935	10023143	MD836	MD836	EMPLACED_CNTR	05/05/76
936	10023144	MD836	MD836	EMPLACED_CNTR	05/05/76
937	10023145	MD836	MD836	EMPLACED_CNTR	05/05/76
938	10023146	MD836	MD836	EMPLACED_CNTR	05/05/76
939	10023147	MD836	MD836	EMPLACED_CNTR	05/14/76
940	10023170	MD836	MD836	EMPLACED_CNTR	05/14/76
941	10023171	MD836	MD836	EMPLACED_CNTR	05/14/76
942	10023173	MD836	MD836	EMPLACED_CNTR	05/19/76
943	10023292	MD836	MD836	EMPLACED_CNTR	02/13/76
944	10023293	MD836	MD836	EMPLACED_CNTR	02/13/76
945	10023295	MD836	MD836	EMPLACED_CNTR	03/03/76
946	10023296	MD836	MD836	EMPLACED_CNTR	03/03/76
947	10023540	MD836	MD836	EMPLACED_CNTR	05/05/76
948	10023594	MD836	MD836	EMPLACED_CNTR	06/10/76
949	10023597	MD836	MD836	EMPLACED_CNTR	05/14/76
950	10023598	MD836	MD836	EMPLACED_CNTR	05/19/76
951	10023599	MD836	MD836	EMPLACED_CNTR	06/10/76
952	10023600	MD836	MD836	EMPLACED_CNTR	06/10/76
953	10023601	MD836	MD836	EMPLACED_CNTR	06/10/76
954	10023602	MD836	MD836	EMPLACED_CNTR	04/28/76
955	10024230	MD836	MD836	EMPLACED_CNTR	06/10/76
956	10024231	MD836	MD836	EMPLACED_CNTR	06/10/76
957	10024232	MD836	MD836	EMPLACED_CNTR	06/10/76
958	10024233	MD836	MD836	EMPLACED_CNTR	06/10/76
959	10024234	MD836	MD836	EMPLACED_CNTR	04/28/76
960	10024235	MD836	MD836	EMPLACED_CNTR	05/14/76
961	10024236	MD836	MD836	EMPLACED_CNTR	05/19/76
962	10024237	MD836	MD836	EMPLACED_CNTR	05/14/76
963	10024238	MD836	MD836	EMPLACED_CNTR	05/05/76
964	10024239	MD836	MD836	EMPLACED_CNTR	04/28/76
965	10024240	MD836	MD836	EMPLACED_CNTR	05/05/76
966	10024241	MD836	MD836	EMPLACED_CNTR	05/05/76
967	10024242	MD836	MD836	EMPLACED_CNTR	04/28/76
968	10024243	MD836	MD836	EMPLACED_CNTR	05/14/76
969	10024244	MD836	MD836	EMPLACED_CNTR	05/19/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
970	10024245	MD836	MD836	EMPLACED_CNTR	05/19/76
971	10024255	MD836	MD836	EMPLACED_CNTR	05/19/76
972	10024256	MD836	MD836	EMPLACED_CNTR	05/05/76
973	10024257	MD836	MD836	EMPLACED_CNTR	06/10/76
974	10024258	MD836	MD836	EMPLACED_CNTR	05/19/76
975	10024261	MD836	MD836	EMPLACED_CNTR	05/19/76
976	10024859	MD836	MD836	EMPLACED_CNTR	05/14/76
977	10024860	MD836	MD836	EMPLACED_CNTR	05/14/76
978	10024861	MD836	MD836	EMPLACED_CNTR	05/05/76
979	10024862	MD836	MD836	EMPLACED_CNTR	05/14/76
980	10024863	MD836	MD836	EMPLACED_CNTR	05/19/76
981	10024864	MD836	MD836	EMPLACED_CNTR	05/14/76
982	10024865	MD836	MD836	EMPLACED_CNTR	05/14/76
983	10024866	MD836	MD836	EMPLACED_CNTR	06/10/76
984	10024867	MD836	MD836	EMPLACED_CNTR	06/10/76
985	10024868	MD836	MD836	EMPLACED_CNTR	06/10/76
986	10025021	MD836	MD836	EMPLACED_CNTR	05/14/76
987	10025023	MD836	MD836	EMPLACED_CNTR	05/19/76
988	10025024	MD836	MD836	EMPLACED_CNTR	05/19/76
989	10025025	MD836	MD836	EMPLACED_CNTR	06/10/76
990	10025027	MD836	MD836	EMPLACED_CNTR	05/05/76
991	10025028	MD836	MD836	EMPLACED_CNTR	05/05/76
992	10025029	MD836	MD836	EMPLACED_CNTR	06/10/76
993	10025030	MD836	MD836	EMPLACED_CNTR	05/14/76
994	10025358	MD836	MD836	EMPLACED_CNTR	04/28/76
995	10025366	MD836	MD836	EMPLACED_CNTR	04/13/76
996	10025367	MD836	MD836	EMPLACED_CNTR	05/05/76
997	10025368	MD836	MD836	EMPLACED_CNTR	04/28/76
998	10025369	MD836	MD836	EMPLACED_CNTR	04/28/76
999	10025370	MD836	MD836	EMPLACED_CNTR	04/28/76
1000	10025371	MD836	MD836	EMPLACED_CNTR	05/05/76
1001	10025372	MD836	MD836	EMPLACED_CNTR	04/28/76
1002	10025373	MD836	MD836	EMPLACED_CNTR	04/28/76
1003	10025609	MD836	MD836	EMPLACED_CNTR	05/14/76
1004	10025610	MD836	MD836	EMPLACED_CNTR	05/14/76
1005	10025611	MD836	MD836	EMPLACED_CNTR	06/10/76
1006	10025612	MD836	MD836	EMPLACED_CNTR	05/14/76
1007	10025613	MD836	MD836	EMPLACED_CNTR	06/10/76
1008	10025614	MD836	MD836	EMPLACED_CNTR	06/10/76
1009	10025615	MD836	MD836	EMPLACED_CNTR	05/19/76
1010	10025616	MD836	MD836	EMPLACED_CNTR	05/19/76
1011	10025617	MD836	MD836	EMPLACED_CNTR	05/14/76
1012	10025618	MD836	MD836	EMPLACED_CNTR	05/14/76
1013	10025619	MD836	MD836	EMPLACED_CNTR	06/10/76
1014	10025620	MD836	MD836	EMPLACED_CNTR	05/14/76
1015	10025621	MD836	MD836	EMPLACED_CNTR	04/28/76
1016	10025622	MD836	MD836	EMPLACED_CNTR	04/28/76
1017	10025624	MD836	MD836	EMPLACED_CNTR	05/19/76
1018	10025625	MD836	MD836	EMPLACED_CNTR	05/19/76
1019	10025626	MD836	MD836	EMPLACED_CNTR	06/10/76
1020	10025627	MD836	MD836	EMPLACED_CNTR	05/14/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1021	10025628	MD836	MD836	EMPLACED_CNTR	05/14/76
1022	10025629	MD836	MD836	EMPLACED_CNTR	05/14/76
1023	10025630	MD836	MD836	EMPLACED_CNTR	05/14/76
1024	10025978	MD836	MD836	EMPLACED_CNTR	04/28/76
1025	10025979	MD836	MD836	EMPLACED_CNTR	04/28/76
1026	10025980	MD836	MD836	EMPLACED_CNTR	04/23/76
1027	10025981	MD836	MD836	EMPLACED_CNTR	04/13/76
1028	10025988	MD836	MD836	EMPLACED_CNTR	05/05/76
1029	10025990	MD836	MD836	EMPLACED_CNTR	05/05/76
1030	10025991	MD836	MD836	EMPLACED_CNTR	04/13/76
1031	10026020	MD836	MD836	EMPLACED_CNTR	04/23/76
1032	10026021	MD836	MD836	EMPLACED_CNTR	04/23/76
1033	10026124	MD836	MD836	EMPLACED_CNTR	02/23/81
1034	10026125	MD836	MD836	EMPLACED_CNTR	10/22/80
1035	10026129	MD836	MD836	EMPLACED_CNTR	05/06/81
1036	10026134	MD836	MD836	EMPLACED_CNTR	10/22/80
1037	10026135	MD836	MD836	EMPLACED_CNTR	04/13/81
1038	10026137	MD836	MD836	EMPLACED_CNTR	05/26/81
1039	10026141	MD836	MD836	EMPLACED_CNTR	02/23/81
1040	10026153	MD836	MD836	EMPLACED_CNTR	06/02/80
1041	10026154	MD836	MD836	EMPLACED_CNTR	06/02/80
1042	10026155	MD836	MD836	EMPLACED_CNTR	10/22/80
1043	10026242	MD836	MD836	EMPLACED_CNTR	06/02/80
1044	10026244	MD836	MD836	EMPLACED_CNTR	06/02/80
1045	10026246	MD836	MD836	EMPLACED_CNTR	05/26/81
1046	10026247	MD836	MD836	EMPLACED_CNTR	10/22/80
1047	10026248	MD836	MD836	EMPLACED_CNTR	03/02/81
1048	10026250	MD836	MD836	EMPLACED_CNTR	05/26/81
1049	10026251	MD836	MD836	EMPLACED_CNTR	07/12/78
1050	10026252	MD836	MD836	EMPLACED_CNTR	10/22/80
1051	10026256	MD836	MD836	EMPLACED_CNTR	05/06/81
1052	10026257	MD836	MD836	EMPLACED_CNTR	04/13/81
1053	10026258	MD836	MD836	EMPLACED_CNTR	09/14/82
1054	10026260	MD836	MD836	EMPLACED_CNTR	06/02/80
1055	10026261	MD836	MD836	EMPLACED_CNTR	03/02/81
1056	10026263	MD836	MD836	EMPLACED_CNTR	10/22/80
1057	10026266	MD836	MD836	EMPLACED_CNTR	07/08/82
1058	10026268	MD836	MD836	EMPLACED_CNTR	01/30/85
1059	10026270	MD836	MD836	EMPLACED_CNTR	07/08/82
1060	10026272	MD836	MD836	EMPLACED_CNTR	06/21/82
1061	10026276	MD836	MD836	EMPLACED_CNTR	06/22/81
1062	10026278	MD836	MD836	EMPLACED_CNTR	12/06/84
1063	10026279	MD836	MD836	EMPLACED_CNTR	03/16/81
1064	10026280	MD836	MD836	EMPLACED_CNTR	03/24/81
1065	10026282	MD836	MD836	EMPLACED_CNTR	04/10/81
1066	10026283	MD836	MD836	EMPLACED_CNTR	08/17/84
1067	10026284	MD836	MD836	EMPLACED_CNTR	03/24/81
1068	10026285	MD836	MD836	EMPLACED_CNTR	03/16/81
1069	10026286	MD836	MD826	EMPLACED_CNTR	06/22/81
1070	10026321	MD836	MD836	EMPLACED_CNTR	06/08/81
1071	10026322	MD836	MD836	EMPLACED_CNTR	06/08/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1072	10026323	MD836	MD836	EMPLACED_CNTR	06/08/81
1073	10026324	MD836	MD836	EMPLACED_CNTR	05/07/85
1074	10026325	MD836	MD836	EMPLACED_CNTR	12/06/84
1075	10026326	MD836	MD836	EMPLACED_CNTR	03/24/81
1076	10026327	MD836	MD836	EMPLACED_CNTR	03/16/81
1077	10026329	MD836	MD836	EMPLACED_CNTR	02/16/81
1078	10026331	MD836	MD836	EMPLACED_CNTR	10/08/84
1079	10026332	MD836	MD836	EMPLACED_CNTR	06/29/81
1080	10026333	MD836	MD836	EMPLACED_CNTR	06/21/82
1081	10026334	MD836	MD836	EMPLACED_CNTR	12/06/84
1082	10026335	MD836	MD836	EMPLACED_CNTR	02/15/81
1083	10026337	MD836	MD836	EMPLACED_CNTR	05/07/85
1084	10026338	MD836	MD836	EMPLACED_CNTR	06/29/81
1085	10026339	MD836	MD836	EMPLACED_CNTR	06/21/82
1086	10026340	MD836	MD836	EMPLACED_CNTR	08/18/81
1087	10026341	MD836	MD836	EMPLACED_CNTR	03/24/81
1088	10026342	MD836	MD836	EMPLACED_CNTR	03/16/81
1089	10026343	MD836	MD836	EMPLACED_CNTR	11/14/84
1090	10026344	MD836	MD836	EMPLACED_CNTR	08/17/84
1091	10026345	MD836	MD836	EMPLACED_CNTR	06/29/81
1092	10026346	MD836	MD836	EMPLACED_CNTR	06/22/81
1093	10026347	MD836	MD836	EMPLACED_CNTR	10/22/80
1094	10026348	MD836	MD836	EMPLACED_CNTR	04/27/81
1095	10026349	MD836	MD836	EMPLACED_CNTR	05/12/81
1096	10026350	MD836	MD836	EMPLACED_CNTR	02/12/84
1097	10026351	MD836	MD836	EMPLACED_CNTR	06/21/82
1098	10026352	MD836	MD836	EMPLACED_CNTR	03/02/81
1099	10026353	MD836	MD836	EMPLACED_CNTR	03/02/81
1100	10026356	MD836	MD836	EMPLACED_CNTR	04/27/81
1101	10026357	MD836	MD836	EMPLACED_CNTR	05/19/81
1102	10026358	MD836	MD836	EMPLACED_CNTR	08/17/84
1103	10026361	MD836	MD836	EMPLACED_CNTR	05/26/81
1104	10026364	MD836	MD836	EMPLACED_CNTR	04/27/81
1105	10026365	MD836	MD836	EMPLACED_CNTR	05/06/81
1106	10026366	MD836	MD836	EMPLACED_CNTR	05/06/81
1107	10026367	MD836	MD836	EMPLACED_CNTR	05/12/81
1108	10026369	MD836	MD836	EMPLACED_CNTR	05/12/81
1109	10026370	MD836	MD836	EMPLACED_CNTR	08/18/81
1110	10026373	MD836	MD836	EMPLACED_CNTR	04/20/81
1111	10026376	MD836	MD836	EMPLACED_CNTR	01/18/82
1112	10026380	MD836	MD836	EMPLACED_CNTR	02/25/82
1113	10026383	MD836	MD836	EMPLACED_CNTR	01/18/82
1114	10026384	MD836	MD836	EMPLACED_CNTR	01/18/82
1115	10026387	MD836	MD836	EMPLACED_CNTR	02/25/82
1116	10026388	MD836	MD836	EMPLACED_CNTR	10/21/81
1117	10026389	MD836	MD836	EMPLACED_CNTR	09/14/82
1118	10026390	MD836	MD836	EMPLACED_CNTR	09/14/82
1119	10026391	MD836	MD836	EMPLACED_CNTR	05/05/82
1120	10026392	MD836	MD836	EMPLACED_CNTR	09/14/82
1121	10026393	MD836	MD836	EMPLACED_CNTR	02/25/82
1122	10026394	MD836	MD836	EMPLACED_CNTR	02/25/82

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1123	10026395	MD836	MD836	EMPLACED_CNTR	09/14/82
1124	10026396	MD836	MD836	EMPLACED_CNTR	05/05/82
1125	10026397	MD836	MD836	EMPLACED_CNTR	08/31/81
1126	10026398	MD836	MD836	EMPLACED_CNTR	01/18/82
1127	10026402	MD836	MD836	EMPLACED_CNTR	04/13/81
1128	10026404	MD836	MD836	EMPLACED_CNTR	04/10/81
1129	10026407	MD836	MD836	EMPLACED_CNTR	04/20/81
1130	10026409	MD836	MD836	EMPLACED_CNTR	04/20/81
1131	10026411	MD836	MD836	EMPLACED_CNTR	05/05/82
1132	10026412	MD836	MD836	EMPLACED_CNTR	11/20/81
1133	10026413	MD836	MD836	EMPLACED_CNTR	05/05/82
1134	10026414	MD836	MD836	EMPLACED_CNTR	04/20/81
1135	10026415	MD836	MD836	EMPLACED_CNTR	09/14/82
1136	10026416	MD836	MD836	EMPLACED_CNTR	05/05/82
1137	10026418	MD836	MD836	EMPLACED_CNTR	01/18/82
1138	10026420	MD836	MD836	EMPLACED_CNTR	04/20/81
1139	10026421	MD836	MD836	EMPLACED_CNTR	04/20/81
1140	10026423	MD836	MD836	EMPLACED_CNTR	07/08/82
1141	10026425	MD836	MD836	EMPLACED_CNTR	06/22/81
1142	10026426	MD836	MD836	EMPLACED_CNTR	03/16/81
1143	10026429	MD836	MD836	EMPLACED_CNTR	05/07/85
1144	10026430	MD836	MD836	EMPLACED_CNTR	01/30/84
1145	10026431	MD836	MD836	EMPLACED_CNTR	03/24/81
1146	10026432	MD836	MD836	EMPLACED_CNTR	01/30/85
1147	10026434	MD836	MD836	EMPLACED_CNTR	05/07/85
1148	10026435	MD836	MD836	EMPLACED_CNTR	05/07/85
1149	10026438	MD836	MD836	EMPLACED_CNTR	02/12/84
1150	10026439	MD836	MD836	EMPLACED_CNTR	08/17/84
1151	10026440	MD836	MD836	EMPLACED_CNTR	08/17/84
1152	10026443	MD836	MD836	EMPLACED_CNTR	08/17/84
1153	10026444	MD836	MD836	EMPLACED_CNTR	10/08/84
1154	10026445	MD836	MD836	EMPLACED_CNTR	12/06/84
1155	10026446	MD836	MD836	EMPLACED_CNTR	04/20/81
1156	10026447	MD836	MD836	EMPLACED_CNTR	04/20/81
1157	10026449	MD836	MD836	EMPLACED_CNTR	10/08/84
1158	10026450	MD836	MD836	EMPLACED_CNTR	08/17/84
1159	10026451	MD836	MD836	EMPLACED_CNTR	08/17/84
1160	10026452	MD836	MD836	EMPLACED_CNTR	03/21/75
1161	10026453	MD836	MD836	EMPLACED_CNTR	10/21/81
1162	10026455	MD836	MD836	EMPLACED_CNTR	02/25/82
1163	10026456	MD836	MD836	EMPLACED_CNTR	08/17/84
1164	10026457	MD836	MD836	EMPLACED_CNTR	06/22/81
1165	10026458	MD836	MD836	EMPLACED_CNTR	06/08/81
1166	10026459	MD836	MD836	EMPLACED_CNTR	11/14/84
1167	10026460	MD836	MD836	EMPLACED_CNTR	10/08/84
1168	10026461	MD836	MD836	EMPLACED_CNTR	12/06/84
1169	10026462	MD836	MD836	EMPLACED_CNTR	03/24/81
1170	10026463	MD836	MD836	EMPLACED_CNTR	10/21/81
1171	10026464	MD836	MD836	EMPLACED_CNTR	05/20/81
1172	10026465	MD836	MD836	EMPLACED_CNTR	01/30/85
1173	10026466	MD836	MD836	EMPLACED_CNTR	12/06/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1174	10026467	MD836	MD836	EMPLACED_CNTR	10/31/84
1175	10026468	MD836	MD836	EMPLACED_CNTR	06/21/82
1176	10026469	MD836	MD836	EMPLACED_CNTR	02/25/82
1177	10026470	MD836	MD836	EMPLACED_CNTR	10/21/81
1178	10026471	MD836	MD836	EMPLACED_CNTR	10/21/81
1179	10026472	MD836	MD836	EMPLACED_CNTR	04/22/81
1180	10026492	MD836	MD836	EMPLACED_CNTR	04/23/76
1181	10026493	MD836	MD836	EMPLACED_CNTR	04/23/76
1182	10026496	MD836	MD836	EMPLACED_CNTR	04/23/76
1183	10026497	MD836	MD836	EMPLACED_CNTR	04/23/76
1184	10026498	MD836	MD836	EMPLACED_CNTR	04/23/76
1185	10026499	MD836	MD836	EMPLACED_CNTR	04/13/76
1186	10026500	MD836	MD836	EMPLACED_CNTR	04/23/76
1187	10026501	MD836	MD836	EMPLACED_CNTR	04/23/76
1188	10026502	MD836	MD836	EMPLACED_CNTR	04/23/76
1189	10026503	MD836	MD836	EMPLACED_CNTR	05/05/76
1190	10026579	MD836	MD836	EMPLACED_CNTR	09/14/82
1191	10026580	MD836	MD836	EMPLACED_CNTR	05/05/82
1192	10026581	MD836	MD836	EMPLACED_CNTR	02/25/82
1193	10026582	MD836	MD836	EMPLACED_CNTR	07/08/82
1194	10026583	MD836	MD836	EMPLACED_CNTR	02/25/82
1195	10026584	MD836	MD836	EMPLACED_CNTR	07/08/82
1196	10026585	MD836	MD836	EMPLACED_CNTR	05/05/82
1197	10026586	MD836	MD836	EMPLACED_CNTR	09/14/82
1198	10026587	MD836	MD836	EMPLACED_CNTR	06/22/81
1199	10026588	MD836	MD836	EMPLACED_CNTR	09/14/82
1200	10026589	MD836	MD836	EMPLACED_CNTR	05/05/82
1201	10026591	MD836	MD836	EMPLACED_CNTR	08/31/81
1202	10026593	MD836	MD836	EMPLACED_CNTR	05/05/82
1203	10026594	MD836	MD836	EMPLACED_CNTR	11/20/81
1204	10026595	MD836	MD836	EMPLACED_CNTR	10/27/81
1205	10026596	MD836	MD836	EMPLACED_CNTR	01/18/82
1206	10026597	MD836	MD836	EMPLACED_CNTR	02/25/82
1207	10026598	MD836	MD836	EMPLACED_CNTR	08/31/81
1208	10026599	MD836	MD836	EMPLACED_CNTR	06/08/81
1209	10026601	MD836	MD836	EMPLACED_CNTR	02/25/82
1210	10026602	MD836	MD836	EMPLACED_CNTR	08/31/81
1211	10026604	MD836	MD836	EMPLACED_CNTR	09/14/82
1212	10026605	MD836	MD836	EMPLACED_CNTR	05/05/82
1213	10026606	MD836	MD836	EMPLACED_CNTR	05/05/82
1214	10026607	MD836	MD836	EMPLACED_CNTR	04/27/81
1215	10026608	MD836	MD836	EMPLACED_CNTR	09/14/82
1216	10026609	MD836	MD836	EMPLACED_CNTR	01/18/82
1217	10026651	MD836	MD836	EMPLACED_CNTR	02/25/82
1218	10026652	MD836	MD836	EMPLACED_CNTR	02/26/82
1219	10026653	MD836	MD836	EMPLACED_CNTR	06/08/81
1220	10026654	MD836	MD836	EMPLACED_CNTR	08/31/81
1221	10026655	MD836	MD836	EMPLACED_CNTR	09/14/82
1222	10026656	MD836	MD836	EMPLACED_CNTR	06/29/81
1223	10026657	MD836	MD836	EMPLACED_CNTR	07/08/82
1224	10026658	MD836	MD836	EMPLACED_CNTR	01/18/82

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1225	10026659	MD836	MD836	EMPLACED_CNTR	02/25/82
1226	10026660	MD836	MD836	EMPLACED_CNTR	08/31/81
1227	10026722	MD836	MD836	EMPLACED_CNTR	05/05/82
1228	10026723	MD836	MD836	EMPLACED_CNTR	04/20/81
1229	10026725	MD836	MD836	EMPLACED_CNTR	01/30/84
1230	10026727	MD836	MD836	EMPLACED_CNTR	02/15/81
1231	10026729	MD836	MD836	EMPLACED_CNTR	06/08/81
1232	10026730	MD836	MD836	EMPLACED_CNTR	06/22/81
1233	10026732	MD836	MD836	EMPLACED_CNTR	10/31/84
1234	10026735	MD836	MD836	EMPLACED_CNTR	10/21/81
1235	10026736	MD836	MD836	EMPLACED_CNTR	08/31/81
1236	10026738	MD836	MD836	EMPLACED_CNTR	02/23/81
1237	10026741	MD836	MD836	EMPLACED_CNTR	01/18/82
1238	10026742	MD836	MD836	EMPLACED_CNTR	01/18/82
1239	10026743	MD836	MD836	EMPLACED_CNTR	06/29/81
1240	10026744	MD836	MD836	EMPLACED_CNTR	08/17/84
1241	10026745	MD836	MD836	EMPLACED_CNTR	04/20/81
1242	10026749	MD836	MD836	EMPLACED_CNTR	11/14/84
1243	10026751	MD836	MD836	EMPLACED_CNTR	02/03/83
1244	10026753	MD836	MD836	EMPLACED_CNTR	08/31/81
1245	10026754	MD836	MD836	EMPLACED_CNTR	01/18/82
1246	10026755	MD836	MD836	EMPLACED_CNTR	04/13/81
1247	10026757	MD836	MD836	EMPLACED_CNTR	06/08/81
1248	10026758	MD836	MD836	EMPLACED_CNTR	04/13/81
1249	10026759	MD836	MD836	EMPLACED_CNTR	04/06/81
1250	10026760	MD836	MD836	EMPLACED_CNTR	01/18/82
1251	10026761	MD836	MD836	EMPLACED_CNTR	11/20/81
1252	10026762	MD836	MD836	EMPLACED_CNTR	05/07/85
1253	10026763	MD836	MD836	EMPLACED_CNTR	03/16/81
1254	10026764	MD836	MD836	EMPLACED_CNTR	05/07/85
1255	10026768	MD836	MD836	EMPLACED_CNTR	06/04/81
1256	10026769	MD836	MD836	EMPLACED_CNTR	01/18/82
1257	10026771	MD836	MD836	EMPLACED_CNTR	05/05/82
1258	10026772	MD836	MD836	EMPLACED_CNTR	06/22/81
1259	10026773	MD836	MD836	EMPLACED_CNTR	01/18/82
1260	10026774	MD836	MD836	EMPLACED_CNTR	01/18/82
1261	10026775	MD836	MD836	EMPLACED_CNTR	11/20/81
1262	10026776	MD836	MD836	EMPLACED_CNTR	10/27/81
1263	10026777	MD836	MD836	EMPLACED_CNTR	09/14/82
1264	10026778	MD836	MD836	EMPLACED_CNTR	05/05/82
1265	10026779	MD836	MD836	EMPLACED_CNTR	09/14/82
1266	10026780	MD836	MD836	EMPLACED_CNTR	06/22/81
1267	10026781	MD836	MD836	EMPLACED_CNTR	05/05/82
1268	10027728	MD836	MD836	EMPLACED_CNTR	04/23/76
1269	10027729	MD836	MD836	EMPLACED_CNTR	04/23/76
1270	10027730	MD836	MD836	EMPLACED_CNTR	04/13/76
1271	10027731	MD836	MD836	EMPLACED_CNTR	04/23/76
1272	10027732	MD836	MD836	EMPLACED_CNTR	04/28/76
1273	10027733	MD836	MD836	EMPLACED_CNTR	05/05/76
1274	10027734	MD836	MD836	EMPLACED_CNTR	04/28/76
1275	10027735	MD836	MD836	EMPLACED_CNTR	04/28/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1276	10027736	MD836	MD836	EMPLACED_CNTR	05/05/76
1277	10027737	MD836	MD836	EMPLACED_CNTR	04/23/76
1278	10027738	MD836	MD836	EMPLACED_CNTR	04/23/76
1279	10027739	MD836	MD836	EMPLACED_CNTR	04/28/76
1280	10027740	MD836	MD836	EMPLACED_CNTR	04/28/76
1281	10027741	MD836	MD836	EMPLACED_CNTR	04/13/76
1282	10027742	MD836	MD836	EMPLACED_CNTR	04/23/76
1283	10027743	MD836	MD836	EMPLACED_CNTR	04/23/76
1284	10027747	MD836	MD836	EMPLACED_CNTR	04/23/76
1285	10027748	MD836	MD836	EMPLACED_CNTR	04/28/76
1286	10027749	MD836	MD836	EMPLACED_CNTR	04/13/76
1287	10027750	MD836	MD836	EMPLACED_CNTR	04/13/76
1288	10027751	MD836	MD836	EMPLACED_CNTR	04/28/76
1289	10027752	MD836	MD836	EMPLACED_CNTR	04/23/76
1290	10027783	MD836	MD836	EMPLACED_CNTR	04/23/76
1291	10027784	MD836	MD836	EMPLACED_CNTR	04/23/76
1292	10027785	MD836	MD836	EMPLACED_CNTR	04/13/76
1293	10027786	MD836	MD836	EMPLACED_CNTR	04/23/76
1294	10027787	MD836	MD836	EMPLACED_CNTR	04/28/76
1295	10027788	MD836	MD836	EMPLACED_CNTR	04/28/76
1296	10027789	MD836	MD836	EMPLACED_CNTR	05/05/76
1297	10027790	MD836	MD836	EMPLACED_CNTR	05/05/76
1298	10027968	MD836	MD836	EMPLACED_CNTR	04/28/76
1299	10027969	MD836	MD836	EMPLACED_CNTR	04/28/76
1300	10027970	MD836	MD836	EMPLACED_CNTR	04/23/76
1301	10027971	MD836	MD836	EMPLACED_CNTR	04/13/76
1302	10027972	MD836	MD836	EMPLACED_CNTR	04/23/76
1303	10028547	MD836	MD836	EMPLACED_CNTR	12/22/76
1304	10028548	MD836	MD836	EMPLACED_CNTR	12/22/76
1305	10028549	MD836	MD836	EMPLACED_CNTR	12/22/76
1306	10028550	MD836	MD836	EMPLACED_CNTR	05/11/77
1307	10028551	MD836	MD836	EMPLACED_CNTR	05/11/77
1308	10028552	MD836	MD836	EMPLACED_CNTR	05/11/77
1309	10028553	MD836	MD836	EMPLACED_CNTR	01/26/77
1310	10028554	MD836	MD836	EMPLACED_CNTR	05/11/77
1311	10028555	MD836	MD836	EMPLACED_CNTR	12/22/76
1312	10028556	MD836	MD836	EMPLACED_CNTR	12/22/76
1313	10028557	MD836	MD836	EMPLACED_CNTR	04/19/77
1314	10028583	MD836	MD836	EMPLACED_CNTR	12/22/76
1315	10028620	MD836	MD836	EMPLACED_CNTR	11/02/76
1316	10028621	MD836	MD836	EMPLACED_CNTR	10/29/76
1317	10028622	MD836	MD836	EMPLACED_CNTR	10/29/76
1318	10028623	MD836	MD836	EMPLACED_CNTR	04/12/76
1319	10028624	MD836	MD836	EMPLACED_CNTR	10/29/76
1320	10028625	MD836	MD836	EMPLACED_CNTR	09/16/76
1321	10028848	MD836	MD836	EMPLACED_CNTR	11/02/76
1322	10028849	MD836	MD836	EMPLACED_CNTR	11/02/76
1323	10028850	MD836	MD836	EMPLACED_CNTR	11/02/76
1324	10028851	MD836	MD836	EMPLACED_CNTR	10/28/76
1325	10028852	MD836	MD836	EMPLACED_CNTR	11/02/76
1326	10028853	MD836	MD836	EMPLACED_CNTR	11/02/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1327	10028854	MD836	MD836	EMPLACED_CNTR	09/16/76
1328	10028855	MD836	MD836	EMPLACED_CNTR	09/23/76
1329	10028856	MD836	MD836	EMPLACED_CNTR	09/16/76
1330	10028857	MD836	MD836	EMPLACED_CNTR	09/16/76
1331	10028858	MD836	MD836	EMPLACED_CNTR	11/02/76
1332	10028859	MD836	MD836	EMPLACED_CNTR	11/02/76
1333	10028864	MD836	MD836	EMPLACED_CNTR	09/16/76
1334	10028865	MD836	MD836	EMPLACED_CNTR	09/23/76
1335	10028866	MD836	MD836	EMPLACED_CNTR	09/23/76
1336	10028867	MD836	MD836	EMPLACED_CNTR	04/13/76
1337	10028868	MD836	MD836	EMPLACED_CNTR	04/12/76
1338	10028869	MD836	MD836	EMPLACED_CNTR	09/16/76
1339	10028870	MD836	MD836	EMPLACED_CNTR	09/16/76
1340	10028871	MD836	MD836	EMPLACED_CNTR	10/28/76
1341	10028872	MD836	MD836	EMPLACED_CNTR	10/28/76
1342	10028873	MD836	MD836	EMPLACED_CNTR	04/13/76
1343	10028874	MD836	MD836	EMPLACED_CNTR	04/13/76
1344	10028875	MD836	MD836	EMPLACED_CNTR	10/29/76
1345	10028876	MD836	MD836	EMPLACED_CNTR	11/02/76
1346	10028877	MD836	MD836	EMPLACED_CNTR	11/02/76
1347	10028878	MD836	MD836	EMPLACED_CNTR	09/16/76
1348	10028879	MD836	MD836	EMPLACED_CNTR	11/02/76
1349	10028880	MD836	MD836	EMPLACED_CNTR	10/28/76
1350	10028881	MD836	MD836	EMPLACED_CNTR	04/12/76
1351	10028882	MD836	MD836	EMPLACED_CNTR	09/23/76
1352	10028883	MD836	MD836	EMPLACED_CNTR	09/23/76
1353	10028884	MD836	MD836	EMPLACED_CNTR	09/16/76
1354	10028885	MD836	MD836	EMPLACED_CNTR	09/23/76
1355	10028886	MD836	MD836	EMPLACED_CNTR	11/02/76
1356	10028887	MD836	MD836	EMPLACED_CNTR	10/29/76
1357	10028888	MD836	MD836	EMPLACED_CNTR	10/29/76
1358	10028889	MD836	MD836	EMPLACED_CNTR	11/02/76
1359	10028890	MD836	MD836	EMPLACED_CNTR	11/02/76
1360	10028891	MD836	MD836	EMPLACED_CNTR	11/02/76
1361	10028892	MD836	MD836	EMPLACED_CNTR	11/02/76
1362	10028893	MD836	MD836	EMPLACED_CNTR	09/23/76
1363	10028894	MD836	MD836	EMPLACED_CNTR	09/23/76
1364	10028895	MD836	MD836	EMPLACED_CNTR	09/23/76
1365	10029047	MD836	MD836	EMPLACED_CNTR	10/28/76
1366	10029048	MD836	MD836	EMPLACED_CNTR	09/16/76
1367	10029049	MD836	MD836	EMPLACED_CNTR	11/02/76
1368	10029050	MD836	MD836	EMPLACED_CNTR	11/02/76
1369	10029051	MD836	MD836	EMPLACED_CNTR	09/23/76
1370	10029052	MD836	MD836	EMPLACED_CNTR	09/16/76
1371	10029053	MD836	MD836	EMPLACED_CNTR	09/16/76
1372	10029054	MD836	MD836	EMPLACED_CNTR	11/02/76
1373	10029055	MD836	MD836	EMPLACED_CNTR	09/23/76
1374	10029056	MD836	MD836	EMPLACED_CNTR	09/16/76
1375	10029057	MD836	MD836	EMPLACED_CNTR	11/02/76
1376	10029058	MD836	MD836	EMPLACED_CNTR	09/23/76
1377	10029059	MD836	MD836	EMPLACED_CNTR	10/29/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1378	10029060	MD836	MD836	EMPLACED_CNTR	09/16/76
1379	10029061	MD836	MD836	EMPLACED_CNTR	09/16/76
1380	10029062	MD836	MD836	EMPLACED_CNTR	11/02/76
1381	10029063	MD836	MD836	EMPLACED_CNTR	11/02/76
1382	10029064	MD836	MD836	EMPLACED_CNTR	09/23/76
1383	10029065	MD836	MD836	EMPLACED_CNTR	09/16/76
1384	10029066	MD836	MD836	EMPLACED_CNTR	09/23/76
1385	10029067	MD836	MD836	EMPLACED_CNTR	09/24/76
1386	10029068	MD836	MD836	EMPLACED_CNTR	04/12/76
1387	10029069	MD836	MD836	EMPLACED_CNTR	10/28/76
1388	10029070	MD836	MD836	EMPLACED_CNTR	09/16/76
1389	10029071	MD836	MD836	EMPLACED_CNTR	09/16/76
1390	10029072	MD836	MD836	EMPLACED_CNTR	09/23/76
1391	10029073	MD836	MD836	EMPLACED_CNTR	09/23/76
1392	10029074	MD836	MD836	EMPLACED_CNTR	11/02/76
1393	10029075	MD836	MD836	EMPLACED_CNTR	05/11/77
1394	10029076	MD836	MD836	EMPLACED_CNTR	04/19/77
1395	10029077	MD836	MD836	EMPLACED_CNTR	04/19/77
1396	10029078	MD836	MD836	EMPLACED_CNTR	04/19/77
1397	10029079	MD836	MD836	EMPLACED_CNTR	04/19/77
1398	10029080	MD836	MD836	EMPLACED_CNTR	04/19/77
1399	10029081	MD836	MD836	EMPLACED_CNTR	05/11/77
1400	10029082	MD836	MD836	EMPLACED_CNTR	12/22/76
1401	10029083	MD836	MD836	EMPLACED_CNTR	12/22/76
1402	10029100	MD836	MD836	EMPLACED_CNTR	04/12/76
1403	10029130	MD836	MD836	EMPLACED_CNTR	04/12/76
1404	10029131	MD836	MD836	EMPLACED_CNTR	09/23/76
1405	10029136	MD836	MD836	EMPLACED_CNTR	09/16/76
1406	10029137	MD836	MD836	EMPLACED_CNTR	04/12/76
1407	10029163	MD836	MD836	EMPLACED_CNTR	09/23/76
1408	10029165	MD836	MD836	EMPLACED_CNTR	04/12/76
1409	10029166	MD836	MD836	EMPLACED_CNTR	04/13/76
1410	10029167	MD836	MD836	EMPLACED_CNTR	04/12/76
1411	10029168	MD836	MD836	EMPLACED_CNTR	04/12/76
1412	10029169	MD836	MD836	EMPLACED_CNTR	04/12/76
1413	10029170	MD836	MD836	EMPLACED_CNTR	04/12/76
1414	10029171	MD836	MD836	EMPLACED_CNTR	04/12/76
1415	10029172	MD836	MD836	EMPLACED_CNTR	04/13/76
1416	10029173	MD836	MD836	EMPLACED_CNTR	04/12/76
1417	10029174	MD836	MD836	EMPLACED_CNTR	04/13/76
1418	10029176	MD836	MD836	EMPLACED_CNTR	04/12/76
1419	10029177	MD836	MD836	EMPLACED_CNTR	04/12/76
1420	10029178	MD836	MD836	EMPLACED_CNTR	04/12/76
1421	10029179	MD836	MD836	EMPLACED_CNTR	04/12/76
1422	10029180	MD836	MD836	EMPLACED_CNTR	04/12/76
1423	10029181	MD836	MD836	EMPLACED_CNTR	04/13/76
1424	10029182	MD836	MD836	EMPLACED_CNTR	04/12/76
1425	10029183	MD836	MD836	EMPLACED_CNTR	04/12/76
1426	10029184	MD836	MD836	EMPLACED_CNTR	04/13/76
1427	10029185	MD836	MD836	EMPLACED_CNTR	09/23/76
1428	10029186	MD836	MD836	EMPLACED_CNTR	09/23/76

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1429	10029187	MD836	MD836	EMPLACED_CNTR	09/16/76
1430	10029188	MD836	MD836	EMPLACED_CNTR	09/16/76
1431	10029189	MD836	MD836	EMPLACED_CNTR	09/16/76
1432	10029190	MD836	MD836	EMPLACED_CNTR	04/13/76
1433	10029191	MD836	MD836	EMPLACED_CNTR	09/16/76
1434	10029192	MD836	MD836	EMPLACED_CNTR	11/02/76
1435	10029194	MD836	MD836	EMPLACED_CNTR	09/23/76
1436	10029216	MD836	MD836	EMPLACED_CNTR	12/22/76
1437	10029217	MD836	MD836	EMPLACED_CNTR	05/11/77
1438	10029218	MD836	MD836	EMPLACED_CNTR	05/11/77
1439	10029219	MD836	MD836	EMPLACED_CNTR	12/22/76
1440	10029220	MD836	MD836	EMPLACED_CNTR	04/19/77
1441	10029221	MD836	MD836	EMPLACED_CNTR	05/11/77
1442	10029222	MD836	MD836	EMPLACED_CNTR	05/11/77
1443	10029223	MD836	MD836	EMPLACED_CNTR	12/22/76
1444	10029224	MD836	MD836	EMPLACED_CNTR	12/22/76
1445	10029225	MD836	MD836	EMPLACED_CNTR	12/22/76
1446	10029228	MD836	MD836	EMPLACED_CNTR	04/13/76
1447	10029229	MD836	MD836	EMPLACED_CNTR	04/13/76
1448	10029230	MD836	MD836	EMPLACED_CNTR	04/13/76
1449	10029231	MD836	MD836	EMPLACED_CNTR	04/13/76
1450	10029232	MD836	MD836	EMPLACED_CNTR	09/23/76
1451	10029233	MD836	MD836	EMPLACED_CNTR	09/16/76
1452	10029234	MD836	MD836	EMPLACED_CNTR	10/28/76
1453	10029235	MD836	MD836	EMPLACED_CNTR	09/23/76
1454	10029236	MD836	MD836	EMPLACED_CNTR	04/12/76
1455	10029282	MD836	MD836	EMPLACED_CNTR	05/11/77
1456	10029283	MD836	MD836	EMPLACED_CNTR	04/19/77
1457	10029284	MD836	MD836	EMPLACED_CNTR	04/19/77
1458	10029285	MD836	MD836	EMPLACED_CNTR	04/19/77
1459	10029286	MD836	MD836	EMPLACED_CNTR	12/22/76
1460	10029341	MD836	MD836	EMPLACED_CNTR	04/19/77
1461	10029342	MD836	MD836	EMPLACED_CNTR	04/19/77
1462	10029343	MD836	MD836	EMPLACED_CNTR	05/11/77
1463	10029344	MD836	MD836	EMPLACED_CNTR	05/11/77
1464	10029345	MD836	MD836	EMPLACED_CNTR	12/22/76
1465	10029346	MD836	MD836	EMPLACED_CNTR	04/19/77
1466	10029525	MD836	MD836	EMPLACED_CNTR	04/19/77
1467	10029526	MD836	MD836	EMPLACED_CNTR	04/19/77
1468	10029527	MD836	MD836	EMPLACED_CNTR	05/11/77
1469	10029528	MD836	MD836	EMPLACED_CNTR	05/11/77
1470	10029529	MD836	MD836	EMPLACED_CNTR	04/19/77
1471	10029530	MD836	MD836	EMPLACED_CNTR	05/11/77
1472	10029531	MD836	MD836	EMPLACED_CNTR	05/11/77
1473	10029532	MD836	MD836	EMPLACED_CNTR	05/11/77
1474	10029533	MD836	MD836	EMPLACED_CNTR	04/19/77
1475	10029534	MD836	MD836	EMPLACED_CNTR	04/19/77
1476	10029535	MD836	MD836	EMPLACED_CNTR	04/19/77
1477	10029536	MD836	MD836	EMPLACED_CNTR	04/16/77
1478	10029537	MD836	MD836	EMPLACED_CNTR	05/11/77
1479	10029538	MD836	MD836	EMPLACED_CNTR	05/11/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1480	10029539	MD836	MD836	EMPLACED_CNTR	12/22/76
1481	10029540	MD836	MD836	EMPLACED_CNTR	05/11/77
1482	10029541	MD836	MD836	EMPLACED_CNTR	05/11/77
1483	10029542	MD836	MD836	EMPLACED_CNTR	04/19/77
1484	10029543	MD836	MD836	EMPLACED_CNTR	04/19/77
1485	10029544	MD836	MD836	EMPLACED_CNTR	04/19/77
1486	10029545	MD836	MD836	EMPLACED_CNTR	04/19/77
1487	10030080	MD836	MD836	EMPLACED_CNTR	09/16/76
1488	10030081	MD836	MD836	EMPLACED_CNTR	09/23/76
1489	10030564	MD836	MD836	EMPLACED_CNTR	10/28/76
1490	10031097	MD836	MD836	EMPLACED_CNTR	01/26/77
1491	10031098	MD836	MD836	EMPLACED_CNTR	10/29/76
1492	10031099	MD836	MD836	EMPLACED_CNTR	10/29/76
1493	10031139	MD836	MD836	EMPLACED_CNTR	12/22/76
1494	10031140	MD836	MD836	EMPLACED_CNTR	04/12/76
1495	10031141	MD836	MD836	EMPLACED_CNTR	01/26/77
1496	10031142	MD836	MD836	EMPLACED_CNTR	08/03/77
1497	10031144	MD836	MD836	EMPLACED_CNTR	01/26/77
1498	10031152	MD836	MD836	EMPLACED_CNTR	10/28/76
1499	10031153	MD836	MD836	EMPLACED_CNTR	12/22/76
1500	10031154	MD836	MD836	EMPLACED_CNTR	03/16/76
1501	10031155	MD836	MD836	EMPLACED_CNTR	01/26/77
1502	10031157	MD836	MD836	EMPLACED_CNTR	03/16/76
1503	10031158	MD836	MD836	EMPLACED_CNTR	10/29/76
1504	10031159	MD836	MD836	EMPLACED_CNTR	01/26/77
1505	10031160	MD836	MD836	EMPLACED_CNTR	12/22/76
1506	10031161	MD836	MD836	EMPLACED_CNTR	01/26/77
1507	10031162	MD836	MD836	EMPLACED_CNTR	12/22/76
1508	10031163	MD836	MD836	EMPLACED_CNTR	08/03/77
1509	10031164	MD836	MD836	EMPLACED_CNTR	10/29/76
1510	10031165	MD836	MD836	EMPLACED_CNTR	10/28/76
1511	10031166	MD836	MD836	EMPLACED_CNTR	08/03/77
1512	10031167	MD836	MD836	EMPLACED_CNTR	08/03/77
1513	10031168	MD836	MD836	EMPLACED_CNTR	10/28/76
1514	10031169	MD836	MD836	EMPLACED_CNTR	09/22/06
1515	10031170	MD836	MD836	EMPLACED_CNTR	01/26/77
1516	10031171	MD836	MD836	EMPLACED_CNTR	12/22/76
1517	10031172	MD836	MD836	EMPLACED_CNTR	10/28/76
1518	10031173	MD836	MD836	EMPLACED_CNTR	01/26/77
1519	10031174	MD836	MD836	EMPLACED_CNTR	01/26/77
1520	10031175	MD836	MD836	EMPLACED_CNTR	01/26/77
1521	10031176	MD836	MD836	EMPLACED_CNTR	01/26/77
1522	10031177	MD836	MD836	EMPLACED_CNTR	10/28/76
1523	10031178	MD836	MD836	EMPLACED_CNTR	04/19/77
1524	10031179	MD836	MD836	EMPLACED_CNTR	12/22/76
1525	10031180	MD836	MD836	EMPLACED_CNTR	08/03/77
1526	10031181	MD836	MD836	EMPLACED_CNTR	08/03/77
1527	10031182	MD836	MD836	EMPLACED_CNTR	01/26/77
1528	10031183	MD836	MD836	EMPLACED_CNTR	08/03/77
1529	10031184	MD836	MD836	EMPLACED_CNTR	08/03/77
1530	10031185	MD836	MD836	EMPLACED_CNTR	08/03/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1531	10031186	MD836	MD836	EMPLACED_CNTR	10/29/76
1532	10031187	MD836	MD836	EMPLACED_CNTR	10/29/76
1533	10031188	MD836	MD836	EMPLACED_CNTR	08/03/77
1534	10031189	MD836	MD836	EMPLACED_CNTR	12/22/76
1535	10031190	MD836	MD836	EMPLACED_CNTR	12/22/76
1536	10031191	MD836	MD836	EMPLACED_CNTR	01/26/77
1537	10031216	MD836	MD836	EMPLACED_CNTR	08/03/77
1538	10031217	MD836	MD836	EMPLACED_CNTR	08/03/77
1539	10032456	MD836	MD836	EMPLACED_CNTR	01/26/77
1540	10032494	MD836	MD836	EMPLACED_CNTR	12/22/76
1541	10032501	MD836	MD836	EMPLACED_CNTR	08/03/77
1542	10033640	MD836	MD836	EMPLACED_CNTR	11/14/84
1543	10033641	MD836	MD836	EMPLACED_CNTR	03/02/81
1544	10033642	MD836	MD836	EMPLACED_CNTR	05/07/85
1545	10033643	MD836	MD836	EMPLACED_CNTR	03/02/81
1546	10033644	MD836	MD836	EMPLACED_CNTR	03/02/81
1547	10033645	MD836	MD836	EMPLACED_CNTR	11/14/84
1548	10033646	MD836	MD836	EMPLACED_CNTR	05/19/81
1549	10033647	MD836	MD836	EMPLACED_CNTR	04/06/81
1550	10033648	MD836	MD836	EMPLACED_CNTR	04/13/81
1551	10033649	MD836	MD836	EMPLACED_CNTR	11/14/84
1552	10033650	MD836	MD836	EMPLACED_CNTR	02/23/81
1553	10033651	MD836	MD836	EMPLACED_CNTR	10/21/81
1554	10033652	MD836	MD836	EMPLACED_CNTR	10/21/81
1555	10033654	MD836	MD836	EMPLACED_CNTR	04/06/81
1556	10033660	MD836	MD836	EMPLACED_CNTR	10/31/84
1557	10033662	MD836	MD836	EMPLACED_CNTR	05/26/81
1558	10033663	MD836	MD836	EMPLACED_CNTR	02/12/84
1559	10033664	MD836	MD836	EMPLACED_CNTR	05/07/85
1560	10033666	MD836	MD836	EMPLACED_CNTR	04/06/81
1561	10033667	MD836	MD836	EMPLACED_CNTR	02/25/82
1562	10033669	MD836	MD836	EMPLACED_CNTR	04/27/81
1563	10033670	MD836	MD836	EMPLACED_CNTR	05/19/81
1564	10033671	MD836	MD836	EMPLACED_CNTR	05/26/81
1565	10033672	MD836	MD836	EMPLACED_CNTR	11/14/84
1566	10033673	MD836	MD836	EMPLACED_CNTR	04/27/81
1567	10033675	MD836	MD836	EMPLACED_CNTR	10/08/84
1568	10033676	MD836	MD836	EMPLACED_CNTR	05/12/81
1569	10033677	MD836	MD836	EMPLACED_CNTR	05/26/81
1570	10033679	MD836	MD836	EMPLACED_CNTR	11/14/84
1571	10033680	MD836	MD836	EMPLACED_CNTR	12/06/84
1572	10033681	MD836	MD836	EMPLACED_CNTR	08/17/84
1573	10033682	MD836	MD836	EMPLACED_CNTR	04/13/81
1574	10033683	MD836	MD836	EMPLACED_CNTR	10/22/80
1575	10033684	MD836	MD836	EMPLACED_CNTR	05/06/81
1576	10033687	MD836	MD836	EMPLACED_CNTR	06/08/81
1577	10033690	MD836	MD836	EMPLACED_CNTR	05/06/81
1578	10033692	MD836	MD836	EMPLACED_CNTR	07/08/82
1579	10033694	MD836	MD836	EMPLACED_CNTR	07/08/82
1580	10033697	MD836	MD836	EMPLACED_CNTR	04/06/81
1581	10033698	MD836	MD836	EMPLACED_CNTR	06/02/80

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1582	10033700	MD836	MD836	EMPLACED_CNTR	05/06/81
1583	10033701	MD836	MD836	EMPLACED_CNTR	03/02/81
1584	10033702	MD836	MD836	EMPLACED_CNTR	02/15/81
1585	10033703	MD836	MD836	EMPLACED_CNTR	07/08/82
1586	10033704	MD836	MD836	EMPLACED_CNTR	05/12/81
1587	10033706	MD836	MD836	EMPLACED_CNTR	05/06/81
1588	10033707	MD836	MD836	EMPLACED_CNTR	02/12/84
1589	10033708	MD836	MD836	EMPLACED_CNTR	03/02/81
1590	10033710	MD836	MD836	EMPLACED_CNTR	05/12/81
1591	10033938	MD836	MD836	EMPLACED_CNTR	06/02/80
1592	10033939	MD836	MD836	EMPLACED_CNTR	04/20/81
1593	10033940	MD836	MD836	EMPLACED_CNTR	06/02/80
1594	10033941	MD836	MD836	EMPLACED_CNTR	08/17/84
1595	10033942	MD836	MD836	EMPLACED_CNTR	10/08/84
1596	10033943	MD836	MD836	EMPLACED_CNTR	04/27/81
1597	10033944	MD836	MD836	EMPLACED_CNTR	08/18/81
1598	10033945	MD836	MD836	EMPLACED_CNTR	04/13/81
1599	10033948	MD836	MD836	EMPLACED_CNTR	04/13/81
1600	10033949	MD836	MD836	EMPLACED_CNTR	04/20/81
1601	10033950	MD836	MD836	EMPLACED_CNTR	08/31/81
1602	10033951	MD836	MD836	EMPLACED_CNTR	08/18/81
1603	10033952	MD836	MD836	EMPLACED_CNTR	09/14/82
1604	10033953	MD836	MD836	EMPLACED_CNTR	10/31/84
1605	10033962	MD836	MD836	EMPLACED_CNTR	06/21/82
1606	10033965	MD836	MD836	EMPLACED_CNTR	02/25/82
1607	10033966	MD836	MD836	EMPLACED_CNTR	06/08/81
1608	10033968	MD836	MD836	EMPLACED_CNTR	10/22/80
1609	10033969	MD836	MD836	EMPLACED_CNTR	06/29/81
1610	10033970	MD836	MD836	EMPLACED_CNTR	07/08/82
1611	10033971	MD836	MD836	EMPLACED_CNTR	04/20/81
1612	10033972	MD836	MD836	EMPLACED_CNTR	06/21/82
1613	10033977	MD836	MD836	EMPLACED_CNTR	05/05/82
1614	10033981	MD836	MD836	EMPLACED_CNTR	12/06/84
1615	10033982	MD836	MD836	EMPLACED_CNTR	05/12/81
1616	10033983	MD836	MD836	EMPLACED_CNTR	06/02/80
1617	10033986	MD836	MD836	EMPLACED_CNTR	05/26/81
1618	10033991	MD836	MD836	EMPLACED_CNTR	03/24/81
1619	10033992	MD836	MD836	EMPLACED_CNTR	08/18/81
1620	10033993	MD836	MD836	EMPLACED_CNTR	04/27/81
1621	10034000	MD836	MD836	EMPLACED_CNTR	05/21/82
1622	10034005	MD836	MD836	EMPLACED_CNTR	03/16/81
1623	10034013	MD836	MD836	EMPLACED_CNTR	03/16/81
1624	10034033	MD836	MD836	EMPLACED_CNTR	10/08/84
1625	10034034	MD836	MD836	EMPLACED_CNTR	06/08/81
1626	10034035	MD836	MD836	EMPLACED_CNTR	05/21/82
1627	10034036	MD836	MD836	EMPLACED_CNTR	04/06/81
1628	10034037	MD836	MD836	EMPLACED_CNTR	04/06/81
1629	10034039	MD836	MD836	EMPLACED_CNTR	07/08/82
1630	10034040	MD836	MD836	EMPLACED_CNTR	07/08/82
1631	10034041	MD836	MD836	EMPLACED_CNTR	05/21/82
1632	10034042	MD836	MD836	EMPLACED_CNTR	07/08/82

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1633	10034043	MD836	MD836	EMPLACED_CNTR	05/26/81
1634	10034044	MD836	MD836	EMPLACED_CNTR	07/08/82
1635	10034045	MD836	MD836	EMPLACED_CNTR	04/27/81
1636	10034046	MD836	MD836	EMPLACED_CNTR	06/08/81
1637	10034051	MD836	MD836	EMPLACED_CNTR	02/25/82
1638	10034052	MD836	MD836	EMPLACED_CNTR	07/08/82
1639	10034058	MD836	MD836	EMPLACED_CNTR	05/21/82
1640	10034059	MD836	MD836	EMPLACED_CNTR	09/14/82
1641	10034060	MD836	MD836	EMPLACED_CNTR	07/08/82
1642	10034062	MD836	MD836	EMPLACED_CNTR	07/08/82
1643	10034063	MD836	MD836	EMPLACED_CNTR	02/25/82
1644	10034064	MD836	MD836	EMPLACED_CNTR	05/21/82
1645	10034065	MD836	MD836	EMPLACED_CNTR	05/26/81
1646	10034066	MD836	MD836	EMPLACED_CNTR	07/08/82
1647	10034070	MD836	MD836	EMPLACED_CNTR	07/08/82
1648	10034073	MD836	MD836	EMPLACED_CNTR	02/25/82
1649	10034074	MD836	MD836	EMPLACED_CNTR	06/21/82
1650	10034075	MD836	MD836	EMPLACED_CNTR	10/22/80
1651	10034076	MD836	MD836	EMPLACED_CNTR	05/21/82
1652	10034077	MD836	MD836	EMPLACED_CNTR	07/08/82
1653	10034078	MD836	MD836	EMPLACED_CNTR	04/06/81
1654	10034079	MD836	MD836	EMPLACED_CNTR	02/25/82
1655	10034158	MD836	MD836	EMPLACED_CNTR	10/31/84
1656	10034160	MD836	MD836	EMPLACED_CNTR	01/30/85
1657	10034161	MD836	MD836	EMPLACED_CNTR	02/23/81
1658	10034162	MD836	MD836	EMPLACED_CNTR	05/21/82
1659	10034163	MD836	MD836	EMPLACED_CNTR	04/27/81
1660	10034164	MD836	MD836	EMPLACED_CNTR	10/21/81
1661	10034165	MD836	MD836	EMPLACED_CNTR	10/31/84
1662	10034167	MD836	MD836	EMPLACED_CNTR	02/03/83
1663	10034168	MD836	MD836	EMPLACED_CNTR	05/07/85
1664	10034169	MD836	MD836	EMPLACED_CNTR	06/08/81
1665	10034172	MD836	MD836	EMPLACED_CNTR	11/14/84
1666	10034173	MD836	MD836	EMPLACED_CNTR	01/30/84
1667	10034174	MD836	MD836	EMPLACED_CNTR	04/06/81
1668	10034175	MD836	MD836	EMPLACED_CNTR	06/08/81
1669	10034177	MD836	MD836	EMPLACED_CNTR	05/06/81
1670	10034179	MD836	MD836	EMPLACED_CNTR	02/03/83
1671	10034184	MD836	MD836	EMPLACED_CNTR	06/08/81
1672	10034744	MD836	MD836	EMPLACED_CNTR	08/17/84
1673	10034745	MD836	MD836	EMPLACED_CNTR	10/31/84
1674	10034746	MD836	MD836	EMPLACED_CNTR	02/03/83
1675	10034747	MD836	MD836	EMPLACED_CNTR	10/31/84
1676	10034809	MD836	MD836	EMPLACED_CNTR	12/22/77
1677	10034810	MD836	MD836	EMPLACED_CNTR	08/17/77
1678	10034816	MD836	MD836	EMPLACED_CNTR	08/17/77
1679	10035086	MD836	MD836	EMPLACED_CNTR	10/10/77
1680	10035442	MD836	MD836	EMPLACED_CNTR	08/17/77
1681	10035445	MD836	MD836	EMPLACED_CNTR	11/02/77
1682	10036185	MD836	MD836	EMPLACED_CNTR	08/17/77
1683	10036186	MD836	MD836	EMPLACED_CNTR	12/22/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1684	10036194	MD836	MD836	EMPLACED_CNTR	08/17/77
1685	10036208	MD836	MD836	EMPLACED_CNTR	12/22/77
1686	10036214	MD836	MD836	EMPLACED_CNTR	12/22/77
1687	10036215	MD836	MD836	EMPLACED_CNTR	10/10/77
1688	10036373	MD836	MD836	EMPLACED_CNTR	11/02/77
1689	10036473	MD836	MD836	EMPLACED_CNTR	11/02/77
1690	10036482	MD836	MD836	EMPLACED_CNTR	08/17/77
1691	10036486	MD836	MD836	EMPLACED_CNTR	12/22/77
1692	10036569	MD836	MD836	EMPLACED_CNTR	08/17/77
1693	10036585	MD836	MD836	EMPLACED_CNTR	10/10/77
1694	10036749	MD836	MD836	EMPLACED_CNTR	08/17/77
1695	10036754	MD836	MD836	EMPLACED_CNTR	03/22/78
1696	10036759	MD836	MD836	EMPLACED_CNTR	06/02/78
1697	10036774	MD836	MD836	EMPLACED_CNTR	12/22/77
1698	10036776	MD836	MD836	EMPLACED_CNTR	11/02/77
1699	10036778	MD836	MD836	EMPLACED_CNTR	08/17/77
1700	10036780	MD836	MD836	EMPLACED_CNTR	08/17/77
1701	10036837	MD836	MD836	EMPLACED_CNTR	06/09/78
1702	10036838	MD836	MD836	EMPLACED_CNTR	06/09/78
1703	10036844	MD836	MD836	EMPLACED_CNTR	03/22/78
1704	10036845	MD836	MD836	EMPLACED_CNTR	06/02/78
1705	10036846	MD836	MD836	EMPLACED_CNTR	03/22/78
1706	10036881	MD836	MD836	EMPLACED_CNTR	10/10/77
1707	10036897	MD836	MD836	EMPLACED_CNTR	08/17/77
1708	10037054	MD836	MD836	EMPLACED_CNTR	10/10/77
1709	10037068	MD836	MD836	EMPLACED_CNTR	10/10/77
1710	10037069	MD836	MD836	EMPLACED_CNTR	08/17/77
1711	10037093	MD836	MD836	EMPLACED_CNTR	03/22/78
1712	10037094	MD836	MD836	EMPLACED_CNTR	03/23/78
1713	10037095	MD836	MD836	EMPLACED_CNTR	06/16/78
1714	10037246	MD836	MD836	EMPLACED_CNTR	03/22/78
1715	10037325	MD836	MD836	EMPLACED_CNTR	06/16/78
1716	10037330	MD836	MD836	EMPLACED_CNTR	03/14/78
1717	10037502	MD836	MD836	EMPLACED_CNTR	06/09/78
1718	10037591	MD836	MD836	EMPLACED_CNTR	06/02/78
1719	10037597	MD836	MD836	EMPLACED_CNTR	03/14/78
1720	10037598	MD836	MD836	EMPLACED_CNTR	06/02/78
1721	10037599	MD836	MD836	EMPLACED_CNTR	08/03/77
1722	10037606	MD836	MD836	EMPLACED_CNTR	03/22/78
1723	10037610	MD836	MD836	EMPLACED_CNTR	06/02/78
1724	10037680	MD836	MD836	EMPLACED_CNTR	06/02/78
1725	10037681	MD836	MD836	EMPLACED_CNTR	06/09/78
1726	10037747	MD836	MD836	EMPLACED_CNTR	11/09/78
1727	10037748	MD836	MD836	EMPLACED_CNTR	07/20/78
1728	10037749	MD836	MD836	EMPLACED_CNTR	11/09/78
1729	10037765	MD836	MD836	EMPLACED_CNTR	08/04/78
1730	10037766	MD836	MD836	EMPLACED_CNTR	07/13/78
1731	10037767	MD836	MD836	EMPLACED_CNTR	08/04/78
1732	10037768	MD836	MD836	EMPLACED_CNTR	06/15/78
1733	10037769	MD836	MD836	EMPLACED_CNTR	08/04/78
1734	10037772	MD836	MD836	EMPLACED_CNTR	08/04/78

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1735	10037773	MD836	MD836	EMPLACED_CNTR	08/04/78
1736	10037774	MD836	MD836	EMPLACED_CNTR	08/04/78
1737	10037777	MD836	MD836	EMPLACED_CNTR	07/27/78
1738	10037779	MD836	MD836	EMPLACED_CNTR	07/13/78
1739	10037780	MD836	MD836	EMPLACED_CNTR	06/15/78
1740	10037781	MD836	MD836	EMPLACED_CNTR	06/15/78
1741	10037782	MD836	MD836	EMPLACED_CNTR	07/13/78
1742	10037783	MD836	MD836	EMPLACED_CNTR	12/13/78
1743	10037784	MD836	MD836	EMPLACED_CNTR	12/18/78
1744	10037789	MD836	MD836	EMPLACED_CNTR	12/18/78
1745	10037790	MD836	MD836	EMPLACED_CNTR	06/15/78
1746	10037794	MD836	MD836	EMPLACED_CNTR	12/13/78
1747	10037795	MD836	MD836	EMPLACED_CNTR	01/05/79
1748	10037803	MD836	MD836	EMPLACED_CNTR	07/20/78
1749	10037804	MD836	MD836	EMPLACED_CNTR	07/20/78
1750	10037805	MD836	MD836	EMPLACED_CNTR	06/15/78
1751	10037808	MD836	MD836	EMPLACED_CNTR	01/05/79
1752	10037809	MD836	MD836	EMPLACED_CNTR	01/05/79
1753	10037810	MD836	MD836	EMPLACED_CNTR	12/13/78
1754	10037811	MD836	MD836	EMPLACED_CNTR	01/05/79
1755	10037812	MD836	MD836	EMPLACED_CNTR	07/20/78
1756	10037814	MD836	MD836	EMPLACED_CNTR	07/13/78
1757	10037816	MD836	MD836	EMPLACED_CNTR	01/05/79
1758	10037817	MD836	MD836	EMPLACED_CNTR	01/05/79
1759	10037818	MD836	MD836	EMPLACED_CNTR	01/05/79
1760	10037819	MD836	MD836	EMPLACED_CNTR	07/13/78
1761	10037840	MD836	MD836	EMPLACED_CNTR	06/15/78
1762	10037845	MD836	MD836	EMPLACED_CNTR	06/15/78
1763	10037864	MD836	MD836	EMPLACED_CNTR	06/09/78
1764	10037866	MD836	MD836	EMPLACED_CNTR	06/02/78
1765	10037910	MD836	MD836	EMPLACED_CNTR	07/20/78
1766	10037911	MD836	MD836	EMPLACED_CNTR	07/13/78
1767	10037914	MD836	MD836	EMPLACED_CNTR	07/20/78
1768	10037915	MD836	MD836	EMPLACED_CNTR	06/16/78
1769	10037916	MD836	MD836	EMPLACED_CNTR	07/13/78
1770	10037917	MD836	MD836	EMPLACED_CNTR	06/15/78
1771	10037924	MD836	MD836	EMPLACED_CNTR	06/15/78
1772	10037925	MD836	MD836	EMPLACED_CNTR	07/13/78
1773	10037926	MD836	MD836	EMPLACED_CNTR	06/16/78
1774	10037933	MD836	MD836	EMPLACED_CNTR	06/15/78
1775	10037934	MD836	MD836	EMPLACED_CNTR	06/16/78
1776	10037935	MD836	MD836	EMPLACED_CNTR	07/13/78
1777	10038043	MD836	MD836	EMPLACED_CNTR	06/15/78
1778	10038045	MD836	MD836	EMPLACED_CNTR	12/13/78
1779	10038046	MD836	MD836	EMPLACED_CNTR	01/05/79
1780	10038047	MD836	MD836	EMPLACED_CNTR	11/09/78
1781	10038080	MD836	MD836	EMPLACED_CNTR	07/20/78
1782	10038081	MD836	MD836	EMPLACED_CNTR	12/13/78
1783	10038082	MD836	MD836	EMPLACED_CNTR	11/09/78
1784	10038220	MD836	MD836	EMPLACED_CNTR	11/02/77
1785	10038223	MD836	MD836	EMPLACED_CNTR	10/10/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1786	10038224	MD836	MD836	EMPLACED_CNTR	11/02/77
1787	10038237	MD836	MD836	EMPLACED_CNTR	12/22/77
1788	10038333	MD836	MD836	EMPLACED_CNTR	10/10/77
1789	10038342	MD836	MD836	EMPLACED_CNTR	08/17/77
1790	10038347	MD836	MD836	EMPLACED_CNTR	03/22/78
1791	10038357	MD836	MD836	EMPLACED_CNTR	06/16/78
1792	10038396	MD836	MD836	EMPLACED_CNTR	03/22/78
1793	10038397	MD836	MD836	EMPLACED_CNTR	03/22/78
1794	10038401	MD836	MD836	EMPLACED_CNTR	03/22/78
1795	10038419	MD836	MD836	EMPLACED_CNTR	03/23/78
1796	10038445	MD836	MD836	EMPLACED_CNTR	10/10/77
1797	10038447	MD836	MD836	EMPLACED_CNTR	11/02/77
1798	10038452	MD836	MD836	EMPLACED_CNTR	06/02/78
1799	10038453	MD836	MD836	EMPLACED_CNTR	06/02/78
1800	10038459	MD836	MD836	EMPLACED_CNTR	11/03/78
1801	10038460	MD836	MD836	EMPLACED_CNTR	07/26/78
1802	10038470	MD836	MD836	EMPLACED_CNTR	06/16/78
1803	10038475	MD836	MD836	EMPLACED_CNTR	07/27/78
1804	10038837	MD836	MD836	EMPLACED_CNTR	08/04/78
1805	10038838	MD836	MD836	EMPLACED_CNTR	11/03/78
1806	10038842	MD836	MD836	EMPLACED_CNTR	06/02/78
1807	10038959	MD836	MD836	EMPLACED_CNTR	06/02/78
1808	10039063	MD836	MD836	EMPLACED_CNTR	01/05/79
1809	10039075	MD836	MD836	EMPLACED_CNTR	11/03/78
1810	10039125	MD836	MD836	EMPLACED_CNTR	08/04/78
1811	10039129	MD836	MD836	EMPLACED_CNTR	06/02/78
1812	10039141	MD836	MD836	EMPLACED_CNTR	07/13/78
1813	10039142	MD836	MD836	EMPLACED_CNTR	07/27/78
1814	10039146	MD836	MD836	EMPLACED_CNTR	07/27/78
1815	10039181	MD836	MD836	EMPLACED_CNTR	07/13/78
1816	10039187	MD836	MD836	EMPLACED_CNTR	05/16/79
1817	10039236	MD836	MD836	EMPLACED_CNTR	05/16/79
1818	10039239	MD836	MD836	EMPLACED_CNTR	12/13/78
1819	10039245	MD836	MD836	EMPLACED_CNTR	01/05/79
1820	10039246	MD836	MD836	EMPLACED_CNTR	11/09/78
1821	10039468	MD836	MD836	EMPLACED_CNTR	12/13/78
1822	10039469	MD836	MD836	EMPLACED_CNTR	01/05/79
1823	10039470	MD836	MD836	EMPLACED_CNTR	08/04/78
1824	10039471	MD836	MD836	EMPLACED_CNTR	11/09/78
1825	10039472	MD836	MD836	EMPLACED_CNTR	11/09/78
1826	10039473	MD836	MD836	EMPLACED_CNTR	11/09/78
1827	10039474	MD836	MD836	EMPLACED_CNTR	11/09/78
1828	10039475	MD836	MD836	EMPLACED_CNTR	01/05/79
1829	10039476	MD836	MD836	EMPLACED_CNTR	12/13/78
1830	10039477	MD836	MD836	EMPLACED_CNTR	12/13/78
1831	10039478	MD836	MD836	EMPLACED_CNTR	12/18/78
1832	10039479	MD836	MD836	EMPLACED_CNTR	11/09/78
1833	10039480	MD836	MD836	EMPLACED_CNTR	12/13/78
1834	10039481	MD836	MD836	EMPLACED_CNTR	01/05/79
1835	10039482	MD836	MD836	EMPLACED_CNTR	01/05/79
1836	10039483	MD836	MD836	EMPLACED_CNTR	01/05/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1837	10039484	MD836	MD836	EMPLACED_CNTR	12/13/78
1838	10039485	MD836	MD836	EMPLACED_CNTR	01/05/79
1839	10039486	MD836	MD836	EMPLACED_CNTR	12/13/78
1840	10039487	MD836	MD836	EMPLACED_CNTR	12/18/78
1841	10039488	MD836	MD836	EMPLACED_CNTR	12/13/78
1842	10039489	MD836	MD836	EMPLACED_CNTR	12/18/78
1843	10039490	MD836	MD836	EMPLACED_CNTR	11/09/78
1844	10039491	MD836	MD836	EMPLACED_CNTR	01/05/79
1845	10039521	MD836	MD836	EMPLACED_CNTR	06/15/78
1846	10039522	MD836	MD836	EMPLACED_CNTR	06/15/78
1847	10039523	MD836	MD836	EMPLACED_CNTR	06/15/78
1848	10039527	MD836	MD836	EMPLACED_CNTR	05/24/79
1849	10039599	MD836	MD836	EMPLACED_CNTR	12/18/78
1850	10039600	MD836	MD836	EMPLACED_CNTR	01/05/79
1851	10039601	MD836	MD836	EMPLACED_CNTR	12/13/78
1852	10039602	MD836	MD836	EMPLACED_CNTR	01/05/79
1853	10039603	MD836	MD836	EMPLACED_CNTR	12/13/78
1854	10039609	MD836	MD836	EMPLACED_CNTR	11/09/78
1855	10040005	MD836	MD836	EMPLACED_CNTR	04/13/81
1856	10040012	MD836	MD836	EMPLACED_CNTR	06/02/80
1857	10040018	MD836	MD836	EMPLACED_CNTR	12/06/84
1858	10040019	MD836	MD836	EMPLACED_CNTR	08/31/81
1859	10040025	MD836	MD836	EMPLACED_CNTR	04/13/81
1860	10040026	MD836	MD836	EMPLACED_CNTR	05/06/81
1861	10040027	MD836	MD836	EMPLACED_CNTR	04/06/81
1862	10040035	MD836	MD836	EMPLACED_CNTR	03/02/81
1863	10040047	MD836	MD836	EMPLACED_CNTR	03/02/81
1864	10040050	MD836	MD836	EMPLACED_CNTR	05/19/81
1865	10040051	MD836	MD836	EMPLACED_CNTR	03/02/81
1866	10040054	MD836	MD836	EMPLACED_CNTR	07/08/82
1867	10040102	MD836	MD836	EMPLACED_CNTR	06/07/79
1868	10040103	MD836	MD836	EMPLACED_CNTR	05/16/79
1869	10040135	MD836	MD836	EMPLACED_CNTR	03/14/79
1870	10040136	MD836	MD836	EMPLACED_CNTR	05/16/79
1871	10040137	MD836	MD836	EMPLACED_CNTR	05/16/79
1872	10040138	MD836	MD836	EMPLACED_CNTR	06/07/79
1873	10040139	MD836	MD836	EMPLACED_CNTR	05/24/79
1874	10040140	MD836	MD836	EMPLACED_CNTR	05/16/79
1875	10040143	MD836	MD836	EMPLACED_CNTR	06/07/79
1876	10040144	MD836	MD836	EMPLACED_CNTR	06/07/79
1877	10040145	MD836	MD836	EMPLACED_CNTR	05/24/79
1878	10040146	MD836	MD836	EMPLACED_CNTR	06/07/79
1879	10040147	MD836	MD836	EMPLACED_CNTR	06/07/79
1880	10040149	MD836	MD836	EMPLACED_CNTR	05/16/79
1881	10040152	MD836	MD836	EMPLACED_CNTR	06/15/78
1882	10040153	MD836	MD836	EMPLACED_CNTR	07/20/78
1883	10040158	MD836	MD836	EMPLACED_CNTR	05/16/79
1884	10040159	MD836	MD836	EMPLACED_CNTR	03/14/79
1885	10040180	MD836	MD836	EMPLACED_CNTR	11/02/77
1886	10040203	MD836	MD836	EMPLACED_CNTR	11/02/77
1887	10040253	MD836	MD836	EMPLACED_CNTR	11/14/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1888	10040254	MD836	MD836	EMPLACED_CNTR	02/03/83
1889	10040255	MD836	MD836	EMPLACED_CNTR	11/14/84
1890	10040256	MD836	MD836	EMPLACED_CNTR	11/14/84
1891	10040262	MD836	MD836	EMPLACED_CNTR	10/31/84
1892	10040265	MD836	MD836	EMPLACED_CNTR	11/14/84
1893	10040266	MD836	MD836	EMPLACED_CNTR	02/03/83
1894	10040268	MD836	MD836	EMPLACED_CNTR	02/03/83
1895	10040277	MD836	MD836	EMPLACED_CNTR	11/14/84
1896	10040392	MD836	MD836	EMPLACED_CNTR	11/14/84
1897	10040393	MD836	MD836	EMPLACED_CNTR	04/27/81
1898	10040394	MD836	MD836	EMPLACED_CNTR	02/03/83
1899	10040395	MD836	MD836	EMPLACED_CNTR	10/31/84
1900	10040396	MD836	MD836	EMPLACED_CNTR	11/14/84
1901	10040398	MD836	MD836	EMPLACED_CNTR	10/31/84
1902	10040399	MD836	MD836	EMPLACED_CNTR	11/14/84
1903	10040400	MD836	MD836	EMPLACED_CNTR	11/14/84
1904	10040401	MD836	MD836	EMPLACED_CNTR	05/06/81
1905	10040403	MD836	MD836	EMPLACED_CNTR	06/02/80
1906	10040404	MD836	MD836	EMPLACED_CNTR	06/02/80
1907	10040405	MD836	MD836	EMPLACED_CNTR	05/12/81
1908	10040406	MD836	MD836	EMPLACED_CNTR	05/12/81
1909	10040407	MD836	MD836	EMPLACED_CNTR	05/19/81
1910	10040408	MD836	MD836	EMPLACED_CNTR	05/12/81
1911	10040411	MD836	MD836	EMPLACED_CNTR	10/22/80
1912	10040412	MD836	MD836	EMPLACED_CNTR	05/06/81
1913	10040413	MD836	MD836	EMPLACED_CNTR	10/22/80
1914	10040414	MD836	MD836	EMPLACED_CNTR	06/02/80
1915	10040415	MD836	MD836	EMPLACED_CNTR	05/12/81
1916	10040416	MD836	MD836	EMPLACED_CNTR	07/11/79
1917	10040417	MD836	MD836	EMPLACED_CNTR	04/06/81
1918	10040419	MD836	MD836	EMPLACED_CNTR	03/02/81
1919	10040428	MD836	MD836	EMPLACED_CNTR	04/06/81
1920	10040431	MD836	MD836	EMPLACED_CNTR	10/22/80
1921	10040432	MD836	MD836	EMPLACED_CNTR	02/23/81
1922	10040435	MD836	MD836	EMPLACED_CNTR	05/07/85
1923	10040436	MD836	MD836	EMPLACED_CNTR	01/30/85
1924	10040440	MD836	MD836	EMPLACED_CNTR	02/16/81
1925	10040441	MD836	MD836	EMPLACED_CNTR	02/23/81
1926	10040451	MD836	MD836	EMPLACED_CNTR	08/31/81
1927	10040453	MD836	MD836	EMPLACED_CNTR	02/12/84
1928	10040454	MD836	MD836	EMPLACED_CNTR	10/31/84
1929	10040457	MD836	MD836	EMPLACED_CNTR	10/22/80
1930	10040460	MD836	MD836	EMPLACED_CNTR	09/06/79
1931	10040463	MD836	MD836	EMPLACED_CNTR	07/08/82
1932	10040464	MD836	MD836	EMPLACED_CNTR	05/26/81
1933	10040465	MD836	MD836	EMPLACED_CNTR	04/01/81
1934	10040466	MD836	MD836	EMPLACED_CNTR	08/18/81
1935	10040467	MD836	MD836	EMPLACED_CNTR	05/19/81
1936	10040470	MD836	MD836	EMPLACED_CNTR	02/23/81
1937	10040471	MD836	MD836	EMPLACED_CNTR	02/23/81
1938	10040474	MD836	MD836	EMPLACED_CNTR	10/31/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1939	10040475	MD836	MD836	EMPLACED_CNTR	10/31/84
1940	10040478	MD836	MD836	EMPLACED_CNTR	03/02/81
1941	10040480	MD836	MD836	EMPLACED_CNTR	02/16/81
1942	10040591	MD836	MD836	EMPLACED_CNTR	04/10/79
1943	10040827	MD836	MD836	EMPLACED_CNTR	03/16/79
1944	10040828	MD836	MD836	EMPLACED_CNTR	10/18/79
1945	10040829	MD836	MD836	EMPLACED_CNTR	03/16/79
1946	10040830	MD836	MD836	EMPLACED_CNTR	08/23/79
1947	10040831	MD836	MD836	EMPLACED_CNTR	10/18/79
1948	10040837	MD836	MD836	EMPLACED_CNTR	03/20/79
1949	10040839	MD836	MD836	EMPLACED_CNTR	04/03/79
1950	10040842	MD836	MD836	EMPLACED_CNTR	10/18/79
1951	10040843	MD836	MD836	EMPLACED_CNTR	10/18/79
1952	10040846	MD836	MD836	EMPLACED_CNTR	03/16/79
1953	10040847	MD836	MD836	EMPLACED_CNTR	08/23/79
1954	10040863	MD836	MD836	EMPLACED_CNTR	03/14/79
1955	10040868	MD836	MD836	EMPLACED_CNTR	10/18/79
1956	10040869	MD836	MD836	EMPLACED_CNTR	10/18/79
1957	10040870	MD836	MD836	EMPLACED_CNTR	03/14/79
1958	10040871	MD836	MD836	EMPLACED_CNTR	03/20/79
1959	10040872	MD836	MD836	EMPLACED_CNTR	04/10/79
1960	10040873	MD836	MD836	EMPLACED_CNTR	04/10/79
1961	10040876	MD836	MD836	EMPLACED_CNTR	11/17/78
1962	10040877	MD836	MD836	EMPLACED_CNTR	11/30/78
1963	10040878	MD836	MD836	EMPLACED_CNTR	04/10/79
1964	10040879	MD836	MD836	EMPLACED_CNTR	04/26/79
1965	10040880	MD836	MD836	EMPLACED_CNTR	11/30/78
1966	10040882	MD836	MD836	EMPLACED_CNTR	11/30/78
1967	10040883	MD836	MD836	EMPLACED_CNTR	04/10/79
1968	10040884	MD836	MD836	EMPLACED_CNTR	04/10/79
1969	10040898	MD836	MD836	EMPLACED_CNTR	04/23/79
1970	10040899	MD836	MD836	EMPLACED_CNTR	04/26/79
1971	10040900	MD836	MD836	EMPLACED_CNTR	04/26/79
1972	10040901	MD836	MD836	EMPLACED_CNTR	04/23/79
1973	10040903	MD836	MD836	EMPLACED_CNTR	04/10/79
1974	10040906	MD836	MD836	EMPLACED_CNTR	11/30/78
1975	10040908	MD836	MD836	EMPLACED_CNTR	04/10/79
1976	10040909	MD836	MD836	EMPLACED_CNTR	11/17/78
1977	10040910	MD836	MD836	EMPLACED_CNTR	04/10/79
1978	10040912	MD836	MD836	EMPLACED_CNTR	04/10/79
1979	10040913	MD836	MD836	EMPLACED_CNTR	11/17/78
1980	10040914	MD836	MD836	EMPLACED_CNTR	11/30/78
1981	10040915	MD836	MD836	EMPLACED_CNTR	11/17/78
1982	10040916	MD836	MD836	EMPLACED_CNTR	11/30/78
1983	10040917	MD836	MD836	EMPLACED_CNTR	11/30/78
1984	10040918	MD836	MD836	EMPLACED_CNTR	11/17/78
1985	10040919	MD836	MD836	EMPLACED_CNTR	11/30/78
1986	10040920	MD836	MD836	EMPLACED_CNTR	11/30/78
1987	10040921	MD836	MD836	EMPLACED_CNTR	04/10/79
1988	10040922	MD836	MD836	EMPLACED_CNTR	11/17/78
1989	10040924	MD836	MD836	EMPLACED_CNTR	03/20/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
1990	10040925	MD836	MD836	EMPLACED_CNTR	03/16/79
1991	10040927	MD836	MD836	EMPLACED_CNTR	04/23/79
1992	10040928	MD836	MD836	EMPLACED_CNTR	04/23/79
1993	10040929	MD836	MD836	EMPLACED_CNTR	04/10/79
1994	10040931	MD836	MD836	EMPLACED_CNTR	04/26/79
1995	10040932	MD836	MD836	EMPLACED_CNTR	04/23/79
1996	10040933	MD836	MD836	EMPLACED_CNTR	04/23/79
1997	10040935	MD836	MD836	EMPLACED_CNTR	04/26/79
1998	10040936	MD836	MD836	EMPLACED_CNTR	04/23/79
1999	10040937	MD836	MD836	EMPLACED_CNTR	04/26/79
2000	10040938	MD836	MD836	EMPLACED_CNTR	11/30/78
2001	10040939	MD836	MD836	EMPLACED_CNTR	04/26/79
2002	10040940	MD836	MD836	EMPLACED_CNTR	04/23/79
2003	10040941	MD836	MD836	EMPLACED_CNTR	04/26/79
2004	10040942	MD836	MD836	EMPLACED_CNTR	04/26/79
2005	10040946	MD836	MD836	EMPLACED_CNTR	04/26/79
2006	10040947	MD836	MD836	EMPLACED_CNTR	11/30/78
2007	10041000	MD836	MD836	EMPLACED_CNTR	08/17/77
2008	10041009	MD836	MD836	EMPLACED_CNTR	04/10/79
2009	10041011	MD836	MD836	EMPLACED_CNTR	03/20/79
2010	10041012	MD836	MD836	EMPLACED_CNTR	04/10/79
2011	10041013	MD836	MD836	EMPLACED_CNTR	03/20/79
2012	10041124	MD836	MD836	EMPLACED_CNTR	01/05/79
2013	10041125	MD836	MD836	EMPLACED_CNTR	04/03/79
2014	10041455	MD836	MD836	EMPLACED_CNTR	06/07/79
2015	10041458	MD836	MD836	EMPLACED_CNTR	09/19/79
2016	10041459	MD836	MD836	EMPLACED_CNTR	10/18/79
2017	10041460	MD836	MD836	EMPLACED_CNTR	10/18/79
2018	10041462	MD836	MD836	EMPLACED_CNTR	08/23/79
2019	10041463	MD836	MD836	EMPLACED_CNTR	10/18/79
2020	10041464	MD836	MD836	EMPLACED_CNTR	09/19/79
2021	10041467	MD836	MD836	EMPLACED_CNTR	06/07/79
2022	10041469	MD836	MD836	EMPLACED_CNTR	01/05/79
2023	10041471	MD836	MD836	EMPLACED_CNTR	06/15/79
2024	10041472	MD836	MD836	EMPLACED_CNTR	08/23/79
2025	10041473	MD836	MD836	EMPLACED_CNTR	08/23/79
2026	10041474	MD836	MD836	EMPLACED_CNTR	08/23/79
2027	10041475	MD836	MD836	EMPLACED_CNTR	10/18/79
2028	10041476	MD836	MD836	EMPLACED_CNTR	09/19/79
2029	10041478	MD836	MD836	EMPLACED_CNTR	08/17/77
2030	10041481	MD836	MD836	EMPLACED_CNTR	10/18/79
2031	10041482	MD836	MD836	EMPLACED_CNTR	10/18/79
2032	10041484	MD836	MD836	EMPLACED_CNTR	10/18/79
2033	10041485	MD836	MD836	EMPLACED_CNTR	08/23/79
2034	10041489	MD836	MD836	EMPLACED_CNTR	11/02/77
2035	10041492	MD836	MD836	EMPLACED_CNTR	04/03/79
2036	10041493	MD836	MD836	EMPLACED_CNTR	10/18/79
2037	10041494	MD836	MD836	EMPLACED_CNTR	09/19/79
2038	10041496	MD836	MD836	EMPLACED_CNTR	06/15/79
2039	10041535	MD836	MD836	EMPLACED_CNTR	10/10/77
2040	10041536	MD836	MD836	EMPLACED_CNTR	11/02/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2041	10041545	MD836	MD836	EMPLACED_CNTR	12/22/77
2042	10041581	MD836	MD836	EMPLACED_CNTR	08/03/77
2043	10041723	MD836	MD836	EMPLACED_CNTR	06/09/78
2044	10041733	MD836	MD836	EMPLACED_CNTR	06/09/78
2045	10041737	MD836	MD836	EMPLACED_CNTR	06/02/78
2046	10041738	MD836	MD836	EMPLACED_CNTR	08/03/77
2047	10041751	MD836	MD836	EMPLACED_CNTR	08/17/76
2048	10041752	MD836	MD836	EMPLACED_CNTR	06/02/78
2049	10041783	MD836	MD836	EMPLACED_CNTR	06/15/78
2050	10041961	MD836	MD836	EMPLACED_CNTR	05/19/81
2051	10041962	MD836	MD836	EMPLACED_CNTR	02/25/82
2052	10041963	MD836	MD836	EMPLACED_CNTR	05/06/81
2053	10041965	MD836	MD836	EMPLACED_CNTR	07/11/79
2054	10041966	MD836	MD836	EMPLACED_CNTR	06/08/81
2055	10041967	MD836	MD836	EMPLACED_CNTR	06/22/81
2056	10041968	MD836	MD836	EMPLACED_CNTR	08/18/81
2057	10041978	MD836	MD836	EMPLACED_CNTR	07/11/79
2058	10041988	MD836	MD836	EMPLACED_CNTR	07/11/79
2059	10041990	MD836	MD836	EMPLACED_CNTR	04/13/81
2060	10041991	MD836	MD836	EMPLACED_CNTR	06/02/80
2061	10041993	MD836	MD836	EMPLACED_CNTR	10/22/80
2062	10041994	MD836	MD836	EMPLACED_CNTR	05/06/81
2063	10041997	MD836	MD836	EMPLACED_CNTR	05/26/81
2064	10042000	MD836	MD836	EMPLACED_CNTR	06/21/82
2065	10042001	MD836	MD836	EMPLACED_CNTR	10/08/84
2066	10042003	MD836	MD836	EMPLACED_CNTR	05/06/81
2067	10042004	MD836	MD836	EMPLACED_CNTR	05/19/81
2068	10042005	MD836	MD836	EMPLACED_CNTR	02/25/82
2069	10042006	MD836	MD836	EMPLACED_CNTR	05/21/82
2070	10042007	MD836	MD836	EMPLACED_CNTR	06/21/82
2071	10042008	MD836	MD836	EMPLACED_CNTR	05/26/81
2072	10042009	MD836	MD836	EMPLACED_CNTR	05/07/85
2073	10042011	MD836	MD836	EMPLACED_CNTR	02/15/81
2074	10042012	MD836	MD836	EMPLACED_CNTR	05/12/81
2075	10042014	MD836	MD836	EMPLACED_CNTR	05/26/81
2076	10042470	MD836	MD836	EMPLACED_CNTR	07/13/78
2077	10042475	MD836	MD836	EMPLACED_CNTR	08/04/78
2078	10042479	MD836	MD836	EMPLACED_CNTR	06/15/78
2079	10042485	MD836	MD836	EMPLACED_CNTR	06/15/79
2080	10042494	MD836	MD836	EMPLACED_CNTR	06/09/78
2081	10042541	MD836	MD836	EMPLACED_CNTR	05/12/81
2082	10042542	MD836	MD836	EMPLACED_CNTR	06/21/82
2083	10042543	MD836	MD836	EMPLACED_CNTR	05/19/81
2084	10042549	MD836	MD836	EMPLACED_CNTR	05/21/82
2085	10042550	MD836	MD836	EMPLACED_CNTR	07/22/81
2086	10042553	MD836	MD836	EMPLACED_CNTR	05/21/82
2087	10042593	MD836	MD836	EMPLACED_CNTR	05/19/81
2088	10042595	MD836	MD836	EMPLACED_CNTR	06/02/80
2089	10042596	MD836	MD836	EMPLACED_CNTR	07/11/79
2090	10042597	MD836	MD836	EMPLACED_CNTR	03/02/81
2091	10042600	MD836	MD836	EMPLACED_CNTR	08/17/84

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2092	10042601	MD836	MD836	EMPLACED_CNTR	03/16/81
2093	10042603	MD836	MD836	EMPLACED_CNTR	12/06/84
2094	10042604	MD836	MD836	EMPLACED_CNTR	10/08/84
2095	10042605	MD836	MD836	EMPLACED_CNTR	02/03/83
2096	10042611	MD836	MD836	EMPLACED_CNTR	05/19/81
2097	10042612	MD836	MD836	EMPLACED_CNTR	10/31/84
2098	10042614	MD836	MD836	EMPLACED_CNTR	05/21/82
2099	10042615	MD836	MD836	EMPLACED_CNTR	05/21/82
2100	10043574	MD836	MD836	EMPLACED_CNTR	04/10/79
2101	10043575	MD836	MD836	EMPLACED_CNTR	11/30/78
2102	10043593	MD836	MD836	EMPLACED_CNTR	11/17/78
2103	10043594	MD836	MD836	EMPLACED_CNTR	11/17/78
2104	10043600	MD836	MD836	EMPLACED_CNTR	02/20/75
2105	10043602	MD836	MD836	EMPLACED_CNTR	04/23/79
2106	10043611	MD836	MD836	EMPLACED_CNTR	04/10/79
2107	10043612	MD836	MD836	EMPLACED_CNTR	04/10/79
2108	10043613	MD836	MD836	EMPLACED_CNTR	04/10/79
2109	10043614	MD836	MD836	EMPLACED_CNTR	04/26/79
2110	10043615	MD836	MD836	EMPLACED_CNTR	06/02/78
2111	10043622	MD836	MD836	EMPLACED_CNTR	11/03/78
2112	10043631	MD836	MD836	EMPLACED_CNTR	04/10/79
2113	10043632	MD836	MD836	EMPLACED_CNTR	11/03/78
2114	10043633	MD836	MD836	EMPLACED_CNTR	07/13/78
2115	10043640	MD836	MD836	EMPLACED_CNTR	06/09/78
2116	10043643	MD836	MD836	EMPLACED_CNTR	11/03/78
2117	10043644	MD836	MD836	EMPLACED_CNTR	06/15/78
2118	10043645	MD836	MD836	EMPLACED_CNTR	11/03/78
2119	10043653	MD836	MD836	EMPLACED_CNTR	07/27/78
2120	10043654	MD836	MD836	EMPLACED_CNTR	11/03/78
2121	10043655	MD836	MD836	EMPLACED_CNTR	07/27/78
2122	10043656	MD836	MD836	EMPLACED_CNTR	07/13/78
2123	10043657	MD836	MD836	EMPLACED_CNTR	08/04/78
2124	10043658	MD836	MD836	EMPLACED_CNTR	08/04/78
2125	10043659	MD836	MD836	EMPLACED_CNTR	06/02/78
2126	10043660	MD836	MD836	EMPLACED_CNTR	08/04/78
2127	10043669	MD836	MD836	EMPLACED_CNTR	10/31/84
2128	10043671	MD836	MD836	EMPLACED_CNTR	02/03/83
2129	10043672	MD836	MD836	EMPLACED_CNTR	02/03/83
2130	10043673	MD836	MD836	EMPLACED_CNTR	10/31/84
2131	10043674	MD836	MD836	EMPLACED_CNTR	10/31/84
2132	10043675	MD836	MD836	EMPLACED_CNTR	11/14/84
2133	10043676	MD836	MD836	EMPLACED_CNTR	02/03/83
2134	10043677	MD836	MD836	EMPLACED_CNTR	06/22/81
2135	10043678	MD836	MD836	EMPLACED_CNTR	10/21/81
2136	10043679	MD836	MD836	EMPLACED_CNTR	10/08/84
2137	10043682	MD836	MD836	EMPLACED_CNTR	10/21/81
2138	10043684	MD836	MD836	EMPLACED_CNTR	02/15/81
2139	10043688	MD836	MD836	EMPLACED_CNTR	02/23/81
2140	10043690	MD836	MD836	EMPLACED_CNTR	10/31/84
2141	10043691	MD836	MD836	EMPLACED_CNTR	02/23/81
2142	10043694	MD836	MD836	EMPLACED_CNTR	02/03/83

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2143	10043697	MD836	MD836	EMPLACED_CNTR	02/03/83
2144	10043698	MD836	MD836	EMPLACED_CNTR	02/03/83
2145	10043709	MD836	MD836	EMPLACED_CNTR	02/03/83
2146	10043710	MD836	MD836	EMPLACED_CNTR	02/03/83
2147	10043712	MD836	MD836	EMPLACED_CNTR	11/14/84
2148	10043714	MD836	MD836	EMPLACED_CNTR	10/08/84
2149	10043716	MD836	MD836	EMPLACED_CNTR	08/18/81
2150	10043789	MD836	MD836	EMPLACED_CNTR	10/21/81
2151	10043791	MD836	MD836	EMPLACED_CNTR	02/03/83
2152	10043792	MD836	MD836	EMPLACED_CNTR	02/15/81
2153	10043793	MD836	MD836	EMPLACED_CNTR	08/18/81
2154	10043800	MD836	MD836	EMPLACED_CNTR	08/18/81
2155	10043802	MD836	MD836	EMPLACED_CNTR	05/19/81
2156	10043804	MD836	MD836	EMPLACED_CNTR	10/21/81
2157	10043805	MD836	MD836	EMPLACED_CNTR	10/21/81
2158	10043809	MD836	MD836	EMPLACED_CNTR	10/21/81
2159	10043811	MD836	MD836	EMPLACED_CNTR	10/21/81
2160	10043812	MD836	MD836	EMPLACED_CNTR	05/19/81
2161	10043815	MD836	MD836	EMPLACED_CNTR	08/18/81
2162	10043819	MD836	MD836	EMPLACED_CNTR	08/18/81
2163	10043834	MD836	MD836	EMPLACED_CNTR	02/15/81
2164	10048417	MD836	MD836	EMPLACED_CNTR	11/30/78
2165	10048418	MD836	MD836	EMPLACED_CNTR	11/17/78
2166	10048419	MD836	MD836	EMPLACED_CNTR	04/10/79
2167	10048628	MD836	MD836	EMPLACED_CNTR	11/14/78
2168	10048629	MD836	MD836	EMPLACED_CNTR	11/14/78
2169	10048630	MD836	MD836	EMPLACED_CNTR	11/14/78
2170	10048631	MD836	MD836	EMPLACED_CNTR	11/14/78
2171	10048632	MD836	MD836	EMPLACED_CNTR	11/14/78
2172	10048633	MD836	MD836	EMPLACED_CNTR	11/14/78
2173	10048637	MD836	MD836	EMPLACED_CNTR	12/13/78
2174	10048762	MD836	MD836	EMPLACED_CNTR	06/09/78
2175	10048808	MD836	MD836	EMPLACED_CNTR	04/10/79
2176	10048809	MD836	MD836	EMPLACED_CNTR	11/17/78
2177	10048899	MD836	MD836	EMPLACED_CNTR	06/09/78
2178	10048900	MD836	MD836	EMPLACED_CNTR	03/14/78
2179	10048901	MD836	MD836	EMPLACED_CNTR	03/23/78
2180	10048915	MD836	MD836	EMPLACED_CNTR	04/23/79
2181	10051285	MD836	MD836	EMPLACED_CNTR	06/15/79
2182	10051286	MD836	MD836	EMPLACED_CNTR	08/23/79
2183	10051287	MD836	MD836	EMPLACED_CNTR	08/23/79
2184	10051290	MD836	MD836	EMPLACED_CNTR	06/15/79
2185	10051291	MD836	MD836	EMPLACED_CNTR	06/15/79
2186	10051292	MD836	MD836	EMPLACED_CNTR	09/19/79
2187	10051307	MD836	MD836	EMPLACED_CNTR	10/18/79
2188	10051308	MD836	MD836	EMPLACED_CNTR	06/15/79
2189	10051359	MD836	MD836	EMPLACED_CNTR	05/24/79
2190	10051361	MD836	MD836	EMPLACED_CNTR	05/16/79
2191	10051362	MD836	MD836	EMPLACED_CNTR	03/20/79
2192	10051363	MD836	MD836	EMPLACED_CNTR	10/18/79
2193	10051364	MD836	MD836	EMPLACED_CNTR	03/21/80

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2194	10051374	MD836	MD836	EMPLACED_CNTR	10/18/79
2195	10051375	MD836	MD836	EMPLACED_CNTR	10/18/79
2196	10051376	MD836	MD836	EMPLACED_CNTR	06/15/79
2197	10052118	MD836	MD836	EMPLACED_CNTR	06/07/79
2198	10052119	MD836	MD836	EMPLACED_CNTR	03/14/79
2199	10052124	MD836	MD836	EMPLACED_CNTR	04/03/79
2200	10052125	MD836	MD836	EMPLACED_CNTR	03/14/79
2201	10052132	MD836	MD836	EMPLACED_CNTR	07/20/78
2202	10052133	MD836	MD836	EMPLACED_CNTR	06/15/78
2203	10052135	MD836	MD836	EMPLACED_CNTR	07/20/78
2204	10052136	MD836	MD836	EMPLACED_CNTR	07/20/78
2205	10052155	MD836	MD836	EMPLACED_CNTR	03/21/80
2206	10052166	MD836	MD836	EMPLACED_CNTR	04/03/79
2207	10052167	MD836	MD836	EMPLACED_CNTR	04/03/79
2208	10052168	MD836	MD836	EMPLACED_CNTR	04/03/79
2209	10052169	MD836	MD836	EMPLACED_CNTR	06/15/79
2210	10052170	MD836	MD836	EMPLACED_CNTR	08/23/79
2211	10052171	MD836	MD836	EMPLACED_CNTR	09/19/79
2212	10052173	MD836	MD836	EMPLACED_CNTR	09/19/79
2213	10052174	MD836	MD836	EMPLACED_CNTR	12/05/79
2214	10052179	MD836	MD836	EMPLACED_CNTR	06/07/79
2215	10052181	MD836	MD836	EMPLACED_CNTR	07/13/78
2216	10052184	MD836	MD836	EMPLACED_CNTR	07/20/78
2217	10052185	MD836	MD836	EMPLACED_CNTR	01/05/79
2218	10052186	MD836	MD836	EMPLACED_CNTR	07/20/78
2219	10052190	MD836	MD836	EMPLACED_CNTR	03/14/79
2220	10052366	MD836	MD836	EMPLACED_CNTR	03/20/79
2221	10052376	MD836	MD836	EMPLACED_CNTR	04/10/79
2222	10052385	MD836	MD836	EMPLACED_CNTR	04/26/79
2223	10052388	MD836	MD836	EMPLACED_CNTR	03/14/79
2224	10052390	MD836	MD836	EMPLACED_CNTR	11/30/78
2225	10052394	MD836	MD836	EMPLACED_CNTR	04/26/79
2226	10052395	MD836	MD836	EMPLACED_CNTR	03/14/79
2227	10052400	MD836	MD836	EMPLACED_CNTR	03/14/79
2228	10052402	MD836	MD836	EMPLACED_CNTR	08/23/79
2229	10052403	MD836	MD836	EMPLACED_CNTR	03/20/79
2230	10052725	MD836	MD836	EMPLACED_CNTR	08/03/77
2231	10052726	MD836	MD836	EMPLACED_CNTR	03/22/78
2232	10052735	MD836	MD836	EMPLACED_CNTR	08/03/77
2233	10052736	MD836	MD836	EMPLACED_CNTR	03/22/78
2234	10052741	MD836	MD836	EMPLACED_CNTR	03/22/78
2235	10052763	MD836	MD836	EMPLACED_CNTR	12/05/79
2236	10052764	MD836	MD836	EMPLACED_CNTR	12/05/79
2237	10052767	MD836	MD836	EMPLACED_CNTR	03/21/80
2238	10052768	MD836	MD836	EMPLACED_CNTR	03/21/80
2239	10052769	MD836	MD836	EMPLACED_CNTR	09/28/79
2240	10052770	MD836	MD836	EMPLACED_CNTR	03/21/80
2241	10052771	MD836	MD836	EMPLACED_CNTR	03/21/80
2242	10052772	MD836	MD836	EMPLACED_CNTR	03/21/80
2243	10052790	MD836	MD836	EMPLACED_CNTR	06/15/79
2244	10053447	MD836	MD836	EMPLACED_CNTR	12/05/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2245	10053448	MD836	MD836	EMPLACED_CNTR	12/05/79
2246	10053460	MD836	MD836	EMPLACED_CNTR	12/05/79
2247	10053612	MD836	MD836	EMPLACED_CNTR	08/23/79
2248	10053614	MD836	MD836	EMPLACED_CNTR	03/14/79
2249	10053617	MD836	MD836	EMPLACED_CNTR	03/14/79
2250	10054006	MD836	MD836	EMPLACED_CNTR	10/10/77
2251	10054007	MD836	MD836	EMPLACED_CNTR	12/22/77
2252	10054008	MD836	MD836	EMPLACED_CNTR	08/17/77
2253	10054009	MD836	MD836	EMPLACED_CNTR	03/22/78
2254	10054010	MD836	MD836	EMPLACED_CNTR	03/14/78
2255	10054011	MD836	MD836	EMPLACED_CNTR	03/14/78
2256	10054016	MD836	MD836	EMPLACED_CNTR	10/10/77
2257	10054018	MD836	MD836	EMPLACED_CNTR	10/10/77
2258	10054019	MD836	MD836	EMPLACED_CNTR	12/22/77
2259	10054020	MD836	MD836	EMPLACED_CNTR	08/17/77
2260	10054021	MD836	MD836	EMPLACED_CNTR	11/02/77
2261	10054050	MD836	MD836	EMPLACED_CNTR	06/16/78
2262	10054061	MD836	MD836	EMPLACED_CNTR	07/20/78
2263	10054062	MD836	MD836	EMPLACED_CNTR	08/04/78
2264	10054066	MD836	MD836	EMPLACED_CNTR	08/04/78
2265	10054067	MD836	MD836	EMPLACED_CNTR	07/13/78
2266	10054102	MD836	MD836	EMPLACED_CNTR	06/09/78
2267	10054103	MD836	MD836	EMPLACED_CNTR	03/22/78
2268	10054104	MD836	MD836	EMPLACED_CNTR	03/14/78
2269	10054105	MD836	MD836	EMPLACED_CNTR	03/14/78
2270	10054109	MD836	MD836	EMPLACED_CNTR	06/09/78
2271	10054120	MD836	MD836	EMPLACED_CNTR	06/15/78
2272	10054123	MD836	MD836	EMPLACED_CNTR	08/04/78
2273	10054136	MD836	MD836	EMPLACED_CNTR	11/03/78
2274	10054146	MD836	MD836	EMPLACED_CNTR	07/27/78
2275	10054147	MD836	MD836	EMPLACED_CNTR	11/03/78
2276	10054152	MD836	MD836	EMPLACED_CNTR	03/14/78
2277	10054153	MD836	MD836	EMPLACED_CNTR	03/22/78
2278	10054154	MD836	MD836	EMPLACED_CNTR	03/14/78
2279	10054159	MD836	MD836	EMPLACED_CNTR	11/03/78
2280	10054168	MD836	MD836	EMPLACED_CNTR	11/09/78
2281	10054169	MD836	MD836	EMPLACED_CNTR	11/17/78
2282	10054171	MD836	MD836	EMPLACED_CNTR	11/14/78
2283	10054173	MD836	MD836	EMPLACED_CNTR	11/17/78
2284	10054174	MD836	MD836	EMPLACED_CNTR	11/17/78
2285	10054175	MD836	MD836	EMPLACED_CNTR	04/26/79
2286	10054178	MD836	MD836	EMPLACED_CNTR	11/14/78
2287	10054182	MD836	MD836	EMPLACED_CNTR	11/09/78
2288	10054189	MD836	MD836	EMPLACED_CNTR	11/14/78
2289	10054190	MD836	MD836	EMPLACED_CNTR	11/14/78
2290	10054193	MD836	MD836	EMPLACED_CNTR	04/10/79
2291	10054202	MD836	MD836	EMPLACED_CNTR	11/17/78
2292	10054207	MD836	MD836	EMPLACED_CNTR	11/30/78
2293	10054208	MD836	MD836	EMPLACED_CNTR	11/03/78
2294	10054216	MD836	MD836	EMPLACED_CNTR	11/14/78
2295	10054239	MD836	MD836	EMPLACED_CNTR	07/13/78

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2296	10054240	MD836	MD836	EMPLACED_CNTR	07/13/78
2297	10054242	MD836	MD836	EMPLACED_CNTR	11/03/78
2298	10054271	MD836	MD836	EMPLACED_CNTR	11/09/78
2299	10054273	MD836	MD836	EMPLACED_CNTR	03/16/79
2300	10054385	MD836	MD836	EMPLACED_CNTR	11/02/77
2301	10054386	MD836	MD836	EMPLACED_CNTR	12/22/77
2302	10054393	MD836	MD836	EMPLACED_CNTR	10/10/77
2303	10054394	MD836	MD836	EMPLACED_CNTR	11/02/77
2304	10054399	MD836	MD836	EMPLACED_CNTR	08/17/77
2305	10054400	MD836	MD836	EMPLACED_CNTR	12/22/77
2306	10054632	MD836	MD836	EMPLACED_CNTR	07/20/78
2307	10054634	MD836	MD836	EMPLACED_CNTR	01/05/79
2308	10054637	MD836	MD836	EMPLACED_CNTR	06/15/79
2309	10054638	MD836	MD836	EMPLACED_CNTR	03/14/79
2310	10054639	MD836	MD836	EMPLACED_CNTR	03/14/79
2311	10054642	MD836	MD836	EMPLACED_CNTR	05/16/79
2312	10054643	MD836	MD836	EMPLACED_CNTR	06/07/79
2313	10054649	MD836	MD836	EMPLACED_CNTR	12/13/78
2314	10054650	MD836	MD836	EMPLACED_CNTR	01/05/79
2315	10054652	MD836	MD836	EMPLACED_CNTR	05/16/79
2316	10054655	MD836	MD836	EMPLACED_CNTR	06/07/79
2317	10054677	MD836	MD836	EMPLACED_CNTR	06/07/79
2318	10054678	MD836	MD836	EMPLACED_CNTR	05/16/79
2319	10054681	MD836	MD836	EMPLACED_CNTR	12/13/78
2320	10054682	MD836	MD836	EMPLACED_CNTR	12/13/78
2321	10054683	MD836	MD836	EMPLACED_CNTR	10/18/79
2322	10054685	MD836	MD836	EMPLACED_CNTR	04/03/79
2323	10054689	MD836	MD836	EMPLACED_CNTR	12/05/79
2324	10054691	MD836	MD836	EMPLACED_CNTR	03/21/80
2325	10054697	MD836	MD836	EMPLACED_CNTR	10/18/79
2326	10054727	MD836	MD836	EMPLACED_CNTR	10/10/77
2327	10054728	MD836	MD836	EMPLACED_CNTR	12/22/77
2328	10054766	MD836	MD836	EMPLACED_CNTR	04/03/79
2329	10054768	MD836	MD836	EMPLACED_CNTR	04/03/79
2330	10054769	MD836	MD836	EMPLACED_CNTR	06/15/79
2331	10054770	MD836	MD836	EMPLACED_CNTR	06/15/79
2332	10054830	MD836	MD836	EMPLACED_CNTR	03/22/78
2333	10054831	MD836	MD836	EMPLACED_CNTR	03/14/78
2334	10054860	MD836	MD836	EMPLACED_CNTR	08/03/77
2335	10054861	MD836	MD836	EMPLACED_CNTR	03/23/78
2336	10054872	MD836	MD836	EMPLACED_CNTR	06/09/78
2337	10054873	MD836	MD836	EMPLACED_CNTR	06/09/78
2338	10054936	MD836	MD836	EMPLACED_CNTR	06/16/78
2339	10054937	MD836	MD836	EMPLACED_CNTR	08/03/77
2340	10054940	MD836	MD836	EMPLACED_CNTR	06/07/79
2341	10054941	MD836	MD836	EMPLACED_CNTR	06/07/79
2342	10055330	MD836	MD836	EMPLACED_CNTR	11/09/78
2343	10055331	MD836	MD836	EMPLACED_CNTR	11/09/78
2344	10055339	MD836	MD836	EMPLACED_CNTR	10/18/79
2345	10055341	MD836	MD836	EMPLACED_CNTR	09/19/79
2346	10055344	MD836	MD836	EMPLACED_CNTR	09/28/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2347	10055345	MD836	MD836	EMPLACED_CNTR	09/28/79
2348	10055346	MD836	MD836	EMPLACED_CNTR	09/19/79
2349	10055347	MD836	MD836	EMPLACED_CNTR	12/05/79
2350	10055351	MD836	MD836	EMPLACED_CNTR	12/05/79
2351	10055353	MD836	MD836	EMPLACED_CNTR	03/21/80
2352	10055355	MD836	MD836	EMPLACED_CNTR	03/21/80
2353	10055368	MD836	MD836	EMPLACED_CNTR	06/09/78
2354	10055369	MD836	MD836	EMPLACED_CNTR	08/03/77
2355	10055388	MD836	MD836	EMPLACED_CNTR	06/02/78
2356	10055389	MD836	MD836	EMPLACED_CNTR	03/14/78
2357	10055394	MD836	MD836	EMPLACED_CNTR	03/22/78
2358	10055409	MD836	MD836	EMPLACED_CNTR	06/09/78
2359	10055412	MD836	MD836	EMPLACED_CNTR	06/02/78
2360	10055413	MD836	MD836	EMPLACED_CNTR	06/09/78
2361	10055433	MD836	MD836	EMPLACED_CNTR	08/23/79
2362	10055434	MD836	MD836	EMPLACED_CNTR	10/18/79
2363	10055436	MD836	MD836	EMPLACED_CNTR	03/14/79
2364	10055437	MD836	MD836	EMPLACED_CNTR	04/03/79
2365	10055439	MD836	MD836	EMPLACED_CNTR	12/18/78
2366	10055442	MD836	MD836	EMPLACED_CNTR	03/14/79
2367	10055444	MD836	MD836	EMPLACED_CNTR	06/15/79
2368	10055474	MD836	MD836	EMPLACED_CNTR	08/23/79
2369	10055478	MD836	MD836	EMPLACED_CNTR	09/19/79
2370	10055479	MD836	MD836	EMPLACED_CNTR	01/05/79
2371	10055487	MD836	MD836	EMPLACED_CNTR	12/18/78
2372	10056263	MD836	MD836	EMPLACED_CNTR	06/16/78
2373	10056273	MD836	MD836	EMPLACED_CNTR	12/22/77
2374	10056278	MD836	MD836	EMPLACED_CNTR	06/16/78
2375	10056279	MD836	MD836	EMPLACED_CNTR	03/14/78
2376	10056287	MD836	MD836	EMPLACED_CNTR	08/03/77
2377	10056288	MD836	MD836	EMPLACED_CNTR	03/14/78
2378	10056343	MD836	MD836	EMPLACED_CNTR	12/22/77
2379	10056346	MD836	MD836	EMPLACED_CNTR	11/02/77
2380	10056352	MD836	MD836	EMPLACED_CNTR	11/02/77
2381	10056353	MD836	MD836	EMPLACED_CNTR	12/22/77
2382	10056522	MD836	MD836	EMPLACED_CNTR	08/23/79
2383	10056523	MD836	MD836	EMPLACED_CNTR	08/23/79
2384	10056524	MD836	MD836	EMPLACED_CNTR	08/23/79
2385	10056533	MD836	MD836	EMPLACED_CNTR	03/21/80
2386	10056538	MD836	MD836	EMPLACED_CNTR	12/05/79
2387	10056539	MD836	MD836	EMPLACED_CNTR	12/05/79
2388	10056542	MD836	MD836	EMPLACED_CNTR	09/19/79
2389	10056543	MD836	MD836	EMPLACED_CNTR	08/23/79
2390	10056544	MD836	MD836	EMPLACED_CNTR	08/23/79
2391	10056545	MD836	MD836	EMPLACED_CNTR	12/05/79
2392	10056546	MD836	MD836	EMPLACED_CNTR	12/05/79
2393	10056547	MD836	MD836	EMPLACED_CNTR	03/21/80
2394	10056548	MD836	MD836	EMPLACED_CNTR	03/21/80
2395	10056550	MD836	MD836	EMPLACED_CNTR	03/21/80
2396	10056551	MD836	MD836	EMPLACED_CNTR	03/21/80
2397	10056552	MD836	MD836	EMPLACED_CNTR	12/05/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2398	10056564	MD836	MD836	EMPLACED_CNTR	08/23/79
2399	10056571	MD836	MD836	EMPLACED_CNTR	10/10/77
2400	10056579	MD836	MD836	EMPLACED_CNTR	10/10/77
2401	10056580	MD836	MD836	EMPLACED_CNTR	10/10/77
2402	10056581	MD836	MD836	EMPLACED_CNTR	06/16/78
2403	10056582	MD836	MD836	EMPLACED_CNTR	03/23/78
2404	10056586	MD836	MD836	EMPLACED_CNTR	06/09/78
2405	10056676	MD836	MD836	EMPLACED_CNTR	09/19/79
2406	10056699	MD836	MD836	EMPLACED_CNTR	04/10/79
2407	10056700	MD836	MD836	EMPLACED_CNTR	03/14/79
2408	10056702	MD836	MD836	EMPLACED_CNTR	12/18/78
2409	10056719	MD836	MD836	EMPLACED_CNTR	09/19/79
2410	10056732	MD836	MD836	EMPLACED_CNTR	12/18/78
2411	10056737	MD836	MD836	EMPLACED_CNTR	06/15/79
2412	10056739	MD836	MD836	EMPLACED_CNTR	04/10/79
2413	10056741	MD836	MD836	EMPLACED_CNTR	04/03/79
2414	10056800	MD836	MD836	EMPLACED_CNTR	05/24/79
2415	10056802	MD836	MD836	EMPLACED_CNTR	05/16/79
2416	10056803	MD836	MD836	EMPLACED_CNTR	05/24/79
2417	10056806	MD836	MD836	EMPLACED_CNTR	06/07/79
2418	10056810	MD836	MD836	EMPLACED_CNTR	05/16/79
2419	10056811	MD836	MD836	EMPLACED_CNTR	11/03/78
2420	10056819	MD836	MD836	EMPLACED_CNTR	05/16/79
2421	10056820	MD836	MD836	EMPLACED_CNTR	11/03/78
2422	10056821	MD836	MD836	EMPLACED_CNTR	11/03/78
2423	10056823	MD836	MD836	EMPLACED_CNTR	12/13/78
2424	10056824	MD836	MD836	EMPLACED_CNTR	12/13/78
2425	10056830	MD836	MD836	EMPLACED_CNTR	03/14/79
2426	10056831	MD836	MD836	EMPLACED_CNTR	12/18/78
2427	10056832	MD836	MD836	EMPLACED_CNTR	08/23/79
2428	10056833	MD836	MD836	EMPLACED_CNTR	04/03/79
2429	10056834	MD836	MD836	EMPLACED_CNTR	09/19/79
2430	10056837	MD836	MD836	EMPLACED_CNTR	09/19/79
2431	10056838	MD836	MD836	EMPLACED_CNTR	08/23/79
2432	10056840	MD836	MD836	EMPLACED_CNTR	09/19/79
2433	10056841	MD836	MD836	EMPLACED_CNTR	01/05/79
2434	10056842	MD836	MD836	EMPLACED_CNTR	03/20/79
2435	10056863	MD836	MD836	EMPLACED_CNTR	06/16/78
2436	10056864	MD836	MD836	EMPLACED_CNTR	07/27/78
2437	10056866	MD836	MD836	EMPLACED_CNTR	07/27/78
2438	10056898	MD836	MD836	EMPLACED_CNTR	11/30/78
2439	10056914	MD836	MD836	EMPLACED_CNTR	05/16/79
2440	10056916	MD836	MD836	EMPLACED_CNTR	06/07/79
2441	10056979	MD836	MD836	EMPLACED_CNTR	07/27/78
2442	10056983	MD836	MD836	EMPLACED_CNTR	07/20/78
2443	10056985	MD836	MD836	EMPLACED_CNTR	08/04/78
2444	10057220	MD836	MD836	EMPLACED_CNTR	08/04/78
2445	10057240	MD836	MD836	EMPLACED_CNTR	04/26/79
2446	10057241	MD836	MD836	EMPLACED_CNTR	04/26/79
2447	10057242	MD836	MD836	EMPLACED_CNTR	04/23/79
2448	10057244	MD836	MD836	EMPLACED_CNTR	11/17/78

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2449	10057319	MD836	MD836	EMPLACED_CNTR	04/26/79
2450	10057327	MD836	MD836	EMPLACED_CNTR	11/17/78
2451	10057329	MD836	MD836	EMPLACED_CNTR	11/30/78
2452	10057347	MD836	MD836	EMPLACED_CNTR	06/09/78
2453	10057348	MD836	MD836	EMPLACED_CNTR	06/16/78
2454	10057350	MD836	MD836	EMPLACED_CNTR	06/09/78
2455	10057370	MD836	MD836	EMPLACED_CNTR	03/22/78
2456	10057377	MD836	MD836	EMPLACED_CNTR	06/09/78
2457	10057390	MD836	MD836	EMPLACED_CNTR	07/27/78
2458	10057392	MD836	MD836	EMPLACED_CNTR	06/16/78
2459	10057393	MD836	MD836	EMPLACED_CNTR	07/27/78
2460	10057394	MD836	MD836	EMPLACED_CNTR	08/04/78
2461	10057408	MD836	MD836	EMPLACED_CNTR	07/27/78
2462	10057415	MD836	MD836	EMPLACED_CNTR	11/03/78
2463	10057417	MD836	MD836	EMPLACED_CNTR	07/20/78
2464	10057563	MD836	MD836	EMPLACED_CNTR	08/04/78
2465	10057564	MD836	MD836	EMPLACED_CNTR	07/20/78
2466	10057565	MD836	MD836	EMPLACED_CNTR	07/20/78
2467	10057566	MD836	MD836	EMPLACED_CNTR	07/20/78
2468	10057567	MD836	MD836	EMPLACED_CNTR	11/14/78
2469	10057568	MD836	MD836	EMPLACED_CNTR	11/14/78
2470	10057569	MD836	MD836	EMPLACED_CNTR	08/04/78
2471	10057574	MD836	MD836	EMPLACED_CNTR	06/16/78
2472	10057576	MD836	MD836	EMPLACED_CNTR	11/09/78
2473	10057580	MD836	MD836	EMPLACED_CNTR	11/09/78
2474	10057581	MD836	MD836	EMPLACED_CNTR	11/09/78
2475	10057654	MD836	MD836	EMPLACED_CNTR	04/26/79
2476	10057765	MD836	MD836	EMPLACED_CNTR	07/27/78
2477	10057770	MD836	MD836	EMPLACED_CNTR	07/13/78
2478	10057777	MD836	MD836	EMPLACED_CNTR	06/16/78
2479	10057780	MD836	MD836	EMPLACED_CNTR	06/09/78
2480	10057782	MD836	MD836	EMPLACED_CNTR	07/27/78
2481	10057786	MD836	MD836	EMPLACED_CNTR	07/20/78
2482	10057796	MD836	MD836	EMPLACED_CNTR	06/17/78
2483	10057803	MD836	MD836	EMPLACED_CNTR	07/20/78
2484	10057805	MD836	MD836	EMPLACED_CNTR	08/04/78
2485	10057816	MD836	MD836	EMPLACED_CNTR	08/04/78
2486	10057817	MD836	MD836	EMPLACED_CNTR	07/27/78
2487	10057820	MD836	MD836	EMPLACED_CNTR	11/14/78
2488	10057822	MD836	MD836	EMPLACED_CNTR	08/04/78
2489	10058226	MD836	MD836	EMPLACED_CNTR	11/14/78
2490	10058231	MD836	MD836	EMPLACED_CNTR	04/10/79
2491	10058235	MD836	MD836	EMPLACED_CNTR	04/26/79
2492	10058243	MD836	MD836	EMPLACED_CNTR	11/14/78
2493	10058244	MD836	MD836	EMPLACED_CNTR	11/14/78
2494	10058249	MD836	MD836	EMPLACED_CNTR	11/17/78
2495	10058250	MD836	MD836	EMPLACED_CNTR	04/23/79
2496	10058253	MD836	MD836	EMPLACED_CNTR	11/14/78
2497	10058264	MD836	MD836	EMPLACED_CNTR	11/14/78
2498	10058269	MD836	MD836	EMPLACED_CNTR	11/17/78
2499	10058270	MD836	MD836	EMPLACED_CNTR	04/23/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2500	10058297	MD836	MD836	EMPLACED_CNTR	11/17/78
2501	10058298	MD836	MD836	EMPLACED_CNTR	04/23/79
2502	10058384	MD836	MD836	EMPLACED_CNTR	03/16/79
2503	10058467	MD836	MD836	EMPLACED_CNTR	12/05/79
2504	10058468	MD836	MD836	EMPLACED_CNTR	12/05/79
2505	10058470	MD836	MD836	EMPLACED_CNTR	03/21/80
2506	10058476	MD836	MD836	EMPLACED_CNTR	12/13/78
2507	10058479	MD836	MD836	EMPLACED_CNTR	11/30/78
2508	10058483	MD836	MD836	EMPLACED_CNTR	06/15/79
2509	10058484	MD836	MD836	EMPLACED_CNTR	08/23/79
2510	10058485	MD836	MD836	EMPLACED_CNTR	11/09/78
2511	10058487	MD836	MD836	EMPLACED_CNTR	06/07/79
2512	10058495	MD836	MD836	EMPLACED_CNTR	11/09/78
2513	10058496	MD836	MD836	EMPLACED_CNTR	11/17/78
2514	10058501	MD836	MD836	EMPLACED_CNTR	03/14/79
2515	10058504	MD836	MD836	EMPLACED_CNTR	09/19/79
2516	10058505	MD836	MD836	EMPLACED_CNTR	11/09/78
2517	10058506	MD836	MD836	EMPLACED_CNTR	09/19/79
2518	10058509	MD836	MD836	EMPLACED_CNTR	12/05/79
2519	10058510	MD836	MD836	EMPLACED_CNTR	12/05/79
2520	10058517	MD836	MD836	EMPLACED_CNTR	11/14/78
2521	10058518	MD836	MD836	EMPLACED_CNTR	05/16/79
2522	10058521	MD836	MD836	EMPLACED_CNTR	03/21/80
2523	10058524	MD836	MD836	EMPLACED_CNTR	06/07/79
2524	10058529	MD836	MD836	EMPLACED_CNTR	12/18/78
2525	10058532	MD836	MD836	EMPLACED_CNTR	12/18/78
2526	10058747	MD836	MD836	EMPLACED_CNTR	11/14/78
2527	10058787	MD836	MD836	EMPLACED_CNTR	09/19/79
2528	10058788	MD836	MD836	EMPLACED_CNTR	09/19/79
2529	10058789	MD836	MD836	EMPLACED_CNTR	10/18/79
2530	10058794	MD836	MD836	EMPLACED_CNTR	03/16/79
2531	10058795	MD836	MD836	EMPLACED_CNTR	12/13/78
2532	10058796	MD836	MD836	EMPLACED_CNTR	03/16/79
2533	10058797	MD836	MD836	EMPLACED_CNTR	04/03/79
2534	10058798	MD836	MD836	EMPLACED_CNTR	12/05/79
2535	10058801	MD836	MD836	EMPLACED_CNTR	09/28/79
2536	10058802	MD836	MD836	EMPLACED_CNTR	09/19/79
2537	10058807	MD836	MD836	EMPLACED_CNTR	03/20/79
2538	10058827	MD836	MD836	EMPLACED_CNTR	06/15/79
2539	10058828	MD836	MD836	EMPLACED_CNTR	12/18/78
2540	10058841	MD836	MD836	EMPLACED_CNTR	03/14/79
2541	10058842	MD836	MD836	EMPLACED_CNTR	04/03/79
2542	10058843	MD836	MD836	EMPLACED_CNTR	03/16/79
2543	10058844	MD836	MD836	EMPLACED_CNTR	06/15/79
2544	10058845	MD836	MD836	EMPLACED_CNTR	12/18/78
2545	10059090	MD836	MD836	EMPLACED_CNTR	11/02/77
2546	10059091	MD836	MD836	EMPLACED_CNTR	12/22/77
2547	10059093	MD836	MD836	EMPLACED_CNTR	10/10/77
2548	10059100	MD836	MD836	EMPLACED_CNTR	12/22/77
2549	10059101	MD836	MD836	EMPLACED_CNTR	11/02/77
2550	10059106	MD836	MD836	EMPLACED_CNTR	12/22/77

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2551	10059507	MD836	MD836	EMPLACED_CNTR	03/14/78
2552	10059603	MD836	MD836	EMPLACED_CNTR	06/15/79
2553	10059626	MD836	MD836	EMPLACED_CNTR	12/18/78
2554	10059627	MD836	MD836	EMPLACED_CNTR	03/14/79
2555	10059628	MD836	MD836	EMPLACED_CNTR	03/14/79
2556	10059633	MD836	MD836	EMPLACED_CNTR	06/15/79
2557	10059638	MD836	MD836	EMPLACED_CNTR	07/13/78
2558	10059639	MD836	MD836	EMPLACED_CNTR	06/16/78
2559	10059649	MD836	MD836	EMPLACED_CNTR	11/14/78
2560	10059650	MD836	MD836	EMPLACED_CNTR	04/23/79
2561	10059657	MD836	MD836	EMPLACED_CNTR	03/16/79
2562	10059662	MD836	MD836	EMPLACED_CNTR	09/19/79
2563	10059663	MD836	MD836	EMPLACED_CNTR	09/19/79
2564	10059673	MD836	MD836	EMPLACED_CNTR	12/18/78
2565	10059675	MD836	MD836	EMPLACED_CNTR	12/18/78
2566	10059676	MD836	MD836	EMPLACED_CNTR	12/18/78
2567	10059677	MD836	MD836	EMPLACED_CNTR	09/19/79
2568	10059705	MD836	MD836	EMPLACED_CNTR	06/16/78
2569	10059706	MD836	MD836	EMPLACED_CNTR	06/02/78
2570	10059708	MD836	MD836	EMPLACED_CNTR	12/18/78
2571	10059714	MD836	MD836	EMPLACED_CNTR	05/16/79
2572	10059717	MD836	MD836	EMPLACED_CNTR	05/16/79
2573	10059720	MD836	MD836	EMPLACED_CNTR	06/15/79
2574	10059724	MD836	MD836	EMPLACED_CNTR	03/20/79
2575	10059742	MD836	MD836	EMPLACED_CNTR	04/10/79
2576	10059743	MD836	MD836	EMPLACED_CNTR	04/23/79
2577	10059750	MD836	MD836	EMPLACED_CNTR	07/20/78
2578	10059751	MD836	MD836	EMPLACED_CNTR	06/16/78
2579	10059759	MD836	MD836	EMPLACED_CNTR	11/17/78
2580	10059824	MD836	MD836	EMPLACED_CNTR	03/14/79
2581	10059825	MD836	MD836	EMPLACED_CNTR	05/16/79
2582	10059833	MD836	MD836	EMPLACED_CNTR	06/15/79
2583	10059834	MD836	MD836	EMPLACED_CNTR	03/14/79
2584	10059835	MD836	MD836	EMPLACED_CNTR	10/18/79
2585	10059837	MD836	MD836	EMPLACED_CNTR	05/16/79
2586	10059847	MD836	MD836	EMPLACED_CNTR	08/17/77
2587	10059850	MD836	MD836	EMPLACED_CNTR	12/22/77
2588	10059857	MD836	MD836	EMPLACED_CNTR	08/17/77
2589	10059859	MD836	MD836	EMPLACED_CNTR	12/22/77
2590	10059864	MD836	MD836	EMPLACED_CNTR	12/22/77
2591	10059865	MD836	MD836	EMPLACED_CNTR	11/02/77
2592	10059869	MD836	MD836	EMPLACED_CNTR	12/22/77
2593	10059870	MD836	MD836	EMPLACED_CNTR	04/03/79
2594	10059873	MD836	MD836	EMPLACED_CNTR	10/10/77
2595	10059874	MD836	MD836	EMPLACED_CNTR	10/10/77
2596	10059935	MD836	MD836	EMPLACED_CNTR	07/27/78
2597	10059936	MD836	MD836	EMPLACED_CNTR	06/15/78
2598	10059941	MD836	MD836	EMPLACED_CNTR	11/14/78
2599	10059942	MD836	MD836	EMPLACED_CNTR	06/15/78
2600	10059943	MD836	MD836	EMPLACED_CNTR	11/03/78
2601	10059948	MD836	MD836	EMPLACED_CNTR	11/30/78

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2602	10059949	MD836	MD836	EMPLACED_CNTR	04/23/79
2603	10059955	MD836	MD836	EMPLACED_CNTR	04/26/79
2604	10060160	MD836	MD836	EMPLACED_CNTR	12/22/78
2605	10060180	MD836	MD836	EMPLACED_CNTR	08/17/76
2606	10060190	MD836	MD836	EMPLACED_CNTR	08/17/76
2607	10060192	MD836	MD836	EMPLACED_CNTR	12/22/77
2608	10060193	MD836	MD836	EMPLACED_CNTR	06/02/78
2609	10060194	MD836	MD836	EMPLACED_CNTR	11/02/77
2610	10060200	MD836	MD836	EMPLACED_CNTR	03/14/78
2611	10060205	MD836	MD836	EMPLACED_CNTR	08/03/77
2612	10060206	MD836	MD836	EMPLACED_CNTR	03/22/78
2613	10060224	MD836	MD836	EMPLACED_CNTR	10/10/77
2614	10060229	MD836	MD836	EMPLACED_CNTR	11/02/77
2615	10060231	MD836	MD836	EMPLACED_CNTR	06/02/78
2616	10060247	MD836	MD836	EMPLACED_CNTR	06/02/78
2617	10060390	MD836	MD836	EMPLACED_CNTR	06/02/78
2618	10060391	MD836	MD836	EMPLACED_CNTR	03/23/78
2619	10060488	MD836	MD836	EMPLACED_CNTR	03/14/78
2620	10060489	MD836	MD836	EMPLACED_CNTR	06/09/78
2621	10060491	MD836	MD836	EMPLACED_CNTR	03/14/78
2622	10060492	MD836	MD836	EMPLACED_CNTR	06/09/78
2623	10060538	MD836	MD836	EMPLACED_CNTR	06/15/78
2624	10060552	MD836	MD836	EMPLACED_CNTR	11/30/78
2625	10060590	MD836	MD836	EMPLACED_CNTR	06/16/78
2626	10060709	MD836	MD836	EMPLACED_CNTR	07/27/78
2627	10060728	MD836	MD836	EMPLACED_CNTR	06/15/78
2628	10060729	MD836	MD836	EMPLACED_CNTR	07/27/78
2629	10060736	MD836	MD836	EMPLACED_CNTR	06/15/78
2630	10060740	MD836	MD836	EMPLACED_CNTR	07/27/78
2631	10060742	MD836	MD836	EMPLACED_CNTR	08/04/78
2632	10060916	MD836	MD836	EMPLACED_CNTR	11/17/78
2633	10060917	MD836	MD836	EMPLACED_CNTR	11/17/78
2634	10060918	MD836	MD836	EMPLACED_CNTR	04/23/79
2635	10060919	MD836	MD836	EMPLACED_CNTR	04/26/79
2636	10060920	MD836	MD836	EMPLACED_CNTR	04/26/79
2637	10060921	MD836	MD836	EMPLACED_CNTR	04/23/79
2638	10060932	MD836	MD836	EMPLACED_CNTR	08/17/77
2639	10061067	MD836	MD836	EMPLACED_CNTR	05/24/79
2640	10061070	MD836	MD836	EMPLACED_CNTR	12/18/78
2641	10061071	MD836	MD836	EMPLACED_CNTR	06/15/79
2642	10061072	MD836	MD836	EMPLACED_CNTR	09/19/79
2643	10061073	MD836	MD836	EMPLACED_CNTR	04/03/79
2644	10061076	MD836	MD836	EMPLACED_CNTR	06/07/79
2645	10061110	MD836	MD836	EMPLACED_CNTR	12/18/78
2646	10061111	MD836	MD836	EMPLACED_CNTR	12/13/78
2647	10061119	MD836	MD836	EMPLACED_CNTR	06/15/79
2648	10061126	MD836	MD836	EMPLACED_CNTR	12/18/78
2649	10061127	MD836	MD836	EMPLACED_CNTR	03/20/79
2650	10061130	MD836	MD836	EMPLACED_CNTR	06/07/79
2651	10061132	MD836	MD836	EMPLACED_CNTR	08/23/79
2652	10061135	MD836	MD836	EMPLACED_CNTR	05/16/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2653	10061136	MD836	MD836	EMPLACED_CNTR	05/24/79
2654	10061141	MD836	MD836	EMPLACED_CNTR	12/13/78
2655	10061152	MD836	MD836	EMPLACED_CNTR	06/07/79
2656	10061153	MD836	MD836	EMPLACED_CNTR	12/18/78
2657	10061155	MD836	MD836	EMPLACED_CNTR	06/15/79
2658	10061169	MD836	MD836	EMPLACED_CNTR	04/03/79
2659	10061174	MD836	MD836	EMPLACED_CNTR	06/07/79
2660	10061176	MD836	MD836	EMPLACED_CNTR	05/16/79
2661	10061177	MD836	MD836	EMPLACED_CNTR	05/24/79
2662	10061178	MD836	MD836	EMPLACED_CNTR	06/07/79
2663	10061181	MD836	MD836	EMPLACED_CNTR	05/16/79
2664	10061292	MD836	MD836	EMPLACED_CNTR	08/17/77
2665	10061295	MD836	MD836	EMPLACED_CNTR	10/10/77
2666	10061530	MD836	MD836	EMPLACED_CNTR	08/03/77
2667	10061533	MD836	MD836	EMPLACED_CNTR	08/03/77
2668	10061713	MD836	MD836	EMPLACED_CNTR	11/02/77
2669	10061715	MD836	MD836	EMPLACED_CNTR	10/10/77
2670	10061716	MD836	MD836	EMPLACED_CNTR	10/10/77
2671	10061717	MD836	MD836	EMPLACED_CNTR	11/02/77
2672	10061718	MD836	MD836	EMPLACED_CNTR	11/02/77
2673	10061797	MD836	MD836	EMPLACED_CNTR	06/16/78
2674	10061798	MD836	MD836	EMPLACED_CNTR	06/02/78
2675	10061803	MD836	MD836	EMPLACED_CNTR	03/22/78
2676	10061805	MD836	MD836	EMPLACED_CNTR	06/02/78
2677	10061829	MD836	MD836	EMPLACED_CNTR	03/22/78
2678	10061830	MD836	MD836	EMPLACED_CNTR	03/22/78
2679	10061831	MD836	MD836	EMPLACED_CNTR	03/22/78
2680	10061847	MD836	MD836	EMPLACED_CNTR	03/22/78
2681	10062265	MD836	MD836	EMPLACED_CNTR	07/20/78
2682	10062406	MD836	MD836	EMPLACED_CNTR	11/30/78
2683	10062413	MD836	MD836	EMPLACED_CNTR	04/26/79
2684	10062415	MD836	MD836	EMPLACED_CNTR	04/23/79
2685	10062422	MD836	MD836	EMPLACED_CNTR	04/26/79
2686	10062423	MD836	MD836	EMPLACED_CNTR	11/30/78
2687	10062432	MD836	MD836	EMPLACED_CNTR	04/23/79
2688	10062434	MD836	MD836	EMPLACED_CNTR	04/23/79
2689	10062445	MD836	MD836	EMPLACED_CNTR	04/26/79
2690	10062450	MD836	MD836	EMPLACED_CNTR	07/13/78
2691	10062459	MD836	MD836	EMPLACED_CNTR	07/13/78
2692	10062469	MD836	MD836	EMPLACED_CNTR	07/13/78
2693	10062471	MD836	MD836	EMPLACED_CNTR	11/03/78
2694	10062473	MD836	MD836	EMPLACED_CNTR	07/13/78
2695	10062478	MD836	MD836	EMPLACED_CNTR	11/30/78
2696	10062489	MD836	MD836	EMPLACED_CNTR	04/23/79
2697	10062495	MD836	MD836	EMPLACED_CNTR	04/23/79
2698	10062674	MD836	MD836	EMPLACED_CNTR	12/05/79
2699	10062678	MD836	MD836	EMPLACED_CNTR	03/21/80
2700	10062681	MD836	MD836	EMPLACED_CNTR	12/05/79
2701	10062684	MD836	MD836	EMPLACED_CNTR	09/28/79
2702	10062688	MD836	MD836	EMPLACED_CNTR	03/21/80
2703	10062700	MD836	MD836	EMPLACED_CNTR	07/27/78

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2704	10062701	MD836	MD836	EMPLACED_CNTR	07/27/78
2705	10062717	MD836	MD836	EMPLACED_CNTR	07/27/78
2706	10062718	MD836	MD836	EMPLACED_CNTR	07/27/78
2707	10062854	MD836	MD836	EMPLACED_CNTR	12/05/79
2708	10062855	MD836	MD836	EMPLACED_CNTR	03/21/80
2709	10062856	MD836	MD836	EMPLACED_CNTR	12/05/79
2710	10062858	MD836	MD836	EMPLACED_CNTR	03/21/80
2711	10062862	MD836	MD836	EMPLACED_CNTR	09/28/79
2712	10062870	MD836	MD836	EMPLACED_CNTR	03/21/80
2713	10062871	MD836	MD836	EMPLACED_CNTR	09/28/79
2714	10062877	MD836	MD836	EMPLACED_CNTR	03/21/80
2715	10062878	MD836	MD836	EMPLACED_CNTR	10/18/79
2716	10062879	MD836	MD836	EMPLACED_CNTR	09/28/79
2717	10062881	MD836	MD836	EMPLACED_CNTR	09/28/79
2718	10062885	MD836	MD836	EMPLACED_CNTR	03/21/80
2719	10062886	MD836	MD836	EMPLACED_CNTR	03/21/80
2720	10062887	MD836	MD836	EMPLACED_CNTR	12/05/79
2721	10062889	MD836	MD836	EMPLACED_CNTR	12/05/79
2722	10062890	MD836	MD836	EMPLACED_CNTR	09/28/79
2723	10113475	MD836	MD836	EMPLACED_CNTR	04/04/75
2724	10113476	MD836	MD836	EMPLACED_CNTR	04/04/75
2725	10113477	MD836	MD836	EMPLACED_CNTR	04/04/75
2726	10113478	MD836	MD836	EMPLACED_CNTR	04/04/75
2727	10113479	MD836	MD836	EMPLACED_CNTR	04/04/75
2728	10113480	MD836	MD836	EMPLACED_CNTR	04/04/75
2729	10113483	MD836	MD836	EMPLACED_CNTR	04/04/75
2730	10113484	MD836	MD836	EMPLACED_CNTR	04/04/75
2731	10113504	MD836	MD836	EMPLACED_CNTR	04/04/75
2732	10113506	MD836	MD836	EMPLACED_CNTR	04/04/75
2733	10113840	MD836	MD836	EMPLACED_CNTR	03/07/75
2734	10113841	MD836	MD836	EMPLACED_CNTR	03/07/75
2735	10113842	MD836	MD836	EMPLACED_CNTR	03/07/75
2736	10113845	MD836	MD836	EMPLACED_CNTR	03/19/75
2737	10113846	MD836	MD836	EMPLACED_CNTR	03/19/75
2738	10113847	MD836	MD836	EMPLACED_CNTR	03/20/75
2739	10113848	MD836	MD836	EMPLACED_CNTR	03/21/75
2740	10113849	MD836	MD836	EMPLACED_CNTR	03/20/75
2741	10113851	MD836	MD836	EMPLACED_CNTR	03/19/75
2742	10113852	MD836	MD836	EMPLACED_CNTR	03/20/75
2743	10113853	MD836	MD836	EMPLACED_CNTR	03/20/75
2744	10113854	MD836	MD836	EMPLACED_CNTR	03/19/75
2745	10113855	MD836	MD836	EMPLACED_CNTR	03/20/75
2746	10113856	MD836	MD836	EMPLACED_CNTR	03/20/75
2747	10113857	MD836	MD836	EMPLACED_CNTR	03/19/75
2748	10113858	MD836	MD836	EMPLACED_CNTR	03/19/75
2749	10113862	MD836	MD836	EMPLACED_CNTR	03/19/75
2750	10113877	MD836	MD836	EMPLACED_CNTR	03/19/75
2751	10116422	MD836	MD836	EMPLACED_CNTR	04/04/75
2752	10116424	MD836	MD836	EMPLACED_CNTR	04/04/75
2753	10116426	MD836	MD836	EMPLACED_CNTR	04/04/75
2754	10116438	MD836	MD836	EMPLACED_CNTR	03/19/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2755	10116525	MD836	MD836	EMPLACED_CNTR	04/04/75
2756	10116526	MD836	MD836	EMPLACED_CNTR	04/04/75
2757	10116544	MD836	MD836	EMPLACED_CNTR	02/19/75
2758	10116545	MD836	MD836	EMPLACED_CNTR	02/25/75
2759	10116546	MD836	MD836	EMPLACED_CNTR	02/19/75
2760	10116547	MD836	MD836	EMPLACED_CNTR	02/25/75
2761	10116550	MD836	MD836	EMPLACED_CNTR	02/25/75
2762	10116551	MD836	MD836	EMPLACED_CNTR	02/21/75
2763	10116552	MD836	MD836	EMPLACED_CNTR	02/19/75
2764	10116553	MD836	MD836	EMPLACED_CNTR	02/19/75
2765	10116554	MD836	MD836	EMPLACED_CNTR	02/19/75
2766	10116555	MD836	MD836	EMPLACED_CNTR	02/25/75
2767	10116556	MD836	MD836	EMPLACED_CNTR	02/25/75
2768	10116557	MD836	MD836	EMPLACED_CNTR	02/19/75
2769	10116558	MD836	MD836	EMPLACED_CNTR	02/20/75
2770	10116559	MD836	MD836	EMPLACED_CNTR	02/25/75
2771	10116560	MD836	MD836	EMPLACED_CNTR	02/21/75
2772	10116561	MD836	MD836	EMPLACED_CNTR	02/21/75
2773	10116562	MD836	MD836	EMPLACED_CNTR	02/19/75
2774	10116563	MD836	MD836	EMPLACED_CNTR	12/20/74
2775	10116564	MD836	MD836	EMPLACED_CNTR	11/25/74
2776	10116565	MD836	MD836	EMPLACED_CNTR	02/20/75
2777	10116566	MD836	MD836	EMPLACED_CNTR	02/20/75
2778	10116567	MD836	MD836	EMPLACED_CNTR	02/19/75
2779	10116568	MD836	MD836	EMPLACED_CNTR	02/25/75
2780	10116569	MD836	MD836	EMPLACED_CNTR	02/25/75
2781	10116570	MD836	MD836	EMPLACED_CNTR	02/20/75
2782	10116593	MD836	MD836	EMPLACED_CNTR	01/09/75
2783	10116596	MD836	MD836	EMPLACED_CNTR	02/10/75
2784	10116598	MD836	MD836	EMPLACED_CNTR	02/17/75
2785	10116830	MD836	MD836	EMPLACED_CNTR	02/21/75
2786	10116831	MD836	MD836	EMPLACED_CNTR	02/20/75
2787	10116832	MD836	MD836	EMPLACED_CNTR	02/20/75
2788	10116834	MD836	MD836	EMPLACED_CNTR	02/25/75
2789	10116835	MD836	MD836	EMPLACED_CNTR	02/21/75
2790	10116836	MD836	MD836	EMPLACED_CNTR	02/25/75
2791	10116837	MD836	MD836	EMPLACED_CNTR	02/25/75
2792	10116838	MD836	MD836	EMPLACED_CNTR	02/25/75
2793	10116839	MD836	MD836	EMPLACED_CNTR	02/21/75
2794	10116840	MD836	MD836	EMPLACED_CNTR	02/25/75
2795	10116841	MD836	MD836	EMPLACED_CNTR	02/20/75
2796	10116922	MD836	MD836	EMPLACED_CNTR	12/09/74
2797	10116923	MD836	MD836	EMPLACED_CNTR	12/18/74
2798	10116925	MD836	MD836	EMPLACED_CNTR	12/19/74
2799	10116927	MD836	MD836	EMPLACED_CNTR	11/26/74
2800	10116928	MD836	MD836	EMPLACED_CNTR	12/18/74
2801	10116938	MD836	MD836	EMPLACED_CNTR	12/18/74
2802	10116939	MD836	MD836	EMPLACED_CNTR	12/09/74
2803	10116940	MD836	MD836	EMPLACED_CNTR	12/09/74
2804	10116941	MD836	MD836	EMPLACED_CNTR	12/19/74
2805	10117022	MD836	MD836	EMPLACED_CNTR	12/04/74

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2806	10117023	MD836	MD836	EMPLACED_CNTR	02/10/75
2807	10117025	MD836	MD836	EMPLACED_CNTR	12/04/74
2808	10117028	MD836	MD836	EMPLACED_CNTR	02/12/75
2809	10117030	MD836	MD836	EMPLACED_CNTR	02/17/75
2810	10117039	MD836	MD836	EMPLACED_CNTR	12/02/74
2811	10117040	MD836	MD836	EMPLACED_CNTR	02/18/75
2812	10117042	MD836	MD836	EMPLACED_CNTR	02/10/75
2813	10117043	MD836	MD836	EMPLACED_CNTR	02/17/75
2814	10117044	MD836	MD836	EMPLACED_CNTR	02/18/75
2815	10117058	MD836	MD836	EMPLACED_CNTR	12/04/74
2816	10117514	MD836	MD836	EMPLACED_CNTR	02/20/75
2817	10117549	MD836	MD836	EMPLACED_CNTR	12/09/74
2818	10117556	MD836	MD836	EMPLACED_CNTR	03/03/75
2819	10117557	MD836	MD836	EMPLACED_CNTR	03/03/75
2820	10117559	MD836	MD836	EMPLACED_CNTR	12/19/74
2821	10117560	MD836	MD836	EMPLACED_CNTR	12/26/74
2822	10117562	MD836	MD836	EMPLACED_CNTR	12/20/74
2823	10117563	MD836	MD836	EMPLACED_CNTR	03/03/75
2824	10118109	MD836	MD836	EMPLACED_CNTR	03/07/75
2825	10118110	MD836	MD836	EMPLACED_CNTR	03/07/75
2826	10118111	MD836	MD836	EMPLACED_CNTR	03/03/75
2827	10118112	MD836	MD836	EMPLACED_CNTR	03/07/75
2828	10118113	MD836	MD836	EMPLACED_CNTR	03/07/75
2829	10118114	MD836	MD836	EMPLACED_CNTR	03/07/75
2830	10118124	MD836	MD836	EMPLACED_CNTR	03/07/75
2831	10118125	MD836	MD836	EMPLACED_CNTR	03/03/75
2832	10118126	MD836	MD836	EMPLACED_CNTR	03/07/75
2833	10118127	MD836	MD836	EMPLACED_CNTR	03/07/75
2834	10118128	MD836	MD836	EMPLACED_CNTR	03/07/75
2835	10118129	MD836	MD836	EMPLACED_CNTR	03/07/75
2836	10118130	MD836	MD836	EMPLACED_CNTR	03/07/75
2837	10118131	MD836	MD836	EMPLACED_CNTR	03/03/75
2838	10118132	MD836	MD836	EMPLACED_CNTR	03/07/75
2839	10118133	MD836	MD836	EMPLACED_CNTR	03/07/75
2840	10118134	MD836	MD836	EMPLACED_CNTR	03/07/75
2841	10118135	MD836	MD836	EMPLACED_CNTR	03/07/75
2842	10118136	MD836	MD836	EMPLACED_CNTR	03/07/75
2843	10118137	MD836	MD836	EMPLACED_CNTR	03/07/75
2844	10118138	MD836	MD836	EMPLACED_CNTR	03/07/75
2845	10118139	MD836	MD836	EMPLACED_CNTR	03/07/75
2846	10118140	MD836	MD836	EMPLACED_CNTR	03/03/75
2847	10118141	MD836	MD836	EMPLACED_CNTR	03/07/75
2848	10118142	MD836	MD836	EMPLACED_CNTR	03/07/75
2849	10118144	MD836	MD836	EMPLACED_CNTR	03/07/75
2850	10118145	MD836	MD836	EMPLACED_CNTR	03/07/75
2851	10118146	MD836	MD836	EMPLACED_CNTR	03/07/75
2852	10118147	MD836	MD836	EMPLACED_CNTR	02/18/75
2853	10118148	MD836	MD836	EMPLACED_CNTR	02/20/75
2854	10118149	MD836	MD836	EMPLACED_CNTR	02/19/75
2855	10118150	MD836	MD836	EMPLACED_CNTR	02/20/75
2856	10118151	MD836	MD836	EMPLACED_CNTR	02/25/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2857	10118152	MD836	MD836	EMPLACED_CNTR	02/21/75
2858	10118153	MD836	MD836	EMPLACED_CNTR	02/19/75
2859	10118177	MD836	MD836	EMPLACED_CNTR	02/18/75
2860	10118184	MD836	MD836	EMPLACED_CNTR	02/12/75
2861	10118197	MD836	MD836	EMPLACED_CNTR	03/12/75
2862	10118198	MD836	MD836	EMPLACED_CNTR	03/12/75
2863	10118199	MD836	MD836	EMPLACED_CNTR	02/20/75
2864	10118200	MD836	MD836	EMPLACED_CNTR	02/20/75
2865	10118201	MD836	MD836	EMPLACED_CNTR	02/20/75
2866	10118202	MD836	MD836	EMPLACED_CNTR	03/07/75
2867	10118203	MD836	MD836	EMPLACED_CNTR	03/07/75
2868	10118220	MD836	MD836	EMPLACED_CNTR	04/03/75
2869	10118221	MD836	MD836	EMPLACED_CNTR	04/04/75
2870	10118222	MD836	MD836	EMPLACED_CNTR	04/03/75
2871	10118223	MD836	MD836	EMPLACED_CNTR	04/04/75
2872	10118224	MD836	MD836	EMPLACED_CNTR	04/04/75
2873	10118226	MD836	MD836	EMPLACED_CNTR	04/04/75
2874	10118227	MD836	MD836	EMPLACED_CNTR	04/04/75
2875	10118234	MD836	MD836	EMPLACED_CNTR	04/03/75
2876	10118238	MD836	MD836	EMPLACED_CNTR	04/03/75
2877	10118240	MD836	MD836	EMPLACED_CNTR	04/03/75
2878	10118246	MD836	MD836	EMPLACED_CNTR	03/03/75
2879	10118253	MD836	MD836	EMPLACED_CNTR	02/10/75
2880	10118259	MD836	MD836	EMPLACED_CNTR	02/10/75
2881	10118260	MD836	MD836	EMPLACED_CNTR	12/04/74
2882	10118261	MD836	MD836	EMPLACED_CNTR	02/12/75
2883	10118262	MD836	MD836	EMPLACED_CNTR	11/25/74
2884	10118264	MD836	MD836	EMPLACED_CNTR	12/19/74
2885	10118265	MD836	MD836	EMPLACED_CNTR	11/26/74
2886	10118267	MD836	MD836	EMPLACED_CNTR	11/26/74
2887	10118269	MD836	MD836	EMPLACED_CNTR	12/09/74
2888	10118272	MD836	MD836	EMPLACED_CNTR	03/03/75
2889	10118280	MD836	MD836	EMPLACED_CNTR	12/20/74
2890	10118281	MD836	MD836	EMPLACED_CNTR	12/09/74
2891	10118282	MD836	MD836	EMPLACED_CNTR	12/09/74
2892	10118283	MD836	MD836	EMPLACED_CNTR	03/03/75
2893	10118285	MD836	MD836	EMPLACED_CNTR	12/27/74
2894	10118287	MD836	MD836	EMPLACED_CNTR	03/03/75
2895	10118292	MD836	MD836	EMPLACED_CNTR	02/21/75
2896	10118294	MD836	MD836	EMPLACED_CNTR	02/20/75
2897	10118298	MD836	MD836	EMPLACED_CNTR	03/03/75
2898	10118299	MD836	MD836	EMPLACED_CNTR	12/27/74
2899	10118300	MD836	MD836	EMPLACED_CNTR	12/20/74
2900	10118301	MD836	MD836	EMPLACED_CNTR	12/20/74
2901	10118302	MD836	MD836	EMPLACED_CNTR	12/20/74
2902	10118303	MD836	MD836	EMPLACED_CNTR	12/09/74
2903	10118304	MD836	MD836	EMPLACED_CNTR	12/19/74
2904	10118305	MD836	MD836	EMPLACED_CNTR	12/20/74
2905	10118306	MD836	MD836	EMPLACED_CNTR	11/22/74
2906	10118307	MD836	MD836	EMPLACED_CNTR	02/27/75
2907	10118308	MD836	MD836	EMPLACED_CNTR	02/25/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2908	10118310	MD836	MD836	EMPLACED_CNTR	02/27/75
2909	10118311	MD836	MD836	EMPLACED_CNTR	02/27/75
2910	10118312	MD836	MD836	EMPLACED_CNTR	03/03/75
2911	10118313	MD836	MD836	EMPLACED_CNTR	02/25/75
2912	10118314	MD836	MD836	EMPLACED_CNTR	03/03/75
2913	10118315	MD836	MD836	EMPLACED_CNTR	03/03/75
2914	10118316	MD836	MD836	EMPLACED_CNTR	03/03/75
2915	10118317	MD836	MD836	EMPLACED_CNTR	03/03/75
2916	10118318	MD836	MD836	EMPLACED_CNTR	02/27/75
2917	10118319	MD836	MD836	EMPLACED_CNTR	02/25/75
2918	10118320	MD836	MD836	EMPLACED_CNTR	02/27/75
2919	10118321	MD836	MD836	EMPLACED_CNTR	02/25/75
2920	10118908	MD836	MD836	EMPLACED_CNTR	02/21/75
2921	10118940	MD836	MD836	EMPLACED_CNTR	04/03/75
2922	10118941	MD836	MD836	EMPLACED_CNTR	04/03/75
2923	10119488	MD836	MD836	EMPLACED_CNTR	12/04/74
2924	10119489	MD836	MD836	EMPLACED_CNTR	12/03/74
2925	10119491	MD836	MD836	EMPLACED_CNTR	12/09/74
2926	10119512	MD836	MD836	EMPLACED_CNTR	11/25/74
2927	10119513	MD836	MD836	EMPLACED_CNTR	12/27/74
2928	10119519	MD836	MD836	EMPLACED_CNTR	12/27/74
2929	10119526	MD836	MD836	EMPLACED_CNTR	12/04/74
2930	10119532	MD836	MD836	EMPLACED_CNTR	04/04/75
2931	10119534	MD836	MD836	EMPLACED_CNTR	03/21/75
2932	10119535	MD836	MD836	EMPLACED_CNTR	03/21/75
2933	10119536	MD836	MD836	EMPLACED_CNTR	03/26/75
2934	10119537	MD836	MD836	EMPLACED_CNTR	03/21/75
2935	10119538	MD836	MD836	EMPLACED_CNTR	03/25/75
2936	10119539	MD836	MD836	EMPLACED_CNTR	03/25/75
2937	10119540	MD836	MD836	EMPLACED_CNTR	03/24/75
2938	10119541	MD836	MD836	EMPLACED_CNTR	03/25/75
2939	10119548	MD836	MD836	EMPLACED_CNTR	04/03/75
2940	10119557	MD836	MD836	EMPLACED_CNTR	04/03/75
2941	10119562	MD836	MD836	EMPLACED_CNTR	04/03/75
2942	10119578	MD836	MD836	EMPLACED_CNTR	04/03/75
2943	10119579	MD836	MD836	EMPLACED_CNTR	04/04/75
2944	10119580	MD836	MD836	EMPLACED_CNTR	04/03/75
2945	10119581	MD836	MD836	EMPLACED_CNTR	04/03/75
2946	10119582	MD836	MD836	EMPLACED_CNTR	04/04/75
2947	10119584	MD836	MD836	EMPLACED_CNTR	04/04/75
2948	10119588	MD836	MD836	EMPLACED_CNTR	04/04/75
2949	10119601	MD836	MD836	EMPLACED_CNTR	03/12/75
2950	10119602	MD836	MD836	EMPLACED_CNTR	03/10/75
2951	10119603	MD836	MD836	EMPLACED_CNTR	03/19/75
2952	10119606	MD836	MD836	EMPLACED_CNTR	03/10/75
2953	10119609	MD836	MD836	EMPLACED_CNTR	03/19/75
2954	10119610	MD836	MD836	EMPLACED_CNTR	03/10/75
2955	10119611	MD836	MD836	EMPLACED_CNTR	03/19/75
2956	10119635	MD836	MD836	EMPLACED_CNTR	04/03/75
2957	10119637	MD836	MD836	EMPLACED_CNTR	03/21/75
2958	10119640	MD836	MD836	EMPLACED_CNTR	03/20/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
2959	10119642	MD836	MD836	EMPLACED_CNTR	04/03/75
2960	10119654	MD836	MD836	EMPLACED_CNTR	02/12/75
2961	10119655	MD836	MD836	EMPLACED_CNTR	04/04/75
2962	10119662	MD836	MD836	EMPLACED_CNTR	04/04/75
2963	10119665	MD836	MD836	EMPLACED_CNTR	04/04/75
2964	10119672	MD836	MD836	EMPLACED_CNTR	02/12/75
2965	10119673	MD836	MD836	EMPLACED_CNTR	03/20/75
2966	10119678	MD836	MD836	EMPLACED_CNTR	04/21/75
2967	10119679	MD836	MD836	EMPLACED_CNTR	04/21/75
2968	10119680	MD836	MD836	EMPLACED_CNTR	04/21/75
2969	10119681	MD836	MD836	EMPLACED_CNTR	04/21/75
2970	10119682	MD836	MD836	EMPLACED_CNTR	04/21/75
2971	10119694	MD836	MD836	EMPLACED_CNTR	04/21/75
2972	10119696	MD836	MD836	EMPLACED_CNTR	04/21/75
2973	10119699	MD836	MD836	EMPLACED_CNTR	04/14/75
2974	10119700	MD836	MD836	EMPLACED_CNTR	04/21/75
2975	10119701	MD836	MD836	EMPLACED_CNTR	04/02/75
2976	10119707	MD836	MD836	EMPLACED_CNTR	04/21/75
2977	10119709	MD836	MD836	EMPLACED_CNTR	04/21/75
2978	10119717	MD836	MD836	EMPLACED_CNTR	04/02/75
2979	10119731	MD836	MD836	EMPLACED_CNTR	03/26/75
2980	10119748	MD836	MD836	EMPLACED_CNTR	03/12/75
2981	10119762	MD836	MD836	EMPLACED_CNTR	03/27/75
2982	10119763	MD836	MD836	EMPLACED_CNTR	03/26/75
2983	10119764	MD836	MD836	EMPLACED_CNTR	03/26/75
2984	10119765	MD836	MD836	EMPLACED_CNTR	03/26/75
2985	10119766	MD836	MD836	EMPLACED_CNTR	03/26/75
2986	10119767	MD836	MD836	EMPLACED_CNTR	03/27/75
2987	10119768	MD836	MD836	EMPLACED_CNTR	03/27/75
2988	10119769	MD836	MD836	EMPLACED_CNTR	03/27/75
2989	10119770	MD836	MD836	EMPLACED_CNTR	03/27/75
2990	10119771	MD836	MD836	EMPLACED_CNTR	03/27/75
2991	10119772	MD836	MD836	EMPLACED_CNTR	03/26/75
2992	10119773	MD836	MD836	EMPLACED_CNTR	03/26/75
2993	10119774	MD836	MD836	EMPLACED_CNTR	03/26/75
2994	10119775	MD836	MD836	EMPLACED_CNTR	03/27/75
2995	10119781	MD836	MD836	EMPLACED_CNTR	03/12/75
2996	10119782	MD836	MD836	EMPLACED_CNTR	03/10/75
2997	10119783	MD836	MD836	EMPLACED_CNTR	03/12/75
2998	10119786	MD836	MD836	EMPLACED_CNTR	03/07/75
2999	10119787	MD836	MD836	EMPLACED_CNTR	03/20/75
3000	10119789	MD836	MD836	EMPLACED_CNTR	03/20/75
3001	10119790	MD836	MD836	EMPLACED_CNTR	02/21/75
3002	10119796	MD836	MD836	EMPLACED_CNTR	04/03/75
3003	10119798	MD836	MD836	EMPLACED_CNTR	03/20/75
3004	10119799	MD836	MD836	EMPLACED_CNTR	03/20/75
3005	10119801	MD836	MD836	EMPLACED_CNTR	03/21/75
3006	10119822	MD836	MD836	EMPLACED_CNTR	03/19/75
3007	10119825	MD836	MD836	EMPLACED_CNTR	03/19/75
3008	10119826	MD836	MD836	EMPLACED_CNTR	03/19/75
3009	10119827	MD836	MD836	EMPLACED_CNTR	03/12/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3010	10119828	MD836	MD836	EMPLACED_CNTR	03/19/75
3011	10119829	MD836	MD836	EMPLACED_CNTR	03/12/75
3012	10119830	MD836	MD836	EMPLACED_CNTR	03/19/75
3013	10119831	MD836	MD836	EMPLACED_CNTR	03/19/75
3014	10119832	MD836	MD836	EMPLACED_CNTR	03/19/75
3015	10119833	MD836	MD836	EMPLACED_CNTR	03/19/75
3016	10119855	MD836	MD836	EMPLACED_CNTR	11/25/74
3017	10119856	MD836	MD836	EMPLACED_CNTR	12/04/74
3018	10119857	MD836	MD836	EMPLACED_CNTR	12/02/74
3019	10119858	MD836	MD836	EMPLACED_CNTR	02/12/75
3020	10119859	MD836	MD836	EMPLACED_CNTR	12/03/74
3021	10119860	MD836	MD836	EMPLACED_CNTR	01/09/75
3022	10119862	MD836	MD836	EMPLACED_CNTR	11/25/74
3023	10119863	MD836	MD836	EMPLACED_CNTR	12/02/74
3024	10119864	MD836	MD836	EMPLACED_CNTR	12/02/74
3025	10119865	MD836	MD836	EMPLACED_CNTR	12/02/74
3026	10119866	MD836	MD836	EMPLACED_CNTR	02/18/75
3027	10119867	MD836	MD836	EMPLACED_CNTR	02/12/75
3028	10119868	MD836	MD836	EMPLACED_CNTR	12/03/74
3029	10119869	MD836	MD836	EMPLACED_CNTR	02/18/75
3030	10119871	MD836	MD836	EMPLACED_CNTR	01/10/75
3031	10119872	MD836	MD836	EMPLACED_CNTR	02/17/75
3032	10119873	MD836	MD836	EMPLACED_CNTR	02/17/75
3033	10119874	MD836	MD836	EMPLACED_CNTR	12/03/74
3034	10119875	MD836	MD836	EMPLACED_CNTR	01/09/75
3035	10119888	MD836	MD836	EMPLACED_CNTR	11/25/74
3036	10119929	MD836	MD836	EMPLACED_CNTR	04/04/75
3037	10119968	MD836	MD836	EMPLACED_CNTR	04/03/75
3038	10119970	MD836	MD836	EMPLACED_CNTR	04/03/75
3039	10119972	MD836	MD836	EMPLACED_CNTR	03/21/75
3040	10119973	MD836	MD836	EMPLACED_CNTR	03/20/75
3041	10119978	MD836	MD836	EMPLACED_CNTR	04/04/75
3042	10120004	MD836	MD836	EMPLACED_CNTR	04/03/75
3043	10120006	MD836	MD836	EMPLACED_CNTR	04/03/75
3044	10120008	MD836	MD836	EMPLACED_CNTR	04/03/75
3045	10120048	MD836	MD836	EMPLACED_CNTR	04/04/75
3046	10120053	MD836	MD836	EMPLACED_CNTR	02/17/75
3047	10120054	MD836	MD836	EMPLACED_CNTR	11/22/74
3048	10120055	MD836	MD836	EMPLACED_CNTR	02/17/75
3049	10120093	MD836	MD836	EMPLACED_CNTR	03/12/75
3050	10120094	MD836	MD836	EMPLACED_CNTR	03/19/75
3051	10120099	MD836	MD836	EMPLACED_CNTR	02/12/75
3052	10120100	MD836	MD836	EMPLACED_CNTR	02/12/75
3053	10120101	MD836	MD836	EMPLACED_CNTR	03/03/75
3054	10120102	MD836	MD836	EMPLACED_CNTR	03/03/75
3055	10120103	MD836	MD836	EMPLACED_CNTR	02/12/75
3056	10120104	MD836	MD836	EMPLACED_CNTR	12/02/74
3057	10120105	MD836	MD836	EMPLACED_CNTR	12/02/74
3058	10120106	MD836	MD836	EMPLACED_CNTR	01/10/75
3059	10120107	MD836	MD836	EMPLACED_CNTR	01/09/75
3060	10120108	MD836	MD836	EMPLACED_CNTR	12/02/74

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3061	10120109	MD836	MD836	EMPLACED_CNTR	02/12/75
3062	10120110	MD836	MD836	EMPLACED_CNTR	02/12/75
3063	10120111	MD836	MD836	EMPLACED_CNTR	12/03/74
3064	10120112	MD836	MD836	EMPLACED_CNTR	02/17/75
3065	10120113	MD836	MD836	EMPLACED_CNTR	02/10/75
3066	10120114	MD836	MD836	EMPLACED_CNTR	01/09/75
3067	10120115	MD836	MD836	EMPLACED_CNTR	02/12/75
3068	10120116	MD836	MD836	EMPLACED_CNTR	02/12/75
3069	10120117	MD836	MD836	EMPLACED_CNTR	11/22/74
3070	10120118	MD836	MD836	EMPLACED_CNTR	02/17/75
3071	10120123	MD836	MD836	EMPLACED_CNTR	12/09/74
3072	10120124	MD836	MD836	EMPLACED_CNTR	12/09/74
3073	10120132	MD836	MD836	EMPLACED_CNTR	12/09/74
3074	10120136	MD836	MD836	EMPLACED_CNTR	02/20/75
3075	10120137	MD836	MD836	EMPLACED_CNTR	12/27/74
3076	10120138	MD836	MD836	EMPLACED_CNTR	02/27/75
3077	10120139	MD836	MD836	EMPLACED_CNTR	12/19/74
3078	10120140	MD836	MD836	EMPLACED_CNTR	02/27/75
3079	10120141	MD836	MD836	EMPLACED_CNTR	12/09/74
3080	10120144	MD836	MD836	EMPLACED_CNTR	02/27/75
3081	10120145	MD836	MD836	EMPLACED_CNTR	02/25/75
3082	10120146	MD836	MD836	EMPLACED_CNTR	12/09/74
3083	10120164	MD836	MD836	EMPLACED_CNTR	04/03/75
3084	10120165	MD836	MD836	EMPLACED_CNTR	04/03/75
3085	10120166	MD836	MD836	EMPLACED_CNTR	04/03/75
3086	10120167	MD836	MD836	EMPLACED_CNTR	04/03/75
3087	10120168	MD836	MD836	EMPLACED_CNTR	04/03/75
3088	10120169	MD836	MD836	EMPLACED_CNTR	04/03/75
3089	10120179	MD836	MD836	EMPLACED_CNTR	03/07/75
3090	10120180	MD836	MD836	EMPLACED_CNTR	03/12/75
3091	10120181	MD836	MD836	EMPLACED_CNTR	03/12/75
3092	10120182	MD836	MD836	EMPLACED_CNTR	03/12/75
3093	10120183	MD836	MD836	EMPLACED_CNTR	03/12/75
3094	10120184	MD836	MD836	EMPLACED_CNTR	03/12/75
3095	10120185	MD836	MD836	EMPLACED_CNTR	03/12/75
3096	10120186	MD836	MD836	EMPLACED_CNTR	03/12/75
3097	10120190	MD836	MD836	EMPLACED_CNTR	12/02/74
3098	10120191	MD836	MD836	EMPLACED_CNTR	12/02/74
3099	10120202	MD836	MD836	EMPLACED_CNTR	11/22/74
3100	10120208	MD836	MD836	EMPLACED_CNTR	12/20/74
3101	10120209	MD836	MD836	EMPLACED_CNTR	11/25/74
3102	10120211	MD836	MD836	EMPLACED_CNTR	11/26/74
3103	10120215	MD836	MD836	EMPLACED_CNTR	12/09/74
3104	10120217	MD836	MD836	EMPLACED_CNTR	11/26/74
3105	10120218	MD836	MD836	EMPLACED_CNTR	11/25/74
3106	10120219	MD836	MD836	EMPLACED_CNTR	11/26/74
3107	10120225	MD836	MD836	EMPLACED_CNTR	11/25/74
3108	10120226	MD836	MD836	EMPLACED_CNTR	11/25/74
3109	10120235	MD836	MD836	EMPLACED_CNTR	11/25/74
3110	10120374	MD836	MD836	EMPLACED_CNTR	03/10/75
3111	10120375	MD836	MD836	EMPLACED_CNTR	04/04/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3112	10120376	MD836	MD836	EMPLACED_CNTR	04/04/75
3113	10120378	MD836	MD836	EMPLACED_CNTR	02/20/75
3114	10120382	MD836	MD836	EMPLACED_CNTR	12/27/74
3115	10120386	MD836	MD836	EMPLACED_CNTR	02/12/75
3116	10120387	MD836	MD836	EMPLACED_CNTR	02/18/75
3117	10120388	MD836	MD836	EMPLACED_CNTR	02/12/75
3118	10120392	MD836	MD836	EMPLACED_CNTR	02/18/75
3119	10120393	MD836	MD836	EMPLACED_CNTR	01/10/75
3120	10120395	MD836	MD836	EMPLACED_CNTR	02/18/75
3121	10120396	MD836	MD836	EMPLACED_CNTR	02/17/75
3122	10120402	MD836	MD836	EMPLACED_CNTR	02/17/75
3123	10120405	MD836	MD836	EMPLACED_CNTR	03/20/75
3124	10120408	MD836	MD836	EMPLACED_CNTR	03/21/75
3125	10120413	MD836	MD836	EMPLACED_CNTR	02/12/75
3126	10120416	MD836	MD836	EMPLACED_CNTR	12/02/74
3127	10120417	MD836	MD836	EMPLACED_CNTR	02/12/75
3128	10120422	MD836	MD836	EMPLACED_CNTR	02/10/75
3129	10120475	MD836	MD836	EMPLACED_CNTR	03/19/75
3130	10120476	MD836	MD836	EMPLACED_CNTR	02/27/75
3131	10120491	MD836	MD836	EMPLACED_CNTR	03/21/75
3132	10120494	MD836	MD836	EMPLACED_CNTR	03/12/75
3133	10120496	MD836	MD836	EMPLACED_CNTR	03/19/75
3134	10120499	MD836	MD836	EMPLACED_CNTR	03/20/75
3135	10120504	MD836	MD836	EMPLACED_CNTR	03/20/75
3136	10120506	MD836	MD836	EMPLACED_CNTR	03/21/75
3137	10120513	MD836	MD836	EMPLACED_CNTR	03/21/75
3138	10120517	MD836	MD836	EMPLACED_CNTR	03/20/75
3139	10120518	MD836	MD836	EMPLACED_CNTR	03/20/75
3140	10120519	MD836	MD836	EMPLACED_CNTR	03/21/75
3141	10120520	MD836	MD836	EMPLACED_CNTR	04/03/75
3142	10120522	MD836	MD836	EMPLACED_CNTR	03/20/75
3143	10120531	MD836	MD836	EMPLACED_CNTR	03/20/75
3144	10120579	MD836	MD836	EMPLACED_CNTR	03/20/75
3145	10120582	MD836	MD836	EMPLACED_CNTR	02/20/75
3146	10120583	MD836	MD836	EMPLACED_CNTR	12/09/74
3147	10120584	MD836	MD836	EMPLACED_CNTR	11/25/74
3148	10120592	MD836	MD836	EMPLACED_CNTR	12/20/74
3149	10120593	MD836	MD836	EMPLACED_CNTR	11/25/74
3150	10120594	MD836	MD836	EMPLACED_CNTR	11/25/74
3151	10120597	MD836	MD836	EMPLACED_CNTR	12/27/74
3152	10120599	MD836	MD836	EMPLACED_CNTR	12/27/74
3153	10120600	MD836	MD836	EMPLACED_CNTR	12/27/74
3154	10120601	MD836	MD836	EMPLACED_CNTR	12/27/74
3155	10120602	MD836	MD836	EMPLACED_CNTR	12/27/74
3156	10120626	MD836	MD836	EMPLACED_CNTR	04/04/75
3157	10120627	MD836	MD836	EMPLACED_CNTR	12/27/74
3158	10120628	MD836	MD836	EMPLACED_CNTR	03/07/75
3159	10120636	MD836	MD836	EMPLACED_CNTR	03/27/75
3160	10120637	MD836	MD836	EMPLACED_CNTR	03/27/75
3161	10120638	MD836	MD836	EMPLACED_CNTR	03/27/75
3162	10120639	MD836	MD836	EMPLACED_CNTR	03/26/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3163	10120640	MD836	MD836	EMPLACED_CNTR	03/27/75
3164	10120641	MD836	MD836	EMPLACED_CNTR	03/27/75
3165	10120642	MD836	MD836	EMPLACED_CNTR	03/27/75
3166	10120643	MD836	MD836	EMPLACED_CNTR	03/26/75
3167	10120645	MD836	MD836	EMPLACED_CNTR	03/27/75
3168	10120646	MD836	MD836	EMPLACED_CNTR	03/26/75
3169	10120647	MD836	MD836	EMPLACED_CNTR	03/27/75
3170	10120666	MD836	MD836	EMPLACED_CNTR	03/26/75
3171	10120668	MD836	MD836	EMPLACED_CNTR	03/26/75
3172	10120677	MD836	MD836	EMPLACED_CNTR	04/04/75
3173	10122890	MD836	MD836	EMPLACED_CNTR	03/25/75
3174	10122893	MD836	MD836	EMPLACED_CNTR	03/24/75
3175	10122895	MD836	MD836	EMPLACED_CNTR	03/25/75
3176	10122898	MD836	MD836	EMPLACED_CNTR	12/04/74
3177	10122903	MD836	MD836	EMPLACED_CNTR	03/21/75
3178	10122904	MD836	MD836	EMPLACED_CNTR	03/21/75
3179	10122905	MD836	MD836	EMPLACED_CNTR	03/21/75
3180	10122906	MD836	MD836	EMPLACED_CNTR	03/21/75
3181	10122907	MD836	MD836	EMPLACED_CNTR	03/21/75
3182	10122908	MD836	MD836	EMPLACED_CNTR	03/21/75
3183	10122913	MD836	MD836	EMPLACED_CNTR	03/21/75
3184	10122914	MD836	MD836	EMPLACED_CNTR	03/21/75
3185	10122915	MD836	MD836	EMPLACED_CNTR	03/21/75
3186	10122916	MD836	MD836	EMPLACED_CNTR	03/21/75
3187	10122923	MD836	MD836	EMPLACED_CNTR	04/21/75
3188	10122924	MD836	MD836	EMPLACED_CNTR	04/21/75
3189	10122925	MD836	MD836	EMPLACED_CNTR	04/21/75
3190	10122973	MD836	MD836	EMPLACED_CNTR	02/27/75
3191	10122974	MD836	MD836	EMPLACED_CNTR	02/27/75
3192	10122976	MD836	MD836	EMPLACED_CNTR	02/25/75
3193	10122979	MD836	MD836	EMPLACED_CNTR	02/27/75
3194	10122980	MD836	MD836	EMPLACED_CNTR	02/27/75
3195	10122983	MD836	MD836	EMPLACED_CNTR	02/27/75
3196	10122985	MD836	MD836	EMPLACED_CNTR	02/25/75
3197	10122986	MD836	MD836	EMPLACED_CNTR	02/27/75
3198	10122990	MD836	MD836	EMPLACED_CNTR	03/20/75
3199	10122991	MD836	MD836	EMPLACED_CNTR	03/20/75
3200	10122992	MD836	MD836	EMPLACED_CNTR	03/21/75
3201	10122998	MD836	MD836	EMPLACED_CNTR	02/19/75
3202	10122999	MD836	MD836	EMPLACED_CNTR	03/03/75
3203	10123002	MD836	MD836	EMPLACED_CNTR	03/03/75
3204	10123003	MD836	MD836	EMPLACED_CNTR	02/21/75
3205	10123005	MD836	MD836	EMPLACED_CNTR	03/03/75
3206	10123010	MD836	MD836	EMPLACED_CNTR	03/21/75
3207	10123013	MD836	MD836	EMPLACED_CNTR	03/20/75
3208	10123015	MD836	MD836	EMPLACED_CNTR	04/03/75
3209	10123018	MD836	MD836	EMPLACED_CNTR	03/20/75
3210	10123019	MD836	MD836	EMPLACED_CNTR	03/20/75
3211	10123021	MD836	MD836	EMPLACED_CNTR	04/03/75
3212	10123063	MD836	MD836	EMPLACED_CNTR	03/21/75
3213	10123065	MD836	MD836	EMPLACED_CNTR	04/07/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3214	10123067	MD836	MD836	EMPLACED_CNTR	03/21/75
3215	10123068	MD836	MD836	EMPLACED_CNTR	03/21/75
3216	10123069	MD836	MD836	EMPLACED_CNTR	03/21/75
3217	10123070	MD836	MD836	EMPLACED_CNTR	03/21/75
3218	10123071	MD836	MD836	EMPLACED_CNTR	03/21/75
3219	10123128	MD836	MD836	EMPLACED_CNTR	04/01/75
3220	10123129	MD836	MD836	EMPLACED_CNTR	04/07/75
3221	10123130	MD836	MD836	EMPLACED_CNTR	04/01/75
3222	10123131	MD836	MD836	EMPLACED_CNTR	03/27/75
3223	10123132	MD836	MD836	EMPLACED_CNTR	04/01/75
3224	10123133	MD836	MD836	EMPLACED_CNTR	04/07/75
3225	10123134	MD836	MD836	EMPLACED_CNTR	04/01/75
3226	10123135	MD836	MD836	EMPLACED_CNTR	04/07/75
3227	10123136	MD836	MD836	EMPLACED_CNTR	04/07/75
3228	10123137	MD836	MD836	EMPLACED_CNTR	04/01/75
3229	10123138	MD836	MD836	EMPLACED_CNTR	04/01/75
3230	10123139	MD836	MD836	EMPLACED_CNTR	03/25/75
3231	10123140	MD836	MD836	EMPLACED_CNTR	03/24/75
3232	10123141	MD836	MD836	EMPLACED_CNTR	03/24/75
3233	10123142	MD836	MD836	EMPLACED_CNTR	03/24/75
3234	10123143	MD836	MD836	EMPLACED_CNTR	03/25/75
3235	10123144	MD836	MD836	EMPLACED_CNTR	03/24/75
3236	10123145	MD836	MD836	EMPLACED_CNTR	03/24/75
3237	10123146	MD836	MD836	EMPLACED_CNTR	03/24/75
3238	10123148	MD836	MD836	EMPLACED_CNTR	03/24/75
3239	10123149	MD836	MD836	EMPLACED_CNTR	03/25/75
3240	10123150	MD836	MD836	EMPLACED_CNTR	03/24/75
3241	10123151	MD836	MD836	EMPLACED_CNTR	03/25/75
3242	10123152	MD836	MD836	EMPLACED_CNTR	04/23/75
3243	10123153	MD836	MD836	EMPLACED_CNTR	03/25/75
3244	10123154	MD836	MD836	EMPLACED_CNTR	04/23/75
3245	10123155	MD836	MD836	EMPLACED_CNTR	04/23/75
3246	10123156	MD836	MD836	EMPLACED_CNTR	04/21/75
3247	10123157	MD836	MD836	EMPLACED_CNTR	04/21/75
3248	10123159	MD836	MD836	EMPLACED_CNTR	04/23/75
3249	10123160	MD836	MD836	EMPLACED_CNTR	04/23/75
3250	10123161	MD836	MD836	EMPLACED_CNTR	04/23/75
3251	10123162	MD836	MD836	EMPLACED_CNTR	05/27/75
3252	10123163	MD836	MD836	EMPLACED_CNTR	05/22/75
3253	10123165	MD836	MD836	EMPLACED_CNTR	05/20/75
3254	10123166	MD836	MD836	EMPLACED_CNTR	05/20/75
3255	10123167	MD836	MD836	EMPLACED_CNTR	05/22/75
3256	10123172	MD836	MD836	EMPLACED_CNTR	03/24/75
3257	10123174	MD836	MD836	EMPLACED_CNTR	03/24/75
3258	10123206	MD836	MD836	EMPLACED_CNTR	05/22/75
3259	10123209	MD836	MD836	EMPLACED_CNTR	04/01/75
3260	10123210	MD836	MD836	EMPLACED_CNTR	04/07/75
3261	10123212	MD836	MD836	EMPLACED_CNTR	04/07/75
3262	10123213	MD836	MD836	EMPLACED_CNTR	04/02/75
3263	10123214	MD836	MD836	EMPLACED_CNTR	04/07/75
3264	10123215	MD836	MD836	EMPLACED_CNTR	04/17/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3265	10123216	MD836	MD836	EMPLACED_CNTR	04/01/75
3266	10123217	MD836	MD836	EMPLACED_CNTR	04/01/75
3267	10123218	MD836	MD836	EMPLACED_CNTR	04/01/75
3268	10123219	MD836	MD836	EMPLACED_CNTR	04/01/75
3269	10123220	MD836	MD836	EMPLACED_CNTR	04/07/75
3270	10123221	MD836	MD836	EMPLACED_CNTR	03/27/75
3271	10123222	MD836	MD836	EMPLACED_CNTR	04/07/75
3272	10123223	MD836	MD836	EMPLACED_CNTR	04/01/75
3273	10123224	MD836	MD836	EMPLACED_CNTR	04/07/75
3274	10123225	MD836	MD836	EMPLACED_CNTR	04/01/75
3275	10123226	MD836	MD836	EMPLACED_CNTR	04/07/75
3276	10123227	MD836	MD836	EMPLACED_CNTR	04/07/75
3277	10123228	MD836	MD836	EMPLACED_CNTR	04/02/75
3278	10123229	MD836	MD836	EMPLACED_CNTR	04/07/75
3279	10123230	MD836	MD836	EMPLACED_CNTR	03/25/75
3280	10123340	MD836	MD836	EMPLACED_CNTR	03/10/75
3281	10123346	MD836	MD836	EMPLACED_CNTR	03/12/75
3282	10123347	MD836	MD836	EMPLACED_CNTR	03/10/75
3283	10123348	MD836	MD836	EMPLACED_CNTR	03/07/75
3284	10123349	MD836	MD836	EMPLACED_CNTR	03/07/75
3285	10123350	MD836	MD836	EMPLACED_CNTR	03/07/75
3286	10123351	MD836	MD836	EMPLACED_CNTR	03/12/75
3287	10123356	MD836	MD836	EMPLACED_CNTR	04/23/75
3288	10123359	MD836	MD836	EMPLACED_CNTR	04/23/75
3289	10123360	MD836	MD836	EMPLACED_CNTR	04/23/75
3290	10123361	MD836	MD836	EMPLACED_CNTR	04/23/75
3291	10123362	MD836	MD836	EMPLACED_CNTR	04/23/75
3292	10123365	MD836	MD836	EMPLACED_CNTR	04/03/75
3293	10123371	MD836	MD836	EMPLACED_CNTR	03/26/75
3294	10123373	MD836	MD836	EMPLACED_CNTR	04/07/75
3295	10123374	MD836	MD836	EMPLACED_CNTR	04/07/75
3296	10123377	MD836	MD836	EMPLACED_CNTR	04/07/75
3297	10123378	MD836	MD836	EMPLACED_CNTR	03/27/75
3298	10123380	MD836	MD836	EMPLACED_CNTR	04/07/75
3299	10123385	MD836	MD836	EMPLACED_CNTR	04/02/75
3300	10123386	MD836	MD836	EMPLACED_CNTR	03/27/75
3301	10123398	MD836	MD836	EMPLACED_CNTR	04/01/75
3302	10123399	MD836	MD836	EMPLACED_CNTR	04/07/75
3303	10123401	MD836	MD836	EMPLACED_CNTR	05/22/75
3304	10123402	MD836	MD836	EMPLACED_CNTR	05/22/75
3305	10123403	MD836	MD836	EMPLACED_CNTR	05/22/75
3306	10124353	MD836	MD836	EMPLACED_CNTR	12/04/74
3307	10124354	MD836	MD836	EMPLACED_CNTR	01/09/75
3308	10124363	MD836	MD836	EMPLACED_CNTR	11/25/74
3309	10124364	MD836	MD836	EMPLACED_CNTR	12/03/74
3310	10124371	MD836	MD836	EMPLACED_CNTR	12/02/74
3311	10124372	MD836	MD836	EMPLACED_CNTR	01/09/75
3312	10124455	MD836	MD836	EMPLACED_CNTR	03/20/75
3313	10124456	MD836	MD836	EMPLACED_CNTR	03/20/75
3314	10124458	MD836	MD836	EMPLACED_CNTR	04/03/75
3315	10124459	MD836	MD836	EMPLACED_CNTR	03/20/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3316	10124460	MD836	MD836	EMPLACED_CNTR	03/20/75
3317	10124464	MD836	MD836	EMPLACED_CNTR	03/21/75
3318	10124465	MD836	MD836	EMPLACED_CNTR	03/20/75
3319	10124467	MD836	MD836	EMPLACED_CNTR	01/10/75
3320	10124468	MD836	MD836	EMPLACED_CNTR	02/12/75
3321	10124470	MD836	MD836	EMPLACED_CNTR	11/25/74
3322	10124472	MD836	MD836	EMPLACED_CNTR	02/18/75
3323	10124480	MD836	MD836	EMPLACED_CNTR	02/12/75
3324	10124484	MD836	MD836	EMPLACED_CNTR	11/22/74
3325	10124485	MD836	MD836	EMPLACED_CNTR	02/12/75
3326	10124488	MD836	MD836	EMPLACED_CNTR	11/25/74
3327	10124493	MD836	MD836	EMPLACED_CNTR	02/17/75
3328	10124494	MD836	MD836	EMPLACED_CNTR	01/10/75
3329	10124497	MD836	MD836	EMPLACED_CNTR	12/03/74
3330	10124498	MD836	MD836	EMPLACED_CNTR	02/12/75
3331	10124499	MD836	MD836	EMPLACED_CNTR	11/22/74
3332	10124500	MD836	MD836	EMPLACED_CNTR	02/12/75
3333	10124501	MD836	MD836	EMPLACED_CNTR	02/10/75
3334	10124503	MD836	MD836	EMPLACED_CNTR	03/19/75
3335	10124530	MD836	MD836	EMPLACED_CNTR	05/20/75
3336	10124531	MD836	MD836	EMPLACED_CNTR	05/29/75
3337	10124532	MD836	MD836	EMPLACED_CNTR	05/29/75
3338	10124533	MD836	MD836	EMPLACED_CNTR	05/20/75
3339	10124534	MD836	MD836	EMPLACED_CNTR	04/23/75
3340	10124535	MD836	MD836	EMPLACED_CNTR	04/23/75
3341	10124536	MD836	MD836	EMPLACED_CNTR	05/29/75
3342	10124537	MD836	MD836	EMPLACED_CNTR	05/20/75
3343	10124539	MD836	MD836	EMPLACED_CNTR	05/22/75
3344	10124540	MD836	MD836	EMPLACED_CNTR	05/20/75
3345	10124541	MD836	MD836	EMPLACED_CNTR	05/22/75
3346	10124542	MD836	MD836	EMPLACED_CNTR	04/23/75
3347	10124543	MD836	MD836	EMPLACED_CNTR	04/23/75
3348	10124544	MD836	MD836	EMPLACED_CNTR	05/22/75
3349	10124545	MD836	MD836	EMPLACED_CNTR	05/22/75
3350	10124546	MD836	MD836	EMPLACED_CNTR	05/29/75
3351	10124552	MD836	MD836	EMPLACED_CNTR	04/21/75
3352	10124606	MD836	MD836	EMPLACED_CNTR	04/08/75
3353	10124608	MD836	MD836	EMPLACED_CNTR	04/15/75
3354	10124610	MD836	MD836	EMPLACED_CNTR	04/08/75
3355	10124613	MD836	MD836	EMPLACED_CNTR	04/08/75
3356	10124616	MD836	MD836	EMPLACED_CNTR	04/08/75
3357	10124768	MD836	MD836	EMPLACED_CNTR	04/17/75
3358	10124769	MD836	MD836	EMPLACED_CNTR	04/17/75
3359	10124848	MD836	MD836	EMPLACED_CNTR	02/27/75
3360	10124849	MD836	MD836	EMPLACED_CNTR	02/27/75
3361	10124853	MD836	MD836	EMPLACED_CNTR	02/27/75
3362	10124854	MD836	MD836	EMPLACED_CNTR	02/27/75
3363	10124855	MD836	MD836	EMPLACED_CNTR	02/18/75
3364	10124857	MD836	MD836	EMPLACED_CNTR	02/20/75
3365	10124858	MD836	MD836	EMPLACED_CNTR	03/03/75
3366	10124865	MD836	MD836	EMPLACED_CNTR	02/18/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3367	10124866	MD836	MD836	EMPLACED_CNTR	03/26/75
3368	10124873	MD836	MD836	EMPLACED_CNTR	02/12/75
3369	10124877	MD836	MD836	EMPLACED_CNTR	04/02/75
3370	10124880	MD836	MD836	EMPLACED_CNTR	04/07/75
3371	10124882	MD836	MD836	EMPLACED_CNTR	03/25/75
3372	10124883	MD836	MD836	EMPLACED_CNTR	03/25/75
3373	10124884	MD836	MD836	EMPLACED_CNTR	03/25/75
3374	10124888	MD836	MD836	EMPLACED_CNTR	03/25/75
3375	10124889	MD836	MD836	EMPLACED_CNTR	03/24/75
3376	10124892	MD836	MD836	EMPLACED_CNTR	03/24/75
3377	10124896	MD836	MD836	EMPLACED_CNTR	04/23/75
3378	10124897	MD836	MD836	EMPLACED_CNTR	04/23/75
3379	10126418	MD836	MD836	EMPLACED_CNTR	03/25/75
3380	10126444	MD836	MD836	EMPLACED_CNTR	03/26/75
3381	10126448	MD836	MD836	EMPLACED_CNTR	04/07/75
3382	10126450	MD836	MD836	EMPLACED_CNTR	04/08/75
3383	10126458	MD836	MD836	EMPLACED_CNTR	04/07/75
3384	10126460	MD836	MD836	EMPLACED_CNTR	04/08/75
3385	10126462	MD836	MD836	EMPLACED_CNTR	04/08/75
3386	10126464	MD836	MD836	EMPLACED_CNTR	04/07/75
3387	10126472	MD836	MD836	EMPLACED_CNTR	04/17/75
3388	10126562	MD836	MD836	EMPLACED_CNTR	01/09/75
3389	10126564	MD836	MD836	EMPLACED_CNTR	04/07/75
3390	10126565	MD836	MD836	EMPLACED_CNTR	04/17/75
3391	10126566	MD836	MD836	EMPLACED_CNTR	04/17/75
3392	10126567	MD836	MD836	EMPLACED_CNTR	04/07/75
3393	10126575	MD836	MD836	EMPLACED_CNTR	02/27/75
3394	10126576	MD836	MD836	EMPLACED_CNTR	02/27/75
3395	10126577	MD836	MD836	EMPLACED_CNTR	04/07/75
3396	10126580	MD836	MD836	EMPLACED_CNTR	04/17/75
3397	10126586	MD836	MD836	EMPLACED_CNTR	02/25/75
3398	10126587	MD836	MD836	EMPLACED_CNTR	12/20/74
3399	10126601	MD836	MD836	EMPLACED_CNTR	04/02/75
3400	10126777	MD836	MD836	EMPLACED_CNTR	04/17/75
3401	10126778	MD836	MD836	EMPLACED_CNTR	04/08/75
3402	10126780	MD836	MD836	EMPLACED_CNTR	04/14/75
3403	10126781	MD836	MD836	EMPLACED_CNTR	04/17/75
3404	10126783	MD836	MD836	EMPLACED_CNTR	04/08/75
3405	10126784	MD836	MD836	EMPLACED_CNTR	04/08/75
3406	10126788	MD836	MD836	EMPLACED_CNTR	04/14/75
3407	10126800	MD836	MD836	EMPLACED_CNTR	04/14/75
3408	10126811	MD836	MD836	EMPLACED_CNTR	04/14/75
3409	10126813	MD836	MD836	EMPLACED_CNTR	04/14/75
3410	10126816	MD836	MD836	EMPLACED_CNTR	04/08/75
3411	10126931	MD836	MD836	EMPLACED_CNTR	04/08/75
3412	10126932	MD836	MD836	EMPLACED_CNTR	04/08/75
3413	10126934	MD836	MD836	EMPLACED_CNTR	04/17/75
3414	10126935	MD836	MD836	EMPLACED_CNTR	04/08/75
3415	10126936	MD836	MD836	EMPLACED_CNTR	04/08/75
3416	10126938	MD836	MD836	EMPLACED_CNTR	04/08/75
3417	10126967	MD836	MD836	EMPLACED_CNTR	04/21/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3418	10126968	MD836	MD836	EMPLACED_CNTR	05/22/75
3419	10126971	MD836	MD836	EMPLACED_CNTR	03/21/75
3420	10126973	MD836	MD836	EMPLACED_CNTR	03/24/75
3421	10126974	MD836	MD836	EMPLACED_CNTR	03/25/75
3422	10126976	MD836	MD836	EMPLACED_CNTR	03/21/75
3423	10126980	MD836	MD836	EMPLACED_CNTR	03/24/75
3424	10127012	MD836	MD836	EMPLACED_CNTR	04/08/75
3425	10127020	MD836	MD836	EMPLACED_CNTR	04/01/75
3426	10127038	MD836	MD836	EMPLACED_CNTR	04/14/75
3427	10127736	MD836	MD836	EMPLACED_CNTR	11/25/74
3428	10127738	MD836	MD836	EMPLACED_CNTR	04/01/75
3429	10127746	MD836	MD836	EMPLACED_CNTR	04/01/75
3430	10129861	MD836	MD836	EMPLACED_CNTR	06/12/75
3431	10129880	MD836	MD836	EMPLACED_CNTR	05/05/75
3432	10129887	MD836	MD836	EMPLACED_CNTR	05/08/75
3433	10129895	MD836	MD836	EMPLACED_CNTR	05/05/75
3434	10129899	MD836	MD836	EMPLACED_CNTR	05/05/75
3435	10129901	MD836	MD836	EMPLACED_CNTR	05/05/75
3436	10129906	MD836	MD836	EMPLACED_CNTR	05/05/75
3437	10129912	MD836	MD836	EMPLACED_CNTR	05/08/75
3438	10129914	MD836	MD836	EMPLACED_CNTR	05/05/75
3439	10129916	MD836	MD836	EMPLACED_CNTR	05/05/75
3440	10129917	MD836	MD836	EMPLACED_CNTR	05/08/75
3441	10129921	MD836	MD836	EMPLACED_CNTR	05/05/75
3442	10129924	MD836	MD836	EMPLACED_CNTR	05/08/75
3443	10129943	MD836	MD836	EMPLACED_CNTR	04/01/75
3444	10130110	MD836	MD836	EMPLACED_CNTR	05/05/75
3445	10130114	MD836	MD836	EMPLACED_CNTR	05/20/75
3446	10130115	MD836	MD836	EMPLACED_CNTR	05/29/75
3447	10130116	MD836	MD836	EMPLACED_CNTR	05/20/75
3448	10130117	MD836	MD836	EMPLACED_CNTR	05/05/75
3449	10130119	MD836	MD836	EMPLACED_CNTR	05/27/75
3450	10130123	MD836	MD836	EMPLACED_CNTR	05/05/75
3451	10130126	MD836	MD836	EMPLACED_CNTR	05/20/75
3452	10130127	MD836	MD836	EMPLACED_CNTR	05/20/75
3453	10130129	MD836	MD836	EMPLACED_CNTR	05/20/75
3454	10130173	MD836	MD836	EMPLACED_CNTR	04/14/75
3455	10130174	MD836	MD836	EMPLACED_CNTR	04/14/75
3456	10130176	MD836	MD836	EMPLACED_CNTR	04/14/75
3457	10130195	MD836	MD836	EMPLACED_CNTR	04/17/75
3458	10130198	MD836	MD836	EMPLACED_CNTR	04/14/75
3459	10130199	MD836	MD836	EMPLACED_CNTR	04/14/75
3460	10130200	MD836	MD836	EMPLACED_CNTR	04/14/75
3461	10130201	MD836	MD836	EMPLACED_CNTR	04/15/75
3462	10130202	MD836	MD836	EMPLACED_CNTR	04/15/75
3463	10130210	MD836	MD836	EMPLACED_CNTR	05/20/75
3464	10130214	MD836	MD836	EMPLACED_CNTR	05/20/75
3465	10130215	MD836	MD836	EMPLACED_CNTR	05/20/75
3466	10130217	MD836	MD836	EMPLACED_CNTR	05/05/75
3467	10130218	MD836	MD836	EMPLACED_CNTR	05/05/75
3468	10130222	MD836	MD836	EMPLACED_CNTR	05/20/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3469	10130261	MD836	MD836	EMPLACED_CNTR	05/22/75
3470	10130262	MD836	MD836	EMPLACED_CNTR	04/02/75
3471	10130263	MD836	MD836	EMPLACED_CNTR	05/22/75
3472	10130264	MD836	MD836	EMPLACED_CNTR	05/20/75
3473	10130274	MD836	MD836	EMPLACED_CNTR	05/08/75
3474	10130276	MD836	MD836	EMPLACED_CNTR	05/05/75
3475	10130278	MD836	MD836	EMPLACED_CNTR	05/20/75
3476	10130288	MD836	MD836	EMPLACED_CNTR	05/08/75
3477	10130289	MD836	MD836	EMPLACED_CNTR	05/05/75
3478	10130290	MD836	MD836	EMPLACED_CNTR	05/08/75
3479	10130291	MD836	MD836	EMPLACED_CNTR	05/05/75
3480	10130292	MD836	MD836	EMPLACED_CNTR	05/05/75
3481	10130293	MD836	MD836	EMPLACED_CNTR	04/02/75
3482	10130294	MD836	MD836	EMPLACED_CNTR	04/02/75
3483	10130296	MD836	MD836	EMPLACED_CNTR	04/02/75
3484	10130298	MD836	MD836	EMPLACED_CNTR	04/02/75
3485	10130299	MD836	MD836	EMPLACED_CNTR	04/02/75
3486	10130300	MD836	MD836	EMPLACED_CNTR	04/02/75
3487	10130301	MD836	MD836	EMPLACED_CNTR	04/02/75
3488	10130302	MD836	MD836	EMPLACED_CNTR	04/02/75
3489	10130305	MD836	MD836	EMPLACED_CNTR	05/05/75
3490	10130306	MD836	MD836	EMPLACED_CNTR	05/08/75
3491	10130313	MD836	MD836	EMPLACED_CNTR	05/08/75
3492	10130375	MD836	MD836	EMPLACED_CNTR	04/01/75
3493	10130377	MD836	MD836	EMPLACED_CNTR	03/27/75
3494	10130379	MD836	MD836	EMPLACED_CNTR	04/01/75
3495	10130380	MD836	MD836	EMPLACED_CNTR	04/01/75
3496	10130381	MD836	MD836	EMPLACED_CNTR	04/01/75
3497	10130382	MD836	MD836	EMPLACED_CNTR	03/27/75
3498	10130387	MD836	MD836	EMPLACED_CNTR	04/17/75
3499	10130395	MD836	MD836	EMPLACED_CNTR	04/17/75
3500	10130410	MD836	MD836	EMPLACED_CNTR	03/24/75
3501	10130415	MD836	MD836	EMPLACED_CNTR	03/24/75
3502	10130417	MD836	MD836	EMPLACED_CNTR	03/24/75
3503	10130430	MD836	MD836	EMPLACED_CNTR	05/08/75
3504	10130458	MD836	MD836	EMPLACED_CNTR	04/17/75
3505	10130464	MD836	MD836	EMPLACED_CNTR	04/07/75
3506	10130465	MD836	MD836	EMPLACED_CNTR	04/07/75
3507	10130472	MD836	MD836	EMPLACED_CNTR	04/07/75
3508	10130473	MD836	MD836	EMPLACED_CNTR	04/07/75
3509	10130476	MD836	MD836	EMPLACED_CNTR	04/17/75
3510	10130487	MD836	MD836	EMPLACED_CNTR	04/01/75
3511	10130488	MD836	MD836	EMPLACED_CNTR	02/20/75
3512	10130493	MD836	MD836	EMPLACED_CNTR	03/20/75
3513	10130498	MD836	MD836	EMPLACED_CNTR	12/09/74
3514	10130499	MD836	MD836	EMPLACED_CNTR	02/20/75
3515	10130503	MD836	MD836	EMPLACED_CNTR	03/20/75
3516	10130512	MD836	MD836	EMPLACED_CNTR	04/23/75
3517	10130513	MD836	MD836	EMPLACED_CNTR	04/23/75
3518	10130515	MD836	MD836	EMPLACED_CNTR	04/21/75
3519	10130542	MD836	MD836	EMPLACED_CNTR	03/12/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3520	10130549	MD836	MD836	EMPLACED_CNTR	03/07/75
3521	10130551	MD836	MD836	EMPLACED_CNTR	03/12/75
3522	10130556	MD836	MD836	EMPLACED_CNTR	03/12/75
3523	10130560	MD836	MD836	EMPLACED_CNTR	03/10/75
3524	10130586	MD836	MD836	EMPLACED_CNTR	04/08/75
3525	10130612	MD836	MD836	EMPLACED_CNTR	04/02/75
3526	10130616	MD836	MD836	EMPLACED_CNTR	05/27/75
3527	10130621	MD836	MD836	EMPLACED_CNTR	05/22/75
3528	10130623	MD836	MD836	EMPLACED_CNTR	05/08/75
3529	10132053	MD836	MD836	EMPLACED_CNTR	02/21/75
3530	10132065	MD836	MD836	EMPLACED_CNTR	02/19/75
3531	10132072	MD836	MD836	EMPLACED_CNTR	04/14/75
3532	10132092	MD836	MD836	EMPLACED_CNTR	04/08/75
3533	10132147	MD836	MD836	EMPLACED_CNTR	04/03/75
3534	10132177	MD836	MD836	EMPLACED_CNTR	06/16/75
3535	10132178	MD836	MD836	EMPLACED_CNTR	06/09/75
3536	10132187	MD836	MD836	EMPLACED_CNTR	04/02/75
3537	10132202	MD836	MD836	EMPLACED_CNTR	12/09/74
3538	10132210	MD836	MD836	EMPLACED_CNTR	04/03/75
3539	10132236	MD836	MD836	EMPLACED_CNTR	03/03/75
3540	10132239	MD836	MD836	EMPLACED_CNTR	03/03/75
3541	10132261	MD836	MD836	EMPLACED_CNTR	05/29/75
3542	10132262	MD836	MD836	EMPLACED_CNTR	04/14/75
3543	10132268	MD836	MD836	EMPLACED_CNTR	06/10/75
3544	10132270	MD836	MD836	EMPLACED_CNTR	05/22/75
3545	10132278	MD836	MD836	EMPLACED_CNTR	04/14/75
3546	10132311	MD836	MD836	EMPLACED_CNTR	03/26/75
3547	10132318	MD836	MD836	EMPLACED_CNTR	04/14/75
3548	10132475	MD836	MD836	EMPLACED_CNTR	06/16/75
3549	10132479	MD836	MD836	EMPLACED_CNTR	04/01/75
3550	10132481	MD836	MD836	EMPLACED_CNTR	03/27/75
3551	10132484	MD836	MD836	EMPLACED_CNTR	03/26/75
3552	10132489	MD836	MD836	EMPLACED_CNTR	03/26/75
3553	10132492	MD836	MD836	EMPLACED_CNTR	04/21/75
3554	10132504	MD836	MD836	EMPLACED_CNTR	04/07/75
3555	10132506	MD836	MD836	EMPLACED_CNTR	04/01/75
3556	10132507	MD836	MD836	EMPLACED_CNTR	03/26/75
3557	10132525	MD836	MD836	EMPLACED_CNTR	04/14/75
3558	10132527	MD836	MD836	EMPLACED_CNTR	05/13/75
3559	10132528	MD836	MD836	EMPLACED_CNTR	04/14/75
3560	10132529	MD836	MD836	EMPLACED_CNTR	05/13/75
3561	10132531	MD836	MD836	EMPLACED_CNTR	05/05/75
3562	10132532	MD836	MD836	EMPLACED_CNTR	05/08/75
3563	10132538	MD836	MD836	EMPLACED_CNTR	05/08/75
3564	10132540	MD836	MD836	EMPLACED_CNTR	05/05/75
3565	10132542	MD836	MD836	EMPLACED_CNTR	05/08/75
3566	10132545	MD836	MD836	EMPLACED_CNTR	05/08/75
3567	10132547	MD836	MD836	EMPLACED_CNTR	05/05/75
3568	10132550	MD836	MD836	EMPLACED_CNTR	05/05/75
3569	10132555	MD836	MD836	EMPLACED_CNTR	05/05/75
3570	10132558	MD836	MD836	EMPLACED_CNTR	05/13/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3571	10132583	MD836	MD836	EMPLACED_CNTR	05/13/75
3572	10132629	MD836	MD836	EMPLACED_CNTR	06/05/75
3573	10132640	MD836	MD836	EMPLACED_CNTR	06/05/75
3574	10132642	MD836	MD836	EMPLACED_CNTR	06/09/75
3575	10132644	MD836	MD836	EMPLACED_CNTR	06/09/75
3576	10132645	MD836	MD836	EMPLACED_CNTR	06/05/75
3577	10132687	MD836	MD836	EMPLACED_CNTR	04/14/75
3578	10132720	MD836	MD836	EMPLACED_CNTR	05/08/75
3579	10132722	MD836	MD836	EMPLACED_CNTR	05/05/75
3580	10132809	MD836	MD836	EMPLACED_CNTR	04/07/75
3581	10132864	MD836	MD836	EMPLACED_CNTR	05/20/75
3582	10132866	MD836	MD836	EMPLACED_CNTR	05/20/75
3583	10132874	MD836	MD836	EMPLACED_CNTR	05/29/75
3584	10132879	MD836	MD836	EMPLACED_CNTR	04/23/75
3585	10132883	MD836	MD836	EMPLACED_CNTR	03/24/75
3586	10132902	MD836	MD836	EMPLACED_CNTR	03/25/75
3587	10132941	MD836	MD836	EMPLACED_CNTR	05/22/75
3588	10132943	MD836	MD836	EMPLACED_CNTR	05/20/75
3589	10133008	MD836	MD836	EMPLACED_CNTR	04/21/75
3590	10133077	MD836	MD836	EMPLACED_CNTR	02/25/75
3591	10133079	MD836	MD836	EMPLACED_CNTR	04/17/75
3592	10133085	MD836	MD836	EMPLACED_CNTR	03/24/75
3593	10133119	MD836	MD836	EMPLACED_CNTR	03/19/75
3594	10135391	MD836	MD836	EMPLACED_CNTR	02/10/75
3595	10135412	MD836	MD836	EMPLACED_CNTR	04/17/75
3596	10135567	MD836	MD836	EMPLACED_CNTR	05/08/75
3597	10135576	MD836	MD836	EMPLACED_CNTR	06/09/75
3598	10135584	MD836	MD836	EMPLACED_CNTR	06/09/75
3599	10135586	MD836	MD836	EMPLACED_CNTR	04/23/75
3600	10135591	MD836	MD836	EMPLACED_CNTR	06/09/75
3601	10135592	MD836	MD836	EMPLACED_CNTR	06/09/75
3602	10135593	MD836	MD836	EMPLACED_CNTR	11/26/74
3603	10135596	MD836	MD836	EMPLACED_CNTR	06/10/75
3604	10135598	MD836	MD836	EMPLACED_CNTR	06/10/75
3605	10135707	MD836	MD836	EMPLACED_CNTR	12/27/74
3606	10135715	MD836	MD836	EMPLACED_CNTR	11/25/74
3607	10135718	MD836	MD836	EMPLACED_CNTR	11/25/74
3608	10135719	MD836	MD836	EMPLACED_CNTR	11/25/74
3609	10135721	MD836	MD836	EMPLACED_CNTR	12/27/74
3610	10135722	MD836	MD836	EMPLACED_CNTR	12/09/74
3611	10135750	MD836	MD836	EMPLACED_CNTR	12/09/74
3612	10135798	MD836	MD836	EMPLACED_CNTR	04/21/75
3613	10135800	MD836	MD836	EMPLACED_CNTR	03/24/75
3614	10135861	MD836	MD836	EMPLACED_CNTR	05/29/75
3615	10135868	MD836	MD836	EMPLACED_CNTR	04/23/75
3616	10135872	MD836	MD836	EMPLACED_CNTR	04/21/75
3617	10135893	MD836	MD836	EMPLACED_CNTR	05/29/75
3618	10135907	MD836	MD836	EMPLACED_CNTR	12/19/74
3619	10135909	MD836	MD836	EMPLACED_CNTR	11/22/74
3620	10135917	MD836	MD836	EMPLACED_CNTR	03/03/75
3621	10135925	MD836	MD836	EMPLACED_CNTR	03/03/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3622	10135932	MD836	MD836	EMPLACED_CNTR	03/03/75
3623	10135936	MD836	MD836	EMPLACED_CNTR	11/25/74
3624	10135940	MD836	MD836	EMPLACED_CNTR	02/10/75
3625	10135954	MD836	MD836	EMPLACED_CNTR	12/02/74
3626	10136295	MD836	MD836	EMPLACED_CNTR	12/02/74
3627	10136317	MD836	MD836	EMPLACED_CNTR	12/27/74
3628	10136970	MD836	MD836	EMPLACED_CNTR	04/17/75
3629	10137026	MD836	MD836	EMPLACED_CNTR	04/17/75
3630	10137033	MD836	MD836	EMPLACED_CNTR	04/17/75
3631	10137035	MD836	MD836	EMPLACED_CNTR	04/17/75
3632	10137072	MD836	MD836	EMPLACED_CNTR	04/02/75
3633	10137075	MD836	MD836	EMPLACED_CNTR	04/02/75
3634	10137076	MD836	MD836	EMPLACED_CNTR	04/02/75
3635	10137077	MD836	MD836	EMPLACED_CNTR	04/02/75
3636	10137079	MD836	MD836	EMPLACED_CNTR	04/14/75
3637	10137082	MD836	MD836	EMPLACED_CNTR	05/08/75
3638	10137083	MD836	MD836	EMPLACED_CNTR	06/10/75
3639	10137084	MD836	MD836	EMPLACED_CNTR	05/27/75
3640	10137085	MD836	MD836	EMPLACED_CNTR	04/02/75
3641	10137089	MD836	MD836	EMPLACED_CNTR	04/08/75
3642	10137090	MD836	MD836	EMPLACED_CNTR	05/29/75
3643	10137093	MD836	MD836	EMPLACED_CNTR	05/27/75
3644	10137095	MD836	MD836	EMPLACED_CNTR	05/22/75
3645	10137101	MD836	MD836	EMPLACED_CNTR	04/08/75
3646	10137103	MD836	MD836	EMPLACED_CNTR	03/25/75
3647	10137104	MD836	MD836	EMPLACED_CNTR	03/25/75
3648	10137105	MD836	MD836	EMPLACED_CNTR	03/27/75
3649	10137107	MD836	MD836	EMPLACED_CNTR	04/08/75
3650	10137109	MD836	MD836	EMPLACED_CNTR	04/08/75
3651	10137112	MD836	MD836	EMPLACED_CNTR	04/07/75
3652	10137114	MD836	MD836	EMPLACED_CNTR	04/01/75
3653	10137116	MD836	MD836	EMPLACED_CNTR	04/01/75
3654	10137118	MD836	MD836	EMPLACED_CNTR	03/27/75
3655	10137120	MD836	MD836	EMPLACED_CNTR	04/01/75
3656	10137123	MD836	MD836	EMPLACED_CNTR	04/08/75
3657	10137145	MD836	MD836	EMPLACED_CNTR	03/24/75
3658	10137148	MD836	MD836	EMPLACED_CNTR	04/17/75
3659	10137149	MD836	MD836	EMPLACED_CNTR	03/25/75
3660	10137165	MD836	MD836	EMPLACED_CNTR	04/14/75
3661	10137166	MD836	MD836	EMPLACED_CNTR	05/08/75
3662	10137171	MD836	MD836	EMPLACED_CNTR	04/08/75
3663	10140187	MD836	MD836	EMPLACED_CNTR	05/22/75
3664	10140189	MD836	MD836	EMPLACED_CNTR	05/20/75
3665	10140191	MD836	MD836	EMPLACED_CNTR	05/13/75
3666	10140194	MD836	MD836	EMPLACED_CNTR	05/13/75
3667	10140199	MD836	MD836	EMPLACED_CNTR	06/10/75
3668	10140205	MD836	MD836	EMPLACED_CNTR	06/10/75
3669	10140207	MD836	MD836	EMPLACED_CNTR	06/10/75
3670	10140209	MD836	MD836	EMPLACED_CNTR	06/10/75
3671	10140211	MD836	MD836	EMPLACED_CNTR	06/10/75
3672	10140215	MD836	MD836	EMPLACED_CNTR	06/10/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3673	10140216	MD836	MD836	EMPLACED_CNTR	06/10/75
3674	10140217	MD836	MD836	EMPLACED_CNTR	06/10/75
3675	10140222	MD836	MD836	EMPLACED_CNTR	06/10/75
3676	10140224	MD836	MD836	EMPLACED_CNTR	06/10/75
3677	10140225	MD836	MD836	EMPLACED_CNTR	06/10/75
3678	10140228	MD836	MD836	EMPLACED_CNTR	06/10/75
3679	10140237	MD836	MD836	EMPLACED_CNTR	06/16/75
3680	10140238	MD836	MD836	EMPLACED_CNTR	06/03/75
3681	10140239	MD836	MD836	EMPLACED_CNTR	06/05/75
3682	10140240	MD836	MD836	EMPLACED_CNTR	06/03/75
3683	10140242	MD836	MD836	EMPLACED_CNTR	06/05/75
3684	10140244	MD836	MD836	EMPLACED_CNTR	06/03/75
3685	10140245	MD836	MD836	EMPLACED_CNTR	05/29/75
3686	10140246	MD836	MD836	EMPLACED_CNTR	06/05/75
3687	10140247	MD836	MD836	EMPLACED_CNTR	06/05/75
3688	10140295	MD836	MD836	EMPLACED_CNTR	06/09/75
3689	10140298	MD836	MD836	EMPLACED_CNTR	06/09/75
3690	10140301	MD836	MD836	EMPLACED_CNTR	06/09/75
3691	10140304	MD836	MD836	EMPLACED_CNTR	06/09/75
3692	10140307	MD836	MD836	EMPLACED_CNTR	06/09/75
3693	10140310	MD836	MD836	EMPLACED_CNTR	06/09/75
3694	10140313	MD836	MD836	EMPLACED_CNTR	06/09/75
3695	10140321	MD836	MD836	EMPLACED_CNTR	06/09/75
3696	10140324	MD836	MD836	EMPLACED_CNTR	06/09/75
3697	10140339	MD836	MD836	EMPLACED_CNTR	05/13/75
3698	10140341	MD836	MD836	EMPLACED_CNTR	05/13/75
3699	10140343	MD836	MD836	EMPLACED_CNTR	05/20/75
3700	10140387	MD836	MD836	EMPLACED_CNTR	03/24/75
3701	10140392	MD836	MD836	EMPLACED_CNTR	04/02/75
3702	10140393	MD836	MD836	EMPLACED_CNTR	04/02/75
3703	10140394	MD836	MD836	EMPLACED_CNTR	04/02/75
3704	10140395	MD836	MD836	EMPLACED_CNTR	04/02/75
3705	10140398	MD836	MD836	EMPLACED_CNTR	04/02/75
3706	10140399	MD836	MD836	EMPLACED_CNTR	04/02/75
3707	10140404	MD836	MD836	EMPLACED_CNTR	04/03/75
3708	10140407	MD836	MD836	EMPLACED_CNTR	03/03/75
3709	10140408	MD836	MD836	EMPLACED_CNTR	02/27/75
3710	10140439	MD836	MD836	EMPLACED_CNTR	06/05/75
3711	10140440	MD836	MD836	EMPLACED_CNTR	06/03/75
3712	10140441	MD836	MD836	EMPLACED_CNTR	06/12/75
3713	10140443	MD836	MD836	EMPLACED_CNTR	06/12/75
3714	10140444	MD836	MD836	EMPLACED_CNTR	06/03/75
3715	10140445	MD836	MD836	EMPLACED_CNTR	06/17/75
3716	10140446	MD836	MD836	EMPLACED_CNTR	06/12/75
3717	10140448	MD836	MD836	EMPLACED_CNTR	06/16/75
3718	10140449	MD836	MD836	EMPLACED_CNTR	05/29/75
3719	10140450	MD836	MD836	EMPLACED_CNTR	06/12/75
3720	10140451	MD836	MD836	EMPLACED_CNTR	06/03/75
3721	10140452	MD836	MD836	EMPLACED_CNTR	05/13/75
3722	10140453	MD836	MD836	EMPLACED_CNTR	06/16/75
3723	10140454	MD836	MD836	EMPLACED_CNTR	06/03/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3724	10140455	MD836	MD836	EMPLACED_CNTR	06/16/75
3725	10140456	MD836	MD836	EMPLACED_CNTR	06/03/75
3726	10140458	MD836	MD836	EMPLACED_CNTR	06/03/75
3727	10140459	MD836	MD836	EMPLACED_CNTR	06/16/75
3728	10140460	MD836	MD836	EMPLACED_CNTR	06/17/75
3729	10140461	MD836	MD836	EMPLACED_CNTR	06/03/75
3730	10140463	MD836	MD836	EMPLACED_CNTR	05/13/75
3731	10140464	MD836	MD836	EMPLACED_CNTR	05/13/75
3732	10140465	MD836	MD836	EMPLACED_CNTR	05/13/75
3733	10140467	MD836	MD836	EMPLACED_CNTR	05/13/75
3734	10140469	MD836	MD836	EMPLACED_CNTR	05/20/75
3735	10140471	MD836	MD836	EMPLACED_CNTR	05/08/75
3736	10140473	MD836	MD836	EMPLACED_CNTR	05/20/75
3737	10140475	MD836	MD836	EMPLACED_CNTR	05/13/75
3738	10140477	MD836	MD836	EMPLACED_CNTR	05/20/75
3739	10140479	MD836	MD836	EMPLACED_CNTR	05/20/75
3740	10140481	MD836	MD836	EMPLACED_CNTR	05/08/75
3741	10140483	MD836	MD836	EMPLACED_CNTR	05/13/75
3742	10140485	MD836	MD836	EMPLACED_CNTR	05/13/75
3743	10140492	MD836	MD836	EMPLACED_CNTR	05/13/75
3744	10140493	MD836	MD836	EMPLACED_CNTR	05/20/75
3745	10140494	MD836	MD836	EMPLACED_CNTR	05/13/75
3746	10140495	MD836	MD836	EMPLACED_CNTR	05/08/75
3747	10140496	MD836	MD836	EMPLACED_CNTR	05/13/75
3748	10140497	MD836	MD836	EMPLACED_CNTR	05/13/75
3749	10140498	MD836	MD836	EMPLACED_CNTR	05/13/75
3750	10140499	MD836	MD836	EMPLACED_CNTR	05/20/75
3751	10140500	MD836	MD836	EMPLACED_CNTR	05/08/75
3752	10140501	MD836	MD836	EMPLACED_CNTR	05/20/75
3753	10140542	MD836	MD836	EMPLACED_CNTR	06/16/75
3754	10140543	MD836	MD836	EMPLACED_CNTR	06/12/75
3755	10140544	MD836	MD836	EMPLACED_CNTR	06/12/75
3756	10140545	MD836	MD836	EMPLACED_CNTR	06/05/75
3757	10140546	MD836	MD836	EMPLACED_CNTR	06/05/75
3758	10140547	MD836	MD836	EMPLACED_CNTR	06/10/75
3759	10140548	MD836	MD836	EMPLACED_CNTR	06/09/75
3760	10140549	MD836	MD836	EMPLACED_CNTR	06/05/75
3761	10140550	MD836	MD836	EMPLACED_CNTR	06/09/75
3762	10140551	MD836	MD836	EMPLACED_CNTR	06/09/75
3763	10140656	MD836	MD836	EMPLACED_CNTR	06/09/75
3764	10140765	MD836	MD836	EMPLACED_CNTR	05/29/75
3765	10140766	MD836	MD836	EMPLACED_CNTR	05/29/75
3766	10140768	MD836	MD836	EMPLACED_CNTR	06/03/75
3767	10140770	MD836	MD836	EMPLACED_CNTR	06/03/75
3768	10140771	MD836	MD836	EMPLACED_CNTR	06/03/75
3769	10140772	MD836	MD836	EMPLACED_CNTR	06/05/75
3770	10140773	MD836	MD836	EMPLACED_CNTR	06/05/75
3771	10140774	MD836	MD836	EMPLACED_CNTR	06/03/75
3772	10140775	MD836	MD836	EMPLACED_CNTR	06/03/75
3773	10140776	MD836	MD836	EMPLACED_CNTR	06/05/75
3774	10140777	MD836	MD836	EMPLACED_CNTR	06/05/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3775	10140779	MD836	MD836	EMPLACED_CNTR	06/03/75
3776	10140781	MD836	MD836	EMPLACED_CNTR	05/27/75
3777	10140782	MD836	MD836	EMPLACED_CNTR	06/03/75
3778	10140783	MD836	MD836	EMPLACED_CNTR	06/05/75
3779	10140784	MD836	MD836	EMPLACED_CNTR	05/27/75
3780	10140785	MD836	MD836	EMPLACED_CNTR	06/03/75
3781	10140786	MD836	MD836	EMPLACED_CNTR	06/12/75
3782	10140787	MD836	MD836	EMPLACED_CNTR	06/03/75
3783	10140789	MD836	MD836	EMPLACED_CNTR	06/03/75
3784	10140791	MD836	MD836	EMPLACED_CNTR	06/17/75
3785	10140792	MD836	MD836	EMPLACED_CNTR	06/16/75
3786	10140793	MD836	MD836	EMPLACED_CNTR	06/16/75
3787	10140794	MD836	MD836	EMPLACED_CNTR	06/16/75
3788	10140795	MD836	MD836	EMPLACED_CNTR	06/05/75
3789	10140796	MD836	MD836	EMPLACED_CNTR	06/05/75
3790	10140797	MD836	MD836	EMPLACED_CNTR	06/09/75
3791	10140798	MD836	MD836	EMPLACED_CNTR	06/03/75
3792	10140799	MD836	MD836	EMPLACED_CNTR	06/09/75
3793	10140800	MD836	MD836	EMPLACED_CNTR	06/03/75
3794	10140801	MD836	MD836	EMPLACED_CNTR	06/03/75
3795	10140802	MD836	MD836	EMPLACED_CNTR	06/03/75
3796	10140803	MD836	MD836	EMPLACED_CNTR	06/03/75
3797	10140804	MD836	MD836	EMPLACED_CNTR	06/03/75
3798	10140805	MD836	MD836	EMPLACED_CNTR	06/03/75
3799	10140806	MD836	MD836	EMPLACED_CNTR	06/05/75
3800	10140807	MD836	MD836	EMPLACED_CNTR	06/03/75
3801	10140808	MD836	MD836	EMPLACED_CNTR	06/05/75
3802	10140810	MD836	MD836	EMPLACED_CNTR	06/03/75
3803	10140816	MD836	MD836	EMPLACED_CNTR	06/12/75
3804	10140817	MD836	MD836	EMPLACED_CNTR	06/12/75
3805	10140818	MD836	MD836	EMPLACED_CNTR	06/12/75
3806	10140819	MD836	MD836	EMPLACED_CNTR	06/03/75
3807	10140820	MD836	MD836	EMPLACED_CNTR	06/03/75
3808	10140821	MD836	MD836	EMPLACED_CNTR	06/03/75
3809	10140822	MD836	MD836	EMPLACED_CNTR	06/09/75
3810	10140823	MD836	MD836	EMPLACED_CNTR	06/03/75
3811	10140824	MD836	MD836	EMPLACED_CNTR	06/03/75
3812	10140825	MD836	MD836	EMPLACED_CNTR	06/03/75
3813	10140827	MD836	MD836	EMPLACED_CNTR	06/10/75
3814	10140828	MD836	MD836	EMPLACED_CNTR	06/03/75
3815	10140829	MD836	MD836	EMPLACED_CNTR	06/03/75
3816	10140830	MD836	MD836	EMPLACED_CNTR	06/16/75
3817	10140832	MD836	MD836	EMPLACED_CNTR	06/09/75
3818	10140833	MD836	MD836	EMPLACED_CNTR	06/05/75
3819	10140835	MD836	MD836	EMPLACED_CNTR	06/05/75
3820	10140836	MD836	MD836	EMPLACED_CNTR	05/13/75
3821	10140837	MD836	MD836	EMPLACED_CNTR	06/03/75
3822	10140838	MD836	MD836	EMPLACED_CNTR	06/12/75
3823	10141072	MD836	MD836	EMPLACED_CNTR	06/05/75
3824	10141073	MD836	MD836	EMPLACED_CNTR	06/03/75
3825	10141074	MD836	MD836	EMPLACED_CNTR	06/05/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3826	10141075	MD836	MD836	EMPLACED_CNTR	06/09/75
3827	10141076	MD836	MD836	EMPLACED_CNTR	06/03/75
3828	10141077	MD836	MD836	EMPLACED_CNTR	05/29/75
3829	10141078	MD836	MD836	EMPLACED_CNTR	06/03/75
3830	10141079	MD836	MD836	EMPLACED_CNTR	06/03/75
3831	10141080	MD836	MD836	EMPLACED_CNTR	06/03/75
3832	10141081	MD836	MD836	EMPLACED_CNTR	06/03/75
3833	10141082	MD836	MD836	EMPLACED_CNTR	06/05/75
3834	10141089	MD836	MD836	EMPLACED_CNTR	05/29/75
3835	10145198	MD836	MD836	EMPLACED_CNTR	04/02/75
3836	10145215	MD836	MD836	EMPLACED_CNTR	04/01/75
3837	10145216	MD836	MD836	EMPLACED_CNTR	03/24/75
3838	10145218	MD836	MD836	EMPLACED_CNTR	04/01/75
3839	10145219	MD836	MD836	EMPLACED_CNTR	04/17/75
3840	10145220	MD836	MD836	EMPLACED_CNTR	03/25/75
3841	10145221	MD836	MD836	EMPLACED_CNTR	03/24/75
3842	10145222	MD836	MD836	EMPLACED_CNTR	04/17/75
3843	10145223	MD836	MD836	EMPLACED_CNTR	04/17/75
3844	10145224	MD836	MD836	EMPLACED_CNTR	04/01/75
3845	10145225	MD836	MD836	EMPLACED_CNTR	04/01/75
3846	10145226	MD836	MD836	EMPLACED_CNTR	04/01/75
3847	10145227	MD836	MD836	EMPLACED_CNTR	03/27/75
3848	10145228	MD836	MD836	EMPLACED_CNTR	04/01/75
3849	10145229	MD836	MD836	EMPLACED_CNTR	04/08/75
3850	10145230	MD836	MD836	EMPLACED_CNTR	04/08/75
3851	10145238	MD836	MD836	EMPLACED_CNTR	03/26/75
3852	10145240	MD836	MD836	EMPLACED_CNTR	03/26/75
3853	10145260	MD836	MD836	EMPLACED_CNTR	03/03/75
3854	10145265	MD836	MD836	EMPLACED_CNTR	02/27/75
3855	10145267	MD836	MD836	EMPLACED_CNTR	12/02/74
3856	10145268	MD836	MD836	EMPLACED_CNTR	12/04/74
3857	10145269	MD836	MD836	EMPLACED_CNTR	02/27/75
3858	10145270	MD836	MD836	EMPLACED_CNTR	02/25/75
3859	10145271	MD836	MD836	EMPLACED_CNTR	12/03/74
3860	10145277	MD836	MD836	EMPLACED_CNTR	12/03/74
3861	10145279	MD836	MD836	EMPLACED_CNTR	12/03/74
3862	10145281	MD836	MD836	EMPLACED_CNTR	12/04/74
3863	10145290	MD836	MD836	EMPLACED_CNTR	12/02/74
3864	10145643	MD836	MD836	EMPLACED_CNTR	03/25/75
3865	10145646	MD836	MD836	EMPLACED_CNTR	03/25/75
3866	10147013	MD836	MD836	EMPLACED_CNTR	04/02/75
3867	10147015	MD836	MD836	EMPLACED_CNTR	03/24/75
3868	10147016	MD836	MD836	EMPLACED_CNTR	04/14/75
3869	10147017	MD836	MD836	EMPLACED_CNTR	04/17/75
3870	10147019	MD836	MD836	EMPLACED_CNTR	03/24/75
3871	10147021	MD836	MD836	EMPLACED_CNTR	04/17/75
3872	10147023	MD836	MD836	EMPLACED_CNTR	04/14/75
3873	10147024	MD836	MD836	EMPLACED_CNTR	04/17/75
3874	10147028	MD836	MD836	EMPLACED_CNTR	04/21/75
3875	10147029	MD836	MD836	EMPLACED_CNTR	05/20/75
3876	10147031	MD836	MD836	EMPLACED_CNTR	04/21/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3877	10147032	MD836	MD836	EMPLACED_CNTR	05/29/75
3878	10147034	MD836	MD836	EMPLACED_CNTR	04/21/75
3879	10147035	MD836	MD836	EMPLACED_CNTR	05/29/75
3880	10147036	MD836	MD836	EMPLACED_CNTR	04/02/75
3881	10213597	MD836	MD836	EMPLACED_CNTR	04/24/08
3882	10394318	MD836	MD836	EMPLACED_CNTR	01/21/11
3883	BN10395691	MD836		EMPLACED_CNTR	10/28/11
3884	BN10395692	MD836		EMPLACED_CNTR	09/26/11
3885	BN10395693	MD836		EMPLACED_CNTR	10/23/11
3886	BN10433664	MD836		EMPLACED_CNTR	03/26/12
3887	BN10436040	MD836		EMPLACED_CNTR	05/19/12
3888	BN10436041	MD836		EMPLACED_CNTR	05/18/12
3889	10015100	MD836	MD836	PRESUB_CERT	12/31/77
3890	10015102	MD836	MD836	PRESUB_CERT	06/17/75
3891	10026120	MD836	MD836	PRESUB_CERT	04/01/81
3892	10031143	MD836	MD836	PRESUB_CERT	05/19/06
3893	10040885	MD836	MD836	PRESUB_CERT	11/30/78
3894	10054072	MD836	MD836	PRESUB_CERT	11/03/78
3895	10055516	MD836	MD836	PRESUB_CERT	11/09/78
3896	10057954	MD836	MD836	PRESUB_CERT	03/16/79
3897	10062726	MD836	MD836	PRESUB_CERT	11/03/78
3898	10001017	MD836	MD836		01/17/75
3899	10001172	MD836	MD836		09/01/75
3900	10001179	MD836	MD836		07/27/03
3901	10001531	MD836	MD836		04/01/81
3902	10001549		MD836		03/02/81
3903	10001678	MD836	MD836		02/16/81
3904	10001698	MD836	MD836		07/22/81
3905	10001709	MD836	MD836		04/01/81
3906	10001754	MD836	MD836		05/27/75
3907	10001940	MD836	MD836		06/19/75
3908	10001941	MD836	MD836		08/04/03
3909	10001942		MD836		06/19/75
3910	10001943	MD836	MD836		08/04/03
3911	10001992	MD836	MD836		12/31/77
3912	10001997	MD836	MD836		07/01/75
3913	10002080		MD836		07/17/75
3914	10002081	MD836	MD836		08/06/03
3915	10002090	MD836	MD836		08/06/03
3916	10002221	MD836	MD836		06/10/75
3917	10002294		MD836		05/27/75
3918	10002322	MD836	MD836		05/20/75
3919	10002459	MD836	MD836		06/25/75
3920	10002536	MD836	MD836		06/16/75
3921	10002718	MD836	RF004		12/11/75
3922	10008700	MD836	MD836		04/28/75
3923	10010439		MD836		04/23/75
3924	10011408	MD836	MD836		07/22/81
3925	10011445	MD836	MD836		07/22/81
3926	10011449	MD836	MD836		08/18/81
3927	10011554	MD836	MD836		03/24/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3928	10011562	MD836	MD836		07/22/81
3929	10018356		MD836		03/24/81
3930	10019038	MD836	MD836		06/08/81
3931	10019053	MD836	MD836		03/21/75
3932	10019260	MD836	MD836		02/13/76
3933	10019347	MD836	MD836		02/13/76
3934	10019591	MD836	MD836		05/30/04
3935	10019605	MD836	MD836		09/30/74
3936	10019957	MD836	MD836		12/05/75
3937	10020275	MD836	MD836		11/06/75
3938	10020278	MD836	MD836		11/06/75
3939	10020279	MD836	MD836		11/06/75
3940	10020280	MD836	MD836		11/07/75
3941	10020282	MD836	MD836		11/07/75
3942	10020283	MD836	MD836		11/07/75
3943	10020286	MD836	MD836		11/08/75
3944	10020288	MD836	MD836		11/06/75
3945	10020289	MD836	MD836		11/06/75
3946	10020301	MD836	MD836		11/07/75
3947	10020304	MD836	MD836		11/07/75
3948	10020305	MD836	MD836		11/07/75
3949	10020307	MD836	MD836		11/08/75
3950	10020309	MD836	MD836		11/07/75
3951	10020351	MD836	MD836		11/06/75
3952	10020512	MD836	MD836		11/07/75
3953	10020557	MD836	MD836		11/07/75
3954	10020558	MD836	MD836		11/07/75
3955	10020559	MD836	MD836		11/08/75
3956	10020560	MD836	MD836		11/08/75
3957	10020561	MD836	MD836		11/08/75
3958	10020564	MD836	MD836		11/07/75
3959	10020565	MD836	MD836		11/06/75
3960	10020566	MD836	MD836		11/07/75
3961	10020570	MD836	MD836		11/07/75
3962	10020596	MD836	MD836		11/08/75
3963	10020613		MD836		06/09/04
3964	10020898	MD836	MD836		03/14/98
3965	10021483	MD836	MD836		02/03/83
3966	10021519	MD836	MD836		08/18/81
3967	10021532	MD836	MD836		07/22/81
3968	10021541	MD836	MD836		08/31/81
3969	10021548	MD836	MD836		04/01/81
3970	10021600	MD836	MD836		07/22/81
3971	10021678	MD836	MD836		03/19/79
3972	10021843	MD836	MD836		12/05/75
3973	10021996	MD836	MD836		08/18/81
3974	10022223	MD836	MD836		05/26/81
3975	10023172	MD836	MD836		05/19/76
3976	10024417	MD836	MD836		06/10/76
3977	10025989	MD836	MD836		08/13/04
3978	10026273	MD836	MD836		08/18/81

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
3979	10026355	MD836	MD836		07/22/81
3980	10026363	MD836	MD836		07/22/81
3981	10028285	MD836	MD836		09/05/04
3982	10028626	MD836	MD836		11/02/76
3983	10029164	MD836	MD836		04/12/76
3984	10029340	MD836	MD836		05/11/77
3985	10030476	MD836	MD836		10/13/04
3986	10030489		MD836		06/23/75
3987	10031156	MD836	MD836		08/03/77
3988	10031279	MD836	MD836		08/27/04
3989	10031283	MD836	MD836		10/27/04
3990	10031284	MD836	MD836		10/27/04
3991	10031285	MD836	MD836		10/27/04
3992	10031287	MD836	MD836		10/27/04
3993	10031306		MD836		01/26/77
3994	10032643	MD836	MD836		12/19/04
3995	10032645	MD836	MD836		12/19/04
3996	10032659	MD836	MD836		12/20/04
3997	10032667	MD836	MD836		01/26/77
3998	10032669		MD836		01/26/77
3999	10033208	MD836	MD847		03/30/76
4000	10033469	MD836	MD836		01/24/97
4001	10033472	MD836	MD836		01/24/97
4002	10033473		MD836		01/24/97
4003	10033474	MD836	MD836		01/24/97
4004	10033475	MD836	MD836		01/24/97
4005	10033476	MD836	MD836		01/24/97
4006	10033477	MD836	MD836		01/24/97
4007	10033978	MD836	MD836		07/22/81
4008	10036923	MD836	MD836		11/26/96
4009	10036927	MD836	MD836		01/24/97
4010	10036928	MD836	MD836		01/24/97
4011	10038468	MD836	MD836		11/03/78
4012	10040034	MD836	MD836		03/02/81
4013	10040477	MD836	MD836		05/07/85
4014	10040510	MD836	MD836		11/26/96
4015	10040511	MD836	MD836		11/26/96
4016	10040513	MD836	MD836		11/26/96
4017	10040514	MD836	MD836		11/26/96
4018	10040515	MD836	MD836		11/26/96
4019	10040518	MD836	MD836		11/26/96
4020	10040560	MD836	MD836		11/26/96
4021	10040886	MD836	MD836		11/17/78
4022	10041210	MD836	MD836		11/26/96
4023	10041211	MD836	MD836		01/24/97
4024	10041212	MD836	MD836		11/26/96
4025	10041213	MD836	MD836		11/26/96
4026	10041215	MD836	MD836		11/26/96
4027	10041216	MD836	MD836		11/26/96
4028	10041217	MD836	MD836		11/26/96
4029	10041218	MD836	MD836		11/26/96

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4030	10041219	MD836	MD836		11/26/96
4031	10041220	MD836	MD836		11/26/96
4032	10041221	MD836	MD836		11/26/96
4033	10041239	MD836	MD836		01/24/97
4034	10041240	MD836	MD836		01/24/97
4035	10041241	MD836	MD836		01/24/97
4036	10041244	MD836	MD836		01/24/97
4037	10041909	MD836	MD836		11/26/96
4038	10041910		MD836		11/26/96
4039	10041911	MD836	MD836		11/26/96
4040	10041912	MD836	MD836		11/26/96
4041	10041913	MD836	MD836		11/26/96
4042	10041914		MD836		11/26/96
4043	10041916	MD836	MD836		11/26/96
4044	10041921	MD836	MD836		11/26/96
4045	10041922		MD836		11/26/96
4046	10041924	MD836	MD836		11/26/96
4047	10041925		MD836		11/26/96
4048	10041927	MD836	MD836		11/26/96
4049	10041928		MD836		06/30/97
4050	10041929	MD836	MD836		06/25/97
4051	10041930	MD836	MD836		06/25/97
4052	10041931	MD836	MD836		06/30/97
4053	10041932	MD836	MD836		08/17/11
4054	10041934	MD836	MD836		01/22/99
4055	10041935	MD836	MD836		09/03/97
4056	10041937	MD836	MD836		08/06/97
4057	10041939	MD836	MD836		11/26/96
4058	10041940	MD836	MD836		01/24/97
4059	10041941	MD836	MD836		01/24/97
4060	10041989	MD836	MD836		08/18/81
4061	10042547	MD836	MD836		07/22/81
4062	10042552	MD836	MD836		08/18/81
4063	10042602	MD836	MD836		07/22/81
4064	10043652	MD836	MD836		11/03/78
4065	10048634		MD836		12/01/77
4066	10052180	MD836	MD836		06/07/79
4067	10052377	MD836	MD836		03/16/79
4068	10052380	MD836	MD836		04/03/79
4069	10055448	MD836	MD836		04/03/79
4070	10055515	MD836	MD836		11/09/78
4071	10057378	MD836	MD836		06/16/78
4072	10057807	MD836	MD836		11/03/78
4073	10058826	MD836	MD836		04/03/79
4074	10059346	MD836	MD836		09/29/08
4075	10059851	MD836	MD836		05/16/79
4076	10059852	MD836	MD836		03/14/79
4077	10059867	MD836	MD836		04/03/79
4078	10060572	MD836	MD836		04/23/79
4079	10061109		MD836		08/23/79
4080	10061154	MD836	MD836		04/03/79

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4081	10062455	MD836	MD836		11/03/78
4082	10062863	MD836	MD836		09/28/79
4083	10062891	MD836	MD836		12/05/79
4084	10063174	MD836	MD836		10/03/05
4085	10080777	MD836	MD836		02/10/06
4086	10083940	MD836			02/24/06
4087	10084341	MD836			02/28/06
4088	10086899	MD836			03/13/06
4089	10089384	MD836			03/24/06
4090	10089385	MD836			03/24/06
4091	10089386	MD836			03/24/06
4092	10089387	MD836			03/24/06
4093	10089388	MD836			03/24/06
4094	10089407	MD836			03/25/06
4095	10089408	MD836			03/25/06
4096	10089409	MD836			03/25/06
4097	10089410	MD836			03/25/06
4098	10089411	MD836			03/25/06
4099	10089412	MD836			03/25/06
4100	10089413	MD836			03/25/06
4101	10089414	MD836			03/25/06
4102	10089415	MD836			03/25/06
4103	10089416	MD836			03/25/06
4104	10089417	MD836			03/25/06
4105	10089418	MD836			03/25/06
4106	10089419	MD836			03/25/06
4107	10089420	MD836			03/25/06
4108	10089448	MD836			03/27/06
4109	10089450	MD836			03/27/06
4110	10089451	MD836			03/27/06
4111	10089452	MD836			03/27/06
4112	10089453	MD836			03/27/06
4113	10089635	MD836			03/28/06
4114	10089636	MD836			03/28/06
4115	10089637	MD836			03/28/06
4116	10089638	MD836			03/28/06
4117	10089639	MD836			03/28/06
4118	10089674	MD836			03/29/06
4119	10089675	MD836			03/29/06
4120	10089676	MD836			03/29/06
4121	10089677	MD836			03/29/06
4122	10089678	MD836			03/29/06
4123	10089848	MD836			03/30/06
4124	10089896	MD836			03/30/06
4125	10089910	MD836			03/30/06
4126	10089923	MD836			03/30/06
4127	10089949	MD836			03/30/06
4128	10090054	MD836			03/30/06
4129	10090055	MD836			03/30/06
4130	10090056	MD836			03/30/06
4131	10090057	MD836			03/30/06

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4132	10090058	MD836			03/30/06
4133	10090059	MD836			03/30/06
4134	10090060	MD836			03/30/06
4135	10090061	MD836			03/30/06
4136	10090062	MD836			03/30/06
4137	10090063	MD836			03/30/06
4138	10098277	MD836			05/09/06
4139	10098674	MD836			05/13/06
4140	10098722	MD836			05/13/06
4141	10099664	MD836			05/17/06
4142	10099665	MD836			05/17/06
4143	10099666	MD836			05/17/06
4144	10099667	MD836			05/17/06
4145	10099668	MD836			05/17/06
4146	10099764	MD836			05/18/06
4147	10099765	MD836			05/18/06
4148	10099766	MD836			05/18/06
4149	10099767	MD836			05/18/06
4150	10099768	MD836			05/18/06
4151	10099775	MD836			05/18/06
4152	10099776	MD836			05/18/06
4153	10099777	MD836			05/18/06
4154	10099778	MD836			05/18/06
4155	10099779	MD836			05/18/06
4156	10099780	MD836			05/18/06
4157	10099781	MD836			05/18/06
4158	10099782	MD836			05/18/06
4159	10099783	MD836			05/18/06
4160	10099886	MD836			05/20/06
4161	10099887	MD836			05/20/06
4162	10099888	MD836			05/20/06
4163	10099889	MD836			05/20/06
4164	10099890	MD836			05/20/06
4165	10099913	MD836			05/21/06
4166	10099914	MD836			05/21/06
4167	10099915	MD836			05/21/06
4168	10099916	MD836			05/21/06
4169	10099941	MD836			05/21/06
4170	10099994	MD836			05/21/06
4171	10100580	MD836			05/23/06
4172	10100581	MD836			05/23/06
4173	10100582	MD836			05/23/06
4174	10100583	MD836			05/23/06
4175	10100584	MD836			05/23/06
4176	10100804	MD836			05/24/06
4177	10100805	MD836			05/24/06
4178	10100806	MD836			05/24/06
4179	10100807	MD836			05/24/06
4180	10100808	MD836			05/24/06
4181	10101286	MD836			05/28/06
4182	10101287	MD836			05/28/06

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4183	10101288	MD836			05/28/06
4184	10101289	MD836			05/28/06
4185	10101290	MD836			05/28/06
4186	10101477	MD836			05/29/06
4187	10101478	MD836			05/29/06
4188	10101479	MD836			05/29/06
4189	10101480	MD836			05/29/06
4190	10101481	MD836			05/29/06
4191	10101482	MD836			05/29/06
4192	10101483	MD836			05/29/06
4193	10101484	MD836			05/29/06
4194	10101485	MD836			05/29/06
4195	10101626	MD836			05/30/06
4196	10101627	MD836			05/30/06
4197	10101628	MD836			05/30/06
4198	10101629	MD836			05/30/06
4199	10101630	MD836			05/30/06
4200	10118532	MD836			09/15/06
4201	10118533	MD836			09/15/06
4202	10118534	MD836			09/15/06
4203	10118535	MD836			09/15/06
4204	10118536	MD836			09/15/06
4205	10118697	MD836			09/16/06
4206	10118698	MD836			09/16/06
4207	10118699	MD836			09/16/06
4208	10118700	MD836			09/16/06
4209	10118701	MD836			09/16/06
4210	10118714	MD836			09/17/06
4211	10118718	MD836			09/17/06
4212	10118721	MD836			09/17/06
4213	10118722	MD836			09/17/06
4214	10118723	MD836			09/17/06
4215	10118724	MD836			09/17/06
4216	10118726	MD836			09/17/06
4217	10118727	MD836			09/17/06
4218	10118729	MD836			09/17/06
4219	10118897	MD836			09/18/06
4220	10118898	MD836			09/18/06
4221	10118899	MD836			09/18/06
4222	10118900	MD836			09/18/06
4223	10118901	MD836			09/18/06
4224	10118971	MD836			09/19/06
4225	10118972	MD836			09/19/06
4226	10118973	MD836			09/19/06
4227	10118974	MD836			09/19/06
4228	10118975	MD836			09/19/06
4229	10119185	MD836			09/22/06
4230	10119186	MD836			09/22/06
4231	10119187	MD836			09/22/06
4232	10119202	MD836			09/22/06
4233	10119206	MD836			09/22/06

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4234	10119265	MD836			09/22/06
4235	10119266	MD836			09/22/06
4236	10119267	MD836			09/22/06
4237	10119268	MD836			09/22/06
4238	10119269	MD836			09/22/06
4239	10119273	MD836			09/23/06
4240	10119274	MD836			09/23/06
4241	10119275	MD836			09/23/06
4242	10119276	MD836			09/23/06
4243	10119277	MD836			09/23/06
4244	10119278	MD836			09/23/06
4245	10119279	MD836			09/23/06
4246	10119280	MD836			09/23/06
4247	10119281	MD836			09/23/06
4248	10119697	MD836	MD836		04/21/75
4249	10119704	MD836	MD836		04/02/75
4250	10120206	MD836	MD836		12/27/74
4251	10120207	MD836	MD836		12/27/74
4252	10120210	MD836	MD836		12/27/74
4253	10120214	MD836	MD848		01/15/75
4254	10120216	MD836	MD836		12/27/74
4255	10120228	MD836			10/16/06
4256	10120585	MD836	MD836		12/27/74
4257	10120598	MD836	MD836		12/27/74
4258	10122444	MD836			10/27/06
4259	10122994	MD836	MD836		03/21/75
4260	10123012	MD836	MD836		03/20/75
4261	10123158	MD836	MD836		04/23/75
4262	10123202	MD836	MD836		03/24/75
4263	10123400	MD836	MD836		03/12/07
4264	10124479	MD836	MD836		12/02/74
4265	10124495	MD836	MD836		02/12/75
4266	10124611	MD836	MD836		04/07/75
4267	10124871		MD836		12/02/74
4268	10124872	MD836	MD836		08/16/11
4269	10130208	MD836	MD836		03/11/07
4270	10130496	MD836	MD836		10/25/75
4271	10130578		MD836		04/08/75
4272	10131493	MD836	MD836		11/26/06
4273	10132007	MD836	MD836		11/26/06
4274	10132094	MD836	MD836		04/07/75
4275	10132174	MD836			12/08/06
4276	10132315	MD836	MD836		03/26/75
4277	10132564	MD836	MD836		01/21/06
4278	10132685	MD836	MD836		04/08/75
4279	10135565	MD836	MD836		06/10/75
4280	10136973	MD836	MD836		04/17/75
4281	10137073	MD836	MD836		04/02/75
4282	10140227	MD836			02/07/07
4283	10140241	MD836	MD836		06/03/75
4284	10140457		MD836		03/01/75

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4285	10140462	MD836	MD836		05/13/75
4286	10140487		MD836		05/13/75
4287	10140541	MD836			02/04/07
4288	10140778	MD836	MD836		06/03/75
4289	10140780	MD836	MD836		06/03/75
4290	10140788	MD836	MD836		06/03/75
4291	10140826	MD836	MD836		06/16/75
4292	10140834	MD836	MD836		05/08/75
4293	10145214	MD836	MD836		04/14/75
4294	10145266	MD836	MD836		12/02/74
4295	10145341	MD836	MD836		04/15/75
4296	10145607	MD836	MD836		12/27/74
4297	10147025	MD836	MD836		04/15/75
4298	10150516	MD836			03/07/07
4299	10150517	MD836			03/07/07
4300	10150518	MD836			03/07/07
4301	10150519	MD836			03/07/07
4302	10150520	MD836			03/07/07
4303	10150521	MD836			03/07/07
4304	10150522	MD836			03/07/07
4305	10150523	MD836			03/07/07
4306	10150524	MD836			03/07/07
4307	10150525	MD836			03/07/07
4308	10150526	MD836			03/07/07
4309	10150527	MD836			03/07/07
4310	10150528	MD836			03/07/07
4311	10150529	MD836			03/07/07
4312	10150641	MD836			03/08/07
4313	10150642	MD836			03/08/07
4314	10150643	MD836			03/08/07
4315	10150644	MD836			03/08/07
4316	10150645	MD836			03/08/07
4317	10150930	MD836			03/10/07
4318	10150931	MD836			03/10/07
4319	10150932	MD836			03/10/07
4320	10150933	MD836			03/10/07
4321	10150934	MD836			03/10/07
4322	10151025	MD836			03/10/07
4323	10151026	MD836			03/10/07
4324	10151027	MD836			03/10/07
4325	10151028	MD836			03/10/07
4326	10151029	MD836			03/10/07
4327	10151187	MD836			03/11/07
4328	10151188	MD836			03/11/07
4329	10151189	MD836			03/11/07
4330	10151190	MD836			03/11/07
4331	10151191	MD836			03/11/07
4332	10167692	MD836			05/28/07
4333	10171972	MD836			06/17/07
4334	10199905	MD836	MD836		01/08/08
4335	10207319	MD836	MD836		01/17/08

	CONTAINER_ID	IDC	HISTORICAL_IDC	WWIS_STATUS	PACK_DATE
4336	10208866	MD836	MD836		03/20/75
4337	10213481	MD836	MD836		03/03/08
4338	10213590	MD836	MD836		06/10/08
4339	10213595	MD836	MD836		06/10/08
4340	10223342	MD836	MD836		04/12/08
4341	10224745	MD836	MD836		04/22/08
4342	10303894	MD836	MD836		07/28/09
4343	10305285	MD836	MD836		07/29/09
4344	10306641	MD836	MD836		08/06/09
4345	10306642	MD836	MD836		08/06/09
4346	10317471	MD836	MD836		09/26/09
4347	10364837	MD836	MD835		05/27/10
4348	10374612	MD836	MD836		07/15/10
4349	10382798	MD836	MD836		09/26/10
4350	10388949	MD836	MD836		11/28/10
4351	10389680	MD836	MD836		12/05/10
4352	10390975	MD836	MD836		12/20/10
4353	10390979	MD836	MD836		12/21/10
4354	10390988		MD836		12/20/10
4355	10391083	MD836	MD836		12/21/10
4356	10391085	MD836	MD836		12/21/10
4357	10392277	MD836	MD836		01/06/11
4358	10392292	MD836	MD836		01/06/11
4359	10392294	MD836	MD836		01/06/11
4360	10392309	MD836	MD836		01/06/11
4361	10392311	MD836	MD836		01/06/11
4362	10392692	MD836	MD836		01/10/11
4363	10415817	MD836	MD836		08/01/11
4364	10418136		MD836		06/25/97

Idaho Treatment Group

INTEROFFICE MEMORANDUM

RECORD
CMC 09/19/2012

To: Sue Peterman
TRU Programs Manager

From: Steve Carpenter
Acceptable Knowledge/Alternate Site Project Manager

Date: January 5, 2012

Subject: Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2 - SPC-001-12

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 population was defined with a minimum of 3,000 and a maximum of 4,000 containers (reference Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2, SPC-015-10 and the Addendum SPC-004-11). Container selection and sampling were completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identified additional BN510.1 Boxline containers. The container numbers within these Reconciliation periodic reports were sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 2 container list. Attachment 1 provides the final sequential listing of random numbers and the containers identified for BN510.1 Boxline Lot 2 with a maximum container population of 4,000.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 2. Ten random numbers and ten contingency random numbers were generated for the maximum population as specified in MP-TRUW-8.25. Sequential numbers were assigned to the random numbers in the order that they were generated. The list was sorted by the random number in ascending order. The first ten random numbers on the list that have acceptable containers associated with them were headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant were monitored as containers qualified for the required sample (n) and are determined when the required sampling is completed. The observed sample n^* is checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2, (including a Characterization Information Summary Report) presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Table 1 identifies the final candidate containers for BN510.1 Boxline Lot 2 with sequence numbers for a maximum population size of 4,000 containers. Table 1 also documents the selection of additional container sequence numbers to serve as contingency samples if needed. The selected random numbers, identified in Table 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot was updated periodically with the containers that were provided by the Reconciliation Group since the initial sample selection memorandum. Selected containers were set aside. Containers confirmed as a sample "n" container, were headspace gas sampled. Table 1 below identifies the selected containers that were selected for headspace gas sampling. Containers 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 from the maximum population were sampled. These are the first 10 randomly selected containers for a population of 4,000 containers that were available for Lot 2.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	1	0.000020	2399	BN10406800
2	2	0.000259	1761	BN10400134
3	3	0.000601	2572	BN10408764
4	4	0.000725	1603	BN10398725
	5	0.000935	3979	BN10429587
5	6	0.001189	2969	BN10413998
6	7	0.001990	161	BN10381425
	8	0.002274	3446	BN10421829
7	9	0.002567	304	BN10382812
8	10	0.002629	1410	BN10396291
9	c1	0.002780	720	BN10388108
10	c2	0.002870	2757	BN10410445
c1	c3	0.003005	1670	BN10399250
	c4	0.003077	3248	BN10418907
c2	c5	0.003159	1013	BN10391867
c3	c6	0.003191	2061	BN10403257
c4	c7	0.003580	963	BN10391073
	c8	0.003686	3008	BN10414714
c5	c9	0.003965	2423	BN10407048
c6	c10	0.004778	968	BN10391078
c7		0.004884	1353	BN10395482
c8		0.005970	739	BN10388302
c9		0.006080	2769	BN10410497
		0.006325	3087	BN10416157
c10		0.006729	2543	BN10408364

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments
1. Container list for BN510.1 Boxline, Lot 2
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Caralea Hinkle-Daniel
Dave Haar
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 2

Minimum Population = 3,000
Maximum Population = 4,000

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.312263	1	BN10376273
		0.567552	2	BN10376276
		0.770726	3	BN10376277
		0.394933	4	BN10376280
		0.871194	5	BN10376283
		0.563289	6	BN10377054
		0.199676	7	BN10379696
		0.269744	8	BN10379697
		0.934024	9	BN10379698
		0.218199	10	BN10379699
		0.393658	11	BN10379700
		0.327281	12	BN10379701
		0.160871	13	BN10379702
		0.205505	14	BN10379703
		0.709447	15	BN10379704
		0.373267	16	BN10379705
		0.818819	17	BN10379706
		0.751591	18	BN10379707
		0.174123	19	BN10379708
		0.845460	20	BN10379709
		0.406343	21	BN10379710
		0.520202	22	BN10379711
		0.145230	23	BN10379712
		0.579569	24	BN10379714
		0.106722	25	BN10379715
		0.279754	26	BN10379716
		0.850679	27	BN10379717
		0.688057	28	BN10379718
		0.352543	29	BN10379719
		0.606054	30	BN10379878
		0.284771	31	BN10379879
		0.683335	32	BN10379880
		0.997004	33	BN10379881
		0.509745	34	BN10379882
		0.289015	35	BN10379883
		0.567839	36	BN10379884
		0.111163	37	BN10379885

		0.289258	38	BN10379886
		0.379822	39	BN10379887
		0.621682	40	BN10379888
		0.295879	41	BN10379889
		0.471384	42	BN10380003
		0.955423	43	BN10380004
		0.635179	44	BN10380005
		0.289851	45	BN10380006
		0.123618	46	BN10380007
		0.438455	47	BN10380008
		0.959959	48	BN10380009
		0.977243	49	BN10380010
		0.750582	50	BN10380011
		0.659341	51	BN10380012
		0.751979	52	BN10380013
		0.477742	53	BN10380014
		0.627569	54	BN10380166
		0.776025	55	BN10380167
		0.509103	56	BN10380168
		0.384857	57	BN10380169
		0.850547	58	BN10380170
		0.905508	59	BN10380171
		0.135829	60	BN10380172
		0.882162	61	BN10380173
		0.607771	62	BN10380174
		0.284801	63	BN10380175
		0.406865	64	BN10380176
		0.520801	65	BN10380177
		0.312732	66	BN10380229
		0.015975	67	BN10380230
		0.117376	68	BN10380231
		0.350256	69	BN10380232
		0.850695	70	BN10380233
		0.240964	71	BN10380234
		0.779452	72	BN10380235
		0.130369	73	BN10380236
		0.498680	74	BN10380237
		0.128348	75	BN10380238
		0.007127	76	BN10380239
		0.855215	77	BN10380240
		0.074676	78	BN10380324
		0.737017	79	BN10380325
		0.859309	80	BN10380326
		0.241231	81	BN10380327
		0.330095	82	BN10380328

		0.285043	83	BN10380329
		0.971511	84	BN10380330
		0.244693	85	BN10380331
		0.479072	86	BN10380332
		0.493215	87	BN10380333
		0.711101	88	BN10380334
		0.807761	89	BN10380335
		0.529711	90	BN10380591
		0.579307	91	BN10380592
		0.489164	92	BN10380593
		0.207582	93	BN10380594
		0.040526	94	BN10380595
		0.214172	95	BN10380596
		0.807275	96	BN10380597
		0.094812	97	BN10380598
		0.647551	98	BN10380599
		0.319030	99	BN10380600
		0.469070	100	BN10380601
		0.580002	101	BN10380602
		0.416910	102	BN10380720
		0.801420	103	BN10380721
		0.247657	104	BN10380722
		0.503360	105	BN10380723
		0.067786	106	BN10380724
		0.611331	107	BN10380725
		0.137919	108	BN10380726
		0.480752	109	BN10380727
		0.643188	110	BN10380728
		0.389038	111	BN10380729
		0.769613	112	BN10380730
		0.595021	113	BN10380731
		0.237856	114	BN10380732
		0.292306	115	BN10380733
		0.158301	116	BN10380734
		0.964926	117	BN10380735
		0.081211	118	BN10380736
		0.803077	119	BN10380738
		0.214511	120	BN10380739
		0.353777	121	BN10380740
		0.391599	122	BN10380741
		0.490487	123	BN10380742
		0.869024	124	BN10380743
		0.397342	125	BN10380919
		0.330124	126	BN10380920
		0.609766	127	BN10380921

		0.926826	128	BN10380922
		0.816996	129	BN10380923
		0.252831	130	BN10380924
		0.824771	131	BN10380925
		0.497918	132	BN10380926
		0.102095	133	BN10380927
		0.046526	134	BN10380928
		0.129837	135	BN10380929
		0.482297	136	BN10380930
		0.013850	137	BN10380965
		0.913570	138	BN10380966
		0.184101	139	BN10380967
		0.887004	140	BN10380968
		0.850305	141	BN10380969
		0.119430	142	BN10380970
		0.454124	143	BN10380971
		0.287971	144	BN10380972
		0.738911	145	BN10380973
		0.321577	146	BN10380974
		0.188425	147	BN10380975
		0.891432	148	BN10380976
		0.549067	149	BN10381309
		0.800776	150	BN10381310
		0.872760	151	BN10381311
		0.413024	152	BN10381312
		0.330592	153	BN10381313
		0.991056	154	BN10381314
		0.605148	155	BN10381315
		0.826142	156	BN10381316
		0.893495	157	BN10381317
		0.734204	158	BN10381318
		0.037170	159	BN10381319
		0.760949	160	BN10381320
6	7	0.001990	161	BN10381425
		0.865134	162	BN10381426
		0.788024	163	BN10381428
		0.532309	164	BN10381431
		0.368421	165	BN10381432
		0.382138	166	BN10381421
		0.902907	167	BN10381422
		0.877269	168	BN10381423
		0.367489	169	BN10381424
		0.870085	170	BN10381427
		0.620110	171	BN10381429
		0.085747	172	BN10381430

		0.803750	173	BN10381434
		0.138727	174	BN10381435
		0.452731	175	BN10381436
		0.346592	176	BN10381437
		0.369586	177	BN10381438
		0.548246	178	BN10381439
		0.414131	179	BN10381440
		0.860824	180	BN10381441
		0.363278	181	BN10381442
		0.674512	182	BN10381443
		0.839494	183	BN10381444
		0.457930	184	BN10381445
		0.488773	185	BN10381573
		0.441054	186	BN10381574
		0.531719	187	BN10381579
		0.516973	188	BN10381580
		0.283396	189	BN10381581
		0.648380	190	BN10381559
		0.083229	191	BN10381560
		0.307538	192	BN10381561
		0.419139	193	BN10381562
		0.346820	194	BN10381563
		0.376832	195	BN10381564
		0.185891	196	BN10381575
		0.638067	197	BN10381576
		0.716885	198	BN10381577
		0.252782	199	BN10381578
		0.715083	200	BN10381582
		0.558907	201	BN10381583
		0.297658	202	BN10381584
		0.962939	203	BN10381586
		0.735149	204	BN10381587
		0.036370	205	BN10381588
		0.129808	206	BN10381589
		0.295082	207	BN10381590
		0.570929	208	BN10381591
		0.917130	209	BN10381937
		0.045081	210	BN10381938
		0.938284	211	BN10381939
		0.780411	212	BN10381940
		0.895948	213	BN10381941
		0.071298	214	BN10381942
		0.998870	215	BN10381943
		0.871259	216	BN10381944
		0.075784	217	BN10381945

		0.738082	218	BN10381946
		0.652654	219	BN10381947
		0.843695	220	BN10381948
		0.854618	221	BN10381989
		0.522901	222	BN10381990
		0.239747	223	BN10381991
		0.707587	224	BN10381992
		0.068203	225	BN10381993
		0.424544	226	BN10381994
		0.442118	227	BN10381995
		0.596615	228	BN10381996
		0.820170	229	BN10381997
		0.043766	230	BN10381998
		0.139661	231	BN10381999
		0.848546	232	BN10382000
		0.837547	233	BN10382140
		0.652772	234	BN10382141
		0.111638	235	BN10382142
		0.856035	236	BN10382143
		0.456251	237	BN10382144
		0.426176	238	BN10382145
		0.800401	239	BN10382146
		0.059677	240	BN10382147
		0.343527	241	BN10382148
		0.820657	242	BN10382149
		0.216180	243	BN10382150
		0.190523	244	BN10382151
		0.188445	245	BN10382272
		0.694214	246	BN10382273
		0.805612	247	BN10382274
		0.839519	248	BN10382275
		0.199296	249	BN10382276
		0.874751	250	BN10382269
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		0.639092	3653	BN10425499
		0.082067	3654	BN10425501
		0.979454	3655	BN10425502
		0.852972	3656	BN10425504
		0.153685	3657	BN10425506
		0.465720	3658	BN10425507
		0.730157	3659	BN10425509
		0.708663	3660	BN10425510
		0.608288	3661	BN10425855
		0.740613	3662	BN10425856
		0.179853	3663	BN10425857
		0.156447	3664	BN10425858
		0.462309	3665	BN10425859
		0.959502	3666	BN10425860
		0.230942	3667	BN10425861
		0.706509	3668	BN10425862
		0.995566	3669	BN10425863
		0.305047	3670	BN10425864
		0.043639	3671	BN10425865
		0.911514	3672	BN10425866
		0.772352	3673	BN10426008
		0.318359	3674	BN10426010
		0.636748	3675	BN10425999
		0.392828	3676	BN10426000
		0.218615	3677	BN10426001
		0.309275	3678	BN10426002
		0.274494	3679	BN10426003
		0.739294	3680	BN10426004
		0.098079	3681	BN10426005
		0.370472	3682	BN10426006

		0.308056	3683	BN10426007
		0.258418	3684	BN10426009
		0.920564	3685	BN10426172
		0.633989	3686	BN10426173
		0.934870	3687	BN10426174
		0.401693	3688	BN10426175
		0.426210	3689	BN10426176
		0.267502	3690	BN10426181
		0.854429	3691	BN10426177
		0.764379	3692	BN10426178
		0.138559	3693	BN10426179
		0.363442	3694	BN10426180
		0.149615	3695	BN10426182
		0.773606	3696	BN10426183
		0.048436	3697	BN10426270
		0.253207	3698	BN10426271
		0.319609	3699	BN10426272
		0.471004	3700	BN10426273
		0.839351	3701	BN10426274
		0.229293	3702	BN10426275
		0.677962	3703	BN10426276
		0.638163	3704	BN10426277
		0.032081	3705	BN10426278
		0.638994	3706	BN10426279
		0.464200	3707	BN10426280
		0.009320	3708	BN10426281
		0.435647	3709	BN10426402
		0.178498	3710	BN10426406
		0.382309	3711	BN10426407
		0.582022	3712	BN10426408
		0.202076	3713	BN10426409
		0.560660	3714	BN10426416
		0.464318	3715	BN10426417
		0.268519	3716	BN10426410
		0.788721	3717	BN10426412
		0.261723	3718	BN10426413
		0.420317	3719	BN10426414
		0.928439	3720	BN10426415
		0.352797	3721	BN10426429
		0.964652	3722	BN10426430
		0.688792	3723	BN10426431
		0.216549	3724	BN10426432
		0.622969	3725	BN10426433
		0.342080	3726	BN10426434
		0.832165	3727	BN10426435

		0.132900	3728	BN10426436
		0.200555	3729	BN10426437
		0.189501	3730	BN10426438
		0.431830	3731	BN10426439
		0.369334	3732	BN10426440
		0.739449	3733	BN10426806
		0.663568	3734	BN10426807
		0.496735	3735	BN10426799
		0.871099	3736	BN10426800
		0.577158	3737	BN10426801
		0.711291	3738	BN10426802
		0.088853	3739	BN10426803
		0.534127	3740	BN10426804
		0.917028	3741	BN10426805
		0.089077	3742	BN10426808
		0.732379	3743	BN10426809
		0.023965	3744	BN10426810
		0.324532	3745	BN10426839
		0.514873	3746	BN10426840
		0.675496	3747	BN10426841
		0.204240	3748	BN10426842
		0.684677	3749	BN10426843
		0.646463	3750	BN10426844
		0.223462	3751	BN10426845
		0.735480	3752	BN10426846
		0.353428	3753	BN10426847
		0.641568	3754	BN10426848
		0.315564	3755	BN10426849
		0.656350	3756	BN10426919
		0.840669	3757	BN10338479
		0.137250	3758	BN10426838
		0.115557	3759	BN10426914
		0.281711	3760	BN10426915
		0.176831	3761	BN10426916
		0.328644	3762	BN10426917
		0.158738	3763	BN10426918
		0.926695	3764	BN10426920
		0.452505	3765	BN10426921
		0.016321	3766	BN10426922
		0.946973	3767	BN10426923
		0.817060	3768	BN10426924
		0.273590	3769	BN10426925
		0.550287	3770	BN10426977
		0.393638	3771	BN10426978
		0.941064	3772	BN10426979

		0.671879	3773	BN10426980
		0.400888	3774	BN10426981
		0.587272	3775	BN10426982
		0.699797	3776	BN10426984
		0.174564	3777	BN10426985
		0.269783	3778	BN10426987
		0.618682	3779	BN10426988
		0.295618	3780	BN10426989
		0.554134	3781	BN10338478
		0.412219	3782	BN10338480
		0.094932	3783	BN10338481
		0.439699	3784	BN10426986
		0.306738	3785	BN10427219
		0.088345	3786	BN10427220
		0.719109	3787	BN10427221
		0.299243	3788	BN10427222
		0.349222	3789	BN10427223
		0.928181	3790	BN10427224
		0.361500	3791	BN10427225
		0.285245	3792	BN10427226
		0.079483	3793	BN10427500
		0.745288	3794	BN10427501
		0.906501	3795	BN10427502
		0.339087	3796	BN10427503
		0.927588	3797	BN10427504
		0.490637	3798	BN10427505
		0.358627	3799	BN10427506
		0.259561	3800	BN10427507
		0.312461	3801	BN10427595
		0.537859	3802	BN10427596
		0.376267	3803	BN10427597
		0.132218	3804	BN10427668
		0.542812	3805	BN10427669
		0.504830	3806	BN10427672
		0.256430	3807	BN10427673
		0.017925	3808	BN10427674
		0.128521	3809	BN10427675
		0.030758	3810	BN10427677
		0.632268	3811	BN10427678
		0.071748	3812	BN10427767
		0.017117	3813	BN10427769
		0.352115	3814	BN10427774
		0.503562	3815	BN10427763
		0.863634	3816	BN10427765
		0.284850	3817	BN10427768

		0.168686	3818	BN10427777
		0.749630	3819	BN10427779
		0.723047	3820	BN10427781
		0.842282	3821	BN10427782
		0.429607	3822	BN10427783
		0.157820	3823	BN10427785
		0.399666	3824	BN10427786
		0.196970	3825	BN10427946
		0.081441	3826	BN10427947
		0.489520	3827	BN10427949
		0.566006	3828	BN10427950
		0.766134	3829	BN10427951
		0.798030	3830	BN10427952
		0.665377	3831	BN10427955
		0.416293	3832	BN10427957
		0.890122	3833	BN10427961
		0.096844	3834	BN10427962
		0.234970	3835	BN10427963
		0.692241	3836	BN10427964
		0.521473	3837	BN10427965
		0.193157	3838	BN10427967
		0.817471	3839	BN10427968
		0.058868	3840	BN10428016
		0.541321	3841	BN10428017
		0.201227	3842	BN10428019
		0.497949	3843	BN10428020
		0.523808	3844	BN10428090
		0.203646	3845	BN10428091
		0.880943	3846	BN10428092
		0.210739	3847	BN10428093
		0.111554	3848	BN10428094
		0.215248	3849	BN10428095
		0.594539	3850	BN10428096
		0.871359	3851	BN10428097
		0.316055	3852	BN10428098
		0.357527	3853	BN10428099
		0.285527	3854	BN10428100
		0.219291	3855	BN10428101
		0.348375	3856	BN10428141
		0.387850	3857	BN10428142
		0.355602	3858	BN10428143
		0.112605	3859	BN10428144
		0.313706	3860	BN10428145
		0.467626	3861	BN10428146
		0.322576	3862	BN10428147

		0.512414	3863	BN10428148
		0.769945	3864	BN10428149
		0.634097	3865	BN10428150
		0.736239	3866	BN10428151
		0.325831	3867	BN10428152
		0.610492	3868	BN10428257
		0.385599	3869	BN10428259
		0.829384	3870	BN10428261
		0.524180	3871	BN10428262
		0.668848	3872	BN10428263
		0.466219	3873	BN10428264
		0.016736	3874	BN10428254
		0.219295	3875	BN10428255
		0.709938	3876	BN10428256
		0.241362	3877	BN10428258
		0.884921	3878	BN10428260
		0.703589	3879	BN10428427
		0.887176	3880	BN10428430
		0.009716	3881	BN10428431
		0.638128	3882	BN10428432
		0.244126	3883	BN10428433
		0.488361	3884	BN10428434
		0.787205	3885	BN10428435
		0.386928	3886	BN10428436
		0.881633	3887	BN10428437
		0.007831	3888	BN10428534
		0.707675	3889	BN10428535
		0.667110	3890	BN10427498
		0.024874	3891	BN10427499
		0.884071	3892	BN10428426
		0.494636	3893	BN10428526
		0.361092	3894	BN10428527
		0.919303	3895	BN10428528
		0.528915	3896	BN10428529
		0.365703	3897	BN10428530
		0.288835	3898	BN10428531
		0.969951	3899	BN10428532
		0.335603	3900	BN10428533
		0.679866	3901	BN10428536
		0.632248	3902	BN10428560
		0.496108	3903	BN10428561
		0.672183	3904	BN10428562
		0.947960	3905	BN10428563
		0.620583	3906	BN10428565
		0.709144	3907	BN10428566

		0.120106	3908	BN10428567
		0.516690	3909	BN10428568
		0.380354	3910	BN10428569
		0.045693	3911	BN10428570
		0.142144	3912	BN10428571
		0.112545	3913	BN10428658
		0.306368	3914	BN10428659
		0.373979	3915	BN10428660
		0.736259	3916	BN10428663
		0.617255	3917	BN10428662
		0.245968	3918	BN10428664
		0.771349	3919	BN10428666
		0.235597	3920	BN10428667
		0.108215	3921	BN10428895
		0.594250	3922	BN10428896
		0.291087	3923	BN10428897
		0.243471	3924	BN10428898
		0.740437	3925	BN10428899
		0.454344	3926	BN10428900
		0.118719	3927	BN10428901
		0.030109	3928	BN10428902
		0.561145	3929	BN10428903
		0.958027	3930	BN10428904
		0.242426	3931	BN10428905
		0.141786	3932	BN10428906
		0.049732	3933	BN10428998
		0.962102	3934	BN10429118
		0.773900	3935	BN10429119
		0.670454	3936	BN10429120
		0.671623	3937	BN10429121
		0.137042	3938	BN10429122
		0.437871	3939	BN10429123
		0.118557	3940	BN10429124
		0.837823	3941	BN10429162
		0.544972	3942	BN10429163
		0.476737	3943	BN10429166
		0.876334	3944	BN10429167
		0.865783	3945	BN10429168
		0.419473	3946	BN10429170
		0.447270	3947	BN10429171
		0.907525	3948	BN10429197
		0.719029	3949	BN10429200
		0.644205	3950	BN10429201
		0.309118	3951	BN10429204
		0.771992	3952	BN10429205

		0.363041	3953	BN10429206
		0.221610	3954	BN10429207
		0.856339	3955	BN10429335
		0.326508	3956	BN10429336
		0.479987	3957	BN10429338
		0.520523	3958	BN10429340
		0.457588	3959	BN10429341
		0.749581	3960	BN10429343
		0.226317	3961	BN10429344
		0.073002	3962	BN10429345
		0.893233	3963	BN10429346
		0.402408	3964	BN10429473
		0.613751	3965	BN10429474
		0.780132	3966	BN10429475
		0.376752	3967	BN10429476
		0.163154	3968	BN10429477
		0.141411	3969	BN10429479
		0.290930	3970	BN10429480
		0.761407	3971	BN10429481
		0.483480	3972	BN10429482
		0.897426	3973	BN10429484
		0.375803	3974	BN10429582
		0.128790	3975	BN10429583
		0.357541	3976	BN10429584
		0.337768	3977	BN10429585
		0.384808	3978	BN10429586
	5	0.000935	3979	BN10429587
		0.207383	3980	BN10429588
		0.072136	3981	BN10429589
		0.067907	3982	BN10429590
		0.593282	3983	BN10429591
		0.891747	3984	BN10429593
		0.317230	3985	BN10429633
		0.603283	3986	BN10429634
		0.069859	3987	BN10429635
		0.816694	3988	BN10429636
		0.052367	3989	BN10429637
		0.517626	3990	BN10429638
		0.169986	3991	BN10429639
		0.797250	3992	BN10429640
		0.439005	3993	BN10429641
		0.464924	3994	BN10429642
		0.204211	3995	BN10429643
		0.985608	3996	BN10429644
		0.705165	3997	BN10429762

		0.818570	3998	BN10429763
		0.569333	3999	BN10429764
		0.675137	4000	BN10429765

AMWTP Advanced Mixed Waste Treatment Project	Randomly Selected Container Report	Form-1196, Rev. 5 Effective: 09/26/07 Page 1 of 1

Implementing Document: MP-TRUW-8.25

Waste Stream Lot: BN510.1 Boxline Lot 2

Population Size of Waste Stream Lot: 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature 12.12 Date

Idaho Treatment Group

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To: Sue Peterman
TRU Programs Manager

RECORD
CMC 01/16/2012

From: Steve Carpenter SC
Acceptable Knowledge/Alternate Site Project Manager

Date: January 9, 2012

Re: Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3 – SPC-002-12

This memorandum contains the subsequent headspace gas random sample selection candidates for waste stream BN510.1 Boxline Lot 3. The final subsequent headspace gas random sample selection memorandum will be submitted upon identification of all containers in the waste stream lot.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 3 population is defined with a minimum of 2,400 and a maximum of 4,000 containers. Container selection and sampling will be completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling Analysis*. Periodic reports will be generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identifies additional BN510.1 boxline containers that have been generated since the selection memo. The container numbers within the Reconciliation periodic reports will be sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 3 container list. Attachment 1 provides a listing of containers by sequential numbers. The final container listing for BN510.1 Boxline Lot 3 will be generated after either the minimum or maximum container populations are reached.

The AMWTP TRU Program Manager may reduce the size of the BN510.1 Boxline Lot 3. In the case where the population is less than 2,400 containers, the AMWTP TRU Program Manager will ensure that the containers selected for sampling are sufficient to characterize the waste stream. If containers originally identified for sampling are not generated, containers in the population not already sampled and shipped will be used to randomly select the remaining required number of containers to be sampled.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream lot will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 3. Ten containers will be selected and available for headspace gas sampling. Random numbers will be generated for the lot population as specified in MP-TRUW-8.25. Sequential numbers will be assigned random numbers in the order that they were generated. The list will be sorted by the random number in ascending order. At a minimum, the first ten random numbers on the list, from the final population, that have acceptable containers associated with them will be headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant will be performed as containers qualify for the required sample (n) and determined when the required sampling is completed. The observed sample n^* will be checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A sampling report presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Attachment 1 identifies the initial candidate containers for BN510.1 Boxline Lot 3. The selected random numbers and contingency random numbers, identified in Attachment 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot will be updated periodically with the containers provided by the Reconciliation Group. Selected containers will be set aside. Containers confirmed as a sample (n) container, will be headspace gas sampled. Table 1 below identifies the selected random numbers and random contingency. Nonconformance reports will be issued as appropriate against the containers that require substitution to ensure that these containers are appropriately characterized.

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	
2	3	0.002097027	1044	
3	4	0.002528466	436	
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	
	9	0.003626498	3863	
	10	0.004061868	3294	
8	C1	0.004168875	579	
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments
1. Container List for BN510.1 Boxline, Lot 3
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 3

Minimum Population = 2,400
Maximum Population = 4,000

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.44961053	1	BN10429766
		0.57930168	2	BN10429767
		0.94553686	3	BN10429768
		0.16864582	4	BN10429769
		0.14578049	5	BN10429770
		0.85340558	6	BN10429771
		0.70819678	7	BN10429773
		0.26782434	8	BN10429844
		0.84808269	9	BN10429845
		0.87499601	10	BN10429846
		0.5161643	11	BN10429847
		0.68566252	12	BN10429848
		0.30462207	13	BN10429849
		0.75084563	14	BN10429850
		0.81176208	15	BN10429851
		0.08750119	16	BN10429852
		0.19612618	17	BN10429853
		0.47980093	18	BN10429854
		0.06715434	19	BN10429855
		0.75507742	20	BN10429985
		0.87312739	21	BN10429986
		0.78087451	22	BN10429987
		0.72840607	23	BN10429988
		0.9587114	24	BN10429989
		0.93974598	25	BN10429990
		0.36651717	26	BN10429991
		0.01599271	27	BN10429992
		0.06794842	28	BN10430046
		0.03335898	29	BN10430056
		0.65055064	30	
		0.260013	31	
		0.6185905	32	
		0.46053685	33	
		0.29861499	34	
		0.822144	35	
		0.97056575	36	
		0.73276838	37	
		0.40092478	38	
		0.96859328	39	
		0.444199	40	
		0.46553625	41	
		0.09463902	42	
		0.46803888	43	
		0.07591143	44	
		0.65838204	45	
		0.28921897	46	
		0.35685404	47	
		0.23783536	48	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.603617	49	
		0.03788705	50	
		0.15243544	51	
		0.21342936	52	
		0.71056966	53	
		0.21136323	54	
		0.74793657	55	
		0.18192411	56	
		0.91369545	57	
		0.74521496	58	
		0.83412714	59	
		0.52396202	60	
		0.0596082	61	
		0.11338912	62	
		0.64674775	63	
		0.62412906	64	
		0.49667793	65	
		0.18787862	66	
		0.66016326	67	
		0.33578444	68	
		0.34055136	69	
		0.83143621	70	
		0.30420431	71	
		0.9067279	72	
		0.74159806	73	
		0.69325716	74	
		0.62883559	75	
		0.4205253	76	
		0.42966387	77	
		0.83042719	78	
		0.27085476	79	
		0.35648155	80	
		0.20405544	81	
		0.04542122	82	
		0.39965453	83	
		0.09203514	84	
		0.21851488	85	
		0.55430681	86	
		0.5599386	87	
		0.32941037	88	
		0.57399225	89	
		0.91628268	90	
		0.58849702	91	
		0.15001272	92	
		0.82794461	93	
		0.38487895	94	
		0.68347537	95	
		0.92359075	96	
		0.52767974	97	
		0.67165485	98	
		0.7543007	99	
		0.94251998	100	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.577634	101	
		0.18641534	102	
		0.88908883	103	
		0.01275273	104	
		0.6652153	105	
		0.03368352	106	
		0.84212635	107	
		0.67621026	108	
1	2	0.00206785	109	
		0.04381898	110	
		0.05808201	111	
		0.80653143	112	
		0.65666393	113	
		0.62072937	114	
		0.77090593	115	
		0.25390474	116	
		0.8997522	117	
		0.53578116	118	
		0.53388139	119	
		0.93604499	120	
		0.06615361	121	
		0.37183377	122	
		0.55928983	123	
		0.30973716	124	
		0.61540227	125	
		0.78725548	126	
		0.15293963	127	
		0.49122705	128	
		0.54821334	129	
		0.14984083	130	
		0.93310521	131	
7	8	0.00333858	132	
		0.28989277	133	
		0.45914133	134	
		0.14456234	135	
		0.57210176	136	
		0.204236	137	
		0.67000304	138	
		0.85884983	139	
		0.11214262	140	
		0.50485179	141	
		0.9888514	142	
		0.6057719	143	
		0.73395841	144	
		0.94732964	145	
		0.48363648	146	
		0.86396018	147	
		0.21275821	148	
		0.80874258	149	
		0.27179657	150	
		0.65197586	151	
		0.59330089	152	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.58943605	153	
		0.56291359	154	
		0.97499086	155	
		0.94061114	156	
		0.76955308	157	
		0.23790668	158	
		0.30791334	159	
		0.39892722	160	
		0.02794978	161	
		0.23873478	162	
		0.21969889	163	
		0.67893367	164	
		0.97084851	165	
		0.16201381	166	
		0.6046876	167	
		0.07778461	168	
		0.8441472	169	
		0.35506008	170	
		0.25114727	171	
		0.15253789	172	
		0.56813748	173	
		0.22717404	174	
		0.3350687	175	
		0.43272149	176	
		0.03423586	177	
		0.11453265	178	
		0.5963251	179	
		0.94899795	180	
		0.38067952	181	
		0.04354604	182	
		0.79837885	183	
		0.76412791	184	
		0.5856722	185	
		0.2779023	186	
		0.03335045	187	
		0.41250451	188	
		0.55113959	189	
		0.59357837	190	
		0.18827101	191	
		0.27727168	192	
		0.75436117	193	
		0.2895075	194	
		0.53924767	195	
		0.30263503	196	
		0.79447913	197	
		0.50580022	198	
		0.71257152	199	
		0.83609912	200	
		0.01897065	201	
		0.22743216	202	
		0.18306162	203	
		0.44093278	204	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55418229	205	
		0.97671744	206	
		0.24095978	207	
		0.3280798	208	
		0.58399193	209	
		0.507784	210	
		0.80793457	211	
		0.1252063	212	
		0.29199264	213	
		0.86541238	214	
		0.27031464	215	
		0.91376964	216	
		0.83938045	217	
		0.47505368	218	
		0.25014991	219	
		0.22819935	220	
		0.18244498	221	
		0.27635301	222	
		0.86247014	223	
		0.77752312	224	
		0.92013822	225	
		0.13635228	226	
		0.18614961	227	
		0.9252214	228	
		0.82805393	229	
		0.874686	230	
		0.59404723	231	
		0.90198558	232	
		0.31807033	233	
		0.99653958	234	
		0.42092645	235	
		0.61135354	236	
		0.89033926	237	
		0.06380212	238	
		0.63518329	239	
		0.66922309	240	
		0.53059127	241	
		0.10956023	242	
		0.3642236	243	
		0.5524196	244	
		0.1961307	245	
		0.3413316	246	
		0.53952268	247	
		0.9522015	248	
		0.05215245	249	
		0.32453857	250	
		0.27717977	251	
		0.70276298	252	
		0.31269357	253	
		0.46020108	254	
		0.96971578	255	
		0.6707212	256	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.17673568	257	
		0.58985449	258	
		0.90068009	259	
		0.59356286	260	
		0.51127781	261	
		0.67890742	262	
		0.83888298	263	
		0.57532835	264	
		0.64879191	265	
		0.97755083	266	
		0.61238207	267	
		0.0201351	268	
		0.32417139	269	
		0.63035214	270	
		0.56112649	271	
		0.57351809	272	
		0.7378014	273	
		0.87013704	274	
		0.88777839	275	
		0.30218835	276	
		0.26452334	277	
		0.62163844	278	
		0.53861572	279	
		0.9821855	280	
		0.12937308	281	
		0.2698108	282	
		0.65984469	283	
		0.58178831	284	
		0.6684138	285	
		0.42405583	286	
		0.28627515	287	
		0.90495591	288	
		0.15098513	289	
		0.34190845	290	
		0.79858822	291	
		0.82430688	292	
		0.52020421	293	
		0.92907297	294	
		0.42556852	295	
		0.19855126	296	
		0.278706	297	
		0.6518017	298	
		0.25347157	299	
		0.65069806	300	
		0.12156415	301	
		0.98475052	302	
		0.56412075	303	
		0.65202519	304	
		0.38443259	305	
		0.54159357	306	
		0.69434343	307	
		0.72089871	308	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.50498854	309	
		0.54654055	310	
		0.57705414	311	
		0.38371498	312	
		0.95748882	313	
		0.15943928	314	
		0.58411179	315	
		0.92976452	316	
		0.1810721	317	
		0.40653417	318	
		0.51462423	319	
		0.23656958	320	
		0.29490037	321	
		0.47133898	322	
		0.54610302	323	
		0.13749584	324	
		0.82361549	325	
		0.06404795	326	
		0.74298384	327	
		0.70550827	328	
		0.6623158	329	
		0.23435559	330	
		0.70191698	331	
		0.0167767	332	
		0.7691549	333	
		0.46578582	334	
		0.20864608	335	
		0.31254898	336	
		0.32597613	337	
		0.79909057	338	
		0.05052673	339	
		0.27033723	340	
		0.48520241	341	
		0.27195941	342	
		0.29173583	343	
		0.32424643	344	
		0.85475206	345	
		0.70246751	346	
		0.7767464	347	
		0.91084446	348	
		0.10190975	349	
		0.20910077	350	
		0.34268557	351	
		0.44226747	352	
		0.03726463	353	
		0.18993869	354	
		0.99593061	355	
		0.56130747	356	
		0.7221347	357	
		0.25157888	358	
		0.8221431	359	
		0.56915278	360	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64690931	361	
		0.75960784	362	
		0.65843568	363	
		0.91661617	364	
		0.77632236	365	
		0.11256819	366	
		0.74746784	367	
		0.98783291	368	
		0.81110586	369	
		0.78730967	370	
		0.54980838	371	
		0.71090959	372	
		0.17376119	373	
		0.83780558	374	
		0.72566838	375	
		0.34819883	376	
		0.29956363	377	
		0.36590762	378	
		0.49811762	379	
		0.42490494	380	
		0.21339213	381	
		0.37161766	382	
		0.82844054	383	
		0.18027282	384	
		0.60395549	385	
		0.52438617	386	
		0.9983971	387	
		0.17068078	388	
		0.62340772	389	
		0.91128121	390	
		0.97450829	391	
		0.23016175	392	
		0.38836732	393	
		0.21384609	394	
		0.40784166	395	
		0.70412951	396	
		0.19645217	397	
		0.79365798	398	
		0.25218142	399	
		0.75326875	400	
		0.66920647	401	
		0.93633501	402	
		0.19464985	403	
		0.13538777	404	
		0.2453149	405	
		0.51570553	406	
		0.26071764	407	
		0.4857179	408	
		0.93458327	409	
		0.72642377	410	
		0.69882556	411	
		0.19811856	412	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31928015	413	
		0.90310989	414	
		0.27328689	415	
		0.17795643	416	
		0.22856966	417	
		0.76857635	418	
		0.81447264	419	
		0.15161988	420	
		0.96473667	421	
		0.74179102	422	
		0.14812352	423	
		0.88032122	424	
		0.8099142	425	
		0.59888469	426	
		0.78206444	427	
		0.61878962	428	
		0.79297285	429	
		0.29619366	430	
		0.75582816	431	
		0.57162218	432	
		0.70967036	433	
		0.0211292	434	
		0.34993965	435	
3	4	0.00252847	436	
		0.12046022	437	
		0.95804219	438	
		0.48884515	439	
		0.92638355	440	
		0.05017275	441	
		0.73921543	442	
		0.42565825	443	
		0.31133657	444	
		0.71308312	445	
		0.45621086	446	
		0.02723668	447	
		0.03380388	448	
		0.0245653	449	
		0.96065065	450	
		0.56621643	451	
		0.9670225	452	
		0.86783636	453	
		0.52877845	454	
		0.76669866	455	
		0.63016247	456	
		0.77649983	457	
		0.40807728	458	
		0.16687215	459	
		0.46784344	460	
		0.91313387	461	
		0.31078107	462	
		0.51844426	463	
		0.90149495	464	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73639585	465	
		0.52915012	466	
		0.24440544	467	
		0.79124049	468	
		0.53113217	469	
		0.45518918	470	
		0.72325671	471	
		0.97084242	472	
		0.46695701	473	
		0.13793062	474	
		0.60698766	475	
		0.57718708	476	
		0.91432502	477	
		0.14074639	478	
		0.92073245	479	
		0.26233204	480	
		0.63183267	481	
		0.99459547	482	
		0.07886519	483	
		0.50959889	484	
		0.51689981	485	
		0.23018147	486	
		0.60911475	487	
		0.05781777	488	
		0.12425645	489	
		0.65229891	490	
		0.09702213	491	
		0.62681321	492	
		0.28880537	493	
		0.22202804	494	
		0.37538193	495	
		0.96575297	496	
		0.90212953	497	
		0.53819341	498	
		0.49855111	499	
		0.09548543	500	
		0.03532865	501	
		0.42816791	502	
		0.67745952	503	
		0.04593083	504	
		0.70678958	505	
		0.71047176	506	
		0.84263034	507	
		0.85031348	508	
		0.8050347	509	
		0.35334937	510	
		0.23080083	511	
		0.20818361	512	
		0.97996838	513	
		0.3424679	514	
		0.70162947	515	
		0.37604957	516	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.56246266	517	
		0.0806392	518	
		0.17770945	519	
		0.53391806	520	
		0.54144996	521	
		0.320664	522	
		0.9818243	523	
		0.46155111	524	
		0.74658476	525	
		0.85239126	526	
		0.20680626	527	
		0.5977697	528	
		0.71201308	529	
		0.90706582	530	
		0.03860619	531	
		0.97177136	532	
		0.47984623	533	
		0.5877673	534	
		0.28267456	535	
		0.34812333	536	
		0.59306421	537	
		0.98072145	538	
		0.16864761	539	
		0.97428428	540	
		0.60903945	541	
		0.0144332	542	
		0.24328088	543	
		0.28083984	544	
		0.40715965	545	
		0.77314353	546	
		0.14451462	547	
		0.85951791	548	
		0.89307806	549	
		0.71608079	550	
		0.55596805	551	
		0.52808274	552	
		0.57403787	553	
		0.45659786	554	
		0.97967655	555	
		0.91456922	556	
		0.39891782	557	
		0.7557061	558	
		0.83984439	559	
		0.16410349	560	
		0.30470086	561	
		0.44652177	562	
		0.54048615	563	
		0.13431381	564	
		0.38677136	565	
		0.52075933	566	
		0.06778891	567	
		0.60948413	568	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53946388	569	
		0.71520799	570	
		0.23734526	571	
		0.15908531	572	
		0.48797003	573	
		0.51160012	574	
		0.86673684	575	
		0.32959011	576	
		0.59362059	577	
		0.48846297	578	
8	C1	0.00416887	579	
		0.19012345	580	
		0.11640234	581	
		0.35849484	582	
		0.42169346	583	
		0.33461434	584	
		0.38797575	585	
		0.42201916	586	
		0.74977244	587	
		0.60036535	588	
		0.07084193	589	
		0.18292861	590	
		0.98061852	591	
		0.82230016	592	
		0.39617994	593	
		0.02203395	594	
		0.57138656	595	
		0.85344045	596	
		0.77497395	597	
		0.45607362	598	
		0.03028913	599	
		0.97084033	600	
		0.58564738	601	
		0.04700016	602	
		0.6772045	603	
		0.52662494	604	
		0.29652829	605	
		0.84753929	606	
		0.41374743	607	
		0.38023744	608	
		0.37075261	609	
		0.66411807	610	
		0.26112009	611	
		0.98064214	612	
		0.91566079	613	
		0.04973986	614	
		0.69625211	615	
		0.85334328	616	
		0.93337388	617	
		0.66683655	618	
		0.53851515	619	
		0.20152379	620	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18161677	621	
		0.18571329	622	
		0.2114824	623	
		0.11552931	624	
		0.29452122	625	
		0.93520428	626	
		0.53032104	627	
		0.39045759	628	
		0.50855294	629	
		0.86214147	630	
		0.40027464	631	
		0.88237524	632	
		0.72064932	633	
		0.32151851	634	
		0.13149453	635	
		0.58979728	636	
		0.90085604	637	
		0.52624064	638	
		0.04638652	639	
		0.82922859	640	
		0.12333225	641	
		0.22693434	642	
		0.76409573	643	
		0.7145501	644	
		0.23432657	645	
		0.93533834	646	
		0.90163134	647	
		0.97871467	648	
		0.10756463	649	
		0.87811969	650	
		0.94504874	651	
		0.74732613	652	
		0.15378354	653	
		0.87945951	654	
		0.65049841	655	
		0.36124887	656	
		0.01203216	657	
		0.18318953	658	
		0.09002524	659	
		0.63140322	660	
		0.61746937	661	
		0.92967613	662	
		0.09483215	663	
		0.17547795	664	
		0.7888428	665	
		0.80347948	666	
		0.64476507	667	
		0.09449254	668	
		0.14617972	669	
		0.13371673	670	
		0.42705766	671	
		0.5761637	672	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18075605	673	
		0.4396773	674	
		0.88225664	675	
		0.44248027	676	
		0.55619507	677	
		0.14589571	678	
		0.01563995	679	
		0.21860949	680	
		0.30244145	681	
		0.31631444	682	
		0.20108941	683	
		0.25554224	684	
		0.58239748	685	
		0.03946508	686	
		0.85034165	687	
		0.78871933	688	
		0.15679674	689	
		0.13689008	690	
		0.34016233	691	
		0.85960972	692	
		0.57608965	693	
		0.09759402	694	
		0.74805124	695	
		0.4492634	696	
		0.95797816	697	
		0.7638196	698	
		0.64365969	699	
		0.64571949	700	
		0.59433686	701	
		0.08472983	702	
		0.93746631	703	
		0.46474329	704	
		0.76854747	705	
		0.10052351	706	
		0.94233949	707	
		0.15501241	708	
		0.33327564	709	
		0.11974644	710	
		0.59362595	711	
		0.06437781	712	
		0.07431163	713	
		0.56106594	714	
		0.28417295	715	
		0.4861889	716	
		0.58651664	717	
		0.09091835	718	
		0.53622391	719	
		0.48431691	720	
		0.47097067	721	
		0.89131915	722	
		0.14793645	723	
		0.21635354	724	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.46678505	725	
		0.1362522	726	
		0.61210493	727	
		0.87493131	728	
		0.32487733	729	
		0.62867293	730	
		0.09646085	731	
		0.55796114	732	
		0.51511672	733	
		0.1942396	734	
		0.38038577	735	
		0.94494135	736	
		0.22410544	737	
		0.29842861	738	
		0.65768226	739	
		0.74844642	740	
		0.28502113	741	
		0.63742743	742	
		0.28750848	743	
		0.52973344	744	
		0.63187193	745	
		0.29292178	746	
		0.3305456	747	
		0.10019116	748	
		0.45827267	749	
		0.71343733	750	
		0.95457699	751	
		0.28117348	752	
		0.7728985	753	
		0.21628733	754	
		0.39051701	755	
		0.79690152	756	
		0.97110126	757	
		0.62224992	758	
		0.38601215	759	
		0.60037154	760	
		0.68068897	761	
		0.67177556	762	
		0.23965083	763	
		0.60683208	764	
		0.30128073	765	
		0.58441939	766	
		0.67101279	767	
		0.35057206	768	
		0.05290817	769	
		0.67191465	770	
		0.22196896	771	
		0.9672525	772	
		0.89060915	773	
		0.95384393	774	
		0.31324993	775	
		0.48413593	776	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19315423	777	
		0.91543818	778	
		0.99825973	779	
		0.07790483	780	
		0.28938271	781	
		0.33846088	782	
		0.13472946	783	
		0.97780281	784	
		0.18581784	785	
		0.41860433	786	
		0.91749162	787	
		0.323374	788	
		0.8413337	789	
		0.20278119	790	
		0.94336681	791	
		0.22728112	792	
		0.21898409	793	
		0.11545943	794	
		0.55251227	795	
		0.38020644	796	
		0.72115155	797	
		0.32463318	798	
		0.10171116	799	
		0.29680628	800	
		0.70843228	801	
		0.76309209	802	
		0.15940313	803	
		0.40915116	804	
		0.36391472	805	
		0.94627736	806	
		0.11248395	807	
		0.58199437	808	
		0.18468547	809	
		0.09375494	810	
		0.4132169	811	
		0.03504936	812	
		0.45719272	813	
		0.6448787	814	
		0.43211979	815	
		0.23198721	816	
		0.12807361	817	
		0.63942254	818	
		0.43950689	819	
		0.48287267	820	
		0.20034038	821	
		0.79381414	822	
		0.30016609	823	
		0.96724658	824	
		0.64223051	825	
		0.04728157	826	
		0.52788018	827	
		0.12994951	828	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64834434	829	
		0.83288916	830	
		0.26782936	831	
		0.99522004	832	
		0.3677366	833	
		0.73840554	834	
		0.70221451	835	
		0.52285263	836	
		0.63568866	837	
		0.33523843	838	
		0.20004506	839	
		0.44134512	840	
		0.96614434	841	
		0.29293494	842	
		0.5787681	843	
		0.94409358	844	
		0.00915194	845	
		0.05981305	846	
		0.14574388	847	
		0.34772044	848	
		0.44263006	849	
		0.51286441	850	
		0.572406	851	
		0.20844574	852	
		0.23644045	853	
		0.34258538	854	
		0.49569084	855	
		0.9073296	856	
		0.7155047	857	
		0.91502528	858	
		0.25846294	859	
		0.65150577	860	
		0.49537268	861	
		0.95464099	862	
		0.98626044	863	
		0.27766088	864	
		0.80308652	865	
		0.95884298	866	
		0.06560592	867	
		0.98553928	868	
		0.22315413	869	
		0.2367601	870	
		0.17503295	871	
		0.74544461	872	
		0.66024965	873	
		0.33751503	874	
		0.98248688	875	
		0.5401248	876	
		0.33347962	877	
		0.1733835	878	
		0.08403261	879	
		0.29819446	880	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97419387	881	
		0.05632946	882	
		0.74566702	883	
		0.66191772	884	
		0.76995278	885	
		0.21108537	886	
		0.76314086	887	
		0.61782246	888	
		0.42042093	889	
		0.20610666	890	
		0.94783213	891	
		0.10795403	892	
		0.95411863	893	
		0.06861511	894	
		0.4788462	895	
		0.18511333	896	
		0.3263025	897	
		0.91194408	898	
		0.76312827	899	
		0.72239747	900	
		0.31179969	901	
		0.1379207	902	
		0.05511441	903	
		0.17890096	904	
		0.03197637	905	
		0.91208748	906	
		0.69404284	907	
		0.24986698	908	
		0.78256731	909	
		0.86943107	910	
		0.83013411	911	
		0.80696296	912	
		0.98502403	913	
		0.12777362	914	
		0.7822075	915	
		0.98616248	916	
		0.65038816	917	
		0.7920312	918	
		0.19195583	919	
		0.15078346	920	
		0.80062441	921	
		0.96201717	922	
		0.36765666	923	
		0.12943267	924	
		0.48508991	925	
		0.19029758	926	
		0.06894041	927	
		0.75378505	928	
		0.54049172	929	
		0.88105288	930	
		0.44655908	931	
		0.21812021	932	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.88485653	933	
		0.4826945	934	
		0.50769076	935	
		0.78694787	936	
		0.30299804	937	
		0.09095481	938	
		0.38128119	939	
		0.13721578	940	
		0.24075643	941	
		0.36194784	942	
		0.82273876	943	
		0.98123756	944	
		0.04647382	945	
		0.73949702	946	
		0.39480686	947	
		0.08709554	948	
C6		0.00667747	949	
		0.36652174	950	
		0.19405891	951	
		0.21348482	952	
		0.63650565	953	
		0.71337666	954	
		0.11387473	955	
		0.13005294	956	
		0.34110022	957	
		0.70025152	958	
		0.15057247	959	
		0.46517226	960	
		0.97098861	961	
		0.48909154	962	
		0.36410473	963	
		0.02015242	964	
		0.01285222	965	
		0.39213532	966	
		0.83339145	967	
		0.27311887	968	
		0.87556167	969	
		0.65122728	970	
		0.60184892	971	
		0.07472003	972	
		0.85993223	973	
		0.99912234	974	
		0.2583392	975	
		0.95340016	976	
		0.13160221	977	
		0.85150863	978	
		0.46736756	979	
		0.35732584	980	
		0.85466014	981	
		0.28547236	982	
C1	C7	0.00581343	983	
		0.91142368	984	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47745858	985	
		0.12889445	986	
		0.31235596	987	
		0.94165612	988	
		0.1108212	989	
		0.76614305	990	
		0.62117295	991	
		0.51763494	992	
		0.01546199	993	
		0.54912274	994	
		0.57002842	995	
		0.33836107	996	
		0.83653953	997	
		0.31767715	998	
		0.88765013	999	
		0.45408612	1000	
		0.2898	1001	
		0.74438552	1002	
		0.27991129	1003	
		0.47713278	1004	
		0.42307254	1005	
		0.95285267	1006	
		0.35851733	1007	
		0.44832708	1008	
		0.56087784	1009	
		0.52220892	1010	
		0.64426595	1011	
		0.76933177	1012	
		0.3920119	1013	
		0.97033336	1014	
		0.4725732	1015	
		0.66973993	1016	
		0.04000135	1017	
		0.34197596	1018	
		0.42163795	1019	
		0.66896049	1020	
		0.98029141	1021	
		0.83187061	1022	
		0.79008876	1023	
		0.82908214	1024	
		0.5753702	1025	
		0.53465088	1026	
		0.5685641	1027	
		0.61533668	1028	
		0.76002922	1029	
		0.38882505	1030	
		0.09642237	1031	
		0.74881269	1032	
		0.20177985	1033	
10	C5	0.00541701	1034	
		0.17741042	1035	
		0.6799087	1036	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.37379607	1037	
		0.98316077	1038	
		0.04432666	1039	
		0.47695915	1040	
		0.8515431	1041	
		0.06690842	1042	
		0.2484429	1043	
2	3	0.00209703	1044	
		0.63007791	1045	
		0.53742855	1046	
		0.03521524	1047	
		0.8174056	1048	
		0.96059069	1049	
		0.9464773	1050	
		0.06933002	1051	
		0.16661572	1052	
		0.77973243	1053	
		0.17011847	1054	
		0.47428413	1055	
		0.31785223	1056	
		0.21402714	1057	
		0.61987366	1058	
		0.47096829	1059	
		0.91056098	1060	
		0.21919046	1061	
		0.19818459	1062	
		0.02903294	1063	
		0.14347913	1064	
		0.06529671	1065	
		0.08418091	1066	
		0.14485008	1067	
		0.10008815	1068	
		0.40954991	1069	
		0.63703232	1070	
		0.34761374	1071	
		0.56399258	1072	
		0.54669626	1073	
		0.35448501	1074	
		0.47391589	1075	
		0.89505371	1076	
		0.83090771	1077	
		0.12433535	1078	
		0.12946357	1079	
		0.52844501	1080	
		0.72347714	1081	
		0.84050636	1082	
		0.65410842	1083	
		0.47391726	1084	
		0.36526967	1085	
		0.80446582	1086	
		0.27472611	1087	
		0.48578903	1088	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.6576506	1089	
		0.69972523	1090	
		0.74758866	1091	
		0.27991107	1092	
		0.16910795	1093	
		0.2121923	1094	
C8		0.00737049	1095	
		0.21337083	1096	
		0.6232689	1097	
		0.68340771	1098	
		0.31294819	1099	
		0.11337704	1100	
		0.15380038	1101	
		0.65907966	1102	
		0.46511051	1103	
		0.06893036	1104	
		0.76770579	1105	
		0.33894078	1106	
		0.0606044	1107	
		0.74895527	1108	
		0.21019588	1109	
		0.31809575	1110	
		0.14864767	1111	
		0.96856918	1112	
		0.59731427	1113	
		0.97945733	1114	
		0.02179903	1115	
		0.36010723	1116	
		0.80992025	1117	
		0.01389985	1118	
		0.96031406	1119	
		0.24672918	1120	
		0.3920675	1121	
		0.25355139	1122	
		0.80884103	1123	
		0.93651281	1124	
		0.11023621	1125	
		0.2507095	1126	
		0.71276022	1127	
C7		0.00703115	1128	
		0.61338777	1129	
		0.49702562	1130	
		0.32317609	1131	
		0.74576656	1132	
		0.14865906	1133	
		0.37794588	1134	
		0.32796799	1135	
		0.54398147	1136	
		0.56786951	1137	
		0.93384013	1138	
		0.62666976	1139	
		0.49827402	1140	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.84005363	1141	
		0.61490969	1142	
		0.49420155	1143	
		0.47018295	1144	
		0.64627926	1145	
		0.32062911	1146	
		0.59144747	1147	
		0.92933096	1148	
		0.83148568	1149	
		0.47710823	1150	
		0.71744227	1151	
		0.3292334	1152	
		0.38759164	1153	
		0.33993023	1154	
		0.90927634	1155	
		0.69598662	1156	
		0.93660035	1157	
		0.94725628	1158	
		0.83743171	1159	
		0.17082257	1160	
		0.7078545	1161	
		0.90343631	1162	
		0.32316498	1163	
		0.24504955	1164	
		0.77107881	1165	
		0.57193388	1166	
		0.5017698	1167	
		0.50770765	1168	
		0.4198839	1169	
		0.70709191	1170	
		0.59111171	1171	
		0.80954572	1172	
		0.23261906	1173	
		0.39545667	1174	
		0.22487042	1175	
		0.50282691	1176	
		0.45504401	1177	
		0.72238126	1178	
		0.66049877	1179	
		0.20096171	1180	
		0.66296315	1181	
		0.44656454	1182	
		0.12928109	1183	
		0.09007082	1184	
		0.49833299	1185	
		0.78938467	1186	
		0.66995598	1187	
		0.05989262	1188	
		0.7882271	1189	
		0.77131022	1190	
		0.69896992	1191	
		0.4012483	1192	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76733144	1193	
		0.07565446	1194	
		0.6524029	1195	
		0.25588861	1196	
		0.21367516	1197	
		0.08015695	1198	
		0.6879374	1199	
		0.01431896	1200	
		0.8827897	1201	
		0.67657505	1202	
		0.80103918	1203	
		0.99165206	1204	
		0.25604465	1205	
		0.33576159	1206	
		0.54440567	1207	
		0.7130397	1208	
		0.12870417	1209	
		0.48698784	1210	
		0.0778413	1211	
		0.96908333	1212	
		0.24673016	1213	
		0.21205264	1214	
		0.34121589	1215	
		0.53670412	1216	
		0.08316983	1217	
		0.11287765	1218	
		0.37842756	1219	
		0.57879433	1220	
		0.47187952	1221	
		0.79889191	1222	
		0.36996297	1223	
		0.05793239	1224	
		0.62807256	1225	
		0.53107868	1226	
		0.07160101	1227	
		0.22374399	1228	
		0.89941496	1229	
		0.4322625	1230	
		0.9756016	1231	
		0.16225726	1232	
		0.59122959	1233	
		0.7169035	1234	
		0.26413559	1235	
		0.75797646	1236	
		0.55329914	1237	
		0.83311864	1238	
		0.74737312	1239	
		0.90585402	1240	
		0.4410047	1241	
		0.27110861	1242	
		0.15041071	1243	
		0.70233466	1244	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.63888267	1245	
		0.93589799	1246	
		0.45651024	1247	
		0.62959154	1248	
		0.43379081	1249	
		0.62949388	1250	
		0.0190725	1251	
		0.52192704	1252	
		0.05605988	1253	
		0.42010484	1254	
		0.94584348	1255	
		0.69009542	1256	
		0.56024932	1257	
		0.82498533	1258	
		0.08908253	1259	
		0.44448058	1260	
		0.34595371	1261	
		0.94458049	1262	
		0.48537254	1263	
		0.41400297	1264	
		0.41888852	1265	
		0.49720515	1266	
		0.28745657	1267	
		0.72284949	1268	
		0.91981144	1269	
		0.36313538	1270	
		0.99238183	1271	
		0.21417278	1272	
		0.71091444	1273	
		0.62099499	1274	
		0.25299141	1275	
		0.09539299	1276	
		0.36371793	1277	
		0.54734173	1278	
		0.72962065	1279	
		0.04121617	1280	
		0.91239902	1281	
		0.66049107	1282	
		0.1394379	1283	
		0.35687058	1284	
		0.53003686	1285	
		0.69820909	1286	
		0.53770196	1287	
		0.42915929	1288	
		0.54313443	1289	
		0.7439162	1290	
		0.54165298	1291	
		0.5086339	1292	
		0.36005337	1293	
		0.28613743	1294	
		0.3955657	1295	
		0.72910386	1296	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.71345631	1297	
		0.87959806	1298	
		0.36161908	1299	
		0.48804671	1300	
		0.16543402	1301	
		0.3131298	1302	
		0.86795528	1303	
		0.50177257	1304	
		0.10703045	1305	
		0.17684346	1306	
		0.63499549	1307	
		0.95346741	1308	
		0.91058551	1309	
		0.15471037	1310	
		0.81638464	1311	
		0.53501736	1312	
		0.8815431	1313	
		0.77507844	1314	
		0.5029548	1315	
		0.83001677	1316	
		0.21465888	1317	
		0.33260536	1318	
		0.62978647	1319	
		0.8332468	1320	
		0.57301539	1321	
		0.9685965	1322	
		0.37206835	1323	
		0.60261507	1324	
		0.16122082	1325	
		0.8590722	1326	
		0.69728264	1327	
		0.29272158	1328	
		0.83915721	1329	
		0.67958705	1330	
		0.67315451	1331	
		0.62976318	1332	
		0.94000857	1333	
		0.27911914	1334	
		0.98988443	1335	
		0.24872431	1336	
		0.07457963	1337	
		0.84685483	1338	
		0.81144814	1339	
		0.21929248	1340	
		0.2014923	1341	
		0.54550248	1342	
		0.83666595	1343	
		0.29919787	1344	
		0.16424991	1345	
		0.81046026	1346	
		0.69507812	1347	
		0.40870076	1348	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.91376929	1349	
		0.4766798	1350	
		0.34075129	1351	
		0.92277352	1352	
		0.04757599	1353	
		0.70620712	1354	
		0.89823083	1355	
		0.41839707	1356	
		0.78088319	1357	
		0.84038756	1358	
		0.69125408	1359	
		0.52239099	1360	
		0.72130932	1361	
		0.28704072	1362	
		0.38815961	1363	
		0.29369737	1364	
		0.43991003	1365	
		0.7183417	1366	
		0.21155779	1367	
		0.51039817	1368	
4	5	0.00253195	1369	
		0.4822261	1370	
		0.69044074	1371	
		0.33743473	1372	
		0.89804319	1373	
		0.2178654	1374	
		0.09689603	1375	
		0.10998095	1376	
		0.33939127	1377	
		0.47044478	1378	
		0.84018043	1379	
		0.60037833	1380	
		0.27713149	1381	
		0.03422532	1382	
		0.41650962	1383	
		0.54172469	1384	
		0.55919853	1385	
		0.31388979	1386	
		0.21634621	1387	
		0.33818962	1388	
		0.81690604	1389	
		0.20683151	1390	
		0.85610117	1391	
		0.57017717	1392	
		0.49958321	1393	
		0.31686115	1394	
		0.23527777	1395	
		0.31447565	1396	
		0.60776528	1397	
		0.85337889	1398	
		0.39133482	1399	
		0.11877925	1400	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97208827	1401	
		0.09599566	1402	
		0.76991659	1403	
		0.41472002	1404	
		0.50274162	1405	
		0.34109062	1406	
		0.98110748	1407	
		0.96612387	1408	
		0.36634939	1409	
		0.20357592	1410	
		0.59352964	1411	
		0.25219535	1412	
		0.39435993	1413	
		0.79903859	1414	
		0.01994383	1415	
		0.19800288	1416	
		0.09283735	1417	
		0.16698787	1418	
		0.23744113	1419	
		0.52614102	1420	
		0.58896012	1421	
		0.24539341	1422	
		0.86802443	1423	
		0.9350959	1424	
		0.30480567	1425	
		0.41567334	1426	
		0.65234939	1427	
		0.66331356	1428	
		0.71464253	1429	
		0.46197174	1430	
		0.92691256	1431	
		0.97208832	1432	
		0.49908295	1433	
		0.74083379	1434	
		0.59260838	1435	
		0.33935375	1436	
		0.4349695	1437	
		0.68628518	1438	
		0.18229914	1439	
		0.74952824	1440	
		0.87708354	1441	
		0.32889032	1442	
		0.91496326	1443	
		0.83647037	1444	
		0.23001441	1445	
		0.70355605	1446	
		0.1317414	1447	
		0.83895352	1448	
		0.93696543	1449	
		0.71256406	1450	
		0.45713554	1451	
		0.9781367	1452	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.81330059	1453	
		0.37991884	1454	
		0.38398305	1455	
		0.50262863	1456	
		0.52145391	1457	
		0.9252449	1458	
		0.14839089	1459	
		0.01929965	1460	
		0.20521785	1461	
		0.25922522	1462	
		0.05676048	1463	
		0.48675927	1464	
		0.09012128	1465	
		0.38505027	1466	
		0.58365057	1467	
		0.835061	1468	
		0.81506075	1469	
		0.71819293	1470	
		0.69626855	1471	
		0.29877856	1472	
		0.72163073	1473	
		0.66614113	1474	
		0.4261221	1475	
		0.6517153	1476	
		0.02101582	1477	
		0.22575576	1478	
		0.13052162	1479	
		0.05789419	1480	
		0.52721993	1481	
		0.88890126	1482	
		0.43737649	1483	
		0.41603182	1484	
		0.21850834	1485	
		0.92312367	1486	
		0.53411509	1487	
		0.44990205	1488	
		0.21062224	1489	
		0.0981981	1490	
		0.04169638	1491	
		0.47203385	1492	
		0.62291595	1493	
		0.92189651	1494	
		0.54810582	1495	
		0.93131732	1496	
		0.74763138	1497	
		0.77472431	1498	
		0.63034541	1499	
		0.01141913	1500	
		0.59421781	1501	
		0.67528225	1502	
		0.69295694	1503	
		0.68087426	1504	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76259408	1505	
		0.82120595	1506	
		0.30538372	1507	
		0.83196323	1508	
		0.65404786	1509	
		0.50367601	1510	
		0.68259245	1511	
		0.49081598	1512	
		0.09368377	1513	
		0.53566825	1514	
		0.42912815	1515	
		0.88789585	1516	
		0.32300006	1517	
		0.33710505	1518	
		0.84542167	1519	
		0.76366378	1520	
		0.61093636	1521	
		0.38595016	1522	
		0.49199925	1523	
		0.68681017	1524	
		0.21509486	1525	
		0.0389738	1526	
		0.84635678	1527	
		0.48077901	1528	
		0.91064125	1529	
		0.7154107	1530	
		0.41807246	1531	
		0.66777197	1532	
		0.79054642	1533	
		0.11945504	1534	
		0.13680743	1535	
		0.27586632	1536	
		0.08796317	1537	
		0.70524093	1538	
		0.22100846	1539	
		0.93060938	1540	
		0.80387341	1541	
		0.64558656	1542	
		0.01142014	1543	
		0.47442184	1544	
		0.17094715	1545	
		0.41745781	1546	
		0.92767859	1547	
		0.93927929	1548	
		0.01425703	1549	
		0.48884631	1550	
		0.21288746	1551	
		0.29351816	1552	
		0.86340345	1553	
		0.96010426	1554	
		0.61717631	1555	
		0.80018202	1556	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75814798	1557	
		0.78311531	1558	
		0.65292943	1559	
		0.93722436	1560	
		0.40775579	1561	
		0.15947537	1562	
		0.12088259	1563	
		0.92515959	1564	
		0.9303991	1565	
		0.2225404	1566	
		0.45928992	1567	
		0.59972607	1568	
		0.7029491	1569	
		0.89426612	1570	
		0.38053646	1571	
		0.36413286	1572	
		0.48625132	1573	
		0.70571832	1574	
		0.30447416	1575	
		0.3662313	1576	
		0.67308107	1577	
		0.80218466	1578	
		0.46259965	1579	
C9		0.00816246	1580	
		0.12926466	1581	
		0.74620628	1582	
		0.0345193	1583	
		0.59375621	1584	
		0.02413858	1585	
		0.65868388	1586	
		0.76048477	1587	
		0.32147535	1588	
		0.3269079	1589	
		0.11964059	1590	
		0.92253204	1591	
		0.3072326	1592	
		0.02051759	1593	
		0.93980904	1594	
		0.63299895	1595	
		0.34316858	1596	
		0.50407558	1597	
		0.49613844	1598	
		0.9218059	1599	
		0.84695804	1600	
		0.71934241	1601	
		0.01293314	1602	
		0.72033128	1603	
		0.49565664	1604	
		0.97952628	1605	
		0.49498034	1606	
		0.4996934	1607	
		0.87672279	1608	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.38247323	1609	
		0.99745468	1610	
		0.6899717	1611	
		0.19776026	1612	
		0.11577338	1613	
		0.6767614	1614	
		0.25733982	1615	
		0.81196606	1616	
		0.02183033	1617	
		0.28374541	1618	
		0.57250916	1619	
		0.02345918	1620	
		0.56613117	1621	
		0.80488393	1622	
		0.24390572	1623	
		0.99925778	1624	
		0.81149574	1625	
		0.51167207	1626	
		0.43569437	1627	
		0.52552912	1628	
		0.98751974	1629	
		0.41873131	1630	
		0.57511594	1631	
		0.29299963	1632	
		0.45349037	1633	
		0.48347042	1634	
		0.91391529	1635	
		0.94571818	1636	
		0.83005367	1637	
		0.36538242	1638	
		0.60177213	1639	
		0.33535482	1640	
		0.22578292	1641	
		0.18691119	1642	
		0.39489986	1643	
		0.18179054	1644	
		0.93071207	1645	
		0.0108097	1646	
		0.81180621	1647	
		0.6432785	1648	
		0.96874287	1649	
		0.26584778	1650	
		0.71001649	1651	
		0.78721161	1652	
		0.06320387	1653	
		0.22546154	1654	
		0.77465066	1655	
		0.97042685	1656	
		0.61078968	1657	
		0.76237348	1658	
		0.4398428	1659	
		0.39022616	1660	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.10209111	1661	
		0.26599053	1662	
		0.13644363	1663	
		0.75616375	1664	
		0.97841574	1665	
		0.666528	1666	
		0.0864844	1667	
		0.5900732	1668	
		0.45800061	1669	
		0.05885226	1670	
		0.72958709	1671	
		0.70497087	1672	
		0.96782744	1673	
		0.72958003	1674	
		0.78067352	1675	
		0.38851242	1676	
		0.87394513	1677	
		0.55314328	1678	
		0.46811784	1679	
		0.83359671	1680	
		0.76482367	1681	
		0.05401582	1682	
		0.02556161	1683	
		0.69243233	1684	
		0.54666355	1685	
		0.05666357	1686	
		0.99952849	1687	
		0.01782163	1688	
		0.56473459	1689	
		0.87193262	1690	
		0.42810867	1691	
		0.20931133	1692	
		0.90836962	1693	
		0.73704706	1694	
		0.48975789	1695	
C4		0.00607367	1696	
		0.69749394	1697	
		0.98868863	1698	
		0.21781644	1699	
		0.50639083	1700	
		0.57087753	1701	
		0.6847112	1702	
		0.17039344	1703	
		0.40479544	1704	
		0.80908379	1705	
		0.07917961	1706	
		0.95978461	1707	
		0.42449552	1708	
		0.44222671	1709	
		0.34361019	1710	
		0.0371488	1711	
		0.19579102	1712	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52768384	1713	
		0.27319282	1714	
		0.4720311	1715	
		0.05807292	1716	
		0.77234261	1717	
		0.08222709	1718	
		0.74970073	1719	
		0.6071946	1720	
		0.04968365	1721	
		0.9168815	1722	
		0.06063604	1723	
		0.62117726	1724	
		0.83730589	1725	
		0.69209271	1726	
		0.18331351	1727	
		0.84175432	1728	
		0.78065506	1729	
		0.63946261	1730	
		0.83292618	1731	
		0.52460868	1732	
		0.73828717	1733	
		0.64415743	1734	
		0.12795388	1735	
		0.73914867	1736	
		0.20000492	1737	
		0.68940688	1738	
		0.30466668	1739	
		0.10421145	1740	
		0.12752603	1741	
		0.72000019	1742	
		0.61236238	1743	
		0.41872153	1744	
		0.50139276	1745	
		0.35464849	1746	
		0.1314306	1747	
		0.31413456	1748	
		0.73607349	1749	
		0.03019021	1750	
		0.30949515	1751	
		0.76141254	1752	
		0.29180515	1753	
		0.66355513	1754	
		0.44039707	1755	
		0.42259592	1756	
		0.19765173	1757	
		0.7905131	1758	
		0.03236796	1759	
		0.44145136	1760	
		0.83887197	1761	
		0.17476458	1762	
		0.08019559	1763	
		0.09834901	1764	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.02651376	1765	
		0.17790848	1766	
		0.83857612	1767	
		0.80415392	1768	
		0.48017546	1769	
		0.76305168	1770	
		0.04293328	1771	
		0.39910532	1772	
		0.61500978	1773	
		0.88991022	1774	
		0.12746722	1775	
		0.51636859	1776	
		0.47033733	1777	
		0.23805294	1778	
		0.13946655	1779	
		0.02138207	1780	
		0.93982714	1781	
		0.58884276	1782	
		0.75974188	1783	
		0.17691755	1784	
		0.99742638	1785	
		0.46403426	1786	
		0.29897976	1787	
		0.54683001	1788	
		0.55031902	1789	
5	6	0.00270493	1790	
		0.59961895	1791	
		0.15491567	1792	
		0.35526272	1793	
		0.35641322	1794	
		0.12423397	1795	
		0.02774984	1796	
		0.63331205	1797	
		0.92354556	1798	
		0.87984427	1799	
		0.07693537	1800	
		0.14045801	1801	
		0.68805269	1802	
		0.26748399	1803	
		0.15627921	1804	
		0.08355631	1805	
		0.95507833	1806	
		0.55274375	1807	
		0.25880303	1808	
		0.97659125	1809	
		0.0608323	1810	
		0.76857044	1811	
		0.29969971	1812	
		0.87353281	1813	
		0.43890761	1814	
		0.7599815	1815	
		0.15227454	1816	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19162114	1817	
		0.82379769	1818	
		0.72426077	1819	
		0.86449243	1820	
		0.95605394	1821	
		0.89732354	1822	
		0.92162274	1823	
		0.75172843	1824	
		0.23557888	1825	
		0.6484977	1826	
		0.60444199	1827	
		0.38177592	1828	
9	C2	0.00420876	1829	
		0.80807121	1830	
		0.31366093	1831	
		0.05324793	1832	
		0.86331944	1833	
		0.22100532	1834	
		0.72358601	1835	
		0.59786619	1836	
		0.21564726	1837	
		0.10813205	1838	
		0.39240346	1839	
		0.75021064	1840	
		0.97047813	1841	
		0.63770483	1842	
		0.97556153	1843	
		0.23852203	1844	
		0.62633126	1845	
		0.7913691	1846	
		0.99063534	1847	
		0.41843186	1848	
		0.33424042	1849	
		0.64869304	1850	
		0.71835847	1851	
		0.24774113	1852	
		0.15376265	1853	
		0.32518006	1854	
		0.97907291	1855	
		0.34544313	1856	
		0.5175263	1857	
		0.35037975	1858	
		0.28583054	1859	
		0.85244032	1860	
		0.74041993	1861	
		0.20316348	1862	
		0.77399329	1863	
		0.87371141	1864	
		0.85940979	1865	
		0.04748537	1866	
		0.16648035	1867	
		0.02462666	1868	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75277384	1869	
		0.00831522	1870	
		0.23015027	1871	
		0.98396212	1872	
		0.3588123	1873	
		0.08817186	1874	
		0.64438443	1875	
		0.60136759	1876	
		0.39842118	1877	
		0.59105198	1878	
		0.16431294	1879	
		0.84930508	1880	
		0.28622832	1881	
		0.32528869	1882	
		0.76426296	1883	
		0.53124885	1884	
		0.64634578	1885	
		0.89517318	1886	
		0.80377879	1887	
		0.09688757	1888	
		0.54922356	1889	
		0.7736844	1890	
		0.11079809	1891	
		0.09341702	1892	
		0.94755489	1893	
		0.25370886	1894	
		0.48371187	1895	
		0.60184359	1896	
		0.75100336	1897	
		0.93947995	1898	
		0.72777562	1899	
		0.53082568	1900	
		0.80196849	1901	
		0.52369816	1902	
		0.40958354	1903	
		0.6141218	1904	
		0.34084033	1905	
		0.62356903	1906	
		0.73503867	1907	
		0.76912477	1908	
		0.27927827	1909	
		0.0429997	1910	
		0.44656401	1911	
		0.61928143	1912	
		0.45974791	1913	
		0.45374735	1914	
		0.51350302	1915	
		0.25701612	1916	
		0.33167562	1917	
		0.72330157	1918	
		0.98247998	1919	
		0.82354468	1920	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.99937238	1921	
		0.52236779	1922	
		0.59390968	1923	
		0.32597122	1924	
		0.20459893	1925	
		0.280375	1926	
		0.68089969	1927	
		0.37639659	1928	
		0.67362164	1929	
		0.28274007	1930	
		0.08630467	1931	
		0.98089178	1932	
		0.37766234	1933	
		0.62725767	1934	
		0.64639802	1935	
		0.01425422	1936	
		0.36838223	1937	
		0.59843179	1938	
		0.18785052	1939	
		0.01271804	1940	
		0.86268601	1941	
		0.10001025	1942	
		0.29065364	1943	
		0.66214259	1944	
		0.71648044	1945	
		0.30028979	1946	
		0.78685522	1947	
		0.43315613	1948	
		0.48613831	1949	
		0.94731889	1950	
		0.9686658	1951	
		0.64366531	1952	
		0.2886582	1953	
		0.50575876	1954	
		0.28251286	1955	
		0.49537195	1956	
		0.09333014	1957	
		0.78191496	1958	
		0.24334098	1959	
		0.56531651	1960	
		0.20968723	1961	
		0.46985844	1962	
		0.7984539	1963	
		0.31963352	1964	
		0.01500875	1965	
		0.97315581	1966	
		0.59378502	1967	
		0.2619407	1968	
		0.12258504	1969	
		0.05588679	1970	
		0.0485401	1971	
		0.65840481	1972	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.5838885	1973	
		0.30365831	1974	
		0.65835957	1975	
		0.57906773	1976	
		0.51309334	1977	
		0.31825594	1978	
		0.52954218	1979	
		0.15869061	1980	
		0.35602672	1981	
		0.3375115	1982	
		0.99705718	1983	
		0.53621872	1984	
		0.85058769	1985	
		0.67002883	1986	
		0.21129104	1987	
		0.14649493	1988	
		0.39020248	1989	
		0.16284178	1990	
		0.83306806	1991	
C10		0.00821735	1992	
		0.78971285	1993	
		0.78034593	1994	
		0.46827487	1995	
		0.06241847	1996	
		0.73310729	1997	
		0.72738588	1998	
		0.47606426	1999	
		0.11329635	2000	
		0.55797225	2001	
		0.17863528	2002	
		0.35825291	2003	
		0.79686497	2004	
		0.08724327	2005	
		0.80744675	2006	
		0.39910801	2007	
		0.38263308	2008	
		0.93944638	2009	
		0.52373917	2010	
		0.77188053	2011	
		0.43937014	2012	
		0.41990833	2013	
		0.47612587	2014	
		0.65659572	2015	
		0.6385261	2016	
		0.30137145	2017	
		0.47901986	2018	
		0.02006625	2019	
		0.80050683	2020	
		0.97326022	2021	
		0.99898332	2022	
C2	C8	0.00590758	2023	
		0.33407207	2024	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32795634	2025	
		0.13223725	2026	
		0.90204974	2027	
		0.55775212	2028	
		0.28422347	2029	
		0.84503956	2030	
		0.58023965	2031	
		0.50520627	2032	
		0.67521409	2033	
		0.15277757	2034	
		0.81036709	2035	
		0.53100969	2036	
		0.44256588	2037	
		0.26090013	2038	
		0.52667557	2039	
		0.71240057	2040	
		0.56568889	2041	
		0.59278607	2042	
		0.97452048	2043	
		0.55029904	2044	
		0.45305276	2045	
		0.53315818	2046	
		0.71859486	2047	
		0.46955199	2048	
		0.58195873	2049	
		0.44543398	2050	
		0.19320145	2051	
		0.23250339	2052	
		0.06638428	2053	
		0.96231658	2054	
		0.01956614	2055	
		0.24715633	2056	
		0.69291275	2057	
		0.51811441	2058	
		0.6031599	2059	
		0.85339945	2060	
		0.51198765	2061	
		0.31178722	2062	
		0.7426702	2063	
		0.39766823	2064	
		0.48908391	2065	
		0.153115	2066	
		0.64533889	2067	
		0.66885131	2068	
		0.41622493	2069	
		0.23635732	2070	
		0.39548785	2071	
		0.52076211	2072	
		0.84590525	2073	
		0.26400463	2074	
		0.30835653	2075	
		0.16776789	2076	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.57177675	2077	
		0.17797385	2078	
		0.32937133	2079	
		0.56125116	2080	
		0.56074203	2081	
		0.90538603	2082	
		0.81349933	2083	
		0.3745434	2084	
		0.37370473	2085	
		0.14102031	2086	
		0.46838302	2087	
		0.73183589	2088	
		0.35972927	2089	
		0.76998435	2090	
		0.56505011	2091	
		0.82499386	2092	
		0.79163055	2093	
		0.72767823	2094	
		0.71361088	2095	
		0.25047596	2096	
		0.0643495	2097	
		0.31123184	2098	
		0.72291549	2099	
		0.28459292	2100	
		0.62278681	2101	
		0.19237098	2102	
		0.65304537	2103	
		0.23972356	2104	
		0.44946739	2105	
		0.91025205	2106	
		0.71387249	2107	
		0.31149527	2108	
		0.2251348	2109	
		0.6482239	2110	
		0.97253569	2111	
		0.93629601	2112	
		0.16405622	2113	
		0.04823058	2114	
		0.50136101	2115	
		0.43917556	2116	
		0.3888675	2117	
		0.71082601	2118	
		0.58200435	2119	
		0.59827044	2120	
		0.36102497	2121	
		0.56294763	2122	
		0.3230792	2123	
		0.92507514	2124	
		0.82102048	2125	
		0.77439919	2126	
		0.95257357	2127	
		0.88860529	2128	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61397179	2129	
		0.44235015	2130	
		0.59502704	2131	
		0.72043944	2132	
		0.25940122	2133	
		0.57924316	2134	
		0.81400577	2135	
		0.28762866	2136	
		0.36813456	2137	
		0.94258169	2138	
		0.38980897	2139	
		0.84061763	2140	
		0.48623096	2141	
		0.07635672	2142	
		0.05617473	2143	
		0.77369064	2144	
		0.30381927	2145	
		0.9988668	2146	
		0.46430918	2147	
		0.95420779	2148	
		0.45798306	2149	
		0.35421824	2150	
		0.44494429	2151	
		0.82626435	2152	
		0.28425355	2153	
		0.5820833	2154	
C3	C10	0.00605446	2155	
		0.757153	2156	
		0.81568309	2157	
		0.85672358	2158	
		0.71022344	2159	
		0.23392692	2160	
		0.28199792	2161	
		0.76801946	2162	
		0.47606155	2163	
		0.59138205	2164	
		0.72579465	2165	
		0.6975133	2166	
		0.87363628	2167	
		0.48512619	2168	
		0.37777863	2169	
		0.09764349	2170	
		0.89000195	2171	
		0.59193591	2172	
		0.69048867	2173	
		0.14142661	2174	
		0.50875965	2175	
		0.93919655	2176	
		0.81526044	2177	
		0.78395025	2178	
		0.98301096	2179	
		0.79484722	2180	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.92168298	2181	
6	7	0.00301624	2182	
		0.88133375	2183	
		0.98859107	2184	
		0.82367843	2185	
		0.51252154	2186	
		0.30683101	2187	
		0.58894536	2188	
		0.9522499	2189	
		0.82658634	2190	
		0.4795889	2191	
		0.64377375	2192	
		0.67194432	2193	
		0.73036826	2194	
		0.19198896	2195	
		0.0918651	2196	
		0.4892125	2197	
		0.4018638	2198	
		0.4615277	2199	
		0.73031495	2200	
		0.96147221	2201	
		0.90078366	2202	
		0.64771196	2203	
		0.63485839	2204	
		0.59809049	2205	
		0.49005374	2206	
		0.981683	2207	
		0.92625549	2208	
		0.21110459	2209	
		0.69256682	2210	
		0.30555002	2211	
		0.48930913	2212	
		0.19745105	2213	
		0.46002718	2214	
		0.14598672	2215	
		0.56928239	2216	
		0.52257971	2217	
		0.3091643	2218	
		0.48480116	2219	
		0.82762199	2220	
		0.4518679	2221	
		0.74483482	2222	
		0.88555761	2223	
		0.49268209	2224	
		0.15707909	2225	
		0.33264429	2226	
		0.32523533	2227	
		0.88460813	2228	
		0.7991386	2229	
		0.8297646	2230	
		0.91989349	2231	
		0.19699806	2232	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.11736832	2233	
		0.24894874	2234	
		0.28915822	2235	
		0.07857772	2236	
		0.91558931	2237	
C5		0.00619021	2238	
		0.32190573	2239	
		0.68975699	2240	
		0.72041699	2241	
		0.76888221	2242	
		0.76768809	2243	
		0.94560827	2244	
		0.66871996	2245	
		0.03161427	2246	
		0.1499699	2247	
		0.3374151	2248	
		0.40066918	2249	
		0.96941557	2250	
		0.74457193	2251	
		0.38355452	2252	
		0.31479486	2253	
		0.56348533	2254	
		0.15442942	2255	
		0.26190023	2256	
		0.07428236	2257	
		0.47605265	2258	
		0.96180312	2259	
		0.11284416	2260	
		0.91296676	2261	
		0.6364855	2262	
		0.42898015	2263	
		0.44645013	2264	
		0.1153235	2265	
		0.70409568	2266	
		0.29345546	2267	
		0.24128665	2268	
		0.66841217	2269	
		0.02807858	2270	
		0.09555696	2271	
		0.55021687	2272	
		0.44161211	2273	
		0.88103636	2274	
		0.19852424	2275	
		0.97220637	2276	
		0.80524957	2277	
		0.36756781	2278	
		0.84372441	2279	
		0.07477912	2280	
		0.24136222	2281	
		0.54160585	2282	
		0.36528841	2283	
		0.98245197	2284	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30776127	2285	
		0.6807318	2286	
		0.27175471	2287	
		0.97066299	2288	
		0.68379181	2289	
		0.58973393	2290	
		0.11997861	2291	
		0.27315608	2292	
		0.49018077	2293	
		0.3233722	2294	
		0.23243969	2295	
		0.74914592	2296	
		0.81430576	2297	
		0.54747537	2298	
		0.77479261	2299	
		0.64669048	2300	
		0.89876294	2301	
		0.79453923	2302	
		0.48970054	2303	
		0.38060764	2304	
		0.74404245	2305	
		0.50416907	2306	
		0.7383154	2307	
		0.49435106	2308	
		0.36857648	2309	
		0.41986721	2310	
		0.42314495	2311	
		0.36184354	2312	
		0.1074157	2313	
		0.37998327	2314	
		0.46539478	2315	
		0.68987266	2316	
		0.01281459	2317	
		0.04515233	2318	
		0.95799922	2319	
		0.74514088	2320	
		0.34070657	2321	
		0.13105681	2322	
		0.71884131	2323	
		0.59080029	2324	
		0.83316563	2325	
		0.23413552	2326	
		0.49720758	2327	
		0.13863934	2328	
		0.26430425	2329	
		0.4397412	2330	
		0.63899423	2331	
		0.79331201	2332	
		0.33805779	2333	
		0.27646768	2334	
		0.33178561	2335	
		0.14319833	2336	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.23560276	2337	
		0.97147976	2338	
		0.94641713	2339	
		0.45883848	2340	
		0.560439	2341	
		0.0924527	2342	
		0.37481611	2343	
		0.46657785	2344	
		0.65200854	2345	
		0.98327952	2346	
		0.80161123	2347	
		0.57392613	2348	
		0.07574107	2349	
		0.9969538	2350	
		0.17258508	2351	
		0.42108949	2352	
		0.55902665	2353	
		0.08787336	2354	
		0.76284609	2355	
		0.12509323	2356	
		0.05500506	2357	
		0.65602327	2358	
		0.08256154	2359	
		0.15465029	2360	
		0.64509026	2361	
		0.30039216	2362	
		0.81290402	2363	
		0.61448581	2364	
		0.38917302	2365	
		0.90866457	2366	
		0.22690182	2367	
		0.35502047	2368	
		0.22447363	2369	
		0.31592038	2370	
		0.52230333	2371	
		0.34065484	2372	
		0.43198851	2373	
		0.45408699	2374	
		0.65985669	2375	
		0.05683687	2376	
		0.69912123	2377	
		0.0165671	2378	
		0.76927702	2379	
		0.42332824	2380	
		0.14992557	2381	
		0.66573185	2382	
		0.53392639	2383	
		0.17086761	2384	
		0.54848117	2385	
		0.92355992	2386	
		0.64901637	2387	
		0.59062945	2388	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7614985	2389	
		0.7951376	2390	
		0.3406973	2391	
		0.36604723	2392	
		0.32021936	2393	
		0.0558592	2394	
		0.96851298	2395	
		0.78232598	2396	
		0.44007836	2397	
		0.90104205	2398	
		0.71536926	2399	
		0.57347118	2400	
		0.2117435	2401	
		0.70391341	2402	
		0.8913779	2403	
		0.26294873	2404	
		0.72769021	2405	
		0.48440429	2406	
		0.64339916	2407	
		0.62668109	2408	
		0.68543003	2409	
		0.3489976	2410	
		0.8230914	2411	
		0.8494614	2412	
		0.06925937	2413	
		0.91675779	2414	
		0.1995463	2415	
		0.09494047	2416	
		0.67918043	2417	
		0.47871058	2418	
		0.77827417	2419	
		0.33131026	2420	
		0.96575946	2421	
		0.71542835	2422	
		0.63261962	2423	
		0.818884	2424	
		0.52973868	2425	
		0.05551063	2426	
		0.44665784	2427	
		0.02753565	2428	
		0.438096	2429	
		0.44373414	2430	
	C4	0.0047364	2431	
		0.45679308	2432	
		0.69287253	2433	
		0.74153934	2434	
		0.3135299	2435	
		0.32022307	2436	
		0.45662861	2437	
		0.72468926	2438	
		0.83824627	2439	
		0.27299058	2440	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75588322	2441	
		0.32502457	2442	
		0.80519179	2443	
		0.85238931	2444	
		0.24537217	2445	
		0.87813642	2446	
		0.89740062	2447	
		0.44600338	2448	
		0.47552077	2449	
		0.02752373	2450	
		0.12705632	2451	
		0.42193479	2452	
		0.74142252	2453	
		0.58591465	2454	
		0.08865331	2455	
		0.82499875	2456	
		0.28859297	2457	
		0.5766366	2458	
		0.86594569	2459	
		0.24791238	2460	
		0.83236897	2461	
		0.55042099	2462	
		0.55853458	2463	
		0.93824215	2464	
		0.79024915	2465	
		0.94318041	2466	
		0.12781551	2467	
		0.26378945	2468	
		0.67826083	2469	
		0.0780538	2470	
		0.12691667	2471	
		0.45769324	2472	
		0.97167277	2473	
		0.90442516	2474	
		0.20332903	2475	
		0.09625359	2476	
		0.8025034	2477	
		0.88832426	2478	
		0.2341294	2479	
		0.66230523	2480	
		0.0960114	2481	
		0.78522232	2482	
		0.39380173	2483	
		0.20699873	2484	
		0.91720416	2485	
		0.94559241	2486	
		0.73722028	2487	
		0.72371585	2488	
		0.67582704	2489	
		0.03335265	2490	
		0.4293335	2491	
		0.2370042	2492	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53288096	2493	
		0.27644588	2494	
		0.5221261	2495	
		0.6326745	2496	
		0.22452812	2497	
		0.20790951	2498	
		0.02197751	2499	
		0.89355775	2500	
		0.91429843	2501	
		0.53573416	2502	
		0.75643717	2503	
		0.0628314	2504	
		0.78733016	2505	
		0.1412121	2506	
		0.92558199	2507	
		0.70320935	2508	
		0.35283269	2509	
		0.85890931	2510	
		0.3901903	2511	
		0.0145184	2512	
		0.36056904	2513	
		0.55194684	2514	
		0.82588566	2515	
		0.5338877	2516	
		0.34390626	2517	
		0.71106021	2518	
		0.31849174	2519	
		0.17801482	2520	
		0.29777951	2521	
		0.77997953	2522	
		0.66933893	2523	
		0.37211523	2524	
		0.0957463	2525	
		0.58618094	2526	
		0.9319913	2527	
		0.40787711	2528	
		0.60787567	2529	
		0.16398861	2530	
		0.18153654	2531	
		0.99675932	2532	
		0.78987957	2533	
		0.33032491	2534	
		0.75144517	2535	
		0.98279409	2536	
		0.2876313	2537	
		0.44371214	2538	
		0.67074824	2539	
		0.69065834	2540	
		0.35057197	2541	
		0.31051345	2542	
		0.38611752	2543	
		0.91238492	2544	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73170395	2545	
		0.44982985	2546	
		0.56401851	2547	
		0.23736003	2548	
		0.20724307	2549	
		0.77120779	2550	
		0.10896801	2551	
		0.44331852	2552	
		0.4593368	2553	
		0.91425503	2554	
		0.81135189	2555	
		0.46807877	2556	
		0.03843423	2557	
		0.03493984	2558	
		0.29192058	2559	
		0.54964548	2560	
		0.7375133	2561	
		0.71981846	2562	
		0.04643683	2563	
		0.57649164	2564	
		0.20989036	2565	
		0.67234415	2566	
		0.92097028	2567	
		0.19818761	2568	
		0.07214511	2569	
		0.58542583	2570	
		0.23802996	2571	
		0.25821848	2572	
		0.11787121	2573	
		0.99764326	2574	
		0.90644528	2575	
		0.53223786	2576	
		0.64659074	2577	
		0.08805871	2578	
		0.82681064	2579	
		0.28336669	2580	
		0.90297201	2581	
		0.34504392	2582	
		0.55546169	2583	
		0.81827516	2584	
		0.69633083	2585	
		0.32014104	2586	
		0.65348327	2587	
		0.30751981	2588	
		0.07015524	2589	
		0.86044627	2590	
		0.39148483	2591	
		0.52504022	2592	
		0.03715098	2593	
		0.70822478	2594	
		0.09829014	2595	
		0.91691511	2596	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.48932299	2597	
		0.71893461	2598	
		0.8652058	2599	
		0.93437188	2600	
		0.81780987	2601	
		0.63750997	2602	
		0.89194507	2603	
		0.83097845	2604	
		0.25768556	2605	
		0.92409051	2606	
		0.0772029	2607	
		0.7310651	2608	
		0.1990716	2609	
		0.608739	2610	
		0.90983932	2611	
		0.21344561	2612	
		0.86447499	2613	
		0.58905154	2614	
		0.68871564	2615	
		0.31189394	2616	
		0.88675411	2617	
		0.8742628	2618	
		0.16742195	2619	
		0.6826457	2620	
		0.79123212	2621	
		0.47043832	2622	
		0.43145996	2623	
		0.94041753	2624	
		0.93434539	2625	
		0.80861037	2626	
		0.60001239	2627	
		0.98938791	2628	
		0.23634813	2629	
		0.79821965	2630	
		0.97866483	2631	
		0.74365577	2632	
		0.3699983	2633	
		0.13266648	2634	
		0.45872957	2635	
		0.99045648	2636	
		0.30252657	2637	
		0.66170163	2638	
		0.11879707	2639	
		0.46130624	2640	
		0.67970807	2641	
		0.45058253	2642	
		0.23463586	2643	
		0.2496918	2644	
		0.5654139	2645	
		0.56281433	2646	
		0.13191591	2647	
		0.51087899	2648	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.43731589	2649	
		0.88269184	2650	
		0.27351869	2651	
		0.34533223	2652	
		0.02861974	2653	
		0.02800328	2654	
		0.5980699	2655	
		0.48293952	2656	
		0.4020327	2657	
		0.83869221	2658	
		0.23201277	2659	
		0.12421676	2660	
		0.70969336	2661	
		0.36881189	2662	
		0.33604782	2663	
		0.64859507	2664	
		0.26339335	2665	
		0.69676374	2666	
		0.70104573	2667	
		0.51666922	2668	
		0.21373131	2669	
		0.64319474	2670	
		0.36554019	2671	
		0.87312891	2672	
		0.84324833	2673	
		0.75208137	2674	
		0.98077235	2675	
		0.50282912	2676	
		0.2005007	2677	
		0.12517858	2678	
		0.25012694	2679	
		0.41423525	2680	
		0.15907731	2681	
		0.76149596	2682	
		0.74753244	2683	
		0.16300146	2684	
		0.99319449	2685	
		0.75744372	2686	
		0.41993043	2687	
		0.79407675	2688	
		0.18140837	2689	
		0.83310473	2690	
		0.26094313	2691	
		0.22541426	2692	
		0.18867839	2693	
		0.50505494	2694	
		0.04601817	2695	
		0.35500209	2696	
		0.88630471	2697	
		0.83548418	2698	
		0.85460995	2699	
		0.34766645	2700	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.15866892	2701	
		0.17564277	2702	
		0.2158169	2703	
		0.81121855	2704	
		0.48865573	2705	
		0.21362238	2706	
		0.96761699	2707	
		0.30283487	2708	
		0.2112282	2709	
		0.8439537	2710	
		0.21412514	2711	
		0.81849063	2712	
		0.99049125	2713	
		0.03947202	2714	
		0.51807498	2715	
		0.28605961	2716	
		0.57231504	2717	
		0.09324267	2718	
		0.4965258	2719	
		0.24420793	2720	
		0.66326501	2721	
		0.71593075	2722	
		0.7459985	2723	
		0.22940074	2724	
		0.11691681	2725	
		0.04241426	2726	
		0.85252067	2727	
		0.06239362	2728	
		0.04924003	2729	
		0.5598817	2730	
		0.24850457	2731	
		0.89197184	2732	
		0.34569166	2733	
		0.19296615	2734	
		0.65941123	2735	
		0.55944746	2736	
		0.90715601	2737	
		0.4121371	2738	
		0.57183917	2739	
		0.59040763	2740	
		0.88560126	2741	
		0.3059601	2742	
		0.84381035	2743	
		0.47989988	2744	
		0.58535796	2745	
		0.23683113	2746	
		0.29824144	2747	
		0.71390813	2748	
		0.1916631	2749	
		0.09482602	2750	
		0.63448545	2751	
		0.60486605	2752	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47940664	2753	
		0.79991553	2754	
		0.40017857	2755	
		0.46091884	2756	
		0.23422131	2757	
		0.53830075	2758	
		0.309782	2759	
		0.11949728	2760	
		0.34004898	2761	
		0.70900552	2762	
		0.37846862	2763	
		0.09037697	2764	
		0.99318957	2765	
		0.55018651	2766	
		0.7881685	2767	
		0.13149427	2768	
		0.32613137	2769	
		0.20451511	2770	
		0.31553286	2771	
		0.0868122	2772	
		0.55512825	2773	
		0.87716355	2774	
		0.05540241	2775	
		0.30892949	2776	
		0.44707888	2777	
		0.39053342	2778	
		0.59371853	2779	
		0.65240283	2780	
		0.09072255	2781	
		0.81579671	2782	
		0.01026417	2783	
		0.91652534	2784	
		0.70588334	2785	
		0.63467125	2786	
		0.96379299	2787	
		0.3561376	2788	
		0.88867677	2789	
		0.05529779	2790	
		0.68881062	2791	
		0.79532896	2792	
		0.44436119	2793	
		0.72963311	2794	
		0.34259082	2795	
		0.87341812	2796	
		0.33117424	2797	
		0.68065615	2798	
		0.68127229	2799	
		0.82031257	2800	
		0.75502242	2801	
	C6	0.00547389	2802	
		0.60614136	2803	
		0.67820035	2804	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52507693	2805	
		0.1157868	2806	
		0.32337783	2807	
		0.06737105	2808	
		0.30083622	2809	
		0.66978758	2810	
		0.28974623	2811	
		0.30604712	2812	
		0.48904556	2813	
		0.11084055	2814	
		0.82699978	2815	
		0.52692888	2816	
		0.73028342	2817	
		0.84012269	2818	
		0.55269039	2819	
		0.81272626	2820	
		0.40420671	2821	
		0.39508478	2822	
		0.56874296	2823	
		0.57688802	2824	
		0.68638913	2825	
		0.25623076	2826	
		0.90049054	2827	
		0.72940448	2828	
		0.7274673	2829	
		0.79389415	2830	
		0.62142627	2831	
		0.38661702	2832	
		0.98810606	2833	
		0.8326072	2834	
		0.26191056	2835	
		0.19621872	2836	
		0.98689334	2837	
		0.1403711	2838	
		0.84876049	2839	
		0.4555812	2840	
		0.80682365	2841	
		0.40765072	2842	
		0.84204195	2843	
		0.35414104	2844	
		0.1081462	2845	
		0.49709978	2846	
		0.1020997	2847	
		0.35129849	2848	
		0.02263173	2849	
		0.63454377	2850	
		0.11678395	2851	
		0.68444699	2852	
		0.53860215	2853	
		0.80070392	2854	
		0.68949955	2855	
		0.82875768	2856	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55522104	2857	
		0.26842659	2858	
		0.54607703	2859	
		0.72247882	2860	
		0.2266599	2861	
		0.28432393	2862	
		0.4635332	2863	
		0.17198308	2864	
		0.08740443	2865	
		0.15834914	2866	
		0.20593448	2867	
		0.40719689	2868	
		0.75274432	2869	
		0.29960013	2870	
		0.79703216	2871	
		0.50953298	2872	
		0.45813352	2873	
		0.09695337	2874	
		0.03653088	2875	
		0.19865355	2876	
		0.9262575	2877	
		0.77167126	2878	
		0.21773531	2879	
		0.05344338	2880	
		0.91352374	2881	
		0.77878379	2882	
		0.47296121	2883	
		0.72272663	2884	
		0.44747951	2885	
		0.57785252	2886	
		0.79317188	2887	
		0.47425255	2888	
		0.11817191	2889	
		0.32872206	2890	
		0.31826331	2891	
		0.81313882	2892	
		0.35815521	2893	
		0.94190719	2894	
		0.20823411	2895	
		0.72707053	2896	
		0.21163101	2897	
		0.49203768	2898	
		0.48483062	2899	
		0.78779913	2900	
		0.37916407	2901	
		0.09973949	2902	
		0.97277929	2903	
		0.58205587	2904	
		0.47995507	2905	
		0.80266899	2906	
		0.04560089	2907	
		0.77529794	2908	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30735868	2909	
		0.48951955	2910	
		0.82012591	2911	
		0.2176364	2912	
		0.42302858	2913	
		0.82979235	2914	
		0.51179919	2915	
		0.13645923	2916	
		0.29059498	2917	
		0.45651267	2918	
		0.70080452	2919	
		0.27628977	2920	
		0.90095771	2921	
		0.36475921	2922	
		0.22631982	2923	
		0.93617358	2924	
		0.83174661	2925	
		0.39215757	2926	
		0.30905762	2927	
		0.43680954	2928	
		0.85478136	2929	
		0.89608502	2930	
		0.09162821	2931	
		0.65797495	2932	
		0.27063646	2933	
		0.36318234	2934	
		0.89565319	2935	
		0.02757494	2936	
		0.59966124	2937	
		0.47630178	2938	
		0.05063951	2939	
		0.79332474	2940	
		0.70969977	2941	
		0.40967308	2942	
		0.81266132	2943	
		0.70801457	2944	
		0.1411859	2945	
		0.3313206	2946	
		0.88110564	2947	
		0.49787782	2948	
		0.93636385	2949	
		0.81477104	2950	
		0.40456693	2951	
		0.65973382	2952	
		0.48211064	2953	
		0.04563482	2954	
		0.60735757	2955	
		0.84597649	2956	
		0.94423755	2957	
		0.889001	2958	
		0.54370281	2959	
		0.65223241	2960	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.66493834	2961	
		0.64111407	2962	
		0.72499319	2963	
		0.20098152	2964	
		0.69792181	2965	
		0.72308793	2966	
		0.36194376	2967	
		0.24275291	2968	
		0.78118482	2969	
		0.44661687	2970	
		0.83119885	2971	
		0.14423064	2972	
		0.48804716	2973	
		0.75639517	2974	
		0.43611176	2975	
		0.4582023	2976	
		0.06691858	2977	
		0.30809183	2978	
		0.23746788	2979	
		0.1745311	2980	
		0.41023001	2981	
		0.73027997	2982	
		0.99088152	2983	
		0.55633873	2984	
		0.52140077	2985	
		0.92395106	2986	
		0.2354426	2987	
		0.89782088	2988	
		0.27105376	2989	
		0.01433016	2990	
		0.52305839	2991	
		0.23862349	2992	
		0.27351329	2993	
		0.401552	2994	
		0.77161193	2995	
		0.20371248	2996	
		0.97278566	2997	
		0.61333708	2998	
		0.51839916	2999	
		0.80841727	3000	
		0.72575025	3001	
		0.22654027	3002	
		0.2560457	3003	
		0.64135508	3004	
		0.10511189	3005	
		0.97857468	3006	
		0.62643179	3007	
		0.93237807	3008	
		0.29851743	3009	
		0.3805991	3010	
		0.2981209	3011	
		0.89012095	3012	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.27565947	3013	
		0.46806939	3014	
		0.24877343	3015	
		0.46384356	3016	
		0.68850642	3017	
		0.00809124	3018	
		0.55645983	3019	
		0.70646154	3020	
		0.11048337	3021	
		0.83408169	3022	
		0.93858096	3023	
		0.36660324	3024	
		0.69837727	3025	
		0.11189632	3026	
		0.62054426	3027	
		0.69809715	3028	
		0.83440621	3029	
		0.6005003	3030	
		0.74937164	3031	
		0.9977705	3032	
		0.05026903	3033	
		0.53319325	3034	
		0.50020819	3035	
		0.64628449	3036	
		0.83456443	3037	
		0.16866094	3038	
		0.77649563	3039	
		0.53907058	3040	
		0.39269052	3041	
		0.74732943	3042	
		0.39541945	3043	
		0.66114493	3044	
		0.16848836	3045	
		0.34367071	3046	
		0.41165698	3047	
		0.55606043	3048	
		0.08801732	3049	
		0.04452454	3050	
		0.21074807	3051	
		0.4861899	3052	
		0.48055206	3053	
		0.28998535	3054	
		0.30273561	3055	
		0.53952096	3056	
		0.57604599	3057	
		0.84566082	3058	
		0.1742941	3059	
		0.59517335	3060	
		0.32772686	3061	
		0.07533817	3062	
		0.52553756	3063	
		0.151614	3064	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.34253106	3065	
		0.90929265	3066	
		0.1652253	3067	
		0.18327814	3068	
		0.24885995	3069	
		0.18836916	3070	
		0.03373627	3071	
		0.51221274	3072	
		0.89806941	3073	
		0.01459143	3074	
		0.06423765	3075	
		0.12900282	3076	
		0.4153969	3077	
		0.9131243	3078	
		0.40818248	3079	
		0.20305042	3080	
		0.3939076	3081	
		0.86965705	3082	
		0.51214429	3083	
		0.33668769	3084	
		0.43773902	3085	
		0.91629666	3086	
		0.26374716	3087	
		0.77043302	3088	
		0.31438285	3089	
		0.26224594	3090	
		0.464582	3091	
		0.92678397	3092	
		0.92709781	3093	
		0.95856354	3094	
		0.75139517	3095	
		0.1466922	3096	
		0.38405628	3097	
		0.28934177	3098	
		0.73116008	3099	
		0.68724979	3100	
		0.40585498	3101	
		0.88606882	3102	
		0.58868624	3103	
		0.86311208	3104	
		0.22688174	3105	
		0.95993146	3106	
		0.14535582	3107	
		0.85797321	3108	
		0.87619462	3109	
		0.26708468	3110	
		0.14373344	3111	
		0.67332274	3112	
		0.423732	3113	
		0.36729833	3114	
		0.89956818	3115	
		0.8779758	3116	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55158135	3117	
		0.89600415	3118	
		0.1017725	3119	
		0.94439748	3120	
		0.56798899	3121	
		0.03327358	3122	
		0.58738273	3123	
		0.2878904	3124	
		0.8510583	3125	
		0.57452112	3126	
		0.34259698	3127	
		0.22278383	3128	
		0.14822714	3129	
		0.33782654	3130	
		0.17971338	3131	
		0.83673842	3132	
		0.33424101	3133	
		0.87473594	3134	
		0.74272101	3135	
		0.87021283	3136	
		0.23692765	3137	
		0.54600577	3138	
		0.11739931	3139	
		0.75269246	3140	
		0.57194978	3141	
		0.66898698	3142	
		0.65025961	3143	
		0.11885711	3144	
		0.35059146	3145	
		0.25206851	3146	
		0.70079442	3147	
		0.44147261	3148	
		0.74992923	3149	
		0.63648097	3150	
		0.94843593	3151	
		0.63470239	3152	
		0.294583	3153	
		0.63520166	3154	
		0.88789473	3155	
		0.34369962	3156	
		0.23535879	3157	
		0.22043388	3158	
		0.44436393	3159	
		0.52893056	3160	
		0.54364244	3161	
		0.7500053	3162	
		0.43205555	3163	
		0.65959815	3164	
		0.39250308	3165	
		0.96477305	3166	
		0.83553217	3167	
		0.04426851	3168	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.29551656	3169	
		0.89412649	3170	
		0.38188138	3171	
		0.70308948	3172	
		0.29979826	3173	
		0.67546062	3174	
		0.76753257	3175	
		0.86973817	3176	
		0.89172205	3177	
	C3	0.00440666	3178	
		0.27529107	3179	
		0.64823377	3180	
		0.91536221	3181	
		0.43244059	3182	
		0.10820092	3183	
		0.88083979	3184	
		0.1034922	3185	
		0.93900774	3186	
		0.07779688	3187	
		0.54756578	3188	
		0.81080424	3189	
		0.62212826	3190	
		0.9795345	3191	
		0.38812732	3192	
		0.58299573	3193	
		0.87190747	3194	
		0.70466702	3195	
		0.30063694	3196	
		0.12866411	3197	
		0.76951303	3198	
		0.58814417	3199	
		0.64941834	3200	
		0.56461948	3201	
		0.80271553	3202	
		0.78038149	3203	
		0.81829569	3204	
		0.5973553	3205	
		0.55762924	3206	
		0.75874359	3207	
		0.99794791	3208	
		0.62945926	3209	
		0.59511337	3210	
		0.92145169	3211	
		0.31979184	3212	
		0.14726072	3213	
		0.61639601	3214	
		0.25799213	3215	
		0.05013722	3216	
		0.33922555	3217	
		0.78572001	3218	
		0.12832396	3219	
		0.57460155	3220	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.41169551	3221	
		0.57115697	3222	
		0.64848284	3223	
		0.26680773	3224	
		0.05161179	3225	
		0.71704108	3226	
		0.14629569	3227	
		0.2653843	3228	
		0.45604316	3229	
		0.41545179	3230	
		0.50927834	3231	
		0.91841484	3232	
		0.3683719	3233	
		0.85247095	3234	
		0.28159718	3235	
		0.66599547	3236	
		0.10302147	3237	
		0.84930771	3238	
		0.46555795	3239	
		0.9320039	3240	
		0.97708228	3241	
		0.56794826	3242	
		0.29552806	3243	
		0.69243971	3244	
		0.93978919	3245	
		0.69623401	3246	
		0.4503364	3247	
		0.34153082	3248	
		0.46703046	3249	
		0.94844962	3250	
		0.52105161	3251	
		0.80563458	3252	
		0.39505215	3253	
		0.24180267	3254	
		0.67735056	3255	
		0.51161881	3256	
		0.16167833	3257	
		0.42213209	3258	
		0.43531525	3259	
		0.56774622	3260	
		0.55604769	3261	
		0.99488744	3262	
		0.65046619	3263	
		0.98650704	3264	
		0.86764488	3265	
		0.55433421	3266	
		0.67099686	3267	
		0.44122363	3268	
		0.93246011	3269	
		0.59636283	3270	
		0.39715236	3271	
		0.6984924	3272	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.21516069	3273	
		0.37761619	3274	
		0.58714411	3275	
		0.01750158	3276	
		0.54035601	3277	
		0.19334757	3278	
		0.34790417	3279	
		0.9912441	3280	
		0.01395446	3281	
		0.55585515	3282	
		0.15382187	3283	
		0.07401933	3284	
		0.01890174	3285	
		0.72728852	3286	
		0.87776818	3287	
		0.74433633	3288	
		0.05683562	3289	
		0.72269172	3290	
		0.9075743	3291	
		0.52567802	3292	
		0.33729211	3293	
	10	0.00406187	3294	
		0.50222619	3295	
		0.74057162	3296	
		0.31881916	3297	
		0.97048707	3298	
		0.88121764	3299	
		0.46414949	3300	
		0.51397452	3301	
		0.55207657	3302	
		0.14455833	3303	
		0.52766702	3304	
		0.76776488	3305	
		0.49474221	3306	
		0.3957261	3307	
		0.46874352	3308	
		0.36719992	3309	
		0.60193092	3310	
		0.21881513	3311	
		0.12253873	3312	
		0.33932611	3313	
		0.66755075	3314	
		0.62697648	3315	
		0.03767	3316	
		0.98110822	3317	
		0.85721163	3318	
		0.64553168	3319	
		0.43482329	3320	
		0.34077738	3321	
		0.0871197	3322	
		0.9420697	3323	
		0.1340752	3324	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61805743	3325	
		0.7355913	3326	
		0.25359927	3327	
		0.0471895	3328	
		0.92793398	3329	
		0.5068829	3330	
		0.90336681	3331	
		0.12729062	3332	
		0.38008394	3333	
		0.31391538	3334	
		0.72717557	3335	
		0.52817938	3336	
		0.11371982	3337	
		0.37889679	3338	
		0.88252166	3339	
		0.88074696	3340	
		0.20318007	3341	
		0.4824982	3342	
		0.2024603	3343	
		0.35235015	3344	
		0.06202549	3345	
		0.29695369	3346	
		0.68559845	3347	
		0.83391596	3348	
		0.45213893	3349	
		0.79431556	3350	
		0.30873937	3351	
		0.27567633	3352	
		0.49415441	3353	
		0.95743158	3354	
		0.45662806	3355	
		0.05336767	3356	
		0.20051753	3357	
		0.52996093	3358	
		0.77402721	3359	
		0.04092716	3360	
		0.84588	3361	
		0.48710504	3362	
		0.78706288	3363	
		0.18010416	3364	
		0.35825565	3365	
		0.2125417	3366	
		0.92911125	3367	
		0.49340895	3368	
		0.748386	3369	
		0.65296857	3370	
		0.03929514	3371	
		0.87435904	3372	
		0.27092264	3373	
		0.67587899	3374	
		0.26617942	3375	
		0.96626794	3376	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.78458962	3377	
		0.27295571	3378	
		0.18039468	3379	
		0.91714955	3380	
		0.94920445	3381	
		0.19103711	3382	
		0.96771905	3383	
		0.88679945	3384	
		0.69956103	3385	
		0.1700117	3386	
		0.29492136	3387	
		0.76715037	3388	
		0.96132259	3389	
		0.74856177	3390	
		0.59988515	3391	
		0.08292325	3392	
		0.7704305	3393	
		0.41893594	3394	
		0.75257615	3395	
		0.2033782	3396	
		0.34479357	3397	
		0.40322643	3398	
		0.90342648	3399	
		0.30847925	3400	
		0.89176351	3401	
		0.57917631	3402	
		0.67343074	3403	
		0.13436956	3404	
		0.09256279	3405	
		0.0389947	3406	
		0.75176982	3407	
		0.6089337	3408	
		0.45248373	3409	
		0.21159236	3410	
		0.03777263	3411	
		0.15247407	3412	
		0.84038492	3413	
		0.28828014	3414	
		0.35812158	3415	
		0.95723238	3416	
		0.461685	3417	
		0.09422089	3418	
		0.55244733	3419	
		0.1094819	3420	
		0.88160578	3421	
		0.8031362	3422	
		0.53858302	3423	
		0.58471875	3424	
		0.34396944	3425	
		0.29049195	3426	
		0.45520596	3427	
		0.7361108	3428	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.59876502	3429	
		0.53847502	3430	
		0.43467429	3431	
		0.83160946	3432	
		0.05152309	3433	
		0.38533871	3434	
		0.10878648	3435	
		0.27598752	3436	
		0.18377271	3437	
		0.2392246	3438	
		0.72778046	3439	
		0.89466988	3440	
		0.05493187	3441	
		0.27500933	3442	
		0.81777308	3443	
		0.11146993	3444	
		0.3376569	3445	
		0.62173365	3446	
		0.65232455	3447	
		0.21463155	3448	
		0.26001318	3449	
		0.74688889	3450	
		0.36136854	3451	
		0.27862911	3452	
		0.99359184	3453	
		0.75056505	3454	
		0.78799463	3455	
		0.08311107	3456	
		0.18237551	3457	
		0.5092366	3458	
		0.36252358	3459	
		0.7275974	3460	
		0.79611245	3461	
		0.32368887	3462	
		0.37724594	3463	
		0.48697087	3464	
		0.16629257	3465	
		0.56115096	3466	
		0.25887237	3467	
		0.97665039	3468	
		0.05849579	3469	
		0.26169076	3470	
		0.16879604	3471	
		0.78334041	3472	
		0.84822591	3473	
		0.59280346	3474	
		0.18660995	3475	
		0.03865192	3476	
		0.06164833	3477	
		0.27520964	3478	
		0.34556203	3479	
		0.68846491	3480	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.05245581	3481	
		0.06755482	3482	
		0.04376885	3483	
		0.84288634	3484	
		0.16092106	3485	
		0.25054499	3486	
		0.19301729	3487	
		0.57727826	3488	
		0.11070003	3489	
		0.51828725	3490	
		0.80199472	3491	
		0.67635011	3492	
		0.29396686	3493	
		0.23621939	3494	
		0.53026319	3495	
		0.18320568	3496	
		0.67846665	3497	
		0.31929503	3498	
		0.5972405	3499	
		0.08700821	3500	
		0.92739924	3501	
		0.13776707	3502	
		0.05699549	3503	
		0.52494399	3504	
		0.94337077	3505	
		0.38483268	3506	
		0.58461655	3507	
		0.2073897	3508	
		0.06439141	3509	
		0.2957508	3510	
		0.22541638	3511	
		0.81196165	3512	
		0.06759142	3513	
		0.501932	3514	
		0.22455341	3515	
		0.76830206	3516	
		0.86010105	3517	
		0.54571557	3518	
		0.67365641	3519	
		0.95984968	3520	
		0.24860613	3521	
		0.17829027	3522	
		0.22556322	3523	
		0.87900745	3524	
		0.57782864	3525	
		0.76120476	3526	
		0.45162157	3527	
		0.40053605	3528	
		0.87957555	3529	
		0.42447539	3530	
		0.85940644	3531	
		0.27656407	3532	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.2914243	3533	
		0.86304444	3534	
		0.23430834	3535	
		0.30964326	3536	
		0.20642107	3537	
		0.81078101	3538	
		0.86609036	3539	
		0.27355406	3540	
		0.63586937	3541	
		0.4332891	3542	
		0.28303563	3543	
		0.68867014	3544	
		0.93754187	3545	
		0.90470819	3546	
		0.36006741	3547	
		0.02246609	3548	
		0.94597047	3549	
		0.79714615	3550	
		0.81617338	3551	
		0.4308031	3552	
		0.79497219	3553	
		0.92458226	3554	
		0.56822936	3555	
		0.82327377	3556	
		0.30843937	3557	
		0.48942993	3558	
		0.33157337	3559	
		0.72602799	3560	
		0.94984916	3561	
		0.48323738	3562	
		0.69765392	3563	
		0.79940403	3564	
		0.56452405	3565	
		0.6721519	3566	
		0.5705243	3567	
		0.65185747	3568	
		0.60770807	3569	
		0.16521276	3570	
		0.76765041	3571	
		0.33638112	3572	
		0.412619	3573	
		0.78420464	3574	
		0.09150019	3575	
		0.366547	3576	
		0.57858177	3577	
		0.63593947	3578	
		0.59802653	3579	
		0.10208001	3580	
		0.62689519	3581	
		0.76797571	3582	
		0.41849292	3583	
		0.0293356	3584	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.1544074	3585	
		0.54689012	3586	
		0.39574005	3587	
		0.37492696	3588	
		0.06753874	3589	
		0.3821629	3590	
		0.02772475	3591	
		0.359136	3592	
		0.95254835	3593	
		0.44747689	3594	
		0.59434256	3595	
		0.50622433	3596	
		0.56409039	3597	
		0.16483203	3598	
		0.29501722	3599	
		0.43716193	3600	
		0.09423197	3601	
		0.7051404	3602	
		0.74870651	3603	
		0.76844513	3604	
		0.91651181	3605	
		0.12598618	3606	
		0.89440659	3607	
		0.7052325	3608	
		0.46997704	3609	
		0.74533229	3610	
		0.50072715	3611	
		0.47719228	3612	
		0.55779637	3613	
		0.67825735	3614	
		0.51226227	3615	
		0.59545273	3616	
	C9	0.00591241	3617	
		0.51732141	3618	
		0.24959674	3619	
		0.38663991	3620	
		0.58243416	3621	
		0.42593051	3622	
		0.88845348	3623	
		0.18521246	3624	
		0.56794162	3625	
		0.98551751	3626	
		0.77059623	3627	
		0.09295328	3628	
		0.2082594	3629	
		0.81880116	3630	
		0.05831134	3631	
		0.68638517	3632	
		0.12001561	3633	
		0.01282097	3634	
		0.33379795	3635	
		0.92197131	3636	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.51946997	3637	
		0.45107712	3638	
		0.76177447	3639	
		0.81782982	3640	
		0.0777488	3641	
		0.34051131	3642	
		0.62896373	3643	
		0.86477433	3644	
		0.36983181	3645	
		0.94996266	3646	
		0.98319438	3647	
		0.03259718	3648	
		0.80626791	3649	
		0.14257428	3650	
		0.9145532	3651	
		0.64862021	3652	
		0.82957102	3653	
		0.53064779	3654	
		0.30531641	3655	
		0.1605117	3656	
		0.8940098	3657	
		0.2724904	3658	
		0.56130358	3659	
		0.09222319	3660	
		0.80250184	3661	
		0.90697127	3662	
		0.33528134	3663	
		0.37676948	3664	
		0.64212247	3665	
		0.03878268	3666	
		0.15703437	3667	
		0.58118642	3668	
		0.06236538	3669	
		0.2908503	3670	
		0.49680196	3671	
		0.78787331	3672	
		0.43682863	3673	
		0.54321814	3674	
		0.9787502	3675	
		0.57203624	3676	
		0.88041055	3677	
		0.12674946	3678	
		0.50747225	3679	
		0.76286059	3680	
		0.89222471	3681	
		0.87394056	3682	
		0.70674725	3683	
		0.94080827	3684	
		0.5535005	3685	
		0.10216274	3686	
		0.47084767	3687	
		0.50904384	3688	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53586907	3689	
		0.19612465	3690	
		0.81336222	3691	
		0.49967926	3692	
		0.87378594	3693	
		0.66052424	3694	
	1	0.0016047	3695	
		0.03584658	3696	
		0.59271112	3697	
		0.22188451	3698	
		0.58280557	3699	
		0.22163626	3700	
		0.08279708	3701	
		0.04042356	3702	
		0.39889778	3703	
		0.28587777	3704	
		0.53038673	3705	
		0.17006184	3706	
		0.97646508	3707	
		0.73730851	3708	
		0.2287015	3709	
		0.53869562	3710	
		0.74511374	3711	
		0.5442312	3712	
		0.21236746	3713	
		0.41579854	3714	
		0.25115617	3715	
		0.19221282	3716	
		0.285589	3717	
		0.24520413	3718	
		0.68173516	3719	
		0.08921851	3720	
		0.1672582	3721	
		0.57844242	3722	
		0.19023237	3723	
		0.81489198	3724	
		0.38398127	3725	
		0.57575529	3726	
		0.39288597	3727	
		0.48379325	3728	
		0.49774505	3729	
		0.94043477	3730	
		0.34920138	3731	
		0.75051707	3732	
		0.79668151	3733	
		0.3032382	3734	
		0.29666638	3735	
		0.12998008	3736	
		0.1955727	3737	
		0.2088491	3738	
		0.87884733	3739	
		0.83465643	3740	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.13798826	3741	
		0.68737857	3742	
		0.00610255	3743	
		0.68465267	3744	
		0.19526055	3745	
		0.44583275	3746	
		0.86014011	3747	
		0.77831131	3748	
		0.91813657	3749	
		0.0567078	3750	
		0.62985843	3751	
		0.04365572	3752	
		0.12895217	3753	
		0.50466834	3754	
		0.52836213	3755	
		0.64946387	3756	
		0.06779647	3757	
		0.71054936	3758	
		0.24693201	3759	
		0.42964635	3760	
		0.77321495	3761	
		0.47704066	3762	
		0.94276316	3763	
		0.94228369	3764	
		0.47447981	3765	
		0.72333341	3766	
		0.88829577	3767	
		0.08216809	3768	
		0.42172035	3769	
		0.5830969	3770	
		0.37107684	3771	
		0.35583958	3772	
		0.03859487	3773	
		0.39230072	3774	
		0.94175995	3775	
		0.27523117	3776	
		0.46873876	3777	
		0.55724871	3778	
		0.94132422	3779	
		0.76934976	3780	
		0.30842669	3781	
		0.6651458	3782	
		0.14770172	3783	
		0.35167856	3784	
		0.60200649	3785	
		0.42515231	3786	
		0.69352376	3787	
		0.442058	3788	
		0.35764942	3789	
		0.93718139	3790	
		0.3542975	3791	
		0.45920737	3792	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7162012	3793	
		0.24654389	3794	
		0.02012979	3795	
		0.36804737	3796	
		0.36171649	3797	
		0.35441414	3798	
		0.90858505	3799	
		0.50691481	3800	
		0.92869782	3801	
		0.99285255	3802	
		0.34290428	3803	
		0.91408954	3804	
		0.67889745	3805	
		0.03196407	3806	
		0.35268651	3807	
		0.73930383	3808	
		0.37621642	3809	
		0.77671132	3810	
		0.24897946	3811	
		0.81308205	3812	
		0.44043652	3813	
		0.02413601	3814	
		0.4626201	3815	
		0.28162015	3816	
		0.26227893	3817	
		0.97578812	3818	
		0.37242227	3819	
		0.23073543	3820	
		0.44313671	3821	
		0.27385471	3822	
		0.84868197	3823	
		0.11517972	3824	
		0.44900236	3825	
		0.68776859	3826	
		0.769786	3827	
		0.40336579	3828	
		0.0099511	3829	
		0.70322439	3830	
		0.52854579	3831	
		0.4165271	3832	
		0.66626215	3833	
		0.81789579	3834	
		0.68002321	3835	
		0.4138838	3836	
		0.5097642	3837	
		0.89823814	3838	
		0.28344561	3839	
		0.67854919	3840	
		0.97019442	3841	
		0.218998	3842	
		0.77989434	3843	
		0.06310512	3844	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31662802	3845	
		0.4443766	3846	
		0.36621931	3847	
		0.10060263	3848	
		0.22417292	3849	
		0.65162322	3850	
		0.85064726	3851	
		0.56591635	3852	
		0.94463298	3853	
		0.28516738	3854	
		0.25200313	3855	
		0.22168574	3856	
		0.04518524	3857	
		0.04099928	3858	
		0.19917726	3859	
		0.78030669	3860	
		0.48065324	3861	
		0.42631878	3862	
	9	0.0036265	3863	
		0.58723584	3864	
		0.22534015	3865	
		0.109647	3866	
		0.79180297	3867	
		0.42507036	3868	
		0.74277435	3869	
		0.18483569	3870	
		0.16112945	3871	
		0.45960065	3872	
		0.12268824	3873	
		0.94958612	3874	
		0.45852138	3875	
		0.72959375	3876	
		0.55910863	3877	
		0.60897824	3878	
		0.69385602	3879	
		0.31871409	3880	
		0.25506801	3881	
		0.22183875	3882	
		0.68932557	3883	
		0.62086968	3884	
		0.24118029	3885	
		0.56915835	3886	
		0.01119862	3887	
		0.21608665	3888	
		0.53516228	3889	
		0.9647399	3890	
		0.55411051	3891	
		0.34633432	3892	
		0.51999044	3893	
		0.33734559	3894	
		0.35970469	3895	
		0.97856977	3896	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32854282	3897	
		0.91507781	3898	
		0.04510475	3899	
		0.28431711	3900	
		0.74411707	3901	
		0.32790588	3902	
		0.51286614	3903	
		0.18329244	3904	
		0.76848296	3905	
		0.27061901	3906	
		0.09964973	3907	
		0.02078376	3908	
		0.25695479	3909	
		0.50665061	3910	
		0.08473523	3911	
		0.87372247	3912	
		0.14214782	3913	
		0.49901941	3914	
		0.17246946	3915	
		0.57125965	3916	
		0.45449021	3917	
		0.04732803	3918	
		0.16473922	3919	
		0.33454331	3920	
		0.89991579	3921	
		0.341538	3922	
		0.51943432	3923	
		0.2041854	3924	
		0.21762871	3925	
		0.94484137	3926	
		0.67561074	3927	
		0.45955111	3928	
		0.63388751	3929	
		0.21509566	3930	
		0.6823966	3931	
		0.63339437	3932	
		0.40719987	3933	
		0.11928836	3934	
		0.41453127	3935	
		0.60010624	3936	
		0.27124163	3937	
		0.85208317	3938	
		0.23797999	3939	
		0.06199801	3940	
		0.74746413	3941	
		0.92771665	3942	
		0.02330923	3943	
		0.69960742	3944	
		0.22039289	3945	
		0.52919273	3946	
		0.43074483	3947	
		0.24421137	3948	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.89614218	3949	
		0.27489096	3950	
		0.78716036	3951	
		0.48814261	3952	
		0.06628242	3953	
		0.63319295	3954	
		0.61156256	3955	
		0.62109962	3956	
		0.34527464	3957	
		0.59762907	3958	
		0.78970358	3959	
		0.15676431	3960	
		0.1741499	3961	
		0.88334194	3962	
		0.5406021	3963	
		0.61308963	3964	
		0.17967053	3965	
		0.2117157	3966	
		0.47751567	3967	
		0.1496899	3968	
		0.97019907	3969	
		0.41131947	3970	
		0.08845274	3971	
		0.13013439	3972	
		0.74104503	3973	
		0.47312522	3974	
		0.98249609	3975	
		0.45619943	3976	
		0.99625133	3977	
		0.26430325	3978	
		0.92505246	3979	
		0.84263926	3980	
		0.77073244	3981	
		0.48831609	3982	
		0.81093507	3983	
		0.82021329	3984	
		0.08369643	3985	
		0.63391868	3986	
		0.08003177	3987	
		0.60591649	3988	
		0.28246203	3989	
		0.41226001	3990	
		0.70435345	3991	
		0.470686	3992	
		0.07836683	3993	
		0.03360085	3994	
		0.85262375	3995	
		0.75198068	3996	
		0.95115581	3997	
		0.75437844	3998	
		0.04565188	3999	
		0.19027711	4000	

AMWTP Advanced Mixed Waste Treatment Project	**Randomly Selected Container Report**	Form-1196, Rev. 5 Effective: 09/26/07 Page 1 of 1

Implementing Document: MP-TRUW-8.25

Waste Stream Lot: BN510.1 Boxline Lot 3

Population Size of Waste Stream Lot: 2,400 to 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature 1.3.12 Date

Idaho Treatment Group

RECORD
CMC 09/19/2012

INTEROFFICE MEMORANDUM

To: Sue Peterman, TRU Programs Manager

From: Steve Carpenter, Alternate Site Project Manager/Acceptable Knowledge Manager

Date: February 1, 2012

Subject: Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2 – SPC-007-12

This memorandum contains the Headspace Gas Sampling Report for the BN510.1 Boxline Lot 2.

The purpose of this sampling report is to provide the sampling characterization data from the headspace gas sampling of randomly selected containers from the BN510.1 Boxline Lot 2, the second lot from an indeterminate waste stream, in accordance with MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. The Reconciliation with Data Quality Objectives and Characterization Information Summary Report are included as Attachments 1 and 2.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 drum population is identified as 4,000 containers. Ten containers within this population have been selected for sampling as defined in MP-TRUW-8.25. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's Reconciliation Group that identified BN510.1 Boxline containers. The container numbers within the Reconciliation reports were sorted in ascending order by container ID and added to the BN510.1 Boxline Lot 2 container list. A list of the containers is included in the final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (n) for characterization of this waste stream would not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 2. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for

sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 3,000 containers to provide the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 2 is documented in memo SPC-015-10 and SPC-004-11. The list of containers and their corresponding sequential and random numbers are included in the final subsequent headspace gas random sample selection memorandum, SPC-001-12.

4. CONFIRMATION OF THE SAMPLE SIZE

The observed sample n* has been checked against the estimate for the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. The observed sample n* estimate did not result in greater than 20 percent more samples than originally estimated. Final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant have been determined. No assignment or assessment added analytes or an associated Environmental Protection Agency hazardous waste number.

5. CONTAINERS SELECTED

Ten containers were selected for headspace gas sampling in accordance with MP-TRUW-8.25. No substitutions were required. Table 1 below identifies the selected containers.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	0.000020	2399	BN10406800
2	0.000259	1761	BN10400134
3	0.000601	2572	BN10408764
4	0.000725	1603	BN10398725
5	0.000935	3979	BN10429587
6	0.001189	2969	BN10413998
7	0.001990	161	BN10381425
8	0.002274	3446	BN10421829
9	0.002567	304	BN10382812
10	0.002629	1410	BN10396291

If you have any questions or comments, please contact me at 557-6323.

SPC/nk

Attachments
1. Reconciliation with Data Quality Objectives
2. Characterization Information Summary Report

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Nancy Kirk
Jason Lance
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☒	☐	☐	
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in	☒	☐	☐	

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?				
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	Applicable only to headspace gas sampling batch data reports.
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the CIS.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	Nancy Kirk	Nancy Kirk	2/1/2012
2nd Site Project Manager	Wes Skaar	Wes Skaar	2/1/2012

WSPF Number: BN510.1 Lot Number: 2

SPM

Printed Name: **Nancy Kirk** Signature: Nancy Kirk Date: **2/1/2012**

2nd SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **2/1/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN510.1 Lot Number: 2

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Selection Process:

The evaluation to determine the required number of samples for BN510.1 Boxline Lot 2 is presented in Attachment A. The required number of samples was calculated for each analyte from Table 4.4.1 of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Permit with reported detections and two or more applicable samples. Applicable samples are all samples that are not diluted non-detects. The required number of samples (*n*) was determined using Appendix A of MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

The BN510.1 Boxline Lot 2 maximum drum population is identified as 4,000 containers. Ten containers within this population were selected for sampling as defined in MP-TRUW-8.25. The final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12 includes the list of randomly selected containers, the list of containers assigned to BN510.1 Boxline Lot 2, and the Randomly Selected Container Report, Form-1196.

The sampling was conducted by AMWTP using procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. The ten randomly selected containers were sampled and met the required number of samples.

Data Results:

The statistical evaluation of the analytical data collected for BN510.1 Boxline Lot 2 was performed in accordance with MP-TRUW-8.25 and is presented in Table 1A. Tentatively Identified Compounds (TICs) that were detected in this lot are detailed in Table 1B. Table 5 lists the correlation of container numbers to headspace gas analysis data packages. Table 7 lists the correlation of container numbers to headspace gas sample numbers. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA HWNs for the BN510.1 waste stream.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). The headspace sampling UCL_{90} results for 1,1,1-Trichloroethane and tolulene were above their associated PRQL values and support the assignment of HWNs F001/F002 and F005 by AK for these analytes (Table 1A).

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

WSPF Number: BN510.1 Lot Number: 2

Table 1A. Headspace Gas Summary Data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10	-
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100	-
Ethyl ether	10	0	None	0.800	0.656	0.186	b	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	b	-	10	D029 [d]
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100	-
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	b	-	10	
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10	
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	b	-	100	F005 [d]
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	F001/F002 [g]
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	b	-	10	F001 [d]
Benzene	10	0	None	0.950	0.860	0.077	b	-	10	F005 [d]
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	b	-	10	D028 [d]
Butanol	10	0	None	14.0	12.8	1.55	b	-	100	-
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100	-
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	F005 [g]
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	b	-	10	F001/F002 [d]
Chlorobenzene	10	0	None	1.05	0.780	0.232	b	-	10	-
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10	-
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10	-
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10	-
Bromoform	10	0	None	1.00	0.940	0.052	b	-	10	-
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	b	-	10	-
Cyclohexane [c, f]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10	-
Carbon disulfide [e]	10	0	None	0.700	0.660	0.052	b	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	10	0	None	3.05	1.76	1.11	b	-	10	-
1,3,5-Trimethylbenzene [f]	10	0	None	2.50	1.48	0.878	b	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

g. These HWNs, assigned by AK, were confirmed by characterization and are retained for this waste stream.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: Jason Kettel Signature: Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 1B. Headspace Gas Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	6	10	60	19	24	79.2
Trichlorofluoromethane	87	0	10	0	1	24	4.2
Isopropyl alcohol	98	1	10	10	1	24	4.2
1,2-Dichloropropane	110	1	10	10	1	24	4.2

Note: Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: Nancy Kirk Signature: Nancy Kirk Date: 2/1/2012

Verification of % Detected Calculation:

Printed Name: Jason Kettel Signature: [signature] Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
BN10406800	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10400134	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10408764	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10398725	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10429587	HS112-00002	N/A	N/A	N/A	N/A	N/A
BN10413998	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10381425	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10421829	HS111-00023	N/A	N/A	N/A	N/A	N/A
BN10382812	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10396291	HS111-00009	N/A	N/A	N/A	N/A	N/A

Note: These containers are being used for headspace sampling data only in this CIS Report. RTR or VE and RA will be performed for these containers and validated prior to certification for shipment to WIPP.

WSPF Number: BN510.1 Lot Number: 2

Table 7. Correlation of Container Numbers to Sample Numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s)
BN10406800	HS111_00009B-10	N/A
BN10400134	HS111_00009B-03	N/A
BN10408764	HS111_00018B-01	N/A
BN10398725	HS111_00009B-06	N/A
BN10429587	HS112_00002B-01	N/A
BN10413998	HS111_00018B-05	N/A
BN10381425	HS111_00004B-07	N/A
BN10421829	HS111_00023B-03	N/A
BN10382812	HS111_00004B-06	N/A
BN10396291	HS111_00009B-07	N/A

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 2

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
Chloromethane [c]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10		HWN not required to be applied [d]
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100		HWN not required to be applied [d]
Ethyl ether	10	0	None	0.800	0.656	0.186	-	-	10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10		HWNs F001/F002 applied
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	-	-	10		HWN D029 applied
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100		HWN not required to be applied [d]
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	10	HWN F002 applied
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	-	-	10		No samples above MDL
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10		HWN not required to be applied [d]
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	-	-	100		HWN F005 applied
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	10	HWN D022 applied
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	10	HWNs F001/F002 applied
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	-	-	10		HWN F001 applied
Benzene	10	0	None	0.950	0.860	0.077	-	-	10		HWN F005 applied
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	-	-	10		HWN D028 applied
Butanol	10	0	None	14.0	12.8	1.55	-	-	100		No samples above MDL
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10		HWNs F001/F002 applied
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100		HWN not required to be applied [d]
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	10	HWN F005 applied
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	-	-	10		HWN F001/F002 applied
Chlorobenzene	10	0	None	1.05	0.780	0.232	-	-	10		No samples above MDL
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10		HWN not required to be applied [d]

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10		HWN not required to be applied [d]
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10		HWN not required to be applied [d]
Bromoform	10	0	None	1.00	0.940	0.052	-	-	10		No samples above MDL
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	-	-	10		No samples above MDL
Cyclohexane [c]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10		HWN not required to be applied [d]
Carbon disulfide	10	0	None	0.700	0.660	0.052	-	-	10		HWN F005 applied
1,2,4-Trimethylbenzene	10	0	None	3.05	1.76	1.11	-	-	10		No samples above MDL
1,3,5-Trimethylbenzene	10	0	None	2.50	1.48	0.878	-	-	10		No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and UCL_{90}.

c. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.

d. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} is below the PRQL.

e. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

f. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10.

Idaho Treatment Group

RECORD
CMC 05/03/2012

INTEROFFICE MEMORANDUM

To: Steve Carpenter
Alternate Site Project Manager/Acceptable Knowledge Manager

From: Nancy Kirk NDK
Acceptable Knowledge Expert

Date: May 3, 2012

Re: Preliminary Statistics of Headspace Gas Sampling for BN510.1 Waste Stream – NDK-001-12

The purpose of this memorandum is to summarize the preliminary statistical results for the headspace gas sampling data of the BN510.1 waste stream that have been sampled to date (Reference Attachments 1 and 2). The preliminary statistical results include headspace gas sampling data associated with the randomly selected and contingency containers from BN510.1 Boxline Lots 1, 2 and 3 that have been sampled as of April 5, 2012.

1. POPULATION DEFINITION

The BN510.1 waste stream currently consists of three boxline lots for a maximum population of 8,014 containers. No lots have been established for BN510.1 Lined Direct Feed (LDF) containers. Fourteen containers were assigned to BN510.1 Boxline Lot 1 as documented in memorandum SPC-014-10, *Headspace Gas Random Selection Memorandum for BN510.1 Boxline Lot 1*. The maximum of 4,000 containers was assigned to BN510.1 Boxline Lot 2 as documented in memorandum SPC-001-12, *Final Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2 and SPC-004-11, *Addendum to Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2. A maximum of 4,000 containers is identified for BN510.1 Boxline Lot 3 as documented in memorandum SPC-002-12, *Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3*. Periodic reports are generated by the Advanced Mixed Waste Treatment Project's (AMWTP) Reconciliation Group to identify candidate containers for BN510.1 Boxline Lot 3. The container numbers within each reconciliation report are sorted in ascending order by the container number and added to the Lot 3 container list. A final subsequent headspace gas random sample selection memorandum will be issued documenting this list of containers when Lot 3 is completed. A headspace gas sampling report memorandum will also be issued summarizing the characterization data for the waste stream upon completion of sampling for Lot 3.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (*n*) for characterization of this waste stream would not exceed ten for BN510.1 Boxline Lot 3. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 3. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 2,400 containers. This provides the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 3 is documented in memo SPC-002-12. The list of containers and their corresponding sequential and random numbers will be included in the final subsequent headspace gas random sample selection memorandum.

4. CONTAINERS SELECTED

As of April 5, 2012, 43 containers (including fourteen from Boxline Lot 1) have been sampled in accordance with procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. All fourteen containers (100%) that were sampled and analyzed from BN510.1 Boxline Lot 1 are identified in memorandum SPC-014-10. The twenty-five containers that were randomly selected and sampled from BN510.1 Boxline Lot 2 are identified in memorandum SPC-001-12. The headspace sampling data from BN510.1 Boxline Lot 2 are summarized in memorandum SPC-001-12, *Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2*. The containers that have been sampled to date from BN510.1 Boxline Lot 3 are identified in Table 1.

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	BN10430658
2	3	0.002097027	1044	
3	4	0.002528466	436	BN10433911
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	BN10430910
	9	0.003626498	3863	
	10	0.004061868	3294	
8	C1	0.004168875	579	BN10435873
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

5. DATA RESULTS

The statistical evaluation of the analytical data collected for BN510.1 waste stream was performed in accordance with MP-TRUW-8.25 and is summarized in Tables 1A and 2A in Attachments 1 and 2, respectively. Attachment 1 includes all data collected to date for both randomly selected containers and randomly selected contingency containers from Lots 1, 2

and 3. Attachment 2 includes only the data collected to date for the randomly selected containers from Lots 1, 2 and 3. Tentatively Identified Compounds (TICs) that were detected in the waste stream are detailed in Tables 1B and 2B in Attachments 1 and 2, respectively. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for each constituent and to assign and/or confirm EPA HWNs for the BN510.1 waste stream. HWNs were assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). None of the headspace sampling UCL_{90} results were above their associated PRQL.

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

If you have any questions or comments, please contact me at 557-6447.

NDK/nk

Attachments

1. Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
2. Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

cc: George Byram
Caralea Hinkle-Daniel
Wes Skaar
AMWTP Correspondence Control

Attachment 1 - Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
May 3, 2012
NDK-02-12

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	43	8	Natural log	2.21	0.256	0.631	0.381	2.30	10	-
Methanol	43	2	None	42.0	26.3	9.65	28.2	-	100	-
Ethyl ether	43	0	None	1.00	0.771	0.212	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	43	4	Natural log	3.43	0.016	0.867	0.188	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	43	0	None	1.05	0.878	0.294	[b]	-	10	D029 [d]
Acetone [c]	43	7	Natural log	5.39	2.57	0.742	2.72	4.61	100	-
Methylene chloride [c]	43	28	Natural log	6.36	1.78	2.04	2.19	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	43	0	None	1.25	0.947	0.219	[b]	-	10	
1,1-Dichloroethane [c]	43	3	Natural log	0.993	-0.087	0.366	-0.014	2.30	10	
Methyl ethyl ketone	43	0	None	12.0	8.58	2.43	[b]	-	100	F005 [d]
Chloroform [c]	43	5	Natural log	4.37	0.161	0.797	0.319	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	43	14	Natural log	5.89	0.978	1.18	1.21	2.30	10	F001/F002 [d]
Carbon tetrachloride [c]	43	4	Natural log	5.97	0.687	0.984	0.882	2.30	10	F001 [d]
Benzene [c]	43	3	Natural log	0.875	-0.019	0.260	0.033	2.30	10	F005 [d]
1,2-Dichloroethane	43	0	None	2.10	1.43	0.508	[b]	-	10	D028 [d]
Butanol	43	0	None	30.0	18.9	8.07	[b]	-	100	-
Trichloroethylene [c]	43	17	Natural log	4.14	0.763	1.15	0.991	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	43	1	Natural log	4.03	2.52	0.403	2.60	4.61	100	-
Toluene [c]	43	25	Natural log	4.48	1.24	1.36	1.51	2.30	10	F005 [d]
Tetrachloroethylene [c]	43	3	Natural log	2.56	-0.028	0.466	0.064	2.30	10	F001/F002 [d]
Chlorobenzene	43	0	None	1.05	0.865	0.216	[b]	-	10	-
Ethyl benzene [c]	43	5	Natural log	2.10	0.200	0.492	0.297	2.30	10	-
m&p-Xylene [c]	43	8	Natural log	3.09	0.442	0.831	0.607	2.30	10	-
o-Xylene [c]	43	4	Natural log	2.71	0.267	0.586	0.383	2.30	10	-
Bromoform	43	0	None	1.55	1.13	0.301	[b]	-	10	-
1,1,2,2-Tetrachloroethane	43	0	None	1.85	1.31	0.328	[b]	-	10	-
Cyclohexane [c, f]	43	2	Natural log	2.29	0.163	0.391	0.240	2.30	10	-
Carbon disulfide [c]	43	0	None	1.25	0.852	0.282	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	43	0	None	3.05	1.60	0.842	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	43	0	None	2.50	1.42	0.653	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	30	43	69.8
Trichlorofluoromethane	2000	4	43	9.3
Ethane, bromo-	31	1	43	2.3
Isopropyl alcohol	98	1	43	2.3
1,2-Dichloropropane	110	1	43	2.3
1,1-Dimethylthanol	370	2	43	4.7

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Attachment 2 - Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)
May 1, 2012
NDK-002-12

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	27	3	Natural log	1.79	0.136	0.454	0.251	2.30	10	-
Methanol	27	1	None	42.0	28.4	9.67	30.9	-	100	-
Ethyl ether	27	0	None	1.00	0.826	0.218	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	27	1	Natural log	3.22	-0.020	0.794	0.181	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	27	0	None	1.05	0.910	0.273	[b]	-	10	D029 [d]
Acetone [c]	27	3	Natural log	5.39	2.56	0.803	2.76	4.61	100	-
Methylene chloride [c]	27	16	Natural log	6.36	1.46	1.89	1.94	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	27	0	None	1.25	1.04	0.227	[b]	-	10	
1,1-Dichloroethane [c]	27	2	Natural log	0.993	0.042	0.371	0.136	2.30	10	
Methyl ethyl ketone	27	0	None	12.0	9.57	2.59	[b]	-	100	F005 [d]
Chloroform [c]	27	3	Natural log	1.25	0.146	0.453	0.261	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	27	7	Natural log	5.89	1.03	1.25	1.35	2.30	10	F001/F002 [d]
Carbon tetrachloride	27	0	None	3.00	2.14	0.920	[b]	-	10	F001 [d]
Benzene	27	0	None	1.10	0.983	0.134	[b]	-	10	F005 [d]
1,2-Dichloroethane	27	0	None	2.10	1.61	0.541	[b]	-	10	D028 [d]
Butanol	27	0	None	30.0	22.2	8.53	[b]	-	100	-
Trichloroethylene [c]	27	8	Natural log	3.43	0.670	1.08	0.942	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	27	1	Natural log	4.03	2.68	0.425	2.79	4.61	100	-
Toluene [c]	27	13	Natural log	4.48	0.962	1.34	1.30	2.30	10	F005 [d]
Tetrachloroethylene	27	0	None	1.05	0.937	0.129	[b]	-	10	F001/F002 [d]
Chlorobenzene	27	0	None	1.05	0.931	0.192	[b]	-	10	-
Ethyl benzene [c]	27	2	Natural log	2.10	0.178	0.446	0.291	2.30	10	-
m&p-Xylene [c]	27	3	Natural log	3.09	0.364	0.785	0.563	2.30	10	-
o-Xylene [c]	27	2	Natural log	2.71	0.296	0.641	0.458	2.30	10	-
Bromoform	27	0	None	1.55	1.25	0.323	[b]	-	10	-
1,1,2,2-Tetrachloroethane	27	0	None	1.85	1.32	0.283	[b]	-	10	-
Cyclohexane [c, f]	27	2	Natural log	2.29	0.258	0.465	0.376	2.30	10	-
Carbon disulfide [e]	27	0	None	1.25	0.963	0.305	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	27	0	None	3.05	1.59	0.742	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	27	0	None	2.50	1.45	0.561	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP..

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	21	27	77.8
Trichlorofluoromethane	87	1	27	3.7
Isopropyl Alcohol	98	1	27	3.7
1,2-Dichloropropane	110	2	27	7.4

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

I-2095
RECORD
R 1-31-07

AMWTP
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: January 29, 2007

To: Eric Schweinsberg
TRU Programs Site Project Manager

From: Steve Carpenter SC
Acceptable Knowledge Expert/Alternate Site Project Manager

Subject: Subsequent Solids Random Sample Selection Candidates for BN836 – Lot 4, Revision 1 - SPC-006-07

This memorandum contains the Subsequent Solids Random Sample Selection Candidates for waste stream BN836, Lot 4. The final Subsequent Solids Random Sample Selection Memorandum will be submitted upon identification of all containers in the waste stream lot.

1. POPULATION DEFINITION

The BN836, Lot 4 drum population was defined with a minimum of 650 and a maximum of 1,400 containers. Container selection and sampling will be completed as defined in MP-TRUW-8.25. Periodic reports will be generated from the Advanced Mixed Waste Treatment Project's Reconciliation Group that identifies additional containers with IDC MD-836 that have been characterized since the previous report. The drum numbers within the Reconciliation reports will be sorted in ascending order and added to the BN836 Lot 4 container list. Only 55-gallon drums, with assay and RTR QC complete data, will be included in the BN836, Lot 4 population. Attachment 1 provides a sequential listing of drums identified to date. The final container listing for BN836, Lot 4 will be generated when the final IDC MD-836 container is characterized or 1,400 containers are identified.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples "n" for characterization of this waste stream will not exceed seven. This estimation was based upon the final required "n" identified in multiple Idaho National Laboratory Advanced Mixed Waste Treatment Facility Sampling reports.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of five samples is required to support characterization of BN836, Lot 4. Ten drums will be selected and available for coring. Random numbers (as specified in MP-TRUW-8.25) will be generated for the lot population. Sequential numbers will be assigned to the random numbers in the order that they were generated. The list will be sorted by the random number, in ascending

order. At a minimum, the first five random numbers on the list that have acceptable containers associated with them will be cored.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant will be determined as containers qualify for the required sample "n" and when the required sampling is complete. The observed sample, n, will be checked against the number of samples (n) (as specified in Appendix A of MP-TRUW-8.25). If the observed sample, n, estimate results in greater than 20 percent more samples than originally calculated, the revised sample estimate will be selected and analyzed. This determination is iterative and will continue until the difference between n and the previous sample determination is less than 20 percent. The required number of samples, n, pertains only to toxicity, characteristic, or listed waste analytes and analytes where the associated Environment Protection Agency hazardous waste number is not assigned and the site intends to establish that an analyte is below the regulatory threshold. A sampling report presenting this information will be developed after sampling is complete.

5. CONTAINERS SELECTED

Attachment 2 identifies the initial candidate containers for BN836 Lot 4 with sequence numbers less than or equal to the minimum estimated for population sizes of 650 and 1,400 containers. Attachment 2 also documents the selection of additional container sequence numbers to serve as contingency samples if needed. The selected random numbers, identified in Attachment 2, were generated in accordance with MP-TRUW-8.25. The drum listing for this lot is updated periodically with the drums that have been provided by the Reconciliation Group since the previous update. Selected containers will be set aside. Once a container has been confirmed as a sample "n" container, it will be cored. Table 1 below identifies the selected containers. Nonconformance reports will be issued as appropriate against the containers that require substitution to ensure that these containers are appropriately characterized.

Table 1 – Selected Containers

Selected Minimum Population	Selected Maximum Population	Random Number	Sequential Number	AMWTP Number	Historical Number
1	1	0.001735	187	10124541	IDMD740003727
2	2	0.002424	142	10123154	IDMD740002492
3	3	0.002950	132	10123139	IDMD740007482
4	4	0.003234	347		
	5	0.003980	1357		
5	c1	0.007341	233	10130208	IDMD740003677
c1	c2	0.008558	152	10123202	IDMD740007455
	c3	0.008667	1044		
	c4	0.009086	1081		

Selected Minimum Population	Selected Maximum Population	Random Number	Sequential Number	AMWTP Number	Historical Number
c2	c5	0.010398	471		
c3		0.010468	302		
		0.010919	853		
		0.011553	811		
c4		0.012657	433		
		0.014802	1352		
		0.015097	965		
c5		0.015934	414		

If you have any questions or comments, please contact me at 557-6323.

SPC:at

Attachments
1. Container List for BN836, Lot 4
2. Randomly Selected Candidate Container Sequence Numbers
3. Randomly Selected Container Report, Form-1196

cc: Rod Arbon
Reed Ashby
Waco Blundell
Ken Burnside
Bobby Eschenbaum
Tom Fallon
Mike Griffin
Gary Grissom
Caralea Hinkle-Daniel
Russ Hose
Jim Jackson
Micky Johnson
Mitch Johnson
Robin Killian
Jason Lance
Kevin Lundquist
Greg McCain
Steve Monson
Angie Morse
Jeff Mousseau
Dave Preston
Scott Raish
Lyle Ryman
Eric Schweinsberg
Clint Sisson
Corrina Stailing
Whitney St. Michel
Carol Taylor
Travis Thompson
Kiki Torres
AMWTP Correspondence Control

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BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.173104	1	10000998	IDMD740003740
0.214565	2	10001174	IDMD740003930
0.224701	3	10001176	IDMD740003576
0.736060	4	10019803	IDMD760008169
0.156560	5	10026412	IDMD00182SL81
0.920919	6	10026653	IDMD00016SL81
0.717747	7	10035445	IDMD08755SL76
0.354897	8	10059603	IDMD99423SL78
0.669437	9	10059652	IDMD09042SL78
0.461393	10	10119488	IDMD740001193
0.498004	11	10119489	IDMD740001186
0.392313	12	10119491	IDMD740001212
0.098451	13	10119513	IDMD740001249
0.588286	14	10119519	IDMD740007267
0.595809	15	10119526	IDMD740001200
0.216675	16	10119532	IDMD740002283
0.530158	17	10119538	IDMD740007476
0.722181	18	10119557	IDMD740002271
0.106230	19	10119578	IDMD740002262
0.210947	20	10119579	IDMD740002290
0.672091	21	10119580	IDMD740002261
0.144866	22	10119581	IDMD740002268
0.131141	23	10119635	IDMD740002258
0.443996	24	10119637	IDMD740007411
0.533532	25	10119640	IDMD740007387
0.346138	26	10119642	IDMD740002245
0.732433	27	10119654	IDMD740007104
0.757515	28	10119655	IDMD740002282
0.205168	29	10119694	IDMD740002466
0.824109	30	10119696	IDMD740002454
0.098472	31	10119699	IDMD740002395
0.345832	32	10119700	IDMD740002464
0.704694	33	10119701	IDMD740002236
0.085585	34	10119704	IDMD740002229
0.118509	35	10119707	IDMD740002463
0.961426	36	10119709	IDMD740002457
0.539617	37	10119731	IDMD740007495
0.710329	38	10120048	IDMD740002312
0.378157	39	10120053	IDMD740007117
0.655301	40	10120054	IDMD740001151
0.868557	41	10120055	IDMD740007121
0.613719	42	10120093	IDMD740007318
0.431074	43	10120094	IDMD740007349
0.119054	44	10120202	IDMD740001121
0.931848	45	10120206	IDMD740007272

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.239874	46	10120207	IDMD740007265
0.857657	47	10120208	IDMD740001324
0.369784	48	10120209	IDMD740001074
0.463578	49	10120210	IDMD740007266
0.457933	50	10120211	IDMD740001101
0.873430	51	10120215	IDMD740001205
0.777608	52	10120216	IDMD740007270
0.949234	53	10120217	IDMD740001100
0.147705	54	10120218	IDMD740001096
0.420589	55	10120219	IDMD740001095
0.574313	56	10120225	IDMD740001068
0.027861	57	10120226	IDMD740001119
0.330707	58	10120235	IDMD740001118
0.607552	59	10120374	IDMD740007312
0.521887	60	10120375	IDMD740002288
0.772818	61	10120376	IDMD740002287
0.378040	62	10120378	IDMD740007163
0.693549	63	10120382	IDMD740001251
0.655546	64	10120386	IDMD740007108
0.746888	65	10120387	IDMD740007126
0.960876	66	10120388	IDMD740007090
0.204323	67	10120392	IDMD740007135
0.557665	68	10120393	IDMD740001470
0.225938	69	10120395	IDMD740007134
0.644533	70	10120396	IDMD740007125
0.365127	71	10120402	IDMD740007115
0.161586	72	10120405	IDMD740007393
0.560294	73	10120408	IDMD740007412
0.162710	74	10120416	IDMD740001178
0.782717	75	10120417	IDMD740007096
0.661029	76	10120422	IDMD740007084
0.403305	77	10120475	IDMD740007341
0.297215	78	10120476	IDMD740007217
0.251746	79	10120491	IDMD740007401
0.408852	80	10120494	IDMD740007333
0.585768	81	10120496	IDMD740007348
0.524591	82	10120499	IDMD740007385
0.613164	83	10120504	IDMD740007365
0.929290	84	10120506	IDMD740007406
0.927426	85	10120513	IDMD740007399
0.263405	86	10120517	IDMD740007364
0.380287	87	10120519	IDMD740007409
0.848667	88	10120520	IDMD740002248
0.317406	89	10120522	IDMD740007390
0.703683	90	10120579	IDMD740007398

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.152290	91	10120583	IDMD740001218
0.454571	92	10120584	IDMD740001072
0.484452	93	10120592	IDMD740001317
0.061198	94	10120593	IDMD740001070
0.344178	95	10120594	IDMD740001073
0.285232	96	10120597	IDMD740007263
0.815238	97	10120598	IDMD740007262
0.105077	98	10120599	IDMD740007264
0.229938	99	10120600	IDMD740007268
0.336115	100	10120601	IDMD740007261
0.583605	101	10120602	IDMD740007260
0.065050	102	10122893	IDMD740007439
0.844240	103	10122898	IDMD740001175
0.153093	104	10122905	IDMD740007430
0.054026	105	10122907	IDMD740007417
0.992170	106	10122908	IDMD740007421
0.716744	107	10122913	IDMD740007432
0.406197	108	10122914	IDMD740007428
0.795298	109	10122923	IDMD740002455
0.702257	110	10122925	IDMD740002467
0.152389	111	10122973	IDMD740007219
0.251390	112	10122976	IDMD740007204
0.138022	113	10122979	IDMD740007216
0.582409	114	10122980	IDMD740007228
0.560553	115	10122983	IDMD740007208
0.603297	116	10122985	IDMD740007198
0.346126	117	10122990	IDMD740007384
0.736505	118	10122998	IDMD740007144
0.872267	119	10122999	IDMD740007248
0.108286	120	10123002	IDMD740007239
0.913658	121	10123003	IDMD740007171
0.875221	122	10123063	IDMD740007423
0.265570	123	10123070	IDMD740007427
0.451996	124	10123128	IDMD740002185
0.219865	125	10123129	IDMD740002345
0.133636	126	10123130	IDMD740002192
0.194088	127	10123131	IDMD740002151
0.283684	128	10123132	IDMD740002201
0.744345	129	10123133	IDMD740002330
0.523391	130	10123134	IDMD740002176
0.369170	131	10123138	IDMD740002195
0.002950	132	10123139	IDMD740007482
0.296967	133	10123140	IDMD740007447
0.043780	134	10123141	IDMD740007454
0.647982	135	10123142	IDMD740007457

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.509526	136	10123145	IDMD740007462
0.876927	137	10123146	IDMD740007440
0.405269	138	10123148	IDMD740007456
0.108107	139	10123149	IDMD740007472
0.527400	140	10123151	IDMD740007477
0.639098	141	10123152	IDMD740002480
0.002424	142	10123154	IDMD740002492
0.623590	143	10123155	IDMD740002478
0.801097	144	10123156	IDMD740002472
0.803716	145	10123160	IDMD740002488
0.321239	146	10123161	IDMD740002497
0.291102	147	10123162	IDMD740003766
0.868429	148	10123163	IDMD740003747
0.773147	149	10123165	IDMD740003693
0.648179	150	10123166	IDMD740003684
0.159118	151	10123174	IDMD740007443
0.008558	152	10123202	IDMD740007455
0.296203	153	10123212	IDMD740002333
0.234815	154	10123213	IDMD740002212
0.951610	155	10123214	IDMD740002319
0.525239	156	10123215	IDMD740002420
0.174485	157	10123216	IDMD740002209
0.897486	158	10123217	IDMD740002202
0.129393	159	10123221	IDMD740002157
0.132235	160	10123222	IDMD740002329
0.183754	161	10123223	IDMD740002183
0.365437	162	10123225	IDMD740002204
0.479442	163	10123226	IDMD740002322
0.894392	164	10123227	IDMD740002318
0.722836	165	10123230	IDMD740007487
0.767591	166	10123340	IDMD740007314
0.634992	167	10123346	IDMD740007325
0.619829	168	10123347	IDMD740007309
0.892935	169	10123348	IDMD740007305
0.432507	170	10123349	IDMD740007304
0.881067	171	10123350	IDMD740007306
0.089841	172	10123351	IDMD740007331
0.642647	173	10123356	IDMD740002474
0.258859	174	10123359	IDMD740002481
0.132742	175	10123360	IDMD740002489
0.641083	176	10123361	IDMD740002495
0.210143	177	10123371	IDMD740007499
0.106984	178	10123378	IDMD740002161
0.827391	179	10123380	IDMD740002328
0.142512	180	10123398	IDMD740002191

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.814270	181	10123399	IDMD740002327
0.200789	182	10124459	IDMD740007396
0.738746	183	10124530	IDMD740003719
0.829799	184	10124532	IDMD740003791
0.814706	185	10124534	IDMD740002485
0.528343	186	10124539	IDMD740003730
0.001735	187	10124541	IDMD740003727
0.854894	188	10124544	IDMD740003733
0.547543	189	10124613	IDMD740002358
0.680177	190	10124866	IDMD740002146
0.315837	191	10124873	IDMD740007094
0.576550	192	10124877	IDMD740002214
0.297704	193	10124880	IDMD740002323
0.241320	194	10124882	IDMD740007474
0.188518	195	10124883	IDMD740007475
0.978814	196	10124884	IDMD740007478
0.455638	197	10124888	IDMD740007465
0.439082	198	10124889	IDMD740007451
0.897125	199	10124892	IDMD740007441
0.693397	200	10124896	IDMD740002493
0.256861	201	10124897	IDMD740002477
0.389412	202	10126444	IDMD740002140
0.567665	203	10126448	IDMD740002338
0.969358	204	10126450	IDMD740002351
0.301541	205	10126458	IDMD740002348
0.879230	206	10126460	IDMD740002359
0.243670	207	10126462	IDMD740002382
0.748848	208	10126464	IDMD740002324
0.319499	209	10126565	IDMD740002444
0.243652	210	10126577	IDMD740002331
0.774840	211	10126816	IDMD740002377
0.874480	212	10126968	IDMD740003744
0.069560	213	10126980	IDMD740007445
0.831941	214	10129880	IDMD740003608
0.505493	215	10129887	IDMD740003644
0.795467	216	10129895	IDMD740003612
0.254932	217	10129901	IDMD740003599
0.176118	218	10129906	IDMD740003623
0.064559	219	10129912	IDMD740003642
0.749393	220	10129914	IDMD740003605
0.042979	221	10129916	IDMD740003611
0.956039	222	10129917	IDMD740003633
0.651102	223	10129921	IDMD740003622
0.638543	224	10130119	IDMD740003754
0.123152	225	10130126	IDMD740003680

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.693565	226	10130173	IDMD740002406
0.362638	227	10130174	IDMD740002397
0.681011	228	10130176	IDMD740002404
0.275159	229	10130195	IDMD740002428
0.578837	230	10130199	IDMD740002399
0.868844	231	10130200	IDMD740002407
0.347773	232	10130201	IDMD740002414
0.007341	233	10130208	IDMD740003677
0.221705	234	10130214	IDMD740003697
0.323223	235	10130217	IDMD740003619
0.578782	236	10130222	IDMD740003674
0.309665	237	10130262	IDMD740002211
0.782334	238	10130274	IDMD740003631
0.878899	239	10130276	IDMD740003603
0.472719	240	10130288	IDMD740003634
0.591097	241	10130290	IDMD740003635
0.813276	242	10130291	IDMD740003620
0.894255	243	10130293	IDMD740002220
0.771518	244	10130294	IDMD740002225
0.017016	245	10130296	IDMD740002238
0.797698	246	10130298	IDMD740002227
0.538834	247	10130299	IDMD740002226
0.740142	248	10130300	IDMD740002221
0.725189	249	10130301	IDMD740002244
0.317019	250	10130302	IDMD740002239
0.163464	251	10130305	IDMD740003601
0.765819	252	10130313	IDMD740003638
0.864544	253	10132053	IDMD740007179
0.701390	254	10132147	IDMD740002251
0.749892	255	10132177	IDMD740003964
0.696754	256	10132187	IDMD740002217
0.042054	257	10132481	IDMD740002156
0.462286	258	10132484	IDMD740002138
0.981820	259	10132506	IDMD740002203
0.679506	260	10132507	IDMD740007496
0.302868	261	10132545	IDMD740003645
0.892603	262	10132547	IDMD740003613
0.352686	263	10132550	IDMD740003602
0.775693	264	10132555	IDMD740003600
0.421772	265	10132558	IDMD740003661
0.617673	266	10132583	IDMD740003654
0.216045	267	10132629	IDMD740003860
0.936793	268	10132640	IDMD740003863
0.279447	269	10132642	IDMD740003897
0.514406	270	10132644	IDMD740003876

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.458587	271	10132645	IDMD740003855
0.786857	272	10132809	IDMD740002339
0.709400	273	10132941	IDMD740003736
0.073024	274	10132943	IDMD740003723
0.127938	275	10133077	IDMD740007200
0.177030	276	10133079	IDMD740002431
0.234598	277	10133085	IDMD740007442
0.491963	278	10135861	IDMD740003794
0.063438	279	10135868	IDMD740002476
0.564765	280	10135872	IDMD740002469
0.267352	281	10137109	IDMD740002353
0.438659	282		
0.360809	283		
0.229811	284		
0.344757	285		
0.047955	286		
0.898129	287		
0.509296	288		
0.772800	289		
0.658808	290		
0.285563	291		
0.769211	292		
0.554577	293		
0.473253	294		
0.352494	295		
0.046127	296		
0.935013	297		
0.648066	298		
0.024960	299		
0.122529	300		
0.760036	301		
0.010468	302		
0.780758	303		
0.819509	304		
0.567408	305		
0.199707	306		
0.896085	307		
0.644565	308		
0.581397	309		
0.893080	310		
0.579544	311		
0.157194	312		
0.981786	313		
0.241646	314		
0.296677	315		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.573523	316		
0.067124	317		
0.088662	318		
0.182820	319		
0.031997	320		
0.864490	321		
0.788235	322		
0.843513	323		
0.807362	324		
0.167927	325		
0.331639	326		
0.306973	327		
0.835934	328		
0.091155	329		
0.931270	330		
0.494459	331		
0.518619	332		
0.951812	333		
0.392714	334		
0.968475	335		
0.347066	336		
0.529649	337		
0.680690	338		
0.754984	339		
0.800702	340		
0.774544	341		
0.646203	342		
0.473049	343		
0.331789	344		
0.237943	345		
0.909809	346		
0.003234	347		
0.179167	348		
0.066196	349		
0.162061	350		
0.126875	351		
0.904129	352		
0.343620	353		
0.094561	354		
0.556050	355		
0.141370	356		
0.702102	357		
0.135511	358		
0.758367	359		
0.045467	360		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.957792	361		
0.083243	362		
0.867540	363		
0.831713	364		
0.515207	365		
0.990533	366		
0.444136	367		
0.504961	368		
0.100802	369		
0.899164	370		
0.591214	371		
0.472994	372		
0.628948	373		
0.582666	374		
0.061257	375		
0.517886	376		
0.966408	377		
0.074930	378		
0.359082	379		
0.485644	380		
0.571652	381		
0.815030	382		
0.527551	383		
0.545315	384		
0.715733	385		
0.191646	386		
0.412628	387		
0.068571	388		
0.484455	389		
0.275169	390		
0.270119	391		
0.751330	392		
0.193445	393		
0.398669	394		
0.520681	395		
0.859000	396		
0.986299	397		
0.795076	398		
0.926703	399		
0.999576	400		
0.594597	401		
0.577446	402		
0.321665	403		
0.257161	404		
0.611563	405		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.453602	406		
0.317501	407		
0.448377	408		
0.603121	409		
0.414855	410		
0.768052	411		
0.593875	412		
0.849386	413		
0.015934	414		
0.611465	415		
0.082245	416		
0.189349	417		
0.715457	418		
0.625905	419		
0.464128	420		
0.222785	421		
0.903281	422		
0.184045	423		
0.335534	424		
0.387079	425		
0.164761	426		
0.097670	427		
0.711262	428		
0.574131	429		
0.433537	430		
0.347881	431		
0.645523	432		
0.012657	433		
0.242725	434		
0.385596	435		
0.873312	436		
0.566741	437		
0.085857	438		
0.900419	439		
0.375444	440		
0.144067	441		
0.707486	442		
0.556204	443		
0.825939	444		
0.370083	445		
0.860868	446		
0.481692	447		
0.887036	448		
0.471069	449		
0.678068	450		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.027515	451		
0.375494	452		
0.770706	453		
0.898359	454		
0.605984	455		
0.032096	456		
0.422879	457		
0.802766	458		
0.817153	459		
0.852160	460		
0.453495	461		
0.750299	462		
0.428732	463		
0.025896	464		
0.251901	465		
0.774307	466		
0.771399	467		
0.354697	468		
0.826089	469		
0.483987	470		
0.010398	471		
0.132154	472		
0.391996	473		
0.092404	474		
0.838969	475		
0.084711	476		
0.159607	477		
0.579322	478		
0.652074	479		
0.713722	480		
0.848360	481		
0.201488	482		
0.386098	483		
0.355766	484		
0.677808	485		
0.368127	486		
0.645214	487		
0.875505	488		
0.925217	489		
0.591859	490		
0.544357	491		
0.377997	492		
0.177798	493		
0.200490	494		
0.131603	495		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.798606	496		
0.235133	497		
0.865381	498		
0.197888	499		
0.858055	500		
0.405844	501		
0.932494	502		
0.323515	503		
0.921114	504		
0.432880	505		
0.131617	506		
0.828964	507		
0.131106	508		
0.345913	509		
0.047006	510		
0.030157	511		
0.972384	512		
0.748664	513		
0.282331	514		
0.735822	515		
0.708202	516		
0.426469	517		
0.627917	518		
0.271110	519		
0.092524	520		
0.823981	521		
0.138987	522		
0.089889	523		
0.872681	524		
0.358475	525		
0.889659	526		
0.180880	527		
0.242330	528		
0.925850	529		
0.048297	530		
0.825004	531		
0.638707	532		
0.508900	533		
0.169759	534		
0.277629	535		
0.095809	536		
0.258258	537		
0.296132	538		
0.676974	539		
0.099432	540		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.361077	541		
0.756889	542		
0.231409	543		
0.677596	544		
0.544335	545		
0.197233	546		
0.033662	547		
0.063691	548		
0.703738	549		
0.110417	550		
0.890258	551		
0.324103	552		
0.513539	553		
0.211671	554		
0.030100	555		
0.403977	556		
0.206821	557		
0.403991	558		
0.457883	559		
0.998069	560		
0.368260	561		
0.984199	562		
0.994119	563		
0.129144	564		
0.222382	565		
0.139557	566		
0.895727	567		
0.389225	568		
0.321176	569		
0.389781	570		
0.454272	571		
0.285761	572		
0.552306	573		
0.495806	574		
0.025312	575		
0.783978	576		
0.469236	577		
0.634501	578		
0.199196	579		
0.382567	580		
0.884585	581		
0.910412	582		
0.030752	583		
0.868424	584		
0.902070	585		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.151300	586		
0.658967	587		
0.031284	588		
0.071988	589		
0.985956	590		
0.442722	591		
0.407336	592		
0.860648	593		
0.656231	594		
0.270444	595		
0.809508	596		
0.148940	597		
0.908569	598		
0.688623	599		
0.766041	600		
0.736679	601		
0.432899	602		
0.485598	603		
0.256899	604		
0.838589	605		
0.400365	606		
0.817298	607		
0.727213	608		
0.063985	609		
0.902552	610		
0.686724	611		
0.730999	612		
0.416157	613		
0.761943	614		
0.539941	615		
0.578177	616		
0.461296	617		
0.624684	618		
0.669191	619		
0.268167	620		
0.132179	621		
0.579606	622		
0.875524	623		
0.553708	624		
0.791008	625		
0.278664	626		
0.173962	627		
0.949273	628		
0.683602	629		
0.249355	630		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.977076	631		
0.520524	632		
0.224194	633		
0.240149	634		
0.232006	635		
0.632400	636		
0.704701	637		
0.046036	638		
0.765442	639		
0.350456	640		
0.721433	641		
0.446226	642		
0.395713	643		
0.589903	644		
0.747475	645		
0.557947	646		
0.221679	647		
0.135679	648		
0.957008	649		
0.907534	650		
0.811717	651		
0.724892	652		
0.737967	653		
0.856929	654		
0.661625	655		
0.962911	656		
0.069325	657		
0.279556	658		
0.300181	659		
0.050539	660		
0.344782	661		
0.877440	662		
0.448078	663		
0.742689	664		
0.842884	665		
0.853097	666		
0.354068	667		
0.208079	668		
0.604867	669		
0.932343	670		
0.287938	671		
0.835703	672		
0.850607	673		
0.607053	674		
0.827913	675		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.131187	676		
0.842194	677		
0.461973	678		
0.796066	679		
0.427005	680		
0.772657	681		
0.170140	682		
0.140318	683		
0.627369	684		
0.920066	685		
0.843910	686		
0.478996	687		
0.926020	688		
0.977170	689		
0.470409	690		
0.399987	691		
0.134286	692		
0.367500	693		
0.815360	694		
0.492881	695		
0.107099	696		
0.944016	697		
0.426913	698		
0.694622	699		
0.833322	700		
0.893028	701		
0.177354	702		
0.804298	703		
0.535098	704		
0.925194	705		
0.064750	706		
0.567044	707		
0.086957	708		
0.337993	709		
0.782478	710		
0.983972	711		
0.783106	712		
0.730735	713		
0.340451	714		
0.925627	715		
0.717518	716		
0.988466	717		
0.977080	718		
0.830102	719		
0.849210	720		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.181287	721		
0.084255	722		
0.206340	723		
0.336590	724		
0.389326	725		
0.426249	726		
0.991497	727		
0.379840	728		
0.176995	729		
0.882570	730		
0.379140	731		
0.675209	732		
0.582912	733		
0.294310	734		
0.776017	735		
0.111356	736		
0.551338	737		
0.209300	738		
0.968903	739		
0.125798	740		
0.833107	741		
0.860382	742		
0.707457	743		
0.227058	744		
0.153366	745		
0.124668	746		
0.777036	747		
0.323373	748		
0.171104	749		
0.952935	750		
0.158614	751		
0.227069	752		
0.951068	753		
0.887364	754		
0.785706	755		
0.448122	756		
0.438428	757		
0.659162	758		
0.470321	759		
0.348811	760		
0.997292	761		
0.169376	762		
0.607664	763		
0.985157	764		
0.961280	765		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.166237	766		
0.716805	767		
0.750148	768		
0.654287	769		
0.504713	770		
0.340524	771		
0.519643	772		
0.513655	773		
0.494989	774		
0.594251	775		
0.704142	776		
0.816452	777		
0.345208	778		
0.301936	779		
0.121001	780		
0.385907	781		
0.308622	782		
0.142880	783		
0.720410	784		
0.737248	785		
0.586011	786		
0.247539	787		
0.216713	788		
0.896007	789		
0.579444	790		
0.906647	791		
0.960528	792		
0.624862	793		
0.874016	794		
0.691470	795		
0.188313	796		
0.785003	797		
0.490814	798		
0.475439	799		
0.261574	800		
0.782919	801		
0.776003	802		
0.647496	803		
0.936753	804		
0.997884	805		
0.533415	806		
0.231825	807		
0.349794	808		
0.166840	809		
0.277572	810		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.011553	811		
0.561264	812		
0.205957	813		
0.937251	814		
0.289609	815		
0.969616	816		
0.565211	817		
0.409142	818		
0.568747	819		
0.635813	820		
0.858597	821		
0.264242	822		
0.878507	823		
0.294411	824		
0.798257	825		
0.043367	826		
0.858406	827		
0.968915	828		
0.574700	829		
0.830549	830		
0.838502	831		
0.327402	832		
0.939448	833		
0.409028	834		
0.259073	835		
0.034719	836		
0.680184	837		
0.026491	838		
0.162089	839		
0.258632	840		
0.358020	841		
0.806226	842		
0.823614	843		
0.450499	844		
0.613455	845		
0.504950	846		
0.457131	847		
0.416185	848		
0.074810	849		
0.819200	850		
0.599781	851		
0.187559	852		
0.010919	853		
0.776317	854		
0.198607	855		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.464963	856		
0.206200	857		
0.783954	858		
0.545947	859		
0.972445	860		
0.259275	861		
0.698090	862		
0.392014	863		
0.538781	864		
0.124871	865		
0.620126	866		
0.900916	867		
0.959309	868		
0.164129	869		
0.176196	870		
0.743480	871		
0.291698	872		
0.056555	873		
0.306827	874		
0.821710	875		
0.997258	876		
0.455835	877		
0.230708	878		
0.962161	879		
0.458766	880		
0.491646	881		
0.402961	882		
0.974821	883		
0.990201	884		
0.956725	885		
0.469498	886		
0.424620	887		
0.228975	888		
0.659562	889		
0.828520	890		
0.482895	891		
0.900144	892		
0.769582	893		
0.213077	894		
0.777756	895		
0.834755	896		
0.291861	897		
0.397123	898		
0.067251	899		
0.832469	900		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.171573	901		
0.567612	902		
0.801542	903		
0.300225	904		
0.828535	905		
0.401057	906		
0.358602	907		
0.414335	908		
0.269994	909		
0.073248	910		
0.561209	911		
0.226823	912		
0.407206	913		
0.182255	914		
0.592635	915		
0.876886	916		
0.437395	917		
0.815356	918		
0.388647	919		
0.704100	920		
0.406336	921		
0.959285	922		
0.953472	923		
0.183508	924		
0.483054	925		
0.435000	926		
0.647816	927		
0.831731	928		
0.849175	929		
0.455608	930		
0.930008	931		
0.081027	932		
0.773182	933		
0.294932	934		
0.289223	935		
0.395056	936		
0.375079	937		
0.481450	938		
0.934917	939		
0.875543	940		
0.571763	941		
0.051013	942		
0.245627	943		
0.874487	944		
0.231378	945		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.359999	946		
0.257054	947		
0.302368	948		
0.947855	949		
0.078305	950		
0.421037	951		
0.751598	952		
0.183052	953		
0.518288	954		
0.440765	955		
0.035103	956		
0.365319	957		
0.213895	958		
0.574617	959		
0.945747	960		
0.467770	961		
0.638076	962		
0.250537	963		
0.724054	964		
0.015097	965		
0.438341	966		
0.292519	967		
0.299638	968		
0.086732	969		
0.707511	970		
0.841644	971		
0.629290	972		
0.452757	973		
0.698846	974		
0.083655	975		
0.115171	976		
0.133348	977		
0.570929	978		
0.849093	979		
0.798517	980		
0.694925	981		
0.651425	982		
0.901057	983		
0.234761	984		
0.767193	985		
0.113541	986		
0.082391	987		
0.380542	988		
0.857961	989		
0.791614	990		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.204978	991		
0.063172	992		
0.318686	993		
0.795305	994		
0.871350	995		
0.198908	996		
0.362437	997		
0.583341	998		
0.788185	999		
0.387938	1000		
0.181691	1001		
0.920894	1002		
0.917620	1003		
0.525818	1004		
0.423914	1005		
0.975259	1006		
0.651054	1007		
0.625002	1008		
0.509195	1009		
0.210709	1010		
0.546650	1011		
0.612371	1012		
0.089045	1013		
0.900248	1014		
0.802171	1015		
0.036049	1016		
0.510891	1017		
0.765881	1018		
0.941089	1019		
0.051896	1020		
0.777452	1021		
0.829773	1022		
0.740811	1023		
0.915454	1024		
0.289770	1025		
0.746402	1026		
0.324452	1027		
0.927729	1028		
0.647674	1029		
0.089964	1030		
0.939200	1031		
0.207502	1032		
0.977924	1033		
0.450799	1034		
0.735332	1035		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.779341	1036		
0.445440	1037		
0.599808	1038		
0.585883	1039		
0.056692	1040		
0.715842	1041		
0.578469	1042		
0.518845	1043		
0.008667	1044		
0.903301	1045		
0.541971	1046		
0.418947	1047		
0.765085	1048		
0.090456	1049		
0.960029	1050		
0.548288	1051		
0.891975	1052		
0.262859	1053		
0.257338	1054		
0.818518	1055		
0.600624	1056		
0.991899	1057		
0.973608	1058		
0.153730	1059		
0.568031	1060		
0.680451	1061		
0.585517	1062		
0.828421	1063		
0.307523	1064		
0.618978	1065		
0.041081	1066		
0.171292	1067		
0.699819	1068		
0.537745	1069		
0.428597	1070		
0.850275	1071		
0.020465	1072		
0.396423	1073		
0.717949	1074		
0.666587	1075		
0.396792	1076		
0.114193	1077		
0.652421	1078		
0.104628	1079		
0.667913	1080		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.009086	1081		
0.033915	1082		
0.765421	1083		
0.795934	1084		
0.396567	1085		
0.264374	1086		
0.428399	1087		
0.758822	1088		
0.858854	1089		
0.852152	1090		
0.420952	1091		
0.348605	1092		
0.138681	1093		
0.612444	1094		
0.690614	1095		
0.816180	1096		
0.647734	1097		
0.112001	1098		
0.226799	1099		
0.655471	1100		
0.624408	1101		
0.773754	1102		
0.443672	1103		
0.343591	1104		
0.713742	1105		
0.492754	1106		
0.955777	1107		
0.081469	1108		
0.649112	1109		
0.981711	1110		
0.995673	1111		
0.305666	1112		
0.891690	1113		
0.812113	1114		
0.805582	1115		
0.533621	1116		
0.291506	1117		
0.730710	1118		
0.654366	1119		
0.980462	1120		
0.770772	1121		
0.273306	1122		
0.606693	1123		
0.131496	1124		
0.097385	1125		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.818153	1126		
0.652123	1127		
0.020568	1128		
0.891723	1129		
0.459046	1130		
0.068080	1131		
0.984844	1132		
0.490462	1133		
0.798593	1134		
0.538268	1135		
0.205447	1136		
0.821135	1137		
0.114985	1138		
0.320602	1139		
0.635397	1140		
0.301101	1141		
0.333749	1142		
0.835322	1143		
0.221024	1144		
0.714591	1145		
0.527754	1146		
0.981279	1147		
0.857974	1148		
0.186681	1149		
0.738837	1150		
0.943273	1151		
0.831613	1152		
0.865753	1153		
0.162635	1154		
0.127500	1155		
0.242362	1156		
0.089181	1157		
0.792269	1158		
0.883465	1159		
0.377906	1160		
0.105321	1161		
0.443504	1162		
0.131169	1163		
0.532347	1164		
0.620230	1165		
0.503902	1166		
0.687295	1167		
0.197095	1168		
0.237701	1169		
0.052469	1170		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.094107	1171		
0.457170	1172		
0.064938	1173		
0.071104	1174		
0.421538	1175		
0.613933	1176		
0.220294	1177		
0.096503	1178		
0.624563	1179		
0.837636	1180		
0.023881	1181		
0.534035	1182		
0.186165	1183		
0.658053	1184		
0.355326	1185		
0.850365	1186		
0.260627	1187		
0.280272	1188		
0.750749	1189		
0.451048	1190		
0.710127	1191		
0.447625	1192		
0.424860	1193		
0.789640	1194		
0.349496	1195		
0.884182	1196		
0.219669	1197		
0.054385	1198		
0.073979	1199		
0.292776	1200		
0.470851	1201		
0.826352	1202		
0.918640	1203		
0.117697	1204		
0.160053	1205		
0.123456	1206		
0.570890	1207		
0.516876	1208		
0.754194	1209		
0.658202	1210		
0.309045	1211		
0.296977	1212		
0.292107	1213		
0.868773	1214		
0.693798	1215		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.858433	1216		
0.900376	1217		
0.824871	1218		
0.381164	1219		
0.796300	1220		
0.036161	1221		
0.893841	1222		
0.412366	1223		
0.552263	1224		
0.484732	1225		
0.737019	1226		
0.929588	1227		
0.950986	1228		
0.631478	1229		
0.295072	1230		
0.128294	1231		
0.410475	1232		
0.027007	1233		
0.763709	1234		
0.097332	1235		
0.503864	1236		
0.495606	1237		
0.604465	1238		
0.536990	1239		
0.928129	1240		
0.105297	1241		
0.856551	1242		
0.742531	1243		
0.422873	1244		
0.899824	1245		
0.101391	1246		
0.123273	1247		
0.636240	1248		
0.398837	1249		
0.361346	1250		
0.956438	1251		
0.853325	1252		
0.218615	1253		
0.221136	1254		
0.974050	1255		
0.716248	1256		
0.566847	1257		
0.580160	1258		
0.553375	1259		
0.907381	1260		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.027697	1261		
0.710542	1262		
0.616547	1263		
0.127722	1264		
0.937220	1265		
0.698812	1266		
0.283012	1267		
0.874847	1268		
0.645598	1269		
0.376911	1270		
0.505853	1271		
0.315744	1272		
0.811242	1273		
0.756505	1274		
0.728280	1275		
0.795973	1276		
0.289979	1277		
0.616952	1278		
0.479192	1279		
0.446599	1280		
0.104247	1281		
0.570610	1282		
0.505860	1283		
0.260899	1284		
0.552655	1285		
0.640597	1286		
0.762491	1287		
0.387040	1288		
0.886675	1289		
0.328893	1290		
0.982583	1291		
0.558030	1292		
0.842289	1293		
0.869844	1294		
0.643235	1295		
0.928631	1296		
0.103912	1297		
0.413193	1298		
0.639714	1299		
0.184224	1300		
0.445402	1301		
0.331314	1302		
0.335836	1303		
0.817272	1304		
0.547626	1305		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.809211	1306		
0.507749	1307		
0.967995	1308		
0.426891	1309		
0.444492	1310		
0.486225	1311		
0.851508	1312		
0.062811	1313		
0.905837	1314		
0.104798	1315		
0.247246	1316		
0.408759	1317		
0.834903	1318		
0.334877	1319		
0.234967	1320		
0.667924	1321		
0.540197	1322		
0.298846	1323		
0.455041	1324		
0.596971	1325		
0.371041	1326		
0.143091	1327		
0.498553	1328		
0.665142	1329		
0.508655	1330		
0.072867	1331		
0.498643	1332		
0.210725	1333		
0.125561	1334		
0.596160	1335		
0.653278	1336		
0.869542	1337		
0.349129	1338		
0.987549	1339		
0.762553	1340		
0.594616	1341		
0.032986	1342		
0.625119	1343		
0.429070	1344		
0.992109	1345		
0.477301	1346		
0.628419	1347		
0.585275	1348		
0.842099	1349		
0.924701	1350		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.446344	1351		
0.014802	1352		
0.257129	1353		
0.573007	1354		
0.433515	1355		
0.706130	1356		
0.003980	1357		
0.620493	1358		
0.923106	1359		
0.720743	1360		
0.703245	1361		
0.526879	1362		
0.270174	1363		
0.706663	1364		
0.322781	1365		
0.686446	1366		
0.186521	1367		
0.596453	1368		
0.868334	1369		
0.020923	1370		
0.570798	1371		
0.151291	1372		
0.777244	1373		
0.485204	1374		
0.880140	1375		
0.863257	1376		
0.596197	1377		
0.093080	1378		
0.338165	1379		
0.120990	1380		
0.972513	1381		
0.916595	1382		
0.436231	1383		
0.246308	1384		
0.076360	1385		
0.861040	1386		
0.977671	1387		
0.564530	1388		
0.341589	1389		
0.647820	1390		
0.971896	1391		
0.822757	1392		
0.392192	1393		
0.406697	1394		
0.849883	1395		

BN 836 Lot 4			
Random Number	Sequential Number	AMWTP Number	Historical Number
0.191538	1396		
0.865621	1397		
0.869710	1398		
0.468564	1399		
0.398216	1400		

Waste Stream: BN836	Lot: 4

Minimum Population = 650
Maximum Population = 1400

Selected Minimum Pop	Selected Maximum Pop	Random Number	Seq Numb	AMWTP Number	Historical Number
1	1	0.001735	187	10124541	IDMD740003727
2	2	0.002424	142	10123154	IDMD740002492
3	3	0.002950	132	10123139	IDMD740007482
4	4	0.003234	347		
	5	0.003980	1357		
5	c1	0.007341	233	10130208	IDMD740003677
c1	c2	0.008558	152	10123202	IDMD740007455
	c3	0.008667	1044		
	c4	0.009086	1081		
c2	c5	0.010398	471		
c3		0.010468	302		
		0.010919	853		
		0.011553	811		
c4		0.012657	433		
		0.014802	1352		
		0.015097	965		
c5		0.015934	414		
		0.017016	245	10130296	IDMD740002238
		0.020465	1072		
		0.020568	1128		
		0.020923	1370		
		0.023881	1181		
		0.024960	299		
		0.025312	575		
		0.025896	464		
		0.026491	838		
		0.027007	1233		
		0.027515	451		
		0.027697	1261		
		0.027861	57	10120226	IDMD740001119
		0.030100	555		
		0.030157	511		
		0.030752	583		
		0.031284	588		
		0.031997	320		
		0.032096	456		
		0.032986	1342		
		0.033662	547		
		0.033915	1082		
		0.034719	836		
		0.035103	956		
		0.036049	1016		
		0.036161	1221		
		0.041081	1066		

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AMWTP Advanced Mixed Waste Treatment Project	**Randomly Selected Container Report**	Form-1196, Rev. 4 Effective Date: 1/24/07 MP-TRUW-8.25 Page 1 of 1

Randomly Selected Container Report

Waste Stream Lot: BN836 Lot 4

Population Size of Waste Stream Lot: 650 – 1,400

Preliminary Selection: N/A

- Attach a list of drums used in preliminary estimate.

Random Selection is for Solids or Headspace Gas Sampling: Solids

Number of Containers to be Cored/Headspace Gas Sampled: 5
Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet
Attach copy of Excel spreadsheet which includes equation used to generate random number

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.

- Were any substitutions made from the original list? (yes (no)) If yes, attach documentation of the substitution. Include reason for substitution, method for selecting new container and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature / Date 1.29.07

Sampling Report for BN836, Lot 3

Advanced Mixed Waste Treatment Project

Signature on File w/DCR # 5508
TRU Programs Manager

10/26/06
Date

Next Periodic Review: 10/2009

Advanced Mixed Waste Treatment Project

Sampling Report For BN836, Lot 3

Purpose

The purpose of this sampling report is to provide the solid sampling characterization data from the core sampling of randomly selected containers from Lot 3 of waste stream BN836 in accordance with Section B-1a of the Waste Analysis Plan (WAP) and under a program approved by the New Mexico Environment Department (NMED).

Introduction

This waste stream is cemented sludge from Mound. The 1,000 containers that make up BN836 Lot 3 are listed in Attachment B.

Selection Process

The evaluation to determine the required number of samples for Lot 3 is presented in Attachment A. The required number of samples was calculated for each analyte with reported detections and two or more applicable samples. Applicable samples are all samples that are not diluted non-detects. However, the required number of samples identified pertains only to toxicity-characteristic or listed-waste analytes and analytes where the associated U.S. Environmental Protection Agency (EPA) hazardous waste number (HWN) is not assigned and a site intends to establish that the constituent is below the regulatory threshold. Because Advanced Mixed Waste Treatment Project (AMWTP) does not intend to establish that an analyte is below the regulatory threshold, five samples were determined to be sufficient.

Ten random numbers were generated to ensure a sufficient number of candidates were available to provide a minimum of five containers for coring. The ten candidate drums were selected for coring using a simple random selection method in accordance with MP-TRUW-8.25, RCRA Statistical Sampling. AMWTP memorandum SPC-031-2006, Final Sampling Plan for BN836 – Lot 3, presents the evaluation for the required number of samples, the random generation verification, the list of the containers selected for coring, the identification of containers that were cored, and the list of containers assigned to Lot 3.

The sampling was conducted by AMWTP using procedure INST-OI-16, Drum Coring Operations. The first six random selected containers were sampled. The selection order attributed to the random number, the associated AMWTP container ID, and the historical container identification number for the first six containers are presented in Table 1.

Table 1. BN836, Lot 3 containers randomly selected for coring.

Selection Order	**AMWTP Container Number**	**Historical ID**
1	10025029	IDMD760008382
2	10025026	IDMD760008383
3	10031169	IDMD08530SL76
4	10043815	IDMD00101SL81
5	10048419	IDMD99289SL78
6	10029165	IDMD760008195

Data Results

The statistical evaluation of the analytical data collected for BN836, Lot 3 is presented in Tables 2, 3A, 3B, 4A, and 4B. Table 5 lists the correlation of container number to solids analysis data packages. The data are used to determine the maximum and mean concentration, standard deviation (SD), and 90% upper confidence level (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA HWNs for the BN836 waste stream.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if solid sampling analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL) or regulatory threshold limit (RTL) values. Barium is the only toxicity characteristic metal analyte with a UCL_{90} result above its associated RTL value (Table 2). No solid sampling UCL_{90} results are above the PRQL values for volatile organic compounds (VOCs) (Table 3A) or for semi-volatile organic compounds (SVOCs) (Table 4A).

Lot 3 analyses included evaluation of SVOC target compounds bis(2-ethylhexyl)phthalate and fluoranthene (Table 4A). Bis(2-ethylhexyl)phthalate was identified as tentatively identified compound (TIC) in over 25% of the samples analyzed in BN836, Lot 1 and was added to the target analyte list as required by the WAP. The SVOC data from this compound did not result in the assignment of additional HWNs to the cemented sludge waste stream.

In conclusion, the originally assigned HWNs from BN836 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, and D011 and listed HWNs F001, F002, and F005.

WSPF Number BN836 Lot Number 3

Table 2. Metals summary data

ANALYTE	No. of Samples	No. of Samples above MDL [a]	Trans-formation [d]	Maximum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed RTL	RTL [c] (mg/kg)	EPA Code
Arsenic [b]	6	6	Natural log	1.76	1.50	0.170	1.61	4.61	100	D004 [h]
Barium	6	6	None	3900	2127	1255	2883	-	2000	D005 [g]
Cadmium [b]	6	6	Natural log	0.642	-0.166	0.723	0.269	3.00	20	D006 [h]
Chromium [b]	6	6	Natural log	4.19	3.52	0.371	3.75	4.61	100	D007 [h]
Lead	6	6	None	58.0	36.6	15.6	46.0	-	100	D008 [h]
Mercury	6	6	None	2.80	1.29	0.952	1.86	-	4	D009 [h]
Selenium	6	4	None	1.40	0.818	0.406	1.06	-	20	D010 [h]
Silver	6	5	None	1.80	1.13	0.572	1.48	-	100	D011 [h]
Antimony	6	4	None	1.80	0.925	0.566	1.27	-	100	N/A [e]
Beryllium	6	6	None	0.630	0.528	0.088	0.582	-	100	N/A [e, f]
Nickel [b]	6	6	Natural log	3.47	2.74	0.396	2.98	4.61	100	N/A [e]
Thallium	6	5	None	1.80	1.14	0.484	1.43	-	100	N/A [e]
Vanadium [b]	6	6	Natural log	3.64	2.93	0.402	3.17	4.61	100	N/A [e]
Zinc	6	6	None	170	126	35.6	147	-	100	N/A [e]

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. The maximum, mean, standard deviation (SD), UCL_{90}, and RTL are presented as transformed values.
c. To determine whether a HWN should be added, the UCL_{90} is compared against the appropriate limit. For toxicity characteristic constituents that do not have a PRQL in the permit, the TC limit (mg/L) multiplied by 20 is used to calculate the RTL. RTLs correspond to the analyte PRQL for analytes that are not characteristic hazardous waste constituents.
d. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.
e. There are no associated toxicity characteristic HWNs with these analytes.
f. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.
g. This analyte is identified based on AK. HWN D005 is applied to the waste stream because the UCL_{90} result for the analyte is above the RTL.
h. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{90} result for the analyte is not above the RTL

Did the data verify the AK? Yes X No _____

If no, describe the basis for assigning EPA Hazardous Waste Code(s): N/A

Statistics performed by: Tamara Shokes (Signature on file) Date 10/26/06
Signature

WSPF Number BN836 Lot Number 3

Table 3A. Total VOC summary data.

ANALYTE	No. of Samples	No of Samples above MDL [a]	Trans-formation [f]	Max-imum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL [c] (mg/kg)	EPA Code
1,1-Dichloroethylene	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
trans-1,2-dichloroethylene	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
1,1,1-Trichloroethane	6	0	None	0.090	0.088	0.003	[b]	–	10	F001, F002 [e]
1,1,2,2-Tetrachloroethane	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
1,1,2-Trichloroethane	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
1,2-Dichloroethane	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Acetone	6	0	None	1.15	1.08	0.041	[b]	–	100	N/A
Benzene	6	0	None	0.090	0.088	0.003	[b]	–	10	F005 [e]
Bromoform	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Butanol	6	0	None	1.10	0.725	0.291	[b]	–	100	N/A
Carbon disulfide	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Carbon tetrachloride	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Chlorobenzene	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Chloroform	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Ethyl benzene	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Ethyl ether	6	0	None	1.15	1.08	0.041	[b]	–	100	N/A
Isobutanol	6	0	None	1.10	0.725	0.291	[b]	–	100	N/A
Methanol [d]	6	1	Natural log	1.99	0.048	1.01	0.660	4.61	100	N/A [g]
Methyl ethyl ketone	6	0	None	1.10	0.725	0.291	[b]	-	100	N/A
Methylene chloride	6	0	None	0.090	0.088	0.003	[b]	-	10	N/A
Pyridine	6	0	None	1.15	1.08	0.041	[b]	-	100	N/A
o-Xylene	6	0	None	0.090	0.088	0.003	[b]	-	10	N/A
m- & p-Xylene	6	0	None	0.180	0.175	0.006	[b]	-	10	N/A
Tetrachloroethylene	6	0	None	0.180	0.175	0.006	[b]	-	10	F002 [e]
Toluene	6	0	None	0.090	0.088	0.003	[b]	-	10	F005 [e]
Trichloroethylene [d]	6	2	Natural log	0.642	-1.66	1.28	-0.890	2.30	10	F001, F002 [e]
Trichlorofluoromethane	6	0	None	0.090	0.088	0.003	[b]	–	10	N/A
Vinyl chloride	6	0	None	0.090	0.088	0.003	[b]	–	4	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.
b. All measurements are below detection; therefore, the UCL_{90} is not calculated.
c. To determine whether a HWN should be added, the UCL_{90} is compared against the appropriate limit. For toxicity characteristic (TC) wastes, the TC limit expressed as the RTL is used if compounds do not have a PRQL in the permit. For listed wastes, the PRQL is used.
d. The maximum, mean, standard deviation (SD), UCL_{90}, and RTL are presented as transformed values.
e. These HWNs, identified by AK, are conservatively applied to the waste stream even though the UCL_{90} for the associated analytes in the solid samples were not above the associated PRQL value.
f. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.
g. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN F003 was not applied.

Did the data verify the AK? Yes X No _____

If no, describe the basis for assigning EPA Hazardous Waste Code(s): N/A

Statistics performed by: Tamara Shokes (Signature on file) Date 10/26/06

Signature

WSPF Number BN836 Lot Number 3

Table 3B. Total VOC summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data verify the AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Code(s): N/A

Calculations performed by: N/A Date

Signature

Verification of % Detected Calculation: N/A Date

Signature

WSPF Number BN836 Lot Number 3

Table 4A. Total SVOC summary data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation [c]	Max-imum (mg/kg)	Mean (mg/kg)	Standard Deviation (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	EPA code
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
2,4-Dinitrophenol	6	0	None	0.200	0.200	0.000	[b]	–	40	N/A
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	[b]	–	2.6	N/A
bis(2-Ethylhexyl) phthalate [d]	6	0	None	0.400	0.399	0.002	[b]	–	40	N/A
Fluoranthene [e]	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	[b]	–	2.6	N/A
Hexachloroethane	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Nitrobenzene	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Pentachlorophenol	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A
Phenol [f]	6	0	None	0.100	0.100	0.000	[b]	–	40	N/A

a. When a measurement is reported as below detection, one-half the analysis MDL is used. Note that the MDL for a given analyte may vary from sample to sample.

b. All measurement are below detection; therefore, the UCL_{90} is not calculated.

c. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

d. Bis(2-Ethylhexyl) phthalate was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Bis(2-Ethylhexyl) phthalate was detected in >25% of the samples in BN 836 Lot 1 and even though it is not a TIC, it was added as a target analyte for the BN836 waste stream. The CAS # for bis(2-Ethylhexyl) phthalate is 117-81-7.

e. Fluoranthene was detected as a TIC in BNINW216-Lot 1 in over 25% of the samples analyzed and was added to the target analyte list as required by the WAP. Fluoranthene is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for fluoranthene is 206-44-0.

f. Phenol was detected as a TIC in BNINW218-Lot 2 in over 25% of the samples analyzed and was added to the laboratory target analyte list as required by the WAP. Phenol is not a target analyte for the BN836 waste stream, but the data will be reported for this analyte. The CAS # for phenol is 108-95-2.

Did the data verify the AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Code(s): N/A

Statistics performed by: Tamara Shokes (Signature on file) Date 10/26/06

Signature

WSPF Number BN836 Lot Number 3

Table 4B. Total SVOC summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	No. of Samples Containing TIC	No. of Containers in Lot	% Detected	No. of Containers in Waste Stream to Date	% Detected
None	N/A	N/A	N/A	N/A	N/A	N/A

Did the data verify the AK? Yes X No

If no, describe the basis for assigning EPA Hazardous Waste Code(s): N/A

Calculations performed by: N/A Date

Signature

Verification of % Detected Calculation: N/A Date

Signature

WSPF Number BN836 Lot Number 3

Table 5. Correlation of container identification numbers to data package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Packages
10025026	N/A	N/A	N/A	N/A	SSC06-0009	ALD06022S ALD06027V ALD06011N ALD06049M
10025029	N/A	N/A	N/A	N/A	SSC06-0009	ALD06022S ALD06027V ALD06011N ALD06049M
10029165	N/A	N/A	N/A	N/A	SSC06-0009	ALD06022S ALD06027V ALD06011N ALD06049M
10031169	N/A	N/A	N/A	N/A	SSC06-0010	ALD06022S ALD06027V ALD06011N ALD06049M
10043815	N/A	N/A	N/A	N/A	SSC06-0010	ALD06022S ALD06027V ALD06011N ALD06049M
10048419	N/A	N/A	N/A	N/A	SSC06-0009	ALD06022S ALD06027V ALD06011N ALD06049M

NOTE: *These containers are being used for solid sampling data only in this Sampling Report. RTR or VE, HSG, and RA will be performed on these containers and validated prior to certification for shipment to WIPP.*

Attachment A
Evaluation of Required Number of Samples. BN836 Lot 3

ANALYTE	No. of Samples	No. of Samples above MDL [a]	Trans-Formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL [c] (mg/kg)	Required number of samples [d, f, h]	Comments
Arsenic [g]	6	6	Natural log	1.76	1.50	0.170	1.61	4.61	100	5	HWN D004 applied per AK [l]
Barium	6	6	None	3900	2127	1255	2883	-	2000	215 [d]	HWN D005 required to be applied [k]
Cadmium [g]	6	6	Natural log	0.642	-0.166	0.723	0.269	3.00	20	5	HWN D006 applied per AK [l]
Chromium [g]	6	6	Natural log	4.19	3.52	0.371	3.75	4.61	100	5	HWN D007 applied per AK [l]
Lead	6	6	None	58.0	36.6	15.6	46.0	-	100	5	HWN D008 applied per AK [l]
Mercury	6	6	None	2.80	1.29	0.952	1.86	-	4	5	HWN D009 applied per AK [l]
Selenium	6	4	None	1.40	0.818	0.406	1.06	-	20	5	HWN D010 applied per AK [l]
Silver	6	5	None	1.80	1.13	0.572	1.48	-	100	5	HWN D011 applied per AK [l]
Antimony	6	4	None	1.80	0.925	0.566	1.27	-	100	5	No associated HWN [e]
Beryllium	6	6	None	0.630	0.528	0.088	0.582	-	100	5	HWN not required to be applied [i, n]
Nickel [g]	6	6	Natural log	3.47	2.74	0.396	2.98	4.61	100	5	No associated HWN [e]
Thallium	6	5	None	1.80	1.14	0.484	1.43	-	100	5	No associated HWN [e]
Vanadium [g]	6	6	Natural log	3.64	2.93	0.402	3.17	4.61	100	5	No associated HWN [e]
Zinc	6	6	None	170	126	35.6	147	-	100	5	No associated HWN [e]
1,1-Dichloroethene (1,1-Dichloroethylene)	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
1,1,1-Trichloroethane	6	0	None	0.090	0.088	0.003	-	-	10	-	HWNs F001/F002 applied per AK [m]
1,1,2,2-Tetrachloroethane	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
1,1,2-Trichloroethane	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL

Advanced Mixed Waste Treatment Project

Sampling Report For BN836, Lot 3

ANALYTE	No. of Samples	No. of Samples above MDL [a]	Trans-Formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL [c] (mg/kg)	Required number of samples [d, f, h]	Comments
1,2-Dichloroethane	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Acetone	6	0	None	1.15	1.08	0.041	-	-	100	-	No samples above MDL
Benzene	6	0	None	0.090	0.088	0.003	-	-	10	-	HWN F005 applied per AK [m]
Bromoform	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Butanol	6	0	None	1.10	0.725	0.291	-	-	100	-	No samples above MDL
Carbon disulfide	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Carbon tetrachloride	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Chlorobenzene	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Chloroform	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Ethyl benzene	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Ethyl ether	6	0	None	1.15	1.08	0.041	-	-	100	-	No samples above MDL
Isobutanol	6	0	None	1.10	0.725	0.291	-	-	100	-	No samples above MDL
Methanol [g]	6	1	Natural log	1.99	0.048	1.01	0.660	4.61	100	5	HWN not required to be applied [j]
Methyl ethyl ketone	6	0	None	1.10	0.725	0.291	-	-	100	-	No samples above MDL
Methylene chloride	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Pyridine	6	0	None	1.15	1.08	0.041	-	-	100	-	No samples above MDL
o-Xylene	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
m&p-Xylene	6	0	None	0.180	0.175	0.006	-	-	10	-	No samples above MDL
Tetrachloroethene (Tetrachloroethylene)	6	0	None	0.180	0.175	0.006	-	-	10	-	HWN F002 applied per AK [m]
Toluene	6	0	None	0.090	0.088	0.003	-	-	10	-	HWN F005 applied per AK [m]
Trichloroethene (Trichloroethylene) [g]	6	2	Natural log	0.642	-1.66	1.28	-0.890	2.30	10	5	HWNs F001/F002 applied per AK [m]
Trichlorofluoromethane	6	0	None	0.090	0.088	0.003	-	-	10	-	No samples above MDL
Vinyl chloride	6	0	None	0.090	0.088	0.003	-	-	4	-	No samples above MDL

Advanced Mixed Waste Treatment Project

Sampling Report For BN836, Lot 3

ANALYTE	No. of Samples	No. of Samples above MDL [a]	Trans-Formation [b]	Maxi-mum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL [c] (mg/kg)	Required number of samples [d, f, h]	Comments
1,2-Dichlorobenzene (o-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
1,4-Dichlorobenzene (p-Dichlorobenzene)	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
2,4-Dinitrophenol	6	0	None	0.200	0.200	0.000	-	-	40	-	No samples above MDL
2,4-Dinitrotoluene	6	0	None	0.100	0.100	0.000	-	-	2.6	-	No samples above MDL
bis(2-Ethylhexyl) Phthalate	6	0	None	0.400	0.399	0.002	-	-	40	-	No samples above MDL
Fluoranthene	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Hexachlorobenzene	6	0	None	0.100	0.100	0.000	-	-	2.6	-	No samples above MDL
Hexachloroethane	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
2-Methylphenol (o-Cresol)	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
3- & 4-Methylphenol (m- & p-Cresol)	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Nitrobenzene	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Pentachlorophenol	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL
Phenol	6	0	None	0.100	0.100	0.000	-	-	40	-	No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of the maximum, mean, SD, UCL_{90}, and PRQL.

c. For analytes that have both an RTL and a PRQL, the PRQL is used to calculate the required number of samples.

d. The required number "n" of samples pertains only to toxicity characteristic or listed waste analytes and only to those analytes where the associated EPA HWN is not applied (i.e., it only applies to those cases where a site intends to establish that the constituent is less than the regulatory threshold and the associated EPA HWN does not apply). The barium (D005) is accepted and applied; therefore, barium is not used in determining "n" for the waste stream

e. If there is no HWN associated with an analyte, then that analyte is not used to define the number of required samples.

f. If there are no samples above the MDL for a given analyte, then that analyte is not used to define the number of required samples.

g. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL / RTL for that analyte.

h. If the calculated sample size is less than 5, then the number of required samples is set to the program-defined minimum of 5.

i. P015 for beryllium as defined in 40 CFR 261 and addressed in AMWTP-RPT-TRUW-63 is not applied to the waste.

j. Although this analyte is identified based on AK, the waste is not ignitable; therefore, HWN F003 was not applied.

k. This analyte is identified as being present in this waste stream based on AK. HWN D005 is applied to the waste stream because the UCL_{90} result for the analyte is above the RTL.

l. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{90} result for the analyte is less than the RTL.

m. This analyte is identified based on AK. The HWN is conservatively applied to the waste stream even though the UCL_{90} result for the analyte is less than the PRQL.

n. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} is less than the RTL or PRQL.

Attachment B - Container List BN836, Lot 3

AMWTP ID	Historical ID
10001501	IDMD740003573
10001531	IDMD99802SL78
10001545	IDMD99737SL78
10001548	IDMD99839SL78
10001549	IDMD99750SL78
10001551	IDMD00097SL81
10001552	IDMD99883SL78
10001554	IDMD99648SL78
10001558	IDMD99965SL78
10001560	IDMD99881SL78
10001568	IDMD99889SL78
10001570	IDMD99629SL78
10001571	IDMD99899SL78
10001575	IDMD99634SL78
10001576	IDMD99621SL78
10001577	IDMD00506SL84
10001669	IDMD00612SL85
10001673	IDMD99704SL78
10001678	IDMD99655SL78
10001681	IDMD99978SL78
10001682	IDMD00466SL81
10001685	IDMD99807SL78
10001691	IDMD99736SL78
10001695	IDMD99712SL78
10001698	IDMD00071SL81
10001699	IDMD99975SL78
10001711	IDMD99735SL78
10001713	IDMD99748SL78
10001718	IDMD00633SL85
10002082	IDMD740002714
10002092	IDMD740002586
10002201	IDMD740002719
10002207	IDMD740002603
10002210	IDMD740002709
10002456	IDMD740002557
10002458	IDMD740003758
10002550	IDMD740003749
10002680	IDMD740002593
10002681	IDMD740002600
10002775	IDMD740003705
10011133	IDMD99745SL78
10011301	IDMD00266SL81
10011302	IDMD99667SL78

AMWTP ID	Historical ID
10011315	IDMD00049SL81
10011329	IDMD00361SL81
10011331	IDMD99858SL78
10011356	IDMD00211SL81
10011374	IDMD99860SL78
10011394	IDMD00110SL81
10011397	IDMD00180SL81
10011398	IDMD00307SL81
10011399	IDMD00306SL81
10011400	IDMD99878SL78
10011402	IDMD99726SL78
10011405	IDMD00229SL81
10011406	IDMD00276SL81
10011410	IDMD00311SL81
10011412	IDMD00310SL81
10011413	IDMD00301SL81
10011445	IDMD00042SL81
10011452	IDMD00300SL81
10011517	IDMD00040SL81
10011528	IDMD00032SL81
10011554	IDMD99673SL78
10011562	IDMD00063SL81
10011564	IDMD99752SL78
10011588	IDMD00158SL81
10015094	IDMD740002536
10015101	IDMD740002538
10018390	IDMD00258SL81
10018964	IDMD99820SL78
10018966	IDMD99791SL78
10018968	IDMD99779SL78
10018997	IDMD99826SL78
10019003	IDMD99789SL78
10019008	IDMD99897SL78
10019032	IDMD00151SL81
10019039	IDMD99690SL78
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AMWTP ID	Historical ID
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10020310	IDMD760008004
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10020559	IDMD760008034
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10020998	IDMD760008072
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AMWTP ID	Historical ID
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10021678	IDMD99224SL78
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10023137	IDMD760008359
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10023145	IDMD760008296
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10023172	IDMD760008355
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10024255	IDMD760008346
10024256	IDMD760008290
10024258	IDMD760008345
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AMWTP ID	Historical ID
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10026498	IDMD760008235
10026499	IDMD760008221
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10026584	IDMD00330SL81
10026586	IDMD00357SL81
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10026652	IDMD00237SL81
10026660	IDMD00141SL81
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10026759	IDMD99785SL78
10026769	IDMD00208SL81
10026774	IDMD00217SL81
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10028556	IDMD08511SL76
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10028622	IDMD760008460
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AMWTP ID	Historical ID
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10028890	IDMD760008462
10028892	IDMD760008468
10028893	IDMD760008434
10028894	IDMD760008405
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10029059	IDMD760008349
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10029166	IDMD760008186
10029167	IDMD760008203
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10029183	IDMD760008202
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10029188	IDMD760008416
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AMWTP ID	Historical ID
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10029219	IDMD08523SL76
10029220	IDMD08573SL76
10029223	IDMD08512SL76
10029224	IDMD08521SL76
10029225	IDMD08520SL76
10029228	IDMD760008229
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10029230	IDMD760008224
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10029544	IDMD08583SL76
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10031140	IDMD08198SL76
10031156	IDMD08594SL76
10031163	IDMD08597SL76
10031165	IDMD08451SL76
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10031173	IDMD08533SL76
10031174	IDMD08500SL76
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10033654	IDMD99792SL78
10033662	IDMD99972SL78
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10033684	IDMD99921SL78

AMWTP ID	Historical ID
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10036845	IDMD08838SL76
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10037748	IDMD08975SL76
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AMWTP ID	Historical ID
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10037864	IDMD08811SL76
10037866	IDMD08829SL76
10037915	IDMD08866SL76
10038045	IDMD99144SL78
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10038047	IDMD09049SL78
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10038447	IDMD08767SL76
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10038470	IDMD08859SL76
10038842	IDMD08834SL76
10039063	IDMD99204SL78
10039129	IDMD08822SL76
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10039482	IDMD99194SL78
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10039485	IDMD99205SL78
10039491	IDMD99208SL78
10039523	IDMD08885SL76
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10040140	IDMD99369SL78
10040146	IDMD99419SL78

AMWTP ID	Historical ID
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10040463	IDMD00336SL81
10040464	IDMD99976SL78
10040470	IDMD99730SL78
10040591	IDMD99293SL78
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10040876	IDMD99091SL78
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10041463	IDMD99544SL78
10041467	IDMD99460SL78

AMWTP ID	Historical ID
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10041752	IDMD08846SL76
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10041989	IDMD00124SL81
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10043594	IDMD99078SL78
10043602	IDMD99329SL78
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10043684	IDMD99658SL78
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10043791	IDMD00450SL81
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10048899	IDMD08833SL76
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10052133	IDMD08896SL76
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10052179	IDMD99421SL78
10052180	IDMD99422SL78
10052190	IDMD99229SL78

AMWTP ID	Historical ID
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10052768	IDMD99609SL78
10052771	IDMD99625SL78
10052772	IDMD99613SL78
10052790	IDMD99384SL78
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10053617	IDMD99222SL78
10054006	IDMD08694SL76
10054021	IDMD08754SL76
10054050	IDMD08864SL76
10054066	IDMD09003SL78
10054102	IDMD08817SL76
10054105	IDMD08682SL76
10054120	IDMD08899SL76
10054168	IDMD09050SL78
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10054182	IDMD09046SL78
10054202	IDMD09031SL78
10054240	IDMD08946SL76
10054271	IDMD09040SL78
10054273	IDMD99242SL78
10054386	IDMD08724SL76
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10054766	IDMD99268SL78
10054769	IDMD99412SL78
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10054872	IDMD08851SL76
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10055368	IDMD08823SL76
10055388	IDMD08839SL76
10055412	IDMD08852SL76

AMWTP ID	Historical ID
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10055487	IDMD99177SL78
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10056288	IDMD08720SL76
10056352	IDMD08740SL76
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10056547	IDMD99616SL78
10056564	IDMD99522SL78
10056579	IDMD08673SL76
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10056732	IDMD99176SL78
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10056979	IDMD08927SL76
10056985	IDMD08990SL76
10057220	IDMD08997SL76
10057240	IDMD99339SL78
10057242	IDMD99314SL78
10057329	IDMD99121SL78
10057378	IDMD08863SL76
10057393	IDMD08923SL76
10057394	IDMD09000SL78
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10057765	IDMD08909SL76
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10057807	IDMD09012SL78
10057954	IDMD99238SL78
10058235	IDMD99347SL78
10058244	IDMD99075SL78

AMWTP ID	Historical ID
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10059106	IDMD08704SL76
10059346	IDMD99066SL78
10059507	IDMD08726SL76
10059626	IDMD99163SL78
10059627	IDMD99220SL78
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10059649	IDMD99100SL78
10059657	IDMD99241SL78
10059673	IDMD99173SL78
10059706	IDMD08813SL76
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10060552	IDMD99139SL78
10060590	IDMD08881SL76
10060709	IDMD08921SL76
10060728	IDMD08900SL76
10060729	IDMD08933SL76
10060742	IDMD08980SL76

AMWTP ID	Historical ID
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10061130	IDMD99440SL78
10061153	IDMD99180SL78
10061154	IDMD99269SL78
10061530	IDMD08598SL76
10062422	IDMD99340SL78
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10062434	IDMD99334SL78
10062450	IDMD08953SL76
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10064034	IDMD08725SL76
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10113476	IDMD740002295
10113477	IDMD740002304
10113478	IDMD740002313
10113479	IDMD740002314
10113480	IDMD740002301
10113483	IDMD740002306
10113484	IDMD740002311
10113504	IDMD740002294
10113506	IDMD740002307
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10113846	IDMD740007357
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10113848	IDMD740007402
10113849	IDMD740007376
10113851	IDMD740003851
10113852	IDMD740007374

AMWTP ID	Historical ID
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10113857	IDMD740007362
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10113862	IDMD740007361
10113877	IDMD740007356
10116422	IDMD740002296
10116424	IDMD740002300
10116426	IDMD740002292
10116438	IDMD740007358
10116525	IDMD740002285
10116526	IDMD740002280
10116544	IDMD740007143
10116545	IDMD740007186
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10116555	IDMD740007185
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10116558	IDMD740007168
10116559	IDMD740007189
10116560	IDMD740007172
10116561	IDMD740007175
10116562	IDMD740007138
10116563	IDMD740001319
10116564	IDMD740001123
10116565	IDMD740007165
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10116593	IDMD740001332
10116596	IDMD740007082
10116598	IDMD740007118
10116830	IDMD740007177
10116832	IDMD740007166
10116834	IDMD740007191

AMWTP ID	Historical ID
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10116836	IDMD740007182
10116837	IDMD740007194
10116838	IDMD740007190
10116839	IDMD740007174
10116840	IDMD740007193
10116841	IDMD740007153
10116922	IDMD740001204
10116923	IDMD740001256
10116925	IDMD740001262
10116927	IDMD740001103
10116928	IDMD740001264
10116938	IDMD740001260
10116939	IDMD740001201
10116940	IDMD740001211
10116941	IDMD740001255
10117022	IDMD740001191
10117023	IDMD740007085
10117025	IDMD740001199
10117028	IDMD740007100
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10117039	IDMD740001154
10117040	IDMD740007131
10117042	IDMD740007088
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10117044	IDMD740007137
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10117514	IDMD740007157
10117549	IDMD740001207
10117556	IDMD740007234
10117557	IDMD740007246
10117559	IDMD740001261
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10117562	IDMD740001325
10117563	IDMD740007242
10118109	IDMD740007302
10118110	IDMD740007303
10118111	IDMD740007259
10118112	IDMD740007277
10118113	IDMD740007291
10118114	IDMD740007296
10118124	IDMD740007283
10118125	IDMD740007257
10118126	IDMD740007273
10118127	IDMD740007286

AMWTP ID	Historical ID
10118128	IDMD740007278
10118129	IDMD740007295
10118130	IDMD740007294
10118131	IDMD740007258
10118132	IDMD740007301
10118133	IDMD740007293
10118134	IDMD740007289
10118135	IDMD740007299
10118136	IDMD740007297
10118137	IDMD740007298
10118138	IDMD740007281
10118139	IDMD740007287
10118140	IDMD740007256
10118141	IDMD740007300
10118142	IDMD740007288
10118144	IDMD740007275
10118145	IDMD740007274
10118146	IDMD740007279
10118147	IDMD740007127
10118148	IDMD740007152
10118149	IDMD740007145
10118150	IDMD740007151
10118151	IDMD740007184
10118152	IDMD740007170
10118153	IDMD740007146
10118177	IDMD740007133
10118184	IDMD740007110
10118197	IDMD740007317
10118198	IDMD740007322
10118199	IDMD740007169
10118200	IDMD740007154
10118201	IDMD740007160
10118202	IDMD740007284
10118203	IDMD740007285
10118220	IDMD740002255
10118221	IDMD740002303
10118222	IDMD740002246
10118223	IDMD740002289
10118224	IDMD740002299
10118226	IDMD740002308
10118227	IDMD740002305
10118234	IDMD740002247
10118238	IDMD740002260
10118240	IDMD740002275
10118246	IDMD740007244

AMWTP ID	Historical ID
10118253	IDMD740007080
10118259	IDMD740007083
10118260	IDMD740001194
10118261	IDMD740007097
10118262	IDMD740001120
10118264	IDMD740001258
10118265	IDMD740001097
10118267	IDMD740001102
10118269	IDMD740001209
10118272	IDMD740007243
10118280	IDMD740001321
10118281	IDMD740001206
10118282	IDMD740001202
10118283	IDMD740007237
10118285	IDMD740001247
10118287	IDMD740007251
10118292	IDMD740007181
10118294	IDMD740007158
10118298	IDMD740007235
10118299	IDMD740001253
10118300	IDMD740001320
10118301	IDMD740001327
10118302	IDMD740001326
10118303	IDMD740001214
10118304	IDMD740001259
10118305	IDMD740001323
10118306	IDMD740001124
10118307	IDMD740007210
10118308	IDMD740007199
10118310	IDMD740007206
10118311	IDMD740007220
10118312	IDMD740007241
10118313	IDMD740007196
10118314	IDMD740007236
10118315	IDMD740007247
10118316	IDMD740007252
10118317	IDMD740007253
10118318	IDMD740007218
10118319	IDMD740007203
10118320	IDMD740007227
10118321	IDMD740007201
10118908	IDMD740007180
10118940	IDMD740002263
10118941	IDMD740002272
10119584	IDMD740002284

AMWTP ID	Historical ID
10119588	IDMD740002309
10119601	IDMD740007324
10119602	IDMD740007313
10119603	IDMD740007347
10119606	IDMD740007316
10119609	IDMD740007352
10119610	IDMD740007311
10119611	IDMD740007345
10119662	IDMD740002291
10119665	IDMD740002286
10119672	IDMD740007095
10119673	IDMD740007394
10119678	IDMD740002459
10119679	IDMD740002470
10119680	IDMD740002453
10119681	IDMD740002450
10119682	IDMD740002465
10119748	IDMD740007330
10119762	IDMD740002159
10119763	IDMD740007492
10119764	IDMD740002147
10119765	IDMD740007498
10119766	IDMD740002145
10119767	IDMD740002166
10119768	IDMD740002158
10119769	IDMD740002160
10119770	IDMD740002171
10119771	IDMD740002169
10119772	IDMD740007497
10119773	IDMD740002148
10119774	IDMD740007491
10119775	IDMD740002173
10119781	IDMD740007328
10119782	IDMD740007315
10119783	IDMD740007323
10119786	IDMD740007290
10119787	IDMD740007391
10119788	IDMD740007375
10119789	IDMD740007389
10119790	IDMD740007173
10119796	IDMD740002259
10119798	IDMD740007371
10119799	IDMD740007378
10119801	IDMD740007410
10119822	IDMD740007343

AMWTP ID	Historical ID
10119825	IDMD740007340
10119826	IDMD740007346
10119827	IDMD740007321
10119828	IDMD740007350
10119829	IDMD740007338
10119830	IDMD740007351
10119831	IDMD740007353
10119832	IDMD740007354
10119833	IDMD740007342
10119855	IDMD740001147
10119856	IDMD740001195
10119857	IDMD740001161
10119858	IDMD740007101
10119859	IDMD740001184
10119860	IDMD740001334
10119862	IDMD740001148
10119863	IDMD740001158
10119864	IDMD740001159
10119865	IDMD740001171
10119866	IDMD740007129
10119867	IDMD740007113
10119868	IDMD740001187
10119869	IDMD740007132
10119871	IDMD740001472
10119872	IDMD740007120
10119873	IDMD740007114
10119874	IDMD740001183
10119875	IDMD740001328
10119888	IDMD740001127
10119929	IDMD740002302
10119968	IDMD740002254
10119970	IDMD740002253
10119972	IDMD740007403
10119973	IDMD740007377
10119978	IDMD740002281
10120004	IDMD740002276
10120006	IDMD740002270
10120008	IDMD740002274
10120099	IDMD740007091
10120100	IDMD740007093
10120101	IDMD740007233
10120102	IDMD740007238
10120103	IDMD740007098
10120104	IDMD740001160
10120105	IDMD740001163

AMWTP ID	Historical ID
10120106	IDMD740001471
10120107	IDMD740001330
10120108	IDMD740001162
10120109	IDMD740007089
10120110	IDMD740007092
10120111	IDMD740001189
10120112	IDMD740007124
10120113	IDMD740007081
10120114	IDMD740001331
10120115	IDMD740007099
10120116	IDMD740007111
10120117	IDMD740001144
10120118	IDMD740007123
10120123	IDMD740001217
10120124	IDMD740001210
10120132	IDMD740001213
10120136	IDMD740007155
10120137	IDMD740001254
10120138	IDMD740007209
10120139	IDMD740001257
10120140	IDMD740007223
10120141	IDMD740001219
10120144	IDMD740007212
10120145	IDMD740007202
10120146	IDMD740001220
10120164	IDMD740002269
10120165	IDMD740002267
10120166	IDMD740002265
10120167	IDMD740002250
10120168	IDMD740002249
10120169	IDMD740002279
10120179	IDMD740007308
10120180	IDMD740007326
10120181	IDMD740007334
10120182	IDMD740007319
10120183	IDMD740007335
10120184	IDMD740007329
10120185	IDMD740007320
10120186	IDMD740007332
10120190	IDMD740001176
10120191	IDMD740001177
10120531	IDMD740007386
10120626	IDMD740002293
10120627	IDMD740001245
10120628	IDMD740007276

AMWTP ID	Historical ID
10120636	IDMD740002163
10120637	IDMD740002162
10120638	IDMD740002168
10120639	IDMD740002141
10120640	IDMD740002164
10120641	IDMD740002174
10120642	IDMD740002167
10120643	IDMD740007490
10120645	IDMD740002165
10120646	IDMD740002144
10120647	IDMD740002170
10120666	IDMD740007494
10120668	IDMD740002149
10120677	IDMD740002310

Advanced Mixed Waste Treatment Project

Reconciliation with Data Quality Objectives

Time: 09:56:36 AM

Lot Number: BN510.1.0157

	Data Quality Objective	Answer	Comment
1	Have all containers in the lot been assigned an appropriate Waste Matrix Code?	YES	
2	Have waste material parameter weights been established for each container in the lot?	YES	
3	Does each waste container of waste contain TRU radioactive waste?	YES	
4	Have mean concentrations, UCL90 values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	YES	
5	For solid sampling, have mean concentrations, UCL90 values for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	N/A	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.
6	Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	YES	
7	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	YES	
8	Can the waste stream be classified as hazardous or nonhazardous at the UCL90?	YES	
9	Was an appropriate packaging configuration and DAC applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	N/A	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10	Have all TICs been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	N/A	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11	Have the overall completeness, comparability, and representativeness QAOs been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Sections C3-2 through C3-9, for the lot?	YES	
12	Have the PRQLs for all analyses been met for the lot?	YES	
13	Was an Open NCR search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	YES	
14	Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	YES	
15	Were all batches identified in the WSPF or reconciliation lot complete through SPM signature release? List any batches identified as not complete through validation.	YES	
16	Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	NO	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17	Is there an approved AK Sufficiency Determination for this waste stream?	NO	

FOR INFORMATION ONLY

Site Project Manager: NANCY KIRK

Date: 08-AUG-12

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Advanced Mixed Waste Treatment Project

Reconciliation Narrative Report

Time: 10:13:46 AM

Lot Number: BN510.1.0157

Narrative Comments

Reconciliation was performed on validated drum file containers obtained from waste stream BN510.1, Revision 0, Supercompacted Debris Waste from the Advanced Mixed Waste Treatment Project. This Reconciliation Lot BN510.1.0157 consists of 25 containers of mixed transuranic waste. Each container file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Batch Correlation Tab for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Quality Assurance Project Plan, MP-TRUW-8.2.

Statistics were performed on the analytical results from the headspace gas random sample in accordance with MP-TRUW-8.25. The analytical results and container data are found in the Characterization Information Summary report, BN510 Boxline Lot 1 through 6, BN510 LDF lots 1 through 4 and BN510.1 Boxline Lot 1and Lot 2. In addition, a continuing evaluation is performed for BN510.1 Boxline Lot 3 as containers are being populated into the lots and random sampling occurs.

Site Project Manager: NANCY KIRK **Date:** 08-AUG-12

Lot Number: BN510.1.0157

Container ID	Headspace Gas WAP Batch	RTR Batch	Assay Batch	Visual Examination Batch	Solid Sampling Batch	Solid Analytical Batch
BN10437736	N/A	N/A	N/A	N/A	N/A	N/A
10437500	N/A	N/A	ASY12-00795	VEB12-00242	N/A	N/A
10437625	N/A	N/A	ASY12-00818	VEB12-00247	N/A	N/A
10437639	N/A	N/A	ASY12-00798	VEB12-00244	N/A	N/A
10437667	N/A	N/A	ASY12-00817	VEB12-00247	N/A	N/A
BN10452072	N/A	N/A	N/A	N/A	N/A	N/A
10451872	N/A	N/A	ASY12-02165	VEB12-00642	N/A	N/A
10451878	N/A	N/A	ASY12-02168	VEB12-00641	N/A	N/A
10451964	N/A	N/A	ASY12-02168	VEB12-00642	N/A	N/A
10451970	N/A	N/A	ASY12-02165	VEB12-00641	N/A	N/A
10451971	N/A	N/A	ASY12-02163	VEB12-00641	N/A	N/A
BN10452073	N/A	N/A	N/A	N/A	N/A	N/A
10451953	N/A	N/A	ASY12-02172	VEB12-00643	N/A	N/A
10451957	N/A	N/A	ASY12-02170	VEB12-00643	N/A	N/A
10451958	N/A	N/A	ASY12-02170	VEB12-00643	N/A	N/A
10452057	N/A	N/A	ASY12-02170	VEB12-00643	N/A	N/A
10452058	N/A	N/A	ASY12-02170	VEB12-00643	N/A	N/A
BN10452074	N/A	N/A	N/A	N/A	N/A	N/A
10451794	N/A	N/A	ASY12-02158	VEB12-00639	N/A	N/A
10451873	N/A	N/A	ASY12-02170	VEB12-00642	N/A	N/A
10451875	N/A	N/A	ASY12-02168	VEB12-00642	N/A	N/A
10451876	N/A	N/A	ASY12-02168	VEB12-00642	N/A	N/A
10451959	N/A	N/A	ASY12-02170	VEB12-00643	N/A	N/A
BN10452075	N/A	N/A	N/A	N/A	N/A	N/A
10451947	N/A	N/A	ASY12-02171	VEB12-00643	N/A	N/A
10451952	N/A	N/A	ASY12-02171	VEB12-00643	N/A	N/A
10451960	N/A	N/A	ASY12-02172	VEB12-00643	N/A	N/A
10452059	N/A	N/A	ASY12-02172	VEB12-00643	N/A	N/A
10452062	N/A	N/A	ASY12-02172	VEB12-00642	N/A	N/A
BN10452076	N/A	N/A	N/A	N/A	N/A	N/A
10451812	N/A	N/A	ASY12-02180	VEB12-00645	N/A	N/A
10451954	N/A	N/A	ASY12-02171	VEB12-00643	N/A	N/A
10452049	N/A	N/A	ASY12-02173	VEB12-00643	N/A	N/A
10452112	N/A	N/A	ASY12-02178	VEB12-00644	N/A	N/A
BN10452078	N/A	N/A	N/A	N/A	N/A	N/A
10451817	N/A	N/A	ASY12-02153	VEB12-00637	N/A	N/A
10451946	N/A	N/A	ASY12-02176	VEB12-00644	N/A	N/A
10452053	N/A	N/A	ASY12-02176	VEB12-00644	N/A	N/A
10452113	N/A	N/A	ASY12-02174	VEB12-00644	N/A	N/A
BN10452079	N/A	N/A	N/A	N/A	N/A	N/A
10451818	N/A	N/A	ASY12-02149	VEB12-00637	N/A	N/A
10451948	N/A	N/A	ASY12-02174	VEB12-00644	N/A	N/A
10451950	N/A	N/A	ASY12-02174	VEB12-00644	N/A	N/A
10452097	N/A	N/A	ASY12-02181	VEB12-00645	N/A	N/A
10452103	N/A	N/A	ASY12-02178	VEB12-00645	N/A	N/A
BN10452080	N/A	N/A	N/A	N/A	N/A	N/A
10452043	N/A	N/A	ASY12-02176	VEB12-00644	N/A	N/A
10452046	N/A	N/A	ASY12-02174	VEB12-00643	N/A	N/A
10452047	N/A	N/A	ASY12-02174	VEB12-00644	N/A	N/A
10452050	N/A	N/A	ASY12-02174	VEB12-00643	N/A	N/A
10452114	N/A	N/A	ASY12-02176	VEB12-00644	N/A	N/A
BN10452081	N/A	N/A	N/A	N/A	N/A	N/A
10452038	N/A	N/A	ASY12-02178	VEB12-00645	N/A	N/A
10452039	N/A	N/A	ASY12-02178	VEB12-00645	N/A	N/A
10452092	N/A	N/A	ASY12-02178	VEB12-00645	N/A	N/A
10452109	N/A	N/A	ASY12-02178	VEB12-00644	N/A	N/A

Container ID	Headspace Gas WAP Batch	RTR Batch	Assay Batch	Visual Examination Batch	Solid Sampling Batch	Solid Analytical Batch
BN10452082	N/A	N/A	N/A	N/A	N/A	N/A
10451949	N/A	N/A	ASY12-02173	VEB12-00644	N/A	N/A
10451951	N/A	N/A	ASY12-02175	VEB12-00644	N/A	N/A
10452045	N/A	N/A	ASY12-02180	VEB12-00644	N/A	N/A
10452051	N/A	N/A	ASY12-02175	VEB12-00644	N/A	N/A
BN10452138	N/A	N/A	N/A	N/A	N/A	N/A
10452094	N/A	N/A	ASY12-02181	VEB12-00645	N/A	N/A
10452100	N/A	N/A	ASY12-02178	VEB12-00645	N/A	N/A
10452105	N/A	N/A	ASY12-02181	VEB12-00645	N/A	N/A
10452107	N/A	N/A	ASY12-02181	VEB12-00645	N/A	N/A
BN10452139	N/A	N/A	N/A	N/A	N/A	N/A
10452041	N/A	N/A	ASY12-02181	VEB12-00644	N/A	N/A
10452042	N/A	N/A	ASY12-02177	VEB12-00644	N/A	N/A
10452044	N/A	N/A	ASY12-02177	VEB12-00644	N/A	N/A
10452108	N/A	N/A	ASY12-02177	VEB12-00645	N/A	N/A
10452110	N/A	N/A	ASY12-02177	VEB12-00645	N/A	N/A
BN10452339	N/A	N/A	N/A	N/A	N/A	N/A
10452171	N/A	N/A	ASY12-02191	VEB12-00648	N/A	N/A
10452178	N/A	N/A	ASY12-02191	VEB12-00648	N/A	N/A
10452192	N/A	N/A	ASY12-02191	VEB12-00648	N/A	N/A
10452200	N/A	N/A	ASY12-02189	VEB12-00648	N/A	N/A
BN10452340	N/A	N/A	N/A	N/A	N/A	N/A
10452158	N/A	N/A	ASY12-02193	VEB12-00649	N/A	N/A
10452164	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452251	N/A	N/A	ASY12-02199	VEB12-00650	N/A	N/A
10452377	N/A	N/A	ASY12-02199	VEB12-00650	N/A	N/A
BN10452343	N/A	N/A	N/A	N/A	N/A	N/A
10452157	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452159	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452160	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452249	N/A	N/A	ASY12-02197	VEB12-00650	N/A	N/A
10452252	N/A	N/A	ASY12-02197	VEB12-00650	N/A	N/A
10452381	N/A	N/A	ASY12-02197	VEB12-00649	N/A	N/A
BN10452344	N/A	N/A	N/A	N/A	N/A	N/A
10452165	N/A	N/A	ASY12-02197	VEB12-00649	N/A	N/A
10452246	N/A	N/A	ASY12-02199	VEB12-00650	N/A	N/A
10452369	N/A	N/A	ASY12-02199	VEB12-00651	N/A	N/A
10452379	N/A	N/A	ASY12-02197	VEB12-00650	N/A	N/A
BN10452345	N/A	N/A	N/A	N/A	N/A	N/A
10452167	N/A	N/A	ASY12-02192	VEB12-00648	N/A	N/A
10452174	N/A	N/A	ASY12-02192	VEB12-00649	N/A	N/A
10452179	N/A	N/A	ASY12-02192	VEB12-00648	N/A	N/A
BN10452346	N/A	N/A	N/A	N/A	N/A	N/A
10452166	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452172	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452195	N/A	N/A	ASY12-02192	VEB12-00648	N/A	N/A
10452382	N/A	N/A	ASY12-02194	VEB12-00649	N/A	N/A
10452386	N/A	N/A	ASY12-02194	VEB12-00650	N/A	N/A
BN10452348	N/A	N/A	N/A	N/A	N/A	N/A
10452156	N/A	N/A	ASY12-02196	VEB12-00650	N/A	N/A
10452248	N/A	N/A	ASY12-02199	VEB12-00650	N/A	N/A
10452250	N/A	N/A	ASY12-02196	VEB12-00650	N/A	N/A
10452374	N/A	N/A	ASY12-02199	VEB12-00650	N/A	N/A
10452376	N/A	N/A	ASY12-02196	VEB12-00650	N/A	N/A
10452383	N/A	N/A	ASY12-02193	VEB12-00649	N/A	N/A
BN10452349	N/A	N/A	N/A	N/A	N/A	N/A

Reconciliation Batch Correlation Table

Time: 10:14:23 AM

Container ID	Headspace Gas WAP Batch	RTR Batch	Assay Batch	Visual Examination Batch	Solid Sampling Batch	Solid Analytical Batch
10452169	N/A	N/A	ASY12-02192	VEB12-00648	N/A	N/A
10452173	N/A	N/A	ASY12-02192	VEB12-00649	N/A	N/A
10452175	N/A	N/A	ASY12-02192	VEB12-00649	N/A	N/A
10452176	N/A	N/A	ASY12-02192	VEB12-00648	N/A	N/A
10452384	N/A	N/A	ASY12-02192	VEB12-00649	N/A	N/A
BN10452421	N/A	N/A	N/A	N/A	N/A	N/A
10452238	N/A	N/A	ASY12-02203	VEB12-00651	N/A	N/A
10452366	N/A	N/A	ASY12-02203	VEB12-00651	N/A	N/A
10452367	N/A	N/A	ASY12-02203	VEB12-00651	N/A	N/A
BN10452423	N/A	N/A	N/A	N/A	N/A	N/A
10452162	N/A	N/A	ASY12-02195	VEB12-00649	N/A	N/A
10452244	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452372	N/A	N/A	ASY12-02201	VEB12-00650	N/A	N/A
10452385	N/A	N/A	ASY12-02195	VEB12-00649	N/A	N/A
BN10452424	N/A	N/A	N/A	N/A	N/A	N/A
10452161	N/A	N/A	ASY12-02195	VEB12-00649	N/A	N/A
10452237	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452365	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452368	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
BN10452425	N/A	N/A	N/A	N/A	N/A	N/A
10452221	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452240	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452241	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A
10452370	N/A	N/A	ASY12-02201	VEB12-00651	N/A	N/A

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN836.87 Rev. 1

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☐	☐	☒	Random solid sampling and analysis is performed in accordance with MP-Truw-8.2. Headspace gas sampling is not required for this waste stream.
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☒	☐	☐	
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	

FOR INFORMATION ONLY

WSPF No.: BN836.87 Rev. 1

Data Quality Objective	Yes	No	N/A	Comment
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☐	☐	☒	Packaging configuration and DAC will be evaluated by CCP prior to headspace gas sampling. Confirmation of the correct packaging configuration and DAC will be performed by CCP prior to entering the headspace gas data into WDS.
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☐	☐	☒	Reconciliation Lot only. TICs are reported and tracked for the randomly selected containers for the waste stream per MP-TRUW-8.25.
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?	☒	☐	☐	
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	

WSPF No.: BN836.87 Rev. 1

Data Quality Objective	Yes	No	N/A	Comment
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the lot.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	**Nancy Kirk**	Nancy Kirk	**4/9/2012**
2nd Site Project Manager	**Wes Skaar**	Wes Skaar	**4/9/2012**

WSPF Number: BN836 Lot Number: 87 Rev. 1

SPM

Printed Name: **Nancy Kirk** Signature: Nancy Kirk Date: **4/9/2012**

2nd SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **4/9/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN836 Lot Number: 87 Rev. 1

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Reconciliation was performed on validated drum file containers obtained from waste stream BN836, Revision 0, Cemented Sludge from the Mound Plant. This Reconciliation Lot BN836.87 consists of 9 drums of mixed transuranic waste. Each drum file was analyzed and all data were reconciled using MP-TRUW-8.11 and MP-TRUW-8.14 WIPP approved procedures. Statistics were performed on the analytical results from the headspace gas samples in accordance with MP-TRUW-8.25 procedure.

The absence of prohibited items is determined and documented through acceptable knowledge and confirmation activities. Radiography or visual examination is performed on each container in this waste stream as a confirmation activity. See Table 5 for the associated RTR and Visual examinations. None of the listed containers contains prohibited items as defined by Section C-1c of the Advanced Mixed Waste Treatment Project Quality Assurance Project Plan (QAPjP), MP-TRUW-8.2. The total metal, VOC, SVOC analytical results and container data are found in the Characterization Information Summary from waste stream BN836, Lot 1, Lot 2, Lot 3, and/or Lot 4.

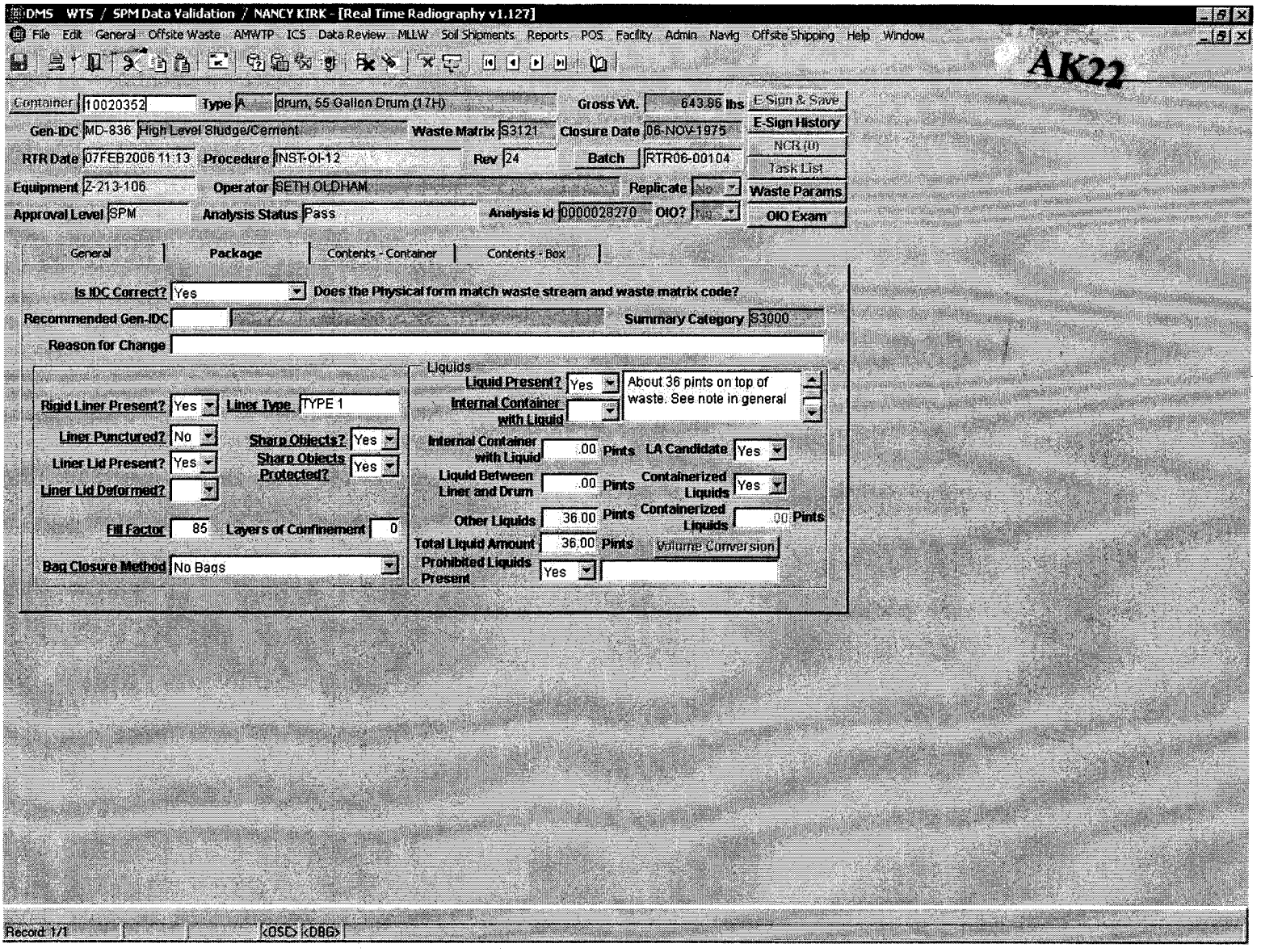
Revision of this lot was necessary to correct the waste stream name.

WSPF Number: BN836 Lot Number: 87 Rev. 1

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
10040885	N/A	RTR05-06376	ASY05-11499	N/A	N/A	N/A
10043660	N/A	RTR06-00088	ASY06-00353	N/A	N/A	N/A
10054768	N/A	RTR06-00075	ASY06-00239	N/A	N/A	N/A
10056810	N/A	RTR05-06387	ASY05-11560	N/A	N/A	N/A
10056811	N/A	RTR05-06387	ASY05-11562	N/A	N/A	N/A
10056821	N/A	RTR05-06387	ASY05-11560	N/A	N/A	N/A
10057415	N/A	RTR05-06388	ASY05-11564	N/A	N/A	N/A
10059943	N/A	RTR06-00062	ASY06-00194	N/A	N/A	N/A
10062726	N/A	RTR05-06395	ASY05-11586	N/A	N/A	N/A

Note: Footnotes will be added as applicable.



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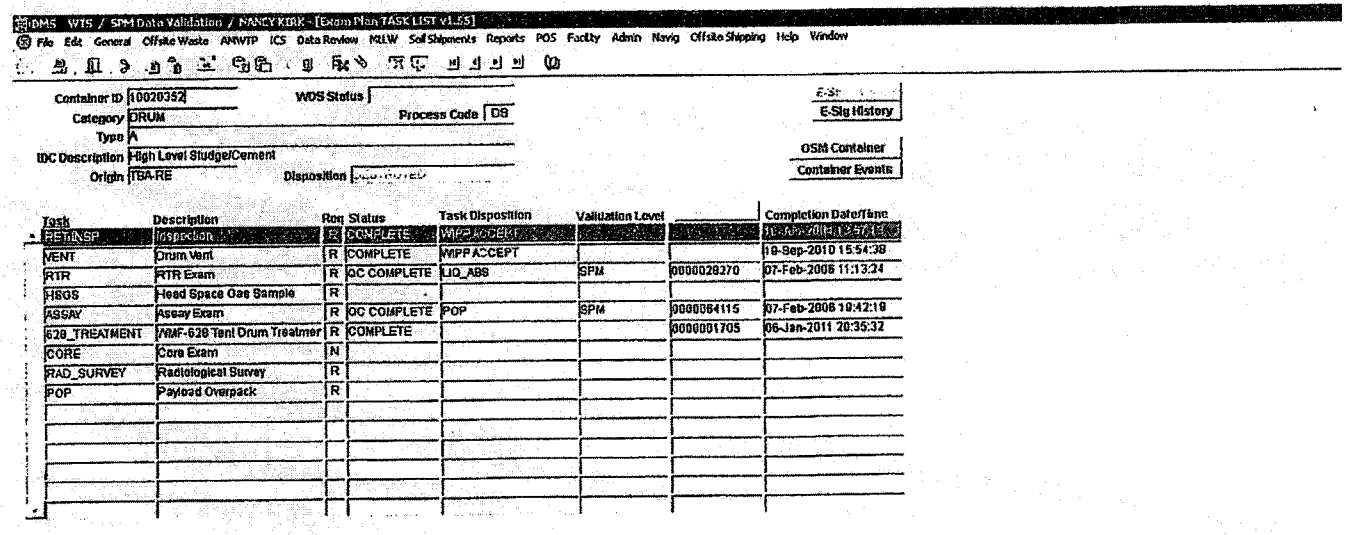
WMS WTS / SPM Data Validation / NANCY KIRK - [Exam Plan TASK LIST v1.65]
File Edit General Offsite Waste ANWTP ICS Data Review MLLW Soil Shipments Reports POS Facility Admin Navig Offsite Shipping Help Window
Container ID 10020352
WDS Status
Category DRUM
Process Code DS
Type A
IDC Description High Level Sludge/Cement
Origin TBA-RE
Disposition
E-Sig History
OSM Container
Container Events
Task
Description
Req
Status
Task Disposition
Validation Level
Completion Date/Time
RETINSP
Inspection
R
COMPLETE
MIPP ACCEPT
19-Sep-2010 15:54:38
VENT
Drum Vent
R
COMPLETE
MIPP ACCEPT
RTR
RTR Exam
R
QC COMPLETE
LIQ_ABS
SPM
0000028270
07-Feb-2006 11:13:24
HSGS
Head Space Gas Sample
R
ASSAY
Assay Exam
R
QC COMPLETE
POP
SPM
0000064115
07-Feb-2006 10:42:19
628_TREATMENT
WMF-628 Tent Drum Treatmer
R
COMPLETE
0000001705
06-Jan-2011 20:35:32
CORE
Core Exam
N
RAD_SURVEY
Radiological Survey
R
POP
Payload Overpack
R

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 20596

Title: WIPP RTR Data Excess Liquids

Originator: Oldham, Edwin	**Date Opened:** 02/07/06
Responsible Dept: Plant Manager	**Batch #:** RTR06-00104
Container ID: 10020352	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Edwin Oldham	**Originator Sign Date:** 02/07/06

Production Comments: **Approved Remediation:** **Treatment Tent**

About 36 pints of liquid on top of the waste.
Treatment complete
Container 10020352 was treated in the 628-tent and repackaged into 55-gl drum 10392309. During treatment all identified liquids were absorbed. GTB 1/9/2011

Performed By: Ryan Cottrell	**Performed Date:** 01/06/11

Waste Programs Evaluation/Verification:

Container 10020352 was treated in the 628-tent and repackaged into 55-gl drum 10392309. During treatment all identified liquids were absorbed. Container 10392309 is slated for characterization (RTR) and any outstanding nonconformances will be identified per OI-12. All required actions have been completed and this NCR is recommended for closure. GTB 1/9/2011

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 01/09/11
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment: Verified in WTS 10020352 was processed through 628-tent with "all visible liquids absorbed". WTS also shows the waste from this container was repackaged into 10392309 and both containers have been assigned historical ID IDMD740002937. Task List shows 10392309 is scheduled for RTR examination. Corrective actions taken are acceptable for NCR closure. LR011011

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Lyle Ryman	**QA Verification Comp Date:** 01/10/11

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NCR HOLD TAG

NCR NUMBER _____

EQUIPMENT/CONTAINER NUMBER _____

BRIEF DESCRIPTION _____

_____

_____

CHARACTERIZATION REJECT ☐

AK-23

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RECORD
C1045A
SWALKER
10/26/2011

AK24

AMWTP Advanced Mixed Waste Treatment Project

AK Source Document Review Summary

Form-1068, Rev. 4
Effective: 01/08/09
Page 1 of 1

Implementing Document: MP-TRUW-8.13

1. Source Document Tracking Number: C1045A	**2. Revision:** 0

3. Category

- ☐ Published Documentation
- ☐ Unpublished Documentation
- ☑ Correspondence
- ☐ Discrepancy

4. Title/Description Information: Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN51O.1 Supercompacted Debris Waste Stream

Document Number: MLJ- 003-11
Revision: 0
Author: Micky L. Johnson, AKE
Date: 09/27/2011

5. AK Element	6. Generator Or Waste Type(s)	7. Location in Source Doc.	8. AK Information Summary:
WS2, WS5	BN-550	All	WMP calculations for WSPF BN510.1.

9. Document Summary:

Document updates waste material parameters (WMPs) for BN510.1 Supercocmpacted Debris Waste Stream.

Original estimate was based on 100 drums (See C851A). This update is based off of 3,426 drums that have undergone visual examination.

10. Source Document Data Limitations (if any):

Data may change with time.

11. AK Expert:	Tim Venneman		10/24/2011
	Print	Sign	Date

INFORMATION ONLY

INTEROFFICE MEMORANDUM

Date: September 27, 2011

To: File

From: Micky L. Johnson
Acceptable Knowledge Expert

Subject: Updated Waste Material Parameter Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream - MLJ-003-11

In accordance with Section 3.4 of MP-TRUW-8.13, *Collection, Review, and Management of Acceptable Knowledge Documentation*, this memorandum documents the method used to estimate the waste material parameter (WMP) weight per unit of waste (i.e., weight percent) for the BN510.1 supercompacted debris waste stream. The original estimate was based on the visual examination (VE) data for 100-gallon drums of supercompacted waste from the BN510 waste stream generated prior to January 1, 2010 (reference MLJ-002-10, Waste Material Parameter (WMP) Weight per Unit of Waste Calculations for the BN510.1 Supercompacted Debris Waste Stream). The updated estimate is based on the VE data for the 3,426 drums of BN510.1 supercompacted waste examined prior to September 12, 2011. A summary of the WMP results is provided in Attachment 1.

1. A query of the Waste Tracking System (WTS) was performed to collect the following information for each 100-gallon drum of supercompacted debris waste [item description code (IDC) BN-550] with VE data:
    a. Container number
    b. Pack date
    c. Percent Fill
    d. Current IDC
    e. Gross weight of waste drum (lbs)
    f. Net weight of waste drum (lbs)
    g. Weight of each material parameter (lbs)
        i. Iron-based metals/alloys
        ii. Aluminum-based metals/alloys
        iii. Other Metals
        iv. Cellulosics
        v. Rubber
        vi. Plastics (waste materials)
        vii. Organic matrix

viii. Inorganic matrix
ix. Soils/gravel

h. VE Date

NOTE: Only valid VE results completed prior to September 12, 2011 were included in the calculations. Query results were reviewed to ensure that the test container, containers with incomplete VE data, or containers shipped as MLLW were not included in the calculations.

2. The total weight of each WMP for all drums examined with valid data was calculated (w_X) in the waste stream based on summing the RTR/VE data from the WTS query.
   w_X = weight (lbs)
   Where $x = i, ii, iii, iv, v, vi, vii, viii, ix$ = waste material parameter (i through ix in step 1)

3. The total net weight (N_T) for the waste stream waste was calculated based on the following equation.
   $N_T = w_i + w_{ii} + w_{iii} + w_{iv} + w_v + w_{vi} + w_{vii} + w_{viii} + w_{ix}$

4. The weight % (or pound per unit waste) was calculated for each WMP (P_X) based on the following equation.
   $P_X = w_X/N_T$
   Where $x = i, ii, iii, iv, v, vi, vii, viii, ix$ = waste material parameter (i through ix in step 1)

A copy of the Excel spreadsheet with the raw data and calculated results is included as Attachment 2.

Attachments:
1. Estimated WMP Weights per Unit waste (lb/lb) for BN510.1 Supercompacted Debris
2. WTS Query Results of WMP Data for IDC BN-550 Drums

MLJ/at

cc: Carolyn Abbott
Steve Carpenter
Julie Collins
Caralea Hinkle-Daniel
Randy Morris
Tim Venneman
AMWTP Correspondence Control

Attachment 1 – Estimated WMP Weights per Unit Waste (lb/lb) for BN510.1
Supercompacted Debris
September 27, 2011
MLJ-003-11

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN510.1 Supercompacted Debris

WMP Weight per unit of waste	Iron Based Metals	Aluminum Based Metals	Other Metals	Other Inorganic Materials	Cellulosics	Rubber	Plastic Waste	Inorganic Matrix	Organic Matrix	Soils and Gravel
All drums of BN-550 with WTS pack date prior to 9/12/11	7.91E-01	9.62E-04	2.99E-03	1.20E-02	1.15E-01	3.98E-03	7.37E-02	1.99E-06	0.00E+00	4.86E-05
WMP Weight %	79.1%	<1%	<1%	1.2%	11.5%	<1%	7.4%	<1%	0.0%	<1%

IDC Description	IDC	Est. # of Drums in Waste Stream BN510.1	# of 100-gal Drums Examined prior to 9/12/11	% Examined prior to 9/12/10
Supercompacted Debris	BN-550	16,000	3,426	21%

Data Collected Prior to:	9/12/2011
Average Fill Factor:	51%
Average Net Wt (pounds):	732

Attachment 2 – WTS Query Results of WMP Data for IDC BN-550 Drums
September 27, 2011
MLJ-003-11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10376273	8/31/10	57	BN-550	837.215	712.22	557.925	0	0	2.08	88.415	0	63.795	0	0	0	712.215	8/31/10
BN10376274	8/31/10	57	BN-550	755.63	630.63	379.765	0	0	0	160.695	3.11	87.06	0	0	0	630.63	8/31/10
BN10376276	8/31/10	45	BN-550	914.39	789.39	777.99	0	0	0	4.85	0	6.55	0	0	0	789.39	8/31/10
BN10376277	9/1/10	53	BN-550	757.835	632.84	431.19	0	0	3	139.27	1.55	57.825	0	0	0	632.835	9/1/10
BN10376278	9/1/10	59	BN-550	793.115	668.12	527.875	0	0	0	54.615	1.55	84.075	0	0	0	668.115	9/1/10
BN10376279	8/31/10	50	BN-550	773.27	648.27	549.83	0	0	0	7.08	4.66	86.7	0	0	0	648.27	8/31/10
BN10376280	9/1/10	53	BN-550	782.09	657.09	563.075	0	0	0	13.05	1.55	79.415	0	0	0	657.09	9/1/10
BN10376281	9/1/10	47	BN-550	821.78	696.78	618.085	0	0	0	9.15	4.66	64.885	0	0	0	696.78	9/1/10
BN10376282	8/31/10	59	BN-550	590.255	465.26	130	0	11.45	0	126.595	2.33	194.88	0	0	0	465.255	8/31/10
BN10376283	9/1/10	52	BN-550	720.35	595.35	415.415	0	0	0	108.45	6.2	65.285	0	0	0	595.35	9/1/10
BN10377054	9/1/10	61	BN-550	912.185	787.19	613.595	0	0	2.5	6.52	1.55	163.02	0	0	0	787.185	9/1/10
BN10379513	8/31/10	60	BN-550	720.35	595.35	119.61	0	0	0	73.16	0	402.58	0	0	0	595.35	8/31/10
BN10379514	8/31/10	57	BN-550	737.99	612.99	306.135	0	0	0	165.58	0	141.275	0	0	0	612.99	8/31/10
BN10379515	8/31/10	56	BN-550	771.065	646.07	324.5	0	0	0	224.48	3.11	93.975	0	0	0	646.065	8/31/10
BN10379516	8/31/10	53	BN-550	654.2	529.2	104	0	0	0	361.68	0	63.52	0	0	0	529.2	8/31/10
BN10379517	8/31/10	59	BN-550	700.505	575.51	275.813	7.518	0	3.759	191.935	3.1	93.38	0	0	0	575.505	8/31/10
BN10379518	8/31/10	57	BN-550	671.84	546.84	209.74	0	0	0	185.26	1.55	150.29	0	0	0	546.84	8/31/10
BN10379521	8/31/10	54	BN-550	755.63	630.63	312.835	0	0	0	241.935	1.55	74.31	0	0	0	630.63	8/31/10
BN10379523	8/31/10	61	BN-550	671.84	546.84	137.81	0	0	0	133.055	6.22	269.755	0	0	0	546.84	8/31/10
BN10379696	9/6/10	57	BN-550	618.92	493.92	212.725	0	0	0	277.455	0	3.74	0	0	0	493.92	9/6/10
BN10379697	9/6/10	53	BN-550	581.435	456.44	214.345	0	0	0	242.09	0	0	0	0	0	456.435	9/6/10
BN10379698	9/6/10	61	BN-550	696.095	571.1	236.3	0	0	0	333.855	0	0.94	0	0	0	571.095	9/6/10
BN10379699	9/7/10	51	BN-550	702.71	577.71	426.25	0	0	0	149.09	0	2.37	0	0	0	577.71	9/7/10
BN10379700	9/6/10	58	BN-550	771.065	646.07	481.975	0	0	0	77.54	0	86.55	0	0	0	646.065	9/6/10
BN10379701	9/7/10	55	BN-550	817.37	692.37	587.535	0	0	0	101.085	0	3.75	0	0	0	692.37	9/7/10
BN10379702	9/6/10	57	BN-550	559.385	434.39	193.73	0	0	0	235.975	0	4.68	0	0	0	434.385	9/6/10
BN10379703	9/7/10	54	BN-550	793.115	668.12	528.28	0	0	0	84.25	0	55.585	0	0	0	668.115	9/7/10
BN10379704	9/6/10	57	BN-550	777.68	652.68	443.57	0	0	0	209.11	0	0	0	0	0	652.68	9/6/10
BN10379705	9/6/10	61	BN-550	861.47	736.47	473.35	0	0	0	164.165	1.55	97.405	0	0	0	736.47	9/6/10
BN10379706	9/6/10	58	BN-550	956.285	831.29	723.705	0	0	0	107.58	0	0	0	0	0	831.285	9/6/10
BN10379707	9/6/10	55	BN-550	603.485	478.49	130	0	0	0	342.865	0	5.62	0	0	0	478.485	9/6/10
BN10379708	9/2/10	59	BN-550	643.175	518.18	130	0	0	4.847	369.418	3.1	10.81	0	0	0	518.175	9/2/10
BN10379709	9/2/10	60	BN-550	687.275	562.28	222.61	0	0	0	289.49	1.55	48.625	0	0	0	562.275	9/2/10
BN10379710	9/2/10	57	BN-550	616.715	491.72	130	0	0	0	336.775	6.21	18.73	0	0	0	491.715	9/2/10
BN10379711	9/2/10	54	BN-550	731.375	606.38	288.29	0	0	0	136.48	2.33	179.275	0	0	0	606.375	9/2/10
BN10379712	9/2/10	59	BN-550	784.295	659.3	347.61	0	0	4.847	292.008	3.1	11.73	0	0	0	659.295	9/2/10
BN10379713	9/1/10	49	BN-550	872.495	747.5	600.58	0	0	0	47.085	8.55	91.28	0	0	0	747.495	9/1/10
BN10379714	9/1/10	58	BN-550	755.63	630.63	367.215	0	0	62.21	69.2	1.55	130.455	0	0	0	630.63	9/1/10
BN10379715	9/2/10	54	BN-550	588.05	463.05	156	0	0	30.407	273.647	0	3	0	0	0	463.054	9/2/10
BN10379716	9/2/10	55	BN-550	854.855	729.86	590.44	0	0	2.1	61.935	0	75.38	0	0	0	729.855	9/2/10
BN10379717	9/2/10	59	BN-550	914.39	789.39	619.755	0	0	5.068	160.318	0	4.25	0	0	0	789.391	9/2/10
BN10379718	9/2/10	56	BN-550	685.07	560.07	305.59	0	0	5.95	198.496	1.55	48.485	0	0	0	560.071	9/2/10
BN10379719	9/2/10	61	BN-550	671.84	546.84	215.36	0	0	5.068	305.333	4.65	16.43	0	0	0	546.841	9/2/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10379878	9/2/10	54	BN-550	916.595	791.6	651.825	0	0	0	134.16	0	5.61	0	0	0	791.595	9/2/10
BN10379879	9/2/10	57	BN-550	663.02	538.02	156	0	0	0	129.69	9.32	243.01	0	0	0	538.02	9/2/10
BN10379880	9/2/10	54	BN-550	801.935	676.94	456.335	0	0	0	205	1.55	14.05	0	0	0	676.935	9/2/10
BN10379881	9/2/10	57	BN-550	715.94	590.94	356.295	0	0	0	114.56	4.66	115.425	0	0	0	590.94	9/2/10
BN10379882	9/3/10	47	BN-550	859.265	734.27	646.595	0	0	0	35.975	6.21	45.485	0	0	0	734.265	9/3/10
BN10379883	9/2/10	54	BN-550	932.03	807.03	581.515	0	0	0	152.26	3.11	70.145	0	0	0	807.03	9/2/10
BN10379884	9/3/10	55	BN-550	876.905	751.91	593.755	0	0	0.52	40.68	9.32	107.63	0	0	0	751.905	9/3/10
BN10379885	9/2/10	61	BN-550	839.42	714.42	333.42	0	0	0	304.585	1.55	74.865	0	0	0	714.42	9/2/10
BN10379886	9/3/10	48	BN-550	715.94	590.94	443.6	0	0	0	18.58	7.77	120.99	0	0	0	590.94	9/3/10
BN10379887	9/2/10	60	BN-550	874.7	749.7	556.395	0	0	0	76.045	4.66	112.6	0	0	0	749.7	9/2/10
BN10379888	9/2/10	53	BN-550	645.38	520.38	281.805	0	0	1	53.575	7.77	176.23	0	0	0	520.38	9/2/10
BN10379889	9/7/10	57	BN-550	744.605	619.61	433.635	0	0	0	182.69	0	3.28	0	0	0	619.605	9/7/10
BN10380003	9/12/10	61	BN-550	921.005	796.01	261.82	0	0	480.725	1.67	1.55	50.24	0	0	0	796.005	9/12/10
BN10380004	9/12/10	61	BN-550	901.16	776.16	355.09	0	67.165	293.935	0.97	0	59	0	0	0	776.16	9/12/10
BN10380005	9/11/10	51	BN-550	949.67	824.67	796.3	0	0	0	7.76	0	20.61	0	0	0	824.67	9/11/10
BN10380006	9/11/10	62	BN-550	954.08	829.08	268.83	0	169.08	316.335	5.82	0	69.015	0	0	0	829.08	9/11/10
BN10380007	9/11/10	57	BN-550	828.395	703.4	385.54	0	0	305.535	3.88	0	8.44	0	0	0	703.395	9/11/10
BN10380008	9/12/10	54	BN-550	890.135	765.14	250.795	0	57.09	451.58	0.97	0	4.7	0	0	0	765.135	9/12/10
BN10380009	9/11/10	53	BN-550	737.99	612.99	204.845	0	90.95	90.95	14.55	3.11	208.585	0	0	0	612.99	9/11/10
BN10380010	9/12/10	51	BN-550	685.07	560.07	104	0	0	313.425	3.88	6.21	132.555	0	0	0	560.07	9/12/10
BN10380011	9/11/10	60	BN-550	905.57	780.57	578.43	0	58.56	30.065	4.71	17.1	91.705	0	0	0	780.57	9/11/10
BN10380012	9/11/10	61	BN-550	934.235	809.24	315.95	0	238.583	238.583	5.82	0	10.3	0	0	0	809.236	9/11/10
BN10380013	9/11/10	53	BN-550	932.03	807.03	558.87	0	0	203.615	0.97	0	43.575	0	0	0	807.03	9/11/10
BN10380014	9/12/10	56	BN-550	751.22	626.22	231.89	0	0	183.81	7.76	6.21	196.55	0	0	0	626.22	9/12/10
BN10380166	9/4/10	52	BN-550	696.095	571.1	429.145	0	0	0	8.22	0	133.73	0	0	0	571.095	9/4/10
BN10380167	9/3/10	55	BN-550	691.685	566.69	130	0	0	187.085	168.555	0	81.045	0	0	0	566.685	9/3/10
BN10380168	9/4/10	54	BN-550	865.88	740.88	569.38	0	0	0	91.475	0	80.025	0	0	0	740.88	9/4/10
BN10380169	9/4/10	59	BN-550	638.765	513.77	213.185	0	0	0	207.281	0	93.301	0	0	0	513.767	9/4/10
BN10380170	9/4/10	52	BN-550	949.67	824.67	816.17	0	0	0	1.94	0	6.56	0	0	0	824.67	9/4/10
BN10380171	9/3/10	56	BN-550	808.55	683.55	282.48	0	0	183.06	206.77	0	11.24	0	0	0	683.55	9/3/10
BN10380172	9/4/10	49	BN-550	687.275	562.28	428.095	0	0	0	130.43	0	3.75	0	0	0	562.275	9/4/10
BN10380173	9/4/10	53	BN-550	865.88	740.88	721.63	0	0	0	8	0	11.25	0	0	0	740.88	9/4/10
BN10380174	9/4/10	49	BN-550	943.055	818.06	663.37	0	0	0	10.37	0	144.315	0	0	0	818.055	9/4/10
BN10380175	9/4/10	55	BN-550	832.805	707.81	500.955	0	0	0	105.295	0	101.555	0	0	0	707.805	9/4/10
BN10380176	9/4/10	58	BN-550	645.38	520.38	159.9	0	0	0	281.61	0	78.87	0	0	0	520.38	9/4/10
BN10380177	9/3/10	58	BN-550	782.09	657.09	340.58	0	0	0	301.52	0	14.99	0	0	0	657.09	9/3/10
BN10380229	9/5/10	56	BN-550	872.495	747.5	588.705	0	0	0	89	0	69.79	0	0	0	747.495	9/5/10
BN10380230	9/5/10	55	BN-550	892.34	767.34	641.48	0	0	1	82.24	0	42.62	0	0	0	767.34	9/5/10
BN10380231	9/5/10	58	BN-550	651.995	527	156	0	0	0	369.125	0	1.87	0	0	0	526.995	9/5/10
BN10380232	9/5/10	56	BN-550	676.25	551.25	296.315	0	0	0	196.505	1.55	56.88	0	0	0	551.25	9/5/10
BN10380233	9/5/10	59	BN-550	857.06	732.06	520.67	0	0	0	201.41	1.55	8.43	0	0	0	732.06	9/5/10
BN10380234	9/4/10	58	BN-550	799.73	674.73	572.825	0	0	0	51.785	0	50.12	0	0	0	674.73	9/4/10
BN10380235	9/5/10	61	BN-550	665.225	540.23	235.115	0	0	0	197.375	1.55	106.185	0	0	0	540.225	9/5/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10380236	9/5/10	62	BN-550	861.47	736.47	418.945	0	0	0	234.61	0	82.915	0	0	0	736.47	9/5/10
BN10380237	9/5/10	54	BN-550	625.535	500.54	250.525	0	0	0	250.01	0	0	0	0	0	500.535	9/5/10
BN10380238	9/5/10	51	BN-550	945.26	820.26	766.84	0	0	0	52.48	0	0.94	0	0	0	820.26	9/5/10
BN10380239	9/5/10	61	BN-550	808.55	683.55	508.955	0	0	0	100.28	1.55	72.765	0	0	0	683.55	9/5/10
BN10380240	9/5/10	54	BN-550	693.89	568.89	496.25	0	0	0	64.21	0	8.43	0	0	0	568.89	9/5/10
BN10380324	9/6/10	54	BN-550	927.62	802.62	739.43	0	0	0	51.64	3.11	8.44	0	0	0	802.62	9/6/10
BN10380325	9/6/10	48	BN-550	755.63	630.63	537.655	0	0	0	15.49	3.1	74.385	0	0	0	630.63	9/6/10
BN10380326	9/6/10	54	BN-550	643.175	518.18	210.74	0	0	0	211.32	1.55	94.565	0	0	0	518.175	9/6/10
BN10380327	9/6/10	54	BN-550	819.575	694.58	549.295	0	0	0	3.88	0	141.4	0	0	0	694.575	9/6/10
BN10380328	9/6/10	53	BN-550	916.595	791.6	687.46	0	0	0	7.56	0	96.575	0	0	0	791.595	9/6/10
BN10380329	9/6/10	52	BN-550	643.175	518.18	244.18	0	0	0	200.295	0	73.7	0	0	0	518.175	9/6/10
BN10380330	9/5/10	60	BN-550	857.06	732.06	406.19	0	0	0	218.915	0	106.955	0	0	0	732.06	9/5/10
BN10380331	9/6/10	56	BN-550	693.89	568.89	255.78	0	0	0	308.43	0	4.68	0	0	0	568.89	9/6/10
BN10380332	9/6/10	57	BN-550	751.22	626.22	499.615	0	0	0	121.925	0	4.68	0	0	0	626.22	9/6/10
BN10380333	9/5/10	47	BN-550	982.745	857.75	852.025	0	0	0	2.91	0	2.81	0	0	0	857.745	9/5/10
BN10380334	9/5/10	53	BN-550	605.69	480.69	224.815	0	0	0	255.875	0	0	0	0	0	480.69	9/5/10
BN10380335	9/5/10	58	BN-550	782.09	657.09	398.805	0	0	0	258.285	0	0	0	0	0	657.09	9/5/10
BN10380591	9/8/10	56	BN-550	938.645	813.65	751.075	0	0	0	58.83	0	3.74	0	0	0	813.645	9/8/10
BN10380592	9/8/10	60	BN-550	709.325	584.33	321.69	0	0	0	182.165	1.55	78.92	0	0	0	584.325	9/8/10
BN10380593	9/7/10	53	BN-550	848.24	723.24	580.925	0	0	0	61.74	0	80.575	0	0	0	723.24	9/7/10
BN10380594	9/7/10	54	BN-550	720.35	595.35	290.535	0	0	0	296.385	0	8.43	0	0	0	595.35	9/7/10
BN10380595	9/7/10	57	BN-550	669.635	544.64	287.34	0	0	0	45.255	0	212.04	0	0	0	544.635	9/7/10
BN10380596	9/7/10	43	BN-550	804.14	679.14	668.54	0	0	0	6.85	0	3.75	0	0	0	679.14	9/7/10
BN10380597	9/7/10	57	BN-550	766.655	641.66	439.16	0	0	0	158.64	0	43.855	0	0	0	641.655	9/7/10
BN10380598	9/7/10	58	BN-550	737.99	612.99	409.935	0	0	0	200.245	0	2.81	0	0	0	612.99	9/7/10
BN10380599	9/7/10	52	BN-550	696.095	571.1	394.27	0	0	0	170.265	0	6.56	0	0	0	571.095	9/7/10
BN10380600	9/7/10	54	BN-550	823.985	698.99	465.14	0	0	0	127.305	0	106.54	0	0	0	698.985	9/7/10
BN10380601	9/8/10	60	BN-550	742.4	617.4	350.085	0	0	0	226.615	9.32	31.38	0	0	0	617.4	9/8/10
BN10380602	9/8/10	59	BN-550	680.66	555.66	301.53	0	0	0	239.77	3.11	11.25	0	0	0	555.66	9/8/10
BN10380720	9/9/10	54	BN-550	691.685	566.69	78	0	0	0	480.575	1.55	6.56	0	0	0	566.685	9/9/10
BN10380721	9/9/10	56	BN-550	656.405	531.41	104	0	0	0	338.28	4.66	84.465	0	0	0	531.405	9/9/10
BN10380722	9/9/10	55	BN-550	744.605	619.61	400.75	3.12	0	0	98.8	3.1	113.835	0	0	0	619.605	9/9/10
BN10380723	9/9/10	59	BN-550	691.685	566.69	147.56	0	0	2.08	81.265	3.1	332.68	0	0	0	566.685	9/9/10
BN10380724	9/9/10	44	BN-550	965.105	840.11	794.81	0	0	0	6.79	0	38.505	0	0	0	840.105	9/9/10
BN10380725	9/8/10	60	BN-550	671.84	546.84	228.58	0	0	0	248.6	3.11	66.55	0	0	0	546.84	9/8/10
BN10380726	9/9/10	45	BN-550	905.57	780.57	749.02	0	0	0.84	7.93	3.11	19.67	0	0	0	780.57	9/9/10
BN10380727	9/9/10	60	BN-550	685.07	560.07	248.935	6.25	0	0.5	11.64	3.1	289.645	0	0	0	560.07	9/9/10
BN10380728	9/8/10	49	BN-550	954.08	829.08	793.34	0	0	0	11.1	7.77	16.87	0	0	0	829.08	9/8/10
BN10380729	9/9/10	39	BN-550	989.36	864.36	858.83	0	0	0	1.94	0.78	2.81	0	0	0	864.36	9/9/10
BN10380730	9/9/10	52	BN-550	583.64	458.64	137.8	0	0	0.84	203.855	2.33	113.815	0	0	0	458.64	9/9/10
BN10380731	9/8/10	59	BN-550	938.645	813.65	784.185	0	0	6.25	9.16	0	14.05	0	0	0	813.645	9/8/10
BN10380732	9/9/10	59	BN-550	663.02	538.02	130	0	0	0	258.52	1.55	147.95	0	0	0	538.02	9/9/10
BN10380733	9/9/10	54	BN-550	726.965	601.97	156.658	3.098	0	0	308.635	3.11	130.465	0	0	0	601.966	9/9/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10380734	9/8/10	52	BN-550	645.38	520.38	207.54	1.56	0	0	144.14	0	167.14	0	0	0	520.38	9/8/10
BN10380735	9/9/10	52	BN-550	621.125	496.13	145.62	0	0	0	3.88	0	346.625	0	0	0	496.125	9/9/10
BN10380736	9/9/10	54	BN-550	909.98	784.98	748.79	0	0	0	6.68	2.33	27.18	0	0	0	784.98	9/9/10
BN10380738	9/8/10	62	BN-550	729.17	604.17	239.78	0	0	0	214.06	0	150.33	0	0	0	604.17	9/8/10
BN10380739	9/8/10	57	BN-550	916.595	791.6	595.76	0	0	8.33	131.085	3.1	53.32	0	0	0	791.595	9/8/10
BN10380740	9/8/10	52	BN-550	967.31	842.31	821.25	0	0	0	8.59	3.11	9.36	0	0	0	842.31	9/8/10
BN10380741	9/9/10	54	BN-550	693.89	568.89	304.545	0	0	2.52	160.423	1.55	99.853	0	0	0	568.891	9/9/10
BN10380742	9/9/10	56	BN-550	773.27	648.27	386.643	2.987	0	0	219.545	0	39.095	0	0	0	648.27	9/9/10
BN10380743	9/9/10	57	BN-550	797.525	672.53	590.429	18.952	0	0.5	45.251	0	17.398	0	0	0	672.53	9/9/10
BN10380919	9/10/10	59	BN-550	790.91	665.91	326.68	10.894	0	1	251.637	1.55	74.15	0	0	0	665.911	9/10/10
BN10380920	9/9/10	57	BN-550	801.935	676.94	441.088	6.107	0	0.5	12.765	4.66	211.815	0	0	0	676.935	9/9/10
BN10380921	9/10/10	59	BN-550	788.705	663.71	200.79	6.24	0	1	450.995	0	4.68	0	0	0	663.705	9/10/10
BN10380922	9/10/10	56	BN-550	835.01	710.01	481.155	15.6	0	7	195.015	0	11.24	0	0	0	710.01	9/10/10
BN10380923	9/9/10	60	BN-550	881.315	756.32	325.025	0	0	0.84	337.505	6.22	86.725	0	0	0	756.315	9/9/10
BN10380924	9/10/10	49	BN-550	446.93	321.93	138.155	3.539	0	0	9.017	1.55	169.67	0	0	0	321.931	9/10/10
BN10380925	9/10/10	58	BN-550	784.295	659.3	404.135	12.48	4.68	2	163.375	0	72.625	0	0	0	659.295	9/10/10
BN10380926	9/10/10	57	BN-550	601.28	476.28	219.325	3.12	0	5.372	44.818	3.1	200.545	0	0	0	476.28	9/10/10
BN10380927	9/10/10	55	BN-550	607.895	482.9	158.245	3.12	0	0.5	7.49	4.66	308.88	0	0	0	482.895	9/10/10
BN10380928	9/10/10	54	BN-550	599.075	474.08	262.965	3.12	0	5.152	105.424	3.11	94.305	0	0	0	474.076	9/10/10
BN10380929	9/10/10	56	BN-550	638.765	513.77	221.777	3.869	0	4.652	55.423	3.1	224.945	0	0	0	513.766	9/10/10
BN10380930	9/10/10	59	BN-550	581.435	456.44	156	0	0	0	15.135	1.55	283.75	0	0	0	456.435	9/10/10
BN10380965	9/10/10	59	BN-550	707.12	582.12	163.81	0	0	0	172.57	3.1	242.64	0	0	0	582.12	9/10/10
BN10380966	9/11/10	51	BN-550	561.59	436.59	166.185	0	0	2	183.815	0	84.59	0	0	0	436.59	9/11/10
BN10380967	9/11/10	49	BN-550	704.915	579.92	308.925	0	0	2	254.88	0	14.11	0	0	0	579.915	9/11/10
BN10380968	9/11/10	43	BN-550	865.88	740.88	679.33	0	0	0	25.455	0	34.795	0	0	1.3	740.88	9/11/10
BN10380969	9/11/10	60	BN-550	696.095	571.1	163.81	0	0	10.524	313.102	3.11	80.55	0	0	0	571.096	9/11/10
BN10380970	9/11/10	55	BN-550	760.04	635.04	408.605	0	0	0	134.065	1.55	90.82	0	0	0	635.04	9/11/10
BN10380971	9/11/10	57	BN-550	945.26	820.26	359.29	0	73.78	226.24	4.58	0	156.37	0	0	0	820.26	9/11/10
BN10380972	9/10/10	59	BN-550	753.425	628.43	239.96	0	0	3.5	380.095	0	4.87	0	0	0	628.425	9/10/10
BN10380973	9/10/10	55	BN-550	771.065	646.07	464.785	3.539	0	9.303	100.504	1.55	66.385	0	0	0	646.066	9/10/10
BN10380974	9/10/10	56	BN-550	632.15	507.15	273.095	0	2.34	10.959	177.631	0	43.125	0	0	0	507.15	9/10/10
BN10380975	9/10/10	53	BN-550	680.66	555.66	245.46	0	0	18.828	173.32	3.1	114.955	0	0	0	555.663	9/10/10
BN10380976	9/11/10	58	BN-550	832.805	707.81	407.105	0	0	2	293.01	0	5.69	0	0	0	707.805	9/11/10
BN10381309	9/12/10	61	BN-550	810.755	685.76	156	0	0	292.705	167.795	1.55	67.705	0	0	0	685.755	9/12/10
BN10381310	9/12/10	57	BN-550	808.55	683.55	104	0	0	454.865	4.71	1.55	118.425	0	0	0	683.55	9/12/10
BN10381311	9/12/10	58	BN-550	810.755	685.76	586.735	0	0	0	6.52	1.55	90.95	0	0	0	685.755	9/12/10
BN10381312	9/12/10	55	BN-550	656.405	531.41	130	0	0	0	6.94	10.87	383.595	0	0	0	531.405	9/12/10
BN10381313	9/12/10	55	BN-550	804.14	679.14	481.26	0	0	0	8.46	4.66	184.76	0	0	0	679.14	9/12/10
BN10381314	9/12/10	54	BN-550	704.915	579.92	330.84	1.56	0	2.08	88.04	0	157.395	0	0	0	579.915	9/12/10
BN10381315	9/12/10	56	BN-550	651.995	527	234.43	0	0	0	9.43	7.76	275.375	0	0	0	526.995	9/12/10
BN10381316	9/12/10	58	BN-550	826.19	701.19	105.17	0	0	426.865	71.185	0	97.97	0	0	0	701.19	9/12/10
BN10381317	9/12/10	60	BN-550	881.315	756.32	243.25	0	0	249.16	5.27	0	258.635	0	0	0	756.315	9/12/10
BN10381318	9/13/10	60	BN-550	689.48	564.48	156	0	0	40.485	10.67	7.75	349.575	0	0	0	564.48	9/13/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10381319	9/12/10	58	BN-550	751.22	626.22	130	0	0	0	3.88	4.66	487.68	0	0	0	626.22	9/12/10
BN10381320	9/12/10	55	BN-550	566	441	104	0	0	0	6.79	1.55	328.66	0	0	0	441	9/12/10
BN10381421	9/14/10	57	BN-550	766.655	641.66	486.525	0	0	0	114.168	9.32	31.643	0	0	0	641.656	9/14/10
BN10381422	9/13/10	53	BN-550	984.95	859.95	855.23	0	0	0	0.97	0	3.75	0	0	0	859.95	9/13/10
BN10381423	9/13/10	53	BN-550	987.155	862.16	708.805	0	0	2.54	83.48	1.55	65.78	0	0	0	862.155	9/13/10
BN10381424	9/14/10	61	BN-550	914.39	789.39	611.815	1.56	0	0	137.14	3.11	35.765	0	0	0	789.39	9/14/10
BN10381425	9/13/10	59	BN-550	632.15	507.15	130	0	0	0	4.85	10.87	361.43	0	0	0	507.15	9/13/10
BN10381426	9/13/10	54	BN-550	583.64	458.64	130	0	0	0	8.59	10.87	309.18	0	0	0	458.64	9/13/10
BN10381427	9/13/10	50	BN-550	790.91	665.91	553.21	0	0	0	108.02	0	4.68	0	0	0	665.91	9/13/10
BN10381428	9/13/10	52	BN-550	552.77	427.77	130	0	0	0	8.46	6.21	283.1	0	0	0	427.77	9/13/10
BN10381429	9/13/10	53	BN-550	746.81	621.81	303.05	0	0	174.05	26.355	6.21	112.145	0	0	0	621.81	9/13/10
BN10381430	9/14/10	56	BN-550	980.54	855.54	746.575	0	0	0	78.363	0	30.603	0	0	0	855.541	9/14/10
BN10381431	9/13/10	62	BN-550	625.535	500.54	156	0	0	0	16.35	10.87	317.315	0	0	0	500.535	9/13/10
BN10381432	9/13/10	62	BN-550	585.845	460.85	156	0	0	0	40.528	6.2	258.118	0	0	0	460.846	9/13/10
BN10381434	9/14/10	58	BN-550	704.915	579.92	130	0	0	236.91	3.88	3.1	206.025	0	0	0	579.915	9/14/10
BN10381435	9/14/10	52	BN-550	640.97	515.97	226.77	0	0	2.08	193.45	1.55	92.12	0	0	0	515.97	9/14/10
BN10381436	9/14/10	50	BN-550	890.135	765.14	492.215	0	130.655	130.655	1.94	3.11	6.56	0	0	0	765.135	9/14/10
BN10381437	9/14/10	53	BN-550	753.425	628.43	468.825	0	0	0	111.558	0	48.043	0	0	0	628.426	9/14/10
BN10381438	9/14/10	35	BN-550	943.055	818.06	817.115	0	0	0	0	0	0.94	0	0	0	818.055	9/14/10
BN10381439	9/14/10	59	BN-550	865.88	740.88	422.205	0	0	188.545	2.77	0	127.36	0	0	0	740.88	9/14/10
BN10381440	9/14/10	47	BN-550	971.72	846.72	834.98	0	0	1	1.94	3.11	5.69	0	0	0	846.72	9/14/10
BN10381441	9/14/10	60	BN-550	749.015	624.02	156	0	0	314.785	31.035	0	122.195	0	0	0	624.015	9/14/10
BN10381442	9/14/10	63	BN-550	921.005	796.01	130	0	0	575.575	75.43	0	15	0	0	0	796.005	9/14/10
BN10381443	9/14/10	54	BN-550	951.875	826.88	809.835	0	0	1	2.91	0	13.13	0	0	0	826.875	9/14/10
BN10381444	9/15/10	59	BN-550	790.91	665.91	226.2	0	0	2.04	212.963	0	224.708	0	0	0	665.911	9/15/10
BN10381445	9/15/10	46	BN-550	901.16	776.16	765.08	0	0	1	1.45	0	8.63	0	0	0	776.16	9/15/10
BN10381559	9/17/10	56	BN-550	841.625	716.63	620.915	0	0	0	47.821	3.11	44.781	0	0	0	716.627	9/17/10
BN10381560	9/17/10	53	BN-550	987.155	862.16	752.84	0	0	0	50.388	7.76	51.168	0	0	0	862.156	9/17/10
BN10381561	9/17/10	57	BN-550	775.475	650.48	369.23	0	0	0	103.105	6.21	171.93	0	0	0	650.475	9/17/10
BN10381562	9/17/10	51	BN-550	621.125	496.13	348.1	0	0	0	57.685	3.1	87.24	0	0	0	496.125	9/17/10
BN10381563	9/17/10	57	BN-550	923.21	798.21	624.58	0	9.37	0	77.285	3.1	83.875	0	0	0	798.21	9/17/10
BN10381564	9/17/10	48	BN-550	932.03	807.03	801.41	0	0	0	0	0	5.62	0	0	0	807.03	9/17/10
BN10381573	9/16/10	57	BN-550	749.015	624.02	565.535	0	0	0	48.66	2.33	7.49	0	0	0	624.015	9/16/10
BN10381574	9/16/10	49	BN-550	932.03	807.03	728.715	0	0	0	3.88	0	74.435	0	0	0	807.03	9/16/10
BN10381575	9/16/10	51	BN-550	790.91	665.91	489.565	0	0	0	11.93	5.44	158.975	0	0	0	665.91	9/16/10
BN10381576	9/16/10	57	BN-550	722.555	597.56	227.11	0	0	2.8	317.255	1.55	48.84	0	0	0	597.555	9/16/10
BN10381577	9/16/10	41	BN-550	634.355	509.36	367.19	0	0	0	5.02	4.66	132.485	0	0	0	509.355	9/16/10
BN10381578	9/16/10	54	BN-550	881.315	756.32	574.65	0	0	0	169.805	1.55	10.31	0	0	0	756.315	9/16/10
BN10381579	9/16/10	49	BN-550	932.03	807.03	733.225	0	0	1	62.505	0	10.3	0	0	0	807.03	9/16/10
BN10381580	9/16/10	50	BN-550	870.29	745.29	737.31	0	0	0	0.48	0	7.5	0	0	0	745.29	9/16/10
BN10381581	9/16/10	53	BN-550	837.215	712.22	538.665	0	0	0	34.803	3.88	134.868	0	0	0	712.216	9/16/10
BN10381582	9/16/10	53	BN-550	685.07	560.07	378.415	0	0	0	36.18	4.66	140.815	0	0	0	560.07	9/16/10
BN10381583	9/16/10	55	BN-550	863.675	738.68	363.25	0	0	4.2	365.605	0	5.62	0	0	0	738.675	9/16/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10381584	9/16/10	48	BN-550	945.26	820.26	812.15	0	0	0	0	1.55	6.56	0	0	0	820.26	9/16/10
BN10381586	9/17/10	54	BN-550	938.645	813.65	800.475	0	0	0	0.97	0	12.2	0	0	0	813.645	9/17/10
BN10381587	9/17/10	49	BN-550	971.72	846.72	839.65	0	0	0	0.97	0	6.1	0	0	0	846.72	9/17/10
BN10381588	9/17/10	59	BN-550	629.945	504.95	156	0	0	0	139.425	10.09	199.43	0	0	0	504.945	9/17/10
BN10381589	9/17/10	45	BN-550	943.055	818.06	812.425	0	0	0	0	0	5.63	0	0	0	818.055	9/17/10
BN10381590	9/17/10	54	BN-550	912.185	787.19	633.42	0	9.37	0	71.808	4.65	67.938	0	0	0	787.186	9/17/10
BN10381591	9/17/10	52	BN-550	832.805	707.81	696.465	0	0	0	2.91	0	8.43	0	0	0	707.805	9/17/10
BN10381937	9/18/10	54	BN-550	607.895	482.9	156	0	0	0	326.395	0	0.5	0	0	0	482.895	9/18/10
BN10381938	9/18/10	59	BN-550	665.225	540.23	182	0	0	0	352.225	0	6	0	0	0	540.225	9/18/10
BN10381939	9/18/10	57	BN-550	905.57	780.57	490.68	0	0	0	286.45	0	3.44	0	0	0	780.57	9/18/10
BN10381940	9/18/10	58	BN-550	676.25	551.25	182	0	0	0	365	0	4.25	0	0	0	551.25	9/18/10
BN10381941	9/19/10	50	BN-550	973.925	848.93	815.535	0	0	10.41	10.18	1.55	11.25	0	0	0	848.925	9/19/10
BN10381942	9/18/10	53	BN-550	663.02	538.02	141.71	0	0	0	392.56	0	3.75	0	0	0	538.02	9/18/10
BN10381943	9/18/10	56	BN-550	649.79	524.79	156	0	0	0	368.79	0	0	0	0	0	524.79	9/18/10
BN10381944	9/18/10	53	BN-550	682.865	557.87	171.61	0	0	0	386.255	0	0	0	0	0	557.865	9/18/10
BN10381945	9/18/10	59	BN-550	658.61	533.61	156	0	0	0	377.61	0	0	0	0	0	533.61	9/18/10
BN10381946	9/18/10	54	BN-550	634.355	509.36	159.9	0	0	0	347.585	0	1.87	0	0	0	509.355	9/18/10
BN10381947	9/18/10	38	BN-550	938.645	813.65	812.705	0	0	0	0	0	0.94	0	0	0	813.645	9/18/10
BN10381948	9/18/10	50	BN-550	934.235	809.24	690.875	0	0	2.1	39.045	0	77.215	0	0	0	809.235	9/18/10
BN10381989	9/19/10	51	BN-550	731.375	606.38	304.52	0	0	0	299.985	0	1.87	0	0	0	606.375	9/19/10
BN10381990	9/19/10	55	BN-550	724.76	599.76	293.7	0	0	0	300.44	0	5.62	0	0	0	599.76	9/19/10
BN10381991	9/19/10	50	BN-550	918.8	793.8	744.465	0	0	2.08	25.273	0	21.983	0	0	0	793.801	9/19/10
BN10381992	9/19/10	60	BN-550	786.5	661.5	393.08	0	0	0	201.24	0	67.18	0	0	0	661.5	9/19/10
BN10381993	9/19/10	37	BN-550	960.695	835.7	832.755	0	0	2	0	0	0.94	0	0	0	835.695	9/19/10
BN10381994	9/19/10	55	BN-550	976.13	851.13	731.57	0	0	0	112.07	0	7.49	0	0	0	851.13	9/19/10
BN10381995	9/20/10	55	BN-550	698.3	573.3	277.735	0	0	86.415	206.34	0	2.81	0	0	0	573.3	9/20/10
BN10381996	9/19/10	52	BN-550	835.01	710.01	576.015	0	0	0	123.695	0	10.3	0	0	0	710.01	9/19/10
BN10381997	9/20/10	47	BN-550	927.62	802.62	588.01	0	0	97.44	114.68	1.55	0.94	0	0	0	802.62	9/20/10
BN10381998	9/20/10	59	BN-550	799.73	674.73	433.215	0	0	0	220.068	0	21.448	0	0	0	674.731	9/20/10
BN10381999	9/20/10	58	BN-550	852.65	727.65	515.42	0	0	75.39	134.96	0	1.88	0	0	0	727.65	9/20/10
BN10382000	9/20/10	53	BN-550	744.605	619.61	156	0	0	435.505	22.46	0	5.64	0	0	0	619.605	9/20/10
BN10382140	9/20/10	53	BN-550	841.625	716.63	605.345	0	0	0	111.28	0	0	0	0	0	716.625	9/20/10
BN10382141	9/21/10	54	BN-550	879.11	754.11	617.32	0	0	0	128.37	0	8.42	0	0	0	754.11	9/21/10
BN10382142	9/20/10	56	BN-550	945.26	820.26	804.61	0	0	2.8	6.3	0	6.55	0	0	0	820.26	9/20/10
BN10382143	9/21/10	56	BN-550	801.935	676.94	430.08	0	0	2.8	13.47	1.55	229.035	0	0	0	676.935	9/21/10
BN10382144	9/20/10	57	BN-550	821.78	696.78	546.13	0	0	5.56	143.22	0	1.87	0	0	0	696.78	9/20/10
BN10382145	9/20/10	55	BN-550	797.525	672.53	592.24	0	0	0	79.345	0	0.94	0	0	0	672.525	9/20/10
BN10382146	9/21/10	56	BN-550	857.06	732.06	550.65	0	0	6.94	112.155	3.11	59.205	0	0	0	732.06	9/21/10
BN10382147	9/20/10	55	BN-550	817.37	692.37	545.16	0	0	0	144.4	0	2.81	0	0	0	692.37	9/20/10
BN10382148	9/21/10	58	BN-550	989.36	864.36	688.965	0	0	0	95.275	0	80.12	0	0	0	864.36	9/21/10
BN10382149	9/20/10	58	BN-550	771.065	646.07	224.21	0	0	238.7	180.335	0	2.82	0	0	0	646.065	9/20/10
BN10382150	9/21/10	52	BN-550	940.85	815.85	705.855	0	0	5.56	96.945	0	7.49	0	0	0	815.85	9/21/10
BN10382151	9/20/10	52	BN-550	898.955	773.96	664.345	12.49	0	0	90.57	0	6.55	0	0	0	773.955	9/20/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10382269	9/24/10	54	BN-550	949.67	824.67	498.71	0	0	0	263.625	0	62.335	0	0	0	824.67	9/24/10
BN10382270	9/24/10	37	BN-550	943.055	818.06	757.415	0	0	0	2.77	0	57.87	0	0	0	818.055	9/24/10
BN10382271	9/24/10	46	BN-550	938.645	813.65	801.315	0	0	0	4.85	0	7.48	0	0	0	813.645	9/24/10
BN10382272	9/21/10	49	BN-550	956.285	831.29	700.135	0	0	6.75	121.59	0	2.81	0	0	0	831.285	9/21/10
BN10382273	9/21/10	56	BN-550	929.825	804.83	694.628	5.596	0	0	99.852	0	4.75	0	0	0	804.826	9/21/10
BN10382274	9/21/10	42	BN-550	934.235	809.24	480.635	0	0	324.85	0	0	3.75	0	0	0	809.235	9/21/10
BN10382275	9/21/10	60	BN-550	905.57	780.57	571.54	0	0	0	151.115	0	57.915	0	0	0	780.57	9/21/10
BN10382276	9/21/10	46	BN-550	826.19	701.19	650.58	3.12	0	0	23.415	0	24.075	0	0	0	701.19	9/21/10
BN10382277	9/24/10	51	BN-550	938.645	813.65	742.865	0	0	0	13.17	0	57.61	0	0	0	813.645	9/24/10
BN10382278	9/25/10	60	BN-550	892.34	767.34	456.675	0	0	0	301.315	4.66	4.69	0	0	0	767.34	9/25/10
BN10382279	9/24/10	43	BN-550	839.42	714.42	596.42	0	0	0	3.61	0	114.39	0	0	0	714.42	9/24/10
BN10382280	9/24/10	58	BN-550	905.57	780.57	712.83	0	0	0	62.44	1.55	3.75	0	0	0	780.57	9/24/10
BN10382361	9/25/10	45	BN-550	885.725	760.73	707.37	0	0	0	44.925	0	8.43	0	0	0	760.725	9/25/10
BN10382362	9/25/10	44	BN-550	883.52	758.52	747.46	0	0	0	2.64	0	8.42	0	0	0	758.52	9/25/10
BN10382363	9/26/10	59	BN-550	954.08	829.08	726.765	0	0	0	98.565	0	3.75	0	0	0	829.08	9/26/10
BN10382364	9/25/10	37	BN-550	918.8	793.8	790.99	0	0	0	0	0	2.81	0	0	0	793.8	9/25/10
BN10382365	9/25/10	58	BN-550	929.825	804.83	513.45	0	0	0	181.39	6.22	103.765	0	0	0	804.825	9/25/10
BN10382366	9/25/10	57	BN-550	726.965	601.97	465.265	0	0	2	10.13	1.55	123.02	0	0	0	601.965	9/25/10
BN10382367	9/25/10	44	BN-550	907.775	782.78	688.365	0	0	0	41.45	0	52.96	0	0	0	782.775	9/25/10
BN10382368	9/25/10	61	BN-550	984.95	859.95	680.345	0	0	0	165.575	4.66	9.37	0	0	0	859.95	9/25/10
BN10382369	9/25/10	39	BN-550	938.645	813.65	607.895	0	0	0	123.95	0	81.8	0	0	0	813.645	9/25/10
BN10382370	9/25/10	46	BN-550	898.955	773.96	712.38	0	0	0	6.79	0	54.785	0	0	0	773.955	9/25/10
BN10382371	9/25/10	59	BN-550	846.035	721.04	379.605	0	0	5	259.615	3.1	73.715	0	0	0	721.035	9/25/10
BN10382372	9/25/10	45	BN-550	967.31	842.31	834.35	0	0	0	1.4	0	6.56	0	0	0	842.31	9/25/10
BN10382461	9/27/10	41	BN-550	901.16	776.16	772.35	0	0	0	1.94	0	1.87	0	0	0	776.16	9/27/10
BN10382462	9/27/10	38	BN-550	839.42	714.42	693.04	0	0	0.84	1.8	0	18.74	0	0	0	714.42	9/27/10
BN10382463	9/27/10	46	BN-550	881.315	756.32	641.27	0	0	1.68	42.485	0	70.88	0	0	0	756.315	9/27/10
BN10382464	9/26/10	46	BN-550	896.75	771.75	715.98	0	0	0	51.09	0	4.68	0	0	0	771.75	9/26/10
BN10382465	9/27/10	36	BN-550	901.16	776.16	772.09	0	0	1.26	0	0	2.81	0	0	0	776.16	9/27/10
BN10382466	9/26/10	61	BN-550	848.24	723.24	532.69	0	0	0	185.4	0	5.15	0	0	0	723.24	9/26/10
BN10382467	9/26/10	50	BN-550	890.135	765.14	603.76	0	0	0	148.255	0	13.12	0	0	0	765.135	9/26/10
BN10382468	9/26/10	48	BN-550	976.13	851.13	839.9	0	0	0	3.74	0	7.49	0	0	0	851.13	9/26/10
BN10382469	9/27/10	42	BN-550	971.72	846.72	843.16	0	0	1.68	0	0	1.88	0	0	0	846.72	9/27/10
BN10382470	9/27/10	38	BN-550	945.26	820.26	817.38	0	0	0	1.94	0	0.94	0	0	0	820.26	9/27/10
BN10382471	9/27/10	46	BN-550	987.155	862.16	779.83	0	0	0	77.635	0	4.69	0	0	0	862.155	9/27/10
BN10382472	9/28/10	49	BN-550	984.95	859.95	848.85	0	0	0	3.61	0	7.49	0	0	0	859.95	9/28/10
BN10382541	9/28/10	42	BN-550	883.52	758.52	749.59	0	0	0	2.37	0	6.56	0	0	0	758.52	9/28/10
BN10382542	9/28/10	40	BN-550	909.98	784.98	779.37	0	0	0	0	0	5.61	0	0	0	784.98	9/28/10
BN10382543	9/28/10	42	BN-550	898.955	773.96	763.965	0	0	0	2.5	0	7.49	0	0	0	773.955	9/28/10
BN10382544	9/28/10	42	BN-550	989.36	864.36	855.07	0	0	0	1.8	0	7.49	0	0	0	864.36	9/28/10
BN10382545	9/28/10	43	BN-550	980.54	855.54	844.81	0	0	0	4.17	0	6.56	0	0	0	855.54	9/28/10
BN10382546	9/28/10	33	BN-550	925.415	800.42	798.545	0	0	0	0	0	1.87	0	0	0	800.415	9/28/10
BN10382547	9/28/10	41	BN-550	954.08	829.08	822.37	0	0	0	3.9	0	2.81	0	0	0	829.08	9/28/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10382548	9/28/10	48	BN-550	929.825	804.83	796.535	0	0	0	3.61	0	4.68	0	0	0	804.825	9/28/10
BN10382549	9/28/10	54	BN-550	989.36	864.36	729.42	0	0	0	65.145	0	69.795	0	0	0	864.36	9/28/10
BN10382550	9/28/10	56	BN-550	984.95	859.95	752.34	0	0	0	2.91	0	104.7	0	0	0	859.95	9/28/10
BN10382551	9/28/10	58	BN-550	854.855	729.86	561.81	0	0	0	57.885	0	110.16	0	0	0	729.855	9/28/10
BN10382552	9/28/10	54	BN-550	768.86	643.86	453.535	0	0	0	151.833	0	38.493	0	0	0	643.861	9/28/10
BN10382801	9/29/10	61	BN-550	848.24	723.24	677.97	0	0	0	33.11	0	12.16	0	0	0	723.24	9/29/10
BN10382802	9/28/10	42	BN-550	907.775	782.78	770.355	0	0	0	6.79	0	5.63	0	0	0	782.775	9/28/10
BN10382803	9/29/10	59	BN-550	909.98	784.98	582.74	0	0	0	28.315	6.22	167.705	0	0	0	784.98	9/29/10
BN10382804	9/29/10	48	BN-550	951.875	826.88	764.605	0	0	0	7.54	0	54.73	0	0	0	826.875	9/29/10
BN10382805	9/29/10	51	BN-550	980.54	855.54	829.747	0	0	7.318	15.406	0	3.07	0	0	0	855.541	9/29/10
BN10382806	9/29/10	47	BN-550	927.62	802.62	792.25	0	0	0	4.75	0	5.62	0	0	0	802.62	9/29/10
BN10382807	9/29/10	59	BN-550	945.26	820.26	795.827	0	0	3.208	9.756	0	11.47	0	0	0	820.261	9/29/10
BN10382808	9/29/10	55	BN-550	835.01	710.01	614.145	0	0	2.767	9.414	0	83.685	0	0	0	710.011	9/29/10
BN10382809	9/29/10	49	BN-550	927.62	802.62	767.46	0	0	7.453	21.147	0	6.56	0	0	0	802.62	9/29/10
BN10382810	9/29/10	45	BN-550	912.185	787.19	778.835	0	0	0	5.54	0	2.81	0	0	0	787.185	9/29/10
BN10382811	9/29/10	50	BN-550	879.11	754.11	689.51	0	0	0	6.65	0	57.95	0	0	0	754.11	9/29/10
BN10382812	9/29/10	53	BN-550	927.62	802.62	690.344	0	0	15.849	34.896	0	61.535	0	0	0	802.624	9/29/10
BN10382889	9/30/10	57	BN-550	744.605	619.61	277.225	0	0	2.25	336.39	0	3.74	0	0	0	619.605	9/30/10
BN10382890	9/30/10	57	BN-550	835.01	710.01	635.295	0	0	0	58.185	6.22	10.31	0	0	0	710.01	9/30/10
BN10382891	10/1/10	53	BN-550	788.705	663.71	507.95	0	0	0	146.405	4.66	4.69	0	0	0	663.705	10/1/10
BN10382892	9/30/10	53	BN-550	901.16	776.16	512.385	0	0	0	4.91	0	258.865	0	0	0	776.16	9/30/10
BN10382893	10/1/10	61	BN-550	815.165	690.17	543.46	0	0	0	90.67	0	56.035	0	0	0	690.165	10/1/10
BN10382894	9/30/10	57	BN-550	777.68	652.68	445.38	0	0	0	78.57	1.55	127.18	0	0	0	652.68	9/30/10
BN10382895	9/30/10	57	BN-550	872.495	747.5	543.26	0	0	3.38	187.735	0	13.12	0	0	0	747.495	9/30/10
BN10382896	9/30/10	53	BN-550	735.785	610.79	538.215	0	0	0	56.64	0	15.93	0	0	0	610.785	9/30/10
BN10382897	9/30/10	52	BN-550	680.66	555.66	316.205	0	0	0	227.285	0	12.17	0	0	0	555.66	9/30/10
BN10382898	9/30/10	48	BN-550	927.62	802.62	780.23	0	0	0	8.36	4.66	9.37	0	0	0	802.62	9/30/10
BN10382899	9/30/10	58	BN-550	967.31	842.31	684.63	0	0	0	150.2	0	7.48	0	0	0	842.31	9/30/10
BN10382900	10/1/10	55	BN-550	980.54	855.54	780.78	0	0	0	8.96	0	65.8	0	0	0	855.54	10/1/10
BN10382904	9/30/10	61	BN-550	909.98	784.98	588.57	0	0	146.075	13.41	0	36.925	0	0	0	784.98	9/30/10
BN10382905	9/30/10	58	BN-550	735.785	610.79	349.18	0	0	0	254.755	3.11	3.74	0	0	0	610.785	9/30/10
BN10382906	9/29/10	51	BN-550	987.155	862.16	844.214	0	0	2.877	12.004	0	3.06	0	0	0	862.155	9/29/10
BN10382907	9/29/10	53	BN-550	949.67	824.67	803.1	0	0	0	8.46	0	13.11	0	0	0	824.67	9/29/10
BN10382908	9/29/10	50	BN-550	965.105	840.11	824.495	0	0	0	6.24	0	9.37	0	0	0	840.105	9/29/10
BN10382909	9/29/10	48	BN-550	925.415	800.42	769.263	0	0	7.258	10.555	4.66	8.68	0	0	0	800.416	9/29/10
BN10382910	9/30/10	49	BN-550	982.745	857.75	840.395	0	0	0	2.37	0	14.98	0	0	0	857.745	9/30/10
BN10382911	9/30/10	56	BN-550	973.925	848.93	532.685	0	0	121.82	5.27	0	189.15	0	0	0	848.925	9/30/10
BN10382912	9/30/10	50	BN-550	588.05	463.05	136.24	0	0	0	325.87	0	0.94	0	0	0	463.05	9/30/10
BN10382913	9/30/10	57	BN-550	658.61	533.61	218.535	0	0	0	312.265	0	2.81	0	0	0	533.61	9/30/10
BN10382914	9/30/10	57	BN-550	779.885	654.89	432.925	0	0	0	219.15	0	2.81	0	0	0	654.885	9/30/10
BN10382915	9/30/10	57	BN-550	817.37	692.37	558.61	0	0	0	130.02	0	3.74	0	0	0	692.37	9/30/10
BN10383283	10/3/10	52	BN-550	817.37	692.37	397.04	0	0	0	287.84	0	7.49	0	0	0	692.37	10/3/10
BN10383284	10/3/10	39	BN-550	907.775	782.78	765.855	0	0	0	4.75	0	12.17	0	0	0	782.775	10/3/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10383285	10/2/10	51	BN-550	945.26	820.26	805.42	0	0	0	9.22	0	5.62	0	0	0	820.26	10/2/10
BN10383286	10/2/10	55	BN-550	773.27	648.27	355.625	0	0	0	287.025	0	5.62	0	0	0	648.27	10/2/10
BN10383287	10/3/10	48	BN-550	936.44	811.44	738.515	0	0	0	6.55	0	66.375	0	0	0	811.44	10/3/10
BN10383288	10/3/10	54	BN-550	890.135	765.14	701.82	0	0	0	62.375	0	0.94	0	0	0	765.135	10/3/10
BN10383289	10/3/10	44	BN-550	978.335	853.34	838.035	0	0	0	5	0	10.3	0	0	0	853.335	10/3/10
BN10383290	10/3/10	54	BN-550	901.16	776.16	617.695	0	0	0	75.065	0	83.4	0	0	0	776.16	10/3/10
BN10383291	10/3/10	40	BN-550	918.8	793.8	692.645	3.12	0	2	3.74	83.875	8.42	0	0	0	793.8	10/3/10
BN10383292	10/3/10	40	BN-550	945.26	820.26	808.22	0	0	0	3.61	0	8.43	0	0	0	820.26	10/3/10
BN10383293	10/3/10	38	BN-550	932.03	807.03	781.8	0	0	0	5.55	0	19.68	0	0	0	807.03	10/3/10
BN10383294	10/3/10	39	BN-550	854.855	729.86	720.025	0	0	0	5.14	0	4.69	0	0	0	729.855	10/3/10
BN10383296	10/1/10	59	BN-550	760.04	635.04	406.53	0	0	0	221.02	0	7.49	0	0	0	635.04	10/1/10
BN10383297	10/1/10	50	BN-550	760.04	635.04	502.155	0	0	0	129.145	0	3.74	0	0	0	635.04	10/1/10
BN10383298	10/1/10	52	BN-550	870.29	745.29	731.59	0	0	0	5.28	0	8.42	0	0	0	745.29	10/1/10
BN10383299	10/1/10	52	BN-550	660.815	535.82	351.6	0	0	0	175.185	1.55	7.48	0	0	0	535.815	10/1/10
BN10383300	10/1/10	58	BN-550	753.425	628.43	454.37	0	0	0	167.505	0	6.55	0	0	0	628.425	10/1/10
BN10383301	10/1/10	57	BN-550	848.24	723.24	549.215	0	0	0	167.465	0	6.56	0	0	0	723.24	10/1/10
BN10383302	10/1/10	47	BN-550	925.415	800.42	791.215	0	0	0	5.45	0	3.75	0	0	0	800.415	10/1/10
BN10383303	10/2/10	57	BN-550	828.395	703.4	490.685	0	0	0	209.9	0	2.81	0	0	0	703.395	10/2/10
BN10383306	10/2/10	50	BN-550	700.505	575.51	439.63	0	2.34	0	77.06	1.55	54.925	0	0	0	575.505	10/2/10
BN10383307	10/2/10	59	BN-550	887.93	762.93	633.965	0	0	0	127.095	0	1.87	0	0	0	762.93	10/2/10
BN10383308	10/2/10	54	BN-550	612.305	487.31	130	0	0	0	354.495	0	2.81	0	0	0	487.305	10/2/10
BN10383309	10/2/10	55	BN-550	865.88	740.88	656.095	0	0	6.25	69.165	0	9.37	0	0	0	740.88	10/2/10
BN10383515	10/2/10	41	BN-550	843.83	718.83	656.455	0	0	0	57.685	0	4.69	0	0	0	718.83	10/2/10
BN10383516	10/2/10	52	BN-550	603.485	478.49	133.9	0	0	0	338.025	0	6.56	0	0	0	478.485	10/2/10
BN10383517	10/2/10	58	BN-550	812.96	687.96	452.765	0	0	1	164.01	1.55	68.635	0	0	0	687.96	10/2/10
BN10383518	10/2/10	51	BN-550	768.86	643.86	379.91	0	0	0.5	213.53	0	49.92	0	0	0	643.86	10/2/10
BN10383519	10/2/10	49	BN-550	865.88	740.88	723.71	0	0	0	11.55	0	5.62	0	0	0	740.88	10/2/10
BN10383521	10/2/10	54	BN-550	921.005	796.01	660.23	0	0	0	76.03	0	59.745	0	0	0	796.005	10/2/10
BN10383522	10/2/10	56	BN-550	768.86	643.86	331.155	0	0	0	307.085	0	5.62	0	0	0	643.86	10/2/10
BN10383523	10/2/10	48	BN-550	793.115	668.12	594.145	0	0	0	70.21	0	3.76	0	0	0	668.115	10/2/10
BN10383524	10/2/10	59	BN-550	837.215	712.22	517.72	0	0	0	147.28	3.1	44.115	0	0	0	712.215	10/2/10
BN10383525	10/2/10	57	BN-550	685.07	560.07	201.935	0	0	6.25	348.135	0	3.75	0	0	0	560.07	10/2/10
BN10383526	10/2/10	52	BN-550	574.82	449.82	130	0	0	0	315.13	0	4.69	0	0	0	449.82	10/2/10
BN10383528	10/4/10	58	BN-550	784.295	659.3	526.89	0	0	0	81.905	0	50.5	0	0	0	659.295	10/4/10
BN10383529	10/4/10	52	BN-550	954.08	829.08	746.88	0	0	4.16	29.195	0	48.845	0	0	0	829.08	10/4/10
BN10383530	10/4/10	48	BN-550	777.68	652.68	555.59	0	0	0	42.55	1.55	52.99	0	0	0	652.68	10/4/10
BN10383531	10/4/10	54	BN-550	870.29	745.29	695.385	0	0	0	8.46	12.43	29.015	0	0	0	745.29	10/4/10
BN10383532	10/4/10	49	BN-550	667.43	542.43	397.94	0	0	0	78.24	1.55	64.7	0	0	0	542.43	10/4/10
BN10383533	10/4/10	48	BN-550	762.245	637.25	613.145	0	0	0	11.64	3.11	9.35	0	0	0	637.245	10/4/10
BN10383534	10/4/10	42	BN-550	843.83	718.83	661.04	0	0	0	54.98	0	2.81	0	0	0	718.83	10/4/10
BN10383535	10/4/10	55	BN-550	929.825	804.83	784.755	0	0	4.16	3.88	0.78	11.25	0	0	0	804.825	10/4/10
BN10383536	10/3/10	56	BN-550	991.565	866.57	695.685	0	0	0	60.188	0	110.693	0	0	0	866.566	10/3/10
BN10383537	10/4/10	53	BN-550	980.54	855.54	723.35	0	0	0	47.006	0	85.186	0	0	0	855.542	10/4/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10383538	10/3/10	46	BN-550	912.185	787.19	733.995	0	0	0	5.41	0	47.78	0	0	0	787.185	10/3/10
BN10383539	10/3/10	58	BN-550	868.085	743.09	597.275	0	0	0	68.285	0	77.525	0	0	0	743.085	10/3/10
BN10383720	10/5/10	59	BN-550	976.13	851.13	741.91	0	0	0.42	93.82	0	14.98	0	0	0	851.13	10/5/10
BN10383721	10/5/10	56	BN-550	861.47	736.47	686.635	0	0	0	32.035	0	17.8	0	0	0	736.47	10/5/10
BN10383722	10/5/10	55	BN-550	755.63	630.63	446.06	0	0	0	112.145	6.2	66.225	0	0	0	630.63	10/5/10
BN10383723	10/5/10	63	BN-550	806.345	681.35	525.32	0	4.68	43.38	23.843	0	84.123	0	0	0	681.346	10/5/10
BN10383724	10/5/10	59	BN-550	832.805	707.81	517.245	0	0	0	154.57	6.21	29.78	0	0	0	707.805	10/5/10
BN10383725	10/5/10	47	BN-550	921.005	796.01	784.135	0	0	0.42	3.34	1.55	6.56	0	0	0	796.005	10/5/10
BN10383726	10/5/10	45	BN-550	949.67	824.67	803.75	0	0	0	8.46	3.1	9.36	0	0	0	824.67	10/5/10
BN10383727	10/5/10	48	BN-550	976.13	851.13	772.32	0	0	0	71.31	0	7.5	0	0	0	851.13	10/5/10
BN10383728	10/5/10	59	BN-550	854.855	729.86	635.31	0	0	49.43	6.14	1.55	37.425	0	0	0	729.855	10/5/10
BN10383729	10/5/10	46	BN-550	903.365	778.37	763.475	0	0	0	5.22	3.11	6.56	0	0	0	778.365	10/5/10
BN10383730	10/5/10	40	BN-550	932.03	807.03	798.64	0	0	2.52	3.06	0	2.81	0	0	0	807.03	10/5/10
BN10383731	10/5/10	58	BN-550	916.595	791.6	664.405	0	0	0	76.62	0	50.57	0	0	0	791.595	10/5/10
BN10383855	10/6/10	53	BN-550	700.505	575.51	441.345	0	0	75.495	1.67	0	56.995	0	0	0	575.505	10/6/10
BN10383856	10/6/10	49	BN-550	989.36	864.36	811.995	0	0	0	40.165	0	12.2	0	0	0	864.36	10/6/10
BN10383857	10/6/10	57	BN-550	828.395	703.4	576.57	0	0	21.81	92.535	3.11	9.37	0	0	0	703.395	10/6/10
BN10383858	10/6/10	56	BN-550	797.525	672.53	584.43	0	0	30.39	42.715	0	14.99	0	0	0	672.525	10/6/10
BN10383859	10/6/10	49	BN-550	978.335	853.34	419.855	0	360.13	24.59	45.95	0	2.81	0	0	0	853.335	10/6/10
BN10383860	10/5/10	63	BN-550	594.665	469.67	290.45	0	0	38.405	80.43	0	60.38	0	0	0	469.665	10/5/10
BN10383861	10/6/10	55	BN-550	907.775	782.78	634.12	0	0	0	141.165	0	7.49	0	0	0	782.775	10/6/10
BN10383862	10/6/10	52	BN-550	984.95	859.95	764.205	0	0	2.08	78.385	3.1	12.18	0	0	0	859.95	10/6/10
BN10383863	10/6/10	53	BN-550	704.915	579.92	338.99	0	0	6.04	223.345	3.11	8.43	0	0	0	579.915	10/6/10
BN10383864	10/6/10	55	BN-550	890.135	765.14	751.895	0	0	2	2.81	0	8.43	0	0	0	765.135	10/6/10
BN10383865	10/6/10	56	BN-550	799.73	674.73	451.735	0	0	3.04	100.975	10.88	108.1	0	0	0	674.73	10/6/10
BN10383866	10/6/10	53	BN-550	973.925	848.93	774.87	0	0	4.04	56.895	0	13.12	0	0	0	848.925	10/6/10
BN10383868	10/7/10	58	BN-550	861.47	736.47	541.115	0	0	0	189.125	1.55	4.68	0	0	0	736.47	10/7/10
BN10383869	10/7/10	55	BN-550	724.76	599.76	311.015	0	0	0	286.085	0.78	1.88	0	0	0	599.76	10/7/10
BN10383870	10/7/10	54	BN-550	894.545	769.55	585.23	0	0	0	144.245	0	40.07	0	0	0	769.545	10/7/10
BN10383871	10/7/10	53	BN-550	984.95	859.95	674.09	0	0	0	104.14	3.11	78.61	0	0	0	859.95	10/7/10
BN10383872	10/7/10	51	BN-550	916.595	791.6	766.685	0	0	0	9.01	4.65	11.25	0	0	0	791.595	10/7/10
BN10383873	10/7/10	51	BN-550	967.31	842.31	717.52	0	0	0	114.81	1.55	8.43	0	0	0	842.31	10/7/10
BN10383874	10/7/10	59	BN-550	914.39	789.39	670.83	0	0	0	103.32	7.76	7.48	0	0	0	789.39	10/7/10
BN10383875	10/7/10	47	BN-550	929.825	804.83	705.05	0	0	2	91.215	0	6.56	0	0	0	804.825	10/7/10
BN10383876	10/7/10	51	BN-550	947.465	822.47	723.34	0	0	5.04	83.795	4.66	5.63	0	0	0	822.465	10/7/10
BN10383877	10/7/10	54	BN-550	947.465	822.47	738.245	0	0	0	71.43	1.55	11.24	0	0	0	822.465	10/7/10
BN10383878	10/7/10	50	BN-550	989.36	864.36	751.25	0	0	5	61.725	0	46.385	0	0	0	864.36	10/7/10
BN10383879	10/7/10	52	BN-550	954.08	829.08	494.7	0	0	0	0	3.1	331.28	0	0	0	829.08	10/7/10
BN10384031	10/8/10	57	BN-550	874.7	749.7	433.81	0	0	0	152.195	3.11	160.585	0	0	0	749.7	10/8/10
BN10384032	10/8/10	53	BN-550	846.035	721.04	527	0	0	0	92.083	3.11	98.843	0	0	0	721.036	10/8/10
BN10384033	10/8/10	51	BN-550	945.26	820.26	809.01	0	0	0	0	0	11.25	0	0	0	820.26	10/8/10
BN10384034	10/8/10	59	BN-550	978.335	853.34	820.605	0	0	0	1.8	0	30.93	0	0	0	853.335	10/8/10
BN10384035	10/9/10	52	BN-550	680.66	555.66	385.509	3.649	0	0	82.993	0	83.51	0	0	0	555.661	10/9/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10384036	10/9/10	36	BN-550	969.515	844.52	842.645	0	0	0	0	0	1.87	0	0	0	844.515	10/9/10
BN10384037	10/9/10	55	BN-550	841.625	716.63	557.716	8.365	0	0	115.64	3.11	31.795	0	0	0	716.626	10/9/10
BN10384038	10/9/10	53	BN-550	669.635	544.64	374.07	0	0	0	83.763	3.11	83.693	0	0	0	544.636	10/9/10
BN10384039	10/7/10	54	BN-550	938.645	813.65	630.975	0	0	0	2.8	0	179.87	0	0	0	813.645	10/7/10
BN10384040	10/8/10	46	BN-550	951.875	826.88	779.145	0	0	0	3.07	0	44.66	0	0	0	826.875	10/8/10
BN10384041	10/8/10	59	BN-550	784.295	659.3	394.36	0	0	0	206.148	0	58.788	0	0	0	659.296	10/8/10
BN10384042	10/8/10	47	BN-550	837.215	712.22	501.225	0	0	0	205.36	0	5.63	0	0	0	712.215	10/8/10
BN10384062	10/9/10	44	BN-550	991.565	866.57	811.65	0	0	0	51.175	0	3.74	0	0	0	866.565	10/9/10
BN10384064	10/9/10	57	BN-550	704.915	579.92	314.239	7.779	0	0	158.028	0	99.87	0	0	0	579.916	10/9/10
BN10384065	10/8/10	50	BN-550	921.005	796.01	696.45	0	0	0	33.878	3.11	62.568	0	0	0	796.006	10/8/10
BN10384066	10/8/10	56	BN-550	980.54	855.54	620.765	0	0	0	154.691	6.22	73.866	0	0	0	855.542	10/8/10
BN10384067	10/8/10	54	BN-550	945.26	820.26	692.015	0	86.56	1.13	18.168	0	22.388	0	0	0	820.261	10/8/10
BN10384068	10/7/10	39	BN-550	907.775	782.78	777.405	0	0	0	3.5	0	1.87	0	0	0	782.775	10/7/10
BN10384069	10/7/10	44	BN-550	932.03	807.03	804.46	0	0	0	0.7	0	1.87	0	0	0	807.03	10/7/10
BN10384070	10/7/10	58	BN-550	958.49	833.49	623.765	0	140.035	0	62.2	0	7.49	0	0	0	833.49	10/7/10
BN10384071	10/7/10	50	BN-550	956.285	831.29	721.12	0	0	0	107.355	0	2.81	0	0	0	831.285	10/7/10
BN10384072	10/8/10	55	BN-550	921.005	796.01	657.04	0	0	0	125.855	0	13.11	0	0	0	796.005	10/8/10
BN10384073	10/8/10	50	BN-550	982.745	857.75	818.51	0	0	0	2.8	0	36.435	0	0	0	857.745	10/8/10
BN10384074	10/8/10	56	BN-550	909.98	784.98	626.23	0	0	2.25	147.13	0	9.37	0	0	0	784.98	10/8/10
BN10384413	10/10/10	48	BN-550	989.36	864.36	768.26	0	0	4.16	84.78	1.55	5.61	0	0	0	864.36	10/10/10
BN10384414	10/10/10	41	BN-550	982.745	857.75	800.17	0	0	4.58	1.67	1.55	49.775	0	0	0	857.745	10/10/10
BN10384415	10/9/10	35	BN-550	960.695	835.7	597.48	0	229.645	0	4.21	1.55	2.81	0	0	0	835.695	10/9/10
BN10384416	10/9/10	53	BN-550	654.2	529.2	303.31	0	0	0	218.39	0	7.5	0	0	0	529.2	10/9/10
BN10384417	10/9/10	58	BN-550	612.305	487.31	156	0	4.68	0	266.045	3.11	57.47	0	0	0	487.305	10/9/10
BN10384418	10/9/10	59	BN-550	768.86	643.86	367.655	0	0	0	207.63	0	68.575	0	0	0	643.86	10/9/10
BN10384419	10/10/10	38	BN-550	940.85	815.85	810.54	0	0	0	2.5	0	2.81	0	0	0	815.85	10/10/10
BN10384420	10/10/10	51	BN-550	976.13	851.13	783.63	0.78	0	2	1.67	3.1	59.95	0	0	0	851.13	10/10/10
BN10384421	10/9/10	43	BN-550	960.695	835.7	767.015	0	0	0	1.76	3.11	63.81	0	0	0	835.695	10/9/10
BN10384422	10/9/10	51	BN-550	938.645	813.65	704.18	0	0	0.42	84.995	1.55	22.5	0	0	0	813.645	10/9/10
BN10384423	10/9/10	52	BN-550	954.08	829.08	750.28	0	0	3	65.5	0	10.3	0	0	0	829.08	10/9/10
BN10384424	10/9/10	51	BN-550	892.34	767.34	642.495	3.358	0	0	118.427	0	3.06	0	0	0	767.34	10/9/10
BN10384497	10/12/10	57	BN-550	984.95	859.95	729.8	0	0	0	125.47	0	4.68	0	0	0	859.95	10/12/10
BN10384498	10/11/10	60	BN-550	810.755	685.76	468.985	0	0	0	157.53	0	59.24	0	0	0	685.755	10/11/10
BN10384499	10/11/10	58	BN-550	799.73	674.73	662.15	0	0	0.42	2.8	0	9.36	0	0	0	674.73	10/11/10
BN10384500	10/11/10	57	BN-550	956.285	831.29	816.015	0	0	1.47	11.93	0	1.87	0	0	0	831.285	10/11/10
BN10384501	10/11/10	55	BN-550	956.285	831.29	812.915	0	0	1.05	7.02	0	10.3	0	0	0	831.285	10/11/10
BN10384502	10/11/10	56	BN-550	958.49	833.49	813.88	0	0	0.84	6.59	0	12.18	0	0	0	833.49	10/11/10
BN10384503	10/11/10	55	BN-550	843.83	718.83	393.82	0	0	0	253.775	0	71.235	0	0	0	718.83	10/11/10
BN10384504	10/11/10	60	BN-550	907.775	782.78	764.975	0	0	0	0	0	17.8	0	0	0	782.775	10/11/10
BN10384505	10/11/10	55	BN-550	797.525	672.53	435.92	0	0	1.47	229.515	0	5.62	0	0	0	672.525	10/11/10
BN10384506	10/11/10	56	BN-550	786.5	661.5	535.22	0	0	0.84	70.97	0	54.47	0	0	0	661.5	10/11/10
BN10384507	10/11/10	54	BN-550	742.4	617.4	104	0	0	0	509.65	0	3.75	0	0	0	617.4	10/11/10
BN10384508	10/11/10	54	BN-550	709.325	584.33	317.52	0	0	0	142.575	0	124.23	0	0	0	584.325	10/11/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10384613	10/12/10	56	BN-550	938.645	813.65	554.865	0	0	0	241.91	0	16.87	0	0	0	813.645	10/12/10
BN10384614	10/12/10	54	BN-550	960.695	835.7	657.04	0	0	1.68	166.825	0.78	9.37	0	0	0	835.695	10/12/10
BN10384615	10/12/10	39	BN-550	916.595	791.6	777.885	0	0	0	4.34	0	9.37	0	0	0	791.595	10/12/10
BN10384616	10/12/10	50	BN-550	916.595	791.6	584.7	0	0	0	191.665	1.17	14.06	0	0	0	791.595	10/12/10
BN10384617	10/12/10	54	BN-550	962.9	837.9	757.2	0	0	2.1	29.91	0.39	48.3	0	0	0	837.9	10/12/10
BN10384618	10/13/10	45	BN-550	766.655	641.66	538.465	0	0	0.84	2.91	0	99.44	0	0	0	641.655	10/13/10
BN10384619	10/12/10	43	BN-550	949.67	824.67	822.89	0	0	0.84	0	0	0.94	0	0	0	824.67	10/12/10
BN10384620	10/13/10	61	BN-550	843.83	718.83	614.665	0	0	0	3.88	0	100.285	0	0	0	718.83	10/13/10
BN10384621	10/12/10	49	BN-550	987.155	862.16	859.965	0	0	0.42	0.83	0	0.94	0	0	0	862.155	10/12/10
BN10384622	10/13/10	47	BN-550	647.585	522.59	240.25	0	0	0	1.94	0	280.395	0	0	0	522.585	10/13/10
BN10384623	10/13/10	56	BN-550	839.42	714.42	584.235	0	0	0	37.035	0.39	92.76	0	0	0	714.42	10/13/10
BN10384624	10/13/10	53	BN-550	757.835	632.84	443.475	0	0	0	1.94	1.55	185.87	0	0	0	632.835	10/13/10
BN10384626	10/10/10	59	BN-550	660.815	535.82	273.175	0	0	0	7.62	3.1	251.92	0	0	0	535.815	10/10/10
BN10384627	10/10/10	53	BN-550	612.305	487.31	308.415	0	0	0	7.08	0	171.81	0	0	0	487.305	10/10/10
BN10384628	10/10/10	51	BN-550	601.28	476.28	265.335	0	0	0	10.12	3.11	197.715	0	0	0	476.28	10/10/10
BN10384629	10/10/10	54	BN-550	691.685	566.69	386.3	0	0	0	7.76	1.55	171.075	0	0	0	566.685	10/10/10
BN10384630	10/10/10	48	BN-550	852.65	727.65	605.31	0	0	0	117.66	0	4.68	0	0	0	727.65	10/10/10
BN10384631	10/11/10	45	BN-550	907.775	782.78	770.435	0	0	0	4.85	0	7.49	0	0	0	782.775	10/11/10
BN10384632	10/10/10	55	BN-550	837.215	712.22	554.225	0	0	0	4.65	0	153.34	0	0	0	712.215	10/10/10
BN10384633	10/10/10	54	BN-550	647.585	522.59	304.565	0	0	0	6.3	3.89	207.83	0	0	0	522.585	10/10/10
BN10384634	10/10/10	52	BN-550	907.775	782.78	666.875	0	0	2.08	40.15	0.78	72.89	0	0	0	782.775	10/10/10
BN10384636	10/10/10	58	BN-550	702.71	577.71	320.075	0	0	0	48.44	4.66	204.535	0	0	0	577.71	10/10/10
BN10384637	10/10/10	46	BN-550	585.845	460.85	277.675	0	0	0	152.825	0	30.345	0	0	0	460.845	10/10/10
BN10384834	10/17/10	54	BN-550	760.04	635.04	389.585	0	0	0	176.505	0	68.95	0	0	0	635.04	10/17/10
BN10384836	10/17/10	58	BN-550	799.73	674.73	481.91	0	0	0	186.57	1.55	4.7	0	0	0	674.73	10/17/10
BN10384837	10/17/10	53	BN-550	861.47	736.47	531.07	0	0	0	203.53	0	1.87	0	0	0	736.47	10/17/10
BN10384838	10/17/10	56	BN-550	828.395	703.4	611.69	0	0	0	83.595	1.55	6.56	0	0	0	703.395	10/17/10
BN10384839	10/17/10	55	BN-550	777.68	652.68	507.885	0	0	0	0	0	144.795	0	0	0	652.68	10/17/10
BN10384840	10/16/10	57	BN-550	819.575	694.58	434.75	0	0	0	254.205	0	5.62	0	0	0	694.575	10/16/10
BN10384841	10/17/10	53	BN-550	823.985	698.99	512.14	0	0	0	182.165	0	4.68	0	0	0	698.985	10/17/10
BN10384842	10/16/10	57	BN-550	894.545	769.55	709.285	0	0	0	4.74	0	55.52	0	0	0	769.545	10/16/10
BN10384843	10/17/10	57	BN-550	777.68	652.68	510.415	15.62	0	0	52.45	0	74.195	0	0	0	652.68	10/17/10
BN10384844	10/17/10	55	BN-550	777.68	652.68	400.275	0	0	0	249.595	0	2.81	0	0	0	652.68	10/17/10
BN10384845	10/17/10	55	BN-550	768.86	643.86	457.465	0	0	1.42	179.355	0	5.62	0	0	0	643.86	10/17/10
BN10384846	10/15/10	64	BN-550	632.15	507.15	133.12	0	0	0	142.405	1.55	230.075	0	0	0	507.15	10/15/10
BN10384847	10/16/10	55	BN-550	658.61	533.61	351.84	0	0	0	138.475	1.55	41.745	0	0	0	533.61	10/16/10
BN10384848	10/16/10	41	BN-550	916.595	791.6	773.125	0	0.94	0	4.74	1.55	11.24	0	0	0	791.595	10/16/10
BN10384849	10/16/10	59	BN-550	846.035	721.04	295.375	0	0	0	417.24	0	8.42	0	0	0	721.035	10/16/10
BN10384850	10/15/10	59	BN-550	868.085	743.09	423.4	0	0	0	308.775	1.55	9.36	0	0	0	743.085	10/15/10
BN10384851	10/16/10	41	BN-550	943.055	818.06	761.205	0	0	0	46.87	1.55	8.43	0	0	0	818.055	10/16/10
BN10384852	10/16/10	32	BN-550	976.13	851.13	825.52	0	22.9	0	0.83	0	1.88	0	0	0	851.13	10/16/10
BN10384853	10/16/10	45	BN-550	704.915	579.92	577.105	0	0	0	0	0	2.81	0	0	0	579.915	10/16/10
BN10384854	10/15/10	54	BN-550	912.185	787.19	716.2	0	0	0	11.1	0	59.885	0	0	0	787.185	10/15/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10384855	10/16/10	53	BN-550	982.745	857.75	553.7	0	0	1.26	301.845	0	0.94	0	0	0	857.745	10/16/10
BN10384856	10/15/10	62	BN-550	830.6	705.6	435.98	0	0	0	259.32	0	10.3	0	0	0	705.6	10/15/10
BN10384857	10/15/10	49	BN-550	812.96	687.96	621.265	0	0	0	0	0	66.695	0	0	0	687.96	10/15/10
BN10384922	10/14/10	59	BN-550	976.13	851.13	779.805	0	0	0	4.85	1.55	64.925	0	0	0	851.13	10/14/10
BN10384923	10/13/10	51	BN-550	980.54	855.54	827.18	0	0	0	4.04	4.65	19.67	0	0	0	855.54	10/13/10
BN10384924	10/14/10	52	BN-550	976.13	851.13	799.715	0	0	0.84	1.4	0	49.175	0	0	0	851.13	10/14/10
BN10384925	10/15/10	55	BN-550	883.52	758.52	657.32	0	0	12	7.21	0	81.99	0	0	0	758.52	10/15/10
BN10384926	10/14/10	57	BN-550	938.645	813.65	779.205	0	0	0	4.85	0	29.59	0	0	0	813.645	10/14/10
BN10384927	10/14/10	49	BN-550	956.285	831.29	768.03	0	0	0	1.66	0	61.595	0	0	0	831.285	10/14/10
BN10384928	10/14/10	49	BN-550	982.745	857.75	772.995	0	0	0	65.74	7.77	11.24	0	0	0	857.745	10/14/10
BN10384929	10/14/10	50	BN-550	962.9	837.9	753.79	0	0	0	78.49	0	5.62	0	0	0	837.9	10/14/10
BN10384930	10/14/10	49	BN-550	954.08	829.08	702.96	0	0	0	3.61	0	122.51	0	0	0	829.08	10/14/10
BN10384931	10/14/10	38	BN-550	954.08	829.08	700.395	0	0	2.08	122.245	1.55	2.81	0	0	0	829.08	10/14/10
BN10384932	10/15/10	54	BN-550	887.93	762.93	644.09	0	0	0	3.88	0	114.96	0	0	0	762.93	10/15/10
BN10384933	10/15/10	50	BN-550	976.13	851.13	836.09	0	0	0	1.94	0	13.1	0	0	0	851.13	10/15/10
BN10385185	10/18/10	58	BN-550	925.415	800.42	652.64	0	0	0	73.565	0	74.21	0	0	0	800.415	10/18/10
BN10385186	10/18/10	52	BN-550	799.73	674.73	594.645	0	0	0	14.61	1.55	63.925	0	0	0	674.73	10/18/10
BN10385187	10/18/10	54	BN-550	876.905	751.91	658.695	0	0	0	82.43	0	10.78	0	0	0	751.905	10/18/10
BN10385188	10/18/10	55	BN-550	892.34	767.34	740.99	0	0	0	11.35	0	15	0	0	0	767.34	10/18/10
BN10385189	10/17/10	57	BN-550	797.525	672.53	649.785	0	0	0	7.76	0	14.98	0	0	0	672.525	10/17/10
BN10385190	10/18/10	54	BN-550	843.83	718.83	668.545	0	0	0	7.76	1.55	40.975	0	0	0	718.83	10/18/10
BN10385191	10/18/10	53	BN-550	698.3	573.3	314.98	0	0	0	258.32	0	0	0	0	0	573.3	10/18/10
BN10385192	10/18/10	56	BN-550	775.475	650.48	459.4	0	0	0	71.32	0	119.755	0	0	0	650.475	10/18/10
BN10385193	10/17/10	62	BN-550	751.22	626.22	510.535	0	0	0	13.58	0	102.105	0	0	0	626.22	10/17/10
BN10385194	10/17/10	52	BN-550	846.035	721.04	711.885	0	0	0	2.91	1.55	4.69	0	0	0	721.035	10/17/10
BN10385195	10/18/10	58	BN-550	890.135	765.14	737.565	0	0	0	11.64	0	15.93	0	0	0	765.135	10/18/10
BN10385196	10/17/10	52	BN-550	868.085	743.09	712.665	0	0	0	12.61	0	17.81	0	0	0	743.085	10/17/10
BN10385385	10/20/10	50	BN-550	788.705	663.71	543.27	0	0	0	70.28	3.1	47.055	0	0	0	663.705	10/20/10
BN10385386	10/19/10	61	BN-550	795.32	670.32	390.03	0	0	0.84	3.61	1.55	274.29	0	0	0	670.32	10/19/10
BN10385387	10/18/10	59	BN-550	793.115	668.12	541.23	0	0	0	54.27	1.55	71.065	0	0	0	668.115	10/18/10
BN10385388	10/18/10	59	BN-550	843.83	718.83	559.49	0	0	0	65.7	1.55	92.09	0	0	0	718.83	10/18/10
BN10385389	10/19/10	56	BN-550	768.86	643.86	521.865	0	0	0	119.185	0	2.81	0	0	0	643.86	10/19/10
BN10385391	10/20/10	57	BN-550	929.825	804.83	443.175	0	0	0	266.535	7.76	87.355	0	0	0	804.825	10/20/10
BN10385392	10/19/10	52	BN-550	654.2	529.2	332.79	0	0	0.42	58.77	0	137.22	0	0	0	529.2	10/19/10
BN10385393	10/19/10	50	BN-550	976.13	851.13	846.31	0	0	0	3.88	0	0.94	0	0	0	851.13	10/19/10
BN10385394	10/19/10	50	BN-550	830.6	705.6	536.64	0	0	0	156.16	1.55	11.25	0	0	0	705.6	10/19/10
BN10385395	10/18/10	54	BN-550	669.635	544.64	242.255	0	0	0.52	220.785	6.22	74.855	0	0	0	544.635	10/18/10
BN10385396	10/19/10	57	BN-550	676.25	551.25	288.585	0	0	0	188.03	0	74.635	0	0	0	551.25	10/19/10
BN10385397	10/20/10	50	BN-550	817.37	692.37	528.525	0	0	0	103.275	7.77	52.8	0	0	0	692.37	10/20/10
BN10385399	10/20/10	33	BN-550	936.44	811.44	745.345	0	0	0	57.045	1.55	7.5	0	0	0	811.44	10/20/10
BN10385400	10/21/10	48	BN-550	980.54	855.54	724.585	0	0	0	118.485	3.1	9.37	0	0	0	855.54	10/21/10
BN10385401	10/20/10	59	BN-550	916.595	791.6	292.8	0	0	0	484.735	0	14.06	0	0	0	791.595	10/20/10
BN10385402	10/20/10	55	BN-550	916.595	791.6	492.055	0	0	0	250.795	3.88	44.865	0	0	0	791.595	10/20/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10385403	10/21/10	60	BN-550	755.63	630.63	271.855	0	0	0	246.39	1.55	110.835	0	0	0	630.63	10/21/10
BN10385404	10/21/10	52	BN-550	832.805	707.81	389.64	0	0	0	189.69	0	128.475	0	0	0	707.805	10/21/10
BN10385405	10/20/10	62	BN-550	704.915	579.92	133.12	0	0	0	270.84	0	175.955	0	0	0	579.915	10/20/10
BN10385406	10/21/10	53	BN-550	704.915	579.92	310.635	0	0	0	209.51	1.55	58.22	0	0	0	579.915	10/21/10
BN10385407	10/21/10	53	BN-550	909.98	784.98	455.415	0	0	0	259.765	0	69.8	0	0	0	784.98	10/21/10
BN10385408	10/21/10	58	BN-550	726.965	601.97	275.53	0	0	0	209.9	2.33	114.205	0	0	0	601.965	10/21/10
BN10385409	10/21/10	55	BN-550	868.085	743.09	477.715	0	0	0	216.92	0	48.45	0	0	0	743.085	10/21/10
BN10385410	10/21/10	54	BN-550	735.785	610.79	291.19	0	0	0	249.215	1.55	68.83	0	0	0	610.785	10/21/10
BN10385589	10/22/10	62	BN-550	821.78	696.78	298.245	0	0	0	299.28	1.55	97.705	0	0	0	696.78	10/22/10
BN10385590	10/22/10	58	BN-550	660.815	535.82	130	0	0	0	347.44	4.66	53.715	0	0	0	535.815	10/22/10
BN10385591	10/22/10	59	BN-550	614.51	489.51	130	0	0	0	206.095	3.11	150.305	0	0	0	489.51	10/22/10
BN10385592	10/22/10	58	BN-550	852.65	727.65	486.47	0	0	0	228.6	3.89	8.69	0	0	0	727.65	10/22/10
BN10385593	10/22/10	57	BN-550	640.97	515.97	156	0	0	1	161.975	7.77	189.225	0	0	0	515.97	10/22/10
BN10385594	10/22/10	60	BN-550	627.74	502.74	156	0	0	0	180.545	12.43	153.765	0	0	0	502.74	10/22/10
BN10385595	10/22/10	52	BN-550	782.09	657.09	415.115	0	0	0	174.03	2.33	65.615	0	0	0	657.09	10/22/10
BN10385597	10/22/10	57	BN-550	951.875	826.88	599.01	0	0	0	160.72	1.55	65.595	0	0	0	826.875	10/22/10
BN10385598	10/22/10	57	BN-550	610.1	485.1	130	0	0	0	13.58	15.54	325.98	0	0	0	485.1	10/22/10
BN10385599	10/22/10	53	BN-550	588.05	463.05	182	0	0	0	16.58	3.11	261.36	0	0	0	463.05	10/22/10
BN10385600	10/22/10	51	BN-550	956.285	831.29	695.4	0	0	0	11.56	3.11	121.215	0	0	0	831.285	10/22/10
BN10385601	10/22/10	57	BN-550	837.215	712.22	497.755	0	0	0	111.36	1.55	101.55	0	0	0	712.215	10/22/10
BN10385602	10/22/10	54	BN-550	887.93	762.93	623.215	0	0	0	44.575	4.66	90.48	0	0	0	762.93	10/22/10
BN10385603	10/22/10	58	BN-550	788.705	663.71	414.7	0	0	1.04	180.38	3.9	63.685	0	0	0	663.705	10/22/10
BN10385604	10/23/10	39	BN-550	927.62	802.62	800.75	0	0	0	0	0	1.87	0	0	0	802.62	10/23/10
BN10385605	10/22/10	61	BN-550	914.39	789.39	526.53	0	0	0	142	0	120.86	0	0	0	789.39	10/22/10
BN10385606	10/23/10	46	BN-550	909.98	784.98	399.795	0	0	314.065	60.21	1.55	9.36	0	0	0	784.98	10/23/10
BN10385607	10/23/10	60	BN-550	976.13	851.13	772.64	0	0	0	8.35	3.11	67.03	0	0	0	851.13	10/23/10
BN10385608	10/23/10	47	BN-550	962.9	837.9	828.81	0	0	0	7.68	0	1.41	0	0	0	837.9	10/23/10
BN10385609	10/23/10	49	BN-550	965.105	840.11	771.385	0	0	0	68.72	0	0	0	0	0	840.105	10/23/10
BN10385610	10/23/10	49	BN-550	945.26	820.26	811.77	0	0	0	4.75	0	3.74	0	0	0	820.26	10/23/10
BN10385611	10/23/10	56	BN-550	898.955	773.96	732.085	0	0	0	7.8	0	34.07	0	0	0	773.955	10/23/10
BN10385612	10/23/10	40	BN-550	960.695	835.7	831.015	0	0	0	3.74	0	0.94	0	0	0	835.695	10/23/10
BN10385613	10/23/10	57	BN-550	881.315	756.32	623.17	0	0	0	108.995	0	24.15	0	0	0	756.315	10/23/10
BN10386018	10/24/10	54	BN-550	894.545	769.55	624.83	0	0	0	115.595	0	29.12	0	0	0	769.545	10/24/10
BN10386019	10/24/10	45	BN-550	989.36	864.36	837.95	0	0	0	5.82	4.66	15.93	0	0	0	864.36	10/24/10
BN10386020	10/24/10	53	BN-550	841.625	716.63	610.495	0	0	0	44.265	0	61.865	0	0	0	716.625	10/24/10
BN10386021	10/23/10	56	BN-550	881.315	756.32	640.36	0	0	0	110.335	0	5.62	0	0	0	756.315	10/23/10
BN10386022	10/24/10	50	BN-550	971.72	846.72	735.78	0	0	0	33.87	0	77.07	0	0	0	846.72	10/24/10
BN10386023	10/23/10	50	BN-550	980.54	855.54	843.4	0	0	0	3.51	0	8.63	0	0	0	855.54	10/23/10
BN10386024	10/24/10	56	BN-550	795.32	670.32	438.175	0	0	0	181.35	0	50.795	0	0	0	670.32	10/24/10
BN10386025	10/24/10	37	BN-550	929.825	804.83	796.365	0	0	0	0.97	0	7.49	0	0	0	804.825	10/24/10
BN10386026	10/24/10	60	BN-550	830.6	705.6	510.635	0	0	0	155.38	0	39.585	0	0	0	705.6	10/24/10
BN10386027	10/24/10	46	BN-550	971.72	846.72	830.63	0	0	0	4.85	0	11.24	0	0	0	846.72	10/24/10
BN10386028	10/24/10	53	BN-550	989.36	864.36	842.53	0	0	0	8.73	0	13.1	0	0	0	864.36	10/24/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10386029	10/24/10	53	BN-550	965.105	840.11	721.83	0	0	0	96.725	0	21.55	0	0	0	840.105	10/24/10
BN10386172	10/26/10	54	BN-550	940.85	815.85	787.65	0	0	1.04	25.28	0	1.88	0	0	0	815.85	10/26/10
BN10386173	10/25/10	37	BN-550	784.295	659.3	654.815	0	0	0	1.67	0	2.81	0	0	0	659.295	10/25/10
BN10386174	10/25/10	34	BN-550	962.9	837.9	833.57	0	0	0	4.33	0	0	0	0	0	837.9	10/25/10
BN10386175	10/25/10	46	BN-550	980.54	855.54	848.16	0	0	0	3.63	0	3.75	0	0	0	855.54	10/25/10
BN10386176	10/26/10	53	BN-550	960.695	835.7	749.18	0	0	0	2.91	2.33	81.275	0	0	0	835.695	10/26/10
BN10386177	10/26/10	51	BN-550	943.055	818.06	592.545	0	0	0	214.28	0	11.23	0	0	0	818.055	10/26/10
BN10386178	10/26/10	53	BN-550	782.09	657.09	399.65	0	0	181.46	3.82	0	72.16	0	0	0	657.09	10/26/10
BN10386179	10/26/10	52	BN-550	962.9	837.9	782.97	0	0	0	44.63	0	10.3	0	0	0	837.9	10/26/10
BN10386180	10/26/10	56	BN-550	973.925	848.93	674.93	0	0	2.08	99.84	0	72.075	0	0	0	848.925	10/26/10
BN10386181	10/26/10	53	BN-550	854.855	729.86	628.495	0	0	0	86.38	0	14.98	0	0	0	729.855	10/26/10
BN10386182	10/26/10	53	BN-550	980.54	855.54	677.985	0	0	0	116.74	0.78	60.035	0	0	0	855.54	10/26/10
BN10386183	10/25/10	45	BN-550	918.8	793.8	788.12	0	0	0	1.94	0	3.74	0	0	0	793.8	10/25/10
BN10386276	10/27/10	46	BN-550	916.595	791.6	747.875	0	0	0	3.39	0	40.33	0	0	0	791.595	10/27/10
BN10386277	10/27/10	55	BN-550	907.775	782.78	639.125	0	0	0	126.51	3.1	14.04	0	0	0	782.775	10/27/10
BN10386278	10/27/10	48	BN-550	967.31	842.31	789.59	0	0	0	3.88	0	48.84	0	0	0	842.31	10/27/10
BN10386279	10/27/10	56	BN-550	932.03	807.03	766.545	0	0	0	28.625	1.55	10.31	0	0	0	807.03	10/27/10
BN10386280	10/26/10	50	BN-550	687.275	562.28	374.855	0	0	0	135.56	9.33	42.53	0	0	0	562.275	10/26/10
BN10386281	10/27/10	46	BN-550	890.135	765.14	603.41	0	0	154.205	0.97	0	6.55	0	0	0	765.135	10/27/10
BN10386282	10/26/10	52	BN-550	885.725	760.73	564.345	0	0	154.06	1.94	1.55	38.83	0	0	0	760.725	10/26/10
BN10386283	10/26/10	45	BN-550	830.6	705.6	639.27	0	0	0	2.91	1.55	61.87	0	0	0	705.6	10/26/10
BN10386284	10/26/10	51	BN-550	909.98	784.98	507.845	0	0	172.785	4.85	4.66	94.84	0	0	0	784.98	10/26/10
BN10386285	10/26/10	53	BN-550	806.345	681.35	214.76	0	0	453.015	3.6	1.55	8.42	0	0	0	681.345	10/26/10
BN10386286	10/26/10	51	BN-550	909.98	784.98	423.42	0	0	351.39	3.61	0	6.56	0	0	0	784.98	10/26/10
BN10386287	10/26/10	53	BN-550	786.5	661.5	399.025	0	0	247.875	4.31	0	10.29	0	0	0	661.5	10/26/10
BN10386368	10/27/10	56	BN-550	969.515	844.52	687.495	0	0	0	66.975	3.11	86.935	0	0	0	844.515	10/27/10
BN10386369	10/28/10	50	BN-550	912.185	787.19	701.71	0	0	2.08	72.155	0	11.24	0	0	0	787.185	10/28/10
BN10386370	10/28/10	51	BN-550	989.36	864.36	731.325	0	0	2.08	5.14	1.55	124.265	0	0	0	864.36	10/28/10
BN10386371	11/1/10	33	BN-550	740.195	615.2	602.945	0	0	0	1.94	0	10.31	0	0	0	615.195	11/1/10
BN10386372	10/28/10	37	BN-550	742.4	617.4	601.39	0	0	0	6.65	0	9.36	0	0	0	617.4	10/28/10
BN10386373	10/28/10	48	BN-550	925.415	800.42	795.725	0	0	2.08	1.67	0	0.94	0	0	0	800.415	10/28/10
BN10386374	10/27/10	42	BN-550	901.16	776.16	712.52	0	0	0	0.97	3.11	59.56	0	0	0	776.16	10/27/10
BN10386375	10/28/10	61	BN-550	863.675	738.68	450.935	0	0	0	139.14	0	148.6	0	0	0	738.675	10/27/10
BN10386376	10/27/10	43	BN-550	943.055	818.06	810.655	0	0	0	0.83	0	6.57	0	0	0	818.055	10/27/10
BN10386377	10/28/10	50	BN-550	828.395	703.4	638.205	0	0	2.08	9.58	1.55	51.98	0	0	0	703.395	10/28/10
BN10386378	10/28/10	50	BN-550	841.625	716.63	547.15	0	4.68	6.25	62.035	1.55	94.96	0	0	0	716.625	10/28/10
BN10386379	10/28/10	54	BN-550	898.955	773.96	541.385	0	0	0	9.16	6.21	217.2	0	0	0	773.955	10/28/10
BN10386619	11/5/10	52	BN-550	870.29	745.29	626.47	0	0	2.08	67.905	4.66	44.175	0	0	0	745.29	11/5/10
BN10386620	11/4/10	41	BN-550	987.155	862.16	854.995	0	0	0	3.34	0	3.82	0	0	0	862.155	11/4/10
BN10386621	11/4/10	43	BN-550	837.215	712.22	698.475	0	0	0	0	1.55	12.19	0	0	0	712.215	11/4/10
BN10386622	11/4/10	39	BN-550	976.13	851.13	794.94	0	0	0	53.38	0	2.81	0	0	0	851.13	11/4/10
BN10386623	11/4/10	46	BN-550	746.81	621.81	419.35	0	0	0	118.06	0	84.4	0	0	0	621.81	11/4/10
BN10386624	11/7/10	51	BN-550	923.21	798.21	742.3	0	0	0	47.16	0.78	7.97	0	0	0	798.21	11/7/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10386625	11/7/10	41	BN-550	945.26	820.26	800.57	0	0	0.42	8.33	1.56	9.38	0	0	0	820.26	11/7/10
BN10386626	11/6/10	43	BN-550	960.695	835.7	824.355	0	0	0	3.06	0.78	7.5	0	0	0	835.695	11/6/10
BN10386627	11/6/10	54	BN-550	965.105	840.11	781.15	0	0	0	9.18	4.66	45.115	0	0	0	840.105	11/6/10
BN10386628	11/5/10	51	BN-550	938.645	813.65	734.005	0	0	0	2.91	3.1	73.63	0	0	0	813.645	11/5/10
BN10386629	11/7/10	54	BN-550	929.825	804.83	789.375	0	0	0	7.02	0	8.43	0	0	0	804.825	11/7/10
BN10386630	11/5/10	59	BN-550	835.01	710.01	428.58	0	0	0	47.355	4.66	229.415	0	0	0	710.01	11/5/10
BN10386804	11/7/10	38	BN-550	744.605	619.61	532.06	0	0	4	3.06	0	80.485	0	0	0	619.605	11/7/10
BN10386805	11/8/10	45	BN-550	839.42	714.42	702.19	0	0	6	0	1.55	4.68	0	0	0	714.42	11/8/10
BN10386806	11/8/10	55	BN-550	885.725	760.73	658.53	0.78	0	0	44.37	3.89	53.155	0	0	0	760.725	11/8/10
BN10386807	11/8/10	50	BN-550	932.03	807.03	701.5	0	0	4	31.345	0	70.185	0	0	0	807.03	11/8/10
BN10386808	11/12/10	56	BN-550	835.01	710.01	517.975	0.78	0	0	10.37	6.99	173.895	0	0	0	710.01	11/12/10
BN10386809	11/12/10	55	BN-550	828.395	703.4	523.535	3.9	0	2	89.48	3.89	80.59	0	0	0	703.395	11/12/10
BN10386810	11/12/10	56	BN-550	828.395	703.4	569.495	0	0	0.84	11.19	13.21	108.66	0	0	0	703.395	11/12/10
BN10386811	11/12/10	59	BN-550	912.185	787.19	638.695	3.12	0	1.04	27.865	3.88	112.585	0	0	0	787.185	11/12/10
BN10386812	11/7/10	42	BN-550	954.08	829.08	772.69	0	0	2	1.67	0	52.72	0	0	0	829.08	11/7/10
BN10386813	11/7/10	55	BN-550	687.275	562.28	359.005	0	0	1.26	190.76	0	11.25	0	0	0	562.275	11/7/10
BN10386814	11/7/10	54	BN-550	890.135	765.14	574.33	0	0	5	151.8	0	34.005	0	0	0	765.135	11/7/10
BN10386815	11/7/10	55	BN-550	852.65	727.65	563.005	0	0	2.1	101.295	0	61.25	0	0	0	727.65	11/7/10
BN10387127	11/12/10	52	BN-550	863.675	738.68	638.255	0	0	0	6.24	12.43	81.75	0	0	0	738.675	11/12/10
BN10387128	11/12/10	54	BN-550	971.72	846.72	526.55	0	0	303.98	11.5	0	4.69	0	0	0	846.72	11/12/10
BN10387129	11/13/10	59	BN-550	971.72	846.72	608.695	3.12	2.34	3.23	97.415	13.22	118.7	0	0	0	846.72	11/13/10
BN10387130	11/12/10	41	BN-550	987.155	862.16	815.655	6.25	2.34	0	16.06	3.11	18.74	0	0	0	862.155	11/12/10
BN10387131	11/13/10	55	BN-550	934.235	809.24	613.35	10.93	5.62	1.26	5.21	7.76	165.105	0	0	0	809.235	11/13/10
BN10387132	11/12/10	61	BN-550	901.16	776.16	518.085	3.12	7.03	1	112.91	3.1	130.915	0	0	0	776.16	11/12/10
BN10387133	11/12/10	49	BN-550	841.625	716.63	606.625	0	0	0	62.425	1.55	46.025	0	0	0	716.625	11/12/10
BN10387134	11/12/10	59	BN-550	601.28	476.28	133.9	0	0	0	158.61	7.77	176	0	0	0	476.28	11/12/10
BN10387135	11/13/10	56	BN-550	801.935	676.94	405.88	0	0	0.84	175.6	0	94.615	0	0	0	676.935	11/13/10
BN10387136	11/12/10	57	BN-550	581.435	456.44	182	3.12	0	1.68	45.795	22.53	201.31	0	0	0	456.435	11/12/10
BN10387137	11/12/10	38	BN-550	947.465	822.47	809.585	1.56	4.68	0	4.92	0.78	0.94	0	0	0	822.465	11/12/10
BN10387138	11/13/10	60	BN-550	742.4	617.4	295.885	0	0	0.84	135.905	7.76	177.01	0	0	0	617.4	11/13/10
BN10387247	11/13/10	47	BN-550	810.755	685.76	466.15	0	0	0	211.175	0	8.43	0	0	0	685.755	11/13/10
BN10387248	11/13/10	45	BN-550	971.72	846.72	803.545	0	3.28	1.68	24.155	0	14.06	0	0	0	846.72	11/13/10
BN10387249	11/13/10	58	BN-550	940.85	815.85	573.65	0	0	0	171.005	0	71.195	0	0	0	815.85	11/13/10
BN10387250	11/13/10	47	BN-550	947.465	822.47	772.375	0	4.68	3.78	8.08	2.33	31.22	0	0	0	822.465	11/13/10
BN10387251	11/13/10	55	BN-550	760.04	635.04	310.305	0	0	0.42	321.505	0	2.81	0	0	0	635.04	11/13/10
BN10387252	11/13/10	51	BN-550	861.47	736.47	575.46	0	0	0	156.33	0	4.68	0	0	0	736.47	11/13/10
BN10387253	11/13/10	50	BN-550	962.9	837.9	726.365	0	0	0	105.925	0	5.61	0	0	0	837.9	11/13/10
BN10387254	11/13/10	58	BN-550	793.115	668.12	445.835	0.31	0	0.84	138.35	3.26	79.52	0	0	0	668.115	11/13/10
BN10387255	11/14/10	56	BN-550	989.36	864.36	766.855	0	0	0	90.015	0	7.49	0	0	0	864.36	11/14/10
BN10387256	11/14/10	49	BN-550	980.54	855.54	775.245	0	2.34	1.68	28.72	0	47.555	0	0	0	855.54	11/14/10
BN10387257	11/14/10	53	BN-550	973.925	848.93	775.95	4.68	0	0.42	19.44	0	48.435	0	0	0	848.925	11/14/10
BN10387258	11/14/10	45	BN-550	943.055	818.06	664.695	0	0	0	151.26	0	2.1	0	0	0	818.055	11/14/10
BN10387629	11/17/10	48	BN-550	969.515	844.52	765.585	0	0	0	15.83	1.88	61.22	0	0	0	844.515	11/17/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10387630	11/17/10	54	BN-550	971.72	846.72	636.75	0	12.65	0	28.395	8.55	160.375	0	0	0	846.72	11/17/10
BN10387631	11/17/10	56	BN-550	989.36	864.36	763.505	0.78	14.52	0	2.64	9.32	73.595	0	0	0	864.36	11/17/10
BN10387632	11/15/10	41	BN-550	916.595	791.6	765.805	0	9.37	2	6.39	0	8.03	0	0	0	791.595	11/15/10
BN10387633	11/14/10	43	BN-550	740.195	615.2	500.34	0	0	0	81.505	0	33.35	0	0	0	615.195	11/14/10
BN10387635	11/15/10	57	BN-550	711.53	586.53	223	0	0	0	338.225	0	25.305	0	0	0	586.53	11/15/10
BN10387636	11/17/10	52	BN-550	870.29	745.29	570.085	0	0	1	85.293	0	88.913	0	0	0	745.291	11/17/10
BN10387637	11/15/10	39	BN-550	909.98	784.98	758.68	1.03	1.87	1	6.94	0	15.46	0	0	0	784.98	11/15/10
BN10387638	11/15/10	41	BN-550	956.285	831.29	806.165	0	0	0	25.12	0	0	0	0	0	831.285	11/15/10
BN10387640	11/15/10	32	BN-550	846.035	721.04	711.545	0	0	0	1.25	0	8.24	0	0	0	721.035	11/15/10
BN10387693	11/18/10	53	BN-550	916.595	791.6	762.455	0	0	0.23	1.67	0.78	26.46	0	0	0	791.595	11/18/10
BN10387694	11/19/10	39	BN-550	987.155	862.16	857.665	0	0	0	1.67	0	2.82	0	0	0	862.155	11/19/10
BN10387695	11/18/10	39	BN-550	940.85	815.85	808.98	0	0	0	1.25	0	5.62	0	0	0	815.85	11/18/10
BN10387696	11/18/10	42	BN-550	896.75	771.75	763.43	0	0	2	2.57	0	3.75	0	0	0	771.75	11/18/10
BN10387697	11/18/10	43	BN-550	768.86	643.86	613.185	0	0	1	1	0.78	27.895	0	0	0	643.86	11/18/10
BN10387698	11/17/10	50	BN-550	925.415	800.42	783.705	0	0	0	6.4	0	10.31	0	0	0	800.415	11/17/10
BN10387699	11/17/10	51	BN-550	782.09	657.09	569.84	0	0	0	0.83	0	86.42	0	0	0	657.09	11/17/10
BN10387700	11/17/10	38	BN-550	927.62	802.62	790.65	0	0	0	1.66	0	10.31	0	0	0	802.62	11/17/10
BN10387701	11/17/10	62	BN-550	777.68	652.68	321.19	0	0	1	13.88	3.11	313.5	0	0	0	652.68	11/17/10
BN10387702	11/18/10	50	BN-550	962.9	837.9	789.645	0	0	0	7.5	1.55	39.205	0	0	0	837.9	11/18/10
BN10387703	11/18/10	52	BN-550	923.21	798.21	765.105	0	0	0	2.49	0	30.615	0	0	0	798.21	11/18/10
BN10387704	11/18/10	54	BN-550	918.8	793.8	724.065	0	0	0	8.33	1.55	59.855	0	0	0	793.8	11/18/10
BN10387815	11/19/10	42	BN-550	872.495	747.5	597.515	0	0	0	146.7	0	3.28	0	0	0	747.495	11/19/10
BN10387816	11/19/10	56	BN-550	729.17	604.17	344.21	0	0	0	161.365	2.33	96.265	0	0	0	604.17	11/19/10
BN10387817	11/19/10	35	BN-550	934.235	809.24	806.765	0	0	0	1.53	0	0.94	0	0	0	809.235	11/19/10
BN10387818	11/19/10	37	BN-550	967.31	842.31	836.23	0	0	0	4.67	0	1.41	0	0	0	842.31	11/19/10
BN10387819	11/20/10	60	BN-550	793.115	668.12	311.48	0	0	0	136.895	3.89	215.85	0	0	0	668.115	11/20/10
BN10387820	11/19/10	62	BN-550	590.255	465.26	130	0	0	0	226.895	3.11	105.25	0	0	0	465.255	11/19/10
BN10387821	11/20/10	47	BN-550	976.13	851.13	688.895	1.56	2.34	1.4	146.165	2.33	8.44	0	0	0	851.13	11/20/10
BN10387822	11/20/10	58	BN-550	726.965	601.97	297.12	0	0	0.97	168.895	1.56	133.42	0	0	0	601.965	11/20/10
BN10387823	11/19/10	62	BN-550	674.045	549.05	130	0	0	0	398.295	3.88	16.87	0	0	0	549.045	11/19/10
BN10387824	11/19/10	57	BN-550	696.095	571.1	281.47	0	0	0	207.03	1.55	81.045	0	0	0	571.095	11/19/10
BN10387825	11/19/10	43	BN-550	854.855	729.86	691.395	0	0	0	38.46	0	0	0	0	0	729.855	11/19/10
BN10387826	11/19/10	43	BN-550	978.335	853.34	847.605	0	0	0	5.26	0	0.47	0	0	0	853.335	11/19/10
BN10388008	11/20/10	58	BN-550	936.44	811.44	594.25	0.31	4.68	0.42	71.85	6.22	133.71	0	0	0	811.44	11/20/10
BN10388009	11/21/10	42	BN-550	982.745	857.75	824.34	0	2.34	0	1.67	0	29.395	0	0	0	857.745	11/21/10
BN10388010	11/20/10	43	BN-550	940.85	815.85	815.85	0	0	0	0	0	0	0	0	0	815.85	11/20/10
BN10388011	11/20/10	54	BN-550	969.515	844.52	763.175	3.12	0	0	64.96	3.89	9.37	0	0	0	844.515	11/20/10
BN10388012	11/20/10	49	BN-550	835.01	710.01	670.505	0	0	0	3.16	1.55	34.795	0	0	0	710.01	11/20/10
BN10388013	11/20/10	53	BN-550	967.31	842.31	697.27	0	0	0.84	41.05	0.78	102.37	0	0	0	842.31	11/20/10
BN10388014	11/20/10	58	BN-550	960.695	835.7	684.12	3.12	0	0	4.44	2.33	141.685	0	0	0	835.695	11/20/10
BN10388015	11/21/10	52	BN-550	976.13	851.13	796.05	0	2.34	2.08	12.39	2.72	35.55	0	0	0	851.13	11/21/10
BN10388016	11/20/10	52	BN-550	984.95	859.95	826.25	0	0	0	7.23	12.43	14.04	0	0	0	859.95	11/20/10
BN10388017	11/21/10	53	BN-550	932.03	807.03	646.33	0	0	0	156.48	0	4.22	0	0	0	807.03	11/21/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10388018	11/20/10	58	BN-550	969.515	844.52	716.235	0	0	0	44.395	1.55	82.335	0	0	0	844.515	11/20/10
BN10388019	11/20/10	44	BN-550	989.36	864.36	789.36	0	0	0	68.76	1.55	4.69	0	0	0	864.36	11/20/10
BN10388108	11/21/10	53	BN-550	989.36	864.36	771.38	0	2.86	0	51.72	0	38.4	0	0	0	864.36	11/21/10
BN10388109	11/21/10	46	BN-550	980.54	855.54	784.645	1.56	22.9	1	39.815	0	5.62	0	0	0	855.54	11/21/10
BN10388110	11/21/10	46	BN-550	989.36	864.36	768.52	6.25	0	5	68.28	0.39	15.92	0	0	0	864.36	11/21/10
BN10388111	11/21/10	32	BN-550	947.465	822.47	804.605	0	0	0	0.42	0	17.44	0	0	0	822.465	11/21/10
BN10388112	11/21/10	38	BN-550	947.465	822.47	810.085	3.12	0	1.5	4.48	0	3.28	0	0	0	822.465	11/21/10
BN10388113	11/21/10	41	BN-550	951.875	826.88	819.025	0	0	1.04	3.07	0	3.74	0	0	0	826.875	11/21/10
BN10388114	11/22/10	44	BN-550	850.445	725.45	679.455	0	0	6.25	2.32	0	37.42	0	0	0	725.445	11/22/10
BN10388115	11/22/10	51	BN-550	991.565	866.57	773.045	0	0	7.37	37.14	1.55	47.46	0	0	0	866.565	11/22/10
BN10388116	11/21/10	40	BN-550	965.105	840.11	815.815	0	0	0	1.95	0	22.34	0	0	0	840.105	11/21/10
BN10388117	11/21/10	46	BN-550	940.85	815.85	799.45	0	0	0	2.8	0	13.6	0	0	0	815.85	11/21/10
BN10388118	11/22/10	49	BN-550	960.695	835.7	771.51	0	18.74	5.2	9.08	6.21	24.955	0	0	0	835.695	11/22/10
BN10388119	11/21/10	54	BN-550	978.335	853.34	766.155	0	0	0	44.15	0	43.03	0	0	0	853.335	11/21/10
BN10388295	11/22/10	47	BN-550	947.465	822.47	766.645	0	9.37	3.08	16.27	13.99	13.11	0	0	0	822.465	11/22/10
BN10388296	11/22/10	57	BN-550	951.875	826.88	634.285	0	0	3.08	177.34	0	12.17	0	0	0	826.875	11/22/10
BN10388297	11/22/10	53	BN-550	905.57	780.57	553.475	0	9.37	0	176.03	0	41.695	0	0	0	780.57	11/22/10
BN10388298	11/22/10	50	BN-550	945.26	820.26	649.525	0	0	3.08	162.025	0	5.63	0	0	0	820.26	11/22/10
BN10388299	11/22/10	52	BN-550	951.875	826.88	785.895	0	9.37	1	17.81	1.55	11.25	0	0	0	826.875	11/22/10
BN10388300	11/23/10	54	BN-550	627.74	502.74	236.175	0	0	0	264.695	0	1.87	0	0	0	502.74	11/23/10
BN10388301	11/23/10	61	BN-550	773.27	648.27	276.47	0	0	0	325.36	0	46.44	0	0	0	648.27	11/23/10
BN10388302	11/22/10	60	BN-550	980.54	855.54	640.875	0	0	4.16	198.655	1.55	10.3	0	0	0	855.54	11/22/10
BN10388303	11/24/10	60	BN-550	835.01	710.01	386.465	0	0	0	320.735	0	2.81	0	0	0	710.01	11/24/10
BN10388304	11/24/10	56	BN-550	645.38	520.38	228.495	0	4.68	0	277.565	7.77	1.87	0	0	0	520.38	11/24/10
BN10388305	11/24/10	44	BN-550	971.72	846.72	834.43	0	0	0	4.8	0	7.49	0	0	0	846.72	11/24/10
BN10388306	11/24/10	59	BN-550	812.96	687.96	391.45	0	7.02	0	191.545	4.66	93.285	0	0	0	687.96	11/24/10
BN10388414	11/28/10	57	BN-550	958.49	833.49	712.125	0	0	0	1.94	0	119.425	0	0	0	833.49	11/28/10
BN10388415	11/28/10	54	BN-550	958.49	833.49	715.81	0	0	0	69.515	1.55	46.615	0	0	0	833.49	11/28/10
BN10388416	11/28/10	43	BN-550	890.135	765.14	741.635	0	0	0	4.75	0	18.75	0	0	0	765.135	11/28/10
BN10388417	11/29/10	48	BN-550	973.925	848.93	830.495	0	0	0	6.89	3.1	8.44	0	0	0	848.925	11/29/10
BN10388418	11/28/10	58	BN-550	861.47	736.47	547.585	0	0	0	141.235	0	47.65	0	0	0	736.47	11/28/10
BN10388419	11/29/10	45	BN-550	991.565	866.57	706.395	0	0	0	110.37	3.1	46.7	0	0	0	866.565	11/29/10
BN10388420	11/29/10	53	BN-550	680.66	555.66	327.365	0	0	0	190.41	1.55	36.335	0	0	0	555.66	11/29/10
BN10388421	11/29/10	60	BN-550	887.93	762.93	603.14	0	0	0	147.85	1.55	10.39	0	0	0	762.93	11/29/10
BN10388422	11/28/10	48	BN-550	940.85	815.85	753.165	0	0	0	8.42	0	54.265	0	0	0	815.85	11/28/10
BN10388423	11/28/10	51	BN-550	921.005	796.01	775.355	0	0	0	3.78	0	16.87	0	0	0	796.005	11/28/10
BN10388424	11/29/10	42	BN-550	945.26	820.26	735.835	0	18.74	0	3.34	0	62.345	0	0	0	820.26	11/29/10
BN10388425	11/29/10	51	BN-550	817.37	692.37	493.425	0	0	10.13	181.515	0	7.3	0	0	0	692.37	11/29/10
BN10388460	11/24/10	50	BN-550	956.285	831.29	731.3	0	0	0	86.865	0	13.12	0	0	0	831.285	11/24/10
BN10388461	11/24/10	51	BN-550	746.81	621.81	412.82	0	0	0	67.345	3.11	138.535	0	0	0	621.81	11/24/10
BN10388462	11/24/10	44	BN-550	779.885	654.89	522.55	0	0	0	7.95	1.55	122.835	0	0	0	654.885	11/24/10
BN10388463	11/25/10	58	BN-550	786.5	661.5	365.505	0	0	0	170.295	1.55	124.15	0	0	0	661.5	11/25/10
BN10388464	11/25/10	57	BN-550	828.395	703.4	394.555	0	2.34	10.41	15.67	7.76	272.66	0	0	0	703.395	11/25/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10388465	11/26/10	58	BN-550	755.63	630.63	309.965	0	0	0	319.725	0	0.94	0	0	0	630.63	11/26/10
BN10388466	11/26/10	59	BN-550	801.935	676.94	276.48	0	0	0	397.805	0.78	1.87	0	0	0	676.935	11/26/10
BN10388467	11/26/10	48	BN-550	766.655	641.66	414.395	0	0	0	161.94	0	65.32	0	0	0	641.655	11/26/10
BN10388468	11/26/10	58	BN-550	729.17	604.17	171.61	0	0	0	431.62	0	0.94	0	0	0	604.17	11/26/10
BN10388469	11/25/10	50	BN-550	768.86	643.86	336.185	0	0	0	7.78	3.1	296.795	0	0	0	643.86	11/25/10
BN10388470	11/26/10	60	BN-550	663.02	538.02	130	0	0	0	408.02	0	0	0	0	0	538.02	11/26/10
BN10388471	11/26/10	50	BN-550	687.275	562.28	322.805	0	0	0	234.78	0	4.69	0	0	0	562.275	11/26/10
BN10388655	11/28/10	59	BN-550	634.355	509.36	159.9	0	0	0	310.955	1.55	36.95	0	0	0	509.355	11/28/10
BN10388656	11/27/10	51	BN-550	709.325	584.33	339.26	3.11	0	7.428	227.027	0	7.5	0	0	0	584.325	11/27/10
BN10388657	11/28/10	52	BN-550	696.095	571.1	180.996	3	0	13.576	370.646	0	2.88	0	0	0	571.098	11/28/10
BN10388658	11/27/10	54	BN-550	733.58	608.58	262.78	0	0	6.25	2.37	10.88	326.3	0	0	0	608.58	11/27/10
BN10388659	11/27/10	53	BN-550	768.86	643.86	413.985	3.11	1.87	6.263	200.823	0	17.81	0	0	0	643.861	11/27/10
BN10388660	11/27/10	50	BN-550	967.31	842.31	710.22	0	4.68	0	74.555	0.78	52.075	0	0	0	842.31	11/27/10
BN10388661	11/27/10	37	BN-550	936.44	811.44	698.045	0	7.96	0	98.875	0	6.56	0	0	0	811.44	11/27/10
BN10388662	11/27/10	50	BN-550	627.74	502.74	225.525	0	0	0	137.185	6.22	133.81	0	0	0	502.74	11/27/10
BN10388663	11/27/10	50	BN-550	876.905	751.91	608.8	10.395	0	0	125.401	0	7.31	0	0	0	751.906	11/27/10
BN10388664	11/27/10	55	BN-550	700.505	575.51	277.24	0	1.87	0	295.455	0	0.94	0	0	0	575.505	11/27/10
BN10388665	11/27/10	50	BN-550	826.19	701.19	501.62	0	0	8.33	56.23	4.66	130.35	0	0	0	701.19	11/27/10
BN10388666	11/27/10	56	BN-550	687.275	562.28	167.71	0	0	0	388.945	0	5.62	0	0	0	562.275	11/27/10
BN10388677	11/30/10	55	BN-550	722.555	597.56	388.815	0	0	0	201.25	2.33	5.16	0	0	0	597.555	11/30/10
BN10388678	11/30/10	57	BN-550	782.09	657.09	456.325	0	0	0	195.135	0	5.63	0	0	0	657.09	11/30/10
BN10388679	11/30/10	54	BN-550	940.85	815.85	805.26	0	0	0	3.08	0	7.51	0	0	0	815.85	11/30/10
BN10388680	11/29/10	53	BN-550	775.475	650.48	474.935	0	0	0	173.95	0	1.59	0	0	0	650.475	11/29/10
BN10388681	11/30/10	60	BN-550	764.45	639.45	495.615	0	0	0	128.365	0	15.47	0	0	0	639.45	11/30/10
BN10388682	11/29/10	54	BN-550	958.49	833.49	818.34	0	0	0	7.37	0	7.78	0	0	0	833.49	11/29/10
BN10388683	11/30/10	54	BN-550	636.56	511.56	355.74	0	0.94	0	146.45	0	8.43	0	0	0	511.56	11/30/10
BN10388684	11/30/10	51	BN-550	691.685	566.69	376.485	0	0	0	186.45	0	3.75	0	0	0	566.685	11/30/10
BN10388685	11/29/10	57	BN-550	962.9	837.9	755.545	0	0	0	75.145	0	7.21	0	0	0	837.9	11/29/10
BN10388686	11/29/10	58	BN-550	874.7	749.7	504.52	0	0	0	242.83	0	2.35	0	0	0	749.7	11/29/10
BN10388687	11/29/10	58	BN-550	784.295	659.3	384.025	0	0	0	270.57	0	4.7	0	0	0	659.295	11/29/10
BN10388688	11/29/10	44	BN-550	947.465	822.47	732.895	0	9.37	1.26	73.32	0	5.62	0	0	0	822.465	11/29/10
BN10388838	12/1/10	56	BN-550	898.955	773.96	612.895	0	0	0	154.5	0	6.56	0	0	0	773.955	12/1/10
BN10388839	12/1/10	57	BN-550	744.605	619.61	333.05	0	0	0	281.875	0	4.68	0	0	0	619.605	12/1/10
BN10388840	12/1/10	54	BN-550	898.955	773.96	618.055	0	0	3.38	112.46	0	40.06	0	0	0	773.955	12/1/10
BN10388841	12/1/10	39	BN-550	936.44	811.44	800.94	0	0	0	3.47	3.75	3.28	0	0	0	811.44	12/1/10
BN10388842	12/1/10	47	BN-550	949.67	824.67	806.15	0	0.94	0	14.46	0.31	2.81	0	0	0	824.67	12/1/10
BN10388843	11/30/10	56	BN-550	777.68	652.68	496.15	0	0	0	150.9	0	5.63	0	0	0	652.68	11/30/10
BN10388844	11/30/10	53	BN-550	984.95	859.95	730.295	0	0	0	124.495	0	5.16	0	0	0	859.95	11/30/10
BN10388845	11/30/10	53	BN-550	960.695	835.7	758.025	0	0	0	46.755	0	30.915	0	0	0	835.695	11/30/10
BN10388846	12/1/10	54	BN-550	923.21	798.21	655.275	0	0	0	99	0	43.935	0	0	0	798.21	12/1/10
BN10388847	12/1/10	58	BN-550	960.695	835.7	688.675	0	0	0	79.745	0.47	66.805	0	0	0	835.695	12/1/10
BN10389011	12/3/10	55	BN-550	766.655	641.66	274.403	0	142.453	0	224.8	0	0	0	0	0	641.656	12/3/10
BN10389012	12/2/10	56	BN-550	901.16	776.16	571.035	0	14.05	0	173.275	0	17.8	0	0	0	776.16	12/2/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10389013	12/2/10	58	BN-550	751.22	626.22	311.72	0	0	0	281.885	1.55	31.065	0	0	0	626.22	12/2/10
BN10389014	12/2/10	45	BN-550	654.2	529.2	338.395	0	0	0	189.865	0	0.94	0	0	0	529.2	12/2/10
BN10389016	12/2/10	47	BN-550	654.2	529.2	333.05	0	0	0	160.59	0	35.56	0	0	0	529.2	12/2/10
BN10389019	12/3/10	59	BN-550	643.175	518.18	208.185	0	0	0	308.12	0	1.87	0	0	0	518.175	12/3/10
BN10389021	12/3/10	54	BN-550	616.715	491.72	131.95	0	0	0	276.175	0	83.59	0	0	0	491.715	12/3/10
BN10389022	12/3/10	47	BN-550	938.645	813.65	712.64	0	0	0	87.885	0	13.12	0	0	0	813.645	12/3/10
BN10389151	12/4/10	53	BN-550	768.86	643.86	325.915	7.8	0	0	90.77	6.4	212.975	0	0	0	643.86	12/4/10
BN10389152	12/4/10	53	BN-550	713.735	588.74	331.235	2.34	0	0	176.075	2	77.085	0	0	0	588.735	12/4/10
BN10389153	12/4/10	44	BN-550	973.925	848.93	806.275	0	19.47	0	11.93	0	11.25	0	0	0	848.925	12/4/10
BN10389154	12/4/10	54	BN-550	896.75	771.75	597.395	0	14.31	0	123.5	0	36.545	0	0	0	771.75	12/4/10
BN10389155	12/4/10	53	BN-550	599.075	474.08	156	0	0	0	290.08	1.55	26.445	0	0	0	474.075	12/4/10
BN10389156	12/4/10	55	BN-550	667.43	542.43	146.4	0	0	0	388.06	0	7.97	0	0	0	542.43	12/4/10
BN10389157	12/4/10	49	BN-550	665.225	540.23	338.215	0	0	0	10.51	0	191.5	0	0	0	540.225	12/4/10
BN10389158	12/4/10	50	BN-550	960.695	835.7	563.18	0	0	0	270.175	0	2.34	0	0	0	835.695	12/4/10
BN10389159	12/4/10	49	BN-550	700.505	575.51	386.795	0	0	0	184.49	0	4.22	0	0	0	575.505	12/4/10
8N10389160	12/4/10	50	BN-550	590.255	465.26	131.17	3.12	0	0	121.43	2.4	207.135	0	0	0	465.255	12/4/10
BN10389161	12/4/10	58	BN-550	865.88	740.88	518.5	4.68	0	0	49.385	4	164.315	0	0	0	740.88	12/4/10
BN10389162	12/4/10	57	BN-550	949.67	824.67	664.195	1.56	0	0	76.295	1.6	81.02	0	0	0	824.67	12/4/10
BN10389331	12/5/10	52	BN-550	960.695	835.7	702.675	0.78	0	0	119.28	0.78	12.18	0	0	0	835.695	12/5/10
BN10389332	12/5/10	56	BN-550	973.925	848.93	724.305	0	0	0	119.16	3.11	2.35	0	0	0	848.925	12/5/10
BN10389334	12/5/10	58	BN-550	634.355	509.36	130	0	0	0	366.925	12.43	0	0	0	0	509.355	12/5/10
BN10389335	12/5/10	55	BN-550	857.06	732.06	553.325	0	11.45	0	110.53	10.88	45.875	0	0	0	732.06	12/5/10
BN10389336	12/5/10	52	BN-550	704.915	579.92	392.105	0	0	0	118.47	0	69.34	0	0	0	579.915	12/5/10
BN10389337	12/5/10	59	BN-550	744.605	619.61	389.4	0	0	0	165.945	3.11	61.15	0	0	0	619.605	12/5/10
BN10389338	12/5/10	44	BN-550	980.54	855.54	842.93	0	0	0	5.3	3.1	4.21	0	0	0	855.54	12/5/10
BN10389339	12/5/10	54	BN-550	614.51	489.51	231.525	0	0	0	7.98	0	250.005	0	0	0	489.51	12/5/10
BN10389340	12/5/10	56	BN-550	629.945	504.95	130	0	0	5	364.325	0	5.62	0	0	0	504.945	12/5/10
BN10389341	12/5/10	56	BN-550	801.935	676.94	392.43	0	11.45	0	273.055	0	0	0	0	0	676.935	12/5/10
BN10389342	12/5/10	47	BN-550	786.5	661.5	457.89	0	0	0	199.61	0	4	0	0	0	661.5	12/5/10
BN10389343	12/5/10	57	BN-550	640.97	515.97	133.9	0	0	0	379.73	0	2.34	0	0	0	515.97	12/5/10
BN10389425	12/6/10	57	BN-550	674.045	549.05	308.89	0	0	0	120.34	3.1	116.715	0	0	0	549.045	12/6/10
BN10389426	12/5/10	55	BN-550	927.62	802.62	699.825	0	0	0	84.725	7.77	10.3	0	0	0	802.62	12/5/10
BN10389427	12/5/10	47	BN-550	874.7	749.7	662.25	0	0	0	47.985	0	39.465	0	0	0	749.7	12/5/10
BN10389428	12/5/10	53	BN-550	751.22	626.22	235.375	0	11.45	0	222.555	6.21	150.63	0	0	0	626.22	12/5/10
BN10389429	12/6/10	55	BN-550	698.3	573.3	321.895	0	0	0	240.175	4.66	6.57	0	0	0	573.3	12/6/10
BN10389430	12/6/10	48	BN-550	548.36	423.36	145.665	0	0	0	272.165	1.55	3.98	0	0	0	423.36	12/6/10
BN10389431	12/6/10	55	BN-550	775.475	650.48	511.71	0	0	0	127.235	3.1	8.43	0	0	0	650.475	12/6/10
BN10389432	12/6/10	56	BN-550	749.015	624.02	396.555	0	0	0	168.57	4.66	54.23	0	0	0	624.015	12/6/10
BN10389433	12/6/10	59	BN-550	806.345	681.35	351.435	0	0	0	302.73	0	27.18	0	0	0	681.345	12/6/10
BN10389434	12/6/10	60	BN-550	667.43	542.43	344.16	0	0	0	176.14	6.2	15.93	0	0	0	542.43	12/6/10
BN10389435	12/6/10	52	BN-550	623.33	498.33	210.705	0	0	0	270.755	0	16.87	0	0	0	498.33	12/6/10
BN10389436	12/6/10	57	BN-550	757.835	632.84	305.89	0	0	0	326.945	0	0	0	0	0	632.835	12/6/10
BN10389520	12/7/10	42	BN-550	973.925	848.93	819.275	0	0	0	1.53	0	28.12	0	0	0	848.925	12/7/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10389521	12/8/10	46	BN-550	912.185	787.19	644.97	3.12	0	0	39.115	2.4	97.58	0	0	0	787.185	12/8/10
BN10389522	12/6/10	58	BN-550	771.065	646.07	351.18	0	1.87	0	221.915	3.11	67.99	0	0	0	646.065	12/6/10
BN10389523	12/7/10	59	BN-550	945.26	820.26	624.435	0	0	0	169.035	0	26.79	0	0	0	820.26	12/7/10
BN10389524	12/7/10	47	BN-550	918.8	793.8	710.535	0	0	0	77.635	0	5.63	0	0	0	793.8	12/7/10
BN10389525	12/8/10	55	BN-550	592.46	467.46	130	0	0	0	302.015	0	35.445	0	0	0	467.46	12/8/10
BN10389526	12/7/10	52	BN-550	927.62	802.62	728.375	0	0	0	65.805	0	8.44	0	0	0	802.62	12/7/10
BN10389527	12/7/10	52	BN-550	581.435	456.44	131.95	0	0	0	323.545	0	0.94	0	0	0	456.435	12/7/10
BN10389528	12/6/10	50	BN-550	627.74	502.74	224.395	0	0	0	264.015	7.77	6.56	0	0	0	502.74	12/6/10
BN10389529	12/7/10	57	BN-550	614.51	489.51	130	0	0	0	359.51	0	0	0	0	0	489.51	12/7/10
BN10389530	12/6/10	42	BN-550	890.135	765.14	683.32	0	0	0	61.205	0	20.61	0	0	0	765.135	12/6/10
BN10389531	12/8/10	55	BN-550	804.14	679.14	583.65	0	0	2.5	11.06	55.68	26.25	0	0	0	679.14	12/8/10
BN10389682	12/28/10	58	BN-550	828.395	703.4	472.055	0	0	0	179.41	0	51.93	0	0	0	703.395	12/28/10
BN10389683	12/28/10	59	BN-550	654.2	529.2	232.885	0	0	0	248.16	6.22	41.935	0	0	0	529.2	12/28/10
BN10389684	12/28/10	54	BN-550	610.1	485.1	156	1.56	0	6	240.585	1.55	79.405	0	0	0	485.1	12/28/10
BN10389685	12/28/10	58	BN-550	760.04	635.04	426.465	0	0	0	161.38	1.55	45.645	0	0	0	635.04	12/28/10
BN10389686	12/28/10	55	BN-550	588.05	463.05	211.585	0	0	0	46.125	3.11	202.23	0	0	0	463.05	12/28/10
BN10389687	12/28/10	59	BN-550	762.245	637.25	437.715	2.03	0	4	24.63	0	168.87	0	0	0	637.245	12/28/10
BN10389688	12/28/10	47	BN-550	923.39	798.39	774.61	0	0	0	5.97	0	17.81	0	0	0	798.39	12/28/10
BN10389689	12/28/10	51	BN-550	746.81	621.81	535.325	0	0	1	75.165	0	10.32	0	0	0	621.81	12/28/10
BN10389690	12/28/10	53	BN-550	989.36	864.36	788.505	0	0	0	33.975	0	41.88	0	0	0	864.36	12/28/10
BN10389691	12/23/10	51	BN-550	773.27	648.27	627.44	0	0	0	18.96	0	1.87	0	0	0	648.27	12/23/10
BN10389692	12/23/10	53	BN-550	601.28	476.28	244.995	0	0	0.42	162.8	9.32	58.745	0	0	0	476.28	12/23/10
BN10389693	12/28/10	58	BN-550	887.93	762.93	527.005	0	0	0.84	152.74	4.66	77.685	0	0	0	762.93	12/28/10
BN10389759	12/9/10	54	BN-550	627.74	502.74	206.2	0	0	0.84	256.225	0	39.475	0	0	0	502.74	12/9/10
BN10389760	12/15/10	53	BN-550	689.48	564.48	324.685	0	0	0	189.355	1.55	48.89	0	0	0	564.48	12/15/10
BN10389761	12/14/10	58	BN-550	674.045	549.05	270.845	0	0	0	173.185	1.55	103.465	0	0	0	549.045	12/14/10
BN10389762	12/9/10	52	BN-550	579.23	454.23	130	0	0	0	321.42	0	2.81	0	0	0	454.23	12/9/10
BN10389763	12/9/10	51	BN-550	932.03	807.03	785.05	0	0	0	16.36	0	5.62	0	0	0	807.03	12/8/10
BN10389764	12/9/10	50	BN-550	625.535	500.54	261.785	0	0	0.84	236.97	0	0.94	0	0	0	500.535	12/9/10
BN10389765	12/14/10	51	BN-550	760.04	635.04	524.025	0	0	0	11.07	0	99.945	0	0	0	635.04	12/14/10
BN10389766	12/15/10	50	BN-550	643.175	518.18	316.875	0	0	0	111.72	3.1	86.48	0	0	0	518.175	12/15/10
BN10389767	12/14/10	57	BN-550	868.085	743.09	508.38	0	0	0	226.275	0	8.43	0	0	0	743.085	12/14/10
BN10389768	12/9/10	53	BN-550	588.05	463.05	156	0	0	0	304.24	0	2.81	0	0	0	463.05	12/9/10
BN10389769	12/9/10	16	BN-550	272.735	147.74	53.95	0	0	0	93.785	0	0	0	0	0	147.735	12/9/10
BN10389770	12/14/10	54	BN-550	951.875	826.88	647.835	7.8	2.34	0	157.36	3.11	8.43	0	0	0	826.875	12/14/10
BN10389809	12/16/10	54	BN-550	841.625	716.63	468.34	0	0	0	241.725	0	6.56	0	0	0	716.625	12/16/10
BN10389810	12/15/10	56	BN-550	588.05	463.05	130	0	0	0	280.365	3.11	49.575	0	0	0	463.05	12/15/10
BN10389811	12/15/10	55	BN-550	894.545	769.55	664.025	0	0	0	29.59	1.55	74.38	0	0	0	769.545	12/15/10
BN10389812	12/16/10	60	BN-550	671.84	546.84	130	0	0	0	332.935	0	83.905	0	0	0	546.84	12/16/10
BN10389813	12/15/10	55	BN-550	561.59	436.59	111.81	0	0	0	131.015	138.72	55.045	0	0	0	436.59	12/15/10
BN10389814	12/16/10	59	BN-550	804.14	679.14	473.495	0	0	0	176.9	0	28.745	0	0	0	679.14	12/16/10
BN10389815	12/16/10	55	BN-550	643.175	518.18	229.325	0	0	0	277.61	0	11.24	0	0	0	518.175	12/16/10
BN10389816	12/15/10	55	BN-550	588.05	463.05	104	0	0	0	126.605	149.35	83.095	0	0	0	463.05	12/15/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10389817	12/15/10	52	BN-550	859.265	734.27	679.335	0	0	0	12.01	4.66	38.26	0	0	0	734.265	12/15/10
BN10389818	12/15/10	55	BN-550	852.65	727.65	395.245	0	0	0	327.105	1.55	3.75	0	0	0	727.65	12/15/10
BN10389819	12/15/10	58	BN-550	947.465	822.47	741.77	0	0	0.56	64.185	0	15.95	0	0	0	822.465	12/15/10
BN10389820	12/15/10	55	BN-550	925.415	800.42	673.645	0	0	0	90.09	0.78	35.9	0	0	0	800.415	12/15/10
BN10390044	12/16/10	55	BN-550	632.15	507.15	327.845	0	0	0	3.51	0	175.795	0	0	0	507.15	12/16/10
BN10390045	12/17/10	55	BN-550	854.855	729.86	663.03	0	0	0	13.87	0.78	52.175	0	0	0	729.855	12/17/10
BN10390046	12/17/10	61	BN-550	857.06	732.06	559.235	0	0	0	99.825	0	73	0	0	0	732.06	12/17/10
BN10390047	12/17/10	56	BN-550	868.085	743.09	576.29	0	0	0	91.52	0	75.275	0	0	0	743.085	12/17/10
BN10390048	12/16/10	53	BN-550	596.87	471.87	130	0	0	0	333.44	0	8.43	0	0	0	471.87	12/16/10
BN10390049	12/17/10	59	BN-550	932.03	807.03	633.92	0	0	0	10.72	0	162.39	0	0	0	807.03	12/17/10
BN10390050	12/16/10	60	BN-550	693.89	568.89	302.465	0	0	1.88	65.805	0	198.74	0	0	0	568.89	12/16/10
BN10390051	12/17/10	54	BN-550	665.225	540.23	262.155	0	0	0	223.03	0	55.04	0	0	0	540.225	12/17/10
BN10390052	12/17/10	55	BN-550	685.07	560.07	271.875	0	0	0	199.495	0	88.7	0	0	0	560.07	12/17/10
BN10390053	12/17/10	53	BN-550	947.465	822.47	759.19	0	0	2	6.52	0	54.755	0	0	0	822.465	12/17/10
BN10390054	12/17/10	58	BN-550	826.19	701.19	565.64	0	0	0	76.21	3.11	56.23	0	0	0	701.19	12/17/10
BN10390055	12/16/10	61	BN-550	603.485	478.49	156	0	0	0	247.16	0	75.325	0	0	0	478.485	12/16/10
BN10390180	12/18/10	61	BN-550	956.285	831.29	639.31	0	1.41	0	183.535	0	7.03	0	0	0	831.285	12/18/10
BN10390181	12/18/10	55	BN-550	898.955	773.96	588.375	0	0	0	170.11	0	15.47	0	0	0	773.955	12/18/10
BN10390182	12/17/10	49	BN-550	969.515	844.52	764.355	0	0	1	5.82	0	73.34	0	0	0	844.515	12/17/10
BN10390183	12/18/10	59	BN-550	903.365	778.37	540.305	0	0	1.13	229.43	0	7.5	0	0	0	778.365	12/18/10
BN10390184	12/18/10	60	BN-550	784.295	659.3	334.59	0	0	0	324.705	0	0	0	0	0	659.295	12/18/10
BN10390185	12/18/10	47	BN-550	839.42	714.42	595.18	0	0	0	69.625	0.78	48.835	0	0	0	714.42	12/18/10
BN10390186	12/17/10	52	BN-550	954.08	829.08	379.38	267.78	0	2	174.3	0	5.62	0	0	0	829.08	12/17/10
BN10390187	12/18/10	47	BN-550	916.595	791.6	471.245	230.32	0	2	82.57	0.78	4.68	0	0	0	791.595	12/18/10
BN10390188	12/18/10	49	BN-550	958.49	833.49	788.59	0	0	0	11.38	0	33.52	0	0	0	833.49	12/18/10
BN10390189	12/18/10	55	BN-550	936.44	811.44	704.835	0	0	4.51	10.72	0	91.375	0	0	0	811.44	12/18/10
BN10390190	12/18/10	48	BN-550	947.465	822.47	694.19	0	2.34	0	124.215	0.78	0.94	0	0	0	822.465	12/18/10
BN10390191	12/18/10	54	BN-550	905.57	780.57	760.54	0	0	0	13.01	0	7.02	0	0	0	780.57	12/18/10
BN10390621	12/19/10	48	BN-550	949.67	824.67	743.41	6.25	0	0	65.64	0	9.37	0	0	0	824.67	12/19/10
BN10390622	12/19/10	57	BN-550	786.5	661.5	405.955	3.12	0	0	246.515	0	5.91	0	0	0	661.5	12/19/10
BN10390623	12/19/10	47	BN-550	901.16	776.16	672.55	0	0	0	100.79	0	2.82	0	0	0	776.16	12/19/10
BN10390624	12/18/10	38	BN-550	921.005	796.01	771.045	0	0	0	11.85	0	13.11	0	0	0	796.005	12/18/10
BN10390625	12/19/10	44	BN-550	987.155	862.16	783.82	0	9.37	0	65.215	0	3.75	0	0	0	862.155	12/19/10
BN10390626	12/19/10	61	BN-550	815.165	690.17	393.35	1.56	0	0	293.375	0	1.88	0	0	0	690.165	12/19/10
BN10390627	12/19/10	53	BN-550	826.19	701.19	390.6	0	0	0	307.78	0	2.81	0	0	0	701.19	12/19/10
BN10390628	12/19/10	44	BN-550	921.005	796.01	646.56	0	9.37	0	137.735	0	2.34	0	0	0	796.005	12/19/10
BN10390630	12/20/10	57	BN-550	929.825	804.83	644.74	0	0	0	82.155	0	77.93	0	0	0	804.825	12/20/10
BN10390631	12/19/10	58	BN-550	960.695	835.7	681.59	0	0	0	154.105	0	0	0	0	0	835.695	12/19/10
BN10390632	12/20/10	49	BN-550	943.055	818.06	760.515	0	0	0	24.085	0	33.455	0	0	0	818.055	12/20/10
BN10390781	12/20/10	52	BN-550	947.465	822.47	736.035	0	0	0	44.815	35.995	5.62	0	0	0	822.465	12/20/10
BN10390782	12/22/10	45	BN-550	918.8	793.8	673.425	0	9.37	1.26	6.8	0	102.945	0	0	0	793.8	12/22/10
BN10390783	12/22/10	49	BN-550	925.415	800.42	754.745	0	0	0	0.97	4.66	40.04	0	0	0	800.415	12/22/10
BN10390784	12/22/10	42	BN-550	921.005	796.01	784.695	0	0	0	1.94	0	9.37	0	0	0	796.005	12/22/10

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10390785	12/21/10	38	BN-550	973.925	848.93	833.135	0	0	2.08	7.15	0	6.56	0	0	0	848.925	12/21/10
BN10390786	12/21/10	48	BN-550	940.85	815.85	699.29	0	0	0	70.29	0	46.27	0	0	0	815.85	12/21/10
BN10390787	12/21/10	56	BN-550	918.8	793.8	512.78	0	0	1.26	268.52	0	11.24	0	0	0	793.8	12/21/10
BN10390788	12/21/10	41	BN-550	960.695	835.7	746.485	0	0	0	81.71	0	7.5	0	0	0	835.695	12/21/10
BN10390789	12/21/10	61	BN-550	676.25	551.25	209.95	0	0	0	206.07	1.55	133.68	0	0	0	551.25	12/21/10
BN10390790	12/21/10	32	BN-550	925.415	800.42	796.865	0	0	0.84	0.83	0	1.88	0	0	0	800.415	12/21/10
BN10390791	12/21/10	32	BN-550	951.875	826.88	826.875	0	0	0	0	0	0	0	0	0	826.875	12/21/10
BN10390792	12/20/10	49	BN-550	945.26	820.26	693.46	0	0	2.4	0.72	1.55	122.13	0	0	0	820.26	12/20/10
BN10390924	12/22/10	40	BN-550	956.285	831.29	787.175	0	0	0	7.44	1.55	35.12	0	0	0	831.285	12/22/10
BN10390925	12/22/10	53	BN-550	810.755	685.76	501.795	0	5.73	0	101.08	0	77.15	0	0	0	685.755	12/22/10
BN10390926	12/22/10	33	BN-550	936.44	811.44	806.52	0	0	0	2.11	0	2.81	0	0	0	811.44	12/22/10
BN10390927	12/22/10	51	BN-550	837.215	712.22	469.155	0	0	9.59	16.5	0	216.97	0	0	0	712.215	12/22/10
BN10390928	12/22/10	50	BN-550	788.705	663.71	385.94	0	0	1.26	21.12	0	255.385	0	0	0	663.705	12/22/10
BN10390929	12/22/10	45	BN-550	795.32	670.32	410.805	0	0	0	78.045	0	181.47	0	0	0	670.32	12/22/10
BN10390930	12/23/10	51	BN-550	846.035	721.04	575.66	0	0.47	0.67	73.26	0	70.975	0	0	0	721.035	12/23/10
BN10390931	12/22/10	45	BN-550	929.825	804.83	697.625	0	18.74	0.25	65.23	0	22.98	0	0	0	804.825	12/22/10
BN10390932	12/23/10	41	BN-550	967.31	842.31	830.85	0	0	0	4.91	0	6.55	0	0	0	842.31	12/23/10
BN10390933	12/23/10	52	BN-550	938.645	813.65	697.46	0	5.73	1.2	105.505	0	3.75	0	0	0	813.645	12/23/10
BN10390934	12/23/10	52	BN-550	762.245	637.25	499.005	0	0	5	34.64	3.11	95.49	0	0	0	637.245	12/23/10
BN10390935	12/23/10	56	BN-550	658.61	533.61	255.515	0	0	1.68	113.685	0	162.73	0	0	0	533.61	12/23/10
BN10391052	12/30/10	53	BN-550	914.39	789.39	347.855	0	0	2	227.84	1.55	210.145	0	0	0	789.39	12/30/10
BN10391054	12/30/10	55	BN-550	678.455	553.46	111.41	0	0	2.08	5.28	1.75	432.935	0	0	0	553.455	12/30/10
BN10391055	12/31/10	50	BN-550	951.875	826.88	659.595	0	0	0	154.65	0	12.63	0	0	0	826.875	12/31/10
BN10391056	12/31/10	41	BN-550	971.72	846.72	744.14	0	0	0	91.34	0	11.24	0	0	0	846.72	12/31/10
BN10391057	12/31/10	54	BN-550	746.81	621.81	335.28	0	4.68	0	146.965	0	134.885	0	0	0	621.81	12/31/10
BN10391058	12/30/10	31	BN-550	987.155	862.16	859.455	0	0	0	0.83	0	1.87	0	0	0	862.155	12/30/10
BN10391060	12/28/10	58	BN-550	839.42	714.42	481.215	0	0	4.9	126.805	3.11	98.39	0	0	0	714.42	12/28/10
BN10391061	1/9/11	57	BN-550	737.99	612.99	492.92	0.78	0	0	61.745	7.77	49.775	0	0	0	612.99	1/9/11
BN10391062	12/30/10	44	BN-550	967.31	842.31	788.885	0	0	2	8.77	0	42.655	0	0	0	842.31	12/30/10
BN10391063	12/30/10	56	BN-550	603.485	478.49	175.52	1.56	0	0	40.305	6.2	254.9	0	0	0	478.485	12/30/10
BN10391064	12/28/10	35	BN-550	793.115	668.12	587.185	0.62	0.11	0	9.33	3.11	67.76	0	0	0	668.115	12/28/10
BN10391070	12/31/10	46	BN-550	852.65	727.65	641.785	0	0	4.16	74.205	0	7.5	0	0	0	727.65	12/31/10
BN10391071	12/31/10	45	BN-550	859.265	734.27	716.745	0	0	0	5.34	0	12.18	0	0	0	734.265	12/31/10
BN10391072	12/31/10	53	BN-550	841.625	716.63	565.74	0	0	0	88.34	0	62.545	0	0	0	716.625	12/31/10
BN10391073	12/31/10	47	BN-550	872.495	747.5	482.535	0	0	0	255.12	0	9.84	0	0	0	747.495	12/31/10
BN10391074	12/31/10	47	BN-550	912.185	787.19	525.68	0	0	0	248.395	0	13.11	0	0	0	787.185	12/31/10
BN10391075	12/31/10	42	BN-550	969.515	844.52	692.115	0	0	0	143.35	1.55	7.5	0	0	0	844.515	12/31/10
BN10391076	12/31/10	50	BN-550	766.655	641.66	245.85	0	0	0	384.395	2.04	9.37	0	0	0	641.655	12/31/10
BN10391077	1/1/11	54	BN-550	940.85	815.85	622.485	0	2.34	0	2.79	0	188.235	0	0	0	815.85	1/1/11
BN10391078	1/1/11	59	BN-550	870.29	745.29	714.77	0	0	0	8.97	0	21.55	0	0	0	745.29	1/1/11
BN10391079	1/1/11	54	BN-550	907.775	782.78	603.965	0	0	0	2.78	0	176.03	0	0	0	782.775	1/1/11
BN10391080	1/1/11	51	BN-550	901.16	776.16	761.78	0	0	0	3.77	3.11	7.5	0	0	0	776.16	1/1/11
BN10391081	1/1/11	51	BN-550	938.645	813.65	771.485	0.78	0	0	13.93	7.77	19.68	0	0	0	813.645	1/1/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10391512	1/2/11	53	BN-550	830.6	705.6	603.7	3.12	0	0	85.66	0	13.12	0	0	0	705.6	1/2/11
BN10391513	1/2/11	60	BN-550	951.875	826.88	678.625	6.24	2.81	0	17.22	3.11	118.87	0	0	0	826.875	1/2/11
BN10391514	1/2/11	55	BN-550	779.885	654.89	395.205	0	0	0	249.38	0	10.3	0	0	0	654.885	1/2/11
BN10391515	1/2/11	59	BN-550	907.775	782.78	646.925	0	0	1.26	94.29	0	40.3	0	0	0	782.775	1/2/11
BN10391516	1/1/11	48	BN-550	923.21	798.21	755.07	10.92	4.68	0	10.67	0	16.87	0	0	0	798.21	1/1/11
BN10391517	1/2/11	60	BN-550	698.3	573.3	321.785	0	0	0	241.525	1.55	8.44	0	0	0	573.3	1/2/11
BN10391518	1/2/11	58	BN-550	894.545	769.55	661.065	0	0	0	64.31	4.66	39.51	0	0	0	769.545	1/2/11
BN10391519	1/1/11	51	BN-550	828.395	703.4	676.905	0	0	0	5.88	0	20.61	0	0	0	703.395	1/1/11
BN10391520	1/2/11	53	BN-550	914.39	789.39	641.975	0	5.62	0	9.48	4.66	127.655	0	0	0	789.39	1/2/11
BN10391521	1/1/11	59	BN-550	982.745	857.75	822.295	0	0	0	10.49	6.22	18.74	0	0	0	857.745	1/1/11
BN10391522	1/2/11	47	BN-550	685.07	560.07	510.42	0	0	0	23.4	0	26.25	0	0	0	560.07	1/2/11
BN10391523	1/2/11	58	BN-550	885.725	760.73	594.475	7.19	0	0	95.455	0	63.605	0	0	0	760.725	1/2/11
BN10391564	1/3/11	59	BN-550	958.49	833.49	726.67	0	0	0	84.66	1.55	20.61	0	0	0	833.49	1/3/11
BN10391565	1/3/11	54	BN-550	749.015	624.02	355.375	0	0	0	261.14	0	7.5	0	0	0	624.015	1/3/11
BN10391566	1/3/11	58	BN-550	636.56	511.56	175.15	0	0	0	292.535	0	43.875	0	0	0	511.56	1/3/11
BN10391567	1/3/11	58	BN-550	760.04	635.04	167.71	0	0	0	455.8	3.1	8.43	0	0	0	635.04	1/3/11
BN10391568	1/3/11	60	BN-550	790.91	665.91	280.65	0	0	0	383.54	0.78	0.94	0	0	0	665.91	1/3/11
BN10391569	1/3/11	61	BN-550	846.035	721.04	581.435	9.37	0	0	75.26	0.78	54.19	0	0	0	721.035	1/3/11
BN10391570	1/3/11	62	BN-550	799.73	674.73	467.785	0	0	0	26.34	1.55	179.055	0	0	0	674.73	1/3/11
BN10391571	1/3/11	53	BN-550	960.695	835.7	730.995	0	0	0	74.42	3.11	27.17	0	0	0	835.695	1/2/11
BN10391572	1/3/11	54	BN-550	951.875	826.88	578.22	1.56	0	0	228.345	0	18.75	0	0	0	826.875	1/3/11
BN10391573	1/3/11	52	BN-550	771.065	646.07	548.25	0	0	0	57.76	4.65	35.405	0	0	0	646.065	1/3/11
BN10391574	1/3/11	52	BN-550	616.715	491.72	104	0	0	83.185	302.66	0	1.87	0	0	0	491.715	1/3/11
BN10391575	1/4/11	59	BN-550	634.355	509.36	216.445	0	0	0	263.84	11.27	17.8	0	0	0	509.355	1/4/11
BN10391772	1/4/11	58	BN-550	678.455	553.46	401.2	0	0	0	91.343	1.55	59.363	0	0	0	553.456	1/4/11
BN10391773	1/4/11	55	BN-550	987.155	862.16	796.02	0	0	0	66.135	0	0	0	0	0	862.155	1/4/11
BN10391774	1/4/11	60	BN-550	669.635	544.64	393.44	0	0	0	58.67	1.55	90.975	0	0	0	544.635	1/4/11
BN10391775	1/4/11	61	BN-550	660.815	535.82	175.52	0	0	0	240.299	9.32	110.679	0	0	0	535.818	1/4/11
BN10391776	1/4/11	60	BN-550	726.965	601.97	347.39	0	14.05	0	174.09	52.385	14.05	0	0	0	601.965	1/4/11
BN10391777	1/4/11	59	BN-550	610.1	485.1	130	0	0	0	334.53	9.32	11.25	0	0	0	485.1	1/4/11
BN10391778	1/5/11	56	BN-550	693.89	568.89	324.565	0	0	0	239.635	0	4.69	0	0	0	568.89	1/5/11
BN10391779	1/5/11	60	BN-550	726.965	601.97	316	0	0	3.56	247.82	0	34.585	0	0	0	601.965	1/5/11
BN10391780	1/5/11	60	BN-550	740.195	615.2	357.365	0	0	0	253.79	3.1	0.94	0	0	0	615.195	1/5/11
BN10391781	1/5/11	54	BN-550	793.115	668.12	531.17	0	0	2.4	81.325	3.11	50.11	0	0	0	668.115	1/5/11
BN10391782	1/5/11	59	BN-550	627.74	502.74	248.705	0	0	0	209.015	0	45.02	0	0	0	502.74	1/5/11
BN10391783	1/4/11	58	BN-550	680.66	555.66	267.925	0	0	0	281.495	1.55	4.69	0	0	0	555.66	1/4/11
BN10391863	1/5/11	55	BN-550	786.5	661.5	494.615	0	0	0	152.535	3.11	11.24	0	0	0	661.5	1/5/11
BN10391864	1/5/11	52	BN-550	768.86	643.86	447.08	0	0	0	189.28	0	7.5	0	0	0	643.86	1/5/11
BN10391865	1/5/11	60	BN-550	744.605	619.61	333.7	0	0	0	277.465	0	8.44	0	0	0	619.605	1/5/11
BN10391866	1/5/11	57	BN-550	947.465	822.47	759.96	0	0	0	53.455	1.55	7.5	0	0	0	822.465	1/5/11
BN10391867	1/5/11	52	BN-550	709.325	584.33	299.375	0	0	0	156.185	7.77	120.995	0	0	0	584.325	1/5/11
BN10391868	1/6/11	59	BN-550	837.215	712.22	447.43	0	0	1.26	253.545	1.55	8.43	0	0	0	712.215	1/6/11
BN10391869	1/6/11	54	BN-550	607.895	482.9	141.71	0	2.34	0	301.895	0	36.95	0	0	0	482.895	1/6/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10391870	1/6/11	59	BN-550	726.965	601.97	310.62	0	0	0	87.44	3.11	200.795	0	0	0	601.965	1/6/11
BN10391871	1/5/11	57	BN-550	656.405	531.41	157.95	0	0	0	266.795	7.76	98.9	0	0	0	531.405	1/5/11
BN10391872	1/5/11	54	BN-550	678.455	553.46	214.635	0	0	0	333.2	0	5.62	0	0	0	553.455	1/5/11
BN10391873	1/5/11	60	BN-550	771.065	646.07	385.295	0	0	0	255.15	0	5.62	0	0	0	646.065	1/5/11
BN10391874	1/5/11	59	BN-550	715.94	590.94	343.8	0	0	0	201.925	3.11	42.105	0	0	0	590.94	1/5/11
BN10392098	1/6/11	54	BN-550	623.33	498.33	281.725	0	0	4.8	208.385	1.55	1.87	0	0	0	498.33	1/6/11
BN10392099	1/6/11	57	BN-550	616.715	491.72	130	0	0	0	338.295	0	23.42	0	0	0	491.715	1/6/11
BN10392100	1/6/11	55	BN-550	702.71	577.71	317.91	0	0	0	240.12	0	19.68	0	0	0	577.71	1/6/11
BN10392101	1/6/11	53	BN-550	674.045	549.05	316.46	0	0	0	226.025	0	6.56	0	0	0	549.045	1/6/11
BN10392102	1/6/11	59	BN-550	921.005	796.01	765.455	0	0	0	3.07	3.11	24.37	0	0	0	796.005	1/6/11
BN10392103	1/7/11	51	BN-550	740.195	615.2	482.225	0	0	0	6.68	7.77	118.52	0	0	0	615.195	1/7/11
BN10392104	1/6/11	56	BN-550	859.265	734.27	604.12	0	0	2.1	5.71	0	122.335	0	0	0	734.265	1/6/11
BN10392105	1/6/11	52	BN-550	649.79	524.79	256.4	0	0	0	263.7	0	4.69	0	0	0	524.79	1/6/11
BN10392106	1/6/11	54	BN-550	982.745	857.75	827.675	0	0	0	1.67	7.77	20.63	0	0	0	857.745	1/6/11
BN10392107	1/7/11	56	BN-550	870.29	745.29	353.345	0	0	2.1	296.705	0	93.14	0	0	0	745.29	1/7/11
BN10392108	1/7/11	50	BN-550	973.925	848.93	671.53	0	32.79	0	138.045	0	6.56	0	0	0	848.925	1/7/11
BN10392109	1/7/11	57	BN-550	978.335	853.34	630.06	0	14.05	0	204.065	0	5.16	0	0	0	853.335	1/7/11
BN10392113	1/9/11	39	BN-550	945.26	820.26	804.23	0	0	0	9.48	0	6.55	0	0	0	820.26	1/9/11
BN10392114	1/9/11	55	BN-550	762.245	637.25	382.665	0	0	0	248.96	0	5.62	0	0	0	637.245	1/9/11
BN10392115	1/9/11	52	BN-550	951.875	826.88	738.97	0	0	0	67.165	3.89	16.85	0	0	0	826.875	1/9/11
BN10392116	1/9/11	53	BN-550	731.375	606.38	337.305	0	0	0	215.84	0	53.23	0	0	0	606.375	1/9/11
BN10392117	1/9/11	53	BN-550	868.085	743.09	557.19	0	0	0	20.69	7.77	157.435	0	0	0	743.085	1/9/11
BN10392118	1/9/11	58	BN-550	678.455	553.46	229.585	0	0	0	314.5	0	9.37	0	0	0	553.455	1/9/11
BN10392119	1/9/11	57	BN-550	581.435	456.44	137.81	0	0	0	199.515	1.55	117.56	0	0	0	456.435	1/9/11
BN10392129	1/9/11	55	BN-550	892.34	767.34	509.325	0	0	0	153.535	4.66	99.82	0	0	0	767.34	1/9/11
BN10392130	1/9/11	59	BN-550	962.9	837.9	531.11	0	0	0	259.07	13.99	33.73	0	0	0	837.9	1/9/11
BN10392131	1/9/11	54	BN-550	854.855	729.86	600.035	0	0	0	93.63	6.21	29.98	0	0	0	729.855	1/9/11
BN10392132	1/9/11	60	BN-550	819.575	694.58	483.73	0	0	1.25	184.005	3.11	22.48	0	0	0	694.575	1/9/11
BN10392133	1/20/11	35	BN-550	982.745	857.75	835.285	0	0	0	5.58	0	16.88	0	0	0	857.745	1/20/11
BN10392135	1/7/11	59	BN-550	689.48	564.48	222.945	0	0	0	281.78	0	59.755	0	0	0	564.48	1/7/11
BN10392136	1/7/11	49	BN-550	965.105	840.11	674.495	0	18.74	0.42	146.45	0	0	0	0	0	840.105	1/7/11
BN10392137	1/7/11	54	BN-550	978.335	853.34	676.89	0	14.05	0	159.575	0	2.82	0	0	0	853.335	1/7/11
BN10392138	1/7/11	54	BN-550	685.07	560.07	246.345	0	0	0	305.615	1.55	6.56	0	0	0	560.07	1/7/11
BN10392139	1/7/11	44	BN-550	828.395	703.4	633.225	0	0	2.94	62.54	0	4.69	0	0	0	703.395	1/7/11
BN10392140	1/7/11	45	BN-550	980.54	855.54	466.62	0	243.465	0	139.835	0	5.62	0	0	0	855.54	1/7/11
BN10392141	1/7/11	52	BN-550	786.5	661.5	380.12	0	0	0	139.51	3.11	138.76	0	0	0	661.5	1/7/11
BN10392142	1/7/11	53	BN-550	947.465	822.47	669.88	0	0	0.42	149.355	0	2.81	0	0	0	822.465	1/7/11
BN10392143	1/8/11	55	BN-550	865.88	740.88	680.1	0	28.11	1.26	18.29	0	13.12	0	0	0	740.88	1/8/11
BN10392144	1/8/11	57	BN-550	912.185	787.19	704.125	0	0	2.1	5.26	0	75.7	0	0	0	787.185	1/8/11
BN10392145	1/8/11	58	BN-550	746.81	621.81	260.255	0	0	0	289.45	0	72.105	0	0	0	621.81	1/8/11
BN10392146	1/7/11	51	BN-550	676.25	551.25	329.51	0	0	0	219.87	0	1.87	0	0	0	551.25	1/7/11
BN10392296	1/8/11	55	BN-550	729.17	604.17	427.145	0	0	0	115.595	0	61.43	0	0	0	604.17	1/8/11
BN10392297	1/8/11	60	BN-550	978.335	853.34	822.745	0	0	0	8.42	1.55	20.62	0	0	0	853.335	1/8/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10392298	1/8/11	56	BN-550	982.745	857.75	741.505	0	0	0	99.38	0	16.86	0	0	0	857.745	1/8/11
BN10392299	1/8/11	50	BN-550	693.89	568.89	386.93	0	0	0	158.24	3.11	20.61	0	0	0	568.89	1/8/11
BN10392300	1/8/11	49	BN-550	638.765	513.77	262.775	0	0	0	250.05	0	0.94	0	0	0	513.765	1/8/11
BN10392301	1/8/11	54	BN-550	749.015	624.02	426.285	0	0	0	191.17	0	6.56	0	0	0	624.015	1/8/11
BN10392302	1/8/11	55	BN-550	603.485	478.49	145.6	0	0	0	268.405	0	64.48	0	0	0	478.485	1/8/11
BN10392303	1/8/11	52	BN-550	757.835	632.84	458.32	0	0	0	95.32	0	79.195	0	0	0	632.835	1/8/11
BN10392304	1/8/11	57	BN-550	663.02	538.02	232.79	0	0	0	302.42	0	2.81	0	0	0	538.02	1/8/11
BN10392305	1/8/11	54	BN-550	823.985	698.99	580.845	0	0	5	14.44	1.55	97.15	0	0	0	698.985	1/8/11
BN10392306	1/8/11	57	BN-550	766.655	641.66	336.025	0	0	0	127.06	0	178.57	0	0	0	641.655	1/8/11
BN10392307	1/8/11	53	BN-550	956.285	831.29	676.87	0	0	0	143.175	0	11.24	0	0	0	831.285	1/8/11
BN10392328	1/11/11	58	BN-550	823.985	698.99	370.925	0	0	0	221.53	1.55	104.98	0	0	0	698.985	1/11/11
BN10392329	1/11/11	50	BN-550	927.62	802.62	656.93	0	0	0	51.05	2.33	92.31	0	0	0	802.62	1/11/11
BN10392330	1/11/11	56	BN-550	960.695	835.7	636.845	0	0	0	107.84	1.55	89.46	0	0	0	835.695	1/11/11
BN10392331	1/10/11	62	BN-550	962.9	837.9	677.465	0	0	0	139.205	1.55	19.68	0	0	0	837.9	1/10/11
BN10392332	1/11/11	53	BN-550	784.295	659.3	423.415	0	0	0	201.825	0	34.055	0	0	0	659.295	1/11/11
BN10392333	1/11/11	53	BN-550	793.115	668.12	390.09	0	0	0	265.545	3.11	9.37	0	0	0	668.115	1/11/11
BN10392334	1/11/11	49	BN-550	925.415	800.42	646.465	0	1.88	0	145.51	0	6.56	0	0	0	800.415	1/11/11
BN10392335	1/11/11	57	BN-550	982.745	857.75	658.425	0	0.94	0	189.01	0	9.37	0	0	0	857.745	1/11/11
BN10392336	1/11/11	53	BN-550	973.925	848.93	757.36	0	0	0	70.955	0	20.61	0	0	0	848.925	1/11/11
BN10392337	1/11/11	41	BN-550	967.31	842.31	824.44	0	0	1	6.58	4.66	5.63	0	0	0	842.31	1/11/11
BN10392338	1/11/11	59	BN-550	826.19	701.19	405.705	0	0	0	221.05	1.55	72.885	0	0	0	701.19	1/11/11
BN10392339	1/11/11	55	BN-550	733.58	608.58	362.57	0	0	0	64.145	0	181.865	0	0	0	608.58	1/11/11
BN10392464	1/10/11	36	BN-550	921.005	796.01	732.905	0	4.96	0	56.26	0	1.88	0	0	0	796.005	1/10/11
BN10392465	1/10/11	47	BN-550	951.875	826.88	752.21	0	6.08	0	65.765	0	2.82	0	0	0	826.875	1/10/11
BN10392466	1/10/11	57	BN-550	984.95	859.95	734.82	0	21.07	0	75.805	1.55	26.705	0	0	0	859.95	1/10/11
BN10392467	1/10/11	57	BN-550	846.035	721.04	454.595	0	2.81	0	252.1	3.1	8.43	0	0	0	721.035	1/10/11
BN10392468	1/10/11	56	BN-550	938.645	813.65	698.985	0	2.81	0	99.66	0	12.19	0	0	0	813.645	1/10/11
BN10392469	1/10/11	53	BN-550	912.185	787.19	743.365	0	0	0	14.17	1.55	28.1	0	0	0	787.185	1/10/11
BN10392470	1/10/11	60	BN-550	921.005	796.01	597.02	0	0	1.31	14.29	6.22	177.165	0	0	0	796.005	1/10/11
BN10392471	1/10/11	54	BN-550	801.935	676.94	569.97	0	4.68	0	91.045	0	11.24	0	0	0	676.935	1/10/11
BN10392472	1/10/11	61	BN-550	916.595	791.6	658.485	0	0	0.63	57.43	0	75.05	0	0	0	791.595	1/10/11
BN10392473	1/10/11	59	BN-550	839.42	714.42	531.57	0	4.68	0	159.78	6.21	12.18	0	0	0	714.42	1/10/11
BN10392474	1/10/11	51	BN-550	812.96	687.96	492.5	0	4.68	0	185.16	0	5.62	0	0	0	687.96	1/10/11
BN10392475	1/10/11	52	BN-550	973.925	848.93	758.03	0	6.18	0	70.655	0	14.06	0	0	0	848.925	1/10/11
BN10392599	1/12/11	57	BN-550	709.325	584.33	209.38	0	0	0	107.695	0.8	266.45	0	0	0	584.325	1/12/11
BN10392600	1/12/11	57	BN-550	720.35	595.35	290.575	0	0	0	83.15	6.78	214.845	0	0	0	595.35	1/12/11
BN10392601	1/12/11	54	BN-550	768.86	643.86	317.615	0	0	0	168.94	0.24	157.065	0	0	0	643.86	1/12/11
BN10392602	1/12/11	59	BN-550	958.49	833.49	791.58	0	0	0	12.27	6.22	23.42	0	0	0	833.49	1/12/11
BN10392603	1/12/11	58	BN-550	841.625	716.63	389.255	0	0	0	166.215	0	161.155	0	0	0	716.625	1/12/11
BN10392604	1/12/11	56	BN-550	832.805	707.81	347.83	0	0	0	259.08	0	100.895	0	0	0	707.805	1/12/11
BN10392605	1/12/11	57	BN-550	896.75	771.75	532.945	0	0	2.08	223.605	0	13.12	0	0	0	771.75	1/12/11
BN10392606	1/12/11	54	BN-550	788.705	663.71	314.89	0	0	0	211.6	0	137.215	0	0	0	663.705	1/12/11
BN10392607	1/12/11	56	BN-550	846.035	721.04	409.94	0	0	1.04	298.815	0	11.24	0	0	0	721.035	1/12/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10392608	1/12/11	60	BN-550	954.08	829.08	515.525	0	0	0	306.065	0	7.49	0	0	0	829.08	1/12/11
BN10392609	1/11/11	58	BN-550	786.5	661.5	342.93	0	0	0	307.64	1.55	9.38	0	0	0	661.5	1/11/11
BN10392610	1/11/11	54	BN-550	898.955	773.96	579.82	0	0	0	190.385	0	3.75	0	0	0	773.955	1/11/11
BN10392805	1/14/11	53	BN-550	892.34	767.34	461.47	0	0	0	290.89	0	14.98	0	0	0	767.34	1/14/11
BN10392806	1/13/11	61	BN-550	788.705	663.71	336.7	0	0	0	308.425	0.78	17.8	0	0	0	663.705	1/13/11
BN10392807	1/13/11	61	BN-550	784.295	659.3	343.73	0	0	0	256.345	0	59.22	0	0	0	659.295	1/13/11
BN10392808	1/13/11	57	BN-550	940.85	815.85	745.79	0	0	3	23.96	0	43.1	0	0	0	815.85	1/13/11
BN10392809	1/13/11	54	BN-550	903.365	778.37	654.88	0	0	0	107.555	0	15.93	0	0	0	778.365	1/13/11
BN10392810	1/13/11	59	BN-550	947.465	822.47	609.045	0	0	0	199.36	0	14.06	0	0	0	822.465	1/13/11
BN10392811	1/13/11	62	BN-550	779.885	654.89	341.41	0	0	0	312.535	0	0.94	0	0	0	654.885	1/13/11
BN10392812	1/13/11	62	BN-550	837.215	712.22	373.45	0	0	72.165	154.05	0.16	112.39	0	0	0	712.215	1/13/11
BN10392813	1/13/11	56	BN-550	978.335	853.34	750.165	0	0	4	17.44	0	81.73	0	0	0	853.335	1/13/11
BN10392814	1/13/11	52	BN-550	676.25	551.25	262.07	0	0	0	281.68	0	7.5	0	0	0	551.25	1/13/11
BN10392815	1/13/11	57	BN-550	760.04	635.04	291.09	0	0	0	329.9	0	14.05	0	0	0	635.04	1/13/11
BN10392816	1/13/11	62	BN-550	804.14	679.14	385.73	0	0	3	230.35	0	60.06	0	0	0	679.14	1/13/11
BN10392955	1/15/11	58	BN-550	826.19	701.19	567.415	0	0	0	118.785	0	14.99	0	0	0	701.19	1/15/11
BN10392956	1/14/11	53	BN-550	812.96	687.96	397.475	0	0	0	288.145	0	2.34	0	0	0	687.96	1/14/11
BN10392957	1/14/11	56	BN-550	982.745	857.75	842.495	0	0	0	8.69	0	6.56	0	0	0	857.745	1/14/11
BN10392958	1/14/11	51	BN-550	927.62	802.62	779.07	0	0	0	9.49	0	14.06	0	0	0	802.62	1/14/11
BN10392959	1/14/11	48	BN-550	940.85	815.85	676.92	0	0	0	123.94	0	14.99	0	0	0	815.85	1/14/11
BN10392960	1/14/11	44	BN-550	883.52	758.52	436.24	0	0	0	310.11	0	12.17	0	0	0	758.52	1/14/11
BN10392961	1/14/11	40	BN-550	973.925	848.93	724	0	0	0	11.53	0	113.395	0	0	0	848.925	1/14/11
BN10392963	1/14/11	33	BN-550	965.105	840.11	835.355	0	0	0	1.94	0	2.81	0	0	0	840.105	1/14/11
BN10392964	1/14/11	49	BN-550	965.105	840.11	812.305	0	0	0	6.25	0	21.55	0	0	0	840.105	1/14/11
BN10392965	1/14/11	44	BN-550	969.515	844.52	831.145	0	0	0	5.88	0	7.49	0	0	0	844.515	1/14/11
BN10392966	1/14/11	51	BN-550	982.745	857.75	771.45	0	0	0	82.545	0	3.75	0	0	0	857.745	1/14/11
BN10393058	1/15/11	57	BN-550	773.27	648.27	278.88	0	0	0	332.575	0	36.815	0	0	0	648.27	1/15/11
BN10393059	1/15/11	50	BN-550	790.91	665.91	551.585	0	0	0	110.585	0	3.74	0	0	0	665.91	1/15/11
BN10393060	1/15/11	46	BN-550	934.235	809.24	770.485	0	0	5.38	14.01	1.55	17.81	0	0	0	809.235	1/15/11
BN10393061	1/15/11	46	BN-550	958.49	833.49	823.66	0	0	0	4.21	0	5.62	0	0	0	833.49	1/15/11
BN10393062	1/15/11	37	BN-550	879.11	754.11	741.47	0	0	0	3.26	0	9.38	0	0	0	754.11	1/15/11
BN10393063	1/15/11	57	BN-550	989.36	864.36	764.455	0	0	0	74.935	1.55	23.42	0	0	0	864.36	1/15/11
BN10393064	1/15/11	45	BN-550	907.775	782.78	774.705	0	0	0	2.44	0	5.63	0	0	0	782.775	1/15/11
BN10393065	1/15/11	48	BN-550	978.335	853.34	817.755	0	0	2.26	14	6.21	13.11	0	0	0	853.335	1/15/11
BN10393066	1/15/11	48	BN-550	969.515	844.52	691.26	0	11.66	0	135.185	0.31	6.1	0	0	0	844.515	1/15/11
BN10393067	1/15/11	59	BN-550	898.955	773.96	680.06	0	0	0	7.67	0	86.225	0	0	0	773.955	1/15/11
BN10393068	1/15/11	56	BN-550	850.445	725.45	489.9	0	0	0	190.165	3.11	42.27	0	0	0	725.445	1/15/11
BN10393069	1/15/11	50	BN-550	832.805	707.81	685.485	0	0	0	2.8	3.11	16.41	0	0	0	707.805	1/15/11
BN10393169	1/16/11	52	BN-550	872.495	747.5	518.39	0	0	0	11.88	3.11	214.115	0	0	0	747.495	1/16/11
BN10393170	1/16/11	62	BN-550	914.39	789.39	593.89	0	0	0	125.8	0	69.7	0	0	0	789.39	1/16/11
BN10393171	1/15/11	49	BN-550	976.13	851.13	664.99	0	0	0	9.8	3.11	173.23	0	0	0	851.13	1/15/11
BN10393172	1/16/11	38	BN-550	945.26	820.26	728.465	0	2.34	0	78.205	0	11.25	0	0	0	820.26	1/16/11
BN10393173	1/16/11	50	BN-550	980.54	855.54	778.605	0	0	0	12.2	0	64.735	0	0	0	855.54	1/16/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10393174	1/16/11	50	BN-550	938.645	813.65	756.985	0	0	3	43.36	0	10.3	0	0	0	813.645	1/16/11
BN10393175	1/15/11	47	BN-550	852.65	727.65	454.235	0	0	0	237.825	0	35.59	0	0	0	727.65	1/15/11
BN10393176	1/16/11	56	BN-550	890.135	765.14	692.73	0	0	0	65.835	0	6.57	0	0	0	765.135	1/16/11
BN10393177	1/15/11	57	BN-550	852.65	727.65	343.875	1.56	9.37	0	367.375	0.31	5.16	0	0	0	727.65	1/15/11
BN10393178	1/15/11	62	BN-550	976.13	851.13	492.82	0	0	0	255.025	0	103.285	0	0	0	851.13	1/15/11
BN10393179	1/16/11	42	BN-550	921.005	796.01	688.915	0	7.02	0	78.5	0	21.57	0	0	0	796.005	1/16/11
BN10393180	1/16/11	44	BN-550	978.335	853.34	828.265	0	0	0	18.51	0	6.56	0	0	0	853.335	1/16/11
BN10393273	1/16/11	50	BN-550	987.155	862.16	851.585	0	0	0	3.08	0	7.49	0	0	0	862.155	1/16/11
BN10393274	1/16/11	48	BN-550	967.31	842.31	742.38	0	0	0	87.76	0	12.17	0	0	0	842.31	1/16/11
BN10393275	1/16/11	56	BN-550	951.875	826.88	741.03	0	0	0	62.425	0	23.42	0	0	0	826.875	1/16/11
BN10393276	1/16/11	51	BN-550	962.9	837.9	754.755	0	0	2.4	73.245	0	7.5	0	0	0	837.9	1/16/11
BN10393277	1/16/11	45	BN-550	949.67	824.67	811.55	0	0	0	0	0	13.12	0	0	0	824.67	1/16/11
BN10393278	1/16/11	40	BN-550	976.13	851.13	835.19	0	0	0	6.57	0	9.37	0	0	0	851.13	1/16/11
BN10393279	1/17/11	44	BN-550	905.57	780.57	631.695	0	0	0	132.335	1.55	14.99	0	0	0	780.57	1/17/11
BN10393280	1/16/11	38	BN-550	912.185	787.19	646.095	0	0	0	135.47	0	5.62	0	0	0	787.185	1/16/11
BN10393281	1/17/11	36	BN-550	905.57	780.57	750.53	0	2.34	0	14.83	0	12.87	0	0	0	780.57	1/17/11
BN10393282	1/16/11	47	BN-550	971.72	846.72	829.14	0	0	0	10.41	1.55	5.62	0	0	0	846.72	1/16/11
BN10393283	1/16/11	45	BN-550	958.49	833.49	768.495	0	0	0	55.635	0	9.36	0	0	0	833.49	1/16/11
BN10393284	1/16/11	39	BN-550	947.465	822.47	809.285	0	0	0	1.94	0	11.24	0	0	0	822.465	1/16/11
BN10393374	1/18/11	33	BN-550	989.36	864.36	852.92	0	0	0	5.82	0	5.62	0	0	0	864.36	1/18/11
BN10393375	1/18/11	38	BN-550	909.98	784.98	760.27	0	0	0	4.16	9.32	11.23	0	0	0	784.98	1/18/11
BN10393376	1/17/11	38	BN-550	885.725	760.73	660.94	0	0	0	9.02	6.22	84.545	0	0	0	760.725	1/17/11
BN10393377	1/17/11	35	BN-550	984.95	859.95	853.39	0	0	0	0	0	6.56	0	0	0	859.95	1/17/11
BN10393378	1/18/11	45	BN-550	914.39	789.39	756.815	0	0	0	2.23	0	30.345	0	0	0	789.39	1/18/11
BN10393379	1/17/11	40	BN-550	817.37	692.37	665.5	0	2.34	0.84	6.24	6.21	11.24	0	0	0	692.37	1/17/11
BN10393380	1/17/11	44	BN-550	954.08	829.08	797.56	0	2.34	1.5	9.58	3.11	14.99	0	0	0	829.08	1/17/11
BN10393381	1/17/11	41	BN-550	936.44	811.44	789.47	0	0	0	13.54	0	8.43	0	0	0	811.44	1/17/11
BN10393382	1/17/11	36	BN-550	927.62	802.62	792.26	0	0	0	1.94	0	8.42	0	0	0	802.62	1/17/11
BN10393383	1/18/11	58	BN-550	947.465	822.47	657.665	0	0	0	121.905	1.55	41.345	0	0	0	822.465	1/18/11
BN10393384	1/17/11	41	BN-550	960.695	835.7	804.375	0	0	0	9.18	6.21	15.93	0	0	0	835.695	1/17/11
BN10393385	1/18/11	57	BN-550	932.03	807.03	740.56	0	0	0	25.38	0	41.09	0	0	0	807.03	1/18/11
BN10393508	1/19/11	54	BN-550	918.8	793.8	717.49	0	0	0	31.63	0	44.68	0	0	0	793.8	1/19/11
BN10393509	1/20/11	57	BN-550	982.745	857.75	595.985	0	0	0	193.32	1.55	66.89	0	0	0	857.745	1/20/11
BN10393510	1/19/11	48	BN-550	919.14	794.14	782.94	0	0	0	0.83	0	10.37	0	0	0	794.14	1/19/11
BN10393511	1/19/11	47	BN-550	967.31	842.31	784.755	0	0	0	48.195	0	9.36	0	0	0	842.31	1/19/11
BN10393512	1/18/11	44	BN-550	947.465	822.47	749.1	0	0	0	66.795	0	6.57	0	0	0	822.465	1/18/11
BN10393513	1/18/11	55	BN-550	777.68	652.68	342.64	0	0	0	297.86	0	12.18	0	0	0	652.68	1/18/11
BN10393514	1/19/11	53	BN-550	958.49	833.49	751.83	0	0	1.04	41.685	0	38.935	0	0	0	833.49	1/19/11
BN10393515	1/18/11	55	BN-550	971.72	846.72	691.08	0	0	0	153.77	0	1.87	0	0	0	846.72	1/18/11
BN10393516	1/19/11	55	BN-550	936.44	811.44	657.675	0	0	1.04	144.615	1.55	6.56	0	0	0	811.44	1/19/11
BN10393517	1/19/11	44	BN-550	973.925	848.93	825.725	0	0	0	5.72	1.55	15.93	0	0	0	848.925	1/19/11
BN10393518	1/19/11	54	BN-550	943.055	818.06	662.135	0	0	0	152.17	0	3.75	0	0	0	818.055	1/19/11
BN10393519	1/19/11	45	BN-550	962.9	837.9	816.04	0	0	0	8.75	0	13.11	0	0	0	837.9	1/19/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10393539	1/20/11	52	BN-550	689.48	564.48	232.31	0	0	2.1	221.725	0	108.345	0	0	0	564.48	1/20/11
BN10393540	1/20/11	58	BN-550	733.58	608.58	311.52	0	0	0	292.37	0	4.69	0	0	0	608.58	1/20/11
BN10393541	1/20/11	49	BN-550	929.825	804.83	710.11	0	0	0	87.225	0	7.49	0	0	0	804.825	1/20/11
BN10393542	1/20/11	57	BN-550	887.93	762.93	492.63	0	0	0	220.43	0	49.87	0	0	0	762.93	1/20/11
BN10393543	1/20/11	62	BN-550	852.65	727.65	437.43	0	0	3.15	274.64	0	12.43	0	0	0	727.65	1/20/11
BN10393545	1/20/11	60	BN-550	883.52	758.52	498.285	0	0	2.08	87.665	0	170.49	0	0	0	758.52	1/20/11
BN10393546	1/20/11	45	BN-550	896.75	771.75	636.215	0	0	1.04	63.673	4.66	66.163	0	0	0	771.751	1/20/11
BN10393547	1/20/11	53	BN-550	881.315	756.32	641.225	0	0	4.3	92.93	0	17.86	0	0	0	756.315	1/20/11
BN10393548	2/2/11	44	BN-550	896.75	771.75	686.955	0	0	5.63	66.065	4.66	8.44	0	0	0	771.75	2/2/11
BN10393549	1/20/11	58	BN-550	629.945	504.95	130	0	0	0	373.945	0	1	0	0	0	504.945	1/20/11
BN10393550	1/20/11	45	BN-550	965.105	840.11	681.21	0	0	0	153.025	0	5.87	0	0	0	840.105	1/20/11
BN10393756	1/21/11	37	BN-550	927.62	802.62	750.02	0	20.82	0	9.29	0	22.49	0	0	0	802.62	1/21/11
BN10393757	1/21/11	40	BN-550	958.49	833.49	756.025	0	0	0	71.855	0	5.61	0	0	0	833.49	1/21/11
BN10393758	1/20/11	58	BN-550	779.885	654.89	309.25	0	0	1	178.135	0	166.5	0	0	0	654.885	1/20/11
BN10393759	1/21/11	51	BN-550	938.645	813.65	687.65	0	0	0	15.865	3.11	107.02	0	0	0	813.645	1/21/11
BN10393760	1/21/11	50	BN-550	956.285	831.29	792.475	0	0	0	5.41	6.22	27.18	0	0	0	831.285	1/21/11
BN10393761	1/21/11	42	BN-550	938.645	813.65	753.36	0	0	0	52.785	0	7.5	0	0	0	813.645	1/21/11
BN10393762	1/21/11	38	BN-550	852.65	727.65	645.17	0	0	0	79.67	0	2.81	0	0	0	727.65	1/21/11
BN10393763	1/21/11	53	BN-550	868.085	743.09	432.62	0	0	0	190.165	1.55	118.75	0	0	0	743.085	1/21/11
BN10393764	1/20/11	55	BN-550	883.52	758.52	582.85	0	0	0	80.935	0	94.735	0	0	0	758.52	1/20/11
BN10393765	1/21/11	43	BN-550	929.825	804.83	697.55	0	14.05	0	67.315	1.55	24.36	0	0	0	804.825	1/21/11
BN10393766	1/21/11	37	BN-550	914.39	789.39	770.64	0	0	0	10.02	3.11	5.62	0	0	0	789.39	1/21/11
BN10393767	1/21/11	35	BN-550	909.98	784.98	770.52	0	0	0	6.97	0	7.49	0	0	0	784.98	1/21/11
BN10393884	1/22/11	55	BN-550	932.03	807.03	659.36	0	0	6.24	17.09	0	124.34	0	0	0	807.03	1/22/11
BN10393885	1/22/11	48	BN-550	887.93	762.93	687.075	0	5.61	0	24.748	1.55	43.948	0	0	0	762.931	1/22/11
BN10393886	1/22/11	47	BN-550	976.13	851.13	774.91	0	0	0.42	3.34	1.55	70.91	0	0	0	851.13	1/22/11
BN10393887	1/22/11	46	BN-550	927.62	802.62	691.44	0	0	0	110.71	0	0.47	0	0	0	802.62	1/22/11
BN10393888	1/22/11	50	BN-550	918.8	793.8	633.26	0	0	0	2.37	1.55	156.62	0	0	0	793.8	1/21/11
BN10393889	1/22/11	47	BN-550	815.165	690.17	372.265	0	0	0	6.25	4.65	307	0	0	0	690.165	1/22/11
BN10393890	1/21/11	45	BN-550	984.95	859.95	794.35	0	0	0	0	0	65.6	0	0	0	859.95	1/21/11
BN10393891	1/22/11	47	BN-550	967.31	842.31	833.23	0	0	0	2.37	1.55	5.16	0	0	0	842.31	1/22/11
BN10393892	1/22/11	50	BN-550	927.62	802.62	783.5	0	0	0	0.69	1.55	16.88	0	0	0	802.62	1/22/11
BN10393893	1/22/11	49	BN-550	912.185	787.19	656.425	0	0	0.42	8.37	0	121.97	0	0	0	787.185	1/22/11
BN10393894	1/22/11	45	BN-550	925.415	800.42	662.915	0	14.32	0	67.41	0	55.77	0	0	0	800.415	1/22/11
BN10393895	1/22/11	51	BN-550	936.44	811.44	744.87	0	0	0	46.6	3.1	16.87	0	0	0	811.44	1/22/11
BN10394196	1/23/11	48	BN-550	934.235	809.24	756.095	0	0	0	4.31	3.1	45.73	0	0	0	809.235	1/23/11
BN10394197	1/23/11	48	BN-550	916.595	791.6	735.595	0	0	2	7.66	0	46.34	0	0	0	791.595	1/23/11
BN10394198	1/23/11	39	BN-550	956.285	831.29	816.895	0	0	2	5.82	0	6.57	0	0	0	831.285	1/23/11
BN10394199	1/23/11	52	BN-550	896.75	771.75	704.875	0	0	0	31.405	0	35.47	0	0	0	771.75	1/23/11
BN10394200	1/23/11	46	BN-550	982.745	857.75	810.05	0	0	0	5.19	0	42.505	0	0	0	857.745	1/23/11
BN10394201	1/22/11	44	BN-550	945.26	820.26	808.32	0	0	0	1.8	0.78	9.36	0	0	0	820.26	1/22/11
BN10394202	1/22/11	38	BN-550	976.13	851.13	830.38	0	0	10.08	4.75	3.11	2.81	0	0	0	851.13	1/22/11
BN10394203	1/23/11	48	BN-550	921.005	796.01	760.745	0	0	0	8.19	0	27.07	0	0	0	796.005	1/23/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10394204	1/22/11	46	BN-550	907.775	782.78	760.995	0	0	0	4.36	10.87	6.55	0	0	0	782.775	1/22/11
BN10394205	1/22/11	53	BN-550	956.285	831.29	816.815	0	0	0	2.84	5.06	6.57	0	0	0	831.285	1/22/11
BN10394206	1/23/11	46	BN-550	958.49	833.49	787.12	0	0	0	0	6.22	40.15	0	0	0	833.49	1/23/11
BN10394207	1/23/11	49	BN-550	921.005	796.01	749.79	0	0	0	3.39	1.55	41.275	0	0	0	796.005	1/23/11
BN10394370	1/23/11	56	BN-550	932.03	807.03	656.835	0	0	0	125.845	0	24.35	0	0	0	807.03	1/23/11
BN10394371	1/23/11	39	BN-550	965.105	840.11	817.285	0	0	0	7.21	1.55	14.06	0	0	0	840.105	1/23/11
BN10394372	1/23/11	53	BN-550	949.67	824.67	601.835	0	0	0	9.46	0	213.375	0	0	0	824.67	1/23/11
BN10394373	1/23/11	43	BN-550	929.825	804.83	770.235	0	0	3.36	2.83	3.1	25.3	0	0	0	804.825	1/23/11
BN10394374	1/23/11	47	BN-550	918.8	793.8	691.67	0	0	0.84	14.15	3.1	84.04	0	0	0	793.8	1/23/11
BN10394375	1/23/11	58	BN-550	960.695	835.7	640.33	0	0	0.42	14.71	0	180.235	0	0	0	835.695	1/23/11
BN10394376	1/23/11	41	BN-550	973.925	848.93	844.635	0	0	0	1.94	0	2.35	0	0	0	848.925	1/23/11
BN10394377	1/24/11	54	BN-550	960.695	835.7	807.395	0	0	3	12.22	4.66	8.42	0	0	0	835.695	1/24/11
BN10394378	1/23/11	51	BN-550	984.95	859.95	826.11	0	0	2	9.7	6.21	15.93	0	0	0	859.95	1/23/11
BN10394379	1/23/11	37	BN-550	960.695	835.7	816.215	0	0	0	1.67	0	17.81	0	0	0	835.695	1/23/11
BN10394380	1/24/11	44	BN-550	984.95	859.95	826.33	0	0	4.08	8.63	3.11	17.8	0	0	0	859.95	1/24/11
BN10394381	1/23/11	60	BN-550	819.575	694.58	464.57	0	0	0	17.95	1.55	210.505	0	0	0	694.575	1/23/11
BN10394475	1/24/11	59	BN-550	987.155	862.16	698.525	0	0	0	72.59	1.55	89.49	0	0	0	862.155	1/24/11
BN10394476	1/24/11	34	BN-550	658.61	533.61	518.64	0	2.34	0	1.4	4.66	6.57	0	0	0	533.61	1/24/11
BN10394477	1/24/11	41	BN-550	969.515	844.52	822.475	0	0	0	3.33	4.65	14.06	0	0	0	844.515	1/24/11
BN10394478	1/24/11	44	BN-550	918.8	793.8	671.26	0	0	0	95.4	9.33	17.81	0	0	0	793.8	1/24/11
BN10394479	1/24/11	46	BN-550	874.7	749.7	634.37	0	0	0	79.15	10.87	25.31	0	0	0	749.7	1/24/11
BN10394480	1/24/11	66	BN-550	954.08	829.08	752.265	0	0	0	5.45	12.43	58.935	0	0	0	829.08	1/24/11
BN10394481	1/24/11	49	BN-550	912.185	787.19	722.855	0	0	0	4.85	9.32	50.16	0	0	0	787.185	1/24/11
BN10394482	1/24/11	53	BN-550	830.94	705.94	678.07	0	0	0.94	4.05	9.71	13.17	0	0	0	705.94	1/24/11
BN10394483	1/24/11	42	BN-550	969.515	844.52	829.365	0	0	1	3.88	4.65	5.62	0	0	0	844.515	1/24/11
BN10394484	1/24/11	48	BN-550	987.155	862.16	754.915	0	4.68	0	5.97	1.55	95.04	0	0	0	862.155	1/24/11
BN10394485	1/24/11	32	BN-550	927.62	802.62	764.31	0	18.74	0	8.33	0	11.24	0	0	0	802.62	1/24/11
BN10394486	1/24/11	52	BN-550	940.85	815.85	619.25	0	0	0	178.51	7.77	10.32	0	0	0	815.85	1/24/11
BN10394534	1/24/11	42	BN-550	921.005	796.01	786.795	0	0	0	2.64	0	6.57	0	0	0	796.005	1/24/11
BN10394535	1/24/11	43	BN-550	945.26	820.26	806.18	0	0	0	7.52	0	6.56	0	0	0	820.26	1/24/11
BN10394536	1/25/11	47	BN-550	828.395	703.4	593.435	0	0	0	9.8	1.55	98.61	0	0	0	703.395	1/25/11
BN10394537	1/24/11	46	BN-550	973.925	848.93	765.66	0	6.55	0	4.85	3.11	68.755	0	0	0	848.925	1/24/11
BN10394538	1/25/11	40	BN-550	914.39	789.39	785.03	0	0	0	0	1.55	2.81	0	0	0	789.39	1/25/11
BN10394539	1/25/11	47	BN-550	887.93	762.93	668.285	0	0	0	2.37	0	92.275	0	0	0	762.93	1/25/11
BN10394540	1/25/11	60	BN-550	980.54	855.54	733.675	0	0	0	9.43	0	112.435	0	0	0	855.54	1/25/11
BN10394541	1/25/11	53	BN-550	940.85	815.85	763.265	0	0	0	11.66	0	40.925	0	0	0	815.85	1/25/11
BN10394542	1/25/11	62	BN-550	883.52	758.52	487.96	0	0	0	8.46	3.11	258.99	0	0	0	758.52	1/25/11
BN10394543	1/25/11	54	BN-550	812.96	687.96	559.615	0	0	0.42	9.73	0	118.195	0	0	0	687.96	1/25/11
BN10394544	1/25/11	50	BN-550	987.155	862.16	760.755	0	0	0	70.48	0	30.92	0	0	0	862.155	1/25/11
BN10394545	1/25/11	52	BN-550	927.62	802.62	675.17	0	0	0	2.91	0	124.54	0	0	0	802.62	1/25/11
BN10394727	1/26/11	42	BN-550	989.36	864.36	844.54	0	0	0	5.14	1.55	13.13	0	0	0	864.36	1/26/11
BN10394728	1/25/11	44	BN-550	969.515	844.52	787.485	0	0	0	6.95	1.55	48.53	0	0	0	844.515	1/25/11
BN10394729	1/25/11	52	BN-550	898.955	773.96	674.43	0	0	0	4.04	0	95.485	0	0	0	773.955	1/25/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10394730	1/26/11	48	BN-550	960.695	835.7	734.19	0	0	7.46	50.59	0	43.455	0	0	0	835.695	1/26/11
BN10394731	1/25/11	44	BN-550	958.49	833.49	807.91	0	0	0	10.59	0	14.99	0	0	0	833.49	1/25/11
BN10394732	1/26/11	50	BN-550	958.49	833.49	797.58	0	0	0	11.87	1.55	22.49	0	0	0	833.49	1/26/11
BN10394733	1/25/11	41	BN-550	951.875	826.88	760.005	0	0	0	7.24	0	59.63	0	0	0	826.875	1/25/11
BN10394734	1/25/11	41	BN-550	907.775	782.78	763.885	0	0	0	3.9	0	14.99	0	0	0	782.775	1/25/11
BN10394735	1/26/11	48	BN-550	962.9	837.9	786.855	0	0	1	35.985	0	14.06	0	0	0	837.9	1/26/11
BN10394736	1/26/11	49	BN-550	960.695	835.7	763.085	0	0	2.25	25.01	0	45.35	0	0	0	835.695	1/26/11
BN10394737	1/26/11	39	BN-550	973.925	848.93	802.495	0	0	0	44.56	0	1.87	0	0	0	848.925	1/26/11
BN10394738	1/26/11	52	BN-550	934.235	809.24	674.485	0	0	1	19.82	3.11	110.82	0	0	0	809.235	1/26/11
BN10394839	1/27/11	58	BN-550	870.29	745.29	436.595	0	2.81	11.25	51.98	13.98	228.675	0	0	0	745.29	1/27/11
BN10394840	1/27/11	44	BN-550	876.905	751.91	651.54	0	0	12.09	11.13	1.55	75.595	0	0	0	751.905	1/27/11
BN10394841	1/27/11	38	BN-550	863.675	738.68	710.145	0	0	1.68	10.3	1.55	15	0	0	0	738.675	1/27/11
BN10394842	1/27/11	35	BN-550	989.36	864.36	842.33	0	4.68	0	13.6	0	3.75	0	0	0	864.36	1/27/11
BN10394843	1/27/11	42	BN-550	991.565	866.57	775.57	0	4.68	0	70.375	0	15.94	0	0	0	866.565	1/27/11
BN10394844	1/27/11	38	BN-550	879.11	754.11	722.27	0	0	0	6.55	0	25.29	0	0	0	754.11	1/27/11
BN10394845	1/27/11	44	BN-550	945.26	820.26	781.26	0	0	7.73	9.76	9.33	12.18	0	0	0	820.26	1/27/11
BN10394846	1/28/11	59	BN-550	890.135	765.14	443.005	0	2.34	0	307.61	0	12.18	0	0	0	765.135	1/28/11
BN10394847	1/27/11	50	BN-550	868.085	743.09	689.725	0	0	0	12.9	0	40.46	0	0	0	743.085	1/27/11
BN10394848	1/27/11	60	BN-550	965.105	840.11	742.845	0	0	2.94	17.35	7.77	69.2	0	0	0	840.105	1/27/11
BN10394849	1/27/11	35	BN-550	918.8	793.8	762.28	0	4.68	0.84	5.71	1.55	18.74	0	0	0	793.8	1/27/11
BN10394850	1/27/11	39	BN-550	967.31	842.31	819.33	0	4.68	0	13.47	1.55	3.28	0	0	0	842.31	1/27/11
BN10394994	1/28/11	58	BN-550	901.16	776.16	284.68	0	0	0	476.48	0	15	0	0	0	776.16	1/28/11
BN10394995	1/28/11	47	BN-550	978.335	853.34	341.76	0	0	0	505.005	0	6.57	0	0	0	853.335	1/28/11
BN10394996	1/28/11	55	BN-550	808.55	683.55	317.32	0	2.81	0	324.08	0	39.34	0	0	0	683.55	1/28/11
BN10394997	1/28/11	48	BN-550	843.83	718.83	591.92	0	0	5.36	78.78	1.55	41.22	0	0	0	718.83	1/28/11
BN10394998	1/28/11	53	BN-550	848.24	723.24	528.83	0	0	0	182.23	0	12.18	0	0	0	723.24	1/28/11
BN10394999	1/28/11	57	BN-550	890.135	765.14	346.66	0	0	0	397.235	1.55	19.69	0	0	0	765.135	1/28/11
BN10395000	1/28/11	55	BN-550	863.675	738.68	460.73	0	0	2.08	182.895	0	92.97	0	0	0	738.675	1/28/11
BN10395001	1/28/11	44	BN-550	925.415	800.42	751.175	0	0	0.84	30.6	0	17.8	0	0	0	800.415	1/28/11
BN10395002	1/28/11	36	BN-550	934.235	809.24	770.825	0	2.34	1.26	12.33	0	22.48	0	0	0	809.235	1/28/11
BN10395003	1/28/11	42	BN-550	934.235	809.24	780.395	0	0	0	25.1	0	3.74	0	0	0	809.235	1/28/11
BN10395004	1/28/11	57	BN-550	808.55	683.55	373.36	0	0	2.08	239.62	0	68.49	0	0	0	683.55	1/28/11
BN10395005	1/28/11	58	BN-550	912.185	787.19	500.225	0	0	0	263.85	1.55	21.56	0	0	0	787.185	1/28/11
BN10395007	1/28/11	56	BN-550	881.315	756.32	576.13	0	0	0	74.66	15.54	89.985	0	0	0	756.315	1/28/11
BN10395008	1/29/11	37	BN-550	984.95	859.95	839.95	0	0	0	5.98	4.66	9.36	0	0	0	859.95	1/29/11
BN10395009	1/28/11	44	BN-550	980.54	855.54	820.69	0	0	10.13	7.85	0	16.87	0	0	0	855.54	1/28/11
BN10395010	1/28/11	63	BN-550	777.68	652.68	119.6	0	0	0	518.42	1.55	13.11	0	0	0	652.68	1/28/11
BN10395011	1/29/11	36	BN-550	945.26	820.26	808.54	0	0	0	6.11	0	5.61	0	0	0	820.26	1/29/11
BN10395012	1/29/11	47	BN-550	903.365	778.37	636.97	0	0	0	5.27	6.22	129.905	0	0	0	778.365	1/29/11
BN10395013	1/29/11	46	BN-550	951.875	826.88	736.175	0	0	0	2.5	0	88.2	0	0	0	826.875	1/29/11
BN10395014	1/28/11	54	BN-550	967.31	842.31	785.3	0	0	0	6.52	27.98	22.51	0	0	0	842.31	1/28/11
BN10395015	1/28/11	45	BN-550	912.185	787.19	762.375	0	0	0	13.27	3.11	8.43	0	0	0	787.185	1/28/11
BN10395016	1/29/11	41	BN-550	978.335	853.34	838.255	0	0	0	1.67	3.11	10.3	0	0	0	853.335	1/29/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10395017	1/28/11	38	BN-550	984.95	859.95	844.76	0	0	0	3.33	1.55	10.31	0	0	0	859.95	1/28/11
BN10395018	1/29/11	56	BN-550	932.03	807.03	579.85	0	0	0	206.3	7.77	13.11	0	0	0	807.03	1/29/11
BN10395283	1/29/11	42	BN-550	962.9	837.9	814.9	0	7.02	0	4.74	0	11.24	0	0	0	837.9	1/29/11
BN10395284	1/30/11	33	BN-550	863.675	738.68	723.405	0	0	2.08	0.7	3.11	9.38	0	0	0	738.675	1/30/11
BN10395285	1/29/11	47	BN-550	912.185	787.19	589.615	7.8	0	0	79.035	3.11	107.625	0	0	0	787.185	1/29/11
BN10395286	1/30/11	37	BN-550	949.67	824.67	817.73	0	0	0	1.32	0	5.62	0	0	0	824.67	1/30/11
BN10395287	1/30/11	35	BN-550	921.005	796.01	788.455	0	0	0	1.94	0	5.61	0	0	0	796.005	1/30/11
BN10395288	1/30/11	43	BN-550	958.49	833.49	821.86	0	0	0	2.91	3.1	5.62	0	0	0	833.49	1/30/11
BN10395289	1/30/11	39	BN-550	938.645	813.65	799.455	0	0	0	3.88	0	10.31	0	0	0	813.645	1/30/11
BN10395290	1/30/11	38	BN-550	918.8	793.8	783.42	0	0	0	1.94	0	8.44	0	0	0	793.8	1/30/11
BN10395291	1/30/11	48	BN-550	865.88	740.88	462.53	9.37	0	0	128.05	3.1	137.83	0	0	0	740.88	1/30/11
BN10395292	1/30/11	44	BN-550	859.265	734.27	459.02	3.9	0	7.94	248.405	0	15	0	0	0	734.265	1/30/11
BN10395293	1/30/11	44	BN-550	894.545	769.55	692.98	0	0	1.05	57.125	6.22	12.17	0	0	0	769.545	1/30/11
BN10395294	1/30/11	42	BN-550	978.335	853.34	576.2	6.24	0	0	261.995	0	8.9	0	0	0	853.335	1/30/11
BN10395374	1/31/11	52	BN-550	958.49	833.49	767.735	55.385	0	0	1.94	0	8.43	0	0	0	833.49	1/31/11
BN10395375	1/31/11	46	BN-550	954.08	829.08	764.675	0	0	1.04	4.02	1.55	57.795	0	0	0	829.08	1/31/11
BN10395376	1/30/11	45	BN-550	973.925	848.93	842.235	0	0	0	3.88	0	2.81	0	0	0	848.925	1/30/11
BN10395377	1/31/11	44	BN-550	967.31	842.31	836.86	0	0	0	4.04	0	1.41	0	0	0	842.31	1/31/11
BN10395378	1/30/11	36	BN-550	967.31	842.31	830	0	0	0	3.88	0	8.43	0	0	0	842.31	1/30/11
BN10395379	1/30/11	38	BN-550	947.465	822.47	802.515	0	0	0	7.76	0	12.19	0	0	0	822.465	1/30/11
BN10395380	1/31/11	56	BN-550	881.315	756.32	583.125	0	0	0.84	11.64	6.22	154.49	0	0	0	756.315	1/31/11
BN10395381	1/31/11	57	BN-550	918.8	793.8	760.18	0	0	0	7.76	10.87	14.99	0	0	0	793.8	1/31/11
BN10395382	1/31/11	49	BN-550	885.725	760.73	672.665	0	0	0	6.79	6.21	75.06	0	0	0	760.725	1/31/11
BN10395383	1/31/11	57	BN-550	887.93	762.93	704.855	0	0	0	5.82	7.76	44.495	0	0	0	762.93	1/31/11
BN10395384	1/31/11	50	BN-550	830.6	705.6	674.83	0	0	0	5.82	6.21	18.74	0	0	0	705.6	1/31/11
BN10395385	1/31/11	56	BN-550	934.235	809.24	619.135	0	0	11.05	32.655	10.87	135.525	0	0	0	809.235	1/31/11
BN10395471	2/2/11	40	BN-550	876.905	751.91	631.355	0	0	0	99.04	9.33	12.18	0	0	0	751.905	2/2/11
BN10395472	2/2/11	49	BN-550	929.825	804.83	786.715	0	0	3.38	6.94	3.1	4.69	0	0	0	804.825	2/2/11
BN10395473	2/2/11	52	BN-550	982.745	857.75	758.745	0	0	3.38	83.44	0	12.18	0	0	0	857.745	2/2/11
BN10395474	2/2/11	49	BN-550	947.465	822.47	697.39	0	14.05	0	84.215	10.88	15.93	0	0	0	822.465	2/2/11
BN10395475	2/1/11	57	BN-550	799.73	674.73	453.435	0	0	0	112.02	1.55	107.725	0	0	0	674.73	2/1/11
BN10395476	2/2/11	51	BN-550	790.91	665.91	456.275	0	0	5.63	168.195	0	35.81	0	0	0	665.91	2/2/11
BN10395477	2/1/11	45	BN-550	874.7	749.7	664.195	0	0	3.38	3.51	0	78.615	0	0	0	749.7	2/1/11
BN10395478	2/1/11	47	BN-550	810.755	685.76	506.545	0	2.34	6.58	18.01	4.66	147.62	0	0	0	685.755	2/1/11
BN10395479	2/1/11	52	BN-550	914.39	789.39	577.175	0	0	3.38	138.14	6.21	64.485	0	0	0	789.39	2/1/11
BN10395480	2/1/11	49	BN-550	808.55	683.55	530.175	0	0	4.5	13.23	10.87	124.775	0	0	0	683.55	2/1/11
BN10395481	2/1/11	49	BN-550	923.21	798.21	756.33	0	0	5.63	2.11	0	34.14	0	0	0	798.21	2/1/11
BN10395482	2/1/11	48	BN-550	881.315	756.32	670.285	0	0	3.38	62.7	7.77	12.18	0	0	0	756.315	2/1/11
BN10395620	2/3/11	45	BN-550	954.08	829.08	757.32	0	2.34	0	31.75	3.11	34.56	0	0	0	829.08	2/3/11
BN10395621	2/3/11	36	BN-550	929.825	804.83	790.355	0	0	0	3.88	3.11	7.48	0	0	0	804.825	2/3/11
BN10395622	2/3/11	49	BN-550	901.16	776.16	731.935	0	0	0	0	0.78	43.445	0	0	0	776.16	2/3/11
BN10395623	2/3/11	36	BN-550	894.545	769.55	751.245	0	0	0	5.82	3.11	9.37	0	0	0	769.545	2/3/11
BN10395625	2/3/11	36	BN-550	883.52	758.52	745.2	0	0	0	5.82	0	7.5	0	0	0	758.52	2/3/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10395626	2/3/11	37	BN-550	865.88	740.88	679.105	0	0	0.56	27.018	1.55	32.648	0	0	0	740.881	2/3/11
BN10395627	2/2/11	36	BN-550	852.65	727.65	533.42	0	0	0	2.84	0	191.39	0	0	0	727.65	2/2/11
BN10395628	2/2/11	43	BN-550	909.98	784.98	659.125	0	2.34	0	36.94	1.55	85.025	0	0	0	784.98	2/2/11
BN10395629	2/2/11	60	BN-550	907.775	782.78	532.77	0	0	5.63	150.1	1.55	92.725	0	0	0	782.775	2/2/11
BN10395630	2/2/11	45	BN-550	945.26	820.26	727.915	0	0	0	1.67	1.55	89.125	0	0	0	820.26	2/2/11
BN10395631	2/2/11	42	BN-550	843.83	718.83	704.62	0	0	1	5.72	0	7.49	0	0	0	718.83	2/2/11
BN10395744	2/3/11	53	BN-550	806.345	681.35	506.2	0	0	0.84	85.343	3.11	85.853	0	0	0	681.346	2/3/11
BN10395745	2/3/11	43	BN-550	943.055	818.06	747.37	0	0	0.84	33.213	1.55	35.083	0	0	0	818.056	2/3/11
BN10395746	2/3/11	41	BN-550	852.65	727.65	694.17	0	0	0	13.46	0	20.02	0	0	0	727.65	2/3/11
BN10395747	2/3/11	34	BN-550	918.8	793.8	748.955	0	0	0	9.3	1.55	33.995	0	0	0	793.8	2/3/11
BN10395748	2/4/11	49	BN-550	938.645	813.65	757.89	0	0	0	20.238	0	35.518	0	0	0	813.646	2/4/11
BN10395749	2/3/11	52	BN-550	934.235	809.24	749.9	0	0	0	0	0	59.335	0	0	0	809.235	2/3/11
BN10395750	2/3/11	29	BN-550	859.265	734.27	730.255	0	0	0	0.42	0.78	2.81	0	0	0	734.265	2/3/11
BN10395751	2/4/11	49	BN-550	951.875	826.88	713.935	0	0	4.5	37.67	0	70.77	0	0	0	826.875	2/4/11
BN10395752	2/4/11	47	BN-550	923.21	798.21	776.7	0	0	0	2.77	0	18.74	0	0	0	798.21	2/4/11
BN10395753	2/4/11	52	BN-550	984.95	859.95	789.21	0	0	2.25	23.11	1.55	43.83	0	0	0	859.95	2/4/11
BN10395754	2/5/11	62	BN-550	654.2	529.2	261.71	0	0	0	192.7	9.32	65.47	0	0	0	529.2	2/5/11
BN10395755	2/4/11	46	BN-550	636.56	511.56	325.65	0	0	0	128.175	2.33	55.405	0	0	0	511.56	2/4/11
BN10395931	2/6/11	45	BN-550	912.185	787.19	726.89	0	0	12.25	4.44	0	43.605	0	0	0	787.185	2/6/11
BN10395932	2/6/11	47	BN-550	890.135	765.14	707.315	0	0	2	15.52	0	40.3	0	0	0	765.135	2/6/11
BN10395933	2/5/11	59	BN-550	804.14	679.14	463.63	0	0	0	99.085	3.11	113.315	0	0	0	679.14	2/5/11
BN10395934	2/6/11	56	BN-550	843.83	718.83	593.055	0	0	0.94	45.405	0.78	78.65	0	0	0	718.83	2/6/11
BN10395935	2/6/11	47	BN-550	956.285	831.29	797.355	0	0	4.21	9.43	1.55	18.74	0	0	0	831.285	2/6/11
BN10395936	2/5/11	47	BN-550	746.81	621.81	512.955	0	0	0	1.94	1.55	105.365	0	0	0	621.81	2/5/11
BN10395937	2/5/11	51	BN-550	929.825	804.83	774.475	0	0	1	8.73	0	20.62	0	0	0	804.825	2/5/11
BN10395938	2/5/11	56	BN-550	788.705	663.71	505.46	0	0	0.84	22.31	0	135.095	0	0	0	663.705	2/5/11
BN10395939	2/5/11	55	BN-550	903.365	778.37	682.655	0	0	0	16.49	1.55	77.67	0	0	0	778.365	2/5/11
BN10395940	2/6/11	53	BN-550	978.335	853.34	727.7	0	0	9.75	4.03	0	111.855	0	0	0	853.335	2/6/11
BN10395941	2/6/11	45	BN-550	793.115	668.12	562.53	0	0	0	8.73	1.55	95.305	0	0	0	668.115	2/6/11
BN10395942	2/6/11	51	BN-550	989.36	864.36	819.57	0	0	2.26	18.16	0	24.37	0	0	0	864.36	2/6/11
BN10396212	2/7/11	61	BN-550	735.785	610.79	221.82	0	0	0	342.905	0	46.06	0	0	0	610.785	2/7/11
BN10396213	2/7/11	48	BN-550	837.215	712.22	684.545	0	0	0	2.37	0	25.3	0	0	0	712.215	2/7/11
BN10396214	2/7/11	54	BN-550	848.24	723.24	636.785	1.56	0	0	19.64	3.11	62.145	0	0	0	723.24	2/7/11
BN10396215	2/7/11	47	BN-550	965.105	840.11	834.125	0	0	1.26	0.97	0	3.75	0	0	0	840.105	2/7/11
BN10396216	2/7/11	45	BN-550	936.44	811.44	797.92	0	0	0	5.82	4.66	3.04	0	0	0	811.44	2/7/11
BN10396217	2/7/11	56	BN-550	973.925	848.93	791.485	0	0	0	44.05	3.1	10.29	0	0	0	848.925	2/7/11
BN10396218	2/7/11	51	BN-550	989.36	864.36	794.655	0	0	0	61.595	1.55	6.56	0	0	0	864.36	2/7/11
BN10396219	2/7/11	53	BN-550	905.57	780.57	702.715	0	0	19.13	1.94	0	56.785	0	0	0	780.57	2/7/11
BN10396220	2/7/11	40	BN-550	982.745	857.75	850.175	0	0	0	1.94	0	5.63	0	0	0	857.745	2/7/11
BN10396221	2/7/11	39	BN-550	980.54	855.54	838.72	0	9.36	0	2.77	0	4.69	0	0	0	855.54	2/7/11
BN10396222	2/6/11	53	BN-550	940.85	815.85	796.63	0	0	0	3.61	1.55	14.06	0	0	0	815.85	2/6/11
BN10396223	2/6/11	41	BN-550	960.695	835.7	776.675	0	0	2	1.8	0	55.22	0	0	0	835.695	2/6/11
BN10396282	2/8/11	51	BN-550	978.335	853.34	740.115	0	4.68	6.25	54.51	0	47.78	0	0	0	853.335	2/8/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10396283	2/9/11	49	BN-550	890.135	765.14	587.735	0	0	0	6.33	0	171.07	0	0	0	765.135	2/9/11
BN10396284	2/8/11	52	BN-550	934.235	809.24	705.92	3.12	0	2	77.925	6.21	14.06	0	0	0	809.235	2/8/11
BN10396285	2/8/11	55	BN-550	823.985	698.99	481.89	0	0	0	202.955	0.08	14.06	0	0	0	698.985	2/8/11
BN10396286	2/8/11	51	BN-550	973.925	848.93	757.625	0	28.63	5.21	30.09	8.63	18.74	0	0	0	848.925	2/8/11
BN10396287	2/8/11	60	BN-550	775.475	650.48	400.28	0	22.9	0	217.625	3.11	6.56	0	0	0	650.475	2/8/11
BN10396288	2/8/11	56	BN-550	740.195	615.2	310.665	0	11.45	2	136.9	0	154.18	0	0	0	615.195	2/8/11
BN10396289	2/8/11	47	BN-550	925.415	800.42	772.065	0	0	2	6.68	0	19.67	0	0	0	800.415	2/8/11
BN10396290	2/9/11	38	BN-550	987.155	862.16	853.735	0	0	0	5.61	0	2.81	0	0	0	862.155	2/9/11
BN10396291	2/8/11	56	BN-550	689.48	564.48	332.7	0	0	0	227.09	0	4.69	0	0	0	564.48	2/8/11
BN10396292	2/9/11	43	BN-550	914.39	789.39	769.39	0	0	0	5.01	0	14.99	0	0	0	789.39	2/9/11
BN10396293	2/8/11	39	BN-550	837.215	712.22	552.27	0	0	0	95.55	0	64.395	0	0	0	712.215	2/8/11
BN10396420	2/10/11	47	BN-550	788.705	663.71	606.68	0	0	0	51.395	0	5.63	0	0	0	663.705	2/10/11
BN10396421	2/9/11	37	BN-550	907.775	782.78	769.065	0	0	0	8.09	0	5.62	0	0	0	782.775	2/9/11
BN10396422	2/9/11	50	BN-550	921.005	796.01	778.505	0	0	0	9.07	0	8.43	0	0	0	796.005	2/9/11
BN10396423	2/9/11	36	BN-550	903.365	778.37	751.125	0	4.68	11.25	3.2	1.55	6.56	0	0	0	778.365	2/9/11
BN10396424	2/9/11	54	BN-550	914.39	789.39	763.47	0	0	0	11.86	0	14.06	0	0	0	789.39	2/9/11
BN10396425	2/9/11	56	BN-550	936.44	811.44	650.71	0	0	2	15.21	0	143.52	0	0	0	811.44	2/9/11
BN10396426	2/9/11	41	BN-550	896.75	771.75	734.63	0	9.36	0	6.85	3.1	17.81	0	0	0	771.75	2/9/11
BN10396427	2/9/11	48	BN-550	881.315	756.32	744.925	0	0	0	6.71	0	4.68	0	0	0	756.315	2/9/11
BN10396428	2/9/11	42	BN-550	907.775	782.78	769.355	0	0	0	4.05	0	9.37	0	0	0	782.775	2/9/11
BN10396429	2/9/11	46	BN-550	905.57	780.57	771.95	0	0	0	5.81	0	2.81	0	0	0	780.57	2/9/11
BN10396430	2/9/11	55	BN-550	934.235	809.24	702.41	0	0	0	12.47	1.55	92.805	0	0	0	809.235	2/9/11
BN10396431	2/9/11	51	BN-550	984.95	859.95	836.63	0	0	0	7.39	0	15.93	0	0	0	859.95	2/9/11
BN10396505	2/10/11	53	BN-550	850.445	725.45	491.26	0	0	1.68	150.425	0	82.08	0	0	0	725.445	2/10/11
BN10396506	2/10/11	55	BN-550	936.44	811.44	503.615	0	0	13.86	165.525	3.88	124.56	0	0	0	811.44	2/10/11
BN10396507	2/10/11	41	BN-550	903.365	778.37	618.17	0	2.34	0.84	73.135	1.55	82.33	0	0	0	778.365	2/10/11
BN10396508	2/10/11	58	BN-550	962.9	837.9	562.84	0	0	10.9	169.11	1.55	93.5	0	0	0	837.9	2/10/11
BN10396509	2/10/11	59	BN-550	916.595	791.6	681.51	0	0	0.42	97.805	1.55	10.31	0	0	0	791.595	2/10/11
BN10396510	2/10/11	57	BN-550	951.875	826.88	677.095	0	0	2.94	71.555	1.55	73.735	0	0	0	826.875	2/10/11
BN10396511	2/10/11	20	BN-550	378.915	253.92	37.71	0	0	6.72	1.67	3.11	204.705	0	0	0	253.915	2/10/11
BN10396512	2/10/11	51	BN-550	823.985	698.99	517.035	0	0	0	84.29	0	97.66	0	0	0	698.985	2/10/11
BN10396513	2/10/11	51	BN-550	894.545	769.55	345.38	0	0	3.78	84.945	0	335.44	0	0	0	769.545	2/10/11
BN10396514	2/10/11	60	BN-550	837.215	712.22	97.52	0	0	17.64	6.81	3.1	587.145	0	0	0	712.215	2/10/11
BN10396515	2/10/11	34	BN-550	945.26	820.26	578.35	0	0	3.78	8.08	0	230.05	0	0	0	820.26	2/10/11
BN10396516	2/10/11	54	BN-550	837.215	712.22	616.24	0	0	0	66.015	4.66	25.3	0	0	0	712.215	2/10/11
BN10396785	2/11/11	60	BN-550	987.155	862.16	777	0	0	0	79.535	0	5.62	0	0	0	862.155	2/11/11
BN10396786	2/11/11	57	BN-550	881.315	756.32	552.245	0	0	0	117.865	1.55	84.655	0	0	0	756.315	2/11/11
BN10396787	2/11/11	50	BN-550	863.675	738.68	640.95	0	0	0	88.365	0	9.36	0	0	0	738.675	2/11/11
BN10396788	2/10/11	53	BN-550	868.085	743.09	540.47	0	0	6.67	143.83	3.1	49.015	0	0	0	743.085	2/10/11
BN10396789	2/11/11	54	BN-550	987.155	862.16	824.145	0	0	1	7.66	3.11	26.24	0	0	0	862.155	2/11/11
BN10396790	2/11/11	56	BN-550	938.645	813.65	758.425	0	0	0	14.61	3.11	37.5	0	0	0	813.645	2/11/11
BN10396791	2/11/11	57	BN-550	969.515	844.52	800.335	0	0	4.16	7.22	0	32.8	0	0	0	844.515	2/11/11
BN10396792	2/12/11	56	BN-550	797.525	672.53	544.025	0	0	0	119.13	0	9.37	0	0	0	672.525	2/12/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10396793	2/12/11	58	BN-550	879.11	754.11	381.28	0	0	253.98	96.675	0	22.175	0	0	0	754.11	2/12/11
BN10396794	2/11/11	51	BN-550	830.6	705.6	537.365	0	0	0	84.86	1.55	81.825	0	0	0	705.6	2/11/11
BN10396795	2/11/11	59	BN-550	973.925	848.93	761.88	0	0	0	56.115	0	30.93	0	0	0	848.925	2/11/11
BN10396796	2/12/11	61	BN-550	989.36	864.36	820.365	0	0	0	9.05	3.11	31.835	0	0	0	864.36	2/12/11
BN10396853	2/12/11	58	BN-550	797.525	672.53	556.33	0	0	2.08	63.1	1.55	49.465	0	0	0	672.525	2/12/11
BN10396854	2/12/11	53	BN-550	828.395	703.4	423.92	0	0	1.13	273.665	0	4.68	0	0	0	703.395	2/12/11
BN10396855	2/12/11	62	BN-550	901.16	776.16	489.135	0	0	1.13	232.03	4.66	49.205	0	0	0	776.16	2/12/11
BN10396856	2/12/11	45	BN-550	923.21	798.21	705.985	0	0	1.13	77.975	0	13.12	0	0	0	798.21	2/12/11
BN10396857	2/12/11	56	BN-550	980.54	855.54	780.52	0	0	2.08	62.64	0	10.3	0	0	0	855.54	2/12/11
BN10396858	2/12/11	56	BN-550	909.98	784.98	445.71	0	0	0	333.65	0	5.62	0	0	0	784.98	2/12/11
BN10396859	2/12/11	53	BN-550	799.73	674.73	533.735	0	0	0	134.435	0	6.56	0	0	0	674.73	2/12/11
BN10396860	2/12/11	56	BN-550	808.55	683.55	457.43	0	0	8.5	151.735	0	65.885	0	0	0	683.55	2/12/11
BN10396861	2/12/11	56	BN-550	863.675	738.68	522.48	0	0	0	178.825	1.55	35.82	0	0	0	738.675	2/12/11
BN10396862	2/12/11	55	BN-550	916.595	791.6	653.345	0	4.68	3.21	116.3	0	14.06	0	0	0	791.595	2/12/11
BN10396863	2/12/11	58	BN-550	916.595	791.6	408.42	0	0	177.645	83.76	0	121.77	0	0	0	791.595	2/12/11
BN10396864	2/12/11	58	BN-550	634.355	509.36	198.45	0	0	0	283.45	1.55	25.905	0	0	0	509.355	2/12/11
BN10397008	2/13/11	57	BN-550	949.67	824.67	605.75	0	0	0	10.07	0	208.85	0	0	0	824.67	2/13/11
BN10397009	2/13/11	53	BN-550	819.575	694.58	556.2	0	0	0	57.425	0	80.95	0	0	0	694.575	2/13/11
BN10397010	2/13/11	50	BN-550	951.875	826.88	697.4	0	0	0	54.285	1.55	73.64	0	0	0	826.875	2/13/11
BN10397011	2/12/11	60	BN-550	726.965	601.97	243.665	0	0	0	351.74	0	6.56	0	0	0	601.965	2/12/11
BN10397012	2/13/11	41	BN-550	943.055	818.06	802.605	0	0	1	6.01	0	8.44	0	0	0	818.055	2/13/11
BN10397013	2/13/11	57	BN-550	740.195	615.2	430.015	0	0	1	174.8	0	9.38	0	0	0	615.195	2/13/11
BN10397014	2/13/11	57	BN-550	715.94	590.94	153.42	0	0	0	435.64	0	1.88	0	0	0	590.94	2/13/11
BN10397015	2/13/11	54	BN-550	929.825	804.83	639.25	0	0	0	9.02	0	156.555	0	0	0	804.825	2/13/11
BN10397016	2/13/11	45	BN-550	923.21	798.21	700.025	0	0	0	11.64	6.21	80.335	0	0	0	798.21	2/13/11
BN10397017	2/12/11	54	BN-550	859.265	734.27	644.26	0	0	2.08	71.385	1.55	14.99	0	0	0	734.265	2/12/11
BN10397018	2/13/11	47	BN-550	916.595	791.6	751.105	0	0	0	9.56	0	30.93	0	0	0	791.595	2/13/11
BN10397019	2/12/11	59	BN-550	909.98	784.98	530.91	0	0	0	249.38	0	4.69	0	0	0	784.98	2/12/11
BN10397156	2/13/11	46	BN-550	918.8	793.8	756.67	0	0	0	8.73	3.1	25.3	0	0	0	793.8	2/13/11
BN10397157	2/13/11	45	BN-550	859.265	734.27	719.055	0	0	0	5.55	3.1	6.56	0	0	0	734.265	2/13/11
BN10397158	2/13/11	42	BN-550	693.89	568.89	545.14	0	0	2	5.82	0	15.93	0	0	0	568.89	2/13/11
BN10397159	2/14/11	52	BN-550	956.285	831.29	689.47	0	0	0	21.64	3.1	117.075	0	0	0	831.285	2/14/11
BN10397160	2/14/11	57	BN-550	879.11	754.11	589.165	0	0	0	20.13	6.21	138.605	0	0	0	754.11	2/14/11
BN10397161	2/14/11	55	BN-550	771.065	646.07	566.715	0.78	0	0	11.63	3.11	63.83	0	0	0	646.065	2/14/11
BN10397162	2/14/11	61	BN-550	766.655	641.66	610.365	0	0	0	9.16	6.2	15.93	0	0	0	641.655	2/14/11
BN10397163	2/14/11	59	BN-550	828.395	703.4	621.82	0	0	0	14.55	0	67.025	0	0	0	703.395	2/14/11
BN10397164	2/14/11	56	BN-550	737.99	612.99	319.285	0	0	1	6.79	3.11	282.805	0	0	0	612.99	2/14/11
BN10397165	2/13/11	60	BN-550	943.055	818.06	694.64	0	0	0	14.01	1.55	107.855	0	0	0	818.055	2/13/11
BN10397166	2/13/11	55	BN-550	932.03	807.03	674	0	0	0	15.38	10.88	106.77	0	0	0	807.03	2/13/11
BN10397167	2/13/11	42	BN-550	980.54	855.54	829.35	0	0	0	7.76	1.55	16.88	0	0	0	855.54	2/13/11
BN10397473	2/15/11	50	BN-550	718.145	593.15	431.955	0	0	0	72.375	6.22	82.595	0	0	0	593.145	2/15/11
BN10397474	2/15/11	56	BN-550	658.61	533.61	449.25	0	0	0	3.88	1.55	77.63	0	0	1.3	533.61	2/15/11
BN10397475	2/15/11	54	BN-550	857.06	732.06	584.415	0	0	0	3.61	1.55	142.485	0	0	0	732.06	2/15/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10397476	2/15/11	54	BN-550	881.315	756.32	671.325	0	0	0	14.56	10.88	59.55	0	0	0	756.315	2/15/11
BN10397477	2/15/11	54	BN-550	793.115	668.12	363.9	0	0	0	15.59	7.77	280.855	0	0	0	668.115	2/15/11
BN10397478	2/15/11	54	BN-550	839.42	714.42	643.945	0	0	1.25	8.46	6.21	54.555	0	0	0	714.42	2/15/11
BN10397479	2/14/11	47	BN-550	835.01	710.01	680.65	0	0	0	7.21	6.22	15.93	0	0	0	710.01	2/14/11
BN10397480	2/14/11	60	BN-550	707.12	582.12	434.9	0	0	0	12.07	9.32	125.83	0	0	0	582.12	2/14/11
BN10397481	2/14/11	51	BN-550	901.16	776.16	747.34	0	0	1	12.89	1.55	13.38	0	0	0	776.16	2/14/11
BN10397482	2/14/11	54	BN-550	830.6	705.6	677.78	0	0	2.08	3.88	3.11	18.75	0	0	0	705.6	2/14/11
BN10397483	2/14/11	49	BN-550	863.675	738.68	699.315	0.78	0	2	9.43	4.66	22.49	0	0	0	738.675	2/14/11
BN10397484	2/14/11	50	BN-550	775.475	650.48	607.915	0	0	2.08	21.75	0	18.73	0	0	0	650.475	2/14/11
BN10397567	2/15/11	51	BN-550	954.08	829.08	805.4	0	0	0	2.77	3.1	17.81	0	0	0	829.08	2/15/11
BN10397568	2/15/11	53	BN-550	954.08	829.08	718.925	0	0	0	56.3	4.66	49.195	0	0	0	829.08	2/15/11
BN10397569	2/16/11	53	BN-550	821.78	696.78	599.185	0	0	0	9.43	4.65	83.515	0	0	0	696.78	2/16/11
BN10397570	2/16/11	51	BN-550	927.62	802.62	771.83	0	0	0	9.56	1.55	19.68	0	0	0	802.62	2/16/11
BN10397571	2/15/11	60	BN-550	768.86	643.86	421.86	0	0	0	42.435	3.1	176.465	0	0	0	643.86	2/15/11
BN10397572	2/16/11	59	BN-550	872.495	747.5	568.665	0	0	0	112.4	4.65	61.78	0	0	0	747.495	2/16/11
BN10397573	2/16/11	51	BN-550	892.34	767.34	663.965	0	0	0	40.768	10.87	51.738	0	0	0	767.341	2/16/11
BN10397574	2/22/11	53	BN-550	819.575	694.58	533.405	0	0	0	40.373	4.66	116.138	0	0	0	694.576	2/22/11
BN10397575	2/16/11	15	BN-550	301.4	176.4	129.325	0	0	0	2.91	0	44.165	0	0	0	176.4	2/16/11
BN10397576	2/22/11	51	BN-550	784.295	659.3	551.29	0	0	0	91.145	0	16.86	0	0	0	659.295	2/22/11
BN10397577	2/15/11	48	BN-550	835.01	710.01	680.06	0	0	0	7.49	4.66	17.8	0	0	0	710.01	2/15/11
BN10397578	2/15/11	50	BN-550	916.595	791.6	774.625	0	0	1.88	3.88	4.66	6.55	0	0	0	791.595	2/15/11
BN10397614	2/22/11	47	BN-550	976.31	851.31	770.015	0	0	0	65.365	0	15.93	0	0	0	851.31	2/22/11
BN10397615	2/23/11	53	BN-550	894.545	769.55	668.145	0	0	1	87.6	1.55	11.25	0	0	0	769.545	2/23/11
BN10397616	2/23/11	58	BN-550	810.755	685.76	260.625	0	93.29	22.93	245.405	0	63.505	0	0	0	685.755	2/23/11
BN10397618	2/23/11	58	BN-550	846.035	721.04	498.31	0	0	0	7	3.11	212.615	0	0	0	721.035	2/23/11
BN10397619	2/22/11	59	BN-550	892.34	767.34	676.165	0	0	0	15.67	1.55	73.955	0	0	0	767.34	2/22/11
BN10397620	2/22/11	56	BN-550	828.395	703.4	603.285	0	0	0	70.47	6.22	23.42	0	0	0	703.395	2/22/11
BN10397621	2/23/11	55	BN-550	722.555	597.56	252	0	3	19.32	288.845	0	34.39	0	0	0	597.555	2/23/11
BN10397622	2/23/11	57	BN-550	967.31	842.31	771.225	0	0	0	50.185	3.1	17.8	0	0	0	842.31	2/23/11
BN10397623	2/23/11	59	BN-550	808.55	683.55	387.425	0	0	0	4.75	4.65	286.725	0	0	0	683.55	2/23/11
BN10397624	2/22/11	60	BN-550	971.72	846.72	810.59	0	0	0	18.32	0	17.81	0	0	0	846.72	2/22/11
BN10397625	2/22/11	48	BN-550	925.415	800.42	617.14	0	0	0	163.475	6.22	13.58	0	0	0	800.415	2/22/11
BN10397685	2/24/11	57	BN-550	665.405	540.41	194	0	4.5	10.88	280.885	0	50.14	0	0	0	540.405	2/24/11
BN10397686	2/23/11	47	BN-550	967.31	842.31	785.405	0	0	0	26.358	0	30.548	0	0	0	842.311	2/23/11
BN10397687	2/23/11	52	BN-550	610.1	485.1	183.5	0	15	13.05	264.3	0.5	8.75	0	0	0	485.1	2/23/11
BN10397688	2/23/11	55	BN-550	876.905	751.91	604.615	0	0	0	8.63	6.99	131.67	0	0	0	751.905	2/23/11
BN10397689	2/23/11	45	BN-550	879.11	754.11	733.71	0	0	0	12.91	0	7.49	0	0	0	754.11	2/23/11
BN10397690	2/23/11	42	BN-550	627.74	502.74	456.185	0	0	0	7.51	0	39.045	0	0	0	502.74	2/23/11
BN10397691	2/23/11	51	BN-550	978.335	853.34	577.23	0	0	0	243.195	20.2	7.5	0	0	5.21	853.335	2/23/11
BN10397692	2/24/11	46	BN-550	716.12	591.12	289	1.4	0	28.49	243.48	0	28.75	0	0	0	591.12	2/24/11
BN10397693	2/24/11	50	BN-550	603.485	478.49	207	0.35	3.15	13.05	106	0	148.935	0	0	0	478.485	2/24/11
BN10397694	2/24/11	60	BN-550	647.835	522.84	193.5	0	0	13.46	291.875	5	19	0	0	0	522.835	2/24/11
BN10397695	2/24/11	58	BN-550	784.295	659.3	615.135	0	0	0	13.44	10.11	20.61	0	0	0	659.295	2/24/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10397696	2/23/11	49	BN-550	607.895	482.9	218	0	0.5	16.8	226.345	0.5	20.75	0	0	0	482.895	2/23/11
BN10398052	2/25/11	50	BN-550	583.64	458.64	183	0.6	4	8.4	224.69	23.7	14.25	0	0	0	458.64	2/25/11
BN10398053	2/25/11	58	BN-550	857.06	732.06	463.99	0	0	0	174.55	7.77	85.75	0	0	0	732.06	2/25/11
BN10398054	2/25/11	61	BN-550	863.675	738.68	657.185	0	0	0	6.26	0	75.23	0	0	0	738.675	2/25/11
BN10398055	2/25/11	43	BN-550	751.22	626.22	508.93	0	0	0	85.39	4.66	27.24	0	0	0	626.22	2/25/11
BN10398056	2/25/11	61	BN-550	967.31	842.31	769.53	1.56	0	0	36.57	4.66	29.99	0	0	0	842.31	2/25/11
BN10398057	2/25/11	54	BN-550	737.99	612.99	240	0	2.5	219.715	126.025	0	24.75	0	0	0	612.99	2/25/11
BN10398058	2/24/11	60	BN-550	903.365	778.37	668.81	0	1.5	2.52	7.72	4.66	93.155	0	0	0	778.365	2/24/11
BN10398059	2/24/11	61	BN-550	846.035	721.04	694.055	0	0	0	1.67	0	25.31	0	0	0	721.035	2/24/11
BN10398060	2/24/11	54	BN-550	764.45	639.45	604.27	0	0	0	9.87	0	25.31	0	0	0	639.45	2/24/11
BN10398061	2/25/11	57	BN-550	909.98	784.98	675.115	0	0	0	39.09	3.11	67.665	0	0	0	784.98	2/25/11
BN10398062	2/24/11	52	BN-550	740.375	615.38	252.75	0	20	113.1	124.5	0	105.025	0	0	0	615.375	2/24/11
BN10398063	2/24/11	56	BN-550	632.15	507.15	189	0	2	8.97	86.805	1.5	218.875	0	0	0	507.15	2/24/11
BN10398249	2/25/11	58	BN-550	751.22	626.22	362.91	0	20	12.34	146.475	0	84.495	0	0	0	626.22	2/25/11
BN10398250	2/25/11	58	BN-550	967.31	842.31	725.235	0	0	0	93.345	3.11	20.62	0	0	0	842.31	2/25/11
BN10398251	2/26/11	47	BN-550	621.125	496.13	182.5	4	1.25	16.38	180.41	0	111.585	0	0	0	496.125	2/26/11
BN10398252	2/26/11	59	BN-550	846.035	721.04	613.005	0	0	0.42	45.125	0	62.485	0	0	0	721.035	2/26/11
BN10398253	2/26/11	56	BN-550	817.37	692.37	324.345	0	14	11.92	220.98	6.55	114.575	0	0	0	692.37	2/26/11
BN10398254	2/25/11	59	BN-550	797.525	672.53	510	0	0	0.84	27.76	6.21	127.715	0	0	0	672.525	2/25/11
BN10398255	2/26/11	57	BN-550	788.885	663.89	325.695	0.9	0	8.4	204.38	10.8	113.71	0	0	0	663.885	2/26/11
BN10398256	2/25/11	45	BN-550	645.38	520.38	210.5	0	0.5	10.08	221.97	0	77.33	0	0	0	520.38	2/25/11
BN10398257	2/26/11	56	BN-550	932.03	807.03	582.81	0	0	0	21.264	1.55	201.406	0	0	0	807.03	2/26/11
BN10398258	2/26/11	61	BN-550	901.16	776.16	407.67	0	0	0.84	16.78	12.44	338.43	0	0	0	776.16	2/26/11
BN10398259	2/26/11	55	BN-550	932.03	807.03	604.5	0	0	0	54.268	1.55	146.713	0	0	0	807.031	2/26/11
BN10398261	2/27/11	44	BN-550	958.49	833.49	810.19	0	0	0	3.61	0	19.69	0	0	0	833.49	2/27/11
BN10398262	2/26/11	46	BN-550	982.745	857.75	817.125	0	0	0	9.7	0	30.92	0	0	0	857.745	2/26/11
BN10398263	2/27/11	52	BN-550	786.5	661.5	549.365	0	0	0	14.96	0	97.175	0	0	0	661.5	2/27/11
BN10398264	2/27/11	58	BN-550	989.36	864.36	818.41	0	0	0	14.09	0	31.86	0	0	0	864.36	2/27/11
BN10398265	2/27/11	56	BN-550	612.305	487.31	177	0.852	2	7.98	192.198	0	107.275	0	0	0	487.305	2/27/11
BN10398266	2/27/11	56	BN-550	797.525	672.53	409.005	0	0	4.62	161.84	0	92.06	5	0	0	672.525	2/27/11
BN10398267	2/26/11	54	BN-550	868.085	743.09	546.19	0	0	0	12.85	0	184.045	0	0	0	743.085	2/26/11
BN10398268	2/26/11	55	BN-550	892.34	767.34	708.15	0	0	2	12.2	0	44.99	0	0	0	767.34	2/26/11
BN10398269	2/27/11	49	BN-550	962.9	837.9	695.015	0	0	0	42.374	0	100.511	0	0	0	837.9	2/27/11
BN10398270	2/27/11	52	BN-550	989.36	864.36	594.38	2.1	0	160.75	78.76	12	16.37	0	0	0	864.36	2/27/11
BN10398271	2/27/11	59	BN-550	771.065	646.07	358.85	0	1.25	4.62	263.715	5	12.63	0	0	0	646.065	2/27/11
BN10398272	2/27/11	53	BN-550	550.565	425.57	196.025	0	0	9.66	123.35	0	96.53	0	0	0	425.565	2/27/11
BN10398323	2/27/11	54	BN-550	610.44	485.44	408.515	0	0	2	40.865	1.55	32.51	0	0	0	485.44	2/27/11
BN10398324	2/27/11	55	BN-550	623.33	498.33	377.715	0	0	0.5	96.16	1.55	22.405	0	0	0	498.33	2/27/11
BN10398325	2/27/11	58	BN-550	647.585	522.59	308.12	0	0	0	106.99	6.21	101.265	0	0	0	522.585	2/27/11
BN10398326	2/27/11	61	BN-550	603.485	478.49	285.195	5.46	0	5	85.74	12.43	84.66	0	0	0	478.485	2/27/11
BN10398327	2/28/11	58	BN-550	713.735	588.74	371.32	0	0	0	129.685	10.88	76.85	0	0	0	588.735	2/28/11
BN10398328	2/27/11	58	BN-550	987.155	862.16	786.71	0	0	2	49.095	4.66	19.69	0	0	0	862.155	2/27/11
BN10398329	2/28/11	60	BN-550	729.17	604.17	444.94	1.56	0	0	20.27	7.77	129.63	0	0	0	604.17	2/28/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10398330	2/28/11	53	BN-550	568.205	443.21	184	0	15.25	4.62	94.565	0	144.77	0	0	0	443.205	2/28/11
BN10398331	2/28/11	53	BN-550	916.595	791.6	765.895	0	0	2.08	5.82	0	17.8	0	0	0	791.595	2/28/11
BN10398332	2/28/11	51	BN-550	870.29	745.29	685.15	0	0	0	20.52	7.76	31.86	0	0	0	745.29	2/28/11
BN10398333	2/27/11	49	BN-550	671.84	546.84	326.435	15	0.25	6.69	182.215	3	13.25	0	0	0	546.84	2/27/11
BN10398334	2/28/11	52	BN-550	857.06	732.06	692.71	0	0	0	7.19	3.11	29.05	0	0	0	732.06	2/28/11
BN10398563	3/1/11	60	BN-550	982.745	857.75	727.05	0	0	7	4.85	0	118.845	0	0	0	857.745	3/1/11
BN10398564	3/1/11	48	BN-550	921.005	796.01	772.565	0	0	4.6	2.91	0	15.93	0	0	0	796.005	3/1/11
BN10398565	2/28/11	55	BN-550	945.26	820.26	596.33	0	0	5.04	167.07	16.32	35.5	0	0	0	820.26	2/28/11
BN10398566	2/28/11	55	BN-550	982.745	857.75	715.83	0	0	0	67.27	4.66	69.985	0	0	0	857.745	2/28/11
BN10398567	2/28/11	51	BN-550	733.58	608.58	266	0	4	101.46	34	0	203.12	0	0	0	608.58	2/28/11
BN10398568	2/28/11	53	BN-550	973.925	848.93	688.58	0	0	0	94.135	10.88	55.33	0	0	0	848.925	2/28/11
BN10398569	2/28/11	60	BN-550	907.775	782.78	600.745	0	0	5.2	74.195	7.76	94.875	0	0	0	782.775	2/28/11
BN10398570	2/28/11	55	BN-550	918.8	793.8	655.885	0	9.37	0	38.17	3.1	87.275	0	0	0	793.8	2/28/11
BN10398571	2/28/11	58	BN-550	724.76	599.76	245.5	0	1	23.82	256.175	0	73.265	0	0	0	599.76	2/28/11
BN10398572	3/1/11	51	BN-550	938.645	813.65	783.635	0	0	15.6	1.94	3.11	9.36	0	0	0	813.645	3/1/11
BN10398573	3/1/11	51	BN-550	949.67	824.67	667.905	0	0	3.6	141.915	0	11.25	0	0	0	824.67	3/1/11
BN10398574	3/1/11	56	BN-550	793.115	668.12	370.25	0	0	0	286.615	0	11.25	0	0	0	668.115	3/1/11
BN10398646	3/1/11	55	BN-550	947.465	822.47	732.15	0	0	0	39.645	0	50.67	0	0	0	822.465	3/1/11
BN10398647	3/1/11	45	BN-550	982.745	857.75	846.035	0	3.28	0	0	0	8.43	0	0	0	857.745	3/1/11
BN10398648	3/1/11	50	BN-550	965.105	840.11	794.01	0	0	0	17.473	0	28.623	0	0	0	840.106	3/1/11
BN10398649	3/1/11	58	BN-550	726.965	601.97	376.585	9.36	0	0	139.91	0	76.11	0	0	0	601.965	3/1/11
BN10398650	3/1/11	48	BN-550	921.005	796.01	699.96	0	0	3.6	81.205	0	11.24	0	0	0	796.005	3/1/11
BN10398651	3/1/11	61	BN-550	755.63	630.63	421.74	0	0	6.13	10.94	0	191.82	0	0	0	630.63	3/1/11
BN10398652	3/2/11	62	BN-550	733.58	608.58	252	0	5	13.3	319.75	0.25	18.28	0	0	0	608.58	3/2/11
BN10398653	3/2/11	55	BN-550	987.155	862.16	816.265	0	0	4.8	8.45	0.78	31.86	0	0	0	862.155	3/2/11
BN10398654	3/1/11	58	BN-550	938.645	813.65	629.525	0	0	11.6	160.34	0	12.18	0	0	0	813.645	3/1/11
BN10398655	3/1/11	58	BN-550	929.825	804.83	774.635	0	0	14.4	3.61	0	12.18	0	0	0	804.825	3/1/11
BN10398656	3/2/11	37	BN-550	989.36	864.36	776.71	0	9.37	0	68.52	0.39	9.37	0	0	0	864.36	3/2/11
BN10398657	3/2/11	52	BN-550	749.015	624.02	490.385	3.12	0	0	87.98	0	42.53	0	0	0	624.015	3/2/11
BN10398725	3/2/11	61	BN-550	715.94	590.94	282.84	0	0	0	242.825	0	65.275	0	0	0	590.94	3/2/11
BN10398726	3/2/11	42	BN-550	987.155	862.16	853.265	0	0	0	1.4	0	7.49	0	0	0	862.155	3/2/11
BN10398727	3/3/11	53	BN-550	667.43	542.43	365.23	0	0	0	88.275	0	88.925	0	0	0	542.43	3/3/11
BN10398728	3/2/11	56	BN-550	936.44	811.44	770.95	0	0	0	13.31	0	27.18	0	0	0	811.44	3/2/11
BN10398729	3/3/11	49	BN-550	949.67	824.67	734.265	0	0	1.26	28.908	0	60.238	0	0	0	824.671	3/3/11
BN10398730	3/2/11	54	BN-550	989.36	864.36	837.23	0	0	0	6.52	0	20.61	0	0	0	864.36	3/2/11
BN10398731	3/2/11	43	BN-550	989.36	864.36	841.72	3.87	0	0	0.97	0	17.8	0	0	0	864.36	3/2/11
BN10398732	3/2/11	52	BN-550	943.055	818.06	805.045	0	0	0	4.58	0	8.43	0	0	0	818.055	3/2/11
BN10398733	3/3/11	54	BN-550	894.545	769.55	586	0	0	0	170.425	0	13.12	0	0	0	769.545	3/3/11
BN10398734	3/2/11	58	BN-550	976.13	851.13	810.82	0	0	3	10.13	0	27.18	0	0	0	851.13	3/2/11
BN10398735	3/2/11	50	BN-550	960.695	835.7	725.815	0	0	5.5	94.07	0	10.31	0	0	0	835.695	3/2/11
BN10398736	3/2/11	50	BN-550	601.28	476.28	105.95	0	0	0	258.9	4.66	106.77	0	0	0	476.28	3/2/11
BN10398866	3/3/11	39	BN-550	876.905	751.91	746.595	0	0	0	2.5	0	2.81	0	0	0	751.905	3/3/11
BN10398867	3/3/11	52	BN-550	925.415	800.42	766.885	0	0	0.84	8.65	1.55	22.49	0	0	0	800.415	3/3/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10398868	3/6/11	52	BN-550	949.67	824.67	723.675	0	0	0	10.69	4.66	85.645	0	0	0	824.67	3/6/11
BN10398869	3/3/11	40	BN-550	945.26	820.26	811.37	0	0	0	5.14	0	3.75	0	0	0	820.26	3/3/11
BN10398870	3/3/11	39	BN-550	936.44	811.44	805.98	0	0	0	2.64	0	2.82	0	0	0	811.44	3/3/11
BN10398871	3/3/11	45	BN-550	967.31	842.31	805.47	0	0	0	1.8	0	35.04	0	0	0	842.31	3/3/11
BN10398872	3/3/11	50	BN-550	973.925	848.93	831.895	0	0	0	4.85	0	12.18	0	0	0	848.925	3/3/11
BN10398873	3/3/11	46	BN-550	951.875	826.88	672.79	0	0	0	150.335	0	3.75	0	0	0	826.875	3/3/11
BN10398874	3/3/11	40	BN-550	969.515	844.52	840.755	0	0	0	0.48	0	3.28	0	0	0	844.515	3/3/11
BN10398875	3/3/11	40	BN-550	927.62	802.62	800.01	0	0	0	1.67	0	0.94	0	0	0	802.62	3/3/11
BN10398876	3/3/11	58	BN-550	768.86	643.86	479.155	0	0	0	9.35	0	155.355	0	0	0	643.86	3/3/11
BN10398877	3/3/11	55	BN-550	817.37	692.37	379.04	0	0	3.36	299.98	1.55	8.44	0	0	0	692.37	3/3/11
BN10398993	3/4/11	44	BN-550	987.155	862.16	762.815	0	0	0	86.22	0	13.12	0	0	0	862.155	3/4/11
BN10398994	3/4/11	36	BN-550	978.335	853.34	838.855	0	0	0	4.16	0	10.32	0	0	0	853.335	3/4/11
BN10398995	3/4/11	32	BN-550	903.365	778.37	772.845	0	0	0	0.83	0	4.69	0	0	0	778.365	3/4/11
BN10398996	3/4/11	45	BN-550	987.155	862.16	809.32	0	0	0	36.905	0	15.93	0	0	0	862.155	3/4/11
BN10398997	3/4/11	51	BN-550	982.745	857.75	833.735	0	0	0	10.26	1.55	12.2	0	0	0	857.745	3/4/11
BN10398998	3/4/11	56	BN-550	912.185	787.19	699.995	0	0	2	73.95	0	11.24	0	0	0	787.185	3/4/11
BN10399000	3/4/11	45	BN-550	954.08	829.08	817.83	0	0	0	3.74	0	7.51	0	0	0	829.08	3/4/11
BN10399001	3/4/11	41	BN-550	978.335	853.34	845.145	0	0	0	5.7	1.55	0.94	0	0	0	853.335	3/4/11
BN10399002	3/4/11	32	BN-550	971.72	846.72	839.3	0	0	2	1.67	0	3.75	0	0	0	846.72	3/4/11
BN10399003	3/4/11	52	BN-550	936.44	811.44	776.11	0	0	0	18.16	3.11	14.06	0	0	0	811.44	3/4/11
BN10399004	3/3/11	38	BN-550	967.31	842.31	840.07	0	0	0	0.83	0	1.41	0	0	0	842.31	3/3/11
BN10399039	3/4/11	41	BN-550	947.465	822.47	679.945	0	0	2	137.71	0	2.81	0	0	0	822.465	3/4/11
BN10399040	3/5/11	43	BN-550	826.19	701.19	659.17	0	0	0	3.88	0	38.14	0	0	0	701.19	3/5/11
BN10399041	3/5/11	50	BN-550	868.085	743.09	703.04	0	0	0	0	1.55	38.495	0	0	0	743.085	3/5/11
BN10399042	3/4/11	43	BN-550	918.8	793.8	775.73	0	0	0	8.09	1.55	8.43	0	0	0	793.8	3/4/11
BN10399043	3/6/11	60	BN-550	881.315	756.32	670.995	0	0	0	72.2	0	13.12	0	0	0	756.315	3/6/11
BN10399044	3/5/11	55	BN-550	872.495	747.5	592.695	0	0	0	31.77	1.55	121.48	0	0	0	747.495	3/5/11
BN10399045	3/5/11	46	BN-550	883.52	758.52	723.17	0	2.81	0	11.64	3.1	17.8	0	0	0	758.52	3/5/11
BN10399046	3/5/11	54	BN-550	909.98	784.98	696.25	0	2.34	0	13.59	9.32	63.48	0	0	0	784.98	3/5/11
BN10399047	3/6/11	50	BN-550	916.595	791.6	768.705	0	2.34	0	2.77	4.66	13.12	0	0	0	791.595	3/6/11
BN10399048	3/5/11	51	BN-550	956.285	831.29	824.025	0	0	0	0.7	0	6.56	0	0	0	831.285	3/5/11
BN10399049	3/5/11	47	BN-550	881.315	756.32	717.105	0	7.03	0	1.94	7.76	22.48	0	0	0	756.315	3/5/11
BN10399050	3/6/11	42	BN-550	967.31	842.31	829.41	0	0	0	2.91	1.55	8.44	0	0	0	842.31	3/6/11
BN10399126	3/6/11	48	BN-550	921.005	796.01	784.865	0	0	0	0.83	0	10.31	0	0	0	796.005	3/6/11
BN10399127	3/6/11	46	BN-550	621.125	496.13	182	5.281	0	8.43	173.154	0	127.26	0	0	0	496.125	3/6/11
BN10399128	3/6/11	55	BN-550	962.9	837.9	690.385	0	0	0	9.28	3.11	135.125	0	0	0	837.9	3/6/11
BN10399129	3/7/11	44	BN-550	984.95	859.95	844.87	0	0	3.78	5.68	0	5.62	0	0	0	859.95	3/7/11
BN10399130	3/7/11	41	BN-550	938.645	813.65	727.675	0	0	0	78.48	0	7.49	0	0	0	813.645	3/7/11
BN10399131	3/7/11	42	BN-550	991.565	866.57	854.355	0	0	0	0.97	0	11.24	0	0	0	866.565	3/7/11
BN10399132	3/7/11	50	BN-550	984.95	859.95	800.25	0	0	0	8.05	0	51.65	0	0	0	859.95	3/7/11
BN10399133	3/6/11	39	BN-550	947.465	822.47	818.295	0	2.81	0	0.42	0	0.94	0	0	0	822.465	3/6/11
BN10399134	3/6/11	36	BN-550	958.49	833.49	823.62	0	0	0	2.37	0	7.5	0	0	0	833.49	3/6/11
BN10399135	3/6/11	47	BN-550	925.415	800.42	723.27	0	0	0	2.94	0	74.205	0	0	0	800.415	3/6/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10399136	3/6/11	45	BN-550	960.695	835.7	747.6	0	0	0	3.88	6.22	77.995	0	0	0	835.695	3/6/11
BN10399137	3/6/11	45	BN-550	940.85	815.85	754.2	0	0	0	11.67	0	49.98	0	0	0	815.85	3/6/11
BN10399241	3/7/11	32	BN-550	989.36	864.36	858.78	0	0	1	0.83	0	3.75	0	0	0	864.36	3/7/11
BN10399242	3/7/11	46	BN-550	991.565	866.57	854.195	0	0	0	3.47	0	8.9	0	0	0	866.565	3/7/11
BN10399243	3/7/11	42	BN-550	962.9	837.9	824.75	0	0	0	0.97	0	12.18	0	0	0	837.9	3/7/11
BN10399244	3/7/11	45	BN-550	956.285	831.29	793.56	0	0	0	32.105	0	5.62	0	0	0	831.285	3/7/11
BN10399245	3/7/11	28	BN-550	901.16	776.16	738.06	0.94	34.35	0	0	0	2.81	0	0	0	776.16	3/7/11
BN10399246	3/7/11	46	BN-550	980.54	855.54	797.34	0	0	0	51.64	0	6.56	0	0	0	855.54	3/7/11
BN10399247	3/7/11	38	BN-550	991.565	866.57	855.305	0	0	2	3.64	0	5.62	0	0	0	866.565	3/7/11
BN10399248	3/22/11	55	BN-550	837.215	712.22	678.925	0	0	0	12.67	0	20.62	0	0	0	712.215	3/22/11
BN10399249	3/7/11	50	BN-550	949.67	824.67	591.8	0	0	0	6.81	0	226.06	0	0	0	824.67	3/7/11
BN10399250	3/7/11	44	BN-550	980.54	855.54	783.235	0	0	0	2.5	0	69.805	0	0	0	855.54	3/7/11
BN10399251	3/7/11	46	BN-550	973.925	848.93	826.065	0	0	0	4.44	1.55	16.87	0	0	0	848.925	3/7/11
BN10399252	3/7/11	38	BN-550	958.49	833.49	788.98	0	0	0	39.83	0	4.68	0	0	0	833.49	3/7/11
BN10399360	3/8/11	42	BN-550	976.13	851.13	841.15	0	0	0	4.05	3.11	2.82	0	0	0	851.13	3/8/11
BN10399361	3/8/11	40	BN-550	973.925	848.93	838.705	0	0	0	7.41	0	2.81	0	0	0	848.925	3/8/11
BN10399362	3/7/11	40	BN-550	892.34	767.34	738.61	0	16.65	0	1.8	4.66	5.62	0	0	0	767.34	3/7/11
BN10399363	3/7/11	40	BN-550	925.415	800.42	783.445	0	11.45	0	0.83	0	4.69	0	0	0	800.415	3/7/11
BN10399364	3/8/11	53	BN-550	929.825	804.83	710.35	0	0	0	84.165	0	10.31	0	0	0	804.825	3/8/11
BN10399365	3/7/11	43	BN-550	984.95	859.95	841.64	0	0	0	13.62	0	4.69	0	0	0	859.95	3/7/11
BN10399366	3/8/11	42	BN-550	980.54	855.54	837.39	0	0	0	5.96	0	12.19	0	0	0	855.54	3/8/11
BN10399367	3/8/11	37	BN-550	969.515	844.52	832.435	0	0	0.42	4.16	0	7.5	0	0	0	844.515	3/8/11
BN10399368	3/7/11	37	BN-550	914.39	789.39	773.63	1.88	5.73	0	6.27	0	1.88	0	0	0	789.39	3/7/11
BN10399369	3/8/11	41	BN-550	925.415	800.42	669.215	0	0	0	124.17	0	7.03	0	0	0	800.415	3/8/11
BN10399370	3/8/11	39	BN-550	958.49	833.49	817.79	0	0	0	6.33	0	9.37	0	0	0	833.49	3/8/11
BN10399371	3/8/11	35	BN-550	969.515	844.52	835.315	0	0	0	5.44	0	3.76	0	0	0	844.515	3/8/11
BN10399501	3/8/11	46	BN-550	980.54	855.54	809.865	0	2.34	4	2.5	0	36.835	0	0	0	855.54	3/8/11
BN10399502	3/8/11	41	BN-550	978.335	853.34	827.155	0	2.34	0	4.16	0	19.68	0	0	0	853.335	3/8/11
BN10399503	3/8/11	49	BN-550	480.005	355.01	210.425	0	0	0	72.37	0	72.21	0	0	0	355.005	3/8/11
BN10399504	3/8/11	38	BN-550	989.36	864.36	845.92	0	0	3	5.14	0	10.3	0	0	0	864.36	3/8/11
BN10399505	3/8/11	56	BN-550	894.545	769.55	717.255	0	0	0	36.37	0	15.92	0	0	0	769.545	3/8/11
BN10399506	3/8/11	46	BN-550	984.95	859.95	818.24	0	0	0	13.3	0	28.41	0	0	0	859.95	3/8/11
BN10399507	3/9/11	62	BN-550	782.45	657.45	301.4	0	0	9.61	297.19	0	49.25	0	0	0	657.45	3/9/11
BN10399508	3/8/11	48	BN-550	660.815	535.82	524.925	0	0	0.56	4.71	0	5.62	0	0	0	535.815	3/8/11
BN10399509	3/9/11	56	BN-550	861.83	736.83	198	0	1.5	384.375	78.985	0	73.97	0	0	0	736.83	3/8/11
BN10399510	3/9/11	58	BN-550	687.635	562.64	230	0	16.5	6.84	160.925	3	145.37	0	0	0	562.635	3/9/11
BN10399511	3/8/11	51	BN-550	921.005	796.01	693.585	0	2.34	0	10.66	0	89.42	0	0	0	796.005	3/8/11
BN10399512	3/8/11	48	BN-550	984.95	859.95	839.12	0	0	0	4.3	1.55	14.98	0	0	0	859.95	3/8/11
BN10399569	3/9/11	51	BN-550	905.57	780.57	729.915	0	0	0	4.17	3.11	43.375	0	0	0	780.57	3/9/11
BN10399570	3/9/11	37	BN-550	909.98	784.98	776.24	0	0	2	4.87	0	1.87	0	0	0	784.98	3/9/11
BN10399571	3/9/11	32	BN-550	876.905	751.91	747.545	0	0	0	0	1.55	2.81	0	0	0	751.905	3/9/11
BN10399572	3/9/11	48	BN-550	949.67	824.67	669.13	0	0	0	39.635	4.66	111.245	0	0	0	824.67	3/9/11
BN10399573	3/9/11	44	BN-550	925.415	800.42	781.165	0	0	0	0.83	1.55	16.87	0	0	0	800.415	3/9/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10399574	3/9/11	46	BN-550	976.13	851.13	751.195	0	0	1.84	3.6	4.66	89.835	0	0	0	851.13	3/9/11
BN10399575	3/9/11	46	BN-550	984.95	859.95	630.025	0	0	4	162.935	0	62.99	0	0	0	859.95	3/9/11
BN10399576	3/9/11	36	BN-550	973.925	848.93	826.845	0	0	4.1	3.33	6.22	8.43	0	0	0	848.925	3/9/11
BN10399577	3/9/11	37	BN-550	956.285	831.29	818.535	0	0	0.84	4.74	1.55	5.62	0	0	0	831.285	3/9/11
BN10399578	3/9/11	47	BN-550	965.105	840.11	792.845	0	0	2	34.02	0	11.24	0	0	0	840.105	3/9/11
BN10399579	3/9/11	57	BN-550	958.85	833.85	546.805	1.41	1.5	7.56	197.6	0	78.975	0	0	0	833.85	3/9/11
BN10399580	3/9/11	32	BN-550	936.44	811.44	797.59	0	0	1.68	2.5	3.11	6.56	0	0	0	811.44	3/9/11
BN10399682	3/11/11	50	BN-550	989.36	864.36	842.41	0	0	0	2.91	3.11	15.93	0	0	0	864.36	3/11/11
BN10399683	3/11/11	59	BN-550	956.285	831.29	682.265	0	0	0	9.71	1.55	137.76	0	0	0	831.285	3/11/11
BN10399684	3/11/11	62	BN-550	868.085	743.09	536.85	0	0	0	5.28	1.55	199.405	0	0	0	743.085	3/11/11
BN10399685	3/11/11	55	BN-550	821.78	696.78	627.73	0	0	1	9.6	3.11	55.34	0	0	0	696.78	3/11/11
BN10399686	3/11/11	59	BN-550	848.24	723.24	612.85	0	0	3	38.065	5.04	64.285	0	0	0	723.24	3/11/11
BN10399687	3/11/11	60	BN-550	929.825	804.83	702.455	0	0	2	8.73	3.1	88.54	0	0	0	804.825	3/11/11
BN10399688	3/10/11	56	BN-550	907.775	782.78	705.75	6.24	4.68	0	5.83	1.55	58.725	0	0	0	782.775	3/10/11
BN10399689	3/10/11	51	BN-550	940.85	815.85	675.59	1.56	18.73	1	7.61	3.11	108.25	0	0	0	815.85	3/10/11
BN10399690	3/11/11	51	BN-550	929.825	804.83	710.555	0	9.37	0	2.91	1.55	80.44	0	0	0	804.825	3/11/11
BN10399691	3/10/11	50	BN-550	973.925	848.93	710.09	7.8	21.08	1.13	10.86	1.55	96.415	0	0	0	848.925	3/10/11
BN10399692	3/11/11	47	BN-550	958.49	833.49	812.91	0	0	0	2.77	0	17.81	0	0	0	833.49	3/11/11
BN10399693	3/11/11	56	BN-550	958.49	833.49	768.35	0	0	0	30.955	1.55	32.635	0	0	0	833.49	3/11/11
BN10399743	3/12/11	58	BN-550	951.875	826.88	747.86	0	0	0	8.73	1.55	68.735	0	0	0	826.875	3/12/11
BN10399744	3/12/11	53	BN-550	978.335	853.34	787.235	3.12	4.68	0	2.77	0	55.53	0	0	0	853.335	3/12/11
BN10399745	3/12/11	51	BN-550	865.88	740.88	646.31	3.12	0	0.42	10.81	4.66	75.56	0	0	0	740.88	3/12/11
BN10399746	3/12/11	47	BN-550	927.62	802.62	677.82	0	0	0.42	57.84	0	66.54	0	0	0	802.62	3/12/11
BN10399747	3/12/11	61	BN-550	980.54	855.54	771.08	0	0	0	10.3	0.78	73.38	0	0	0	855.54	3/12/11
BN10399748	3/11/11	38	BN-550	936.44	811.44	803.92	0	0	0	0.97	0	6.55	0	0	0	811.44	3/11/11
BN10399749	3/12/11	48	BN-550	887.93	762.93	671.935	0	0	0	36.083	0	54.913	0	0	0	762.931	3/12/11
BN10399750	3/12/11	47	BN-550	965.105	840.11	821.885	0	0	1.68	9.7	0	6.84	0	0	0	840.105	3/12/11
BN10399751	3/11/11	45	BN-550	925.415	800.42	790.905	0	0	0	3.88	0	5.63	0	0	0	800.415	3/11/11
BN10399752	3/11/11	45	BN-550	987.155	862.16	843.315	0	0	0	2.91	0	15.93	0	0	0	862.155	3/11/11
BN10399753	3/11/11	54	BN-550	936.44	811.44	705.505	0	0	0	54.603	0	51.333	0	0	0	811.441	3/11/11
BN10399754	3/11/11	43	BN-550	934.235	809.24	752.945	0	0	1	3.53	3.11	48.65	0	0	0	809.235	3/11/11
BN10399760	3/13/11	59	BN-550	832.805	707.81	524.105	0	0	0	163.08	0	20.62	0	0	0	707.805	3/13/11
BN10399761	3/12/11	47	BN-550	852.65	727.65	642.82	0	0	0	4.48	0	80.35	0	0	0	727.65	3/12/11
BN10399762	3/13/11	52	BN-550	874.7	749.7	618.835	0	0	0	123.365	0	7.5	0	0	0	749.7	3/13/11
BN10399763	3/13/11	58	BN-550	872.495	747.5	538.645	0	0	0	181.825	3.11	23.915	0	0	0	747.495	3/13/11
BN10399764	3/12/11	37	BN-550	971.72	846.72	838.46	0	0	0	5.45	0	2.81	0	0	0	846.72	3/12/11
BN10399765	3/13/11	40	BN-550	879.11	754.11	745.97	0	0	0	0.97	1.55	5.62	0	0	0	754.11	3/13/11
BN10399766	3/13/11	49	BN-550	967.31	842.31	675.41	0	0	0	157.53	0	9.37	0	0	0	842.31	3/13/11
BN10399767	3/12/11	44	BN-550	958.49	833.49	823.19	0	0	0	2.81	0	7.49	0	0	0	833.49	3/12/11
BN10399768	3/13/11	55	BN-550	982.745	857.75	824.295	0	0	0	16.62	4.66	12.17	0	0	0	857.745	3/13/11
BN10399769	3/13/11	53	BN-550	883.52	758.52	643.04	0	0	0	45.62	3.1	66.76	0	0	0	758.52	3/13/11
BN10399770	3/13/11	46	BN-550	987.155	862.16	821.29	0	2.34	0	21.665	0	16.86	0	0	0	862.155	3/13/11
BN10399771	3/13/11	52	BN-550	823.985	698.99	469.665	0	0	0	115.195	0.39	113.735	0	0	0	698.985	3/13/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10400011	3/13/11	51	BN-550	954.08	829.08	813.4	0	0	0	9.13	0	6.55	0	0	0	829.08	3/13/11
BN10400012	3/13/11	28	BN-550	958.49	833.49	833.49	0	0	0	0	0	0	0	0	0	833.49	3/13/11
BN10400013	3/13/11	43	BN-550	989.36	864.36	800.52	0	0	0	2.37	0	61.47	0	0	0	864.36	3/13/11
BN10400014	3/13/11	55	BN-550	823.985	698.99	490.885	0	0	2.08	201.33	0	4.69	0	0	0	698.985	3/13/11
BN10400015	3/13/11	52	BN-550	962.9	837.9	827.84	0	0	0	6.31	0	3.75	0	0	0	837.9	3/13/11
BN10400016	3/14/11	54	BN-550	887.93	762.93	667.805	0	7.03	0	23.343	1.55	63.203	0	0	0	762.931	3/14/11
BN10400017	3/13/11	46	BN-550	958.49	833.49	775.74	0	0	0	7.66	1.55	48.54	0	0	0	833.49	3/13/11
BN10400018	3/14/11	37	BN-550	806.345	681.35	640.39	0	0	0	10.14	0	30.815	0	0	0	681.345	3/14/11
BN10400019	3/14/11	42	BN-550	991.565	866.57	849.235	0	0	0	8.9	0	8.43	0	0	0	866.565	3/14/11
BN10400020	3/14/11	41	BN-550	969.515	844.52	839.185	0	0	0.84	1.67	0	2.82	0	0	0	844.515	3/14/11
BN10400021	3/13/11	43	BN-550	956.285	831.29	725.98	0	0	0	2.81	1.55	100.945	0	0	0	831.285	3/13/11
BN10400022	3/14/11	44	BN-550	914.39	789.39	599.285	0	0	0	183.545	0	6.56	0	0	0	789.39	3/14/11
BN10400130	3/14/11	54	BN-550	965.105	840.11	790.735	0	0	0	39.38	1.55	8.44	0	0	0	840.105	3/14/11
BN10400131	3/14/11	44	BN-550	984.95	859.95	830.14	0	0	0	6.4	4.66	18.75	0	0	0	859.95	3/14/11
BN10400132	3/15/11	53	BN-550	768.86	643.86	626.89	0	0	0.42	5.31	0	11.24	0	0	0	643.86	3/15/11
BN10400133	3/14/11	36	BN-550	892.34	767.34	742.37	0	0	0	9.04	0	15.93	0	0	0	767.34	3/14/11
BN10400134	3/14/11	46	BN-550	821.78	696.78	646.495	0	0	0	18.1	4.66	27.525	0	0	0	696.78	3/14/11
BN10400135	3/14/11	56	BN-550	907.775	782.78	607.03	0	0	0	167.315	0	8.43	0	0	0	782.775	3/14/11
BN10400136	3/15/11	54	BN-550	863.675	738.68	590.705	0	0	1.47	140.88	0	5.62	0	0	0	738.675	3/15/11
BN10400137	3/14/11	43	BN-550	984.95	859.95	847.77	0	0	0	0	0	12.18	0	0	0	859.95	3/14/11
BN10400138	3/14/11	40	BN-550	925.415	800.42	789.715	0	0	0	6.02	0	4.68	0	0	0	800.415	3/14/11
BN10400139	3/16/11	35	BN-550	837.215	712.22	704.245	0	0	0	4.22	0	3.75	0	0	0	712.215	3/16/11
BN10400140	3/14/11	51	BN-550	978.335	853.34	785.045	0	0	2.5	16.668	0	49.123	0	0	0	853.336	3/14/11
BN10400141	3/16/11	55	BN-550	921.005	796.01	623.325	0	0	0.78	72.17	4.66	95.07	0	0	0	796.005	3/16/11
BN10400225	3/17/11	62	BN-550	881.315	756.32	531.51	0	0	1.04	45.65	6.59	171.525	0	0	0	756.315	3/17/11
BN10400226	3/16/11	59	BN-550	929.825	804.83	541.105	3.12	0	0	155.168	10.88	94.553	0	0	0	804.826	3/16/11
BN10400227	3/16/11	48	BN-550	976.13	851.13	832.76	0	0	5.72	2.37	4.66	5.62	0	0	0	851.13	3/16/11
BN10400228	3/16/11	58	BN-550	857.06	732.06	547.14	0	0	0	45.1	13.99	125.83	0	0	0	732.06	3/16/11
BN10400229	3/16/11	61	BN-550	881.315	756.32	599.08	0	0	0	81.56	0	75.675	0	0	0	756.315	3/16/11
BN10400230	3/16/11	58	BN-550	817.37	692.37	493.91	0	0	0	160.37	0	38.09	0	0	0	692.37	3/16/11
BN10400231	3/16/11	55	BN-550	656.405	531.41	159.26	0	0	0	225.06	4.66	142.425	0	0	0	531.405	3/16/11
BN10400232	3/16/11	63	BN-550	989.36	864.36	599.225	0	0	0	233.285	0	31.85	0	0	0	864.36	3/16/11
BN10400233	3/17/11	46	BN-550	757.835	632.84	542.74	0	0	0	14.98	3.1	72.015	0	0	0	632.835	3/17/11
BN10400234	3/16/11	53	BN-550	982.745	857.75	462.66	0	0	0	282.335	0	112.75	0	0	0	857.745	3/16/11
BN10400235	3/16/11	48	BN-550	914.39	789.39	751.94	0	0	0	16.83	0	20.62	0	0	0	789.39	3/16/11
BN10400236	3/17/11	58	BN-550	689.48	564.48	312.9	0	0	0	23.2	6.21	222.17	0	0	0	564.48	3/17/11
BN10400319	3/18/11	49	BN-550	632.15	507.15	285.27	0	0	0	138.08	3.11	80.69	0	0	0	507.15	3/18/11
BN10400320	3/18/11	50	BN-550	965.105	840.11	817.535	0	0	0	7.91	1.55	13.11	0	0	0	840.105	3/18/11
BN10400321	3/18/11	56	BN-550	907.775	782.78	711.68	0	0	0	57.055	0	14.04	0	0	0	782.775	3/18/11
BN10400322	3/18/11	55	BN-550	868.085	743.09	585.19	0	0	0	80.245	1.56	76.09	0	0	0	743.085	3/18/11
BN10400323	3/17/11	52	BN-550	579.23	454.23	322.665	0	4.68	0	10.04	4.66	112.185	0	0	0	454.23	3/17/11
BN10400324	3/17/11	59	BN-550	971.72	846.72	708.785	0	0	0	16.47	6.99	114.475	0	0	0	846.72	3/17/11
BN10400325	3/17/11	57	BN-550	797.525	672.53	577.89	0	0	0.42	27.04	2.33	64.845	0	0	0	672.525	3/17/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10400326	3/18/11	52	BN-550	713.735	588.74	445.16	0	0	0	138.275	1.55	3.75	0	0	0	588.735	3/18/11
BN10400327	3/18/11	59	BN-550	934.235	809.24	608.98	0	2.34	0.52	86.935	0.78	109.68	0	0	0	809.235	3/18/11
BN10400328	3/17/11	55	BN-550	898.955	773.96	655.89	0	0	0	15.4	0.78	101.885	0	0	0	773.955	3/17/11
BN10400329	3/18/11	50	BN-550	872.495	747.5	735.785	0	0	0	4.21	0	7.5	0	0	0	747.495	3/18/11
BN10400330	3/18/11	56	BN-550	835.01	710.01	547.81	0	0	0.84	88.23	3.11	70.02	0	0	0	710.01	3/18/11
BN10400368	3/19/11	57	BN-550	863.675	738.68	625.93	0	0	0	105.255	0	7.49	0	0	0	738.675	3/19/11
BN10400369	3/18/11	56	BN-550	894.545	769.55	695.94	0	0	0	15.34	1.55	56.715	0	0	0	769.545	3/18/11
BN10400370	3/18/11	54	BN-550	698.3	573.3	376.12	0	0	0	88.75	10.1	98.33	0	0	0	573.3	3/18/11
BN10400371	3/19/11	58	BN-550	678.455	553.46	431.34	0	0	0	75.18	2.33	44.605	0	0	0	553.455	3/19/11
BN10400372	3/19/11	58	BN-550	720.35	595.35	321.26	0	0	0	269.41	0	4.68	0	0	0	595.35	3/19/11
BN10400373	3/19/11	55	BN-550	735.785	610.79	496.075	0	0	0	102.55	0	12.16	0	0	0	610.785	3/19/11
BN10400374	3/19/11	55	BN-550	718.145	593.15	337.475	0	0	0	252.86	0	2.81	0	0	0	593.145	3/19/11
BN10400375	3/19/11	57	BN-550	685.07	560.07	311.82	0	0	0	198.25	9.31	40.69	0	0	0	560.07	3/19/11
BN10400376	3/18/11	58	BN-550	726.965	601.97	280.48	0	0	1.42	189.525	3.89	126.65	0	0	0	601.965	3/18/11
BN10400377	3/19/11	62	BN-550	790.91	665.91	444.1	0	0	0.84	205.04	0	15.93	0	0	0	665.91	3/19/11
BN10400378	3/19/11	51	BN-550	735.785	610.79	559.535	0	0	0	40.08	1.55	9.62	0	0	0	610.785	3/19/11
BN10400379	3/19/11	52	BN-550	879.11	754.11	694.4	0	0	0	49.84	0	9.87	0	0	0	754.11	3/19/11
BN10400595	3/20/11	54	BN-550	799.73	674.73	430.885	0	0	0	230.765	4.65	8.43	0	0	0	674.73	3/20/11
BN10400596	3/20/11	53	BN-550	691.685	566.69	312.405	0	0	0	242.45	6.21	5.62	0	0	0	566.685	3/20/11
BN10400597	3/20/11	57	BN-550	819.575	694.58	547.155	0	0	0	134.3	0	13.12	0	0	0	694.575	3/20/11
BN10400598	3/20/11	61	BN-550	777.68	652.68	417.765	0	0	0	227.425	0	7.49	0	0	0	652.68	3/20/11
BN10400599	3/20/11	59	BN-550	775.475	650.48	404.345	0	0	2	234.15	1.55	8.43	0	0	0	650.475	3/20/11
BN10400600	3/20/11	54	BN-550	874.7	749.7	594.34	0	0	0	136.01	1.55	17.8	0	0	0	749.7	3/20/11
BN10400601	3/20/11	59	BN-550	678.455	553.46	171.61	0	0	0.52	355.755	7.77	17.8	0	0	0	553.455	3/20/11
BN10400602	3/20/11	61	BN-550	989.36	864.36	815.03	0	0	0	21.26	4.65	23.42	0	0	0	864.36	3/20/11
BN10400603	3/20/11	56	BN-550	793.115	668.12	558.99	0	8.58	0	48.445	6.21	45.89	0	0	0	668.115	3/20/11
BN10400604	3/20/11	51	BN-550	636.56	511.56	157.33	0	0	0	350.01	0	4.22	0	0	0	511.56	3/20/11
BN10400605	3/20/11	48	BN-550	925.415	800.42	768.445	0	0	0	12.14	1.55	18.28	0	0	0	800.415	3/20/11
BN10400606	3/20/11	54	BN-550	870.29	745.29	698.88	0	2.86	0	11.43	7.75	24.37	0	0	0	745.29	3/20/11
BN10400779	3/21/11	59	BN-550	810.755	685.76	426.32	0	0	0	247.255	0	12.18	0	0	0	685.755	3/21/11
BN10400780	3/20/11	57	BN-550	854.855	729.86	650.055	0	0	0	16.863	7.77	55.168	0	0	0	729.856	3/20/11
BN10400781	3/21/11	54	BN-550	936.44	811.44	557.6	0	0	0	246.35	0	7.49	0	0	0	811.44	3/21/11
BN10400782	3/21/11	41	BN-550	923.21	798.21	693.05	0	0	0	100.48	0	4.68	0	0	0	798.21	3/21/11
BN10400783	3/21/11	62	BN-550	812.96	687.96	425.975	0	0	0	172.875	7.77	81.34	0	0	0	687.96	3/21/11
BN10400784	3/21/11	59	BN-550	905.57	780.57	704.29	0	0	0	53.88	13.98	8.42	0	0	0	780.57	3/21/11
BN10400785	3/21/11	58	BN-550	865.88	740.88	472.48	0	0	0	257.16	0	11.24	0	0	0	740.88	3/21/11
BN10400786	3/21/11	58	BN-550	746.81	621.81	405.61	0	0	0	189.1	9.31	17.79	0	0	0	621.81	3/21/11
BN10400787	3/21/11	56	BN-550	722.555	597.56	403.925	0	0	0	106.545	7.76	79.325	0	0	0	597.555	3/21/11
BN10400788	3/21/11	59	BN-550	786.5	661.5	394.94	0	0	0	100.49	15.54	150.53	0	0	0	661.5	3/21/11
BN10400789	3/21/11	54	BN-550	929.825	804.83	739.485	0	0	0	56.29	1.55	7.5	0	0	0	804.825	3/21/11
BN10400790	3/20/11	60	BN-550	685.07	560.07	163.8	0	0	0	371.35	10.87	14.05	0	0	0	560.07	3/20/11
BN10400949	3/21/11	60	BN-550	987.155	862.16	631.32	6.25	0	0	213.345	0	11.24	0	0	0	862.155	3/21/11
BN10400950	3/22/11	53	BN-550	678.455	553.46	265.495	0	0	45.365	242.595	0	0	0	0	0	553.455	3/22/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10400951	3/22/11	59	BN-550	651.995	527	276.93	0	0	0	165.36	0	84.705	0	0	0	526.995	3/22/11
BN10400952	3/22/11	61	BN-550	971.72	846.72	627.68	10.93	0	38.21	152.43	1.55	15.92	0	0	0	846.72	3/22/11
BN10400953	3/22/11	56	BN-550	696.095	571.1	412.475	0	0	0	123.57	0	35.05	0	0	0	571.095	3/22/11
BN10400954	3/22/11	60	BN-550	751.22	626.22	242.495	0	0	0	326	1.55	56.175	0	0	0	626.22	3/22/11
BN10400955	3/23/11	62	BN-550	751.22	626.22	351.805	0	0	0	255.995	1.55	16.87	0	0	0	626.22	3/23/11
BN10400956	3/22/11	58	BN-550	887.93	762.93	584.545	0.78	0	104.61	23.89	1.55	47.555	0	0	0	762.93	3/22/11
BN10400957	3/23/11	53	BN-550	594.665	469.67	199.97	0	0	0	265.005	0	4.69	0	0	0	469.665	3/23/11
BN10400958	3/22/11	55	BN-550	874.7	749.7	692.37	0	2.86	0	20.77	4.65	29.05	0	0	0	749.7	3/22/11
BN10400959	3/23/11	53	BN-550	687.275	562.28	246.005	0	0	0	301.92	3.1	11.25	0	0	0	562.275	3/23/11
BN10400960	3/22/11	59	BN-550	704.915	579.92	281.15	0	0	0	296.895	0	1.87	0	0	0	579.915	3/22/11
BN10401040	3/24/11	59	BN-550	960.695	835.7	686.295	0	0	3.36	64.48	0	81.56	0	0	0	835.695	3/24/11
BN10401042	3/23/11	53	BN-550	960.695	835.7	747.055	0	0	0.84	12.9	0	74.9	0	0	0	835.695	3/23/11
BN10401043	3/23/11	59	BN-550	971.72	846.72	636.275	0	0	0.84	196.475	0	13.13	0	0	0	846.72	3/23/11
BN10401044	3/24/11	50	BN-550	901.16	776.16	747.15	0	0	0	10.26	0	18.75	0	0	0	776.16	3/24/11
BN10401045	3/23/11	61	BN-550	711.53	586.53	284.485	0	0	0	276.995	3.49	21.56	0	0	0	586.53	3/23/11
BN10401046	3/23/11	54	BN-550	720.35	595.35	253.755	0	0	0	321.005	4.66	15.93	0	0	0	595.35	3/23/11
BN10401047	3/24/11	61	BN-550	865.88	740.88	499.565	0	0	0.84	172.245	0	68.23	0	0	0	740.88	3/24/11
BN10401048	3/23/11	54	BN-550	625.535	500.54	244.61	0	0	0	253.115	0	2.81	0	0	0	500.535	3/23/11
BN10401049	3/23/11	59	BN-550	740.195	615.2	447.175	0	0	0	161.15	0	6.87	0	0	0	615.195	3/23/11
BN10401050	3/23/11	62	BN-550	980.54	855.54	745.96	0	0	1.26	20.35	1.17	86.8	0	0	0	855.54	3/23/11
BN10401051	3/23/11	48	BN-550	982.745	857.75	844.225	0	0	0	5.71	3.11	4.7	0	0	0	857.745	3/23/11
BN10401263	3/24/11	56	BN-550	846.035	721.04	432.225	0	0	0	282.25	0	6.56	0	0	0	721.035	3/24/11
BN10401264	3/24/11	32	BN-550	947.465	822.47	815.435	0	0	0	1.4	0	5.63	0	0	0	822.465	3/24/11
BN10401265	3/24/11	39	BN-550	896.75	771.75	653.965	0	0	0	57.1	1.55	59.135	0	0	0	771.75	3/24/11
BN10401266	3/24/11	48	BN-550	903.365	778.37	747.795	0	0	0	10.28	1.55	18.74	0	0	0	778.365	3/24/11
BN10401267	3/24/11	50	BN-550	965.105	840.11	743.595	0	0	0	81.52	0	14.99	0	0	0	840.105	3/24/11
BN10401268	3/24/11	47	BN-550	883.52	758.52	564.83	0	0	1.26	187.74	0	4.69	0	0	0	758.52	3/24/11
BN10401269	3/24/11	51	BN-550	793.115	668.12	266.815	0	0	0.52	397.96	0	2.82	0	0	0	668.115	3/24/11
BN10401270	3/24/11	40	BN-550	984.95	859.95	780.175	0	0	0	3.34	3.11	73.325	0	0	0	859.95	3/24/11
BN10401271	3/25/11	35	BN-550	960.695	835.7	822.815	0	0	0	0.7	0	12.18	0	0	0	835.695	3/25/11
BN10401272	3/24/11	54	BN-550	973.925	848.93	748.69	0	0	3	88.195	1.55	7.49	0	0	0	848.925	3/24/11
BN10401273	3/24/11	37	BN-550	755.63	630.63	583.585	0	0	0	40.485	0	6.56	0	0	0	630.63	3/24/11
BN10401274	3/25/11	51	BN-550	971.72	846.72	769.36	0	0	0	9.16	7.77	60.43	0	0	0	846.72	3/25/11
BN10401486	3/25/11	44	BN-550	947.465	822.47	807.875	0	0	0	5.55	1.55	7.49	0	0	0	822.465	3/25/11
BN10401487	3/25/11	57	BN-550	817.37	692.37	493.41	0	0	0	192.39	0	6.57	0	0	0	692.37	3/25/11
BN10401488	3/25/11	44	BN-550	936.44	811.44	802.78	0	0	2	2.91	0	3.75	0	0	0	811.44	3/25/11
BN10401489	3/25/11	50	BN-550	921.005	796.01	757.145	0	0	2.08	15.87	3.11	17.8	0	0	0	796.005	3/25/11
BN10401490	3/25/11	53	BN-550	797.525	672.53	417.11	0	0	1	87.29	36.585	130.54	0	0	0	672.525	3/25/11
BN10401491	3/25/11	61	BN-550	938.645	813.65	484.255	0	5.73	0	205.975	3.1	114.585	0	0	0	813.645	3/25/11
BN10401492	3/25/11	60	BN-550	969.515	844.52	740.695	0	0	1.26	37.135	6.21	59.215	0	0	0	844.515	3/25/11
BN10401493	3/25/11	45	BN-550	943.055	818.06	798.885	0	0	0	8.57	3.11	7.49	0	0	0	818.055	3/25/11
BN10401494	3/26/11	60	BN-550	859.265	734.27	554.995	0	0	0	135.14	3.11	41.02	0	0	0	734.265	3/26/11
BN10401495	3/26/11	56	BN-550	903.365	778.37	687.73	0	0	0	78.455	0	12.18	0	0	0	778.365	3/26/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10401496	3/25/11	53	BN-550	936.44	811.44	646.52	0	0	1.26	85.155	3.11	75.395	0	0	0	811.44	3/25/11
BN10401497	3/25/11	40	BN-550	984.95	859.95	858.25	0	0	1	0.7	0	0	0	0	0	859.95	3/25/11
BN10401499	3/26/11	61	BN-550	887.93	762.93	533.925	0	0	0	95.305	0	133.7	0	0	0	762.93	3/26/11
BN10401500	3/26/11	57	BN-550	674.045	549.05	324.95	0	0	0	131.72	3.11	89.265	0	0	0	549.045	3/26/11
BN10401501	3/26/11	62	BN-550	967.31	842.31	709.745	0	0	2.08	67.58	0	62.905	0	0	0	842.31	3/26/11
BN10401502	3/26/11	60	BN-550	879.11	754.11	551.44	0	0	0	124.26	1.55	76.86	0	0	0	754.11	3/26/11
BN10401503	3/26/11	51	BN-550	945.26	820.26	779.37	0	0	0	20.26	0	20.63	0	0	0	820.26	3/26/11
BN10401504	3/26/11	54	BN-550	918.8	793.8	592.28	0	0	1.04	188.31	0	12.17	0	0	0	793.8	3/26/11
BN10401505	3/26/11	54	BN-550	932.03	807.03	774.13	0	0	0	11.37	4.66	16.87	0	0	0	807.03	3/26/11
BN10401506	3/26/11	47	BN-550	916.595	791.6	754.595	0	0	4	18.02	0	14.98	0	0	0	791.595	3/26/11
BN10401507	3/26/11	51	BN-550	967.31	842.31	811	0	0	1	10.67	9.32	10.32	0	0	0	842.31	3/26/11
BN10401508	3/27/11	45	BN-550	943.055	818.06	793.955	0	0	1	10.3	1.55	11.25	0	0	0	818.055	3/27/11
BN10401509	3/26/11	42	BN-550	887.93	762.93	739.54	0	0	0	14.97	0	8.42	0	0	0	762.93	3/26/11
BN10401510	3/26/11	49	BN-550	929.825	804.83	784.625	0	0	4.08	5.82	0	10.3	0	0	0	804.825	3/26/11
BN10401557	3/27/11	47	BN-550	943.055	818.06	794.455	0	0	1.56	9.55	3.11	9.38	0	0	0	818.055	3/27/11
BN10401558	3/27/11	49	BN-550	934.235	809.24	788.205	0	0	0	0	9.32	11.71	0	0	0	809.235	3/27/11
BN10401559	3/27/11	42	BN-550	918.8	793.8	740.655	0	0	0	24.803	0	28.343	0	0	0	793.801	3/27/11
BN10401560	3/27/11	41	BN-550	951.875	826.88	819.815	0	0	0	0.97	0	6.09	0	0	0	826.875	3/27/11
BN10401561	3/27/11	56	BN-550	927.62	802.62	595.56	0	0	0	5.98	4.66	196.42	0	0	0	802.62	3/27/11
BN10401562	3/27/11	41	BN-550	987.155	862.16	853.355	0	0	0	0.83	0	7.97	0	0	0	862.155	3/27/11
BN10401563	3/27/11	39	BN-550	987.155	862.16	843.705	0	0	0	0.97	1.55	15.93	0	0	0	862.155	3/27/11
BN10401564	3/27/11	57	BN-550	958.49	833.49	703.735	0	0	0.26	20.37	0	109.125	0	0	0	833.49	3/27/11
BN10401565	3/27/11	58	BN-550	980.54	855.54	815.04	0	0	0	18.97	4.66	16.87	0	0	0	855.54	3/27/11
BN10401566	3/27/11	54	BN-550	859.265	734.27	668.55	0	0	0	25.513	1.55	38.653	0	0	0	734.266	3/27/11
BN10401567	3/27/11	50	BN-550	989.36	864.36	846.19	0	0	0	4.58	0	13.59	0	0	0	864.36	3/27/11
BN10401568	3/27/11	51	BN-550	956.285	831.29	734.63	0	0	0	7.92	1.55	87.185	0	0	0	831.285	3/27/11
BN10401707	3/28/11	57	BN-550	987.155	862.16	750.21	3.12	0	1.68	95.125	0.78	11.24	0	0	0	862.155	3/28/11
BN10401708	3/28/11	43	BN-550	984.95	859.95	797.28	0	0	0	0.97	0	61.7	0	0	0	859.95	3/28/11
BN10401709	3/28/11	39	BN-550	938.645	813.65	803.055	0	0	0	4.47	0	6.12	0	0	0	813.645	3/28/11
BN10401710	3/28/11	54	BN-550	914.39	789.39	716.305	0	0	0	5	1.55	66.535	0	0	0	789.39	3/28/11
BN10401711	3/28/11	47	BN-550	934.235	809.24	778.785	0	5.73	2.1	6.69	0	15.93	0	0	0	809.235	3/28/11
BN10401712	3/28/11	41	BN-550	936.44	811.44	802.16	0	0	0	1.8	0	7.48	0	0	0	811.44	3/28/11
BN10401713	3/28/11	51	BN-550	991.565	866.57	817.75	4.68	0	0.84	7.09	0	36.205	0	0	0	866.565	3/28/11
BN10401714	3/28/11	58	BN-550	768.86	643.86	533.95	6.25	0	0.84	73.455	1.55	27.815	0	0	0	643.86	3/28/11
BN10401715	3/28/11	51	BN-550	971.72	846.72	796.175	0	0	4.07	10.68	0	35.795	0	0	0	846.72	3/28/11
BN10401716	3/28/11	48	BN-550	980.54	855.54	817.52	3.12	11.45	1.26	5.97	3.11	13.11	0	0	0	855.54	3/28/11
BN10401717	3/28/11	58	BN-550	865.88	740.88	543.015	0	0	0	180.065	0	17.8	0	0	0	740.88	3/28/11
BN10401718	3/28/11	61	BN-550	896.75	771.75	587.85	0	0	0.84	85.425	0	97.635	0	0	0	771.75	3/28/11
BN10401808	3/29/11	35	BN-550	846.035	721.04	707.085	4.68	0	0	0.83	0	8.44	0	0	0	721.035	3/29/11
BN10401809	3/29/11	37	BN-550	980.54	855.54	852.73	0	0	0	0	0	2.81	0	0	0	855.54	3/29/11
BN10401810	3/29/11	43	BN-550	971.72	846.72	837.3	0	0	0	4.73	0	4.69	0	0	0	846.72	3/29/11
BN10401811	3/28/11	36	BN-550	872.495	747.5	736.865	1.56	0	0.84	1.67	0	6.56	0	0	0	747.495	3/28/11
BN10401812	3/28/11	46	BN-550	956.285	831.29	782.885	0	0	34.59	4.44	0	9.37	0	0	0	831.285	3/28/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10401813	3/29/11	42	BN-550	980.54	855.54	846.14	0	0	0	3.78	0	5.62	0	0	0	855.54	3/29/11
BN10401814	3/28/11	44	BN-550	945.26	820.26	808.6	0	0	0.5	2.37	0	7.49	0	0	1.3	820.26	3/28/11
BN10401815	3/28/11	42	BN-550	991.565	866.57	851.175	0	0	0	6.96	0	8.43	0	0	0	866.565	3/28/11
BN10401816	3/29/11	41	BN-550	989.36	864.36	849.14	0	0	4.16	5.3	3.89	1.87	0	0	0	864.36	3/29/11
BN10401817	3/29/11	30	BN-550	764.45	639.45	626.49	0	2.34	1.26	3.74	0	5.62	0	0	0	639.45	3/29/11
BN10401818	3/29/11	48	BN-550	987.155	862.16	848.445	0	0	0	6.69	2.33	4.69	0	0	0	862.155	3/29/11
BN10401819	3/29/11	55	BN-550	938.645	813.65	749.915	0	0	0	37.03	0	26.7	0	0	0	813.645	3/29/11
BN10401936	3/30/11	55	BN-550	925.415	800.42	741.025	0	0	0	44.39	0	15	0	0	0	800.415	3/30/11
BN10401937	3/30/11	37	BN-550	982.745	857.75	850.715	0	0	0	1.4	0	5.63	0	0	0	857.745	3/30/11
BN10401938	3/29/11	42	BN-550	978.335	853.34	851.555	0	0	0.84	0	0	0.94	0	0	0	853.335	3/29/11
BN10401939	3/30/11	40	BN-550	967.31	842.31	831.13	0	0	1.68	3.88	0	5.62	0	0	0	842.31	3/30/11
BN10401940	3/29/11	53	BN-550	927.62	802.62	725.94	0	0	0	71.99	0	4.69	0	0	0	802.62	3/29/11
BN10401941	3/29/11	48	BN-550	965.105	840.11	786.96	0	0	0	2.64	0	50.505	0	0	0	840.105	3/29/11
BN10401942	3/29/11	50	BN-550	987.155	862.16	859.335	0	0	0	0	0	2.82	0	0	0	862.155	3/29/11
BN10401943	3/30/11	45	BN-550	976.13	851.13	840.2	0	0	0	2.5	0	8.43	0	0	0	851.13	3/30/11
BN10401944	3/30/11	52	BN-550	588.05	463.05	261.67	0	0	0	7.49	12.43	181.46	0	0	0	463.05	3/30/11
BN10401945	3/30/11	50	BN-550	945.26	820.26	762.13	0	0	0	36.77	7.77	13.59	0	0	0	820.26	3/30/11
BN10401946	3/30/11	48	BN-550	932.03	807.03	758.775	0	0	0	7.08	4.66	36.515	0	0	0	807.03	3/30/11
BN10401947	3/30/11	53	BN-550	923.21	798.21	665.025	1.56	0	0.42	36.81	9.32	85.075	0	0	0	798.21	3/30/11
BN10402073	3/31/11	52	BN-550	976.13	851.13	834.5	0	0.94	3.26	3.06	0	9.37	0	0	0	851.13	3/31/11
BN10402074	3/30/11	56	BN-550	982.745	857.75	727.18	0	0	0.84	3.33	3.11	123.285	0	0	0	857.745	3/30/11
BN10402075	3/31/11	43	BN-550	965.105	840.11	819.325	0	0	0	2.37	1.55	16.86	0	0	0	840.105	3/31/11
BN10402076	3/31/11	43	BN-550	989.36	864.36	573.925	0	0	0.42	9.17	1.55	279.295	0	0	0	864.36	3/31/11
BN10402077	3/30/11	48	BN-550	945.26	820.26	796.55	0	0	0	7.78	0	15.93	0	0	0	820.26	3/30/11
BN10402078	3/31/11	42	BN-550	890.135	765.14	711.96	0	0	0	4.17	0	49.005	0	0	0	765.135	3/31/11
BN10402079	3/31/11	59	BN-550	969.515	844.52	699.085	0	0	0	105.7	0	39.73	0	0	0	844.515	3/31/11
BN10402080	3/31/11	44	BN-550	980.54	855.54	838.4	0	0	0	4.05	4.66	8.43	0	0	0	855.54	3/31/11
BN10402081	3/31/11	50	BN-550	938.645	813.65	795.295	0	0	0	5	0	13.35	0	0	0	813.645	3/31/11
BN10402082	3/31/11	57	BN-550	949.67	824.67	761.88	0	0	0.84	10.67	0	51.28	0	0	0	824.67	3/31/11
BN10402083	3/31/11	48	BN-550	969.515	844.52	810.525	0	0	0	6.52	0	27.47	0	0	0	844.515	3/31/11
BN10402084	3/31/11	42	BN-550	989.36	864.36	839.86	0	4.68	2	3.34	6.99	7.49	0	0	0	864.36	3/31/11
BN10402191	3/31/11	49	BN-550	989.36	864.36	844.63	0	0	0	9.43	0	10.3	0	0	0	864.36	3/31/11
BN10402192	4/1/11	41	BN-550	927.62	802.62	759.635	0	0	0	3.33	0	39.655	0	0	0	802.62	4/1/11
BN10402193	4/1/11	43	BN-550	912.185	787.19	773.655	0	0	0	4.17	0	9.36	0	0	0	787.185	4/1/11
BN10402194	3/31/11	57	BN-550	799.73	674.73	470.845	0	0	0	198.265	0	5.62	0	0	0	674.73	3/31/11
BN10402195	4/1/11	49	BN-550	903.365	778.37	761.935	4.68	0	0	0.83	1.55	9.37	0	0	0	778.365	4/1/11
BN10402196	3/31/11	42	BN-550	969.515	844.52	822.525	0	0	0	7.64	3.11	11.24	0	0	0	844.515	3/31/11
BN10402197	3/31/11	61	BN-550	956.285	831.29	677.045	0	0	1	114.71	0	38.53	0	0	0	831.285	3/31/11
BN10402198	4/1/11	53	BN-550	766.655	641.66	570.075	0	0	0	51.9	0	19.68	0	0	0	641.655	4/1/11
BN10402199	3/31/11	43	BN-550	945.26	820.26	803.46	0	0	0	5.55	0	11.25	0	0	0	820.26	3/31/11
BN10402200	3/31/11	41	BN-550	971.72	846.72	807.31	0	0	0	12.19	0	27.22	0	0	0	846.72	3/31/11
BN10402201	4/1/11	58	BN-550	645.38	520.38	130	0	0	0	334.085	0	56.295	0	0	0	520.38	4/1/11
BN10402202	4/1/11	59	BN-550	663.02	538.02	130	0	0	0	402.4	0	5.62	0	0	0	538.02	4/1/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10402204	4/2/11	39	BN-550	921.005	796.01	772.625	0.47	0	0	4.16	0	18.75	0	0	0	796.005	4/2/11
BN10402205	4/2/11	43	BN-550	898.955	773.96	752.115	0	0	1	4.61	3.11	13.12	0	0	0	773.955	4/2/11
BN10402206	4/1/11	43	BN-550	991.565	866.57	850.985	0	0	1	3.33	0	11.25	0	0	0	866.565	4/1/11
BN10402207	4/1/11	56	BN-550	887.93	762.93	571.255	0	0	0	112.225	0	79.45	0	0	0	762.93	4/1/11
BN10402208	4/1/11	29	BN-550	850.445	725.45	717.315	0	0	0	2.5	0	5.63	0	0	0	725.445	4/1/11
BN10402209	4/1/11	55	BN-550	918.8	793.8	644.715	0	0	0	141.585	0	7.5	0	0	0	793.8	4/1/11
BN10402210	4/1/11	60	BN-550	905.57	780.57	666.95	0	0	0	85.825	0	27.795	0	0	0	780.57	4/1/11
BN10402211	4/1/11	60	BN-550	687.275	562.28	324.29	0	0	0	72.975	0	165.01	0	0	0	562.275	4/1/11
BN10402212	4/1/11	56	BN-550	943.055	818.06	665.74	0	0	0	103.13	0	49.185	0	0	0	818.055	4/1/11
BN10402213	4/1/11	39	BN-550	870.29	745.29	716.03	0.78	9.58	0	11.55	0.78	6.57	0	0	0	745.29	4/1/11
BN10402214	4/1/11	54	BN-550	927.62	802.62	672.31	0	0	0	106.983	0	23.328	0	0	0	802.621	4/1/11
BN10402215	4/1/11	59	BN-550	947.465	822.47	550.995	0	0	0	267.72	0	3.75	0	0	0	822.465	4/1/11
BN10402374	4/2/11	50	BN-550	969.515	844.52	812.515	0	0	0	7.95	1.55	22.5	0	0	0	844.515	4/2/11
BN10402375	4/2/11	35	BN-550	987.155	862.16	857.575	0	0	0	0.83	0	3.75	0	0	0	862.155	4/2/11
BN10402376	4/2/11	56	BN-550	967.31	842.31	750.675	0	8.43	0	18.96	2.34	61.905	0	0	0	842.31	4/2/11
BN10402377	4/2/11	43	BN-550	934.235	809.24	796.095	1.56	1.41	3	2.49	0	4.68	0	0	0	809.235	4/2/11
BN10402378	4/2/11	40	BN-550	914.39	789.39	779.08	0	0	2.08	1.66	0	6.57	0	0	0	789.39	4/2/11
BN10402379	4/3/11	42	BN-550	923.21	798.21	792.37	0	0	0	2.1	0	3.74	0	0	0	798.21	4/3/11
BN10402380	4/2/11	35	BN-550	969.515	844.52	840.705	0	0	1	2.81	0	0	0	0	0	844.515	4/2/11
BN10402381	4/2/11	54	BN-550	737.99	612.99	485.87	1.56	7.02	0	43.59	3.5	71.45	0	0	0	612.99	4/2/11
BN10402382	4/3/11	46	BN-550	987.155	862.16	832.385	0	0	0	21.33	0	8.44	0	0	0	862.155	4/3/11
BN10402383	4/2/11	47	BN-550	969.515	844.52	668.625	0	0	0	159.35	1.55	14.99	0	0	0	844.515	4/2/11
BN10402384	4/3/11	34	BN-550	918.8	793.8	791.46	0	0	0	1.4	0	0.94	0	0	0	793.8	4/3/11
BN10402385	4/2/11	60	BN-550	982.745	857.75	706.69	0	4.68	0	10.44	4.67	131.265	0	0	0	857.745	4/2/11
BN10402573	4/4/11	51	BN-550	890.135	765.14	725.735	0	2.34	0	5.04	1.55	30.47	0	0	0	765.135	4/4/11
BN10402574	4/4/11	63	BN-550	907.775	782.78	657.13	0	28.11	0	40.085	0	57.45	0	0	0	782.775	4/4/11
BN10402575	4/4/11	52	BN-550	645.38	520.38	446.835	0	0	0	3.49	0	70.055	0	0	0	520.38	4/4/11
BN10402576	4/4/11	55	BN-550	744.605	619.61	582.76	0	0	0	1.67	0	35.175	0	0	0	619.605	4/4/11
BN10402577	4/4/11	35	BN-550	857.06	732.06	723.86	0	0	3	3.33	0	1.87	0	0	0	732.06	4/4/11
BN10402578	4/4/11	52	BN-550	729.17	604.17	576.795	0	0	0	0	0	27.375	0	0	0	604.17	4/4/11
BN10402579	4/4/11	47	BN-550	916.595	791.6	742.735	1.56	2.34	2	0	0	42.96	0	0	0	791.595	4/4/11
BN10402580	4/5/11	48	BN-550	894.545	769.55	711.355	0	21.07	0	4.3	0	32.82	0	0	0	769.545	4/5/11
BN10402581	4/4/11	52	BN-550	956.285	831.29	793.535	0	7.54	3.34	3.2	0	23.67	0	0	0	831.285	4/4/11
BN10402582	4/4/11	51	BN-550	969.515	844.52	829.255	0	0	0	7.76	0	7.5	0	0	0	844.515	4/4/11
BN10402583	4/4/11	46	BN-550	987.155	862.16	845.005	0	0	0	2.16	0	14.99	0	0	0	862.155	4/4/11
BN10402584	4/4/11	46	BN-550	912.185	787.19	725.495	0	46.85	0	1.25	0	13.59	0	0	0	787.185	4/4/11
BN10402662	4/4/11	49	BN-550	918.8	793.8	771.41	1.56	6.79	1.04	2.08	1.55	9.37	0	0	0	793.8	4/4/11
BN10402663	4/4/11	47	BN-550	976.13	851.13	844.29	0	2.34	0.84	2.22	0	1.44	0	0	0	851.13	4/4/11
BN10402664	4/3/11	40	BN-550	980.54	855.54	829.6	0	2.34	0.42	9.44	1.55	12.19	0	0	0	855.54	4/3/11
BN10402665	4/3/11	31	BN-550	865.88	740.88	726.9	0	3.75	0	4.61	0	5.62	0	0	0	740.88	4/3/11
BN10402666	4/3/11	38	BN-550	912.185	787.19	773.245	0	3.75	0	0.83	0	9.36	0	0	0	787.185	4/3/11
BN10402667	4/3/11	47	BN-550	938.645	813.65	787.615	0	1.41	0	9.33	0	15.29	0	0	0	813.645	4/3/11
BN10402668	4/4/11	37	BN-550	885.725	760.73	757.915	0	0	0	0	0	2.81	0	0	0	760.725	4/4/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10402669	4/3/11	57	BN-550	786.5	661.5	500.385	0	0	0	115.625	0	45.49	0	0	0	661.5	4/3/11
BN10402670	4/4/11	38	BN-550	890.135	765.14	757.335	0	0	0	4.99	0	2.81	0	0	0	765.135	4/4/11
BN10402671	4/3/11	46	BN-550	898.955	773.96	735.105	0	0	0	4.17	0	34.68	0	0	0	773.955	4/3/11
BN10402672	4/3/11	61	BN-550	960.695	835.7	792.625	0	7.02	0.84	9.65	0	25.56	0	0	0	835.695	4/3/11
BN10402673	4/3/11	62	BN-550	828.395	703.4	582.9	0	1.41	0	21.168	0	97.918	0	0	0	703.396	4/3/11
BN10402675	4/5/11	29	BN-550	883.52	758.52	744.45	0	4.68	0	0.97	0	8.42	0	0	0	758.52	4/5/11
BN10402676	4/5/11	46	BN-550	960.695	835.7	777.345	0	42.16	0	1.67	0	14.52	0	0	0	835.695	4/5/11
BN10402677	4/5/11	51	BN-550	737.99	612.99	297.775	0	0	0	307.725	0	7.49	0	0	0	612.99	4/5/11
BN10402678	4/5/11	25	BN-550	478.14	353.14	170.977	0	151.323	2.705	9.8	0.6	20.105	0	0	0	355.51	4/5/11
BN10402679	4/5/11	38	BN-550	786.5	661.5	635.54	0	0	0	3.47	0	22.49	0	0	0	661.5	4/5/11
BN10402680	4/5/11	61	BN-550	755.63	630.63	306.255	2.82	9.37	2	268.005	3.1	39.08	0	0	0	630.63	4/5/11
BN10402681	4/5/11	61	BN-550	962.9	837.9	588.64	0	0	0	202.88	1.55	44.83	0	0	0	837.9	4/5/11
BN10402682	4/5/11	61	BN-550	934.235	809.24	501.035	0	0	0	272.33	0	35.87	0	0	0	809.235	4/5/11
BN10402683	4/6/11	59	BN-550	934.235	809.24	667.745	0	0	0	124.64	4.66	12.19	0	0	0	809.235	4/6/11
BN10402684	4/5/11	59	BN-550	929.825	804.83	596.69	0	0	0	198.135	1.55	8.45	0	0	0	804.825	4/5/11
BN10402685	4/6/11	51	BN-550	907.775	782.78	635.83	0	0	0	144.135	0	2.81	0	0	0	782.775	4/6/11
BN10402686	4/5/11	49	BN-550	987.155	862.16	845.165	0	0	1	10.37	0	5.62	0	0	0	862.155	4/5/11
BN10402864	4/6/11	41	BN-550	967.31	842.31	829.32	0	0	0	3.64	4.66	4.69	0	0	0	842.31	4/6/11
BN10402865	4/7/11	60	BN-550	971.72	846.72	428.525	0	0	0	411.645	0	6.55	0	0	0	846.72	4/7/11
BN10402866	4/6/11	59	BN-550	925.415	800.42	560.285	0	0	0	237.32	0	2.81	0	0	0	800.415	4/6/11
BN10402867	4/6/11	45	BN-550	949.67	824.67	784.725	0	0	0	2.81	0.39	36.745	0	0	0	824.67	4/6/11
BN10402868	4/7/11	59	BN-550	929.825	804.83	467.73	0	5.73	0	328.545	0	2.82	0	0	0	804.825	4/7/11
BN10402869	4/7/11	37	BN-550	918.8	793.8	786.6	0	0	3	4.2	0	0	0	0	0	793.8	4/7/11
BN10402870	4/7/11	59	BN-550	810.755	685.76	387.37	0	0	0	292.765	0	5.62	0	0	0	685.755	4/7/11
BN10402871	4/7/11	60	BN-550	826.19	701.19	405.075	0	0	0	295.175	0	0.94	0	0	0	701.19	4/7/11
BN10402872	4/7/11	54	BN-550	925.415	800.42	598.405	0	0	0	145.005	0	57.005	0	0	0	800.415	4/7/11
BN10402873	4/7/11	59	BN-550	790.91	665.91	308.74	0	0	0	323.585	0	33.585	0	0	0	665.91	4/7/11
BN10402874	4/6/11	58	BN-550	940.85	815.85	168.09	0	0	0	644.95	0	2.81	0	0	0	815.85	4/6/11
BN10402875	4/6/11	46	BN-550	735.785	610.79	493.66	0	0	0	110.565	0	6.56	0	0	0	610.785	4/6/11
BN10402876	4/8/11	48	BN-550	912.185	787.19	719.565	0	0	0	58.25	0	9.37	0	0	0	787.185	4/8/11
BN10402877	4/8/11	61	BN-550	980.54	855.54	684.09	0	5.62	1	43.06	3.11	118.66	0	0	0	855.54	4/8/11
BN10402878	4/8/11	45	BN-550	925.415	800.42	715.195	0	0	2.08	53.543	0	29.598	0	0	0	800.416	4/8/11
BN10402879	4/8/11	37	BN-550	934.235	809.24	787.895	0	2.06	3.04	8.74	0	7.5	0	0	0	809.235	4/8/11
BN10402880	4/8/11	35	BN-550	980.54	855.54	847.71	0	0	2.08	0	0	5.75	0	0	0	855.54	4/8/11
BN10402881	4/8/11	40	BN-550	980.54	855.54	838.16	0	0	4.5	0.7	0	12.18	0	0	0	855.54	4/8/11
BN10402882	4/9/11	62	BN-550	830.6	705.6	418.895	0	0	4.16	72.545	9.33	200.67	0	0	0	705.6	4/9/11
BN10402883	4/8/11	47	BN-550	987.155	862.16	839.345	0	0	5.94	5.02	1.55	10.3	0	0	0	862.155	4/8/11
BN10402884	4/9/11	60	BN-550	828.395	703.4	518.37	0	0	2.08	137.785	3.1	42.06	0	0	0	703.395	4/9/11
BN10402885	4/8/11	48	BN-550	962.9	837.9	793.79	0	0	5.06	2.5	0	36.55	0	0	0	837.9	4/8/11
BN10402886	4/9/11	48	BN-550	976.13	851.13	705.66	0	57.26	0	44.795	0	43.415	0	0	0	851.13	4/9/11
BN10402887	4/8/11	48	BN-550	949.67	824.67	666.955	0	0	8.02	40.395	1.55	107.75	0	0	0	824.67	4/8/11
BN10402888	4/7/11	38	BN-550	907.775	782.78	721.11	0	0	0	56.045	0	5.62	0	0	0	782.775	4/7/11
BN10402889	4/7/11	58	BN-550	634.355	509.36	156	0	0	0	301.815	0	51.54	0	0	0	509.355	4/7/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10402890	4/7/11	60	BN-550	773.27	648.27	388.73	0	0	0	140.86	6.21	112.47	0	0	0	648.27	4/7/11
BN10402891	4/7/11	46	BN-550	954.08	829.08	811.27	0	0	3	8.26	0	6.55	0	0	0	829.08	4/7/11
BN10402892	4/8/11	59	BN-550	707.12	582.12	294.285	0	0	0	236.685	0	51.15	0	0	0	582.12	4/8/11
BN10402893	4/7/11	42	BN-550	945.26	820.26	776.6	0	0	0	3.51	0	40.15	0	0	0	820.26	4/7/11
BN10402894	4/8/11	52	BN-550	848.24	723.24	591.93	0	0	0	114.45	0	16.86	0	0	0	723.24	4/8/11
BN10402895	4/8/11	51	BN-550	916.595	791.6	752.305	0	0	2	1.67	0	35.62	0	0	0	791.595	4/8/11
BN10402896	4/8/11	50	BN-550	982.745	857.75	836.175	0	0	0	6.59	0	14.98	0	0	0	857.745	4/8/11
BN10402897	4/7/11	57	BN-550	691.685	566.69	267.74	0	0	0	291.155	3.11	4.68	0	0	0	566.685	4/7/11
BN10402898	4/7/11	57	BN-550	876.905	751.91	608.365	0	0	0	105.995	0	37.545	0	0	0	751.905	4/7/11
BN10402899	4/7/11	57	BN-550	577.025	452.03	189.81	0	0	0	128.98	6.22	127.015	0	0	0	452.025	4/7/11
BN10403253	4/9/11	52	BN-550	876.905	751.91	602.125	0	0	0	133.87	4.66	11.25	0	0	0	751.905	4/9/11
BN10403254	4/9/11	57	BN-550	674.045	549.05	299.39	4.68	0	0	185.095	6.22	53.66	0	0	0	549.045	4/9/11
BN10403255	4/9/11	58	BN-550	764.45	639.45	497.71	0	0	0	123.94	0	17.8	0	0	0	639.45	4/9/11
BN10403256	4/9/11	49	BN-550	557.18	432.18	209.99	0	0	0.84	110.475	0	110.875	0	0	0	432.18	4/9/11
BN10403257	4/9/11	57	BN-550	559.385	434.39	107.9	0	0	0	280.075	0	46.41	0	0	0	434.385	4/9/11
BN10403258	4/9/11	61	BN-550	678.455	553.46	137.81	0	0	0	382.995	1.94	30.71	0	0	0	553.455	4/9/11
BN10403259	4/9/11	48	BN-550	978.335	853.34	827.805	0	0	0	8.67	0	16.86	0	0	0	853.335	4/9/11
BN10403260	4/9/11	59	BN-550	718.145	593.15	358.96	0	0	0	161.51	6.22	66.455	0	0	0	593.145	4/9/11
BN10403261	4/9/11	61	BN-550	678.455	553.46	199.445	0	0	1.26	310.555	0	42.195	0	0	0	553.455	4/9/11
BN10403262	4/9/11	53	BN-550	682.865	557.87	423.005	0	0	0	119.87	0	14.99	0	0	0	557.865	4/9/11
BN10403263	4/9/11	61	BN-550	797.525	672.53	357.575	0	0	2	3.61	4.66	304.68	0	0	0	672.525	4/9/11
BN10403264	4/9/11	54	BN-550	643.175	518.18	188.92	0	0	0	242.985	0	86.27	0	0	0	518.175	4/9/11
BN10403342	4/10/11	45	BN-550	755.63	630.63	431.605	0	0	0	142.03	0	56.995	0	0	0	630.63	4/10/11
BN10403343	4/10/11	58	BN-550	707.12	582.12	303.24	0	0	1.26	182.005	0	95.615	0	0	0	582.12	4/10/11
BN10403344	4/9/11	54	BN-550	625.535	500.54	196.52	0	0	0	287.155	0	16.86	0	0	0	500.535	4/9/11
BN10403345	4/10/11	56	BN-550	804.14	679.14	375.375	0	0	2.52	156.435	1.55	143.26	0	0	0	679.14	4/10/11
BN10403346	4/10/11	52	BN-550	693.89	568.89	137.81	0	0	0	357.96	0	73.12	0	0	0	568.89	4/10/11
BN10403347	4/10/11	58	BN-550	784.295	659.3	328.365	0	0	0	319.69	0	11.24	0	0	0	659.295	4/10/11
BN10403348	4/10/11	61	BN-550	760.04	635.04	339.155	0	2.98	0	175.455	0	117.45	0	0	0	635.04	4/10/11
BN10403350	4/9/11	54	BN-550	698.3	573.3	326.46	0	0	1.26	164.665	1.55	79.365	0	0	0	573.3	4/9/11
BN10403351	4/10/11	55	BN-550	779.885	654.89	187.365	0	0	292.88	69.985	4.66	99.995	0	0	0	654.885	4/10/11
BN10403352	4/10/11	60	BN-550	722.555	597.56	289.66	0	0	0	292.285	1.55	14.06	0	0	0	597.555	4/10/11
BN10403353	4/10/11	53	BN-550	680.66	555.66	299.47	0	0	0	241.18	0	15.01	0	0	0	555.66	4/10/11
BN10403427	4/10/11	45	BN-550	837.215	712.22	619.98	0	0	0	83.805	0	8.43	0	0	0	712.215	4/10/11
BN10403429	4/11/11	54	BN-550	960.695	835.7	400.52	0	0	356.48	66.515	0	12.18	0	0	0	835.695	4/11/11
BN10403430	4/11/11	58	BN-550	693.89	568.89	262.59	0	0	0	221.77	0	84.53	0	0	0	568.89	4/11/11
BN10403431	4/11/11	56	BN-550	865.88	740.88	476.965	0	0	0	250.795	0	13.12	0	0	0	740.88	4/11/11
BN10403432	4/10/11	59	BN-550	669.635	544.64	170.05	0	0	0	353.025	0	21.56	0	0	0	544.635	4/10/11
BN10403433	4/10/11	55	BN-550	634.355	509.36	142.49	0	0	0	342.835	6.22	17.81	0	0	0	509.355	4/10/11
BN10403434	4/11/11	60	BN-550	868.085	743.09	389.885	0	0	0	244.295	0	108.905	0	0	0	743.085	4/11/11
BN10403435	4/11/11	59	BN-550	868.085	743.09	515.925	0	0	0	217.31	0	9.85	0	0	0	743.085	4/11/11
BN10403436	4/11/11	50	BN-550	830.6	705.6	499.92	0	0	0	160.7	0	44.98	0	0	0	705.6	4/11/11
BN10403437	4/11/11	51	BN-550	685.07	560.07	241	0	0	5.46	307.99	0	5.62	0	0	0	560.07	4/11/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10403438	4/11/11	57	BN-550	733.58	608.58	370.07	0	0	0.84	228.3	0	9.37	0	0	0	608.58	4/11/11
BN10403474	4/11/11	58	BN-550	843.83	718.83	593.98	0	0	0	113.47	1.55	9.83	0	0	0	718.83	4/11/11
BN10403475	4/11/11	59	BN-550	945.26	820.26	658.295	0	0	0	153.525	0	8.44	0	0	0	820.26	4/11/11
BN10403476	4/11/11	59	BN-550	905.57	780.57	531.76	0	0	0	237.56	0	11.25	0	0	0	780.57	4/11/11
BN10403477	4/12/11	42	BN-550	965.105	840.11	762.805	0	0	0	75.43	0	1.87	0	0	0	840.105	4/11/11
BN10403478	4/11/11	49	BN-550	969.515	844.52	699.675	0	0	0	142.5	0	2.34	0	0	0	844.515	4/11/11
BN10403479	4/11/11	54	BN-550	887.93	762.93	629.585	0	0	1	126.725	0	5.62	0	0	0	762.93	4/11/11
BN10403480	4/12/11	62	BN-550	795.32	670.32	313.635	0	0	0	349.185	0	7.5	0	0	0	670.32	4/12/11
BN10403481	4/11/11	43	BN-550	918.8	793.8	780.19	0	0	0	0.97	0	12.64	0	0	0	793.8	4/11/11
BN10403482	4/11/11	42	BN-550	934.235	809.24	798.925	0	0	0	2.81	0	7.5	0	0	0	809.235	4/11/11
BN10403483	4/12/11	54	BN-550	799.73	674.73	460.17	0	0	0	204.43	3.11	7.02	0	0	0	674.73	4/12/11
BN10403484	4/11/11	54	BN-550	881.315	756.32	653.98	0	0	0	93.425	0	8.91	0	0	0	756.315	4/11/11
BN10403485	4/12/11	59	BN-550	711.53	586.53	255.32	0	0	0	327.47	0	3.74	0	0	0	586.53	4/12/11
BN10403742	4/13/11	61	BN-550	976.13	851.13	748.71	0	7.02	0	66.04	3.11	26.25	0	0	0	851.13	4/13/11
BN10403743	4/13/11	59	BN-550	795.32	670.32	441.7	0	0	1.26	96.32	3.11	127.93	0	0	0	670.32	4/13/11
BN10403744	4/12/11	50	BN-550	640.97	515.97	234.29	0	9.13	1.26	266.6	0	4.69	0	0	0	515.97	4/12/11
BN10403745	4/13/11	55	BN-550	870.29	745.29	513.005	0	0	0	162.25	1.55	68.485	0	0	0	745.29	4/13/11
BN10403746	4/13/11	53	BN-550	693.89	568.89	386.725	0	0	0	79.325	0	102.84	0	0	0	568.89	4/13/11
BN10403747	4/12/11	59	BN-550	669.635	544.64	383.84	0	2.34	0	98.67	0.78	59.005	0	0	0	544.635	4/12/11
BN10403748	4/12/11	60	BN-550	632.15	507.15	137.81	0	0	2.1	323.375	0	43.865	0	0	0	507.15	4/12/11
BN10403749	4/12/11	53	BN-550	696.095	571.1	376.82	0	11.59	0	167.125	0	15.56	0	0	0	571.095	4/12/11
BN10403750	4/13/11	57	BN-550	722.555	597.56	338.33	0	27.63	0	159.51	0	72.085	0	0	0	597.555	4/13/11
BN10403751	4/12/11	56	BN-550	965.105	840.11	696.695	0	0	0	140.92	1.55	0.94	0	0	0	840.105	4/12/11
BN10403752	4/12/11	47	BN-550	991.565	866.57	701.32	0	0	0.5	93.715	1.55	69.48	0	0	0	866.565	4/12/11
BN10403753	4/12/11	59	BN-550	775.475	650.48	322.82	0	9.37	2.1	306.665	1.55	7.97	0	0	0	650.475	4/12/11
BN10403755	4/13/11	42	BN-550	934.235	809.24	760.005	0	11.45	0	4.31	0	33.47	0	0	0	809.235	4/13/11
BN10403756	4/13/11	34	BN-550	870.29	745.29	737.7	0	0	0	2.91	0	4.68	0	0	0	745.29	4/13/11
BN10403757	4/14/11	46	BN-550	967.31	842.31	785.93	0	0	0	10.76	1.55	44.07	0	0	0	842.31	4/14/11
BN10403758	4/14/11	58	BN-550	753.425	628.43	470.235	0	0	0	85.66	1.55	70.98	0	0	0	628.425	4/14/11
BN10403759	4/14/11	59	BN-550	949.67	824.67	696.625	0	2.34	0	68.65	12.43	44.625	0	0	0	824.67	4/14/11
BN10403760	4/14/11	49	BN-550	973.925	848.93	559.69	0	2.34	0	10.34	0	276.555	0	0	0	848.925	4/14/11
BN10403761	4/14/11	38	BN-550	971.72	846.72	837.79	0	0	0	2.37	0	6.56	0	0	0	846.72	4/14/11
BN10403762	4/13/11	47	BN-550	865.88	740.88	579.03	0	2.34	0	135.79	3.1	20.62	0	0	0	740.88	4/13/11
BN10403763	4/13/11	60	BN-550	760.04	635.04	389.975	0	0	4.16	171.5	0	69.405	0	0	0	635.04	4/13/11
BN10403764	4/13/11	61	BN-550	991.565	866.57	804.515	0	0	0	2.1	0	59.95	0	0	0	866.565	4/13/11
BN10403765	4/13/11	62	BN-550	984.95	859.95	724.72	0	0	0	123.04	0	12.19	0	0	0	859.95	4/13/11
BN10403766	4/13/11	54	BN-550	894.545	769.55	637.12	0	0	0	4.91	0	127.515	0	0	0	769.545	4/13/11
BN10403897	4/14/11	51	BN-550	987.155	862.16	744.695	0	100.02	0	7.13	0	10.31	0	0	0	862.155	4/14/11
BN10403898	4/14/11	56	BN-550	916.595	791.6	707.395	0	0	0	77.64	0	6.56	0	0	0	791.595	4/14/11
BN10403899	4/14/11	49	BN-550	969.515	844.52	535.59	0	169.44	3.38	9.23	0	126.875	0	0	0	844.515	4/14/11
BN10403900	4/14/11	39	BN-550	929.825	804.83	763.595	0	0	0	8.42	0	32.81	0	0	0	804.825	4/14/11
BN10403901	4/14/11	48	BN-550	982.745	857.75	691.385	0	143.61	0	10.57	0	12.18	0	0	0	857.745	4/14/11
BN10403902	4/14/11	45	BN-550	934.235	809.24	793.215	0	0	0	2.91	0	13.11	0	0	0	809.235	4/14/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10403903	4/14/11	52	BN-550	932.03	807.03	662.45	0	0	0	135.86	3.11	5.61	0	0	0	807.03	4/14/11
BN10403904	4/14/11	58	BN-550	793.115	668.12	604.085	0	0	0	17.82	7.77	38.44	0	0	0	668.115	4/14/11
BN10403905	4/15/11	51	BN-550	636.56	511.56	235.295	0	0	0	272.845	1.55	1.87	0	0	0	511.56	4/15/11
BN10403906	4/14/11	59	BN-550	958.49	833.49	620.665	0	0	0	166.8	1.55	44.475	0	0	0	833.49	4/14/11
BN10403907	4/15/11	51	BN-550	806.345	681.35	532.365	0	0	0	140.88	1.55	6.55	0	0	0	681.345	4/15/11
BN10403908	4/15/11	55	BN-550	984.95	859.95	764.33	0	0	0	86.26	0	9.36	0	0	0	859.95	4/15/11
BN10404097	4/15/11	51	BN-550	978.335	853.34	763.78	0	0	4.2	71.625	1.55	12.18	0	0	0	853.335	4/15/11
BN10404098	4/17/11	44	BN-550	921.005	796.01	740.935	0	20.82	3.02	4.56	3.11	23.56	0	0	0	796.005	4/17/11
BN10404099	4/15/11	58	BN-550	610.1	485.1	278.58	0	0	4.08	168.49	0	33.95	0	0	0	485.1	4/15/11
BN10404101	4/15/11	51	BN-550	581.435	456.44	245.025	0	0	0	200.8	3.11	7.5	0	0	0	456.435	4/15/11
BN10404102	4/15/11	51	BN-550	898.955	773.96	653.455	0	0	0	12.67	1.55	106.28	0	0	0	773.955	4/15/11
BN10404103	4/15/11	61	BN-550	896.75	771.75	640.965	0	0	14.64	66.065	0	50.08	0	0	0	771.75	4/15/11
BN10404104	4/15/11	46	BN-550	909.98	784.98	746.76	0	0	7.45	2.37	3.1	25.3	0	0	0	784.98	4/15/11
BN10404105	4/15/11	57	BN-550	698.3	573.3	213.1	0	0	0	247.04	6.22	106.94	0	0	0	573.3	4/15/11
BN10404106	4/15/11	55	BN-550	828.395	703.4	635.33	0	0	0	34.045	3.1	30.92	0	0	0	703.395	4/15/11
BN10404107	4/15/11	61	BN-550	782.09	657.09	463.14	0	0	0	159	3.11	31.84	0	0	0	657.09	4/15/11
BN10404108	4/15/11	48	BN-550	958.49	833.49	657.405	0	0	0	140.155	0	35.93	0	0	0	833.49	4/15/11
BN10404220	4/17/11	61	BN-550	817.37	692.37	513.845	3.12	0	0	123.89	3.11	48.405	0	0	0	692.37	4/17/11
BN10404221	4/17/11	60	BN-550	876.905	751.91	574.09	0	0	0	160.945	0	16.87	0	0	0	751.905	4/17/11
BN10404222	4/17/11	55	BN-550	835.01	710.01	535.595	0	0	0.21	160.945	3.89	9.37	0	0	0	710.01	4/17/11
BN10404223	4/17/11	61	BN-550	786.5	661.5	267.3	1.56	0	0.84	280.665	0	111.135	0	0	0	661.5	4/17/11
BN10404224	4/17/11	60	BN-550	914.39	789.39	577.26	0	0	9.42	149.145	0	53.565	0	0	0	789.39	4/17/11
BN10404225	4/17/11	52	BN-550	773.27	648.27	440.985	0	0	66.365	105.65	6.21	29.06	0	0	0	648.27	4/17/11
BN10404226	4/17/11	41	BN-550	980.54	855.54	838.14	0	0	0	3.34	0	14.06	0	0	0	855.54	4/17/11
BN10404227	4/17/11	58	BN-550	973.925	848.93	658.255	0	0	0	60.5	4.66	125.51	0	0	0	848.925	4/17/11
BN10404228	4/17/11	59	BN-550	859.265	734.27	487.975	0	0	3.6	224.88	0	17.81	0	0	0	734.265	4/17/11
BN10404229	4/17/11	58	BN-550	643.175	518.18	159.12	0	0	4.08	301.685	1.55	51.74	0	0	0	518.175	4/17/11
BN10404231	4/17/11	56	BN-550	938.645	813.65	694.98	0	0	0	15.11	3.11	100.445	0	0	0	813.645	4/17/11
BN10404315	4/18/11	53	BN-550	879.11	754.11	474.415	0	0	66.675	143.385	0	69.635	0	0	0	754.11	4/18/11
BN10404316	4/19/11	54	BN-550	929.825	804.83	603.135	0	0	0	192.32	0	9.37	0	0	0	804.825	4/19/11
BN10404317	4/18/11	57	BN-550	965.105	840.11	578.525	0	0	0	246.91	1.55	13.12	0	0	0	840.105	4/18/11
BN10404318	4/19/11	56	BN-550	768.86	643.86	341.35	0	0	0	291.25	0	11.26	0	0	0	643.86	4/19/11
BN10404319	4/18/11	53	BN-550	707.12	582.12	292.245	0	0	1.04	203.225	1.56	84.05	0	0	0	582.12	4/18/11
BN10404320	4/19/11	50	BN-550	918.8	793.8	706.375	0	0	0	77.125	0	10.3	0	0	0	793.8	4/19/11
BN10404321	4/18/11	48	BN-550	868.085	743.09	569.7	0	0	49.87	112.595	1.55	9.37	0	0	0	743.085	4/18/11
BN10404322	4/19/11	55	BN-550	973.925	848.93	657.335	0	0	3.22	99.485	2.33	86.555	0	0	0	848.925	4/19/11
BN10404323	4/18/11	58	BN-550	731.375	606.38	264.735	0	0	0	178.83	68.91	93.9	0	0	0	606.375	4/18/11
BN10404324	4/19/11	54	BN-550	987.155	862.16	842.435	0	0	0	9.4	0	10.32	0	0	0	862.155	4/19/11
BN10404325	4/19/11	60	BN-550	777.68	652.68	244.2	0	0	0	389.12	1.55	17.81	0	0	0	652.68	4/19/11
BN10404326	4/18/11	58	BN-550	945.26	820.26	576.85	0	0	6.04	164.215	0.78	72.375	0	0	0	820.26	4/18/11
BN10404380	4/24/11	57	BN-550	795.32	670.32	258.885	0	3.75	0.42	328.91	1.56	76.795	0	0	0	670.32	4/24/11
BN10404381	4/23/11	60	BN-550	784.295	659.3	491.99	0	0	2	13.65	1.55	150.105	0	0	0	659.295	4/23/11
BN10404383	4/24/11	40	BN-550	812.96	687.96	672.13	0	0	0	0.83	0	15	0	0	0	687.96	4/24/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10404384	4/24/11	49	BN-550	927.62	802.62	614.655	0	3.28	0	162.675	2.33	19.68	0	0	0	802.62	4/24/11
BN10404385	4/24/11	48	BN-550	894.545	769.55	712.6	0	0	0	24.248	0	32.698	0	0	0	769.546	4/24/11
BN10404386	4/24/11	54	BN-550	786.5	661.5	563.59	0	0	0	7.83	1.55	88.53	0	0	0	661.5	4/24/11
BN10404387	4/24/11	61	BN-550	956.285	831.29	547.5	0	3.75	0	220.815	3.88	55.34	0	0	0	831.285	4/24/11
BN10404388	4/24/11	61	BN-550	984.95	859.95	624.56	0	3.75	0	210.24	0.78	20.62	0	0	0	859.95	4/24/11
BN10404389	4/23/11	55	BN-550	707.12	582.12	313.11	0	0	0	252.46	1.55	15	0	0	0	582.12	4/23/11
BN10404390	4/24/11	56	BN-550	715.94	590.94	388.375	0	0	0	181.815	1.55	19.2	0	0	0	590.94	4/23/11
BN10404391	4/23/11	57	BN-550	775.475	650.48	598.235	0	0	0	12.33	15.54	24.37	0	0	0	650.475	4/23/11
BN10404392	4/23/11	61	BN-550	819.575	694.58	454.515	0	0	0	223.53	6.22	10.31	0	0	0	694.575	4/23/11
BN10404408	4/21/11	54	BN-550	991.565	866.57	677.475	0	9.37	2.25	72.41	0	105.06	0	0	0	866.565	4/21/11
BN10404411	4/20/11	54	BN-550	934.235	809.24	711.45	0	0	10.4	4.91	0	82.475	0	0	0	809.235	4/20/11
BN10404412	4/21/11	57	BN-550	618.92	493.92	130	0	0	0	328.885	0	35.035	0	0	0	493.92	4/21/11
BN10404413	4/20/11	51	BN-550	744.605	619.61	455.285	0	0	2.08	115.75	0	46.49	0	0	0	619.605	4/20/11
BN10404414	4/20/11	50	BN-550	872.495	747.5	640.035	0	0	0	8.94	0	98.52	0	0	0	747.495	4/20/11
BN10404415	4/19/11	54	BN-550	980.54	855.54	629.035	0	0	8.32	204.125	0	14.06	0	0	0	855.54	4/19/11
BN10404416	4/21/11	54	BN-550	852.65	727.65	455.6	0	0	0	262.68	0	9.37	0	0	0	727.65	4/21/11
BN10404417	4/20/11	50	BN-550	962.9	837.9	738.505	0	0	10.41	82.435	0	6.55	0	0	0	837.9	4/20/11
BN10404418	4/21/11	54	BN-550	660.815	535.82	341.08	0	0	0	147.69	1.55	45.495	0	0	0	535.815	4/21/11
BN10404419	4/19/11	59	BN-550	929.825	804.83	547.71	0	0	1.04	240.475	1.55	14.05	0	0	0	804.825	4/19/11
BN10404420	4/20/11	60	BN-550	749.015	624.02	377.5	0	0	0	138.13	0	108.385	0	0	0	624.015	4/20/11
BN10404421	4/20/11	40	BN-550	947.465	822.47	802.645	0	0	8.32	3.07	0	8.43	0	0	0	822.465	4/20/11
BN10404569	4/21/11	27	BN-550	671.84	546.84	538.61	0	0	0	7.29	0	0.94	0	0	0	546.84	4/21/11
BN10404570	4/21/11	61	BN-550	956.285	831.29	708.355	0	0	6.75	7.22	0	108.96	0	0	0	831.285	4/21/11
BN10404571	4/22/11	45	BN-550	784.295	659.3	547.26	0	0	0	110.165	0	1.87	0	0	0	659.295	4/22/11
BN10404572	4/21/11	60	BN-550	843.83	718.83	532.235	0	0	0	102.85	12.42	71.325	0	0	0	718.83	4/21/11
BN10404573	4/23/11	41	BN-550	665.225	540.23	472.385	0	0	0	2.11	7.77	57.96	0	0	0	540.225	4/23/11
BN10404574	4/22/11	54	BN-550	718.145	593.15	398.46	0	0	0	67.245	13.98	113.46	0	0	0	593.145	4/22/11
BN10404575	4/22/11	42	BN-550	945.26	820.26	761.31	0	0	0	12	0	46.95	0	0	0	820.26	4/22/11
BN10404576	4/23/11	52	BN-550	663.02	538.02	469.64	2.34	0	0	41.69	4.66	19.69	0	0	0	538.02	4/23/11
BN10404577	4/23/11	56	BN-550	788.705	663.71	437.375	0	0	0	221.64	0	4.69	0	0	0	663.705	4/23/11
BN10404578	4/23/11	55	BN-550	665.225	540.23	415.295	0	0	0	87.025	3.11	34.795	0	0	0	540.225	4/23/11
BN10404579	4/23/11	51	BN-550	726.965	601.97	526.22	0	0	0	50.815	10.87	14.06	0	0	0	601.965	4/23/11
BN10404580	4/23/11	50	BN-550	605.69	480.69	273.96	0	0	0	72.555	1.55	132.625	0	0	0	480.69	4/23/11
BN10404716	4/24/11	43	BN-550	843.83	718.83	696.16	0	0	0	8.62	0	14.05	0	0	0	718.83	4/24/11
BN10404717	4/25/11	52	BN-550	819.575	694.58	512.635	0	0	0	174.45	0	7.49	0	0	0	694.575	4/25/11
BN10404718	4/25/11	54	BN-550	936.44	811.44	611.33	0	0	2	191.56	0	6.55	0	0	0	811.44	4/25/11
BN10404719	4/25/11	57	BN-550	691.685	566.69	137.81	0	0	0	335.955	0	92.92	0	0	0	566.685	4/25/11
BN10404720	4/24/11	52	BN-550	905.57	780.57	737.015	0	0	0	8.6	1.55	33.405	0	0	0	780.57	4/24/11
BN10404721	4/24/11	59	BN-550	954.08	829.08	480.675	0	1.87	1.68	304.815	3.11	36.93	0	0	0	829.08	4/24/11
BN10404722	4/24/11	54	BN-550	916.595	791.6	722.62	0	0	1	8.74	4.66	54.575	0	0	0	791.595	4/24/11
BN10404723	4/24/11	55	BN-550	984.95	859.95	717.78	0	0	3.66	80.05	15.54	42.92	0	0	0	859.95	4/24/11
BN10404724	4/25/11	53	BN-550	574.82	449.82	111.81	0	0	0	330.22	3.11	4.68	0	0	0	449.82	4/25/11
BN10404725	4/25/11	56	BN-550	823.985	698.99	578.265	0	0	0	23.93	15.53	81.26	0	0	0	698.985	4/25/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10404726	4/24/11	62	BN-550	921.005	796.01	602.315	0	0	0	27.64	3.1	162.95	0	0	0	796.005	4/24/11
BN10404727	4/24/11	37	BN-550	861.47	736.47	590.505	0	0	0	129.425	1.55	14.99	0	0	0	736.47	4/24/11
BN10405083	4/26/11	39	BN-550	826.19	701.19	666.2	0	0	1	1.4	0	32.59	0	0	0	701.19	4/26/11
BN10405084	4/26/11	43	BN-550	965.105	840.11	828.725	0	0	0	1.4	1.55	8.43	0	0	0	840.105	4/26/11
BN10405085	4/26/11	56	BN-550	599.075	474.08	267.79	0	0	0	99.57	12.43	94.285	0	0	0	474.075	4/26/11
BN10405086	4/27/11	45	BN-550	894.545	769.55	608.935	0	0	0	34.04	0	126.57	0	0	0	769.545	4/27/11
BN10405087	4/27/11	46	BN-550	978.335	853.34	543.69	0	0	276.085	2.37	3.11	28.08	0	0	0	853.335	4/27/11
BN10405088	4/26/11	48	BN-550	982.745	857.75	838.875	0	0	2	3.76	0	13.11	0	0	0	857.745	4/26/11
BN10405089	4/27/11	39	BN-550	971.72	846.72	832.44	0	0	0	8.05	1.55	4.68	0	0	0	846.72	4/27/11
BN10405090	4/26/11	53	BN-550	808.55	683.55	573.415	0	0	0	10.48	0	99.655	0	0	0	683.55	4/26/11
BN10405092	4/26/11	43	BN-550	553.11	428.11	298.77	0	0	0	44.955	0	84.385	0	0	0	428.11	4/26/11
BN10405093	4/26/11	61	BN-550	936.44	811.44	682.685	0	0	0	4.93	0	123.825	0	0	0	811.44	4/26/11
BN10405094	4/26/11	60	BN-550	790.91	665.91	557.215	0	0	0	2.81	0	105.885	0	0	0	665.91	4/26/11
BN10405129	4/28/11	59	BN-550	726.965	601.97	223.985	0	0	113.03	254.04	6.22	4.69	0	0	0	601.965	4/28/11
BN10405130	4/28/11	56	BN-550	757.835	632.84	386.37	0	0	61.725	148.19	0	36.55	0	0	0	632.835	4/28/11
BN10405131	4/28/11	49	BN-550	839.42	714.42	388.42	152.605	0	0	168.705	0	4.69	0	0	0	714.42	4/28/11
BN10405132	4/28/11	60	BN-550	782.09	657.09	406.835	0	0	1	228.015	1.55	19.69	0	0	0	657.09	4/28/11
BN10405133	4/28/11	59	BN-550	901.16	776.16	634.09	0	0	45.125	5.55	0	91.395	0	0	0	776.16	4/28/11
BN10405135	4/28/11	56	BN-550	894.545	769.55	587.7	0	0	2	169.525	0	10.32	0	0	0	769.545	4/28/11
BN10405136	4/28/11	58	BN-550	744.605	619.61	312.375	0	0	0	187.89	0	119.34	0	0	0	619.605	4/28/11
BN10405137	4/28/11	58	BN-550	735.785	610.79	277.13	0	0	7.08	246.73	3.11	76.735	0	0	0	610.785	4/28/11
BN10405138	4/28/11	61	BN-550	722.555	597.56	368.265	0	0	0	2.91	0	226.38	0	0	0	597.555	4/28/11
BN10405139	4/28/11	56	BN-550	755.63	630.63	371.895	0	0	2.1	6.96	0	249.675	0	0	0	630.63	4/28/11
BN10405140	4/28/11	51	BN-550	715.94	590.94	373.45	0	0	1.68	4.05	1.55	210.21	0	0	0	590.94	4/28/11
BN10405175	4/27/11	50	BN-550	925.415	800.42	451.34	0	0	337.825	0	0	11.25	0	0	0	800.415	4/27/11
BN10405176	4/28/11	53	BN-550	989.36	864.36	814.52	0	0	0	11.95	0	37.89	0	0	0	864.36	4/28/11
BN10405177	4/28/11	41	BN-550	801.935	676.94	404.97	243.47	0	0	3.51	0	24.985	0	0	0	676.935	4/28/11
BN10405178	4/27/11	40	BN-550	722.555	597.56	248.845	0	0	344.44	3.33	0	0.94	0	0	0	597.555	4/27/11
BN10405179	4/27/11	58	BN-550	918.8	793.8	453.86	0	0	326.8	2.83	0	10.31	0	0	0	793.8	4/27/11
BN10405180	4/28/11	37	BN-550	947.465	822.47	811.175	0	0	0	6.59	0	4.7	0	0	0	822.465	4/28/11
BN10405181	4/28/11	51	BN-550	645.38	520.38	319.875	0	0	0	152.53	0	47.975	0	0	0	520.38	4/28/11
BN10405182	4/27/11	45	BN-550	945.26	820.26	506.265	194.5	0	4	4.69	0	110.805	0	0	0	820.26	4/27/11
BN10405183	4/27/11	56	BN-550	874.7	749.7	639.415	0	0	0	43.473	0	66.813	0	0	0	749.701	4/27/11
BN10405184	4/28/11	38	BN-550	967.31	842.31	829.43	0	0	0	4.92	0	7.96	0	0	0	842.31	4/28/11
BN10405185	4/28/11	53	BN-550	973.925	848.93	782.805	0	0	0	58.62	0	7.5	0	0	0	848.925	4/28/11
BN10405186	4/28/11	40	BN-550	978.335	853.34	828.935	0	0	0	8.8	1.55	14.05	0	0	0	853.335	4/28/11
BN10405371	4/29/11	51	BN-550	973.925	848.93	641.65	0	4.68	138.98	3.88	0	59.735	0	0	0	848.925	4/29/11
BN10405372	4/29/11	36	BN-550	883.52	758.52	733.91	0	0	10.59	5.6	0	8.42	0	0	0	758.52	4/29/11
BN10405373	4/29/11	54	BN-550	984.95	859.95	612.515	0	9.37	230.725	5.62	0.78	0.94	0	0	0	859.95	4/29/11
BN10405374	4/28/11	57	BN-550	978.335	853.34	639.01	0	0	1.68	1.94	0	210.705	0	0	0	853.335	4/28/11
BN10405375	4/28/11	45	BN-550	925.415	800.42	782.025	0	0	0	3.88	0	14.51	0	0	0	800.415	4/28/11
BN10405376	4/29/11	50	BN-550	984.95	859.95	760.515	0	2.34	79.645	3.25	1.55	12.65	0	0	0	859.95	4/29/11
BN10405377	4/29/11	47	BN-550	989.36	864.36	831.05	0	0	3.78	12.655	0	16.875	0	0	0	864.36	4/29/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10405378	4/29/11	37	BN-550	954.08	829.08	760.265	0	0	0.84	57.695	4.66	5.62	0	0	0	829.08	4/29/11
BN10405379	4/29/11	53	BN-550	991.565	866.57	729.46	0	0	109.585	8.65	3.88	14.99	0	0	0	866.565	4/29/11
BN10405380	4/29/11	61	BN-550	693.89	568.89	135.07	0	0	4.42	291.686	6.22	131.494	0	0	0	568.89	4/29/11
BN10405381	4/29/11	56	BN-550	711.53	586.53	228.615	0	0	302.005	0	2.72	53.19	0	0	0	586.53	4/29/11
BN10405382	4/29/11	39	BN-550	870.29	745.29	661.04	0	0	0.42	4.85	4.66	74.32	0	0	0	745.29	4/29/11
BN10405570	4/30/11	45	BN-550	989.36	864.36	839.93	0	0	2.94	5.56	0	15.93	0	0	0	864.36	4/30/11
BN10405571	4/30/11	42	BN-550	991.565	866.57	839.605	3.12	4.68	0.84	3.33	0	14.99	0	0	0	866.565	4/30/11
BN10405572	4/30/11	54	BN-550	936.44	811.44	797.32	0	0	0	1.94	0	12.18	0	0	0	811.44	4/30/11
BN10405573	4/30/11	52	BN-550	945.26	820.26	806.58	0	0	0	7.12	0	6.56	0	0	0	820.26	4/30/11
BN10405574	4/30/11	58	BN-550	907.775	782.78	761.995	0	0	1	2.91	0	16.87	0	0	0	782.775	4/30/11
BN10405575	4/30/11	62	BN-550	916.595	791.6	702.32	0	0	0.42	8.73	3.1	77.025	0	0	0	791.595	4/30/11
BN10405576	4/30/11	48	BN-550	828.395	703.4	691.535	0	0	0	2.81	1.55	7.5	0	0	0	703.395	4/30/11
BN10405577	4/30/11	62	BN-550	760.04	635.04	311.885	0	0	1.42	305.825	4.66	11.25	0	0	0	635.04	4/30/11
BN10405578	4/30/11	50	BN-550	885.725	760.73	740.545	0	0	0	5.82	3.11	11.25	0	0	0	760.725	4/30/11
BN10405579	4/30/11	42	BN-550	971.72	846.72	789.19	0	0	1.26	6.54	0	49.73	0	0	0	846.72	4/30/11
BN10405580	4/30/11	47	BN-550	892.34	767.34	757.43	0	0	0	6.16	0	3.75	0	0	0	767.34	4/30/11
BN10405581	4/30/11	50	BN-550	954.08	829.08	770.47	0	0	0	25.6	1.55	31.46	0	0	0	829.08	4/30/11
BN10405614	5/1/11	45	BN-550	965.105	840.11	816.785	0	0	0	11.15	0	12.17	0	0	0	840.105	5/1/11
BN10405615	5/1/11	40	BN-550	980.54	855.54	841.75	0	0	2.52	3.77	0	7.5	0	0	0	855.54	5/1/11
BN10405616	5/1/11	53	BN-550	960.695	835.7	696.695	0.78	0	0	11.66	1.55	125.01	0	0	0	835.695	5/1/11
BN10405617	5/1/11	40	BN-550	965.105	840.11	819.885	0	0	2.1	5.01	0	13.11	0	0	0	840.105	4/30/11
BN10405618	5/1/11	61	BN-550	973.925	848.93	767.43	0	0	0.42	54.845	0	26.23	0	0	0	848.925	5/1/11
BN10405619	5/1/11	45	BN-550	969.515	844.52	761.85	0	0	0.84	4.71	0	77.115	0	0	0	844.515	5/1/11
BN10405620	5/1/11	38	BN-550	982.745	857.75	831.005	0	9.37	1.26	6.28	0	9.83	0	0	0	857.745	5/1/11
BN10405621	5/1/11	45	BN-550	934.235	809.24	785.385	3.12	0	0	9.48	0	11.25	0	0	0	809.235	5/1/11
BN10405622	5/1/11	54	BN-550	850.445	725.45	546.865	0	0	0.84	159	0	18.74	0	0	0	725.445	5/1/11
BN10405623	5/1/11	58	BN-550	863.675	738.68	654.3	0	0	1	24.48	1.55	57.345	0	0	0	738.675	5/1/11
BN10405624	5/1/11	44	BN-550	984.95	859.95	839.65	0	0	0	9.06	0	11.24	0	0	0	859.95	5/1/11
BN10405625	5/1/11	57	BN-550	940.85	815.85	661.685	0	0	0	18.37	1.55	134.245	0	0	0	815.85	5/1/11
BN10405822	5/2/11	41	BN-550	947.465	822.47	752.97	0	4.68	0.42	3.19	0	61.205	0	0	0	822.465	5/1/11
BN10405823	5/2/11	40	BN-550	982.745	857.75	822.445	0	14.05	2.1	4.16	0	14.99	0	0	0	857.745	5/2/11
BN10405824	5/2/11	41	BN-550	958.49	833.49	712.39	0	0	0	103.94	3.11	14.05	0	0	0	833.49	5/2/11
BN10405825	5/2/11	54	BN-550	835.01	710.01	501.895	0	0	3.6	92.98	0	111.535	0	0	0	710.01	5/2/11
BN10405826	5/2/11	38	BN-550	954.08	829.08	764.29	18.74	0	0	4.3	0	41.75	0	0	0	829.08	5/2/11
BN10405827	5/1/11	41	BN-550	984.95	859.95	840.72	0	4.68	1.26	8.61	0	4.68	0	0	0	859.95	5/1/11
BN10405828	5/2/11	46	BN-550	965.105	840.11	805.715	0	0	0	10.96	0	23.43	0	0	0	840.105	5/2/11
BN10405829	5/2/11	42	BN-550	912.185	787.19	764.815	0	0	0	8.32	0	14.05	0	0	0	787.185	5/2/11
BN10405830	5/2/11	37	BN-550	987.155	862.16	853.915	0	0	0	1.67	0	6.57	0	0	0	862.155	5/2/11
BN10405831	5/2/11	37	BN-550	976.13	851.13	834.69	0	0	0	2.85	0	13.59	0	0	0	851.13	5/2/11
BN10405832	5/2/11	57	BN-550	885.725	760.73	630.56	0	0	0	5.42	0	124.745	0	0	0	760.725	5/2/11
BN10405833	5/2/11	45	BN-550	984.95	859.95	824.6	0	0	0	8.18	0	27.17	0	0	0	859.95	5/2/11
BN10405986	5/3/11	62	BN-550	956.285	831.29	752.565	0	0	1.42	13.77	0	63.53	0	0	0	831.285	5/3/11
BN10405987	5/3/11	49	BN-550	839.42	714.42	674.965	0	0	2.08	4.17	19.135	14.07	0	0	0	714.42	5/3/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10405988	5/3/11	49	BN-550	916.595	791.6	758.07	0	0	0	1.67	27.175	4.68	0	0	0	791.595	5/3/11
BN10405989	5/3/11	57	BN-550	969.515	844.52	711.47	0	10.3	0	10.42	0	112.325	0	0	0	844.515	5/3/11
BN10405990	5/2/11	43	BN-550	978.335	853.34	824.985	0	0	0.42	6.38	0	21.55	0	0	0	853.335	5/2/11
BN10405991	5/2/11	39	BN-550	962.9	837.9	818.24	0	0	3.84	4.57	0	11.25	0	0	0	837.9	5/2/11
BN10405992	5/3/11	49	BN-550	969.515	844.52	810.815	0	0	0.84	23.48	0	9.38	0	0	0	844.515	5/3/11
BN10405993	5/3/11	42	BN-550	958.49	833.49	821.41	0	0	0	0.83	0	11.25	0	0	0	833.49	5/3/11
BN10405994	5/3/11	48	BN-550	940.85	815.85	729.25	0	0	1.26	54.115	0	31.225	0	0	0	815.85	5/3/11
BN10405995	5/2/11	43	BN-550	989.36	864.36	841.97	0	0	0	8.34	0	14.05	0	0	0	864.36	5/2/11
BN10405996	5/2/11	33	BN-550	874.7	749.7	735.69	0	0	10.26	0	0	3.75	0	0	0	749.7	5/2/11
BN10405997	5/2/11	46	BN-550	991.565	866.57	834.525	0	0	0	8.61	0	23.43	0	0	0	866.565	5/2/11
BN10406023	5/3/11	40	BN-550	951.875	826.88	808.465	0	0	0	2.49	0	15.92	0	0	0	826.875	5/3/11
BN10406024	5/3/11	46	BN-550	987.155	862.16	827.605	0	0	0	7.38	0	27.17	0	0	0	862.155	5/3/11
BN10406025	5/3/11	41	BN-550	969.515	844.52	824.635	0	4.68	0	5.83	0	9.37	0	0	0	844.515	5/3/11
BN10406026	5/4/11	50	BN-550	971.72	846.72	789.76	0	0	0	26.74	0	30.22	0	0	0	846.72	5/4/11
BN10406027	5/4/11	42	BN-550	870.29	745.29	732.48	0	0	1.26	4.05	0	7.5	0	0	0	745.29	5/4/11
BN10406028	5/4/11	48	BN-550	927.62	802.62	785.57	0	0	0	0.83	3.1	13.12	0	0	0	802.62	5/4/11
BN10406029	5/4/11	56	BN-550	898.955	773.96	613.6	0	0	0.42	138.125	0	21.81	0	0	0	773.955	5/4/11
BN10406030	5/3/11	33	BN-550	868.085	743.09	731.695	0	0	0	3.9	0	7.49	0	0	0	743.085	5/3/11
BN10406031	5/4/11	42	BN-550	967.31	842.31	819.65	0	0	0.42	7.24	0	15	0	0	0	842.31	5/4/11
BN10406032	5/4/11	45	BN-550	896.75	771.75	750.82	0	0	0	5	0	15.93	0	0	0	771.75	5/4/11
BN10406033	5/3/11	51	BN-550	898.955	773.96	718.02	0	0	0	38.455	1.55	15.93	0	0	0	773.955	5/3/11
BN10406034	5/3/11	42	BN-550	929.825	804.83	791.475	0	0	0	2.1	0	11.25	0	0	0	804.825	5/3/11
BN10406134	5/5/11	49	BN-550	980.54	855.54	849.08	0	0	0	0.83	0	5.63	0	0	0	855.54	5/5/11
BN10406135	5/4/11	42	BN-550	982.745	857.75	845.035	0	0	0	3.34	0	9.37	0	0	0	857.745	5/4/11
BN10406136	5/5/11	50	BN-550	846.035	721.04	650.72	0	0	0	8.34	4.66	57.315	0	0	0	721.035	5/5/11
BN10406137	5/4/11	53	BN-550	821.78	696.78	614.16	0	0	0.42	62.165	0	20.035	0	0	0	696.78	5/4/11
BN10406138	5/4/11	52	BN-550	984.95	859.95	793.07	0	0	1.5	36.79	0	28.59	0	0	0	859.95	5/4/11
BN10406139	5/4/11	41	BN-550	921.005	796.01	775.575	0	0	0.5	5.58	3.11	11.24	0	0	0	796.005	5/4/11
BN10406140	5/4/11	61	BN-550	969.515	844.52	686.845	0	0	0	125.51	3.1	29.06	0	0	0	844.515	5/4/11
BN10406141	5/5/11	41	BN-550	903.365	778.37	765.785	0	0	0	4.17	4.66	3.75	0	0	0	778.365	5/5/11
BN10406142	5/4/11	50	BN-550	936.44	811.44	778.72	0	0	0	2.77	9.33	20.62	0	0	0	811.44	5/4/11
BN10406143	5/5/11	44	BN-550	934.235	809.24	789.535	0	0	0	5.96	1.55	12.19	0	0	0	809.235	5/5/11
BN10406144	5/5/11	45	BN-550	936.44	811.44	798.79	0	0	0	0	2.33	10.32	0	0	0	811.44	5/5/11
BN10406145	5/4/11	37	BN-550	898.955	773.96	755.995	0	0	0	5.31	0	12.65	0	0	0	773.955	5/4/11
BN10406213	5/5/11	49	BN-550	839.42	714.42	679.46	0	0	3.6	9.29	0	22.07	0	0	0	714.42	5/5/11
BN10406214	5/5/11	54	BN-550	934.235	809.24	715.355	0	0	0	55.53	0.78	37.57	0	0	0	809.235	5/5/11
BN10406215	5/5/11	43	BN-550	894.545	769.55	748.965	0	0	0.42	10.01	0.78	9.37	0	0	0	769.545	5/5/11
BN10406216	5/6/11	50	BN-550	883.52	758.52	656.095	0	0	0	52.37	3.1	46.955	0	0	0	758.52	5/6/11
BN10406217	5/5/11	39	BN-550	945.26	820.26	801.67	0	11.71	2	0.83	3.11	0.94	0	0	0	820.26	5/5/11
BN10406218	5/6/11	42	BN-550	932.03	807.03	743.875	1.56	0	3.64	9.62	4.66	43.675	0	0	0	807.03	5/6/11
BN10406219	5/6/11	43	BN-550	945.26	820.26	765.84	4.68	2.34	0.6	1.8	9.32	35.68	0	0	0	820.26	5/6/11
BN10406220	5/5/11	53	BN-550	923.21	798.21	630.025	0	0	10.33	58.885	4.66	94.31	0	0	0	798.21	5/5/11
BN10406221	5/5/11	33	BN-550	918.8	793.8	784.97	0	0	0	3.2	0	5.63	0	0	0	793.8	5/5/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10406222	5/5/11	59	BN-550	912.185	787.19	581.135	0	0	0	88.36	3.11	114.58	0	0	0	787.185	5/5/11
BN10406223	5/5/11	48	BN-550	932.03	807.03	724.675	3.12	9.37	0	22.34	4.66	42.865	0	0	0	807.03	5/5/11
BN10406224	5/5/11	44	BN-550	885.725	760.73	754.215	0	0	1	0.83	0	4.68	0	0	0	760.725	5/5/11
BN10406450	5/7/11	39	BN-550	940.85	815.85	792.115	1.56	0	0	14.685	0	7.49	0	0	0	815.85	5/7/11
BN10406451	5/7/11	51	BN-550	945.26	820.26	764.78	0	0	1.68	38.24	0	15.56	0	0	0	820.26	5/7/11
BN10406452	5/6/11	38	BN-550	956.285	831.29	821.675	3.12	0	0	1.8	0	4.69	0	0	0	831.285	5/6/11
BN10406453	5/6/11	53	BN-550	976.13	851.13	774.61	0.78	0	0	64.5	0	11.24	0	0	0	851.13	5/6/11
BN10406454	5/6/11	46	BN-550	938.645	813.65	783.42	0	0	0.84	0.97	1.55	26.865	0	0	0	813.645	5/6/11
BN10406455	5/6/11	47	BN-550	898.955	773.96	630.715	0	0	0.24	11.36	6.21	125.43	0	0	0	773.955	5/6/11
BN10406456	5/6/11	48	BN-550	916.595	791.6	771.615	0	0	2	0.97	1.55	15.46	0	0	0	791.595	5/6/11
BN10406457	5/6/11	43	BN-550	936.44	811.44	790.29	0	0	2.08	0.83	4.65	13.59	0	0	0	811.44	5/6/11
BN10406458	5/6/11	37	BN-550	938.645	813.65	793.295	3.12	0	2	5.56	3.1	6.57	0	0	0	813.645	5/6/11
BN10406459	5/6/11	37	BN-550	956.285	831.29	822.985	3.12	0	0	2.36	0	2.82	0	0	0	831.285	5/6/11
BN10406460	5/7/11	54	BN-550	898.955	773.96	683.75	0	0	3	35.846	0	51.359	0	0	0	773.955	5/7/11
BN10406461	5/7/11	40	BN-550	894.545	769.55	756.495	0	0	3	4.75	1.55	3.75	0	0	0	769.545	5/7/11
BN10406464	5/7/11	39	BN-550	848.24	723.24	644.34	0	0	0	69.86	1.55	7.49	0	0	0	723.24	5/7/11
BN10406465	5/7/11	47	BN-550	903.365	778.37	713.855	0	0	5	49.86	3.1	6.55	0	0	0	778.365	5/7/11
BN10406466	5/7/11	43	BN-550	943.055	818.06	805.815	0	0	0	1.94	0	10.3	0	0	0	818.055	5/7/11
BN10406467	5/7/11	39	BN-550	934.235	809.24	799.825	0	0	0	0.97	0	8.44	0	0	0	809.235	5/7/11
BN10406468	5/7/11	43	BN-550	934.235	809.24	781.905	0	0	0	2.37	6.22	18.74	0	0	0	809.235	5/7/11
BN10406469	5/7/11	38	BN-550	949.67	824.67	784.52	0	0	0	1.67	0	38.48	0	0	0	824.67	5/7/11
BN10406470	5/8/11	53	BN-550	960.695	835.7	670.1	0	0	7	138.295	1.55	18.75	0	0	0	835.695	5/8/11
BN10406471	5/7/11	46	BN-550	921.005	796.01	704.17	0	0	0	79.515	1.55	10.77	0	0	0	796.005	5/7/11
BN10406472	5/7/11	45	BN-550	949.67	824.67	785.26	0	0	2	7.22	1.55	28.64	0	0	0	824.67	5/7/11
BN10406473	5/7/11	49	BN-550	883.52	758.52	744.73	0	0	5	8.79	0	0	0	0	0	758.52	5/7/11
BN10406474	5/7/11	45	BN-550	892.34	767.34	689.73	0	0	3.08	71.72	0	2.81	0	0	0	767.34	5/7/11
BN10406475	5/7/11	47	BN-550	943.055	818.06	753.435	0	0	1	26.19	0	37.43	0	0	0	818.055	5/7/11
BN10406601	5/8/11	54	BN-550	793.115	668.12	404.175	0	0	0	260.19	0	3.75	0	0	0	668.115	5/8/11
BN10406602	5/8/11	48	BN-550	971.72	846.72	709.185	0	0	0	137.535	0	0	0	0	0	846.72	5/8/11
BN10406603	5/8/11	58	BN-550	678.455	553.46	258.225	0	0	6.5	210.28	0	78.45	0	0	0	553.455	5/8/11
BN10406604	5/8/11	57	BN-550	771.065	646.07	334.585	0	0	17	247.27	0	47.21	0	0	0	646.065	5/8/11
BN10406605	5/8/11	58	BN-550	885.725	760.73	468.03	0	0	22.5	260.815	0	9.38	0	0	0	760.725	5/8/11
BN10406606	5/8/11	62	BN-550	689.48	564.48	119.61	0	0	23.5	324.765	0	96.605	0	0	0	564.48	5/8/11
BN10406607	5/8/11	46	BN-550	969.515	844.52	788.155	0	0	2	52.48	0	1.88	0	0	0	844.515	5/8/11
BN10406608	5/8/11	52	BN-550	916.595	791.6	707.41	0	0	3	74.625	0	6.56	0	0	0	791.595	5/8/11
BN10406609	5/8/11	38	BN-550	874.7	749.7	697.755	0	0	0	49.135	0	2.81	0	0	0	749.7	5/8/11
BN10406610	5/8/11	56	BN-550	943.055	818.06	665.97	0	0	10	87.98	0	54.105	0	0	0	818.055	5/8/11
BN10406611	5/8/11	35	BN-550	907.775	782.78	745.375	0	0	0	28.35	1.55	7.5	0	0	0	782.775	5/8/11
BN10406612	5/8/11	51	BN-550	960.695	835.7	760.31	0	0	1.5	35.895	0	37.99	0	0	0	835.695	5/8/11
BN10406706	5/9/11	55	BN-550	982.745	857.75	745.03	0	0	0	106.155	0	6.56	0	0	0	857.745	5/9/11
BN10406707	5/9/11	49	BN-550	779.885	654.89	418.53	0	0	195.805	4.92	7.77	27.86	0	0	0	654.885	5/9/11
BN10406708	5/9/11	55	BN-550	956.285	831.29	538.965	0	0	219.505	71.265	1.55	0	0	0	0	831.285	5/9/11
BN10406709	5/9/11	53	BN-550	715.94	590.94	357.33	0	0	0	233.61	0	0	0	0	0	590.94	5/9/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10406710	5/8/11	58	BN-550	821.78	696.78	529.1	0	0	0	15.44	0	152.24	0	0	0	696.78	5/8/11
BN10406711	5/9/11	46	BN-550	991.565	866.57	781.735	0	0	0	79.21	0	5.62	0	0	0	866.565	5/9/11
BN10406712	5/9/11	49	BN-550	934.235	809.24	796.925	0	0	0	6.69	0	5.62	0	0	0	809.235	5/9/11
BN10406713	5/8/11	46	BN-550	907.775	782.78	643.615	0	0	7	6.98	1.55	123.63	0	0	0	782.775	5/8/11
BN10406714	5/9/11	48	BN-550	978.335	853.34	695.96	0	0	141.425	5.99	6.21	3.75	0	0	0	853.335	5/9/11
BN10406715	5/8/11	60	BN-550	852.65	727.65	361.015	0	0	107.42	248.955	9.32	0.94	0	0	0	727.65	5/8/11
BN10406716	5/9/11	51	BN-550	835.01	710.01	485.485	0	0	0	224.525	0	0	0	0	0	710.01	5/9/11
BN10406717	5/9/11	53	BN-550	925.415	800.42	607.105	0	0	0.42	168.56	9.33	15	0	0	0	800.415	5/9/11
BN10406800	5/9/11	35	BN-550	973.925	848.93	846.775	0	0	0	2.15	0	0	0	0	0	848.925	5/9/11
BN10406801	5/10/11	50	BN-550	954.08	829.08	820.61	0	0	0	3.78	0	4.69	0	0	0	829.08	5/10/11
BN10406802	5/9/11	37	BN-550	971.72	846.72	835.26	0	0	0.42	7.76	0	3.28	0	0	0	846.72	5/9/11
BN10406803	5/9/11	26	BN-550	896.75	771.75	770.78	0	0	0	0.97	0	0	0	0	0	771.75	5/9/11
BN10406804	5/10/11	40	BN-550	958.49	833.49	746.81	0	0	0	84.49	0.78	1.41	0	0	0	833.49	5/10/11
BN10406805	5/10/11	38	BN-550	925.415	800.42	790.555	0	0	0	2.37	0	7.49	0	0	0	800.415	5/10/11
BN10406806	5/10/11	40	BN-550	965.105	840.11	827.925	0	0	0	0	0	12.18	0	0	0	840.105	5/10/11
BN10406807	5/10/11	40	BN-550	936.44	811.44	788.54	0	14.05	0	6.59	0.39	1.87	0	0	0	811.44	5/10/11
BN10406808	5/10/11	47	BN-550	969.515	844.52	833.685	0	0	1	4.21	0	5.62	0	0	0	844.515	5/10/11
BN10406809	5/10/11	42	BN-550	982.745	857.75	841.285	0	0	2	6.96	0	7.5	0	0	0	857.745	5/10/11
BN10406810	5/10/11	56	BN-550	782.09	657.09	541.835	0	0	0	109.945	1.56	3.75	0	0	0	657.09	5/10/11
BN10406811	5/9/11	52	BN-550	898.955	773.96	589.1	0	0	0	101.68	0	83.175	0	0	0	773.955	5/9/11
BN10407001	5/11/11	60	BN-550	923.21	798.21	465.165	0	0	0	331.165	0	1.88	0	0	0	798.21	5/11/11
BN10407002	5/11/11	57	BN-550	828.395	703.4	454.355	0	0	0	212.84	0.39	35.81	0	0	0	703.395	5/11/11
BN10407003	5/10/11	41	BN-550	960.695	835.7	784.08	0	0	2	42.595	0	7.02	0	0	0	835.695	5/10/11
BN10407004	5/10/11	53	BN-550	709.325	584.33	261.055	0	0	117.41	197.45	4.66	3.75	0	0	0	584.325	5/10/11
BN10407005	5/10/11	42	BN-550	949.67	824.67	798.16	0	14.05	1	4.91	0	6.55	0	0	0	824.67	5/10/11
BN10407006	5/10/11	56	BN-550	700.505	575.51	127.42	0	0	129.135	311.55	5.05	2.35	0	0	0	575.505	5/10/11
BN10407007	5/10/11	53	BN-550	773.27	648.27	222.52	0	0	11.12	407.16	4.66	2.81	0	0	0	648.27	5/10/11
BN10407008	5/11/11	35	BN-550	989.36	864.36	853.69	0	0	0	6.92	0	3.75	0	0	0	864.36	5/11/11
BN10407009	5/11/11	54	BN-550	951.875	826.88	556.27	0	0	0	264.845	3.89	1.87	0	0	0	826.875	5/11/11
BN10407010	5/11/11	53	BN-550	934.235	809.24	548.22	0	0	0	255.715	1.55	3.75	0	0	0	809.235	5/11/11
BN10407011	5/11/11	59	BN-550	735.785	610.79	351.255	0	0	0	113.155	1.94	144.435	0	0	0	610.785	5/11/11
BN10407012	5/11/11	59	BN-550	890.135	765.14	582.04	0	0	0	39.91	0.78	142.405	0	0	0	765.135	5/11/11
BN10407048	5/12/11	50	BN-550	938.645	813.65	786.405	0	0	0	15.05	0	12.19	0	0	0	813.645	5/12/11
BN10407049	5/11/11	56	BN-550	651.995	527	234.615	1.56	0	6.24	58.99	1.56	224.03	0	0	0	526.995	5/11/11
BN10407050	5/12/11	57	BN-550	832.805	707.81	504.985	0	0	2.08	9.32	6.87	184.55	0	0	0	707.805	5/12/11
BN10407051	5/13/11	49	BN-550	965.105	840.11	653.48	0	0	0	164.795	3.11	18.72	0	0	0	840.105	5/13/11
BN10407052	5/12/11	56	BN-550	989.36	864.36	661.025	0	0	3.38	108.76	2.33	88.865	0	0	0	864.36	5/12/11
BN10407053	5/13/11	58	BN-550	938.645	813.65	670.08	0	0	0	123.765	3.88	15.92	0	0	0	813.645	5/13/11
BN10407054	5/13/11	38	BN-550	892.34	767.34	644.77	0	0	3.66	2.41	4.66	111.84	0	0	0	767.34	5/13/11
BN10407055	5/13/11	60	BN-550	887.93	762.93	690.538	12.012	0	0	48.64	0	11.74	0	0	0	762.93	5/13/11
BN10407056	5/13/11	57	BN-550	852.65	727.65	584.455	1.56	0	0	109.73	6.22	25.685	0	0	0	727.65	5/13/11
BN10407057	5/12/11	52	BN-550	991.565	866.57	835.675	0	0	8	3.76	0.39	18.74	0	0	0	866.565	5/12/11
BN10407058	5/12/11	45	BN-550	940.85	815.85	732.475	0	0	2.25	67.555	4.66	8.91	0	0	0	815.85	5/12/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10407059	5/12/11	53	BN-550	982.745	857.75	831.445	0	0	1.13	6.15	5.44	13.58	0	0	0	857.745	5/12/11
BN10407061	5/13/11	43	BN-550	821.78	696.78	653.762	5.839	0	0	15.559	0	21.62	0	0	0	696.78	5/13/11
BN10407062	5/13/11	57	BN-550	916.595	791.6	691.976	4.687	0	2.81	69.963	1.55	20.61	0	0	0	791.596	5/13/11
BN10407063	5/13/11	46	BN-550	689.48	564.48	527.569	5.091	0	3.38	17.132	0	11.31	0	0	0	564.482	5/13/11
BN10407064	5/13/11	46	BN-550	810.755	685.76	648.748	6.609	0	0	17.658	0	12.74	0	0	0	685.755	5/13/11
BN10407065	5/14/11	49	BN-550	896.75	771.75	738.794	7.052	0	1	16.475	0	8.43	0	0	0	771.751	5/14/11
BN10407066	5/13/11	44	BN-550	861.47	736.47	700.07	0	0	4	18.35	0	14.05	0	0	0	736.47	5/13/11
BN10407067	5/14/11	59	BN-550	768.86	643.86	368.127	204.297	0	1	55.436	0	15	0	0	0	643.86	5/14/11
BN10407068	5/13/11	62	BN-550	771.065	646.07	262.431	3	0	1	6.42	1.55	371.665	0	0	0	646.066	5/13/11
BN10407069	5/14/11	43	BN-550	962.9	837.9	831.87	3.12	0	0	2.91	0	0	0	0	0	837.9	5/14/11
BN10407070	5/14/11	51	BN-550	925.415	800.42	786.095	0.94	0	2	3.88	0	7.5	0	0	0	800.415	5/14/11
BN10407071	5/14/11	53	BN-550	967.31	842.31	743.365	0	0	4.5	11.3	0.78	82.365	0	0	0	842.31	5/14/11
BN10407072	5/14/11	50	BN-550	898.955	773.96	731.345	0	0	5	0.7	0	36.91	0	0	0	773.955	5/14/11
BN10407138	5/15/11	44	BN-550	971.72	846.72	819.32	0	0	0	6.79	0	20.61	0	0	0	846.72	5/15/11
BN10407139	5/15/11	40	BN-550	987.155	862.16	817.795	0	0	2	4.44	0	37.92	0	0	0	862.155	5/15/11
BN10407140	5/15/11	56	BN-550	918.8	793.8	561.635	0	0	2	230.165	0	0	0	0	0	793.8	5/15/11
BN10407141	5/15/11	46	BN-550	839.42	714.42	565.855	0	0	1	145.215	0	2.35	0	0	0	714.42	5/15/11
BN10407142	5/15/11	59	BN-550	914.39	789.39	584.825	0	0	1	138.6	0	64.965	0	0	0	789.39	5/15/11
BN10407143	5/14/11	62	BN-550	916.595	791.6	739.185	0	0	0	8.04	0	44.37	0	0	0	791.595	5/14/11
BN10407144	5/15/11	52	BN-550	669.635	544.64	332.065	0	0	0	191.01	0	21.56	0	0	0	544.635	5/15/11
BN10407145	5/14/11	53	BN-550	852.65	727.65	579.225	0	0	0	134.845	0	13.58	0	0	0	727.65	5/14/11
BN10407146	5/14/11	60	BN-550	918.8	793.8	649.9	0	0	0	43.215	0	100.685	0	0	0	793.8	5/14/11
BN10407147	5/14/11	57	BN-550	757.835	632.84	317.78	0	0	0	197.385	1.55	116.12	0	0	0	632.835	5/14/11
BN10407148	5/14/11	59	BN-550	768.86	643.86	361.98	0	0	0	260.405	0	21.475	0	0	0	643.86	5/14/11
BN10407149	5/14/11	58	BN-550	892.34	767.34	650.515	1.56	9.37	0	38.425	3.5	63.97	0	0	0	767.34	5/14/11
BN10407502	5/15/11	38	BN-550	872.495	747.5	723.005	0	0	0	2.94	0	21.55	0	0	0	747.495	5/15/11
BN10407503	5/15/11	59	BN-550	707.12	582.12	257.675	0	0	0	311.335	0	13.11	0	0	0	582.12	5/15/11
BN10407504	5/15/11	57	BN-550	903.365	778.37	583.215	0	0	0	175.48	0	19.67	0	0	0	778.365	5/15/11
BN10407505	5/15/11	54	BN-550	722.555	597.56	308.445	0	0	0	285	0	2.81	0	0	1.3	597.555	5/15/11
BN10407506	5/15/11	54	BN-550	876.905	751.91	491.935	0	0	0	257.62	0	2.35	0	0	0	751.905	5/15/11
BN10407507	5/15/11	48	BN-550	989.36	864.36	728.02	0	0	0	129.78	0	6.56	0	0	0	864.36	5/15/11
BN10407508	5/15/11	47	BN-550	965.105	840.11	662.975	0	0	0	172.91	0	4.22	0	0	0	840.105	5/15/11
BN10407509	5/15/11	45	BN-550	938.645	813.65	743.42	0	0	0	43.055	0	27.17	0	0	0	813.645	5/15/11
BN10407510	5/15/11	62	BN-550	726.965	601.97	284.95	0	0	0	315.145	0	1.87	0	0	0	601.965	5/15/11
BN10407511	5/15/11	57	BN-550	846.035	721.04	484.875	0	0	0	219.29	0	16.87	0	0	0	721.035	5/15/11
BN10407512	5/16/11	51	BN-550	945.26	820.26	747.825	0	0	0	58.385	0	14.05	0	0	0	820.26	5/16/11
BN10407513	5/15/11	60	BN-550	923.21	798.21	629.695	0	0	0	164.765	0	3.75	0	0	0	798.21	5/15/11
BN10407590	5/16/11	43	BN-550	898.955	773.96	764.125	0	0	0	4.21	0	5.62	0	0	0	773.955	5/16/11
BN10407591	5/16/11	56	BN-550	881.315	756.32	548.8	0	0	0	110.95	0	96.565	0	0	0	756.315	5/16/11
BN10407592	5/16/11	49	BN-550	951.875	826.88	799.715	0	0	0	15.93	0	11.23	0	0	0	826.875	5/16/11
BN10407593	5/16/11	47	BN-550	890.135	765.14	619.105	0	0	0	133.23	1.55	11.25	0	0	0	765.135	5/16/11
BN10407594	5/16/11	57	BN-550	861.47	736.47	507.265	0	0	6.25	76.47	0	146.485	0	0	0	736.47	5/16/11
BN10407595	5/16/11	44	BN-550	932.03	807.03	735.175	0	0	0	64.365	0	7.49	0	0	0	807.03	5/16/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10407596	5/17/11	59	BN-550	898.955	773.96	540.705	0	0	6.25	220.87	0	6.13	0	0	0	773.955	5/17/11
BN10407597	5/16/11	52	BN-550	987.155	862.16	730.94	0	0	0	94.265	0	36.95	0	0	0	862.155	5/16/11
BN10407598	5/16/11	48	BN-550	987.155	862.16	834.045	0	0	15.62	5.01	0	7.48	0	0	0	862.155	5/16/11
BN10407599	5/16/11	52	BN-550	991.565	866.57	679.84	0	0	12.49	168.935	1.55	3.75	0	0	0	866.565	5/16/11
BN10407600	5/16/11	55	BN-550	861.47	736.47	543.885	0	0	6	125.745	0	60.84	0	0	0	736.47	5/16/11
BN10407601	5/16/11	53	BN-550	987.155	862.16	840.885	0	0	0	14.71	0	6.56	0	0	0	862.155	5/16/11
BN10407795	5/17/11	56	BN-550	667.43	542.43	226.285	0	0	0	315.205	0	0.94	0	0	0	542.43	5/17/11
BN10407796	5/17/11	56	BN-550	969.515	844.52	711.79	11.278	22.9	5.639	89.16	0	3.75	0	0	0	844.517	5/17/11
BN10407797	5/17/11	51	BN-550	984.95	859.95	842.52	0	1.87	0	9.95	0	5.61	0	0	0	859.95	5/17/11
BN10407798	5/17/11	61	BN-550	795.32	670.32	371.03	0	0	0	291.18	1.55	6.56	0	0	0	670.32	5/17/11
BN10407799	5/17/11	54	BN-550	801.935	676.94	222.745	0	4.68	15.62	347.29	82.85	3.75	0	0	0	676.935	5/17/11
BN10407800	5/17/11	57	BN-550	912.185	787.19	644.78	0	0	0	83.105	0	59.3	0	0	0	787.185	5/17/11
BN10407801	5/17/11	52	BN-550	927.62	802.62	569.82	0	0	0	228.11	0	4.69	0	0	0	802.62	5/17/11
BN10407802	5/17/11	53	BN-550	682.865	557.87	253.128	10.279	0	5.16	273.06	3.11	13.13	0	0	0	557.867	5/17/11
BN10407803	5/17/11	54	BN-550	777.68	652.68	496.953	5.685	0	2.843	93.41	3.11	50.68	0	0	0	652.681	5/17/11
BN10407804	5/17/11	52	BN-550	711.53	586.53	111.81	0	0	0	472.06	0.78	1.88	0	0	0	586.53	5/17/11
BN10407805	5/17/11	41	BN-550	987.155	862.16	744.33	0	22.9	0	88.365	0	6.56	0	0	0	862.155	5/17/11
BN10407806	5/17/11	50	BN-550	984.95	859.95	700.055	0	5.73	0	149.955	0	4.21	0	0	0	859.95	5/17/11
BN10407891	5/18/11	56	BN-550	938.645	813.65	675.31	0	3.75	0	64.565	3.11	66.91	0	0	0	813.645	5/18/11
BN10407892	5/17/11	48	BN-550	971.72	846.72	618.065	0	6.56	0	219.285	0	2.81	0	0	0	846.72	5/17/11
BN10407893	5/18/11	50	BN-550	980.54	855.54	823.48	0	7.5	2.08	14.99	0	7.49	0	0	0	855.54	5/18/11
BN10407894	5/18/11	60	BN-550	812.96	687.96	338.245	0	0	1.56	289.38	4.66	54.115	0	0	0	687.96	5/18/11
BN10407895	5/18/11	59	BN-550	786.5	661.5	389.615	0	0	0.12	209.565	0	62.2	0	0	0	661.5	5/18/11
BN10407896	5/19/11	49	BN-550	846.035	721.04	555.96	1.56	0	2.56	97.485	3.1	60.37	0	0	0	721.035	5/19/11
BN10407897	5/19/11	41	BN-550	907.775	782.78	731.955	0	0	0	9.64	1.55	39.63	0	0	0	782.775	5/19/11
BN10407898	5/19/11	54	BN-550	932.03	807.03	636.575	0	0	0	68.355	0	102.1	0	0	0	807.03	5/19/11
BN10407899	5/19/11	54	BN-550	839.42	714.42	556.465	0	0	0	105.525	1.55	50.88	0	0	0	714.42	5/19/11
BN10407900	5/19/11	59	BN-550	940.85	815.85	748.465	0	0	0	53.345	0	14.04	0	0	0	815.85	5/19/11
BN10407901	5/19/11	58	BN-550	819.575	694.58	482.38	0	0	0	167.38	0	44.815	0	0	0	694.575	5/19/11
BN10407902	5/19/11	52	BN-550	823.985	698.99	592.12	0	0	0	93.765	0	13.1	0	0	0	698.985	5/19/11
BN10407958	5/19/11	52	BN-550	984.95	859.95	810.14	0	0	0	14.19	0	35.62	0	0	0	859.95	5/19/11
BN10407959	5/19/11	60	BN-550	934.235	809.24	724.94	0	0	0	3.51	1.55	79.235	0	0	0	809.235	5/19/11
BN10407960	5/19/11	60	BN-550	823.985	698.99	346.6	0	0	0	336.455	0	15.93	0	0	0	698.985	5/19/11
BN10407961	5/19/11	57	BN-550	978.335	853.34	798.815	0	0	2.08	9.33	0	43.11	0	0	0	853.335	5/19/11
BN10407962	5/19/11	43	BN-550	949.67	824.67	800.37	0	0	0	5.88	1.55	16.87	0	0	0	824.67	5/19/11
BN10407963	5/19/11	55	BN-550	914.39	789.39	750.03	0	0	0	15.95	0	23.41	0	0	0	789.39	5/19/11
BN10407964	5/20/11	62	BN-550	885.725	760.73	543.7	0	0	0	203.905	0	13.12	0	0	0	760.725	5/20/11
BN10407965	5/20/11	58	BN-550	682.865	557.87	189.8	0	0	0	341.13	0	26.935	0	0	0	557.865	5/20/11
BN10407966	5/19/11	62	BN-550	817.37	692.37	255.285	0	0	0	426.775	0	10.31	0	0	0	692.37	5/19/11
BN10407967	5/20/11	61	BN-550	797.525	672.53	301.21	0	0	0	314.028	0	57.288	0	0	0	672.526	5/20/11
BN10407968	5/19/11	57	BN-550	932.03	807.03	758.73	0	0	0	12.68	0	35.62	0	0	0	807.03	5/19/11
BN10407969	5/19/11	52	BN-550	945.26	820.26	789.92	0	0	0	8.79	0	21.55	0	0	0	820.26	5/19/11
BN10408147	5/21/11	50	BN-550	872.835	747.84	702.415	0	0	0	14.76	1.55	29.11	0	0	0	747.835	5/21/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10408148	5/21/11	37	BN-550	991.565	866.57	547.785	0	309.16	0	7.75	0	1.87	0	0	0	866.565	5/21/11
BN10408149	5/20/11	60	BN-550	804.14	679.14	574.05	0	0	0	51.11	3.42	50.56	0	0	0	679.14	5/20/11
BN10408150	5/20/11	56	BN-550	616.715	491.72	167.7	0	0	0	278.955	0	45.06	0	0	0	491.715	5/20/11
BN10408151	5/21/11	55	BN-550	989.36	864.36	816.55	0	0	0	31.89	0	15.92	0	0	0	864.36	5/21/11
BN10408152	5/20/11	51	BN-550	766.655	641.66	557.725	0	0	0	12.24	3.1	68.59	0	0	0	641.655	5/20/11
BN10408153	5/21/11	38	BN-550	947.465	822.47	792.195	0	1.87	0	6.55	3.11	18.74	0	0	0	822.465	5/21/11
BN10408155	5/20/11	54	BN-550	870.29	745.29	670.84	0	0	0	11.67	0	62.78	0	0	0	745.29	5/20/11
BN10408156	5/21/11	57	BN-550	737.99	612.99	399.39	0	0	0	151.79	0	61.81	0	0	0	612.99	5/21/11
BN10408157	5/20/11	56	BN-550	804.14	679.14	589.87	0	0	0	47.44	1.55	40.28	0	0	0	679.14	5/20/11
BN10408158	5/20/11	60	BN-550	861.47	736.47	495.01	0	0	0	199.435	0	42.025	0	0	0	736.47	5/20/11
BN10408159	5/20/11	60	BN-550	965.105	840.11	735.89	0	0	0	19.36	0	84.855	0	0	0	840.105	5/20/11
BN10408315	5/22/11	56	BN-550	940.85	815.85	488.015	0	0	0	322.215	0	5.62	0	0	0	815.85	5/22/11
BN10408316	5/22/11	55	BN-550	808.55	683.55	543.27	0	0	0	105	1.55	33.73	0	0	0	683.55	5/22/11
BN10408317	5/22/11	58	BN-550	945.26	820.26	731.12	0	0	5.63	10.7	1.55	71.26	0	0	0	820.26	5/22/11
BN10408319	5/22/11	57	BN-550	826.19	701.19	544.08	0	0	0	104.725	3.11	49.275	0	0	0	701.19	5/22/11
BN10408320	5/22/11	57	BN-550	676.25	551.25	137.81	0	0	13.92	221.95	0	177.57	0	0	0	551.25	5/22/11
BN10408321	5/22/11	53	BN-550	971.72	846.72	802.525	0	0	0	11.43	0	32.765	0	0	0	846.72	5/22/11
BN10408322	5/22/11	61	BN-550	749.015	624.02	222.61	0	0	9	291.845	0	100.56	0	0	0	624.015	5/22/11
BN10408323	5/22/11	57	BN-550	817.37	692.37	207.11	0	0	223.315	8.05	10.88	243.015	0	0	0	692.37	5/22/11
BN10408324	5/25/11	58	BN-550	720.35	595.35	299.07	0	0	0.25	77.885	12.43	205.715	0	0	0	595.35	5/25/11
BN10408325	5/22/11	54	BN-550	700.505	575.51	216.13	0	0	115.3	239.395	0	4.68	0	0	0	575.505	5/22/11
BN10408326	5/22/11	54	BN-550	863.675	738.68	598.275	0	0	18.38	112.65	0	9.37	0	0	0	738.675	5/22/11
BN10408327	5/22/11	57	BN-550	786.5	661.5	330.6	0	0	14.48	186.23	0	130.19	0	0	0	661.5	5/22/11
BN10408362	5/23/11	51	BN-550	839.42	714.42	372.73	0	0	219.535	109.975	0	12.18	0	0	0	714.42	5/23/11
BN10408363	5/23/11	55	BN-550	971.72	846.72	717.19	0	0	2.39	117.76	0	9.38	0	0	0	846.72	5/23/11
BN10408364	5/22/11	61	BN-550	755.63	630.63	353.315	0	0	0	268.885	0	8.43	0	0	0	630.63	5/22/11
BN10408365	5/22/11	58	BN-550	951.875	826.88	652.24	0	2.34	9	154.855	0	8.44	0	0	0	826.875	5/22/11
BN10408366	5/22/11	56	BN-550	971.72	846.72	824.25	0	0	0	5.61	0	16.86	0	0	0	846.72	5/22/11
BN10408367	5/22/11	53	BN-550	879.11	754.11	575.23	0	0	0	162.02	0	16.86	0	0	0	754.11	5/22/11
BN10408368	5/22/11	59	BN-550	892.34	767.34	636.505	0	0	0	101.785	0	10.31	0	0	18.74	767.34	5/22/11
BN10408369	5/23/11	53	BN-550	848.24	723.24	591.935	0	0	7.39	83.865	0	40.05	0	0	0	723.24	5/23/11
BN10408370	5/22/11	62	BN-550	936.44	811.44	484.485	0	0	3.39	199.025	0	124.54	0	0	0	811.44	5/22/11
BN10408371	5/23/11	57	BN-550	960.695	835.7	608.335	0	11.45	1.5	90.235	0	124.175	0	0	0	835.695	5/23/11
BN10408372	5/23/11	54	BN-550	978.335	853.34	754.815	0	0	3.38	76.51	0	10.3	0	0	8.33	853.335	5/23/11
BN10408373	5/23/11	61	BN-550	806.345	681.35	506.927	4.362	0	2.181	41.885	112.87	13.12	0	0	0	681.345	5/23/11
BN10408408	5/23/11	53	BN-550	592.46	467.46	182.73	0	0	0	211.71	0	73.02	0	0	0	467.46	5/23/11
BN10408409	5/23/11	60	BN-550	731.375	606.38	119.61	0	0	148.11	335.845	0	2.81	0	0	0	606.375	5/23/11
BN10408410	5/23/11	59	BN-550	879.11	754.11	635.942	10.349	0	3.614	75.19	0	29.015	0	0	0	754.11	5/23/11
BN10408411	5/23/11	54	BN-550	874.7	749.7	645.88	0	0	0	88.82	0	15	0	0	0	749.7	5/23/11
BN10408412	5/23/11	54	BN-550	640.97	515.97	179.361	8.866	0	5.933	319.69	0	2.12	0	0	0	515.97	5/23/11
BN10408413	5/23/11	61	BN-550	898.955	773.96	254.045	0	0	387.24	129.86	0	2.81	0	0	0	773.955	5/23/11
BN10408414	5/23/11	52	BN-550	634.355	509.36	204.985	0	0	4	297.09	0	3.28	0	0	0	509.355	5/23/11
BN10408415	5/23/11	53	BN-550	766.655	641.66	428.58	0	0	0	208.385	0	4.69	0	0	0	641.655	5/23/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10408416	5/23/11	62	BN-550	704.915	579.92	133.9	0	0	155.55	105.185	0.78	184.5	0	0	0	579.915	5/23/11
BN10408417	5/23/11	53	BN-550	934.235	809.24	604.775	0	0	173.69	2.37	3.11	25.29	0	0	0	809.235	5/23/11
BN10408418	5/23/11	52	BN-550	894.545	769.55	404.096	6.67	0	302.73	5.09	0.78	50.18	0	0	0	769.546	5/23/11
BN10408419	5/23/11	52	BN-550	581.435	456.44	313.916	14.087	0	7.043	5.83	0.78	114.78	0	0	0	456.436	5/23/11
BN10408758	5/24/11	60	BN-550	839.42	714.42	488.49	0	0	8.4	206.32	4.66	6.55	0	0	0	714.42	5/24/11
BN10408759	5/24/11	60	BN-550	693.89	568.89	137.81	0	0	10	370.27	0	50.81	0	0	0	568.89	5/24/11
BN10408760	5/24/11	52	BN-550	663.02	538.02	130	0	107.5	5.61	294.91	0	0	0	0	0	538.02	5/24/11
BN10408761	5/24/11	60	BN-550	835.01	710.01	468.2	0	4.68	10.33	156.685	1.55	68.565	0	0	0	710.01	5/24/11
BN10408762	5/24/11	57	BN-550	846.035	721.04	444.925	0	0	0	226.29	1.55	48.27	0	0	0	721.035	5/24/11
BN10408763	5/24/11	55	BN-550	709.325	584.33	319.71	0	0	3.38	259.365	0	1.87	0	0	0	584.325	5/24/11
BN10408764	5/24/11	54	BN-550	837.215	712.22	499.535	0	0	8.75	194.56	0	9.37	0	0	0	712.215	5/24/11
BN10408765	5/24/11	53	BN-550	872.495	747.5	628.53	0	0	2.52	109.415	0	7.03	0	0	0	747.495	5/24/11
BN10408766	5/24/11	51	BN-550	687.275	562.28	393.17	0	0	0	5.28	4.66	159.165	0	0	0	562.275	5/24/11
BN10408767	5/24/11	62	BN-550	740.195	615.2	353.125	0	0	0	12.23	7.77	242.07	0	0	0	615.195	5/24/11
BN10408768	5/24/11	51	BN-550	980.54	855.54	622.465	0	126.405	3.21	59.105	1.55	42.805	0	0	0	855.54	5/24/11
BN10408769	5/24/11	58	BN-550	751.22	626.22	425.37	0	0	1.68	62.395	6.22	130.555	0	0	0	626.22	5/24/11
BN10408853	5/26/11	60	BN-550	810.755	685.76	402.07	0	0	0	76.195	15.55	191.94	0	0	0	685.755	5/26/11
BN10408854	5/25/11	61	BN-550	879.11	754.11	580.62	0	0	0.5	14.63	12.43	145.93	0	0	0	754.11	5/25/11
BN10408855	5/25/11	60	BN-550	731.375	606.38	349.9	0	0	0	114.165	3.1	139.21	0	0	0	606.375	5/25/11
BN10408856	5/24/11	50	BN-550	559.385	434.39	218.505	0	0	0	13.1	3.11	199.67	0	0	0	434.385	5/24/11
BN10408857	5/24/11	59	BN-550	938.645	813.65	554.985	0	0	0	131.96	10.1	116.6	0	0	0	813.645	5/25/11
BN10408858	5/24/11	62	BN-550	627.74	502.74	182.775	0	0	0	15.53	12.43	292.005	0	0	0	502.74	5/24/11
BN10408859	5/25/11	60	BN-550	943.055	818.06	744.03	0	0	0.25	63.635	3.11	7.03	0	0	0	818.055	5/25/11
BN10408860	5/26/11	54	BN-550	823.985	698.99	515.3	0	0	0	10.99	0	172.695	0	0	0	698.985	5/26/11
BN10408861	5/24/11	46	BN-550	954.08	829.08	816.59	0	0	0	4.21	0.78	7.5	0	0	0	829.08	5/24/11
BN10408862	5/25/11	56	BN-550	709.325	584.33	357.245	0	0	0	74.71	4.66	147.71	0	0	0	584.325	5/25/11
BN10408863	5/25/11	59	BN-550	687.275	562.28	264.26	0	0	0	115.245	17.1	165.67	0	0	0	562.275	5/25/11
BN10408864	5/26/11	62	BN-550	676.25	551.25	232.09	0	0	0	19.17	10.88	289.11	0	0	0	551.25	5/26/11
BN10408936	5/26/11	47	BN-550	958.49	833.49	785.785	0	0	0	0	0	47.705	0	0	0	833.49	5/26/11
BN10408937	5/26/11	62	BN-550	815.165	690.17	366.74	0	0	0	209.52	12.43	101.475	0	0	0	690.165	5/26/11
BN10408938	5/26/11	32	BN-550	954.08	829.08	812.84	3.12	4.68	0	0	0	8.44	0	0	0	829.08	5/26/11
BN10408939	5/27/11	47	BN-550	982.745	857.75	835.995	0	0	0	8.33	3.11	10.31	0	0	0	857.745	5/27/11
BN10408940	5/26/11	56	BN-550	909.98	784.98	782.64	0	0	0	1.4	0	0.94	0	0	0	784.98	5/26/11
BN10408941	5/26/11	49	BN-550	861.47	736.47	644.88	0	0	0	11.08	4.66	75.85	0	0	0	736.47	5/26/11
BN10408942	5/27/11	59	BN-550	815.165	690.17	572.31	0	0	2.25	4.92	0	110.685	0	0	0	690.165	5/27/11
BN10408943	5/26/11	36	BN-550	947.465	822.47	813.085	0	0	2.4	4.17	0	2.81	0	0	0	822.465	5/26/11
BN10408944	5/27/11	36	BN-550	938.645	813.65	804.725	0	0	0	6.11	0	2.81	0	0	0	813.645	5/27/11
BN10408945	5/27/11	50	BN-550	954.08	829.08	771.35	0	4.68	0	6.38	1.55	45.12	0	0	0	829.08	5/27/11
BN10408946	5/27/11	49	BN-550	969.515	844.52	821.795	1.56	0	0	9.92	0	11.24	0	0	0	844.515	5/27/11
BN10408948	5/27/11	49	BN-550	912.185	787.19	666.915	0	0	1.26	5.41	0	113.6	0	0	0	787.185	5/27/11
BN10409136	5/27/11	46	BN-550	956.285	831.29	777.245	0	2.34	0	8.61	0	43.09	0	0	0	831.285	5/27/11
BN10409137	5/27/11	40	BN-550	949.67	824.67	816.45	0	0	0	5.41	0	2.81	0	0	0	824.67	5/27/11
BN10409138	5/27/11	44	BN-550	923.21	798.21	774.19	0	0	1.26	7.76	0	15	0	0	0	798.21	5/27/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10409139	5/28/11	40	BN-550	943.055	818.06	800.215	0	0	0.84	10.43	0	6.57	0	0	0	818.055	5/28/11
BN10409140	5/27/11	48	BN-550	976.13	851.13	827.16	0	0	0	6.63	0	17.34	0	0	0	851.13	5/27/11
BN10409141	5/28/11	39	BN-550	965.105	840.11	801.275	0	0	0.42	27.64	0	10.77	0	0	0	840.105	5/28/11
BN10409142	5/28/11	43	BN-550	927.62	802.62	784.39	0	0	0.84	3.33	0	14.06	0	0	0	802.62	5/28/11
BN10409143	5/27/11	32	BN-550	898.955	773.96	762.765	3.12	0	1	0.97	0	6.1	0	0	0	773.955	5/27/11
BN10409144	5/27/11	47	BN-550	918.8	793.8	712.465	0	2.34	0	61.195	0	17.8	0	0	0	793.8	5/27/11
BN10409145	5/28/11	40	BN-550	978.335	853.34	831.465	0	0	0	10.62	0	11.25	0	0	0	853.335	5/28/11
BN10409146	5/28/11	41	BN-550	954.08	829.08	802.12	0	0	0.42	12	0	14.54	0	0	0	829.08	5/28/11
BN10409147	5/27/11	55	BN-550	956.285	831.29	636.49	0	118.47	0	34.798	0	41.528	0	0	0	831.286	5/27/11
BN10409206	5/28/11	36	BN-550	852.65	727.65	720.46	0	0	1.42	3.9	0	1.87	0	0	0	727.65	5/28/11
BN10409207	5/28/11	32	BN-550	987.155	862.16	860.605	0	0	0	0	1.55	0	0	0	0	862.155	5/28/11
BN10409208	5/28/11	43	BN-550	971.72	846.72	840.28	0	0	3	2.5	0	0.94	0	0	0	846.72	5/28/11
BN10409209	5/28/11	36	BN-550	923.21	798.21	795.4	0	0	0	0	0	2.81	0	0	0	798.21	5/28/11
BN10409210	5/28/11	21	BN-550	627.74	502.74	502.74	0	0	0	0	0	0	0	0	0	502.74	5/28/11
BN10409211	5/28/11	36	BN-550	881.315	756.32	748.085	0	0	0	7.29	0	0.94	0	0	0	756.315	5/28/11
BN10409212	5/28/11	40	BN-550	887.93	762.93	736.89	0	0	0	9.17	0	16.87	0	0	0	762.93	5/28/11
BN10409213	5/28/11	40	BN-550	890.135	765.14	675.385	0	0	1.26	44.495	0	43.995	0	0	0	765.135	5/28/11
BN10409214	5/28/11	35	BN-550	956.285	831.29	824.865	0	0	0	3.61	0	2.81	0	0	0	831.285	5/28/11
BN10409215	5/29/11	60	BN-550	965.105	840.11	733.195	3.12	0	1	41.005	1.55	60.235	0	0	0	840.105	5/29/11
BN10409216	5/29/11	34	BN-550	940.85	815.85	805.02	0	0	4.8	1.67	1.55	2.81	0	0	0	815.85	5/29/11
BN10409217	5/29/11	36	BN-550	950.01	825.01	820.26	0	0	0	0	0	4.75	0	0	0	825.01	5/29/11
BN10409310	5/29/11	42	BN-550	861.47	736.47	723.68	0	0	2.76	3.47	0	6.56	0	0	0	736.47	5/29/11
BN10409311	5/30/11	39	BN-550	885.725	760.73	742.155	0	0	6	6.01	0	6.56	0	0	0	760.725	5/30/11
BN10409312	5/30/11	43	BN-550	879.11	754.11	689.755	0	0	0	5.28	1.55	57.525	0	0	0	754.11	5/30/11
BN10409313	5/30/11	47	BN-550	898.955	773.96	748.785	0	0	10.68	4.17	0	10.32	0	0	0	773.955	5/30/11
BN10409314	5/29/11	41	BN-550	868.085	743.09	673.695	0	0	3	32.09	0	34.3	0	0	0	743.085	5/29/11
BN10409315	5/29/11	40	BN-550	909.98	784.98	761.28	1.56	0	0	5.28	0	16.86	0	0	0	784.98	5/29/11
BN10409316	5/29/11	42	BN-550	870.29	745.29	722.86	0	0	3	5.7	1.55	12.18	0	0	0	745.29	5/29/11
BN10409317	5/29/11	51	BN-550	883.52	758.52	702.925	3.12	0	0	19.24	0	33.235	0	0	0	758.52	5/29/11
BN10409318	5/29/11	45	BN-550	773.27	648.27	590.465	0	0	3	22.708	1.55	30.548	0	0	0	648.271	5/29/11
BN10409319	5/29/11	49	BN-550	936.44	811.44	780.2	0	0	0	12.5	0	18.74	0	0	0	811.44	5/29/11
BN10409320	5/29/11	45	BN-550	890.135	765.14	729.525	0	0	0	11.23	0	24.38	0	0	0	765.135	5/29/11
BN10409321	5/29/11	46	BN-550	936.44	811.44	792.41	0	0	0	7.78	0	11.25	0	0	0	811.44	5/29/11
BN10409428	5/30/11	35	BN-550	872.495	747.5	731.115	0	0	1.68	7.21	0	7.49	0	0	0	747.495	5/30/11
BN10409429	5/30/11	50	BN-550	914.39	789.39	761.61	0	0	0	5	3.11	19.67	0	0	0	789.39	5/30/11
BN10409430	5/30/11	57	BN-550	887.93	762.93	671.145	3.12	2.34	0	24.99	0.78	60.555	0	0	0	762.93	5/30/11
BN10409431	5/30/11	43	BN-550	947.465	822.47	805.485	0	0	2	0	0	14.98	0	0	0	822.465	5/30/11
BN10409432	5/30/11	43	BN-550	987.155	862.16	846.905	0.78	0	0	4.16	0	10.31	0	0	0	862.155	5/30/11
BN10409433	5/30/11	40	BN-550	960.695	835.7	813.825	0	0	2.1	2.91	0	16.86	0	0	0	835.695	5/30/11
BN10409434	5/30/11	51	BN-550	859.265	734.27	711.645	0	4.68	0.84	1.66	2.33	13.11	0	0	0	734.265	5/30/11
BN10409435	5/30/11	30	BN-550	932.03	807.03	798.71	0	0	2	3.51	0	2.81	0	0	0	807.03	5/30/11
BN10409436	5/30/11	61	BN-550	932.03	807.03	704.76	0.78	0	0	38.845	0	62.645	0	0	0	807.03	5/30/11
BN10409437	5/30/11	56	BN-550	973.925	848.93	772.93	0	0	6	4.16	0	65.835	0	0	0	848.925	5/30/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10409438	5/30/11	47	BN-550	925.415	800.42	699.55	72.425	0	6	4.03	6.22	12.19	0	0	0	800.415	5/30/11
BN10409439	5/30/11	41	BN-550	921.005	796.01	785.625	0	0	3	0.83	0	6.55	0	0	0	796.005	5/30/11
BN10409525	5/31/11	48	BN-550	934.235	809.24	623.72	0	0	174.655	1.66	3.1	6.1	0	0	0	809.235	5/31/11
BN10409526	5/31/11	57	BN-550	909.98	784.98	662.8	0	0	1.04	5.41	9.32	106.41	0	0	0	784.98	5/31/11
BN10409527	5/31/11	41	BN-550	976.13	851.13	844.07	3.12	0	3	0	0	0.94	0	0	0	851.13	5/31/11
BN10409528	5/31/11	57	BN-550	861.47	736.47	624.345	0	0	4.16	1.67	4.66	101.635	0	0	0	736.47	5/31/11
BN10409529	5/31/11	41	BN-550	868.085	743.09	735.485	0	0	0.42	2.5	0	4.68	0	0	0	743.085	5/31/11
BN10409530	5/30/11	40	BN-550	771.065	646.07	630.175	0	4.68	0	2.63	1.55	7.03	0	0	0	646.065	5/30/11
BN10409531	5/31/11	37	BN-550	865.88	740.88	728.26	0	0	2.08	1.67	4.65	4.22	0	0	0	740.88	5/31/11
BN10409532	5/31/11	34	BN-550	912.185	787.19	772.755	3.12	0	6	2.5	0	2.81	0	0	0	787.185	5/31/11
BN10409533	5/31/11	42	BN-550	903.365	778.37	510.635	0	0	219.59	40.98	6.22	0.94	0	0	0	778.365	5/31/11
BN10409534	5/31/11	42	BN-550	932.03	807.03	790.1	0	0	0	3.33	0	13.6	0	0	0	807.03	5/31/11
BN10409535	5/31/11	50	BN-550	969.515	844.52	785.23	0	0	0	2.5	0	56.785	0	0	0	844.515	5/31/11
BN10409536	5/31/11	52	BN-550	921.005	796.01	444.385	0	0	315.88	0	0	35.74	0	0	0	796.005	5/31/11
BN10409628	5/31/11	47	BN-550	656.405	531.41	105.95	0	0	301.905	80.965	0	42.585	0	0	0	531.405	5/31/11
BN10409629	5/31/11	46	BN-550	978.335	853.34	641.655	0	0	197.14	3.16	1.55	9.83	0	0	0	853.335	5/31/11
BN10409630	6/1/11	58	BN-550	731.375	606.38	274.435	3.12	0	0.42	319.03	0	9.37	0	0	0	606.375	6/1/11
BN10409631	5/31/11	42	BN-550	934.235	809.24	792.985	3.12	0	0	2.97	0.78	9.38	0	0	0	809.235	5/31/11
BN10409632	5/31/11	61	BN-550	989.36	864.36	242.28	0	0	601.57	10.67	0	9.84	0	0	0	864.36	5/31/11
BN10409633	5/31/11	61	BN-550	971.72	846.72	211.34	0	0	622.28	6.24	3.11	3.75	0	0	0	846.72	5/31/11
BN10409634	5/31/11	58	BN-550	929.825	804.83	338.705	0	0	449.77	4.17	0	12.18	0	0	0	804.825	5/31/11
BN10409635	6/1/11	52	BN-550	775.475	650.48	341.645	8.816	0	0	296.644	0	3.37	0	0	0	650.475	6/1/11
BN10409636	6/1/11	51	BN-550	755.63	630.63	313.865	20.752	5.73	0	285.913	0	4.37	0	0	0	630.63	6/1/11
BN10409637	6/1/11	49	BN-550	654.2	529.2	285.715	0	0	0	172.063	0	71.423	0	0	0	529.201	6/1/11
BN10409638	6/1/11	52	BN-550	771.065	646.07	313.9	32.84	0	0.84	295.548	0	2.94	0	0	0	646.068	6/1/11
BN10409639	6/1/11	55	BN-550	804.14	679.14	360.52	11.936	4.68	0	298.694	0	3.31	0	0	0	679.14	6/1/11
BN10409739	6/1/11	47	BN-550	967.31	842.31	779.155	0	0	12.38	24.613	1.55	24.613	0	0	0	842.311	6/1/11
BN10409740	6/1/11	55	BN-550	731.375	606.38	551.86	0	0	41.365	0.97	0	12.18	0	0	0	606.375	6/1/11
BN10409741	6/1/11	54	BN-550	857.06	732.06	686.01	0	0	26.76	9.92	0	9.37	0	0	0	732.06	6/1/11
BN10409742	6/2/11	44	BN-550	982.745	857.75	848.975	0	0	0	3.47	1.55	3.75	0	0	0	857.745	6/2/11
BN10409743	6/1/11	60	BN-550	846.035	721.04	619.015	0	11.45	45.67	29.91	0	14.99	0	0	0	721.035	6/1/11
BN10409744	6/2/11	56	BN-550	865.88	740.88	600.425	0	0	0	108.385	0	32.07	0	0	0	740.88	6/2/11
BN10409745	6/1/11	61	BN-550	925.415	800.42	576.425	0	0	211.06	5.9	0	7.03	0	0	0	800.415	6/1/11
BN10409746	6/1/11	57	BN-550	427.085	302.09	182	0	0	83.68	25.155	0	11.25	0	0	0	302.085	6/1/11
BN10409747	6/2/11	46	BN-550	883.52	758.52	700.245	0	0	0	5.41	3.1	49.765	0	0	0	758.52	6/2/11
BN10409748	6/1/11	47	BN-550	812.96	687.96	617.035	0	0	4.64	64.405	0	1.88	0	0	0	687.96	6/1/11
BN10409749	6/1/11	41	BN-550	909.98	784.98	700.475	0	0	1	0.83	0	82.675	0	0	0	784.98	6/1/11
BN10409750	6/1/11	45	BN-550	722.555	597.56	487.92	6.24	0	14.66	84.915	0	3.82	0	0	0	597.555	6/1/11
BN10409752	6/2/11	52	BN-550	947.465	822.47	678.83	0	0	0	138.335	1.55	3.75	0	0	0	822.465	6/2/11
BN10409753	6/2/11	46	BN-550	976.13	851.13	806.35	0	0	0	2.93	0	41.85	0	0	0	851.13	6/2/11
BN10409754	6/2/11	61	BN-550	984.95	859.95	649.035	0	9.37	0	116.51	0	85.035	0	0	0	859.95	6/2/11
BN10409755	6/2/11	50	BN-550	984.95	859.95	733.64	0	0	0	123.5	0	2.81	0	0	0	859.95	6/2/11
BN10409756	6/3/11	60	BN-550	967.31	842.31	725.84	0	0	0	96.81	4.66	15	0	0	0	842.31	6/3/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10409757	6/3/11	58	BN-550	883.52	758.52	554.305	0	0	1	156.56	0	46.655	0	0	0	758.52	6/3/11
BN10409758	6/2/11	54	BN-550	810.755	685.76	442.26	0	0	0	236.935	0	6.56	0	0	0	685.755	6/2/11
BN10409759	6/2/11	45	BN-550	940.85	815.85	709.895	0	0	0	32.73	0	73.225	0	0	0	815.85	6/2/11
BN10409760	6/2/11	52	BN-550	881.315	756.32	629.565	0	1.87	0	42.823	0	82.058	0	0	0	756.316	6/2/11
BN10409761	6/2/11	37	BN-550	987.155	862.16	851.235	0	0	0	6.24	0	4.68	0	0	0	862.155	6/2/11
BN10409762	6/2/11	43	BN-550	962.9	837.9	793.925	0	0	0	20.648	0	23.328	0	0	0	837.901	6/2/11
BN10409763	6/3/11	54	BN-550	929.825	804.83	737.85	0	0	0	8.69	0	58.285	0	0	0	804.825	6/3/11
BN10409897	6/3/11	52	BN-550	885.725	760.73	683.535	0	0	0	12.34	6.22	58.63	0	0	0	760.725	6/3/11
BN10409898	6/3/11	56	BN-550	958.49	833.49	697.035	0	0	0	7.66	6.22	122.575	0	0	0	833.49	6/3/11
BN10409899	6/4/11	40	BN-550	989.36	864.36	828.31	0	28.63	2	1.67	0	3.75	0	0	0	864.36	6/4/11
BN10409900	6/3/11	49	BN-550	960.695	835.7	763.385	0	0	0.06	12.19	3.11	56.95	0	0	0	835.695	6/3/11
BN10409901	6/4/11	40	BN-550	982.745	857.75	847.125	0	0	0	2.5	1.55	6.57	0	0	0	857.745	6/4/11
BN10409902	6/4/11	44	BN-550	973.925	848.93	827.205	0	0	1	6.67	0	14.05	0	0	0	848.925	6/4/11
BN10409903	6/3/11	55	BN-550	984.95	859.95	820.9	0	0	0.18	5.4	4.66	28.81	0	0	0	859.95	6/3/11
BN10409904	6/3/11	59	BN-550	949.67	824.67	792.47	0	0	0	11.59	0	20.61	0	0	0	824.67	6/3/11
BN10409905	6/3/11	54	BN-550	918.8	793.8	755.51	0	0	0	21.15	7.76	9.38	0	0	0	793.8	6/3/11
BN10409906	6/3/11	56	BN-550	700.505	575.51	469.095	0	0	0	25.28	0	81.13	0	0	0	575.505	6/3/11
BN10409907	6/3/11	59	BN-550	837.215	712.22	580.265	0.78	0	0	39.415	3.1	88.655	0	0	0	712.215	6/3/11
BN10409908	6/4/11	50	BN-550	982.745	857.75	839.895	0	0	4	1.67	0	12.18	0	0	0	857.745	6/4/11
BN10410026	6/4/11	39	BN-550	927.62	802.62	763.91	0	2.86	0	9.31	3.11	23.43	0	0	0	802.62	6/4/11
BN10410027	6/4/11	46	BN-550	938.645	813.65	790.705	0	0	0	2.64	1.55	18.75	0	0	0	813.645	6/4/11
BN10410028	6/4/11	44	BN-550	954.08	829.08	667.04	0	0	0	142.08	3.1	16.86	0	0	0	829.08	6/4/11
BN10410029	6/4/11	40	BN-550	927.62	802.62	760.33	0	28.11	2	0	0	12.18	0	0	0	802.62	6/4/11
BN10410030	6/4/11	52	BN-550	912.185	787.19	678.28	0	0	0	15.96	0	92.945	0	0	0	787.185	6/4/11
BN10410031	6/4/11	43	BN-550	892.34	767.34	732.05	0	18.74	0	2.5	0	14.05	0	0	0	767.34	6/4/11
BN10410032	6/5/11	43	BN-550	982.745	857.75	841.275	0	0	2	4.16	0	10.31	0	0	0	857.745	6/5/11
BN10410033	6/4/11	45	BN-550	976.13	851.13	770.13	0	22.9	0	48.73	0	9.37	0	0	0	851.13	6/4/11
BN10410034	6/5/11	37	BN-550	934.235	809.24	771.65	0	0	0	28.225	0	9.36	0	0	0	809.235	6/5/11
BN10410035	6/4/11	36	BN-550	982.745	857.75	848.485	0	0	3.84	1.67	0	3.75	0	0	0	857.745	6/4/11
BN10410036	6/4/11	44	BN-550	828.395	703.4	640.57	0	9.37	0	9.31	0	44.145	0	0	0	703.395	6/4/11
BN10410037	6/4/11	51	BN-550	984.95	859.95	822.23	0	0	0	10	0	27.72	0	0	0	859.95	6/4/11
BN10410112	6/5/11	40	BN-550	982.745	857.75	836.965	0	0	0	9.54	0	11.24	0	0	0	857.745	6/5/11
BN10410113	6/5/11	45	BN-550	984.95	859.95	832.32	0	0	0.84	6.81	3.11	16.87	0	0	0	859.95	6/5/11
BN10410114	6/5/11	40	BN-550	921.005	796.01	763.695	0	0	0	12.64	0	19.67	0	0	0	796.005	6/5/11
BN10410115	6/5/11	44	BN-550	969.515	844.52	823.135	0	0	0	5.45	0	15.93	0	0	0	844.515	6/5/11
BN10410116	6/5/11	39	BN-550	949.67	824.67	811.73	0	0	0	2.63	0	10.31	0	0	0	824.67	6/5/11
BN10410117	6/5/11	42	BN-550	980.54	855.54	806.64	0	0	3	4.43	0	41.47	0	0	0	855.54	6/5/11
BN10410118	6/5/11	50	BN-550	956.285	831.29	797.145	0	0	0.42	11.24	0	22.48	0	0	0	831.285	6/5/11
BN10410119	6/6/11	49	BN-550	934.235	809.24	683.45	0	0	1.68	17.39	5.44	101.275	0	0	0	809.235	6/6/11
BN10410120	6/5/11	46	BN-550	967.31	842.31	784.255	34.195	0	0.84	3.34	0	19.68	0	0	0	842.31	6/5/11
BN10410121	6/6/11	61	BN-550	817.37	692.37	378.46	3.12	0	1.26	131.448	9.32	168.763	0	0	0	692.371	6/6/11
BN10410122	6/5/11	61	BN-550	940.85	815.85	729.21	0	0	0	51.98	0	34.66	0	0	0	815.85	6/5/11
BN10410123	6/5/11	53	BN-550	971.72	846.72	763.505	6.25	0	0	10.28	0	66.685	0	0	0	846.72	6/5/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10410390	6/7/11	56	BN-550	984.95	859.95	736.925	3.12	0	0	105.845	0	14.06	0	0	0	859.95	6/7/11
BN10410391	6/7/11	42	BN-550	976.13	851.13	653.625	0	140.72	0	0	0	56.785	0	0	0	851.13	6/7/11
BN10410392	6/6/11	44	BN-550	909.98	784.98	754.64	0	0	0	20.35	1.55	8.44	0	0	0	784.98	6/6/11
BN10410393	6/6/11	54	BN-550	808.55	683.55	411.96	0	0	1.26	251	6.21	13.12	0	0	0	683.55	6/6/11
BN10410394	6/6/11	54	BN-550	947.465	822.47	747.985	0	0	1.26	34.5	3.11	35.61	0	0	0	822.465	6/6/11
BN10410395	6/7/11	54	BN-550	901.16	776.16	654.13	0	0	0.42	18.42	3.11	100.08	0	0	0	776.16	6/7/11
BN10410396	6/6/11	52	BN-550	768.86	643.86	503.365	0	0	7.14	79.165	1.55	52.64	0	0	0	643.86	6/6/11
BN10410397	6/6/11	53	BN-550	887.93	762.93	684.64	0	0	1.26	42.06	3.11	31.86	0	0	0	762.93	6/6/11
BN10410398	6/6/11	49	BN-550	854.855	729.86	621.34	0	0	0	97.255	0	11.26	0	0	0	729.855	6/6/11
BN10410399	6/7/11	52	BN-550	982.745	857.75	740.375	3.12	0	0	97.09	3.1	14.06	0	0	0	857.745	6/7/11
BN10410400	6/7/11	59	BN-550	852.65	727.65	546.895	0	0	0.84	80.985	4.66	94.27	0	0	0	727.65	6/7/11
BN10410401	6/7/11	50	BN-550	921.005	796.01	745.19	0	0	0	4.71	0	46.105	0	0	0	796.005	6/7/11
BN10410435	6/7/11	41	BN-550	918.8	793.8	775.84	0	0	0	4.85	0	13.11	0	0	0	793.8	6/7/11
BN10410436	6/7/11	34	BN-550	923.21	798.21	788.58	0	0	2.08	1.94	0	5.61	0	0	0	798.21	6/7/11
BN10410437	6/7/11	44	BN-550	973.925	848.93	833.705	0	0	0	6.79	0	8.43	0	0	0	848.925	6/7/11
BN10410438	6/7/11	45	BN-550	969.515	844.52	826.355	0	0	2	6.79	0	9.37	0	0	0	844.515	6/7/11
BN10410439	6/7/11	40	BN-550	958.49	833.49	817.43	0	0	2	0	0	14.06	0	0	0	833.49	6/7/11
BN10410440	6/7/11	45	BN-550	958.49	833.49	813.48	0	0	2.08	3.88	0	14.05	0	0	0	833.49	6/7/11
BN10410441	6/7/11	40	BN-550	945.26	820.26	799.48	0	0	0	4.85	0	15.93	0	0	0	820.26	6/7/11
BN10410442	6/7/11	40	BN-550	951.875	826.88	815.635	0	0	0	0	0	11.24	0	0	0	826.875	6/7/11
BN10410443	6/7/11	55	BN-550	879.11	754.11	618.13	0	0	0	86.285	1.55	48.145	0	0	0	754.11	6/7/11
BN10410444	6/7/11	49	BN-550	956.285	831.29	720.87	0	0	2	5.82	0	102.595	0	0	0	831.285	6/7/11
BN10410445	6/7/11	43	BN-550	987.155	862.16	842.325	0	0	0	6.72	0	13.11	0	0	0	862.155	6/7/11
BN10410446	6/7/11	41	BN-550	894.545	769.55	755.435	0	0	0	0.7	3.11	10.3	0	0	0	769.545	6/7/11
BN10410489	6/9/11	52	BN-550	938.645	813.65	798.785	0	0	0.84	6.52	0	7.5	0	0	0	813.645	6/9/11
BN10410490	6/10/11	61	BN-550	680.66	555.66	379.16	0	0	2.52	5.41	5.44	163.13	0	0	0	555.66	6/10/11
BN10410491	6/9/11	52	BN-550	984.95	859.95	839.09	0	0	0.42	5.45	0	14.99	0	0	0	859.95	6/9/11
BN10410492	6/10/11	58	BN-550	954.08	829.08	663.61	1.56	0	3.36	6.25	3.1	151.2	0	0	0	829.08	6/10/11
BN10410493	6/10/11	49	BN-550	947.465	822.47	720.275	0	0	0	11.54	3.11	87.54	0	0	0	822.465	6/9/11
BN10410494	6/10/11	48	BN-550	927.62	802.62	775.89	0	9.37	0	0.83	1.55	14.98	0	0	0	802.62	6/10/11
BN10410495	6/10/11	52	BN-550	980.54	855.54	824.51	0	0	1.68	0.97	7.77	20.61	0	0	0	855.54	6/10/11
BN10410496	6/10/11	46	BN-550	967.31	842.31	585.775	1.56	0	241.785	1.94	0	11.25	0	0	0	842.31	6/10/11
BN10410497	6/10/11	58	BN-550	790.91	665.91	483.525	0	0	0.42	9.02	0	172.945	0	0	0	665.91	6/10/11
BN10410498	6/9/11	48	BN-550	962.9	837.9	796.215	0	0	2.04	23.705	0	15.94	0	0	0	837.9	6/9/11
BN10410499	6/8/11	37	BN-550	945.26	820.26	806.6	0	0	1.68	4.48	0	7.5	0	0	0	820.26	6/8/11
BN10410500	6/8/11	56	BN-550	960.695	835.7	717.1	0	0	1.26	37.48	6.22	73.635	0	0	0	835.695	6/8/11
BN10410589	6/11/11	44	BN-550	969.515	844.52	822.795	0	0	6	8.22	0	7.5	0	0	0	844.515	6/11/11
BN10410590	6/10/11	57	BN-550	793.115	668.12	612.105	0	0	1.26	21.345	0	33.405	0	0	0	668.115	6/10/11
BN10410591	6/11/11	44	BN-550	929.825	804.83	717.13	0	0	1	77.325	0	9.37	0	0	0	804.825	6/11/11
BN10410592	6/11/11	58	BN-550	872.495	747.5	528.815	0	0	4	136.805	0	77.875	0	0	0	747.495	6/11/11
BN10410593	6/11/11	57	BN-550	865.88	740.88	583.785	0	0	2.12	12.43	4.66	137.885	0	0	0	740.88	6/11/11
BN10410594	6/11/11	58	BN-550	691.685	566.69	340.945	0	0	0.24	100.81	1.55	123.14	0	0	0	566.685	6/11/11
BN10410595	6/11/11	56	BN-550	967.31	842.31	702.815	0	0	4	7.91	1.55	126.035	0	0	0	842.31	6/11/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10410596	6/11/11	52	BN-550	843.83	718.83	575.395	0	0	2	7.78	0	133.655	0	0	0	718.83	6/11/11
BN10410597	6/10/11	52	BN-550	984.95	859.95	843.01	0	0	1.26	6.79	0	8.89	0	0	0	859.95	6/10/11
BN10410598	6/11/11	55	BN-550	680.66	555.66	322.015	0	0	0	22.25	4.65	206.745	0	0	0	555.66	6/11/11
BN10410599	6/11/11	52	BN-550	729.17	604.17	406.11	0	0	0	95.03	6.21	96.82	0	0	0	604.17	6/11/11
BN10410600	6/10/11	59	BN-550	901.16	776.16	594.02	0	0	0	10.12	0	172.02	0	0	0	776.16	6/10/11
BN10410829	6/12/11	38	BN-550	918.8	793.8	773.75	0	0	1.08	9.13	0	9.84	0	0	0	793.8	6/12/11
BN10410830	6/12/11	45	BN-550	830.6	705.6	604.68	1.56	0	0.36	85.65	0	13.35	0	0	0	705.6	6/12/11
BN10410832	6/11/11	60	BN-550	967.31	842.31	735.45	0	0	0	97.48	0	9.38	0	0	0	842.31	6/11/11
BN10410834	6/12/11	51	BN-550	918.8	793.8	608.1	0	0	0	174.77	1.55	9.38	0	0	0	793.8	6/12/11
BN10410835	6/11/11	48	BN-550	927.62	802.62	751.995	0	0	9	6.95	0	34.675	0	0	0	802.62	6/11/11
BN10410836	6/11/11	52	BN-550	883.52	758.52	592.955	0	0	0.84	91.2	0	73.525	0	0	0	758.52	6/11/11
BN10410837	6/11/11	47	BN-550	971.72	846.72	800.98	0	9.37	0	10.46	1.55	24.36	0	0	0	846.72	6/11/11
BN10410838	6/11/11	52	BN-550	918.8	793.8	746.015	0	0	0	5.55	0	42.235	0	0	0	793.8	6/11/11
BN10410840	6/11/11	38	BN-550	925.415	800.42	771.165	0	0	0.48	8.16	0	20.61	0	0	0	800.415	6/11/11
BN10410880	6/12/11	55	BN-550	912.185	787.19	719.165	2.34	2.34	45.88	2.81	1.55	13.1	0	0	0	787.185	6/12/11
BN10410884	6/12/11	55	BN-550	806.345	681.35	575.025	0	0	0	79.61	0	26.71	0	0	0	681.345	6/12/11
BN10410885	6/12/11	53	BN-550	949.67	824.67	775.2	24.92	0	0	8.64	0	15.91	0	0	0	824.67	6/12/11
BN10410887	6/13/11	60	BN-550	740.195	615.2	412.77	0	0	0	159.16	1.55	41.715	0	0	0	615.195	6/13/11
BN10410890	6/13/11	54	BN-550	768.86	643.86	460.89	1.56	0	1.67	167.56	0	12.18	0	0	0	643.86	6/13/11
BN10410891	6/13/11	56	BN-550	799.73	674.73	482.875	0	0	0	178.735	0	13.12	0	0	0	674.73	6/13/11
BN10410948	6/14/11	56	BN-550	863.675	738.68	558.025	0	0	68.365	23.143	0	89.143	0	0	0	738.676	6/14/11
BN10410949	6/14/11	47	BN-550	570.75	445.75	242.635	0	0	0	105.82	0	97.295	0	0	0	445.75	6/14/11
BN10410950	6/14/11	56	BN-550	698.3	573.3	413.82	0	0	0	0	0	159.48	0	0	0	573.3	6/14/11
BN10410952	6/14/11	44	BN-550	735.785	610.79	593.185	0	0	2	6.24	0	9.36	0	0	0	610.785	6/14/11
BN10410953	6/14/11	61	BN-550	757.835	632.84	414.665	0	72.365	0	129.885	0	15.92	0	0	0	632.835	6/14/11
BN10410954	6/13/11	41	BN-550	991.565	866.57	848.625	0	0	2	3.77	0	12.17	0	0	0	866.565	6/13/11
BN10410955	6/14/11	57	BN-550	768.86	643.86	568.575	0	0	6	51.475	0	17.81	0	0	0	643.86	6/14/11
BN10410956	6/14/11	56	BN-550	969.515	844.52	679.445	0	0	0	154.46	3.11	7.5	0	0	0	844.515	6/14/11
BN10410957	6/13/11	45	BN-550	962.9	837.9	714.85	0	11.45	6	100.91	0	4.69	0	0	0	837.9	6/13/11
BN10410958	6/14/11	61	BN-550	724.76	599.76	218.435	0	0	0	6.11	0	375.215	0	0	0	599.76	6/14/11
BN10410959	6/14/11	48	BN-550	951.875	826.88	593.15	3.12	0	120.335	105.59	0	4.68	0	0	0	826.875	6/14/11
BN10411033	6/18/11	59	BN-550	806.345	681.35	467.945	0	0	0	155.395	0	58.005	0	0	0	681.345	6/18/11
BN10411034	6/18/11	58	BN-550	832.805	707.81	410.185	0	0	0.42	285.34	1.55	10.31	0	0	0	707.805	6/18/11
BN10411035	6/18/11	35	BN-550	852.65	727.65	678.37	0	0	0	0.97	0	48.31	0	0	0	727.65	6/18/11
BN10411036	6/18/11	52	BN-550	923.21	798.21	712.705	0	0	0	17.66	0	67.845	0	0	0	798.21	6/18/11
BN10411037	6/18/11	60	BN-550	726.965	601.97	279.99	0	0	0	252.595	1.55	67.83	0	0	0	601.965	6/18/11
BN10411038	6/18/11	38	BN-550	925.415	800.42	765.445	0	0	0	1.8	0	33.17	0	0	0	800.415	6/18/11
BN10411039	6/18/11	25	BN-550	841.625	716.63	710.745	0	1.87	0	3.07	0	0.94	0	0	0	716.625	6/18/11
BN10411040	6/18/11	25	BN-550	912.185	787.19	779.065	0	4.68	0	2.5	0	0.94	0	0	0	787.185	6/18/11
BN10411041	6/19/11	56	BN-550	821.78	696.78	526.335	0	0	0	28.72	0	141.725	0	0	0	696.78	6/18/11
BN10411042	6/19/11	59	BN-550	702.71	577.71	398.41	0	0	0	12.95	1.55	164.8	0	0	0	577.71	6/19/11
BN10411043	6/19/11	35	BN-550	907.775	782.78	770.985	0	0	2	4.17	0	5.62	0	0	0	782.775	6/19/11
BN10411044	6/19/11	52	BN-550	943.055	818.06	661.225	0	0	0	8.34	1.55	146.94	0	0	0	818.055	6/19/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10411231	6/15/11	47	BN-550	978.335	853.34	774.105	0	0	0	61.13	3.1	15	0	0	0	853.335	6/15/11
BN10411232	6/15/11	52	BN-550	984.95	859.95	825.02	0	0	6.25	8.09	4.66	15.93	0	0	0	859.95	6/15/11
BN10411233	6/15/11	41	BN-550	909.98	784.98	757.78	0	0	0	13.81	7.77	5.62	0	0	0	784.98	6/15/11
BN10411234	6/15/11	48	BN-550	989.36	864.36	845.16	0	0	10.41	5.97	0	2.82	0	0	0	864.36	6/15/11
BN10411235	6/15/11	56	BN-550	788.705	663.71	641.275	0	0	1	2.23	0	19.2	0	0	0	663.705	6/15/11
BN10411236	6/14/11	59	BN-550	660.815	535.82	138.59	0	0	0	221.405	0	175.82	0	0	0	535.815	6/14/11
BN10411237	6/14/11	53	BN-550	927.62	802.62	761.68	0	22.9	0	2.11	0	15.93	0	0	0	802.62	6/14/11
BN10411238	6/15/11	61	BN-550	654.54	529.54	509.8	0	0	0	0	0	19.74	0	0	0	529.54	6/15/11
BN10411239	6/14/11	54	BN-550	702.71	577.71	460.355	0	0	0	9.79	1.55	106.015	0	0	0	577.71	6/14/11
BN10411240	6/15/11	46	BN-550	854.855	729.86	523.965	0	0	0	2.77	0	203.12	0	0	0	729.855	6/15/11
BN10411241	6/15/11	50	BN-550	876.905	751.91	736.185	0	0	0	4.47	0	11.25	0	0	0	751.905	6/15/11
BN10411242	6/14/11	50	BN-550	579.57	454.57	377.295	0	0	0	52.545	3.11	21.62	0	0	0	454.57	6/14/11
BN10411327	6/15/11	44	BN-550	921.005	796.01	776.185	0	0	0.42	10.97	0	8.43	0	0	0	796.005	6/15/11
BN10411328	6/16/11	52	BN-550	793.115	668.12	521.155	0	0	0	31.48	0.78	114.7	0	0	0	668.115	6/16/11
BN10411329	6/15/11	50	BN-550	971.72	846.72	797.46	0	0	0	42.09	1.55	5.62	0	0	0	846.72	6/15/11
BN10411330	6/15/11	45	BN-550	680.66	555.66	533.78	0	0	0	17.19	0	4.69	0	0	0	555.66	6/15/11
BN10411331	6/16/11	53	BN-550	976.13	851.13	740.045	0	0	0.48	29.085	0	81.52	0	0	0	851.13	6/16/11
BN10411332	6/15/11	47	BN-550	881.315	756.32	694.345	0	5.73	0	27.745	0	28.495	0	0	0	756.315	6/15/11
BN10411333	6/15/11	50	BN-550	918.8	793.8	633.985	0	0	1	6.95	1.55	150.315	0	0	0	793.8	6/15/11
BN10411334	6/15/11	58	BN-550	705.255	580.26	427.455	0	0	0	32.85	1.55	118.4	0	0	0	580.255	6/15/11
BN10411335	6/16/11	44	BN-550	921.005	796.01	788.515	0	2.34	0	1.4	0	3.75	0	0	0	796.005	6/16/11
BN10411336	6/16/11	56	BN-550	786.5	661.5	572.965	0	0	0	65.105	0	23.43	0	0	0	661.5	6/16/11
BN10411337	6/15/11	42	BN-550	927.62	802.62	788.41	0	5.73	0	2.23	1.55	4.7	0	0	0	802.62	6/15/11
BN10411338	6/16/11	43	BN-550	969.515	844.52	811.865	0	0	0	5.66	5.43	21.56	0	0	0	844.515	6/16/11
BN10411373	6/17/11	49	BN-550	903.365	778.37	756.675	0	0	0	14.83	3.11	3.75	0	0	0	778.365	6/17/11
BN10411374	6/18/11	48	BN-550	890.135	765.14	734.655	0	0	0	7.04	0	23.44	0	0	0	765.135	6/18/11
BN10411375	6/17/11	55	BN-550	843.83	718.83	627.33	0	0	0.42	65.32	0	25.76	0	0	0	718.83	6/17/11
BN10411376	6/18/11	54	BN-550	912.185	787.19	589.59	0	0	0	180.415	3.11	14.07	0	0	0	787.185	6/18/11
BN10411377	6/17/11	45	BN-550	916.595	791.6	717.36	0	0	0	8.33	0	65.905	0	0	0	791.595	6/17/11
BN10411378	6/17/11	43	BN-550	936.44	811.44	787.42	0	0	0.42	5.19	1.55	16.86	0	0	0	811.44	6/17/11
BN10411379	6/17/11	47	BN-550	912.185	787.19	732.295	0	0	0	22.015	1.55	31.325	0	0	0	787.185	6/17/11
BN10411380	6/17/11	55	BN-550	925.415	800.42	746.31	0	4.68	2.08	3.85	1.55	41.945	0	0	0	800.415	6/17/11
BN10411381	6/18/11	51	BN-550	967.31	842.31	771.475	0	0	0	65.535	1.55	3.75	0	0	0	842.31	6/18/11
BN10411382	6/17/11	53	BN-550	744.605	619.61	500.865	0	0	0	91.55	0	27.19	0	0	0	619.605	6/17/11
BN10411383	6/18/11	51	BN-550	945.26	820.26	671.445	0	0	1.42	135.865	3.1	8.43	0	0	0	820.26	6/18/11
BN10411384	6/18/11	41	BN-550	885.725	760.73	657.465	0	0	0	90.48	1.55	11.23	0	0	0	760.725	6/18/11
BN10411405	6/17/11	53	BN-550	874.7	749.7	604.15	0	0	3.17	5.37	4.66	132.35	0	0	0	749.7	6/17/11
BN10411406	6/16/11	41	BN-550	958.49	833.49	817.49	0	0	0.48	3.33	0	12.19	0	0	0	833.49	6/16/11
BN10411407	6/17/11	54	BN-550	751.22	626.22	464.73	1.56	0	0	116.42	1.55	41.96	0	0	0	626.22	6/17/11
BN10411408	6/17/11	47	BN-550	881.315	756.32	708.055	0	0	5.63	8.89	0	33.74	0	0	0	756.315	6/17/11
BN10411409	6/17/11	42	BN-550	940.85	815.85	794.86	0	0	3.38	1.67	0	15.94	0	0	0	815.85	6/17/11
BN10411410	6/17/11	45	BN-550	896.75	771.75	745.66	0	0	11.2	0.83	0	14.06	0	0	0	771.75	6/17/11
BN10411411	6/17/11	55	BN-550	969.515	844.52	800.085	0	0	6.41	9.29	1.55	27.18	0	0	0	844.515	6/17/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10411412	6/17/11	47	BN-550	962.9	837.9	803.75	0	0	10.13	5.28	0	18.74	0	0	0	837.9	6/17/11
BN10411413	6/17/11	43	BN-550	905.57	780.57	756.71	0	0	4.62	2.37	0	16.87	0	0	0	780.57	6/17/11
BN10411414	6/17/11	46	BN-550	943.055	818.06	797.915	0	0	0	5.14	0	15	0	0	0	818.055	6/17/11
BN10411415	6/17/11	55	BN-550	951.875	826.88	762.365	0	0	0	35.46	0	29.05	0	0	0	826.875	6/17/11
BN10411416	6/17/11	56	BN-550	936.44	811.44	753.365	0	0	6.75	0.97	3.1	47.255	0	0	0	811.44	6/17/11
BN10411717	6/20/11	46	BN-550	987.155	862.16	833.115	0	0	0	1.86	0	27.18	0	0	0	862.155	6/20/11
BN10411718	6/19/11	46	BN-550	879.11	754.11	711.19	0	0	0	16.67	0	26.25	0	0	0	754.11	6/19/11
BN10411719	6/19/11	46	BN-550	989.36	864.36	841.13	0	0	0	9.17	0	14.06	0	0	0	864.36	6/19/11
BN10411720	6/19/11	45	BN-550	912.525	787.53	774.275	0	0	0	1.94	0	11.31	0	0	0	787.525	6/19/11
BN10411721	6/19/11	35	BN-550	940.85	815.85	795.21	0	0	2	6.45	0	12.19	0	0	0	815.85	6/19/11
BN10411722	6/20/11	41	BN-550	940.85	815.85	804.39	0	0	0	7.72	0	3.74	0	0	0	815.85	6/20/11
BN10411723	6/20/11	50	BN-550	984.95	859.95	823.25	0	0	1	10.43	4.66	20.61	0	0	0	859.95	6/20/11
BN10411724	6/19/11	51	BN-550	991.565	866.57	845.085	0	0	0	6.49	0	14.99	0	0	0	866.565	6/19/11
BN10411725	6/19/11	37	BN-550	971.72	846.72	842.11	0	0	0	4.61	0	0	0	0	0	846.72	6/19/11
BN10411726	6/19/11	44	BN-550	954.08	829.08	809.01	0	0	0	6.02	0	14.05	0	0	0	829.08	6/19/11
BN10411727	6/19/11	27	BN-550	927.62	802.62	797.93	0	0	0	0	0	4.69	0	0	0	802.62	6/19/11
BN10411728	6/19/11	51	BN-550	969.515	844.52	807.455	0	0	0	15.51	0	21.55	0	0	0	844.515	6/19/11
BN10411845	6/20/11	50	BN-550	980.54	855.54	772.87	0	0	0	11.97	1.55	69.15	0	0	0	855.54	6/20/11
BN10411846	6/20/11	50	BN-550	982.745	857.75	792.38	0	0	0	4.9	2.33	58.135	0	0	0	857.745	6/20/11
BN10411847	6/20/11	43	BN-550	914.39	789.39	758.92	0	2.29	0	6.63	0	21.55	0	0	0	789.39	6/20/11
BN10411848	6/20/11	56	BN-550	923.21	798.21	702.865	0	2.34	2	11.1	1.55	78.355	0	0	0	798.21	6/20/11
BN10411849	6/20/11	59	BN-550	938.645	813.65	722.035	0	11.45	0	8.36	6.21	65.59	0	0	0	813.645	6/20/11
BN10411850	6/20/11	42	BN-550	923.21	798.21	781.67	0	0	0	6.25	0	10.29	0	0	0	798.21	6/20/11
BN10411851	6/20/11	55	BN-550	874.7	749.7	407.875	0	0	125.62	11.93	0	204.275	0	0	0	749.7	6/20/11
BN10411852	6/21/11	44	BN-550	980.54	855.54	807.605	0	0	1	3.74	0	43.195	0	0	0	855.54	6/21/11
BN10411853	6/21/11	57	BN-550	947.465	822.47	656.95	0	0	97.075	28.655	3.11	36.675	0	0	0	822.465	6/21/11
BN10411854	6/22/11	40	BN-550	973.925	848.93	823.435	0	0	0	2.77	0	22.72	0	0	0	848.925	6/22/11
BN10411855	6/21/11	54	BN-550	890.135	765.14	627.21	0	0	0	5.27	0	132.655	0	0	0	765.135	6/21/11
BN10411856	6/21/11	52	BN-550	848.24	723.24	698.59	0	0	0	6.52	0	10.31	0	0	7.82	723.24	6/21/11
BN10411904	6/22/11	56	BN-550	583.64	458.64	130	0	0	0	271.965	0	56.675	0	0	0	458.64	6/22/11
BN10411905	6/22/11	56	BN-550	782.09	657.09	553.63	0	0	2.1	34.165	1.55	65.645	0	0	0	657.09	6/22/11
BN10411906	6/22/11	45	BN-550	973.925	848.93	802.45	0	0	0	2.63	0	43.845	0	0	0	848.925	6/22/11
BN10411907	6/22/11	48	BN-550	954.08	829.08	742.195	0	0	0	5.82	7.77	70.685	0	0	2.61	829.08	6/22/11
BN10411908	6/22/11	50	BN-550	973.925	848.93	789.175	0	0	0	14.47	0	30.94	0	0	14.34	848.925	6/22/11
BN10411909	6/22/11	47	BN-550	916.595	791.6	750.495	0	0	0	16.77	4.66	19.67	0	0	0	791.595	6/22/11
BN10411910	6/22/11	43	BN-550	868.085	743.09	669.475	0	0	0	16.33	0	55.98	0	0	1.3	743.085	6/22/11
BN10411911	6/22/11	61	BN-550	740.195	615.2	355.205	0	0	0	134.218	4.65	121.123	0	0	0	615.196	6/22/11
BN10411912	6/22/11	53	BN-550	671.84	546.84	401.595	0	0	0.25	88.565	0	56.43	0	0	0	546.84	6/22/11
BN10411913	6/22/11	58	BN-550	693.89	568.89	350.42	0	0	0	86.09	3.1	129.28	0	0	0	568.89	6/22/11
BN10411914	6/22/11	57	BN-550	921.005	796.01	707.8	0	0	0	12.04	0	76.165	0	0	0	796.005	6/22/11
BN10411915	6/23/11	54	BN-550	945.26	820.26	703.965	0	0	0	101.295	0	15	0	0	0	820.26	6/23/11
BN10411935	6/23/11	50	BN-550	956.285	831.29	794.015	0	0	0	5.41	0	31.86	0	0	0	831.285	6/23/11
BN10411936	6/23/11	44	BN-550	938.645	813.65	795.545	0	0	0	6.85	0	11.25	0	0	0	813.645	6/23/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10411937	6/23/11	49	BN-550	890.135	765.14	737.605	0	0	0	11.6	0	15.93	0	0	0	765.135	6/23/11
BN10411939	6/29/11	43	BN-550	462.545	337.55	138	2.525	0	9.66	170.86	0	16.5	0	0	0	337.545	6/29/11
BN10411942	6/29/11	48	BN-550	447.29	322.29	218.01	0	6	5.04	83.24	0.5	9.5	0	0	0	322.29	6/29/11
BN10411944	6/23/11	55	BN-550	980.54	855.54	826.48	0	0	0	14.07	0	14.99	0	0	0	855.54	6/23/11
BN10413376	7/15/11	54	BN-550	687.275	562.28	364.907	0	0	12.174	6.38	0.78	178.035	0	0	0	562.276	7/15/11
BN10413377	7/15/11	58	BN-550	488.825	363.83	156	0	0	0	4.27	6.2	197.355	0	0	0	363.825	7/15/11
BN10413379	7/15/11	61	BN-550	539.54	414.54	201.65	0	0	0	5.17	2.33	205.39	0	0	0	414.54	7/15/11
BN10413380	7/15/11	47	BN-550	471.185	346.19	202.765	0	0	0	2.91	5.43	135.08	0	0	0	346.185	7/15/11
BN10413383	7/15/11	55	BN-550	517.49	392.49	156	0	0	0	6.78	3.11	226.6	0	0	0	392.49	7/15/11
BN10413384	7/15/11	57	BN-550	541.745	416.75	159.9	0	0	0	5.47	38.72	212.655	0	0	0	416.745	7/15/11
BN10413385	7/15/11	63	BN-550	601.28	476.28	332.395	0	0	0	8.26	3.11	132.515	0	0	0	476.28	7/15/11
BN10413386	7/15/11	59	BN-550	656.405	531.41	337.55	0	0	0.06	1.67	3.88	188.245	0	0	0	531.405	7/15/11
BN10413387	7/15/11	57	BN-550	693.89	568.89	414.3	0	0	0	0	0.39	154.2	0	0	0	568.89	7/15/11
BN10413492	7/16/11	58	BN-550	632.15	507.15	294.9	0	0	0	7.76	0.78	203.71	0	0	0	507.15	7/16/11
BN10413493	7/16/11	58	BN-550	790.91	665.91	549.645	0	0	0	12.89	2.33	101.045	0	0	0	665.91	7/16/11
BN10413494	7/16/11	57	BN-550	879.11	754.11	654.03	0	0	0.03	15.41	12.43	71.23	0	0	0.98	754.11	7/16/11
BN10413495	7/15/11	59	BN-550	696.095	571.1	293.975	0	0	7.273	125.893	1.55	142.405	0	0	0	571.096	7/15/11
BN10413496	7/15/11	62	BN-550	636.56	511.56	300.125	0	0	0	10.13	9.32	188.395	0	0	3.59	511.56	7/15/11
BN10413497	7/16/11	61	BN-550	907.775	782.78	630.415	0	0	0	16.82	3.11	129.82	0	0	2.61	782.775	7/16/11
BN10413498	7/15/11	57	BN-550	636.56	511.56	274.585	0	0	0.06	2.91	6.21	226.495	0	0	1.3	511.56	7/15/11
BN10413499	7/16/11	56	BN-550	852.65	727.65	563.75	0	0	0.06	51.475	6.22	105.815	0	0	0.33	727.65	7/16/11
BN10413500	7/16/11	60	BN-550	945.26	820.26	544.15	0	0	0.03	222.44	6.21	43.52	0	0	3.91	820.26	7/16/11
BN10413501	7/16/11	52	BN-550	962.9	837.9	772.005	0	0	0	2.77	1.55	61.575	0	0	0	837.9	7/16/11
BN10413502	7/16/11	43	BN-550	859.265	734.27	714.595	0	0	0	0	0	19.67	0	0	0	734.265	7/16/11
BN10413503	7/16/11	57	BN-550	918.8	793.8	734.4	0	0	0	6.32	0	53.08	0	0	0	793.8	7/16/11
BN10413507	7/18/11	54	BN-550	962.9	837.9	633.02	0	0	0	185.2	0	19.68	0	0	0	837.9	7/18/11
BN10413508	7/18/11	59	BN-550	746.81	621.81	253.02	0	0	0	129.78	147.23	91.78	0	0	0	621.81	7/18/11
BN10413509	7/17/11	54	BN-550	678.455	553.46	340.66	0	0	0.12	135.705	4.65	72.32	0	0	0	553.455	7/17/11
BN10413510	7/18/11	58	BN-550	921.005	796.01	505.35	0	0	0	272.845	0	17.81	0	0	0	796.005	7/18/11
BN10413511	7/17/11	52	BN-550	965.105	840.11	709.98	0	0	2	11.66	0	116.465	0	0	0	840.105	7/17/11
BN10413512	7/17/11	55	BN-550	610.1	485.1	271.78	0	0	0.42	62.59	6.21	144.1	0	0	0	485.1	7/17/11
BN10413513	7/17/11	44	BN-550	916.595	791.6	664.905	0	0	0	4.85	1.55	120.29	0	0	0	791.595	7/17/11
BN10413514	7/17/11	58	BN-550	835.01	710.01	525.615	0	0	0	9.6	0	174.795	0	0	0	710.01	7/17/11
BN10413515	7/17/11	48	BN-550	874.7	749.7	569.555	0	0	0	9.83	0	170.315	0	0	0	749.7	7/17/11
BN10413516	7/16/11	48	BN-550	896.75	771.75	644.645	0	0	4.08	3.88	0	119.145	0	0	0	771.75	7/16/11
BN10413517	7/17/11	59	BN-550	760.04	635.04	585.895	0	0	0	23.845	0	25.3	0	0	0	635.04	7/17/11
BN10413518	7/16/11	50	BN-550	843.83	718.83	700.62	0	0	2	7.78	0	8.43	0	0	0	718.83	7/16/11
BN10413681	7/18/11	44	BN-550	962.9	837.9	813.73	0	0	0	7.01	3.1	14.06	0	0	0	837.9	7/18/11
BN10413682	7/18/11	57	BN-550	965.105	840.11	601.29	0	0	0	226.625	0	12.19	0	0	0	840.105	7/18/11
BN10413683	7/19/11	59	BN-550	896.75	771.75	618.065	0	0	5.65	43.745	3.11	101.18	0	0	0	771.75	7/19/11
BN10413684	7/19/11	54	BN-550	766.655	641.66	287.06	0	0	5.44	3.96	0	345.195	0	0	0	641.655	7/19/11
BN10413685	7/18/11	49	BN-550	934.235	809.24	714.075	0	0	0	7.95	4.66	82.55	0	0	0	809.235	7/18/11
BN10413686	7/18/11	57	BN-550	828.395	703.4	503.495	0	0	0	104.535	4.66	90.705	0	0	0	703.395	7/18/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10413687	7/18/11	52	BN-550	819.575	694.58	622.97	0	0	2.08	0.7	1.55	67.275	0	0	0	694.575	7/18/11
BN10413688	7/18/11	60	BN-550	665.225	540.23	97.52	0	0	2.72	137.87	0	302.115	0	0	0	540.225	7/18/11
BN10413689	7/19/11	53	BN-550	762.245	637.25	489.725	0	0	9.34	11.14	6.22	120.82	0	0	0	637.245	7/19/11
BN10413690	7/19/11	61	BN-550	658.61	533.61	225.095	0	0	3.58	113.73	1.55	189.655	0	0	0	533.61	7/19/11
BN10413691	7/18/11	59	BN-550	971.72	846.72	596.34	0	0	1.13	236.59	0	12.66	0	0	0	846.72	7/18/11
BN10413692	7/19/11	52	BN-550	832.805	707.81	636.855	0	0	0	0.7	1.55	68.7	0	0	0	707.805	7/19/11
BN10413725	7/19/11	62	BN-550	806.345	681.35	517.375	0	0	0.42	89.94	7.77	65.84	0	0	0	681.345	7/19/11
BN10413726	7/20/11	46	BN-550	841.625	716.63	626.215	0	0	0	78.22	0	12.19	0	0	0	716.625	7/20/11
BN10413727	7/19/11	52	BN-550	570.41	445.41	114.39	0	0	0	14	13.98	303.04	0	0	0	445.41	7/19/11
BN10413728	7/22/11	61	BN-550	841.625	716.63	429.28	0	0	4.18	116.275	11.66	155.23	0	0	0	716.625	7/22/11
BN10413729	7/19/11	55	BN-550	594.665	469.67	277.405	0	0	0	92.305	9.32	90.635	0	0	0	469.665	7/19/11
BN10413730	7/22/11	56	BN-550	885.725	760.73	486.795	0	0	2.09	8.89	12.43	250.52	0	0	0	760.725	7/22/11
BN10413731	7/22/11	60	BN-550	784.295	659.3	472.765	0	0	5.63	11.64	4.66	164.6	0	0	0	659.295	7/22/11
BN10413732	7/20/11	62	BN-550	894.545	769.55	513.92	0	0	0.84	11.42	17.09	226.275	0	0	0	769.545	7/20/11
BN10413733	7/19/11	57	BN-550	704.915	579.92	220.52	0	0	2.1	236.81	9.33	111.155	0	0	0	579.915	7/19/11
BN10413734	7/20/11	56	BN-550	812.96	687.96	484.49	0	0	0	6.11	10.87	186.49	0	0	0	687.96	7/20/11
BN10413735	7/19/11	51	BN-550	753.425	628.43	456.03	0	0	0.84	9.1	6.21	156.245	0	0	0	628.425	7/19/11
BN10413736	7/20/11	49	BN-550	984.95	859.95	774.5	0	0	0	4.31	1.55	79.59	0	0	0	859.95	7/20/11
BN10413894	7/22/11	61	BN-550	720.35	595.35	232.36	0	0	1	197.095	7.77	151.915	0	0	5.21	595.35	7/22/11
BN10413895	7/22/11	60	BN-550	746.81	621.81	415.285	0	0	1.47	56.08	12.43	136.545	0	0	0	621.81	7/22/11
BN10413896	7/22/11	61	BN-550	731.375	606.38	328.96	0	0	0	105.49	6.21	165.715	0	0	0	606.375	7/22/11
BN10413897	7/22/11	51	BN-550	755.63	630.63	347.51	0	0	82.715	7.35	1.55	191.505	0	0	0	630.63	7/22/11
BN10413898	7/22/11	59	BN-550	896.75	771.75	502.92	0	0	6.67	11.23	1.55	238.95	0	0	10.43	771.75	7/22/11
BN10413899	7/22/11	58	BN-550	742.4	617.4	366.945	0	0	0.42	46.82	13.98	189.235	0	0	0	617.4	7/22/11
BN10413900	7/22/11	61	BN-550	746.81	621.81	337.465	0	0	0	30.15	15.16	239.035	0	0	0	621.81	7/22/11
BN10413901	7/22/11	54	BN-550	751.22	626.22	469.595	0	0	3.55	32.48	56.618	63.978	0	0	0	626.221	7/22/11
BN10413902	7/22/11	58	BN-550	665.225	540.23	417.96	0	0	0	2.91	0	119.355	0	0	0	540.225	7/22/11
BN10413903	7/22/11	61	BN-550	812.96	687.96	383.485	0	0	2.89	207.695	6.98	86.91	0	0	0	687.96	7/22/11
BN10413996	7/23/11	60	BN-550	883.52	758.52	720.15	0	0	2.19	12.79	9.33	14.06	0	0	0	758.52	7/23/11
BN10413997	7/23/11	57	BN-550	885.725	760.73	683.085	0	0	0	9.59	13.98	54.07	0	0	0	760.725	7/23/11
BN10413998	7/23/11	51	BN-550	687.275	562.28	366.605	0	0	1.42	14.84	7.39	172.02	0	0	0	562.275	7/23/11
BN10413999	7/23/11	53	BN-550	557.18	432.18	154.1	0	0	0.54	15.93	14.77	246.84	0	0	0	432.18	7/23/11
BN10414002	7/23/11	53	BN-550	651.995	527	308.595	0	0	2.52	85.615	7.77	122.495	0	0	0	526.995	7/23/11
BN10414003	7/23/11	59	BN-550	629.945	504.95	281.37	0	0	0.52	15.58	5.44	202.035	0	0	0	504.945	7/23/11
BN10414006	7/23/11	59	BN-550	596.87	471.87	247.53	0	0	0	11	3.11	210.23	0	0	0	471.87	7/23/11
BN10414007	7/23/11	55	BN-550	755.63	630.63	366.085	0	0	136.285	4.64	101.12	22.5	0	0	0	630.63	7/23/11
BN10414508	7/23/11	58	BN-550	801.935	676.94	524.415	0	0	2.5	5.84	3.1	137.17	0	0	3.91	676.935	7/23/11
BN10414511	7/23/11	56	BN-550	876.905	751.91	522.53	0	0	192.225	13.04	3.5	20.61	0	0	0	751.905	7/23/11
BN10414512	7/24/11	57	BN-550	735.785	610.79	270.905	0.31	0	2.82	117.535	24.85	194.365	0	0	0	610.785	7/24/11
BN10414516	7/24/11	61	BN-550	782.09	657.09	477.005	0	0	1	119.22	12.82	47.045	0	0	0	657.09	7/24/11
BN10414517	7/24/11	61	BN-550	790.91	665.91	469.57	0	0	6	16.91	13.99	159.44	0	0	0	665.91	7/24/11
BN10414518	7/24/11	62	BN-550	782.09	657.09	333.17	0	0	2.94	89.81	21.76	209.41	0	0	0	657.09	7/24/11
BN10414519	7/24/11	54	BN-550	715.94	590.94	355.55	0	0	1.04	15.1	7.76	211.49	0	0	0	590.94	7/24/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10414632	7/25/11	47	BN-550	782.09	657.09	493.93	0	0	2.35	12.06	6.22	142.53	0	0	0	657.09	7/25/11
BN10414633	7/25/11	49	BN-550	651.995	527	270.62	0	0	3.68	2.64	160.575	89.48	0	0	0	526.995	7/25/11
BN10414634	7/25/11	56	BN-550	755.63	630.63	156.12	0	0	164.57	3.61	4.66	301.67	0	0	0	630.63	7/25/11
BN10414635	7/25/11	57	BN-550	751.22	626.22	463.625	0	2.81	0	4.91	0	154.875	0	0	0	626.22	7/25/11
BN10414636	7/25/11	53	BN-550	753.425	628.43	377.86	0	0	2.52	147.095	7.77	93.18	0	0	0	628.425	7/25/11
BN10414637	7/25/11	60	BN-550	907.775	782.78	664.56	0	0	0.84	3.61	1.55	112.215	0	0	0	782.775	7/25/11
BN10414638	7/24/11	56	BN-550	784.295	659.3	516.195	0	0	0	12.2	17.48	113.42	0	0	0	659.295	7/24/11
BN10414639	7/25/11	43	BN-550	715.94	590.94	494.125	0	0	1.68	36.935	0.39	57.81	0	0	0	590.94	7/25/11
BN10414640	7/25/11	51	BN-550	735.785	610.79	390.21	0	0	2.4	20.69	75.35	122.135	0	0	0	610.785	7/25/11
BN10414641	7/25/11	61	BN-550	753.425	628.43	288.16	0	0	1.26	127.885	122.61	88.51	0	0	0	628.425	7/25/11
BN10414642	7/25/11	54	BN-550	861.47	736.47	517.2	0	0	7.86	13.71	13.99	183.71	0	0	0	736.47	7/25/11
BN10414643	7/24/11	49	BN-550	726.965	601.97	471.95	0	0	1.22	67.17	7.76	53.865	0	0	0	601.965	7/24/11
BN10414659	7/26/11	56	BN-550	744.605	619.61	480.565	0	0	0	59.25	3.11	76.68	0	0	0	619.605	7/26/11
BN10414660	7/26/11	57	BN-550	846.035	721.04	418.65	0	0	8.3	7.84	6.21	280.035	0	0	0	721.035	7/26/11
BN10414661	7/26/11	57	BN-550	674.045	549.05	213.185	0	0	1.68	121.39	8.54	204.25	0	0	0	549.045	7/26/11
BN10414662	7/26/11	55	BN-550	848.24	723.24	497.885	0	0	187.865	5.64	0	31.85	0	0	0	723.24	7/26/11
BN10414663	7/25/11	56	BN-550	718.145	593.15	453.015	0	0	6.14	7.39	1.55	125.05	0	0	0	593.145	7/25/11
BN10414664	7/25/11	53	BN-550	945.26	820.26	771.75	0	0	3.56	9.67	6.22	29.06	0	0	0	820.26	7/25/11
BN10414665	7/25/11	51	BN-550	909.98	784.98	751.48	0	0	1.04	1.86	1.55	29.05	0	0	0	784.98	7/25/11
BN10414666	7/25/11	52	BN-550	689.48	564.48	225.935	0	0	0.84	91.735	7.76	238.21	0	0	0	564.48	7/25/11
BN10414667	7/26/11	54	BN-550	749.015	624.02	371.05	0	0	5.77	3.88	4.66	238.655	0	0	0	624.015	7/26/11
BN10414668	7/26/11	59	BN-550	724.76	599.76	229.395	0	0	5.76	129.35	0	235.255	0	0	0	599.76	7/26/11
BN10414669	7/26/11	53	BN-550	729.17	604.17	481.585	0	0	0	35.21	0	87.375	0	0	0	604.17	7/26/11
BN10414670	7/26/11	55	BN-550	777.68	652.68	471.185	0	0	2	2.91	3.11	173.475	0	0	0	652.68	7/26/11
BN10414710	7/28/11	42	BN-550	962.9	837.9	786.905	0	0	0	35.065	0	15.93	0	0	0	837.9	7/28/11
BN10414711	7/28/11	53	BN-550	760.04	635.04	478.765	0	1.87	4.52	4.85	3.11	141.925	0	0	0	635.04	7/28/11
BN10414712	7/28/11	52	BN-550	823.985	698.99	494.995	0	0	2.4	111.495	0	90.095	0	0	0	698.985	7/28/11
BN10414713	7/28/11	42	BN-550	903.365	778.37	742.135	0	0	0	9.99	0	26.24	0	0	0	778.365	7/28/11
BN10414714	7/27/11	43	BN-550	951.875	826.88	713.54	0	0	1.6	24.94	0	86.795	0	0	0	826.875	7/27/11
BN10414715	7/28/11	54	BN-550	965.105	840.11	710.705	0	0	3.2	54.63	0	71.57	0	0	0	840.105	7/28/11
BN10414717	7/27/11	55	BN-550	965.105	840.11	655.615	0	0	3	79.505	0	101.985	0	0	0	840.105	7/27/11
BN10414719	7/27/11	54	BN-550	971.72	846.72	782.49	0	0	0	43.61	0	20.62	0	0	0	846.72	7/27/11
BN10414721	7/27/11	51	BN-550	982.745	857.75	587.095	0	0	5.13	249.92	1.55	14.05	0	0	0	857.745	7/27/11
BN10414858	7/27/11	58	BN-550	905.57	780.57	696.63	0	0	1.2	0.97	3.11	78.66	0	0	0	780.57	7/27/11
BN10414859	7/26/11	55	BN-550	594.665	469.67	83.85	0	0	5	2.12	3.11	375.585	0	0	0	469.665	7/26/11
BN10414862	7/27/11	51	BN-550	837.215	712.22	348.14	0	0	2.13	200.125	1.55	160.27	0	0	0	712.215	7/27/11
BN10414866	7/27/11	52	BN-550	887.93	762.93	548.99	0	0	3	1.94	1.55	207.45	0	0	0	762.93	7/27/11
BN10414867	7/26/11	60	BN-550	812.96	687.96	344.775	0	0	7.09	12.81	10.88	312.405	0	0	0	687.96	7/26/11
BN10414868	7/26/11	58	BN-550	764.45	639.45	213.23	0	0	4.49	111.56	6.21	303.96	0	0	0	639.45	7/26/11
BN10414869	7/26/11	53	BN-550	883.52	758.52	641.415	0	0	1.68	82.015	1.55	31.86	0	0	0	758.52	7/26/11
BN10414985	7/29/11	57	BN-550	960.695	835.7	722.49	0	0	1.13	71.795	0	40.28	0	0	0	835.695	7/29/11
BN10414986	7/29/11	35	BN-550	872.495	747.5	729.525	0	0	8	4.36	0	5.61	0	0	0	747.495	7/29/11
BN10414987	7/28/11	30	BN-550	495.44	370.44	186.735	9.37	0	0.84	2.5	1.55	169.445	0	0	0	370.44	7/28/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10414988	7/29/11	56	BN-550	678.455	553.46	329.975	0	0	0	171.823	0	51.658	0	0	0	553.456	7/29/11
BN10414989	7/28/11	55	BN-550	868.085	743.09	420.735	0	0	2	9.43	5.44	305.48	0	0	0	743.085	7/28/11
BN10414990	7/29/11	42	BN-550	685.07	560.07	457.39	0	0	4	4.44	0	94.24	0	0	0	560.07	7/29/11
BN10414991	7/29/11	58	BN-550	857.06	732.06	555.475	0	0	4.52	10.13	3.89	158.045	0	0	0	732.06	7/29/11
BN10414992	7/28/11	46	BN-550	965.105	840.11	824.205	0	0	2.33	5.14	0	8.43	0	0	0	840.105	7/28/11
BN10414993	7/29/11	41	BN-550	976.13	851.13	836.46	0	0	7.5	4.36	0	2.81	0	0	0	851.13	7/29/11
BN10414994	7/29/11	57	BN-550	938.645	813.65	766.125	9.37	0	5.52	2.64	0	29.99	0	0	0	813.645	7/29/11
BN10414995	7/29/11	48	BN-550	921.005	796.01	759.205	0	0	4.84	2.91	0	29.05	0	0	0	796.005	7/29/11
BN10414996	7/29/11	56	BN-550	671.84	546.84	370.715	0	0	0	124.965	0	51.16	0	0	0	546.84	7/29/11
BN10415250	7/31/11	56	BN-550	826.19	701.19	664	0	0	2.5	10.03	3.11	21.55	0	0	0	701.19	7/31/11
BN10415251	7/31/11	58	BN-550	874.7	749.7	574.335	0	0	73.32	18.88	3.1	80.065	0	0	0	749.7	7/31/11
BN10415252	7/31/11	57	BN-550	854.855	729.86	640.415	0	0	2.08	70.82	1.55	14.99	0	0	0	729.855	7/31/11
BN10415253	7/31/11	57	BN-550	737.99	612.99	496.9	0	0	0	7.56	3.11	105.42	0	0	0	612.99	7/31/11
BN10415255	7/31/11	59	BN-550	674.045	549.05	222.33	0	0	0	322.025	0	4.69	0	0	0	549.045	7/31/11
BN10415258	7/30/11	58	BN-550	909.98	784.98	624.915	0	0	5	67.47	0	87.595	0	0	0	784.98	7/30/11
BN10415260	7/31/11	63	BN-550	848.24	723.24	546.175	0	0	0	92.18	0	84.885	0	0	0	723.24	7/31/11
BN10415261	8/30/11	58	BN-550	658.61	533.61	218.35	0	0	34.28	276.29	0	4.69	0	0	0	533.61	8/30/11
BN10415262	7/30/11	58	BN-550	788.705	663.71	488.695	0	0	149.83	3.34	3.1	18.74	0	0	0	663.705	7/30/11
BN10415431	8/1/11	55	BN-550	896.75	771.75	724.76	0	0	0.16	6.84	1.55	38.44	0	0	0	771.75	8/1/11
BN10415432	8/1/11	51	BN-550	916.595	791.6	689.23	0	0	11.32	46.56	0	44.485	0	0	0	791.595	8/1/11
BN10415433	7/31/11	58	BN-550	929.825	804.83	781.875	0	0	1.04	7.56	3.11	11.24	0	0	0	804.825	7/31/11
BN10415434	8/1/11	57	BN-550	943.055	818.06	708.98	0	4.68	0.24	25.04	2.33	76.785	0	0	0	818.055	8/1/11
BN10415435	8/1/11	58	BN-550	839.42	714.42	566.6	0	0	0	117.23	6.21	24.38	0	0	0	714.42	8/1/11
BN10415436	8/1/11	61	BN-550	848.24	723.24	390.485	0	0	37.393	5.71	3.88	285.775	0	0	0	723.243	8/1/11
BN10415437	7/31/11	57	BN-550	927.62	802.62	762.03	0	0	8.4	17.19	0	15	0	0	0	802.62	7/31/11
BN10415438	7/31/11	55	BN-550	965.105	840.11	685.425	0	0	126.73	10.13	0	17.82	0	0	0	840.105	7/31/11
BN10415439	8/1/11	53	BN-550	903.365	778.37	583.525	0	0	0	3.61	1.55	189.68	0	0	0	778.365	8/1/11
BN10415440	8/1/11	60	BN-550	801.935	676.94	501.5	0	0	18.03	61.165	4.65	91.59	0	0	0	676.935	8/1/11
BN10415441	8/1/11	56	BN-550	786.5	661.5	449.45	0	0	1	112.015	6.21	92.825	0	0	0	661.5	8/1/11
BN10415442	8/1/11	54	BN-550	735.785	610.79	423.49	0	0	17.22	46.15	6.21	117.716	0	0	0	610.786	8/1/11
BN10415445	8/2/11	54	BN-550	698.3	573.3	251.925	0	0	9.21	189.785	0	122.38	0	0	0	573.3	8/2/11
BN10415446	8/2/11	51	BN-550	835.01	710.01	452.65	0	0	0.42	9.16	0	247.78	0	0	0	710.01	8/2/11
BN10415447	8/2/11	54	BN-550	852.65	727.65	683.36	0	0	0	2.11	0	42.18	0	0	0	727.65	8/2/11
BN10415448	8/2/11	58	BN-550	905.57	780.57	582.81	0	0	2.58	14.57	3.11	177.5	0	0	0	780.57	8/2/11
BN10415449	8/2/11	56	BN-550	740.195	615.2	176.89	0	0	7.62	419.445	0	11.24	0	0	0	615.195	8/2/11
BN10415450	8/2/11	61	BN-550	819.575	694.58	451.94	0	5.73	0	162.265	4.65	69.99	0	0	0	694.575	8/2/11
BN10415451	8/2/11	60	BN-550	777.68	652.68	216.245	0	0	115.1	1.07	0	320.265	0	0	0	652.68	8/2/11
BN10415452	8/1/11	51	BN-550	751.22	626.22	383.76	0	0	4.81	99.03	1.55	137.07	0	0	0	626.22	8/1/11
BN10415453	8/1/11	56	BN-550	801.935	676.94	464.05	0	0	2.08	70.145	0	140.66	0	0	0	676.935	8/1/11
BN10415454	8/1/11	51	BN-550	949.67	824.67	678.445	0	0	3	6.24	3.11	133.875	0	0	0	824.67	8/1/11
BN10415455	8/2/11	56	BN-550	685.07	560.07	137.18	0	0	4.4	77.11	3.11	338.27	0	0	0	560.07	8/2/11
BN10415768	8/2/11	51	BN-550	817.37	692.37	450.655	0	0	2.26	14.83	6.21	218.415	0	0	0	692.37	8/2/11
BN10415769	8/3/11	38	BN-550	916.595	791.6	772.225	0	0	0	2.5	0	16.87	0	0	0	791.595	8/3/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10415770	8/4/11	59	BN-550	872.495	747.5	439.55	0	0	0	191.065	10.87	106.01	0	0	0	747.495	8/4/11
BN10415771	8/4/11	56	BN-550	625.535	500.54	234.485	0	0	0	95.995	3.11	166.945	0	0	0	500.535	8/4/11
BN10415772	8/3/11	61	BN-550	821.78	696.78	315.55	0	0	2.52	86.39	14.77	277.55	0	0	0	696.78	8/3/11
BN10415773	8/3/11	54	BN-550	846.035	721.04	527.505	0	0	0	1.94	6.22	185.37	0	0	0	721.035	8/3/11
BN10415774	8/3/11	46	BN-550	918.8	793.8	719.925	0	0	0	0	7.76	66.115	0	0	0	793.8	8/3/11
BN10415775	8/3/11	57	BN-550	797.525	672.53	344.88	0	0	0	135.775	14	177.87	0	0	0	672.525	8/3/11
BN10415776	8/3/11	46	BN-550	945.26	820.26	707.02	0	0	1.68	97.66	0.78	13.12	0	0	0	820.26	8/3/11
BN10415777	8/3/11	46	BN-550	786.5	661.5	582.475	0	0	0	4.17	6.21	68.645	0	0	0	661.5	8/3/11
BN10415778	8/4/11	48	BN-550	940.85	815.85	606.705	0	0	2.1	8.49	9.32	189.235	0	0	0	815.85	8/4/11
BN10415779	8/4/11	57	BN-550	632.15	507.15	228.235	0	0	0	183.855	20.2	74.86	0	0	0	507.15	8/4/11
BN10415836	8/5/11	46	BN-550	949.67	824.67	801.09	0	0	0	7.65	0	15.93	0	0	0	824.67	8/5/11
BN10415837	8/5/11	55	BN-550	973.925	848.93	634.355	0	0	1.68	187	6.21	19.68	0	0	0	848.925	8/5/11
BN10415838	8/5/11	56	BN-550	718.145	593.15	287.325	0	0	0	218.425	3.11	84.285	0	0	0	593.145	8/5/11
BN10415839	8/5/11	59	BN-550	815.165	690.17	394.78	0	0	0	266.935	9.7	18.75	0	0	0	690.165	8/5/11
BN10415840	8/5/11	60	BN-550	634.355	509.36	156	3.12	0	0	217.02	10.87	122.345	0	0	0	509.355	8/5/11
BN10415841	8/5/11	58	BN-550	914.39	789.39	646.375	0	0	2.08	54.255	0	86.68	0	0	0	789.39	8/5/11
BN10415842	8/5/11	58	BN-550	784.295	659.3	331.385	0	0	2.1	118.945	1.55	205.315	0	0	0	659.295	8/5/11
BN10415843	8/5/11	53	BN-550	585.845	460.85	130	0	0	2.64	83.82	13.98	230.405	0	0	0	460.845	8/5/11
BN10415844	8/6/11	56	BN-550	943.055	818.06	507.425	0	0	7	286.16	1.55	15.92	0	0	0	818.055	8/6/11
BN10415845	8/5/11	53	BN-550	696.095	571.1	493.725	0	0	1.5	4.31	3.1	68.46	0	0	0	571.095	8/5/11
BN10415846	8/6/11	61	BN-550	757.835	632.84	449.02	0	0	0.42	42.668	7.76	132.968	0	0	0	632.836	8/6/11
BN10415847	8/6/11	58	BN-550	890.135	765.14	627.28	0	0	2.52	10.9	103.815	20.62	0	0	0	765.135	8/6/11
BN10416156	8/7/11	46	BN-550	804.14	679.14	664.79	0	0	7.8	0	0	6.55	0	0	0	679.14	8/7/11
BN10416157	8/6/11	59	BN-550	819.575	694.58	432.765	4.68	0	8.85	151.755	3.11	93.415	0	0	0	694.575	8/6/11
BN10416158	8/6/11	49	BN-550	936.44	811.44	760.33	0	0	18.33	15.92	0	16.86	0	0	0	811.44	8/6/11
BN10416159	8/6/11	50	BN-550	823.985	698.99	559.445	0	0	10.02	7.92	0	121.6	0	0	0	698.985	8/6/11
BN10416160	8/6/11	54	BN-550	674.045	549.05	307.205	0	0	8.43	75.605	67.335	90.47	0	0	0	549.045	8/6/11
BN10416161	8/6/11	60	BN-550	751.22	626.22	289.865	0	0	13.97	192.555	10.88	118.95	0	0	0	626.22	8/6/11
BN10416162	8/6/11	53	BN-550	859.265	734.27	628.495	0	0	10.33	76.89	7.77	10.78	0	0	0	734.265	8/6/11
BN10416163	8/6/11	60	BN-550	786.5	661.5	412.28	0	0	20.29	102.255	1.55	125.125	0	0	0	661.5	8/6/11
BN10416164	8/7/11	58	BN-550	918.8	793.8	732.58	0	0	19.69	8.73	0	32.8	0	0	0	793.8	8/7/11
BN10416165	8/7/11	58	BN-550	654.2	529.2	486.71	0	0	6.63	17.18	9.32	9.36	0	0	0	529.2	8/7/11
BN10416166	8/6/11	58	BN-550	854.855	729.86	483.245	0	0	9.83	99.795	0	136.985	0	0	0	729.855	8/6/11
BN10416167	8/7/11	58	BN-550	932.03	807.03	665.855	0	0	6.11	118.545	6.22	10.3	0	0	0	807.03	8/7/11
BN10416278	8/9/11	57	BN-550	868.085	743.09	546.52	0	0	0	21.62	3.1	171.845	0	0	0	743.085	8/9/11
BN10416279	8/8/11	53	BN-550	894.545	769.55	657.825	0	0	4	18.16	0.78	88.78	0	0	0	769.545	8/8/11
BN10416280	8/7/11	62	BN-550	819.575	694.58	445.745	0	0	4.8	15.14	1.55	227.34	0	0	0	694.575	8/7/11
BN10416281	8/8/11	53	BN-550	766.655	641.66	510.955	0	0	4.44	2.91	113.04	10.31	0	0	0	641.655	8/8/11
BN10416282	8/8/11	39	BN-550	495.44	370.44	193.4	0	0	6	162.31	3.11	5.62	0	0	0	370.44	8/8/11
BN10416283	8/8/11	60	BN-550	782.09	657.09	599.6	0	0	0.42	11.49	1.55	44.03	0	0	0	657.09	8/8/11
BN10416284	8/8/11	57	BN-550	901.16	776.16	623.655	0	0	5	48.825	1.55	97.13	0	0	0	776.16	8/8/11
BN10416285	8/8/11	55	BN-550	799.73	674.73	547.505	0	0	7.43	6.38	7.77	105.645	0	0	0	674.73	8/8/11
BN10416286	8/7/11	58	BN-550	775.475	650.48	480.575	0	0	0.42	8.19	132.25	29.04	0	0	0	650.475	8/7/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10416287	8/8/11	62	BN-550	771.065	646.07	377.38	0	0	2.4	10.66	6.22	249.405	0	0	0	646.065	8/8/11
BN10416288	8/8/11	57	BN-550	704.915	579.92	401.54	0	0	5.83	7.92	1.55	163.075	0	0	0	579.915	8/8/11
BN10416289	8/8/11	55	BN-550	627.74	502.74	388.88	0	0	0	7	3.11	103.75	0	0	0	502.74	8/8/11
BN10416481	8/11/11	49	BN-550	753.425	628.43	436.66	1.56	0	9.1	100.97	13.99	66.145	0	0	0	628.425	8/11/11
BN10416482	8/11/11	49	BN-550	718.145	593.15	529.88	1.56	11.45	2	7.26	1.55	39.445	0	0	0	593.145	8/11/11
BN10416483	8/13/11	51	BN-550	599.075	474.08	130	0	0	3.36	262.81	9.32	68.585	0	0	0	474.075	8/13/11
BN10416484	8/12/11	54	BN-550	808.55	683.55	390.655	0	0	6.1	264.975	7.77	14.05	0	0	0	683.55	8/12/11
BN10416485	8/11/11	56	BN-550	636.56	511.56	254.36	0	0	5.26	136.935	10.88	104.125	0	0	0	511.56	8/11/11
BN10416486	8/11/11	59	BN-550	766.655	641.66	436.36	0	0	13.84	74.9	13.99	102.565	0	0	0	641.655	8/11/11
BN10416487	8/11/11	45	BN-550	976.13	851.13	770.86	0	28.63	4.7	5.18	4.66	37.1	0	0	0	851.13	8/11/11
BN10416488	8/13/11	57	BN-550	731.375	606.38	274.48	0	5.73	5.52	20.37	10.88	289.395	0	0	0	606.375	8/13/11
BN10416489	8/13/11	53	BN-550	649.79	524.79	311.47	0	0	3.78	11.21	6.21	192.12	0	0	0	524.79	8/13/11
BN10416490	8/13/11	53	BN-550	676.25	551.25	386.715	0	0	2.52	108.9	1.55	51.565	0	0	0	551.25	8/13/11
BN10416491	8/12/11	47	BN-550	883.52	758.52	582.82	0	22.9	6.44	41.38	1.55	103.43	0	0	0	758.52	8/12/11
BN10416492	8/13/11	50	BN-550	771.065	646.07	487.77	0	0	0	7.98	8.55	141.765	0	0	0	646.065	8/13/11
BN10416502	8/9/11	51	BN-550	848.24	723.24	697.045	0	0	0	0	0	26.195	0	0	0	723.24	8/9/11
BN10416503	8/9/11	52	BN-550	934.235	809.24	754.605	0	0	1.14	20.79	18.65	14.05	0	0	0	809.235	8/9/11
BN10416504	8/9/11	62	BN-550	810.755	685.76	303.295	0	0	241.32	11	20.21	109.93	0	0	0	685.755	8/9/11
BN10416505	8/10/11	47	BN-550	740.195	615.2	551.375	0	0	2.52	6.25	10.88	44.17	0	0	0	615.195	8/10/11
BN10416506	8/10/11	61	BN-550	967.31	842.31	771.81	0	0	3.9	11.1	21.76	33.74	0	0	0	842.31	8/10/11
BN10416507	8/10/11	54	BN-550	612.305	487.31	111.81	0	0	0	47.105	12.43	315.96	0	0	0	487.305	8/10/11
BN10416508	8/10/11	54	BN-550	826.19	701.19	542.315	0	0	0.84	8.73	6.22	143.085	0	0	0	701.19	8/10/11
BN10416509	8/10/11	60	BN-550	735.785	610.79	435.61	0	0	2.18	94.395	0	78.6	0	0	0	610.785	8/10/11
BN10416510	8/9/11	60	BN-550	865.88	740.88	660.64	0	0	1.47	8.73	10.88	59.16	0	0	0	740.88	8/9/11
BN10416511	8/11/11	59	BN-550	769.2	644.2	429.865	3.12	0	2.4	176.595	3.1	29.12	0	0	0	644.2	8/11/11
BN10416512	8/9/11	52	BN-550	984.95	859.95	676.03	0	0	167.83	3.61	3.11	9.37	0	0	0	859.95	8/9/11
BN10416513	8/9/11	50	BN-550	775.475	650.48	593.915	0	0	1.13	19.29	10.88	25.26	0	0	0	650.475	8/9/11
BN10417007	8/14/11	61	BN-550	874.7	749.7	635.01	0	0	4.42	9.76	4.66	95.85	0	0	0	749.7	8/14/11
BN10417008	8/14/11	53	BN-550	956.285	831.29	767.13	0	0	6.1	0.97	0	57.085	0	0	0	831.285	8/14/11
BN10417009	8/14/11	64	BN-550	693.89	568.89	133.9	0	0	2.88	12.61	12.43	407.07	0	0	0	568.89	8/14/11
BN10417010	8/14/11	59	BN-550	925.415	800.42	476.365	3.12	2.34	120.72	69.988	4.66	123.223	0	0	0	800.416	8/14/11
BN10417011	8/14/11	59	BN-550	678.455	553.46	287.515	0	0	2.7	38.555	4.65	220.035	0	0	0	553.455	8/14/11
BN10417012	8/14/11	57	BN-550	790.91	665.91	105.32	0	0	211.1	270.495	3.11	75.885	0	0	0	665.91	8/14/11
BN10417013	8/14/11	58	BN-550	841.625	716.63	677.995	0	0	3.26	9.64	6.99	18.74	0	0	0	716.625	8/14/11
BN10417014	8/14/11	59	BN-550	799.73	674.73	247.77	0	0	0.84	46.36	357.015	22.745	0	0	0	674.73	8/14/11
BN10417015	8/14/11	61	BN-550	843.83	718.83	405.265	0	0	6.16	161.53	3.88	141.995	0	0	0	718.83	8/14/11
BN10417016	8/14/11	63	BN-550	711.53	586.53	369.99	0	0	2	7.17	4.43	202.94	0	0	0	586.53	8/14/11
BN10417017	8/14/11	60	BN-550	934.235	809.24	641.365	0	0	2.92	9.59	4.65	150.71	0	0	0	809.235	8/14/11
BN10417018	8/14/11	60	BN-550	883.52	758.52	554.275	0	0	6.36	106.36	9.33	82.195	0	0	0	758.52	8/14/11
BN10417171	8/15/11	45	BN-550	987.155	862.16	716.345	0	0	3.26	11.66	0	130.89	0	0	0	862.155	8/15/11
BN10417172	8/15/11	57	BN-550	777.68	652.68	246.025	0	4.68	205.46	61.695	5.5	129.32	0	0	0	652.68	8/15/11
BN10417173	8/15/11	52	BN-550	958.49	833.49	774.935	0	0	2.1	37.875	3.11	15.47	0	0	0	833.49	8/15/11
BN10417174	8/14/11	59	BN-550	943.055	818.06	468.71	0	5.73	175.05	153.595	4.66	10.31	0	0	0	818.055	8/14/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10417175	8/15/11	56	BN-550	819.575	694.58	515.375	0	0	1	48.31	4.65	125.24	0	0	0	694.575	8/15/11
BN10417176	8/15/11	56	BN-550	835.01	710.01	543.07	0	1.41	9.93	143.12	3.11	9.37	0	0	0	710.01	8/15/11
BN10417177	8/15/11	60	BN-550	936.44	811.44	608.54	0	5.73	2.26	113.635	1.55	79.725	0	0	0	811.44	8/15/11
BN10417178	8/15/11	47	BN-550	837.215	712.22	563.68	0	0	6	80.095	1.55	60.89	0	0	0	712.215	8/15/11
BN10417179	8/14/11	56	BN-550	890.135	765.14	533.375	0	2.34	1.15	132.74	6.21	89.32	0	0	0	765.135	8/14/11
BN10417180	8/15/11	53	BN-550	918.8	793.8	776.86	0	0	2	3.85	0.78	10.31	0	0	0	793.8	8/15/11
BN10417181	8/15/11	54	BN-550	984.95	859.95	828.56	0	0.94	5.1	11.29	0	14.06	0	0	0	859.95	8/15/11
BN10417182	8/15/11	54	BN-550	852.65	727.65	666.31	0	0	2.94	46.22	0	12.18	0	0	0	727.65	8/15/11
BN10417465	8/17/11	53	BN-550	779.885	654.89	566.15	0	5.73	1.63	9.56	1.55	70.265	0	0	0	654.885	8/17/11
BN10417466	8/17/11	52	BN-550	874.7	749.7	692.835	0	0	4.2	0	0	52.665	0	0	0	749.7	8/17/11
BN10417467	8/17/11	54	BN-550	821.78	696.78	621.665	0	0	0	6.11	3.11	65.895	0	0	0	696.78	8/17/11
BN10417468	8/16/11	60	BN-550	740.195	615.2	385.825	0	0	1.89	27.3	6.21	193.97	0	0	0	615.195	8/16/11
BN10417469	8/17/11	48	BN-550	782.09	657.09	332.995	0	0	2.94	217.36	4.66	99.135	0	0	0	657.09	8/17/11
BN10417470	8/16/11	50	BN-550	951.875	826.88	619.405	0	0	1.47	19.01	3.1	183.89	0	0	0	826.875	8/16/11
BN10417471	8/16/11	54	BN-550	735.785	610.79	371.785	0	0	0.88	21.53	9.71	206.88	0	0	0	610.785	8/16/11
BN10417472	8/16/11	47	BN-550	951.875	826.88	769.26	0	0	1.26	9.38	0	46.975	0	0	0	826.875	8/16/11
BN10417473	8/16/11	44	BN-550	923.21	798.21	745.06	0	0	0.84	6.61	3.11	42.59	0	0	0	798.21	8/16/11
BN10417474	8/16/11	52	BN-550	932.03	807.03	773.11	0	0	2.94	12.26	4.66	14.06	0	0	0	807.03	8/16/11
BN10417475	8/17/11	45	BN-550	956.285	831.29	811.145	0	0	3.84	11.61	0	4.69	0	0	0	831.285	8/17/11
BN10417476	8/18/11	51	BN-550	846.035	721.04	536.855	0	0	8.12	91.325	4.66	80.075	0	0	0	721.035	8/17/11
BN10417783	8/18/11	61	BN-550	766.655	641.66	359.28	0	0	9.83	11.23	3.1	251.695	0	0	6.52	641.655	8/18/11
BN10417784	8/18/11	52	BN-550	835.01	710.01	582.33	0	0	3.1	11.37	1.55	111.66	0	0	0	710.01	8/18/11
BN10417785	8/19/11	59	BN-550	815.165	690.17	361.465	0	95.61	4.56	151.305	6.22	71.005	0	0	0	690.165	8/19/11
BN10417786	8/18/11	51	BN-550	898.955	773.96	642.155	0	0	17.6	41.73	1.55	70.92	0	0	0	773.955	8/18/11
BN10417787	8/18/11	57	BN-550	865.88	740.88	430.775	3.12	0	0.84	172.095	9.33	124.72	0	0	0	740.88	8/18/11
BN10417788	8/19/11	52	BN-550	949.67	824.67	731.515	0	0	0	14.35	3.1	75.705	0	0	0	824.67	8/19/11
BN10417789	8/19/11	59	BN-550	753.425	628.43	268.405	0	0	1.68	8.05	7.77	342.52	0	0	0	628.425	8/19/11
BN10417790	8/18/11	47	BN-550	976.13	851.13	708.57	0	4.68	2.42	90.435	1.55	43.475	0	0	0	851.13	8/18/11
BN10417791	8/19/11	61	BN-550	832.805	707.81	489.65	0	0	32.88	49.88	3.1	132.295	0	0	0	707.805	8/19/11
BN10417792	8/19/11	50	BN-550	689.48	564.48	234.39	0	0	1.26	44.16	9.32	275.35	0	0	0	564.48	8/19/11
BN10417793	8/19/11	47	BN-550	989.36	864.36	790.795	0	0	0.42	7.7	1.55	63.895	0	0	0	864.36	8/19/11
BN10417795	8/18/11	55	BN-550	909.98	784.98	693.985	0	0	14.18	7.62	3.11	66.085	0	0	0	784.98	8/18/11
BN10417801	8/22/11	54	BN-550	680.66	555.66	461.535	0	0	0	6.96	3.11	84.055	0	0	0	555.66	8/22/11
BN10417802	8/22/11	60	BN-550	828.395	703.4	449.795	0	0	7.14	182.955	15.54	47.965	0	0	0	703.395	8/22/11
BN10417803	8/22/11	59	BN-550	722.555	597.56	172.415	0	0	6.24	321.345	3.1	94.455	0	0	0	597.555	8/22/11
BN10417804	8/22/11	60	BN-550	775.475	650.48	401.9	0	0	3.22	124.485	12.74	108.13	0	0	0	650.475	8/22/11
BN10417805	8/21/11	59	BN-550	788.705	663.71	403.64	0	0	4.39	69.245	29.52	156.91	0	0	0	663.705	8/21/11
BN10417806	8/21/11	57	BN-550	956.285	831.29	782.585	0	0	19.74	11.15	0	17.81	0	0	0	831.285	8/21/11
BN10417807	8/22/11	54	BN-550	720.35	595.35	342.475	0	6.87	5.56	43.4	7.77	189.275	0	0	0	595.35	8/22/11
BN10417808	8/22/11	48	BN-550	674.045	549.05	317.88	0	0	2.26	49.735	11.65	167.52	0	0	0	549.045	8/22/11
BN10417809	8/22/11	62	BN-550	870.29	745.29	588.97	0	0	1.84	8.46	6.22	139.8	0	0	0	745.29	8/22/11
BN10417810	8/21/11	58	BN-550	852.65	727.65	513.19	0	11.45	7.56	92.35	12.43	90.67	0	0	0	727.65	8/21/11
BN10417811	8/21/11	53	BN-550	932.03	807.03	735.72	0	11.45	15.02	8.34	9.32	27.18	0	0	0	807.03	8/21/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10417812	8/21/11	54	BN-550	881.315	756.32	694.705	0	0	21.48	1.94	12.43	25.76	0	0	0	756.315	8/21/11
BN10418008	8/21/11	40	BN-550	940.85	815.85	779.05	0	0	0	7.78	4.66	24.36	0	0	0	815.85	8/21/11
BN10418009	8/21/11	59	BN-550	940.85	815.85	682.885	0	0	5.2	20.1	10.87	96.795	0	0	0	815.85	8/21/11
BN10418010	8/21/11	57	BN-550	973.925	848.93	595.405	0	144.12	13	52.72	10.88	32.8	0	0	0	848.925	8/21/11
BN10418011	8/20/11	44	BN-550	898.955	773.96	683.95	0	0	0	70.655	1.55	17.8	0	0	0	773.955	8/20/11
BN10418012	8/20/11	49	BN-550	971.72	846.72	755.185	0	0	12.5	1.94	1.55	75.545	0	0	0	846.72	8/20/11
BN10418013	8/21/11	49	BN-550	958.49	833.49	717.93	0	0	10.92	80.26	0	24.38	0	0	0	833.49	8/21/11
BN10418014	8/20/11	58	BN-550	757.835	632.84	400.295	0	0	0.63	162.865	12.44	56.605	0	0	0	632.835	8/20/11
BN10418015	8/20/11	53	BN-550	894.545	769.55	637.43	0	0	0	66.025	4.66	61.43	0	0	0	769.545	8/20/11
BN10418016	8/20/11	57	BN-550	812.96	687.96	442.58	0	0	0	142.145	4.66	98.575	0	0	0	687.96	8/20/11
BN10418017	8/20/11	59	BN-550	978.335	853.34	666.64	0	0	6.38	98.865	10.87	70.58	0	0	0	853.335	8/20/11
BN10418018	8/20/11	61	BN-550	850.445	725.45	455.2	0	0	2.1	135.94	6.22	125.985	0	0	0	725.445	8/20/11
BN10418019	8/21/11	54	BN-550	982.745	857.75	784.015	0	0	10.96	10.03	7.77	44.97	0	0	0	857.745	8/21/11
BN10418495	8/23/11	57	BN-550	925.415	800.42	698.025	0	0	22.99	7.51	1.55	70.34	0	0	0	800.415	8/23/11
BN10418496	8/23/11	60	BN-550	790.91	665.91	329.115	0	0	2.52	10.29	95.795	228.19	0	0	0	665.91	8/23/11
BN10418497	8/23/11	58	BN-550	764.45	639.45	366.82	0	0	1	92.718	0	178.913	0	0	0	639.451	8/23/11
BN10418498	8/23/11	59	BN-550	722.555	597.56	340.67	0	0	6.34	4.85	12.43	233.265	0	0	0	597.555	8/23/11
BN10418499	8/24/11	52	BN-550	987.155	862.16	670.32	0	0	0.42	8.73	0	176.165	0	0	6.52	862.155	8/24/11
BN10418500	8/23/11	59	BN-550	890.135	765.14	477.46	0	0	0	21.92	13.98	251.775	0	0	0	765.135	8/23/11
BN10418501	8/23/11	57	BN-550	707.12	582.12	438.68	0	0	0	10.68	7.77	124.99	0	0	0	582.12	8/23/11
BN10418502	8/22/11	63	BN-550	923.21	798.21	617.28	0	0	5.88	17.03	10.87	147.15	0	0	0	798.21	8/22/11
BN10418503	8/23/11	58	BN-550	960.695	835.7	762.775	0	0	0	21.04	3.11	48.77	0	0	0	835.695	8/23/11
BN10418504	8/24/11	57	BN-550	735.785	610.79	223.48	0	0	1.68	71.735	7.76	306.13	0	0	0	610.785	8/24/11
BN10418505	8/22/11	57	BN-550	771.065	646.07	352.555	0	0	2.52	101.94	117.105	71.945	0	0	0	646.065	8/22/11
BN10418506	8/24/11	53	BN-550	594.665	469.67	133.9	0	0	2.26	14	7.77	311.735	0	0	0	469.665	8/24/11
BN10418649	8/25/11	57	BN-550	618.92	493.92	253.775	0	0	0	6.11	15.54	218.495	0	0	0	493.92	8/25/11
BN10418650	8/25/11	59	BN-550	740.195	615.2	264.91	0	0	0	196.54	3.11	150.635	0	0	0	615.195	8/25/11
BN10418651	8/24/11	53	BN-550	859.265	734.27	625.075	0	0	6.08	13.88	10.87	78.36	0	0	0	734.265	8/24/11
BN10418652	8/25/11	53	BN-550	663.02	538.02	347.195	0	0	4.2	113.51	0	73.115	0	0	0	538.02	8/25/11
BN10418653	8/25/11	56	BN-550	718.145	593.15	304	0	0	0	237.485	3.11	48.55	0	0	0	593.145	8/25/11
BN10418654	8/25/11	55	BN-550	610.1	485.1	156	0	0	0	200.935	4.65	123.515	0	0	0	485.1	8/25/11
BN10418655	8/25/11	60	BN-550	859.265	734.27	606.625	0	0	14.61	9.3	3.1	100.63	0	0	0	734.265	8/25/11
BN10418656	8/24/11	48	BN-550	960.695	835.7	809.125	0	0	7.08	1.94	0	8.43	0	0	9.12	835.695	8/24/11
BN10418657	8/24/11	58	BN-550	832.805	707.81	350.33	0	0	2.52	14.28	1.55	339.125	0	0	0	707.805	8/24/11
BN10418658	8/24/11	60	BN-550	854.855	729.86	303.025	0	22.9	1.26	169.63	4.66	228.38	0	0	0	729.855	8/24/11
BN10418659	8/24/11	54	BN-550	951.875	826.88	678.18	0	0	2.84	9.29	0	136.565	0	0	0	826.875	8/24/11
BN10418660	8/24/11	54	BN-550	901.16	776.16	460.685	0	0	0.42	250.835	4.66	58.26	0	0	1.3	776.16	8/24/11
BN10418741	8/26/11	58	BN-550	894.545	769.55	614.83	0	0	0	24.83	15.54	114.345	0	0	0	769.545	8/26/11
BN10418742	8/25/11	58	BN-550	835.01	710.01	555.44	0	0	0	98.08	8.55	47.94	0	0	0	710.01	8/25/11
BN10418743	8/26/11	55	BN-550	746.81	621.81	403.215	0	0	0	203.605	0	14.99	0	0	0	621.81	8/26/11
BN10418744	8/26/11	60	BN-550	890.135	765.14	594.275	0	0	0	83.754	3.11	83.996	0	0	0	765.135	8/26/11
BN10418745	8/26/11	53	BN-550	885.725	760.73	696.515	0	0	7.09	25.28	4.66	27.18	0	0	0	760.725	8/26/11
BN10418746	8/26/11	54	BN-550	757.835	632.84	403.48	0	0	0	117.105	15.53	96.72	0	0	0	632.835	8/26/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10418747	8/26/11	61	BN-550	799.73	674.73	404.83	0	0	0	217.84	0	52.06	0	0	0	674.73	8/26/11
BN10418748	8/26/11	59	BN-550	876.905	751.91	583.73	0	0	0	97.185	17.1	53.89	0	0	0	751.905	8/26/11
BN10418749	8/26/11	51	BN-550	707.12	582.12	319.22	6.25	0	5	102.62	3.11	145.92	0	0	0	582.12	8/26/11
BN10418750	8/26/11	53	BN-550	801.935	676.94	530.52	0	0	0	10.39	12.42	123.605	0	0	0	676.935	8/26/11
BN10418751	8/26/11	53	BN-550	726.965	601.97	367.325	0	0	0.84	42.822	20.2	170.778	0	0	0	601.965	8/26/11
BN10418752	8/26/11	57	BN-550	859.265	734.27	598.625	0	0	0.42	27.37	17.1	90.75	0	0	0	734.265	8/26/11
BN10418901	8/27/11	51	BN-550	921.005	796.01	564.645	0	0	0	226.68	0	4.68	0	0	0	796.005	8/27/11
BN10418902	8/27/11	51	BN-550	947.465	822.47	803.635	0	0	0	10.1	3.1	5.63	0	0	0	822.465	8/27/11
BN10418903	8/27/11	54	BN-550	883.52	758.52	623.005	0	0	0	109.275	0	26.24	0	0	0	758.52	8/27/11
BN10418904	8/27/11	45	BN-550	978.335	853.34	836.155	0	0	1	11.49	0	4.69	0	0	0	853.335	8/27/11
BN10418905	8/27/11	38	BN-550	870.29	745.29	579.385	0	0	0	159.055	3.1	3.75	0	0	0	745.29	8/27/11
BN10418906	8/27/11	48	BN-550	980.54	855.54	813.31	0	0	0	19.12	1.55	21.56	0	0	0	855.54	8/27/11
BN10418907	8/26/11	40	BN-550	848.24	723.24	665.25	0	0	0	20.51	0	37.48	0	0	0	723.24	8/26/11
BN10418908	8/26/11	58	BN-550	901.16	776.16	480.615	0	0	3.08	82.51	0	209.955	0	0	0	776.16	8/26/11
BN10418909	8/26/11	47	BN-550	819.575	694.58	560.455	0	0	0	20.7	3.11	110.31	0	0	0	694.575	8/26/11
BN10418910	8/27/11	54	BN-550	804.14	679.14	548.215	0	0	1	8.21	0	121.715	0	0	0	679.14	8/27/11
BN10418911	8/27/11	47	BN-550	903.365	778.37	636.58	0	0	0	140.845	0	0.94	0	0	0	778.365	8/27/11
BN10418912	8/27/11	47	BN-550	943.055	818.06	792.025	0	0	7	13.87	0	5.16	0	0	0	818.055	8/27/11
BN10419174	8/28/11	45	BN-550	991.565	866.57	851.735	0	0	0	9.21	0	5.62	0	0	0	866.565	8/28/11
BN10419175	8/28/11	46	BN-550	934.235	809.24	609.96	0	4.68	0	56.15	3.11	135.335	0	0	0	809.235	8/28/11
BN10419176	8/29/11	51	BN-550	894.545	769.55	587.44	0	0	2.1	12.13	1.55	166.325	0	0	0	769.545	8/29/11
BN10419177	8/28/11	44	BN-550	846.035	721.04	581.26	0	0	0	131.345	0	8.43	0	0	0	721.035	8/28/11
BN10419178	8/28/11	59	BN-550	921.005	796.01	374.28	3.12	0	4.79	406.315	0	7.5	0	0	0	796.005	8/28/11
BN10419179	8/28/11	55	BN-550	804.14	679.14	642.22	0	0	0	21.92	0	15	0	0	0	679.14	8/28/11
BN10419180	8/28/11	49	BN-550	949.67	824.67	735.935	0	0	0	71.865	0	16.87	0	0	0	824.67	8/28/11
BN10419181	8/28/11	52	BN-550	945.26	820.26	725.465	0	0	0	18.71	1.55	74.535	0	0	0	820.26	8/28/11
BN10419182	8/28/11	56	BN-550	907.775	782.78	616.685	0	0	0	166.09	0	0	0	0	0	782.775	8/28/11
BN10419183	8/29/11	55	BN-550	925.415	800.42	635.6	0	0	10.5	147.755	0	6.56	0	0	0	800.415	8/29/11
BN10419184	8/28/11	38	BN-550	932.03	807.03	788.91	0	0	9.66	1.75	1.55	5.16	0	0	0	807.03	8/28/11
BN10419185	8/28/11	52	BN-550	636.56	511.56	247.12	0	0	0	213.405	0	51.035	0	0	0	511.56	8/28/11
BN10419307	8/29/11	66	BN-550	667.43	542.43	182.99	0	0	2	237.755	4.66	115.025	0	0	0	542.43	8/29/11
BN10419308	8/29/11	52	BN-550	918.8	793.8	663.93	0	0	0	15.58	0	114.29	0	0	0	793.8	8/29/11
BN10419309	8/29/11	50	BN-550	793.115	668.12	429.865	0	0	134.165	81.325	7.77	14.99	0	0	0	668.115	8/29/11
BN10419310	8/29/11	56	BN-550	863.675	738.68	521.7	0	0	181.605	9.46	1.55	24.36	0	0	0	738.675	8/29/11
BN10419311	8/29/11	54	BN-550	623.33	498.33	349.38	0	0	0.84	0	0	148.11	0	0	0	498.33	8/29/11
BN10419312	8/30/11	56	BN-550	779.885	654.89	569.255	0	0	84.22	0	0	1.41	0	0	0	654.885	8/30/11
BN10419313	8/29/11	55	BN-550	863.675	738.68	408.995	0	0	1.68	7.93	300.39	19.68	0	0	0	738.675	8/29/11
BN10419314	8/29/11	52	BN-550	887.93	762.93	533.015	0	0	3	212.275	6.21	8.43	0	0	0	762.93	8/29/11
BN10419315	8/29/11	57	BN-550	881.315	756.32	451.525	0	0	8.84	292.2	0	3.75	0	0	0	756.315	8/29/11
BN10419316	8/30/11	60	BN-550	757.835	632.84	543.995	0	0	49.44	1.32	6.22	31.86	0	0	0	632.835	8/30/11
BN10419317	8/30/11	57	BN-550	943.055	818.06	683.37	0	0	5.42	4.31	0	124.955	0	0	0	818.055	8/30/11
BN10419318	8/30/11	60	BN-550	965.105	840.11	630.205	0	0	1	1.94	4.66	202.3	0	0	0	840.105	8/30/11
BN10419443	8/31/11	58	BN-550	907.775	782.78	490.73	0	0	4.76	281.665	0	5.62	0	0	0	782.775	8/31/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10419444	8/31/11	52	BN-550	914.39	789.39	727.545	0	0	0.72	6.59	0	54.535	0	0	0	789.39	8/31/11
BN10419445	8/30/11	55	BN-550	843.83	718.83	543.56	0	0	22.905	144.865	0	7.5	0	0	0	718.83	8/30/11
BN10419446	8/30/11	53	BN-550	742.4	617.4	520.41	0	0	27.64	62.5	3.11	3.74	0	0	0	617.4	8/30/11
BN10419447	8/30/11	57	BN-550	735.785	610.79	313.87	0	0	5.2	155.2	6.22	130.295	0	0	0	610.785	8/30/11
BN10419448	8/31/11	61	BN-550	984.95	859.95	495.02	0	0	4.56	356.62	0	3.75	0	0	0	859.95	8/31/11
BN10419449	8/30/11	46	BN-550	967.31	842.31	300.08	0	335.1	5.8	145.2	0	56.13	0	0	0	842.31	8/30/11
BN10419450	8/30/11	55	BN-550	936.44	811.44	424.36	0	165.67	3.29	199.38	0	18.74	0	0	0	811.44	8/30/11
BN10419451	8/31/11	41	BN-550	876.905	751.91	477.135	0	209.295	4.22	0.7	0	60.555	0	0	0	751.905	8/31/11
BN10419452	8/31/11	58	BN-550	973.925	848.93	811.645	0	0	14.85	3.74	9.32	9.37	0	0	0	848.925	8/31/11
BN10419453	8/31/11	55	BN-550	903.365	778.37	548.745	0	0	7.2	207.76	1.55	13.11	0	0	0	778.365	8/31/11
BN10419506	9/1/11	57	BN-550	777.68	652.68	487.12	0	0	10.08	111.19	12.42	31.87	0	0	0	652.68	9/1/11
BN10419507	8/31/11	54	BN-550	843.83	718.83	587.02	0	0	9.36	0	3.11	119.34	0	0	0	718.83	8/31/11
BN10419508	8/31/11	59	BN-550	901.16	776.16	709.81	0	0	2.52	15.14	9.33	39.36	0	0	0	776.16	8/31/11
BN10419509	8/31/11	60	BN-550	830.6	705.6	476.68	0	0	5.46	169.66	0	53.8	0	0	0	705.6	8/31/11
BN10419510	8/31/11	51	BN-550	742.4	617.4	291.275	0	2.29	4	278.38	1.55	39.905	0	0	0	617.4	8/31/11
BN10419511	8/31/11	62	BN-550	947.465	822.47	737.53	0	0	13.34	11.52	10.88	49.195	0	0	0	822.465	8/31/11
BN10419512	9/1/11	53	BN-550	951.875	826.88	766.725	0	0	4.18	4.44	0	51.53	0	0	0	826.875	9/1/11
BN10419513	9/1/11	57	BN-550	777.68	652.68	524.93	0	0	6.2	6.52	1.55	113.48	0	0	0	652.68	9/1/11
BN10419514	9/1/11	63	BN-550	793.115	668.12	340.265	0	0	79.65	42.82	12.42	192.96	0	0	0	668.115	9/1/11
BN10419515	9/1/11	60	BN-550	907.775	782.78	755.115	0	0	6.62	16.35	0	4.69	0	0	0	782.775	9/1/11
BN10419516	9/1/11	61	BN-550	839.42	714.42	538.735	0	0	6.46	95.735	6.22	67.27	0	0	0	714.42	9/1/11
BN10419517	9/1/11	56	BN-550	815.165	690.17	578.445	0	0	1.26	4.44	0	106.02	0	0	0	690.165	9/1/11
BN10419795	9/2/11	57	BN-550	724.76	599.76	321.295	0	0	124.7	38.35	0	115.415	0	0	0	599.76	9/2/11
BN10419796	9/2/11	51	BN-550	965.105	840.11	833.535	0	0	1.26	2.5	0	2.81	0	0	0	840.105	9/2/11
BN10419797	9/1/11	61	BN-550	938.645	813.65	625.485	0	0	6.3	6.95	133.365	41.545	0	0	0	813.645	9/1/11
BN10419798	9/2/11	58	BN-550	795.32	670.32	444.38	0	0	3.36	127.37	9.32	85.89	0	0	0	670.32	9/2/11
BN10419799	9/2/11	63	BN-550	775.475	650.48	407.495	0	0	8.3	152.33	7.76	74.59	0	0	0	650.475	9/2/11
BN10420145	9/3/11	52	BN-550	839.42	714.42	538.765	0	0	0	171.915	0	3.74	0	0	0	714.42	9/3/11
BN10420146	9/3/11	48	BN-550	725.1	600.1	502.945	0	0	0	10.02	12.43	74.705	0	0	0	600.1	9/3/11
BN10420147	9/2/11	56	BN-550	667.43	542.43	256.945	0	0	0	279.865	0	5.62	0	0	0	542.43	9/2/11
BN10420148	9/2/11	56	BN-550	967.31	842.31	773.38	0	0	2	0.97	0	65.96	0	0	0	842.31	9/2/11
BN10420149	9/3/11	59	BN-550	832.805	707.81	452.2	0	0	0	247.175	0	8.43	0	0	0	707.805	9/3/11
BN10420150	9/2/11	48	BN-550	685.07	560.07	324.92	0	0	2.1	88.245	3.11	141.695	0	0	0	560.07	9/2/11
BN10420151	9/2/11	61	BN-550	852.65	727.65	449.365	0	0	1	226.475	1.55	49.26	0	0	0	727.65	9/2/11
BN10420258	9/3/11	46	BN-550	852.65	727.65	626.625	0	0	2	86.245	6.22	6.56	0	0	0	727.65	9/3/11
BN10420259	9/3/11	49	BN-550	821.78	696.78	556.48	0	0	0	123.76	1.55	14.99	0	0	0	696.78	9/3/11
BN10420260	9/3/11	56	BN-550	901.16	776.16	525.595	0	0	0	248.695	0	1.87	0	0	0	776.16	9/3/11
BN10420268	9/4/11	58	BN-550	945.26	820.26	597.675	0	0	0	77.36	1.55	143.675	0	0	0	820.26	9/4/11
BN10420269	9/4/11	24	BN-550	427.425	302.43	166.645	0	0	0	2.11	3.11	130.56	0	0	0	302.425	9/4/11
BN10420270	9/4/11	49	BN-550	943.055	818.06	771.735	0	0	0	11.32	3.11	31.89	0	0	0	818.055	9/4/11
BN10420271	9/4/11	40	BN-550	912.185	787.19	712.675	0	0	0	4.73	0	69.78	0	0	0	787.185	9/4/11
BN10420272	9/4/11	45	BN-550	985.29	860.29	833.69	0	0	0	9.52	1.55	15.53	0	0	0	860.29	9/4/11
BN10420273	9/4/11	42	BN-550	550.905	425.91	280.135	0	0	2	4.05	0	139.72	0	0	0	425.905	9/4/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10420274	9/4/11	42	BN-550	905.57	780.57	753.38	0	0	0	10.32	0	16.87	0	0	0	780.57	9/4/11
BN10420276	9/4/11	41	BN-550	698.3	573.3	314.315	0	0	0	3.08	251.225	4.68	0	0	0	573.3	9/4/11
BN10420278	9/3/11	61	BN-550	830.94	705.94	499.98	0	0	0	68.075	7.15	130.735	0	0	0	705.94	9/3/11
BN10420343	9/4/11	58	BN-550	548.36	423.36	116.88	0	0	132.025	45.975	0	128.48	0	0	0	423.36	9/4/11
BN10420344	9/5/11	53	BN-550	550.905	425.91	220.185	0	0	0	1.67	0	204.05	0	0	0	425.905	9/5/11
BN10420345	9/5/11	59	BN-550	689.48	564.48	235.555	0	0	0	268.805	3.1	57.02	0	0	0	564.48	9/5/11
BN10420346	9/5/11	62	BN-550	729.17	604.17	479.93	0	0	0	8.52	0	115.72	0	0	0	604.17	9/5/11
BN10420347	9/5/11	53	BN-550	562.27	437.27	191.385	0	0	0	3.78	0	242.105	0	0	0	437.27	9/5/11
BN10420348	9/5/11	54	BN-550	539.54	414.54	315.69	0	0	0	0.97	0	97.88	0	0	0	414.54	9/5/11
BN10420349	9/4/11	52	BN-550	954.08	829.08	722.37	0	0	0	81.77	10.88	14.06	0	0	0	829.08	9/4/11
BN10420350	9/4/11	43	BN-550	707.12	582.12	385.27	0	0	0	186.08	0	10.77	0	0	0	582.12	9/4/11
BN10420351	9/5/11	54	BN-550	506.465	381.47	87.75	0	0	0	2.23	0	291.485	0	0	0	381.465	9/5/11
BN10420352	9/5/11	58	BN-550	751.22	626.22	228.165	0	0	2	152.07	0	243.985	0	0	0	626.22	9/5/11
BN10420353	9/5/11	62	BN-550	636.56	511.56	358.075	0	0	0	140.835	0	12.65	0	0	0	511.56	9/5/11
BN10420354	9/5/11	58	BN-550	585.845	460.85	205.6	0	0	3	84.47	1.55	166.225	0	0	0	460.845	9/5/11
BN10420356	9/6/11	52	BN-550	839.42	714.42	510.005	0	0	3.12	198.805	1.55	0.94	0	0	0	714.42	9/6/11
BN10420357	9/6/11	62	BN-550	687.275	562.28	215.08	0	0	0	339.695	0	7.5	0	0	0	562.275	9/6/11
BN10420358	9/5/11	60	BN-550	735.785	610.79	343.96	0	0	0	116.04	4.65	146.135	0	0	0	610.785	9/5/11
BN10420359	9/6/11	58	BN-550	687.275	562.28	317.6	0	0	0	232.815	1.55	10.31	0	0	0	562.275	9/6/11
BN10420360	9/5/11	53	BN-550	645.38	520.38	161.22	0	0	0	293.85	7.77	57.54	0	0	0	520.38	9/5/11
BN10420361	9/5/11	54	BN-550	618.92	493.92	119.61	0	0	0	172.47	6.21	195.63	0	0	0	493.92	9/5/11
BN10420362	9/6/11	59	BN-550	806.345	681.35	452.94	0	0	2	193.62	3.11	29.675	0	0	0	681.345	9/6/11
BN10420363	9/6/11	52	BN-550	636.56	511.56	239.175	0	4.68	0	231.085	0	36.62	0	0	0	511.56	9/6/11
BN10420364	9/5/11	60	BN-550	711.53	586.53	288.185	0	0	0	208.688	8.55	81.108	0	0	0	586.531	9/5/11
BN10420365	9/6/11	47	BN-550	676.25	551.25	447.07	0	0	0	79.81	0	24.37	0	0	0	551.25	9/6/11
BN10420366	9/5/11	58	BN-550	715.94	590.94	339.765	0	0	0	129.533	6.2	115.443	0	0	0	590.941	9/5/11
BN10420367	9/5/11	54	BN-550	980.54	855.54	756.195	0	0	0	70.295	0	29.05	0	0	0	855.54	9/5/11
BN10420577	9/7/11	40	BN-550	654.2	529.2	418.06	0	0	2.26	98.57	0	10.31	0	0	0	529.2	9/7/11
BN10420578	9/6/11	57	BN-550	832.805	707.81	540.39	6.24	0	3.12	63.21	1.55	93.295	0	0	0	707.805	9/6/11
BN10420579	9/6/11	57	BN-550	594.665	469.67	163.81	0	0	0	181.68	0	124.175	0	0	0	469.665	9/6/11
BN10420580	9/6/11	56	BN-550	874.7	749.7	609.215	0	0	0	104.778	1.55	34.158	0	0	0	749.701	9/6/11
BN10420581	9/7/11	61	BN-550	912.185	787.19	728.495	0	0	0	8.19	0	50.5	0	0	0	787.185	9/7/11
BN10420582	9/6/11	59	BN-550	890.135	765.14	673.145	3.12	0	2	9.02	1.55	76.3	0	0	0	765.135	9/6/11
BN10420583	9/6/11	55	BN-550	733.58	608.58	348.025	0	0	0	242.155	1.55	16.85	0	0	0	608.58	9/6/11
BN10420584	9/6/11	57	BN-550	925.415	800.42	608.975	3.12	0	4.16	177.6	0	6.56	0	0	0	800.415	9/6/11
BN10420585	9/7/11	44	BN-550	927.62	802.62	746.44	0	0	6.75	38.34	0.78	10.31	0	0	0	802.62	9/7/11
BN10420586	9/6/11	55	BN-550	892.34	767.34	469.135	0	34.35	0	249.785	0	14.07	0	0	0	767.34	9/6/11
BN10420587	9/7/11	45	BN-550	962.9	837.9	702.86	0	99.04	0	11.02	1.55	23.43	0	0	0	837.9	9/7/11
BN10420588	9/7/11	57	BN-550	967.31	842.31	569.015	0	142.145	1.13	62.54	0	67.48	0	0	0	842.31	9/7/11
BN10420790	9/7/11	53	BN-550	965.105	840.11	802.745	4.68	0	3.25	18.66	0	10.77	0	0	0	840.105	9/7/11
BN10420791	9/7/11	48	BN-550	956.285	831.29	585.135	1.56	147.86	4.38	77.36	0	14.99	0	0	0	831.285	9/7/11
BN10420792	9/9/11	48	BN-550	925.415	800.42	747.795	0	0	11.37	7.51	0	33.74	0	0	0	800.415	9/9/11
BN10420793	9/8/11	51	BN-550	709.325	584.33	343.315	0	0	1.26	157.435	1.55	80.765	0	0	0	584.325	9/8/11

WTS Query Results for WMP Data for IDC BN-550 Drums

Container	Pack Date	Fill Factor	Current IDC	Gross Wt	Net Wt	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLULOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL	calc net wt	VE Date
BN10420794	9/8/11	56	BN-550	674.045	549.05	207.715	0	0	1.68	213.655	6.22	119.775	0	0	0	549.045	9/8/11
BN10420795	9/8/11	57	BN-550	663.02	538.02	238.765	0	0	0	93.31	7.76	198.185	0	0	0	538.02	9/8/11
BN10420796	9/9/11	53	BN-550	936.44	811.44	758.14	0	0	2.1	12.5	3.1	35.6	0	0	0	811.44	9/9/11
BN10420797	9/8/11	60	BN-550	691.685	566.69	151.47	0	0	4.5	248.04	1.55	161.125	0	0	0	566.685	9/8/11
BN10420798	9/7/11	36	BN-550	905.57	780.57	766.48	0	0	0	0.97	0	13.12	0	0	0	780.57	9/7/11
BN10420799	9/8/11	48	BN-550	940.85	815.85	798.86	0	0	0	3.88	0	13.11	0	0	0	815.85	9/8/11
BN10420800	9/8/11	59	BN-550	682.865	557.87	261.57	0	0	0	141.085	17.09	138.12	0	0	0	557.865	9/8/11
BN10420801	9/8/11	58	BN-550	671.84	546.84	291.68	3.12	0	18.05	19.46	9.32	205.21	0	0	0	546.84	9/8/11
BN10421045	9/10/11	40	BN-550	962.9	837.9	790.35	0	0	4.33	6.79	23.3	13.13	0	0	0	837.9	9/10/11
BN10421046	9/10/11	49	BN-550	987.155	862.16	806.925	0	0	7.94	8.35	20.2	18.74	0	0	0	862.155	9/10/11
BN10421047	9/10/11	46	BN-550	982.745	857.75	805.205	0	11.45	4.33	5.28	10.87	20.61	0	0	0	857.745	9/10/11
BN10421048	9/10/11	34	BN-550	976.13	851.13	818	0	0	3.93	3.34	10.87	14.99	0	0	0	851.13	9/10/11
BN10421049	9/10/11	42	BN-550	947.465	822.47	799.655	0	0	8.42	0.97	3.11	10.31	0	0	0	822.465	9/10/11
BN10421050	9/9/11	57	BN-550	925.415	800.42	604.1	0	83	0	60.77	3.1	49.445	0	0	0	800.415	9/9/11
BN10421051	9/9/11	48	BN-550	951.875	826.88	768.485	0	0	0.42	6.94	12.82	35.6	0	0	2.61	826.875	9/9/11
BN10421052	9/9/11	56	BN-550	923.21	798.21	597.505	0	0	0	148.64	2.72	49.345	0	0	0	798.21	9/9/11
BN10421053	9/9/11	48	BN-550	909.98	784.98	705.685	0	0	3.36	14.6	1.55	59.785	0	0	0	784.98	9/9/11
BN10421054	9/9/11	61	BN-550	932.03	807.03	580.085	0	0	3.09	34.42	159.915	29.52	0	0	0	807.03	9/9/11
BN10421055	9/10/11	40	BN-550	991.565	866.57	833.855	0	0	4.22	5.72	7.77	15	0	0	0	866.565	9/10/11
BN10421056	9/11/11	61	BN-550	921.005	796.01	647.855	0	0	10.68	66.065	7.77	63.635	0	0	0	796.005	9/11/11
BN10421074	9/11/11	61	BN-550	887.93	762.93	481.75	0	0	20.4	259.84	0	0.94	0	0	0	762.93	9/11/11
BN10421075	9/11/11	54	BN-550	909.98	784.98	598.81	0	0	4.5	69.055	0	112.615	0	0	0	784.98	9/11/11
BN10421076	9/11/11	54	BN-550	826.19	701.19	585.97	0	0	4.72	20.92	6.21	83.37	0	0	0	701.19	9/11/11
BN10421077	9/11/11	55	BN-550	837.215	712.22	536.5	0	0	17.06	138.035	0	20.62	0	0	0	712.215	9/11/11
BN10421080	9/11/11	56	BN-550	742.4	617.4	325.99	0	0	2.25	221.02	0	68.14	0	0	0	617.4	9/11/11
BN10421081	9/11/11	59	BN-550	718.145	593.15	295.85	0	0	3.23	184.745	4.66	104.66	0	0	0	593.145	9/11/11
BN10421082	9/11/11	59	BN-550	925.415	800.42	710.76	0	0	8.4	13.9	1.55	65.805	0	0	0	800.415	9/11/11
BN10421083	9/11/11	56	BN-550	627.74	502.74	105.95	0	0	6.76	385.56	0	4.47	0	0	0	502.74	9/11/11
BN10421084	9/11/11	55	BN-550	837.215	712.22	363.925	0	0	91.545	74.17	0	182.575	0	0	0	712.215	9/11/11
3426		176412				1982986.366	2410.38	7499.354	30117.894	288567.497	9968.413	184707.083	5	0	121.89	2506383.877	
				pounds WMP/pound waste =		0.791174243	0.000961696	0.002992101	0.012016473	0.115133001	0.00397721	0.07369465	1.99491E-06	0	4.86318E-05	1	

AMWTP Advanced Mixed Waste Treatment Project	**AK Source Document Review Summary**	AMWTP Form 1068, Rev. 2 Effective Date: 02/07/06 MP-TRUW-8.13 Page 1 of 2

T-2382 RECORD CB 4-22-07

Reference Number: C534A Rev. 5

(Please delete all previous records and replace with the information below. Also ensure the CD is available within records.

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- ☐ **Published Documentation**
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Title of Source Document (including author(s), document and revision number, date, etc.): Memorandum to File "Waste Material Parameter (WMP) Weight Calculations and Supporting Data to Determine WMP Weight per Unit of Waste", Tim Venneman, January 19, 2007

Information Source:
Interoffice Memorandum to File

AK #[a]	AK Information Summary
WS2, WS5 AMWTP RF-004 RF-802 RF-371 RF-371 RF-377 RF-328 RF-335 RF-338 RF-360 RF-376 RF-490 RF-001 RF-002 RF-800 RF-007 RF-803 RF-807 RF-440 RF-339 RF-463 RF-320 RF-321 RF-480 RF-481 MD-801	The attached memorandum (January 19, 2007) outlines the method of calculating the estimated WMP weights per unit of waste. No changes were made to the previously issued memorandum during this revision. The CD referenced in the January 19, 2007 memorandum was updated for this revision to support TWBR development.

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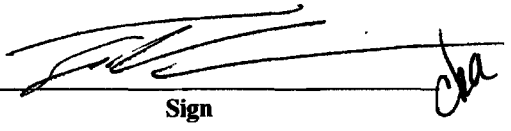
MD-802 MD-803 MD-804 MD-805 MD-810 MD-813 MD-814 MD-825 MD-827 MD-848 MD-834 MD-835 MD-836 BN-510	

Source Document Data Limitations (if any):
The calculations and estimates are not exact and could be subject to change as containers are retrieved (e.g., if unexpected WMPs are noted in significant quantities over time).

AK Expert:

Tim Venneman /  **Date:** 3/14/07

Print **Sign**

[a] **Obtain from Acceptable Knowledge Documentation Checklists (AMWTP Form-1066/AMWTP Form-1067)**

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INTEROFFICE MEMORANDUM

Date: **January 19, 2007**

To: **File**

From: **Tim Venneman**
Acceptable Knowledge Expert

Subject: **Waste Material Parameter (WMP) Weight Calculations And Supporting Data To Determine WMP Weight Per Unit of Waste - TV-001-07**

Based on the 311 Permit Modification Request (PMR) Waste Analysis Plan (WAP) revision it is necessary to revise the Advanced Mixed Waste Project (AMWTP) waste stream profile (WSP) packages for certified waste streams to include additional information on waste material parameters(WMPs). Documentation of this information is as follows:

- The WMP weights are to be reported as weight of each parameter identified in the Waste Isolation Pilot Plant (WIPP) WAP Table B3-1 (lbs) per unit of waste weight (lbs), which can also be reported as fraction or percent by weight.
- The method used to calculate or estimate the WMP weights per unit of waste is to be included in the AMWTP procedure and in the characterization information summary (CIS) part of the WSP package.
- The WMP weights per unit of waste are to be reported in the waste stream profile form (WSPF) as part of the WSP package.
- The WMP weights by percentage of the material in the waste are reported in the acceptable knowledge (AK) summary part of the WSP package.

The following method outlines the approach determining WMP weight estimates and is to be used as the basis for the calculations for all waste streams. Where multiple item description codes (IDCs) are identified within the WSPF, the method remains essentially the same, with the exception that the WMP weights are calculated using a weighted average (by IDC).

1. Perform a Waste Tracking System (WTS) query for the following information for each IDC in the waste stream:
    a) Whether or not < or > LLD
    b) Gross weight of waste drum (lbs)
    c) Net weight of the waste (lbs)
    d) Weight of each material parameter (lbs)

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i. Iron based metals/alloys
ii. Aluminum based metals/alloys
iii. Other metal
iv. Cellulosic waste
v. Rubber waste
vi. Plastic waste
vii. Inorganic matrix
viii. Organic matrix
ix. Soil/gravel

2. Determine the total number of container for each IDC in the waste stream from Memorandum to File, Estimated Number of Drums for the WIPP Approved Direct Ship Waste Streams (C535A).
3. Determine the total number of containers examined to date for each IDC in the waste stream from the WTS query [note: the total container count is based off of only those containers with completed (finalized) sets of weights for each WMP (identified above in i through ix)].
4. Sum the net waste weights for all drums examined to date for each IDC.
5. Estimate the total net weight of the waste.
6. For the total number of container in the waste stream identified in step 2 based on the total net weight of the waste in the containers examined to date.

$W_w = N_w/N_e \times W_{ex}$
N = number of drums
W=net weight
Subscripts:
w = waste stream
ex = examined

NOTE: For waste streams with multiple IDCs, calculate the net waste weight and the WMP weights for each IDC separately, and sum them for a weighted average.

7. Sum the weight of each material parameter for the drums examined to date for each IDC.
8. Estimate the total weight of each material parameter for the total number of containers in the waste stream identified in step 2 based on the weight of the waste material parameters in the containers examined to date.

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$M_w = N_w/N_e \times M_{ex}$

N = number of drums
M = material parameter weight
Subscripts:
w = waste stream
ex = examined

9. Calculate the WMP weight per unit of waste.
   a) WMP lb/waste lb = M_w/W_w

Also attached are the WMP summary sheets for approved WSPFs as of the date of this memorandum. A compact disc (CD) with the raw data, summaries, and percentage of drums examined are included as an attachment to this AK source document to complete the AK record for WMPs weights per unit of waste.

References:
AMWTP-MP-TRUW-8.13
AMWTP-MP-TRUW-8.14
AMWTP-RPT-TRUW-56, August 3, 2006. (P649A)

TV:at

cc: Carolyn Abbott
Steve Carpenter
AMWTP Correspondence Control

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Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN004 Special Setups Waste

	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	1041	1.56E-04	1.93E-06	7.43E-05	4.07E-03	3.78E-05	2.42E-05	4.94E-04	9.95E-01	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	2108	1.63E-04	2.02E-06	7.69E-05	4.25E-03	3.95E-05	2.53E-05	5.00E-04	9.95E-01	0.00E+00	0.00E+00
Normalized Precentages		<1%	<1%	<1%	<1%	<1%	<1%	<1%	99%	0%	0%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		0	0	0	5	0	0	1	1300	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., solidified liquids, cement, etc.)	TOTAL
Metals and CPR based on weighted average	0.0%	0.0%	0.1%	99.9%	100.0%
AK Summary, Rev. 0	1%	1%	1%	97%	100%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined.
Special Setups	RF-004	2029	964	48%
Solidified Laboratory Waste	RF-802	79	77	97%
		2108	1041	49%

RFP Dates of Generation for Examined Containers:	1972-1988

Average Fill Factor:	85%
Average Net Wt (pounds):	494

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Values based on WTS query performed on 10/11/06

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN161 Firebrick Debris Waste

	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	183	2.40E-03	0.00E+00	3.51E-04	9.36E-01	4.88E-02	2.34E-05	1.16E-02	0.00E+00	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	2022	2.40E-03	0.00E+00	3.51E-04	9.36E-01	4.88E-02	2.34E-05	1.16E-02	0.00E+00	0.00E+00	0.00E+00
Normalized Precentages		<1%	<1%*	<1%	94%	5%	<1%	1%	0%	0%	0%

* Aluminum (as a component of filter media) was identified in individual drums in this waste stream based on AK (P368A).

Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		1	0	0	540	28	0	7	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., firebrick)	TOTAL
Metals and CPR based on weighted average	0.2%	0.0%	6.0%	93.6%	99.9%
AK Summary, Rev. 0	<1%	<1%	10%	88%	98%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined.
Firebrick	RF-371	2019	183	9%
Coarse Firebrick	RF-377	3	0	0%
		2022	183	9%

RFP Dates of Generation for Examined Containers:	1972-1987

Average Fill Factor:	71%
Average Net Wt (pounds):	186

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN211 Filter Debris Waste

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	1500	2.12E-03	1.60E-02	2.33E-03	7.05E-01	2.37E-01	2.13E-04	3.65E-02	0.00E+00	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	2461	8.93E-03	1.39E-02	2.15E-03	7.39E-01	2.09E-01	3.47E-04	2.64E-02	0.00E+00	0.00E+00	0.00E+00
Normalized Precentages		1%	1%	<1%	74%	21%	<1%	3%	0%	0%	0%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		3	4	1	210	59	0	7	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., glass fiber)	Total	Total for waste form (filters and insulation)	comment
Metals and CPR based on weighted average	0.9%	1.6%	23.5%	73.9%	100.0%	94.8%	Assumes all cellulosics waste identified is filter or insulation waste and none was other debris items (e.g., rags, coveralls, cardboard, etc.). Amount of filters versus insulation cannot be determined by WMP weights
AK Summary, Rev. 1	1%	4%	34%	61%	100%	N/A	

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined
Ful-Flo Incinerator Filters	RF-328	8	8	100%
Absolute 8 x 8 Filters	RF-335	153	62	41%
Insulation and CWS Filter Media	RF-338	284	184	65%
Insulation	RF-360	486	1	0%
Cemented Insulation and Filter Media	RF-376	1416	1230	87%
HEPA Filters and CWS Filters	RF-490	114	15	13%
		2461	1500	61%

RFP Dates of Generation for Examined Containers:	1972-1988

Average Fill Factor:	81%
Average Net Wt (pounds):	105

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Values based on WTS query performed on 10/11/06

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) BN243 Glass Debris Waste

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	485	6.89E-03	0.00E+00	5.79E-02	8.40E-01	3.33E-03	1.34E-03	9.06E-02	0.00E+00	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	1612	6.89E-03	0.00E+00	5.79E-02	8.40E-01	3.33E-03	1.34E-03	9.06E-02	0.00E+00	0.00E+00	0.00E+00
Normalized Precentages		1%	<1%*	6%	84%	<1%	<1%	9%	0%	0%	0%

* Aluminum (as a component of light bulbs) was identified in individual drums in this waste stream based on AK (P368A).

Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		2	0	20	290	1	0	32	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., glass)	TOTAL
Metals and CPR based on weighted average	0.7%	5.8%	9.5%	84.0%	100.0%
AK Summary, Rev. 2	2%	3%	11%	84%	100%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined.
Glass	RF-440	1612	485	30%

RFP Dates of Generation for Examined Containers:	1971-1985

Average Fill Factor:	84%
Average Net Wt (pounds):	134

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Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN252 Leaded Rubber Debris Waste

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data (only IDC 339 examined to date)	451	3.10E-04	0.00E+00	1.13E-01	9.24E-03	3.89E-04	8.74E-01	3.81E-03	0.00E+00	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	1134	3.10E-04	0.00E+00	1.13E-01	9.24E-03	3.89E-04	8.74E-01	3.81E-03	0.00E+00	0.00E+00	0.00E+00

May be 'biased' because confirmatory data prior to rev. 3 of RPT-05 directed RTR to assume 50% lead and 50% rubber for leaded rubber gloves. Current direction is to assume 100% rubber for leaded rubber gloves.

Normalized Precentages		<1%	0%	11%	1%	<1%	87%	<1%	0%	0%	0%

Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		0	0	89	7	0	690	3	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., glass, absorbents)	Total	Total for waste form (rubber)
Metals and CPR based on WTS data	<0.1%	11.3%	87.8%	<0.1%	99.0%	87.4%
AK Summary, Rev. 2	<1%	<1%	88%	10%	98%	n/a

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% examined
Leaded Rubber Gloves and Aprons	RF-339	1030	451	44%
Leaded Rubber Gloves and Aprons	RF-463	107	0	0%
		1137	451	40%

RFP Dates of Generation for Examined Containers:	1973-1988

Average Fill Factor:	71%
Average Net Wt (pounds):	256

Values based on WTS query performed on 10/11/06

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN296 Non-Special Source Metal

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	2001	3.94E-01	2.44E-03	5.63E-01	1.63E-02	1.24E-02	3.46E-03	7.82E-03	1.02E-05	6.70E-06	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	4741	4.02E-01	2.62E-03	5.50E-01	1.79E-02	1.25E-02	4.39E-03	9.29E-03	1.33E-05	1.01E-05	0.00E+00

May be 'biased' because confirmatory data prior to rev. 5 of RPT-05 directed RTR to assume 'Other metal' when type of metal could not be identified by RTR.

Normalized Precentages		40%	<1%	55%	2%	1%	<1%	1%	<1%	<1%	0%

Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		190	1	260	8	6	2	4	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., glass, absorbents)	Total	Total for waste form (metals)
Metals and CPR based on weighted average	40.2%	55.3%	2.6%	1.8%	99.9%	95.5%
AK Summary, Rev. 1	57%	32%	6%	5%	100%	89%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% examined
Heavy Non-special Source Metal	RF-320	734	413	56%
Lead	RF-321	4	4	100%
Non-special Source Metal	RF-480	3157	929	29%
Leached Non-special Source Metal	RF-481	846	655	77%
		4741	2001	42%

RFP Dates of Generation for Examined Containers:	1971-1988

Average Fill Factor:	77%
Average Net Wt (pounds):	164

Values based on WTS query performed on 10-12-06

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN304 Mound Debris Waste

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	822	0.309	0.00E+00	2.30E-01	3.80E-01	1.20E-02	4.78E-03	6.15E-02	0.00E+00	0.00E+00	2.61E-03
Weighted average using % drums of each IDC and weight of WMPs for each IDC	977	0.283	1.12E-03	3.45E-01	1.48E-01	5.56E-02	8.36E-02	8.37E-02	2.23E-04	0.00E+00	1.45E-03
Normalized Precentages		28%	<1%	34%	15%	6%	8%	8%	<1%	0%	<1%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		77	0	95	40	15	23	23	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., glass, absorbent)	TOTAL
Metals and CPR based on weighted average	28.3%	34.6%	22.3%	14.9%	100.1%
AK Summary, Rev. 0	30%	20%	32%	18%	100%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined.
Rags, Paper, Wood	MD-801	35	31	89%
Dry Box Gloves and O-rings	MD-802	120	118	98%
Metal Equipment, Pipe, Valves, Etc.	MD-803	182	173	95%
Plastic, Tygon, Mani-Boots, Etc.	MD-804	221	213	96%
Asbestos Filters	MD-805	38	39	103%
Glass, Flasks, Sample Vials, Etc.	MD-810	12	13	108%
Glass Filters and Fiberglass	MD-813	3	2	67%
Graphite Waste	MD-814	2	2	100%
Equipment Drums, Non-combustible	MD-825	225	205	91%
Equipment Drums, Combustible	MD-827	5	8	160%
LSA<100 nCi/g Non-combustible	MD-848	134	18	13%
		977	822	84%

Mound Dates of Generation for Examined Containers:	1974-1985

Average Fill Factor:	62%
Average Net Wt (pounds):	78

12/17

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN510 Supercompacted Debris

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	5963	4.51E-01	4.25E-03	5.77E-03	2.02E-02	2.35E-01	6.70E-03	2.77E-01	4.55E-05	9.35E-06	2.41E-05
Normalized Precentages		45%	<1%	1%	2%	24%	1%	28%	<1%	<1%	<1%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		1000	9	13	45	520	15	610	0	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other debris (e.g., glass)	TOTAL
Metals and CPR based on weighted average	45.1%	1.0%	51.9%	2.0%	100.0%
AK Summary, Rev. 2	26.2%	10.4%	34.5%	28.9%	100.0%

	IDC	Drums in WSPF	Drums Examined	% Examined
Supercompacted Debris	BN-510	30,740	5963	19%

Average Fill Factor:	53%
Average Net Wt (pounds):	539

3/17

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN835 Solidified Acid/Caustic Waste

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	2229	1.34E-04	1.61E-06	0.00E+00	2.61E-04	2.65E-02	5.62E-05	1.34E-03	9.72E-01	0.00E+00	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	2576	1.38E-04	1.57E-06	0.00E+00	2.80E-04	2.68E-02	5.84E-05	1.42E-03	9.93E-01	0.00E+00	0.00E+00
Normalized Precentages		<1%	<1%	0%	<1%	3%	<1%	<1%	97%	0%	0%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		0	0	0	0	19	0	1	710	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., inorganic matrix)	TOTAL
Metals and CPR based on weighted average	0.0%	0.0%	2.8%	99.3%	102.2%
AK Summary, Rev. 1	CPR and Metals content was not presented in AK summary.				

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined
High Level Acid	MD-834	901	705	78%
High Level Caustic	MD-835	1675	1524	91%
		2576	2229	87%

Mound Dates of Generation for Examined Containers:	1974-1985

Average Fill Factor:	71%
Average Net Wt (pounds):	239

12/17

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BN836 High Level Sludge/Cement

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	1	1.1E-05	0.0E+00	2.2E-05	4.9E-04	3.1E-04	1.0E-05	1.1E-04	0.999	0.0E+00	0.0E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	4178	1.1E-05	0.0E+00	2.2E-05	4.9E-04	3.1E-04	1.0E-05	1.1E-04	0.999	0.0E+00	0.0E+00
Normalized Precentages		<1%	0%	<1%	<1%	<1%	<1%	<1%	100%	0%	0%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		0	0	0	1	0	0	0	1400	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., inorganic matrix, Portland cement)	TOTAL
Metals and CPR based on weighted average	0.0%	0.0%	0.0%	99.9%	100.0%
AK Summary, Rev. 0	0%	0%	4%	96%	100%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined.
High Level Sludge/Cement	MD-836	4178	2871	69%

Mound Dates of Generation for Examined Containers:	1974-1985

Average Fill Factor:	88%
Average Net Wt (pounds):	555

15/17

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BNINW216 First and Second Stage Sludge

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	8749	3.67E-03	4.15E-07	1.92E-04	1.30E-02	4.14E-05	4.12E-05	1.25E-03	9.82E-01	1.03E-04	0.00E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	21373	3.29E-03	3.92E-07	1.56E-04	1.18E-02	3.64E-05	3.25E-05	1.05E-03	9.83E-01	1.31E-04	0.00E+00
Normalized Precentages		<1%	<1%	<1%	1%	<1%	<1%	<1%	98%	<1%	0%
Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		4	0	0	13	0	0	1	1100	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., sludge)	TOTAL
Metals and CPR based on weighted average	0.3%	0.0%	0.1%	99.5%	100.0%
AK Summary, Rev. 4	<1%	<1%	10%	88%	98%

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined
First Stage Sludge	RF-001	9491	4934	52%
Second Stage Sludge	RF-002	11795	3741	32%
Solidified Sludge - Building 774	RF-800	87	74	85%
		21373	8749	41%

RFP Dates of Generation for Examined Containers:	1972-1988

Average Fill Factor:	83%
Average Net Wt (pounds):	417

16/17

Values based on WTS query performed on 10/11/06.

updated 3/12/07

Estimated Waste Material Parameter Weights per Unit Waste (lb/lb) for BNINW218 Building 374 Sludge

WMP weight per unit of waste	# OF DRUMS	IRON BASED METALS	ALUMINUM BASED METALS	OTHER METALS	OTHER INORGANIC MATERIALS	CELLU-LOSICS	RUBBER	PLASTIC WASTE	INORGANIC MATRIX	ORGANIC MATRIX	SOILS GRAVEL
All drums with WTS data	1980	4.6E-03	1.0E-06	6.3E-06	5.8E-02	6.9E-06	3.2E-05	5.5E-03	9.3E-01	0.0E+00	0.0E+00
Weighted average using % drums of each IDC and weight of WMPs for each IDC	2086	4.6E-03	1.0E-06	6.3E-06	5.8E-02	6.9E-06	3.1E-05	5.5E-03	9.3E-01	0.0E+00	0.0E+00

Normalized Precentages		<1%	<1%	<1%	6%	<1%	<1%	1%	93%	0%	0%

Density for TWBIR, kg/m^3 (based on normalized lb/lb values)		5	0	0	69	0	0	7	1100	0	0

Comparison with AK Summary CPR Table	Ferrous Metal	Non-Ferrous Metal	CPR	Other (e.g., sludge)	TOTAL
Metals and CPR based on weighted average	0.5%	0.0%	0.6%	98.9%	99.9%
AK Summary, Rev. 6	CPR and metals content was not presented in AK Summary.				

	IDC	Est. # of Drums (C535A)	# of Drums Examined	% Examined
Building 374 Dry Sludge	RF-007	1767	1684	95%
Solidified Direct Cementation Sludge	RF-803	36	24	67%
Building 374 Solidified Bypass Sludge	RF-807	283	272	96%
		2086	1980	95%

RFP Dates of Generation for Examined Containers:	1982-1988

Average Fill Factor:	80%
Average Net Wt (pounds):	440

3/12/07

Values based on WTS query performed on 10/11/06.

Updated 3/12/07

AMWTP
Advanced Mixed Waste Treatment Project

AK25

MANAGEMENT ASSESSMENT STATUS REPORT

Responsible Department	Responsible Manager:	Doc ID No.	Title	Risk	Record Status	Date Due
Waste Programs	Susan Peterman	65795	Schedule a MAR for Retrieval that assess the process and methods used to identify, evaluate and disposition "UNKNOWNs"		Closed - Cancelled	06/28/12
ES&H	William Goodspeed	67980	March Combustible Loading Assessment		Closed - Done	03/30/12
Waste Programs	Susan Peterman	68487	Assess TRU Programs procedures to ensure that compliant, efficient and effective operations are maintained ***CAS MAR***		Closed - Done	05/31/12
Waste Programs	James Zovi	68489	Assess the MLLW/LLW program to verify that new processes and procedures are compliant and effective ***DOE CAS MAR***		Closed - Done	07/12/12
ES&H	Kevin Mc Murtrey	70567	1st Quarter 2012 Surveillance Summary		Closed - Done	06/30/12
ES&H	Kevin Mc Murtrey	71601	2nd Quarter 2012 Surveillance Summary		Closed - Done	10/01/12

Management Assessment (68487)

The purpose of the MA is to assess WIPP TRU Programs procedures for efficiency and effectiveness, as well as compliance with programmatic requirements. The scope will be to specifically assess TRU Program documents that are reviewed and approved by the Carlsbad Field Office (CBFO). Consistent with requirements in the WIPP-WAP, AMWTP uses acceptable knowledge (AK) to initially characterize TRU waste which provides the basis for identifying TRU waste streams eligible for WIPP disposal. Therefore the compilation of AK, validation of characterization data, reconciliation, and certification are the primary areas of the TRU Program where data is reviewed and carefully scrutinized on a daily basis.

Document	Title	Production Impact	Open DCR	Related CAR Assigned in Last 12 months
MP-TRUW-8.1	Certification Plan for INL Transuranic Waste	None	None	None
INST-TRUW-8.1.1	Drum Assay Post-Maintenance Calibration and Verification	None	None	None
MP-TRUW-8.2	Quality Assurance Project Plan	None	DCR-10657	None
MP-TRUW-8.5	TRU Waste Certification	None	DCR-11010	None
MP-TRUW-8.8	Level I Data Validation	None	DCR-10658	61367
MP-TRUW-8.9	Level II Data Validation	None	None	61367
MP-TRUW-8.11	Data Reconciliation	None	DCR-11028	None
MP-TRUW-8.12	Waste Receipt and Shipping Inspection	None	None	None
MP-TRUW-8.13	Collection, Review, and Management of Acceptable Knowledge Documentation	None	None	None
MP-TRUW-8.14	Preparation of Waste Stream Profile Forms	None	None	None
MP-TRUW-8.17	Co-Located Core Sampling Control Charts	None	None	None
MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis	None	None	None
MP-TRUW-8.26	Reports to Management	None	None	None
MP-TRUW-8.34	WIPP Sample Transfers	None	None	None
MP-PRPL-22.1	Production Planning	None	None	None

FOR INFORMATION ONLY

History

The Advanced Mixed Waste Treatment Project (AMWTP) characterizes and certifies contact-handled (CH) transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP). The AMWTP has developed TRU documents to comply with the *WIPP Hazardous Waste Facility Permit, Attachment C, Waste Analysis Plan* (WIPP-WAP). Waste characterization activities include the following, although not all of these techniques are used on each container: AK, headspace gas sampling (HSGS) and analysis, homogeneous solids waste sampling and analysis, radio assay (RA), real-time radiography (RTR), and visual examination (VE).

Corrective Action Requests (CAR) against our program documents over the last 12 months has been reviewed. CAR 61367 was written due to a procedure non-compliance, with one action to revise MP-TRUW-8.8 and 8.9. The nature of the procedure change revision included adding steps to evaluate Type-3 NCRs when written for programmatic implications. The revision was made for clarification to the Operator over the concern with PCBs, not that the procedure was deficient. The Project has PCB Waste Streams, and non-PCB waste streams which have to be managed judiciously, particularly regarding Non-Conformance Management. In this particular event, several Operators over several weeks identified PCBs present during their scan, but failed to write an NCR per their procedure. In some of these cases the container passed all the way through validation without being questioned by the ITR, or the SPM. A contributing cause to this occurrence was the addition of a new IDC (604) which is PCB debris with a WMC of 5490. The fact that it was an approved IDC, and we had been working on a PCB waste stream (BN600) –was cause for some confusion on the part of the Operators and the project level office.

Management Assessment (65718) was also performed as a Corrective Action also to CAR 61367. The purpose of the MA was to evaluate the effectiveness of recent revisions to TRU Programs procedures (8.8, 8.9). This MA concluded the revisions to the noted procedures proved effective and efficient, with no findings.

The Table above was generated to reflect the criteria in which this MAR addressed, specifically in compliance, efficiency and effectiveness. In summary, TRU Program documents have proven to be very efficient and effective over the course of this project. Over the last twelve months only one corrective action report required a revision to our documents, albeit a minor revision. The open DCRs currently in existence were opened to improve existing process, which reflect due diligence of the TRU Program.

Idaho Treatment Group

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RECORD
CMC 10/11/2012

To: Eric Schweinsberg, Site Project Manager
Steve Carpenter, Acceptable Knowledge/Alternate Site Project Manager

From: Jason Kettel, Mathematics Subject Matter Expert JK

Date: October 11, 2012

Re: Acceptable Knowledge Accuracy Assessment for July 1, 2011 to June 30, 2012 – JHK-002-12

This memorandum transmits the Advanced Mixed Waste Treatment Project's Acceptable Knowledge accuracy assessment for the reporting period of July 1, 2011 through June 30, 2012.

JHK/at

Attachments

1. Acceptable Knowledge Accuracy Assessment by Waste Stream Profile for July 1, 2011 to June 30, 2012
2. Acceptable Knowledge Accuracy Assessment by Waste Generator for July 1, 2011 to June 30, 2012

cc: Sue Peterman
Lyle Ryman
Tim Venneman
Ed Vokoun

ACCEPTABLE KNOWLEDGE ACCURACY ASSESSMENT BY WASTE STREAM PROFILE FOR JULY 1, 2011 TO JUNE 30, 2012

This acceptable knowledge (AK) accuracy assessment has been prepared in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. The waste analysis plan (WAP) requires that accuracy of initial waste matrix code (WMC) and hazardous waste number (HWN) assignments be evaluated. The Waste Isolation Pilot Plant (WIPP) waste acceptance criteria (WAC) also require that the accuracy of AK-assigned radioisotopic contents is evaluated and that discrepancies identified during waste confirmation are reported as a measure of AK accuracy. The results of these evaluations are presented below in tabular form, organized by waste stream profile (WSP).

The AK accuracy assessment is based on data obtained from the AMWTP Waste Tracking System (WTS), the WIPP Waste Data System (WDS) and from information obtained from the AK record for the reporting period of July 1, 2011 to June 30, 2012 [e.g. acceptable knowledge resolutions (AKRs)]. Only containers which are associated with approved waste stream profiles and which were validated through the site project manager (SPM) level during the reporting period are included in the assessment.

Special Note Concerning the BN510 and BN510.1 Waste Streams

Container counts and any discrepancies with respect to the physical or radioisotopic contents of debris feed waste containers are associated with the IDCs of the containers at the time of site project manager (SPM) validation. IDCs are then correlated to their associated waste streams for reporting.

Waste Stream Profile BN510 was replaced with WSP BN510.1 due to changes in authorized feedstock and the addition of new HWNs into the supercompacted debris waste stream. All debris containers validated during the reporting period have been reported as BN510.1 containers for the purpose of WMC/WSP and radioisotopic accuracy assessments. In the case of HWN and certification accuracy, it is possible to separate the two waste streams because the final shipped container is the container of concern for these assessments.

Accuracy Evaluation of AK HWN Assignment

A summary of the accuracy of HWN assignments identified for WIPP-approved Advanced Mixed Waste Treatment Project (AMWTP) WSPs during the reporting period of July 1, 2011 through June 30, 2012 is presented in Table 1.

To determine HWN accuracy for the reporting period, the following approach was used.

1. WIPP-approved WSPs used during the reporting period were identified.
2. HWNs associated with WIPP-approved WSPs were identified.
3. The total number of containers used in the evaluation is the number of containers certified during the period of July 1, 2011 through June 30, 2012. These data were obtained from the WIPP WDS.
4. All acceptable knowledge resolutions (AKRs) written during the reporting period were reviewed to correlate HWN changes for WSPs.

The overall percent accuracy of AK HWN assignment for the reporting period is 100%.

Table 1. Accuracy of AK HWN Assignment by WSP.

WSP Number	AK-Assigned HWNs[a]	Characterization-Assigned HWNs	HWN Difference	HWNs in WSP	Certified Containers[b]	% Accuracy
BN510	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D029	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D029	0	17	15	100%
BN510.1	F001, F002, F004, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043	F001, F002, F004, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043	0	23	2,567	100%
BN004	F001, F002, F005, F006, F007, F009, D006, D007, D008, D011, D029	F001, F002, F005, F006, F007, F009, D006, D007, D008, D011, D029	0	11	38	100%
BN222	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	0	15	57	100%
BNINW216	F001, F002, F003, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	F001, F002, F003, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	0	16	669	100%
BNINW218	F001, F002, F005, F006, F007, F009, D006, D007, D008, D009, D010, D011, D032	F001, F002, F005, F006, F007, F009, D006, D007, D008, D009, D010, D011, D032	0	13	55	100%
BN600	D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009	D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009	0	24	22	100%
BN835	F001, F002, D007, D008, D009	F001, F002, D007, D008, D009	0	5	15	100%
BN836	F001, F002, F005, D004, D005, D006, D007, D008, D009, D010, D011	F001, F002, F005, D004, D005, D006, D007, D008, D009, D010, D011	0	11	31	100%
Total for all approved WSPs			**0**		**3,469**	**100%**
Overall HWN Assignment % Accuracy					**100%**	

a. HWNs are based on the HWNs identified for the initial development of WSPs (i.e., within the initial AK summary report document). Once a WSP is WIPP-approved, the HWNs are based on those HWNs identified within the WIPP-approved WSP at the beginning of the reporting period.

b. Number of certified containers from 7/1/11 to 6/30/12. The data were obtained from the WIPP WDS.

Accuracy Evaluation of AK Radioisotopic Content Assignment

A summary of the accuracy of AK radioisotopic content assignment for WIPP-approved AMWTP WSPs during the reporting period of July 1, 2011 through June 30, 2012 is presented in Table 2. This table includes the number of containers for each WSP and IDC that was validated through the SPM level for nondestructive assay examinations during the reporting period. These data were obtained from the AMWTP WTS. Because data generated from non-destructive assay of debris waste boxes is not validated through SPM level, debris waste boxes are not included in Table 2. However, IDC BN-508 represents the containers generated from these containers in the Treatment Facility.

As part of the overall radioisotopic accuracy evaluation, all AKRs written during the reporting period were reviewed to correlate discrepancies between the AK-assigned radioisotopic content and the radioisotopic content found during characterization activities at the AMWTP.

The overall percent accuracy of AK radioisotopic content assignment for the reporting period is 100%.

Table 2. Accuracy of AK Radioisotopic Content Assignment by WSP.

WSP Number	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
BN510.1	BC-201	0	N/A	0	100%
	BC-202	0	N/A	0	100%
	BN-508	6,756	N/A	0	100%
	MD-801	0	N/A	0	100%
	MD-802	1	N/A	0	100%
	MD-803	1	N/A	0	100%
	MD-804	1	N/A	0	100%
	MD-805	0	N/A	0	100%
	MD-810	0	N/A	0	100%
	MD-813	0	N/A	0	100%
	MD-814	2	N/A	0	100%
	MD-824	0	N/A	0	100%
	MD-825	3	N/A	0	100%
	MD-826	0	N/A	0	100%
	MD-827	0	N/A	0	100%
	MD-838	0	N/A	0	100%
	MD-847	8	N/A	0	100%
	MD-848	2	N/A	0	100%
	RF-010	0	N/A	0	100%
	RF-020	0	N/A	0	100%
	RF-030	0	N/A	0	100%
	RF-040	0	N/A	0	100%
	RF-050	0	N/A	0	100%
	RF-060	0	N/A	0	100%
	RF-070	0	N/A	0	100%
	RF-241	3	N/A	0	100%
	RF-300	21	N/A	0	100%
	RF-301	1	N/A	0	100%
	RF-302	3	N/A	0	100%
	RF-303	1	N/A	0	100%
	RF-310	0	N/A	0	100%
	RF-312	1	N/A	0	100%
	RF-320	38	N/A	0	100%
	RF-321	0	N/A	0	100%
	RF-328	0	N/A	0	100%
	RF-330	452	N/A	0	100%
	RF-335	13	N/A	0	100%
	RF-336	503	N/A	0	100%
	RF-337	136	N/A	0	100%
	RF-338	8	N/A	0	100%
	RF-339	19	N/A	0	100%
	RF-33A	0	N/A	0	100%
	RF-33B	0	N/A	0	100%
	RF-360	32	N/A	0	100%

WSP Number	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
	RF-368	0	N/A	0	100%
	RF-370	1	N/A	0	100%
	RF-371	38	N/A	0	100%
	RF-372	0	N/A	0	100%
	RF-374	100	N/A	0	100%
	RF-376	101	N/A	0	100%
	RF-377	0	N/A	0	100%
	RF-391	3	N/A	0	100%
	RF-392	4	N/A	0	100%
	RF-416	0	N/A	0	100%
	RF-430	7	N/A	0	100%
	RF-431	3	N/A	0	100%
	RF-440	49	N/A	0	100%
	RF-441	29	N/A	0	100%
	RF-442	11	N/A	0	100%
	RF-44A	0	N/A	0	100%
	RF-460	1	N/A	0	100%
	RF-463	4	N/A	0	100%
	RF-464	9	N/A	0	100%
	RF-480	162	N/A	0	100%
	RF-481	29	N/A	0	100%
	RF-488	0	N/A	0	100%
	RF-48A	0	N/A	0	100%
	RF-490	8	N/A	0	100%
	RF-491	0	N/A	0	100%
	RF-750	1,143	N/A	0	100%
	RF-760	9	N/A	0	100%
	RF-831	0	N/A	0	100%
	RF-832	0	N/A	0	100%
	RF-833	0	N/A	0	100%
	RF-900	95	N/A	0	100%
	RF-950	66	N/A	0	100%
	RF-960	89	N/A	0	100%
	RF-970	3	N/A	0	100%
	RL-712	0	N/A	0	100%
	RL-714	0	N/A	0	100%
	RL-716	0	N/A	0	100%
Subtotal AMWTP WSP BN510.1 (Excluding IDC BN-508)		**3,213**		**0**	**100%**
Total AMWTP WSP BN510.1		**9,969**		**0**	**100%**

WSP Number	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
BN004	RF-004	58	N/A	0	100%
	RF-744	0	N/A	0	100%
	RF-802	0	N/A	0	100%
Total AMWTP WSP BN004		**58**		**0**	**100%**
BN222	RF-292	8	N/A	0	100%
	RF-696	0	N/A	0	100%
	RF-818	0	N/A	0	100%
	RF-820	1	N/A	0	100%
Total AMWTP WSP BN222		**9**		**0**	**100%**
BNINW216	RF-001	0	N/A	0	100%
	RF-002	0	N/A	0	100%
	RF-741	7	N/A	0	100%
	RF-742	11	N/A	0	100%
	RF-800	1	N/A	0	100%
Total AMWTP WSP BNINW216		**19**		**0**	**100%**
BNINW218	RF-007	2	N/A	0	100%
	RF-803	0	N/A	0	100%
	RF-807	0	N/A	0	100%
Total AMWTP WSP BNINW218		**2**		**0**	**100%**
BN600	BN-600	40	N/A	0	100%
Total AMWTP WSP BN600		**40**		**0**	**100%**
BN835	MD-834	4	N/A	0	100%
	MD-835	9	N/A	0	100%
Total AMWTP WSP BN835		**13**		**0**	**100%**

WSP Number	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
BN836	MD-836	8	N/A	0	100%
Total AMWTP WSP BN836		**8**		**0**	**100%**
[redacted]					
Subtotal (Excluding IDCs BN-508 and BN-600)		**3,332**		**0**	**100%**
Total for All Approved WSPs		**10,118**		**0**	**100%**

Accuracy Evaluation of AK WMC and WSP Assignment

The WMC or WSP changes that were identified during the reporting period are summarized in Table 3.

The total number of RTR/VE SPM-validated containers for the reporting period of July 1, 2011 through June 30, 2012 was obtained from the AMWTP WTS. The WTS database also tracks IDC, WMC and waste stream changes. WTS data were used to obtain container counts relating to IDC, WMC or waste stream changes within the reporting period. Only validated containers associated with a WIPP-approved AMWTP Waste Stream Profile Form (by IDC) were used in the accuracy calculation. Because data generated from RTR of debris waste boxes is not validated through SPM level, debris waste boxes are not included in Table 3; IDC BN-508 represents the containers generated from these boxes in the Treatment Facility. The overall percent accuracy for WMC or WSP assignments for the reporting period is 98.61%.

Table 3. Accuracy of AK WMC and WSP Assignment by WSP.

WSP Number	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
BN510.1	BC-201	S5490	1	N/A	0	100.00%	0	100.00%
	BC-202	S5490	0	N/A	0	N/A	0	N/A
	BN-508	S5490	6,549	N/A	0	100.00%	0	100.00%
	MD-801	S5490	0	N/A	0	N/A	0	N/A
	MD-802	S5490	1	N/A	0	100.00%	0	100.00%
	MD-803	S5490	1	N/A	0	100.00%	0	100.00%
	MD-804	S5490	1	N/A	0	100.00%	0	100.00%
	MD-805	S5490	0	N/A	0	N/A	0	N/A
	MD-810	S5490	1	N/A	0	100.00%	0	100.00%
	MD-813	S5490	0	N/A	0	N/A	0	N/A
	MD-814	S5490	0	N/A	0	N/A	0	N/A
	MD-824	S5490	0	N/A	0	N/A	0	N/A
	MD-825	S5490	1	N/A	0	100.00%	0	100.00%
	MD-826	S5490	0	N/A	0	N/A	0	N/A
	MD-827	S5490	0	N/A	0	N/A	0	N/A
	MD-838	S5490	0	N/A	0	N/A	0	N/A
	MD-847	S5490	11	N/A	0	100.00%	0	100.00%
	MD-848	S5490	9	485,645,745	7	22.22%	1	88.89%
	RF-010	S5300	0	N/A	0	N/A	0	N/A
	RF-020	S5300	0	N/A	0	N/A	0	N/A
	RF-030	S5300	0	N/A	0	N/A	0	N/A
	RF-040	S5311	0	N/A	0	N/A	0	N/A
	RF-050	S5112	0	N/A	0	N/A	0	N/A
	RF-060	S5112	0	N/A	0	N/A	0	N/A
	RF-070	S5126	0	N/A	0	N/A	0	N/A
	RF-241	S5490	1	N/A	0	100.00%	0	100.00%
	RF-300	S5126	19	725	1	94.74%	1	94.74%
	RF-301	S5126	0	N/A	0	N/A	0	N/A
	RF-302	S5300	2	N/A	0	100.00%	0	100.00%
	RF-303	S5126	1	N/A	0	100.00%	0	100.00%
	RF-310	S5126	0	N/A	0	N/A	0	N/A
	RF-312	S5126	0	N/A	0	N/A	0	N/A

WSP Number	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
	RF-320	S5112	13	N/A	0	100.00%	0	100.00%
	RF-321	S5112	0	N/A	0	N/A	0	N/A
	RF-328	S5410	0	N/A	0	N/A	0	N/A
	RF-330	S5300	351	516,524,668, 682,697,733	17	95.16%	17	95.16%
	RF-335	S5410	9		0	100.00%	0	100.00%
	RF-336	S5300	443	498,618,736, 740,749	10	97.74%	10	97.74%
	RF-337	S5300	105	504,705,735, 737	5	95.24%	5	95.24%
	RF-338	S5410	7	754	1	85.71%	1	85.71%
	RF-339	S5311	3	N/A	0	100.00%	0	100.00%
	RF-33A	S5300	0	N/A	0	N/A	0	N/A
	RF-33B	S5300	0	N/A	0	N/A	0	N/A
	RF-360	S5410	23	746	1	95.65%	1	95.65%
	RF-368	S5190	0	N/A	0	N/A	0	N/A
	RF-370	S5190	3	684	2	33.33%	2	33.33%
	RF-371	S5123	55	512,527,562, 656,683,690, 703,730,734, 751	24	56.36%	24	56.36%
	RF-372	S5490	0	N/A	0	N/A	0	N/A
	RF-374	S5490	132	623,743,753	12	90.91%	12	90.91%
	RF-376	S5410	47	717	1	97.87%	1	97.87%
	RF-377	S5123	0	N/A	0	N/A	0	N/A
	RF-391	S5190	5	731	1	80.00%	1	80.00%
	RF-392	S5190	4	N/A	0	100.00%	0	100.00%
	RF-416	S5111	0	N/A	0	N/A	0	N/A
	RF-430	S5390	11	N/A	0	100.00%	0	100.00%
	RF-431	S5390	3	N/A	0	100.00%	0	100.00%
	RF-440	S5122	73	642,691,706, 708,713,714, 729	23	68.49%	23	68.49%
	RF-441	S5100	14	716	1	92.86%	1	92.86%
	RF-442	S5100	7	709	1	85.71%	1	85.71%
	RF-44A	S5122	0	N/A	0	N/A	0	N/A

WSP Number	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
	RF-460	S5390	2	N/A	0	100.00%	0	100.00%
	RF-463	S5311	13	N/A	0	100.00%	0	100.00%
	RF-464	S5300	9	707,712	2	77.78%	2	77.78%
	RF-480	S5112	173	570,647,689, 698,704,710, 744	14	91.91%	14	91.91%
	RF-481	S5112	5	N/A	0	100.00%	0	100.00%
	RF-488	S5122	0	N/A	0	N/A	0	N/A
	RF-48A	S5112	0	N/A	0	N/A	0	N/A
	RF-490	S5410	6	N/A	0	100.00%	0	100.00%
	RF-491	S5410	0	N/A	0	N/A	0	N/A
	RF-750	S5490	722	653,721,722, 723	5	99.31%	5	99.31%
	RF-760	S5490	2	N/A	0	100.00%	0	100.00%
	RF-831	S5300	0	N/A	0	N/A	0	N/A
	RF-832	S5300	0	N/A	0	N/A	0	N/A
	RF-833	S5300	0	N/A	0	N/A	0	N/A
	RF-900	S5390	106	603	1	99.06%	1	99.06%
	RF-950	S5490	47	742	1	97.87%	1	97.87%
	RF-960	S5490	80	546,550,558, 718,756	6	92.50%	6	92.50%
	RF-970	S5320	4	727	1	75.00%	1	75.00%
	RL-712	S5400	0	N/A	0	N/A	0	N/A
	RL-714	S5400	0	N/A	0	N/A	0	N/A
	RL-716	S5400	0	N/A	0	N/A	0	N/A
Subtotal AMWTP WSP BN510.1 (Excluding IDC BN-508)			**2,526**		**137**	**94.58%**	**131**	**94.81%**
Total AMWTP WSP BN510.1			**9,075**		**137**	**98.49%**	**131**	**98.56%**

WSP Number	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
BN004	RF-004	S3150	44	701	1	97.73%	1	97.73%
	RF-744	S3150	6	719,720	3	50.00%	3	50.00%
	RF-802	S3150	1	N/A	0	100.00%	0	100.00%
Total AMWTP WSP BN004			**51**		**4**	**92.16%**	**4**	**92.16%**
BN222	RF-292	S3150	2	N/A	0	100.00%	0	100.00%
	RF-696	S3150	0	N/A	0	N/A	0	N/A
	RF-818	S3150	0	N/A	0	N/A	0	N/A
	RF-820	S3150	0	N/A	0	N/A	0	N/A
Total AMWTP WSP BN222			**2**		**0**	**100%**	**0**	**100%**
BNINW216	RF-001	S3121	150	N/A	0	100.00%	0	100.00%
	RF-002	S3121	448	715	1	99.78%	1	99.78%
	RF-741	S3121	19	N/A	0	100.00%	0	100.00%
	RF-742	S3121	25	N/A	0	100.00%	0	100.00%
	RF-800	S3150	1	N/A	0	100.00%	0	100.00%
Total AMWTP WSP BNINW216			**643**		**1**	**100%**	**1**	**100%**
BNINW218	RF-007	S3121	6	N/A	0	100.00%	0	100.00%
	RF-803	S3150	0	N/A	0	N/A	0	N/A
	RF-807	S3121	0	N/A	0	N/A	0	N/A
Total AMWTP WSP BNINW218			**6**		**0**	**100%**	**0**	**100%**

WSP Number	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
BN600	BN-600	S5490	22	N/A	0	100.00%	0	100.00%
Total AMWTP WSP BN600			**22**		**0**	**100%**	**0**	**100%**
[redacted]								
BN835	MD-834	S3113	1	N/A	0	100.00%	0	100.00%
	MD-835	S3113	3	N/A	0	100.00%	0	100.00%
Total AMWTP WSP BN835			**4**		**0**	**100%**	**0**	**100%**
[redacted]								
BN836	MD-836	S3121	10	N/A	0	100.00%	0	100.00%
Total AMWTP WSP BN836			**10**		**0**	**100%**	**0**	**100%**
[redacted]								
Subtotal for all approved WSPs (Excluding IDC BN-508)			**3,242**		**142**	**95.62%**	**136**	**95.81%**
Totals for all approved WSPs			**9,813**		**142**	**98.55%**	**136**	**98.61%**

Accuracy Evaluation of WIPP-Certified Containers

The accuracy for AMWTP WIPP-certified containers during the reporting period is summarized in Table 4.

The number of containers certified for shipment by the AMWTP to WIPP during the reporting period of July 1, 2011 through June 30, 2012 was obtained from the WIPP WDS. All AMWTP WIPP-certified containers were confirmed by the WIPP confirmation team members.

The overall percent accuracy for AMWTP WIPP-certified containers for the reporting period is 100%.

Table 4. Accuracy of AMWTP WIPP-Certified Containers by WSP.

WSP Number	Certified Containers	Confirmation-Failed Containers	Confirmation % Accuracy
BN510	15	0	100%
BN510.1	2,567	0	100%
BN004	38	0	100%
BN222	57	0	100%
BNINW216	669	0	100%
BNINW218	55	0	100%
BN600	22	0	100%
BN835	15	0	100%
BN836	31	0	100%
TOTAL	**3,469**	**0**	**100%**

ACCEPTABLE KNOWLEDGE ACCURACY ASSESSMENT BY WASTE GENERATOR FOR JULY 1, 2010 TO JUNE 30, 2011

This acceptable knowledge (AK) accuracy assessment has been prepared in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. The waste analysis plan (WAP) requires that accuracy of initial waste matrix code (WMC) and hazardous waste number (HWN) assignments be evaluated. The Waste Isolation Pilot Plant (WIPP) waste acceptance criteria (WAC) also requires that the accuracy of AK-assigned radioisotopic contents is evaluated and that discrepancies identified during waste confirmation are reported as a measure of AK accuracy. The results of these evaluations are presented below in tabular form, organized by waste generation site.

The overall percent accuracy of AK HWN assignment for all generators is 100%.
The overall percent accuracy of AK radioisotopic content assignment for all generators is 100%.
The overall percent accuracy for Waste Matrix Code (WMC) or Waste Stream Profile (WSP) assignments for all generators is 98.61%.
The overall percent accuracy for Advanced Mixed Waste Treatment Project (AMWTP) WIPP-certified containers for all generators is 100%.

Special Note Concerning the BN510 and BN510.1 Waste Streams
Container counts and any discrepancies with respect to the physical or radioisotopic contents of debris feed waste containers are associated with the IDCs of the containers at the time of site project manager (SPM) validation. IDCs are then correlated to their associated waste streams for reporting.

Waste Stream Profile BN510 was replaced with WSP BN510.1 due to changes in authorized feedstock and the addition of new HWNs into the supercompacted debris waste stream. All debris containers validated during the reporting period have been reported as BN510.1 containers for the purpose of WMC/WSP and radioisotopic accuracy assessments. In the case of HWN and certification accuracy, it is possible to separate the two waste streams because the final shipped container is the container of concern for these assessments.

Table 1. Accuracy of AK HWN Assignment by Generator.

WSP Number	AK-Assigned HWNs	Characterization-Assigned HWNs	HWN Difference	HWNs in WSP	Certified Containers	% Accuracy
BN510	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D029	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D029	0	17	15	100%
BN510.1	F001, F002, F004, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043	F001, F002, F004, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, D037, D043	0	23	2,567	100%
BN600	D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009	D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D032, D034, D037, D043, F001, F002, F004, F005, F006, F007, F009	0	24	22	100%
Total for all AMWTP IDCs			**0**		**2,604**	**100%**
BN004	F001, F002, F005, F006, F007, F009, D006, D007, D008, D011, D029	F001, F002, F005, F006, F007, F009, D006, D007, D008, D011, D029	0	11	38	100%
BN222	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	F001, F002, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	0	15	57	100%
BNINW216	F001, F002, F003, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	F001, F002, F003, F005, F006, F007, F009, D004, D005, D006, D007, D008, D009, D010, D011, D022	0	16	669	100%
BNINW218	F001, F002, F005, F006, F007, F009, D006, D007, D008, D009, D010, D011, D032	F001, F002, F005, F006, F007, F009, D006, D007, D008, D009, D010, D011, D032	0	13	55	100%
Total for all Rocky Flats IDCs			**0**		**819**	**100%**

BN835	F001, F002, D007, D008, D009	F001, F002, D007, D008, D009	0	5	15	100%
BN836	F001, F002, F005, D004, D005, D006, D007, D008, D009, D010, D011	F001, F002, F005, D004, D005, D006, D007, D008, D009, D010, D011	0	11	31	100%
Total for all Mound IDCs			**0**		**46**	**100%**

Table 2. Accuracy of AK Radioisotopic Content Assignment by Generator.

Generator	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
AMWTP	BN-508	6,756	N/A	0	100%
	BN-600	40	N/A	0	100%
Total AMWTP IDCs		**6,796**		**0**	**100%**
Rocky Flats	RF-001	0	N/A	0	N/A
	RF-002	0	N/A	0	N/A
	RF-004	58	N/A	0	100%
	RF-007	2	N/A	0	100%
	RF-010	0	N/A	0	N/A
	RF-020	0	N/A	0	N/A
	RF-030	0	N/A	0	N/A
	RF-040	0	N/A	0	N/A
	RF-050	0	N/A	0	N/A
	RF-060	0	N/A	0	N/A
	RF-070	0	N/A	0	N/A
	RF-241	3	N/A	0	100%
	RF-292	8	N/A	0	100%
	RF-300	21	N/A	0	100%
	RF-301	1	N/A	0	100%
	RF-302	3	N/A	0	100%
	RF-303	1	N/A	0	100%
	RF-310	0	N/A	0	N/A
	RF-312	1	N/A	0	100%
	RF-320	38	N/A	0	100%
	RF-321	0	N/A	0	N/A
	RF-328	0	N/A	0	N/A
	RF-330	452	N/A	0	100%
	RF-335	13	N/A	0	100%
	RF-336	503	N/A	0	100%
	RF-337	136	N/A	0	100%
	RF-338	8	N/A	0	100%
	RF-339	19	N/A	0	100%
	RF-33A	0	N/A	0	N/A
	RF-33B	0	N/A	0	N/A
	RF-360	32	N/A	0	100%
	RF-368	0	N/A	0	N/A
	RF-370	1	N/A	0	100%
	RF-371	38	N/A	0	100%
	RF-372	0	N/A	0	N/A
	RF-374	100	N/A	0	100%
	RF-376	101	N/A	0	100%
	RF-377	0	N/A	0	N/A
	RF-391	3	N/A	0	100%
	RF-392	4	N/A	0	100%
	RF-416	0	N/A	0	N/A

Generator	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
	RF-430	7	N/A	0	100%
	RF-431	3	N/A	0	100%
	RF-440	49	N/A	0	100%
	RF-441	29	N/A	0	100%
	RF-442	11	N/A	0	100%
	RF-44A	0	N/A	0	N/A
	RF-460	1	N/A	0	100%
	RF-463	4	N/A	0	100%
	RF-464	9	N/A	0	100%
	RF-480	162	N/A	0	100%
	RF-481	29	N/A	0	100%
	RF-488	0	N/A	0	N/A
	RF-48A	0	N/A	0	N/A
	RF-490	8	N/A	0	100%
	RF-491	0	N/A	0	N/A
	RF-696	0	N/A	0	N/A
	RF-741	7	N/A	0	100%
	RF-742	11	N/A	0	100%
	RF-744	0	N/A	0	N/A
	RF-750	1,143	N/A	0	100%
	RF-760	9	N/A	0	100%
	RF-800	1	N/A	0	100%
	RF-802	0	N/A	0	N/A
	RF-803	0	N/A	0	N/A
	RF-807	0	N/A	0	N/A
	RF-818	0	N/A	0	N/A
	RF-820	1	N/A	0	100%
	RF-831	0	N/A	0	N/A
	RF-832	0	N/A	0	N/A
	RF-833	0	N/A	0	N/A
	RF-900	95	N/A	0	100%
	RF-950	66	N/A	0	100%
	RF-960	89	N/A	0	100%
	RF-970	3	N/A	0	100%
Total Rocky Flats IDCs		**3,283**		**0**	

Generator	IDC	SPM-Validated Containers	AKR Number	Containers affected by AKR	% Accuracy
Mound	MD-801	0	N/A	0	N/A
	MD-802	1	N/A	0	100%
	MD-803	1	N/A	0	100%
	MD-804	1	N/A	0	100%
	MD-805	0	N/A	0	N/A
	MD-810	0	N/A	0	N/A
	MD-813	0	N/A	0	N/A
	MD-814	2	N/A	0	100%
	MD-824	0	N/A	0	N/A
	MD-825	3	N/A	0	100%
	MD-826	0	N/A	0	N/A
	MD-827	0	N/A	0	N/A
	MD-834	4	N/A	0	100%
	MD-835	9	N/A	0	100%
	MD-836	8	N/A	0	100%
	MD-838	0	N/A	0	N/A
	MD-847	8	N/A	0	100%
	MD-848	2	N/A	0	100%
Total Mound IDCs		**39**		**0**	**100%**
Battelle Columbus	BC-201	0	N/A	0	N/A
	BC-202	0	N/A	0	N/A
Total Battelle Columbus IDCs		**0**		**0**	**N/A**
Hanford	RL-712	0	N/A	0	N/A
	RL-714	0	N/A	0	N/A
	RL-716	0	N/A	0	N/A
Total Hanford IDCs		**0**		**0**	**N/A**

Table 3. Accuracy of AK WMC and WSP Assignment by Generator.

Generator	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
AMWTP	BN-508	S5490	6549	N/A	0	100%	0	100%
	BN-600	S5490	22	N/A	0	100%	0	100%
Total AMWTP IDCs			**6,571**		**0**	**100%**	**0**	**100%**
Rocky Flats	RF-001	S3121	150	N/A	0	100.00%	0	100.00%
	RF-002	S3121	448	715	1	99.78%	1	99.78%
	RF-004	S3150	44	701	1	97.73%	1	97.73%
	RF-007	S3121	6	N/A	0	100.00%	0	100.00%
	RF-010	S5300	0	N/A	0	N/A	0	N/A
	RF-020	S5300	0	N/A	0	N/A	0	N/A
	RF-030	S5300	0	N/A	0	N/A	0	N/A
	RF-040	S5311	0	N/A	0	N/A	0	N/A
	RF-050	S5112	0	N/A	0	N/A	0	N/A
	RF-060	S5112	0	N/A	0	N/A	0	N/A
	RF-070	S5126	0	N/A	0	N/A	0	N/A
	RF-241	S5490	1	N/A	0	100.00%	0	100.00%
	RF-292	S3150	2	N/A	0	100.00%	0	100.00%
	RF-300	S5126	19	725	1	94.74%	1	94.74%
	RF-301	S5126	0	N/A	0	N/A	0	N/A
	RF-302	S5300	2	N/A	0	100.00%	0	100.00%
	RF-303	S5126	1	N/A	0	100.00%	0	100.00%
	RF-310	S5126	0	N/A	0	N/A	0	N/A
	RF-312	S5126	0	N/A	0	N/A	0	N/A
	RF-320	S5112	13	N/A	0	100.00%	0	100.00%
	RF-321	S5112	0	N/A	0	N/A	0	N/A
	RF-328	S5410	0	N/A	0	N/A	0	N/A
	RF-330	S5300	351	516,524,668, 682,697,733	17	95.16%	17	95.16%

Generator	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
	RF-335	S5410	9	N/A	0	100.00%	0	100.00%
	RF-336	S5300	443	498,618,736, 740,749	10	97.74%	10	97.74%
	RF-337	S5300	105	504,705,735, 737	5	95.24%	5	95.24%
	RF-338	S5410	7	754	1	85.71%	1	85.71%
	RF-339	S5311	3	N/A	0	100.00%	0	100.00%
	RF-33A	S5300	0	N/A	0	N/A	0	N/A
	RF-33B	S5300	0	N/A	0	N/A	0	N/A
	RF-360	S5410	23	746	1	95.65%	1	95.65%
	RF-368	S5190	0	N/A	0	N/A	0	N/A
	RF-370	S5190	3	684	2	33.33%	2	33.33%
	RF-371	S5123	55	512,527,562, 656,683,690, 703,730,734, 751	24	56.36%	24	56.36%
	RF-372	S5490	0	N/A	0	N/A	0	N/A
	RF-374	S5490	132	623,743,753	12	90.91%	12	90.91%
	RF-376	S5410	47	717	1	97.87%	1	97.87%
	RF-377	S5123	0	N/A	0	N/A	0	N/A
	RF-391	S5190	5	731	1	80.00%	1	80.00%
	RF-392	S5190	4	N/A	0	100.00%	0	100.00%
	RF-416	S5111	0	N/A	0	N/A	0	N/A
	RF-430	S5390	11	N/A	0	100.00%	0	100.00%
	RF-431	S5390	3	N/A	0	100.00%	0	100.00%
	RF-440	S5122	73	642,691,706, 708,713,714, 729	23	68.49%	23	68.49%
	RF-441	S5100	14	716	1	92.86%	1	92.86%
	RF-442	S5100	7	709	1	85.71%	1	85.71%
	RF-44A	S5122	0	N/A	0	N/A	0	N/A
	RF-460	S5390	2	N/A	0	100.00%	0	100.00%

Generator	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
	RF-463	S5311	13	N/A	0	100.00%	0	100.00%
	RF-464	S5300	9	707,712	2	77.78%	2	77.78%
	RF-480	S5112	173	570,647,689, 698,704,710, 744	14	91.91%	14	91.91%
	RF-481	S5112	5	N/A	0	100.00%	0	100.00%
	RF-488	S5122	0	N/A	0	N/A	0	N/A
	RF-48A	S5112	0	N/A	0	N/A	0	N/A
	RF-490	S5410	6	N/A	0	100.00%	0	100.00%
	RF-491	S5410	0	N/A	0	N/A	0	N/A
	RF-696	S3150	0	N/A	0	N/A	0	N/A
	RF-741	S3121	19	N/A	0	100.00%	0	100.00%
	RF-742	S3121	25	N/A	0	100.00%	0	100.00%
	RF-744	S3150	6	719,720	3	50.00%	3	50.00%
	RF-750	S5490	722	653,721,722, 723	5	99.31%	5	99.31%
	RF-760	S5490	2	N/A	0	100.00%	0	100.00%
	RF-800	S3150	1	N/A	0	100.00%	0	100.00%
	RF-802	S3150	1	N/A	0	100.00%	0	100.00%
	RF-803	S3150	0	N/A	0	N/A	0	N/A
	RF-807	S3121	0	N/A	0	N/A	0	N/A
	RF-818	S3150	0	N/A	0	N/A	0	N/A
	RF-820	S3150	0	N/A	0	N/A	0	N/A
	RF-831	S5300	0	N/A	0	N/A	0	N/A
	RF-832	S5300	0	N/A	0	N/A	0	N/A
	RF-833	S5300	0	N/A	0	N/A	0	N/A
	RF-900	S5390	106	603	1	99.06%	1	99.06%
	RF-950	S5490	47	742	1	97.87%	1	97.87%
	RF-960	S5490	80	546,550,558, 718,756	6	92.50%	6	92.50%
	RF-970	S5320	4	727	1	75.00%	1	75.00%

Generator	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
Total Rocky Flats IDCs			**3,202**		**135**	**95.78%**	**135**	**95.78%**
Mound	MD-801	S5490	0	N/A	0	N/A	0	N/A
	MD-802	S5490	1	N/A	0	100.00%	0	100.00%
	MD-803	S5490	1	N/A	0	100.00%	0	100.00%
	MD-804	S5490	1	N/A	0	100.00%	0	100.00%
	MD-805	S5490	0	N/A	0	N/A	0	N/A
	MD-810	S5490	1	N/A	0	100.00%	0	100.00%
	MD-813	S5490	0	N/A	0	N/A	0	N/A
	MD-814	S5490	0	N/A	0	N/A	0	N/A
	MD-824	S5490	0	N/A	0	N/A	0	N/A
	MD-825	S5490	1	N/A	0	100.00%	0	100.00%
	MD-826	S5490	0	N/A	0	N/A	0	N/A
	MD-827	S5490	0	N/A	0	N/A	0	N/A
	MD-834	S3113	1	N/A	0	100.00%	0	100.00%
	MD-835	S3113	3	N/A	0	100.00%	0	100.00%
	MD-836	S3121	10	N/A	0	100.00%	0	100.00%
	MD-838	S5490	0	N/A	0	N/A	0	N/A
	MD-847	S5490	11	N/A	0	100.00%	0	100.00%
	MD-848	S5490	9	485,645,745	7	22.22%	1	88.89%
Total Mound IDCs			**39**		**7**	**82.05%**	**1**	**97.44%**

Generator	IDC	WMC	Validated Containers Examined	AKR No(s).	IDC Changed Containers	IDC % Accuracy	WMC/WS Changed Containers	WMC/WS % Accuracy
Battelle Columbus	BC-201	S5490	1	N/A	0	100.00%	0	100.00%
	BC-202	S5490	0	N/A	0	N/A	0	N/A
Total Battelle Columbus IDCs			**1**		**0**	**100%**	**0**	**100%**
Hanford	RL-712	S5400	0	N/A	0	N/A	0	N/A
	RL-714	S5400	0	N/A	0	N/A	0	N/A
	RL-716	S5400	0	N/A	0	N/A	0	N/A
Total Hanford IDCs			**0**		**0**	**N/A**	**0**	**N/A**

Table 4. Accuracy of AMWTP WIPP-Certified Containers by Generator.

WSP Number	Certified Containers	Confirmation-Failed Containers	Confirmation % Accuracy
BN510	15	0	100%
BN510.1	2,567	0	100%
BN600	22	0	100%
AMWTP TOTAL	**2,604**	**0**	**100%**
BN004	38	0	100%
BN222	57	0	100%
BNINW216	669	0	100%
BNINW218	55	0	100%
Rocky Flats TOTAL	**819**	**0**	**100%**
BN835	15	0	100%
BN836	31	0	100%
Mound TOTAL	**46**	**0**	**100%**

AMWTP
Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 09:09

Batch Type Real Time Radiography
Batch Report No. RTR06-00548
Batch Id RTR06-00548
Open Date 29-NOV-06 21:50:16
Close Date 02-DEC-06 22:27:23
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10130302	MD-836	0000039236	29-NOV-06 21:50:16	Original	P	MICHAEL RICKS
10126462	MD-836	0000039238	29-NOV-06 22:12:30	Original	P	MICHAEL RICKS
10130294	MD-836	0000039241	29-NOV-06 22:27:41	Original	P	MICHAEL RICKS
10126460	MD-836	0000039243	29-NOV-06 22:43:12	Original	P	MICHAEL RICKS
10124869	RF-002	0000039285	02-DEC-06 13:43:24	Original	P	MARK SORENSON
10123179	RF-292	0000039287	02-DEC-06 14:09:08	Original	P	MARK SORENSON
10124573	RF-002	0000039289	02-DEC-06 14:29:04	Original	P	MARK SORENSON
10124532	MD-836	0000039291	02-DEC-06 14:42:46	Original	P	MARK SORENSON
10124539	MD-836	0000039292	02-DEC-06 15:28:19	Original	P	MARK SORENSON
10124534	MD-836	0000039294	02-DEC-06 15:48:02	Original	P	MARK SORENSON
10124530	MD-836	0000039295	02-DEC-06 16:00:32	Original	P	MARK SORENSON
10124541	MD-836	0000039297	02-DEC-06 16:14:40	Original	P	MARK SORENSON
10124539	MD-836	0000039300	02-DEC-06 17:13:03	Replicate / Duplicate	P	ADAIRE VAUGHN
10124534	MD-836	0000039301	02-DEC-06 17:27:17	RTR OIO	P	ADAIRE VAUGHN
10130076	RF-002	0000039303	02-DEC-06 18:11:38	Original	P	MARK SORENSON
10130089	RF-004	0000039305	02-DEC-06 18:25:02	Original	P	MARK SORENSON
10130087	RF-001	0000039306	02-DEC-06 19:20:15	Original	P	CHRIS NOWACKI
10130074	RF-371	0000039307	02-DEC-06 19:58:07	Original	P	JASON HAYNE
10119724	RF-001	0000039310	02-DEC-06 20:46:30	Original	P	JASON HAYNE
10123361	MD-836	0000039311	02-DEC-06 20:58:02	Original	P	CHRIS NOWACKI
10123139	MD-836	0000039313	02-DEC-06 22:12:17	Original	P	JASON HAYNE
10123371	MD-836	0000039315	02-DEC-06 22:27:23	Original	P	JASON HAYNE
10124541	MD-836	0000071850	08-MAR-07 11:51:01	Supplemental	P	CHRIS NOWACKI
10123139	MD-836	0000072246	10-MAR-07 13:05:30	Supplemental	P	CHRIS NOWACKI

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
CSIMMONS	13-DEC-06 10:18:05	Performing ITR level I validations per MP-TRUW- 8.8.
CSIMMONS	13-DEC-06 10:18:05	Information: Container 10137004 isn't properly vented. The filter in this drum goes into absorbent material and the vent holes are not free and clear. NCR 24833 was generated for this condition.
CSIMMONS	13-DEC-06 10:18:05	Container 10123361: The recording id and start side was entered incorrectly into WTS. The correct id is 1RTR06-00186 start side B. Please review and make changes as needed.
CSIMMONS	13-DEC-06 10:18:05	Container 10130087: Although an NCR was generated for the filter being wrapped in plastic and the drum not being properly vented the filter does penetrate the 90-mil liner therefore the liner puncture question should be answered yes. Please review and make changes as needed
CSIMMONS	13-DEC-06 10:18:05	Sent batch to operations for rework.
CNOWACKI	13-DEC-06 10:24:37	Rework complete
CSIMMONS	13-DEC-06 10:29:45	Reviewed rework.
CSIMMONS	13-DEC-06 10:29:45	Promoted batch to TS level.
DMARQUARDT	16-DEC-06 13:55:12	Reviewed and validated.
DMARQUARDT	16-DEC-06 13:55:12	Note: ITR batch comment for drum 10123361. ITR mistakenly entered 1RTR06-00186. The correct recording ID is 1RTR06-00286 side B. The operator realized this and performed the required rework. No action required.
DMARQUARDT	16-DEC-06 13:55:12	e-sig to promote to Level 1 QA.
DMARQUARDT	16-DEC-06 14:20:47	Reviewed and validated.
DMARQUARDT	16-DEC-06 14:20:47	Note: On hold for NCR 24833. Promote when NCR will allow.
RBTHOMPSON	18-DEC-06 07:10:28	Reviewed and approved the batch. Promoted to SQAO.
VBOWMAN	18-DEC-06 12:59:11	Information only: The ITR batch comment for container 10137004 should have stated 10130074.
VBOWMAN	18-DEC-06 13:01:58	Promote to SPM.
VBOWMAN	18-DEC-06 13:01:58	SQAO validation is complete.
LHACKNEY	29-DEC-06 13:48:47	Promote to SPM. No further SQAO validation performed. Original validation by V.Bowman stands.
LHACKNEY	29-DEC-06 13:48:47	Promote to SPM.
PFETZER	05-JAN-07 07:31:20	Promotel.
PFETZER	05-JAN-07 07:32:36	Promote.

**********RTR/VE Update (RVU) Comments**********

Written By	Date	Comment

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
631010	CSIMMONS	13-DEC-2006 10:18:05	Sent batch to operations for rework.
631018	CNOWACKI	13-DEC-2006 10:24:37	Rework complete
631030	CSIMMONS	13-DEC-2006 10:29:45	Promoted batch to TS level.
634312	DMARQUARDT	16-DEC-2006 13:55:13	e-sig to promote to Level 1 QA.
635772	RBTHOMPSON	18-DEC-2006 07:10:30	Reviewed and approved the batch. Promoted to SQAO.
646767	LHACKNEY	29-DEC-2006 13:48:47	Promote to SPM.
652713	PFETZER	05-JAN-2007 07:31:21	Promotel.
652716	PFETZER	05-JAN-2007 07:32:37	Promote.
721235	RWALKER	21-MAR-2007 14:12:52	Demoted RVU for rework.
721257	RWALKER	21-MAR-2007 14:36:36	Demoted RVU for rework.

**********RTR/VE Update (RVU) E-Signature History**********

Approval ID	User ID	Signature Date	Comment

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

RTR Analysis Report

Date: 20-Sep-2012

Time: 09:11

Batch Id RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000039313

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-DEC-2006 22:12 **Gross Weight** 637.245 Lbs **Net Weight** 558.645 Lbs

Equipment Z-213-101 **Waste Matrix Code** S3121 **IDC** MD-836 High Level Sludge/Cement

Recording Id 1RTR06-00287 **Procedure Id** INST-OI-12 **Revision** 29 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-MAR-1975 00:00 **Operator** JHAYNE

Result Comment Waste appears to consist mainly of sludge. No prohibited items. Disposition wipp accept.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 0

Fill Factor 90

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** 0 pints

Liquid Between Liner & Drum 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints

Prohibited Liquids Present No

Internal Container with Liquid

LA Candidate No

Containerized Liquid No

Containerized Liquid Amt 0 pints

Comment

Comment

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects?

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
1/4 Inch Plywood Spacer (Packaging)	1.000	EACH	1.200	1.200
1/2 Inch Plywood Spacer (Packaging)	1.000	EACH	2.400	2.400

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

RTR Analysis Report

Batch Id RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000039313

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	558.645
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	3.600

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
620899	JHAYNE	02-DEC-2006 22:12	

-----End of RTR Analysis Report-----

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 13-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report and QA documentation complete with the following: o RTR Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412) o TS checklist (Form-1413) o QA checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491) o Associated NCRs o Audio/Video Recording References?	No		This batch was validated electronically.TS and QA Checklists will be completed at applicable level of validation.
2. Are there 20 containers or less in the batch?	Yes		
3. Has the E-signature History review been performed?	Yes		
4. Was the Image Quality Indicator (IQI) satisfactory for every container in the batch?	Yes		
5. Does every drum reported in the batch reference an audio/video recording?	Yes		
6. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
7. Were weights estimated for the (12) WAP waste material parameters? o Does the packaging weight plus the net weight equal the gross weight of the drum? o Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
8. Has the description of rigid liners and layers of confinement been properly documented?	No		See batch comments.
9. Was the presence or absence of prohibited items properly documented?	Yes		
10. If prohibited items were identified, have appropriate NCRs been generated?	Yes		
11. Were the drums examined between October and April in compliance with the preheat requirements?	Yes		
12. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
13. Was the data generated in a technically correct manner using the correct revision of INST-OI-012, Real-Time Radiography Operations, i.e., the correct revision of the procedure is documented on all analysis reports.	Yes		INST-OI-12
14. Was a replicate scan performed by an independent operator on at least one drum per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the original examination? o If Replicate Scan is from a different batch, record the batch number in the comment section of this checklist.	Yes		The replicate scan was preformed on container 10124539 on 12/02/06. There were no differences between exams.

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 13-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.			
15. Was an Operator Independent Observation (OIO) (not the replicate) performed by a qualified operator, other than the individual who performed the original examination, on at least one drum per day or once per batch? If so, o If OIO is from a different batch, record the batch number in the comment section of this checklist. o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.	Yes		The OIO was preformed on container 10124534 on 12/02/06.There were no differences between exams.
16. Were any NCRs generated for drums containing prohibited items, or any non-conforming conditions that failed to meet Data Quality Objectives or Quality Assurance Objectives? o Include the NCRs, as appropriate, in the Batch Data Report.	Yes		NCRs: 24686, 24693,and 24833

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 13-DEC-06 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report and QA documentation complete with the following: o RTR Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412) o TS checklist (Form-1413) o QA checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491) o Associated NCRs o Audio/Video Recording References?	No		This batch was validated electronically.TS and QA Checklists will be completed at applicable level of validation.
2. Are there 20 containers or less in the batch?	Yes		
3. Has the E-signature History review been performed?	Yes		
4. Was the Image Quality Indicator (IQI) satisfactory for every container in the batch?	Yes		
5. Does every drum reported in the batch reference an audio/video recording?	Yes		
6. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
7. Were weights estimated for the (12) WAP waste material parameters? o Does the packaging weight plus the net weight equal the gross weight of the drum? o Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
8. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
9. Was the presence or absence of prohibited items properly documented?	Yes		
10. If prohibited items were identified, have appropriate NCRs been generated?	Yes		
11. Were the drums examined between October and April in compliance with the preheat requirements?	Yes		
12. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
13. Was the data generated in a technically correct manner using the correct revision of INST-OI-012, Real-Time Radiography Operations, i.e., the correct revision of the procedure is documented on all analysis reports.	Yes		INST-OI-12
14. Was a replicate scan performed by an independent operator on at least one drum per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the original examination? o If Replicate Scan is from a different batch, record the	Yes		The replicate scan was preformed on container 10124539 on 12/02/06. There were no differences between exams.

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 13-DEC-06 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
batch number in the comment section of this checklist. o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.			
15. Was an Operator Independent Observation (OIO) (not the replicate) performed by a qualified operator, other than the individual who performed the original examination, on at least one drum per day or once per batch? If so, o If OIO is from a different batch, record the batch number in the comment section of this checklist. o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.	Yes		The OIO was preformed on container 10124534 on 12/02/06.There were no differences between exams.
16. Were any NCRs generated for drums containing prohibited items, or any non-conforming conditions that failed to meet Data Quality Objectives or Quality Assurance Objectives? o Include the NCRs, as appropriate, in the Batch Data Report.	Yes		NCRs: 24686, 24693,and 24833

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer DAVE MARQUARDT **Approval Level** Technical Supervisor Reviewer

Approval Date 16-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Has the independent technical review been performed and documented by signature release?	Yes		
2. Is the Batch Data Report and QA documentation complete? o RTR Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412) o TS checklist (Form-1413) o QA checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491), as applicable o Associated NCRs o Audio/Video Recording References?	Yes		All applicable data is included for this level of validation.
3. Has the E-signature History Review been performed?	Yes		
4. Did the operator verify for each container in the batch that the item description codes, waste matrix codes and waste stream description are consistent with the container contents? o Did the operator recommend the correct IDC/WMC change? o Was an NCR generated, when appropriate?	Yes		NO IDC/WMC changes were recommended.
5. Is the data technically reasonable based on the technique used?	Yes		
6. Were any NCRs generated for drums containing prohibited items, or any non-conforming conditions that failed to meet Data Quality Objectives or Quality Assurance Objectives ? o Include the NCRs, as appropriate, in the Batch Data Report.	Yes		NCR's 24686, 24693 and 24833.

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer ROE THOMPSON **Approval Level** Quality Assurance Reviewer

Approval Date 18-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Has the Independent Technical Reviewer and Technical Supervisor reviews been performed and documented by signature release?	Yes		
2. Is the Batch Data Report and QA documentation complete with the following: o RTR Batch Cover Sheet (Form-1491) o Table of Contents (manual review only) o RTR Analysis Reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR Checklist (Form-1412) o TS Checklist (Form-1413) o QA Checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491), as applicable o Associated NCRs o Audio/Video Recording References?	Yes		
3. Was the absence or presence of prohibited items properly identified?	Yes		
4. Were waste material parameters documented properly?	Yes		
5. Are all raw data signed and dated in reproducible black or blue ink or unalterable electronic signatures?	Yes		
6. Are all data recorded clearly, legibly, and accurately in field and laboratory records (bench sheets, logbooks)?	N/A		
7. Are all changes to original data or forms made by a single line through incorrect entry, initialed, and dated by the person making the changes or documented in E-signature History?	Yes		
8. Were all data changes adequately justified?	Yes		
9. Have all data been transferred and reduced from field records completely and accurately?	N/A		
10. Were the RTR QAOs satisfactorily met? o Precision: A valid IQI was confirmed for containers in the batch. o Completeness: An audio/video medium of the RTR examination and a validated RTR data form obtained for 100% of the waste containers. o Comparability: o RTR operator training and qualification is current as specified in MP-RTQP-14.4 o Data was collected using current methods and procedures	Yes		
11. Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the original examination? o Did the ITR complete a comparison of the original and replicate scans?	Yes		
12. Was an independent observation (not the replicate) performed on at least one container per day or once per	Yes		

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer ROE THOMPSON **Approval Level** Quality Assurance Reviewer

Approval Date 18-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
batch by a qualified operator, other than the individual who performed the original examination?			
13. Were the independent observation and replicate comparison satisfactory?	Yes		
14. Was all rework identified through the independent observation or replicate comparison verified as complete?	N/A		No rework was performed as a result of the Replicate or OIO.
15. Are NCRs included as appropriate for this Batch Data Report?	Yes		NCR's 24686, 24693 and 24833.

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer LEANNE HACKNEY **Approval Level** Site Project Quality Assurance Officer

Approval Date 29-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, Table B3-11	INST-OI-12, Rev. 29 FC-3, as referenced on the RTR Analysis Report.
(2) Do (Does) the individual drum reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, (f) signature and date of examination?	Yes	MP-TRUW-8.2, Table B3-11	
(3) Is there verification that the physical form matches the waste stream description and waste matrix code?	Yes	MP-TRUW-8.2, Table B3-11	
(4) Have the IDC, Waste Matrix Code (WMC), and/or waste stream for all drums in the batch remained the same as originally assigned? If not, note the drum number in the comment field and notify SPM-Acceptable Knowledge (AK) if NCR does not exist on the WMC and IDC change.	Yes	MP-TRUW-8.2, B-3c and B4-3d (1)	
(5) Is the description of container contents detailed enough to provide verification of estimated weights for the waste material parameters identified?	Yes	MP-TRUW-8.2, B1-3a, B3-1 and B3-11a	
(6) Has a clear description of liners and layers of containment been given (if possible) for all drums in the batch?	Yes	MP-TRUW-8.2, Table B3-11	
(7) For each drum in the batch, was the presence or absence of prohibited items properly identified? If residual liquid exists in the drum, is an estimate of quantity given?	Yes	MP-TRUW-8.2, B-1c	
(8) Was the Imaging Quality Indicator (IQI) satisfactory for every container in the batch?	Yes	MP-TRUW-8.2, B3-4	
(9) Was a replicate scan performed by an independent operator on at least one drum per day or once per testing batch, whichever is less frequent , by a qualified radiography operator other than the individual who performed the original examination?	Yes	MP-TRUW-8.2, B1-3b	Replicate exam was performed on waste container 10124539 on 12/02/06. No differences noted. No issues or concerns.
(10) Has an independent observation of one scan (not the replicate) been performed by a qualified operator other than the individual who performed the first scan, at a rate of once per day or one per batch, whichever is less frequent? Record container number, date of observation, and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, B1-3b, B3-10b(1)	I/O performed on waste container 10124534 on 12/02/06 by Adaire Vaughn. No differences noted. No issues or concerns.
(11) Was a satisfactory audio/video check completed?	Yes	MP-TRUW-8.2 Section B3-10b(1)	
(12) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.2, Section B3	
(13) Has an audio/video (or equivalent media) of the RTR exam and a validated RTR data form been obtained for 100% of the waste containers?	Yes	MP-TRUW-8.2, B3-10b(1)	
(14) Are there any Nonconformance Reports associated with this Batch? Identify NCR(s) (open or closed), and whether the NCR is for a specific container, or the batch.	Yes	MP-TRUW-8.2, B3-12a	NCR 24686 - 10124869 - Open NCR 24693 - 10130087 - Open NCR 24833 - 10130074 - Open
(15) Is data reported properly with correct units and significant figures?	Yes	MP-TRUW-8.2, Table B3-11	
(16) Is the batch complete?	Yes	MP-TRUW-8.2, Table	

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer LEANNE HACKNEY **Approval Level** Site Project Quality Assurance Officer

Approval Date 29-DEC-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
·RTR Batch Data Coversheet		B3-11	
·Table of Contents (manual review only)			
·RTR Analysis reports			
·Replicate Scan			
·Replicate Comparison			
·Independent Observation			
·ITR checklist (Form-1412)			
·TS checklist (Form-1413)			
·QA checklist (Form-1414)			
·Associated NCRs			
·Batch Data Report Supplemental Comment Form, as applicable (Form-1491)			
·Audio/Video Recording References?			

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer PAM FETZER **Approval Level** SPM Acceptable Knowledge

Approval Date 05-JAN-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, B4-3d	None identified.
(2) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, B4-3d	
(3) Are the packaging configurations identified on the RTR consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, B4-3b	
(4) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, B4-3b	
(5) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, B4-3d	
(6) Were any nonconforming items or conditions identified?	Yes	MP-TRUW-8.2, B3-13	NCR 24686 - 10124869 - Open NCR 24693 - 10130087 - Open NCR 24833 - 10130074 - Open
(7) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, B4-3b	References: RPT-TRUW-05 RPT-TRUW-56 AKR-04-202 TWMIS

Checklist Report

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Reviewer PAM FETZER **Approval Level** SPM Data Validation

Approval Date 05-JAN-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review, Technical Supervisor and QA Officer review?	Yes	MP-TRUW-8.2, B3-10b(2)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, B3-10b(2)	
(3) Have all applicable Quality Assurance Objectives been met including precision, accuracy, completeness, and comparability by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, section B3-4? Precision · Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern. Accuracy · An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability · Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, B3-4	
(4) Does the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, B3-11	
(5) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the SQAO checklist (Form-1385) complete and acceptable? · Is the BDR complete (all pages identified in the BDR and numbered according)? · RTR Batch Coversheet · Table of Contents (manual review only) · RTR Analysis reports · Replicate Scan · Replicate Comparison · Independent Observation · ITR checklist (Form-1412) · TS checklist (Form-1413) · QA checklist (Form-1414) · Associated NCRs · Batch Data Report Supplemental Comment Form (Form-1491), as applicable · Audio/Video Recording References?	Yes	MP-TRUW-8.2, B3-10b(2)	As evidenced by the batch data report and corresponding checklists.
(6) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, B3-13	NCR 24686 - 10124869 - Open NCR 24693 - 10130087 - Open NCR 24833 - 10130074 - Open

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Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:11

Batch Id RTR06-00548 **Open Date** 29-NOV-06 **Close Date** 02-DEC-06

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
721257	RWALKER	21-MAR-07	ITR	Demoted RVU for rework.
721235	RWALKER	21-MAR-07	ITR	Demoted RVU for rework.
652716	PFETZER	05-JAN-07	SPM	Promote.
652713	PFETZER	05-JAN-07	SPM_AK	Promotel.
646767	LHACKNEY	29-DEC-06	SQA	Promote to SPM.
635772	RBTHOMPSON	18-DEC-06	QAR	Reviewed and approved the batch. Promoted to SQAO.
634312	DMARQUARDT	16-DEC-06	TSR	e-sig to promote to Level 1 QA.
631030	CSIMMONS	13-DEC-06	ITR	Promoted batch to TS level.
631010	CSIMMONS	13-DEC-06	ITR	Sent batch to operations for rework.

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Non-Conformance Report

Date: 20-Sep-12
Time: 09:16

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR06-00548		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10124869	24686	OPEN	02-DEC-06	
10130074	24833	CLOSED	13-DEC-06	03-JUN-09
10130087	24693	CLOSED	02-DEC-06	12-FEB-07

*****End of Non-Conformance Report*****

Advanced Mixed Waste Treatment Project

RTR Replicate Comparison Report

Time: 09:17

RTR Batch Id: RTR06-00548 Container Id: 10124539 Equipment Id: Z-213-101

Container type Description: drum, 55 Gallon Drum (17H) Gen-IDC: MD-836 Gross Weight(Lbs): 626.22

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000039292	02-DEC-2006 15:28	0000039300	02-DEC-2006 17:13
Procedure /Revision:	INST-OI-12	29 FC-3	INST-OI-12	29 FC-3
Recording Media Id:	1RTR06-00286		1RTR06-00286	
Starting Position:	A		B	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	MARK SORENSON		ADAIRE VAUGHN	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S3000	S3121	S3000	S3121
Packaging				
Rigid Liner Present?	Y		Y	
Liner Type Code:	TYPE 1		TYPE 1	
Liner Punctured:	Y		Y	
Liner Lid Deformed:	N		N	
Layers Of Confinement:	0		0	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	90		90	
Bag Closure Method:	No Bags		No Bags	
Liner Lid Present?:	Y		Y	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
nternal Container with Liquid?				
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:				
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present?	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

Advanced Mixed Waste Treatment Project

RTR Replicate Comparison Report

Time: 09:17

RTR Batch Id: RTR06-00548 **Container Id: 10124539** **Equipment Id: Z-213-101**

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	The waste in this container appears to be primarily sludge. No prohibited items found. WIPP accept. M.S. 12-02-06	Waste appears to be primarily sludge. No prohibited items WIPP accept This is a replicate

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
630581	CSIMMONS	12-DEC-06	Signed replicate comparison.

-----End of RTR Replicate Comparison Report-----

Advanced Mixed Waste Treatment Project

RTR/VE Update Analysis Report

Time: 09:18

Affected Batch RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000072246 **Analysis Status** Passed

VE Date 10-MAR-07 13:05:30 **Procedure Id** INST-OI-34 **Gross Weight** 640.36 lbs.

Gen-IDC Id MD-836 High Level Sludge/Cement **Proc Rev** 17 FC-1 **Net Weight** 563.36 lbs.

Waste Matrix S3121 **Summary Category Group** S3000 **Equipment ID** VE NGW C FAC

Container Type A **Affected Analysis ID** 0000039313

Operator 1 CHRIS NOWACKI **Operator 2** DENNY GASPER

General

Rigid Liner Present? Yes **Liner Punctured?** Yes **Liner Hole Size:** 20" in. **Liner Type** TYPE 1

Liner Lid Present No **Fill Factor** 95 %

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Internal Container with Liquid pints **Total Liquid Amount** 0 pints

Containerized Liquid 0 pints

Prohibited Liquids Present No

Internal Container with Liquid

Containerized Liquid No

Affected Batch RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000072246

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging	No	
Impenetrable Dense Objects?	No	
Sealed Containers Over 4 liters?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC**

IDC Change Reason

Visual Exam Comment {Waste appears to consist mainly of sludge. No prohibited items. Disposition wipp accept. - RTR comment from rtr batch RTR06-00548} RVU complete, the plywood spacers were removed with the drum lid during drum docking. liner lid cut up and placed on top of waste. F.K. 3-10-2007 Corrected liner lid present to 'No'. CN/DG 03/22/2007

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Advanced Mixed Waste Treatment Project

RTR/VE Update Analysis Report

Time: 09:18

Affected Batch RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000072246

Closure

Closure Date 10-MAR-07 00:00:00 **Closure Method** Twisted and Taped

Layers Of Confinement 1 **Overpack Required?** No

New Steel Lid? Yes

IDC CODES

Current Container IDC Code: MD-836 **Recommended IDC Code:**

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum Stub Bag (Plastic Packaging)	1.000	EACH	2.000	2.000

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
sampling tools and cleaning supplies	1.000	EACH	0.500	0.500
Drum Stub Bag (Plastic Waste)	1.000	EACH	2.000	2.000
32-inch Rubber Band	1.000	EACH	0.200	0.200
Teflon Liner	1.000	EACH	0.470	0.470
Parfait Bit	1.000	EACH	1.200	1.200
Pushrod	1.000	EACH	0.100	0.100
NF7DS Filter	1.000	EACH	0.240	0.240

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.240
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.200
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.250
Rubber	0.000	0.200
Plastic (Waste Materials)	0.000	2.820
Inorganic matrix	100.000	558.645
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Container Filters

WDS Filter Code	Event	Event Date	Entered By	Remove	Other Filter Model	Exclude
NF19SD	RTR/VE Update	10-MAR-07	FKUCK	N		
Filter Comment						
NF7DS	634 - DVS	26-OCT-06	RFUJII	N		
Filter Comment						

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Advanced Mixed Waste Treatment Project

RTR/VE Update Analysis Report

Time: 09:18

Affected Batch RTR06-00548 **Container Id** 10123139 **Analysis Id** 0000072246

NF7DS	Coring	09-MAR-07	MKREMIN	Y

Filter Comment docked drum and removed lid removing filter in the process MDK 03/09/07

E-Signature History

Esig Approval Id	User ID	E-signature Date	Comment
710217	FKUCK	10-MAR-07 13:14:17	
710218	MKREMIN	10-MAR-07 13:14:22	
722215	CNOWACKI	22-MAR-07 16:20:28	
722217	DGASPER	22-MAR-07 16:20:43	

-----End of RTR/VE Update Analysis Report-----

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Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 20-Sep-2012

Time: 08:45

AK28

Batch Type Real Time Radiography

Batch Report No. RTR06-00062

Batch Id RTR06-00062

Open Date 03-JAN-06 00:06:31

Close Date 03-JAN-06 10:55:36

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10040933	MD-836	0000027077	03-JAN-06 00:06:31	Original	P	FRANK KUCK
10040939	MD-836	0000027078	03-JAN-06 00:18:33	Original	P	FRANK KUCK
10059759	MD-836	0000027079	03-JAN-06 00:53:04	Original	P	FRANK KUCK
10059743	MD-836	0000027080	03-JAN-06 01:03:14	Original	P	FRANK KUCK
10037818	MD-836	0000027081	03-JAN-06 01:52:26	Original	P	FRANK KUCK
10037816	MD-836	0000027082	03-JAN-06 02:02:58	Original	P	FRANK KUCK
10037811	MD-836	0000027083	03-JAN-06 02:22:54	Original	P	FRANK KUCK
10059649	MD-836	0000027084	03-JAN-06 02:38:48	Original	P	FRANK KUCK
10038959	MD-836	0000027085	03-JAN-06 03:43:26	Original	P	FRANK KUCK
10038401	MD-836	0000027086	03-JAN-06 03:54:56	Original	P	FRANK KUCK
10037814	MD-836	0000027087	03-JAN-06 04:04:47	Original	P	FRANK KUCK
10059650	MD-836	0000027088	03-JAN-06 04:22:54	Original	P	FRANK KUCK
10038959	MD-836	0000027089	03-JAN-06 04:52:02	Replicate / Duplicate	P	DALLAS JOHNSTON
10038401	MD-836	0000027090	03-JAN-06 05:01:41	RTR OIO	P	DALLAS JOHNSTON
10059936	MD-836	0000027091	03-JAN-06 08:29:55	Original	P	SAMUEL PHILLIPS
10037866	MD-836	0000027092	03-JAN-06 08:57:16	Original	P	SAMUEL PHILLIPS
10059750	MD-836	0000027093	03-JAN-06 09:10:52	Original	P	SAMUEL PHILLIPS
10037680	MD-836	0000027094	03-JAN-06 09:26:47	Original	P	SAMUEL PHILLIPS
10059955	MD-836	0000027095	03-JAN-06 10:12:23	Original	P	SAMUEL PHILLIPS
10036881	MD-836	0000027096	03-JAN-06 10:28:29	Original	P	SAMUEL PHILLIPS
10059943	MD-836	0000027097	03-JAN-06 10:41:47	Original	P	SAMUEL PHILLIPS
10059639	MD-836	0000027098	03-JAN-06 10:55:36	Original	P	SAMUEL PHILLIPS

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
SPHILLIPS	03-JAN-06 10:54:33	ITR Reed Walker viewed this batch with operator.
CNOWACKI	09-JAN-06 13:35:59	NCRs # 20130, 20131, 20132 and 20133 (WIPP Data) Warped liner lids
CNOWACKI	09-JAN-06 13:35:59	Container # 10038959 (Replicate) the operator entered 3 plywood spacers @ 1.2 pounds each in Waste items by Weight. These plywood spacers are outside of the 90-mil liner and are considered packaging. Also the operator placed 100% of the remaining weight percent in Organic Matrix. This particular IDC should have been placed in Inorganic Matrix. No rework will be performed on the Replicate.
CNOWACKI	09-JAN-06 13:35:59	Container # 10038401 (OIO) the operator entered 5 plywood spacers @ 1.2 pounds each in Waste items by Weight. These plywood spacers are outside of the 90-mil liner and are considered packaging. No rework will be performed on the OIO.
CNOWACKI	09-JAN-06 13:36:27	Promote to TS level.
JSIEMS	09-JAN-06 15:14:51	Reviewed and approved the batch. Promoted to QA
JSIEMS	09-JAN-06 15:18:02	Reviewed and approved the batch. Promoted to SQAO
SCANIFF	10-JAN-06 08:29:20	Promote to SPM.
CHINKLE	11-JAN-06 14:48:17	promote
CHINKLE	11-JAN-06 14:50:06	promote

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
343295	CNOWACKI	09-JAN-2006 13:36:27	Promote to TS level.
343363	JSIEMS	09-JAN-2006 15:14:51	Reviewed and approved the batch. Promoted to QA
343367	JSIEMS	09-JAN-2006 15:18:03	Reviewed and approved the batch. Promoted to SQAO
343981	SCANIFF	10-JAN-2006 08:29:20	Promote to SPM.
345229	CHINKLE	11-JAN-2006 14:48:17	promote
345230	CHINKLE	11-JAN-2006 14:50:06	promote

***** End of Batch Report Coversheet Report *****

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Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 20-Sep-2012

Time: 08:46

Batch Id RTR06-00062 **Container Id** 10059943 **Analysis Id** 0000027097

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JAN-2006 10:41 **Gross Weight** 643.860 **Lbs** **Net Weight** 565.260 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** MD-836 High Level Sludge/Cement

Recording Id 2RTR06-0003 **Procedure Id** INST-OI-12 **Revision** 23 FC-1 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** B **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-NOV-1978 00:00 **Operator** SPHILLIPS

Result Comment Waste appears to be inorganic sludge. No prohibited items were found in this drum. This drum is WIPP acceptable.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? **Layers Of Confinement** 0

Fill Factor 80

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid**

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid** No

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects?

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
1/4 Inch Plywood Spacer (Packaging)	3.000	EACH	1.200	3.600

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR06-00062 **Container Id** 10059943 **Analysis Id** 0000027097

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	565.260
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	3.600

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
337244	SPHILLIPS	03-JAN-2006 10:41	

------End of RTR Analysis Report------

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer CHRIS NOWACKI **Approval Level** Independent Technical Reviewer

Approval Date 09-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report and QA documentation complete with the following: o RTR Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412) o TS checklist (Form-1413) o QA checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491) o Associated NCRs o Audio/Video Recording References?	No		TS (Form 1413) and QA (Form 1414) will be completed at applicable level of validations.
2. Are there 20 containers or less in the batch?	Yes		
3. Has the E-signature History review been performed?	Yes		
4. Was the Image Quality Indicator (IQI) satisfactory for every container in the batch?	Yes		
5. Does every drum reported in the batch reference an audio/video recording?	Yes		
6. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
7. Were weights estimated for the (12) WAP waste material parameters? o Does the packaging weight plus the net weight equal the gross weight of the drum? o Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
8. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
9. Was the presence or absence of prohibited items properly documented?	Yes		
10. If prohibited items were identified, have appropriate NCRs been generated?	N/A		No prohibited items identified in this batch.
11. Were the drums examined between October and April in compliance with the preheat requirements?	Yes		
12. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
13. Was the data generated in a technically correct manner using the correct revision of INST-OI-012, Real-Time Radiography Operations, i.e., the correct revision of the procedure is documented on all analysis reports.	Yes		INST-OI-12 Rev. 23 FC-1
14. Was a replicate scan performed by an independent operator on at least one drum per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the original examination? o If Replicate Scan is from a different batch, record the batch number in the comment section of this checklist.	Yes		Container #10038959 Date of observation 01/03/06 Original: 3 plywood spacers @ 1.2 pounds each entered in packaging materials. The 100% of remaining waste by weight percent assigned to Inorganic Matrix. Replicate: 3 plywood spacers @ 1.2 pounds each entered in waste items by

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer CHRIS NOWACKI **Approval Level** Independent Technical Reviewer

Approval Date 09-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.			weight.. The 100% of remaining waste by weight percent assigned to Organic Matrix. Plywood spacers outside of the 90-mil liner are considered packaging and this IDC should be assigned to Inorganic Matrix. The Replicate will not be reworked.
15. Was an Operator Independent Observation (OIO) (not the replicate) performed by a qualified operator, other than the individual who performed the original examination, on at least one drum per day or once per batch? If so, o If OIO is from a different batch, record the batch number in the comment section of this checklist. o Record the container number in the comment section of this checklist. o Record the date of observation in the comment section of this checklist. o Record any issues or concerns in the comment section of this checklist.	Yes		Container #10038401 Date of observation 01/03/06 Original: 5 plywood spacers @ 1.2 pounds each entered in packaging materials. OIO: 5 plywood spacers @ 1.2 pounds each entered in waste items by weight. Plywood spacers outside of the 90-mil liner are considered packaging. The OIO will not be reworked.
16. Were any NCRs generated for drums containing prohibited items, or any non-conforming conditions that failed to meet Data Quality Objectives or Quality Assurance Objectives? o Include the NCRs, as appropriate, in the Batch Data Report.	Yes		NCRs # 20130, 20131, 20132, and 20133

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer JOSHUA SIEMS **Approval Level** Technical Supervisor Reviewer

Approval Date 09-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Has the independent technical review been performed and documented by signature release?	Yes		
2. Is the Batch Data Report and QA documentation complete? o RTR Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412) o TS checklist (Form-1413) o QA checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491), as applicable o Associated NCRs o Audio/Video Recording References?	No		Form-1414, and any other NCRs will be provided upon further review thru Level I data validation.
3. Has the E-signature History Review been performed?	Yes		
4. Did the operator verify for each container in the batch that the item description codes, waste matrix codes and waste stream description are consistent with the container contents? o Did the operator recommend the correct IDC/WMC change? o Was an NCR generated, when appropriate?	Yes		
5. Is the data technically reasonable based on the technique used?	Yes		
6. Were any NCRs generated for drums containing prohibited items, or any non-conforming conditions that failed to meet Data Quality Objectives or Quality Assurance Objectives ? o Include the NCRs, as appropriate, in the Batch Data Report.	Yes		

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer JOSHUA SIEMS **Approval Level** Quality Assurance Reviewer

Approval Date 09-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Has the Independent Technical Reviewer and Technical Supervisor reviews been performed and documented by signature release?	Yes		
2. Is the Batch Data Report and QA documentation complete with the following: o RTR Batch Cover Sheet (Form-1491) o Table of Contents (manual review only) o RTR Analysis Reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR Checklist (Form-1412) o TS Checklist (Form-1413) o QA Checklist (Form-1414) o Batch Data Report Supplemental Comment Form (Form-1491), as applicable o Associated NCRs o Audio/Video Recording References?	Yes		
3. Was the absence or presence of prohibited items properly identified?	Yes		
4. Were waste material parameters documented properly?	Yes		
5. Are all raw data signed and dated in reproducible black or blue ink or unalterable electronic signatures?	Yes		
6. Are all data recorded clearly, legibly, and accurately in field and laboratory records (bench sheets, logbooks)?	N/A		There are no hand written field records in the RTR batches.
7. Are all changes to original data or forms made by a single line through incorrect entry, initialed, and dated by the person making the changes or documented in E-signature History?	N/A		
8. Were all data changes adequately justified?	Yes		
9. Have all data been transferred and reduced from field records completely and accurately?	N/A		There are no hand written field records in the RTR batches.
10. Were the RTR QAOs satisfactorily met? o Precision: A valid IQI was confirmed for containers in the batch. o Completeness: An audio/video medium of the RTR examination and a validated RTR data form obtained for 100% of the waste containers. o Comparability: o RTR operator training and qualification is current as specified in MP-RTQP-14.4 o Data was collected using current methods and procedures	Yes		
11. Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the original examination? o Did the ITR complete a comparison of the original and replicate scans?	Yes		
12. Was an independent observation (not the replicate) performed on at least one container per day or once per	Yes		

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer JOSHUA SIEMS **Approval Level** Quality Assurance Reviewer

Approval Date 09-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
batch by a qualified operator, other than the individual who performed the original examination?			
13. Were the independent observation and replicate comparison satisfactory?	Yes		
14. Was all rework identified through the independent observation or replicate comparison verified as complete?	Yes		
15. Are NCRs included as appropriate for this Batch Data Report?	Yes		

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer SEAN CANIFF **Approval Level** Site Project Quality Assurance Officer

Approval Date 10-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, Table B3-11	INST-OI-12 REV. 23 FC-1
(2) Do (Does) the individual drum reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, (f) signature and date of examination?	Yes	MP-TRUW-8.2, Table B3-11	
(3) Is there verification that the physical form matches the waste stream description and waste matrix code?	Yes	MP-TRUW-8.2, Table B3-11	
(4) Have the IDC, Waste Matrix Code (WMC), and/or waste stream for all drums in the batch remained the same as originally assigned? If not, note the drum number in the comment field and notify SPM-Acceptable Knowledge (AK) if NCR does not exist on the WMC and IDC change.	Yes	MP-TRUW-8.2, B-3c and B4-3d (1)	
(5) Is the description of container contents detailed enough to provide verification of estimated weights for the waste material parameters identified?	Yes	MP-TRUW-8.2, B1-3a, B3-1 and B3-11a	
(6) Has a clear description of liners and layers of containment been given (if possible) for all drums in the batch?	Yes	MP-TRUW-8.2, Table B3-11	
(7) For each drum in the batch, was the presence or absence of prohibited items properly identified? If residual liquid exists in the drum, is an estimate of quantity given?	Yes	MP-TRUW-8.2, B-1c	
(8) Was the Imaging Quality Indicator (IQI) satisfactory for every container in the batch?	Yes	MP-TRUW-8.2, B3-4	
(9) Was a replicate scan performed by an independent operator on at least one drum per day or once per testing batch, whichever is less frequent , by a qualified radiography operator other than the individual who performed the original examination?	Yes	MP-TRUW-8.2, B1-3b	Replicate scan performed to 10038959 on 1/6/06 by D. Johnston.
(10) Has an independent observation of one scan (not the replicate) been performed by a qualified operator other than the individual who performed the first scan, at a rate of once per day or one per batch, whichever is less frequent? Record container number, date of observation, and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, B1-3b, B3-10b(1)	Independent Observation performed to 10038401 on 1/6/06 by D. Johnston.
(11) Was a satisfactory audio/video check completed?	Yes	MP-TRUW-8.2 Section B3-10b(1)	
(12) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.2, Section B3	
(13) Has an audio/video (or equivalent media) of the RTR exam and a validated RTR data form been obtained for 100% of the waste containers?	Yes	MP-TRUW-8.2, B3-10b(1)	
(14) Are there any Nonconformance Reports associated with this Batch? Identify NCR(s) (open or closed), and whether the NCR is for a specific container, or the batch.	Yes	MP-TRUW-8.2, B3-12a	NCRs 20130, 20131, 20132, and 20133 are open against drums 10037811, 10059649, 10037814, and 10037866 respectively. All of these NCRs are for warped liner lids.
(15) Is data reported properly with correct units and significant figures?	Yes	MP-TRUW-8.2, Table B3-11	
(16) Is the batch complete?	Yes	MP-TRUW-8.2, Table	

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer SEAN CANIFF **Approval Level** Site Project Quality Assurance Officer

Approval Date 10-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
·RTR Batch Data Coversheet		B3-11	
·Table of Contents (manual review only)			
·RTR Analysis reports			
·Replicate Scan			
·Replicate Comparison			
·Independent Observation			
·ITR checklist (Form-1412)			
·TS checklist (Form-1413)			
·QA checklist (Form-1414)			
·Associated NCRs			
·Batch Data Report Supplemental Comment Form, as applicable (Form-1491)			
·Audio/Video Recording References?			

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer CARALEA HINKLE-DANIEL **Approval Level** SPM Acceptable Knowledge

Approval Date 11-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report?	N/A	MP-TRUW-8.2, B4-3d	
(2) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, B4-3d	
(3) Are the packaging configurations identified on the RTR consistent with the waste stream AK Summary Report?	Yes	MP-TRUW-8.2, B4-3b	
(4) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report?	Yes	MP-TRUW-8.2, B4-3b	
(5) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, B4-3d	
(6) Were any nonconforming items or conditions identified?	Yes	MP-TRUW-8.2, B3-12a	NCR 20130 - container 10037811 - open for warped liner lid NCR 20131 - container 10059649 - open for warped liner lid NCR 20132- container 10037814 - open for warped liner lid NCR 20133 - container 10037866 - open for warped liner lid
(7) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK Summary Reports used in review of this data package.	N/A	MP-TRUW-8.2, B4-3b	References: AMWTP-RPT-TRUW-13, Current Revision

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Reviewer CARALEA HINKLE-DANIEL **Approval Level** SPM Data Validation

Approval Date 11-JAN-06 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review, Technical Supervisor and QA Officer review?	Yes	MP-TRUW-8.2, B3-10b(2)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, B3-10b(2)	
(3) Have all applicable Quality Assurance Objectives been met including precision, accuracy, completeness, and comparability by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, section B3-4? Precision · Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs though viewing an image test pattern. Accuracy · An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability · Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, B3-4	
(4) Did the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, B3-11	
(5) The data for all containers within this batch meet the review, validation, and verification requirements. · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the SQAO checklist (Form-1385) complete and acceptable? · Is the BDR complete (all pages identified in the BDR and numbered according)? · RTR Batch Coversheet · Table of Contents (manual review only) · RTR Analysis reports · Replicate Scan · Replicate Comparison · Independent Observation · ITR checklist (Form-1412) · TS checklist (Form-1413) · QA checklist (Form-1414) · Associated NCRs · Batch Data Report Supplemental Comment Form (Form-1491), as applicable · Audio/Video Recording References?	Yes	MP-TRUW-8.2, B3-10b(2)	As evidenced by the Batch Data Report and corresponding checklists.
(6) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, B3-13	NCR 20130 - container 10037811 - open for warped liner lid NCR 20131 - container 10059649 - open for warped liner lid NCR 20132- container 10037814 - open for warped liner lid NCR 20133 - container 10037866 - open for warped liner lid

Batch Id RTR06-00062 **Open Date** 03-JAN-06 **Close Date** 03-JAN-06

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
345230	CHINKLE	11-JAN-06	SPM	promote
345229	CHINKLE	11-JAN-06	SPM_AK	promote
343981	SCANIFF	10-JAN-06	SQA	Promote to SPM.
343367	JSIEMS	09-JAN-06	QAR	Reviewed and approved the batch. Promoted to SQAO
343363	JSIEMS	09-JAN-06	TSR	Reviewed and approved the batch. Promoted to QA
343295	CNOWACKI	09-JAN-06	ITR	Promote to TS level.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 20-Sep-2012

Time: 08:51

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR06-00062

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10037811	20130	CLOSED	03-JAN-06	21-JUN-07
10037814	20132	CLOSED	03-JAN-06	12-NOV-07
10037866	20133	CLOSED	03-JAN-06	16-DEC-06
10059649	20131	CLOSED	03-JAN-06	16-DEC-06

*****End of Non-Conformance Report*****

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Advanced Mixed Waste Treatment Project

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RTR Replicate Comparison Report

Date: 20-Sep-2012

Time: 08:53

RTR Batch Id: RTR06-00062 **Container Id:** 10038959 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **MD-836** Gross Weight(Lbs): **635.04**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000027085	03-JAN-2006 03:43	0000027089	03-JAN-2006 04:52
Procedure /Revision:	INST-OI-12	23 FC-1	INST-OI-12	23 FC-1
Recording Media Id:	2RTR06-00003		2RTR06-00003	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	FRANK KUCK		DALLAS JOHNSTON	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S3000	S3121	S3000	S3121
Packaging				
Rigid Liner Present?	Y		Y	
Liner Type Code:	TYPE 1		TYPE 1	
Liner Punctured:	N		N	
Liner Lid Deformed:				
Layers Of Confinement:	0		0	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	88		85	
Bag Closure Method:	No Bags		No Bags	
Liner Lid Present?:	Y		Y	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
nternal Container with Liquid?				
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:				
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present?	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR06-00062 **Container Id:** 10038959 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present	N	N
PCBs Present?	No	No
PCB Mass (lbs)	N/A	N/A
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Waste appears to be cemented sludge. No prohibited items. WIPP accept.	Waste consists primarily of sludge, no prohibited items, 3 plywood spacers. wipp accept.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 11:46

AK29

Batch Type VE Boxline

Batch Report No. VEB11-00835

Batch Id VEB11-00835

Open Date 16-SEP-11 21:20:41

Close Date 17-SEP-11 10:45:01

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10422235	BN-508	0000257020	16-SEP-11 21:20:41	Original	P	KEVIN ANDERSEN
10422234	BN-508	0000257023	16-SEP-11 21:36:04	Original	P	KEVIN ANDERSEN
10422231	BN-508	0000257024	16-SEP-11 22:25:29	Original	P	KEVIN ANDERSEN
10422232	BN-508	0000257028	16-SEP-11 22:41:39	Original	P	KEVIN ANDERSEN
10422230	BN-508	0000257029	16-SEP-11 23:03:37	Original	P	KEVIN ANDERSEN
10422229	BN-508	0000257030	16-SEP-11 23:24:56	Original	P	KEVIN ANDERSEN
10422239	BN-508	0000257031	16-SEP-11 23:27:52	Original	P	ANDREW WOOD
10422238	BN-508	0000257032	16-SEP-11 23:38:37	Original	P	ANDREW WOOD
10422228	BN-508	0000257033	16-SEP-11 23:38:31	Original	NR	PAUL HURLEY
10422227	BN-508	0000257037	17-SEP-11 01:03:36	Original	P	ANDREW WOOD
10422233	BN-508	0000257039	17-SEP-11 01:43:06	Original	P	KEVIN ANDERSEN
10422222	BN-508	0000257040	17-SEP-11 02:13:43	Original	P	ANDREW WOOD
10422223	BN-508	0000257041	17-SEP-11 02:42:30	Original	P	KEVIN ANDERSEN
10422226	BN-508	0000257042	17-SEP-11 02:47:40	Original	P	ANDREW WOOD
10422225	BN-508	0000257044	17-SEP-11 03:03:59	Original	P	KEVIN ANDERSEN
10422221	BN-508	0000257045	17-SEP-11 03:35:45	Original	P	KEVIN ANDERSEN
10422218	BN-508	0000257049	17-SEP-11 09:10:05	Original	P	NATHAN KEMPTON
10422358	BN-508	0000257050	17-SEP-11 10:13:39	Original	P	NATHAN KEMPTON
10422356	BN-508	0000257051	17-SEP-11 10:29:12	Original	P	NATHAN KEMPTON
10422359	BN-508	0000257052	17-SEP-11 10:45:01	Original	P	NATHAN KEMPTON

FOR INFORMATION ONLY

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 11:46

**********Batch Comments**********

Written By	Date	Comment
RGRISE	28-SEP-11 10:06:39	closing batch
DLEE	28-SEP-11 12:51:11	No validation has been done to the batch. Demote to Operations per request.
PHURLEY	28-SEP-11 14:25:00	Esigned.
DLEE	29-SEP-11 05:54:57	Non-report drum 10422228.
DLEE	29-SEP-11 06:12:52	This batch was validated to MP-TRUW-8.8.
DLEE	29-SEP-11 06:13:17	Promote to SPM.
SCANIFF	06-OCT-11 07:55:48	Promote.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 11:46

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2109897	RGRISE	28-SEP-2011 10:06:39	closing batch
2110040	DLEE	28-SEP-2011 12:51:11	No validation has been done to the batch. Demote to Operations per request.
2110049	PHURLEY	28-SEP-2011 14:25:00	
2110469	DLEE	29-SEP-2011 05:54:57	Non-report drum 10422228.
2110474	DLEE	29-SEP-2011 06:13:17	Promote to SPM.
2114944	SCANIFF	06-OCT-2011 07:55:48	Promote.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 11:48

Batch Id VEB11-00835 **Container Id** 10422232 **Analysis Id** 0000257028

VE Date 16-SEP-11 22:41:39 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 141.12 lbs

Closure Date 16-SEP-11 22:41:39 **Procedure Id** INST-FOI-17 **Net Weight** 115.12 lbs

Container Type 55 **Revision** 23

Operator 1 KEVIN ANDERSEN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 STEVE ESPLIN **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 66 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB11-00835 **Container Id** 10422232 **Analysis Id** 0000257028

Visual Exam Comment Remaining waste by weight percent is iron base metal consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10243724	destroyed @ 676- SHD/1	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	2.000	PINTS	0.702	1.400
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	111.850
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.400
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2104266	KANDERSEN	16-SEP-11 22:41:39	
2104267	SESPLIN	16-SEP-11 22:41:40	

------End of VE Boxline Report------

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 28-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	N/A		
2. Are there 20 containers or less in the batch?	N/A		
3. Was each VE Operator qualified at the time of the VE event?	N/A		
4. Was a VE data form completed for each container in the batch?	N/A		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	N/A		
6. Was the correct revision of the procedure documented on each analysis report?	N/A		
7. Was the E-signature History review performed?	N/A		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	N/A		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	N/A		
12. Were the waste material parameters documented correctly?	N/A		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	N/A		
14. Has the description of rigid liners and layers of confinement been properly documented?	N/A		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	N/A		

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 28-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	N/A		
18. Were all units and significant figures used correct for all reported volumes/weights?	N/A		
19. Has the data been reviewed for transcription errors as appropriate?	N/A		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	N/A		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	N/A		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	N/A		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 29-SEP-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		Analytical Balance Calibration Check sheet was not used. All weights were estimated. Audio/Video Recording References are not required.
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not required for VEB batches.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not required for VEB batches.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		The Initial IDC was assigned to containers during this VEB process.
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		Liner Puncture Status, Packaging Configuration, Filter data and Liner Hole diameter are not applicable for this VEB batch type.
16. Have filters been installed or removed from drum as	N/A		Containers are not equipped with Filters.

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 29-SEP-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
recorded in WTS, as applicable?			
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not required for VEB batches.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not required for VEB batches.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not required for VEB batches.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	Yes		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 06-OCT-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	No	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	N/A	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC , WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 06-OCT-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Checklist Report

Batch Id VEB11-00835 **Open Date** 16-SEP-11 **Close Date** 17-SEP-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2114944	SCANIFF	06-OCT-11	SPM	Promote.
2110474	DLEE	29-SEP-11	ITR	Promote to SPM.
2110040	DLEE	28-SEP-11	ITR	No validation has been done to the batch. Demote to Operations per request.

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Non-Conformance Report

Date: 24-Sep-2012

Time: 11:51

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB11-00835		
Trackwise Number		**Status**	**Opened Date**	**Closed Date**	

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10422228	66034	OPEN	27-SEP-11	

*****End of Non-Conformance Report*****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 11:54

AK30

Batch Type VE Boxline **Batch Report No.** VEB11-00837

Batch Id VEB11-00837 **Open Date** 17-SEP-11 13:10:25 **Close Date** 17-SEP-11 23:10:38

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10422348	BN-508	0000257053	17-SEP-11 13:10:25	Original	P	NATHAN KEMPTON
10422224	BN-508	0000257054	17-SEP-11 13:31:35	Original	P	SARA FELLOWS
10422219	BN-508	0000257058	17-SEP-11 15:26:56	Original	P	SARA FELLOWS
10422355	BN-508	0000257063	17-SEP-11 19:36:01	Original	P	RICHARD SCOTT
10422350	BN-508	0000257064	17-SEP-11 19:49:11	Original	P	RICHARD SCOTT
10422354	BN-508	0000257065	17-SEP-11 19:59:19	Original	P	VIRGIL B WATERS
10422353	BN-508	0000257066	17-SEP-11 20:04:35	Original	P	VIRGIL B WATERS
10422347	BN-508	0000257069	17-SEP-11 20:35:28	Original	P	VIRGIL B WATERS
10422351	BN-508	0000257070	17-SEP-11 20:45:31	Original	P	RICHARD SCOTT
10422352	BN-508	0000257071	17-SEP-11 20:44:03	Original	P	VIRGIL B WATERS
10422349	BN-508	0000257072	17-SEP-11 21:06:58	Original	P	VIRGIL B WATERS
10422344	BN-508	0000257073	17-SEP-11 21:15:01	Original	P	RICHARD SCOTT
10422343	BN-508	0000257074	17-SEP-11 21:39:53	Original	P	RICHARD SCOTT
10422346	BN-508	0000257075	17-SEP-11 21:45:18	Original	P	VIRGIL B WATERS
10422342	BN-508	0000257077	17-SEP-11 21:53:11	Original	P	RICHARD SCOTT
10422345	BN-508	0000257078	17-SEP-11 22:00:25	Original	P	VIRGIL B WATERS
10422340	BN-508	0000257080	17-SEP-11 22:10:16	Original	P	RICHARD SCOTT
10422341	BN-508	0000257081	17-SEP-11 22:12:36	Original	P	VIRGIL B WATERS
10422339	BN-508	0000257082	17-SEP-11 22:35:27	Original	P	VIRGIL B WATERS
10422337	BN-508	0000257083	17-SEP-11 23:10:38	Original	P	RICHARD SCOTT

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
KHUGHES	18-SEP-11 08:04:40	Validated electronically.
KHUGHES	18-SEP-11 10:30:23	promote to SPM
PFETZER	20-SEP-11 09:14:04	Promote.

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2105000	KHUGHES	18-SEP-2011 10:30:23	promote to SPM
2105287	PFETZER	20-SEP-2011 09:14:04	Promote.

***** End of Batch Report Coversheet Report *****

AMWTP

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VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 11:55

Batch Id VEB11-00837 **Container Id** 10422344 **Analysis Id** 0000257073

VE Date 17-SEP-11 21:15:01 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 143.33 lbs

Closure Date 17-SEP-11 21:15:01 **Procedure Id** INST-FOI-17 **Net Weight** 117.33 lbs

Container Type 55 **Revision** 23

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 STEVE ESPLIN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB11-00837 **Container Id** 10422344 **Analysis Id** 0000257073

Visual Exam Comment The remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10420742	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Raschig Rings	1.000	PINTS	0.625	0.630
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	111.975
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.630
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2104733	RSCOTT	17-SEP-11 21:15:02	
2104734	SESPLIN	17-SEP-11 21:15:03	

------End of VE Boxline Report------

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 11:56

Batch Id VEB11-00837 **Container Id** 10422345 **Analysis Id** 0000257078

VE Date 17-SEP-11 22:00:25 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs

Closure Date 17-SEP-11 22:00:25 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs

Container Type 55 **Revision** 23

Operator 1 VIRGIL B WATERS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 11:56

Batch Id VEB11-00837 **Container Id** 10422345 **Analysis Id** 0000257078

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10420745	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	6.000	PINTS	0.937	5.620

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	83.040
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2104749	VWATERS	17-SEP-11 22:00:25	
2104750	MBECK1	17-SEP-11 22:00:26	

------End of VE Boxline Report------

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 11:56

Batch Id VEB11-00837 **Container Id** 10422354 **Analysis Id** 0000257065

VE Date 17-SEP-11 19:59:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 213.89 lbs

Closure Date 17-SEP-11 19:59:19 **Procedure Id** INST-FOI-17 **Net Weight** 187.89 lbs

Container Type 55 **Revision** 23

Operator 1 VIRGIL B WATERS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB11-00837 **Container Id** 10422354 **Analysis Id** 0000257065

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10420745	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	2.000	PINTS	0.937	1.870
Microcel-E	5.000	PINTS	0.120	0.600

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	185.415
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.600
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2104712	VWATERS	17-SEP-11 19:59:19	
2104713	MBECK1	17-SEP-11 19:59:21	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 24-Sep-2012

Time: 11:57

Batch Id VEB11-00837 **Open Date** 17-SEP-11 **Close Date** 17-SEP-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 18-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB11-00837 **Open Date** 17-SEP-11 **Close Date** 17-SEP-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 18-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB11-00837 **Open Date** 17-SEP-11 **Close Date** 17-SEP-11

Reviewer PAM FETZER **Approval Level** SPM Data Validation

Approval Date 20-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No AK discrepancies identified. References: AMWTP-RPT-TRUW-05 AMWTP-RPT-TRUW-06 AMWTP-RPT-TRUW-83
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	BN-508 is assigned for newly-generated waste as a result of boxline operations. AKE reviews and NCRs are not required.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	All applicable EV&V data is present.

Batch Id VEB11-00837 **Open Date** 17-SEP-11 **Close Date** 17-SEP-11

Reviewer PAM FETZER **Approval Level** SPM Data Validation

Approval Date 20-SEP-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	18. Yes VE event for newly generated waste using two operators does not require an audio/video record. All applicable EV&V data is present.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VEB.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Checklist Report

Batch Id VEB11-00837 **Open Date** 17-SEP-11 **Close Date** 17-SEP-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2105287	PFETZER	20-SEP-11	SPM	Promote.
2105000	KHUGHES	18-SEP-11	ITR	promote to SPM

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 24-Sep-2012

Time: 11:59

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB11-00837		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:23

AK31

Batch Type VE Boxline

Batch Report No. VEB12-00021

Batch Id VEB12-00021

Open Date 09-JAN-12 16:41:43

Close Date 10-JAN-12 00:10:01

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10430675	BN-508	0000263119	09-JAN-12 16:41:43	Original	P	GUY MATLOCK
10430626	BN-508	0000263120	09-JAN-12 17:01:41	Original	P	CHARLES WOOD
10430676	BN-508	0000263121	09-JAN-12 16:58:04	Original	P	GUY MATLOCK
10430622	BN-508	0000263122	09-JAN-12 17:24:16	Original	P	GUY MATLOCK
10430619	BN-508	0000263123	09-JAN-12 19:48:33	Original	P	JEFF MARTINEZ
10430674	BN-508	0000263125	09-JAN-12 19:58:04	Original	P	HOWARD SHELL
10430673	BN-508	0000263126	09-JAN-12 20:03:43	Original	P	HOWARD SHELL
10430621	BN-508	0000263127	09-JAN-12 20:14:00	Original	P	JEFF MARTINEZ
10430620	BN-508	0000263132	09-JAN-12 21:14:03	Original	P	HOWARD SHELL
10430616	BN-508	0000263133	09-JAN-12 21:21:10	Original	P	HOWARD SHELL
10430671	BN-508	0000263137	09-JAN-12 21:38:53	Original	P	JEFF MARTINEZ
10430617	BN-508	0000263138	09-JAN-12 22:03:16	Original	P	JEFF MARTINEZ
10430672	BN-508	0000263139	09-JAN-12 22:48:10	Original	P	HOWARD SHELL
10430670	BN-508	0000263140	09-JAN-12 22:47:23	Original	P	JEFF MARTINEZ
10430669	BN-508	0000263141	09-JAN-12 22:54:11	Original	P	HOWARD SHELL
10430618	BN-508	0000263142	09-JAN-12 23:05:54	Original	P	HOWARD SHELL
10430615	BN-508	0000263143	09-JAN-12 23:15:30	Original	P	JEFF MARTINEZ
10430733	BN-508	0000263144	09-JAN-12 23:31:12	Original	P	HOWARD SHELL
10430721	BN-508	0000263145	09-JAN-12 23:35:08	Original	P	HOWARD SHELL
10430734	BN-508	0000263146	10-JAN-12 00:09:01	Original	P	JEFF MARTINEZ

FOR INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CWASYLOW	10-JAN-12 13:53:34	Batch being validated to MP-TRUW-8.8.
CWASYLOW	10-JAN-12 13:53:34	ITR review of the batch.
CWASYLOW	10-JAN-12 13:53:34	No Rework required.
CWASYLOW	10-JAN-12 13:53:34	No NCR's associated to the batch
CWASYLOW	10-JAN-12 13:53:56	Batch promoted to SPM
KBURNSIDE	11-JAN-12 07:45:26	SPM reviewed and approved.

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:23

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2158594	CWASYLOW	10-JAN-2012 13:53:56	Batch promoted to SPM
2159012	KBURNSIDE	11-JAN-2012 07:45:26	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:24

Batch Id VEB12-00021 **Container Id** 10430617 **Analysis Id** 0000263138

VE Date 09-JAN-12 22:03:16 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 116.87 lbs

Closure Date 09-JAN-12 22:03:16 **Procedure Id** INST-FOI-17 **Net Weight** 90.87 lbs

Container Type 55 **Revision** 23

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:24

Batch Id VEB12-00021 **Container Id** 10430617 **Analysis Id** 0000263138

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10429958	destroyed @ 676- SHD/1	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	10.000	PINTS	0.937	9.370

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	81.495
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	9.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2157992	JMARTINEZ	09-JAN-12 22:03:16	
2157993	MREIDER	09-JAN-12 22:03:18	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012
Time: 15:25

Batch Id VEB12-00021 **Container Id** 10430671 **Analysis Id** 0000263137

VE Date 09-JAN-12 21:38:53 **Analysis Status** Pass
Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 lbs
Closure Date 09-JAN-12 21:38:53 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 lbs
Container Type 55 **Revision** 23
Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000
Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags
Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 64 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints
Containerized Liquid pints **Total Liquid Amount** 0 pints
Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00021 **Container Id** 10430671 **Analysis Id** 0000263137

Visual Exam Comment The remaining waste by weight percent is plastic sheeting & bags.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10429958	destroyed @ 676- SHD/1	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	1.000	PINTS	1.554	1.550

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	80.760
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2157985	JMARTINEZ	09-JAN-12 21:38:53	
2157986	MREIDER	09-JAN-12 21:38:55	\

------End of VE Boxline Report------

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:25

Batch Id VEB12-00021 **Container Id** 10430674 **Analysis Id** 0000263125

VE Date 09-JAN-12 19:58:04 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 72.77 lbs

Closure Date 09-JAN-12 19:58:04 **Procedure Id** INST-FOI-17 **Net Weight** 46.77 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 68 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:25

Batch Id VEB12-00021 **Container Id** 10430674 **Analysis Id** 0000263125

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10175654	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	43.015
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2157958	HSHELL	09-JAN-12 19:58:04	
2157959	JBAILEY	09-JAN-12 19:58:05	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 24-Sep-2012

Time: 15:26

Batch Id VEB12-00021 **Open Date** 09-JAN-12 **Close Date** 10-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		Analytical Balance Calibration Check sheet was not used. All weights were estimated. Audio/Video Recording References are not required.
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not required for VEB batches.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not required for VEB batches.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		The Initial IDC was assigned to containers during this VEB process.
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		Liner Puncture Status, Packaging Configuration, Filter data and Liner Hole diameter are not applicable for this VEB batch type.
16. Have filters been installed or removed from drum as	N/A		Containers are not equipped with Filters.

Batch Id VEB12-00021 **Open Date** 09-JAN-12 **Close Date** 10-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
recorded in WTS, as applicable?			
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not required for VEB batches.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not required for VEB batches.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not required for VEB batches.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	N/A		No NCRs.
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No operator rework.

Batch Id VEB12-00021 **Open Date** 09-JAN-12 **Close Date** 10-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 11-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	None identified.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00021 **Open Date** 09-JAN-12 **Close Date** 10-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 11-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

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Non-Conformance Report

Date: 24-Sep-2012

Time: 15:29

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00021		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

Batch Id VEB12-00021 **Open Date** 09-JAN-12 **Close Date** 10-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2159012	KBURNSIDE	11-JAN-12	SPM	SPM reviewed and approved.
2158594	CWASYLOW	10-JAN-12	ITR	Batch promoted to SPM

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Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:39

AK32

Batch Type VE Boxline

Batch Report No. VEB12-00020

Batch Id VEB12-00020

Open Date 09-JAN-12 08:59:43

Close Date 09-JAN-12 16:39:04

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10430640	BN-508	0000263086	09-JAN-12 08:59:43	Original	P	GUY MATLOCK
10430690	BN-508	0000263093	09-JAN-12 12:43:48	Original	P	CHARLES WOOD
10430642	BN-508	0000263094	09-JAN-12 12:53:11	Original	P	CHARLES WOOD
10430685	BN-508	0000263095	09-JAN-12 13:00:23	Original	P	CHARLES WOOD
10430684	BN-508	0000263096	09-JAN-12 13:13:46	Original	P	CHARLES WOOD
10430686	BN-508	0000263098	09-JAN-12 13:16:37	Original	P	GUY MATLOCK
10430639	BN-508	0000263099	09-JAN-12 13:20:48	Original	P	GUY MATLOCK
10430683	BN-508	0000263102	09-JAN-12 13:43:20	Original	P	GUY MATLOCK
10430627	BN-508	0000263103	09-JAN-12 13:55:02	Original	P	GUY MATLOCK
10430682	BN-508	0000263104	09-JAN-12 14:09:23	Original	P	GUY MATLOCK
10430628	BN-508	0000263106	09-JAN-12 14:23:55	Original	P	GUY MATLOCK
10430681	BN-508	0000263107	09-JAN-12 14:46:05	Original	P	CHARLES WOOD
10430679	BN-508	0000263108	09-JAN-12 14:54:10	Original	P	GUY MATLOCK
10430629	BN-508	0000263109	09-JAN-12 14:58:40	Original	P	CHARLES WOOD
10430625	BN-508	0000263110	09-JAN-12 15:01:02	Original	P	GUY MATLOCK
10430680	BN-508	0000263111	09-JAN-12 15:16:49	Original	P	GUY MATLOCK
10430677	BN-508	0000263113	09-JAN-12 16:16:25	Original	P	GUY MATLOCK
10430630	BN-508	0000263116	09-JAN-12 16:21:20	Original	P	CHARLES WOOD
10430678	BN-508	0000263117	09-JAN-12 16:24:22	Original	P	GUY MATLOCK
10430624	BN-508	0000263118	09-JAN-12 16:38:04	Original	P	GUY MATLOCK

FOR INFORMATION ONLY

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
CWASYLOW	10-JAN-12 11:28:37	Batch being validated to MP-TRUW-8.8.
CWASYLOW	10-JAN-12 11:28:37	ITR review of the batch.
CWASYLOW	10-JAN-12 12:19:33	No Rework required.
CWASYLOW	10-JAN-12 12:19:33	No NCR's associated to the batch
CWASYLOW	10-JAN-12 12:19:56	Batch promoted to SPM
KBURNSIDE	11-JAN-12 07:53:32	SPM reviewed and approved.

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VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:40

Batch Id VEB12-00020 **Container Id** 10430681 **Analysis Id** 0000263107

VE Date 09-JAN-12 14:46:05 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 218.30 lbs

Closure Date 09-JAN-12 14:46:05 **Procedure Id** INST-FOI-17 **Net Weight** 192.30 lbs

Container Type 55 **Revision** 23

Operator 1 CHARLES WOOD **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00020 **Container Id** 10430681 **Analysis Id** 0000263107

Visual Exam Comment Remaining waste by weight percent is plastic (Waste Materials) consisting of bags, sheeting, tape and PPE.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10429956	destroyed @ 676- BXI/16	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	2.000	PINTS	1.125	2.250
Paper	6.000	PINTS	0.969	5.810
Iron	1.000	PINTS	7.807	7.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.250
Cellulosics	0.000	5.810
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	176.425
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2157791	CWOOD	09-JAN-12 14:46:06	
2157792	JYOUNG	09-JAN-12 14:46:09	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

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VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:41

Batch Id VEB12-00020 **Container Id** 10430685 **Analysis Id** 0000263095

VE Date 09-JAN-12 13:00:23 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 198.45 lbs

Closure Date 09-JAN-12 13:00:23 **Procedure Id** INST-FOI-17 **Net Weight** 172.45 lbs

Container Type 55 **Revision** 23

Operator 1 CHARLES WOOD **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JAMES YOUNG **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00020 **Container Id** 10430685 **Analysis Id** 0000263095

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10429956	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Cured Cement (Other Inorganics)	5.000	PINTS	1.125	5.630
Paper	4.000	PINTS	0.969	3.880
Plastic	8.000	PINTS	0.937	7.500

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	154.600
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.470
Cellulosics	0.000	3.880
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2157739	CWOOD	09-JAN-12 13:00:24	
2157740	JYOUNG	09-JAN-12 13:00:26	

------End of VE Boxline Report------

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:42

Batch Id VEB12-00020 **Container Id** 10430686 **Analysis Id** 0000263098

VE Date 09-JAN-12 13:16:37 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs

Closure Date 09-JAN-12 13:16:37 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs

Container Type 55 **Revision** 23

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 25 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

AMWTP

VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:42

Batch Id VEB12-00020 **Container Id** 10430686 **Analysis Id** 0000263098

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10175654	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	85.850
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2157747	GMATLOCK	09-JAN-12 13:16:37	
2157748	SPEREZ	09-JAN-12 13:16:38	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

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Checklist Report

Date: 24-Sep-2012

Time: 15:42

Batch Id VEB12-00020 **Open Date** 09-JAN-12 **Close Date** 09-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		Analytical Balance Calibration Check sheet was not used. All weights were estimated. Audio/Video Recording References are not required.
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not required for VEB batches.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not required for VEB batches.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		The Initial IDC was assigned to containers during this VEB process.
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		Liner Puncture Status, Packaging Configuration, Filter data and Liner Hole diameter are not applicable for this VEB batch type.
16. Have filters been installed or removed from drum as	N/A		Containers are not equipped with Filters.

Batch Id VEB12-00020 **Open Date** 09-JAN-12 **Close Date** 09-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
recorded in WTS, as applicable?			
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not required for VEB batches.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not required for VEB batches.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not required for VEB batches.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	N/A		No NCRs.
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No operator rework.

Batch Id VEB12-00020 **Open Date** 09-JAN-12 **Close Date** 09-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 11-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	None identified.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00020 **Open Date** 09-JAN-12 **Close Date** 09-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 11-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00020 **Open Date** 09-JAN-12 **Close Date** 09-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2159013	KBURNSIDE	11-JAN-12	SPM	SPM reviewed and approved.
2158533	CWASYLOW	10-JAN-12	ITR	Batch promoted to SPM

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Non-Conformance Report

Date: 24-Sep-2012

Time: 15:46

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00020		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:39

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2158533	CWASYLOW	10-JAN-2012 12:19:56	Batch promoted to SPM
2159013	KBURNSIDE	11-JAN-2012 07:53:32	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

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Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:59

AK33

Batch Type VE Boxline

Batch Id VEB12-00649

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Open Date 01-AUG-12 02:41:25

Batch Report No. VEB12-00649

Close Date 01-AUG-12 07:27:45

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10452166	BN-508	0000280876	01-AUG-12 02:49:37	Original	P	STEVE ESPLIN
10452175	BN-508	0000280877	01-AUG-12 02:41:25	Original	P	RICHARD SCOTT
10452173	BN-508	0000280878	01-AUG-12 03:02:45	Original	P	STEVE ESPLIN
10452172	BN-508	0000280880	01-AUG-12 03:19:00	Original	P	STEVE ESPLIN
10452168	BN-508	0000280881	01-AUG-12 03:37:58	Original	P	KEN DOWNS
10452174	BN-508	0000280883	01-AUG-12 03:47:20	Original	P	KEN DOWNS
10452163	BN-508	0000280884	01-AUG-12 03:41:02	Original	P	STEVE ESPLIN
10452162	BN-508	0000280887	01-AUG-12 03:59:19	Original	P	KEN DOWNS
10452165	BN-508	0000280889	01-AUG-12 04:19:18	Original	P	MICHAEL BECK
10452161	BN-508	0000280890	01-AUG-12 04:21:38	Original	P	KEN DOWNS
10452383	BN-508	0000280891	01-AUG-12 04:16:19	Original	P	STEVE ESPLIN
10452160	BN-508	0000280892	01-AUG-12 04:38:57	Original	P	STEVE ESPLIN
10452384	BN-508	0000280893	01-AUG-12 04:48:04	Original	P	STEVE ESPLIN
10452385	BN-508	0000280894	01-AUG-12 05:15:14	Original	P	KEN DOWNS
10452159	BN-508	0000280895	01-AUG-12 05:04:22	Original	P	STEVE ESPLIN
10452164	BN-508	0000280896	01-AUG-12 05:20:45	Original	P	MICHAEL BECK
10452158	BN-508	0000280897	01-AUG-12 05:06:51	Original	P	STEVE ESPLIN
10452381	BN-508	0000280899	01-AUG-12 05:29:36	Original	P	STEVE ESPLIN
10452382	BN-508	0000280902	01-AUG-12 05:40:16	Original	P	MICHAEL BECK
10452157	BN-508	0000280905	01-AUG-12 07:26:45	Original	P	JUSTIN BURTON

FOR INFORMATION
ONLY

**********Batch Comments**********

Written By	Date	Comment
RBTHOMPSON	01-AUG-12 14:29:50	Initial ITR review of Batch.
RBTHOMPSON	02-AUG-12 10:37:44	ITR review complete
RBTHOMPSON	02-AUG-12 10:37:44	Promote to SPM.
SCANIFF	02-AUG-12 12:58:52	Promote.

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Batch Report Coversheet

Date: 24-Sep-2012

Time: 15:59

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2297495	RBTHOMPSON	02-AUG-2012 10:37:44	Promote to SPM.
2297635	SCANIFF	02-AUG-2012 12:58:52	Promote.

***** End of Batch Report Coversheet Report *****

VE Boxline and Repackaging Report

Batch Id VEB12-00649 **Container Id** 10452385 **Analysis Id** 0000280894

VE Date 01-AUG-12 05:15:14 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 01-AUG-12 05:15:14 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 25

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ANTHONY CAIN **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 66 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

VE Boxline and Repackaging Report

Batch Id VEB12-00649 **Container Id** 10452385 **Analysis Id** 0000280894

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447345	676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	104.095
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2296141	KDOWNS	01-AUG-12 05:15:14	
2296142	TCAIN	01-AUG-12 05:15:15	

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VE Boxline and Repackaging Report

Date: 24-Sep-2012

Time: 15:59

Batch Id VEB12-00649 **Container Id** 10452162 **Analysis Id** 0000280887

VE Date 01-AUG-12 03:59:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 138.92 lbs

Closure Date 01-AUG-12 03:59:19 **Procedure Id** INST-FOI-17 **Net Weight** 112.92 lbs

Container Type 55 **Revision** 25

Operator 1 KEN DOWNS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ANTHONY CAIN **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 66 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00649 **Container Id** 10452162 **Analysis Id** 0000280887

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10450752	676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	112.915
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2296098	KDOWNS	01-AUG-12 03:59:19	
2296099	TCAIN	01-AUG-12 03:59:21	

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Checklist Report

Date: 24-Sep-2012

Time: 15:59

Batch Id VEB12-00649 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

Batch Id VEB12-00649 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB12-00649 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC, WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00649 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00649 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2297635	SCANIFF	02-AUG-12	SPM	Promote.
2297495	RBTHOMPSON	02-AUG-12	ITR	Promote to SPM.

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Non-Conformance Report

Date: 24-Sep-2012

Time: 16:01

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00649		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

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Batch Report Coversheet

Date: 24-Sep-2012

Time: 16:09

AK34

Batch Type VE Boxline

Batch Report No. VEB12-00650

Batch Id VEB12-00650

Open Date 01-AUG-12 07:30:24

Close Date 01-AUG-12 10:31:10

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10452386	BN-508	0000280906	01-AUG-12 07:30:24	Original	P	AARON FENN
10452156	BN-508	0000280907	01-AUG-12 07:34:37	Original	P	ROBERT MINTON
10452380	BN-508	0000280908	01-AUG-12 07:47:21	Original	P	AARON FENN
10452379	BN-508	0000280914	01-AUG-12 08:12:29	Original	P	ROBERT MINTON
10452378	BN-508	0000280915	01-AUG-12 08:14:45	Original	P	AARON FENN
10452252	BN-508	0000280916	01-AUG-12 08:15:26	Original	P	JUSTIN BURTON
10452251	BN-508	0000280918	01-AUG-12 08:24:42	Original	P	JUSTIN BURTON
10452250	BN-508	0000280919	01-AUG-12 08:24:38	Original	P	AARON FENN
10452377	BN-508	0000280923	01-AUG-12 08:33:57	Original	P	ROBERT MINTON
10452376	BN-508	0000280924	01-AUG-12 08:29:44	Original	P	JUSTIN BURTON
10452249	BN-508	0000280925	01-AUG-12 09:01:16	Original	P	ROBERT MINTON
10452245	BN-508	0000280926	01-AUG-12 09:32:40	Original	P	ROBERT MINTON
10452375	BN-508	0000280927	01-AUG-12 09:28:41	Original	P	AARON FENN
10452374	BN-508	0000280928	01-AUG-12 09:39:24	Original	P	JUSTIN BURTON
10452373	BN-508	0000280930	01-AUG-12 09:45:10	Original	P	AARON FENN
10452246	BN-508	0000280935	01-AUG-12 10:03:53	Original	P	ROBERT MINTON
10452247	BN-508	0000280936	01-AUG-12 10:19:02	Original	P	AARON FENN
10452372	BN-508	0000280937	01-AUG-12 10:27:45	Original	P	ROBERT MINTON
10452248	BN-508	0000280938	01-AUG-12 10:26:58	Original	P	JUSTIN BURTON
10452371	BN-508	0000280939	01-AUG-12 10:30:10	Original	P	JUSTIN BURTON

FOR DOCUMENT ID ONLY

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 16:09

**********Batch Comments**********

Written By	Date	Comment
MSORENSON	02-AUG-12 07:41:06	This batch was validated electronically per MP-TRUW-8.8.
MSORENSON	02-AUG-12 07:41:06	No rework identified. Promote to SPM.
SCANIFF	02-AUG-12 13:27:00	Promote.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 16:09

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2297246	MSORENSON	02-AUG-2012 07:41:06	No rework identified. Promote to SPM.
2297663	SCANIFF	02-AUG-2012 13:27:01	Promote.

***** End of Batch Report Coversheet Report *****

Batch Id VEB12-00650 **Container Id** 10452372 **Analysis Id** 0000280937

VE Date 01-AUG-12 10:27:45 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 132.30 lbs

Closure Date 01-AUG-12 10:27:45 **Procedure Id** INST-FOI-17 **Net Weight** 106.30 lbs

Container Type 55 **Revision** 25

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JOHN CUNNINGHAM **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 80 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remainiing waste by weight percent is Iron-based Metals/Alloys- misc. scrap metal

Batch Id VEB12-00650 **Container Id** 10452372 **Analysis Id** 0000280937

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10450428	676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Wood	3.000	PINTS	0.702	2.110
Copper	1.000	PINTS	9.369	9.370
Plastic	6.000	PINTS	0.937	5.620

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	88.230
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	9.370
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.080
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2296424	RMINTON	01-AUG-12 10:27:45	
2296425	JCUNNINGHAM	01-AUG-12 10:27:47	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 24-Sep-2012
Time: 16:09

Batch Id VEB12-00650 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

Batch Id VEB12-00650 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework identified.

Batch Id VEB12-00650 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC, WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00650 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00650 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2297663	SCANIFF	02-AUG-12	SPM	Promote.
2297246	MSORENSON	02-AUG-12	ITR	No rework identified. Promote to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 24-Sep-2012

Time: 16:11

*****Batch NCR(s)*****

Batch Type VEB **Batch ID** VEB12-00650

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 24-Sep-2012

Time: 16:14

AK35

Batch Type VE Boxline

Batch Id VEB12-00651

Batch Report No. VEB12-00651

Open Date 01-AUG-12 10:40:41

Close Date 01-AUG-12 14:52:00

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10452370	BN-508	0000280940	01-AUG-12 10:40:41	Original	P	AARON FENN
10452244	BN-508	0000280941	01-AUG-12 10:44:49	Original	P	ROBERT MINTON
10452243	BN-508	0000280942	01-AUG-12 10:57:14	Original	P	JUSTIN BURTON
10452369	BN-508	0000280944	01-AUG-12 11:07:40	Original	P	ROBERT MINTON
10452242	BN-508	0000280950	01-AUG-12 11:54:49	Original	P	AARON FENN
10452367	BN-508	0000280951	01-AUG-12 12:17:01	Original	P	AARON FENN
10452241	BN-508	0000280952	01-AUG-12 12:19:18	Original	P	JUSTIN BURTON
10452366	BN-508	0000280953	01-AUG-12 12:27:14	Original	P	JUSTIN BURTON
10452239	BN-508	0000280954	01-AUG-12 12:30:26	Original	P	AARON FENN
10452368	BN-508	0000280955	01-AUG-12 12:38:15	Original	P	ROBERT MINTON
10452365	BN-508	0000280960	01-AUG-12 13:08:16	Original	P	JUSTIN BURTON
10452240	BN-508	0000280963	01-AUG-12 13:14:34	Original	P	ROBERT MINTON
10452238	BN-508	0000280964	01-AUG-12 13:38:21	Original	P	AARON FENN
10452364	BN-508	0000280965	01-AUG-12 13:33:18	Original	P	ROBERT MINTON
10452237	BN-508	0000280966	01-AUG-12 13:35:59	Original	P	JUSTIN BURTON
10452363	BN-508	0000280967	01-AUG-12 14:03:18	Original	P	ROBERT MINTON
10452221	BN-508	0000280968	01-AUG-12 14:21:20	Original	P	ROBERT MINTON
10452235	BN-508	0000280969	01-AUG-12 14:21:39	Original	P	JUSTIN BURTON
10452236	BN-508	0000280970	01-AUG-12 14:30:42	Original	P	AARON FENN
10452222	BN-508	0000280972	01-AUG-12 14:51:00	Original	P	AARON FENN

INFORMATION
ONLY

**********Batch Comments**********

Written By	Date	Comment
KHUGHES	02-AUG-12 06:13:11	validated electronically
KHUGHES	02-AUG-12 12:59:53	promote to SPM
SCANIFF	02-AUG-12 14:28:37	Promote.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2297637	KHUGHES	02-AUG-2012 12:59:53	promote to SPM
2297707	SCANIFF	02-AUG-2012 14:28:37	Promote.

***** End of Batch Report Coversheet Report *****

Batch Id VEB12-00651 **Container Id** 10452244 **Analysis Id** 0000280941

VE Date 01-AUG-12 10:44:49 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 01-AUG-12 10:44:49 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 25

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JOHN CUNNINGHAM **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remainiing waste by weight percent is Iron-based Metals/Alloys- misc. scrap metal

Batch Id VEB12-00651 **Container Id** 10452244 **Analysis Id** 0000280941

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10450428	676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Plastic	15.000	PINTS	0.937	14.060

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	89.065
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	14.060
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2296462	RMINTON	01-AUG-12 10:44:50	
2296463	JCUNNINGHAM	01-AUG-12 10:44:51	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 24-Sep-2012
Time: 16:14

Batch Id VEB12-00651 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

Batch Id VEB12-00651 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB12-00651 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC, WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00651 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation
Approval Date 02-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00651 **Open Date** 01-AUG-12 **Close Date** 01-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2297707	SCANIFF	02-AUG-12	SPM	Promote.
2297637	KHUGHES	02-AUG-12	ITR	promote to SPM

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 24-Sep-2012

Time: 16:16

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00651		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

HSGS Headspace Gas Batch HS111-00023 Cover Sheet & Case Narrative

Batch No: HS111-00023
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 02-NOV-11 09:49
Batch Analysis Date: 02-NOV-11 13:01
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 16-NOV-11 13:10
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.

No NCRs associated with this batch.

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: Summaries of the applicable ICAL, MDLs and MPSs were analyzed within six months, they met criteria.

Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10418907	100	BN-550	S5000	Yes	Yes	No	None	P
BN10421829	100	BN-550	S5000	Yes	No	No	1	P

---Batch Comments---

User Id	Role	Esignature Date	Comment
NKIRK	SPM	21-NOV-11 09:44:05	Validation complete. Promote batch.
JKETTEL	ITR	16-NOV-11 15:11:32	Promote.
CROJAS	HOC	16-NOV-11 13:10:57	Promote to ITR.
CROJAS	HOC	16-NOV-11 13:10:21	Promote to ITR
CROJAS	HOC	14-NOV-11 16:39:50	
CROJAS	HOC	14-NOV-11 16:05:45	
SOLDHAM	HSGO	02-NOV-11 12:56:27	
SOLDHAM	HSGO	02-NOV-11 08:24:11	

FOR INFORMATIONAL ONLY

---Non-Reported Container Comments---

Written By	Date	Container ID	Comment

--- End of Report ---

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS111-00023
Non-Conformances

Date: 24 Sep 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
ICAL Report

Batch No.: ICAL/HS111-00023
Instrument method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\

ICAL Start: 24-OCT-11 15:53
ICAL End: 24-OCT-11 16:48
Sampled by: SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	002I1-F.D	003I2-F.D	004I3-F.D	005I4-F.D	006I5-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.02E+05	0.000	1.0000	
Methane	4.78E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	
Chloromethane	0.170	0.159	0.151	0.145	0.151	6.20	
Methanol	0.048	0.044	0.043	0.042	0.044	4.88	
Ethyl ether	0.165	0.154	0.150	0.145	0.154	4.85	
1,1-dichloroethylene	0.251	0.240	0.231	0.228	0.243	3.79	
Freon-113	0.614	0.574	0.547	0.534	0.557	5.50	
Acetone	0.113	0.107	0.105	0.103	0.111	3.91	
Carbon disulfide	0.607	0.567	0.565	0.558	0.603	4.00	
Methylene chloride	0.208	0.193	0.187	0.189	0.200	4.46	
trans-1,2-dichloroethylene	0.284	0.262	0.259	0.252	0.270	4.56	
1,1-dichloroethane	0.519	0.487	0.469	0.451	0.478	5.27	
cis-1,2-dichloroethylene	0.285	0.271	0.261	0.255	0.274	4.35	
Methyl ethyl ketone	0.121	0.116	0.115	0.114	0.124	3.79	
Chloroform	0.752	0.694	0.656	0.619	0.644	7.67	
1,1,1-trichloroethane	0.868	0.821	0.772	0.730	0.742	7.28	
Cyclohexane	0.442	0.418	0.411	0.402	0.428	3.68	
Carbon tetrachloride	0.213	0.197	0.191	0.181	0.176	7.50	
Benzene	0.728	0.680	0.670	0.658	0.711	4.22	
1,2-dichloroethane	0.603	0.548	0.514	0.478	0.483	9.84	
Trichloroethylene	0.491	0.455	0.436	0.431	0.456	5.23	
1-Butanol	0.047	0.045	0.045	0.044	0.046	2.81	
Methyl isobutyl ketone	0.114	0.110	0.109	0.105	0.099	5.22	
Toluene	0.608	0.575	0.555	0.559	0.617	4.81	
Tetrachloroethylene	0.674	0.639	0.611	0.574	0.545	8.43	
Chlorobenzene	1.068	0.964	0.939	0.909	0.976	6.18	
Ethylbenzene	0.509	0.465	0.467	0.458	0.497	4.67	
m and p-xylene	0.595	0.566	0.552	0.558	0.619	4.86	
o-xylene	0.563	0.530	0.533	0.546	0.591	4.54	
Bromoform	0.452	0.424	0.413	0.412	0.429	3.80	
1,1,2,2-tetrachloroethane	0.437	0.402	0.413	0.408	0.457	5.41	
1,3,5-trimethylbenzene	0.725	0.680	0.740	0.732	0.817	6.71	
1,2,4-trimethylbenzene	0.651	0.623	0.695	0.701	0.767	8.00	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
BFB Report ICAL

Batch No.: ICAL/HS111-00023
Instrument Method: VOCGAS
Apex Scan(s): 434
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\001BF-F.D

Pass? PASS
Analyzed On: 24-OCT-11 15:45
Matrix: QC Sample

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.9
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
177	5.0 - 9.0% of mass 176	6.5
174	Greater than 50.0% of mass 95	93.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	98.0
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	002I1-F.D	24-OCT-2011 15:53
ICAL2	ICAL	003I2-F.D	24-OCT-2011 16:07
ICAL3	ICAL	004I3-F.D	24-OCT-2011 16:21
ICAL4	ICAL	005I4-F.D	24-OCT-2011 16:34
ICAL5	ICAL	006I5-F.D	24-OCT-2011 16:48

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
BFB Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Apex Scan(s): 432
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\001BF-F.D

Pass? PASS
Analyzed On: 02-NOV-11 09:49
Matrix: QC Sample

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	97.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	97.8
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	02-NOV-2011 09:57
LCS1	LCS	003LC-F.D	02-NOV-2011 10:15
EB	EB	004EB-F.D	02-NOV-2011 10:29
FB	FB	005FB-F.D	02-NOV-2011 10:43

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
BFB Report Shift 2

Batch No.: HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 02-NOV-11 13:01
Apex Scan(s): 430 431 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.7
174	Greater than 50.0% of mass 95	97.8
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	95.9
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	02-NOV-2011 13:09
LCS2	LCS	008LC-F.D	02-NOV-2011 13:30
BN10418907	HS111_00023B-01	009DR-F.D	02-NOV-2011 13:44
DILUTION1	HS111_00023B-01(1X)	010DR-F.D	02-NOV-2011 14:00
BN10418907	HS111_00023B-02	011DR-F.D	02-NOV-2011 14:13
DILUTION1	HS111_00023B-02(1X)	012DR-F.D	02-NOV-2011 14:28
BN10421829	HS111_00023B-03	013DR-F.D	02-NOV-2011 14:42

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
CCAL Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D

Analyzed on: 02-NOV-11 09:57
Sampled on & by: 02-NOV-11 09:15 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.01	100.6	
Methane	1.00	1.02	101.8	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.147	5.2	
Methanol	0.044	0.041	6.8	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.232	2.9	
Freon-113	0.565	0.552	2.3	
Acetone	0.108	0.102	5.6	
Carbon disulfide	0.580	0.565	2.6	
Methylene chloride	0.196	0.190	3.1	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.461	4.2	
cis-1,2-dichloroethylene	0.269	0.260	3.3	
Methyl ethyl ketone	0.118	0.112	5.1	
Chloroform	0.673	0.637	5.3	
1,1,1-trichloroethane	0.786	0.755	3.9	
Cyclohexane	0.420	0.397	5.5	
Carbon tetrachloride	0.192	0.184	4.2	
Benzene	0.689	0.659	4.4	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.441	2.9	
1-Butanol	0.046	0.044	4.3	
Methyl isobutyl ketone	0.107	0.106	0.9	
Toluene	0.583	0.543	6.9	
Tetrachloroethylene	0.609	0.599	1.6	
Chlorobenzene	0.971	0.903	7.0	
Ethylbenzene	0.479	0.444	7.3	
m and p-xylene	0.578	0.530	8.3	
o-xylene	0.553	0.510	7.8	
Bromoform	0.426	0.404	5.2	
1,1,2,2-tetrachloroethane	0.423	0.383	9.5	
1,3,5-trimethylbenzene	0.739	0.647	12.4	
1,2,4-trimethylbenzene	0.687	0.607	11.6	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
CCAL Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

Analyzed on: 02-NOV-11 13:09
Sampled on & by: 02-NOV-11 11:17 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.00	99.9	
Methane	1.00	1.02	102.3	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.150	3.2	
Methanol	0.044	0.040	9.1	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.236	1.3	
Freon-113	0.565	0.554	1.9	
Acetone	0.108	0.100	7.4	
Carbon disulfide	0.580	0.562	3.1	
Methylene chloride	0.196	0.189	3.6	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.458	4.8	
cis-1,2-dichloroethylene	0.269	0.261	3.0	
Methyl ethyl ketone	0.118	0.113	4.2	
Chloroform	0.673	0.646	4.0	
1,1,1-trichloroethane	0.786	0.760	3.3	
Cyclohexane	0.420	0.391	6.9	
Carbon tetrachloride	0.192	0.189	1.6	
Benzene	0.689	0.662	3.9	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.443	2.4	
1-Butanol	0.046	0.042	8.7	
Methyl isobutyl ketone	0.107	0.104	2.8	
Toluene	0.583	0.536	8.1	
Tetrachloroethylene	0.609	0.587	3.6	
Chlorobenzene	0.971	0.884	9.0	
Ethylbenzene	0.479	0.434	9.4	
m and p-xylene	0.578	0.516	10.7	
o-xylene	0.553	0.487	11.9	
Bromoform	0.426	0.393	7.7	
1,1,2,2-tetrachloroethane	0.423	0.369	12.8	
1,3,5-trimethylbenzene	0.739	0.628	15.0	
1,2,4-trimethylbenzene	0.687	0.567	17.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D

Analyzed on: 02-NOV-11 10:15
Sampled on & by: 02-NOV-11 09:21 SO
Multiplier: 1.38
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.51	102.47	
Methane	0.500	0.52	104.42	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	49.92	99.83	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.87	89.74	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.84	89.68	
Benzene	50.00	47.63	95.27	
1,2-dichloroethane	50.00	46.01	92.03	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.08	91.43	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D

Analyzed on: 02-NOV-11 13:30
Sampled on & by: 02-NOV-11 11:24 SO
Multiplier: 1.39
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.51	102.48	
Methane	0.500	0.51	102.84	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.10	100.20	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.93	89.87	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.23	88.45	
Benzene	50.00	48.01	96.03	
1,2-dichloroethane	50.00	45.86	91.72	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.68	92.62	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 10:15	02-NOV-11 13:30
Sampled on & by:	02-NOV-11 09:21 SO	02-NOV-11 11:24 SO
Multiplier:	1.38	1.39
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D	C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.51	0.51	0.01	
Methane	0.52	0.51	1.52	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	49.92	50.10	0.37	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	44.87	44.93	0.14	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	44.84	44.23	1.38	
Benzene	47.63	48.01	0.80	
1,2-dichloroethane	46.01	45.86	0.34	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.08	46.68	1.29	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas Batch HS111-00023 LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Equipment Blank Report

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\004EB-F.D

Analyzed on: 02-NOV-11 10:29
Sampled on & by: 02-NOV-11 09:34 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Field Blank Report

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\005FB-F.D

Analyzed on: 02-NOV-11 10:43
Sampled on & by: 02-NOV-11 09:39 SO
Multiplier: 1.41
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS111_00023B-01	HS111_00023B-02
Container Id.:	BN10418907	BN10418907
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 13:44	02-NOV-11 14:13
Sampled on & by:	02-NOV-11 11:37 SO	02-NOV-11 11:48 SO
Multiplier:	1.39	1.39
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\009DR-F.D	C:\HPCHEM\1\DATA\HS111_00023B\011DR-F.D
Dilution File(s):	010	012

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.59	0.60	1.12	
Methane	U	U	NC	
Chloromethane	J	J	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	J	J	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	220	220	1.51	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	J	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	J	J	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	J	J	NC	
Benzene	J	J	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	21	22	2.45	
Tetrachloroethylene	J	J	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS111-00023
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Internal Standards Summary

Batch No.: HS111-00023
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

CCAL1 Analyzed on: 02-NOV-11 09:57
CCAL2 Analyzed on: 02-NOV-11 13:09

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	8994053	4.10	8278615	6.60
LCS1	9056706	4.09	7929537	6.59
EB	8809534	4.12	7801753	6.61
FB	8622999	4.12	7687533	6.62
CCAL2 STD.	8544930	4.12	8052723	6.62
LCS2	8737497	4.10	7725796	6.60
BN10418907	8565219	4.07	7556993	6.57
DILUTION1	8535545	4.12	7598193	6.62
BN10418907	8422874	4.08	7488123	6.58
DILUTION1	8402808	4.10	7470167	6.60
BN10421829	8273116	4.09	7480078	6.59

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum BN10421829 Sample Report

Batch No.: HS111-00023
Container Id.: BN10421829
Lab Sample Id.: HS111_00023B-03
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\013DR-F.D

Analysis Status
Pass

Analyzed on: 02-NOV-11 14:42
Sampled on & by: 02-NOV-11 12:11 SO
Multiplier: 1.39
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.018 vol%	J							
Methane	0.019 vol%	U							
Chloromethane	1.3	J							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	25								
Acetone	19	U							
Carbon disulfide	1.2	U							
Methylene chloride	11								
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	2.7	J							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	1.0	J							
1,1,1-trichloroethane	5.5	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	11								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	88								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	8.2	J							
m and p-xylene	22								
o-xylene	7.8	J							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	42	7.43

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum BN10421829 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS111-00023
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags		Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
				Inner	Liner							
P	BN10418907	3	S5000	0	0	7	26 Aug 11	26 Aug 11	02 Nov 11	2	68	NF19SD, NF036
P	BN10421829	3	S5000	0	0	7	18 Sep 11	18 Sep 11	02 Nov 11	2	45	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10418907	NA	Y	Y	SETH OLDHAM	
BN10421829	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR
2132326	CROJAS	14-NOV-11 16:05	
2127181	SOLDHAM	02-NOV-11 12:56	

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

DAC Information

Waste Type:	II	**Liner Lid Hole Size:**	NA	**Vent Date:**	18-SEP-11
Rigid Liner:	N	**Inner Bags:**	NA	**Closure Date:**	18-SEP-11
Rigid Liner Lid:	N	**Liner Bags:**	NA	**Layers of Confinement:**	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:

Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	**Liner Punctured:**	NA
Liner Hole Size:	NA	**Liner Type:**	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	**Fill Factor:**	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
rom:	635	Assembled Payloads						22-MAR-12 10:39:21	Carl Chapman
To:	TRUPACT Loaded							22-MAR-12 10:41:16	Carl Chapman
atus:	Container move is done and complete								
rom:	635	WC			4	1	1	08-MAR-12 14:20:13	John Aguayo
To:	635	Assembled Payloads						08-MAR-12 14:21:06	John Aguayo
atus:	Container move is done and complete								
rom:	628	SJ			7	1	2	07-MAR-12 11:03:49	Kim Smith
To:	635	WC			4	1	1	07-MAR-12 13:30:05	Kim Smith
atus:	Container move is done and complete								
rom:	628	NK			3	3	2	06-MAR-12 14:31:49	Fred White
To:	628	SJ			7	1	2	06-MAR-12 16:21:10	Fred White
atus:	Container move is done and complete								
rom:	628	NK			3	1	1	03-JAN-12 08:00:01	Rick Whitmore
To:	628	NK			3	3	2	03-JAN-12 08:20:36	Rick Whitmore
atus:	Container move is done and complete								
rom:	628	NK			11	2	1	30-DEC-11 08:29:49	Bruce Hebdon
To:	628	NK			3	1	1	30-DEC-11 10:55:53	Dave White
atus:	Container move is done and complete								
rom:	628	NN			2	2	2	23-DEC-11 17:07:48	Steven Stewart
To:	628	NK			11	2	1	23-DEC-11 17:08:06	Steven Stewart
atus:	Container move is done and complete								
rom:	628	NN			2	2	2	20-DEC-11 16:47:10	Craig Muehleip
To:	628	NN			2	2	2	20-DEC-11 16:50:21	Craig Muehleip
atus:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NN			2	2	2	20-DEC-11 16:44:13	Craig Muehleip
To:	628	NM						20-DEC-11 16:45:18	Craig Muehleip
atus:	Container move is cancelled								
From:	628	NN			10	3	2	07-DEC-11 10:43:44	Justin Hendricks
To:	628	NN			2	2	2	07-DEC-11 10:45:58	Justin Hendricks
atus:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	26-NOV-11 14:10:04	Jesse Howard
To:	628	NN			10	3	2	26-NOV-11 14:10:25	Jesse Howard
atus:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	10-NOV-11 08:25:32	Tim Burwell
To:	634- Characterization	SN						10-NOV-11 09:06:10	Tim Burwell
atus:	Container move is cancelled								
From:	634- Characterization	SN			6	2	1	04-NOV-11 08:09:36	Leisa Bunce
To:	634- Characterization	SN			4	3	1	04-NOV-11 08:25:09	Leisa Bunce
atus:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 12:20:16	Cindy Tiegs
To:	634- Characterization	SN			6	2	1	02-NOV-11 12:21:04	Cindy Tiegs
atus:	Container move is done and complete								
From:	634- Characterization	SN			5	2	1	02-NOV-11 08:27:56	Michael Ricks
To:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 08:28:10	Michael Ricks
atus:	Container move is done and complete								
From:	634- Characterization	SH			9	3	1	28-OCT-11 10:31:56	Frank Kuck
To:	634- Characterization	SN			5	2	1	28-OCT-11 10:32:58	Frank Kuck
atus:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 16:20:41	Paul Chapman
To:	634- Characterization	SH			9	3	1	26-OCT-11 16:22:41	Paul Chapman
atus:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 13:58:17	Paul Chapman
To:	634- Characterization	Staging Area						26-OCT-11 16:20:41	Paul Chapman
atus:	Container move is cancelled								
From:	628	NN			15	3	2	14-OCT-11 14:17:57	Mikel Fisher
To:	628	NN			11	2	1	14-OCT-11 14:18:53	Mikel Fisher
atus:	Container move is done and complete								
From:	628	NN			10	3	2	11-OCT-11 16:12:00	Jesse Howard
To:	628	NN			15	3	2	11-OCT-11 16:14:54	Jesse Howard
atus:	Container move is done and complete								
From:	628	NN			9	3	2	06-OCT-11 14:06:56	Steve Hunter
To:	628	NN			10	3	2	06-OCT-11 14:07:27	Steve Hunter
atus:	Container move is done and complete								
From:	628	NN			8	2	2	06-OCT-11 13:28:47	Adam Schenck
To:	628	NN			9	3	2	06-OCT-11 14:05:24	Steve Hunter
atus:	Container move is done and complete								
From:	628	NN			15	1	2	30-SEP-11 16:29:59	Che Miles
To:	628	NN			8	2	2	30-SEP-11 16:38:37	Che Miles
atus:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	ND			4	1	1	27-SEP-11 14:51:37	Tony Burgess
To:	628	NN			15	1	2	27-SEP-11 16:26:18	Dallas Johnston
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				22-SEP-11 10:59:54	Thomas Mills
To:	628	ND			4	1	1	22-SEP-11 16:50:21	Larin Mortimer
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				21-SEP-11 05:08:45	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				21-SEP-11 05:07:51	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				21-SEP-11 03:07:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				20-SEP-11 12:37:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				20-SEP-11 09:35:43	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				19-SEP-11 04:02:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				18-SEP-11 15:14:01	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				18-SEP-11 14:30:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				18-SEP-11 14:29:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				18-SEP-11 14:29:47	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				18-SEP-11 14:29:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				18-SEP-11 14:29:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				18-SEP-11 14:28:33	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				18-SEP-11 14:14:24	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				18-SEP-11 14:14:04	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				18-SEP-11 14:13:46	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 14:13:30	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 14:11:38	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				18-SEP-11 09:19:05	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 09:15:40	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 09:15:26	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				18-SEP-11 05:40:27	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				18-SEP-11 03:39:48	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				18-SEP-11 03:00:45	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				17-SEP-11 23:42:38	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				17-SEP-11 20:48:19	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/01				17-SEP-11 18:00:35	
atus:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/01				17-SEP-11 15:03:24	
atus:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INA/07	INA/07				17-SEP-11 15:02:59	
atus:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/06	INA/06				16-SEP-11 21:40:02	
atus:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/05	INA/05				16-SEP-11 21:39:36	
atus:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/04	INA/04				16-SEP-11 14:32:00	
atus:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/03	INA/03				16-SEP-11 14:31:37	
atus:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/02	INA/02				16-SEP-11 04:25:34	
atus:	Container move is done and complete								
From:								14-SEP-11 02:13:38	Nolan Bjorkman
To:	676- Facility	General Facility Building	General Facility Subsection I					14-SEP-11 02:13:38	Nolan Bjorkman
atus:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10421829

DS Filter ode	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
19SD		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	1.85E-05							
Comment								
036		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	9.25E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas Batch HS111-00023 Daily Checks Report

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	

HSGS Headspace Gas Batch HS111-00023 Daily Checks Report

Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2127065	SOLDHAM	02-NOV-11 08:24	
2132332	CROJAS	14-NOV-11 16:39	
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Batch Log

Date: 24 SEP 2012
Time: 10:24

$HS111_00023,2011-10-
30,17:38:59,SO,0.005,0.004,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0
02,0.002,60.00,3.00,40.00,5.00,60.00,5.00,18:25:32,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error,manifold & bottles,LK_RT_TST. Vac_error(EVAC3). V
Evac).||No comment.
S1,HS111_00023,icCLEAN,2011-11-02,08:49:44,649.068,894.711,22.1,SO,,,0.0013,644.215,N/A|No comment.
A1,HS111_00023,icCLEAN,719.291|IC1,2011-11-02,08:54:28 Delivered (719.291).
R,HS111_00023,QC1,2011-11-02,08:59:23|No system comments.
S1,HS111_00023,icCCAL1,2011-11-02,09:15:15,649.800,877.102,22.4,SO,,,0.0068,644.459,N/A|No comment.
S2,HS111_00023,icLCS1,2011-11-02,09:21:03,649.709,896.847,22.5,SO,,,0.0067,644.398,N/A|No comment.
S4,HS111_00023,icEB,2011-11-02,09:34:40,650.075,910.459,22.8,SO,,,0.0014,644.551,N/A|No comment.
S3,HS111_00023,drFB,2011-11-02,09:39:48,642.628,904.325,22.8,SO,,,0.0141,644.551,N/A|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,09:50:06 BFB analysis started.
A1,HS111_00023,icCCAL1,708.670|IC1,2011-11-02,09:54:13 Delivered (708.670).
A2,HS111_00023,icLCS1,716.971|IC2,2011-11-02,10:12:05 Delivered (716.971).
A4,HS111_00023,icEB,724.265|IC4,2011-11-02,10:25:52 Delivered (724.265).
A3,HS111_00023,drFB,719.718|DR3,2011-11-02,10:39:37 Delivered (719.718).
R,HS111_00023,QC2, EB-4,2011-11-02,10:44:29|No system comments.
S2,HS111_00023,icCCAL2,2011-11-02,11:17:42,650.319,893.430,24.3,SO,,,0.0068,644.826,N/A|No comment.
S3,HS111_00023,icLCS2,2011-11-02,11:24:07,649.709,901.273,24.6,SO,,,0.0091,644.704,N/A|No comment.
S8,HS111_00023,drBN10418907,2011-11-02,11:37:55,643.086,895.749,24.6,SO,,,0.0023,644.704,N/A|No comment.
S9,HS111_00023,drBN10418907 DUP,2011-11-02,11:48:11,642.659,893.399,24.8,SO,,,0.0061,644.643,passed|No comment.
S10,HS111_00023,drBN10421829,2011-11-02,12:11:20,642.567,894.528,25.1,SO,,,0.0018,644.673,passed|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,13:02:18 BFB analysis started.
A2,HS111_00023,icCCAL2,719.169|IC2,2011-11-02,13:06:26 Delivered (719.169).
A3,HS111_00023,icLCS2,721.336|IC3,2011-11-02,13:27:26 Delivered (721.336).
A8,HS111_00023,drBN10418907,711.570|DR8,2011-11-02,13:41:13 Delivered (711.570).
A8,HS111_00023,drBN10418907,751.152|DL8 to 4,2011-11-02,13:54:59 DEP = 103.244. DCP = 929.136. Delivered (751.152).
A9,HS111_00023,drBN10418907 DUP,720.634|DR9,2011-11-02,14:10:28 Delivered (720.634).
R,HS111_00023,Re-clean DL,2011-11-02,14:15:16|No system comments.
A9,HS111_00023,drBN10418907 DUP,751.366|DL9 to 4,2011-11-02,14:24:12 DEP = 104.648. DCP = 929.136. Delivered (751.366).
A10,HS111_00023,drBN10421829,712.577|DR10,2011-11-02,14:39:22 Delivered (712.577).
R,HS111_00023,Re-clean DL,2011-11-02,14:44:14|No system comments.

******************************Esignature***************************

Esig Approval ID	Esigned By	Esigned Date	Comment
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Date: 24-SEP-12

Batch ID: HS111-00023

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are puck drums; don't have rigid liner.
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRS
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Date: 24-SEP-12

Batch ID: HS111-00023

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are puck drums; don't have rigid liner.
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRS
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not	N/A		No liners present.

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
present, mark N/A.			
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst, and complete?	Yes		
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.	N/A		
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected at a level greater than three times the MDL in blank analyses.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected at a level greater than the MDL in blank analyses.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a concentration exceeding the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of precision, accuracy, and MDLs performed within the last six months?	Yes		
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum and drum duplicate met precision criteria.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable) · RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2134599	NKIRK	21-NOV-11	SPM	Validation complete. Promote batch.
2132638	JKETTEL	16-NOV-11	ITR	Promote.

HSGS Headspace Gas Batch HS112-00002 Cover Sheet & Case Narrative

Batch No: HS112-00002
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 17-JAN-12 09:25
Batch Analysis Date: 17-JAN-12 14:02
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 19-JAN-12 15:22
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.
NCR: No NCRs associated to this batch

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: A summary of the applicable ICAL is included in this batch. MDLs and MPSs were analyzed within six months, they met criteria.
Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10429587	100	BN-550	S5000	Yes	No	No	1	P
BN10430658	100	BN-550	S5000	Yes	Yes	No	2	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	23-JAN-12 15:06:24	Validation complete. Promote batch.
JKETTEL	ITR	23-JAN-12 10:05:31	Promote to SPM.
CROJAS	HOC	19-JAN-12 15:22:16	Promote to ITR
CROJAS	HOC	18-JAN-12 14:33:11	
CROJAS	HOC	18-JAN-12 14:25:48	
SOLDHAM	HSGO	17-JAN-12 13:58:08	
SOLDHAM	HSGO	17-JAN-12 08:08:34	

FOR INFORMATION ONLY

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS112-00002
Non-Conformances

Date: 24 Sep 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
ICAL Report

Batch No.: ICAL/HS112-00002
Instrument method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\

ICAL Start: 11-JAN-12 13:17
ICAL End: 11-JAN-12 14:13
Sampled by: SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	002I1-F.D	003I2-F.D	004I3-F.D	005I4-F.D	006I5-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.03E+05	0.000	0.9999	
Methane	4.85E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5		
Chloromethane	0.148	0.132	0.132	0.129	0.127	6.18	
Methanol	0.033	0.028	0.028	0.028	0.027	8.09	
Ethyl ether	0.159	0.143	0.142	0.142	0.138	5.65	
1,1-dichloroethylene	0.247	0.224	0.231	0.229	0.228	3.83	
Freon-113	0.641	0.568	0.570	0.566	0.557	5.89	
Acetone	0.118	0.101	0.104	0.106	0.106	6.20	
Carbon disulfide	0.605	0.534	0.549	0.546	0.552	4.95	
Methylene chloride	0.212	0.185	0.188	0.191	0.193	5.54	
trans-1,2-dichloroethylene	0.293	0.258	0.259	0.266	0.268	5.21	
1,1-dichloroethane	0.561	0.476	0.482	0.492	0.497	6.78	
cis-1,2-dichloroethylene	0.311	0.257	0.267	0.270	0.274	7.43	
Methyl ethyl ketone	0.130	0.108	0.112	0.115	0.117	7.10	
Chloroform	0.770	0.631	0.636	0.639	0.631	9.24	
1,1,1-trichloroethane	0.857	0.720	0.722	0.730	0.710	8.21	
Cyclohexane	0.469	0.391	0.406	0.416	0.419	6.93	
Carbon tetrachloride	0.202	0.166	0.177	0.176	0.170	7.98	
Benzene	0.767	0.648	0.658	0.677	0.694	6.82	
1,2-dichloroethane	0.591	0.474	0.478	0.481	0.473	10.24	
Trichloroethylene	0.551	0.452	0.467	0.477	0.484	7.81	
1-Butanol	0.053	0.041	0.044	0.045	0.044	9.74	
Methyl isobutyl ketone	0.119	0.097	0.104	0.107	0.095	9.08	
Toluene	0.663	0.532	0.562	0.572	0.599	8.45	
Tetrachloroethylene	0.683	0.536	0.572	0.560	0.503	11.93	
Chlorobenzene	1.101	0.879	0.930	0.948	0.979	8.58	
Ethylbenzene	0.512	0.408	0.441	0.449	0.464	8.38	
m and p-xylene	0.609	0.482	0.534	0.544	0.564	8.44	
o-xylene	0.579	0.452	0.505	0.526	0.542	9.00	
Bromoform	0.442	0.357	0.401	0.409	0.412	7.56	
1,1,2,2-tetrachloroethane	0.447	0.346	0.393	0.404	0.419	9.25	
1,3,5-trimethylbenzene	0.709	0.556	0.672	0.685	0.720	9.83	
1,2,4-trimethylbenzene	0.654	0.517	0.635	0.654	0.680	10.19	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
BFB Report ICAL

Batch No.: ICAL/HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 11-JAN-12 13:09
Apex Scan(s): 430 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.4
75	30.0 - 60.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.2
174	Greater than 50.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	98.5
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	002I1-F.D	11-JAN-2012 13:17
ICAL2	ICAL	003I2-F.D	11-JAN-2012 13:31
ICAL3	ICAL	004I3-F.D	11-JAN-2012 13:45
ICAL4	ICAL	005I4-F.D	11-JAN-2012 13:59
ICAL5	ICAL	006I5-F.D	11-JAN-2012 14:13

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
BFB Report Shift 1

Batch No.: HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 17-JAN-12 09:25
Apex Scan(s): 431 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.9
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7
177	5.0 - 9.0% of mass 176	6
174	Greater than 50.0% of mass 95	94.4
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	98.9
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	17-JAN-2012 09:33
LCS1	LCS	003LC-F.D	17-JAN-2012 09:52
EB	EB	004EB-F.D	17-JAN-2012 10:06
FB	FB	005FB-F.D	17-JAN-2012 10:20

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
BFB Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Apex Scan(s): 432
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\006BF-F.D

Pass? PASS
Analyzed On: 17-JAN-12 14:02
Matrix: QC Sample

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	98.1
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	96.4
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	17-JAN-2012 14:10
LCS2	LCS	008LC-F.D	17-JAN-2012 14:27
BN10429587	HS112_00002B-01	009DR-F.D	17-JAN-2012 14:41
BN10429587	HS112_00002B-02	010DR-F.D	17-JAN-2012 14:55
BN10430658	HS112_00002B-03	011DR-F.D	17-JAN-2012 15:09
DILUTION1	HS112_00002B-03(1X)	012DR-F.D	17-JAN-2012 15:24

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
CCAL Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D

Analyzed on: 17-JAN-12 09:33
Sampled on & by: 17-JAN-12 08:57 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.98	98.0	
Methane	1.00	1.00	99.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.125	6.7	
Methanol	0.029	0.029	0.0	
Ethyl ether	0.145	0.143	1.4	
1,1-dichloroethylene	0.232	0.233	0.4	
Freon-113	0.580	0.577	0.5	
Acetone	0.107	0.105	1.9	
Carbon disulfide	0.557	0.552	0.9	
Methylene chloride	0.194	0.194	0.0	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.269	2.5	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.651	1.5	
1,1,1-trichloroethane *	0.748	0.753	0.7	
Cyclohexane	0.420	0.408	2.9	
Carbon tetrachloride	0.178	0.174	2.2	
Benzene	0.689	0.657	4.6	
1,2-dichloroethane	0.499	0.492	1.4	
Trichloroethylene	0.486	0.478	1.6	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.105	0.0	
Toluene	0.586	0.557	4.9	
Tetrachloroethylene	0.571	0.573	0.4	
Chlorobenzene	0.967	0.919	5.0	
Ethylbenzene	0.455	0.431	5.3	
m and p-xylene	0.547	0.514	6.0	
o-xylene	0.521	0.482	7.5	
Bromoform	0.404	0.391	3.2	
1,1,2,2-tetrachloroethane	0.402	0.370	8.0	
1,3,5-trimethylbenzene	0.668	0.603	9.7	
1,2,4-trimethylbenzene	0.628	0.556	11.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
CCAL Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

Analyzed on: 17-JAN-12 14:10
Sampled on & by: 17-JAN-12 11:42 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.97	97.0	
Methane	1.00	0.99	98.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.118	11.9	
Methanol	0.029	0.026	10.3	
Ethyl ether	0.145	0.138	4.8	
1,1-dichloroethylene	0.232	0.223	3.9	
Freon-113	0.580	0.563	2.9	
Acetone	0.107	0.104	2.8	
Carbon disulfide	0.557	0.534	4.1	
Methylene chloride	0.194	0.189	2.6	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.267	3.3	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.653	1.2	
1,1,1-trichloroethane	0.748	0.740	1.1	
Cyclohexane	0.420	0.405	3.6	
Carbon tetrachloride	0.178	0.177	0.6	
Benzene	0.689	0.660	4.2	
1,2-dichloroethane	0.499	0.491	1.6	
Trichloroethylene	0.486	0.477	1.9	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.104	1.0	
Toluene	0.586	0.551	6.0	
Tetrachloroethylene	0.571	0.563	1.4	
Chlorobenzene	0.967	0.903	6.6	
Ethylbenzene	0.455	0.423	7.0	
m and p-xylene	0.547	0.501	8.4	
o-xylene	0.521	0.476	8.6	
Bromoform	0.404	0.387	4.2	
1,1,2,2-tetrachloroethane	0.402	0.365	9.2	
1,3,5-trimethylbenzene	0.668	0.578	13.5	
1,2,4-trimethylbenzene	0.628	0.541	13.9	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
LCS Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D

Analyzed on: 17-JAN-12 09:52
Sampled on & by: 17-JAN-12 09:02 SO
Multiplier: 1.39
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	97.66	
Methane	0.500	0.50	99.32	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.62	101.25	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.60	91.19	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.13	92.27	
Benzene	50.00	47.71	95.42	
1,2-dichloroethane	50.00	47.84	95.68	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.64	92.54	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
LCS Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D

Analyzed on: 17-JAN-12 14:27
Sampled on & by: 17-JAN-12 11:47 SO
Multiplier: 1.38
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	98.15	
Methane	0.500	0.49	97.38	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.63	101.26	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.59	91.17	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.17	92.34	
Benzene	50.00	48.25	96.51	
1,2-dichloroethane	50.00	48.31	96.63	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.46	92.18	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	LCS
Lab Sample Id.:	LCS	LCS2
Container Id.:	LCS1	VOCGAS
Instrument Method:	VOCGAS	17-JAN-12 14:27
Analyzed on:	17-JAN-12 09:52	17-JAN-12 11:47 SO
Sampled on & by:	17-JAN-12 09:02 SO	1.38
Multiplier:	1.39	QC Sample
Matrix:	QC Sample	C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D	
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.49	0.49	0.50	
Methane	0.50	0.49	1.98	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	50.62	50.63	0.01	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	45.60	45.59	0.03	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	46.13	46.17	0.08	
Benzene	47.71	48.25	1.14	
1,2-dichloroethane	47.84	48.31	0.99	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.64	46.46	0.39	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS112-00002
LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Equipment Blank Report

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\004EB-F.D

Analyzed on: 17-JAN-12 10:06
Sampled on & by: 17-JAN-12 09:12 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Field Blank Report

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\005FB-F.D

Analyzed on: 17-JAN-12 10:20
Sampled on & by: 17-JAN-12 09:16 SO
Multiplier: 1.42
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide *	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS112_00002B-01	HS112_00002B-02
Container Id.:	BN10429587	BN10429587
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	17-JAN-12 14:41	17-JAN-12 14:55
Sampled on & by:	17-JAN-12 13:17 SO	17-JAN-12 13:29 SO
Multiplier:	1.38	1.38
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\009DR-F.D	C:\HPCHEM\1\DATA\HS112_00002B\010DR-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	J	J	NC	
Methane	U	U	NC	
Chloromethane	J	U	NC	
Methanol	J	J	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	U	U	NC	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	U	U	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	U	U	NC	
Benzene	U	U	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	27	28	2.42	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Internal Standards Summary

Batch No.: HS112-00002
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

CCAL1 Analyzed on: 17-JAN-12 09:33
CCAL2 Analyzed on: 17-JAN-12 14:10

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	6309498	4.10	5959907	6.59
LCS1	6231046	4.07	5720084	6.57
EB	6131714	4.09	5662135	6.58
FB	5865722	4.07	5469082	6.57
CCAL2 STD.	6018153	4.09	5760669	6.59
LCS2	6079556	4.08	5651450	6.58
BN10429587	5990895	4.07	5581731	6.57
BN10429587	6002827	4.08	5525868	6.57
BN10430658	6030452	4.13	5617238	6.62
DILUTION1	5914895	4.08	5504630	6.57

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Drum BN10430658 Sample Report

Batch No.: HS112-00002
Container Id.: BN10430658
Lab Sample Id.: HS112_00002B-03
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\011DR-F.D

Analysis Status
Pass

Analyzed on: 17-JAN-12 15:09
Sampled on & by: 17-JAN-12 13:42 SO
Multiplier: 1.43
Matrix: Drum Headspace
Dilution Files: 012

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.15 vol%								
Methane	0.019 vol%	U							
Chloromethane	0.99	U							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	0.62	U							
Acetone	170								
Carbon disulfide	1.2	U							
Methylene chloride	580	D							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.3	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	0.99	U							
1,1,1-trichloroethane	7.9	J							
Cyclohexane	2.8	J							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	13								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	34								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
78-87-5	1,2-DICHLOROPROPANE	150	4.71
556-67-2	Cyclotetrasiloxane, octamethyl-	49	7.45

HSGS Headspace Gas
Batch HS112-00002
Drum BN10430658 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10429587	3	S5000	0	0	7	27 Dec 11	27 Dec 11	17 Jan 12	2	21	NF19SD, NF036
P	BN10430658	3	S5000	0	0	7	10 Jan 12	10 Jan 12	17 Jan 12	2	7	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10429587	NA	Y	Y	SETH OLDHAM	
BN10430658	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR
2164151	CROJAS	18-JAN-12 14:25	
2163335	SOLDHAM	17-JAN-12 13:58	

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

DAC Information

Waste Type:	III	**Liner Lid Hole Size:**	NA	**Vent Date:**	10-JAN-12
Rigid Liner:	N	**Inner Bags:**	NA	**Closure Date:**	10-JAN-12
Rigid Liner Lid:	N	**Liner Bags:**	NA	**Layers of Confinement:**	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:

Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	**Liner Punctured:**	NA
Liner Hole Size:	NA	**Liner Type:**	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	**Fill Factor:**	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						10-AUG-12 08:13:33	Mark Christensen
To:	TRUPACT Loaded							10-AUG-12 08:16:05	Mark Christensen
atus:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 08:16:58	Larry Hampton
To:	635	Assembled Payloads						05-AUG-12 08:18:34	Larry Hampton
atus:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 07:18:56	Larry Hampton
To:	635	WC						05-AUG-12 08:16:58	Larry Hampton
atus:	Container move is cancelled								
From:	628	NK			13	3	1	03-AUG-12 16:02:20	Larry Hampton
To:	628	SL			6	2	1	03-AUG-12 17:42:38	Larry Hampton
atus:	Container move is done and complete								
From:	628	NK			4	3	2	26-JUL-12 09:54:55	Lonnie Seiler
To:	628	NK			13	3	1	26-JUL-12 10:00:07	Lonnie Seiler
atus:	Container move is done and complete								
From:	628	ND			6	3	1	23-JUL-12 16:04:57	Steven Williams
To:	628	NK			4	3	2	23-JUL-12 16:32:30	Steven Williams
atus:	Container move is done and complete								
From:	628	SE			7	2	2	20-JUL-12 11:40:07	Julie Ragan
To:	628	ND			6	3	1	20-JUL-12 11:44:21	Julie Ragan
atus:	Container move is done and complete								
From:	633	SA			6	2	2	14-JUL-12 13:56:31	Paul Chapman
To:	628	SE			7	2	2	14-JUL-12 13:57:13	Paul Chapman
atus:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SK			13	1	1	07-FEB-12 11:36:51	Larry Payne
To:	633	SA			6	2	2	07-FEB-12 11:48:03	Larry Payne
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	06-FEB-12 15:10:11	Cindy Tiegs
To:	634- Characterization	SK			13	1	1	06-FEB-12 15:15:46	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	24-JAN-12 18:22:22	Tony Burgess
To:	634- Characterization	SG						24-JAN-12 18:23:09	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	SG			7	3	1	24-JAN-12 11:40:29	Tony Burgess
To:	634- Characterization	SI			1	2	1	24-JAN-12 11:41:01	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:49:12	Scott Taggart
To:	634- Characterization	SG			7	3	1	17-JAN-12 13:49:28	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:33	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:43	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:14	Michael Kremin
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:45	Michael Kremin
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	2	1	17-JAN-12 08:25:21	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 09:31:45	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	2	1	16-JAN-12 13:13:50	Tony Burgess
To:	634- Characterization	SG						16-JAN-12 16:21:31	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	Staging Area						13-JAN-12 11:44:26	Jason Uptergrove
To:	634- Characterization	SG			7	2	1	13-JAN-12 11:44:45	Jason Uptergrove
Status:	Container move is done and complete								
From:	628	SA			5	2	2	13-JAN-12 10:22:45	Jason Uptergrove
To:	634- Characterization	Staging Area						13-JAN-12 11:44:03	Jason Uptergrove
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 10:18:14	Jeff Johnson
To:	628	SA			5	2	2	11-JAN-12 10:26:16	Jeff Johnson
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 05:19:12	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/06	EXA/06				11-JAN-12 05:18:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				11-JAN-12 05:17:23	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				11-JAN-12 03:30:42	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				10-JAN-12 21:35:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				10-JAN-12 17:04:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				10-JAN-12 15:15:55	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				10-JAN-12 15:15:37	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				10-JAN-12 15:15:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				10-JAN-12 15:15:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				10-JAN-12 15:14:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				10-JAN-12 15:13:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				10-JAN-12 14:53:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				10-JAN-12 14:52:44	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 14:52:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 14:50:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/8				10-JAN-12 10:57:33	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 10:54:22	
Status:	Container move is done and complete								

AMWTP Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 10:53:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				10-JAN-12 10:53:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				10-JAN-12 09:10:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				10-JAN-12 08:52:03	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				10-JAN-12 05:08:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				10-JAN-12 05:01:10	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				09-JAN-12 21:42:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				09-JAN-12 21:34:52	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				09-JAN-12 21:34:24	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				09-JAN-12 16:16:40	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				09-JAN-12 16:16:14	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				09-JAN-12 11:43:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				09-JAN-12 11:42:57	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				09-JAN-12 11:42:52	
Status:	Container move is done and complete								
From:								08-JAN-12 07:06:59	Jenny Cummins
To:	676- Facility	General Facility Building	General Facility Subsection Ii					08-JAN-12 07:06:59	Jenny Cummins
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10430658

DS Filter ode	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
19SD		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	1.85E-05							
Comment								
036		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	9.25E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas Batch HS112-00002 Daily Checks Report

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	

Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2163061	SOLDHAM	17-JAN-12 08:08	
2164156	CROJAS	18-JAN-12 14:33	
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

$HS112_00002,2012-01-11,14:31:50,SO,0.007,0.004,0.004,0.004,0.004,0.005,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,15:18:47,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error(EVAC2). Vac_error(EVAC3).||No comment.
S1,HS112_00002,icCLEAN,2012-01-17,08:32:04,640.919,902.280,22.3,SO,,,0.0121,636.036,N/A|No comment.
A1,HS112_00002,icCLEAN,723.197|IC1,2012-01-17,08:36:45 Delivered (723.197).
R,HS112_00002,QC1,2012-01-17,08:41:39|No system comments.
S1,HS112_00002,icCCAL1,2012-01-17,08:57:20,641.682,895.688,22.0,SO,,,0.0097,636.403,N/A|No comment.
S2,HS112_00002,icLCS1,2012-01-17,09:02:26,641.896,890.347,22.2,SO,,,0.0101,636.403,N/A|No comment.
S10,HS112_00002,icEB,2012-01-17,09:12:00,641.163,895.627,22.4,SO,,,0.0015,636.372,N/A|No comment.
S3,HS112_00002,drFB,2012-01-17,09:16:23,634.693,903.745,22.5,SO,,,0.0204,636.403,N/A|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,09:25:04 BFB analysis started.
A1,HS112_00002,icCCAL1,721.458|IC1,2012-01-17,09:29:16 Delivered (721.458).
A2,HS112_00002,icLCS1,711.722|IC2,2012-01-17,09:48:20 Delivered (711.722).
A10,HS112_00002,icEB,710.593|IC10,2012-01-17,10:02:04 Delivered (710.593).
A3,HS112_00002,drFB,723.747|DR3,2012-01-17,10:15:49 Delivered (723.747).
R,HS112_00002,QC2, EB-10,2012-01-17,10:20:43|No system comments.
S2,HS112_00002,icCCAL2,2012-01-17,11:42:08,641.499,885.525,23.0,SO,,,0.0061,636.372,N/A|No comment.
S3,HS112_00002,icLCS2,2012-01-17,11:47:22,641.804,886.776,23.1,SO,,,0.0069,636.311,N/A|No comment.
S8,HS112_00002,drBN10429587,2012-01-17,13:17:41,633.717,872.036,24.1,SO,,,0.0154,634.999,N/A|No comment.
S9,HS112_00002,drBN10429587 DUP,2012-01-17,13:29:13,633.320,876.492,24.2,SO,,,0.0124,634.938,passed|No comment.
S10,HS112_00002,drBN10430658,2012-01-17,13:42:51,632.313,902.280,24.1,SO,,,0.0122,634.693,passed|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,14:01:58 BFB analysis started.
A2,HS112_00002,icCCAL2,709.464|IC2,2012-01-17,14:06:08 Delivered (709.464).
A3,HS112_00002,icLCS2,712.668|IC3,2012-01-17,14:23:40 Delivered (712.668).
A8,HS112_00002,drBN10429587,697.165|DR8,2012-01-17,14:37:24 Delivered (697.165).
A9,HS112_00002,drBN10429587 DUP,699.057|DR9,2012-01-17,14:51:11 Delivered (699.057).
A10,HS112_00002,drBN10430658,717.551|DR10,2012-01-17,15:05:01 Delivered (717.551).
A10,HS112_00002,drBN10430658,740.410|DL10 to 4,2012-01-17,15:18:56 DEP = 104.251. DCP = 917.173. Delivered (740.410).

******************************Esignature**************************

Esig Approval ID	Esigned By	Esigned Date	Comment
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Batch ID: HS112-00002

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are 100 gal puck drums
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRs
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with containers in this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not	N/A		Product drums do not have liners.

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
present, mark N/A.			
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst, and complete?	Yes		
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.	N/A		
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected in blank samples at a level greater than three times the MDL.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected in blank samples at a level greater or equal to the MDL.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a level beyond the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of precision, accuracy, and MDLs performed within the last six months?	Yes		
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		No changes necessary.
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		No rework required.

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum/drum duplicate RPD QAO is acceptable.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable) · RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2167766	NKIRK	23-JAN-12	SPM	Validation complete. Promote batch.
2167676	JKETTEL	23-JAN-12	ITR	Promote to SPM.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 20-Sep-2012

Time: 10:03

AK38

Batch Type Solid Sampling Coring

Batch Id SSC07-00101

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-250-801 634-Coring

Batch Report No. SSC07-00101

Open Date 06-MAR-07 10:17:55

Close Date 12-MAR-07 09:17:17

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10124541	MD-836	390	06-MAR-07 14:33:55	Original	P	STEVEN YOUNT
10124541	MD-836	391	06-MAR-07 15:45:08	Replicate / Duplicate	P	DAVEY SUMNERS
10123154	MD-836	392	08-MAR-07 14:28:00	Original	P	FRANK KUCK
10123139	MD-836	393	09-MAR-07 16:35:00	Original	P	MICHAEL KREMIN
10130208	MD-836	394	10-MAR-07 14:00:30	Original	P	MICHAEL KREMIN
10123400	MD-836	395	11-MAR-07 14:07:00	Original	P	STEVEN YOUNT

ONLY

**********Batch Comments**********

Written By	Date	Comment
DSUMNERS	12-MAR-07 09:17:18	Esigned.
JTWITCHELL	13-MAR-07 09:04:10	Performing Level 1 ITR Validation.
JTWITCHELL	13-MAR-07 10:29:58	REWORK: Container 10130208 (sub samples 10151030, 10151031 and 10151032). Per INST-OI-16, step 4.14.10, "Trip Blank" must be entered into the Distance from top Comment. Please review.
JTWITCHELL	13-MAR-07 10:29:58	REWORK: Container 10123139 (sub samples 10150935, 10150936 and 10150937). Per INST-OI-16, step 4.14.10, "Trip Blank" must be entered into the Distance from top Comment. Please review.
JTWITCHELL	13-MAR-07 10:29:58	REWORK: Container 10123139 (sub sample 10150930). This is the first sample and should read as PVOC. Please review.
JTWITCHELL	13-MAR-07 10:29:58	REWORK: Container 10130208 (sub sample 10151029). Please correct data for type of Vial. This should read as 125 ml. as this is a metals sub sample.
JTWITCHELL	15-MAR-07 07:32:57	Demote to operations for rework.
FKUCK	15-MAR-07 15:29:57	REWORK COMPLETE
FKUCK	15-MAR-07 15:30:34	REWORK COMPLETE
JTWITCHELL	19-MAR-07 15:01:58	REWORK: Container 10130208 (sub sample 10151029). Operator lists 20 ml vial under sampling equipment. This is the metals sub sample, therefore the sampling equipment should read as 125 ML Vial. Please review and correct as necessary.
JTWITCHELL	19-MAR-07 15:01:59	Demote to operations for rework.
JTWITCHELL	20-MAR-07 06:36:00	Rework was performed satisfactorily.
JTWITCHELL	20-MAR-07 14:22:59	Promote to SPM.
DMARQUARDT	29-MAR-07 11:01:03	Reviewed and validated. Approval pending pagination.
DMARQUARDT	29-MAR-07 15:29:34	e-sig to approve.
DMARQUARDT	29-MAR-07 15:29:34	Pagination reviewed. Approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
711854	DSUMNERS	12-MAR-2007 09:17:18	
714854	JTWITCHELL	15-MAR-2007 07:32:57	Demote to operations for rework.
715376	FKUCK	15-MAR-2007 15:29:57	REWORK COMPLETE
715378	FKUCK	15-MAR-2007 15:30:34	REWORK COMPLETE
719074	JTWITCHELL	19-MAR-2007 15:01:59	Demote to operations for rework.
720144	JTWITCHELL	20-MAR-2007 14:23:00	Promote to SPM.
729012	DMARQUARDT	29-MAR-2007 15:29:47	e-sig to approve.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample
Batch Data Report

Date: 20-Sep-2012
Time: 10:04

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC07-00101	10123139	MD-836	S3121	A

Core Sample

Core Sample ID 393
Core Sample Date 09-MAR-07 16:35:00
Taken By MICHAEL KREMIN
Core Sample Type Initial Core Sample

Core Length 27.00 in.
Core Recovered (%) 100.0
Depth Of Waste 27.0 in.
Core Sector 5
Horizontal Position 24678 mils East

Equipment Procedure ID INST-OI-16 Procedure Revision ID 24 FC-2

Coring Equipment Used

Serial Number	Part Type
041703-01-35	LINER
DBP-003	BARREL
010804-01-128	PUSH ROD
010804-01-428	DRILL BIT

Physical Description undistured dark grayish black color, dry clay like
Core Sector Comment cored in sector 5
Core Sample Comment initial core sample, no other sample to compare to

Cancel Date By Reason

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
708682	MKREMIN	09-MAR-2007 08:31:44	none
708925	MKREMIN	09-MAR-2007 13:42:28	none
708926	MKREMIN	09-MAR-2007 13:44:39	none
709212	MKREMIN	09-MAR-2007 16:38:06	none
709386	MKREMIN	09-MAR-2007 17:36:12	none

Sub Sample

Core Sample ID 393
Sub Sample ID 10150930
Sub Sample Date 10-MAR-07 07:14:00
Taken By FRANK KUCK
Sample Requested PVOC

Weight 2.85 gms
Volume 20 ml.
Custody Seal Attached Y
Preserved to 4 Degrees C Y

Required Distance 19.50 in. Actual Distance 19.50 in.
Distance From Top Comment
sample taken at 19.5"

Sub Sample Comment
sample cut at 19.25" and material removed to 19.5" sub sampling toward bottom of core sample.

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709847	FKUCK	10-MAR-2007 07:16:50	PVOC
715338	FKUCK	15-MAR-2007 15:16:02	Corrected HNVOC to PVOC for initial sub sample
715340	JSZABO	15-MAR-2007 15:16:04	

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample
Batch Data Report

Date: 20-Sep-2012
Time: 10:04

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC07-00101	10123139	MD-836	S3121	A

Sub Sample

Core Sample ID 393 Sub Sample ID 10150931 Weight 2.91 gms

Sub Sample Date 10-MAR-07 07:15:00 Volume 20 ml.

Taken By FRANK KUCK Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested NHVOC

Required Distance in. Actual Distance 20.00 in. Distance From Top Comment
Difference in distance due to previous sample consumption

Sub Sample Comment
NHVOC

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709849	FKUCK	10-MAR-2007 07:19:51	NHVOC

Sub Sample

Core Sample ID 393 Sub Sample ID 10150932 Weight 2.70 gms

Sub Sample Date 10-MAR-07 07:16:07 Volume 20 ml.

Taken By FRANK KUCK Custody Seal Attached Y Preserved to 4 Degrees C Y

Sample Requested SPARE

Required Distance in. Actual Distance 20.50 in. Distance From Top Comment
Difference in distance due to previous sample consumption

Sub Sample Comment
Spare 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709850	FKUCK	10-MAR-2007 07:21:20	Spare 1

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample Batch Data Report

Date: 20-Sep-2012
Time: 10:04

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC07-00101	10123139	MD-836	S3121	A

Sub Sample

Core Sample ID 393
Sub Sample ID 10150933
Weight 2.91 gms
Sub Sample Date 10-MAR-07 07:17:33
Volume 20 ml.
Taken By FRANK KUCK
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SPARE
Required Distance in. Actual Distance 21.00 in.
Distance From Top Comment
Difference in distance due to previous sample consumption

Sub Sample Comment
Spare 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709851	FKUCK	10-MAR-2007 07:22:53	Spare 2
709947	FKUCK	10-MAR-2007 09:26:30	custody seals attached
709965	FKUCK	10-MAR-2007 09:41:53	samples in fridge

Sub Sample

Core Sample ID 393
Sub Sample ID 10150934
Weight 39.25 gms
Sub Sample Date 10-MAR-07 07:19:11
Volume 125 ml.
Taken By FRANK KUCK
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested SVOC, METALS
Required Distance in. Actual Distance 21.50 in.
Distance From Top Comment
Difference in distance due to previous sample consumption

Sub Sample Comment
SVOC METALS

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
125 ML (4 oz) Vial	PC0125-0015	052303	ID03I-0506	NA
Spatula	3693	J009276	ID03I-1088	03U-011120
Weigh Boat	C-01017-15	P111103 PANS	ID03I-0506	03-U011119

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709852	FKUCK	10-MAR-2007 07:25:01	SVOC METALS

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample Batch Data Report

Date: 20-Sep-2012
Time: 10:04

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC07-00101	10123139	MD-836	S3121	A

Sub Sample

Core Sample ID 393
Sub Sample ID 10150935
Weight 2.88 gms
Sub Sample Date 10-MAR-07 07:30:00
Volume 20 ml.
Taken By FRANK KUCK
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. Actual Distance 0.00 in.
Distance From Top Comment
TRIP BLANK 1

Sub Sample Comment
TRIP BLANK 1

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709858	FKUCK	10-MAR-2007 07:31:32	TRIP 1
715343	FKUCK	15-MAR-2007 15:20:39	Corrected
715345	JSZABO	15-MAR-2007 15:20:40	Corrected distance from top comment

Sub Sample

Core Sample ID 393
Sub Sample ID 10150936
Weight 2.91 gms
Sub Sample Date 10-MAR-07 07:31:51
Volume 20 ml.
Taken By FRANK KUCK
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in. Actual Distance 0.00 in.
Distance From Top Comment
TRIP Blank 2

Sub Sample Comment
TRIP Blank 2

Cancel Date By Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

----------Esignature----------

Esig Approval ID	User ID	E-Signature Date	Comment
709859	FKUCK	10-MAR-2007 07:32:57	TRIP 2
715346	FKUCK	15-MAR-2007 15:21:45	Corrected distance from top comment
715347	JSZABO	15-MAR-2007 15:21:46	Corrected distance from top comment

AMWTP
Advanced Mixed Waste Treatment Project

Core Sample Batch Data Report

Date: 20-Sep-2012
Time: 10:05

Batch ID	Container	IDC	Waste Matrix Code	Container Type
SSC07-00101	10123139	MD-836	S3121	A

Sub Sample

Core Sample ID 393
Sub Sample ID 10150937
Weight 2.98 gms
Sub Sample Date 10-MAR-07 07:33:20
Volume 20 ml.
Taken By FRANK KUCK
Custody Seal Attached Y
Preserved to 4 Degrees C Y
Sample Requested TRIP BLANK
Required Distance in.
Actual Distance 0.00 in.
Distance From Top Comment
TRIP Blank 3

Sub Sample Comment
TRIP Blank 3

Cancel Date
By
Reason

Disposable Sampling Equipment

Type	Part #	Lot	PO	LAB ID
20 ML Vial	S326-0020	015899	AMW05-1029	
Spatula	3693	J009276	ID03I-1088	03U-011120

Esignature

Esig Approval ID	User ID	E-Signature Date	Comment
709860	FKUCK	10-MAR-2007 07:34:25	TRIP 3
715350	FKUCK	15-MAR-2007 15:23:03	Corrected distance from top comment
715352	JSZABO	15-MAR-2007 15:23:04	Corrected distance from top comment

******End of Core Analysis Report******

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 20-Sep-2012

Time: 10:06

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 15-MAR-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and does it include data reports and QC results? o WTS Coring Batch Cover Sheet o Table of Contents (manual review only) o WTS Coring Analysis Reports o Chain of Custody o Refrigerator Temperature Log Sheet (Form-1585) o Analytical Balance Calibration Check Sheet (Form-1215) o Solid Waste Sampling Checklist (Form-1599) o Solid Sampling Independent Reviewer Checklist (Form-1421) o Supplemental Batch Comment Form (Form-1491) o Associated NCRs (referenced in WTS)	Yes		
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	Yes		
3. Has the Chain of Custody been initiated properly, filled out correctly and completely?	Yes		
4. Was the E-signature History review performed?	Yes		
5. Were samples collected using the correct version of INST-OI-16, Drum Coring Operations?	Yes		
6. Was the sample and sub-sample collected based on a random selection method?	Yes		
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. o Sealing of the liner prior to sampling o Refrigeration of the samples	Yes		
8. Were the proper units and significant figures used for all reported volumes/weights?	Yes		
9. Has the data been reviewed for transcription errors, as appropriate?	Yes		
10. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		
11. Is the scale in calibration and a calibration check performed?	Yes		
12. Was the equipment used traceable to the Certificate of Cleanliness?	Yes		
13. Were the following inspections performed? o Was the coring tool inspection satisfactory? o Was the sampling equipment protective wrapper intact? o Was the sampling area inspection satisfactory? o Were the sampling tools visually clean after unwrapping?	Yes		
14. Were there any nonconforming conditions identified which affect data quality? If so indicate all NCR numbers in the comment section?	No		

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 15-MAR-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
15. Were sampling QC/QAOs met or exceptions documented, as listed below? o Precision: o Co-located cores or samples collected at a frequency of once per sampling batch, as defined in INST-OI-16? o Sample batch does not exceed 20 samples (excluding QC samples)? o All samples have been collected within 14 days from the first sample in the batch? o Accuracy o Equipment blanks have been collected from sampling and coring tools, liners and disposable sampling equipment? o Results of equipment blanks do not exceed three times the MDL. o Completeness o A valid sample has been collected from a randomly selected drum using randomly selected horizontal and vertical planes. o For drums that contain smaller containers, has one randomly selected smaller container been sampled? o Comparability o The use of INST-OI-16, sampling equipment, and measurement units have been consistent? o Was data generated in a technically correct manner in accordance with INST-OI-16, Drum Coring Operations? o Representativeness o The coring tools and sampling equipment were clean prior to sampling? o The core sample collected has a length greater than or equal to 50 percent of the depth of the waste? o If core recovery is less than 50 percent, a second core location has been randomly selected?	Yes		With the exception of: For drums that contain smaller containers, has one randomly selected smaller container been sampled? NA

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 19-MAR-07 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and does it include data reports and QC results? o WTS Coring Batch Cover Sheet o Table of Contents (manual review only) o WTS Coring Analysis Reports o Chain of Custody o Refrigerator Temperature Log Sheet (Form-1585) o Analytical Balance Calibration Check Sheet (Form-1215) o Solid Waste Sampling Checklist (Form-1599) o Solid Sampling Independent Reviewer Checklist (Form-1421) o Supplemental Batch Comment Form (Form-1491) o Associated NCRs (referenced in WTS)	Yes		
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	Yes		
3. Has the Chain of Custody been initiated properly, filled out correctly and completely?	Yes		
4. Was the E-signature History review performed?	Yes		
5. Were samples collected using the correct version of INST-OI-16, Drum Coring Operations?	Yes		
6. Was the sample and sub-sample collected based on a random selection method?	Yes		
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. o Sealing of the liner prior to sampling o Refrigeration of the samples	Yes		
8. Were the proper units and significant figures used for all reported volumes/weights?	Yes		
9. Has the data been reviewed for transcription errors, as appropriate?	Yes		
10. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		
11. Is the scale in calibration and a calibration check performed?	Yes		
12. Was the equipment used traceable to the Certificate of Cleanliness?	Yes		
13. Were the following inspections performed? o Was the coring tool inspection satisfactory? o Was the sampling equipment protective wrapper intact? o Was the sampling area inspection satisfactory? o Were the sampling tools visually clean after unwrapping?	Yes		
14. Were there any nonconforming conditions identified which affect data quality? If so indicate all NCR numbers in the comment section?	No		

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 19-MAR-07 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
15. Were sampling QC/QAOs met or exceptions documented, as listed below? o Precision: o Co-located cores or samples collected at a frequency of once per sampling batch, as defined in INST-OI-16? o Sample batch does not exceed 20 samples (excluding QC samples)? o All samples have been collected within 14 days from the first sample in the batch? o Accuracy o Equipment blanks have been collected from sampling and coring tools, liners and disposable sampling equipment? o Results of equipment blanks do not exceed three times the MDL. o Completeness o A valid sample has been collected from a randomly selected drum using randomly selected horizontal and vertical planes. o For drums that contain smaller containers, has one randomly selected smaller container been sampled? o Comparability o The use of INST-OI-16, sampling equipment, and measurement units have been consistent? o Was data generated in a technically correct manner in accordance with INST-OI-16, Drum Coring Operations? o Representativeness o The coring tools and sampling equipment were clean prior to sampling? o The core sample collected has a length greater than or equal to 50 percent of the depth of the waste? o If core recovery is less than 50 percent, a second core location has been randomly selected?	Yes		With the exception of: For drums that contain smaller containers, has one randomly selected smaller container been sampled? NA

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 20-MAR-07 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and does it include data reports and QC results? o WTS Coring Batch Cover Sheet o Table of Contents (manual review only) o WTS Coring Analysis Reports o Chain of Custody o Refrigerator Temperature Log Sheet (Form-1585) o Analytical Balance Calibration Check Sheet (Form-1215) o Solid Waste Sampling Checklist (Form-1599) o Solid Sampling Independent Reviewer Checklist (Form-1421) o Supplemental Batch Comment Form (Form-1491) o Associated NCRs (referenced in WTS)	Yes		
2. Are there 20 samples or less in the batch, excluding QC samples, collected within 14 days of the first sample of the batch?	Yes		
3. Has the Chain of Custody been initiated properly, filled out correctly and completely?	Yes		
4. Was the E-signature History review performed?	Yes		
5. Were samples collected using the correct version of INST-OI-16, Drum Coring Operations?	Yes		
6. Was the sample and sub-sample collected based on a random selection method?	Yes		
7. Were the sample collection times and preservation requirements met, or exceptions documented, as listed below? If any of these conditions have not been met, record the NCR number in the comments section. o Sealing of the liner prior to sampling o Refrigeration of the samples	Yes		
8. Were the proper units and significant figures used for all reported volumes/weights?	Yes		
9. Has the data been reviewed for transcription errors, as appropriate?	Yes		
10. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		
11. Is the scale in calibration and a calibration check performed?	Yes		
12. Was the equipment used traceable to the Certificate of Cleanliness?	Yes		
13. Were the following inspections performed? o Was the coring tool inspection satisfactory? o Was the sampling equipment protective wrapper intact? o Was the sampling area inspection satisfactory? o Were the sampling tools visually clean after unwrapping?	Yes		
14. Were there any nonconforming conditions identified which affect data quality? If so indicate all NCR numbers in the comment section?	No		

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer JUANITA TWITCHELL **Approval Level** Independent Technical Reviewer

Approval Date 20-MAR-07 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
15. Were sampling QC/QAOs met or exceptions documented, as listed below? o Precision: o Co-located cores or samples collected at a frequency of once per sampling batch, as defined in INST-OI-16? o Sample batch does not exceed 20 samples (excluding QC samples)? o All samples have been collected within 14 days from the first sample in the batch? o Accuracy o Equipment blanks have been collected from sampling and coring tools, liners and disposable sampling equipment? o Results of equipment blanks do not exceed three times the MDL. o Completeness o A valid sample has been collected from a randomly selected drum using randomly selected horizontal and vertical planes. o For drums that contain smaller containers, has one randomly selected smaller container been sampled? o Comparability o The use of INST-OI-16, sampling equipment, and measurement units have been consistent? o Was data generated in a technically correct manner in accordance with INST-OI-16, Drum Coring Operations? o Representativeness o The coring tools and sampling equipment were clean prior to sampling? o The core sample collected has a length greater than or equal to 50 percent of the depth of the waste? o If core recovery is less than 50 percent, a second core location has been randomly selected?	Yes		With the exception of: For drums that contain smaller containers, has one randomly selected smaller container been sampled? NA

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer DAVE MARQUARDT **Approval Level** SPM Data Validation

Approval Date 29-MAR-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review and is the review checklist complete and accurate?	Yes	MP-TRUW-8.2, B3-10b(1)	
(2) Have all applicable Quality Assurance Objectives been met? Precision: · Has a co-located core sample been collected once per sampling batch or once per week during sampling operations, whichever is more frequent? Accuracy: · Has an equipment blank been collected once per equipment cleaning batch: - Coring Tools - Liners - Sampling Equipment Completeness: · Has the number of valid samples collected as a percent of the total number of samples collected for the waste stream been established and is it greater than 90 percent? · The containers were randomly selected from the container population and the subsampling location in the core was randomly selected. Comparability: · Was the correct version of INST-OI-16 used? Representativeness: · Were non-disposable coring tools and sampling equipment cleaned prior to sampling? · Has > or = 50% of the depth of the waste or the core with the best core recovery been used for sample collection? · Was the waste disturbance minimized verified by visual examination of the core and the documented in the field logbook?	Yes	MP-TRUW-8.2, B1-2 and B3-3	
(3) Do the data reports contain the following information: · The physical location within the container? · Sampling date and time? · The sampler's signature and date? · The sample matrix and type? · The sample number and size? · Identification of the waste matrix code?	Yes	MP-TRUW-8.2, Table B3-12	
(4) Was the scale in calibration, and a calibration check performed?"	Yes	MP-TRUW-8.2, B1-2d	
(5) Was the analysis of the blanks acceptable? NOTE: The analytical results for the equipment blanks are less than 3 times the MDL for VOCs and SVOCs and less than 3 times the PRDLs for the metals.	Yes	MP-TRUW-8.2, B1-2b(2)	
(6) Are samples preserved by keeping them at a temperature of 4 C (+/- 2 C)?	Yes	MP-TRUW-8.2, Table B1-4	
(7) Were samples collected within 14 days and is a time given between coring and sub-sampling?	Yes	MP-TRUW-8.2, Table B1-4 and B1-2b(1)	
(8) Are there no more than 20 containers in the batch (excluding field QC samples)?	Yes		

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer DAVE MARQUARDT **Approval Level** SPM Data Validation

Approval Date 29-MAR-07 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(9) Are sampling equipment numbers ("cleaning batch" lot number for disposable equipment) included in the batch data report? NOTE: This ensures that appropriate equipment blanks have been collected for the disposable equipment.	Yes	MP-TRUW-8.2, Table B3-12	
(10) Are field records present in the batch data report? NOTE: Field records include: collecting problems (if applicable), sequence of sampling collection, inspection of the solids sampling equipment, coring tool test, and random location of sub-sample?	Yes	MP-TRUW-8.2, Table B3- 12	
(11) Is the location (point of origin) where each sample was taken included in the batch data report? NOTE: This would include building and room number (if applicable).	Yes	MP-TRUW-8.2, Table B3-12	
(12) Does the batch data report include a record of analysis requested and laboratory?	Yes	MP-TRUW-8.2, Table B3-12	
(13) Is there a cross-reference of sampling equipment numbers with associated cleaning batch numbers in the batch data report?	Yes	MP-TRUW-8.2, Table B3-12	
(14) Is the depth of waste included for each waste container?	Yes	MP-TRUW-8.2, Table B3-12	
(15) Is the time between coring and sub-sampling less than one hour? If time is greater than 1 hour, was capping performed?	Yes	MP-TRUW-8.2 B1-2a(2)	
(16) The data for all containers within this batch meet the review, validation, and verification requirements. · Are proper units (e.g. grams or liters) and significant figures used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? · WTS Coring Batch Cover Sheet · Table of Contents (manual review only) · WTS Coring Analysis Reports · Chain of Custody · Refrigerator Temperature Log Sheet (Form-1585) · Analytical Balance Calibration Check Sheet (Form-1215) · Solid Waste Sampling Checklist (Form-1599) · Solid Sampling Independent Reviewer Checklist (Form-1421) · Supplemental Batch Comment Form (Form-1491) · Associated NCRs	Yes	MP-TRUW-8.2, B3-10b	
(17) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, B3-13	NCR 26469 is closed.
(18) Were the following inspections performed? - Was the coring tool inspection satisfactory? - Was the sampling equipment protective wrapped intact? - Was the sampling area inspection satisfactory? - Was the equipment inspected after unwrapping?	Yes	MP-TRUW-8.2, B1-2B(2)	
(19) Are the calculation of core recovery and co-located core description included in the batch data report?	Yes	MP-TRUW-8.2, Table B3-12	

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Reviewer	DAVE MARQUARDT	**Approval Level**	SPM Data Validation
Approval Date	29-MAR-07	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
(20) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, B3-10b(2)	

Batch Id SSC07-00101 **Open Date** 06-MAR-07 **Close Date** 12-MAR-07

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
729012	DMARQUARDT	29-MAR-07	SPM	e-sig to approve.
720144	JTWITCHELL	20-MAR-07	ITR	Promote to SPM.
719074	JTWITCHELL	19-MAR-07	ITR	Demote to operations for rework.
714854	JTWITCHELL	15-MAR-07	ITR	Demote to operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 20-Sep-2012

Time: 10:10

*****Batch NCR(s)*****

Batch Type	SSC	Batch ID	SSC07-00101

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10123400	26469	CLOSED	11-MAR-07	29-MAR-07

*****End of Non-Conformance Report*****

CH2M•WG IDAHO, LLC

Idaho Cleanup Project

Analytical Laboratories Department

B-2010-0004
RECORD
CC 2/16/10

Transuranic Waste Characterization Program

RCRA Analysis Data Report

Batch Data Report Number:	ALD07011S	Analytical Method:	ACMM-9270
Revision Number:	1	Analyte(s):	SVOCs
Issue Date:	May 01, 2007		

Issued to: Mr. Eric P. Schweinsberg
Site Project Manager, TRU Programs
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC
850 Energy Drive, Suite 200
Idaho Falls, ID 83401

Summary: This data report contains analysis results for 6 samples from Sampling Batch SSC07-00101. Revision 1 corrects an omission on the Independent Technical Review Checklist.

Report Content:

Section	Content	Pages
1	Sample Identification Table	0002 – 0003
2	Sample Custody and Tracking Documents	0004 – 0017
3	Analysis Results	0018 – 0044
4	Batch QC Sample Results	0045 – 0059
5	Instrument QC Data	0060 – 0073
6	Data Review Checklists	0074 – 0081

Release Authorization:

Name & Position	Signature	Date
Thomas G. Moffett Technical Leader	Thomas G Moffett	5/1/07
Jeffrey L. Jeter Supervisor		5/1/07
Shelly J. Sailer Quality Assurance Officer		05/01/07

0001-R1

CH2M•WG IDAHO, LLC

Analytical Laboratories Department

SUPERSEDED
3/05/01/07

Idaho Cleanup Project

Transuranic Waste Characterization Program

RCRA Analysis Data Report

Batch Data Report Number: ALD07011S
Revision Number: 0
Issue Date: APR 10 2007

Analytical Method: ACMM-9270
Analyte(s): SVOCs

Issued to: Mr. Eric P. Schweinsberg
Site Project Manager, TRU Programs
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC
850 Energy Drive, Suite 200
Idaho Falls, ID 83401

Summary: This data report contains analysis results for 6 samples from Sampling Batch SSC07-00101.

Report Content:

Section	Content	Pages
1	Sample Identification Table	0002 – 0003
2	Sample Custody and Tracking Documents	0004 – 0017
3	Analysis Results	0018 – 0044
4	Batch QC Sample Results	0045 – 0059
5	Instrument QC Data	0060 – 0073
6	Data Review Checklists	0074 – 0081

Release Authorization:

Name & Position	Signature	Date
Thomas G. Moffett Technical Leader	Thomas G. Moffett	4/10/07
Jeffrey L. Jeter Supervisor	Jeffrey L. Jeter	4/10/07
Shelly J. Sailer Quality Assurance Officer	Shelly J. Sailer	04/10/07

Section 1

Sample Identification Table

TOTAL SVOC ANALYSIS
SAMPLE CROSS-REFERENCE TABLE

Idaho Cleanup Project

Analytical Laboratories Department
TRU Waste Characterization Program

Preparation Method: ACMM-9500-R11
Analytical Method: ACMM-9270-R8

Data Report Number: ALD07011S
Analytical Batch ID: 0703083

Field Sample ID	Lab Sample ID
NA	LBS031907A
NA	LCSS0703083A
10150520	7AK77
10150529	7AK80
10150529MS	7AK80MS
10150529MSD	7AK80MSD
10150645	7AK98
10150934	7AM02
10151029	7AM05
10151191	7AN18
NA	LBS032107A
10150520RE	7AK77RE
10150520MS	7AK77MS
10150520MSD	7AK77MSD
10150529RE	7AK80RE
10150645RE	7AK98RE
10150934RE	7AM02RE
10151029RE	7AM05RE
10151191RE	7AN18RE

Section 2

Sample Custody and Tracking Documents

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.04 Analytical Log #: 070312_3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AM04-4	03/14/07 13:20	C. Richardson	RC	242	HAZWRAP Tables	3/14/07 16:30	RC	[illegible]	Received 3/22/07
7AK97-1, 7AK99-1, 7AM01-1, 7AM03-1, 7AM04-1, 7AM05-1	03/15/07 08:50	C. Richardson	B. Hurd	214	VOC Analysis	03/15/07 14:30	B. Hurd	C. Richardson	Consumed in Analysis
7AK97-2, 7AK99-2, 7AM01-2, 7AM03-2, 7AM04-2, 7AM05-2	03/19/07 07:55	C. Richardson	[illegible]	211	NHVOC Analysis	03/19/07 10:40	[illegible]	C. Richardson	Consumed in Analysis
7AK98-1, 7AM02-1, 7AM05-1	03/15/07 08:45	C. Richardson	[illegible]	207 / 211	SemiVol Analysis	03/19/07 13:30	[illegible]	Richardson	Ret. Sample
7AK98-1, 7AM02-1, 7AM05-1	3/26/07 14:05	[illegible]	[illegible]	207 / 211	Metals	3/26/07 16:10	[illegible]	[illegible]	Ret. Sample
7AK98-1, 7AM02-1, 7AM05-1	3/26/07 08:20	[illegible]	[illegible]	207 / 211	Mercury	03/29/07 10:30	[illegible]	Richardson	Ret. Sample
7AK97-3, 7AM01-3, 7AM04-3 7AM03-3 7AK99-3 7AM06-3	03/21/07 08:30	C. Richardson	B. Hurd	214	VOC Analysis Spare	3/21/07 11:20	B. Hurd	[illegible]	Returned 7AM03-3
7AK97-4, 7AM01-4, 7AM04-4 JAD 3/26/07	/ /			211	NHVOC Analysis Spare	/ / :			
7AK98-1, 7AM02-1, 7AM05-1	03/21/07 0850	C. Richardson	[illegible]	208	SemiVol Analysis	03/21/07 1540	[illegible]	Richardson	Ret. Sample

0005

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070312_3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK98-1, 7AM02-1, 7AM05-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207/211	03/15/07 08:45	C. Richardson	[signature]	SemiVol Analysis	
207/211	213	03/19/07 13:30	[signature]	C. Richardson	Return Samples ~~[illegible] 3/19/07~~	Prep'ed the sample and returned originals. Left SemiVol Extracts (Spl's w/ '-S' extension) in 211 freezer.
209	208	03/21/07 08:50	C. Richardson	[signature]	SemiVol Analysis	
208	209	3/21/07 15:40	S.R. Taylor	C. Richardson		Ret. Sample
		/ / :				
		/ / :				
		/ / :				

9000

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.04 Analytical Log #: 070314 3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AN17-4	03/14/07 13:30	C. Richardson	RC	242	Hazard Index	3/14/07 16:30	RC	Daley	
7AN17-1, 7AN19-1	03/15/07 05:50	C. Richardson	B. Hamel	214	VOC Analysis	03/15/07 14:30	B. Hamel	C. Richardson	Consumed
7AN17-2, 7AN19-2	03/19/07 07:55	C. Richardson		211	NHVOC Analysis	03/19/07 10:40		C. Richardson	Consumed
7AN18-1	03/15/07 08:45	C. Richardson		207 / 211	SemiVol Analysis	03/19/07 13:38		C. Richardson	Ret. Sample
7AN18-1	3/26/07 08:26	Daley		207 / 211	Mercury	03/26/07 10:30		C. Richardson	Ret. Sample
7AN18-1	3/26/07 14:05	Daley	K. Madden	207 / 211	Metals	3/26/07 16:10	K. Madden	Daley	Ret. Sample
7AN17-3	03/21/07 08:30	C. Richardson	B. Hamel	214	VOC Analysis + Spare	3/27/07 11:20	B. Hamel		CONSUMED
7AN18-1	03/21/07 08:50	C. Richardson		208	SemiVol Analysis	03/21/07 15:41		C. Richardson	Ret. Samples
	/ / :					/ / :			
	/ / :					/ / :			

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

1000

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070314 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AN18-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	03/15/07 08:45	C. Richardson	[signature]	SemiVol Analysis	
207 / 211	209	03/19/07 13:30	[signature]	C. Richardson	Returned	Sample
209	208	03/21/07 08:50	C. Richardson	[signature]		
208	209	3/21/07 15:40	SM Taylor	C. Richardson		Return Sample
		/ / :				
		/ / :				
		/ / :				

8000

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

Cust 03/08/07

ALD LOG #

AMWTP

Chain Of Custody

ALD LOG # 0703083

Print Date: 08-Mar-2007
Print Time: 10:10
COC No.: 0000296
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150516	07-Mar-2007	11:35	20 / ml	2.80 / gms	PVOC	Douglas Larson	sub sample PVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150517	07-Mar-2007	11:36	20 / ml	2.63 / gms	NHVOC	Douglas Larson	sub sample NHVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150518	07-Mar-2007	11:39	20 / ml	2.61 / gms	SPARE	Douglas Larson	sub sample SPARE 1 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150519	07-Mar-2007	11:41	20 / ml	2.69 / gms	SPARE	Douglas Larson	sub sample SPARE 2 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150520	07-Mar-2007	11:46	125 / ml	35.18 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from initial core.	
SSC07-00101	10124541	MD-836	10150564	07-Mar-2007	15:14	20 / ml	2.98 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150565	07-Mar-2007	15:19	20 / ml	2.94 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150566	07-Mar-2007	15:21	20 / ml	2.86 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R. Larson	03/08/07 1016	
Received By	Rachelle Hubler	Rachelle Hubler	03/08/07 1016	
Relinquished By	Rachelle Hubler	Rachelle Hubler	3/08/07 1050	BOL# AMWTP000344 INL Truck Seal # 077703 Rachelle Hubler 3/8/07
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	
Relinquished By				
Received By				
Relinquished By				
Received By				

0003

Page 1 of 1

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703083 CWX 03/08/07

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000298
Page 1 of 2

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150521	07-Mar-2007	12:15	20 / ml	2.72 / gms	PVOC	Douglas Larson	sub sample PVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150522	07-Mar-2007	12:21	20 / ml	2.75 / gms	PVOC	Douglas Larson	sub sample PVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150523	07-Mar-2007	12:23	20 / ml	2.70 / gms	PVOC	Douglas Larson	sub sample PVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150524	07-Mar-2007	12:24	20 / ml	2.98 / gms	NHVOC	Douglas Larson	sub sample NHVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150525	07-Mar-2007	12:27	20 / ml	2.64 / gms	NHVOC	Douglas Larson	sub sample NHVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150526	07-Mar-2007	12:28	20 / ml	2.58 / gms	NHVOC	Douglas Larson	sub sample NHVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150527	07-Mar-2007	12:30	20 / ml	2.64 / gms	SPARE	Douglas Larson	sub sample SPARE1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150528	07-Mar-2007	12:33	20 / ml	2.90 / gms	SPARE	Douglas Larson	sub sample SPARE2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150529	07-Mar-2007	12:38	125 / ml	34.80 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from co-located core.	
SSC07-00101	10124541	MD-836	10150567	07-Mar-2007	15:30	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150568	07-Mar-2007	15:32	20 / ml	2.99 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150569	07-Mar-2007	15:34	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R. Larson	03/08/07 1023	
Received By	Rachelle Hubler	Rachelle Hubler	3/08/07 1023	

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ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG #
0703083

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000298
Page 2 of 2

Relinquished By	Rachelle Hubler	Rachelle Hubler	3/8/07 1055	BOL#AMWTP0000344
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	IAL Truck Seal#077220 Rachelle Hubler 3/8/07
Relinquished By				
Received By				
Relinquished By				
Received By				

0011

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:54
COC No.: 0000299
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123154	MD-836	10150641	08-Mar-2007	14:59	20 / ml	2.96 / gms	PVOC	Frank Kuck	core sample cut at 21.75, material removed to 22.00, and sampling towards bottom of core.	
SSC07-00101	10123154	MD-836	10150642	08-Mar-2007	15:01	20 / ml	2.83 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123154	MD-836	10150643	08-Mar-2007	15:02	20 / ml	2.83 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123154	MD-836	10150644	08-Mar-2007	15:03	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123154	MD-836	10150645	08-Mar-2007	15:05	125 / ml	39.90 / gms	SVOC, METALS	Frank Kuck	SVOC	
SSC07-00101	10123154	MD-836	10150646	08-Mar-2007	16:31	20 / ml	2.85 / gms	TRIP BLANK	Frank Kuck	trip blank 1	
SSC07-00101	10123154	MD-836	10150647	08-Mar-2007	16:35	20 / ml	2.83 / gms	TRIP BLANK	Frank Kuck	trip blank 2	
SSC07-00101	10123154	MD-836	10150648	08-Mar-2007	16:39	20 / ml	2.78 / gms	TRIP BLANK	Frank Kuck	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:42:26	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:42:26	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:44	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:44	
Relinquished By	Steven Yount		12-MAR-07 ~~1458~~ 1058	
Received By	Richard A. NeSmith		12-MAR-07 1058	
Relinquished By	Richard A. NeSmith		12-MAR-07 1130	BOL # AMWTP 000345 INL Truck
Received By	Cary Richardson		12-Mar-07 1400	Seal # 077705 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:59
COC No.: 0000300
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123139	MD-836	10150930	10-Mar-2007 07:14	20 / ml	2.65 / gms	~~NHVOC~~ PUOC 3/12/07 SY	Frank Kuck	sample cut at 19.25" and material removed to 19.5" sub sampling toward bottom of core sample.	
SSC07-00101	10123139	MD-836	10150931	10-Mar-2007 07:15	20 / ml	2.91 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123139	MD-836	10150932	10-Mar-2007 07:16	20 / ml	2.70 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123139	MD-836	10150933	10-Mar-2007 07:17	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123139	MD-836	10150934	10-Mar-2007 07:19	125 / ml	39.25 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10123139	MD-836	10150935	10-Mar-2007 07:30	20 / ml	2.88 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10123139	MD-836	10150936	10-Mar-2007 07:31	20 / ml	2.91 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10123139	MD-836	10150937	10-Mar-2007 07:33	20 / ml	2.98 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:41:16	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:41:16	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:00	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:00	
Relinquished By	Steven Yount		12-MAR-07 1102	
Received By	Richard A. NeSmith		12-MAR-07 1102	
Relinquished By	Richard A. NeSmith		12MAR07 1127	BOL # AMWTP 000395 INL TRUCK
Received By	Cory Richardson	Cory Richardson	12-Mar-07 1410	Seal # 077722 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 11:02
COC No.: 0000301
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10130208	MD-836	10151025	10-Mar-2007	14:26	20 / ml	2.97 / gms	PVOC	Frank Kuck	core sample tube cut at 10.25 and sampling towards top of core sample.	
SSC07-00101	10130208	MD-836	10151026	10-Mar-2007	14:27	20 / ml	2.84 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10130208	MD-836	10151027	10-Mar-2007	14:28	20 / ml	2.99 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10130208	MD-836	10151028	10-Mar-2007	14:29	20 / ml	2.96 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10130208	MD-836	10151029	10-Mar-2007	14:31	125 ml	39.99 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10130208	MD-836	10151030	10-Mar-2007	15:00	20 / ml	2.67 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10130208	MD-836	10151031	10-Mar-2007	15:01	20 / ml	2.72 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10130208	MD-836	10151032	10-Mar-2007	15:03	20 / ml	2.93 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:40:07	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:40:07	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:20:09	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:20:09	
Relinquished By	Steven Yount		12-MAR-07 1107	CORRECTED SVOC METAL VOLUME TO CORRECT SIZE OF 125 ML SY 3/12/07
Received By	Richard A. NeSmith		12MAR-07 1107	
Relinquished By	Richard A. NeSmith		12MAR07 1124	BOL # AMWTP000345 INL TRUCK
Received By	Cary Richardson	Cary Richardson	12-Mar-07 1408	Seal # 077733 3/12/07 RA
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

0011

3/14/07

ALD LOG #

AMWTP

Chain Of Custody

ALD LOG # 0703143

Print Date: 14-Mar-2007
Print Time: 09:20
COC No.: 0000302
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123400	MD-836	10151187	11-Mar-2007	14:22	20 / ml	2.70 / gms	PVOC	Davey Sumners	pvoc	
SSC07-00101	10123400	MD-836	10151188	11-Mar-2007	14:44	20 / ml	2.89 / gms	NHVOC	Davey Sumners	nhvoc	
SSC07-00101	10123400	MD-836	10151189	11-Mar-2007	14:46	20 / ml	2.83 / gms	SPARE	Davey Sumners	spare 1	
SSC07-00101	10123400	MD-836	10151190	11-Mar-2007	14:47	20 / ml	2.84 / gms	SPARE	Davey Sumners	spare 2	
SSC07-00101	10123400	MD-836	10151191	11-Mar-2007	14:49	125 / ml	39.70 / gms	SVOC, METALS	Davey Sumners	svoc/metals	
SSC07-00101	10123400	MD-836	10151192	11-Mar-2007	15:02	20 / ml	2.88 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC07-00101	10123400	MD-836	10151193	11-Mar-2007	15:04	20 / ml	2.83 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC07-00101	10123400	MD-836	10151194	11-Mar-2007	15:06	20 / ml	2.82 / gms	TRIP BLANK	Davey Sumners	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		3/14/07 0923	
Received By	Richard A. NeSmith		3/14/07 0923	
Relinquished By	Richard A. NeSmith		3/14/07 1012	BOL # AMWTP000346 INL Truck
Received By	Cary Richardson		3/14/07 1110	Seal # 077719 3/14/07
Relinquished By				
Received By				
Relinquished By				
Received By				

0015

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ALD Document: Log 0703143 AMWTP_836.04.tif - Scanned:3/14/2007 2:46:22 PM

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.48 Last 4/26/07 Analytical Log #: 070308_3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AK76-4	03/08/07 15:15	C. Richardson	RC	242	Hazard Index	03/08/07 16:05	RC	C. Richardson	
7AK76-1, 7AK78-1, 7AK79-1, 7AK79-2, 7AK79-3, 7AK81-1	03/15/07 08:50	C. Richardson	B. Hurd	214	VOC Analysis	03/15/07 14:30	B. Hurd	C. Richardson	Consumed
7AK76-2, 7AK78-2, 7AK79-4, 7AK79-5, 7AK79-6, 7AK81-2	03/13/07 08:50	C. Richardson		211	NHVOC Analysis	3/18/07 11:30		D. Daley	Consumed
7AK77-1, 7AK80-1	03/15/07 08:45	C. Richardson		207/211	SemiVol Analysis	03/19/07 13:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 08:30	D. Daley		207/211	Mercury	03/26/07 10:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 14:05	D. Daley	K. Medley	207/211	Metals	3/26/07 16:10	K. Medley	D. Daley	Ret Sample
7AK77-1, 7AK80-1	03/21/07 08:50	C. Richardson	S. Taylor	208	Semi Vol Analysis	03/21/07 15:40	S. Taylor	C. Richardson	Ret. Sample
	/ / :					/ / :			
	/ / :					/ / :			
	/ / :					/ / :			

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

0016

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.46 04 4/2/07 Analytical Log #: 070308_3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK77-1, 7AK80-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207/211	03/15/07 08:45	C. Richardson		SemiVol Analysis	
207/211	209	03/19/07 13:30		C. Richardson	Returned	
209	208	03/21/07 08:50	C. Richardson	S.M. Taylor	SemiVol Analysis	
208	209	3/21/07 15:40	S.M. Taylor	C. Richardson		Return Sample
		/ / :				
		/ / :				
		/ / :				

0017

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

Section 3

Analysis Results

Idaho Cleanup Project
Analytical Laboratories Department

Data Report Narrative for ALD07011S

Six solid samples from AMWTP were extracted and analyzed for semivolatile organic compounds (SVOCs) by methods ACMM-9500 Revision 11 and ACMM-9270 Revision 8, which implement the requirements of SW-846 Methods 3550B and 8270C, respectively. All applicable holding times were met.

One initial calibration (IS606WA7) is associated with these analyses. All compounds use average response factors for quantitation.

Recoveries for acid surrogate and matrix spike compounds in samples 7AK77, 7AK80, 7AK80MS, 7AK80MSD, 7AK98, 7AM02, 7AM05, and 7AN18 failed low in the initial extraction. Due to the failed surrogate recoveries, the samples were re-extracted and analyzed, along with an additional MS/MSD pair on sample 7AK77. All re-extracted samples and the additional MS/MSD again exhibited failing recoveries for acid surrogate and matrix spike compounds. Results of all extractions are therefore reported. Comparison with acceptable acid compound recoveries in the associated laboratory blanks and LCS indicate that the sample recovery failures are due to sample matrix effects. Pentachlorophenol and phenol sample results are "Z" flagged on the Form Is due to the MS and MSD failures; however, reported concentrations of other acid target analytes (2,4-dinitrophenol, 2-methylphenol, and 3&4-methylphenol) likely have similar low bias.

All other analytical QC meets acceptance criteria for this analytical batch.

The CAS number for 3&4-methylphenol on Form I is the CAS number for 4-methylphenol. The CAS number for 3-methylphenol is 108-39-4.

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Data Qualifier Flag Definitions for SVOCs

Flag	Definition
B	Analyte detected in associated laboratory blank
E	Reported analyte concentration exceeds the calibration range
D	Reported analyte concentration is from a secondary dilution of the sample
H	Holding time exceeded
J	Target Analyte concentration <PRQL but ≥ MDL
J	TIC concentration is estimated by comparison to nearest internal standard, and has high analytical uncertainty.
N	Presumptive evidence of a compound, based on a mass spectral library search (TICs only)
U	Analyte was undetected (reported as sample-specific MDL)
Z	One or more QC sample results do not meet acceptance criteria

TOTAL SVOC ANALYSIS DATA SHEET

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150934	Lab Sample ID:	7AM02
Sampling Batch No:	SSC07-00101	Lab File ID:	SS603734
Date Sampled:	3 /10/2007	Data Report Number:	ALD07011S
Date Extracted:	3 /19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	9 days		
Date/Time Analyzed:	03/21/2007 21:56	Instrument ID:	SV-6
Analysis Holding Time:	2 days	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

CAS #	TARGET ANALYTE	CONCENTRATION mg/kg	Q
117-81-7	bis(2-Ethylhexyl)phthalate	0.40	U
95-50-1	1,2-Dichlorobenzene	0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	U
51-28-5	2,4-Dinitrophenol	0.20	U
121-14-2	2,4-Dinitrotoluene	0.20	U
206-44-0	Fluoranthene	0.40	U
118-74-1	Hexachlorobenzene	0.20	U
67-72-1	Hexachloroethane	0.20	U
95-48-7	2-Methylphenol	0.20	U
106-44-5	3&4-Methylphenol	0.20	U
98-95-3	Nitrobenzene	0.20	U
87-86-5	Pentachlorophenol	0.20	UZ
108-95-2	Phenol	0.20	UZ

TOTAL SVOC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150934	Lab Sample ID:	7AM02
Sampling Batch No:	SSC07-00101	Lab File ID:	SS803734
Date Sampled:	3 /10/2007	Data Report Number:	ALD07011S
Date Extracted:	3 /19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	9 days		
Date/Time Analyzed:	03/21/2007 21:56	Instrument ID:	SV-6
Analysis Holding Time:	2 days	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

Number of TICs Found: 0

	CAS Number	Tentatively Identified SVOCs	Concentration mg/kg	Q	Retention Time (min)
1		None			

TOTAL SVOC ANALYSIS DATA SHEET

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150934RE	Lab Sample ID:	7AM02RE
Sampling Batch No:	SSC07-00101	Lab File ID:	SS603745
Date Sampled:	3 /10/2007	Data Report Number:	ALD07011S
Date Extracted:	3 /21/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	11 days		
Date/Time Analyzed:	03/22/2007 21:31	Instrument ID:	SV-6
Analysis Holding Time:	1 day	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

CAS #	TARGET ANALYTE	CONCENTRATION mg/kg	Q
117-81-7	bis(2-Ethylhexyl)phthalate	0.40	U
95-50-1	1,2-Dichlorobenzene	0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	U
51-28-5	2,4-Dinitrophenol	0.20	U
121-14-2	2,4-Dinitrotoluene	0.20	U
206-44-0	Fluoranthene	0.40	U
118-74-1	Hexachlorobenzene	0.20	U
67-72-1	Hexachloroethane	0.20	U
95-48-7	2-Methylphenol	0.20	U
106-44-5	3&4-Methylphenol	0.20	U
98-95-3	Nitrobenzene	0.20	U
87-86-5	Pentachlorophenol	0.20	UZ
108-95-2	Phenol	0.20	UZ

TOTAL SVOC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150934RE	Lab Sample ID:	7AM02RE
Sampling Batch No:	SSC07-00101	Lab File ID:	SS603745
Date Sampled:	3 /10/2007	Data Report Number:	ALD07011S
Date Extracted:	3 /21/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	11 days		
Date/Time Analyzed:	03/22/2007 21:31	Instrument ID:	SV-6
Analysis Holding Time:	1 day	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

Number of TICs Found: 0

	CAS Number	Tentatively Identified SVOCs	Concentration mg/kg	Q	Retention Time (min)
1		None			

Section 4

Batch QC Sample Results

TOTAL SVOC ANALYSIS
SURROGATE RECOVERY FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Preparation Method: ACMM-9500-R11
Analytical Method: ACMM-9270-R8

Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6
Sample Matrix: SOLID

	LAB SAMPLE ID	SMC1 %R (2FP)	SMC2 %R (PHL)	SMC3 %R (NBZ)	SMC4 %R (FBP)	SMC5 %R (TBP)	SMC6 %R (TPH)	TOTAL OUT
1	LBS031907A	46	50	49	49	67	93	0
2	LCSS0703083A	56	56	58	56	69	87	0
3	7AK77	0 Z	8	50	52	20	44	1
4	7AK80	0 Z	0 Z	53	57	0 Z	82	3
5	7AK80MS	0 Z	0 Z	43	43	0 Z	75	3
6	7AK80MSD	0 Z	0 Z	46	46	0 Z	77	3
7	7AK98	0 Z	5	46	45	0 Z	76	2
8	7AM02	0 Z	0 Z	43	44	0 Z	79	3
9	7AM05	0 Z	4	38	40	0 Z	74	2
10	7AN18	0 Z	0 Z	47	48	0 Z	82	3
11	LBS032107A	46	49	49	47	60	94	0
12	7AK77RE	0 Z	0 Z	32	34	0 Z	89	3
13	7AK77MS	0 Z	7	47	48	0 Z	90	2
14	7AK77MSD	0 Z	16	47	46	24	85	1
15	7AK80RE	0 Z	5	51	49	0 Z	74	2
16	7AK98RE	0 Z	0 Z	34	38	0 Z	84	3
17	7AM02RE	0 Z	0 Z	34	35	0 Z	78	3
18	7AM05RE	0 Z	0 Z	50	48	0 Z	87	3
19	7AN18RE	0 Z	0 Z	34	39	0 Z	81	3

Acceptance Criteria

S1 (2FP) = 2-Fluorophenol	Detected - 120
S2 (PHL) = Phenol-d6	Detected - 120
S3 (NBZ) = Nitrobenzene-d5	12 - 109
S4 (FBP) = 2-Fluorobiphenyl	15 - 113
S5 (TBP) = 2,4,6-Tribromophenol	Detected - 123
S6 (TPH) = p-Terphenyl-d14	18 - 134

Z =Values Outside of Acceptance Criteria

D = Surrogates diluted out

TOTAL SVOC ANALYSIS
MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORTING FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Preparation Method:	ACMM-9500-R11			Data Report Number:	ALD07011S
Analytical Method:	ACMM-9270-R8			Analytical Batch ID:	0703083
Instrument ID:	SV-6			Matrix	SOLID
Lab Sample ID:	7AK77RE	MS Lab Sample ID:	7AK77MS	MSD Lab Sample ID:	7AK77MSD
Field Sample ID:	10150520RE	MS Field Sample ID:	10150520MS	MSD Field Sample ID:	10150520MSD
Lab File ID:	SS603740	MS Lab File ID:	SS603741	MSD Lab File ID:	SS603742
Date Analyzed:	03/22/2007	MS Date Analyzed:	03/22/2007	MSD Date Analyzed:	03/22/2007

TARGET ANALYTE	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	SPIKED SAMPLE CONCENTRATION mg/kg	MS % RECOVERY	ACCEPTANCE CRITERIA % RECOVERY
1,4-Dichlorobenzene	5.00	0.20 U	2.11	42	20 - 124
2,4-Dinitrotoluene	5.00	0.20 U	2.67	53	39 - 139
Pentachlorophenol	10.00	0.20 U	0.20 U	0 Z	14 - 176
Phenol	10.00	0.20 U	0.60	6	5 - 112

TARGET ANALYTE	SPIKE ADDED mg/kg	DUPLICATE SPIKED SAMPLE CONCENTRATION mg/kg	%RPD	MSD % RECOVERY	QC LIMITS RPD
1,4-Dichlorobenzene	4.95	2.12	1.8	43	≤ 86
2,4-Dinitrotoluene	4.95	2.53	4.1	51	≤ 46
Pentachlorophenol	9.90	0.92	200.0 Z	9 Z	≤ 126
Phenol	9.90	1.31	75.4 Z	13	≤ 55

Z =Values Outside of Acceptance Criteria

D = Spiked Analytes Diluted Out

RPD: 2 out of 4 outside limits

Spike Recovery: 2 out of 8 outside limits

TOTAL SVOC ANALYSIS
MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORTING FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Preparation Method:	ACMM-9500-R11			Data Report Number:	ALD07011S
Analytical Method:	ACMM-9270-R8			Analytical Batch ID:	0703083
Instrument ID:	SV-6			Matrix:	SOLID
Lab Sample ID:	7AK80	MS Lab Sample ID:	7AK80MS	MSD Lab Sample ID:	7AK80MSD
Field Sample ID:	10150529	MS Field Sample ID:	10150529MS	MSD Field Sample ID:	10150529MSD
Lab File ID:	SS603730	MS Lab File ID:	SS603731	MSD Lab File ID:	SS603732
Date Analyzed:	03/21/2007	MS Date Analyzed:	03/21/2007	MSD Date Analyzed:	03/21/2007

TARGET ANALYTE	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	SPIKED SAMPLE CONCENTRATION mg/kg	MS % RECOVERY	ACCEPTANCE CRITERIA % RECOVERY
1,4-Dichlorobenzene	4.96	0.20 U	1.91	39	20 - 124
2,4-Dinitrotoluene	4.96	0.20 U	2.45	49	39 - 139
Pentachlorophenol	9.92	0.20 U	0.20 U	0 Z	14 - 176
Phenol	9.92	0.20 U	0.24	2 Z	5 - 112

TARGET ANALYTE	SPIKE ADDED mg/kg	DUPLICATE SPIKED SAMPLE CONCENTRATION mg/kg	%RPD	MSD % RECOVERY	QC LIMITS RPD
1,4-Dichlorobenzene	4.97	2.01	4.8	40	≤ 86
2,4-Dinitrotoluene	4.97	2.54	3.7	51	≤ 46
Pentachlorophenol	9.94	0.20 U	0.0	0 Z	≤ 128
Phenol	9.94	0.31	22.4	3 Z	≤ 55

Z =Values Outside of Acceptance Criteria

D = Spiked Analytes Diluted Out

RPD: 0 out of 4 outside limits

Spike Recovery: 4 out of 8 outside limits

TOTAL SVOC ANALYSIS DATA SHEET

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab Sample ID:	LBS031907A
Sampling Batch No:	NA	Lab File ID:	BS603727
Date Sampled:	NA	Data Report Number:	ALD07011S
Date Extracted:	3/19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/21/2007 16:48	Instrument ID:	SV-6
Analysis Holding Time:	2 days	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

CAS #	TARGET ANALYTE	CONCENTRATION mg/kg	Q
117-81-7	bis(2-Ethylhexyl)phthalate	0.40	U
95-50-1	1,2-Dichlorobenzene	0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	U
51-28-5	2,4-Dinitrophenol	0.20	U
121-14-2	2,4-Dinitrotoluene	0.20	U
206-44-0	Fluoranthene	0.40	U
118-74-1	Hexachlorobenzene	0.20	U
67-72-1	Hexachloroethane	0.20	U
95-48-7	2-Methylphenol	0.20	U
106-44-5	3&4-Methylphenol	0.20	U
98-95-3	Nitrobenzene	0.20	U
87-86-5	Pentachlorophenol	0.20	U
108-95-2	Phenol	0.20	U

TOTAL SVOC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab Sample ID:	LBS031907A
Sampling Batch No:	NA	Lab File ID:	BS603727
Date Sampled:	NA	Data Report Number:	ALD07011S
Date Extracted:	3 /19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/21/2007 16:48	Instrument ID:	SV-6
Analysis Holding Time:	2 days	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

Number of TICs Found: 0

	CAS Number	Tentatively Identified SVOCs	Concentration mg/kg	Q	Retention Time (min)
1		None			

TOTAL SVOC ANALYSIS DATA SHEET

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab Sample ID:	LBS032107A
Sampling Batch No:	NA	Lab File ID:	BS603739
Date Sampled:	NA	Data Report Number:	ALD07011S
Date Extracted:	3 /21/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/22/2007 17:08	Instrument ID:	SV-6
Analysis Holding Time:	1 day	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

CAS #	TARGET ANALYTE	CONCENTRATION mg/kg	Q
117-81-7	bis(2-Ethylhexyl)phthalate	0.40	U
95-50-1	1,2-Dichlorobenzene	0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	U
51-28-5	2,4-Dinitrophenol	0.20	U
121-14-2	2,4-Dinitrotoluene	0.20	U
206-44-0	Fluoranthene	0.40	U
118-74-1	Hexachlorobenzene	0.20	U
67-72-1	Hexachloroethane	0.20	U
95-48-7	2-Methylphenol	0.20	U
106-44-5	3&4-Methylphenol	0.20	U
98-95-3	Nitrobenzene	0.20	U
87-86-5	Pentachlorophenol	0.20	U
108-95-2	Phenol	0.20	U

TOTAL SVOC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab Sample ID:	LBS032107A
Sampling Batch No:	NA	Lab File ID:	BS603739
Date Sampled:	NA	Data Report Number:	ALD07011S
Date Extracted:	3 /21/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/22/2007 17:08	Instrument ID:	SV-6
Analysis Holding Time:	1 day	Matrix:	SOLID
Preparation Method:	ACMM-9500-R11	Dilution Factor:	1
Analytical Method:	ACMM-9270-R8		

Number of TICs Found: 0

	CAS Number	Tentatively Identified SVOCs	Concentration mg/kg	Q	Retention Time (min)
1		None			

TOTAL SVOC ANALYSIS
LABORATORY BLANK SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date Extracted:	03/19/2007	Lab Sample ID:	LBS031907A
Date/Time Analyzed:	03/21/2007 18:48	Lab File ID:	BS603727
Preparation Method:	ACMM-9500-R11	Data Report Number:	ALD07011S
Analytical Method:	ACMM-9270-R8	Analytical Batch ID:	0703083
		Instrument ID:	SV-6
		Matrix:	SOLID

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
NA	LCSS0703083A	LS603728	3/21/2007	17:32
10150520	7AK77	SS603729	3/21/2007	18:16
10150529	7AK80	SS603730	3/21/2007	19:00
10150529MS	7AK80MS	SS603731	3/21/2007	19:44
10150529MSD	7AK80MSD	SS603732	3/21/2007	20:28
10150645	7AK98	SS603733	3/21/2007	21:12
10150934	7AM02	SS603734	3/21/2007	21:56
10151029	7AM05	SS603735	3/21/2007	22:40
10151191	7AN18	SS603736	3/21/2007	23:24

TOTAL SVOC ANALYSIS
LABORATORY BLANK SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date Extracted:	03/21/2007	Lab Sample ID:	LBS032107A
Date/Time Analyzed:	03/22/2007 17:08	Lab File ID:	BS603739
Preparation Method:	ACMM-9500-R11	Data Report Number:	ALD07011S
Analytical Method:	ACMM-9270-R8	Analytical Batch ID:	0703083
		Instrument ID:	SV-6
		Matrix:	SOLID

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
10150520RE	7AK77RE	SS603740	3/22/2007	17:52
10150520MS	7AK77MS	SS603741	3/22/2007	18:36
10150520MSD	7AK77MSD	SS603742	3/22/2007	19:20
10150529RE	7AK80RE	SS603743	3/22/2007	20:04
10150645RE	7AK98RE	SS603744	3/22/2007	20:47
10150934RE	7AM02RE	SS603745	3/22/2007	21:31
10151029RE	7AM05RE	SS603746	3/22/2007	22:15
10151191RE	7AN18RE	SS603747	3/22/2007	22:59

TOTAL SVOC ANALYSIS
LABORATORY CONTROL SAMPLE FORM
(QC REFERENCE CHECK)

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date Extracted:	3/19/2007	Lab Sample ID:	LCSS0703083A
Date/Time Analyzed:	03/21/2007 17:32	Lab File ID:	LS603728
Preparation Method:	ACMM-9500-R11	Data Report Number:	ALD07011S
Analytical Method:	ACMM-9270-R8	Analytical Batch ID:	0703083
		Instrument ID:	SV-6
		Matrix	SOLID

TARGET ANALYTE	MEASURED CONCENTRATION mg/kg	KNOWN CONCENTRATION mg/kg	PERCENT RECOVERY	ACCEPTANCE CRITERIA % RECOVERY
1,4-Dichlorobenzene	2.66	5.03	53	20 - 124
2,4-Dinitrotoluene	3.16	5.03	63	39 - 139
Pentachlorophenol	5.58	10.06	55	14 - 176
Phenol	5.01	10.06	50	5 - 112

Z =Values Outside of Acceptance Criteria

TOTAL SVOC ANALYSIS
INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed: 03/21/2007 16:04
Analytical Method: ACMM-9270-R8

Daily CCAL Sample ID: CC032107A
Daily CCAL Lab File ID: CS603726
Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6

	IS1 (DCB) Area	RT (min.)	IS2 (NPT) Area	RT (min.)	IS3 (ANT) Area	RT (min.)
12 HOUR STANDARD	239033	8.69	924976	11.07	552209	14.39
UPPER LIMIT	478066	9.19	1849952	11.57	1104418	14.89
LOWER LIMIT	119516	8.19	462488	10.57	276104	13.89

	Lab Sample ID						
1	LBS031907A	235157	8.69	931178	11.07	540766	14.38
2	LCSS0703083A	249116	8.69	976592	11.07	568422	14.38
3	7AK77	235206	8.69	923055	11.07	540857	14.38
4	7AK80	230540	8.69	906838	11.07	535195	14.38
5	7AK80MS	231343	8.69	910270	11.07	537546	14.38
6	7AK80MSD	235285	8.69	922832	11.07	547111	14.38
7	7AK96	236170	8.69	930218	11.07	549900	14.38
8	7AM02	235319	8.69	934809	11.07	537248	14.38
9	7AM05	237537	8.69	936661	11.07	546372	14.38
10	7AN18	236805	8.69	932522	11.06	544398	14.38

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed: 03/21/2007 16:04
Analytical Method: ACMM-9270-R8

Daily CCAL Sample ID: CC032107A
Daily CCAL Lab File ID: CS603726
Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6

	IS4 (PHN) Area	RT (min.)	IS5 (CRY) Area	RT (min.)	IS6 (PRY) Area	RT (min.)
12 HOUR STANDARD	841490	17.15	857505	22.22	704506	25.90
UPPER LIMIT	1682980	17.65	1715010	22.72	1409012	26.40
LOWER LIMIT	420745	16.65	428752	21.72	352253	25.40

	Lab Sample ID						
1	LBS031907A	885706	17.14	677793	22.21	485736	25.90
2	LCSS0703083A	935807	17.14	717575	22.21	532767	25.90
3	7AK77	892223	17.14	770299	22.21	638737	25.90
4	7AK80	877557	17.14	776406	22.21	629679	25.91
5	7AK80MS	873566	17.14	740099	22.21	598799	25.90
6	7AK80MSD	871172	17.14	743566	22.21	584890	25.90
7	7AK98	898266	17.14	798553	22.21	645644	25.90
8	7AM02	867622	17.14	662839	22.21	529529	25.90
9	7AM05	891427	17.14	811819	22.21	686432	25.90
10	7AN18	875122	17.14	757132	22.21	616242	25.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed: 03/22/2007 16:24
Analytical Method: ACMM-8270-R8

Daily CCAL Sample ID: CC032207A
Daily CCAL Lab File ID: CS803738
Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6

	IS1 (DCB) Area	RT (min.)	IS2 (NPT) Area	RT (min.)	IS3 (ANT) Area	RT (min.)
12 HOUR STANDARD	229288	8.69	911252	11.07	540533	14.39
UPPER LIMIT	458576	9.19	1822504	11.57	1081066	14.89
LOWER LIMIT	114844	8.19	455626	10.57	270266	13.89

	Lab Sample ID						
1	LBS032107A	233250	8.69	907536	11.06	528151	14.38
2	7AK77RE	226388	8.69	899533	11.06	521043	14.38
3	7AK77MS	235906	8.69	925589	11.07	543325	14.38
4	7AK77MSD	231585	8.69	919493	11.07	538331	14.38
5	7AK80RE	241162	8.69	947560	11.07	552245	14.38
6	7AK98RE	243265	8.69	946828	11.06	560194	14.38
7	7AM02RE	240501	8.69	942774	11.07	554989	14.38
8	7AM05RE	239487	8.69	937307	11.06	549415	14.38
9	7AN18RE	238548	8.69	929754	11.07	536274	14.38

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed: 03/22/2007 16:24

Analytical Method: ACMM-9270-R8

Daily CCAL Sample ID: CC032207A

Daily CCAL Lab File ID: CS603738

Data Report Number: ALD07011S

Analytical Batch ID: 0703083

Instrument ID: SV-6

	IS4 (PHN) Area	RT (min.)	IS5 (CRY) Area	RT (min.)	IS6 (PRY) Area	RT (min.)
12 HOUR STANDARD	882610	17.15	740716	22.22	553108	25.90
UPPER LIMIT	1765220	17.65	1481432	22.72	1106216	26.40
LOWER LIMIT	441305	16.65	370358	21.72	276554	25.40

	Lab Sample ID						
1	LBS032107A	848436	17.14	724229	22.21	525838	25.90
2	7AK77RE	837344	17.14	676701	22.21	533949	25.91
3	7AK77MS	874417	17.14	674933	22.21	525420	25.90
4	7AK77MSD	880155	17.14	709710	22.21	589263	25.91
5	7AK80RE	901764	17.14	748883	22.21	596381	25.91
6	7AK98RE	902380	17.14	768394	22.21	620131	25.90
7	7AM02RE	902576	17.14	805379	22.21	643059	25.90
8	7AM05RE	885057	17.14	752547	22.21	596259	25.90
9	7AN18RE	869827	17.14	723130	22.21	585037	25.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

Section 5

Instrument QC Data

TOTAL SVOC ANALYSIS
INSTRUMENT PERFORMANCE CHECK

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

DFTPP Injection Date/Time: 03/21/2007 13:26

Analytical Method: ACMM-9270-R8

Lab Sample ID: DFT032107A

Lab File ID: TS603725

Data Report Number: ALD07011S

Analytical Batch ID: 0703083

Instrument ID: SV-6

m/z	Ion Abundance Criteria	% Rel Abundance
51	30.0 - 60.0% of mass 198	49.8
68	Less than 2.0% of mass 69	1.7 (1)
69	Mass 69 relative abundance	40.5
70	Less than 2.0% of mass 69	0.4 (1)
127	40.0 - 60.0% of mass 198	46.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.0% of mass 198	3.0
441	Present, but less than mass 443	77.3 (3)
442	Greater than 40.0% of mass 198	81.3
443	17.0 - 23.0% of mass 442	19.4 (2)

1 - Value is % mass 69 2 - Value is % mass 442 3 - Value is % mass 443

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
NA	CC032107A	CS603726	3/21/2007	16:04
NA	LBS031907A	BS603727	3/21/2007	16:48
NA	LCSS0703083A	LS603728	3/21/2007	17:32
10150520	7AK77	SS603729	3/21/2007	18:16
10150529	7AK80	SS603730	3/21/2007	19:00
10150529MS	7AK80MS	SS603731	3/21/2007	19:44
10150529MSD	7AK80MSD	SS603732	3/21/2007	20:28
10150645	7AK98	SS603733	3/21/2007	21:12
10150934	7AM02	SS603734	3/21/2007	21:56
10151029	7AM05	SS603735	3/21/2007	22:40
10151191	7AN18	SS603736	3/21/2007	23:24

TOTAL SVOC ANALYSIS
INSTRUMENT PERFORMANCE CHECK

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

DFTPP Injection Date/Time: 03/22/2007 16:00

Analytical Method: ACMM-9270-R8

Lab Sample ID: DFT032207A

Lab File ID: TS603737

Data Report Number: ALD07011S

Analytical Batch ID: 0703083

Instrument ID: SV-6

m/z	Ion Abundance Criteria	% Rel Abundance
51	30.0 - 60.0% of mass 198	48.8
68	Less than 2.0% of mass 69	0.4 (1)
69	Mass 69 relative abundance	39.9
70	Less than 2.0% of mass 69	0.0 (1)
127	40.0 - 60.0% of mass 198	46.2
197	Less than 1.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	21.4
365	Greater than 1.0% of mass 198	3.0
441	Present, but less than mass 443	75.2 (3)
442	Greater than 40.0% of mass 198	82.3
443	17.0 - 23.0% of mass 442	19.8 (2)

1 - Value is % mass 69 2 - Value is % mass 442 3 - Value is % mass 443

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
NA	CC032207A	CS603738	3/22/2007	16:24
NA	LBS032107A	BS603739	3/22/2007	17:08
10150520RE	7AK77RE	SS603740	3/22/2007	17:52
10150520MS	7AK77MS	SS603741	3/22/2007	18:36
10150520MSD	7AK77MSD	SS603742	3/22/2007	19:20
10150529RE	7AK80RE	SS603743	3/22/2007	20:04
10150645RE	7AK98RE	SS603744	3/22/2007	20:47
10150934RE	7AM02RE	SS603745	3/22/2007	21:31
10151029RE	7AM05RE	SS603746	3/22/2007	22:15
10151191RE	7AN18RE	SS603747	3/22/2007	22:59

TOTAL SVOC ANALYSIS
INITIAL CALIBRATION DATA

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Calibration Dates/Times: 11/02/2006 09:22 - 11/02/2006 12:55
Analytical Method: ACMM-9270-R8

ICAL File ID: IS606WA7
Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6

LAB FILE ID:	RRF 1 = IS603398	RRF 3 = IS603400	RRF 5 = IS603402
	RRF 2 = IS603399	RRF 4 = IS603401	RRF 6 = IS603403

TARGET ANALYTE	RRF 1	RRF 2	RRF 3	RRF 4	RRF 5	RRF 6	AVE RRF	% RSD	#
2-Fluorophenol	1.302	1.366	1.414	1.439	1.375	1.411	1.384	3.50	
Phenol-d6	1.652	1.722	1.809	1.844	1.743	1.835	1.767	4.25	
Phenol *	1.891	1.998	2.108	2.157	2.083	2.216	2.076	5.60	
1,4-Dichlorobenzene *	1.557	1.613	1.693	1.721	1.675	1.751	1.668	4.31	
1,2-Dichlorobenzene	1.420	1.498	1.557	1.581	1.528	1.614	1.533	4.46	
2-Methylphenol	1.079	1.123	1.179	1.187	1.167	1.206	1.157	4.08	
3&4-Methylphenol	1.321	1.383	1.459	1.462	1.429	1.484	1.423	4.29	
N-Nitroso-di-n-propylamine **	0.979	1.012	1.076	1.057	1.029	1.069	1.037	3.60	
Hexachloroethane	0.575	0.597	0.625	0.635	0.609	0.644	0.614	4.16	
Nitrobenzene-d5	1.389	1.454	1.533	1.527	1.484	1.552	1.490	4.08	
Nitrobenzene	1.417	1.465	1.548	1.548	1.502	1.571	1.509	3.90	
2-Nitrophenol *	0.201	0.209	0.218	0.229	0.211	0.217	0.214	4.45	
2,4-Dichlorophenol *	0.298	0.304	0.321	0.332	0.311	0.327	0.315	4.27	
Hexachlorobutadiene *	0.171	0.175	0.184	0.196	0.183	0.198	0.185	5.93	
4-Chloro-3-methylphenol *	0.295	0.302	0.324	0.329	0.309	0.319	0.313	4.24	
Hexachlorocyclopentadiene **	0.301	0.314	0.329	0.331	0.302	0.296	0.312	4.86	
2,4,6-Trichlorophenol *	0.370	0.383	0.399	0.415	0.386	0.398	0.392	4.03	
2-Fluorobiphenyl	1.229	1.279	1.356	1.441	1.353	1.437	1.349	6.27	
Acenaphthene *	1.046	1.090	1.160	1.196	1.146	1.226	1.144	5.81	
2,4-Dinitrophenol **	0.162	0.172	0.186	0.171	0.169	0.149	0.168	7.16	
4-Nitrophenol **	0.195	0.199	0.259	0.246	0.252	0.256	0.235	12.51	
2,4-Dinitrotoluene	0.336	0.347	0.387	0.385	0.400	0.425	0.380	8.78	
N-Nitrosodiphenylamine *	0.755	0.788	0.898	0.924	1.009	1.071	0.907	13.50	
2,4,6-Tribromophenol	0.090	0.098	0.103	0.116	0.104	0.107	0.103	8.54	
Hexachlorobenzene	0.193	0.225	0.230	0.238	0.214	0.231	0.222	7.27	
Pentachlorophenol *	0.135	0.139	0.144	0.148	0.135	0.138	0.140	3.81	
Fluoranthene *	1.013	1.037	1.052	1.190	1.091	1.172	1.093	6.70	
Terphenyl-d14	0.667	0.669	0.729	0.743	0.766	0.755	0.722	5.97	
bis(2-Ethylhexyl)phthalate	0.698	0.730	0.770	0.776	0.760	0.753	0.748	3.90	
Di-n-octylphthalate *	1.438	1.599	1.646	1.646	1.522	1.526	1.563	5.26	
Benzo(a)pyrene *	1.033	1.080	1.160	1.190	1.108	1.136	1.118	5.05	

TOTAL SVOC ANALYSIS
INITIAL CALIBRATION DATA

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Calibration Dates/Times: 11/02/2006 09:22 - 11/02/2006 12:55
Analytical Method: ACMM-9270-R8

ICAL File ID: IS606WA7
Data Report Number: ALD07011S
Analytical Batch ID: 0703083
Instrument ID: SV-6

LAB FILE ID:	RRF 1 = IS603398	RRF 3 = IS603400	RRF 5 = IS603402
	RRF 2 = IS603399	RRF 4 = IS603401	RRF 6 = IS603403

TARGET ANALYTE	RRF 1	RRF 2	RRF 3	RRF 4	RRF 5	RRF 6	AVE RRF	% RSD	#

CCC %RSD $\leq$ 30%

SPCC Average RRF $\geq$ 0.050

Non-SPCC Average RRF $\geq$ 0.010

* = CCC - Calibration Check Compounds
** = SPCC - System Performance Check Compounds

# Column used to flag modeled compounds
M = Modeled compound.
Z =Values Outside of Acceptance Criteria

TOTAL SVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Date/Time Analyzed:	03/21/2007 16:04	Lab Sample ID:	CC032107A
Analytical Method:	ACMM-9270-R8	Lab File ID:	CS603726
		Data Report Number:	ALD07011S
Initial Calibration Date/Time:	11/02/2006 09:22 - 11/02/2006 12:55	Analytical Batch ID:	0703083
		Instrument ID:	SV-6

TARGET ANALYTE	AVE RRF	CCAL RRF	%D
2-Fluorophenol	1.384	1.459	5.4
Phenol-d6	1.767	1.857	5.1
Phenol *	2.076	2.072	0.2
1,4-Dichlorobenzene *	1.668	1.711	2.6
1,2-Dichlorobenzene	1.533	1.586	3.5
2-Methylphenol	1.157	1.249	8.0
3&4-Methylphenol	1.423	1.526	7.2
N-Nitroso-di-n-propylamine **	1.037	1.101	6.2
Hexachloroethane	0.614	0.650	5.9
Nitrobenzene-d5	1.490	1.605	7.7
Nitrobenzene	1.509	1.625	7.7
2-Nitrophenol *	0.214	0.216	0.9
2,4-Dichlorophenol *	0.315	0.329	4.4
Hexachlorobutadiene *	0.185	0.200	8.1
4-Chloro-3-methylphenol *	0.313	0.345	10.2
Hexachlorocyclopentadiene **	0.312	0.392	25.6
2,4,6-Trichlorophenol *	0.392	0.393	0.3
2-Fluorobiphenyl	1.349	1.372	1.7
Acenaphthene *	1.144	1.121	2.0
2,4-Dinitrophenol **	0.168	0.137	18.5
4-Nitrophenol **	0.235	0.255	8.5
2,4-Dinitrotoluene	0.380	0.401	5.5
N-Nitrosodiphenylamine *	0.907	0.944	4.1
2,4,6-Tribromophenol	0.103	0.136	32.0
Hexachlorobenzene	0.222	0.273	23.0
Pentachlorophenol *	0.140	0.152	8.6

TOTAL SVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Date/Time Analyzed:	03/21/2007 16:04	Lab Sample ID:	CC032107A
Analytical Method:	ACMM-9270-R8	Lab File ID:	CS603726
		Data Report Number:	ALD07011S
Initial Calibration Date/Time:	11/02/2006 09:22 - 11/02/2006 12:55	Analytical Batch ID:	0703083
		Instrument ID:	SV-6

TARGET ANALYTE	AVE RRF	CCAL RRF	%D
Fluoranthene *	1.093	1.263	15.6
Terphenyl-d14	0.722	0.865	19.8
bis(2-Ethylhexyl)phthalate	0.748	0.859	14.8
Di-n-octylphthalate *	1.563	1.705	9.1
Benzo(a)pyrene *	1.118	1.223	9.4

CCC %D ≤ 20%

SPCC Average RRF ≥ 0.050
Non-SPCC Average RRF ≥ 0.010

* = CCC - Calibration Check Compounds
** = SPCC - System Performance Check Compounds

Z =Values Outside of Acceptance Criteria

TOTAL SVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Date/Time Analyzed:	03/22/2007 16:24	Lab Sample ID:	CC032207A
Analytical Method:	ACMM-9270-R8	Lab File ID:	CS603738
		Data Report Number:	ALD07011S
Initial Calibration Date/Time:	11/02/2006 09:22 - 11/02/2006 12:55	Analytical Batch ID:	0703083
		Instrument ID:	SV-6

TARGET ANALYTE	AVE RRF	CCAL RRF	%D
2-Fluorophenol	1.384	1.475	6.6
Phenol-d6	1.767	1.853	4.9
Phenol *	2.076	2.121	2.2
1,4-Dichlorobenzene *	1.668	1.764	5.8
1,2-Dichlorobenzene	1.533	1.613	5.2
2-Methylphenol	1.157	1.271	9.9
3&4-Methylphenol	1.423	1.559	9.6
N-Nitroso-di-n-propylamine **	1.037	1.127	8.7
Hexachloroethane	0.614	0.659	7.3
Nitrobenzene-d5	1.490	1.600	7.4
Nitrobenzene	1.509	1.649	9.3
2-Nitrophenol *	0.214	0.217	1.4
2,4-Dichlorophenol *	0.315	0.327	3.8
Hexachlorobutadiene *	0.185	0.198	7.0
4-Chloro-3-methylphenol *	0.313	0.342	9.3
Hexachlorocyclopentadiene **	0.312	0.386	23.7
2,4,6-Trichlorophenol *	0.392	0.394	0.5
2-Fluorobiphenyl	1.349	1.374	1.9
Acenaphthene *	1.144	1.125	1.7
2,4-Dinitrophenol **	0.168	0.111	33.9
4-Nitrophenol **	0.235	0.248	5.5
2,4-Dinitrotoluene	0.380	0.400	5.3
N-Nitrosodiphenylamine *	0.907	0.949	4.6
2,4,6-Tribromophenol	0.103	0.123	19.4
Hexachlorobenzene	0.222	0.249	12.2
Pentachlorophenol *	0.140	0.145	3.6

TOTAL SVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Date/Time Analyzed:	03/22/2007 16:24	Lab Sample ID:	CC032207A
Analytical Method:	ACMM-9270-R8	Lab File ID:	CS603738
		Data Report Number:	ALD07011S
Initial Calibration Date/Time:	11/02/2006 09:22 - 11/02/2006 12:55	Analytical Batch ID:	0703083
		Instrument ID:	SV-6

TARGET ANALYTE	AVE RRF	CCAL RRF	%D
Fluoranthene *	1.093	1.135	3.8
Terphenyl-d14	0.722	0.946	31.0
bis(2-Ethylhexyl)phthalate	0.748	0.914	22.2
Di-n-octylphthalate *	1.563	1.855	18.7
Benzo(e)pyrene *	1.118	1.218	8.9

CCC %D ≤ 20%

SPCC Average RRF ≥ 0.050
Non-SPCC Average RRF ≥ 0.010

* = CCC - Calibration Check Compounds
** = SPCC - System Performance Check Compounds

Z =Values Outside of Acceptance Criteria

TOTAL SVOC ANALYSIS
CCAL INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/21/2007 16:04	Daily CCAL Sample ID:	CC032107A
Analytical Method:	ACMM-8270-R8	Daily CCAL Lab File ID:	CS603726
ICAL/CCAL Sample ID:	CC031907B	Data Report Number:	ALD07011S
ICAL/CCAL Lab File ID:	CS603711	Analytical Batch ID:	0703083
Date Analyzed:	3/19/2007	Instrument ID:	SV-6

		IS1 (DCB) Area	RT (MIN)	IS2 (NPT) Area	RT (MIN)	IS3 (ANT) Area	RT (MIN)
Previous ICAL/CCAL	12 HOUR STANDARD	242855	8.69	948315	11.07	564417	14.39
	UPPER LIMIT	485710	9.19	1896630	11.57	1128834	14.89
	LOWER LIMIT	121428	8.19	474158	10.57	282208	13.89
Continuing Calibration Check		239033	8.69	924976	11.07	552209	14.39

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
CCAL INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/21/2007 16:04	Daily CCAL Sample ID:	CC032107A
Analytical Method:	ACMM-8270-R8	Daily CCAL Lab File ID:	CS603726
ICAL/CCAL Sample ID:	CC031907B	Data Report Number:	ALD07011S
ICAL/CCAL Lab File ID:	CS603711	Analytical Batch ID:	0703083
Date Analyzed:	3/19/2007	Instrument ID:	SV-6

		IS4 (PHN) Area	RT (MIN)	IS5 (CRY) Area	RT (MIN)	IS6 (PRY) Area	RT (MIN)
Previous ICAL/CCAL	12 HOUR STANDARD	828237	17.15	918854	22.22	803699	25.91
	UPPER LIMIT	1656474	17.65	1837708	22.72	1607398	26.41
	LOWER LIMIT	414118	16.65	459427	21.72	401850	25.41
Continuing Calibration Check		841490	17.15	857505	22.22	704506	25.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
CCAL INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/22/2007 16:24	Daily CCAL Sample ID:	CC032207A
Analytical Method:	ACMM-9270-R8	Daily CCAL Lab File ID:	CS603738
ICAL/CCAL Sample ID:	CC032107A	Data Report Number:	ALD07011S
ICAL/CCAL Lab File ID:	CS603726	Analytical Batch ID:	0703083
Date Analyzed:	3/21/2007	Instrument ID:	SV-6

		IS1 (DCB) Area	RT (MIN)	IS2 (NPT) Area	RT (MIN)	IS3 (ANT) Area	RT (MIN)
Previous ICAL/CCAL	12 HOUR STANDARD	239033	8.69	924976	11.07	552209	14.39
	UPPER LIMIT	478066	9.19	1849952	11.57	1104418	14.89
	LOWER LIMIT	119516	8.19	462488	10.57	276104	13.89
Continuing Calibration Check		229288	8.69	911252	11.07	540533	14.39

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
CCAL INTERNAL STANDARD AREA AND RT SUMMARY

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/22/2007 16:24	Daily CCAL Sample ID:	CC032207A
Analytical Method:	ACMM-9270-R8	Daily CCAL Lab File ID:	CS603738
ICAL/CCAL Sample ID:	CC032107A	Data Report Number:	ALD07011S
ICAL/CCAL Lab File ID:	CS603726	Analytical Batch ID:	0703083
Date Analyzed:	3/21/2007	Instrument ID:	SV-6

		IS4 (PHN) Area	RT (MIN)	IS5 (CRY) Area	RT (MIN)	IS6 (PRY) Area	RT (MIN)
Previous ICAL/CCAL	12 HOUR STANDARD	841490	17.15	857505	22.22	704506	25.90
	UPPER LIMIT	1682980	17.65	1715010	22.72	1409012	26.40
	LOWER LIMIT	420745	16.65	428752	21.72	352253	25.40
Continuing Calibration Check		882810	17.15	740716	22.22	553108	25.90

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

Z = Values outside of Acceptance Criteria

Area upper limit = +100% of internal standard area
Area lower limit = -50% of internal standard area

RT upper limit = +30 seconds of internal standard RT
RT lower limit = -30 seconds of internal standard RT

TOTAL SVOC ANALYSIS
MDL REPORTING FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

MDL Determination Date: 1/30/2007 Instrument ID: SV-6

Preparation Method: ACMM-9500-R11 Matrix: SOLID

Analytical Method: ACMM-8270-R8

TARGET ANALYTE	Reported MDL mg/kg	Program Required MDL mg/kg	PRQL mg/kg
bis(2-Ethylhexyl)phthalate	0.40	5	40
1,2-Dichlorobenzene	0.20	5	40
1,4-Dichlorobenzene	0.20	5	40
2,4-Dinitrophenol	0.20	5	40
2,4-Dinitrotoluene	0.20	0.3	2.6
Fluoranthene	0.40	5	40
Hexachlorobenzene	0.20	0.3	2.6
Hexachloroethane	0.20	5	40
2-Methylphenol	0.20	5	40
3&4-Methylphenol	0.20	5	40
Nitrobenzene	0.20	5	40
Pentachlorophenol	0.20	5	40
Phenol	0.20	5	40

Section 6

Data Review Checklists

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070308 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000296 & 0000298	If Yes NCR Number: _____
Reviewer: Cary Richardson / Cary Richardson 03/08/07 (Printed Name/Signature / Date)		

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

	Requirement	Yes	No	Comments
	1. FIELD CHAIN-OF-CUSTODY (COC)			
a.	Was a COC form received with each shipping container?	☒	☐	
b.	Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c.	Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d.	Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e.	Is the correct analysis requested for each sample?	☒	☐	
f.	Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	2. SAMPLE LABELS			
a.	Was each sample received with a completed sample label?	☒	☐	
b.	Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c.	Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d.	Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e.	Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	3. SAMPLE INTEGRITY			
a.	Were custody seals used on the shipping container?	☒	☐	
b.	Were custody seals used on each individual sample container?	☒	☐	
c.	Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d.	Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e.	Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f.	Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g.	Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
	4. INTERNAL SAMPLE TRACKING			
a.	Were all samples logged into the Analytical Computer System?	☒	☐	
b.	Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c.	Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d.	Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070312 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000299, 0000300 & 0000301	If Yes NCR Number: _____
Reviewer: Cary Richardson (Cary Richardson) 03/12/07		
Printed Name/Signature	Date	

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

	Requirement	Yes	No	Comments
	1. FIELD CHAIN-OF-CUSTODY (COC)			
a.	Was a COC form received with each shipping container?	☒	☐	
b.	Did the contents of each shipping container match that listed on the associated COC form?	☒	☐	
c.	Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d.	Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e.	Is the correct analysis requested for each sample?	☒	☐	
f.	Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	2. SAMPLE LABELS			
a.	Was each sample received with a completed sample label?	☒	☐	
b.	Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c.	Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d.	Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e.	Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	3. SAMPLE INTEGRITY			
a.	Were custody seals used on the shipping container?	☒	☐	
b.	Were custody seals used on each individual sample container?	☒	☐	
c.	Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d.	Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e.	Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f.	Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g.	Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
	4. INTERNAL SAMPLE TRACKING			
a.	Were all samples logged into the Analytical Computer System?	☒	☐	
b.	Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c.	Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d.	Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 0703143	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000302	If Yes NCR Number: _____
Reviewer: Cary Richardson / Cary Richardson (Printed Name/Signature)	03/14/2007 (Date)	

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR.

Requirement	Yes	No	Comments
1. FIELD CHAIN-OF-CUSTODY (COC)			
a. Was a COC form received with each shipping container?	☒	☐	
b. Did the contents of each shipping container match that listed on the associated COC forms?	☒	☐	
c. Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d. Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e. Is the correct analysis requested for each sample?	☒	☐	
f. Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
2. SAMPLE LABELS			
a. Was each sample received with a completed sample label?	☒	☐	
b. Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c. Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d. Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e. Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
3. SAMPLE INTEGRITY			
a. Were custody seals used on the shipping container?	☒	☐	
b. Were custody seals used on each individual sample container?	☒	☐	
c. Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d. Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e. Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f. Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g. Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
4. INTERNAL SAMPLE TRACKING			
a. Were all samples logged into the Analytical Computer System?	☒	☐	
b. Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c. Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d. Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date: 10Mar05

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ICP Analytical Laboratories Department

Data Generator Checklist for TWCP

Data Report Number: ALD07011S	Analytical Batch: 0703083
Analysis Procedure: ACMM-9270	Procedure Revision: 8
Analysis Date(s): 3/21/07 and 3/22/07	
Data Generator Signature: Thomas G. Moffett	

Criteria	Yes	No	Comments
1. Samples analyzed in accordance with cited analytical method.	X		
2. All logbook entries completed in accordance with MCP-2011.	X		
3. All data entry and corrections made in accordance with MCP-2008.	X		
4. All raw data signed/initialed and dated in indelible black ink.	X		
5. Data reviewed for completeness and accuracy.	X		

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total SVOCs in Homogeneous Solids and Soil/Gravel by GC/MS

Analytical Batch: 0703083	Data Report: ALD07011S	Methods: ACMM-9270 and ACMM-9500

Run # and Analysis Date	Data Generator	ITR Review Date	ITR Signature Release	ITR Release Date
#1 3/21/07	Tom Moffett	4-02-07		
#2 3/22/07	Tom Moffett	4-02-07		4-09-07
#3				
#4				

Instructions: Complete one checklist per analytical batch. If more than four instrument runs were needed to complete the batch analysis, use a second checklist. Enter the appropriate response for each question. Each "No" response requires explanation.

Requirement	Run #1 Yes	Run #1 No	Run #2 Yes	Run #2 No	Run #3 Yes	Run #3 No	Run #4 Yes	Run #4 No	Comments
1. Instrument Performance Check (DFTPP Tune)	///	///	///	///	///	///	///	///	
a. Was a DFTPP tune performed at the beginning of each 12-hour analytical shift, before analysis of standards or samples?	✓		✓						
b. Does the DFTPP tune meet ACMM-9270 acceptance criteria?	✓		✓						
2. Initial Calibration (ICAL)	///	///	///	///	///	///	///	///	
a. Have all ICALs used with this analytical batch been verified to meet specifications and approved for use as documented by a completed Initial Calibration Independent Technical Review Checklist?	✓		✓						
3. Continuing Calibration Verification (CCAL)	///	///	///	///	///	///	///	///	
a. Was a CCAL standard analyzed at the beginning of each 12-hour analytical shift, after the DFTPP tune but before sample analysis?	✓		✓						
b. Are all CCC RRF or concentration (for modeled compounds) %Ds ≤20?	✓		✓						
c. Are the RRFs ≥0.050 for all SPCCs and ≥ 0.01 for non-SPCCs?	✓		✓						
d. Are internal standard areas within 50 to 200% of the areas in the last daily calibration standard (CCAL or midpoint ICAL standard)?	✓		✓						
e. Are internal standard retention times (RTs) within 30 seconds of the RT in the last daily calibration standard (CCAL or midpoint ICAL standard)?	✓		✓						
4. Samples (including LCSs, Blanks, MS and MSDs)	///	///	///	///	///	///	///	///	
a. Are the internal standard areas within 50 to 200% of those in the associated CCAL?	✓		✓						
b. Are the internal standard retention times within 30 seconds of those in the associated CCAL?	✓		✓						
c. Do all surrogate compound recoveries meet ACMM-9270 TWCP acceptance criteria?		✓		✓					See Narrative
d. Were all samples having analytes detected in amounts exceeding the calibration range reanalyzed on a dilution?	NA		NA						
e. Are detected target analyte RRTs within 0.06 RRT units of the associated CCAL RRT, or is the qualitative identification justified by the analyst?	✓		✓						
f. In your opinion, do the sample spectra for positive hits match the reference spectra?	✓		✓						
g. In your opinion, are the quantitation ion peak areas correctly integrated?	✓		✓						
h. Was a TIC search conducted on each sample and blank in the analytical batch?	✓		✓						
i. Are TIC identities appropriately assigned per the identification criteria of ACMM-9270?	✓		✓						

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ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total SVOCs in Homogeneous Solids and Soil/Gravel by GC/MS

Analytical Batch: 0703083	Data Report: ALD07011S	Methods: ACMM-9270 and ACMM-9500

Requirement	Yes	No	Comments
5. Blanks	///	///	
a. Was at least one unique laboratory blank extracted and analyzed with the analytical batch?	✓		
b. Are all laboratory blank results ≤3 x program-required MDLs for all target analytes?	✓		
6. Laboratory Control Samples (LCSs)	///	///	
a. Was at least one unique LCS extracted and analyzed with the analytical batch?	✓		
b. Are all LCSs prepared from a standard source different from that used for the ICAL standards?	✓		
c. Do percent recoveries for all spiked analytes in each LCS meet ACMM-9270 TWCP acceptance criteria?	✓		
7. Matrix Spike and Matrix Spike Duplicate Samples (MS/MSD)	///	///	
a. Was at least one matrix spike sample (MS) analyzed with the analytical batch?	✓		
b. Was at least one matrix spike duplicate sample (MSD) analyzed with the analytical batch?	✓		
c. Do all percent recoveries for the MS and MSD meet ACMM-9270 TWCP acceptance criteria?		✓	See Narrative
d. Do the RPDs between the MS and MSD meet ACMM-9270 TWCP acceptance criteria?		✓	See Narrative
8. Sample Integrity Verification	///	///	
a. Is COC documentation complete and accurate for all reported samples?	✓		
b. Was physical integrity of all samples verified as satisfactory at VTSR?	✓		
c. Were all samples stored at 4 ± 2 °C between receipt and analysis?	✓		
d. Were all extracts stored at < -10 °C between preparation and analysis?	✓		
e. Were all samples extracted within 14 days of collection and analyzed (including dilutions and reanalyses) within 40 days of extraction?	✓		
9. Instrument, Method and Personnel Qualification Verification	///	///	
a. Were all analytical tasks, including sample analysis and supporting method performance and ICALs, conducted by personnel having current TWCP qualifications?	✓		
b. Was acceptable demonstration of precision, accuracy, and MDLs performed within the last 6 months?	✓		
10. Supporting Data Package Completeness	///	///	
a. Are all raw data and instrument printouts signed/initialed (in permanent black ink) and dated by the chemist/analyst and included in the data package?	✓		
b. Are copies of all extraction/preparation and analysis run log books for the analytical batch included in the data package?	✓		
c. Are standard certificates and QC Lab preparation records present and accurate for all working, intermediate and stock standard solutions used?	✓		
d. Are all changes to original data made by line-out of incorrect data, initialed/signed and dated by the person making the change?	✓		

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ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total SVOCs in Homogeneous Solids and Soil/Gravel by GC/MS

Analytical Batch: 0703083	Data Report: ALD07011S	Methods: ACMM-9270 and ACMM-9500

Requirement		Yes	No	Comments
II. Data Report Completeness		///	///	
a.	Does the report contain a Data Report Narrative that addresses, at a minimum: 1) any deviations from ACMM-9270 or ACMM-9500 and the justification for the deviations; 2) any QC samples that failed the acceptance criteria, and their impact on data quality; 3) any NCRs associated with the reported samples; and 4) any problems or unusual conditions encountered during the analysis?	✓		
b.	Are copies of any NCRs associated with the data included?	✓		
c.	Are Analysis Data Sheets and TIC Analysis Data Sheets present and accurate for all samples in the analytical batch? 5-01-07	✓		
d.	Are the analyte concentrations on the Analysis Data Sheets reported in units of mg/kg and correctly rounded to 2 significant figures?	✓		
e.	Are U, J, B, D, E, H, Z, and N qualifying flags correctly assigned on the reporting forms?	✓		
f.	Are reporting forms present and accurate for surrogate recoveries, MS/MSDs, LBs, MBs, ISA&RTs, LCSs, DFTPP tunes, ICALs, CCALs, CCAL ISA&RTs, and MDLs?	✓		
g.	Are copies of all COC documentation included?	✓		
h.	Have all data received documented data generator review and signature?	✓		
i.	Were all calculations performed using validated software or 100% manually verified?	✓		
j.	Have the data been reviewed for transcription errors?	✓		
k.	Are all pages in the data report legible and correctly paginated?	✓		

Additional Comments: Revision 1 change reviewed and approved KCJ 5-01-07

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ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total SVOCs in Homogeneous Solids and Soil/Gravel by GC/MS

Analytical Batch: 0703083	Data Report: ALD07011S	Methods: ACMM-9270 and ACMM-9500

Requirement	Yes	No	Comments
a. Does the report contain a Data Report Narrative that addresses, at a minimum: 1) any deviations from ACMM-9270 or ACMM-9500 and the justification for the deviations; 2) any QC samples that failed the acceptance criteria, and their impact on data quality; 3) any NCRs associated with the reported samples; and 4) any problems or unusual conditions encountered during the analysis?	✓		
b. Are copies of any NCRs associated with the data included?	✓		
c. Are Analysis Data Sheets and TIC Analysis Data Sheets present and accurate for all samples in the analytical batch?	✓		
d. Are the analyte concentrations on the Analysis Data Sheets reported in units of mg/kg and correctly rounded to 2 significant figures?	✓		
e. Are U, J, B, D, E, H, Z, and N qualifying flags correctly assigned on the reporting forms?	✓		
f. Are reporting forms present and accurate for surrogate recoveries, MS/MSDs, LBs, MBs, ISA&RTs, LCSs, DFTPP tunes, ICALs, CCALs, CCAL ISA&RTs, and MDLs?	✓		
g. Are copies of all COC documentation included?	✓		
h. Have all data received documented data generator review and signature?	✓		
i. Were all calculations performed using validated software or 100% manually verified?	✓		
j. Have the data been reviewed for transcription errors?	✓		
k. Are all pages in the data report legible and correctly paginated?	✓		

Additional Comments:

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AMWTP Advanced Mixed Waste Treatment Project	SPM Analysis of Homogenous Solids and Soils/Gravel Checklist	Form-1609, Rev. 2 Effective Date: 1/24/07 Page 1 of 8

Implementing Document: MP-TRUW-8.9

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response			Requirement(s)	Comment(s)
		Yes	No	N/A		
QC Elements						
1	Has the BDR received a Data Generation Level (DGL) Independent Technical Review?	X			MP-TRUW-8.2, B3-10a	
2	Is there a minimum of one laboratory blank analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
3	Are laboratory blank results ≤ 3 x MDL/IDL (≤ 5 x IDL for ICP-MS)?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
4	Is there a minimum of one LCS analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
5	Are the %R for the LCS analytes within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
6	Is there a minimum of one matrix spike (MS) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
7	Are the %R for the MS within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
8	Is there a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
9	Are the %R for the MSD within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
10	Are the precision QAOs (%RSD or RPD) for the MSD within the acceptable range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals) Has the F-test (or equivalent) or control chart sampling precision been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
VOCs, NHVOCs, SVOAs						
11	This analytical batch is specific to metals, therefore this section does not apply. **Skip to question 33.**		X			
12	Are all analytical samples spiked with surrogate compounds?	X			MP-TRUW-8.2, Tables B3-5, B3-7	

000082

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
13	Are the surrogate compound recoveries (%R) within acceptance criteria and averaged from a minimum of 30 samples? **NOTE:** *After 30 samples, the %R is ± 3 sigma.*	X			MP-TRUW-8.2, Tables B3-5, B3-7	
	GS/MS Inititial Calibration					
14	Was there a DFTPP or BFB tune performed at a minimum frequency of every 12 hours?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
15	Were the method ion abundance criteria satisfied as determined by the ITR's validation?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
16	Was the initial calibration correctly prepared and performed? **NOTE:** *Minimum of 5 standards containing all method analytes and at least one standard < PRQL. Six standards are needed if second order regression is used.*	X			MP-TRUW-8.2, Tables B3-5, B3-7	
17	Was the %RSD ≤ 30 for CCC or ≤ 15 for all other compounds?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
18	If %RSD is ≤ 15, is average RRF used?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
19	If %RSD is > 15, is the regression equation used, and is the R or R^2 ≥ 0.990?			X	MP-TRUW-8.2, Tables B3-5, B3-7	
20	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria?			X	MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	This is an SVOC batch.
	Chloromethane ≥ 0.10					
	1,1-Dichloroethane ≥ 0.10					
	Bromoform ≥ 0.10					
	Chlorobenzene ≥ 0.30					
	1,1,2,2-Tetrachloroethane ≥ 0.30					
	All remaining SPCCs ≥ 0.05					
21	Are the RRFs for all non-SPCCs ≥ 0.01?	X			MP-TRUW-8.2, Tables B3-5, B3-7	

280000

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
	GC/MS Continuing Calibration					
22	Is calibration verification performed at a minimum frequency of every 12 hours?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
23	Are response factor %Ds for the target analyte CCCs ≤ 20?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
24	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria?			X	MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	This is an SVOC batch.
	Chloromethane ≥ 0.10					
	1,1-Dichloroethane ≥ 0.10					
	Bromoform ≥ 0.10					
	Chlorobenzene ≥ 0.30					
	1,1,2,2-Tetrachloroethane ≥ 0.30					
	All remaining SPCCs ≥ 0.05					
25	Are the RRFs for all non-SPCCs ≥ 0.01?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
26	Is the RT for CCAL internal standards ± 30 seconds from the last daily calibration check?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
27	Is the CCAL internal standard area count > 50% and < 200% from the last daily calibration check?	X			MP-TRUW-8.2, Tables B3-5, B3-7	
	GC/FID (used for NHVOC analysis only)					
28	Is the initial 3-point initial calibration, consisting of at least five standards containing all target analytes, complete? **NOTE:** *One standard must be less than the PRQL.*			X	MP-TRUW-8.2, Table B3-5	This is an SVOC batch.
29	Is the correlation coeffficient ≥ 0.990, or %RSD ≤ 20 for all analytes?			X	MP-TRUW-8.2, Table B3-5	This is an SVOC batch.
30	Has a CCV standard been analyzed at the beginning of each 12-hour shift to verify ICAL performed at a mimimum frequency of every 12 hours?			X	MP-TRUW-8.2, Table B3-5	This is an SVOC batch.
31	Are the %Ds ≤ 15 for all analytes?			X	MP-TRUW-8.2, Table B3-5	This is an SVOC batch.
32	Are the RTs for continuing calibrations ± 3 standard deviations from the ICAL?			X	MP-TRUW-8.2, Table B3-5	This is an SVOC batch.

000084

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
	METALS					
33	This analytical batch is specific to organics, therefore this section does not apply. **Skip to question 48.**	X				This is an SVOC batch.
34	Is the ICP serial dilution performed once per analytical batch?				MP-TRUW-8.2, Table B3-9	
35	Is the 5x serial dilution result ≤ 10% D of initial value for sample results > 50 x IDL? If no, result must be flagged "Z".				MP-TRUW-8.2, Table B3-9	
	ICP-AES Calibration					
36	Is initial calibration, including one blank and one standard, performed each day of operation?				MP-TRUW-8.2, Table B3-9	
37	Is the %R for the daily ICV check standard within the 90-110% acceptance range for the ICV solution?				MP-TRUW-8.2, Table B3-9	
38	Is continuing calibration performed every 10 samples and at the beginning and end of the run?				MP-TRUW-8.2, Table B3-9	
39	Is the %R for the check standards within the 90-110% range?				MP-TRUW-8.2, Table B3-9	
40	Is interference correction verification performed at the beginning and end of the analytical batch or every 8 hours, whichever is more frequent?				MP-TRUW-8.2, Table B3-9	
41	Are solutions containing interference plus analytes within the 80-120% acceptance range for all analytes? **NOTE:** *If response is no and interferents are found at levels greater than the ICS(A) solution, write an NCR unless one has already been initiated at the DGL.*				MP-TRUW-8.2, Table B3-9	

000085

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
	CVAA Calibration (used for mercury analysis only)					
42	Is a 5-point initial calibration, including a blank, performed each day of operation? **NOTE:** *At least one QC or calibration standard must be ≤ the PRQL.*				MP-TRUW-8.2, Table B3-9; ACMM-2810, Section 7.9	
43	Is the CVAA serial dilution performed once per analytical batch? **NOTE:** *Not required if %R of the sample (S) and sample duplicate (SD) are 100 ± 20 or Hg is below 10 x IDL for all samples in the batch.*				ACMM-2810, Section 7.20	
44	Is the %R for the ICV solution within 80-120% for the ICV solution?				MP-TRUW-8.2, Table B3-9	
45	Is the regression coefficient ≥ 0.995?				MP-TRUW-8.2, Table B3-9	
46	Is continuing calibration performed every 10 samples and at the beginning and end of the run?				MP-TRUW-8.2, Table B3-9	
47	Is %R for the check standards within the 80-120% acceptance range?				MP-TRUW-8.2, Table B3-9	
	Sample Handling Requirements					
48	Have samples been properly preserved (cooled to 4°C, +/- 2°C)?	X			MP-TRUW-8.2, Table B1-4	
49	Are holding times between sample collection and sample extraction (preparation) within 14 days for VOC/SVOC or within 180 days for metals? Note: Holding time for Hg is 28 days.	X			MP-TRUW-8.2, Table B1-4	
50	Are holding times between sample extraction and analysis within the 40-day requirement? **NOTE:** *Not a requirement for metals.*	X			MP-TRUW-8.2, Table B1-4	
	Analytical Batch/BDR & Reporting Requirements					
51	Are there 20 or fewer samples analyzed in the batch (excluding laboratory QC samples) and within 14 days of the validated time of sample receipt of the first sample in the batch?	X			MP-TRUW-8.2, B3-10	
52	Were proper procedures followed to ensure representative samples (Include procedure number used for analysis in comment)?	X			MP-TRUW-8.2, B3-10b(1)	

990000

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
53	Is the BDR complete (all pages identified in the BDR and numbered accordingly)?		X		MP-TRUW-8.2, Table B3-13	
	BDR number and date					
	Sample numbers and applicable QC designations					
	Current implementing procedure (including method if more than one method cited)					
	QC sample results					
	Sample data forms including reduced data for target analytes and TICs					
	Chains of Custody					
	Evidence of sample preservation					
	Evidence of holding times					
	Cross-reference of field numbers to laboratory sample numbers					
	Analysis dates, times, and operator signatures					
	TIC evaluations as applicable					
	Reporting flags as applicable, *explained in the narrative*					
	Report narrative					
	Associated NCRs					
	Applicable Data Review Checklists					
	Batch Data Report Supplemental Comment Form (Form-1491)					There are no NCRs nor Form-1491 associated with this batch.
54	Is all data reported properly with correct units and significant figures?	X			MP-TRUW-8.2, B3-10b(2)	
55	Were reporting flags correctly assigned and included in the case narrative?	X			MP-TRUW-8.2, B3-10a	
56	Are the MDLs, IDL, PRDL, PRQL demonstration, and method performance samples current and was one standard below the PRQL? **NOTE:** *MPS should be performed semi-annually.*	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	On file at the laboratory.
57	Has the 90% completeness requirement for analytical results been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	

1480000

	BDR No.:ALD07011S (SSC07-00101)					
	Question	Response			Requirement(s)	Comment(s)
		Yes	No	N/A		
58	Are the traceable standards used to generate these data referenced in the BDR?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
59	Was representativeness achieved by collecting unbiased samples?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
60	Is the analytical laboratory PDP participation current and acceptable?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	On file at the laboratory.
61	Is the ITR checklist complete?	X			MP-TRUW-8.2, B3-10b(2)	The ITR checklist was revised so that an omission associated with question 11c could be addressed. As a result, the cover page was also revised. No other changes were made.
62	The data for all containers in this BDR are complete, properly documented, technically reasonable, representative, and meet the review, validation, and verification requirements.	X			MP-TRUW-8.2, B3-10b(2)	
63	Review all NCRs, open and closed. Can the batch be promoted?	X			MP-TRUW-8.2, Table B3-13	No NCRs associated with this batch.
64	Is all data associated with this BDR acceptable for signature release?	X			MP-TRUW-8.2, B3-10b(a)	

SPM George Byram

Signature/Date: George Byram 8/2/07

000000

Acronym Key

%D - percent difference
%R - percent recoveries
%RSD - percent relative standard deviation
AES - Atomic Emission Spectroscopy
BFB - Bromofluorobenzene
CCAL - continuing calibration
CCC - calibration check compounds
CCV – continuing calibration verification
CVAA - Cold Vapor Atomic Absorption
DFTPP - Decafluorotriphenylphosphine
GC/FID - Gas Chromatography/Flame Ionization Detection
GC/MS - Gas Chromatography/Mass Spectrometry
ICP-MS - Inductively Coupled Plasma-Mass Spectroscopy
ICS(A) - interferent check sample
ICV - initial calibration verification
IDL - instrument detection limit
ITR - Independent Technical Reviewer
LCS - laboratory control sample
MDL - method detection limit
MPS – method performance sample
PDP - Performance Demonstration Program
PRDL - Program Required Detection Limit
PRQL - Program Required Quantitation Limit
QAO - quality assurance objective
R, R^2 - correlation coefficient
RPD - relative percent difference
RRF - relative response factor
RT - retention time
SPCC - system performance check compound
TIC - tentatively identified compound

680000

B-2010-0004
RECORD
CC 2/17/10

CH2M•WG IDAHO, LLC

Analytical Laboratories Department

Idaho Cleanup Project

Transuranic Waste Characterization Program

RCRA Analysis Data Report

Batch Data Report Number: ALD07018M
Revision Number: 0
Issue Date: 04/17/07

Analytical Method: ACMM-2901, -2810
Analyte(s): Metals

Issued to: Mr. Eric P. Schweinsberg
Site Project Manager - TRU Programs
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC
850 Energy Drive, Suite 200
Idaho Falls, ID 83401

Summary: This data report contains analysis results for 6 samples from Sampling Batch SSC07-00101.

Report Content:

Section	Content	Pages
1	Sample Identification Table	0002 – 0003
2	Sample Custody and Tracking Documents	0004 – 0020
3	Analysis Results	0021 – 0030
4	Batch QC Sample Results	0031 – 0037
5	Instrument QC Data	0038 – 0047
6	Data Review Checklists	0048 – 0059

Release Authorization:

Name & Position	Signature	Date
Jeffrey S. Laug Technical Leader		04/17/07
Jeffrey S. Laug Technical Supervisor		04/17/07
Shelly J. Sailer Quality Assurance Officer		04/17/07

Section 1

Sample Identification Table

TOTAL METALS SAMPLE CROSS-REFERENCE TABLE

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Field Sample ID	Lab Sample ID
10150520	7AK77
10150529	7AK80
10150645	7AK98
10150934	7AM02
10151029	7AM05
10151191	7AN18

Section 2

Sample Custody Documents

Cary 03/08/07

ALD LOG # 0703083

AMWTP

Chain Of Custody

ALD LOG # 0703083

Print Date: 08-Mar-2007
Print Time: 10:10
COC No.: 0000296
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150516	07-Mar-2007	11:35	20 / ml	2.80 / gms	PVOC	Douglas Larson	sub sample PVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150517	07-Mar-2007	11:36	20 / ml	2.63 / gms	NHVOC	Douglas Larson	sub sample NHVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150518	07-Mar-2007	11:39	20 / ml	2.61 / gms	SPARE	Douglas Larson	sub sample SPARE 1 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150519	07-Mar-2007	11:41	20 / ml	2.69 / gms	SPARE	Douglas Larson	sub sample SPARE 2 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150520	07-Mar-2007	11:46	125 / ml	35.18 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from initial core.	
SSC07-00101	10124541	MD-836	10150564	07-Mar-2007	15:14	20 / ml	2.98 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150565	07-Mar-2007	15:19	20 / ml	2.94 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150566	07-Mar-2007	15:21	20 / ml	2.86 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R. Larson	03/08/07 1016	
Received By	Rachelle Hubler	Rachelle Hubler	03/08/07 1016	
Relinquished By	Rachelle Hubler	Rachelle Hubler	3/08/07 1050	BOL# AMWTP000344 INL Truck Seal # 077703 Rachelle Hubler 3/8/07
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	
Relinquished By				
Received By				
Relinquished By				
Received By				

S00005

Page 1 of 1

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703083
03/08/07

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000288
Page 1 of 2

900000

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150521	07-Mar-2007	12:15	20 / ml	2.72 / gms	PVOC	Douglas Larson	sub sample PVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150522	07-Mar-2007	12:21	20 / ml	2.75 / gms	PVOC	Douglas Larson	sub sample PVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150523	07-Mar-2007	12:23	20 / ml	2.70 / gms	PVOC	Douglas Larson	sub sample PVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150524	07-Mar-2007	12:24	20 / ml	2.98 / gms	NHVOC	Douglas Larson	sub sample NHVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150525	07-Mar-2007	12:27	20 / ml	2.64 / gms	NHVOC	Douglas Larson	sub sample NHVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150526	07-Mar-2007	12:28	20 / ml	2.58 / gms	NHVOC	Douglas Larson	sub sample NHVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150527	07-Mar-2007	12:30	20 / ml	2.64 / gms	SPARE	Douglas Larson	sub sample SPARE1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150528	07-Mar-2007	12:33	20 / ml	2.90 / gms	SPARE	Douglas Larson	sub sample SPARE2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150529	07-Mar-2007	12:38	125 / ml	34.80 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from co-located core.	
SSC07-00101	10124541	MD-836	10150567	07-Mar-2007	15:30	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150568	07-Mar-2007	15:32	20 / ml	2.99 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150569	07-Mar-2007	15:34	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R Larson	03/05/07 1023	
Received By	Rachelle Hubler	Rachelle Hubler	3/08/07 1023	

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ALD LOG # 0703083

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000298
Page 2 of 2

Relinquished By	Rachelle Hubler	Rachelle Hubler	3/8/07 1055	BOL # AMWTP000344
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	IAL Truck Seal # 077720 Rachelle Hubler 3/8/07
Relinquished By				
Received By				
Relinquished By				
Received By				

000007

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 11:02
COC No.: 0000301
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10130208	MD-836	10151025	10-Mar-2007	14:26	20 / ml	2.97 / gms	PVOC	Frank Kuck	core sample tube cut at 10.25 and sampling towards top of core sample.	
SSC07-00101	10130208	MD-836	10151026	10-Mar-2007	14:27	20 / ml	2.84 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10130208	MD-836	10151027	10-Mar-2007	14:28	20 / ml	2.99 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10130208	MD-836	10151028	10-Mar-2007	14:29	20 / ml	2.96 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10130208	MD-836	10151029	10-Mar-2007	14:31	125 ml	39.99 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10130208	MD-836	10151030	10-Mar-2007	15:00	20 / ml	2.67 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10130208	MD-836	10151031	10-Mar-2007	15:01	20 / ml	2.72 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10130208	MD-836	10151032	10-Mar-2007	15:03	20 / ml	2.93 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

800000

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:40:07	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:40:07	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:20:09	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:20:09	
Relinquished By	Steven Yount		12-MAR-07 1107	CORRECTED SVOC METAL VOLUME TO CORRECT SIZE OF 125 ML SY 3/12/07
Received By	Richard A. NeSmith		12MAR-07 1107	
Relinquished By	Richard A. NeSmith		12MAR07 1124	BOL # AMWTP000345 INL TRUCK
Received By	Cary Richardson	Cary Richardson	12-Mar-07 1400	Seal # 077753 3/12/07 RA
Relinquished By				
Received By				
Relinquished By				
Received By				

ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:59
COC No.: 0000300
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123139	MD-836	10150930	10-Mar-2007	07:14	20 / ml	2.85 / gms	~~NHVOC~~ PVOC 3/12/07 SY	Frank Kuck	sample cut at 19.25" and material removed to 19.5" sub sampling toward bottom of core sample.	
SSC07-00101	10123139	MD-836	10150931	10-Mar-2007	07:15	20 / ml	2.91 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123139	MD-836	10150932	10-Mar-2007	07:16	20 / ml	2.70 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123139	MD-836	10150933	10-Mar-2007	07:17	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123139	MD-836	10150934	10-Mar-2007	07:19	125 / ml	39.25 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10123139	MD-836	10150935	10-Mar-2007	07:30	20 / ml	2.88 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10123139	MD-836	10150936	10-Mar-2007	07:31	20 / ml	2.91 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10123139	MD-836	10150937	10-Mar-2007	07:33	20 / ml	2.98 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

600000

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:41:16	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:41:16	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:00	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:00	
Relinquished By	Steven Yount		12-MAR-07 1102	
Received By	Richard A. NeSmith		12-MAR-07 1102	
Relinquished By	Richard A. NeSmith		12MAR07 1127	BOL # AMWTP000395 INL Truck
Received By	Cary Richardson	Cary Richardson	12-Mar-07 HW	Seal # 077722 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

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ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:54
COC No.: 0000299
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123154	MD-836	10150641	08-Mar-2007	14:59	20 / ml	2.96 / gms	PVOC	Frank Kuck	core sample cut at 21.75, material removed to 22.00, and sampling towards bottom of core.	
SSC07-00101	10123154	MD-836	10150642	08-Mar-2007	15:01	20 / ml	2.83 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123154	MD-836	10150643	08-Mar-2007	15:02	20 / ml	2.83 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123154	MD-836	10150644	08-Mar-2007	15:03	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123154	MD-836	10150645	08-Mar-2007	15:05	125 / ml	39.90 / gms	SVOC, METALS	Frank Kuck	SVOC	
SSC07-00101	10123154	MD-836	10150646	08-Mar-2007	16:31	20 / ml	2.85 / gms	TRIP BLANK	Frank Kuck	trip blank 1	
SSC07-00101	10123154	MD-836	10150647	08-Mar-2007	16:35	20 / ml	2.83 / gms	TRIP BLANK	Frank Kuck	trip blank 2	
SSC07-00101	10123154	MD-836	10150648	08-Mar-2007	16:39	20 / ml	2.78 / gms	TRIP BLANK	Frank Kuck	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:42:26	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:42:26	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:44	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:44	
Relinquished By	Steven Yount		12-MAR-07 1058	3/12/07 1058
Received By	Richard A. NeSmith		12-MAR-07 1058	3/12/07
Relinquished By	Richard A. NeSmith		12-MAR-07 1130	BOL # AMWTP 000345 INL Truck
Received By	Cary Richardson	Cary Richardson	12-Mar-07 1400	Seal # 077705 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

000010

Page 1 of 1

ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

3/14/07

ALD LOG #

AMWTP

Chain Of Custody

Print Date: 14-Mar-2007
Print Time: 09:20
COC No.: 0000302
Page 1 of 1

ALD LOG # 0703143

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123400	MD-836	10151187	11-Mar-2007	14:22	20 / ml	2.70 / gms	PVOC	Davey Sumners	pvoc	
SSC07-00101	10123400	MD-836	10151188	11-Mar-2007	14:44	20 / ml	2.89 / gms	NHVOC	Davey Sumners	nhvoc	
SSC07-00101	10123400	MD-836	10151189	11-Mar-2007	14:45	20 / ml	2.83 / gms	SPARE	Davey Sumners	spare 1	
SSC07-00101	10123400	MD-836	10151190	11-Mar-2007	14:47	20 / ml	2.84 / gms	SPARE	Davey Sumners	spare 2	
SSC07-00101	10123400	MD-836	10151191	11-Mar-2007	14:49	125 / ml	39.70 / gms	SVOC, METALS	Davey Sumners	svoc/metals	
SSC07-00101	10123400	MD-836	10151192	11-Mar-2007	15:02	20 / ml	2.88 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC07-00101	10123400	MD-836	10151193	11-Mar-2007	15:04	20 / ml	2.83 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC07-00101	10123400	MD-836	10151194	11-Mar-2007	15:06	20 / ml	2.82 / gms	TRIP BLANK	Davey Sumners	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		3/14/07 0923	
Received By	Richard A. NeSmith		3/14/07 0923	
Relinquished By	Richard A. NeSmith		3/14/07 1012	BOL # AMWTP000346 INL Truck
Received By	Cary Richardson		3/14/07 1118	Seal # 077719 3/14/07
Relinquished By				
Received By				
Relinquished By				
Received By				

000011

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ALD Document: Log 0703143 AMWTP_836.04.tif - Scanned:3/14/2007 2:46:22 PM

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.46 4/24/07 Analytical Log #: 070308_3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AK76-4	03/08/07 15:15	C. Richardson	RC	242	Hazard Index	03/08/07 16:05	RC	C. Richardson	
7AK76-1, 7AK78-1, 7AK79-1, 7AK79-2, 7AK79-3, 7AK81-1	03/15/07 08:50	C. Richardson	B. Hurd	214	VOC Analysis	03/15/07 14:38	B. Hurd	C. Richardson	Consumed
7AK76-2, 7AK78-2, 7AK79-4, 7AK79-5, 7AK79-6, 7AK81-2	03/13/07 08:50	C. Richardson		211	NHVOC Analysis	3/13/07 11:30		D. Daley	227 Consumed
7AK77-1, 7AK80-1	03/15/07 08:45	C. Richardson		207 / 211	SemiVol Analysis	03/19/07 13:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 08:30	D. Daley		207 / 211	Mercury	03/26/07 10:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 14:05	D. Daley	K. Madden	207 / 211	Metals	3/26/07 16:10	K. Madden	D. Daley	Ret Sample
7AK77-1, 7AK80-1	03/21/07 08:50	C. Richardson	S. Taylor	208	Semi Vol Analysis	03/21/07 15:40	S. Taylor	C. Richardson	Ret. Sample
	/ / :					/ / :			
	/ / :					/ / :			
	/ / :					/ / :			

000012

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.16 Ltr 4/2/07 Analytical Log #: 070308 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK77-1, 7AK80-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	3/26/07 14:05	Julee Daley	Ky Meadows	Metals	
207 / 211	209	3/26/07 16:10	Ky Meadows	Julee Daley	Returned	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

000013

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.16 04 4/26/07 Analytical Log #: 070308 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK77-1, 7AK80-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	3/26/07 08:20			Mercury	
207 / 211	209	3/26/07 10:30		C. Richardson	Returned	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

000014

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.04 Analytical Log #: 070312 3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AM04-4	03/14/07 13:50	C. Richardson	RC	212	HAZARD INDEX	3/14/07 16:30	RC	[illegible]	Reviewed 3/21/07
7AK97-1, 7AK99-1, 7AM01-1, 7AM03-1, 7AM04-1, 7AM06-1	03/15/07 08:50	C. Richardson	B. Hurd	214	VOC Analysis	03/15/07 14:30	B. Hurd	C. Richardson	Consumed in Analysis
7AK97-2, 7AK99-2, 7AM01-2, 7AM03-2, 7AM04-2, 7AM06-2	03/19/07 07:55	C. Richardson	[illegible]	211	NHVOC Analysis	03/19/07 10:40	[illegible]	C. Richardson	Consumed in Analysis
7AK98-1, 7AM02-1, 7AM05-1	03/15/07 08:45	C. Richardson	[illegible]	207 / 211	SemiVol Analysis	03/19/07 13:30	[illegible]	C. Richardson	Ret. Sample
7AK98-1, 7AM02-1, 7AM05-1	3/26/07 1405	[illegible]	[illegible]	207 / 211	Metals	3/26/07 16:10	[illegible]	[illegible]	Ret Sample
7AK98-1, 7AM02-1, 7AM05-1	3/26/07 08:20	[illegible]	[illegible]	207 / 211	Mercury	03/26/07 10:30	[illegible]	C. Richardson	Ret. Sample
7AK97-3, 7AM01-3, 7AM04-3 7AM03-3 7AK99-3 7AM06-3	03/21/07 08:30	C. Richardson	B. Hurd	214	VOC Analysis *Spare*	3/21/07 11:20	B. Hurd	[illegible]	Returned 7AM03-3
7AK97-4, 7AM01-4, 7AM04-4	/ / :			211	NHVOC Analysis *Spare*	/ / :			
7AK98-1, 7AM02-1, 7AM05-1	03/21/07 0850	C. Richardson	[illegible]	208	SemiVol Analysis	03/21/07 1540	[illegible]	C. Richardson	Ret. Sample

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

0000015

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070312 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK98-1, 7AM02-1, 7AM05-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	3/26/07 14:05	D Daley	Ky Maddox	Metals	
207 / 211	213	03/26/07 16:10	Ky Maddox	D Daley	Return Samples	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

000016

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070312 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK98-1, 7AM02-1, 7AM05-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	3/26/07 08:20			Mercury	
207 / 211	213	3/26/07 10:30		C. Richardson	Return Samples	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

0000417

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

ALD CUSTODY AREA Sample Tracking Form

Project Name: **AMWTP:836.04** Analytical Log #: **070314_3**

Custody Area: **209** Environmental/Regulatory Sample: **YES**

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AN17-4	03/14/07 13:30	C. Richardson	RC	242	Hazard Index	3/14/07 16:30	RC	Dale	
7AN17-1, 7AN19-1	03/15/07 05:50	C. Richardson	B. Hamel	214	VOC Analysis	03/15/07 14:30	B. Hamel	C. Richardson	Consumed
7AN17-2, 7AN19-2	03/19/07 07:55	C. Richardson	[redacted]	211	NHVOC Analysis	03/19/07 10:40	[redacted]	C. Richardson	Consumed
7AN18-1	03/15/07 08:45	C. Richardson	[redacted]	207 / 211	SemiVol Analysis	03/19/07 13:38	[redacted]	C. Richardson	Ret. Sample
7AN18-1	3/26/07 08:20	Dale	[redacted]	207 / 211	Mercury	03/26/07 10:30	[redacted]	C. Richardson	Ret. Sample
7AN18-1	3/26/07 14:05	Dale	[redacted]	207 / 211	Metals	3/26/07 16:10	[redacted]	[redacted]	Ret. Sample
7AN17-3	03/21/07 08:30	C. Richardson	B. Hamel	214	VOC Analysis Spare	3/27/07 11:20	B. Hamel	[redacted]	CONSUMED
7AN18-1	03/21/07 08:50	C. Richardson	[redacted]	208	SemiVol Analysis	03/21/07 15:41	[redacted]	C. Richardson	Ret. Samples
	/ / :					/ / :			
	/ / :					/ / :			

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

000018

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070314 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AN18-1

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

020000

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	207 / 211	3/26/07 08:20			Mercury	
207 / 211	209	3/26/07 10:30		C. Richardson	Returned	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

Section 3

Analysis Results

Batch Narrative

Transuranic Waste Characterization Program (TWCP) - AMWTP Waste Drums - Waste Stream 836.04

Sampling Batch Number: SSC07-00101

Analytical Batch ID: 0703083

Data Report Number: ALD07018M

ICP-AE

Sample Preparation

The AMWTP samples were prepared on 03/27/07 according to ACMM Method 8909, Revision 10. The following table summarizes the preparation batch.

Log Number	Field Sample ID	Lab Sample ID
0703083	10150520	7AK77
0703083	10150520S & SD	7AK77S & SD
0703083	10150529	7AK80
0703123	10150645	7AK98
0703123	10150934	7AM02
0703123	10151029	7AM05
0703143	10151191	7AN18

Both an LCS and a Laboratory Blank were prepared with the samples. The LCS was prepared using aliquots from an Environmental Resource Associates Priority PollutnT Inorganic Soil Standard, Lot D038540.

Sample Analysis

The analytical run was performed on 04/05/07 following ACMM Method 2901, Revision 3. QC requirements set forth in TWCP documentation were followed. Background corrections were applied by the instrument computer during data acquisition. During the analytical run, the five potentially interfering elements - aluminum, calcium, magnesium, iron and uranium were quantitatively analyzed with the target analytes to determine their concentrations in the samples. It was determined that iron was at interfering concentrations for the determination of cadmium and zinc in each of the samples. The analytical computer system's 2901 program was used to calculate and apply the corrections. These corrections were applied to the sample, serial dilution and spiked sample results.

Titanium, manganese and copper were monitored in each of the samples for potential interferences. The profiles of the samples indicated that these elements were not at interfering concentrations in the dilutions analyzed.

During the technical review of the analytical data, the following observations were noted:

1. Antimony and thallium were not within the required 80-120% recovery criteria for the duplicate matrix spikes on sample 7AK77. These elements were recovered in the MS at 70.6% and 67.6% respectively. In the Matrix Spike Duplicate (MSD), these elements were recovered at 56.3% (Sb) and 63.8% (Tl). Since the spike recoveries for Sb and Tl were outside the required range in the MS and MSD, the results for these

elements were reported qualified with a "Z." The sample results reported for these elements may be biased low as evidenced by the low spike recoveries. These out-of-range spike recoveries were due to matrix effects inherent with the samples.

The precision (RPD) for all elements was within the required ± 30% criteria.

2. A serial dilution analysis was performed on sample 7AN18. The percent differences (%D's) were within limits for all elements whose concentrations were greater than fifty times the IDL.

3. A post-digestion spike analysis was performed on sample 7AN18. The spike recoveries for all elements were within the required 75-125% acceptance criteria.

4. The concentrations of barium and zinc in the Laboratory Blank prepared with the samples were 0.10 and 13.39 mg/Kg respectively. Although above the detection limits, these concentrations are ≤ 3 times the applicable PRDL. A "J" qualifier was applied to the barium result for this blank. The zinc concentration was greater than five times the IDL; therefore, no "J" qualifier was needed for this element. No "B" qualifiers were required for the reported sample data for these elements due to this blank.

5. Arsenic was detected in the ICB at a concentration greater than the IDL. The arsenic data for this blank was reported qualified with a "J." No "B" qualifiers were required for the reported sample data for this element due to this blank.

Mercury CVAA

Sample Preparation

The AMWTP samples were prepared on 03/26/07 according to ACMM 2810, Revision 3. Duplicate Matrix Spikes were prepared on sample 7AK77. Approximately 0.5 grams of each sample diluted to 50 mL with reagents was used in the sample preparation. All samples, spikes, calibration standards and ICV were taken through the digestion procedure. Both an LCS and a Laboratory Blank were prepared with the samples. The LCS was prepared using aliquots from an Environmental Resource Associates Priority PollutnT Inorganic Soil Standard, Lot D038540.

Sample Analysis

The AMWTP samples were analyzed on 03/26/07, according to ACMM 2810, Revision 3. The QC requirements set forth in TWCP documentation were followed during the analysis.

The duplicate spikes prepared on sample 7AK77 were analyzed, and each of the spike recoveries was within the required range of 80-120%. These spikes were recovered at 88.5% and 110.1% in the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) respectively. The precision (RPD) of these spiked duplicates was 7.8%, which is within the required limits.

Since the MS and MSD were recovered within the required range, no serial dilution or post-digestion spike analyses were performed on this batch of samples.

All other QC samples were analyzed within the prescribed limits.

4/11/07

Jeff Laug
Inorganic Chemistry Supervisor

Idaho National Engineering and Environmental Laboratory
Analytical Laboratories Department

TRU Waste Characterization Program

Data Qualifier Flag Definitions for Metals

Flag	Definition
B	Analyte blank concentration (laboratory or calibration verification) ≥ 20% of the sample concentration prior to dilution correction
H	Holding time exceeded
J	Analyte concentration ≥ IDL but < 5 x IDL before dilution correction
U	Analyte was undetected (reported as sample-specific IDL, corrected for dilution)
Z	One or more QC sample results do not meet acceptance criteria

Metals Method Codes

Code	Definition
P	ICP-AES per ACMM-2901
V	CVAA per ACMM-2810

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID:	10150520	Lab Sample ID:	7AK77
Sampling Batch No.:	SSC07-00101	Data Report No. :	ALD07018M
Date Sampled:	03/07/2007	Analytical Batch ID:	0703083
Date Digested, ICP:	03/27/2007	Date Digested, CVAA:	03/26/2007
Method, CVAA:	ACMM-2810-R3	Instrument ID, CVAA:	CVHG-1
Method, ICP-AES Prep.:	ACMM-8909-R10	Microwave Digester ID:	MW-3
Method, ICP-AES Analysis:	ACMM-2901-R3	Instrument ID, ICP-AES:	ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	8.0E-01	U	Z	04/05/2007 11:44:35	29	P
7440-38-2	Arsenic	4.6E+00			04/05/2007 11:44:35	29	P
7440-39-3	Barium	3.9E+03			04/05/2007 14:30:40	29	P
7440-41-7	Beryllium	5.8E-01			04/05/2007 11:44:35	29	P
7440-43-9	Cadmium	9.8E-01			04/05/2007 11:44:35	29	P
7440-47-3	Chromium	5.0E+01			04/05/2007 11:44:35	29	P
7439-92-1	Lead	4.7E+01			04/05/2007 11:44:35	29	P
7439-97-6	Mercury	1.4E+00			03/26/2007 15:07:53	19	V
7440-02-0	Nickel	1.6E+01			04/05/2007 11:44:35	29	P
7782-49-2	Selenium	1.1E+00	J		04/05/2007 11:44:35	29	P
7440-22-4	Silver	1.4E+00	J		04/05/2007 11:44:35	29	P
7440-28-0	Thallium	1.9E+00	J	Z	04/05/2007 11:44:35	29	P
7440-62-2	Vanadium	1.5E+01			04/05/2007 11:44:35	29	P
7440-66-6	Zinc	1.2E+02			04/05/2007 11:44:35	29	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID:	10150529	Lab Sample ID:	7AK80
Sampling Batch No.:	SSC07-00101	Data Report No. :	ALD07018M
Date Sampled:	03/07/2007	Analytical Batch ID:	0703083
Date Digested, ICP:	03/27/2007	Date Digested, CVAA:	03/26/2007
Method, CVAA:	ACMM-2810-R3	Instrument ID, CVAA:	CVHG-1
Method, ICP-AES Prep.:	ACMM-8909-R10	Microwave Digester ID:	MW-3
Method, ICP-AES Analysis:	ACMM-2901-R3	Instrument ID, ICP-AES:	ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	8.0E-01	U	Z	04/05/2007 12:15:14	29	P
7440-38-2	Arsenic	4.6E+00			04/05/2007 12:15:14	29	P
7440-39-3	Barium	3.8E+03			04/05/2007 14:40:36	29	P
7440-41-7	Beryllium	5.5E-01			04/05/2007 12:15:14	29	P
7440-43-9	Cadmium	7.4E-01			04/05/2007 12:15:14	29	P
7440-47-3	Chromium	4.8E+01			04/05/2007 12:15:14	29	P
7439-92-1	Lead	4.5E+01			04/05/2007 12:15:14	29	P
7439-97-6	Mercury	1.6E+00			03/26/2007 15:35:25	19	V
7440-02-0	Nickel	1.6E+01			04/05/2007 12:15:14	29	P
7782-49-2	Selenium	1.4E+00	J		04/05/2007 12:15:14	29	P
7440-22-4	Silver	1.4E+00	J		04/05/2007 12:15:14	29	P
7440-28-0	Thallium	1.7E+00	J	Z	04/05/2007 12:15:14	29	P
7440-62-2	Vanadium	1.5E+01			04/05/2007 12:15:14	29	P
7440-66-6	Zinc	1.2E+02			04/05/2007 12:15:14	29	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10150645
Lab Sample ID: 7AK98
Sampling Batch No.: SSC07-00101
Data Report No. : ALD07018M
Date Sampled: 03/08/2007
Analytical Batch ID: 0703083
Date Digested, ICP: 03/27/2007
Date Digested, CVAA: 03/26/2007
Method, CVAA: ACMM-2810-R3
Instrument ID, CVAA: CVHG-1
Method, ICP-AES Prep.: ACMM-8909-R10
Microwave Digester ID: MW-3
Method, ICP-AES Analysis: ACMM-2901-R3
Instrument ID, ICP-AES: ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	8.0E-01	U	Z	04/05/2007 12:23:45	28	P
7440-38-2	Arsenic	4.2E+00			04/05/2007 12:23:45	28	P
7440-39-3	Barium	4.1E+03			04/05/2007 14:43:51	28	P
7440-41-7	Beryllium	6.0E-01			04/05/2007 12:23:45	28	P
7440-43-9	Cadmium	1.0E+00			04/05/2007 12:23:45	28	P
7440-47-3	Chromium	8.1E+01			04/05/2007 12:23:45	28	P
7439-92-1	Lead	4.4E+01			04/05/2007 12:23:45	28	P
7439-97-6	Mercury	2.3E+00			03/26/2007 15:37:58	18	V
7440-02-0	Nickel	1.4E+01			04/05/2007 12:23:45	28	P
7782-49-2	Selenium	8.2E-01	J		04/05/2007 12:23:45	28	P
7440-22-4	Silver	1.6E+00			04/05/2007 12:23:45	28	P
7440-28-0	Thallium	1.4E+00	J	Z	04/05/2007 12:23:45	28	P
7440-62-2	Vanadium	1.6E+01			04/05/2007 12:23:45	28	P
7440-66-6	Zinc	2.7E+02			04/05/2007 12:23:45	28	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10150934
Lab Sample ID: 7AM02
Sampling Batch No.: SSC07-00101
Data Report No. : ALD07018M
Date Sampled: 03/10/2007
Analytical Batch ID: 0703083
Date Digested, ICP: 03/27/2007
Date Digested, CVAA: 03/26/2007
Method, CVAA: ACMM-2810-R3
Instrument ID, CVAA: CVHG-1
Method, ICP-AES Prep.: ACMM-8909-R10
Microwave Digester ID: MW-3
Method, ICP-AES Analysis: ACMM-2901-R3
Instrument ID, ICP-AES: ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	8.0E-01	U	Z	04/05/2007 12:58:16	26	P
7440-38-2	Arsenic	4.4E+00			04/05/2007 12:58:16	26	P
7440-39-3	Barium	5.3E+03			04/05/2007 14:46:13	26	P
7440-41-7	Beryllium	6.5E-01			04/05/2007 12:58:16	26	P
7440-43-9	Cadmium	7.6E-01			04/05/2007 12:58:16	26	P
7440-47-3	Chromium	4.2E+01			04/05/2007 12:58:16	26	P
7439-92-1	Lead	4.6E+01			04/05/2007 12:58:16	26	P
7439-97-6	Mercury	9.9E-01			03/26/2007 15:40:32	16	V
7440-02-0	Nickel	1.0E+01			04/05/2007 12:58:16	26	P
7782-49-2	Selenium	8.3E-01	J		04/05/2007 12:58:16	26	P
7440-22-4	Silver	2.0E+00			04/05/2007 12:58:16	26	P
7440-28-0	Thallium	1.6E+00	J	Z	04/05/2007 12:58:16	26	P
7440-62-2	Vanadium	1.5E+01			04/05/2007 12:58:16	26	P
7440-66-6	Zinc	1.4E+02			04/05/2007 12:58:16	26	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID:	10151029	Lab Sample ID:	7AM05
Sampling Batch No.:	SSC07-00101	Data Report No. :	ALD07018M
Date Sampled:	03/10/2007	Analytical Batch ID:	0703083
Date Digested, ICP:	03/27/2007	Date Digested, CVAA:	03/26/2007
Method, CVAA:	ACMM-2810-R3	Instrument ID, CVAA:	CVHG-1
Method, ICP-AES Prep.:	ACMM-8909-R10	Microwave Digester ID:	MW-3
Method, ICP-AES Analysis:	ACMM-2901-R3	Instrument ID, ICP-AES:	ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	1.1E+00	J	Z	04/05/2007 13:07:03	26	P
7440-38-2	Arsenic	3.8E+00			04/05/2007 13:07:03	26	P
7440-39-3	Barium	4.0E+03			04/05/2007 14:48:58	26	P
7440-41-7	Beryllium	5.5E-01			04/05/2007 13:07:03	26	P
7440-43-9	Cadmium	6.3E-01			04/05/2007 13:07:03	26	P
7440-47-3	Chromium	4.7E+01			04/05/2007 13:07:03	26	P
7439-92-1	Lead	4.4E+01			04/05/2007 13:07:03	26	P
7439-97-6	Mercury	1.5E+00			03/26/2007 15:43:07	16	V
7440-02-0	Nickel	1.5E+01			04/05/2007 13:07:03	26	P
7782-49-2	Selenium	1.3E+00	J		04/05/2007 13:07:03	26	P
7440-22-4	Silver	1.3E+00	J		04/05/2007 13:07:03	26	P
7440-28-0	Thallium	2.0E+00	J	Z	04/05/2007 13:07:03	26	P
7440-62-2	Vanadium	1.4E+01			04/05/2007 13:07:03	26	P
7440-66-6	Zinc	1.4E+02			04/05/2007 13:07:03	26	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

TOTAL METALS ANALYSIS DATA SHEET

IDAHO CLEANUP PROJECT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10151191
Lab Sample ID: 7AN18
Sampling Batch No.: SSC07-00101
Data Report No. : ALD07018M
Date Sampled: 03/11/2007
Analytical Batch ID: 0703083
Date Digested, ICP: 03/27/2007
Date Digested, CVAA: 03/26/2007
Method, CVAA: ACMM-2810-R3
Instrument ID, CVAA: CVHG-1
Method, ICP-AES Prep.: ACMM-8909-R10
Microwave Digester ID: MW-3
Method, ICP-AES Analysis: ACMM-2901-R3
Instrument ID, ICP-AES: ICP-4

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	Date and Time of Analysis	Holding Time, Days	M
7440-36-0	Antimony	7.9E-01	U	Z	04/05/2007 13:16:03	25	P
7440-38-2	Arsenic	4.2E+00			04/05/2007 13:16:03	25	P
7440-39-3	Barium	3.9E+03			04/05/2007 13:26:07	25	P
7440-41-7	Beryllium	5.3E-01			04/05/2007 13:16:03	25	P
7440-43-9	Cadmium	9.0E-01			04/05/2007 13:16:03	25	P
7440-47-3	Chromium	4.7E+01			04/05/2007 13:16:03	25	P
7439-92-1	Lead	4.8E+01			04/05/2007 13:16:03	25	P
7439-97-6	Mercury	1.4E+00			03/26/2007 15:45:40	15	V
7440-02-0	Nickel	1.6E+01			04/05/2007 13:16:03	25	P
7782-49-2	Selenium	1.6E+00	J		04/05/2007 13:16:03	25	P
7440-22-4	Silver	1.6E+00			04/05/2007 13:16:03	25	P
7440-28-0	Thallium	1.0E+00	J	Z	04/05/2007 13:16:03	25	P
7440-62-2	Vanadium	1.3E+01			04/05/2007 13:16:03	25	P
7440-66-6	Zinc	1.4E+02			04/05/2007 13:16:03	25	P

C = concentration qualifier; Q = data qualifier; M = method code;

Comments:

Section 4

Batch Quality Control Results

LABORATORY CONTROL SAMPLE

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

LCS Source, CVAA:	ERA LOT D038540	Data Report Number :	ALD07018M
LCS Source, ICP-AES:	ERA LOT D038540	Analytical Batch ID:	0703083
Method, CVAA:	ACMM-2810-R3	LCS ID, CVAA:	LCS959-36
Method, ICP-AES Prep.:	ACMM-8909-R10	LCS ID, ICP-AES:	LCS1024-21
Method, ICP-AES Analysis:	ACMM-2901-R3		

Concentration Units: mg/kg

Analyte	True	Found	C	Control Limits Low	Control Limits High	%R	M
Antimony	114.28	129.50		53.5	175.0	113.3	P
Arsenic	110.38	119.70		89.9	131.0	108.4	P
Barium	332.52	368.40		280.0	385.0	110.8	P
Beryllium	136.10	146.00		115.0	158.0	107.3	P
Cadmium	100.35	111.64		84.0	117.0	111.3	P
Chromium	175.46	182.10		145.0	205.0	103.8	P
Lead	100.54	109.30		81.8	119.0	108.7	P
Mercury	3.71	3.76		2.5	4.9	101.3	V
Nickel	130.61	142.30		111.0	150.0	109.0	P
Selenium	170.41	182.70		143.0	198.0	107.2	P
Silver	79.22	85.14		65.9	92.5	107.5	P
Thallium	138.39	146.50		112.0	165.0	105.9	P
Vanadium	135.17	147.50		113.0	157.0	109.1	P
Zinc	203.76	223.72		164.0	243.0	109.8	P

C = concentration qualifier; M = method code

MATRIX SPIKE RECOVERY

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID #: 10150520S
Lab Sample ID: 7AK77S
Method, CVAA: ACMM-2810-R3
Data Report Number: ALD07018M
Method, ICP-AES Prep.: ACMM-8909-R10
Analytical Batch ID: 0703083
Method, ICP-AES Analysis: ACMM-2901-R3

Concentration Units: mg/kg

Analyte	Spike Sample Result	C	Sample Result	C	Spike Added	%R	Q	M
Antimony	70.6300		0.8000	U	100.00	70.6	Z	P
Arsenic	104.1000		4.6500		100.00	99.4		P
Barium	5799.2000		3853.3000		2000.00	97.3		P
Beryllium	97.4600		0.5800		100.00	96.9		P
Cadmium	17.9031		0.9753		20.00	84.6		P
Chromium	136.9000		49.8200		100.00	87.1		P
Lead	140.6000		47.3300		100.00	93.3		P
Mercury	2.1253		1.4175		0.80	88.5		V
Nickel	105.3000		15.9900		100.00	89.3		P
Selenium	21.4700		1.1400	J	20.00	101.6		P
Silver	97.1000		1.4500	J	100.00	95.7		P
Thallium	69.4800		1.9000	J	100.00	67.6	Z	P
Vanadium	106.4000		15.4100		100.00	91.0		P
Zinc	209.5969		120.6870		100.00	88.9		P

C = concentration qualifier; Q = data qualifier; M = method code

Comments:

MATRIX SPIKE RECOVERY

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID #: 10150520SD
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis : ACMM-2901-R3

Lab Sample ID: 7AK77SD
Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Concentration Units: mg/kg

Analyte	Spike Sample Result	C	Sample Result	C	Spike Added	%R	Q	M
Antimony	56.3300		0.8000	U	100.00	56.3	Z	P
Arsenic	103.0000		4.6500		100.00	98.3		P
Barium	5776.1000		3853.3000		2000.00	96.1		P
Beryllium	100.0000		0.5800		100.00	99.4		P
Cadmium	18.7636		0.9753		20.00	88.9		P
Chromium	136.5000		49.8200		100.00	86.7		P
Lead	143.8000		47.3300		100.00	96.5		P
Mercury	2.2984		1.4175		0.80	110.1		V
Nickel	107.1000		15.9900		100.00	91.1		P
Selenium	22.2600		1.1400	J	20.00	105.6		P
Silver	96.2300		1.4500	J	100.00	94.8		P
Thallium	65.6500		1.9000	J	100.00	63.8	Z	P
Vanadium	104.5000		15.4100		100.00	89.1		P
Zinc	216.5100		120.6870		100.00	95.8		P

C = concentration qualifier; Q = data qualifier; M = method code

Comments:

MATRIX SPIKE DUPLICATE AGREEMENT

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10150520
Lab Sample ID: 7AK77
Method, CVAA: ACMM-2810-R3
Data Report Number : ALD07018M
Method, ICP-AES Prep.: ACMM-8909-R10
Analytical Batch ID: 0703083
Method, ICP-AES Analysis: ACMM-2901-R3

Concentration Units: mg/kg

Analyte	Matrix Spike Result	C	Matrix Spike Duplicate Result	C	RPD	Q	M
Antimony	70.630		56.330		22.5		P
Arsenic	104.100		103.000		1.1		P
Barium	5799.200		5776.100		0.4		P
Beryllium	97.460		100.000		2.6		P
Cadmium	17.903		18.764		4.7		P
Chromium	136.900		136.500		0.3		P
Lead	140.600		143.800		2.3		P
Mercury	2.125		2.298		7.8		V
Nickel	105.300		107.100		1.7		P
Selenium	21.470		22.260		3.6		P
Silver	97.100		96.230		0.9		P
Thallium	69.480		65.650		5.7		P
Vanadium	106.400		104.500		1.8		P
Zinc	209.597		216.510		3.2		P

RPD = relative percent difference;
C = concentration qualifier; Q = data qualifier; M = method code

POST DIGESTION SPIKE RECOVERY

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT
ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10151191A
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis: ACMM-2901-R3

Lab Sample ID: 7AN18A
Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Concentration Units: ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	M
Antimony	986.80		8.00	U	980.39	100.7		P
Arsenic	1015.00		41.37		980.39	99.3		P
Barium	9721.00		7791.18		1960.78	98.4		P
Beryllium	997.90		5.29		980.39	101.2		P
Cadmium	914.26		8.94		980.39	92.3		P
Chromium	1373.00		469.22		980.39	92.2		P
Lead	1379.00		477.06		980.39	92.0		P
Mercury						NA		V
Nickel	1063.00		156.76		980.39	92.4		P
Selenium	1012.00		15.69	J	980.39	101.6		P
Silver	960.70		15.39		980.39	96.4		P
Thallium	933.70		10.20	J	980.39	94.2		P
Vanadium	1054.00		133.14		980.39	93.9		P
Zinc	2351.38		1413.93		980.39	95.6		P

C = concentration qualifier; Q = data qualifier; M = method code

Comments:

SERIAL DILUTION AGREEMENT

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Field Sample ID: 10151191L
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis: ACMM-2901-R3

Lab Sample ID: 7AN18L
Data Report No.: ALD07018M
Analytical Batch ID: 0703083

Concentration Units: ug/L

Analyte	Sample Result	C	Serial Dilution Result	C	%Difference	Q	M
Antimony	8.00	U	40.00	U			P
Arsenic	42.20		33.50	J	20.6		P
Barium	7947.00		7975.00		0.4		P
Beryllium	5.40		5.50	J	1.9		P
Cadmium	9.12		8.29	J	9.1		P
Chromium	478.60		501.50		4.8		P
Lead	486.60		498.00		2.3		P
Mercury					NA		V
Nickel	159.90		171.00		6.9		P
Selenium	16.00	J	40.00	U			P
Silver	15.70		20.50	J	30.6		P
Thallium	10.40	J	45.00	U			P
Vanadium	135.80		140.00		3.1		P
Zinc	1442.21		1465.79		1.6		P

C = concentration qualifier; Q = data qualifier; M = method code

Section 5

Instrument Calibration and Quality Control Results

INITIAL AND CONTINUING CALIBRATION VERIFICATION

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Data Report Number: ALD07018M
Method, CVAA: ACMM-2810-R3
Method, ICP-AES: ACMM-2901-R3
Calibration Source, ICP-AES: CPI International
ICV Source, ICP-AES: SPEX Industries
CCV Source, ICP-AES: SPEX Industries
Calibration Source, CVAA: SPEX Industries
ICV Source, CVAA: CPI International
CCV Source, CVAA: SPEX Industries

Analytical Batch ID: 0703083
Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4

Concentration Units: ug/L

Analyte	Initial Calibration Verification			Continuing Calibration Verification					M
	True	Found	%R	True	Found	%R(1)	Found	%R(2)	
Antimony	2500.0	2493.00	99.7	2500.0	2479.00	99.2		NA	P
Arsenic	2500.0	2517.00	100.7	2500.0	2512.00	100.5		NA	P
Barium	2500.0	2570.00	102.8	2500.0	2498.00	99.9		NA	P
Beryllium	2500.0	2547.00	101.9	2500.0	2555.00	102.2		NA	P
Cadmium	2500.0	2469.00	98.8	2500.0	2514.00	100.6		NA	P
Chromium	2500.0	2523.00	100.9	2500.0	2370.00	94.8	2510.00	100.4	P
Lead	2500.0	2402.00	96.1	2500.0	2369.00	94.8	2409.00	96.4	P
Mercury	4.0	4.17	104.2	4.0	4.18	104.5	4.22	105.5	V
Nickel	2500.0	2565.00	102.6	2500.0	2513.00	100.5		NA	P
Selenium	2500.0	2497.00	99.9	2500.0	2443.00	97.7		NA	P
Silver	2500.0	2499.00	100.0	2500.0	2318.00	92.7	2519.00	100.8	P
Thallium	2500.0	2483.00	99.3	2500.0	2486.00	99.4		NA	P
Vanadium	2500.0	2505.00	100.2	2500.0	2498.00	99.9		NA	P
Zinc	2500.0	2488.00	99.5	2500.0	2443.14	97.7		NA	P

Data Updated: 04/11/2007 12:26:24

INITIAL AND CONTINUING CALIBRATION VERIFICATION

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Data Report Number: ALD07018M
Method, CVAA: ACMM-2810-R3
Method, ICP-AES: ACMM-2901-R3
Calibration Source, ICP-AES: CPI International
ICV Source, ICP-AES:
CCV Source, ICP-AES: SPEX Industries
Calibration Source, CVAA: SPEX Industries
ICV Source, CVAA:
CCV Source, CVAA: SPEX Industries

Analytical Batch ID: 0703083
Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4

Concentration Units: ug/L

Analyte	Initial Calibration Verification True	Found	%R	Continuing Calibration Verification True	Found	%R(1)	Found	%R(2)	M
Antimony			NA	2500.0	2417.00	96.7		NA	P
Arsenic			NA	2500.0	2421.00	96.8		NA	P
Barium			NA	2500.0	2483.00	99.3	2547.00	101.9	P
Beryllium			NA	2500.0	2459.00	98.4		NA	P
Cadmium			NA	2500.0	2400.00	96.0		NA	P
Chromium			NA	2500.0	2513.00	100.5		NA	P
Lead			NA	2500.0	2449.00	98.0		NA	P
Mercury			NA	4.0	4.26	106.5		NA	V
Nickel			NA	2500.0	2544.00	101.8		NA	P
Selenium			NA	2500.0	2519.00	100.8		NA	P
Silver			NA	2500.0	2402.00	96.1		NA	P
Thallium			NA	2500.0	2551.00	102.0		NA	P
Vanadium			NA	2500.0	2473.00	98.9		NA	P
Zinc			NA	2500.0	2432.06	97.3		NA	P

Data Updated: 04/11/2007 12:28:37

INITIAL AND CONTINUING CALIBRATION VERIFICATION

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Data Report Number: ALD07018M
Method, CVAA: ACMM-2810-R3
Method, ICP-AES: ACMM-2901-R3
Calibration Source, ICP-AES: CPI International
ICV Source, ICP-AES:
CCV Source, ICP-AES: SPEX Industries
Calibration Source, CVAA: SPEX Industries
ICV Source, CVAA:
CCV Source, CVAA: SPEX Industries

Analytical Batch ID: 0703083
Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4

Concentration Units: ug/L

Analyte	Initial Calibration Verification True	Found	%R	Continuing Calibration Verification True	Found	%R(1)	Found	%R(2)	M
Antimony			NA			NA		NA	P
Arsenic			NA			NA		NA	P
Barium			NA	2500.0	2542.00	101.7		NA	P
Beryllium			NA			NA		NA	P
Cadmium			NA			NA		NA	P
Chromium			NA			NA		NA	P
Lead			NA			NA		NA	P
Mercury			NA			NA		NA	V
Nickel			NA			NA		NA	P
Selenium			NA			NA		NA	P
Silver			NA			NA		NA	P
Thallium			NA			NA		NA	P
Vanadium			NA			NA		NA	P
Zinc			NA			NA		NA	P

Data Updated: 04/11/2007 12:31:34

LOW LEVEL CONCENTRATION CHECK STANDARD, ICP-AES

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, ICP-AES: ICP-4
Method, ICP-AES: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Concentration Units: ug/L

Analyte	True	Found	%R
Antimony	200.0	201.2	100.6
Arsenic	200.0	199.6	99.8
Barium	200.0	210.5	105.2
Beryllium	200.0	203.6	101.8
Cadmium	200.0	207.7	103.8
Chromium	200.0	205.3	102.6
Lead	200.0	208.6	104.3
Nickel	200.0	209.3	104.6
Selenium	200.0	206.7	103.4
Silver	200.0	205.9	103.0
Thallium	200.0	208.8	104.4
Vanadium	200.0	206.9	103.4
Zinc	200.0	201.9	101.0

Data Updated: 04/10/2007 10:26:00

BLANKS

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083
Lab Blank ID, CVAA: LB959-36
Lab Blank ID, ICP-AES: LB1024-21

	Initial Calibration Blank, ug/L		Continuing Calibration Blank, ug/L						Laboratory Blank, mg/kg		
Analyte		C	1	C	2	C	3	C		C	M
Antimony	8.0	U	8.0	U			8.0	U	0.800	U	P
Arsenic	2.5	J	2.0	U			2.0	U	0.200	U	P
Barium	1.0	U	1.0	U			1.0	U	0.100	J	P
Beryllium	1.0	U	1.0	U			1.0	U	0.100	U	P
Cadmium	1.0	U	1.0	U			1.0	U	0.100	U	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.100	U	P
Lead	14.0	U	14.0	U	14.0	U	14.0	U	1.400	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.010	U	V
Nickel	2.0	U	2.0	U			2.0	U	0.200	U	P
Selenium	8.0	U	8.0	U			8.0	U	0.800	U	P
Silver	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	P
Thallium	9.0	U	9.0	U			9.0	U	0.900	U	P
Vanadium	2.0	U	2.0	U			2.0	U	0.200	U	P
Zinc	1.0	U	1.0	U			1.0	U	13.390		P

C = concentration qualifier; M = method code;

Data Updated: 04/11/2007 12:34:39

BLANKS

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Prep.: ACMM-8909-R10
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083
Lab Blank ID, CVAA:
Lab Blank ID, ICP-AES:

	Initial Calibration Blank , ug/L		Continuing Calibration Blank, ug/L						Laboratory Blank, mg/kg		
Analyte		C	1	C	2	C	3	C		C	M
Antimony											P
Arsenic											P
Barium			1.0	U	1.0	U					P
Beryllium											P
Cadmium											P
Chromium											P
Lead											P
Mercury											V
Nickel											P
Selenium											P
Silver											P
Thallium											P
Vanadium											P
Zinc											P

C = concentration qualifier; M = method code;

Data Updated: 04/11/2007 12:35:48

INTERFERENCE CHECK SAMPLE, ICP-AES

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, ICP-AES: ICP-4
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Solution A	Solution AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Antimony		980	15	928.7	94.8	13	951.2	97.1
Arsenic		980	-4	933.5	95.3	-11	958.9	97.8
Barium		490	4	457.8	93.4	5	454.6	92.8
Beryllium		490	1	490.9	100.2	1	490.6	100.1
Cadmium		980	2	874.1	89.2	1	889.1	90.7
Chromium		490	2	439.2	89.6	2	443.4	90.5
Lead		980	-14	906.4	92.5	-9	917.7	93.6
Nickel		980	10	888.2	90.6	11	890.9	90.9
Selenium		980	18	966.4	98.6	18	970.4	99.0
Silver		980	-10	935.9	95.5	-18	930.7	95.0
Thallium		980	19	896.9	91.5	16	909.5	92.8
Vanadium		490	4	448.8	91.6	3	450.8	92.0
Zinc		980	0	926.0	94.5	-3	920.4	93.9

Data Updated: 04/10/2007 10:33:00

INSTRUMENT DETECTION LIMITS

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, CVAA: CVHG-1
Instrument ID, ICP-AES: ICP-4
Method, CVAA: ACMM-2810-R3
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Analyte	Wavelength (nm)	IDL (ug/L)	IDL Effective Date	M
Antimony	206.83	8.0	10/23/2006	P
Arsenic	189.04	2.0	10/23/2006	P
Barium	233.53	1.0	10/23/2006	P
Beryllium	234.86	1.0	10/23/2006	P
Cadmium	226.50	1.0	10/23/2006	P
Chromium	205.55	1.0	10/23/2006	P
Lead	182.15	14.0	10/23/2006	P
Mercury	253.70	0.1	10/25/2006	V
Nickel	231.60	2.0	10/23/2006	P
Selenium	196.09	8.0	10/23/2006	P
Silver	338.29	3.0	10/23/2006	P
Thallium	190.86	9.0	10/23/2006	P
Vanadium	292.40	2.0	10/23/2006	P
Zinc	213.86	1.0	10/23/2006	P

IDL = instrument detection limit; M = method code

LINEAR RANGES, ICP-AES

IDAHO CLEANUP PROJECT
ANALYTICAL LABORATORIES DEPARTMENT

ADVANCED MIXED WASTE TREATMENT PROJECT

Instrument ID, ICP-AES: ICP-4
Method, ICP-AES Analysis: ACMM-2901-R3

Data Report Number: ALD07018M
Analytical Batch ID: 0703083

Analyte	Wavelength (nm)	Linear Range (ug/L)	Linear Range Effective Date
Aluminum	237.31	909000.0	10/23/2006
Antimony	206.83	5000.0	10/23/2006
Arsenic	189.04	5000.0	10/23/2006
Barium	233.53	30000.0	10/23/2006
Beryllium	234.86	5000.0	10/23/2006
Cadmium	226.50	30000.0	10/23/2006
Calcium	317.93	909000.0	10/23/2006
Chromium	205.55	30000.0	10/23/2006
Iron	238.20	250000.0	10/23/2006
Lead	182.15	30000.0	10/23/2006
Magnesium	279.08	909000.0	10/23/2006
Nickel	231.60	30000.0	10/23/2006
Selenium	196.09	5000.0	10/23/2006
Silver	338.29	5000.0	10/23/2006
Thallium	190.86	5000.0	10/23/2006
Uranium	263.55	333000.0	10/23/2006
Vanadium	292.40	5000.0	10/23/2006
Zinc	213.86	30000.0	10/23/2006

Section 6

Data Review Checklists

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070308 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000296 & 0000298	If Yes NCR Number:
Reviewer: Cary Richardson / Cary Richardson 03/08/07 (Printed Name/Signature / Date)		

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

Requirement	Yes	No	Comments
1. FIELD CHAIN-OF-CUSTODY (COC)			
a. Was a COC form received with each shipping container?	☒	☐	
b. Did the contents of each shipping container match that listed on the associated COC form?	☒	☐	
c. Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d. Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e. Is the correct analysis requested for each sample?	☒	☐	
f. Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
2. SAMPLE LABELS			
a. Was each sample received with a completed sample label?	☒	☐	
b. Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c. Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d. Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e. Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
3. SAMPLE INTEGRITY			
a. Were custody seals used on the shipping container?	☒	☐	
b. Were custody seals used on each individual sample container?	☒	☐	
c. Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d. Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e. Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f. Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g. Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
4. INTERNAL SAMPLE TRACKING			
a. Were all samples logged into the Analytical Computer System?	☒	☐	
b. Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c. Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d. Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

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TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070312 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000299, 0000300 & 0000301	If Yes NCR Number: _____
Reviewer: Cary Richardson (Cary Richardson) 03/12/07		
Printed Name/Signature	Date	

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

Requirement	Yes	No	Comments
1. FIELD CHAIN-OF-CUSTODY (COC)			
a. Was a COC form received with each shipping container?	☒	☐	
b. Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c. Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d. Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e. Is the correct analysis requested for each sample?	☒	☐	
f. Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
2. SAMPLE LABELS			
a. Was each sample received with a completed sample label?	☒	☐	
b. Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c. Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d. Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e. Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
3. SAMPLE INTEGRITY			
a. Were custody seals used on the shipping container?	☒	☐	
b. Were custody seals used on each individual sample container?	☒	☐	
c. Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d. Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e. Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f. Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g. Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
4. INTERNAL SAMPLE TRACKING			
a. Were all samples logged into the Analytical Computer System?	☒	☐	
b. Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c. Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d. Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

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TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 0703143	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000302	If Yes NCR Number:
Reviewer: Cary Richardson / Cary Richardson 03/14/2007 (Printed Name/Signature / Date)		

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

Requirement	Yes	No	Comments
1. FIELD CHAIN-OF-CUSTODY (COC)			
a. Was a COC form received with each shipping container?	☒	☐	
b. Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c. Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d. Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e. Is the correct analysis requested for each sample?	☒	☐	
f. Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
2. SAMPLE LABELS			
a. Was each sample received with a completed sample label?	☒	☐	
b. Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c. Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d. Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e. Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
3. SAMPLE INTEGRITY			
a. Were custody seals used on the shipping container?	☒	☐	
b. Were custody seals used on each individual sample container?	☒	☐	
c. Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d. Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e. Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f. Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g. Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
4. INTERNAL SAMPLE TRACKING			
a. Were all samples logged into the Analytical Computer System?	☒	☐	
b. Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c. Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d. Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

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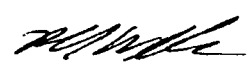
ICP Analytical Laboratories Department

Data Generator Checklist for TWCP

Data Report Number: ALD07018M	Analytical Batch: 0703083
Analysis Procedure: ACMM-2810	Procedure Revision: 3
Analysis Date(s): 03/26/07	
Data Generator Signature:  (Richard D. Wells)	

Criteria	Yes	No	Comments
1. Samples analyzed in accordance with cited analytical method.	X		
2. All logbook entries completed in accordance with MCP-2011.	X		
3. All data entry and corrections made in accordance with MCP-2008.	X		
4. All raw data signed/initialed and dated in indelible black ink.	X		
5. Data reviewed for completeness and accuracy.	X		

ICP Analytical Laboratories Department

Data Generator Checklist for TWCP

Data Report Number: ALD07018M	Analytical Batch: 0703083
Analysis Procedure: ACMM-2901	Procedure Revision: 3
Analysis Date(s): 04/05/07	
Data Generator Signature: (Duane S. Lundholm)	

Criteria	Yes	No	Comments
1. Samples analyzed in accordance with cited analytical method.	✓		
2. All logbook entries completed in accordance with MCP-2011.	✓		
3. All data entry and corrections made in accordance with MCP-2008.	✓		
4. All raw data signed/initialed and dated in indelible black ink.	✓		
5. Data reviewed for completeness and accuracy.	✓		

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Mercury in Homogeneous Solids and Soil/Gravel by CVAA

Analytical Batch: 0703083	Data Report: ALD07018M	Method: ACMM-2810

Run # and Analysis Date	Data Generator	ITR Review Date	ITR Release Signature	ITR Release Date
1. 03/26/07	Richard D. Wells	03/27/07		04/17/07
2.				

Instructions: Complete one checklist per analytical batch. If more than two instrument runs were needed to complete the batch analysis, use a second checklist. Enter appropriate responses for each question. Each "No" response requires an explanation.

Requirement	Run #1 Yes	Run #1 No	Run #2 Yes	Run #2 No	Comments
1. Initial Calibration	///	///	///	///	
a. Was the initial calibration performed using a minimum of 5 standards and a blank?	✓				
b. Is the regression coefficient (r) ≥ 0.995?	✓				
2. Initial Calibration Verification (ICV)	///	///	///	///	
a. Was an ICV analyzed after the initial calibration and prior to analysis of any samples?	✓				
b. Is the recovery of the ICV between 80% and 120%?	✓				
c. Is the ICV standard prepared from a different source than that of the initial calibration standards?	✓				
3. Continuing Calibration Verification (CCV)	///	///	///	///	
a. Was the CCV analyzed prior to the analysis of samples?	✓				
b. Is the percent recovery for the CCV between 80% and 120%?	✓				
c. Was a compliant CCV (%R between 80% and 120%) analyzed at the completion of the analytical run?	✓				
d. Were every ten samples bracketed by compliant CCVs?	✓				
4. Blanks	///	///	///	///	
a. Was at least one laboratory blank (LB) digested and analyzed with the analytical batch?	✓				
b. Are all laboratory blank results ≤ 3×PRDL?	✓				
c. Was an ICB analyzed immediately after the ICV?	✓				
d. Was a CCB analyzed immediately after each CCV?	✓				
e. Is each of the ICB and CCB results ≤ PRDL?	✓				
5. Laboratory Control Sample (LCS)	///	///	///	///	
a. Was at least one LCS digested and analyzed with the analytical batch?	✓				
b. Is the recovery within the manufacturer/statistical control limits for LCSs?	✓				
6. Matrix Spikes (MS) and Matrix Spike Duplicates (MSD)	///	///	///	///	
a. Were a MS and a MSD performed on at least one sample from the analytical batch?	✓				
b. Is the MS/MSD RPD ≤30%?	✓				
c. Are percent recoveries (%R) between 80% and 120% for the MS and MSD?	✓				

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Mercury in Homogeneous Solids and Soil/Gravel by CVAA

Analytical Batch: 0703083	Data Report: ALD07018M	Method: ACMM-2810

Requirement	Run #1 Yes	Run #1 No	Run #2 Yes	Run #2 No	Comments
7. Samples (Including MS, MSD, Post Digestion Spike (PDS) and Serial Dilution (SD))	///	///	///	///	
a. Were all samples and QC samples with mercury readings exceeding the calibration range reanalyzed with a dilution?	✓				
b. Was a SD analyzed in the analytical batch if 6c is NO and at least one sample concentration exceeded 10xIDL?	NA				SD not needed - MS & MSD not needed with required range.
c. If a SD was analyzed, is %D ≤10?	NA				" " " " " "
d. IF 6c is *NO* AND 7c is *NO* or *N/A*, was a PDS performed in the analytical batch?	NA				PDS not needed - MS & MSD not needed with range.
e. IF 7d is *YES* was the PDS spike recovery between 85% and 115%?	NA				" " " " " "
f. Was MSA used for quantitation if PDS was required AND did not meet the acceptance criteria?	NA				MSA not needed
g. Are any corrective actions taken during the analysis documented in the raw data?	✓				
8. Sample Integrity Verification	Yes	No			
a. Is COC documentation complete and accurate for all reported samples?	✓				
b. Was physical integrity of all samples verified as satisfactory at VTSR?	✓				
c. Were all samples stored at 4 ± 2 °C between receipt and analysis?	✓				
d. Were all samples prepared and analyzed (including dilutions) within 28 days of collection?	✓				
9. Instrument, Method and Personnel Qualification Verification	///	///			
a. Were all analytical tasks, including sample analysis and supporting method performance, conducted by personnel having current TWCP qualifications?	✓				
b. Was acceptable demonstration of precision, accuracy, and IDLs performed within the last 6 months?	✓				
10. Supporting Data Package Completeness	///	///			
a. Are all instrument and computer system printouts present and accurate for every reported standard, sample and QC sample?	✓				
b. Are copies of preparation and analysis run log books for all samples and QC samples present and accurate?	✓				
c. Are standard certificates and QC Lab preparation records present and accurate for all working and intermediate standards used?	✓				
d. Are all raw data initialed/signed by the generator in permanent black ink?	✓				
e. Are all changes to original data made by line-out of incorrect data, initialed/signed and dated by the person making the change?	✓				

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Mercury in Homogeneous Solids and Soil/Gravel by CVAA

Analytical Batch: 0703083	Data Report: ALD07018M	Method: ACMM-2810

11. Data Report Completeness	Yes	No	
a. Does the report contain a Data Report Narrative that addresses, at a minimum: 1) any deviations from ACMM-2810 and the justification for the deviations; 2) any QC samples that failed the acceptance criteria, and their impact on data quality; 3) any NCRs associated with the reported samples; and 4) any problems or unusual conditions encountered during the analysis?	✓		
b. Are copies of any NCRs associated with the data included?	NA		No NCRs associated with this data.
c. Are Analysis Data Sheets present and accurate for all samples in the analytical batch?	✓		
d. Are analyte concentrations on the Analysis Data Sheets reported in units of mg/kg and correctly rounded to 2 significant figures?	✓		
e. Are U, J, B, H and Z data qualifying flags correctly assigned on the reporting forms?	✓		
f. Are reporting forms present and accurate for MS/MSD %R and RPD, LCSs, ICB/CCB/LBs, ICV/CCVs, and IDLs? SDs, PDSs, and MSA if required?	✓		
g. Are copies of all COC documentation included?	✓		
h. Have all data received documented data generator review and signature?	✓		
i. Were all calculations performed using validated software or 100% manually verified?	✓		
j. Have the data been reviewed for transcription errors?	✓		
k. Are all pages in the data report legible and correctly paginated?	✓		

Additional Comments:

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Metals in Homogeneous Solids and Soil/Gravel by ICP-AES

Analytical Batch: 0703083	Data Report: ALD07018M	Methods: ACMM-2901 & ACMM-8909

Run # and Analysis Date	Data Generator	ITR Review Date	ITR Signature Release	ITR Release Date
1. 04/05/07	Duane S. Lundholm	04/16/07		04/17/07
2.				

Instructions: Complete one checklist per analytical batch. If more than two instrument runs were needed to complete the batch analysis, use a second checklist. Enter appropriate responses for each question. Each "No" response requires an explanation.

Requirement	Run #1 Yes	Run #1 No	Run #2 Yes	Run #2 No	Comments
1. Initial Calibration	///	///	///	///	
a. Was the initial calibration performed using a minimum of 1 standard and a blank?	✓				
2. Initial Calibration Verification (ICV)	///	///	///	///	
a. Was an ICV analyzed after the initial calibration and prior to analysis of any samples?	✓				
b. Are the recoveries for each reported analyte in the ICV between 90% and 110%?	✓				
c. Is the ICV standard from a different source than the initial calibration standards?	✓				
3. Continuing Calibration Verification (CCV)	///	///	///	///	
a. Was the CCV solution analyzed (as ICV) prior to the analysis of samples?	✓				
b. Is the percent recovery of each reported analyte between 90% and 110%?	✓				
c. Was a compliant CCV analyzed for reported analytes at the completion of the analytical run?	✓				
d. Were every 10 samples bracketed by compliant CCVs or ICV/CCV pair for reported analytes?	✓				
4. Low Level Concentration Check Standard (LLC)	///	///	///	///	
a. Was the LLC solution analyzed prior to the analysis of samples?	✓				
b. Is the percent recovery of each reported analyte between 80% and 120%?	✓				
5. Blanks	///	///	///	///	
a. Was at least one laboratory blank digested and analyzed with the analytical batch?	✓				
b. Are the laboratory blank results ≤ 3×PRDL for all reported analytes?	✓				
c. Was an ICB analyzed immediately after the ICV?	✓				
d. Was a CCB analyzed immediately after each CCV?	✓				
e. Are each of the ICB and CCB results ≤ the PRDL for all reported analytes?	✓				
6. Laboratory Control Samples (LCS)	///	///	///	///	
a. Was at least one LCS digested and analyzed with the analytical batch?	✓				
b. Is %R for all reported analytes between 80% and 120% for aqueous LCSs, or within manufacturer or statistical control limits for solid LCSs?	✓				
7. Matrix Spikes (MS) and Matrix Spike Duplicates (MSD)	///	///	///	///	
a. Were a MS and a MSD performed on at least one field sample from the analytical batch?	✓				
b. Is the MS/MSD RPD ≤ 30% for all analytes?	✓				
c. Is %R between 80% to 120% for all analytes in the MS and MSD?		✓			MS & MSD out of range for Sb at TL. Data reported w/ 'Z' qualifier - See narrative.

000057

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Metals in Homogeneous Solids and Soil/Gravel by ICP-AES

Analytical Batch: 0703083	Data Report: ALD07018M	Methods: ACMM-2901 & ACMM-8909

Requirement	Run #1		Run #2		Comments
	Yes	No	Yes	No	
8. Background Correction and Interference Check Samples	///	///	///	///	
a. Was background correction used during the analysis and applied correctly?	✓				
b. Were the interfering elements monitored during the analysis and interelement correction factors correctly applied where necessary?	✓				
c. Were the ICSA and ICSAB solutions analyzed within prescribed limits at both the beginning and end of the analytical run, or twice per 8 hour shift, whichever is more frequent?	✓				
9. Samples [Including MS, MSD, Post Digestion Spike (PDS) and Serial Dilution (SD)]	///	///	///	///	
a. Were all samples having analytes detected in amounts exceeding the Linear Dynamic Range reanalyzed with a dilution?	✓				
b. Was at least one serial dilution analysis per matrix performed in the analytical batch?	✓				
c. For all analytes > 50x IDL in the initial sample, are serial dilution results ≤ 10 %D of initial value?	✓				
d. Was at least one post-digestion spike (PDS) analysis performed in the analytical batch if MS, MSD, or SD failed (see 7c and 9c)?	✓				
e. If a PDS was analyzed, was the PDS recovery within the required range of 75% to 125%?	✓				
f. Are any corrective actions taken during the analysis documented in the raw data?	✓				
10. Sample Integrity Verification	Yes	No			
a. Is COC documentation complete and accurate for all reported samples?	✓				
b. Was physical integrity of all samples verified as satisfactory at VTSR?	✓				
c. Were all samples stored at 4 ± 2 °C between receipt and analysis?	✓				
d. Were all samples prepared and analyzed (including dilutions) within 180 days of collection?	✓				
11. Instrument, Method and Personnel Qualification Verification	///	///			
a. Were all analytical tasks, including sample analysis and supporting method performance, conducted by personnel having current TWCP qualifications?	✓				
b. Was acceptable demonstration of precision, accuracy, and IDLs performed within the last 6 months?	✓				
12. Supporting Data Package Completeness	///	///			
a. Are all instrument and computer system printouts present and accurate for every reported standard, sample and QC sample?	✓				
b. Are copies of preparation log books for all digested samples and QC samples present and accurate?	✓				
c. Are standard certificates and QC Lab preparation records present and accurate for all working and intermediate standards used?	✓				
d. Are all raw data initialed/signed by the generator in permanent black ink?	✓				
e. Are all changes to original data made by line-out of incorrect data, initialed/signed and dated by the person making the change?	✓				

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total Metals In Homogeneous Solids and Soil/Gravel by ICP-AES

Analytical Batch: 0703083	Data Report: ALD07018M	Methods: ACMM-2901 & ACMM-8909

13. Data Report Completeness	Yes	No	
a. Does the report contain a Data Report Narrative that addresses, at a minimum: 1) any deviations from ACMM-2901 or ACMM-8909 and the justification for the deviations; 2) any QC samples that failed the acceptance criteria, and their impact on data quality; 3) any NCRs associated with the reported samples; and 4) any problems or unusual conditions encountered during the analysis?	✓		
b. Are copies of any NCRs associated with the data included?	NA		NO NCRs associated w/ Data
c. Are Analysis Data Sheets present and accurate for all samples in the analytical batch?	✓		
d. Are analyte concentrations on the Analysis Data Sheets reported in units of mg/kg and correctly rounded to 2 significant figures?	✓		
e. Are U, J, B, H and Z data qualifying flags correctly assigned on the reporting forms?	✓		
f. Are reporting forms present and accurate for MS/MSD %R and RPD, LCSs, ICB/CCB/LBs, ICV/CCVs, LLCs, ICSA/ICSABs, SDs, linear range, and IDLs? PDSs as required?	✓		
g. Are copies of all COC documentation included?	✓		
h. Have all data received documented data generator review and signature?	✓		
i. Were all calculations performed using validated software or 100% manually verified?	✓		
j. Have the data been reviewed for transcription errors?	✓		
k. Are all pages in the data report legible and correctly paginated?	✓		

Additional Comments:

AMWTP Advanced Mixed Waste Treatment Project	SPM Analysis of Homogenous Solids and Soils/Gravel Checklist	Form-1609, Rev. 2 Effective Date: 1/24/07 Page 1 of 8

Implementing Document: MP-TRUW-8.9

	BDR No.: ALD07018M					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
	QC Elements					
1	Has the BDR received a Data Generation Level (DGL) Independent Technical Review?	X			MP-TRUW-8.2, B3-10a	
2	Is there a minimum of one laboratory blank analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
3	Are laboratory blank results ≤ 3 x MDL/IDL (≤ 5 x IDL for ICP-MS)?		X		MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	Analytes > 3 x IDL are < their respective PRQLs. There are no impacts to the DQOs; data is acceptable.
4	Is there a minimum of one LCS analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
5	Are the %R for the LCS analytes within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
6	Is there a minimum of one matrix spike (MS) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
7	Are the %R for the MS within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)		X		MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	Out-of-range spike recoveries are due to matrix effects. There are no impacts to the DQOs; data is acceptable.
8	Is there a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
9	Are the %R for the MSD within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)		X		MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	Out-of-range spike recoveries are due to matrix effects. There are no impacts to the DQOs; data is acceptable.
10	Are the precision QAOs (%RSD or RPD) for the MSD within the acceptable range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals) Has the F-test (or equivalent) or control chart sampling precision been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	Note: Control chart sampling is not applicable.
	VOCs, NHVOCs, SVOAs					
11	This analytical batch is specific to metals, therefore this section does not apply. **Skip to question 33.**	X				

090000

BDR No.: ALD07018M

	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
12	Are all analytical samples spiked with surrogate compounds?				MP-TRUW-8.2, Tables B3-5, B3-7	
13	Are the surrogate compound recoveries (%R) within acceptance criteria and averaged from a minimum of 30 samples? **NOTE**: *After 30 samples, the %R is ± 3 sigma.*				MP-TRUW-8.2, Tables B3-5, B3-7	
	GS/MS Inititial Calibration					
14	Was there a DFTPP or BFB tune performed at a minimum frequency of every 12 hours?				MP-TRUW-8.2, Tables B3-5, B3-7	
15	Were the method ion abundance criteria satisfied as determined by the ITR's validation?				MP-TRUW-8.2, Tables B3-5, B3-7	
16	Was the initial calibration correctly prepared and performed? **NOTE**: *Minimum of 5 standards containing all method analytes and at least one standard < PRQL. Six standards are needed if second order regression is used.*				MP-TRUW-8.2, Tables B3-5, B3-7	
17	Was the %RSD ≤ 30 for CCC or ≤ 15 for all other compounds?				MP-TRUW-8.2, Tables B3-5, B3-7	
18	If %RSD is ≤ 15, is average RRF used?				MP-TRUW-8.2, Tables B3-5, B3-7	
19	If %RSD is > 15, is the regression equation used, and is the R or R^2 ≥ 0.990?				MP-TRUW-8.2, Tables B3-5, B3-7	
20	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria? Chloromethane ≥ 0.10 1,1-Dichloroethane ≥ 0.10 Bromoform ≥ 0.10 Chlorobenzene ≥ 0.30 1,1,2,2-Tetrachloroethane ≥ 0.30 All remaining SPCCs ≥ 0.05				MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	
21	Are the RRFs for all non-SPCCs ≥ 0.01?				MP-TRUW-8.2, Tables B3-5, B3-7	

000061

	BDR No.: ALD07018M					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
	GC/MS Continuing Calibration					
22	Is calibration verification performed at a minimum frequency of every 12 hours?				MP-TRUW-8.2, Tables B3-5, B3-7	
23	Are response factor %Ds for the target analyte CCCs ≤ 20?				MP-TRUW-8.2, Tables B3-5, B3-7	
24	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria?					
	Chloromethane ≥ 0.10					
	1,1-Dichloroethane ≥ 0.10					
	Bromoform ≥ 0.10					
	Chlorobenzene ≥ 0.30					
	1,1,2,2-Tetrachloroethane ≥ 0.30				MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	
	All remaining SPCCs ≥ 0.05					
25	Are the RRFs for all non-SPCCs ≥ 0.01?				MP-TRUW-8.2, Tables B3-5, B3-7	
26	Is the RT for CCAL internal standards ± 30 seconds from the last daily calibration check?				MP-TRUW-8.2, Tables B3-5, B3-7	
27	Is the CCAL internal standard area count > 50% and < 200% from the last daily calibration check?				MP-TRUW-8.2, Tables B3-5, B3-7	
	GC/FID (used for NHVOC analysis only)					
28	Is the initial 3-point initial calibration, consisting of at least five standards containing all target analytes, complete? **NOTE:** *One standard must be less than the PRQL.*				MP-TRUW-8.2, Table B3-5	
29	Is the correlation coeffficient ≥ 0.990, or %RSD ≤ 20 for all analytes?				MP-TRUW-8.2, Table B3-5	
30	Has a CCV standard been analyzed at the beginning of each 12-hour shift to verify ICAL performed at a mimimum frequency of every 12 hours?				MP-TRUW-8.2, Table B3-5	
31	Are the %Ds ≤ 15 for all analytes?				MP-TRUW-8.2, Table B3-5	

000062

	BDR No.: ALD07018M					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
32	Are the RTs for continuing calibrations ± 3 standard deviations from the ICAL?				MP-TRUW-8.2, Table B3-5	
	METALS					
33	This analytical batch is specific to organics, therefore this section does not apply. **Skip to question 48.**		X			
34	Is the ICP serial dilution performed once per analytical batch?	X			MP-TRUW-8.2, Table B3-9	
35	Is the 5x serial dilution result ≤ 10% D of initial value for sample results > 50 x IDL? If no, result must be flagged "Z".	X			MP-TRUW-8.2, Table B3-9	
	ICP-AES Calibration					
36	Is initial calibration, including one blank and one standard, performed each day of operation?	X			MP-TRUW-8.2, Table B3-9	
37	Is the %R for the daily ICV check standard within the 90-110% acceptance range for the ICV solution?	X			MP-TRUW-8.2, Table B3-9	
38	Is continuing calibration performed every 10 samples and at the beginning and end of the run?	X			MP-TRUW-8.2, Table B3-9	
39	Is the %R for the check standards within the 90-110% range?	X			MP-TRUW-8.2, Table B3-9	
40	Is interference correction verification performed at the beginning and end of the analytical batch or every 8 hours, whichever is more frequent?	X			MP-TRUW-8.2, Table B3-9	
41	Are solutions containing interference plus analytes within the 80-120% acceptance range for all analytes? **NOTE:** *If response is no and interferents are found at levels greater than the ICS(A) solution, write an NCR unless one has already been initiated at the DGL.*	X			MP-TRUW-8.2, Table B3-9	

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BDR No.: ALD07018M

	Question	Response: Yes	Response: No	Response: N/A	Requirement(s)	Comment(s)
	CVAA Calibration (used for mercury analysis only)					
42	Is a 5-point initial calibration, including a blank, performed each day of operation? **NOTE:** *At least one QC or calibration standard must be ≤ the PRQL.*	X			MP-TRUW-8.2, Table B3-9; ACMM-2810, Section 7.9	
43	Is the CVAA serial dilution performed once per analytical batch? **NOTE:** *Not required if %R of the sample (S) and sample duplicate (SD) are 100 ± 20 or Hg is below 10 x IDL for all samples in the batch.*		X		ACMM-2810, Section 7.20	Not required.
44	Is the %R for the ICV solution within 80-120% for the ICV solution?	X			MP-TRUW-8.2, Table B3-9	
45	Is the regression coefficient ≥ 0.995?	X			MP-TRUW-8.2, Table B3-9	
46	Is continuing calibration performed every 10 samples and at the beginning and end of the run?	X			MP-TRUW-8.2, Table B3-9	As reported on the CVHG#1 Mercury Run Log for TWCP in the supplemental data.
47	Is %R for the check standards within the 80-120% acceptance range?	X			MP-TRUW-8.2, Table B3-9	
	Sample Handling Requirements					
48	Have samples been properly preserved (cooled to 4°C, +/- 2°C)?	X			MP-TRUW-8.2, Table B1-4	Reference ITR checklist question 8c.
49	Are holding times between sample collection and sample extraction (preparation) within 14 days for VOC/SVOC or within 180 days for metals? Note: Holding time for Hg is 28 days.	X			MP-TRUW-8.2, Table B1-4	
50	Are holding times between sample extraction and analysis within the 40-day requirement? **NOTE:** *Not a requirement for metals.*		X		MP-TRUW-8.2, Table B1-4	Not required.
	Analytical Batch/BDR & Reporting Requirements					
51	Are there 20 or fewer samples analyzed in the batch (excluding laboratory QC samples) and within 14 days of the validated time of sample receipt of the first sample in the batch?	X			MP-TRUW-8.2, B3-10	

000064

BDR No.: ALD07018M

	Question	Response: Yes	Response: No	Response: N/A	Requirement(s)	Comment(s)
52	Were proper procedures followed to ensure representative samples (Include procedure number used for analysis in comment)?	X			MP-TRUW-8.2, B3-10b(1)	ACMM-2901, current revision ACMM-8909, current revision ACMM-2810, current revision
53	Is the BDR complete (all pages identified in the BDR and numbered accordingly)? BDR number and date *Sample numbers and applicable QC designations* Current implementing procedure (including method if more than one method cited) QC sample results Sample data forms including reduced data for target analytes and TICs Chains of Custody Evidence of sample preservation Evidence of holding times Cross-reference of field numbers to laboratory sample numbers Analysis dates, times, and operator signatures TIC evaluations as applicable Reporting flags as applicable, *explained in the narrative* Report narrative Associated NCRs Applicable Data Review Checklists Batch Data Report Supplemental Comment Form (Form-1491)	X			MP-TRUW-8.2, Table B3-13	All applicable ALD-metals data is present.
54	Is all data reported properly with correct units and significant figures?	X			MP-TRUW-8.2, B3-10b(2)	
55	Were reporting flags correctly assigned and included in the case narrative?	X			MP-TRUW-8.2, B3-10a	
56	Are the MDLs, IDL, PRDL, PRQL demonstration, and method performance samples current and was one standard below the PRQL? **NOTE:** *MPS should be performed semi-annually.*	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	Reference ITR checklist question 9b.

590000

BDR No.: ALD07018M

	Question	Response: Yes	No	N/A	Requirement(s)	Comment(s)
57	Has the 90% completeness requirement for analytical results been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
58	Are the traceable standards used to generate these data referenced in the BDR?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	Standards are included in the BDR supplemental data.
59	Was representativeness achieved by collecting unbiased samples?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
60	Is the analytical laboratory PDP participation current and acceptable?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
61	Is the ITR checklist complete?	X			MP-TRUW-8.2, B3-10b(2)	
62	The data for all containers in this BDR are complete, properly documented, technically reasonable, representative, and meet the review, validation, and verification requirements.	X			MP-TRUW-8.2, B3-10b(2)	
63	Review all NCRs, open and closed. Can the batch be promoted?	X			MP-TRUW-8.2, Table B3-13	No NCRs are associated with this ALD batch.
64	Is all data associated with this BDR acceptable for signature release?	X			MP-TRUW-8.2, B3-10b(a)	

SPM Dawn Wolf

Signature/Date: DWolf 01-May-07

990000

Acronym Key

%D - percent difference
%R - percent recoveries
%RSD - percent relative standard deviation
AES - Atomic Emission Spectroscopy
BFB - Bromofluorobenzene
CCAL - continuing calibration
CCC - calibration check compounds
CCV – continuing calibration verification
CVAA - Cold Vapor Atomic Absorption
DFTPP - Decafluorotriphenylphosphine
GC/FID - Gas Chromatography/Flame Ionization Detection
GC/MS - Gas Chromatography/Mass Spectrometry
ICP-MS - Inductively Coupled Plasma-Mass Spectroscopy
ICS(A) - interferent check sample
ICV - initial calibration verification
IDL - instrument detection limit
ITR - Independent Technical Reviewer
LCS - laboratory control sample
MDL - method detection limit
MPS – method performance sample
PDP - Performance Demonstration Program
PRDL - Program Required Detection Limit
PRQL - Program Required Quantitation Limit
QAO - quality assurance objective
R, R^2 - correlation coefficient
RPD - relative percent difference
RRF - relative response factor
RT - retention time
SPCC - system performance check compound
TIC - tentatively identified compound

490000

CH2M•WG IDAHO, LLC

Analytical Laboratories Department

B-2010-0004
RECORD
CC 4/7/10

Idaho Cleanup Project

Transuranic Waste Characterization Program

RCRA Analysis Data Report

Batch Data Report Number: ALD07007N
Revision Number: 0
Issue Date: APR 11 2007

Analytical Method: ACMM-9441
Analyte(s): NHVOCs

Issued to: Mr. Eric P. Schweinsberg
Site Project Manager, TRU Programs
Advanced Mixed Waste Treatment Project
Bechtel BWXT Idaho, LLC
850 Energy Drive, Suite 200
Idaho Falls, ID 83401

Summary: This data report contains analysis results for 6 samples and 6 trip blanks from Sampling Batch SSC07-00101.

Report Content:

Section	Content	Pages
1	Sample Identification Table	0002 - 0003
2	Sample Custody and Tracking Documents	0004 – 0017
3	Analysis Results	0018 – 0032
4	Batch QC Sample Results	0033 – 0051
5	Instrument QC Data	0052 – 0058
6	Data Review Checklists	0059 – 0066

Release Authorization:

Name & Position	Signature	Date
Faye E. Srala Technical Leader		4/11/07
Jeffrey L. Jeter Supervisor		4/11/07
Shelly J. Sailer Quality Assurance Officer		04/11/07

Section 1

Sample Identification Table

TOTAL NHVOC ANALYSIS
SAMPLE CROSS-REFERENCE TABLE

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Preparation Method: ACMM-9441-R12
Analytical Method: ACMM-9441-R12

Data Report Number: ALD07007N
Analytical Batch ID: 0703083

Field Sample ID	Lab Sample ID
NA	LBN031307
NA	LCSN0703083
10150517	7AK76
10150565	7AK78
10150524	7AK79
10150525MS	7AK79MS
10150526MSD	7AK79MSD
10150568	7AK81
NA	LBN031907
10150642	7AK97
10150647	7AK99
10150931	7AM01
10150936	7AM03
10151026	7AM04
10151031	7AM06
10151188	7AN17
10151193	7AN19

Section 2

Sample Custody and Tracking Documents

Cust 03/08/07

ALD LOG # 0703083

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:10
COC No.: 0000296
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150516	07-Mar-2007	11:35	20 / ml	2.80 / gms	PVOC	Douglas Larson	sub sample PVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150517	07-Mar-2007	11:36	20 / ml	2.63 / gms	NHVOC	Douglas Larson	sub sample NHVOC is from initial core sample.	
SSC07-00101	10124541	MD-836	10150518	07-Mar-2007	11:39	20 / ml	2.81 / gms	SPARE	Douglas Larson	sub sample SPARE 1 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150519	07-Mar-2007	11:41	20 / ml	2.69 / gms	SPARE	Douglas Larson	sub sample SPARE 2 is from initial core sample.	
SSC07-00101	10124541	MD-836	10150520	07-Mar-2007	11:46	125 / ml	35.18 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from initial core.	
SSC07-00101	10124541	MD-836	10150564	07-Mar-2007	15:14	20 / ml	2.98 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150565	07-Mar-2007	15:19	20 / ml	2.94 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150566	07-Mar-2007	15:21	20 / ml	2.86 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R. Larson	03/08/07 1016	
Received By	Rachelle Hubler	Rachelle Hubler	03/08/07 1016	
Relinquished By	Rachelle Hubler	Rachelle Hubler	3/08/07 1050	BOL # AMWTP000344 INL Truck Seal # 077703 Rachelle Hubler 3/8/07
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	
Relinquished By				
Received By				
Relinquished By				
Received By				

0005

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703083
03/08/07

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000298
Page 1 of 2

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10124541	MD-836	10150521	07-Mar-2007	12:15	20 / ml	2.72 / gms	PVOC	Douglas Larson	sub sample PVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150522	07-Mar-2007	12:21	20 / ml	2.75 / gms	PVOC	Douglas Larson	sub sample PVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150523	07-Mar-2007	12:23	20 / ml	2.70 / gms	PVOC	Douglas Larson	sub sample PVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150524	07-Mar-2007	12:24	20 / ml	2.98 / gms	NHVOC	Douglas Larson	sub sample NHVOC1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150525	07-Mar-2007	12:27	20 / ml	2.64 / gms	NHVOC	Douglas Larson	sub sample NHVOC2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150526	07-Mar-2007	12:28	20 / ml	2.58 / gms	NHVOC	Douglas Larson	sub sample NHVOC3 is from co-located core.	
SSC07-00101	10124541	MD-836	10150527	07-Mar-2007	12:30	20 / ml	2.64 / gms	SPARE	Douglas Larson	sub sample SPARE1 is from co-located core.	
SSC07-00101	10124541	MD-836	10150528	07-Mar-2007	12:33	20 / ml	2.90 / gms	SPARE	Douglas Larson	sub sample SPARE2 is from co-located core.	
SSC07-00101	10124541	MD-836	10150529	07-Mar-2007	12:38	125 / ml	34.80 / gms	SVOC, METALS	Douglas Larson	sub sample SVOC/METALS is from co-located core.	
SSC07-00101	10124541	MD-836	10150567	07-Mar-2007	15:30	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 1	
SSC07-00101	10124541	MD-836	10150568	07-Mar-2007	15:32	20 / ml	2.99 / gms	TRIP BLANK	Douglas Larson	Trip Blank 2	
SSC07-00101	10124541	MD-836	10150569	07-Mar-2007	15:34	20 / ml	2.90 / gms	TRIP BLANK	Douglas Larson	Trip Blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Douglas Larson	Douglas R. Larson	03/08/07 1023	
Received By	Rachelle Hubler	Rachelle Hubler	3/08/07 1023	

Page 1 of 2

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ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG #
0703083

AMWTP

Chain Of Custody

Print Date: 08-Mar-2007
Print Time: 10:08
COC No.: 0000298
Page 2 of 2

Relinquished By	Rachelle Hubler	Rachelle Hubler	3/8/07 1055	BOL # AMWTP000344
Received By	Cary Richardson	Cary Richardson	3/08/07 1340	IAL Truck Seal # 077720 Rachelle Hubler 3/8/07
Relinquished By				
Received By				
Relinquished By				
Received By				

0007

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:54
COC No.: 0000299
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123154	MD-836	10150641	08-Mar-2007	14:59	20 / ml	2.96 / gms	PVOC	Frank Kuck	core sample cut at 21.75, material removed to 22.00, and sampling towards bottom of core.	
SSC07-00101	10123154	MD-836	10150642	08-Mar-2007	15:01	20 / ml	2.83 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123154	MD-836	10150643	08-Mar-2007	15:02	20 / ml	2.83 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123154	MD-836	10150644	08-Mar-2007	15:03	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123154	MD-836	10150645	08-Mar-2007	15:05	125 / ml	39.90 / gms	SVOC, METALS	Frank Kuck	SVOC	
SSC07-00101	10123154	MD-836	10150646	08-Mar-2007	16:31	20 / ml	2.85 / gms	TRIP BLANK	Frank Kuck	trip blank 1	
SSC07-00101	10123154	MD-836	10150647	08-Mar-2007	16:35	20 / ml	2.83 / gms	TRIP BLANK	Frank Kuck	trip blank 2	
SSC07-00101	10123154	MD-836	10150648	08-Mar-2007	16:39	20 / ml	2.78 / gms	TRIP BLANK	Frank Kuck	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:42:26	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:42:26	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:44	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:44	
Relinquished By	Steven Yount		12-MAR-07 1058	
Received By	Richard A. NeSmith		12-MAR-07 1058 3/12/07	
Relinquished By	Richard A. NeSmith		12-MAR-07 1130	BOL # AMWTP 000345 INL Truck
Received By	Cary Richardson		12-Mar-07 1400	Seal # 077705 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

8000

Page 1 of 1

ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 10:59
COC No.: 0000300
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123139	MD-836	10150930	10-Mar-2007	07:14	20 / ml	2.85 / gms	~~NHVOC~~ PVOC 8/12/07 SY	Frank Kuck	sample cut at 19.25" and material removed to 19.5" sub sampling toward bottom of core sample.	
SSC07-00101	10123139	MD-836	10150931	10-Mar-2007	07:15	20 / ml	2.91 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10123139	MD-836	10150932	10-Mar-2007	07:16	20 / ml	2.70 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10123139	MD-836	10150933	10-Mar-2007	07:17	20 / ml	2.91 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10123139	MD-836	10150934	10-Mar-2007	07:19	125 / ml	39.25 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10123139	MD-836	10150935	10-Mar-2007	07:30	20 / ml	2.88 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10123139	MD-836	10150936	10-Mar-2007	07:31	20 / ml	2.91 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10123139	MD-836	10150937	10-Mar-2007	07:33	20 / ml	2.98 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:41:16	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:41:16	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:21:00	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:21:00	
Relinquished By	Steven Yount		12-MAR-07 1102	
Received By	Richard A. NeSmith		12-MAR-07 1102	
Relinquished By	Richard A. NeSmith		12MAR07 1127	BOL # AMWTP000395 INL Truck
Received By	Cory Richardson	Cory Richardson	12-Mar-07 1410	Seal # 077722 3/12/07
Relinquished By				
Received By				
Relinquished By				
Received By				

6000

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ALD LOG # 0703123

AMWTP

Chain Of Custody

Print Date: 12-Mar-2007
Print Time: 11:02
COC No.: 0000301
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10130208	MD-836	10151025	10-Mar-2007	14:26	20 / ml	2.97 / gms	PVOC	Frank Kuck	core sample tube cut at 10.25 and sampling towards top of core sample.	
SSC07-00101	10130208	MD-836	10151026	10-Mar-2007	14:27	20 / ml	2.84 / gms	NHVOC	Frank Kuck	NHVOC	
SSC07-00101	10130208	MD-836	10151027	10-Mar-2007	14:28	20 / ml	2.99 / gms	SPARE	Frank Kuck	Spare 1	
SSC07-00101	10130208	MD-836	10151028	10-Mar-2007	14:29	20 / ml	2.96 / gms	SPARE	Frank Kuck	Spare 2	
SSC07-00101	10130208	MD-836	10151029	10-Mar-2007	14:31	125 / ml	39.99 / gms	SVOC, METALS	Frank Kuck	SVOC METALS	
SSC07-00101	10130208	MD-836	10151030	10-Mar-2007	15:00	20 / ml	2.67 / gms	TRIP BLANK	Frank Kuck	TRIP 1	
SSC07-00101	10130208	MD-836	10151031	10-Mar-2007	15:01	20 / ml	2.72 / gms	TRIP BLANK	Frank Kuck	TRIP 2	
SSC07-00101	10130208	MD-836	10151032	10-Mar-2007	15:03	20 / ml	2.93 / gms	TRIP BLANK	Frank Kuck	TRIP 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Frank Kuck	Electronically signed in WTS	10-MAR-07 16:40:07	
Received By	Michael Kremin	Electronically signed in WTS	10-MAR-07 16:40:07	
Relinquished By	Michael Kremin	Electronically signed in WTS	11-MAR-07 05:20:09	
Received By	Steven Yount	Electronically signed in WTS	11-MAR-07 05:20:09	
Relinquished By	Steven Yount		12-MAR-07 1107	CORRECTED SVOC METAL VOLUME TO CORRECT SIZE OF 125 ML SY 3/12/07
Received By	Richard A. NeSmith		12-MAR-07 1107	
Relinquished By	Richard A. NeSmith		12-MAR-07 1124	BOL # AMWTP000345 INL TRUCK
Received By	Cary Richardson		12-Mar-07 1400	Seal # 077753 3/12/07 RA
Relinquished By				
Received By				
Relinquished By				
Received By				

Page 1 of 1

ALD Document: Log 0703123 AMWTP_836.04.tif - Scanned:3/14/2007 2:50:44 PM

3/14/07

ALD LOG # 0703143

AMWTP

Chain Of Custody

Print Date: 14-Mar-2007
Print Time: 09:20
COC No.: 0000302
Page 1 of 1

Shipping Location: AMWTP Analytical Location: INEEL-INTEC Sampling Location: WMF-634 Coring Glove Box Sample Matrix: Solid

Sample Batch	Container ID	GEN-IDC	Sample ID	Sample Date	Sample Time	Volume	Weight	Analysis Type	Subsample Created by	Comments	Final Disposition
SSC07-00101	10123400	MD-836	10151187	11-Mar-2007	14:22	20 / ml	2.70 / gms	PVOC	Davey Sumners	pvoc	
SSC07-00101	10123400	MD-836	10151188	11-Mar-2007	14:44	20 / ml	2.89 / gms	NHVOC	Davey Sumners	nhvoc	
SSC07-00101	10123400	MD-836	10151189	11-Mar-2007	14:46	20 / ml	2.83 / gms	SPARE	Davey Sumners	spare 1	
SSC07-00101	10123400	MD-836	10151190	11-Mar-2007	14:47	20 / ml	2.84 / gms	SPARE	Davey Sumners	spare 2	
SSC07-00101	10123400	MD-836	10151191	11-Mar-2007	14:49	125 / ml	39.70 / gms	SVOC, METALS	Davey Sumners	svoc/metals	
SSC07-00101	10123400	MD-836	10151192	11-Mar-2007	15:02	20 / ml	2.88 / gms	TRIP BLANK	Davey Sumners	trip blank 1	
SSC07-00101	10123400	MD-836	10151193	11-Mar-2007	15:04	20 / ml	2.83 / gms	TRIP BLANK	Davey Sumners	trip blank 2	
SSC07-00101	10123400	MD-836	10151194	11-Mar-2007	15:06	20 / ml	2.82 / gms	TRIP BLANK	Davey Sumners	trip blank 3	

All samples are preserved by cooling to 4 +/-2 degrees C

	Print Name	Signature	Date	Discrepancies / Comments
Relinquished By	Davey Sumners		3/14/07 0923	
Received By	Richard A. NeSmith	Richard A. NeSmith	3/14/07 0923	
Relinquished By	Richard A. NeSmith	Richard A. NeSmith	3/14/07 1012	BOL # AMWTP000346 - INL Truck
Received By	Cary Richardson	Cary Richardson	3/14/07 1110	Seal # 077719 3/14/07
Relinquished By				
Received By				
Relinquished By				
Received By				

0011

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ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.40 4/26/07 Analytical Log #: 070308 3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AK76-4	03/08/07 15:15	C. Richardson	RC	242	Hazard Index	03/08/07 16:05	RC	C. Richardson	
7AK76-1, 7AK78-1, 7AK79-1, 7AK79-2, 7AK79-3, 7AK81-1	03/15/07 08:50	C. Richardson	B. Hurd	214	VOC Analysis	3/15/07 14:30	B. Hurd	C. Richardson	Consumed
7AK76-2, 7AK78-2, 7AK79-4, 7AK79-5, 7AK79-6, 7AK81-2	03/13/07 08:50	C. Richardson		211	NHVOC Analysis	3/13/07 11:30			Consumed
7AK77-1, 7AK80-1	03/15/07 08:45	C. Richardson		207 / 211	SemiVol Analysis	03/19/07 13:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 08:30			207 / 211	Mercury	03/26/07 10:30		C. Richardson	Ret. Sample
7AK77-1, 7AK80-1	3/26/07 14:05			207 / 211	Metals	3/26/07 16:16			Ret Sample
7AK77-1, 7AK80-1	03/21/07 08:50	C. Richardson		208	Semi Vol Analysis	03/21/07 15:40		C. Richardson	Ret. Sample
	/ / :					/ / :			
	/ / :					/ / :			
	/ / :					/ / :			

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

0012

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.46 04 last 4/4/07 Analytical Log #: 070308_3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK76-2, 7AK78-2, 7AK79-4, 7AK79-5, 7AK79-6, 7AK81-2

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	211	03/13/07 08:50	C. Richardson		NHVOC Analysis	
211	209	3/13/07 11:30			consumed	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

0013

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.04 Analytical Log #: 070312_3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AM04-4	03/14/07 13:50	C. Richardson	RC	242	HAZARD INDEX	3/14/07 16:30	RC	[illegible]	
7AK97-1, 7AK99-1, 7AM01-1, 7AM03-1, 7AM04-1, 7AM06-1	03/15/07 05:50	C. Richardson	[illegible]	214	VOC Analysis	03/15/07 14:30	[illegible]	C. Richardson	Consumed in Analysis
7AK97-2, 7AK99-2, 7AM01-2, 7AM03-2, 7AM04-2, 7AM06-2	03/19/07 07:55	C. Richardson	[illegible]	211	NHVOC Analysis	03/19/07 10:40	[illegible]	C. Richardson	Consumed in Analysis
7AK98-1, 7AM02-1, 7AM05-1	03/15/07 08:45	C. Richardson	[illegible]	207 / 211	SemiVol Analysis	03/19/07 13:30	[illegible]	C. Richardson	Rot. Sample
7AK98-1, 7AM02-1, 7AM05-1	/ / :			207 / 211	Metals	/ / :			
7AK98-1, 7AM02-1, 7AM05-1	/ / :			207 / 211	Mercury	/ / :			
7AK97-3, 7AM01-3, 7AM04-3	/ / :			214	VOC Analysis *Spare*	/ / :			
7AK97-4, 7AM01-4, 7AM04-4	/ / :			211	NHVOC Analysis *Spare*	/ / :			

0014

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

** If consumed in Analysis, document in Comments field.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070312 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AK97-2, 7AK99-2, 7AM01-2, 7AM03-2, 7AM04-2, 7AM06-2

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	211	03/19/05 07:55	C. Richardson	[signature]	NHVOC Analysis	Originals were consumed in Analysis Water extracts were created and consumed in analysis.
211	209	03/19/05 10:40	[signature]	C. Richardson	Return Sample Shell	Consumed
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

0015

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

** If consumed in Analysis, document in Comments field.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

ALD CUSTODY AREA Sample Tracking Form

Project Name: AMWTP:836.04 Analytical Log #: 070314 3

Custody Area: 209 Environmental/Regulatory Sample: YES

*Lab Sample ID(s)	Date / Time Removed	Relinquished By	Received By	To Lab	Analysis / Procedure	Date / Time Returned	Returned By	Received By	**Comments
7AN17-4	03/14/07 13:50	C. Richardson	RC	242	Hazard Index	3/14/07 16:30	RC	Daley	
7AN17-1, 7AN19-1	03/15/07 08:50	C. Richardson	B. Hand	214	VOC Analysis	03/15/07 14:30	B. Hand	C. Richardson	Consumed
7AN17-2, 7AN19-2	03/19/07 07:55	C. Richardson		211	NHVOC Analysis	03/19/07 10:40		C. Richardson	Consumed
7AN18-1	03/15/07 08:45	C. Richardson		207 / 211	SemiVol Analysis	03/19/07 13:30		C. Richardson	Ret. Sample
7AN18-1	/ / :			207 / 211	Mercury	/ / :			
7AN18-1	/ / :			207 / 211	Metals	/ / :			
	/ / :					/ / :			
	/ / :					/ / :			
	/ / :					/ / :			
	/ / :					/ / :			

0016

* Multi Lab Sample IDs can be listed on a single line IF and ONLY IF they will be maintained and handled the same; otherwise a separate line should be used for each sample set.

ALD INTERNAL LAB Sample Tracking Form

Custody Area: 209 Project Name: AMWTP:836.04 Analytical Log #: 070314 3

Environmental/Regulatory Sample: YES

*Lab Spl ID(s): 7AN17-2, 7AN19-2

Sample Type: ☒ Original Sample ☐ TCLP Extract ☐ Sample Prep ☐ Other: _____

Location From	Location To	Date Time	Relinquished By	Received By	Analysis / Procedure	**Comments
209	211	03/19/07 07:55	C. Richardson		NHVOC Analysis	
211	209	03/19/07 10:40		C. Richardson	Request Cancelled	
		/ / :				
		/ / :				
		/ / :				
		/ / :				
		/ / :				

0017

* All Sample codes listed on the line above must be maintained and handled as a batch. If any sample is going to be handled differently, a separate tracking form must be used.

NOTE: Return this form to Custody Area when samples are returned, relinquished, consumed, or disposed.

Section 3

Analysis Results

Idaho Cleanup Project
Analytical Laboratories Department

Data Report Narrative for ALD07007N

This data report contains NHVOC results for 6 samples from waste drums and 6 associated trip blanks, received 03/08/07, 3/12/07, and 03/14/07 from the Advanced Mixed Waste Treatment Project (AMWTP) for the TRU Waste Characterization Program (TWCP).

Sample analysis was performed using ACMM-9441 Revision 12, which implements EPA SW-846 Method 8015B, "Non-Halogenated Organics Using GC/FID" and Method 8000B, "Determinative Chromatographic Separations."

The holding time for solid samples is 14 days from collection to analysis. All samples were analyzed within the holding time.

The extracted laboratory blank was used to satisfy requirements in ACMM-9441 for analysis of a daily method blank before sample analysis.

All QC parameters meet acceptance criteria for this analytical batch.

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Data Qualifier Flag Definitions for NHVOCs

Flag	Definition
B	Analyte detected in associated laboratory blank or method blank
E	Reported analyte concentration exceeds the calibration range
D	Reported analyte concentration is from a secondary dilution of the sample
H	Holding time exceeded
J	Target Analyte concentration <PRQL but ≥ MDL
U	Analyte was undetected (reported as sample-specific MDL)
Z	One or more QC sample results do not meet acceptance criteria

TOTAL NHVOC ANALYSIS DATA SHEET

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150931	Lab File ID:	SN102423
Sampling Batch No:	SSC07-00101	Lab Sample ID:	7AM01
Date Sampled:	3/10/2007	Data Report Number:	ALD07007N
Date Extracted:	03/19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	9 days		
Date/Time Analyzed:	03/19/2007 14:14	Instrument ID:	GC-1
Analysis Holding Time:	<1 day	Sample Matrix:	SOLID
Preparation Method:	ACMM-9441-R12	Dilution Factor:	1
Analytical Method:	ACMM-9441-R12		

CAS NUMBER	TARGET ANALYTE	CONCENTRATION (mg/kg)	Q
67-64-1	Acetone	2.0	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	3.7	J
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.0	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.0	U

* = Column B value used

Section 4

Batch QC Sample Results

TOTAL NHVOC ANALYSIS
SURROGATE RECOVERY FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Preparation Method: ACMM-9441-R12
Analytical Method: ACMM-9441-R12

Data Report Number: ALD07007N
Analytical Batch No: 0703083
Instrument ID: GC-1
Matrix: SOLID

	LAB SAMPLE ID	Isopropanol-d8 %R COLUMN A	Isopropanol-d8 %R COLUMN B	TOTAL OUT
1	LBN031307	106	105	0
2	LCSN0703083	109	108	0
3	7AK76	101	100	0
4	7AK78	108	107	0
5	7AK79	100	99	0
6	7AK79MS	102	102	0
7	7AK79MSD	104	103	0
8	7AK81	107	106	0
9	LBN031907	101	102	0
10	7AK97	92	93	0
11	7AK99	101	102	0
12	7AM01	96	97	0
13	7AM03	101	101	0
14	7AM04	96	96	0
15	7AM06	102	103	0
16	7AN17	93	94	0
17	7AN19	100	101	0

%R Acceptance Criteria 77 - 118

Z = Values does not meet acceptance criteria
D = Surrogate Diluted out

TOTAL NHVOC ANALYSIS
MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORTING FORM

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Preparation Method:	ACMM-9441-R12			Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12			Analytical Batch ID:	0703083
Instrument ID:	GC-1			Sample Matrix:	SOLID
Lab Sample ID:	7AK79	MS Lab Sample ID:	7AK79MS	MSD Lab Sample ID:	7AK79MSD
Field Sample ID:	10150524	MS Field Sample ID	10150525MS	MSD Field Sample ID:	10150526MSD
Lab File ID:	SN102414	MS Lab File ID:	SN102415	MSD Lab File ID:	SN102416
Date Analyzed:	03/13/2007	MS Date Analyzed:	03/13/2007	MSD Date Analyzed:	03/13/2007

COLUMN A ID: DB-624

TARGET ANALYTE	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)		SPIKED SAMPLE CONCENTRATION (mg/kg)	MS % RECOVERY	ACCEPTANCE CRITERIA % RECOVERY
Acetone	113.636	2.04	U	113.11	100	60 - 150
Butanol	113.636	1.02	U	126.03	111	60 - 150
Methanol	113.636	4.69		121.11	102	60 - 150
Methyl ethyl ketone	113.636	1.02	U	112.12	99	60 - 150
Ethyl ether	113.636	2.04	U	99.96	88	60 - 150
Isobutanol	113.636	1.02	U	122.92	108	60 - 150
Pyridine	113.636	2.04	U	107.49	95	60 - 150

TARGET ANALYTE	SPIKE ADDED (mg/kg)	DUPLICATE SAMPLE CONCENTRATION (mg/kg)	%RPD	MSD % RECOVERY	ACCEPTANCE CRITERIA RPD
Acetone	116.279	118.75	2.6	102	≤ 50
Butanol	116.279	133.08	3.1	114	≤ 50
Methanol	116.279	127.69	3.2	106	≤ 50
Methyl ethyl ketone	116.279	117.29	2.2	101	≤ 50
Ethyl ether	116.279	105.97	3.5	91	≤ 50
Isobutanol	116.279	128.58	2.2	111	≤ 50
Pyridine	116.279	115.86	5.2	100	≤ 50

Z = Values outside of QC limits

RPD: 0 out of 7 outside acceptance criteria
Spike Recovery: 0 out of 14 outside acceptance criteria

TOTAL NHVOC ANALYSIS DATA SHEET

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab File ID:	BN102410
Sampling Batch No:	NA	Lab Sample ID:	LBN031307
Date Sampled:	NA	Data Report Number:	ALD07007N
Date Extracted:	03/13/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/13/2007 13:03	Instrument ID:	GC-1
Analysis Holding Time:	<1 day	Sample Matrix:	SOLID
Preparation Method:	ACMM-9441-R12	Dilution Factor:	1
Analytical Method:	ACMM-9441-R12		

CAS NUMBER	TARGET ANALYTE	CONCENTRATION (mg/kg)	Q
67-64-1	Acetone	2.1	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

* = Column B value used

TOTAL NHVOC ANALYSIS DATA SHEET

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	NA	Lab File ID:	BN102420
Sampling Batch No:	NA	Lab Sample ID:	LBN031907
Date Sampled:	NA	Data Report Number:	ALD07007N
Date Extracted:	03/19/2007	Analytical Batch ID:	0703083
Extraction Holding Time:	NA		
Date/Time Analyzed:	03/19/2007 12:39	Instrument ID:	GC-1
Analysis Holding Time:	<1 day	Sample Matrix:	SOLID
Preparation Method:	ACMM-9441-R12	Dilution Factor:	1
Analytical Method:	ACMM-9441-R12		

CAS NUMBER	TARGET ANALYTE	CONCENTRATION (mg/kg)	Q
67-64-1	Acetone	2.1	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

* = Column B value used

TOTAL NHVOC ANALYSIS
BLANK FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/13/2007 13:03	Lab Sample ID:	LBN031307
Preparation Method:	ACMM-9441-R12	Lab File ID:	BN102410
Analytical Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

Column A ID: DB-624

CAS NUMBER	TARGET ANALYTE	CONCENTRATION mg/kg	Q
67-64-1	Acetone	2.1	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

Column B ID: DB-1

CAS NUMBER	TARGET ANALYTE	CONCENTRATION mg/kg	Q
67-64-1	Acetone	1.0	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

Acceptance Criteria: $\leq$ 3MDL

TOTAL NHVOC ANALYSIS
BLANK FORM

Idaho Cleanup Project

Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/19/2007 12:39	Lab Sample ID:	LBN031907
Preparation Method:	ACMM-9441-R12	Lab File ID:	BN102420
Analytical Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

Column A ID: DB-624

CAS NUMBER	TARGET ANALYTE	CONCENTRATION mg/kg	Q
67-64-1	Acetone	2.1	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

Column B ID: DB-1

CAS NUMBER	TARGET ANALYTE	CONCENTRATION mg/kg	Q
67-64-1	Acetone	1.0	U
71-36-3	Butanol	1.0	U
67-56-1	Methanol	1.0	U
78-93-3	Methyl ethyl ketone	1.0	U
60-29-7	Ethyl ether	2.1	U
78-83-1	Isobutanol	1.0	U
110-86-1	Pyridine	2.1	U

Acceptance Criteria: $\leq$ 3MDL

TOTAL NHVOC ANALYSIS
LABORATORY BLANK SUMMARY

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/13/2007 13:03	Lab Sample ID:	LBN031307
Preparation Method:	ACMM-9441-R12	Lab File ID:	BN102410
Analytical Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
NA	LCSN0703083	LN102411	3/13/2007	13:34
10150517	7AK76	SN102412	3/13/2007	14:04
10150565	7AK78	SN102413	3/13/2007	14:34
10150524	7AK79	SN102414	3/13/2007	15:04
10150525MS	7AK79MS	SN102415	3/13/2007	15:34
10150526MSD	7AK79MSD	SN102416	3/13/2007	16:04
10150568	7AK81	SN102417	3/13/2007	16:34

TOTAL NHVOC ANALYSIS
LABORATORY BLANK SUMMARY

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/19/2007 12:39	Lab Sample ID:	LBN031907
Preparation Method:	ACMM-9441-R12	Lab File ID:	BN102420
Analytical Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, AND STANDARDS

FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
10150642	7AK97	SN102421	3/19/2007	13:10
10150647	7AK99	SN102422	3/19/2007	13:42
10150931	7AM01	SN102423	3/19/2007	14:14
10150936	7AM03	SN102424	3/19/2007	14:46
10151026	7AM04	SN102425	3/19/2007	15:18
10151031	7AM06	SN102426	3/19/2007	15:50
10151188	7AN17	SN102427	3/19/2007	16:22
10151193	7AN19	SN102428	3/19/2007	16:54

TOTAL NHVOC ANALYSIS
LABORATORY CONTROL SAMPLE FORM

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Date/Time Analyzed: 03/13/2007 13:34
Preparation Method: ACMM-9441-R12
Analytical Method: ACMM-9441-R12

Lab File ID: LN102411
Lab Sample ID: LCSN0703083
Data Report Number: ALD07007N
Analytical Batch ID: 0703083
Instrument ID: GC-1
Sample Matrix: SOLID

TARGET ANALYTE	KNOWN CONCENTRATION (mg/kg)	MEASURED CONCENTRATION (mg/kg)	%RECOVERY
Acetone	100.00	104.737	105
Butanol	100.00	118.010	118
Methanol	100.00	106.305	106
Methyl ethyl ketone	100.00	104.999	105
Ethyl ether	100.00	93.679	94
Isobutanol	100.00	113.232	113
Pyridine	100.00	104.846	105

Acceptance Criteria: 60 - 150
Z = Value outside Acceptance Criteria

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150517	Lab File ID:	SN102412
Date/Time Analyzed:	3/13/2007 14:04	Lab Sample ID:	7AK76
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.485	2.272	2.688	4.86	
	B	2.134	1.958	2.298	3.98	19.96
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150524	Lab File ID:	SN102414
Date/Time Analyzed:	3/13/2007 15:04	Lab Sample ID:	7AK79
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.493	2.272	2.688	4.69	
	B	2.139	1.958	2.298	3.92	17.90
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150568	Lab File ID:	SN102417
Date/Time Analyzed:	3/13/2007 16:34	Lab Sample ID:	7AK81
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	RT WINDOW (min) To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	A					
	B					
Methyl ethyl ketone	* A	6.906	6.578	7.190	1.75	
	B	5.699	5.348	5.992	1.29	29.96
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150642	Lab File ID:	SN102421
Date/Time Analyzed:	3/19/2007 13:10	Lab Sample ID:	7AK97
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	RT WINDOW (min) To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.458	2.247	2.663	5.02	
	B	2.108	1.935	2.275	4.34	14.55
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150647	Lab File ID:	SN102422
Date/Time Analyzed:	3/19/2007 13:42	Lab Sample ID:	7AK99
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	A					
	B					
Methyl ethyl ketone	* A	6.837	6.528	7.140	7.31	
	B	5.628	5.295	5.939	6.84	6.64
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150931	Lab File ID:	SN102423
Date/Time Analyzed:	3/19/2007 14:14	Lab Sample ID:	7AM01
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.482	2.247	2.663	3.71	
	B	2.109	1.935	2.275	2.99	21.67
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10150936	Lab File ID:	SN102424
Date/Time Analyzed:	3/19/2007 14:46	Lab Sample ID:	7AM03
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	RT WINDOW (min) To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	A					
	B					
Methyl ethyl ketone	* A	6.838	6.528	7.140	2.90	
	B	5.624	5.295	5.939	2.38	19.90
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10151026	Lab File ID:	SN102425
Date/Time Analyzed:	3/19/2007 15:18	Lab Sample ID:	7AM04
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	RT WINDOW (min) To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.453	2.247	2.663	8.18	
	B	2.104	1.935	2.275	7.51	8.58
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

TOTAL NHVOC ANALYSIS
ANALYTE IDENTIFICATION FORM

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Field Sample ID:	10151188	Lab File ID:	SN102427
Date/Time Analyzed:	3/19/2007 16:22	Lab Sample ID:	7AN17
Preparation Method:	ACMM-9441-R12	Data Report Number:	ALD07007N
Analytical Method:	ACMM-9441-R12	Analytical Batch ID:	0703083
		Instrument ID:	GC-1
		Sample Matrix:	SOLID

TARGET ANALYTE	COLUMN	RETENTION TIME (min)	RT WINDOW (min) From	RT WINDOW (min) To	CONCENTRATION mg/kg	RPD
Acetone	A					
	B					
Butanol	A					
	B					
Methanol	* A	2.453	2.247	2.663	6.43	
	B	2.102	1.935	2.275	5.74	11.28
Methyl ethyl ketone	A					
	B					
Ethyl ether	A					
	B					
Isobutanol	A					
	B					
Pyridine	A					
	B					

* = column used for final report

Section 5

Instrument QC Data

TOTAL NHVOC ANALYSIS

Initial Calibration Data

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Analytical Method: ACMM-9441-R11

Data Report Number: ALD07007N
Analytical Batch ID: 0703083

ICAL ID: IN105002

Instrument ID: GC-1

GC Column A: ID: DB-624

ICAL Std Conc (ug/mL)	15	125	200	5	75			
TARGET ANALYTE	IN101891 11/09/2005 RT	IN101893 11/09/2005 RT	IN101894 11/09/2005 RT	IN101899 11/09/2005 RT	IN101900 11/09/2005 RT	RT WINDOW (min) FROM	TO	CORRELATION COEFFICIENT (r)
Isopropanol-d8	4.356	4.371	4.367	4.357	4.354	4.190	4.817	1.000
Acetone	4.126	4.141	4.137	4.128	4.122	3.930	4.567	1.000
Butanol	8.928	8.936	8.934	8.930	8.925	8.789	9.353	1.000
Methanol	2.480	2.489	2.488	2.482	2.483	2.346	2.761	1.000
Methyl ethyl ketone	6.884	6.894	6.891	6.885	6.879	6.710	7.322	1.000
Ethyl ether	3.638	3.652	3.650	3.639	3.635	3.434	4.043	1.000
Isobutanol	8.034	8.045	8.042	8.035	8.032	7.891	8.466	1.000
Pyridine	10.515	10.521	10.516	10.522	10.510	10.393	10.984	1.000

GC Column B: ID: DB-1

ICAL Std Conc (ug/mL)	15	125	200	5	75			
TARGET ANALYTE	IN101891 11/09/2005 RT	IN101893 11/09/2005 RT	IN101894 11/09/2005 RT	IN101899 11/09/2005 RT	IN101900 11/09/2005 RT	RT WINDOW (min) FROM	TO	CORRELATION COEFFICIENT (r)
Isopropanol-d8	3.298	3.311	3.308	3.302	3.297	2.922	3.458	1.000
Acetone	3.152	3.163	3.160	3.153	3.149	2.780	3.294	1.000
Butanol	7.644	7.649	7.646	7.647	7.637	7.257	7.857	1.000
Methanol	2.101	2.109	2.108	2.103	2.104	1.838	2.178	1.000
Methyl ethyl ketone	5.622	5.631	5.627	5.625	5.615	5.187	5.831	1.000
Ethyl ether	3.679	3.694	3.691	3.681	3.677	3.247	3.842	1.000
Isobutanol	6.707	6.716	6.713	6.708	6.702	6.303	6.921	1.000
Pyridine	9.502	9.496	9.490	9.519	9.487	9.156	9.773	1.000

Acceptance Criteria: $r \geq 0.990$
Retention Time within RT Window

Z = Value outside Acceptance Criteria
I = Mean Retention Time outside RT Window

TOTAL NHVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/13/2007 12:33	Lab Sample ID:	CCN031307A
Analytical Method:	ACMM-9441-R12	Lab File ID:	CN102409
		Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
Initial Calibration Date:	11/09/2005	Instrument ID:	GC-1

Column A ID: DB-624

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	4.353	4.190	4.817	81.191	75	8.26
Acetone	4.126	3.930	4.567	79.248	75	5.66
Butanol	8.928	8.789	9.353	81.116	75	8.15
Methanol	2.480	2.346	2.761	78.228	75	4.30
Methyl ethyl ketone	6.884	6.710	7.322	79.261	75	5.68
Ethyl ether	3.642	3.434	4.043	78.909	75	5.21
Isobutanol	8.035	7.891	8.466	79.979	75	6.64
Pyridine	10.514	10.393	10.984	80.057	75	6.74

Column B ID: DB-1

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	3.340	2.922	3.458	80.277	75	7.04
Acetone	3.192	2.780	3.294	78.942	75	5.26
Butanol	7.687	7.257	7.857	81.531	75	8.71
Methanol	2.128	1.838	2.178	78.693	75	4.92
Methyl ethyl ketone	5.670	5.187	5.831	78.264	75	4.35
Ethyl ether	3.731	3.247	3.842	78.813	75	5.08
Isobutanol	6.754	6.303	6.921	80.179	75	6.91
Pyridine	9.537	9.156	9.773	79.888	75	6.52

Acceptance Criteria: %D $\leq$ 15%
Retention Times within RT Window

Z = %D > 15%
I = Retention Time outside RT Window

TOTAL NHVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/13/2007 17:04	Lab Sample ID:	CCN031307B
Analytical Method:	ACMM-9441-R12	Lab File ID:	CN102418
		Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
Initial Calibration Date:	11/09/2005	Instrument ID:	GC-1

Column A ID: DB-624

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	4.380	4.039	4.667	83.162	75	10.88
Acetone	4.152	3.808	4.444	81.225	75	8.30
Butanol	8.944	8.646	9.210	82.898	75	10.53
Methanol	2.497	2.272	2.688	80.391	75	7.19
Methyl ethyl ketone	6.904	6.578	7.190	81.106	75	8.14
Ethyl ether	3.666	3.338	3.946	79.891	75	6.52
Isobutanol	8.052	7.748	8.322	81.991	75	9.32
Pyridine	10.530	10.219	10.809	82.185	75	9.58

Column B ID: DB-1

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	3.361	3.072	3.608	82.104	75	9.47
Acetone	3.213	2.935	3.449	80.772	75	7.70
Butanol	7.702	7.387	7.987	82.960	75	10.61
Methanol	2.141	1.958	2.298	80.871	75	7.83
Methyl ethyl ketone	5.690	5.348	5.992	79.618	75	6.16
Ethyl ether	3.752	3.433	4.029	79.292	75	5.72
Isobutanol	6.770	6.445	7.063	81.968	75	9.29
Pyridine	9.551	9.228	9.846	81.307	75	8.41

Acceptance Criteria: %D $\leq$ 15%
Retention Times within RT Window

Z = %D > 15%
! = Retention Time outside RT Window

TOTAL NHVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/19/2007 11:23	Lab Sample ID:	CCN031907A
Analytical Method:	ACMM-9441-R12	Lab File ID:	CN102419
		Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
Initial Calibration Date:	11/09/2005	Instrument ID:	GC-1

Column A ID: DB-624

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	4.306	4.190	4.817	77.446	75	3.26
Acetone	4.080	3.930	4.567	75.921	75	1.23
Butanol	8.882	8.789	9.353	75.107	75	0.14
Methanol	2.455	2.346	2.761	75.648	75	0.86
Methyl ethyl ketone	6.834	6.710	7.322	75.747	75	1.00
Ethyl ether	3.598	3.434	4.043	75.750	75	1.00
Isobutanol	7.987	7.891	8.466	74.633	75	0.49
Pyridine	10.465	10.393	10.984	75.842	75	1.12

Column B ID: DB-1

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	3.300	2.922	3.458	77.651	75	3.53
Acetone	3.154	2.780	3.294	76.109	75	1.48
Butanol	7.637	7.257	7.857	74.798	75	0.27
Methanol	2.105	1.838	2.178	75.829	75	1.10
Methyl ethyl ketone	5.617	5.187	5.831	76.074	75	1.43
Ethyl ether	3.683	3.247	3.842	76.045	75	1.39
Isobutanol	6.702	6.303	6.921	74.649	75	0.47
Pyridine	9.488	9.156	9.773	75.641	75	0.85

Acceptance Criteria: %D $\leq$ 15%
Retention Times within RT Window

Z = %D > 15%
! = Retention Time outside RT Window

TOTAL NHVOC ANALYSIS
CONTINUING CALIBRATION CHECK

Idaho Cleanup Project
Analytical Laboratories Department

TRU Waste Characterization Program

Date/Time Analyzed:	03/19/2007 17:27	Lab Sample ID:	CCN031907B
Analytical Method:	ACMM-9441-R12	Lab File ID:	CN102429
		Data Report Number:	ALD07007N
		Analytical Batch ID:	0703083
Initial Calibration Date:	11/08/2005	Instrument ID:	GC-1

Column A ID: DB-624

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	4.288	3.992	4.620	76.489	75	1.99
Acetone	4.062	3.762	4.398	74.575	75	0.57
Butanol	8.865	8.600	9.164	74.458	75	0.72
Methanol	2.448	2.247	2.663	74.735	75	0.35
Methyl ethyl ketone	6.816	6.528	7.140	74.212	75	1.05
Ethyl ether	3.583	3.294	3.902	71.466	75	4.71
Isobutanol	7.971	7.700	8.274	74.201	75	1.07
Pyridine	10.448	10.170	10.760	74.686	75	0.42

Column B ID: DB-1

TARGET ANALYTE	RETENTION TIME (min)	RT WINDOW (min) FROM	RT WINDOW (min) TO	MEASURED CONCENTRATION (ug/mL)	KNOWN CONCENTRATION (ug/mL)	%D
Isopropanol-d8	3.285	3.032	3.568	77.189	75	2.92
Acetone	3.140	2.897	3.411	75.075	75	0.10
Butanol	7.618	7.337	7.937	76.178	75	1.57
Methanol	2.097	1.936	2.275	74.962	75	0.05
Methyl ethyl ketone	5.598	5.295	5.939	74.777	75	0.30
Ethyl ether	3.667	3.385	3.981	71.924	75	4.10
Isobutanol	6.682	6.393	7.011	75.451	75	0.60
Pyridine	9.469	9.179	9.797	74.880	75	0.16

Acceptance Criteria: %D $\leq$ 15%
Retention Times within RT Window

Z = %D > 15%
I = Retention Time outside RT Window

TOTAL NHVOC ANALYSIS
MDL REPORTING FORM

Idaho Cleanup Project
Analytical Laboratories Department
TRU Waste Characterization Program

Preparation Method: ACMM-9441-R12
Analysis Method: ACMM-9441-R12
MDL Determination Date: 09/21/2006

Instrument ID GC-1
Sample Matrix: SOLID

COLUMN A ID: DB-624

TARGET ANALYTE	REPORTED MDL (mg/kg)	PROGRAM REQUIRED MDL (mg/kg)	PRQL (mg/kg)
Isopropanol-d8	2.0	10	100
Acetone	2.0	10	100
Butanol	1.0	10	100
Methanol	1.0	10	100
Methyl ethyl ketone	1.0	10	100
Ethyl ether	2.0	10	100
Isobutanol	1.0	10	100
Pyridine	2.0	10	100

COLUMN B ID: DB-1

TARGET ANALYTE	REPORTED MDL (mg/kg)	Program Required MDL (mg/kg)	PRQL (mg/kg)
Isopropanol-d8	2.0	10	100
Acetone	1.0	10	100
Butanol	1.0	10	100
Methanol	1.0	10	100
Methyl ethyl ketone	1.0	10	100
Ethyl ether	2.0	10	100
Isobutanol	1.0	10	100
Pyridine	2.0	10	100

SOLIDS: MDLs calculated assuming 3.00 gram sample and 22mL extraction volume

Section 6

Data Review Checklists

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070308 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000296 & 0000298	If Yes NCR Number: _____
Reviewer: Cary Richardson / Cary Richardson 03/08/07 (Printed Name/Signature / Date)		

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

	Requirement	Yes	No	Comments
	1. FIELD CHAIN-OF-CUSTODY (COC)			
a.	Was a COC form received with each shipping container?	☒	☐	
b.	Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c.	Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d.	Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e.	Is the correct analysis requested for each sample?	☒	☐	
f.	Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	2. SAMPLE LABELS			
a.	Was each sample received with a completed sample label?	☒	☐	
b.	Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c.	Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d.	Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e.	Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	3. SAMPLE INTEGRITY			
a.	Were custody seals used on the shipping container?	☒	☐	
b.	Were custody seals used on each individual sample container?	☒	☐	
c.	Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d.	Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e.	Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f.	Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g.	Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
	4. INTERNAL SAMPLE TRACKING			
a.	Were all samples logged into the Analytical Computer System?	☒	☐	
b.	Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c.	Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d.	Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

ALD Document: Log 0703083 AMWTP_836.04.tif - Scanned:3/12/2007 12:55:28 PM

TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 070312 3	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000299, 0000300 & 0000301	If Yes NCR Number: _____
Reviewer: Cary Richardson (Cary Richardson) 03/12/07		
Printed Name/Signature	Date	

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

	Requirement	Yes	No	Comments
	1. FIELD CHAIN-OF-CUSTODY (COC)			
a.	Was a COC form received with each shipping container?	☒	☐	
b.	Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c.	Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d.	Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e.	Is the correct analysis requested for each sample?	☒	☐	
f.	Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	2. SAMPLE LABELS			
a.	Was each sample received with a completed sample label?	☒	☐	
b.	Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c.	Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d.	Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e.	Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	3. SAMPLE INTEGRITY			
a.	Were custody seals used on the shipping container?	☒	☐	
b.	Were custody seals used on each individual sample container?	☒	☐	
c.	Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d.	Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e.	Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f.	Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g.	Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
	4. INTERNAL SAMPLE TRACKING			
a.	Were all samples logged into the Analytical Computer System?	☒	☐	
b.	Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c.	Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d.	Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10Mar05

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TWCP SAMPLE RECEIVING & CUSTODY REVIEW CHECKLIST
INEEL ANALYTICAL LABORATORIES DEPARTMENT

Log Number: 0703143	IDC #: MD-836	NCR Initiation Required? ☐ Yes ☒ No
COC #(s):	0000302	If Yes NCR Number:
Reviewer: Cary Richardson (Printed Name/Signature) Cary Richardson 03/14/2007 (Date)		

Instructions:
Complete one checklist per log. Enter appropriate response for each question. Each "No" response requires explanation. A "No" response to a question may require initiation of an NCR

	Requirement	Yes	No	Comments
	1. FIELD CHAIN-OF-CUSTODY (COC)			
a.	Was a COC form received with each shipping container?	☒	☐	
b.	Did the content of each shipping container match that listed on the associated COC form?	☒	☐	
c.	Were all custody transfers completely documented by signatures of relinquishers and receivers, with date and time of transfer?	☒	☐	
d.	Does all sample information (e.g., sample ID, sampling date and time, sampling batch) listed on the COC form corresponds with the information on the sample labels?	☒	☐	
e.	Is the correct analysis requested for each sample?	☒	☐	
f.	Were any corrections on the COC appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	2. SAMPLE LABELS			
a.	Was each sample received with a completed sample label?	☒	☐	
b.	Do the field IDs on the sample labels correspond to those on the field COC form?	☒	☐	
c.	Were the sampling batch number, sampling date, time and requested analysis recorded on each sample label, and they correspond with those recorded on the COC?	☒	☐	
d.	Are the sampler initials, organization and sample description recorded on each sample label?	☒	☐	
e.	Are any corrections on the sample labels appropriately made (a single line through the incorrect entry and correct data written in [not overwritten], initialed and dated)?	☒	☐	
	3. SAMPLE INTEGRITY			
a.	Were custody seals used on the shipping container?	☒	☐	
b.	Were custody seals used on each individual sample container?	☒	☐	
c.	Were all custody seals intact and undamaged upon receipt at ALD?	☒	☐	
d.	Were all custody seals placed such that the container could not be opened without damaging the seal?	☒	☐	
e.	Has the physical integrity of all samples been maintained (i.e., no cracks)?	☒	☐	
f.	Were all samples preserved during shipment with "Blue Ice" or equivalent cooling mechanism?	☒	☐	
g.	Were all samples placed in refrigerated storage (4° ± 2° C) after login?	☒	☐	
	4. INTERNAL SAMPLE TRACKING			
a.	Were all samples logged into the Analytical Computer System?	☒	☐	
b.	Was all sample information correctly transcribed from the field documentation into the ACS?	☒	☐	
c.	Were all sample bottles labeled with the ACS log number and the laboratory sample ID?	☒	☐	
d.	Were internal tracking forms prepared for each log?	☒	☐	

Contact the sampling organization if any discrepancies are found in the field COC and sample label documentation. Document the name of the person Contacting the sampling organization, the name of the person contacted, the date and time of the contact, and the resolution of the problem.

Notes:

Form effective Date 10May05

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ICP Analytical Laboratories Department

Data Generator Checklist for TWCP

Data Report Number: ALD07007N	Analytical Batch: 0703083
Analysis Procedure: ACMM-9441	Procedure Revision: 12
Analysis Date(s): 3/13/07 and 03/19/07	
Data Generator Signature:	

Criteria	Yes	No	Comments
1. Samples analyzed in accordance with cited analytical method.	✓		
2. All logbook entries completed in accordance with MCP-2011.	✓		
3. All data entry and corrections made in accordance with MCP-2008.	✓		
4. All raw data signed/initialed and dated in indelible black ink.	✓		
5. Data reviewed for completeness and accuracy.	✓		

ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total NHVOCs in Homogenous Solids and Soil/Gravel by GC/FID

Analytical Batch: 0703083	Data Report: ALD07007N	Method: ACMM-9441

Run # and Analysis Date	Data Generator	ITR Review Date	ITR Release Signature	ITR Release Date
#1 03/13/07	Scott Pristupa	4-10-07		4-10-07
#2 03/19/07	Scott Pristupa	4-10-07		
#3				

Instructions: Complete one checklist per analytical batch. If more than three instrument runs were needed to complete the batch analysis, use a second checklist. Enter the appropriate response for each question. Each "No" response requires explanation.

Requirement	Run #1 Yes	Run #1 No	Run #2 Yes	Run #2 No	Run #3 Yes	Run #3 No	Comments
1. Retention Time (RT) Windows	///	///	///	///	///	///	
a. Have all RT windows used with this analytical batch been verified and approved for use as documented by a completed RT Window Determination and Initial Calibration Independent Technical Review Checklist?	✓		✓				
2. Initial Calibration (ICAL)	///	///	///	///	///	///	
a. Have all ICALs used with this analytical batch been verified to meet specifications and approved for use as documented by a completed RT Window Determination and Initial Calibration Independent Technical Review Checklist?	✓		✓				
3. Continuing Calibration Verification (CCV)	///	///	///	///	///	///	
a. Were CCV standards analyzed at the beginning of each 12-hour analytical shift (before analysis of samples), and at the end of the shift (after sample analysis and within 12 hours of the beginning CCV)?	✓		✓				
b. Are all target analyte peaks within the initial RT windows for the beginning CCV?	✓		✓				
c. Are all target analyte peaks within the daily RT (centered around beginning CCV RTs) windows for the ending CCV?	✓		✓				
d. Are the measured concentration %Ds ≤15% for each target analyte on both analytical columns for the beginning and ending CCVs?	✓		✓				
4. Samples (Including LCSs, Blanks, MS and MSDs)	///	///	///	///	///	///	
a. Are all detected target analytes identified on both the quantitation and confirmation column with peaks within the daily RT windows and in concentrations ≥MDL?	✓		✓				
b. *Were all samples having analytes detected in amounts exceeding the calibration range reanalyzed on a dilution?*	NA		NA				
c. Do all surrogate compound recoveries meet ACMM-9441 acceptance criteria?	✓		✓				
d. Are all analytes showing discrepancies (interferences) between columns quantitated per ACMM-9441?	✓		✓				
e. Are analyte retention time windows checked for multiple peaks falling within the RT windows?	✓		✓				
f. Have peak baselines been checked for correct integration?	✓		✓				
g. Were the correct quantitation routines used for each column?	✓		✓				
h. Are peak areas proportionally consistent with those of the CCV?	✓		✓				

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ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total NHVOCs in Homogenous Solids and Soil/Gravel by GC/FID

Analytical Batch: 0703083	Data Report: ALD07007N	Method: ACMM-9441

Requirement	Yes	No	Comments
5. Blanks	///	///	
a. Was at least one unique laboratory blank extracted and analyzed with the analytical batch?	✓		
b. Was a blank (laboratory or method) analyzed daily prior to the analysis of samples?	✓		
c. Are all blank results ≤3 x program-required MDLs for all target analytes?	✓		
6. Laboratory Control Samples (LCSs)	///	///	
a. Was at least one unique LCS extracted and analyzed with the analytical batch?	✓		
b. Are all LCSs prepared from a standard source different from that used for the calibration standards?	✓		
c. Does the LCS contain all of the NHVOC target analytes?	✓		
d. Are the percent recoveries for each target analyte in each LCS between 60% and 150%?	✓		
7. Matrix Spike and Matrix Spike Duplicate Samples (MS/MSD)	///	///	
a. Was at least one matrix spike sample (MS) analyzed with the analytical batch?	✓		
b. Was at least one matrix spike duplicate sample (MSD) analyzed with the analytical batch?	✓		
c. Are all percent recoveries for the MS and MSD between 60% and 150%?	✓		
d. Are all RPDs between the MS and MSD ≤50?	✓		
8. Sample Integrity Verification	///	///	
a. Is COC documentation complete and accurate for all reported samples?	✓		
b. Was physical integrity of all samples verified as satisfactory at VTSR?	✓		
c. Were all samples and associated extracts stored at 4 ± 2 °C between receipt and analysis?	✓		
d. Were all samples (including dilutions and reanalyses) analyzed within 14 days of collection?	✓		
9. Instrument, Method and Personnel Qualification Verification	///	///	
a. Were all analytical tasks, including sample analysis and supporting method performance and ICALs, conducted by personnel having current TWCP qualifications?	✓		
b. Was acceptable demonstration of precision, accuracy, and MDLs performed within the last 6 months?	✓		
10. Supporting Data Package Completeness	///	///	
a. Are all raw data and instrument printouts signed/initialed (in permanent black ink) and dated by the chemist/analyst and included in the data package?	✓		
b. Are copies of all extraction/preparation and analysis run log books for the analytical batch included in the data package?	✓		
c. Are standard certificates and QC Lab preparation records present and accurate for all working, intermediate and stock standard solutions used?	✓		
d. Are all changes to original data made by line-out of incorrect data, initialed/signed and dated by the person making the change?	✓		

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ICP Analytical Laboratories Department
Independent Technical Review (ITR) Checklist for TWCP
Total NHVOCs in Homogenous Solids and Soil/Gravel by GC/FID

Analytical Batch: 0703083	Data Report: ALD07007N	Method: ACMM-9441

Requirement		Yes	No	Comments
	11. Data Report Completeness	///	///	
a.	Does the report contain a Data Report Narrative that addresses, at a minimum: 1) any deviations from ACMM-9441 and the justification for the deviations; 2) any QC samples that failed the acceptance criteria, and their impact on data quality; 3) any NCRs associated with the reported samples; and 4) any problems or unusual conditions encountered during the analysis?	✓		
b.	Are copies of any NCRs associated with the data included?	✓		
c.	Are Analysis Data Sheets present and accurate for all samples in the analytical batch?	✓		
d.	Are the analyte concentrations on the Analysis Data Sheets reported in units of mg/kg and correctly rounded to 2 significant figures?	✓		
e.	Are U, J, B, D, E, H, and Z data qualifying flags correctly assigned on the reporting forms?	✓		
f.	Are reporting forms present and accurate for surrogate recoveries, MS/MSDs, LBs, LCSs, ICALs, CCVs, MDLs and Analyte Identification?	✓		
g.	Are copies of all COC documentation included?	✓		
h.	Have all data received documented data generator review and signature?	✓		
i.	Were all calculations performed using validated software or 100% manually verified?	✓		
j.	Have the data been reviewed for transcription errors?	✓		
k.	Are all pages in the data report legible and correctly paginated?	✓		

Additional Comments:

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BDR No. ALD07007N (SSC07-00101)

	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
	QC Elements					
1	Has the BDR received a Data Generation Level (DGL) Independent Technical Review?	X			MP-TRUW-8.2, B3-10a	
2	Is there a minimum of one laboratory blank analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
3	Are laboratory blank results ≤ 3 x MDL/IDL (≤ 5 x IDL for ICP-MS)?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
4	Is there a minimum of one LCS analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
5	Are the %R for the LCS analytes within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
6	Is there a minimum of one matrix spike (MS) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
7	Are the %R for the MS within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
8	Is there a minimum of one matrix spike duplicate (MSD) analyzed per analytical batch?	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	
9	Are the %R for the MSD within the acceptance range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals)	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
10	Are the precision QAOs (%RSD or RPD) for the MSD within the acceptable range? (Table B3-4 for VOAs, B3-6 for SVOAs, and B3-8 for Metals) Has the F-test (or equivalent) or control chart sampling precision been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	
	VOCs, NHVOCs, SVOAs					
11	This analytical batch is specific to metals, therefore this section does not apply. **Skip to question 33.**		X			This is an NHVOC batch.
12	Are all analytical samples spiked with surrogate compounds?	X			MP-TRUW-8.2, Tables B3-5, B3-7	

490000

	BDR No. ALD07007N (SSC07-00101)					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
13	Are the surrogate compound recoveries (%R) within acceptance criteria and averaged from a minimum of 30 samples? **NOTE**: *After 30 samples, the %R is ± 3 sigma.*	X			MP-TRUW-8.2, Tables B3-5, B3-7	
	GS/MS Inititial Calibration					
14	Was there a DFTPP or BFB tune performed at a minimum frequency of every 12 hours?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
15	Were the method ion abundance criteria satisfied as determined by the ITR's validation?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
16	Was the initial calibration correctly prepared and performed? **NOTE**: *Minimum of 5 standards containing all method analytes and at least one standard < PRQL. Six standards are needed if second order regression is used.*			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
17	Was the %RSD ≤ 30 for CCC or ≤ 15 for all other compounds?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
18	If %RSD is ≤ 15, is average RRF used?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
19	If %RSD is > 15, is the regression equation used, and is the R or R^2 ≥ 0.990?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
20	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria? Chloromethane ≥ 0.10 1,1-Dichloroethane ≥ 0.10 Bromoform ≥ 0.10 Chlorobenzene ≥ 0.30 1,1,2,2-Tetrachloroethane ≥ 0.30 All remaining SPCCs ≥ 0.05			X	MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	This is a NHVOC batch.
21	Are the RRFs for all non-SPCCs ≥ 0.01?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.

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	BDR No.: ALD07007N (SSC07-00101)					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
	GC/MS Continuing Calibration					
22	Is calibration verification performed at a minimum frequency of every 12 hours?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
23	Are response factor %Ds for the target analyte CCCs ≤ 20?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
24	Do the minimum mean response factors for the volatile SPCCs meet acceptance criteria?					
	Chloromethane ≥ 0.10					
	1,1-Dichloroethane ≥ 0.10					
	Bromoform ≥ 0.10					
	Chlorobenzene ≥ 0.30					
	1,1,2,2-Tetrachloroethane ≥ 0.30				MP-TRUW-8.2, Tables B3-5, B3-7, SW-846 Methods 8260B and 8270C	
	All remaining SPCCs ≥ 0.05			X		This is a NHVOC batch.
25	Are the RRFs for all non-SPCCs ≥ 0.01?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
26	Is the RT for CCAL internal standards ± 30 seconds from the last daily calibration check?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
27	Is the CCAL internal standard area count > 50% and < 200% from the last daily calibration check?			X	MP-TRUW-8.2, Tables B3-5, B3-7	This is a NHVOC batch.
	GC/FID (used for NHVOC analysis only)					
28	Is the initial 3-point initial calibration, consisting of at least five standards containing all target analytes, complete? **NOTE:** *One standard must be less than the PRQL.*	X			MP-TRUW-8.2, Table B3-5	
29	Is the correlation coeffficient ≥ 0.990, or %RSD ≤ 20 for all analytes?	X			MP-TRUW-8.2, Table B3-5	
30	Has a CCV standard been analyzed at the beginning of each 12-hour shift to verify ICAL performed at a mimimum frequency of every 12 hours?	X			MP-TRUW-8.2, Table B3-5	
31	Are the %Ds ≤ 15 for all analytes?	X			MP-TRUW-8.2, Table B3-5	
32	Are the RTs for continuing calibrations ± 3 standard deviations from the ICAL?	X			MP-TRUW-8.2, Table B3-5	

690000

	BDR No.:ALD07007N (SSC07-00101)					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
	METALS					
33	This analytical batch is specific to organics, therefore this section does not apply. **Skip to question 48.**	X				This is an NHVOC batch.
34	Is the ICP serial dilution performed once per analytical batch?				MP-TRUW-8.2, Table B3-9	
35	Is the 5x serial dilution result ≤ 10% D of initial value for sample results > 50 x IDL? If no, result must be flagged "Z".				MP-TRUW-8.2, Table B3-9	
	ICP-AES Calibration					
36	Is initial calibration, including one blank and one standard, performed each day of operation?				MP-TRUW-8.2, Table B3-9	
37	Is the %R for the daily ICV check standard within the 90-110% acceptance range for the ICV solution?				MP-TRUW-8.2, Table B3-9	
38	Is continuing calibration performed every 10 samples and at the beginning and end of the run?				MP-TRUW-8.2, Table B3-9	
39	Is the %R for the check standards within the 90-110% range?				MP-TRUW-8.2, Table B3-9	
40	Is interference correction verification performed at the beginning and end of the analytical batch or every 8 hours, whichever is more frequent?				MP-TRUW-8.2, Table B3-9	
41	Are solutions containing interference plus analytes within the 80-120% acceptance range for all analytes? NOTE: *If response is no and interferents are found at levels greater than the ICS(A) solution, write an NCR unless one has already been initiated at the DGL.*				MP-TRUW-8.2, Table B3-9	

070000

	BDR No.:ALD07007N (SSC07-00101)					
	Question	Response Yes	Response No	Response N/A	Requirement(s)	Comment(s)
	CVAA Calibration (used for mercury analysis only)					
42	Is a 5-point initial calibration, including a blank, performed each day of operation? **NOTE:** *At least one QC or calibration standard must be ≤ the PRQL.*				MP-TRUW-8.2, Table B3-9; ACMM-2810, Section 7.9	
43	Is the CVAA serial dilution performed once per analytical batch? **NOTE:** *Not required if %R of the sample (S) and sample duplicate (SD) are 100 ± 20 or Hg is below 10 x IDL for all samples in the batch.*				ACMM-2810, Section 7.20	
44	Is the %R for the ICV solution within 80-120% for the ICV solution?				MP-TRUW-8.2, Table B3-9	
45	Is the regression coefficient ≥ 0.995?				MP-TRUW-8.2, Table B3-9	
46	Is continuing calibration performed every 10 samples and at the beginning and end of the run?				MP-TRUW-8.2, Table B3-9	
47	Is %R for the check standards within the 80-120% acceptance range?				MP-TRUW-8.2, Table B3-9	
	Sample Handling Requirements					
48	Have samples been properly preserved (cooled to 4°C, +/- 2°C)?	X			MP-TRUW-8.2, Table B1-4	
49	Are holding times between sample collection and sample extraction (preparation) within 14 days for VOC/SVOC or within 180 days for metals? Note: Holding time for Hg is 28 days.	X			MP-TRUW-8.2, Table B1-4	
50	Are holding times between sample extraction and analysis within the 40-day requirement? **NOTE:** *Not a requirement for metals.*	X			MP-TRUW-8.2, Table B1-4	
	Analytical Batch/BDR & Reporting Requirements					
51	Are there 20 or fewer samples analyzed in the batch (excluding laboratory QC samples) and within 14 days of the validated time of sample receipt of the first sample in the batch?	X			MP-TRUW-8.2, B3-10	
52	Were proper procedures followed to ensure representative samples (Include procedure number used for analysis in comment)?	X			MP-TRUW-8.2, B3-10b(1)	

140000

	BDR No. ALD07007N (SSC07-00101)					
	Question	Response Yes	No	N/A	Requirement(s)	Comment(s)
53	Is the BDR complete (all pages identified in the BDR and numbered accordingly)?				MP-TRUW-8.2, Table B3-13	
	BDR number and date					
	Sample numbers and applicable QC designations					
	Current implementing procedure (including method if more than one method cited)					
	QC sample results					
	Sample data forms including reduced data for target analytes and TICs					
	Chains of Custody					
	Evidence of sample preservation					
	Evidence of holding times					
	Cross-reference of field numbers to laboratory sample numbers					
	Analysis dates, times, and operator signatures					
	TIC evaluations as applicable					
	Reporting flags as applicable, *explained in the narrative*					
	Report narrative					
	Associated NCRs					
	Applicable Data Review Checklists					
	Batch Data Report Supplemental Comment Form (Form-1491)	X				There are no NCRs nor Form-1491 associated with this batch data report.
54	Is all data reported properly with correct units and significant figures?	X			MP-TRUW-8.2, B3-10b(2)	
55	Were reporting flags correctly assigned and included in the case narrative?	X			MP-TRUW-8.2, B3-10a	
56	Are the MDLs, IDL, PRDL, PRQL demonstration, and method performance samples current and was one standard below the PRQL? NOTE: *MPS should be performed semi-annually.*	X			MP-TRUW-8.2, Tables B3-5, B3-7, B3-9	On file at the laboratory.
57	Has the 90% completeness requirement for analytical results been met?	X			MP-TRUW-8.2, Tables B3-4, B3-6, B3-8	

270000

	BDR No.:ALD07007N (SSC07-00101)					
	Question	Response			Requirement(s)	Comment(s)
		Yes	No	N/A		
58	Are the traceable standards used to generate these data referenced in the BDR?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
59	Was representativeness achieved by collecting unbiased samples?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	
60	Is the analytical laboratory PDP participation current and acceptable?	X			MP-TRUW-8.2, B3-6, B3-7, B3-8	*On file at the laboratory.*
61	Is the ITR checklist complete?	X			MP-TRUW-8.2, B3-10b(2)	
62	The data for all containers in this BDR are complete, properly documented, technically reasonable, representative, and meet the review, validation, and verification requirements.	X			MP-TRUW-8.2, B3-10b(2)	
63	Review all NCRs, open and closed. Can the batch be promoted?	X			MP-TRUW-8.2, Table B3-13	No NCRs associated with this batch.
64	Is all data associated with this BDR acceptable for signature release?	X			MP-TRUW-8.2, B3-10b(a)	

SPM George Byram

Signature/Date: George Byram 4/28/07

000073

Acronym Key

%D - percent difference
%R - percent recoveries
%RSD - percent relative standard deviation
AES - Atomic Emission Spectroscopy
BFB - Bromofluorobenzene
CCAL - continuing calibration
CCC - calibration check compounds
CCV – continuing calibration verification
CVAA - Cold Vapor Atomic Absorption
DFTPP - Decafluorotriphenylphosphine
GC/FID - Gas Chromatography/Flame Ionization Detection
GC/MS - Gas Chromatography/Mass Spectrometry
ICP-MS - Inductively Coupled Plasma-Mass Spectroscopy
ICS(A) - interferent check sample
ICV - initial calibration verification
IDL - instrument detection limit
ITR - Independent Technical Reviewer
LCS - laboratory control sample
MDL - method detection limit
MPS – method performance sample
PDP - Performance Demonstration Program
PRDL - Program Required Detection Limit
PRQL - Program Required Quantitation Limit
QAO - quality assurance objective
R, R^2 - correlation coefficient
RPD - relative percent difference
RRF - relative response factor
RT - retention time
SPCC - system performance check compound
TIC - tentatively identified compound

470000

AMWTP Advanced Mixed Waste Treatment Project	Job Analysis Task Listing	FORM-1244 Rev. 2A MP-RTQP-14.6 Effective Date: TBD Page 1 of 5

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK PLAN

FOR
Acceptable Knowledge Expert
QCAKE01A

At
AMWTP

Date: 1-26-2011

Revision: 3

Instructional Analyst: Dave Butler

REVIEW

Ralph Hartline Training Manager/Supervisor Print/Type Name	Training Manager/Supervisor Signature	48593 S No.	2/24/11 Date

APPROVAL

Jim Jackson Line Manager/Supervisor Print/Type Name	Line Manager/Supervisor Signature	104550 S No.	02/15/11 Date

BEST AVAILABLE COPY

Submitted By: Dave Butler Date: 12/13/10

MODIFICATION RECORD

Change Number	Affected Pages	Description of Change	Management Approval	Date
0	All	Initial Issue	Ralph Hartline	2/28/07
1	All	Update to current format & to add new tasks	Steve Carpenter	7/27/09
2		Rev. 2 of the JTAL was never used.	N/A	N/A
3	5	Add knowledge item (19a) under section "E" to state, "Know what actions to take in the event that a containers IDC changes to one that may be potentially incompatible".	Jim Jackson	2-24-11

TABLE TOP JOB ANALYSIS PROCESS

On 2/07/2008 an evaluation was made for the task list that needed to be generated for the AMWTP Storage operatin by a training analyst. The initial task list should have been presented to a panel of Subject Matter Experts from the AMWTP Project for review and validation. However, since they weren't done by the previous Contractors at AMWTP, we are now trying to comply with the procedures that call out what needs to be done when developing a course. The review and validation panel should consist of senior operators, one management, and one training specialist. Using a tabletop approach, the SME panel would review the task list and validate that the tasks were applicable to the position. The process that should be used is outlined in greater detail below:.

1. Generate an initial task list from the existing job analysis.
2. Assemble SME panel from the Characterization arena.
3. Orient the team to the process.
4. Review the boundaries of the Job Analysis.
5. Verify task list is complete using a combination of these methods:
    a. Group discussion
    b. Review existing job analysis

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.

7. Validate task list to be applicable to the position.
    a. Yes, applicable to the position.
    b. No, not applicable to the position.

8. Select tasks for training based on the following criteria.
    a. Non-Formal training tasks (impact: not included in formal training program).
        - Task performed often enough that one does not forget how to do it.
        - There is low difficulty when performing the task.
        - There is low probability of error when performing task.
        - Improper task performance makes no difference in plant operations or harm to personnel (low consequences of error).
        - Task can be learned and competently performed with just mentoring, informed by OJT, job experience, and/or a job aid/procedures.
    b. Pre-train tasks (impact: tasks are taught formally, on an as-needed basis).
        - Task is only performed once every 2-1/2 to 5+ years.
        - Time would be available for training prior to need for task performance.
        - If task is performed improperly, there are moderate – to high – consequences.
    c. Train tasks (impact: tasks are formally taught once during initial training using boiler-plate lessons plans and tests).
        - Improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error).
        - Related task performance maintains proficiency on this task.
        - One-time training is sufficient to learn competent task performance.
    d. Over-train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests).
        - Task requires frequent practice to maintain proficiency.
        - Proper task performance is critical to safety, extreme consequences-(serious injury, death, or site emergency).
        - Task performed seldom enough that one may forget how to perform task.

The participants involved in creating the Task List include:

Print Name:	Dave Butler	Signature:		S No.:	103532	Date: 12/13/10
Job Title:	Training Instructor	Phone No.:	557-0979			
Print Name:	Bill Erhardt	Signature:		S No.:	C85490	Date: 2/10/11
Job Title:	AKE	Phone No.:	557-6341			
Print Name:	Steve Carpenter	Signature:		S No.:	104550	Date: 2.10.11
Job Title:	AKE Manager	Phone No.:	6323			
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
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Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				
Print Name:		Signature:		S No.:		Date:
Job Title:		Phone No.:				

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NFT	PT	T	OT
A	**Regulations, Requirements and Procedures**				
1	Review the AK requirements in the AMWTP Quality Assurance Project Plan				X
2	Have a working knowledge of AMWTP policies, plans, procedures, and other implementing documents applicable to AK.			X	X
3	Comply with all relevant health and safety requirements.				X
4	Be familiar with Emergency Action policies/procedures and methods for reporting/resolving unsafe work practices.				X
B	**Acceptable Knowledge Documentation**				
5	Have knowledge of the primary site-specific procedures associated with waste characterization using acceptable knowledge.			X	
6	Have knowledge of the state and federal RCRA regulations associated with solid and hazardous waste determinations.			X	
7	Have knowledge of the various types of AK source documentation collected for compilation into an auditable record.			X	
8	Have knowledge of data limitations and discrepancies that may occur in source documents and the process for resolution.			X	
9	Have knowledge of when an AK would develop and AK Resolution (AKR) vs. developing an AK Discrepancy Report (DR).			X	
10	Have knowledge of the consolidation of all historical AK information into a baseline summary document.			X	
11	Have knowledge of the process of summarizing an AK Source Document utilizing AMWTP Form-1068.			X	
C	**Waste Streams**				
12.	Have knowledge of how AMWTP has developed waste streams that will be characterized using AK.			X	
13.	Have knowledge of the process for designating Summary Category Groups, Waste Matrix Codes, EPA Hazardous Waste Codes and waste material parameters to a waste stream.			X	
14.	Have knowledge of the preparation and main components of a Waste Stream Profile Form and the associated Characterization Information Summary Report.			X	
D	**Non-Conformance Reports**				
15.	Discuss how nonconformances are processed, including discrepancy resolution and reporting.			X	
E	**Software and Database Management**				
16.	Have the ability to prepare an AKR using the appropriate AMWTP Form.			X	
17.	Have the ability to prepare the required AMWTP Forms for summarizing and submitting an AK source document.			X	
18.	Have the ability to access the Waste Tracking System (WTS) and locate screens used by the AKE, including the AK Evaluation (container queue) screens.			X	
19.	Know the process to evaluate and resolve container historical IDs in WTS.			X	
19a	Know what actions to take in the event that a containers IDC changes to one that is potentially incompatible.				X
20.	Know the process of managing core and debris container lots.			X	
21.	Have the ability to access and navigate the Trackwise system from NCR creation to verification of NCR closure.			X	

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Tim Venneman S# 71915

ACCEPTABLE KNOWLEDGE EXPERT

Qualification Checklist Number: QCAKE01A

The manager granting re- qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Re-Qualification granted by:	Jim Jackson TRU Programs Manager (Print Name)	Signature	9/29/11 Date

Required Attachments: Check box if attached	Exemption Form (if used) ☐	Remedial Form (if used) ☐

Qual Pack Issued to Trainee by :	Dave Butler Print Name	Signature	8/25/11 Date

TRU WASTE DEPT.
OCT 03 2011
Mails

Qualification Checklist Approval Section

Line Manager Approval	James Jackson Print Name	Signature on file Signature	2/24/11 Date
Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	2/24/11 Date

QC 10-31-11 Kcm

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name TIM VENNEMAN S# 7195

Revision Record				
Revision Number	Affected Pages	Description of Revision	Management Approval	Date
0	All	Initial Issue	E. Torres	3/1/07
1	All	Complete revision/rewrite. Update Checklist from previous revision.	R. Hartline	7/20/09
2	All	Editorial changes	J. Jackson	9/22/09
3	6	Add items 3.3.12 and 3.3.13 to section 3.3 (Knowledge section).	J. Jackson	2/24/11

Mod Number	Affected Pages	**Modification Record** Description of Change	Management Approval	Date

- Applicable Manager must sign for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name TIM VENNEMAN S# 71915

Signature Roster

Personnel signing blocks in this Qualification Checklist must print their name legibly, sign and initial. Sign off by the Evaluator indicates successful performance of the task IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Steve Carpenter		SC
Eric Schweinsberg		ES

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name TIM VENNEMAN S# 71915

1.0 Scope

Completion of this re-qualification checklist is required for all personnel performing tasks as an Acceptable Knowledge Expert (AKE). This checklist specifies the prerequisite knowledge, training, and OJT objectives necessary to assure the candidate possesses the comprehensive knowledge and skills required for compliant task performance, and is qualified to perform these tasks.

Extended absence (greater than six months) and/or performance deficiencies may result in disqualification of the individual by the AK Manager until any or all conditions are remediated.

Upon successful completion of this checklist, the candidate shall be able to independently perform duties of an AKE.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of an Acceptable Knowledge Expert (AKE).

The employee has completed all initial training *and is current* on the applicable qualifications and/or checklists identified on the ITP to support this qualification checklist.

Manager assigned Completion target date: 9.30.11

Employee's Production Manager — Date: 9.29.11

	Date Requirement Was Completed	**Signature** (Training representative or Manager)	**Date**
2.1 Initial QCAKE01A checklist	10-13-09		8/25/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name TIM FOREMAN S# 71915

3.0 Initial & Continuing Training / Knowledge / Required Reading

The training courses identified pertain to the job function/duties and will be verified complete by the AK Manager or Training Specialist.

3.1 Training Courses :	Date Requirement was Complete	Recurring Training Frequency
None		

The Trainee will discuss the Required Reading documents with the qualified OJT Instructor, and/or AK Manager. These items will be signed off by the OJT instructor or AK Manager after the discussion.

3.2 Required Reading:	OJT Instructor / AK Manager Signature	Date
3.2.1 Collection, Review, and Management of Acceptable Knowledge Documentation. (MP-TRUW-8.13)		9.29.11
3.2.2 Preparation of Waste Stream Profile Forms (MP-TRUW-8.14)		9.29.11

The knowledge items identified pertain to the job function/duties and following an acceptable discussion will be signed by the qualified OJT Instructor or AK Manager.

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.4 Discuss the primary site-specific processes associated with waste characterization that augments acceptable knowledge.		9.29.11
3.3.5 Discuss data limitations and discrepancies that may occur in source documents and the process for resolution.		9.29.11
3.3.6 Discuss the required AK information necessary for a baseline summary document.		9.29.11
3.3.7 Discuss when an AK would develop an AK Resolution (AKR) vs. developing an AK Discrepancy Report (DR).		9.29.11

Employee Name TIM VENNEMAN S# 71915

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.8 Discuss how AMWTP designates waste streams.		9.29.11
3.3.9 Discuss the process for assigning Summary Category Groups, Waste Matrix Codes, EPA Hazardous Waste Codes and waste material parameters to a waste stream.		9.29.11
3.3.10 Discuss the preparation and main components of a Waste Stream Profile Form and the associated Characterization Information Summary Report for each Summary Category Group.		9.29.11
3.3.11 Discuss how non-conformances are processed, including discrepancy resolution and reporting.		9.29.11
3.3.12 Discuss how potentially incompatible IDC changes are managed (documented, notifications to be made, etc.)		9.29.11
3.3.13 Discuss any recent lessons learned regarding IDC changes to potentially incompatible containers.		9.29.11

4.0 OJT Training Objectives

The following training objectives are conducted per MP-COPS-9.34, Conduct of Operations Control of On-Shift Training. These elements are to be performed (P), simulated (S) or discussed (D) as appropriate. At the conclusion of the instructions phase, the trainee will be assessed per MP-RTQP-14.13, Performance Assessments. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

AKE Tasks	P S D	Evaluator Signature & date
4.1.1 Prepare an AKR using Form-1070 for submittal.	P	9.29.11
4.1.2 Prepare the required AMWTP Forms for summarizing and submitting an AK source document for submittal.	P	9.29.11
4.1.3 Access the WTS AK Evaluation screen.	P	9.29.11
4.1.4 Evaluate and resolve a container historical ID.	P	9.29.11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name JIM VENNEMAN S# 71915

AKE Tasks	P S D	Evaluator Signature & date
4.1.5 Manage solids and debris container lots.	P	9.29.11
4.1.6 Access and navigate the TrackWise system from NCR creation to verification of NCR closure.	P	9.29.11

5.0 Emergency / Abnormal Conditions

The AKE must demonstrate adequate knowledge of each Emergency/Abnormal condition listed below through performance, simulation or discussion with an OJT Instructor, AKE Manager or SS. The scope of these items should pertain to the AKE's required duties.

Emergency / Abnormal Conditions	PS D	Evaluator signature	Date
5.1 Fire/Alarm	S D		9.29.11
5.2 Location of Fire Extinguishers/Fire Alarms	P		9.29.11
5.3 Evacuation Alarm	S D		9.29.11
5.4 Injured person	S D		9.29.11
5.5 Dropped Waste Container	S/D		9.29.11
5.6 Breached Waste Container	S/D		9.29.11
5.7 Take Cover Alarm	S/D		9.29.11
5.8 CAM Alarm	S/D		9.29.11
5.9 Spill/Contamination Release	S/D		9.29.11
5.10 Loss of ventilation/air	S/D		9.29.11
5.11 Loss of commercial power	S/D		9.29.11

6.0 Examinations (Sections 1-5 must be complete prior to testing)

Written Exam: None

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name TIM VENNEMAN S# 71915

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the AKE Manager (or designee) acknowledges that the trainee is competent and recommends that the employee be granted re-qualification in this job scope.		
Steve Carpenter		9.29.11
AKE Manager (Print Name)	Signature	Date

Upon satisfactory completion of this Re-Qualification Checklist, the TRU Programs Manager (or designee) may grant Re-Qualification to the trainee by signing on the cover page of this Re-Qualification Checklist.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT	QCAKE01A Rev 3

Employee Name Nancy Kirk S# 102910

ACCEPTABLE KNOWLEDGE EXPERT

Qualification Checklist Number: QCAKE01A

The manager granting re- qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Re-Qualification granted by:	S M Peterman		4/26/12
	TRU Programs Manager (Print Name)	Signature	Date

Required Attachments: Check box if attached	Exemption Form (if used) ☐	Remedial Form (if used) ☐

Qual Pack Issued to Trainee by :	Dave Butler		4/3/12
	Print Name	Signature	Date

Qualification Checklist Approval Section

Line Manager Approval	James Jackson	Signature on file	2/24/11
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	2/24/11
	Print Name	Signature	Date

Employee Name Nancy Kirk S# 102910

Revision Record				
Revision Number	Affected Pages	Description of Revision	Management Approval	Date
0	All	Initial Issue	E. Torres	3/1/07
1	All	Complete revision/rewrite. Update Checklist from previous revision.	R. Hartline	7/20/09
2	All	Editorial changes	J. Jackson	9/22/09
3	6	Add items 3.3.12 and 3.3.13 to section 3.3 (Knowledge section).	J. Jackson	2/24/11

Mod Number	Affected Pages	**Modification Record** Description of Change	Management Approval	Date

- Applicable Manager must sign for modifications.

Employee Name Nancy Kirk S# 102910

Signature Roster

Personnel signing blocks in this Qualification Checklist must print their name legibly, sign and initial. Sign off by the Evaluator indicates successful performance of the task IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Steve Carpenter		SC
Aaron Buckskin		AB
SM Peterman	SM Peterman	SMP

Employee Name Nancy Kirk S# 10291C

1.0 Scope

Completion of this re-qualification checklist is required for all personnel performing tasks as an Acceptable Knowledge Expert (AKE). This checklist specifies the prerequisite knowledge, training, and OJT objectives necessary to assure the candidate possesses the comprehensive knowledge and skills required for compliant task performance, and is qualified to perform these tasks.

Extended absence (greater than six months) and/or performance deficiencies may result in disqualification of the individual by the AK Manager until any or all conditions are remediated.

Upon successful completion of this checklist, the candidate shall be able to independently perform duties of an AKE.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of an Acceptable Knowledge Expert (AKE).

The employee has completed all initial training *and is current* on the applicable qualifications and/or checklists identified on the ITP to support this qualification checklist.

Manager assigned Completion target date: N/A

Employee's Production Manager

4/26/12 Date

	Date Requirement Was Completed	**Signature** (Training representative or Manager)	**Date**
2.1 Initial QCAKE01A checklist	4-20-10		4/3/12

Employee Name Nancy Kirk S# 102910

3.0 **Initial & Continuing Training / Knowledge / Required Reading**

The training courses identified pertain to the job function/duties and will be verified complete by the AK Manager or Training Specialist.

3.1 Training Courses :	Date Requirement was Complete	Recurring Training Frequency
None		

The Trainee will discuss the Required Reading documents with the qualified OJT Instructor, and/or AK Manager. These items will be signed off by the OJT instructor or AK Manager after the discussion.

3.2 Required Reading:	OJT Instructor / AK Manager Signature	Date
3.2.1 Collection, Review, and Management of Acceptable Knowledge Documentation. (MP-TRUW-8.13)		4.18.12
3.2.2 Preparation of Waste Stream Profile Forms (MP-TRUW-8.14)		4.18.12

The knowledge items identified pertain to the job function/duties and following an acceptable discussion will be signed by the qualified OJT Instructor or AK Manager.

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.4 Discuss the primary site-specific processes associated with waste characterization that augments acceptable knowledge.		4.18.12
3.3.5 Discuss data limitations and discrepancies that may occur in source documents and the process for resolution.		4.18.12
3.3.6 Discuss the required AK information necessary for a baseline summary document.		4.18.12
3.3.7 Discuss when an AK would develop an AK Resolution (AKR) vs. developing an AK Discrepancy Report (DR).		4.18.12

Employee Name Nancy Kirk S# 102910

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.8 Discuss how AMWTP designates waste streams.		4,18,12
3.3.9 Discuss the process for assigning Summary Category Groups, Waste Matrix Codes, EPA Hazardous Waste Codes and waste material parameters to a waste stream.		4,18,12
3.3.10 Discuss the preparation and main components of a Waste Stream Profile Form and the associated Characterization Information Summary Report for each Summary Category Group.		4,18,12
3.3.11 Discuss how non-conformances are processed, including discrepancy resolution and reporting.		4,18,12
3.3.12 Discuss how potentially incompatible IDC changes are managed (documented, notifications to be made, etc.)		4,18,12
3.3.13 Discuss any recent lessons learned regarding IDC changes to potentially incompatible containers.		4,18,12

4.0 OJT Training Objectives

The following training objectives are conducted per MP-COPS-9.34, Conduct of Operations Control of On-Shift Training. These elements are to be performed (P), simulated (S) or discussed (D) as appropriate. At the conclusion of the instructions phase, the trainee will be assessed per MP-RTQP-14.13, Performance Assessments. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

AKE Tasks	P S D	*Evaluator Signature & date*
4.1.1 Prepare an AKR using Form-1070 for submittal.	P	4,18,12
4.1.2 Prepare the required AMWTP Forms for summarizing and submitting an AK source document for submittal.	P	4,18,12
4.1.3 Access the WTS AK Evaluation screen.	P	4,18,12
4.1.4 Evaluate and resolve a container historical ID.	P	4,18,12

Employee Name Nancy Kirk S# 102910

AKE Tasks	PSD	Evaluator Signature & date
4.1.5 Manage solids and debris container lots.	P	4/18/12
4.1.6 Access and navigate the TrackWise system from NCR creation to verification of NCR closure.	P	4/18/12

5.0 Emergency / Abnormal Conditions

The AKE must demonstrate adequate knowledge of each Emergency/Abnormal condition listed below through performance, simulation or discussion with an OJT Instructor, AKE Manager or SS. The scope of these items should pertain to the AKE's required duties.

Emergency / Abnormal Conditions	PSD	Evaluator signature	Date
5.1 Fire/Alarm	S(D)		04/23/12
5.2 Location of Fire Extinguishers/Fire Alarms	(P)		04/23/12
5.3 Evacuation Alarm	S(D)		04/23/12
5.4 Injured person	S(D)		04/23/12
5.5 Dropped Waste Container	S(D)		04/23/12
5.6 Breached Waste Container	S(D)		04/23/12
5.7 Take Cover Alarm	S(D)		04/23/12
5.8 CAM Alarm	S(D)		04/23/12
5.9 Spill/Contamination Release	S(D)		04/23/12
5.10 Loss of ventilation/air	S(D)		04/23/12
5.11 Loss of commercial power	S(D)		04/23/12

6.0 Examinations (Sections 1-5 must be complete prior to testing)

Written Exam: None

Employee Name Nancy Kirk S# 102910

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the AKE Manager (or designee) acknowledges that the trainee is competent and recommends that the employee be granted re-qualification in this job scope.		
SM Peterman		4/26/12
AKE Manager (Print Name)	Signature	Date

Upon satisfactory completion of this Re-Qualification Checklist, the TRU Programs Manager (or designee) may grant Re-Qualification to the trainee by signing on the cover page of this Re-Qualification Checklist.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Steve Carpenter S# 104550

ACCEPTABLE KNOWLEDGE EXPERT

Qualification Checklist Number: QCAKE01A

The manager granting re- qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Re-Qualification granted by:	Eric Schweinsberg		9/12/12
	TRU Programs Manager (Print Name)	Signature	Date

Required Attachments: Check box if attached	Exemption Form (if used) ☐	Remedial Form (if used) ☐

Qual Pack Issued to Trainee by :	James Stamos		9-12-12
	Print Name	Signature	Date

Qualification Checklist Approval Section

Line Manager Approval	James Jackson	Signature on file	2/24/11
	Print Name	Signature	Date
Training Manager Approval	Ralph Hartline	Signature on file	2/24/11
	Print Name	Signature	Date

Employee Name Steve Carpenter S# 104550

Revision Record

Revision Number	Affected Pages	Description of Revision	Management Approval	Date
0	All	Initial Issue	E. Torres	3/1/07
1	All	Complete revision/rewrite. Update Checklist from previous revision.	R. Hartline	7/20/09
2	All	Editorial changes	J. Jackson	9/22/09
3	6	Add items 3.3.12 and 3.3.13 to section 3.3 (Knowledge section).	J. Jackson	2/24/11

Mod Number	Affected Pages	**Modification Record** Description of Change	Management Approval	Date

- Applicable Manager must sign for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Steve Carpenter S# 104550

Signature Roster

Personnel signing blocks in this Qualification Checklist must print their name legibly, sign and initial. Sign off by the Evaluator indicates successful performance of the task IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Carolea Huckle-Daniel	Carolea Huckle-Daniel	CHD
Eric Schweinsberg	Eric Schweinsberg	ES

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Steve Carpenter S# 104550

1.0 Scope

Completion of this re-qualification checklist is required for all personnel performing tasks as an Acceptable Knowledge Expert (AKE). This checklist specifies the prerequisite knowledge, training, and OJT objectives necessary to assure the candidate possesses the comprehensive knowledge and skills required for compliant task performance, and is qualified to perform these tasks.

Extended absence (greater than six months) and/or performance deficiencies may result in disqualification of the individual by the AK Manager until any or all conditions are remediated.

Upon successful completion of this checklist, the candidate shall be able to independently perform duties of an AKE.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of an Acceptable Knowledge Expert (AKE).

The employee has completed all initial training *and is current* on the applicable qualifications and/or checklists identified on the ITP to support this qualification checklist.

Manager assigned Completion target date: 10.1.12

Employee's Production Manager

9/12/12 Date

	Date Requirement Was Completed	**Signature** (Training representative or Manager)	**Date**
2.1 Initial QCAKE01A checklist	7-6-10		9-12-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	QCAKE01A Rev 3

Employee Name Steve Carpenter S# 104550

3.0 Initial & Continuing Training / Knowledge / Required Reading

The training courses identified pertain to the job function/duties and will be verified complete by the AK Manager or Training Specialist.

3.1 Training Courses :	Date Requirement was Complete	Recurring Training Frequency
None		

The Trainee will discuss the Required Reading documents with the qualified OJT Instructor, and/or AK Manager. These items will be signed off by the OJT instructor or AK Manager after the discussion.

3.2 Required Reading:	OJT Instructor / AK Manager Signature	Date
3.2.1 Collection, Review, and Management of Acceptable Knowledge Documentation. (MP-TRUW-8.13)	Caralea Huckle-Daniel	9-12-12
3.2.2 Preparation of Waste Stream Profile Forms (MP-TRUW-8.14)	Caralea Huckle-Daniel	9-12-12

The knowledge items identified pertain to the job function/duties and following an acceptable discussion will be signed by the qualified OJT Instructor or AK Manager.

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.4 Discuss the primary site-specific processes associated with waste characterization that augments acceptable knowledge.	Caralea Huckle-Daniel	9-12-12
3.3.5 Discuss data limitations and discrepancies that may occur in source documents and the process for resolution.	Caralea Huckle-Daniel	9-12-12
3.3.6 Discuss the required AK information necessary for a baseline summary document.	Caralea Huckle-Daniel	9-12-12
3.3.7 Discuss when an AK would develop an AK Resolution (AKR) vs. developing an AK Discrepancy Report (DR).	Caralea Huckle-Daniel	9-12-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST* *ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Steve Carpenter S# 104550

3.3 Knowledge:	OJT Instructor / AK Manager Signature	Date
3.3.8 Discuss how AMWTP designates waste streams.	Caralea Hinkle-Daniel	9-12-12
3.3.9 Discuss the process for assigning Summary Category Groups, Waste Matrix Codes, EPA Hazardous Waste Codes and waste material parameters to a waste stream.	Caralea Hinkle-Daniel	9-12-12
3.3.10 Discuss the preparation and main components of a Waste Stream Profile Form and the associated Characterization Information Summary Report for each Summary Category Group.	Caralea Hinkle-Daniel	9-12-12
3.3.11 Discuss how non-conformances are processed, including discrepancy resolution and reporting.	Caralea Hinkle-Daniel	9-12-12
3.3.12 Discuss how potentially incompatible IDC changes are managed (documented, notifications to be made, etc.)	Caralea Hinkle-Daniel	9-12-12
3.3.13 Discuss any recent lessons learned regarding IDC changes to potentially incompatible containers.	Caralea Hinkle Daniel	9-12-12

4.0 OJT Training Objectives

The following training objectives are conducted per MP-COPS-9.34, Conduct of Operations Control of On-Shift Training. These elements are to be performed (P), simulated (S) or discussed (D) as appropriate. At the conclusion of the instructions phase, the trainee will be assessed per MP-RTQP-14.13, Performance Assessments. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

AKE Tasks	P S D	*Evaluator Signature & date*
4.1.1 Prepare an AKR using Form-1070 for submittal.	P	Caralea Hinkle-Daniel 9-12-12
4.1.2 Prepare the required AMWTP Forms for summarizing and submitting an AK source document for submittal.	P	Caralea Hinkle-Daniel 9-12-12
4.1.3 Access the WTS AK Evaluation screen.	P	Caralea Hinkle-Daniel 9-12-12
4.1.4 Evaluate and resolve a container historical ID.	P	Caralea Hinkle-Daniel 9-12-12

Employee Name Steve Carpenter S# 104550

AKE Tasks		PSD	Evaluator Signature & date
4.1.5	Manage solids and debris container lots.	P	Caralea Huckle-Daniel 9-12-12
4.1.6	Access and navigate the TrackWise system from NCR creation to verification of NCR closure.	P	Caralea Huckle-Daniel 9-12-12

5.0 Emergency / Abnormal Conditions

The AKE must demonstrate adequate knowledge of each Emergency/Abnormal condition listed below through performance, simulation or discussion with an OJT Instructor, AKE Manager or SS. The scope of these items should pertain to the AKE's required duties.

Emergency / Abnormal Conditions		PSD	Evaluator signature	Date
5.1	Fire/Alarm	(S) D	Caralea Huckle-Daniel	9-12-12
5.2	Location of Fire Extinguishers/Fire Alarms	P	Caralea Huckle-Daniel	9-12-12
5.3	Evacuation Alarm	(S) D	Caralea Huckle-Daniel	9-12-12
5.4	Injured person	(S) D	Caralea Huckle-Daniel	9-12-12
5.5	Dropped Waste Container	(S) D	Caralea Huckle-Daniel	9-12-12
5.6	Breached Waste Container	(S) D	Caralea Huckle-Daniel	9-12-12
5.7	Take Cover Alarm	(S) D	Caralea Huckle-Daniel	9-12-12
5.8	CAM Alarm	(S) D	Caralea Huckle-Daniel	9-12-12
5.9	Spill/Contamination Release	(S) D	Caralea Huckle-Daniel	9-12-12
5.10	Loss of ventilation/air	(S) D	Caralea Huckle-Daniel	9-12-12
5.11	Loss of commercial power	(S) D	Caralea Huckle-Daniel	9-12-12

6.0 Examinations (Sections 1-5 must be complete prior to testing)

Written Exam: None

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE- QUALIFICATION CHECKLIST ACCEPTABLE KNOWLEDGE EXPERT*	**QCAKE01A** **Rev 3**

Employee Name Steve Carpenter S# 104550

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the AKE Manager (or designee) acknowledges that the trainee is competent and recommends that the employee be granted re-qualification in this job scope.		
Caralea Hunkle-Daniel	Caralea Hunkle-Daniel	9-12-12
AKE Manager (Print Name)	Signature	Date

Upon satisfactory completion of this Re-Qualification Checklist, the TRU Programs Manager (or designee) may grant Re-Qualification to the trainee by signing on the cover page of this Re-Qualification Checklist.

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Cover Sheet & Case Narrative

Batch No: HS111-00023
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 02-NOV-11 09:49
Batch Analysis Date: 02-NOV-11 13:01
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 16-NOV-11 13:10
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.

No NCRs associated with this batch.

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: Summaries of the applicable ICAL, MDLs and MPSs were analyzed within six months, they met criteria.

Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10418907	100	BN-550	S5000	Yes	Yes	No	None	P
BN10421829	100	BN-550	S5000	Yes	No	No	1	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	21-NOV-11 09:44:05	Validation complete. Promote batch.
JKETTEL	ITR	16-NOV-11 15:11:32	Promote.
CROJAS	HOC	16-NOV-11 13:10:57	Promote to ITR.
CROJAS	HOC	16-NOV-11 13:10:21	Promote to ITR
CROJAS	HOC	14-NOV-11 16:39:50	
CROJAS	HOC	14-NOV-11 16:05:45	
SOLDHAM	HSGO	02-NOV-11 12:56:27	
SOLDHAM	HSGO	02-NOV-11 08:24:11	

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS111-00023
Non-Conformances

Date: 25 Sep 2012

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
ICAL Report

Batch No.: ICAL/HS111-00023 **ICAL Start:** 24-OCT-11 15:53
Instrument method: VOCGAS **ICAL End:** 24-OCT-11 16:48
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\ **Sampled by:** SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.02E+05	0.000	1.0000	
Methane	4.78E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	Q Flag
Chloromethane	0.170	0.159	0.151	0.145	0.151	6.20	
Methanol	0.048	0.044	0.043	0.042	0.044	4.88	
Ethyl ether	0.165	0.154	0.150	0.145	0.154	4.85	
1,1-dichloroethylene	0.251	0.240	0.231	0.228	0.243	3.79	
Freon-113	0.614	0.574	0.547	0.534	0.557	5.50	
Acetone	0.113	0.107	0.105	0.103	0.111	3.91	
Carbon disulfide	0.607	0.567	0.565	0.558	0.603	4.00	
Methylene chloride	0.208	0.193	0.187	0.189	0.200	4.46	
trans-1,2-dichloroethylene	0.284	0.262	0.259	0.252	0.270	4.56	
1,1-dichloroethane	0.519	0.487	0.469	0.451	0.478	5.27	
cis-1,2-dichloroethylene	0.285	0.271	0.261	0.255	0.274	4.35	
Methyl ethyl ketone	0.121	0.116	0.115	0.114	0.124	3.79	
Chloroform	0.752	0.694	0.656	0.619	0.644	7.67	
1,1,1-trichloroethane	0.868	0.821	0.772	0.730	0.742	7.28	
Cyclohexane	0.442	0.418	0.411	0.402	0.428	3.68	
Carbon tetrachloride	0.213	0.197	0.191	0.181	0.176	7.50	
Benzene	0.728	0.680	0.670	0.658	0.711	4.22	
1,2-dichloroethane	0.603	0.548	0.514	0.478	0.483	9.84	
Trichloroethylene	0.491	0.455	0.436	0.431	0.456	5.23	
1-Butanol	0.047	0.045	0.045	0.044	0.046	2.81	
Methyl isobutyl ketone	0.114	0.110	0.109	0.105	0.099	5.22	
Toluene	0.608	0.575	0.555	0.559	0.617	4.81	
Tetrachloroethylene	0.674	0.639	0.611	0.574	0.545	8.43	
Chlorobenzene	1.068	0.964	0.939	0.909	0.976	6.18	
Ethylbenzene	0.509	0.465	0.467	0.458	0.497	4.67	
m and p-xylene	0.595	0.566	0.552	0.558	0.619	4.86	
o-xylene	0.563	0.530	0.533	0.546	0.591	4.54	
Bromoform	0.452	0.424	0.413	0.412	0.429	3.80	
1,1,2,2-tetrachloroethane	0.437	0.402	0.413	0.408	0.457	5.41	
1,3,5-trimethylbenzene	0.725	0.680	0.740	0.732	0.817	6.71	
1,2,4-trimethylbenzene	0.651	0.623	0.695	0.701	0.767	8.00	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

HSGS Headspace Gas
Batch HS111-00023
BFB Report ICAL

Batch No. ICAL/HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 24-OCT-11 15:45
Apex Scan(s) 434 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_111024AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.9
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
177	5.0 - 9.0% of mass 176	6.5
174	Greater than 50.0% of mass 95	93.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	98.0
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	00211-F.D	24-OCT-2011 15:53
ICAL2	ICAL	00312-F.D	24-OCT-2011 16:07
ICAL3	ICAL	00413-F.D	24-OCT-2011 16:21
ICAL4	ICAL	00514-F.D	24-OCT-2011 16:34
ICAL5	ICAL	00615-F.D	24-OCT-2011 16:48

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
BFB Report Shift 1

Batch No. HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 02-NOV-11 09:49
Apex Scan(s) 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	97.4
175	5.0 - 9.0% of mass 174	7.6
176	95.0 - 101.0% of mass 174	97.8
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	02-NOV-2011 09:57
LCS1	LCS	003LC-F.D	02-NOV-2011 10:15
EB	EB	004EB-F.D	02-NOV-2011 10:29
FB	FB	005FB-F.D	02-NOV-2011 10:43

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
BFB Report Shift 2

Batch No. HS111-00023 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 02-NOV-11 13:01
Apex Scan(s) 430 431 432 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	47.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.7
174	Greater than 50.0% of mass 95	97.8
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	95.9
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	02-NOV-2011 13:09
LCS2	LCS	008LC-F.D	02-NOV-2011 13:30
BN10418907	HS111_00023B-01	009DR-F.D	02-NOV-2011 13:44
DILUTION1	HS111_00023B-01(1X)	010DR-F.D	02-NOV-2011 14:00
BN10418907	HS111_00023B-02	011DR-F.D	02-NOV-2011 14:13
DILUTION1	HS111_00023B-02(1X)	012DR-F.D	02-NOV-2011 14:28
BN10421829	HS111_00023B-03	013DR-F.D	02-NOV-2011 14:42

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
CCAL Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D

Analyzed on: 02-NOV-11 09:57
Sampled on & by: 02-NOV-11 09:15 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.01	100.6	
Methane	1.00	1.02	101.8	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.147	5.2	
Methanol	0.044	0.041	6.8	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.232	2.9	
Freon-113	0.565	0.552	2.3	
Acetone	0.108	0.102	5.6	
Carbon disulfide	0.580	0.565	2.6	
Methylene chloride	0.196	0.190	3.1	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.461	4.2	
cis-1,2-dichloroethylene	0.269	0.260	3.3	
Methyl ethyl ketone	0.118	0.112	5.1	
Chloroform	0.673	0.637	5.3	
1,1,1-trichloroethane	0.786	0.755	3.9	
Cyclohexane	0.420	0.397	5.5	
Carbon tetrachloride	0.192	0.184	4.2	
Benzene	0.689	0.659	4.4	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.441	2.9	
1-Butanol	0.046	0.044	4.3	
Methyl isobutyl ketone	0.107	0.106	0.9	
Toluene	0.583	0.543	6.9	
Tetrachloroethylene	0.609	0.599	1.6	
Chlorobenzene	0.971	0.903	7.0	
Ethylbenzene	0.479	0.444	7.3	
m and p-xylene	0.578	0.530	8.3	
o-xylene	0.553	0.510	7.8	
Bromoform	0.426	0.404	5.2	
1,1,2,2-tetrachloroethane	0.423	0.383	9.5	
1,3,5-trimethylbenzene	0.739	0.647	12.4	
1,2,4-trimethylbenzene	0.687	0.607	11.6	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
CCAL Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

Analyzed on: 02-NOV-11 13:09
Sampled on & by: 02-NOV-11 11:17 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	1.00	99.9	
Methane	1.00	1.02	102.3	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.155	0.150	3.2	
Methanol	0.044	0.040	9.1	
Ethyl ether	0.154	0.145	5.8	
1,1-dichloroethylene	0.239	0.236	1.3	
Freon-113	0.565	0.554	1.9	
Acetone	0.108	0.100	7.4	
Carbon disulfide	0.580	0.562	3.1	
Methylene chloride	0.196	0.189	3.6	
trans-1,2-dichloroethylene	0.265	0.256	3.4	
1,1-dichloroethane	0.481	0.458	4.8	
cis-1,2-dichloroethylene	0.269	0.261	3.0	
Methyl ethyl ketone	0.118	0.113	4.2	
Chloroform	0.673	0.646	4.0	
1,1,1-trichloroethane	0.786	0.760	3.3	
Cyclohexane	0.420	0.391	6.9	
Carbon tetrachloride	0.192	0.189	1.6	
Benzene	0.689	0.662	3.9	
1,2-dichloroethane	0.525	0.494	5.9	
Trichloroethylene	0.454	0.443	2.4	
1-Butanol	0.046	0.042	8.7	
Methyl isobutyl ketone	0.107	0.104	2.8	
Toluene	0.583	0.536	8.1	
Tetrachloroethylene	0.609	0.587	3.6	
Chlorobenzene	0.971	0.884	9.0	
Ethylbenzene	0.479	0.434	9.4	
m and p-xylene	0.578	0.516	10.7	
o-xylene	0.553	0.487	11.9	
Bromoform	0.426	0.393	7.7	
1,1,2,2-tetrachloroethane	0.423	0.369	12.8	
1,3,5-trimethylbenzene	0.739	0.628	15.0	
1,2,4-trimethylbenzene	0.687	0.567	17.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Report Shift 1

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D

Analyzed on: 02-NOV-11 10:15
Sampled on & by: 02-NOV-11 09:21 SO
Multiplier: 1.38
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Nominal	Calculated	%R	Q Flag
Hydrogen	0.500	0.51	102.47	
Methane	0.500	0.52	104.42	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	49.92	99.83	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.87	89.74	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.84	89.68	
Benzene	50.00	47.63	95.27	
1,2-dichloroethane	50.00	46.01	92.03	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.08	91.43	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Report Shift 2

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D

Analyzed on: 02-NOV-11 13:30
Sampled on & by: 02-NOV-11 11:24 SO
Multiplier: 1.39
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Nominal	Calculated	%R	Q Flag
Hydrogen	0.500	0.51	102.48	
Methane	0.500	0.51	102.84	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.10	100.20	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	44.93	89.87	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	44.23	88.45	
Benzene	50.00	48.01	96.03	
1,2-dichloroethane	50.00	45.86	91.72	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.68	92.62	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 10:15	02-NOV-11 13:30
Sampled on & by:	02-NOV-11 09:21 SO	02-NOV-11 11:24 SO
Multiplier:	1.38	1.39
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\003LC-F.D	C:\HPCHEM\1\DATA\HS111_00023B\008LC-F.D
Dilution File(s):		

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs) Original	Duplicate	RPD	Q Flag
Hydrogen	0.51	0.51	0.01	
Methane	0.52	0.51	1.52	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	49.92	50.10	0.37	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	44.87	44.93	0.14	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	44.84	44.23	1.38	
Benzene	47.63	48.01	0.80	
1,2-dichloroethane	46.01	45.86	0.34	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.08	46.68	1.29	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS111-00023
LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Equipment Blank Report

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\004EB-F.D

Analyzed on: 02-NOV-11 10:29
Sampled on & by: 02-NOV-11 09:34 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval I	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Field Blank Report

Date: 25-SEP-12

Batch No.: HS111-00023
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\005FB-F.D

Analyzed on: 02-NOV-11 10:43
Sampled on & by: 02-NOV-11 09:39 SO
Multiplier: 1.41
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval I	Esigned By	Esigned Date	Comments
2132591	CROJAS	16 NOV 2011	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS111-00023	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS111_00023B-01	HS111_00023B-02
Container Id.:	BN10418907	BN10418907
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	02-NOV-11 13:44	02-NOV-11 14:13
Sampled on & by:	02-NOV-11 11:37 SO	02-NOV-11 11:48 SO
Multiplier:	1.39	1.39
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS111_00023B\009DR-F.D	C:\HPCHEM\1\DATA\HS111_00023B\011DR-F.D
Dilution File(s):	010	012

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.59	0.60	1.12	
Methane	U	U	NC	
Chloromethane	J	J	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	J	J	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	220	220	1.51	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	J	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	J	J	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	J	J	NC	
Benzene	J	J	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	21	22	2.45	
Tetrachloroethylene	J	J	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

HSGS Headspace Gas
Batch HS111-00023
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Internal Standards Summary

Batch No.: HS111-00023
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS111_00023B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS111_00023B\007CC-F.D

CCAL1 Analyzed on: 02-NOV-11 09:57
CCAL2 Analyzed on: 02-NOV-11 13:09

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	8994053	4.10	8278615	6.60
LCS1	9056706	4.09	7929537	6.59
EB	8809534	4.12	7801753	6.61
FB	8622999	4.12	7687533	6.62
CCAL2 STD.	8544930	4.12	8052723	6.62
LCS2	8737497	4.10	7725796	6.60
BN10418907	8565219	4.07	7556993	6.57
DILUTION1	8535545	4.12	7598193	6.62
BN10418907	8422874	4.08	7488123	6.58
DILUTION1	8402808	4.10	7470167	6.60
BN10421829	8273116	4.09	7480078	6.59

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum BN10418907 Sample Report

Batch No.: HS111-00023 **Analysis Status** **Analyzed on:** 02-NOV-11 13:44
Container Id.: BN10418907 Pass **Sampled on & by:** 02-NOV-11 11:37 SO
Lab Sample Id.: HS111_00023B-01 **Multiplier:** 1.39
Instrument Method: VOCGAS **Matrix:** Drum Headspace
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\009DR-F.D **Dilution Files:** 010

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.59 vol%								
Methane	0.019 vol%	U							
Chloromethane	3.4	J							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	1.8	J							
Acetone	25	J							
Carbon disulfide	1.2	U							
Methylene chloride	220	D							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.7	J							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	3.1	J							
1,1,1-trichloroethane	7.2	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	3.9	J							
Benzene	2.4	J							
1,2-dichloroethane	1.6	U							
Trichloroethylene	6.9	J							
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	21								
Tetrachloroethylene	1.8	J							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum BN10421829 Sample Report

Batch No.: HS111-00023 **Analysis Status** **Analyzed on:** 02-NOV-11 14:42
Container Id.: BN10421829 Pass **Sampled on & by:** 02-NOV-11 12:11 SO
Lab Sample Id.: HS111_00023B-03 **Multiplier:** 1.39
Instrument Method: VOCGAS **Matrix:** Drum Headspace
Data Path: C:\HPCHEM\1\DATA\HS111_00023B\013DR-F.D **Dilution Files:**

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.018 vol%	J							
Methane	0.019 vol%	U							
Chloromethane	1.3	J							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	25								
Acetone	19	U							
Carbon disulfide	1.2	U							
Methylene chloride	11								
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	2.7	J							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	1.0	J							
1,1,1-trichloroethane	5.5	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	11								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	88								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	8.2	J							
m and p-xylene	22								
o-xylene	7.8	J							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	42	7.43

HSGS Headspace Gas
Batch HS111-00023
Drum BN10421829 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

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Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10418907	3	S5000	0	0	7	26 Aug 11	26 Aug 11	02 Nov 11	2	68	NF19SD, NF036
P	BN10421829	3	S5000	0	0	7	18 Sep 11	18 Sep 11	02 Nov 11	2	45	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10418907	NA	Y	Y	SETH OLDHAM	
BN10421829	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR
2132326	CROJAS	14-NOV-11 16:05	
2127181	SOLDHAM	02-NOV-11 12:56	

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	26-AUG-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	26-AUG-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						21-APR-12 08:49:02	Jake Archibald
To:	TRUPACT Loaded							21-APR-12 08:53:05	Jake Archibald
Status:	Container move is done and complete								
From:	628	SJ			10	1	1	19-APR-12 10:00:06	Ed Aldrich
To:	635	Assembled Payloads						19-APR-12 10:00:55	Ed Aldrich
Status:	Container move is done and complete								
From:	628	SJ			9	1	1	18-APR-12 10:52:11	Ed Aldrich
To:	628	SJ			10	1	1	18-APR-12 10:52:29	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			10	3	1	18-APR-12 09:57:25	Ed Aldrich
To:	628	SJ			9	1	1	18-APR-12 10:51:57	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			5	3	2	12-APR-12 14:30:32	Tim Burwell
To:	628	NK			10	3	1	12-APR-12 14:31:42	Tim Burwell
Status:	Container move is done and complete								
From:	628	ND			9	3	1	11-APR-12 16:37:19	Chelsie Beard
To:	628	NK			5	3	2	11-APR-12 16:45:28	Ed Aldrich
Status:	Container move is done and complete								
From:	628	NK			3	2	1	07-APR-12 13:37:48	Chris Stamos
To:	628	ND			9	3	1	07-APR-12 13:41:39	Chris Stamos
Status:	Container move is done and complete								
From:	628	NK			3	2	1	07-APR-12 10:52:23	Chris Stamos
To:	628	Overpack staging area						07-APR-12 13:37:48	Chris Stamos
Status:	Container move is cancelled								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NK			2	3	2	03-JAN-12 08:00:43	Rick Whitmore
To:	628	NK			3	2	1	03-JAN-12 08:16:50	Rick Whitmore
Status:	Container move is done and complete								
From:	628	NK			12	3	1	30-DEC-11 08:29:31	Bruce Hebdon
To:	628	NK			2	3	2	30-DEC-11 10:58:59	Dave White
Status:	Container move is done and complete								
From:	628	NN			2	1	1	23-DEC-11 17:11:41	Steven Stewart
To:	628	NK			12	3	1	23-DEC-11 17:11:57	Steven Stewart
Status:	Container move is done and complete								
From:	628	NN			11	2	2	07-DEC-11 10:36:30	Justin Hendricks
To:	628	NN			2	1	1	07-DEC-11 10:37:47	Justin Hendricks
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	2	1	26-NOV-11 14:09:16	Jesse Howard
To:	628	NN			11	2	2	26-NOV-11 14:09:36	Jesse Howard
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	2	1	10-NOV-11 08:25:14	Tim Burwell
To:	634- Characterization	SN						10-NOV-11 09:06:23	Tim Burwell
Status:	Container move is cancelled								
From:	634- Characterization	SN			6	3	1	04-NOV-11 08:09:44	Leisa Bunce
To:	634- Characterization	SN			4	2	1	04-NOV-11 08:25:33	Leisa Bunce
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 12:08:13	Nancy Bunce
To:	634- Characterization	SN			6	3	1	02-NOV-11 12:09:05	Nancy Bunce
Status:	Container move is done and complete								
From:	634- Characterization	SN			5	1	1	02-NOV-11 08:27:44	Michael Ricks
To:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 08:28:19	Michael Ricks
Status:	Container move is done and complete								
From:	634- Characterization	SH			9	2	1	28-OCT-11 10:31:07	Frank Kuck
To:	634- Characterization	SN			5	1	1	28-OCT-11 10:32:45	Frank Kuck
Status:	Container move is done and complete								
From:	628	NN			12	2	1	26-OCT-11 16:20:56	Paul Chapman
To:	634- Characterization	SH			9	2	1	26-OCT-11 16:23:00	Paul Chapman
Status:	Container move is done and complete								
From:	628	NN			12	2	1	26-OCT-11 13:58:05	Paul Chapman
To:	634- Characterization	Staging Area						26-OCT-11 16:20:56	Paul Chapman
Status:	Container move is cancelled								
From:	628	NN			12	2	2	14-SEP-11 23:15:05	Greg Stecklein
To:	628	NN			12	2	1	15-SEP-11 01:47:50	Greg Stecklein
Status:	Container move is done and complete								
From:	628	NN			13	2	2	10-SEP-11 01:34:46	Che Miles
To:	628	NN			12	2	2	10-SEP-11 02:13:51	Che Miles
Status:	Container move is done and complete								
From:	628	ND			10	3	1	08-SEP-11 14:36:26	Larin Mortimer
To:	628	NN			13	2	2	08-SEP-11 14:44:36	Larin Mortimer
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	SA			2	3	1	03-SEP-11 10:37:35	Dallas Johnston
To:	628	ND			10	3	1	03-SEP-11 11:16:41	Dallas Johnston
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				27-AUG-11 22:19:14	Tracy Pena
To:	628	SA			2	3	1	27-AUG-11 22:25:01	Tracy Pena
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				27-AUG-11 16:42:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				27-AUG-11 16:41:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				27-AUG-11 16:40:16	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				27-AUG-11 12:45:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				27-AUG-11 08:22:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				27-AUG-11 03:04:51	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				26-AUG-11 23:42:15	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				26-AUG-11 22:51:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				26-AUG-11 22:51:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				26-AUG-11 22:51:07	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				26-AUG-11 22:50:49	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				26-AUG-11 22:50:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				26-AUG-11 22:49:53	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				26-AUG-11 22:37:59	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				26-AUG-11 22:37:40	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				26-AUG-11 22:37:22	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-AUG-11 22:37:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-AUG-11 22:35:14	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				26-AUG-11 21:47:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-AUG-11 21:44:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-AUG-11 21:43:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				26-AUG-11 17:49:08	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				26-AUG-11 16:25:00	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				26-AUG-11 15:22:12	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				26-AUG-11 14:05:49	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				26-AUG-11 08:36:28	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				26-AUG-11 07:36:20	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				26-AUG-11 07:35:56	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10418907

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				26-AUG-11 03:23:04	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				26-AUG-11 03:23:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				26-AUG-11 03:22:55	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				26-AUG-11 03:22:50	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				26-AUG-11 03:22:46	
Status:	Container move is done and complete								
From:								23-AUG-11 15:00:17	Cheryl Packer
To:	676- Facility	General Facility Building	General Facility Subsection I					23-AUG-11 15:00:17	Cheryl Packer
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10418907

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	26-AUG-11	WASHCRAFT	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	26-AUG-11	WASHCRAFT	N			N
Diffusivity:	9.25E-05							
Comment								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

DAC Information

Waste Type:	II	Liner Lid Hole Size:	NA	Vent Date:	18-SEP-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	18-SEP-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						22-MAR-12 10:39:21	Carl Chapman
To:	TRUPACT Loaded							22-MAR-12 10:41:16	Carl Chapman
Status:	Container move is done and complete								
From:	635	WC			4	1	1	08-MAR-12 14:20:13	John Aguayo
To:	635	Assembled Payloads						08-MAR-12 14:21:06	John Aguayo
Status:	Container move is done and complete								
From:	628	SJ			7	1	2	07-MAR-12 11:03:49	Kim Smith
To:	635	WC			4	1	1	07-MAR-12 13:30:05	Kim Smith
Status:	Container move is done and complete								
From:	628	NK			3	3	2	06-MAR-12 14:31:49	Fred White
To:	628	SJ			7	1	2	06-MAR-12 16:21:10	Fred White
Status:	Container move is done and complete								
From:	628	NK			3	1	1	03-JAN-12 08:00:01	Rick Whitmore
To:	628	NK			3	3	2	03-JAN-12 08:20:36	Rick Whitmore
Status:	Container move is done and complete								
From:	628	NK			11	2	1	30-DEC-11 08:29:49	Bruce Hebdon
To:	628	NK			3	1	1	30-DEC-11 10:55:53	Dave White
Status:	Container move is done and complete								
From:	628	NN			2	2	2	23-DEC-11 17:07:48	Steven Stewart
To:	628	NK			11	2	1	23-DEC-11 17:08:06	Steven Stewart
Status:	Container move is done and complete								
From:	628	NN			2	2	2	20-DEC-11 16:47:10	Craig Muehleip
To:	628	NN			2	2	2	20-DEC-11 16:50:21	Craig Muehleip
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	NN			2	2	2	20-DEC-11 16:44:13	Craig Muehleip
To:	628	NM						20-DEC-11 16:45:18	Craig Muehleip
Status:	Container move is cancelled								
From:	628	NN			10	3	2	07-DEC-11 10:43:44	Justin Hendricks
To:	628	NN			2	2	2	07-DEC-11 10:45:58	Justin Hendricks
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	26-NOV-11 14:10:04	Jesse Howard
To:	628	NN			10	3	2	26-NOV-11 14:10:25	Jesse Howard
Status:	Container move is done and complete								
From:	634- Characterization	SN			4	3	1	10-NOV-11 08:25:32	Tim Burwell
To:	634- Characterization	SN						10-NOV-11 09:06:10	Tim Burwell
Status:	Container move is cancelled								
From:	634- Characterization	SN			6	2	1	04-NOV-11 08:09:36	Leisa Bunce
To:	634- Characterization	SN			4	3	1	04-NOV-11 08:25:09	Leisa Bunce
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 12:20:16	Cindy Tiegs
To:	634- Characterization	SN			6	2	1	02-NOV-11 12:21:04	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SN			5	2	1	02-NOV-11 08:27:56	Michael Ricks
To:	634- Characterization	HGAS Area	HGAS 001 Machine					02-NOV-11 08:28:10	Michael Ricks
Status:	Container move is done and complete								
From:	634- Characterization	SH			9	3	1	28-OCT-11 10:31:56	Frank Kuck
To:	634- Characterization	SN			5	2	1	28-OCT-11 10:32:58	Frank Kuck
Status:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 16:20:41	Paul Chapman
To:	634- Characterization	SH			9	3	1	26-OCT-11 16:22:41	Paul Chapman
Status:	Container move is done and complete								
From:	628	NN			11	2	1	26-OCT-11 13:58:17	Paul Chapman
To:	634- Characterization	Staging Area						26-OCT-11 16:20:41	Paul Chapman
Status:	Container move is cancelled								
From:	628	NN			15	3	2	14-OCT-11 14:17:57	Mikel Fisher
To:	628	NN			11	2	1	14-OCT-11 14:18:53	Mikel Fisher
Status:	Container move is done and complete								
From:	628	NN			10	3	2	11-OCT-11 16:12:00	Jesse Howard
To:	628	NN			15	3	2	11-OCT-11 16:14:54	Jesse Howard
Status:	Container move is done and complete								
From:	628	NN			9	3	2	06-OCT-11 14:06:56	Steve Hunter
To:	628	NN			10	3	2	06-OCT-11 14:07:27	Steve Hunter
Status:	Container move is done and complete								
From:	628	NN			8	2	2	06-OCT-11 13:28:47	Adam Schenck
To:	628	NN			9	3	2	06-OCT-11 14:05:24	Steve Hunter
Status:	Container move is done and complete								
From:	628	NN			15	1	2	30-SEP-11 16:29:59	Che Miles
To:	628	NN			8	2	2	30-SEP-11 16:38:37	Che Miles
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	628	ND			4	1	1	27-SEP-11 14:51:37	Tony Burgess
To:	628	NN			15	1	2	27-SEP-11 16:26:18	Dallas Johnston
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				22-SEP-11 10:59:54	Thomas Mills
To:	628	ND			4	1	1	22-SEP-11 16:50:21	Larin Mortimer
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				21-SEP-11 05:08:45	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				21-SEP-11 05:07:51	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				21-SEP-11 03:07:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				20-SEP-11 12:37:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				20-SEP-11 09:35:43	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				19-SEP-11 04:02:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				18-SEP-11 15:14:01	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				18-SEP-11 14:30:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				18-SEP-11 14:29:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				18-SEP-11 14:29:47	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				18-SEP-11 14:29:29	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				18-SEP-11 14:29:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				18-SEP-11 14:28:33	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				18-SEP-11 14:14:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				18-SEP-11 14:14:04	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				18-SEP-11 14:13:46	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 14:13:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 14:11:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				18-SEP-11 09:19:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				18-SEP-11 09:15:40	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				18-SEP-11 09:15:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				18-SEP-11 05:40:27	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				18-SEP-11 03:39:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				18-SEP-11 03:00:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				17-SEP-11 23:42:38	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				17-SEP-11 20:48:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/01				17-SEP-11 18:00:35	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/01				17-SEP-11 15:03:24	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10421829

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	INA/07	INA/07				17-SEP-11 15:02:59	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/06	INA/06				16-SEP-11 21:40:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/05	INA/05				16-SEP-11 21:39:36	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/04	INA/04				16-SEP-11 14:32:00	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/03	INA/03				16-SEP-11 14:31:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INA/02	INA/02				16-SEP-11 04:25:34	
Status:	Container move is done and complete								
From:								14-SEP-11 02:13:38	Nolan Bjorkman
To:	676- Facility	General Facility Building	General Facility Subsection I					14-SEP-11 02:13:38	Nolan Bjorkman
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10421829

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	18-SEP-11	WASHCRAFT	N			N
Diffusivity:	9.25E-05							
Comment								

HSGS Headspace Gas Batch HS111-00023 Daily Checks Report

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Helium 1600 psi, Nitrogen 1300 psi
Ensure the humidifier contains ASTM Type II water.	PASS	

Verify Method performance demonstration and MDL's are current.	PASS	Exp. date: 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B, 04/21/12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2127065	SOLDHAM	02-NOV-11 08:24	
2132332	CROJAS	14-NOV-11 16:39	
2132591	CROJAS	16-NOV-11 13:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS111-00023
Batch Log

Date: 25 SEP 2012
Time: 09:31

$HS111_00023,2011-10-30,17:38:59,SO,0.005,0.004,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.001,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,18:25:32,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error,manifold & bottles,LK_RT_TST. Vac_error(EVAC3). Vac_error(Final Evac).||No comment.
S1,HS111_00023,icCLEAN,2011-11-02,08:49:44,649.068,894.711,22.1,SO,,,0.0013,644.215,N/A|No comment.
A1,HS111_00023,icCLEAN,719.291|IC1,2011-11-02,08:54:28 Delivered (719.291).
R,HS111_00023,QC1,2011-11-02,08:59:23|No system comments.
S1,HS111_00023,icCCAL1,2011-11-02,09:15:15,649.800,877.102,22.4,SO,,,0.0068,644.459,N/A|No comment.
S2,HS111_00023,icLCS1,2011-11-02,09:21:03,649.709,896.847,22.5,SO,,,0.0067,644.398,N/A|No comment.
S4,HS111_00023,icEB,2011-11-02,09:34:40,650.075,910.459,22.8,SO,,,0.0014,644.551,N/A|No comment.
S3,HS111_00023,drFB,2011-11-02,09:39:48,642.628,904.325,22.8,SO,,,0.0141,644.551,N/A|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,09:50:06 BFB analysis started.
A1,HS111_00023,icCCAL1,708.670|IC1,2011-11-02,09:54:13 Delivered (708.670).
A2,HS111_00023,icLCS1,716.971|IC2,2011-11-02,10:12:05 Delivered (716.971).
A4,HS111_00023,icEB,724.265|IC4,2011-11-02,10:25:52 Delivered (724.265).
A3,HS111_00023,drFB,719.718|DR3,2011-11-02,10:39:37 Delivered (719.718).
R,HS111_00023,QC2, EB-4,2011-11-02,10:44:29|No system comments.
S2,HS111_00023,icCCAL2,2011-11-02,11:17:42,650.319,893.430,24.3,SO,,,0.0068,644.826,N/A|No comment.
S3,HS111_00023,icLCS2,2011-11-02,11:24:07,649.709,901.273,24.6,SO,,,0.0091,644.704,N/A|No comment.
S8,HS111_00023,drBN10418907,2011-11-02,11:37:55,643.086,895.749,24.6,SO,,,0.0023,644.704,N/A|No comment.
S9,HS111_00023,drBN10418907 DUP,2011-11-02,11:48:11,642.659,893.399,24.8,SO,,,0.0061,644.643,passed|No comment.
S10,HS111_00023,drBN10421829,2011-11-02,12:11:20,642.567,894.528,25.1,SO,,,0.0018,644.673,passed|No comment.
A0,HS111_00023,BFB,0.000|Loading BFB,2011-11-02,13:02:18 BFB analysis started.
A2,HS111_00023,icCCAL2,719.169|IC2,2011-11-02,13:06:26 Delivered (719.169).
A3,HS111_00023,icLCS2,721.336|IC3,2011-11-02,13:27:26 Delivered (721.336).
A8,HS111_00023,drBN10418907,711.570|DR8,2011-11-02,13:41:13 Delivered (711.570).
A8,HS111_00023,drBN10418907,751.152|DL8 to 4,2011-11-02,13:54:59 DEP = 103.244. DCP = 929.136. Delivered (751.152).
A9,HS111_00023,drBN10418907 DUP,720.634|DR9,2011-11-02,14:10:28 Delivered (720.634).
R,HS111_00023,Re-clean DL,2011-11-02,14:15:16|No system comments.
A9,HS111_00023,drBN10418907 DUP,751.366|DL9 to 4,2011-11-02,14:24:12 DEP = 104.648. DCP = 929.136. Delivered (751.366).
A10,HS111_00023,drBN10421829,712.577|DR10,2011-11-02,14:39:22 Delivered (712.577).
R,HS111_00023,Re-clean DL,2011-11-02,14:44:14|No system comments.

**********Esignature**********

Esig Approval ID	Esigned By	Esigned Date	Comment
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Data Generation Checklist

Batch ID HS111-00023

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are puck drums; don't have rigid liner.
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRS
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2132591	CROJAS	16-NOV-11 01:10	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 25-Sep-2012
Time: 09:31

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer
Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not present, mark N/A.	N/A		No liners present.
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst,	Yes		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
and complete?			
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have	N/A		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer
Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.			
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected at a level greater than three times the MDL in blank analyses.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected at a level greater than the MDL in blank analyses.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a concentration exceeding the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of	Yes		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer
Approval Date 16-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
precision, accuracy, and MDLs performed within the last six months?			
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation
Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum and drum duplicate met precision criteria.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation
Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container · Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable)	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Reviewer NANCY KIRK **Approval Level** SPM Data Validation
Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

Batch Id HS111-00023 **Open Date** 16-NOV-11 **Close Date** 16-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2134599	NKIRK	21-NOV-11	SPM	Validation complete. Promote batch.
2132638	JKETTEL	16-NOV-11	ITR	Promote.

NorLAB®
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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales.
The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 556776 **Lot No.:** A076393

Description : Custom Organics Blend

Expiration Date[1]**:** February 2012 **Storage:** Freezer

Elution Order	Compound	CAS #	Percent Purity [2]	Concentration [3] (weight/weight%)	% Uncertainty [4] (95% C.L.; K=2)
1	Chloromethane (methyl chloride)	74-87-3	99%	0.8180 wt./wt.%	+/-0.58 %
2	Methanol	67-56-1	99%	5.0678 wt./wt.%	+/-0.58 %
3	Diethyl ether (ethyl ether)	60-29-7	99%	1.1191 wt./wt.%	+/-0.58 %
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1	97%	3.0419 wt./wt.%	+/-0.58 %
5	Acetone	67-64-1	99%	9.1213 wt./wt.%	+/-0.58 %
6	1,1-dichloroethene	75-35-4	99%	1.5305 wt./wt.%	+/-0.58 %
7	Methylene chloride (dichloromethane)	75-09-2	99%	1.3239 wt./wt.%	+/-0.58 %
8	Carbon disulfide	75-15-0	99%	1.2229 wt./wt.%	+/-0.58 %
9	trans-1,2-Dichloroethene	156-60-5	99%	1.5289 wt./wt.%	+/-0.58 %
10	1,1-Dichloroethane	75-34-3	98%	1.5285 wt./wt.%	+/-0.58 %
11	2-Butanone (MEK)	78-93-3	99%	11.2501 wt./wt.%	+/-0.58 %
12	cis-1,2-Dichloroethene	156-59-2	99%	1.5311 wt./wt.%	+/-0.58 %
13	chloroform	67-66-3	98%	1.8262 wt./wt.%	+/-0.58 %
14	1,1,1-trichloroethane	71-55-6	99%	2.0271 wt./wt.%	+/-0.58 %
15	Cyclohexane	110-82-7	99%	1.3177 wt./wt.%	+/-0.58 %
16	carbon tetrachloride	56-23-5	99%	2.4428 wt./wt.%	+/-0.58 %
17	1,2-Dichloroethane	107-06-2	99%	1.5270 wt./wt.%	+/-0.58 %
18	Benzene	71-43-2	99%	1.2212 wt./wt.%	+/-0.58 %
19	1-Butanol	71-36-3	99%	11.6559 wt./wt.%	+/-0.58 %
20	Trichloroethene	79-01-6	99%	2.0325 wt./wt.%	+/-0.58 %
21	4-Methyl-2-pentanone (MIBK)	108-10-1	99%	15.7123 wt./wt.%	+/-0.58 %
22	Toluene	108-88-3	99%	1.4188 wt./wt.%	+/-0.58 %
23	Tetrachloroethene	127-18-4	99%	2.6374 wt./wt.%	+/-0.58 %
24	Chlorobenzene	108-90-7	99%	1.7227 wt./wt.%	+/-0.58 %
25	Ethylbenzene	100-41-4	99%	1.6217 wt./wt.%	+/-0.58 %
26	m-Xylene	108-38-3	99%	0.8112 wt./wt.%	+/-0.58 %
27	p-Xylene	106-42-3	99%	0.8108 wt./wt.%	+/-0.58 %
28	o-Xylene	95-47-6	99%	1.6217 wt./wt.%	+/-0.58 %
29	bromoform	75-25-2	99%	4.0540 wt./wt.%	+/-0.58 %
30	1,1,2,2-Tetrachloroethane	79-34-5	99%	2.6377 wt./wt.%	+/-0.58 %
31	1,3,5-Trimethylbenzene	108-67-8	99%	1.8245 wt./wt.%	+/-0.58 %
32	1,2,4-Trimethylbenzene	95-63-6	99%	1.8303 wt./wt.%	+/-0.58 %

Solvent: n/a

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

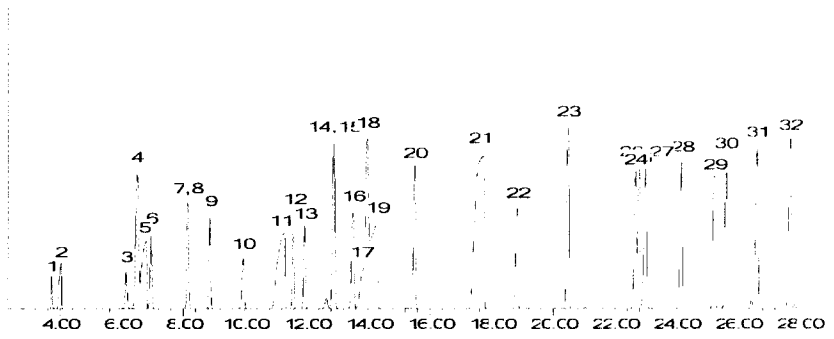
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



Sara Eyster QA Analyst

Date Passed: 24-Aug-2010 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

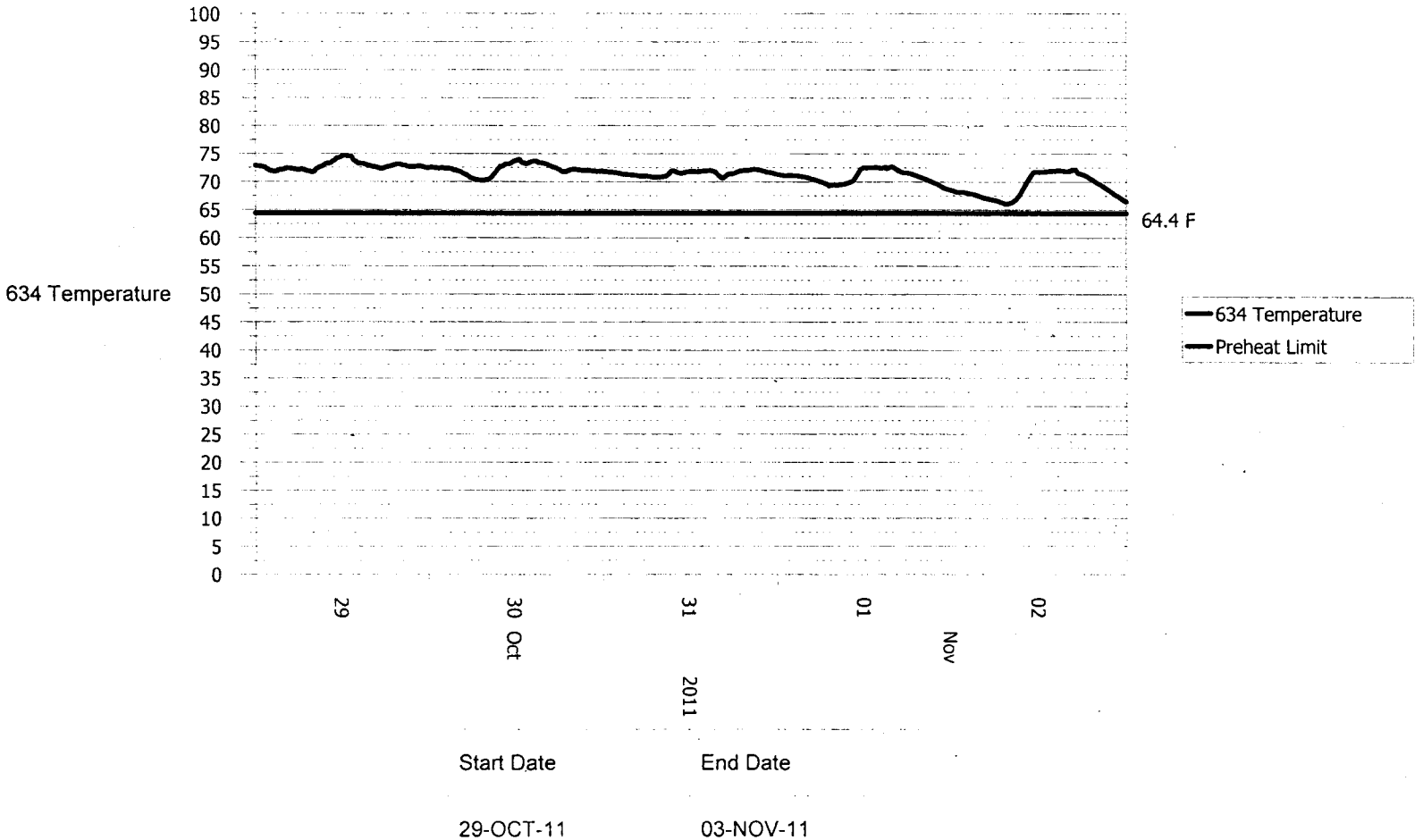
3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Note:

Density = 0.9468

634 Characterization Temperature



Start Date	End Date
29-OCT-11	03-NOV-11

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Cover Sheet & Case Narrative

Batch No: HS112-00002
Lab Name: AMWTP
Batch Status Code: AP
Batch Sampling Date: 17-JAN-12 09:25
Batch Analysis Date: 17-JAN-12 14:02
Sample Point of Origin: WMF-634
Sample Location: Container Headspace

Chemist Batch E-sig. Date: 19-JAN-12 15:22
Analysis Requested: VOC/H2/CH4
Procedure & Revision: INST-OI-43 rev. 20
GC Column & ID.: RTX-VMS, 320 um
Sampling/Analysis Equipment No.: Z-221-001-A
Sample Size: 500 mL
Sample Matrix/Type: Headspace Gas Volatile Organics

Narrative

This batch was processed in accordance with approved procedures for the Advanced Mixed Waste Treatment Project (AMWTP) waste characterization program referenced on the sample reports. Headspace gas sampling and analysis at the AMWTP occurs at the container headspace with a minimum volume that will not impact sample representativeness. Prior to sampling and analysis, rigid liner puncture is verified in accordance with MP-TRUW-8.8, ensuring venting of the drum and rigid liner has been performed using the Drum Vent System (DVS) or Visual Examination events. The DVS was determined in Report RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP to vent and sample the innermost layer of confinement, thus the rigid liner per the report is punctured upon completion of sampling or venting.
NCR: No NCRs associated to this batch

QA/QC:
Standards: ISTD/BFB #CC191961, OCS #CC254995, CCV H2/CH4 #CC254976, VOC #A076393
Both Shift 1 and Shift 2 CCAL analyte responses MEET the criterion of less than or equal to 30 %D of the average initial calibration response factors.
Shift 1 LCS analyte results are present in the acceptable range of 70 to 130 %R.
The EB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
The FB analysis MEETS the criteria of all compounds less than or equal to 3*MDL.
Drum/Drum Duplicate comparison results MEET the precision criterion.
LCS/LCS Duplicate comparison results MEET the precision criterion.

ICAL and MDL Reference: A summary of the applicable ICAL is included in this batch. MDLs and MPSs were analyzed within six months, they met criteria.
Note(s): None

Container ID	Container Type (gal)	IDC	Matrix Code	VOCs	Hydrogen	Methane	TICs	Analysis Status
BN10429587	100	BN-550	S5000	Yes	No	No	1	P
BN10430658	100	BN-550	S5000	Yes	Yes	No	2	P

Batch Comments

User Id	Role	Esignature Date	Comment
NKIRK	SPM	23-JAN-12 15:06:24	Validation complete. Promote batch.
JKETTEL	ITR	23-JAN-12 10:05:31	Promote to SPM.
CROJAS	HOC	19-JAN-12 15:22:16	Promote to ITR
CROJAS	HOC	18-JAN-12 14:33:11	
CROJAS	HOC	18-JAN-12 14:25:48	
SOLDHAM	HSGO	17-JAN-12 13:58:08	
SOLDHAM	HSGO	17-JAN-12 08:08:34	

Non-Reported Container Comments

Written By	Date	Container ID	Comment

End of Report

AMWTP
Advanced Mixed Waste Treatment Project

HGAS Headspace Gas Sampling
Batch HS112-00002
Non-Conformances

Date: 25 Sep 201

Container	Type	NCR#	Status	Opened	Title

----------end of report----------

Advanced Mixed Waste Treatment Project

ICAL Report

Batch No.: ICAL/HS112-00002 **ICAL Start:** 11-JAN-12 13:17
Instrument method: VOCGAS **ICAL End:** 11-JAN-12 14:13
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\ **Sampled by:** SO

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990. Note 2: %RSD for VOA compounds must be less than 35.0.

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5
File ID:	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H2/CH4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND NAME	Curve Slope	Curve Intercept	r^2	Q Flag
Hydrogen	1.03E+05	0.000	0.9999	
Methane	4.85E+04	0.000	1.0000	

	ICAL1	ICAL2	ICAL3	ICAL4	ICAL5	%RSD	
Chloromethane	0.148	0.132	0.132	0.129	0.127	6.18	
Methanol	0.033	0.028	0.028	0.028	0.027	8.09	
Ethyl ether	0.159	0.143	0.142	0.142	0.138	5.65	
1,1-dichloroethylene	0.247	0.224	0.231	0.229	0.228	3.83	
Freon-113	0.641	0.568	0.570	0.566	0.557	5.89	
Acetone	0.118	0.101	0.104	0.106	0.106	6.20	
Carbon disulfide	0.605	0.534	0.549	0.546	0.552	4.95	
Methylene chloride	0.212	0.185	0.188	0.191	0.193	5.54	
trans-1,2-dichloroethylene	0.293	0.258	0.259	0.266	0.268	5.21	
1,1-dichloroethane	0.561	0.476	0.482	0.492	0.497	6.78	
cis-1,2-dichloroethylene	0.311	0.257	0.267	0.270	0.274	7.43	
Methyl ethyl ketone	0.130	0.108	0.112	0.115	0.117	7.10	
Chloroform	0.770	0.631	0.636	0.639	0.631	9.24	
1,1,1-trichloroethane	0.857	0.720	0.722	0.730	0.710	8.21	
Cyclohexane	0.469	0.391	0.406	0.416	0.419	6.93	
Carbon tetrachloride	0.202	0.166	0.177	0.176	0.170	7.98	
Benzene	0.767	0.648	0.658	0.677	0.694	6.82	
1,2-dichloroethane	0.591	0.474	0.478	0.481	0.473	10.24	
Trichloroethylene	0.551	0.452	0.467	0.477	0.484	7.81	
1-Butanol	0.053	0.041	0.044	0.045	0.044	9.74	
Methyl isobutyl ketone	0.119	0.097	0.104	0.107	0.095	9.08	
Toluene	0.663	0.532	0.562	0.572	0.599	8.45	
Tetrachloroethylene	0.683	0.536	0.572	0.560	0.503	11.93	
Chlorobenzene	1.101	0.879	0.930	0.948	0.979	8.58	
Ethylbenzene	0.512	0.408	0.441	0.449	0.464	8.38	
m and p-xylene	0.609	0.482	0.534	0.544	0.564	8.44	
o-xylene	0.579	0.452	0.505	0.526	0.542	9.00	
Bromoform	0.442	0.357	0.401	0.409	0.412	7.56	
1,1,2,2-tetrachloroethane	0.447	0.346	0.393	0.404	0.419	9.25	
1,3,5-trimethylbenzene	0.709	0.556	0.672	0.685	0.720	9.83	
1,2,4-trimethylbenzene	0.654	0.517	0.635	0.654	0.680	10.19	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

Batch HS112-00002

BFB Report ICAL

Batch No. ICAL/HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 11-JAN-12 13:09
Apex Scan(s) 430 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\IC1_120111AA\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.4
75	30.0 - 60.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.2
174	Greater than 50.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	98.5
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
ICAL1	ICAL	00211-F.D	11-JAN-2012 13:17
ICAL2	ICAL	00312-F.D	11-JAN-2012 13:31
ICAL3	ICAL	00413-F.D	11-JAN-2012 13:45
ICAL4	ICAL	00514-F.D	11-JAN-2012 13:59
ICAL5	ICAL	00615-F.D	11-JAN-2012 14:13

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

BFB Report Shift 1

Batch No. HS112-00002 **Pass?** PASS
Instrument Method: VOCGAS **Analyzed On:** 17-JAN-12 09:25
Apex Scan(s) 431 **Matrix:** QC Sample
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\001BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.9
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7
177	5.0 - 9.0% of mass 176	6
174	Greater than 50.0% of mass 95	94.4
175	5.0 - 9.0% of mass 174	7.4
176	95.0 - 101.0% of mass 174	98.9
173	Less than 2.0% of mass 174	0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL1	CCAL	002CC-F.D	17-JAN-2012 09:33
LCS1	LCS	003LC-F.D	17-JAN-2012 09:52
EB	EB	004EB-F.D	17-JAN-2012 10:06
FB	FB	005FB-F.D	17-JAN-2012 10:20

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

BFB Report Shift 2

Batch No. HS112-00002 **Pass?** PASS

Instrument Method: VOCGAS **Analyzed On:** 17-JAN-12 14:02

Apex Scan(s) 432 **Matrix:** QC Sample

Data Path: C:\HPCHEM\1\DATA\HS112_00002B\006BF-F.D

m/z	Ion Abundance Criteria	% Relative Abundance
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	44.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
177	5.0 - 9.0% of mass 176	6.6
174	Greater than 50.0% of mass 95	98.1
175	5.0 - 9.0% of mass 174	7.3
176	95.0 - 101.0% of mass 174	96.4
173	Less than 2.0% of mass 174	0.0

---------- *THIS CHECK APPLIES TO THE FOLLOWING*----------

Sample	Lab Sample ID	Data File	Analysis Date/Time
CCAL2	CCAL	007CC-F.D	17-JAN-2012 14:10
LCS2	LCS	008LC-F.D	17-JAN-2012 14:27
BN10429587	HS112_00002B-01	009DR-F.D	17-JAN-2012 14:41
BN10429587	HS112_00002B-02	010DR-F.D	17-JAN-2012 14:55
BN10430658	HS112_00002B-03	011DR-F.D	17-JAN-2012 15:09
DILUTION1	HS112_00002B-03(1X)	012DR-F.D	17-JAN-2012 15:24

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

Advanced Mixed Waste Treatment Project

CCAL Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D

Analyzed on: 17-JAN-12 09:33
Sampled on & by: 17-JAN-12 08:57 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.98	98.0	
Methane	1.00	1.00	99.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.125	6.7	
Methanol	0.029	0.029	0.0	
Ethyl ether	0.145	0.143	1.4	
1,1-dichloroethylene	0.232	0.233	0.4	
Freon-113	0.580	0.577	0.5	
Acetone	0.107	0.105	1.9	
Carbon disulfide	0.557	0.552	0.9	
Methylene chloride	0.194	0.194	0.0	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.269	2.5	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.651	1.5	
1,1,1-trichloroethane	0.748	0.753	0.7	
Cyclohexane	0.420	0.408	2.9	
Carbon tetrachloride	0.178	0.174	2.2	
Benzene	0.689	0.657	4.6	
1,2-dichloroethane	0.499	0.492	1.4	
Trichloroethylene	0.486	0.478	1.6	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.105	0.0	
Toluene	0.586	0.557	4.9	
Tetrachloroethylene	0.571	0.573	0.4	
Chlorobenzene	0.967	0.919	5.0	
Ethylbenzene	0.455	0.431	5.3	
m and p-xylene	0.547	0.514	6.0	
o-xylene	0.521	0.482	7.5	
Bromoform	0.404	0.391	3.2	
1,1,2,2-tetrachloroethane	0.402	0.370	8.0	
1,3,5-trimethylbenzene	0.668	0.603	9.7	
1,2,4-trimethylbenzene	0.628	0.556	11.5	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Advanced Mixed Waste Treatment Project

CCAL Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

Analyzed on: 17-JAN-12 14:10
Sampled on & by: 17-JAN-12 11:42 SO
Matrix: QC Sample

Concentration
(vol % for H2/CH4) (ppmV for VOCs)

Compound Name	Nominal	Calculated	%R	Q Flag
Hydrogen	1.00	0.97	97.0	
Methane	1.00	0.99	98.7	

Response Factor

Compound Name	ICAL	CCAL	%D	Q Flag
Chloromethane	0.134	0.118	11.9	
Methanol	0.029	0.026	10.3	
Ethyl ether	0.145	0.138	4.8	
1,1-dichloroethylene	0.232	0.223	3.9	
Freon-113	0.580	0.563	2.9	
Acetone	0.107	0.104	2.8	
Carbon disulfide	0.557	0.534	4.1	
Methylene chloride	0.194	0.189	2.6	
trans-1,2-dichloroethylene	0.269	0.264	1.9	
1,1-dichloroethane	0.502	0.491	2.2	
cis-1,2-dichloroethylene	0.276	0.267	3.3	
Methyl ethyl ketone	0.116	0.113	2.6	
Chloroform	0.661	0.653	1.2	
1,1,1-trichloroethane	0.748	0.740	1.1	
Cyclohexane	0.420	0.405	3.6	
Carbon tetrachloride	0.178	0.177	0.6	
Benzene	0.689	0.660	4.2	
1,2-dichloroethane	0.499	0.491	1.6	
Trichloroethylene	0.486	0.477	1.9	
1-Butanol	0.045	0.044	2.2	
Methyl isobutyl ketone	0.105	0.104	1.0	
Toluene	0.586	0.551	6.0	
Tetrachloroethylene	0.571	0.563	1.4	
Chlorobenzene	0.967	0.903	6.6	
Ethylbenzene	0.455	0.423	7.0	
m and p-xylene	0.547	0.501	8.4	
o-xylene	0.521	0.476	8.6	
Bromoform	0.404	0.387	4.2	
1,1,2,2-tetrachloroethane	0.402	0.365	9.2	
1,3,5-trimethylbenzene	0.668	0.578	13.5	
1,2,4-trimethylbenzene	0.628	0.541	13.9	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Batch HS112-00002

LCS Report Shift 1

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D

Analyzed on: 17-JAN-12 09:52
Sampled on & by: 17-JAN-12 09:02 SO
Multiplier: 1.39
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	97.66	
Methane	0.500	0.50	99.32	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.62	101.25	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.60	91.19	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.13	92.27	
Benzene	50.00	47.71	95.42	
1,2-dichloroethane	50.00	47.84	95.68	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.64	92.54	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Batch HS112-00002
LCS Report Shift 2

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D

Analyzed on: 17-JAN-12 14:27
Sampled on & by: 17-JAN-12 11:47 SO
Multiplier: 1.38
Matrix: QC Sample

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Nominal**	**Calculated**	**%R**	**Q Flag**
Hydrogen	0.500	0.49	98.15	
Methane	0.500	0.49	97.38	
Chloromethane		U	NC	
Methanol		U	NC	
Ethyl ether		U	NC	
1,1-dichloroethylene		U	NC	
Freon-113		U	NC	
Acetone		U	NC	
Carbon disulfide		U	NC	
Methylene chloride	50.00	50.63	101.26	
trans-1,2-dichloroethylene		U	NC	
1,1-dichloroethane		U	NC	
cis-1,2-dichloroethylene		U	NC	
Methyl ethyl ketone		U	NC	
Chloroform	50.00	45.59	91.17	
1,1,1-trichloroethane		U	NC	
Cyclohexane		U	NC	
Carbon tetrachloride	50.00	46.17	92.34	
Benzene	50.00	48.25	96.51	
1,2-dichloroethane	50.00	48.31	96.63	
Trichloroethylene		U	NC	
1-Butanol		U	NC	
Methyl isobutyl ketone		U	NC	
Toluene	50.40	46.46	92.18	
Tetrachloroethylene		U	NC	
Chlorobenzene		U	NC	
Ethylbenzene		U	NC	
m and p-xylene		U	NC	
o-xylene		U	NC	
Bromoform		U	NC	
1,1,2,2-tetrachloroethane		U	NC	
1,3,5-trimethylbenzene		U	NC	
1,2,4-trimethylbenzene		U	NC	

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

Batch HS112-00002
LCS Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	
Lab Sample Id.:	LCS	LCS
Container Id.:	LCS1	LCS2
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	17-JAN-12 09:52	17-JAN-12 14:27
Sampled on & by:	17-JAN-12 09:02 SO	17-JAN-12 11:47 SO
Multiplier:	1.39	1.38
Matrix:	QC Sample	QC Sample
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\003LC-F.D	C:\HPCHEM\1\DATA\HS112_00002B\008LC-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	0.49	0.49	0.50	
Methane	0.50	0.49	1.98	
Chloromethane	U	U	NC	
Methanol	U	U	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	U	U	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	50.62	50.63	0.01	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	U	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	45.60	45.59	0.03	
1,1,1-trichloroethane	U	U	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	46.13	46.17	0.08	
Benzene	47.71	48.25	1.14	
1,2-dichloroethane	47.84	48.31	0.99	
Trichloroethylene	U	U	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	46.64	46.46	0.39	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

LCS Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Equipment Blank Report

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\004EB-F.D

Analyzed on: 17-JAN-12 10:06
Sampled on & by: 17-JAN-12 09:12 SO
Multiplier: 1.40
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

Esig Approval I	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

Batch No.: HS112-00002
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\005FB-F.D

Analyzed on: 17-JAN-12 10:20
Sampled on & by: 17-JAN-12 09:16 SO
Multiplier: 1.42
Matrix: QC Sample

Compound Name	Concentration (vol % for H2/CH4) (ppmV for VOCs)	Q Flag(s)
Hydrogen	0.014	U
Methane	0.019	U
Chloromethane	0.99	U
Methanol	17	U
Ethyl ether	0.88	U
1,1-dichloroethylene	0.71	U
Freon-113	0.62	U
Acetone	19	U
Carbon disulfide	1.2	U
Methylene chloride	1.5	U
trans-1,2-dichloroethylene	1.7	U
1,1-dichloroethane	1.3	U
cis-1,2-dichloroethylene	1.8	U
Methyl ethyl ketone	13	U
Chloroform	0.99	U
1,1,1-trichloroethane	1.4	U
Cyclohexane	2.3	U
Carbon tetrachloride	2.5	U
Benzene	1.9	U
1,2-dichloroethane	1.6	U
Trichloroethylene	0.96	U
1-Butanol	22	U
Methyl isobutyl ketone	19	U
Toluene	2.4	U
Tetrachloroethylene	1.8	U
Chlorobenzene	2.1	U
Ethylbenzene	2.5	U
m and p-xylene	2.8	U
o-xylene	3.4	U
Bromoform	2.0	U
1,1,2,2-tetrachloroethane	3.7	U
1,3,5-trimethylbenzene	5.0	U
1,2,4-trimethylbenzene	6.1	U

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)

No TICs PRESENT

Esig Approval I	Esigned By	Esigned Date	Comments
2164929	CROJAS	19 JAN 2012	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

DRUM Duplicate Report

		DUPLICATE
Batch No.:	HS112-00002	
Analysis Status:	Pass	Pass
Lab Sample Id.:	HS112_00002B-01	HS112_00002B-02
Container Id.:	BN10429587	BN10429587
Instrument Method:	VOCGAS	VOCGAS
Analyzed on:	17-JAN-12 14:41	17-JAN-12 14:55
Sampled on & by:	17-JAN-12 13:17 SO	17-JAN-12 13:29 SO
Multiplier:	1.38	1.38
Matrix:	Drum Headspace	Drum Headspace
Data Path:	C:\HPCHEM\1\DATA\HS112_00002B\009DR-F.D	C:\HPCHEM\1\DATA\HS112_00002B\010DR-F.D
Dilution File(s):		

	Concentration (vol % for H2/CH4) (ppmV for VOCs)			
Compound Name	**Original**	**Duplicate**	**RPD**	**Q Flag**
Hydrogen	J	J	NC	
Methane	U	U	NC	
Chloromethane	J	U	NC	
Methanol	J	J	NC	
Ethyl ether	U	U	NC	
1,1-dichloroethylene	U	U	NC	
Freon-113	U	U	NC	
Acetone	J	J	NC	
Carbon disulfide	U	U	NC	
Methylene chloride	U	U	NC	
trans-1,2-dichloroethylene	U	U	NC	
1,1-dichloroethane	U	J	NC	
cis-1,2-dichloroethylene	U	U	NC	
Methyl ethyl ketone	U	U	NC	
Chloroform	U	U	NC	
1,1,1-trichloroethane	J	J	NC	
Cyclohexane	U	U	NC	
Carbon tetrachloride	U	U	NC	
Benzene	U	U	NC	
1,2-dichloroethane	U	U	NC	
Trichloroethylene	J	J	NC	
1-Butanol	U	U	NC	
Methyl isobutyl ketone	U	U	NC	
Toluene	27	28	2.42	
Tetrachloroethylene	U	U	NC	
Chlorobenzene	U	U	NC	
Ethylbenzene	U	U	NC	
m and p-xylene	U	U	NC	
o-xylene	U	U	NC	
Bromoform	U	U	NC	
1,1,2,2-tetrachloroethane	U	U	NC	
1,3,5-trimethylbenzene	U	U	NC	
1,2,4-trimethylbenzene	U	U	NC	

Batch HS112-00002
DRUM Duplicate Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Internal Standards Summary

Batch No.: HS112-00002
Instrument Method: VOCGAS
CCAL1 Data Path: C:\HPchem\1\DATA\HS112_00002B\002CC-F.D
CCAL2 Data Path: C:\HPchem\1\DATA\HS112_00002B\007CC-F.D

CCAL1 Analyzed on: 17-JAN-12 09:33
CCAL2 Analyzed on: 17-JAN-12 14:10

	Fluorobenzene		Chlorobenzene-d5	
Sample	**Area**	**R.T. (min)**	**Area**	**R.T. (min)**
CCAL1 STD.	6309498	4.10	5959907	6.59
LCS1	6231046	4.07	5720084	6.57
EB	6131714	4.09	5662135	6.58
FB	5865722	4.07	5469082	6.57
CCAL2 STD.	6018153	4.09	5760669	6.59
LCS2	6079556	4.08	5651450	6.58
BN10429587	5990895	4.07	5581731	6.57
BN10429587	6002827	4.08	5525868	6.57
BN10430658	6030452	4.13	5617238	6.62
DILUTION1	5914895	4.08	5504630	6.57

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

Batch HS112-00002
Drum BN10429587 Sample Report

Batch No.: HS112-00002
Container Id.: BN10429587
Lab Sample Id.: HS112_00002B-01
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\009DR-F.D

Analysis Status: Pass
Analyzed on: 17-JAN-12 14:41
Sampled on & by: 17-JAN-12 13:17 SO
Multiplier: 1.38
Matrix: Drum Headspace
Dilution Files:

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.082 vol%	J							
Methane	0.019 vol%	U							
Chloromethane	1.1	J							
Methanol	42	J							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	0.62	U							
Acetone	25	J							
Carbon disulfide	1.2	U							
Methylene chloride	1.5	U							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.3	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	0.99	U							
1,1,1-trichloroethane	8.4	J							
Cyclohexane	2.3	U							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	1.6	J							
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	27								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
556-67-2	Cyclotetrasiloxane, octamethyl-	53	7.41

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Batch HS112-00002
Drum BN10430658 Sample Report

Batch No.: HS112-00002
Container Id.: BN10430658
Lab Sample Id.: HS112_00002B-03
Instrument Method: VOCGAS
Data Path: C:\HPCHEM\1\DATA\HS112_00002B\011DR-F.D

Analysis Status: Pass

Analyzed on: 17-JAN-12 15:09
Sampled on & by: 17-JAN-12 13:42 SO
Multiplier: 1.43
Matrix: Drum Headspace
Dilution Files: 012

Compound Name	Amount (ppmV)	Q Flag	C Cal 1	C Cal 2	LCS	L Dup.	EB	FB	D Dup.
Hydrogen	0.15 vol%								
Methane	0.019 vol%	U							
Chloromethane	0.99	U							
Methanol	17	U							
Ethyl ether	0.88	U							
1,1-dichloroethylene	0.71	U							
Freon-113	0.62	U							
Acetone	170								
Carbon disulfide	1.2	U							
Methylene chloride	580	**D**							
trans-1,2-dichloroethylene	1.7	U							
1,1-dichloroethane	1.3	U							
cis-1,2-dichloroethylene	1.8	U							
Methyl ethyl ketone	13	U							
Chloroform	0.99	U							
1,1,1-trichloroethane	7.9	J							
Cyclohexane	2.8	J							
Carbon tetrachloride	2.5	U							
Benzene	1.9	U							
1,2-dichloroethane	1.6	U							
Trichloroethylene	13								
1-Butanol	22	U							
Methyl isobutyl ketone	19	U							
Toluene	34								
Tetrachloroethylene	1.8	U							
Chlorobenzene	2.1	U							
Ethylbenzene	2.5	U							
m and p-xylene	2.8	U							
o-xylene	3.4	U							
Bromoform	2.0	U							
1,1,2,2-tetrachloroethane	3.7	U							
1,3,5-trimethylbenzene	5.0	U							
1,2,4-trimethylbenzene	6.1	U							

TENTATIVELY IDENTIFIED COMPOUNDS

CAS Number	Compound Name	Amount (ppmV)	R.T. (min.)
78-87-5	1,2-DICHLOROPROPANE	150	4.71
556-67-2	Cyclotetrasiloxane, octamethyl-	49	7.45

Batch HS112-00002
Drum BN10430658 Sample Report

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Drum Age Criteria (DAC) Report

Implementing Document: INST-OI-43

Analysis Status	Container	Sampling Scenario	Summary Category	Bags Inner	Bags Liner	Package Configuration Group No.	Closure Date	Vent Date	Sample Date	DAC (days)	Drum Age (days)	Filter Models Present
P	BN10429587	3	S5000	0	0	7	27 Dec 11	27 Dec 11	17 Jan 12	2	21	NF19SD, NF036
P	BN10430658	3	S5000	0	0	7	10 Jan 12	10 Jan 12	17 Jan 12	2	7	NF19SD, NF036

Container	Liner Lid Hole Size (in., if applicable)	Vent Blocked Prior to Sampling	DAC Verified	Headspace Operator	Comments
BN10429587	NA	Y	Y	SETH OLDHAM	
BN10430658	NA	Y	Y	SETH OLDHAM	

Esig Approval ID	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR
2164151	CROJAS	18-JAN-12 14:25	
2163335	SOLDHAM	17-JAN-12 13:58	

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	27-DEC-11
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	27-DEC-11
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						20-MAR-12 08:25:18	Rick Whitmore
To:	TRUPACT Loaded							20-MAR-12 08:26:14	Rick Whitmore
Status:	Container move is done and complete								
From:	635	WC			3	3	1	15-MAR-12 13:21:25	Kim Smith
To:	635	Assembled Payloads						15-MAR-12 13:21:35	Kim Smith
Status:	Container move is done and complete								
From:	628	SJ			14	2	2	14-MAR-12 15:52:34	Fred White
To:	635	WC			3	3	1	14-MAR-12 16:22:51	Rick Whitmore
Status:	Container move is done and complete								
From:	633	SA			6	1	2	14-MAR-12 11:40:13	Fred White
To:	628	SJ			14	2	2	14-MAR-12 11:40:59	Fred White
Status:	Container move is done and complete								
From:	634- Characterization	SK			13	2	1	07-FEB-12 11:37:00	Larry Payne
To:	633	SA			6	1	2	07-FEB-12 11:47:00	Larry Payne
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	1	1	06-FEB-12 15:09:56	Cindy Tiegs
To:	634- Characterization	SK			13	2	1	06-FEB-12 15:15:22	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	1	1	24-JAN-12 11:40:22	Tony Burgess
To:	634- Characterization	SI			1	1	1	24-JAN-12 11:40:46	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:34:51	Scott Taggart
To:	634- Characterization	SG			7	1	1	17-JAN-12 13:35:09	Scott Taggart
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SG			7	1	1	17-JAN-12 12:07:25	Michael Kremin
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:55	Michael Kremin
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	1	1	16-JAN-12 13:14:04	Tony Burgess
To:	634- Characterization	SG						16-JAN-12 16:21:43	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	SX			1	1	1	13-JAN-12 08:11:45	Cindy Tiegs
To:	634- Characterization	SG			7	1	1	13-JAN-12 08:12:02	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					10-JAN-12 15:23:02	Tony Burgess
To:	634- Characterization	SX			1	1	1	10-JAN-12 15:23:27	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	SX			1	1	1	10-JAN-12 13:54:14	Seth Oldham
To:	634- Characterization	HGAS Area	HGAS 001 Machine					10-JAN-12 13:54:30	Seth Oldham
Status:	Container move is done and complete								
From:	628	NL			1	2	1	07-JAN-12 08:34:47	Jason Uptergrove
To:	634- Characterization	SX			1	1	1	07-JAN-12 08:36:06	Jason Uptergrove
Status:	Container move is done and complete								
From:	628	ND			7	1	1	05-JAN-12 16:59:49	Douglas Capell
To:	628	NL			1	2	1	05-JAN-12 17:00:43	Douglas Capell
Status:	Container move is done and complete								
From:	628	SC			7	2	1	31-DEC-11 16:04:59	Chris Stamos
To:	628	ND			7	1	1	31-DEC-11 16:37:53	Chris Stamos
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-DEC-11 08:29:12	Douglas Capell
To:	628	SC			7	2	1	28-DEC-11 08:39:28	Douglas Capell
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				28-DEC-11 00:45:46	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/06	EXB/06				28-DEC-11 00:45:08	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/05	EXB/05				27-DEC-11 22:07:05	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/04	EXB/04				27-DEC-11 17:19:03	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/03	EXB/03				27-DEC-11 13:09:41	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXB/02	EXB/02				27-DEC-11 10:50:25	
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	EXB/01	EXB/01				27-DEC-11 02:05:27	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/02				27-DEC-11 01:54:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/03				27-DEC-11 01:54:12	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				27-DEC-11 01:54:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				27-DEC-11 01:53:47	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				27-DEC-11 01:53:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				27-DEC-11 01:52:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				27-DEC-11 01:38:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				26-DEC-11 22:06:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				26-DEC-11 22:06:23	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-DEC-11 22:06:07	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-DEC-11 22:04:15	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/9				26-DEC-11 17:31:16	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTA/01				26-DEC-11 17:27:45	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				26-DEC-11 17:27:30	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10429587

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				26-DEC-11 16:57:19	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				26-DEC-11 09:41:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				26-DEC-11 09:35:51	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				25-DEC-11 00:13:54	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				24-DEC-11 23:59:22	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				24-DEC-11 23:59:09	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				24-DEC-11 05:11:54	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				24-DEC-11 05:11:28	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				23-DEC-11 16:15:48	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				23-DEC-11 16:15:44	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				23-DEC-11 16:15:40	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				23-DEC-11 16:15:36	
Status:	Container move is done and complete								
From:								22-DEC-11 10:31:33	Wayne Ashcraft
To:	676- Facility	General Facility Building	General Facility Subsection I					22-DEC-11 10:31:33	Wayne Ashcraft
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10429587

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	27-DEC-11	RGUNNING	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	27-DEC-11	RGUNNING	N			N
Diffusivity:	9.25E-05							
Comment								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

DAC Information

Waste Type:	III	Liner Lid Hole Size:	NA	Vent Date:	10-JAN-12
Rigid Liner:	N	Inner Bags:	NA	Closure Date:	10-JAN-12
Rigid Liner Lid:	N	Liner Bags:	NA	Layers of Confinement:	0

Inspection Information

Historical ID:
TID:
D Number:
Pack Date:
Assay LLD: Not Available

Latest RVU Information

Liner Present:	NA	Liner Punctured:	NA
Liner Hole Size:	NA	Liner Type:	NA
		Closure Date:	NA
Liner Bags:	NA		
Inner Bags:	NA		
Waste Matrix Code:	NA	Fill Factor:	NA

NCR Information

Trackwise #	Opened	Closed

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	635	Assembled Payloads						10-AUG-12 08:13:33	Mark Christensen
To:	TRUPACT Loaded							10-AUG-12 08:16:05	Mark Christensen
Status:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 08:16:58	Larry Hampton
To:	635	Assembled Payloads						05-AUG-12 08:18:34	Larry Hampton
Status:	Container move is done and complete								
From:	628	SL			6	2	1	05-AUG-12 07:18:56	Larry Hampton
To:	635	WC						05-AUG-12 08:16:58	Larry Hampton
Status:	Container move is cancelled								
From:	628	NK			13	3	1	03-AUG-12 16:02:20	Larry Hampton
To:	628	SL			6	2	1	03-AUG-12 17:42:38	Larry Hampton
Status:	Container move is done and complete								
From:	628	NK			4	3	2	26-JUL-12 09:54:55	Lonnie Seiler
To:	628	NK			13	3	1	26-JUL-12 10:00:07	Lonnie Seiler
Status:	Container move is done and complete								
From:	628	ND			6	3	1	23-JUL-12 16:04:57	Steven Williams
To:	628	NK			4	3	2	23-JUL-12 16:32:30	Steven Williams
Status:	Container move is done and complete								
From:	628	SE			7	2	2	20-JUL-12 11:40:07	Julie Ragan
To:	628	ND			6	3	1	20-JUL-12 11:44:21	Julie Ragan
Status:	Container move is done and complete								
From:	633	SA			6	2	2	14-JUL-12 13:56:31	Paul Chapman
To:	628	SE			7	2	2	14-JUL-12 13:57:13	Paul Chapman
Status:	Container move is done and complete								

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Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:	634- Characterization	SK			13	1	1	07-FEB-12 11:36:51	Larry Payne
To:	633	SA			6	2	2	07-FEB-12 11:48:03	Larry Payne
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	06-FEB-12 15:10:11	Cindy Tiegs
To:	634- Characterization	SK			13	1	1	06-FEB-12 15:15:46	Cindy Tiegs
Status:	Container move is done and complete								
From:	634- Characterization	SI			1	2	1	24-JAN-12 18:22:22	Tony Burgess
To:	634- Characterization	SG						24-JAN-12 18:23:09	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	SG			7	3	1	24-JAN-12 11:40:29	Tony Burgess
To:	634- Characterization	SI			1	2	1	24-JAN-12 11:41:01	Tony Burgess
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:49:12	Scott Taggart
To:	634- Characterization	SG			7	3	1	17-JAN-12 13:49:28	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:33	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 13:35:43	Scott Taggart
Status:	Container move is done and complete								
From:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:14	Michael Kremin
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 12:07:45	Michael Kremin
Status:	Container move is done and complete								
From:	634- Characterization	SG			7	2	1	17-JAN-12 08:25:21	Scott Taggart
To:	634- Characterization	HGAS Area	HGAS 001 Machine					17-JAN-12 09:31:45	Scott Taggart
Status:	Container move is done and complete.								
From:	634- Characterization	SG			7	2	1	16-JAN-12 13:13:50	Tony Burgess
To:	634- Characterization	SG						16-JAN-12 16:21:31	Tony Burgess
Status:	Container move is cancelled								
From:	634- Characterization	Staging Area						13-JAN-12 11:44:26	Jason Uptergrove
To:	634- Characterization	SG			7	2	1	13-JAN-12 11:44:45	Jason Uptergrove
Status:	Container move is done and complete								
From:	628	SA			5	2	2	13-JAN-12 10:22:45	Jason Uptergrove
To:	634- Characterization	Staging Area						13-JAN-12 11:44:03	Jason Uptergrove
Status:	Container move is done and complete								
From:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 10:18:14	Jeff Johnson
To:	628	SA			5	2	2	11-JAN-12 10:26:16	Jeff Johnson
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	TR/01				11-JAN-12 05:19:12	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/06	EXA/06				11-JAN-12 05:18:37	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/05	EXA/05				11-JAN-12 05:17:23	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Clean Room	RM143-SYS422	EXA/04	EXA/04				11-JAN-12 03:30:42	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/03	EXA/03				10-JAN-12 21:35:33	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/02	EXA/02				10-JAN-12 17:04:35	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	EXA/01	EXA/01				10-JAN-12 15:15:55	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OSTG/01				10-JAN-12 15:15:37	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/02				10-JAN-12 15:15:24	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	OCHN/01				10-JAN-12 15:15:06	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/02				10-JAN-12 15:14:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/02				10-JAN-12 15:13:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/02				10-JAN-12 14:53:05	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/02				10-JAN-12 14:52:44	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 14:52:26	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 14:50:30	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PH/8				10-JAN-12 10:57:33	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LFTB/01				10-JAN-12 10:54:22	
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Container: BN10430658

	Building	Section	Subsection	ICS Location	X	Y	Z	Date	Operator
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/02				10-JAN-12 10:53:53	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LCHN/01				10-JAN-12 10:53:43	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	STG/01				10-JAN-12 09:10:52	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	LID/01				10-JAN-12 08:52:03	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	AIR/01				10-JAN-12 05:08:48	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	PAIR/01				10-JAN-12 05:01:10	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ICHN/02				09-JAN-12 21:42:02	
Status:	Container move is done and complete								
From:									
To:	676- Facility	General Facility Building	General Facility Subsection	ISTG/02				09-JAN-12 21:34:52	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/07	INB/07				09-JAN-12 21:34:24	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/06	INB/06				09-JAN-12 16:16:40	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/05	INB/05				09-JAN-12 16:16:14	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/04	INB/04				09-JAN-12 11:43:02	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/03	INB/03				09-JAN-12 11:42:57	
Status:	Container move is done and complete								
From:									
To:	676- Clean Room	RM143-SYS422	INB/02	INB/02				09-JAN-12 11:42:52	
Status:	Container move is done and complete								
From:								08-JAN-12 07:06:59	Jenny Cummins
To:	676- Facility	General Facility Building	General Facility Subsection I					08-JAN-12 07:06:59	Jenny Cummins
Status:	Container move is done and complete								

AMWTP
Advanced Mixed Waste Treatment Project

Headspace Gas Report

Filter Data

BN10430658

WDS Filter Code	Other Filter Model	Event	Event Date	Entered By	Removed	Removed Date	Removed By	Exclude
NF19SD		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	1.85E-05							
Comment								
NF036		SC Loadout	10-JAN-12	JCUMMINS	N			N
Diffusivity:	9.25E-05							
Comment								

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	
Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors.WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Historical Checklist

	Answer	Comment
Ensure all special tools, equipment and supplies are available to perform INST-OI-43.	PASS	
Ensure all commercial stock gas and liquid standards have not exceeded the manufactures shelf life.	PASS	
Ensure all gas cylinders' valves are open and regulated to the appropriate pressure.	PASS	
Ensure an adequate supply of helium and nitrogen.	PASS	Nitrogen 2250 psi; Helium 1500 psi
Ensure the humidifier contains ASTM Type II water.	PASS	

Verify Method performance demonstration and MDL's are current.	PASS	Exp. date 02/13/12
Ensure A/C makeup damper is properly adjusted.	PASS	
Ensure that all M and TE is current and document expiration dates in the comment section. HGAS Temperature Sensors. HGAS Pressure Sensors. WMF-634 Temperature recorder.	PASS	TI-221-001A, 06/26/12; TIC-221-001A, 06/26/12; PI-221-001A, 06/30/12; VG-221-001A, 06/30/12; TT-232-063B,04-21-12
Verify that all drums staged for HGAS analysis have met the 72 hour equilibration at > 18 degrees C.	PASS	
Ensure all manual valves and switches are in proper configuration. Nitrogen humidifier valve open. OCS Valve closed. HGAS sampler switch in Run Mode.	PASS	
Ensure all required PPE is available.	PASS	

Esig Approval Id	Esigned By	Esigned Date	Comments
2163061	SOLDHAM	17-JAN-12 08:08	
2164156	CROJAS	18-JAN-12 14:33	
2164929	CROJAS	19-JAN-12 15:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSGS Headspace Gas
Batch HS112-00002
Batch Log

Date: 25 SEP 2012
Time: 09:21

$HS112_00002,2012-01-
11,14:31:50,SO,0.007,0.004,0.004,0.004,0.004,0.005,0.003,0.003,0.003,0.003,0.002,0.002,0.003,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,0.002,(
.002,0.001,0.002,0.002,0.002,60.00,3.00,40.00,5.00,60.00,5.00,15:18:47,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1|Vac_error(EVAC2). Vac_error(EVAC3).||No comment.
S1,HS112_00002,icCLEAN,2012-01-17,08:32:04,640.919,902.280,22.3,SO,,,0.0121,636.036,N/A|No comment.
A1,HS112_00002,icCLEAN,723.197|IC1,2012-01-17,08:36:45 Delivered (723.197).
R,HS112_00002,QC1,2012-01-17,08:41:39|No system comments.
S1,HS112_00002,icCCAL1,2012-01-17,08:57:20,641.682,895.688,22.0,SO,,,0.0097,636.403,N/A|No comment.
S2,HS112_00002,icLCS1,2012-01-17,09:02:26,641.896,890.347,22.2,SO,,,0.0101,636.403,N/A|No comment.
S10,HS112_00002,icEB,2012-01-17,09:12:00,641.163,895.627,22.4,SO,,,0.0015,636.372,N/A|No comment.
S3,HS112_00002,drFB,2012-01-17,09:16:23,634.693,903.745,22.5,SO,,,0.0204,636.403,N/A|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,09:25:04 BFB analysis started.
A1,HS112_00002,icCCAL1,721.458|IC1,2012-01-17,09:29:16 Delivered (721.458).
A2,HS112_00002,icLCS1,711.722|IC2,2012-01-17,09:48:20 Delivered (711.722).
A10,HS112_00002,icEB,710.593|IC10,2012-01-17,10:02:04 Delivered (710.593).
A3,HS112_00002,drFB,723.747|DR3,2012-01-17,10:15:49 Delivered (723.747).
R,HS112_00002,QC2, EB-10,2012-01-17,10:20:43|No system comments.
S2,HS112_00002,icCCAL2,2012-01-17,11:42:08,641.499,885.525,23.0,SO,,,0.0061,636.372,N/A|No comment.
S3,HS112_00002,icLCS2,2012-01-17,11:47:22,641.804,886.776,23.1,SO,,,0.0069,636.311,N/A|No comment.
S8,HS112_00002,drBN10429587,2012-01-17,13:17:41,633.717,872.036,24.1,SO,,,0.0154,634.999,N/A|No comment.
S9,HS112_00002,drBN10429587 DUP,2012-01-17,13:29:13,633.320,876.492,24.2,SO,,,0.0124,634.938,passed|No comment.
S10,HS112_00002,drBN10430658,2012-01-17,13:42:51,632.313,902.280,24.1,SO,,,0.0122,634.693,passed|No comment.
A0,HS112_00002,BFB,0.000|Loading BFB,2012-01-17,14:01:58 BFB analysis started.
A2,HS112_00002,icCCAL2,709.464|IC2,2012-01-17,14:06:08 Delivered (709.464).
A3,HS112_00002,icLCS2,712.668|IC3,2012-01-17,14:23:40 Delivered (712.668).
A8,HS112_00002,drBN10429587,697.165|DR8,2012-01-17,14:37:24 Delivered (697.165).
A9,HS112_00002,drBN10429587 DUP,699.057|DR9,2012-01-17,14:51:11 Delivered (699.057).
A10,HS112_00002,drBN10430658,717.551|DR10,2012-01-17,15:05:01 Delivered (717.551).
A10,HS112_00002,drBN10430658,740.410|DL10 to 4,2012-01-17,15:18:56 DEP = 104.251. DCP = 917.173. Delivered (740.410).

*******************************Esignature***************************

Esig Approval ID	Esigned By	Esigned Date	Comment
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

HSOS Data Generation Checklist

Batch ID HS112-00002

	Answer	Comment
Cover page: Batch Number	Y	
Cover page: Batch Date	Y	
Cover page: Batch Report Generation Date	Y	
Cover page: Sample Equipment Number	Y	
Cover page: Container Type	Y	
Cover page: Sample Matrix/Type	Y	
Cover page: Analysis Required	Y	
Cover page: Sample Origin/Location	Y	
Cover page: Sample Size	Y	
Cover page: Sample/Container Number(s)	Y	
Table Of Contents	N/A	
Case Narrative: Verification of Rigid Liner Puncture	N/A	These are 100 gal puck drums
ICAL Report (Form 6A)	Y	
BFB Tune Report(s): ICAL Form 5A	Y	
BFB Tune Report(s): Shift 1/Shift 2 Form 5A(s)	Y	
CCV Report(s): Shift 1/Shift 2 Form 7A(s)	Y	
OCS Report(s): Shift 1 Form 3A/Shift 1 Form 1A	Y	
OCS Report(s): Shift 2 Form 3A Duplicate/Shift 2 Form 1A	Y	
OCS Report(s): Form 3B (OCS/OCS Duplicate Precision)	Y	
Blank Report(s): Form 4A (Field Blank)	N/A	
Blank Report(s): Form 1A/1E (Field Blank)	Y	
Blank Report(s): Form 1A (Equipment Blank)	Y	
Duplicate Report(s): Form 3C (Sample/Sample Duplicate Precision)	Y	
Duplicate Report(s): Form 1A/1E Duplicate Sample	Y	
Internal Standard Report(s): Form 8A (Shift 1)	Y	
Internal Standard Report(s): Form 8A (Shift 2)	Y	
Drum Report(s): Form 1A(s)/Form 1E(s)	Y	
Drum Report(s): Verify Raw Data	Y	
Drum Report(s): Verify all Flags	Y	
Drum Report(s): Verify Date and Time	Y	
MDL Spreadsheet	N	See case narrative
MPS Spreadsheet	N	See case narrative
Form-1449: Drum Vent Date Data	Y	
WTS HSG Report(s)	Y	
WMF-634 Temperature Graph	Y	
Certificates of Accuracy: CCV Standard	N	See case narrative
Certificates of Accuracy: OCS Standard	N	See case narrative
Certificates of Accuracy: Internal Standard	N	See case narrative
NCR(s)/CAR(s)	N	No NCRs
Data Generation Checklist	Y	

****** Esignature History ******

Esig Approval Id	Esigned By	Esigned Date	Comments
2164929	CROJAS	19-JAN-12 03:22	Promote to ITR

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the BDR complete? o Batch Cover Sheet o Table of Contents (manual review only) o Case Narrative o BFB Information o Continuing Calibration Information o On-Line Control Sample Information o On-line Control Sample Duplicate Information o On-line Field Blank Information o On-Line Equipment Blank Information (if applicable) o On-Line Drum Duplicate Information o Drum Sample Information for each container o Temperature Equilibrium Charts or WTS Preheat Data Information o Evidence of Initial Calibration o Evidence of Method Detection Limits o Nonconformance Reports (referenced in WTS, if applicable) o Independent Technical Review Checklist (Form-1517) o HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (manual review only) o RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) o WTS Headspace Gas Report / WTS Container Movement History o Form-1595, HGAS Daily Checks o Form-1449, Sample Batch Drum Age Criteria Data Sheet o Form-1491, Batch Data Report Supplemental Comment Form, as applicable.	Yes		
2.Were NCRs that were generated for containers reported in the batch that failed to meet DQOs or QAOs included or referenced within the batch?	N/A		No NCRs associated with containers in this batch.
3. Were all drums equilibrated for a minimum of 72 hours at 18°C or higher and were the samples taken above 18°C?	Yes		
4. Was the appropriate Drum Age Criteria (DAC) scenario applied to each of the drums in the batch? o Was the appropriate packaging configuration group applied (if applicable)? o Was the appropriate DAC applied based on filter diffusivity, rigid liner hole diameter and liner lid configuration (lid hole diameter, no lid, or no liner)?	Yes		
5. Have all waste containers reported in the batch achieved or exceeded the appropriate DAC before being sampled? If a drum failed to meet DAC, mark No and write the NCR number.	Yes		
6. Was the correct vent date from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation used?	Yes		
7. Were NCRs reviewed for impact on DAC determination?	N/A		No NCRs associated with containers in this batch.
8. Were all liner lids in reported waste containers punctured prior to sampling at HGAS? If liners are not present, mark N/A.	N/A		Product drums do not have liners.
9. Has a BFB tune been performed for each 12-hour shift prior to sampling/analysis?	Yes		
10. Were all samples collected and analyzed within the BFB 12-hour window?	Yes		
11. Does the BFB meet the abundance criteria for key ions per INST-OI-43, HGAS Sampling and Analysis Operations?	Yes		
12. Has the BFB data been reviewed, signed by the analyst,	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
and complete?			
13. Was a valid ICAL used as described in INST-OI-43, and included or referenced as appropriate? o Was a 5-point calibration used for MS and a 4-point used for TCD? o Was the %RSD of response factor for each analyte less than 35% for GC/MS? o Was the r(r) greater than 0.990 for TCD? o Was at least one level of the calibration of the GC/MS below the PRQL?	Yes		
14. Was a CCV analyzed for each 12-hour shift, after the BFB tune and prior to analysis of any samples?	Yes		
15. Were the retention times of the internal standard within 30 seconds of those in the associated ICAL?	Yes		
16. Were the internal standard areas within 50 to 200% of those in the associated ICAL?	Yes		
17. Is the Percent Difference (%D) less than or equal to 30% of the initial calibration for all analytes?	Yes		
18. Was the percent recovery for the TCD between 70% and 130%?	Yes		
19. Was the CCV data reviewed, signed by the analyst, and complete for each analyte?	Yes		
20. Was there a minimum of one on-line control sample (OCS) collected and analyzed after the CCV for each 12-hour shift?	Yes		
21. Is the OCS independent from the ICAL (i.e. second source)?	Yes		
22. Does the on-line control sample contain a minimum of six VOC target analytes, hydrogen, and methane?	Yes		
23. Does the OCS contain concentrations within a range of 10 to 100 ppmv for VOCs and greater than the MDL for each compound?	Yes		
24. Do the percent recoveries (%R) for all analytes in the OCS fall within the 70% to 130% acceptable range?	Yes		
25. Was the OCS data reviewed, signed off by the analyst, and complete?	Yes		
26. Was the field blank collected and analyzed after the on-line control sample for each sampling batch?	Yes		
27. Are the field blank results less than or equal to three times the MDLs for each analyte?	Yes		
28. Was the field blank data reviewed, signed off by the analyst,and complete?	Yes		
29. Was the equipment blank collected and analyzed after the on-line control sample for each 12-hour shift?	Yes		
30. Are the equipment blank results less than or equal to three times the MDLs for each analyte?	Yes		
31. Was the equipment blank data reviewed, signed off by the analyst, and complete?	Yes		
32. Is there a minimum of one on-line duplicate sample collected and analyzed per on-line batch?	Yes		
33. Does the sample and duplicate sample data have at least one compound in common at concentrations greater than the PRQL for performing a duplicate comparison?	Yes		
34. Does the RPD between the sample and duplicate results (for each analyte) at or above the PRQL meet the less than or equal to 25% precision requirement?	Yes		
35. If the sample and sample duplicate did not contain at least one compound in common greater than PRQL, or satisfy the RPD QAO, did the OCS and OCS duplicate have	N/A		

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
an RPD less than or equal to 25%? If the sample/sample duplicate meets the QAO, mark N/A.			
36. Is the sample duplicate data reviewed, signed off by an analyst, and complete?	Yes		
37. Do all reported hits have retention times within RT windows determined by the initial calibration?	Yes		
38. Are the sample internal standard areas within a factor of 2 (i.e, 50 to 200%) of the CCAL?	Yes		
39. Using the analyte identification criteria from INST-OI-43, does the sample spectra for positive hits match the reference spectra?	Yes		
40. Has a TIC search been conducted on each sample, the sample duplicate, and field blank to report peaks with areas greater than or equal to 10% of the nearest internal standard?	Yes		
41. Does the TIC data exist for each sample with one or more TICs?	Yes		
42. If there were more than one possible match, was the TIC reported adequately in accordance with INST-OI-43?	Yes		
43. Was a TIC identification change made and was the reason for change confirmed and documented within the batch or WTS batch comments? If no TIC changes were made, mark N/A.	N/A		
44. Was the quantitation method used for TICs consistent with WAP requirements?	Yes		
45. Was the sample TIC data reviewed, signed off by an analyst, and complete for all samples associated with this analytical batch?	Yes		
46. Has the data been generated in a technically correct manner using the correct revision of INST-OI-43 and in accordance with the methods and instrument used?	Yes		
47. Has 100% of the hand-entered data been reviewed for transcription errors?	Yes		
48. Are the field sampling records complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration?	Yes		
49. Are all values less than the MDL reported as the MDL and flagged with a "U" qualifier?	Yes		
50. Are all values greater than or equal to the MDL and less than the PRQL reported with a "J" qualifier?	Yes		
51. Are all values determined from a dilution reported with a "D" qualifier?	Yes		
52. Are all analytes greater than three times the MDL found in blank analyses flagged with a "Z" qualifier and documented on a NCR?	N/A		No analytes detected in blank samples at a level greater than three times the MDL.
53. Are all values greater than or equal to the MDL in the Blank analyses flagged with a "B" qualifier?	N/A		No analytes detected in blank samples at a level greater or equal to the MDL.
54. Are all samples having analytes detected at concentrations exceeding the calibration range flagged with an "E" qualifier and documented on a NCR?	N/A		No analytes detected at a level beyond the calibration range.
55. Were all hand calculations verified (equilibrium time, DAC calculations, and drum age)?	Yes		
56. Were the traceable standards used?	Yes		
57. Are all units and significant figures used for sample analysis and reporting correct?	Yes		
58. Do all the peaks have proper baselines and are all integrations correct?	Yes		
59. Has there been an acceptable demonstration of	Yes		

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer JASON KETTEL **Approval Level** Independent Technical Reviewer
Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
precision, accuracy, and MDLs performed within the last six months?			
60. Have the applicable Minimum Detection Limits (MDL) and Method Performance Summary (MPS) been documented within the batch?	Yes		
61. Has the HSGS participated in the current Performance Demonstration Program?	Yes		
62. Is the individual who performed the analysis current on their HGAS qualification?	Yes		
63. Are all sample data signed and dated via electronic signatures, or manually using reproducible ink?	Yes		
64. Has all data been recorded clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media?	Yes		
65. Has the data been reviewed for changes, and if changes have been performed, has adequate justification been made?	Yes		
66. Have all changes to original data been tracked by either electronic means or manually, by a single line through the incorrect entry, initialed and dated by the person making the change?	N/A		No changes necessary.
67. Were there any nonconforming conditions identified which affect data quality?	No		
68. Were the rework requirements clearly identified in WTS or within the batch?	N/A		No rework required.

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Does the BDR include a listing of all container numbers in the batch?	Yes	MP-TRUW-8.2, C3-10b(2)	
(2) Is the current implementing procedure and revision number included in the BDR?	Yes	MP-TRUW-8.2, Table C3-13	
(3) Was a five-point calibration used for GC/MS?	Yes	MP-TRUW-8.2 Table C3-3 INST-OI-43	
(4) Is the concentration of one calibration standard below the PRQL for GC/MS?	Yes	INST-OI-43	
(5) Is the GC/MS Initial Calibration %RSD < 35% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(6) Was a BFB Tune performed at the start of the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(7) Were all reported samples collected within the 12-hour Shift-1 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(8) Were all reported samples analyzed within the 12-hour Shift-2 BFB period?	Yes	MP-TRUW-8.2 Table C3-3	
(9) Do all associated BFB analyses pass accepted criteria?	Yes	MP-TRUW-8.2 Table C3-3	
(10) Was a shift-1 and a shift-2 CCAL run for the batch?	Yes	MP-TRUW-8.2 Table C3-3	
(11) For GC/MS, was the shift-1 and shift-2 CCAL %D less than or equal to 30% for all VOA compounds?	Yes	MP-TRUW-8.2 Table C3-3	
(12) Was a shift-1 and a shift-2 on-line control sample (OCS) analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(13) Was the shift-1 OCS recovery (%R) acceptable (70-130%) for all analytes?	Yes	MP-TRUW-8.2 Table C3-3	
(14) Was the OCS/OCS duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are < PRQL)? Mark N/A if the drum/drum duplicate RPD QAO is acceptable.	N/A	MP-TRUW-8.2 Table C3-2	Drum/drum duplicate RPD QAO is acceptable.
(15) Was an on-line equipment blank analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(16) Were the on-line equipment blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(17) Was a field blank collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(18) Were the field blank results less than or equal to 3 times the MDL?	Yes	MP-TRUW-8.2 Table C3-3	
(19) Was an on-line duplicate drum sample (ODS) collected and analyzed once per batch?	Yes	MP-TRUW-8.2 Table C3-3	
(20) Was the drum/drum duplicate precision criteria acceptable (RPD < or = 25% when sample and duplicate results are > PRQL)?	Yes	MP-TRUW-8.2 Table C3-3	
(21) Are the Retention Times of the internal standards within 30 seconds of the ICAL and are the internal standard areas within 50 to 200 percent of those in the associated ICAL?	Yes	EPA SW-846 Method 8260	
(22) Is there an HGAS drum sample data form for each reported container in the batch?	Yes	MP-TRUW-8.2, Table C3-13	
(23) Were VOA results reported in ppmv?	Yes	MP-TRUW-8.2 Table C3-2	
(24) Were TICs properly reported, if applicable?	Yes	MP-TRUW-8.2, C3-1(3)	
(25) Were container temperature equilibrium requirements met (72-hours @ 18°C or higher)?	Yes	MP-TRUW-8.2, C1-1a	
(26) Was drum age criteria (DAC) met for each drum?	Yes	MP-TRUW-8.2 Table C3-2	
(27) Was the correct DAC scenario selected?	Yes	MP-TRUW-8.2 Table C3-2	

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(28) Was the correct waste packaging configuration selected?	Yes	MP-TRUW-8.2 Table C3-2	
(29) Was the data reported with the correct number of significant figures?	Yes	MP-TRUW-8.2, C3-10b(1)	
(30) Were all applicable NCRs and flagged data described in the case narrative?	Yes	MP-TRUW-8.2, Table C3-13	
(31) Were the correct qualifying flags assigned?	Yes	MP-TRUW-8.2, Table C3-14	
(32) Were traceable standards used?	Yes	MP-TRUW-8.2, C1-1b(3)	
(33) Was sampling equipment cleaned and leak checked, as appropriate?	Yes	MP-TRUW-8.2 Table C3-2	
(34) Was the pressure regulation documented?	Yes	MP-TRUW-8.2 Table C3-2	
(35) Were the manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards?	Yes	MP-TRUW-8.2 Table C3-2	
(36) Were proper sample handling and preservation requirements met (0-40°C)?	Yes	MP-TRUW-8.2, Table C1-1	
(37) Were MDLs and PRQLs established and met for each compound listed in Table C3-2?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(38) Are Method Performance Samples (MPS) current for GC/MS and GC/TCD?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(39) Is the system's PDP participation current and satisfactory?	Yes	MP-TRUW-8.2 Table C3-3	
(40) Were the MDLs (expressed in nanograms) determined within the last 6 months of sampling for containers in the BDR?	Yes	MP-TRUW-8.2,C3-3 C3-5	
(41) Has the laboratory met the 90% completeness requirement for analysis?	Yes	MP-TRUW-8.2 Table C3-2	
(42) Are all personnel training records acceptable and current?	Yes	MP-TRUW-8.2, Table C3-14	
(43) Is the completed, signed, and dated Independent Technical Review checklist included in the BDR?	Yes	MP-TRUW-8.2, C3-10b(1)	
(44) Is the BDR for HGAS complete (all pages identified in the BDR and numbered according)? · Batch Cover Sheet Container List and Case Narrative · Initial Calibration Report · BFB Reports · Continuing Calibration Reports · On-Line Control Sample Reports · On-line Control Sample Duplicate Report · On-line Field Blank Report · On-Line Equipment Blank Report · On-Line Drum Duplicate Report · On-Line Internal Standard Summaries Report · Drum Sample Report for each container · Sample Batch Drum Age Criteria Report · WTS Headspace Gas Report · WTS Preheat Data Report · WTS Container Movement History · Temperature Equilibrium Charts · HGAS Daily Checks (Form-1595) · HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) · HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (Form-1517) · Evidence of Method Detection Limits · Nonconformance Reports (if applicable)	Yes	MP-TRUW-8.2, C3-10b(1)	

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Reviewer NANCY KIRK **Approval Level** SPM Data Validation

Approval Date 23-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (or referenced) · Batch Data Report Supplemental Comment Form (Form-1491), as applicable			
(45) The QC checks were properly performed and meet the Quality Assurance Objectives (QAOs). Proper procedures were followed during data reduction and analysis.	Yes	MP-TRUW-8.2, C3-10b(1)	
(46) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, Table C3-13	
(47) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 09:22

Batch Id HS112-00002 **Open Date** 19-JAN-12 **Close Date** 19-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2167766	NKIRK	23-JAN-12	SPM	Validation complete. Promote batch.
2167676	JKETTEL	23-JAN-12	ITR	Promote to SPM.

NorLAB®
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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales.
The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 556776 **Lot No.:** A076393

Description : Custom Organics Blend

Expiration Date[1]**:** February 2012 **Storage:** Freezer

Elution Order	Compound	CAS #	Percent Purity [2]	Concentration [3] (weight/weight%)	% Uncertainty [4] (95% C.L.; K=2)
1	Chloromethane (methyl chloride)	74-87-3	99%	0.8180 wt./wt.%	+/-0.58 %
2	Methanol	67-56-1	99%	5.0678 wt./wt.%	+/-0.58 %
3	Diethyl ether (ethyl ether)	60-29-7	99%	1.1191 wt./wt.%	+/-0.58 %
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1	97%	3.0419 wt./wt.%	+/-0.58 %
5	Acetone	67-64-1	99%	9.1213 wt./wt.%	+/-0.58 %
6	1,1-dichloroethene	75-35-4	99%	1.5305 wt./wt.%	+/-0.58 %
7	Methylene chloride (dichloromethane)	75-09-2	99%	1.3239 wt./wt.%	+/-0.58 %
8	Carbon disulfide	75-15-0	99%	1.2229 wt./wt.%	+/-0.58 %
9	trans-1,2-Dichloroethene	156-60-5	99%	1.5289 wt./wt.%	+/-0.58 %
10	1,1-Dichloroethane	75-34-3	98%	1.5285 wt./wt.%	+/-0.58 %
11	2-Butanone (MEK)	78-93-3	99%	11.2501 wt./wt.%	+/-0.58 %
12	cis-1,2-Dichloroethene	156-59-2	99%	1.5311 wt./wt.%	+/-0.58 %
13	chloroform	67-66-3	98%	1.8262 wt./wt.%	+/-0.58 %
14	1,1,1-trichloroethane	71-55-6	99%	2.0271 wt./wt.%	+/-0.58 %
15	Cyclohexane	110-82-7	99%	1.3177 wt./wt.%	+/-0.58 %
16	carbon tetrachloride	56-23-5	99%	2.4428 wt./wt.%	+/-0.58 %
17	1,2-Dichloroethane	107-06-2	99%	1.5270 wt./wt.%	+/-0.58 %
18	Benzene	71-43-2	99%	1.2212 wt./wt.%	+/-0.58 %
19	1-Butanol	71-36-3	99%	11.6559 wt./wt.%	+/-0.58 %
20	Trichloroethene	79-01-6	99%	2.0325 wt./wt.%	+/-0.58 %
21	4-Methyl-2-pentanone (MIBK)	108-10-1	99%	15.7123 wt./wt.%	+/-0.58 %
22	Toluene	108-88-3	99%	1.4188 wt./wt.%	+/-0.58 %
23	Tetrachloroethene	127-18-4	99%	2.6374 wt./wt.%	+/-0.58 %
24	Chlorobenzene	108-90-7	99%	1.7227 wt./wt.%	+/-0.58 %
25	Ethylbenzene	100-41-4	99%	1.6217 wt./wt.%	+/-0.58 %
26	m-Xylene	108-38-3	99%	0.8112 wt./wt.%	+/-0.58 %
27	p-Xylene	106-42-3	99%	0.8108 wt./wt.%	+/-0.58 %
28	o-Xylene	95-47-6	99%	1.6217 wt./wt.%	+/-0.58 %
29	bromoform	75-25-2	99%	4.0540 wt./wt.%	+/-0.58 %
30	1,1,2,2-Tetrachloroethane	79-34-5	99%	2.6377 wt./wt.%	+/-0.58 %
31	1,3,5-Trimethylbenzene	108-67-8	99%	1.8245 wt./wt.%	+/-0.58 %
32	1,2,4-Trimethylbenzene	95-63-6	99%	1.8303 wt./wt.%	+/-0.58 %

Solvent: n/a

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

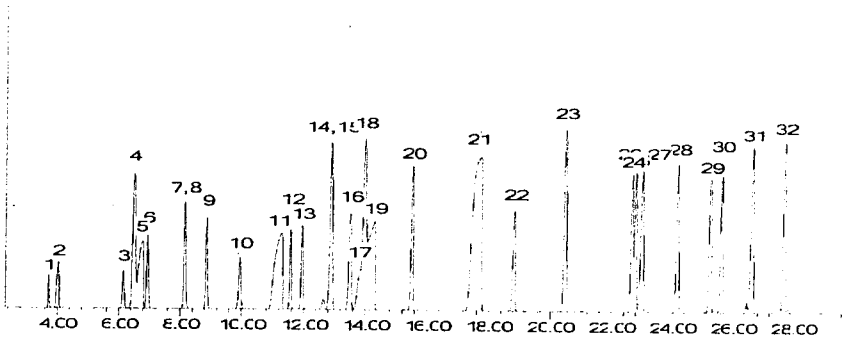
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



Sara Eyster QA Analyst

Date Passed: 24-Aug-2010 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

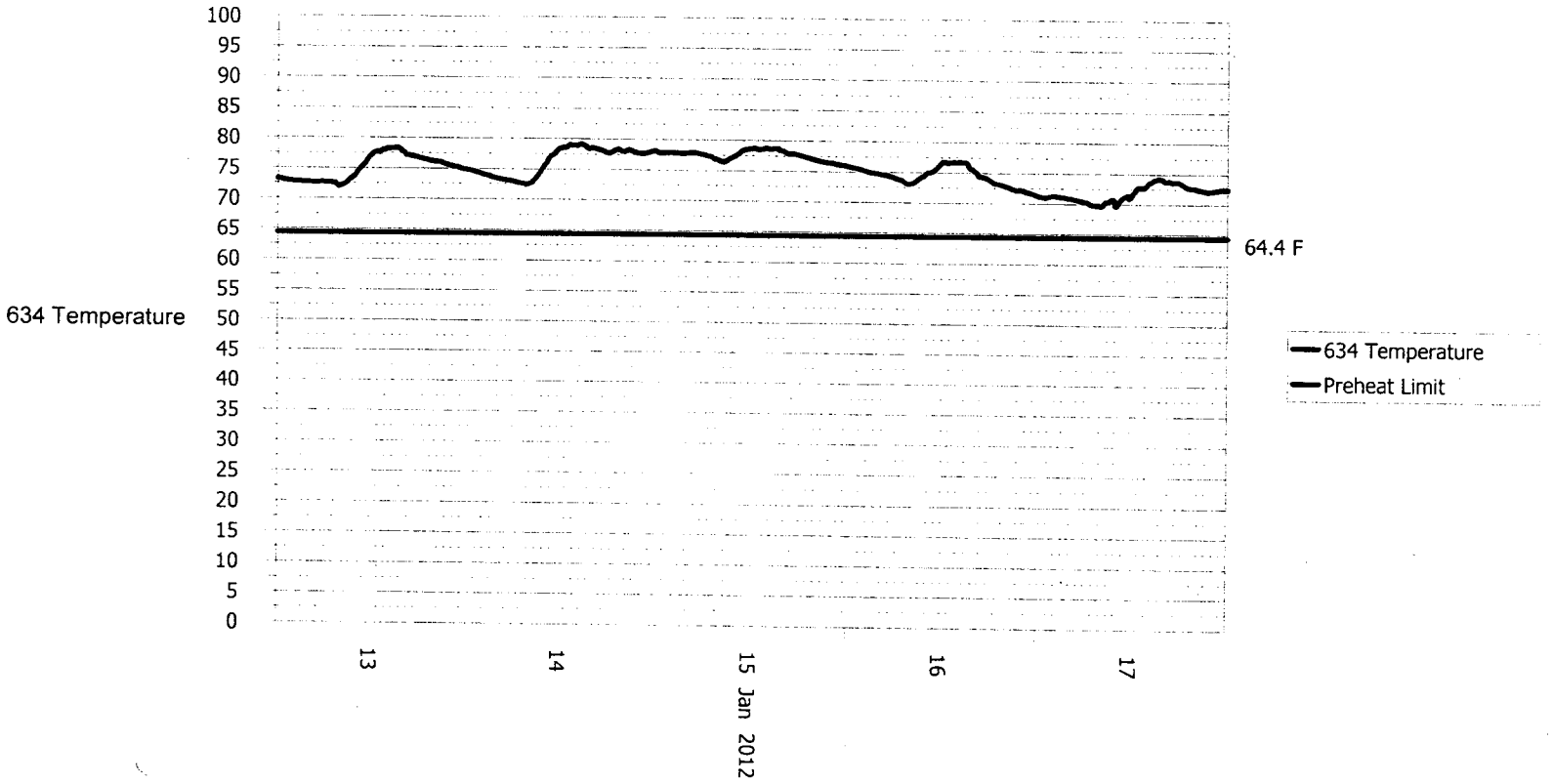
3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Note:

Density = 0.9468

634 Characterization Temperature



Start Date	End Date
13-JAN-12	18-JAN-12

DOE F 1325.8

United States Government

HSG3
Department of Energy

memorandum

Carlsbad Field Office
Carlsbad, New Mexico 88221

DATE: JUN 4 2012

REPLY TO ATTN OF: CBFO:NTP:MRB:GL:12-0505:UFC 5822.00

SUBJECT: Approval Status for Cycle 26A of the Headspace Gas Performance Demonstration Program

TO: Jerry Wells, DOE-ID

The Advanced Mixed Waste Treatment Project (AMWTP) participated in Cycle 26A of the Analysis of Simulated Headspace Gases (HSG) Performance Demonstration Program (PDP) for the Waste Isolation Pilot Plant (WIPP) transuranic (TRU) Waste Characterization Program. Cycle 26A samples were distributed to participating measurement facilities on April 2, 2012, and the analytical results submitted to date have been scored. I anticipate that the formal scoring report for Cycle 26A providing detailed information of their performance to be issued in July.

The AMWTP Headspace Gas Analysis System (HGAS) Unit Z-221-001-A was used to generate Cycle 26A data, and this system is listed as the only gas chromatography/mass spectrometry (GC/MS) system in use by AMWTP for volatile organic compound (VOC) analysis. Based on the results of data submitted for HSG PDP Cycle 26A, the status of the AMWTP for performing waste characterization analyses of waste intended for disposal at WIPP is as follows:

> **Approved for analysis of VOCs** in headspace gas samples by gas chromatography/mass spectrometry (GC/MS) in accordance with Revision 20 of the procedure INST-OI-43, *HGAS Sampling and Analysis Operations* using the analytical system identified as Z-221-001-A.

In accordance with the requirements of the Headspace Gas PDP Plan, only this specific method and analytical system may be utilized for WIPP sample analysis. Any future method and/or system changes or additions that could be considered to potentially impact the AMWTP headspace gas analysis qualification must be approved by me prior to being implemented.

To maintain its "Approved" status, the AMWTP must demonstrate continued capability to meet program quality assurance objectives by successful participation in Cycle 27A of the HSG PDP, currently scheduled for April, 2013.

If you have any questions, please call Amber Brinly, HSG PDP Coordinator, at (406) 498-1550 or me at (575) 234-7476.

Michael R. Brown
Transportation Packaging Manager

cc:

R. Unger, CBFO	*ED
N. Castaneda, CBFO	ED
C. Rojas, ITG	ED
E. Schweinsberg, AMWTP	ED
R. Allen, CTAC	ED
A. Brinly, CTAC	ED
B. Oates, CTAC	ED
G. White, CTAC	ED
P. Gilbert, LANL	ED
G. Lyshik, LANL	ED

CBFO M&RC
*ED denotes electronic distribution

Method Detection Limits/Method Performance Sample (MDL/MPS) Folder

Instrument: BNFL_HGAS_A_001

Method: VOCGAS.M

HS111-00014
RECORD
CC 8/29/11

Batch: HS111-00014

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Signature: J Rojas Date: 8/15/11

Method Detection Limits

MDL Date	13-Aug-2011 14 17		Instrument.	Z-221-001-A		Data Path	C \HPCHEM\1\DATA\HS111_00014B\											
		DATA FILES																
COMPOUND	Data file	009DR-F D	010DR-F D	011DR-F D	012DR-F D	013DR-F D	014DR-F D	015DR-F D	Average	Maximum	Minimum	STD	% RSD	MDL		MW g/mol	MDL (ng on column)	Required MDL	Pass/Fail
Compound Name	Actual Conc (ppmv)	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	Avg % Rec	Max % Rec	Min % Rec	Standard Deviation	% RSD	MDL ppmv	Moles analyte	MW		< MDL (ng)	
Chloromethane	23 58775126	22 13	22.23	22.17	23.00	22.48	22.43	22.70	95 18	97 49	93.83	0 31	1 40	0.99	8 02E-14	50 49	0.00	10	PASS
Methanol	230 2849553	209.27	198.55	206.70	204.97	197.69	209.40	198 13	88 38	90.93	85 84	5 28	2 60	16.61	1 35E-12	32.04	0.04	150	PASS
Ethyl Ether	21 9822474	22 10	22.57	22.38	22.00	22.61	22.42	22.78	101 94	103.63	100.08	0 28	1 24	0.88	7 12E-14	74 12	0.01	10	PASS
1,1-Dichloroethene	22 98629229	23.42	23.54	23.49	23.77	23.58	23.82	24 06	102.97	104.67	101 89	0 23	0 95	0.71	5 76E-14	96.94	0.01	10	PASS
1,1,2-Trichloro-1,2,2-Trifluoroethane	23 63651709	22.88	22.70	22.69	23.13	22.51	22.65	22 76	96.29	97 85	95 22	0 20	0 87	0.62	5 07E-14	187 37	0.01	10	PASS
Acetone	228 6487011	246 33	247.54	245 51	255 05	246.69	259.88	256 77	109 82	113 66	107 37	5 93	2 36	18.63	1 51E-12	58 08	0.09	150	PASS
Carbon Disulfide	23 38388566	23.87	24.29	23 85	24 58	24 06	24 43	24.90	103 84	106.50	101 99	0 39	1 60	1.22	9 92E-14	76 14	0.01	10	PASS
Methylene Chloride	22 69512946	25 04	25 22	24 50	25 12	24 73	25 67	25 86	110 87	113 93	107 96	0 48	1 91	1.51	1 23E-13	84 93	0.01	10	PASS
trans-1,2-Dichloroethene	22 96226219	24 37	25 25	24 37	25 13	24.62	25 62	25 55	108 82	111 59	106 12	0 53	2 14	1.68	1 36E-13	98 96	0.01	10	PASS
1,1-Dichloroethane	22 48766499	23.04	22.96	22.43	22 90	22.62	23.57	23.50	102.29	104.81	99.76	0 42	1 82	1.32	1 07E-13	98.96	0.01	10	PASS
cis-1,2-Dichloroethene	22 99530358	24 18	24 94	24.46	25 01	24.36	25.39	25 68	108 11	111 67	105 16	0 56	2 24	1.75	1 42E-13	96 94	0.01	10	PASS
Methyl ethyl ketone	227 1410713	238 88	240 15	235 74	242 46	240 32	249 02	243 10	106 27	109 63	103 78	4 15	1 72	13.04	1 06E-12	72 11	0.08	150	PASS
Chloroform	22 37180268	21 45	21 68	20 94	21 36	20 82	21 55	21 20	95 57	97 34	93 49	0 32	1 48	0.99	8 07E-14	119 38	0.01	10	PASS
1,1,1-Trichloroethane	22 12370966	20.01	19.94	19 04	19 41	18.91	19.68	19 20	87 94	90.45	85 48	0 43	2 23	1.37	1 11E-13	133 40	0.01	10	PASS
Cyclohexane	22 7955159	25 17	25.99	25.39	26.34	25.59	26.98	27 02	114.36	118 53	110 43	0 74	2 84	2.33	1 89E-13	84 16	0.02	10	PASS
Carbon Tetrachloride	23 12137783	19.91	18.52	18.44	18 25	17.69	18.24	17.38	79 35	86.09	75.16	0 80	4 38	2.52	2 05E-13	153 82	0.03	10	PASS
Benzene	22 76243739	24 30	24 73	24 20	24 97	24 43	25 81	25.34	109 06	113 37	106 31	0 59	2 37	1.85	1 50E-13	78 11	0.01	10	PASS
1,2-Dichloroethane	22 46559663	19.96	19.56	18.71	19.16	18.45	19.29	18.87	85 22	88.85	82 13	0 52	2 70	1.63	1 32E-13	98.96	0.01	10	PASS
Trichloroethene	22 52199449	23.59	23.90	23.38	23.80	23.94	24.12	24.28	105 94	107.79	103 81	0 31	1 28	0.96	7 81E-14	131 39	0.01	10	PASS
Butanol	228 9544076	231.01	233.06	227.23	233.83	226.55	240.99	218.88	100.55	105 26	95.60	6 94	3 01	21.80	1 77E-12	74.12	0.13	150	PASS
Methyl isobutyl ketone	228 3936647	232 22	237.94	231.86	237.78	234.73	248.00	229.87	103 36	108.59	100 69	6 06	2.57	19.05	1 55E-12	100 16	0.16	150	PASS
Toluene	22 41875951	24.94	25.94	25.19	25 89	26 17	27 21	26.54	115 90	121.38	111 26	0 77	2 97	2.43	1 97E-13	92.14	0.02	10	PASS
Tetrachloroethene	23 1553584	22 12	23.09	22.36	22 88	22.83	23.86	23 07	98 85	103.04	95 54	0 56	2 43	1.75	1 42E-13	165 83	0.02	10	PASS
Chlorobenzene	22 28251336	23 36	24 34	23 44	24 45	24.31	25 19	24.67	108 84	113 06	104 84	0 65	2 70	2.06	1 67E-13	112 56	0.02	10	PASS
Ethylbenzene	22 23859295	22 94	24.39	23.42	24.24	23 96	25 32	24.58	108 46	113.84	103 15	0 78	3 23	2.45	1 99E-13	106 17	0.02	10	PASS
m and p-xylene	22 24270689	23 64	25.15	24.45	25 14	25.06	26.38	25.86	112.84	118 58	106 30	0 89	3.55	2.80	2.28E-13	106 17	0.02	10	PASS
o-xylene	22 23859295	23 23	25.31	24.57	25 72	25 56	26.61	25.59	113 44	119 67	104 47	1 07	4 23	3.35	2 72E-13	106 17	0.03	10	PASS
Bromoform	23 35423002	22.49	23.89	23.05	23.90	23.40	24.48	23.59	100 81	104 84	96 30	0 65	2 74	2.03	1.65E-13	252 73	0.04	10	PASS
1,1,2,2-Tetrachloroethane	22 87929818	23.65	25.97	25.30	26.56	26.28	27.35	26.57	113.44	119.52	103 38	1 19	4.59	3.74	3 04E-13	167 85	0.05	10	PASS
1,3,5-Trimethylbenzene	22 10111268	21.02	24.51	24.06	25 01	24 99	25 88	25.37	110 43	117 10	95 11	1 60	6 56	5.04	4 09E-13	120 19	0.05	10	PASS
1,2,4-Trimethylbenzene	22 17137109	20 59	24.86	24.53	25 56	25 63	26 42	25 76	111 71	119 16	92 88	1 94	7 84	6.10	4 96E-13	120 19	0.06	10	PASS

COMPOUND	Data file	009DR-F D	010DR-F D	011DR-F D	012DR-F D	013DR-F D	014DR-F D	015DR-F D						
Compound Name	Actual Conc (vol%)	Vol%	Vol%	Vol%	Vol%	Vol%	Vol%	Vol%	Avg % Rec	Max % Rec	Min % Rec	Standard Deviation	% RSD	MDL vol %
Hydrogen	0 512	0.5034	0.5057	0.4980	0.5102	0.5041	0.5068	0.5105	98 73	99.70	97 26	0 0043	0 85	0.014
Methane	0 5	0.4988	0.5086	0.4988	0 5021	0 5123	0.5115	0.5118	101 26	102 46	99 76	0 0062	1 22	0.019

Injection Volume (uL)	2 50
Ambient Pressure (INL, torr)	635 0000
R (L*atm/(mol * K))	0 0821
Temperature (°C)	40
Temperature (K)	313 15
Total moles of Injection	8 12886E-08
CH_4 Cylinder Number	CC241870
Average Multiplier	1 390

Liquid VOC Vial Lot Number A076393

ppmv = (moles of analyte) / (total moles injected) * 1,000,000 therefore
moles of analyte = ppmv * total moles injected / 1,000,000

ng injected = moles of analyte * GMW * 1,000,000,000 (ng/g)

Method Performance

MPS Date:	13-Aug-2011 14:17		Instrument:	Z-221-001-A		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\								
		DATA FILES													
COMPOUND	Data file	009DR-F.D	010DR-F.D	011DR-F.D	012DR-F.D	013DR-F.D	014DR-F.D	015DR-F.D	Average	Maximum	Minimum	STD	% RSD		Pass/Fail
Compound Name	Actual Conc (ppmv)	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	Avg % Rec.	Max % Rec	Min % Rec.	Standard Deviation	% RSD	Required %RSD	
Chloromethane	23 58775126	22 1334	22 2321	22 1667	22 9956	22.4825	22 4333	22 7039	95 18	97 49	93 83	0 31	1 40	<25	PASS
Methanol	230.2849553	209 269	198 549	206 696	204 966	197 685	209 397	198.13	88 38	90 93	85.84	5 28	2.60	<25	PASS
Ethyl Ether	21.9822474	22.101	22.5711	22.3833	21.9994	22.6059	22.4196	22.7797	101.94	103.63	100.08	0.28	1.24	<25	PASS
1,1-Dichloroethene	22.98629229	23 4199	23.543	23 4897	23.7667	23.5805	23 8246	24 0609	102.97	104.67	101.89	0.23	0 95	<25	PASS
1,1,2-Trichloro-1,2,2-Trifluoroethane	23 63651709	22.8843	22.7031	22 6915	23 1289	22 5061	22.6492	22 7614	96.29	97 85	95 22	0.20	0 87	<25	PASS
Acetone	228.6487011	246.33	247.544	245.508	255.048	246.694	259.877	256.771	109.82	113.66	107.37	5.93	2.36	<25	PASS
Carbon Disulfide	23.38388566	23.8721	24.2892	23.8481	24.5773	24.0552	24.4303	24.904	103.84	106.50	101.99	0.39	1.60	<25	PASS
Methylene Chloride	22.69512946	25.0392	25.2205	24.5024	25.1178	24.7266	25.6657	25.8565	110.87	113.93	107.96	0.48	1.91	<25	PASS
trans-1,2-Dichloroethene	22.96226219	24.3689	25.2464	24.3669	25 133	24 6206	25.6246	25 5459	108.82	111.59	106.12	0.53	2.14	<25	PASS
1,1-Dichloroethane	22 48766499	23 0448	22 9626	22 4347	22 8997	22 6152	23.5699	23 4967	102 29	104.81	99.76	0 42	1 82	<25	PASS
cis-1,2-Dichloroethene	22.99530358	24.181	24.9418	24.4582	25.0088	24.3617	25.3936	25.6793	108.11	111.67	105.16	0.56	2.24	<25	PASS
Methyl ethyl ketone	227.1430712	238 876	240 154	235.74	242 461	240 324	249.023	243.101	106 27	109 63	103.78	4 15	1 72	<25	PASS
Chloroform	22.27180268	21.447	21.6791	20.9434	21.3572	20.8216	21.5545	21.1955	95.57	97.34	93.49	0.32	1.48	<25	PASS
1,1,1-Trichloroethane	22 12370966	20 0107	19 9435	19.0416	19 4052	18 9109	19 6787	19 1997	87.94	90 45	85 48	0.43	2 23	<25	PASS
Cyclohexane	22.7955159	25.1734	25.9861	25.3944	26.3364	25.5909	26.9766	27.0195	114.36	118.53	110.43	0.74	2.84	<25	PASS
Carbon Tetrachloride	23.12137783	19.9057	18.521	18.4413	18.249	17.6852	18.2425	17.3774	79.35	86.09	75.16	0.80	4 38	<25	PASS
Benzene	22.76243739	24.3048	24.7341	24.1981	24.9694	24.4254	25.8054	25.3411	109.06	113.37	106.31	0.59	2.37	<25	PASS
1,2-Dichloroethane	22.46559663	19.9597	19.5648	18.7096	19.1638	18.4512	19.2942	18.8739	85.22	88.85	82.13	0.52	2.70	<25	PASS
Trichloroethene	22.52199449	23.5886	23.9014	23.3801	23.7967	23.9435	24.1247	24.2768	105.94	107.79	103.81	0.31	1.28	<25	PASS
Butanol	228.9544076	231.011	233.062	227.23	233.83	226.548	240.988	218.883	100.55	105 26	95.60	6.94	3.01	<25	PASS
Methyl isobutyl ketone	228.3936647	232.219	237 942	231.858	237.782	234.725	248.002	229.969	103.36	108.59	100 69	6 06	2.57	<25	PASS
Toluene	22.41875951	24.9425	25.9431	25.1851	25.8926	26.1714	27.2124	26.5373	115.90	121.38	111.26	0 77	2.97	<25	PASS
Tetrachloroethene	23.1553584	22.1229	23.0854	22.3806	22.8839	22.8293	23.859	23.0667	98.85	103.04	95.54	0.56	2.43	<25	PASS
Chlorobenzene	22.28251336	23.3616	24.3396	23.4369	24.4499	24.3063	25.1929	24.672	108.84	113.06	104.84	0.65	2.70	<25	PASS
Ethylbenzene	22.23859295	22.9387	24.3936	23.4203	24.2401	23.9586	25.3159	24.5766	108.46	113.84	103.15	0.78	3.23	<25	PASS
m and p-xylene	22.24270689	23.6435	25.151	24.453	25.1408	25.0627	26.3764	25.864	112.84	118.58	106.30	0.89	3.55	<25	PASS
o-xylene	22.23859295	23.233	25.3079	24.5721	25.7188	25.5612	26.6131	25.5891	113.44	119.67	104.47	1.07	4.23	<25	PASS
Bromoform	23.35423002	22.49	23.8865	23.0511	23.9004	23.3956	24.4837	23.5947	100.81	104.84	96.30	0.65	2.74	<25	PASS
1,1,2,2-Tetrachloroethane	22.87929616	23.6521	25.9737	25.2979	26.5583	26.2761	27.345	26.5719	113.44	119.52	103.38	1.19	4.59	<25	PASS
1,3,5-Trimethylbenzene	22.10111268	21.0213	24.5127	24.057	25.0129	24.9945	25.8798	25.3673	110.43	117.10	95.11	1.60	6.56	<25	PASS
1,2,4-Trimethylbenzene	22.17137109	20 5929	24 8594	24.5345	25 5631	25.6343	26.4198	25.7635	111.71	119.16	92.88	1.94	7.84	<25	PASS

COMPOUND	Data file	009DR-F.D	010DR-F.D	011DR-F.D	012DR-F.D	013DR-F.D	014DR-F.D	015DR-F.D							
Compound Name	Actual Conc. (vol%)	Vol%	Vol%	Vol%	Vol%	Vol%	Vol%	Vol%	Avg % Rec.	Max % Rec	Min % Rec.	Standard Deviation	% RSD	Required %RSD	Pass/Fail
Hydrogen	0.512	0.5034	0.5057	0.4980	0.5102	0.5041	0.5068	0.5105	98.73	99.70	97.26	0.0043	0.85	<25	PASS
Methane	0.5	0.4988	0.5086	0.4988	0.5021	0.5123	0.5115	0.5118	101.26	102.46	99.76	0.0062	1.22	<25	PASS

FORM 6A
VOLATILE ORGANIC INITIAL CALIBRATION DATA

AMWTP
Advanced Mixed Waste Treatment Project

Lab Name:	AMWTP	Batch No.:	N/A (ICAL)
Smpl Pt. of Origin:	WMF-634	Procedure:	OI-43 Revision: 20
Instrument ID:	Z-221-001-A	ICal Start:	25-May-2011 12:31
Instrument Method:	VOCGAS	ICal End:	25-May-2011 13:27
GC Column:	RTX-VMS ID: 320 um	Data Path:	C:\HPCHEM\1\DATA\IC1_110525AA\
BFB/IS Cylinder No.:	CC191961 Exp. 31-Jan-2013	Sampled by:	SO

Data file ID:	RF1	RF2	RF3	RF4	RF5
	00211-F.D	00312-F.D	00413-F.D	00514-F.D	00615-F.D
VOC Std.:	A076393	A076393	A076393	A076393	A076393
H_2/CH_4 Std.:	CC254993	CC241870	CC254976	CC251685	NA

COMPOUND	CURVE SLOPE	CURVE INTERCEPT	CORRELATION COEFFICIENT	R FLAG
Hydrogen	1.01E+05	0.000	1.0000	
Methane	4.80E+04	0.000	1.0000	

COMPOUND	RF1	RF2	RF3	RF4	RF5	AVG RF	%RSD
Chloromethane	0.159	0.142	0.134	0.126	0.130	0.138	9.38
Methanol	0.044	0.039	0.038	0.037	0.038	0.039	6.81
Ethyl Ether	0.141	0.132	0.129	0.128	0.132	0.133	3.78
1,1-Dichloroethene	0.249	0.232	0.232	0.233	0.254	0.240	4.51
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.662	0.605	0.586	0.576	0.610	0.608	5.44
Acetone	0.088	0.082	0.083	0.085	0.094	0.086	5.78
Carbon Disulfide	0.654	0.594	0.598	0.605	0.667	0.624	5.50
Methylene Chloride	0.195	0.187	0.189	0.190	0.210	0.194	4.67
trans-1,2-Dichloroethene	0.262	0.246	0.245	0.248	0.268	0.254	4.14
1,1-Dichloroethane	0.484	0.443	0.432	0.432	0.451	0.448	4.76
cis-1,2-Dichloroethene	0.263	0.248	0.251	0.253	0.273	0.258	3.96
Methyl ethyl ketone	0.116	0.113	0.118	0.124	0.141	0.122	9.08
Chloroform	0.773	0.719	0.692	0.673	0.689	0.709	5.54
1,1,1-Trichloroethane	0.922	0.859	0.830	0.797	0.807	0.843	5.95
Cyclohexane	0.302	0.291	0.298	0.302	0.323	0.303	3.96
Carbon Tetrachloride	0.254	0.241	0.227	0.210	0.208	0.228	8.70
Benzene	0.735	0.696	0.698	0.705	0.767	0.720	4.24
1,2-Dichloroethane	0.613	0.553	0.522	0.491	0.484	0.533	9.84
Trichloroethene	0.430	0.394	0.403	0.402	0.436	0.413	4.50
Butanol	0.035	0.034	0.036	0.036	0.040	0.036	6.60
Methyl isobutyl ketone	0.098	0.098	0.109	0.116	0.127	0.110	11.32
Toluene	0.539	0.517	0.530	0.538	0.590	0.543	5.14
Tetrachloroethene	0.620	0.601	0.661	0.678	0.701	0.652	6.32
Chlorobenzene	0.957	0.891	0.911	0.903	0.976	0.927	3.96
Ethylbenzene	0.445	0.423	0.439	0.444	0.477	0.446	4.44
m and p-xylene	0.492	0.466	0.497	0.508	0.564	0.505	7.16
o-xylene	0.465	0.443	0.480	0.492	0.539	0.484	7.40
Bromoform	0.421	0.408	0.434	0.437	0.469	0.434	5.26
1,1,2,2-Tetrachloroethane	0.383	0.364	0.399	0.412	0.448	0.401	7.97
1,3,5-Trimethylbenzene	0.568	0.544	0.649	0.668	0.738	0.633	12.41
1,2,4-Trimethylbenzene	0.515	0.501	0.612	0.635	0.701	0.593	14.22

Note 1: Correlation Coefficient for hydrogen and methane must be greater than 0.990.
Note 2: %RSD for VOA compounds must be less than 35.0.

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 5A
VOLATILE INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: AMWTP
Smpl Pt. of Origin: WMF-634
Procedure: OI-43 Revision: 20
Instrument ID: Z-221-001-A
Instrument Method: VOCGAS
GC Column: RTX-VMS ID: 320 um
BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013

Batch No.: N/A (ICAL)
Analyzed on: 25-May-2011 12:23
Data Path: C:\HPCHEM\1\DATA\HS111_00014B\
Data File ID: 001BF-F.D
Scan No.: 428
Subtraction Scan: 416

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE		
50	15.0 - 40.0% of mass 95	19.8		
75	30.0 - 60.0% of mass 95	55.1		
95	Base Peak, 100% relative abundance	100.0		
96	5.0 - 9.0% of mass 95	6.6		
173	Less than 2.0% of mass 174	0.0	(0.0)	1
174	Greater than 50.0% of mass 95	97.9		
175	5.0 - 9.0% of mass 174	7.0	(7.1)	1
176	95.0 - 101.0% of mass 174	97.9	(99.9)	1
177	5.0 - 9.0% of mass 176	6.3	(6.4)	2

1 - Value is % mass 174 2 - Value is % mass 176

PASS/FAIL?: PASS

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, OCS, BLANKS, AND STANDARDS

CONTAINER ID	LAB SAMPLE ID	DATA FILE ID	DATE ANALYZED	TIME ANALYZED
ICAL1	ICAL1	002I1-F.D	25-May-2011	12:31
ICAL2	ICAL2	003I2-F.D	25-May-2011	12:45
ICAL3	ICAL3	004I3-F.D	25-May-2011	12:59
ICAL4	ICAL4	005I4-F.D	25-May-2011	13:12
ICAL5	ICAL5	006I5-F.D	25-May-2011	13:27

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 5A
VOLATILE INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: AMWTP
Smpl. Pt. of Origin: WMF-634
Procedure: OI-43 Revision: 20
Instrument ID: Z-221-001-A
Instrument Method: VOCGAS
GC Column: RTX-VMS ID: 320 um
BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013

Batch No.: HS111_00014
Analyzed on: 13-Aug-2011 09:59
Data Path: C:\HPCHEM\1\DATA\HS111_00014B\
Data File ID: 001BF-F.D
Scan No.: 442
Subtraction Scan: 430

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE		
50	15.0 - 40.0% of mass 95	18.3		
75	30.0 - 60.0% of mass 95	50.7		
95	Base Peak, 100% relative abundance	100.0		
96	5.0 - 9.0% of mass 95	6.6		
173	Less than 2.0% of mass 174	0.0	(0.0)	1
174	Greater than 50.0% of mass 95	99.9		
175	5.0 - 9.0% of mass 174	6.9	(6.9)	1
176	95.0 - 101.0% of mass 174	97.8	(97.9)	1
177	5.0 - 9.0% of mass 176	6.0	(6.1)	2

1 - Value is % mass 174
2 - Value is % mass 176

PASS/FAIL?: PASS

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, OCS, BLANKS, AND STANDARDS

CONTAINER ID	LAB SAMPLE ID	DATA FILE ID	DATE ANALYZED	TIME ANALYZED
CCAL	CCAL1	002CC-F.D	13-Aug-2011	10:07
LCS1	LCS1	003LC-F.D	13-Aug-2011	10:26
EB	EB	004EB-F.D	13-Aug-2011	10:40
FB	FB	005FB-F.D	13-Aug-2011	10:53

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 5A
VOLATILE INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl Pt. of Origin:	WMF-634			Analyzed on:	13-Aug-2011 13:38
Procedure:	OI-43	Revision:	20	Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Instrument ID:	Z-221-001-A			Data File ID:	006BF-F.D
Instrument Method:	VOCGAS			Scan No.:	432
GC Column:	RTX-VMS	ID: 320 um		Subtraction Scan:	421
BFB/IS Cylinder No.:	CC191961	Exp.: 31-Jan-2013			

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE		
50	15.0 - 40.0% of mass 95	17.1		
75	30.0 - 60.0% of mass 95	48.4		
95	Base Peak, 100% relative abundance	100.0		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.0	(0.0)	1
174	Greater than 50.0% of mass 95	96.6		
175	5.0 - 9.0% of mass 174	7.4	(7.7)	1
176	95.0 - 101.0% of mass 174	94.6	(97.9)	1
177	5.0 - 9.0% of mass 176	6.4	(6.8)	2

1 - Value is % mass 174 2 - Value is % mass 176

PASS/FAIL?: PASS

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, OCS, BLANKS, AND STANDARDS

CONTAINER ID	LAB SAMPLE ID	DATA FILE ID	DATE ANALYZED	TIME ANALYZED
CCAL	CCAL2	007CC-F.D	13-Aug-2011	13:46
LCS2	LCS2	008LC-F.D	13-Aug-2011	14:03
MDL1	HS111_00014B-01	009DR-F.D	13-Aug-2011	14:17
MDL2	HS111_00014B-02	010DR-F.D	13-Aug-2011	14:30
MDL3	HS111_00014B-03	011DR-F.D	13-Aug-2011	14:44
MDL4	HS111_00014B-04	012DR-F.D	13-Aug-2011	14:58
MDL5	HS111_00014B-05	013DR-F.D	13-Aug-2011	15:11
MDL6	HS111_00014B-06	014DR-F.D	13-Aug-2011	15:25
MDL7	HS111_00014B-07	015DR-F.D	13-Aug-2011	15:39

Signature: J Rojos Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 7A
VOLATILE ORGANIC CONTINUING CAL. CHECK

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl Pt. of Origin:	WMF-634			Analyzed on:	13-Aug-2011 10:07
Procedure:	OI-43	Revision:	20	Sampled on:	13-Aug-2011 09:22
Instrument ID:	Z-221-001-A			ICal Start:	25-May-2011 12:31
Instrument Method:	VOCGAS			ICal End:	25-May-2011 13:27
GC Column:	RTX-VMS	ID:	320 um	Data Path:	C:\HPchem\1\DATA\HS111_00014B\
				Data File ID:	002CC-F.D
VOC Standard Lot:	A076393	Exp.:	28-Feb-12		
H_2/CH_4 Cylinder No.:	CC254976	Exp.:	28-Feb-14		
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-13	Sampled by:	CB

COMPOUND	NOMINAL CONCENTRATION	CALCULATED CONCENTRATION	PERCENT RECOVERY	FLAG
Hydrogen	1.00	1.01	100.9	
Methane	1.00	1.00	100.4	

COMPOUND	AVERAGE RF	CCAL RF	PERCENT DIFFERENCE	FLAG
Chloromethane	0.138	0.133	3.6	
Methanol	0.039	0.035	10.3	
Ethyl Ether	0.133	0.133	0.0	
1,1-Dichloroethene	0.240	0.240	0.0	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.608	0.575	5.4	
Acetone	0.086	0.089	3.5	
Carbon Disulfide	0.624	0.630	1.0	
Methylene Chloride	0.194	0.201	3.6	
trans-1,2-Dichloroethene	0.254	0.261	2.8	
1,1-Dichloroethane	0.448	0.441	1.6	
cis-1,2-Dichloroethene	0.258	0.261	1.2	
Methyl ethyl ketone	0.122	0.122	0.0	
Chloroform	0.709	0.664	6.3	
1,1,1-Trichloroethane	0.843	0.756	10.3	
Cyclohexane	0.303	0.327	7.9	
Carbon Tetrachloride	0.228	0.192	15.8	
Benzene	0.720	0.728	1.1	
1,2-Dichloroethane	0.533	0.454	14.8	
Trichloroethene	0.413	0.405	1.9	
Butanol	0.036	0.035	2.8	
Methyl isobutyl ketone	0.110	0.110	0.0	
Toluene	0.543	0.574	5.7	
Tetrachloroethene	0.652	0.620	4.9	
Chlorobenzene	0.927	0.909	1.9	
Ethylbenzene	0.446	0.433	2.9	
m and p-xylene	0.505	0.504	0.2	
o-xylene	0.484	0.484	0.0	
Bromoform	0.434	0.407	6.2	
1,1,2.2-Tetrachloroethane	0.401	0.393	2.0	
1,3,5-Trimethylbenzene	0.633	0.598	5.5	
1,2,4-Trimethylbenzene	0.593	0.555	6.4	

Note: Maximum percent difference is 30 and acceptable range for percent recovery is 70-130.

Signature: Ryo Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 7A
VOLATILE ORGANIC CONTINUING CAL. CHECK

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl. Pt. of Origin:	WMF-634			Analyzed on:	13-Aug-2011 13:46
Procedure:	OI-43	Revision:	20	Sampled on:	13-Aug-2011 12:12
Instrument ID:	Z-221-001-A			ICal Start:	25-May-2011 12:31
Instrument Method:	VOCGAS			ICal End:	25-May-2011 13:27
GC Column:	RTX-VMS	ID:	320 um	Data Path:	C:\HPchem\1\DATA\HS111_00014B\
				Data File ID:	007CC-F.D
VOC Standard Lot:	A076393	Exp.:	28-Feb-12		
H_2/CH_4 Cylinder No.:	CC254976	Exp.:	28-Feb-14		
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-13	Sampled by:	CB

COMPOUND	NOMINAL CONCENTRATION	CALCULATED CONCENTRATION	PERCENT RECOVERY	FLAG
Hydrogen	1.00	0.99	98.5	
Methane	1.00	1.00	99.9	

COMPOUND	AVERAGE RF	CCAL RF	PERCENT DIFFERENCE	FLAG
Chloromethane	0.138	0.130	5.8	
Methanol	0.039	0.034	12.8	
Ethyl Ether	0.133	0.132	0.8	
1,1-Dichloroethene	0.240	0.243	1.3	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.608	0.582	4.3	
Acetone	0.086	0.091	5.8	
Carbon Disulfide	0.624	0.638	2.2	
Methylene Chloride	0.194	0.205	5.7	
trans-1,2-Dichloroethene	0.254	0.266	4.7	
1,1-Dichloroethane	0.448	0.450	0.4	
cis-1,2-Dichloroethene	0.258	0.269	4.3	
Methyl ethyl ketone	0.122	0.126	3.3	
Chloroform	0.709	0.679	4.2	
1,1,1-Trichloroethane	0.843	0.762	9.6	
Cyclohexane	0.303	0.331	9.2	
Carbon Tetrachloride	0.228	0.186	18.4	
Benzene	0.720	0.753	4.6	
1,2-Dichloroethane	0.533	0.464	12.9	
Trichloroethene	0.413	0.424	2.7	
Butanol	0.036	0.037	2.8	
Methyl isobutyl ketone	0.110	0.114	3.6	
Toluene	0.543	0.582	7.2	
Tetrachloroethene	0.652	0.629	3.5	
Chlorobenzene	0.927	0.940	1.4	
Ethylbenzene	0.446	0.447	0.2	
m and p-xylene	0.505	0.518	2.6	
o-xylene	0.484	0.492	1.7	
Bromoform	0.434	0.418	3.7	
1,1,2 2-Tetrachloroethane	0.401	0.404	0.7	
1,3,5-Trimethylbenzene	0.633	0.595	6.0	
1,2,4-Trimethylbenzene	0.593	0.556	6.2	

Note: Maximum percent difference is 30 and acceptable range for percent recovery is 70-130.

Signature: _____ Date: 8/15/11

FORM 3A
On-line Control Sample (OCS) ACCURACY FORM

AMWTP
Advanced Mixed Waste Treatment Project

Lab Name:	AMWTP					
Smpl. Pt. of Origin:	WMF-634					
Procedure:	OI-43		Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A				Analyzed on:	13-Aug-2011 10:26
Instrument Method:	VOCGAS				Sampled on:	13-Aug-2011 09:27
GC Column:	RTX-VMS	ID:	320 um		Multiplier:	1.41
Sample Volume:	500 mL				Matrix:	QC Sample
Lab Sample ID:	LCS				Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	LCS1				Data File ID:	003LC-F.D
OCS Cylinder No.:	CC254995	Exp.:	28-Feb-2013		Sampled by:	CB
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013		Sample Type:	HGVO

1333-74-0	Hydrogen	0.51		0.500	101.44
74-82-8	Methane	0.51		0.500	101.51

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG	TRUE AMOUNT	% RECOVERY
74-87-3	Chloromethane	2.62	U		NR
67-56-1	Methanol	56.33	U		NR
60-29-7	Ethyl Ether	1.64	U		NR
75-35-4	1,1-Dichloroethene	2.07	U		NR
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.91	U		NR
67-64-1	Acetone	20.35	U		NR
75-15-0	Carbon Disulfide	1.42	U		NR
75-09-2	Methylene Chloride	53.89		50.00	107.78
156-60-5	trans-1,2-Dichloroethene	1.47	U		NR
75-34-3	1,1-Dichloroethane	1.35	U		NR
156-59-2	cis-1,2-Dichloroethene	1.31	U		NR
78-93-3	Methyl ethyl ketone	13.62	U		NR
67-66-3	Chloroform	44.45		50.00	88.90
71-55-6	1,1,1-Trichloroethane	2.16	U		NR
110-82-7	Cyclohexane	1.93	U		NR
56-23-5	Carbon Tetrachloride	39.17		50.00	78.34
71-43-2	Benzene	50.68		50.00	101.35
107-06-2	1,2-Dichloroethane	42.70		50.00	85.41
79-01-6	Trichloroethene	1.65	U		NR
71-36-3	Butanol	27.85	U		NR
108-10-1	Methyl isobutyl ketone	17.63	U		NR
108-88-3	Toluene	52.50		50.40	104.16
127-18-4	Tetrachloroethene	1.46	U		NR
108-90-7	Chlorobenzene	1.18	U		NR
100-41-4	Ethylbenzene	1.84	U		NR
108-38-3	m and p-xylene	1.79	U		NR
95-47-6	o-xylene	1.81	U		NR
75-25-2	Bromoform	1.80	U		NR
79-34-5	1,1,2,2-Tetrachloroethane	2.01	U		NR
108-67-8	1,3,5-Trimethylbenzene	1.59	U		NR
95-63-6	1,2,4-Trimethylbenzene	1.77	U		NR

Signature: Ryos Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP			Duplicated?:	Y
Smpl. Pt. of Origin:	WMF-634			Dup P/F/NC?:	P
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 10:26
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 09:27
GC Column:	RTX-VMS	ID:	320 um	Multiplier:	1.41
Sample Volume:	500 mL			Matrix:	QC Sample
Lab Sample ID:	LCS			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	LCS1			Data File ID:	003LC-F.D
				Sampled by:	CB
OCS Cylinder No.:	CC254995	Exp.:	28-Feb-2013		
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013	Sample Type:	HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.51	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	2.6	U
67-56-1	Methanol	56	U
60-29-7	Ethyl Ether	1.6	U
75-35-4	1,1-Dichloroethene	2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	1.4	U
75-09-2	Methylene Chloride	54	
156-60-5	trans-1,2-Dichloroethene	1.5	U
75-34-3	1,1-Dichloroethane	1.4	U
156-59-2	cis-1,2-Dichloroethene	1.3	U
78-93-3	Methyl ethyl ketone	14	U
67-66-3	Chloroform	44	
71-55-6	1,1,1-Trichloroethane	2.2	U
110-82-7	Cyclohexane	1.9	U
56-23-5	Carbon Tetrachloride	39	
71-43-2	Benzene	51	
107-06-2	1,2-Dichloroethane	43	
79-01-6	Trichloroethene	1.7	U
71-36-3	Butanol	28	U
108-10-1	Methyl isobutyl ketone	18	U
108-88-3	Toluene	52	
127-18-4	Tetrachloroethene	1.5	U
108-90-7	Chlorobenzene	1.2	U
100-41-4	Ethylbenzene	1.8	U
108-38-3	m and p-xylene	1.8	U
95-47-6	o-xylene	1.8	U
75-25-2	Bromoform	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U
108-67-8	1,3,5-Trimethylbenzene	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.8	U

Signature: Reyes Date: 8/15/11

FORM 3A Duplicate
On-line Control Sample (OCS) ACCURACY FORM

AMWTP
Advanced Mixed Waste Treatment Project

Lab Name:	AMWTP						
Smpl. Pt. of Origin:	WMF-634						
Procedure:	OI-43		Revision:	20	Batch No.:	HS111_00014	
Instrument ID:	Z-221-001-A				Analyzed on:	13-Aug-2011 14:03	
Instrument Method:	VOCGAS				Sampled on:	13-Aug-2011 12:17	
GC Column:	RTX-VMS	ID:	320 um		Multiplier:	1.39	
Sample Volume:	500 mL				Matrix:	QC Sample	
Lab Sample ID:	LCS				Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\	
Container ID:	LCS2				Data File ID:	008LC-F.D	
OCS Cylinder No.:	CC254995	Exp.:	28-Feb-2013		Sampled by:	CB	
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013		Sample Type:	HGVO	

1333-74-0	Hydrogen	0.51		0.500	101.46
74-82-8	Methane	0.50		0.500	99.84

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG	TRUE AMOUNT	% RECOVERY
74-87-3	Chloromethane	2.62	U		NR
67-56-1	Methanol	56.33	U		NR
60-29-7	Ethyl Ether	1.64	U		NR
75-35-4	1,1-Dichloroethene	2.07	U		NR
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.91	U		NR
67-64-1	Acetone	20.35	U		NR
75-15-0	Carbon Disulfide	1.42	U		NR
75-09-2	Methylene Chloride	53.99		50.00	107.98
156-60-5	trans-1,2-Dichloroethene	1.47	U		NR
75-34-3	1,1-Dichloroethane	1.35	U		NR
156-59-2	cis-1,2-Dichloroethene	1.31	U		NR
78-93-3	Methyl ethyl ketone	13.62	U		NR
67-66-3	Chloroform	43.85		50.00	87.70
71-55-6	1,1,1-Trichloroethane	2.16	U		NR
110-82-7	Cyclohexane	1.93	U		NR
56-23-5	Carbon Tetrachloride	38.40		50.00	76.80
71-43-2	Benzene	51.66		50.00	103.32
107-06-2	1,2-Dichloroethane	42.14		50.00	84.29
79-01-6	Trichloroethene	1.65	U		NR
71-36-3	Butanol	27.85	U		NR
108-10-1	Methyl isobutyl ketone	17.63	U		NR
108-88-3	Toluene	54.08		50.40	107.30
127-18-4	Tetrachloroethene	1.46	U		NR
108-90-7	Chlorobenzene	1.18	U		NR
100-41-4	Ethylbenzene	1.84	U		NR
108-38-3	m and p-xylene	1.79	U		NR
95-47-6	o-xylene	1.81	U		NR
75-25-2	Bromoform	1.80	U		NR
79-34-5	1,1,2,2-Tetrachloroethane	2.01	U		NR
108-67-8	1,3,5-Trimethylbenzene	1.59	U		NR
95-63-6	1,2,4-Trimethylbenzene	1.77	U		NR

Signature: Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DUPLICATE DATA SHEET

Lab Name:	AMWTP		Duplicate?:	Y
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	P
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 14:03
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 12:17
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.39
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	LCS		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	LCS2		Data File ID:	008LC-F.D
			Sampled by:	CB
OCS Cylinder No.:	CC254995	Exp.: 28-Feb-2013		
BFB/IS Cylinder No.:	CC191961	Exp.: 31-Jan-2013	Sample Type:	HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.50	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	2.6	U
67-56-1	Methanol	56	U
60-29-7	Ethyl Ether	1.6	U
75-35-4	1,1-Dichloroethene	2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	1.4	U
75-09-2	Methylene Chloride	54	
156-60-5	trans-1,2-Dichloroethene	1.5	U
75-34-3	1,1-Dichloroethane	1.4	U
156-59-2	cis-1,2-Dichloroethene	1.3	U
78-93-3	Methyl ethyl ketone	14	U
67-66-3	Chloroform	44	
71-55-6	1,1,1-Trichloroethane	2.2	U
110-82-7	Cyclohexane	1.9	U
56-23-5	Carbon Tetrachloride	38	
71-43-2	Benzene	52	
107-06-2	1,2-Dichloroethane	42	
79-01-6	Trichloroethene	1.7	U
71-36-3	Butanol	28	U
108-10-1	Methyl isobutyl ketone	18	U
108-88-3	Toluene	54	
127-18-4	Tetrachloroethene	1.5	U
108-90-7	Chlorobenzene	1.2	U
100-41-4	Ethylbenzene	1.8	U
108-38-3	m and p-xylene	1.8	U
95-47-6	o-xylene	1.8	U
75-25-2	Bromoform	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U
108-67-8	1,3,5-Trimethylbenzene	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.8	U

Signature: J Rojas Date: 8/15/11

FORM 3B
OCS / OCS DUPLICATE PRECISION FORM

AMWTP
Advanced Mixed Waste Treatment Project

Lab Name:	AMWTP			Analyzed on:	13-Aug-2011 10:26
Smpl. Pt. of Origin:	WMF-634			Sampled on:	13-Aug-2011 09:27
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Dup. Analyzed on:	13-Aug-2011 14:03
Instrument Method:	VOCGAS			Dup. Sampled on:	13-Aug-2011 12:17
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.41 Dup. 1.39
Sample Volume:	500 mL			Matrix:	QC Sample
Lab Sample ID:	LCS	Dup.:	LCS	Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	LCS1	Dup.:	LCS2	Data File ID:	003LC-F.D
				Dup. Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
OCS Cylinder No.:	CC254995	Exp.:	28-Feb-2013	Dup. Data File ID:	008LC-F.D
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013	Sample Type:	HGVO

		Sample		Duplicate Sample		
CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG	AMOUNT (PERCENT)	Q FLAG	RPD
1333-74-0	Hydrogen	0.507		0.507		0.03
74-82-8	Methane	0.508		0.499		1.66
CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG	AMOUNT (PPMV)	Q FLAG	RPD
74-87-3	Chloromethane	2.62	U	2.62	U	NR
67-56-1	Methanol	56.33	U	56.33	U	NR
60-29-7	Ethyl Ether	1.64	U	1.64	U	NR
75-35-4	1,1-Dichloroethene	2.07	U	2.07	U	NR
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.91	U	1.91	U	NR
67-64-1	Acetone	20.35	U	20.35	U	NR
75-15-0	Carbon Disulfide	1.42	U	1.42	U	NR
75-09-2	Methylene Chloride	53.89		53.99		0.18
156-60-5	trans-1,2-Dichloroethene	1.47	U	1.47	U	NR
75-34-3	1,1-Dichloroethane	1.35	U	1.35	U	NR
156-59-2	cis-1,2-Dichloroethene	1.31	U	1.31	U	NR
78-93-3	Methyl ethyl ketone	13.62	U	13.62	U	NR
67-66-3	Chloroform	44.45		43.85		1.36
71-55-6	1,1,1-Trichloroethane	2.16	U	2.16	U	NR
110-82-7	Cyclohexane	1.93	U	1.93	U	NR
56-23-5	Carbon Tetrachloride	39.17		38.40		1.98
71-43-2	Benzene	50.68		51.66		1.92
107-06-2	1,2-Dichloroethane	42.70		42.14		1.32
79-01-6	Trichloroethene	1.65	U	1.65	U	NR
71-36-3	Butanol	27.85	U	27.85	U	NR
108-10-1	Methyl isobutyl ketone	17.63	U	17.63	U	NR
108-88-3	Toluene	52.50		54.08		2.97
127-18-4	Tetrachloroethene	1.46	U	1.46	U	NR
108-90-7	Chlorobenzene	1.18	U	1.18	U	NR
100-41-4	Ethylbenzene	1.84	U	1.84	U	NR
108-38-3	m and p-xylene	1.79	U	1.79	U	NR
95-47-6	o-xylene	1.81	U	1.81	U	NR
75-25-2	Bromoform	1.80	U	1.80	U	NR
79-34-5	1,1,2,2-Tetrachloroethane	2.01	U	2.01	U	NR
108-67-8	1,3,5-Trimethylbenzene	1.59	U	1.59	U	NR
95-63-6	1,2,4-Trimethylbenzene	1.77	U	1.77	U	NR

Signature: _____ Date: 8/15/11

FORM 4A
VOLATILE ORGANIC METHOD BLANK SUMMARY

AMWTP Advanced Mixed Waste Treatment Project

THIS ON-LINE BLANK APPLIES TO THE FOLLOWING SAMPLES, EQUIPMENT BLANKS AND OCSs

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl. Pt. of Origin:	WMF-634			Analyzed on:	13-Aug-2011 10:53
Procedure:	OI-43		Revision:	20 Sampled on:	13-Aug-2011 09:46
Instrument ID:	Z-221-001-A			Lab Sample ID:	FB
Instrument Method:	VOCGAS			Container ID:	ON-LINE BLANK
GC Column:	RTX-VMS	ID:	320 um	Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Sample Volume:	500 mL			Data File ID:	005FB-F.D
Multiplier:	1.42			Sample Type:	HGVO
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013	Sampled by:	CB

CONTAINER ID	LAB SAMPLE ID	DATA FILE ID	DATE ANALYZED	TIME ANALYZED
LCS1	LCS1	003LC-F.D	13-Aug-2011	10:26
EB	EB	004EB-F.D	13-Aug-2011	10:40
LCS2	LCS2	008LC-F.D	13-Aug-2011	14:03
MDL1	HS111_00014B-01	009DR-F.D	13-Aug-2011	14:17
MDL2	HS111_00014B-02	010DR-F.D	13-Aug-2011	14:30
MDL3	HS111_00014B-03	011DR-F.D	13-Aug-2011	14:44
MDL4	HS111_00014B-04	012DR-F.D	13-Aug-2011	14:58
MDL5	HS111_00014B-05	013DR-F.D	13-Aug-2011	15:11
MDL6	HS111_00014B-06	014DR-F.D	13-Aug-2011	15:25
MDL7	HS111_00014B-07	015DR-F.D	13-Aug-2011	15:39

Signature: _____ Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 10:53
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 09:46
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.42
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	FB		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	FB		Data File ID:	005FB-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.011	U
74-82-8	Methane	0.010	U

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	2.6	U
67-56-1	Methanol	56	U
60-29-7	Ethyl Ether	1.6	U
75-35-4	1,1-Dichloroethene	2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	1.4	U
75-09-2	Methylene Chloride	1.3	U
156-60-5	trans-1,2-Dichloroethene	1.5	U
75-34-3	1,1-Dichloroethane	1.4	U
156-59-2	cis-1,2-Dichloroethene	1.3	U
78-93-3	Methyl ethyl ketone	14	U
67-66-3	Chloroform	1.9	U
71-55-6	1,1,1-Trichloroethane	2.2	U
110-82-7	Cyclohexane	1.9	U
56-23-5	Carbon Tetrachloride	2.1	U
71-43-2	Benzene	1.6	U
107-06-2	1,2-Dichloroethane	2.5	U
79-01-6	Trichloroethene	1.7	U
71-36-3	Butanol	28	U
108-10-1	Methyl isobutyl ketone	18	U
108-88-3	Toluene	1.8	U
127-18-4	Tetrachloroethene	1.5	U
108-90-7	Chlorobenzene	1.2	U
100-41-4	Ethylbenzene	1.8	U
108-38-3	m and p-xylene	1.8	U
95-47-6	o-xylene	1.8	U
75-25-2	Bromoform	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U
108-67-8	1,3,5-Trimethylbenzene	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.8	U

Signature: Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 10:53
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 09:46
GC Column:	RTX-VMS	ID: 320 um		Multiplier:	1.42
Sample Volume:	500 mL			Matrix:	QC Sample
Lab Sample ID:	FB			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	FB			Data File ID:	005FB-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: _____ Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 10:40
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 09:40
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.42
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	EB		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	EB		Data File ID:	004EB-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.011	U
74-82-8	Methane	0.010	U

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	2.6	U
67-56-1	Methanol	56	U
60-29-7	Ethyl Ether	1.6	U
75-35-4	1,1-Dichloroethene	2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	1.4	U
75-09-2	Methylene Chloride	1.3	U
156-60-5	trans-1,2-Dichloroethene	1.5	U
75-34-3	1,1-Dichloroethane	1.4	U
156-59-2	cis-1,2-Dichloroethene	1.3	U
78-93-3	Methyl ethyl ketone	14	U
67-66-3	Chloroform	1.9	U
71-55-6	1,1,1-Trichloroethane	2.2	U
110-82-7	Cyclohexane	1.9	U
56-23-5	Carbon Tetrachloride	2.1	U
71-43-2	Benzene	1.6	U
107-06-2	1,2-Dichloroethane	2.5	U
79-01-6	Trichloroethene	1.7	U
71-36-3	Butanol	28	U
108-10-1	Methyl isobutyl ketone	18	U
108-88-3	Toluene	1.8	U
127-18-4	Tetrachloroethene	1.5	U
108-90-7	Chlorobenzene	1.2	U
100-41-4	Ethylbenzene	1.8	U
108-38-3	m and p-xylene	1.8	U
95-47-6	o-xylene	1.8	U
75-25-2	Bromoform	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U
108-67-8	1,3,5-Trimethylbenzene	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.8	U

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 8A
VOLATILE ORGANIC INTERNAL STANDARD REPORT
AREA AND RETENTION TIME SUMMARY

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl. Pt. of Origin:	WMF-634			CCal Data Path:	C:\HPchem\1\DATA\HS111_00014B\
Procedure:	OI-43		Revision: 20	CCal Data File ID:	002CC-F.D
Instrument ID:	Z-221-001-A			CCal Analyzed on:	13-Aug-2011 10:07
GC Column:	RTX-VMS	ID:	320 um	Instrument Method:	VOCGAS
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013		

	IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
12 HOUR STD	9124648	4.11	8271204	6.61
UPPER LIMIT	18249296	4.61	16542408	7.11
LOWER LIMIT	4562324	3.61	4135602	6.11

CONTAINER ID	IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
LCS1	9053624	4.10	7846642	6.61
EB	8644058	4.10	7537731	6.61
FB	8898022	4.11	7733979	6.61

IS1: Fluorobenzene
IS2: Chlorobenzene-d5

AREA UPPER LIMIT: +100% of internal standard area.
AREA LOWER LIMIT: -50% of internal standard area.
RT UPPER LIMIT: +0.50 minutes from internal standard RT.
RT LOWER LIMIT: -0.50 minutes from internal standard RT.

(F) denotes value outside of required QC limits

Signature: J Ryos Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 8A
VOLATILE ORGANIC INTERNAL STANDARD REPORT
AREA AND RETENTION TIME SUMMARY

Lab Name:	AMWTP			Batch No.:	HS111_00014
Smpl. Pt..of Origin:	WMF-634			CCal Data Path:	C:\HPchem\1\DATA\HS111_00014B\
Procedure:	OI-43		Revision: 20	CCal Data File ID:	007CC-F.D
Instrument ID:	Z-221-001-A			CCal Analyzed on:	13-Aug-2011 13:46
GC Column:	RTX-VMS	ID:	320 um	Instrument Method:	VOCGAS
BFB/IS Cylinder No.:	CC191961	Exp.:	31-Jan-2013		

	IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
12 HOUR STD	9137667	4.10	8366970	6.60
UPPER LIMIT	18275334	4.60	16733940	7.10
LOWER LIMIT	4568834	3.60	4183485	6.10

CONTAINER ID	IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
LCS2	9268249	4.13	8018228	6.62
MDL1	9155535	4.11	8185284	6.61
MDL2	9420070	4.10	8366684	6.60
MDL3	9559829	4.09	8469426	6.59
MDL4	9763970	4.10	8584681	6.60
MDL5	9906124	4.08	8663146	6.58
MDL6	10085035	4.11	8808414	6.61
MDL7	10222947	4.13	8877174	6.62

IS1:	Fluorobenzene
IS2:	Chlorobenzene-d5
AREA UPPER LIMIT:	+100% of internal standard area.
AREA LOWER LIMIT:	-50% of internal standard area.
RT UPPER LIMIT:	+0.50 minutes from internal standard RT.
RT LOWER LIMIT:	-0.50 minutes from internal standard RT.

(F) denotes value outside of required QC limits

Signature: _____ Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 14:17
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 12:36
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.39
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-01		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL1		Data File ID:	009DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.50	
74-82-8	Methane	0.50	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	22	
67-56-1	Methanol	210	
60-29-7	Ethyl Ether	22	
75-35-4	1,1-Dichloroethene	23	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	250	
75-15-0	Carbon Disulfide	24	
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	24	
75-34-3	1,1-Dichloroethane	23	
156-59-2	cis-1,2-Dichloroethene	24	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	21	
71-55-6	1,1,1-Trichloroethane	20	
110-82-7	Cyclohexane	25	
56-23-5	Carbon Tetrachloride	20	
71-43-2	Benzene	24	
107-06-2	1,2-Dichloroethane	20	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	230	
108-10-1	Methyl isobutyl ketone	230	
108-88-3	Toluene	25	
127-18-4	Tetrachloroethene	22	
108-90-7	Chlorobenzene	23	
100-41-4	Ethylbenzene	23	
108-38-3	m and p-xylene	24	
95-47-6	o-xylene	23	
75-25-2	Bromoform	22	
79-34-5	1,1,2,2-Tetrachloroethane	24	
108-67-8	1,3,5-Trimethylbenzene	21	
95-63-6	1,2,4-Trimethylbenzene	21	

Signature: J Rojos Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 14:17
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 12:36
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.39
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-01			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL1			Data File ID:	009DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 14:30
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 12:44
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.40
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-02		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL2		Data File ID:	010DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.51	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	22	
67-56-1	Methanol	200	
60-29-7	Ethyl Ether	23	
75-35-4	1,1-Dichloroethene	24	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	250	
75-15-0	Carbon Disulfide	24	
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	25	
75-34-3	1,1-Dichloroethane	23	
156-59-2	cis-1,2-Dichloroethene	25	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	22	
71-55-6	1,1,1-Trichloroethane	20	
110-82-7	Cyclohexane	26	
56-23-5	Carbon Tetrachloride	19	
71-43-2	Benzene	25	
107-06-2	1,2-Dichloroethane	20	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	230	
108-10-1	Methyl isobutyl ketone	240	
108-88-3	Toluene	26	
127-18-4	Tetrachloroethene	23	
108-90-7	Chlorobenzene	24	
100-41-4	Ethylbenzene	24	
108-38-3	m and p-xylene	25	
95-47-6	o-xylene	25	
75-25-2	Bromoform	24	
79-34-5	1,1,2,2-Tetrachloroethane	26	
108-67-8	1,3,5-Trimethylbenzene	25	
95-63-6	1,2,4-Trimethylbenzene	25	

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP					
Smpl. Pt. of Origin:	WMF-634					
Procedure:	OI-43		Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A				Analyzed on:	13-Aug-2011 14:30
Instrument Method:	VOCGAS				Sampled on:	13-Aug-2011 12:44
GC Column:	RTX-VMS	ID:	320 um		Multiplier:	1.40
Sample Volume:	500 mL				Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-02				Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL2				Data File ID:	010DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: _____ Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 14:44
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 12:51
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.36
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-03		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL3		Data File ID:	011DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.50	
74-82-8	Methane	0.50	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	22	
67-56-1	Methanol	210	
60-29-7	Ethyl Ether	22	
75-35-4	1,1-Dichloroethene	23	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	250	
75-15-0	Carbon Disulfide	24	
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	24	
75-34-3	1,1-Dichloroethane	22	
156-59-2	cis-1,2-Dichloroethene	24	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	21	
71-55-6	1,1,1-Trichloroethane	19	
110-82-7	Cyclohexane	25	
56-23-5	Carbon Tetrachloride	18	
71-43-2	Benzene	24	
107-06-2	1,2-Dichloroethane	19	
79-01-6	Trichloroethene	23	
71-36-3	Butanol	230	
108-10-1	Methyl isobutyl ketone	230	
108-88-3	Toluene	25	
127-18-4	Tetrachloroethene	22	
108-90-7	Chlorobenzene	23	
100-41-4	Ethylbenzene	23	
108-38-3	m and p-xylene	24	
95-47-6	o-xylene	25	
75-25-2	Bromoform	23	
79-34-5	1,1,2,2-Tetrachloroethane	25	
108-67-8	1,3,5-Trimethylbenzene	24	
95-63-6	1,2,4-Trimethylbenzene	25	

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 14:44
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 12:51
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.36
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-03			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL3			Data File ID:	011DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 14:58
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 13:00
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.38
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-04		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL4		Data File ID:	012DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.50	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	23	
67-56-1	Methanol	200	
60-29-7	Ethyl Ether	22	
75-35-4	1,1-Dichloroethene	24	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	260	
75-15-0	Carbon Disulfide	25	
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	25	
75-34-3	1,1-Dichloroethane	23	
156-59-2	cis-1,2-Dichloroethene	25	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	21	
71-55-6	1,1,1-Trichloroethane	19	
110-82-7	Cyclohexane	26	
56-23-5	Carbon Tetrachloride	18	
71-43-2	Benzene	25	
107-06-2	1,2-Dichloroethane	19	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	230	
108-10-1	Methyl isobutyl ketone	240	
108-88-3	Toluene	26	
127-18-4	Tetrachloroethene	23	
108-90-7	Chlorobenzene	24	
100-41-4	Ethylbenzene	24	
108-38-3	m and p-xylene	25	
95-47-6	o-xylene	26	
75-25-2	Bromoform	24	
79-34-5	1,1,2,2-Tetrachloroethane	27	
108-67-8	1,3,5-Trimethylbenzene	25	
95-63-6	1,2,4-Trimethylbenzene	26	

Signature: J Reyes Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 14:58
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 13:00
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.38
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-04			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL4			Data File ID:	012DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 15:11
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 13:08
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.40
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-05		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL5		Data File ID:	013DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.50	
74-82-8	Methane	0.51	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	22	
67-56-1	Methanol	200	
60-29-7	Ethyl Ether	23	
75-35-4	1,1-Dichloroethene	24	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	250	
75-15-0	Carbon Disulfide	24	
75-09-2	Methylene Chloride	25	
156-60-5	trans-1,2-Dichloroethene	25	
75-34-3	1,1-Dichloroethane	23	
156-59-2	cis-1,2-Dichloroethene	24	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	21	
71-55-6	1,1,1-Trichloroethane	19	
110-82-7	Cyclohexane	26	
56-23-5	Carbon Tetrachloride	18	
71-43-2	Benzene	24	
107-06-2	1,2-Dichloroethane	18	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	230	
108-10-1	Methyl isobutyl ketone	230	
108-88-3	Toluene	26	
127-18-4	Tetrachloroethene	23	
108-90-7	Chlorobenzene	24	
100-41-4	Ethylbenzene	24	
108-38-3	m and p-xylene	25	
95-47-6	o-xylene	26	
75-25-2	Bromoform	23	
79-34-5	1,1,2,2-Tetrachloroethane	26	
108-67-8	1,3,5-Trimethylbenzene	25	
95-63-6	1,2,4-Trimethylbenzene	26	

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 15:11
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 13:08
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.40
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-05			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL5			Data File ID:	013DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: _____ Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 15:25
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 13:16
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.39
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-06		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL6		Data File ID:	014DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.51	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	22	
67-56-1	Methanol	210	
60-29-7	Ethyl Ether	22	
75-35-4	1,1-Dichloroethene	24	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	260	
75-15-0	Carbon Disulfide	24	
75-09-2	Methylene Chloride	26	
156-60-5	trans-1,2-Dichloroethene	26	
75-34-3	1,1-Dichloroethane	24	
156-59-2	cis-1,2-Dichloroethene	25	
78-93-3	Methyl ethyl ketone	250	
67-66-3	Chloroform	22	
71-55-6	1,1,1-Trichloroethane	20	
110-82-7	Cyclohexane	27	
56-23-5	Carbon Tetrachloride	18	
71-43-2	Benzene	26	
107-06-2	1,2-Dichloroethane	19	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	240	
108-10-1	Methyl isobutyl ketone	250	
108-88-3	Toluene	27	
127-18-4	Tetrachloroethene	24	
108-90-7	Chlorobenzene	25	
100-41-4	Ethylbenzene	25	
108-38-3	m and p-xylene	26	
95-47-6	o-xylene	27	
75-25-2	Bromoform	24	
79-34-5	1,1,2,2-Tetrachloroethane	27	
108-67-8	1,3,5-Trimethylbenzene	26	
95-63-6	1,2,4-Trimethylbenzene	26	

Signature: Rojos Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 15:25
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 13:16
GC Column:	RTX-VMS	ID: 320 um		Multiplier:	1.39
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-06			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL6			Data File ID:	014DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1A VOLATILE ORGANIC ANALYSIS
DATA SHEET

Lab Name:	AMWTP		Duplicated?:	N
Smpl. Pt. of Origin:	WMF-634		Dup P/F/NC?:	NA
Procedure:	OI-43	Revision: 20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A		Analyzed on:	13-Aug-2011 15:39
Instrument Method:	VOCGAS		Sampled on:	13-Aug-2011 13:27
GC Column:	RTX-VMS	ID: 320 um	Multiplier:	1.41
Sample Volume:	500 mL		Matrix:	QC Sample
Lab Sample ID:	HS111_00014B-07		Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL7		Data File ID:	015DR-F.D
			Sampled by:	CB

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	AMOUNT (PERCENT)	Q FLAG
1333-74-0	Hydrogen	0.51	
74-82-8	Methane	0.51	

CAS NUMBER	COMPOUND	AMOUNT (PPMV)	Q FLAG
74-87-3	Chloromethane	23	
67-56-1	Methanol	200	
60-29-7	Ethyl Ether	23	
75-35-4	1,1-Dichloroethene	24	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	23	
67-64-1	Acetone	260	
75-15-0	Carbon Disulfide	25	
75-09-2	Methylene Chloride	26	
156-60-5	trans-1,2-Dichloroethene	26	
75-34-3	1,1-Dichloroethane	23	
156-59-2	cis-1,2-Dichloroethene	26	
78-93-3	Methyl ethyl ketone	240	
67-66-3	Chloroform	21	
71-55-6	1,1,1-Trichloroethane	19	
110-82-7	Cyclohexane	27	
56-23-5	Carbon Tetrachloride	17	
71-43-2	Benzene	25	
107-06-2	1,2-Dichloroethane	19	
79-01-6	Trichloroethene	24	
71-36-3	Butanol	220	
108-10-1	Methyl isobutyl ketone	230	
108-88-3	Toluene	27	
127-18-4	Tetrachloroethene	23	
108-90-7	Chlorobenzene	25	
100-41-4	Ethylbenzene	25	
108-38-3	m and p-xylene	26	
95-47-6	o-xylene	26	
75-25-2	Bromoform	24	
79-34-5	1,1,2,2-Tetrachloroethane	27	
108-67-8	1,3,5-Trimethylbenzene	25	
95-63-6	1,2,4-Trimethylbenzene	26	

Signature: J Rojas Date: 8/15/11

AMWTP
Advanced Mixed Waste Treatment Project

FORM 1E
VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	AMWTP				
Smpl. Pt. of Origin:	WMF-634				
Procedure:	OI-43	Revision:	20	Batch No.:	HS111_00014
Instrument ID:	Z-221-001-A			Analyzed on:	13-Aug-2011 15:39
Instrument Method:	VOCGAS			Sampled on:	13-Aug-2011 13:27
GC Column:	RTX-VMS ID:	320 um		Multiplier:	1.41
Sample Volume:	500 mL			Matrix:	Drum Headspace
Lab Sample ID:	HS111_00014B-07			Data Path:	C:\HPCHEM\1\DATA\HS111_00014B\
Container ID:	MDL7			Data File ID:	015DR-F.D

BFB/IS Cylinder No.: CC191961 Exp.: 31-Jan-2013 Sample Type: HGVO

CAS NUMBER	COMPOUND	RT	EST. AMOUNT (PPMV)

Signature: J Rojas Date: 8/15/11

RESTEK

Certificate of Analysis

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 556776 **Lot No.**: A076393

Description : Custom Organics Blend

Expiration Date[1]: February 2012 **Storage**: Freezer

Elution Order	Compound	CAS #	Percent Purity [2]	Concentration [3] (weight/weight%)	% Uncertainty [4] (95% C.L.; K=2)
1	Chloromethane (methyl chloride)	74-87-3	99%	0.8180 wt./wt.%	+/-0.58 %
2	Methanol	67-56-1	99%	5.0678 wt./wt.%	+/-0.58 %
3	Diethyl ether (ethyl ether)	60-29-7	99%	1.1191 wt./wt.%	+/-0.58 %
4	1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1	97%	3.0419 wt./wt.%	+/-0.58 %
5	Acetone	67-64-1	99%	9.1213 wt./wt.%	+/-0.58 %
6	1,1-dichloroethene	75-35-4	99%	1.5305 wt./wt.%	+/-0.58 %
7	Methylene chloride (dichloromethane)	75-09-2	99%	1.3239 wt./wt.%	+/-0.58 %
8	Carbon disulfide	75-15-0	99%	1.2229 wt./wt.%	+/-0.58 %
9	trans-1,2-Dichloroethene	156-60-5	99%	1.5289 wt./wt.%	+/-0.58 %
10	1,1-Dichloroethane	75-34-3	98%	1.5285 wt./wt.%	+/-0.58 %
11	2-Butanone (MEK)	78-93-3	99%	11.2501 wt./wt.%	+/-0.58 %
12	cis-1,2-Dichloroethene	156-59-2	99%	1.5311 wt./wt.%	+/-0.58 %
13	chloroform	67-66-3	98%	1.8262 wt./wt.%	+/-0.58 %
14	1,1,1-trichloroethane	71-55-6	99%	2.0271 wt./wt.%	+/-0.58 %
15	Cyclohexane	110-82-7	99%	1.3177 wt./wt.%	+/-0.58 %
16	carbon tetrachloride	56-23-5	99%	2.4428 wt./wt.%	+/-0.58 %
17	1,2-Dichloroethane	107-06-2	99%	1.5270 wt./wt.%	+/-0.58 %
18	Benzene	71-43-2	99%	1.2212 wt./wt.%	+/-0.58 %
19	1-Butanol	71-36-3	99%	11.6559 wt./wt.%	+/-0.58 %
20	Trichloroethene	79-01-6	99%	2.0325 wt./wt.%	+/-0.58 %
21	4-Methyl-2-pentanone (MIBK)	108-10-1	99%	15.7123 wt./wt.%	+/-0.58 %
22	Toluene	108-88-3	99%	1.4188 wt./wt.%	+/-0.58 %
23	Tetrachloroethene	127-18-4	99%	2.6374 wt./wt.%	+/-0.58 %
24	Chlorobenzene	108-90-7	99%	1.7227 wt./wt.%	+/-0.58 %
25	Ethylbenzene	100-41-4	99%	1.6217 wt./wt.%	+/-0.58 %
26	m-Xylene	108-38-3	99%	0.8112 wt./wt.%	+/-0.58 %
27	p-Xylene	106-42-3	99%	0.8108 wt./wt.%	+/-0.58 %
28	o-Xylene	95-47-6	99%	1.6217 wt./wt.%	+/-0.58 %
29	bromoform	75-25-2	99%	4.0540 wt./wt.%	+/-0.58 %
30	1,1,2,2-Tetrachloroethane	79-34-5	99%	2.6377 wt./wt.%	+/-0.58 %
31	1,3,5-Trimethylbenzene	108-67-8	99%	1.8245 wt./wt.%	+/-0.58 %
32	1,2,4-Trimethylbenzene	95-63-6	99%	1.8303 wt./wt.%	+/-0.58 %

Solvent: n/a

Column:
60m x .25mm x 1.4um
Rtx-502.2 (cat.#10916)

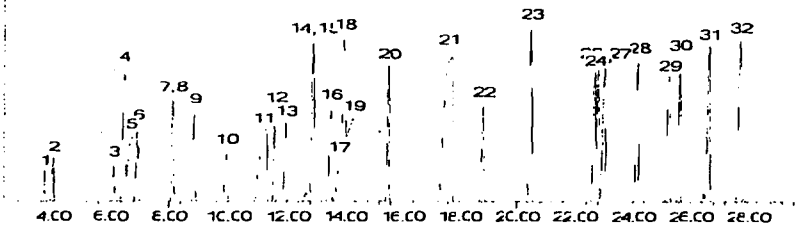
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



Sara Eyster QA Analyst

Date Passed: 24-Aug-2010 **Balance:** 1127510105

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

1 Expiration date of the unopened ampule stored at the recommended storage condition.

2A Purity is determined by one or more of the following techniques: GC/FID, HPLC, GC/ECD, GC/MS. Value is rounded to the nearest whole number. Chemical identity is confirmed using GC/MS. See data pack or contact provider for further details.

2B Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities.

2C The following types of compounds will have a listed purity of less than 99%: Aldehyde/Ketone-DNPH compounds, Bromides, Chlorides, HCL salts, HBR salts, sulfates, hydrates, and other compounds as necessary. The listed purity is a correction factor that is equivalent to the percentage of parent compound in the molecule. This correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution. The concentration listed on the certificate is the concentration of the parent compound in the solution.

2D Purity of isomeric compounds is reported as the sum of the isomers. Value is rounded to the nearest whole number after summation.

3 Based upon gravimetric preparation with balance calibration verified using NIST traceable weights (seven mass levels) and/or class A glassware used for dilutions.

4 Uncertainties determined using data for balances and glassware from measurement systems analysis methodology, raw material purity, and, when significant, equipment tolerances or calibration results.

Note:

Density = 0.9468

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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 15, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07/-2230
Ord. Number: 9465715

Lot Number: 0-042-121
Part Number: SPG 8ALSNC22174

Cylinder Number(s): CC 254995

Date Analyzed: 2/15/2010
Expires: 2-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Benzene	50.0ppm	50ppm	GC-FID
Chloroform	50.0ppm	50ppm	GC-FID
Carbon Tetrachloride	50.0ppm	50ppm	Gravimetric
1,2-Dichloroethane	50.0ppm	50ppm	GC-FID
Methylene Chloride	50.0ppm	50ppm	GC-FID
Toluene	50.4ppm	50ppm	GC-FID
Hydrogen	0.500%	0.5%	Gravimetric
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672

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CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-200
Part Number: SPG 2ALSNC25374

Cylinder Number(s): CC254993

Date Analyzed: 2/10/2011
Expires. 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	0.076 %	0.075 %	Zirconium Oxide Cell GC-TCD
Methane	0.075 %	0.075 %	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Jeff Korn
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales.
The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-200
Part Number: SPG 2ALSNC25374

Cylinder Number(s): CC254993

Date Analyzed: 2/10/2011
Expires. 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Not Reported CR 8/15/11

Component	Reported Concentration	Requested Concentration	Analytical Method
			Zirconium Oxide Cell
Hydrogen	0.076 %	0.075 %	GC-TCD
Methane	0.075 %	0.075 %	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Jeff Korn
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Calibration Gases & Equipment

Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-201
Part Number: SPG 2ALSNC45374

Cylinder Number(s): CC 241870

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	0.512%	0.5%	GC-TCD
Methane	0.500%	0.5%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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Certified Quality Management System

CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-202
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 254976

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	1.01%	1.0%	GC-TCD
Methane	1.00%	1.0%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales.
The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

898 W. GOWEN ROAD • BOISE, IDAHO 83705
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CERTIFICATE OF ANALYSIS

February 10, 2011

Norco, Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 25285963

Lot Number: 1-040-203
Part Number: SPG 2ALSNC55374

Cylinder Number(s): CC 251685

Date Analyzed: 2/10/2011
Expires: 2-2014
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Hydrogen	3.02%	3%	GC-TCD
Methane	3.00%	3%	Gravimetric
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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CERTIFICATE OF ANALYSIS

January 25, 2010

Norco. Inc
Idaho Falls Warehouse
3450 N. 25th East
Idaho Falls, ID 83401

P.O. Number: 07-2230
Ord. Number: 9377946

Lot Number: 0-020-100
Part Number: SPG 3ALSNC2**74

Cylinder Number(s): CC 191961

Date Analyzed: 1/25/2010
Expires: 1-2013
Analytical Accuracy: +/- 2 %

Cylinder Size: ALS
Pressure: 2000 psig @ 70°F

Component	Reported Concentration	Requested Concentration	Analytical Method
Fluorobenzene	80.4ppm	80ppm	GC-FID
d-5-Chlorobenzene	70.4ppm	70ppm	GC-FID
1-Bromo-4-fluorobenzene	25.0ppm	25ppm	GC-FID
Nitrogen	Balance		

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Approved: _____
Aaron Schwenken
Lab Technician

The cylinders in this lot were prepared gravimetricaly and are traceable to the NIST by certified weights used to calibrate the scales. The cylinders were then analyzed against standards traceable to the NIST by weights or SRM's.
NIST Report Numbers: 2007-1223 and 2007-1286

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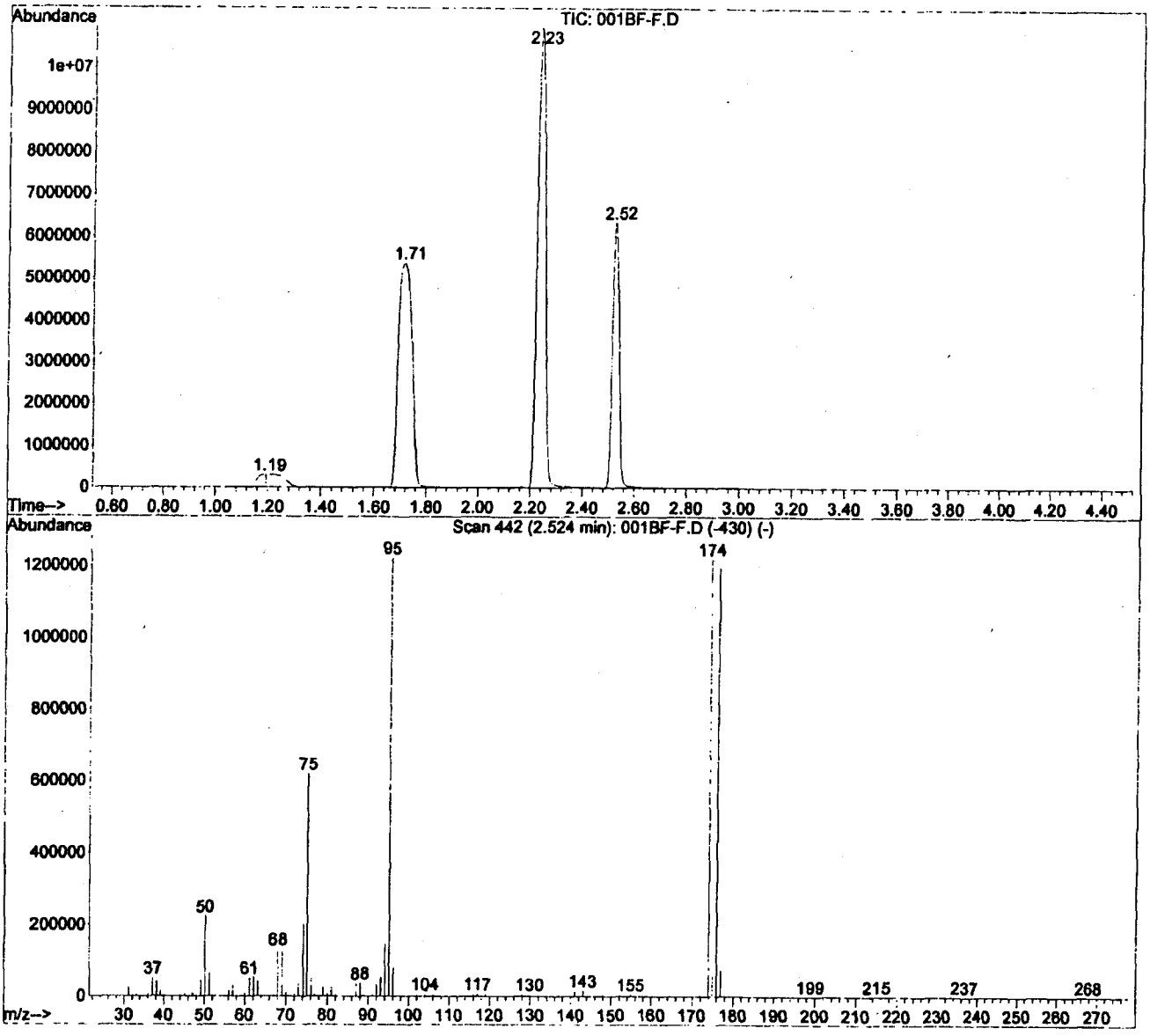
BFB

Data File : C:\HPCHEM\1\DATA\HS111 00014B\001BF-F.D Vial: 1
Acq On : 13 Aug 2011 9:59 Operator: CB
Sample : bf,BFB,,, Inst : Instrumen
Misc : ,,,,, Multiplr: 1.00
Sample Amount: 0.00
Method : C:\HPCHEM\1\METHODS\TUNE.M (RTE Integrator)
Title :



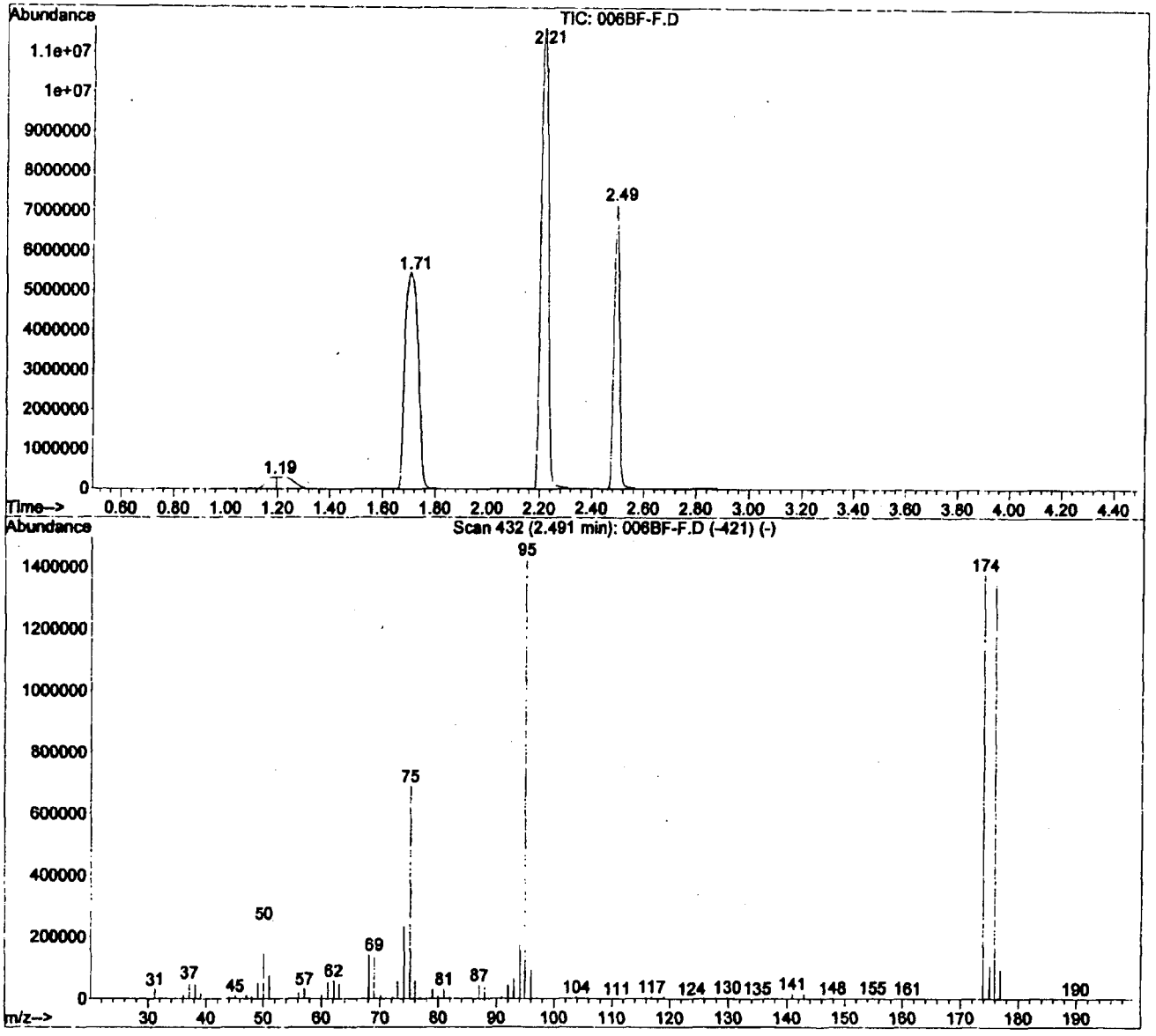
Spectrum Information: Scan 442

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	223296	PASS
75	95	30	60	50.7	619033	PASS
95	95	100	100	100.0	1221884	PASS
96	95	5	9	6.6	80046	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	99.9	1220608	PASS
175	174	5	9	6.9	84728	PASS
176	174	95	101	97.9	1195008	PASS
177	176	5	9	6.1	73400	PASS

001BF-F.D TUNE.M Mon Aug 15 09:34:06 2011

BFB

Data File : C:\HPCHEM\1\DATA\HS111 00014B\006BF-F.D Vial: 6
Acq On : 13 Aug 2011 13:38 Operator: SO
Sample : bf,BFB,,, Inst : Instrumen
Misc : ,,,,, Multiplr: 1.00
Sample Amount: 0.00
Method : C:\HPCHEM\1\METHODS\TUNE.M (RTE Integrator)
Title :



Spectrum Information: Scan 432

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.1	244361	PASS
75	95	30	60	48.4	690880	PASS
95	95	100	100	100.0	1427178	PASS
96	95	5	9	6.5	93340	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	96.6	1379328	PASS
175	174	5	9	7.7	105776	PASS
176	174	95	101	97.9	1350656	PASS
177	176	5	9	6.8	91456	PASS

006BF-F.D TUNE.M Mon Aug 15 09:57:41 2011

Response Factor Report Instrumen

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Initial Calibration

Calibration Files
1 =002I1-F.D 2 =003I2-F.D 3 =004I3-F.D
4 =005I4-F.D 5 =006I5-F.D

		Compound	1	2	3	4	5	Avg	%RSD
1)	TL	Hydrogen	0.974	0.990	1.007	1.015		0.996 E5	1.82
2)	TL	Methane	4.725	4.851	4.916	4.782		4.819 E4	1.73
3)	I	Fluorobenzene	----------ISTD----------						
4)	T	Chloromethane	0.159	0.142	0.134	0.126	0.130	0.138	9.38
5)	T	Methanol	0.044	0.039	0.038	0.037	0.038	0.039	6.81
6)	T	Ethyl ether	0.141	0.132	0.129	0.128	0.132	0.133	3.78
7)	T	1,1-Dichloroethen	0.249	0.232	0.232	0.233	0.254	0.240	4.51
8)	T	1,1,2-Trichloro-1	0.662	0.605	0.586	0.576	0.610	0.608	5.44
9)	T	Acetone	0.088	0.082	0.083	0.085	0.094	0.086	5.78
10)	T	Carbon Disulfide	0.654	0.594	0.598	0.605	0.667	0.624	5.50
11)	TL	Methylene chlorid	0.195	0.187	0.189	0.190	0.210	0.194	4.67
12)	T	trans-1,2-Dichlor	0.262	0.246	0.245	0.248	0.268	0.254	4.14
13)	T	1,1-Dichloroethan	0.484	0.443	0.432	0.432	0.451	0.448	4.76
14)	T	cis-1,2-Dichloroe	0.263	0.248	0.251	0.253	0.273	0.258	3.96
15)	T	Methyl ethyl keto	0.116	0.113	0.118	0.124	0.141	0.122	9.08
16)	TL	Chloroform	0.773	0.719	0.692	0.673	0.689	0.709	5.54
17)	T	1,1,1-Trichloroet	0.922	0.859	0.830	0.797	0.807	0.843	5.95
18)	T	Cyclohexane	0.302	0.291	0.298	0.302	0.323	0.303	3.96
19)	TL	Carbon Tetrachlor	0.254	0.241	0.227	0.210	0.208	0.228	8.70
20)	TL	Benzene	0.735	0.696	0.698	0.705	0.767	0.720	4.24
21)	TL	1,2-Dichloroethan	0.613	0.553	0.522	0.491	0.484	0.533	9.84
22)	T	Trichloroethene	0.430	0.394	0.403	0.402	0.436	0.413	4.50
23)	T	Butanol	0.035	0.034	0.036	0.036	0.040	0.036	6.60
24)	I	Chlorobenzene-d5	----------ISTD----------						
25)	T	Methyl isobutyl k	0.098	0.098	0.109	0.116	0.127	0.110	11.32
26)	TL	Toluene	0.539	0.517	0.530	0.538	0.590	0.543	5.14
27)	T	Tetrachloroethene	0.620	0.601	0.661	0.678	0.701	0.652	6.32
28)	T	Chlorobenzene	0.957	0.891	0.911	0.903	0.976	0.927	3.96
29)	T	Ethylbenzene	0.445	0.423	0.439	0.444	0.477	0.446	4.44
30)	T	m and p-xylene	0.492	0.466	0.496	0.508	0.564	0.505	7.16
31)	T	o-xylene	0.465	0.443	0.480	0.492	0.539	0.484	7.40
32)	T	Bromoform	0.421	0.408	0.434	0.437	0.469	0.434	5.26
33)	S	4-Bromofluorobenz	1.313	1.293	1.268	1.283	1.239	1.279	2.17
34)	T	1,1,2,2-Tetrachlo	0.383	0.364	0.399	0.412	0.448	0.401	7.97
35)	T	1,3,5-Trimethylbe	0.568	0.544	0.649	0.668	0.738	0.633	12.41
36)	T	1,2,4-Trimethylbe	0.515	0.501	0.612	0.635	0.701	0.593	14.22

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\HS111 00014B\002CC-F.D Vial: 2
Acq On : 13 Aug 2011 10:07 Operator: CB
Sample : ic1,CCAL1,2011-08-13,09:22:43,642.232 Inst : Instrumen
Misc : 919.828,24.0,CB,,, Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(min)
1	TL	Hydrogen	99.626	101.197	E3	-1.6	98	0.00
2	TL	Methane	48.185	48.155	E3	0.1	97	-0.08
3	I	Fluorobenzene	1.000	1.000		0.0	111	-0.02
4	T	Chloromethane	0.138	0.133		3.6	98	0.00
5	T	Methanol	0.039	0.035		10.3	99	0.00
6	T	Ethyl ether	0.133	0.133		0.0	96	-0.01
7	T	1,1-Dichloroethene	0.240	0.240		0.0	95	-0.02
8	T	1,1,2-Trichloro-1,2,2-Trifl	0.608	0.575		5.4	95	-0.02
9	T	Acetone	0.086	0.089		-3.5	95	-0.02
10	T	Carbon Disulfide	0.624	0.630		-1.0	95	-0.02
11	TL	Methylene chloride	0.194	0.201		-3.6	94	-0.02
12	T	trans-1,2-Dichloroethene	0.254	0.261		-2.8	94	-0.02
13	T	1,1-Dichloroethane	0.448	0.441		1.6	94	-0.01
14	T	cis-1,2-Dichloroethene	0.258	0.261		-1.2	93	-0.02
15	T	Methyl ethyl ketone	0.122	0.122		0.0	93	-0.02
16	TL	Chloroform	0.709	0.664		6.3	94	-0.02
17	T	1,1,1-Trichloroethane	0.843	0.756		10.3	95	-0.02
18	T	Cyclohexane	0.303	0.327		-7.9	95	-0.02
19	TL	Carbon Tetrachloride	0.228	0.192		15.8	99	-0.02
20	TL	Benzene	0.720	0.728		-1.1	93	-0.02
21	TL	1,2-Dichloroethane	0.533	0.454		14.8	94	-0.02
22	T	Trichloroethene	0.413	0.405		1.9	92	-0.02
23	T	Butanol	0.036	0.035		2.8	91	-0.02
24	I	Chlorobenzene-d5	1.000	1.000		0.0	103	0.00
25	T	Methyl isobutyl ketone	0.110	0.110		0.0	92	-0.01
26	TL	Toluene	0.543	0.574		-5.7	94	-0.01
27	T	Tetrachloroethene	0.652	0.620		4.9	94	-0.01
28	T	Chlorobenzene	0.927	0.909		1.9	92	0.00
29	T	Ethylbenzene	0.446	0.433		2.9	92	0.00
30	T	m and p-xylene	0.505	0.504		0.2	92	0.00
31	T	o-xylene	0.484	0.484		0.0	94	0.00
32	T	Bromoform	0.434	0.407		6.2	92	0.00
33	S	4-Bromofluorobenzene	1.279	1.221		4.5	99	0.00
34	T	1,1,2,2-Tetrachloroethane	0.401	0.393		2.0	92	0.00
35	T	1,3,5-Trimethylbenzene	0.633	0.598		5.5	95	0.00
36	T	1,2,4-Trimethylbenzene	0.593	0.555		6.4	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
007CC-F.D VOCGAS.M Mon Aug 15 09:44:39 2011

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\HS111 00014B\007CC-F.D Vial: 7
Acq On : 13 Aug 2011 13:46 Operator: SO
Sample : ic2,CCAL2,2011-08-13,12:12:00,641.621 Inst : Instrumen
Misc : 882.595,26.6,SO,,, Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 0% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 500%

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(min)
1	TL	Hydrogen	99.626	98.833	E3	0.8	100	0.01
2	TL	Methane	48.185	47.926	E3	0.5	100	-0.07
3	I	Fluorobenzene	1.000	1.000		0.0	111	-0.03
4	T	Chloromethane	0.138	0.130		5.8	100	0.00
5	T	Methanol	0.039	0.034		12.8	100	0.00
6	T	Ethyl ether	0.133	0.132		0.8	100	0.00
7	T	1,1-Dichloroethene	0.240	0.243		-1.3	100	-0.01
8	T	1,1,2-Trichloro-1,2,2-Trifl	0.608	0.582		4.3	100	0.00
9	T	Acetone	0.086	0.091		-5.8	100	-0.01
10	T	Carbon Disulfide	0.624	0.638		-2.2	100	0.00
11	TL	Methylene chloride	0.194	0.205		-5.7	100	0.00
12	T	trans-1,2-Dichloroethene	0.254	0.266		-4.7	100	-0.01
13	T	1,1-Dichloroethane	0.448	0.450		-0.4	100	-0.01
14	T	cis-1,2-Dichloroethene	0.258	0.269		-4.3	100	-0.02
15	T	Methyl ethyl ketone	0.122	0.126		-3.3	100	-0.02
16	TL	Chloroform	0.709	0.679		4.2	100	-0.02
17	T	1,1,1-Trichloroethane	0.843	0.762		9.6	100	-0.02
18	T	Cyclohexane	0.303	0.331		-9.2	100	-0.02
19	TL	Carbon Tetrachloride	0.228	0.186		18.4	100	-0.02
20	TL	Benzene	0.720	0.753		-4.6	100	-0.02
21	TL	1,2-Dichloroethane	0.533	0.464		12.9	100	-0.02
22	T	Trichloroethene	0.413	0.424		-2.7	100	-0.02
23	T	Butanol	0.036	0.037		-2.8	100	-0.02
24	I	Chlorobenzene-d5	1.000	1.000		0.0	104	-0.02
25	T	Methyl isobutyl ketone	0.110	0.114		-3.6	100	-0.02
26	TL	Toluene	0.543	0.582		-7.2	100	-0.02
27	T	Tetrachloroethene	0.652	0.629		3.5	100	-0.02
28	T	Chlorobenzene	0.927	0.940		-1.4	100	-0.02
29	T	Ethylbenzene	0.446	0.447		-0.2	100	-0.02
30	T	m and p-xylene	0.505	0.518		-2.6	100	-0.02
31	T	o-xylene	0.484	0.492		-1.7	100	-0.02
32	T	Bromoform	0.434	0.418		3.7	100	-0.02
33	S	4-Bromofluorobenzene	1.279	1.214		5.1	100	-0.02
34	T	1,1,2,2-Tetrachloroethane	0.401	0.404		-0.7	100	-0.02
35	T	1,3,5-Trimethylbenzene	0.633	0.595		6.0	100	-0.02
36	T	1,2,4-Trimethylbenzene	0.593	0.556		6.2	100	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
007CC-F.D VOCGAS.M Mon Aug 15 10:13:16 2011

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\002CC-F.D Vial: 2
Acq On : 13 Aug 2011 10:07 Operator: CB
Sample : ic1,CCAL1,2011-08-13,09:22:43,642.232 Inst : Instrumen
Misc : 919.828,24.0,CB,,, Multiplr: 1.00
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:16:02 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 10:16:02 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

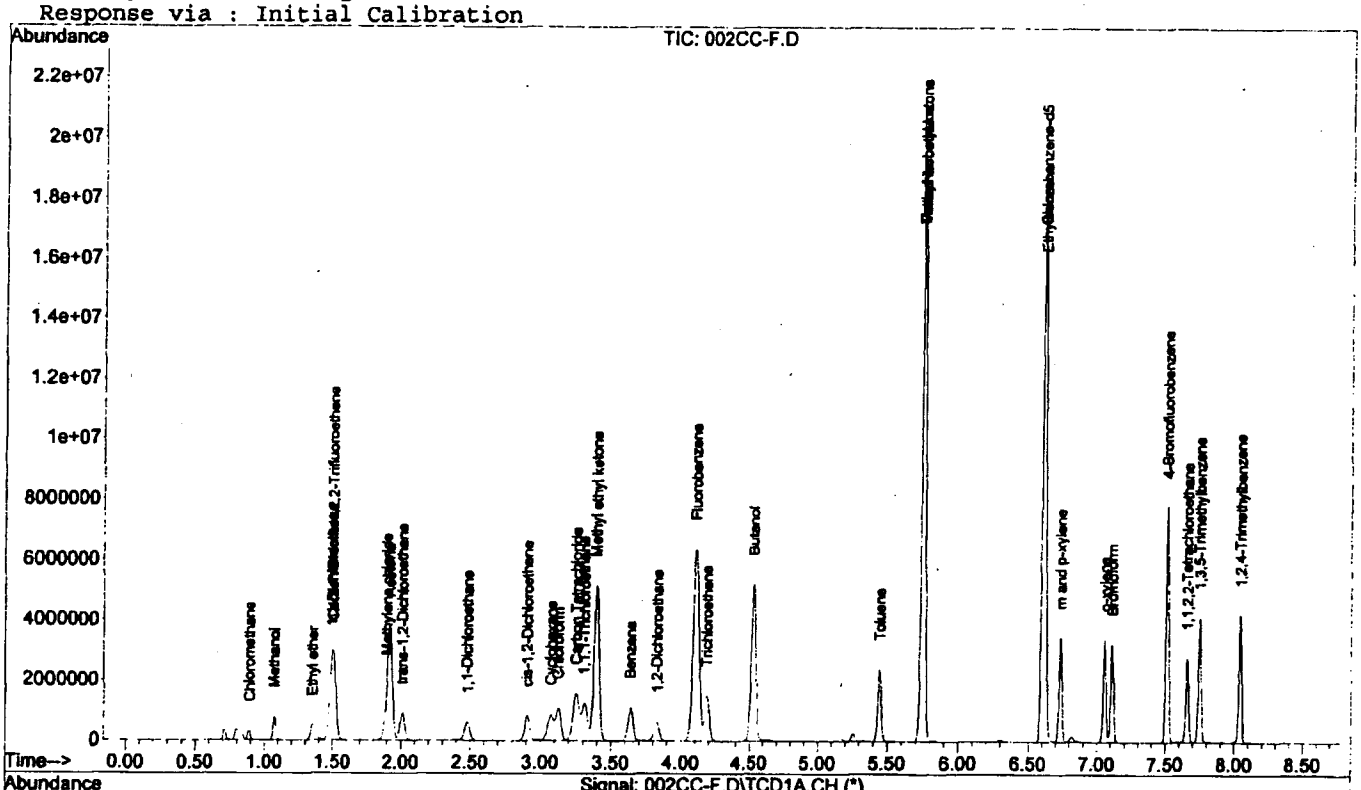
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) Fluorobenzene	4.11	96	9124648	201.00	ppm	-0.02
24) Chlorobenzene-d5	6.61	117	8271204	176.00	ppm	0.00
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.51	95	2170253	36.10	ppm	0.00
Target Compounds						Qvalue
1) Hydrogen	2.78	GC1	71363	0.7043	perce	100
2) Methane	5.74	GC1	33622	0.7010	perce	100
4) Chloromethane	0.89	50	238165	37.9858	ppm	98
5) Methanol	1.07	31	606568	341.9022	ppm	100
6) Ethyl ether	1.35	59	222629	36.9550	ppm	99
7) 1,1-Dichloroethene	1.48	96	419907	38.5611	ppm	94
8) 1,1,2-Trichloro-1,2,2-Trif	1.50	101	1033637	37.4652	ppm	99
9) Acetone	1.92	58	1556260	396.9391	ppm	78
10) Carbon Disulfide	1.51	76	1120304	39.5759	ppm	96
11) Methylene chloride	1.89	84	347335	39.3726	ppm	94
12) trans-1,2-Dichloroethene	2.01	96	455829	39.5566	ppm	97
13) 1,1-Dichloroethane	2.48	63	754057	37.0535	ppm	100
14) cis-1,2-Dichloroethene	2.91	96	457374	39.0948	ppm	96
15) Methyl ethyl ketone	3.39	72	2115063	380.4382	ppm	91
16) Chloroform	3.12	83	1124482	34.9225	ppm	98
17) 1,1,1-Trichloroethane	3.31	97	1271920	33.2360	ppm	99
18) Cyclohexane	3.07	56	567140	41.1754	ppm	95
19) Carbon Tetrachloride	3.25	82	337861	32.6325	ppm	96
20) Benzene	3.64	78	1261425	38.5768	ppm	99
21) 1,2-Dichloroethane	3.83	62	776521	32.1174	ppm	97
22) Trichloroethene	4.19	130	694079	37.0277	ppm	97
23) Butanol	4.53	55	610605	373.2866	ppm	95
25) Methyl isobutyl ketone	5.75	100	1983049	384.8063	ppm	99
26) Toluene	5.44	92	1013304	39.7106	ppm	98
27) Tetrachloroethene	5.74	166	1130958	36.9033	ppm	98
28) Chlorobenzene	6.60	112	1594424	36.5797	ppm	100
29) Ethylbenzene	6.62	106	757536	36.1728	ppm	99
30) m and p-xylene	6.73	106	883145	37.1883	ppm	95
31) o-xylene	7.06	106	848091	37.3080	ppm	95
32) Bromoform	7.11	171	749415	36.7655	ppm	98
34) 1,1,2,2-Tetrachloroethane	7.66	85	707520	37.5405	ppm	99
35) 1,3,5-Trimethylbenzene	7.75	120	1041023	34.9705	ppm	97
36) 1,2,4-Trimethylbenzene	8.04	120	969063	34.7970	ppm	96

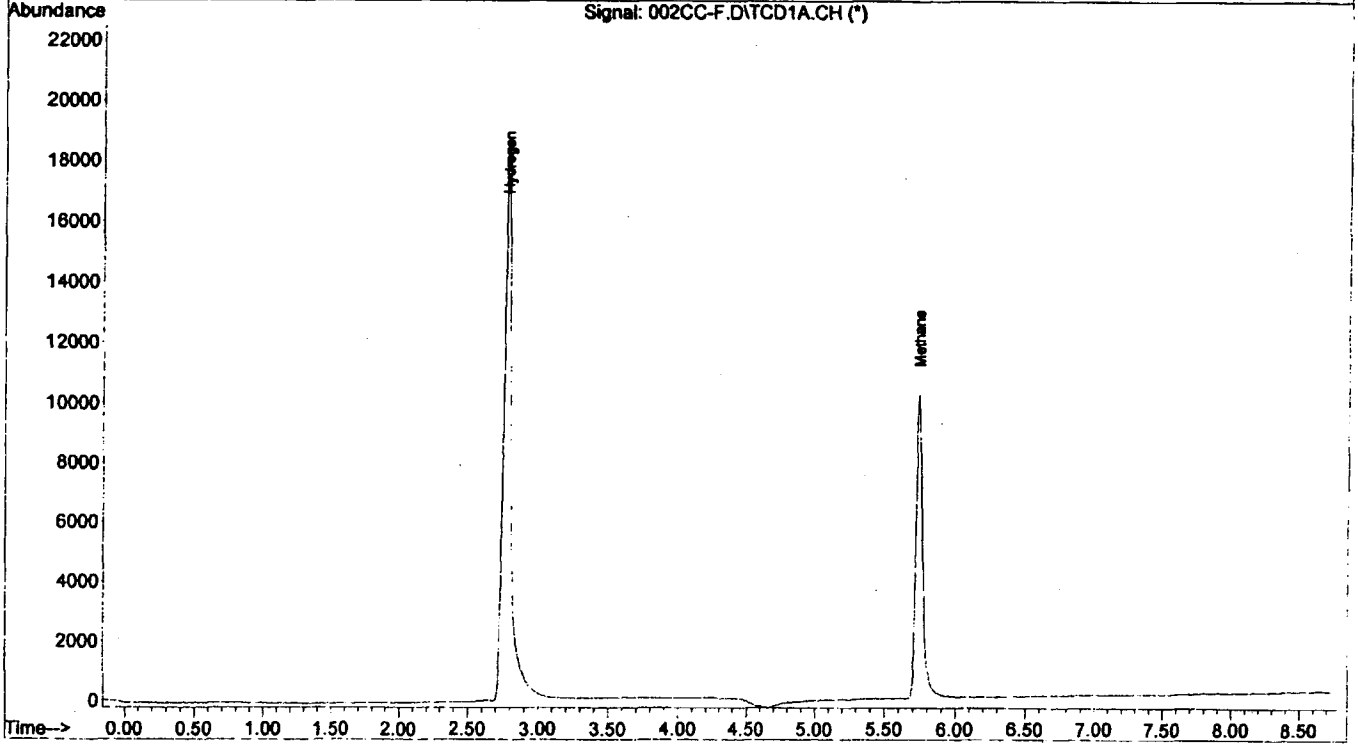
(#) = qualifier out of range (m) = manual integration
002CC-F.D VOCGAS.M Mon Aug 15 09:47:44 2011

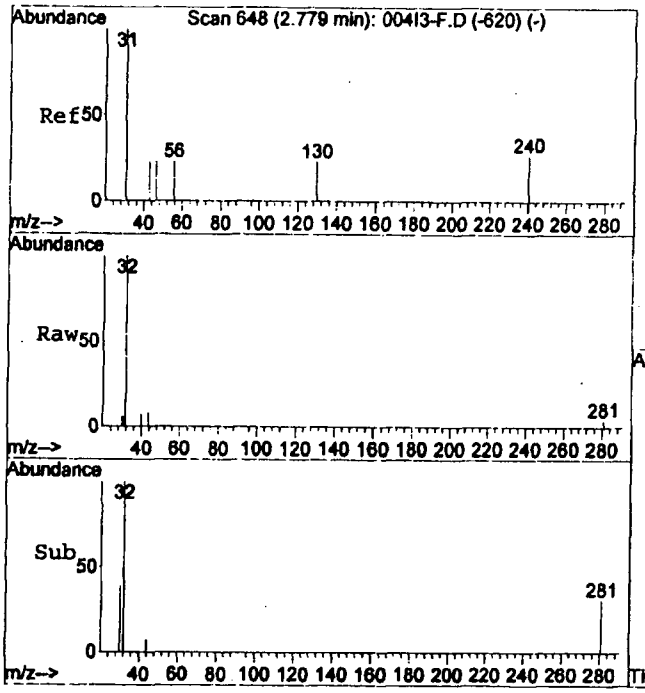
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\002CC-F.D Vial: 2
Acq On : 13 Aug 2011 10:07 Operator: CB
Sample : ic1,CCAL1,2011-08-13,09:22:43,642.232 Inst : Instrumen
Misc : 919.828,24.0,CB,,, Multiplr: 1.00
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:16 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Initial Calibration

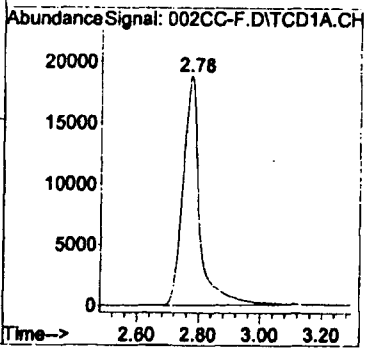


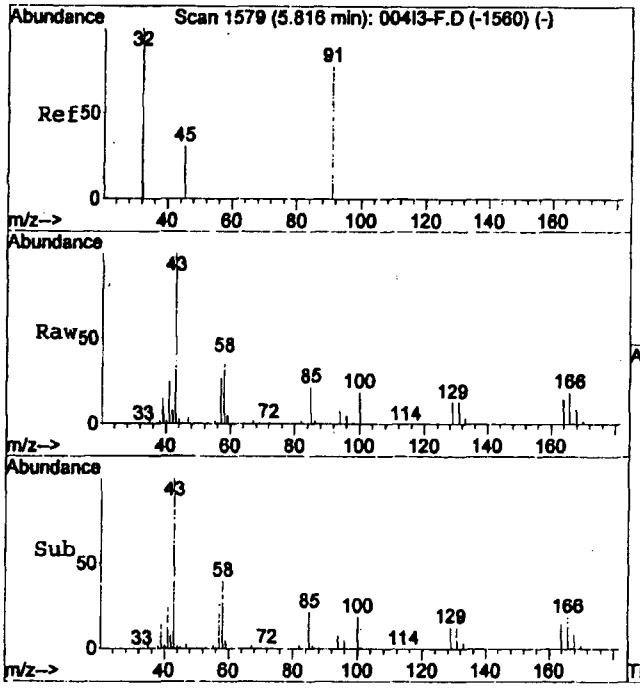




#1
Hydrogen
Concen: 0.70 percent
RT: 2.78 min
Delta R.T. -0.00 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

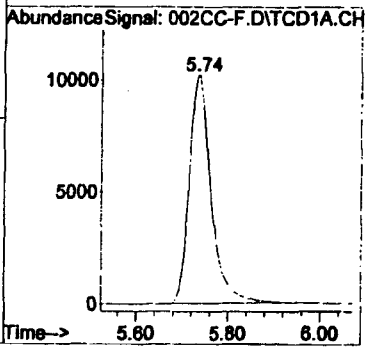
Tgt Sig:GC1 Resp: 71363

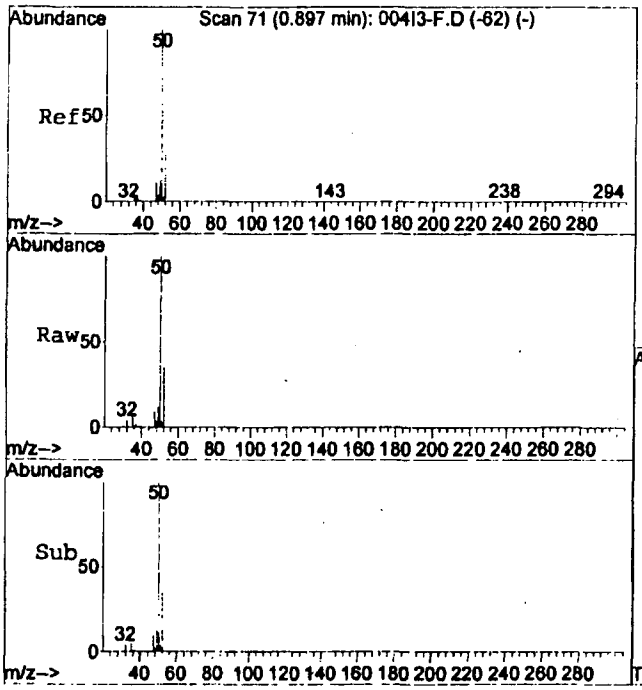




#2
Methane
Concen: 0.70 percent
RT: 5.74 min
Delta R.T. -0.08 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Sig:GC1 Resp: 33622

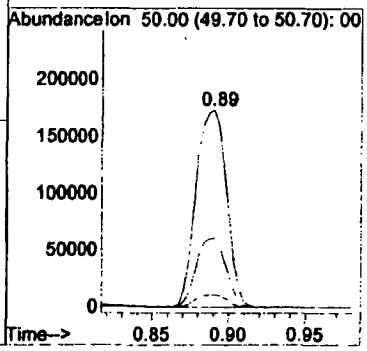


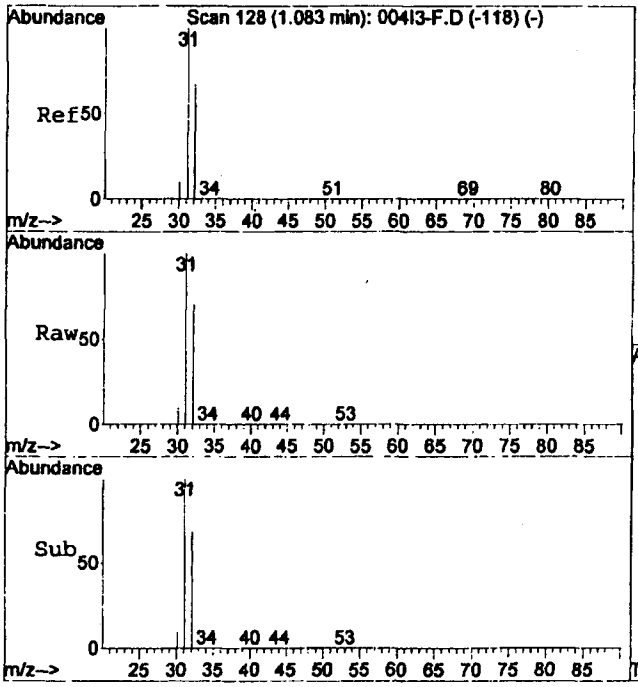


#4
Chloromethane
Concen: 37.99 ppm
RT: 0.89 min Scan# 69
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 50 Resp: 238165

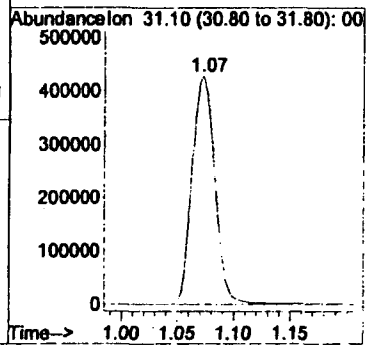
Ion	Ratio	Lower	Upper
50	100		
35	6.1	5.3	9.8
52	33.9	23.2	43.2

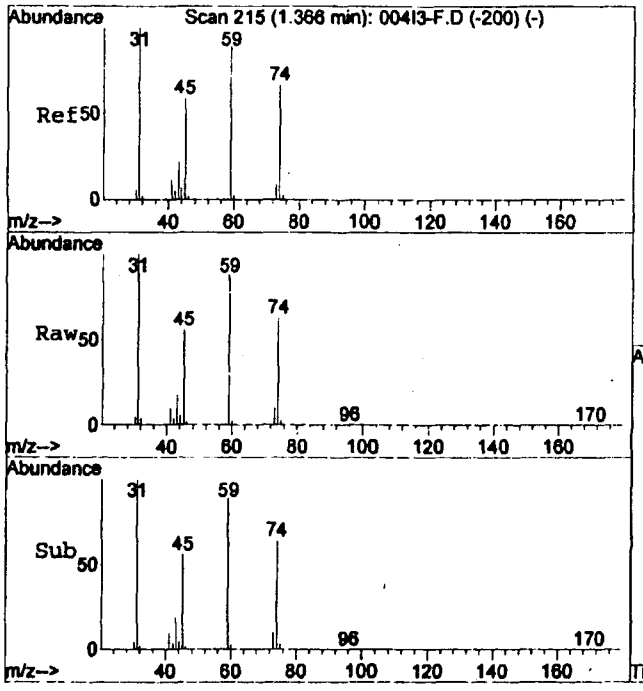




#5
Methanol
Concen: 341.90 ppm
RT: 1.07 min Scan# 125
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 31 Resp: 606568

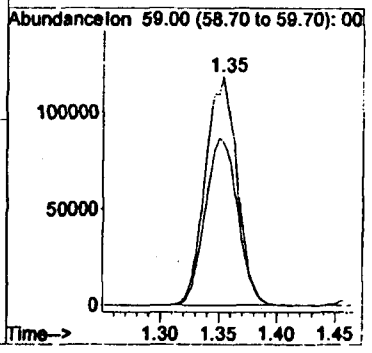


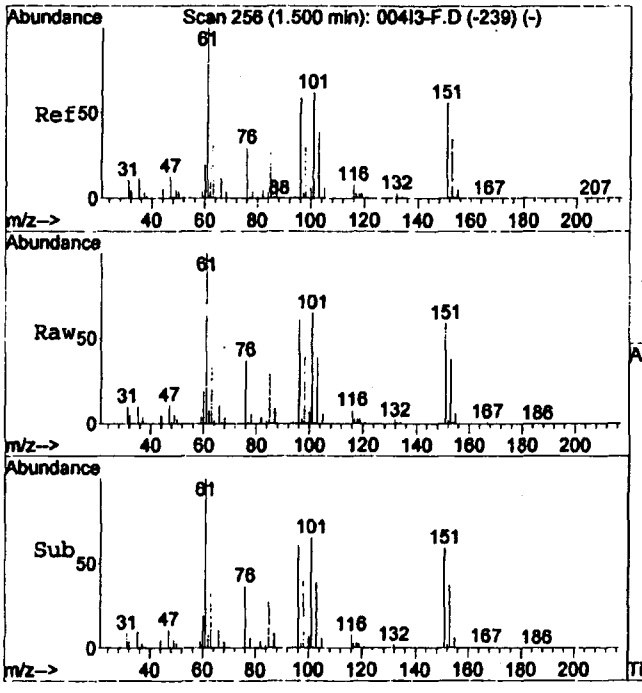


#6
Ethyl ether
Concen: 36.96 ppm
RT: 1.35 min Scan# 211
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 59 Resp: 222629

Ion	Ratio	Lower	Upper
59	100		
74	74.6	51.7	95.9

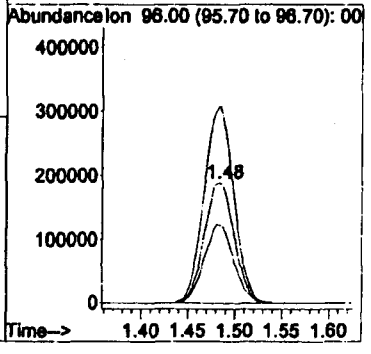


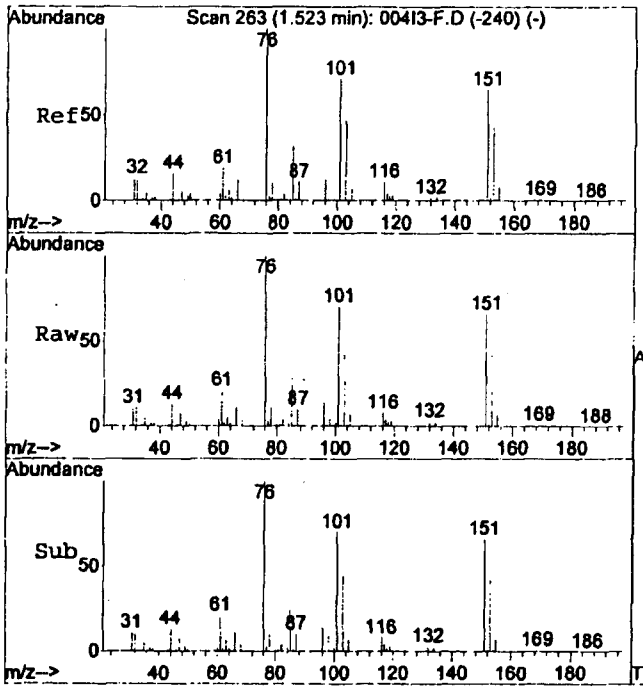


#7
1,1-Dichloroethene
Concen: 38.56 ppm
RT: 1.48 min Scan# 251
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 96 Resp: 419907

Ion	Ratio	Lower	Upper
96	100		
61	161.0	121.2	225.0
98	64.4	44.9	83.3

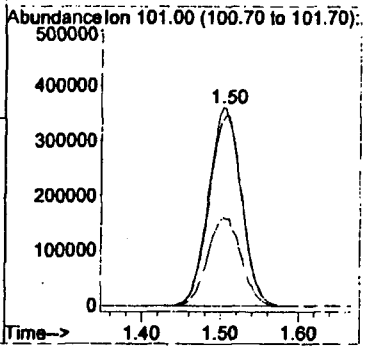


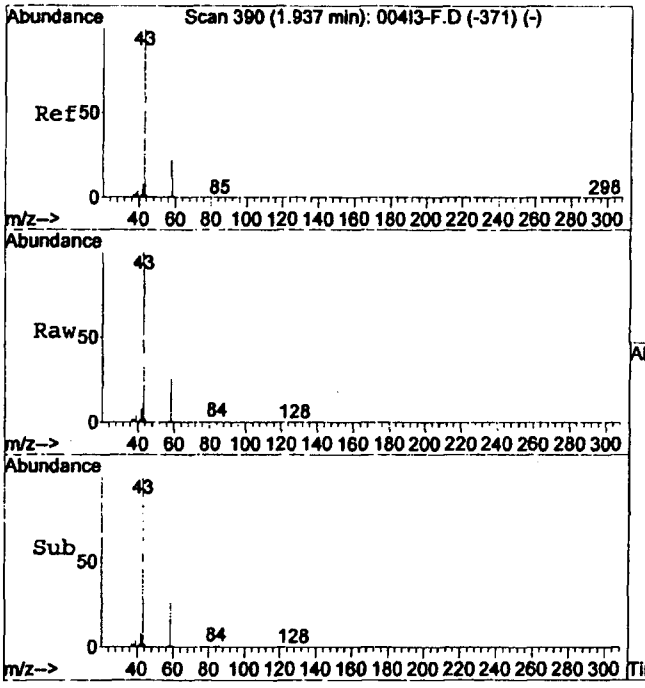


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 37.47 ppm
RT: 1.50 min Scan# 257
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:101 Resp: 1033637

Ion	Ratio	Lower	Upper
101	100		
85	45.3	32.3	59.9
151	97.0	66.8	124.2

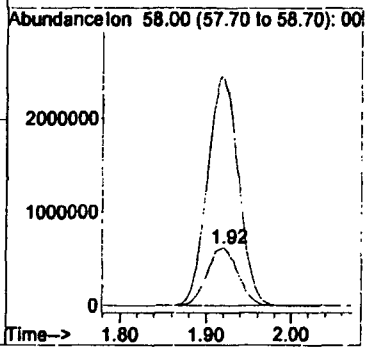


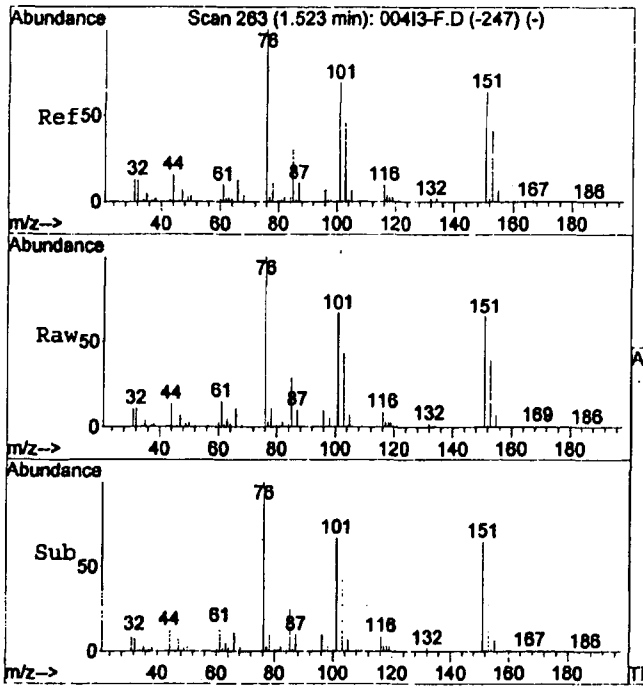


#9
Acetone
Concen: 396.94 ppm
RT: 1.92 min Scan# 385
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 58 Resp: 1556260

Ion	Ratio	Lower	Upper
58	100		
43	398.2	317.7	590.1

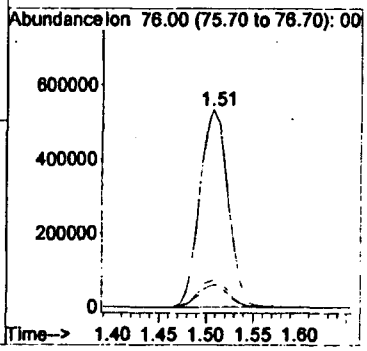


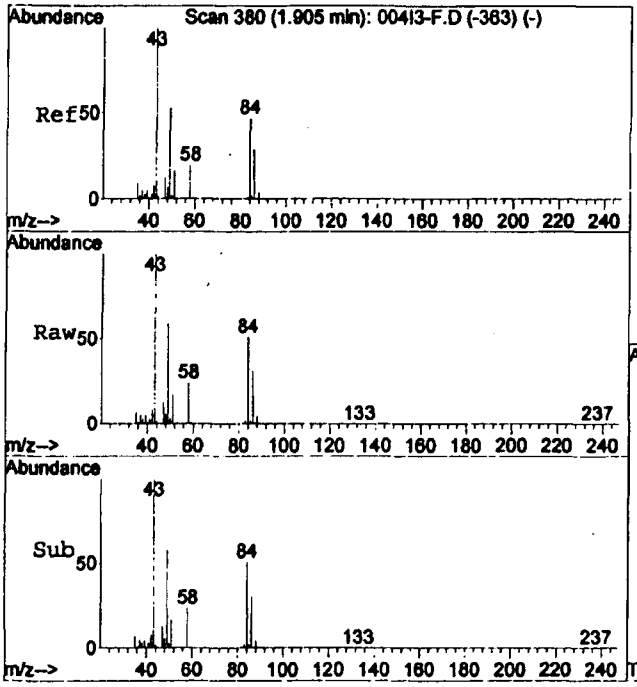


#10
Carbon Disulfide
Concen: 39.58 ppm
RT: 1.51 min Scan# 258
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 76 Resp: 1120304

Ion	Ratio	Lower	Upper
76	100		
44	13.6	11.5	21.5
78	11.2	7.6	14.2

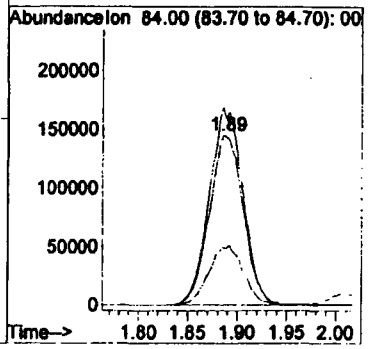


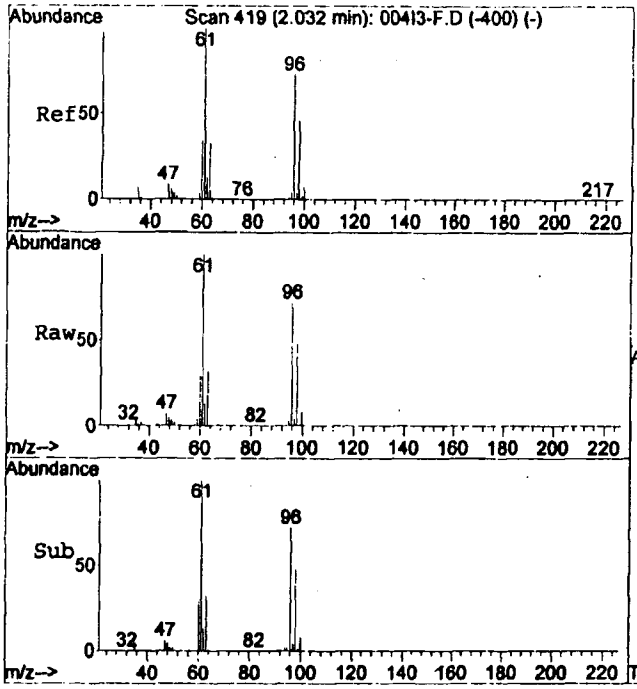


#11
Methylene chloride
Concen: 39.37 ppm
RT: 1.89 min Scan# 374
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 84 Resp: 347335

Ion	Ratio	Lower	Upper
84	100		
49	114.7	85.8	159.4
51	35.4	25.6	47.6

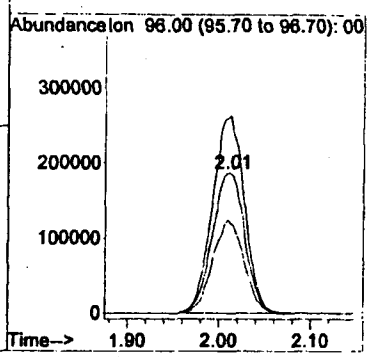


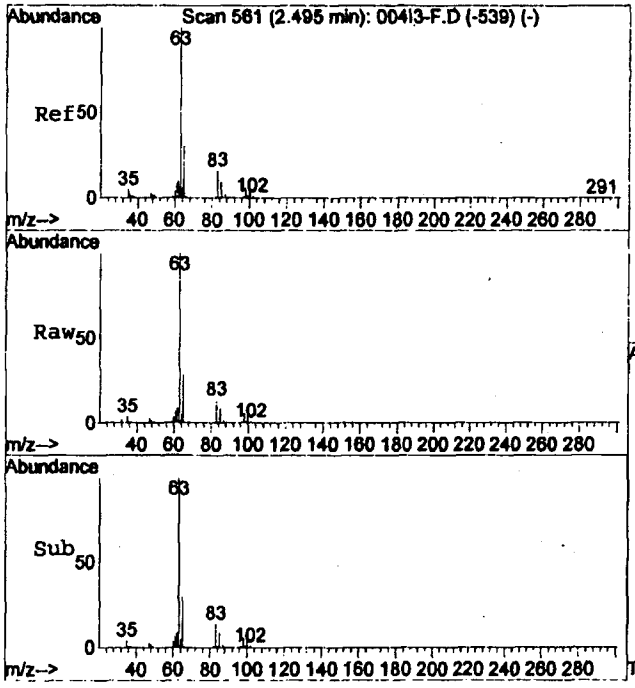


#12
trans-1,2-Dichloroethene
Concen: 39.56 ppm
RT: 2.01 min Scan# 412
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 96 Resp: 455829

Ion	Ratio	Lower	Upper
96	100		
61	139.1	100.3	186.3
98	64.0	45.6	84.8

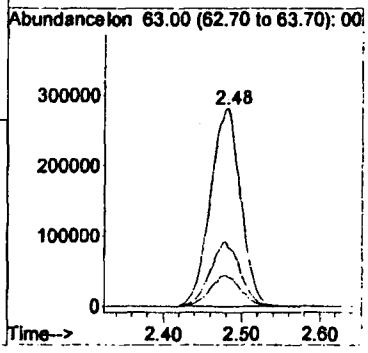


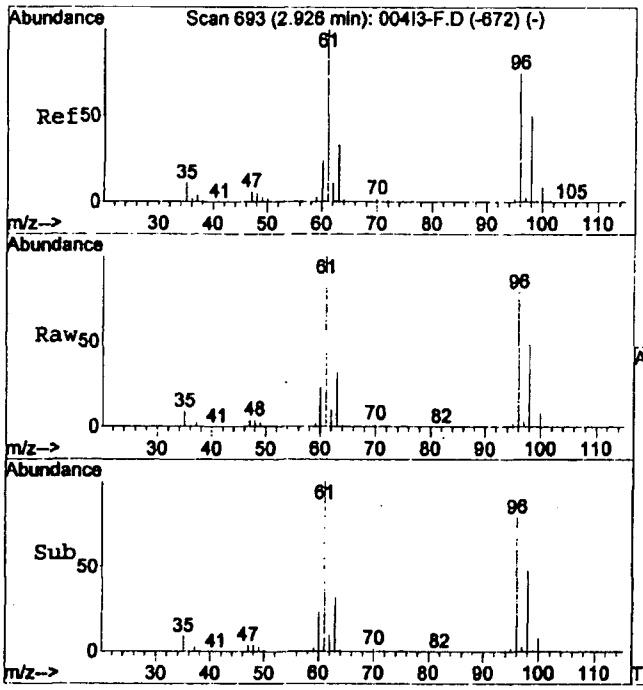


#13
1,1-Dichloroethane
Concen: 37.05 ppm
RT: 2.48 min Scan# 557
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 63 Resp: 754057

Ion	Ratio	Lower	Upper
63	100		
83	15.3	10.7	19.9
65	31.9	22.1	41.1

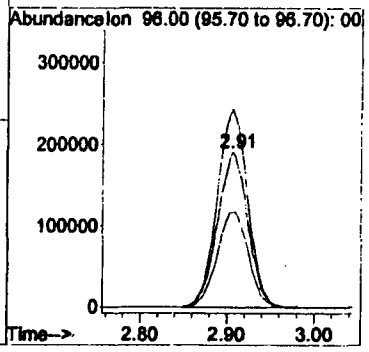


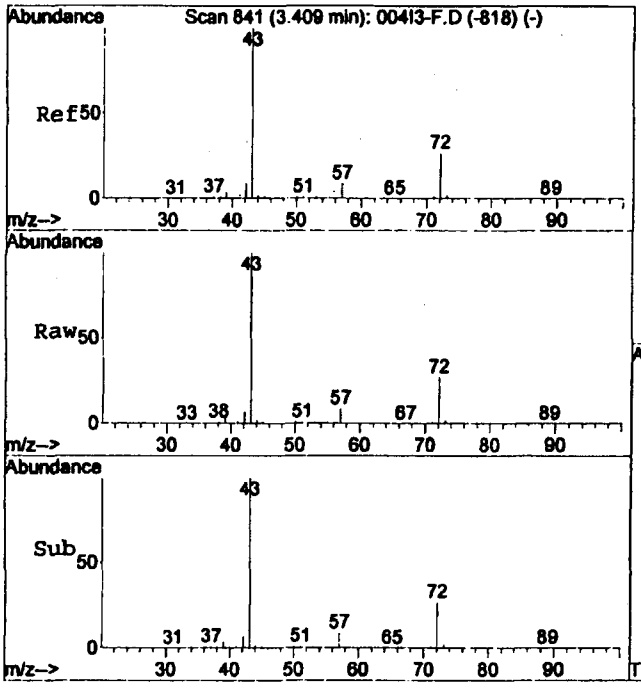


#14
cis-1,2-Dichloroethene
Concen: 39.09 ppm
RT: 2.91 min Scan# 687
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 96 Resp: 457374

Ion	Ratio	Lower	Upper
96	100		
61	128.7	94.0	174.6
98	63.6	45.2	84.0

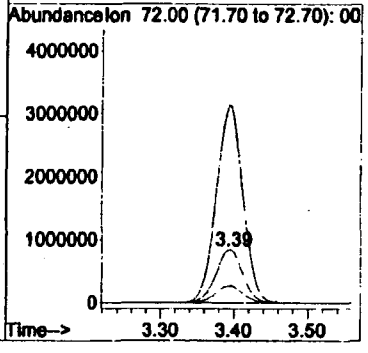


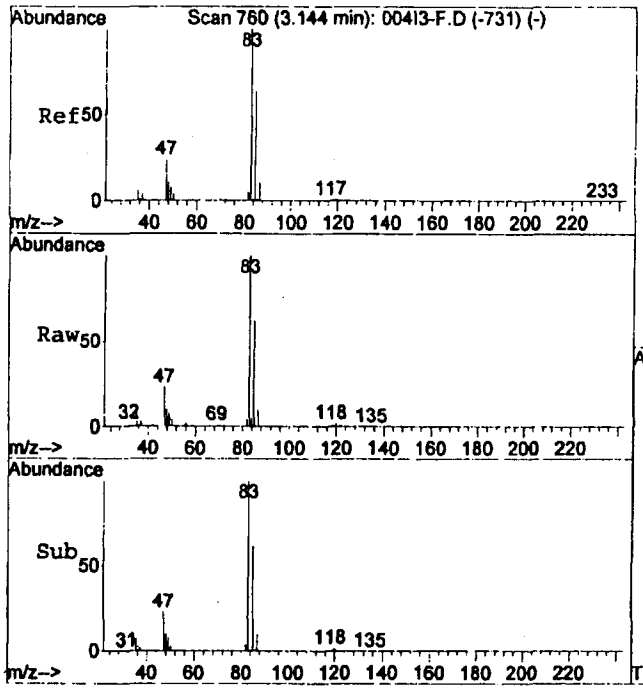


#15
Methyl ethyl ketone
Concen: 380.44 ppm
RT: 3.39 min Scan# 836
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 72 Resp: 2115063

Ion	Ratio	Lower	Upper
72	100		
57	32.2	23.7	43.9
43	370.6	274.5	509.7

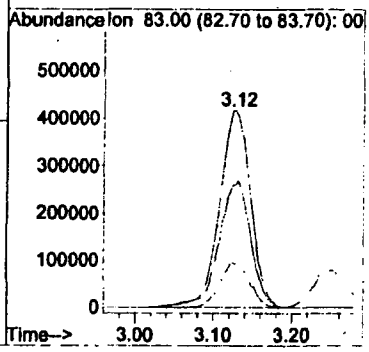


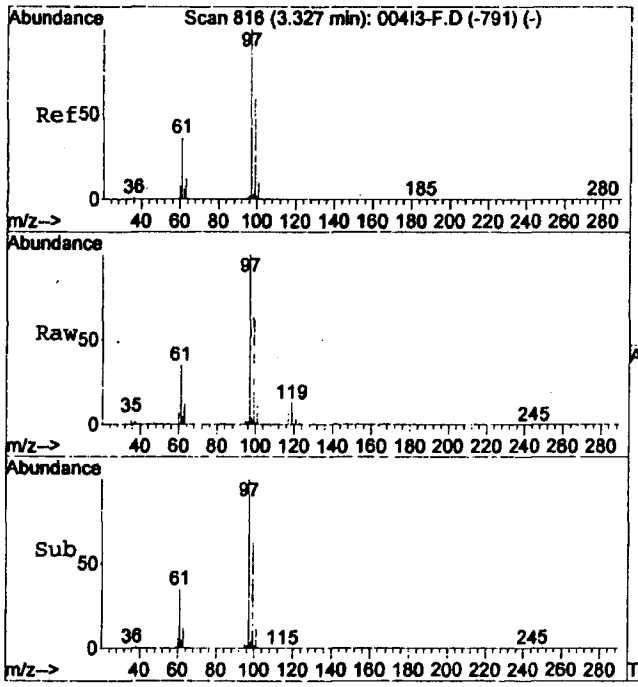


#16
Chloroform
Concen: 34.92 ppm
RT: 3.12 min Scan# 754
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 83 Resp: 1124482

Ion	Ratio	Lower	Upper
83	100		
47	22.0	16.6	30.8
85	65.8	45.1	83.7

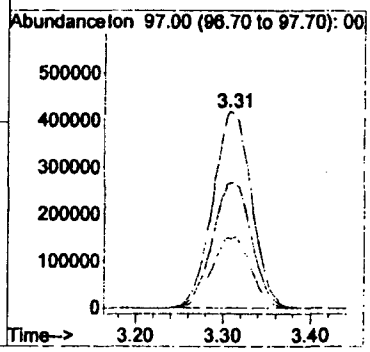


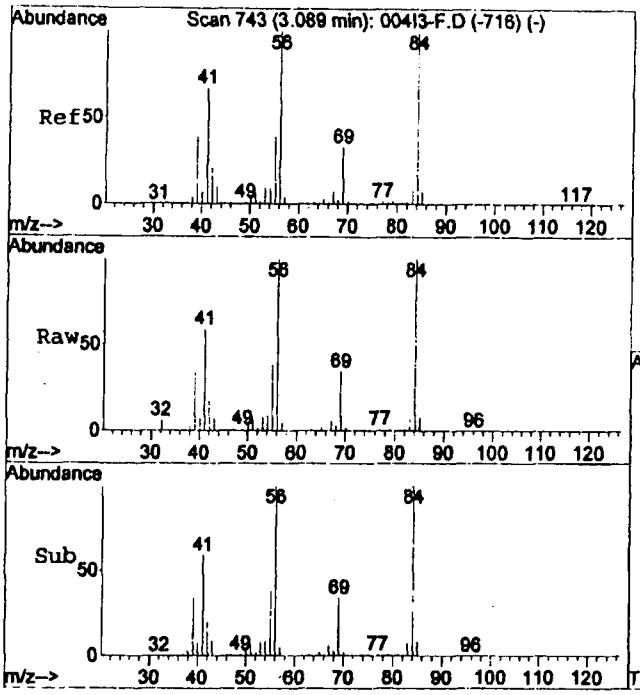


#17
1,1,1-Trichloroethane
Concen: 33.24 ppm
RT: 3.31 min Scan# 810
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 97 Resp: 1271920

Ion	Ratio	Lower	Upper
97	100		
61	36.4	26.1	48.5
99	64.8	45.0	83.6

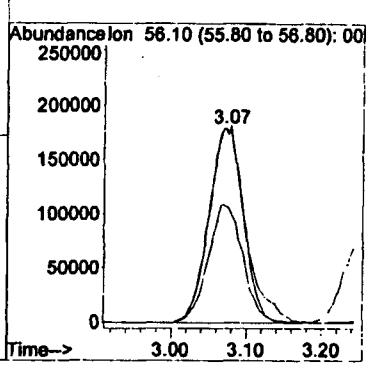


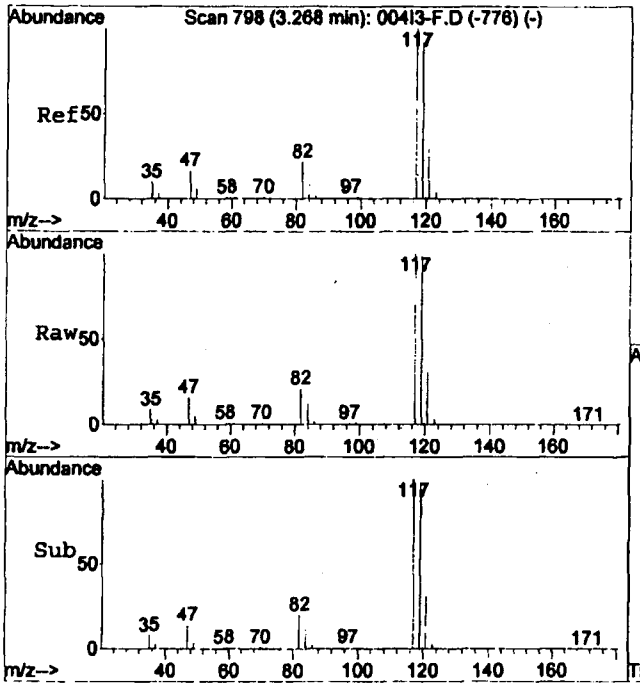


#18
Cyclohexane
Concen: 41.18 ppm
RT: 3.07 min Scan# 738
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 56 Resp: 567140

Ion	Ratio	Lower	Upper
56	100		
84	106.1	75.7	140.7
41	60.8	47.6	88.4

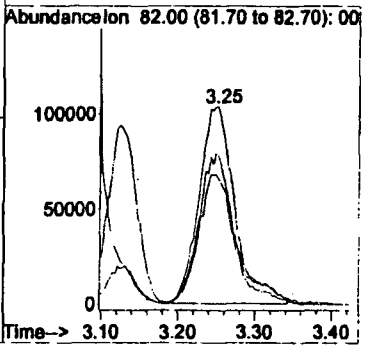


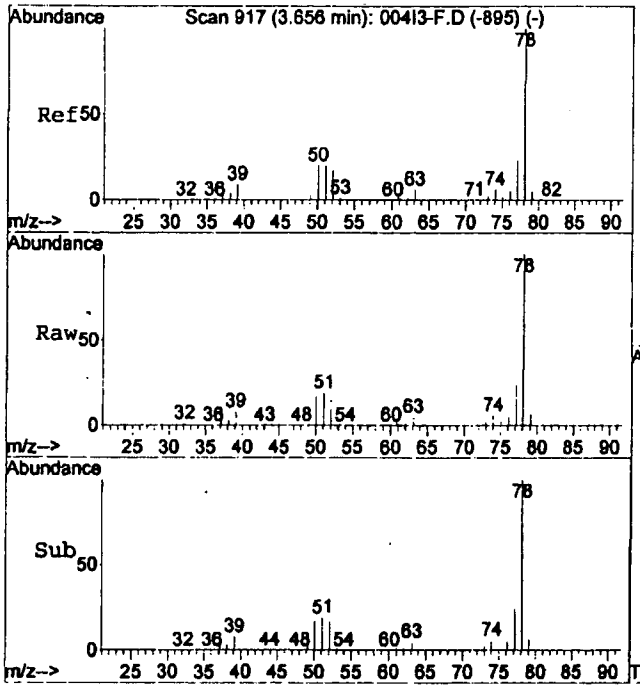


#19
Carbon Tetrachloride
Concen: 32.63 ppm
RT: 3.25 min Scan# 793
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 82 Resp: 337861

Ion	Ratio	Lower	Upper
82	100		
47	75.4	51.1	94.9
84	65.8	43.1	80.1

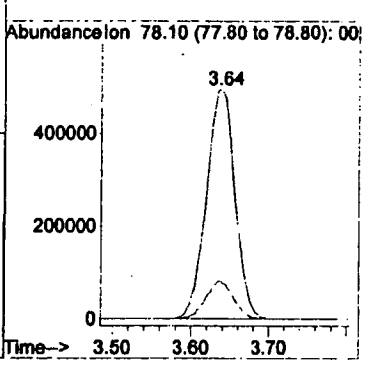


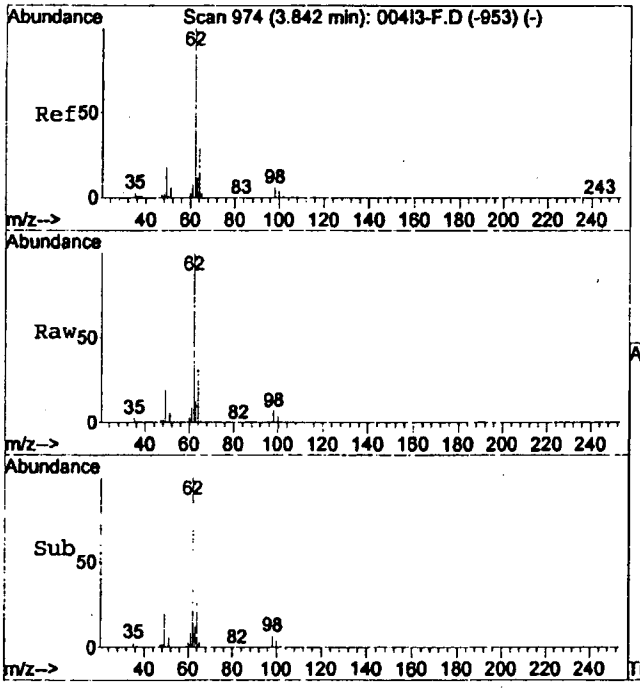


#20
Benzene
Concen: 38.58 ppm
RT: 3.64 min Scan# 911
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 78 Resp: 1261425

Ion	Ratio	Lower	Upper
78	100		
52	16.0	11.6	21.6

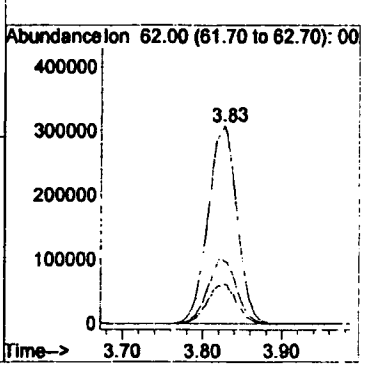


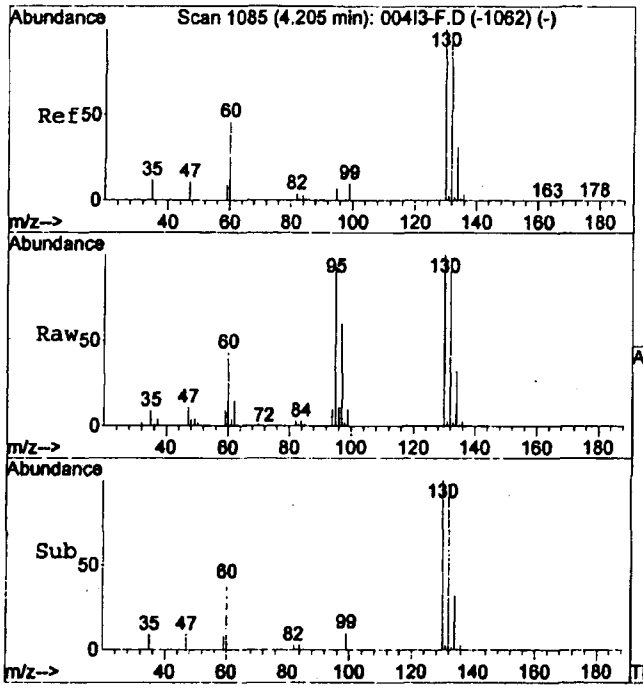


#21
1,2-Dichloroethane
Concen: 32.12 ppm
RT: 3.83 min Scan# 969
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 62 Resp: 776521

Ion	Ratio	Lower	Upper
62	100		
49	20.1	12.7	23.7
64	32.8	22.4	41.6

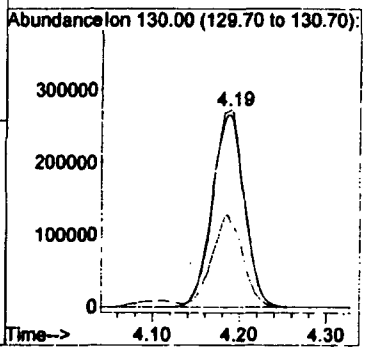


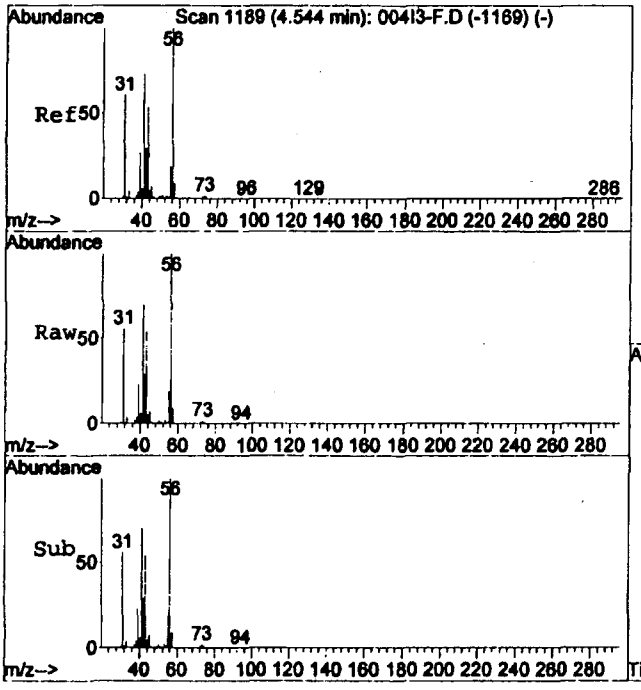


#22
Trichloroethene
Concen: 37.03 ppm
RT: 4.19 min Scan# 1080
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:130 Resp: 694079

Ion	Ratio	Lower	Upper
130	100		
60	45.0	35.2	65.4
132	97.7	68.0	126.4

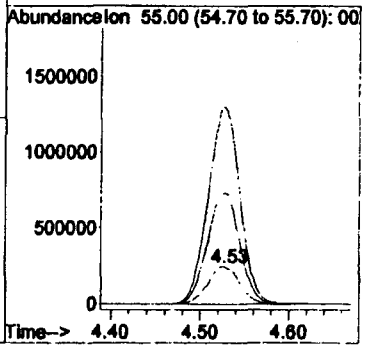


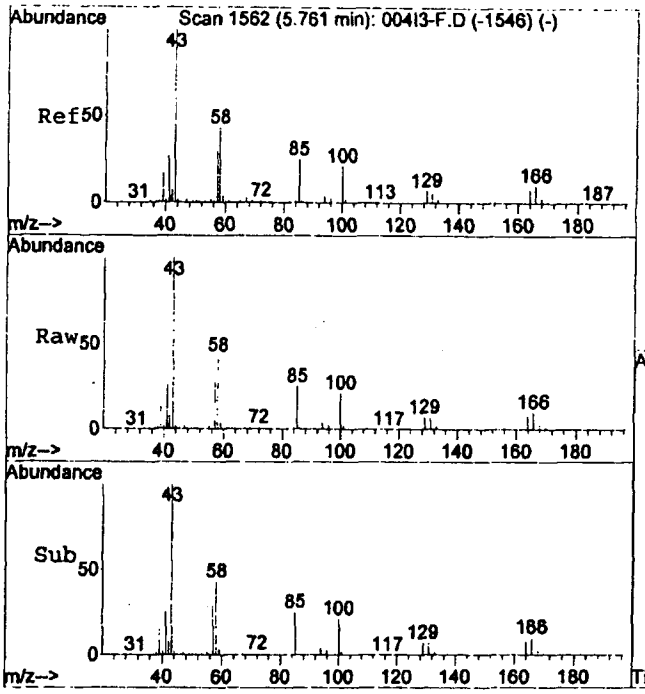


#23
Butanol
Concen: 373.29 ppm
RT: 4.53 min Scan# 1184
Delta R.T. -0.02 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 55 Resp: 610605

Ion	Ratio	Lower	Upper
55	100		
31	301.2	218.1	405.1
56	523.3	355.3	659.9

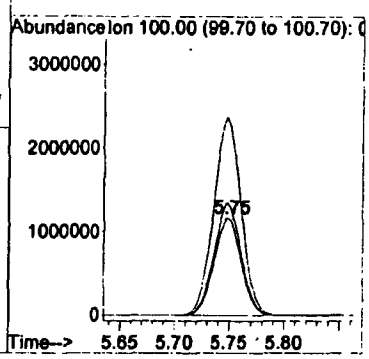


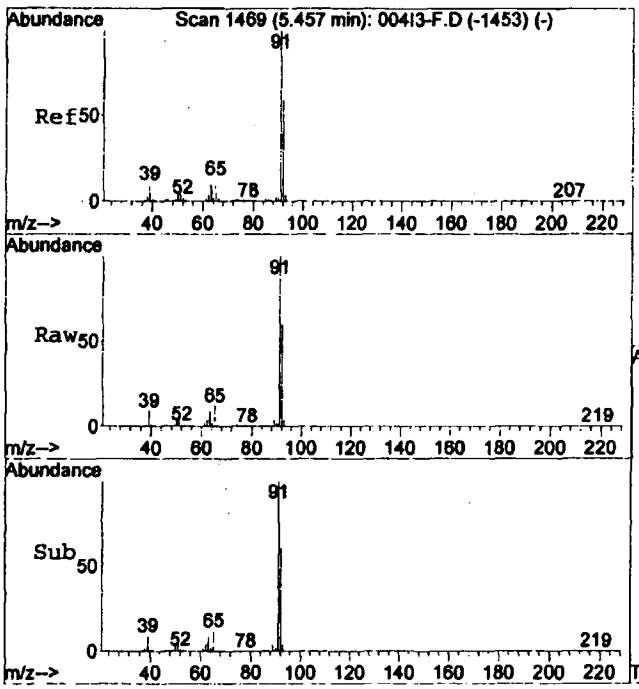


#25
Methyl isobutyl ketone
Concen: 384.81 ppm
RT: 5.75 min Scan# 1558
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:100 Resp: 1983049

Ion	Ratio	Lower	Upper
100	100		
58	206.1	144.8	268.8
85	115.3	81.6	151.6

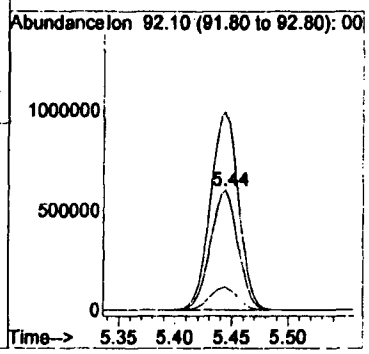


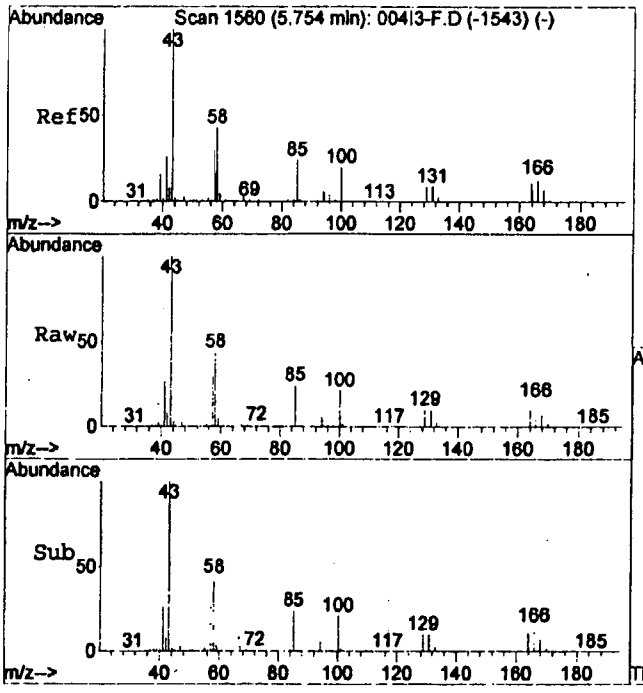


#26
Toluene
Concen: 39.71 ppm
RT: 5.44 min Scan# 1465
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 92 Resp: 1013304

Ion	Ratio	Lower	Upper
92	100		
91	169.3	120.1	223.1
65	19.5	14.4	26.8

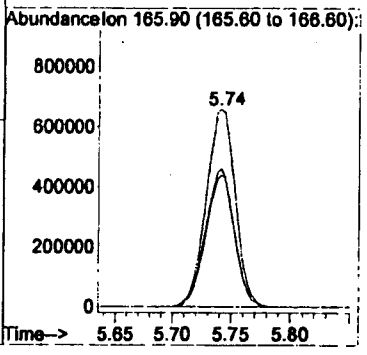


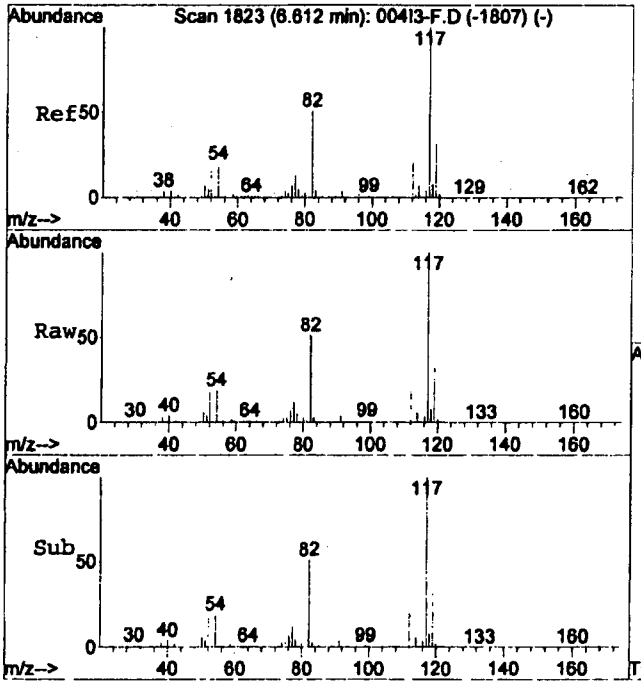


#27
Tetrachloroethene
Concen: 36.90 ppm
RT: 5.74 min Scan# 1556
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:166 Resp: 1130958

Ion	Ratio	Lower	Upper
166	100		
129	68.5	46.3	86.1
131	66.9	45.7	84.9

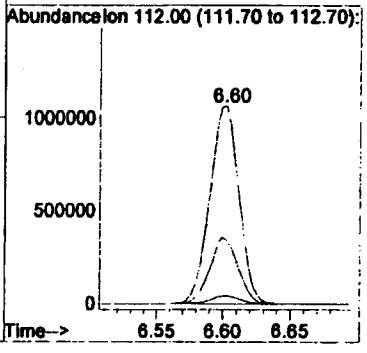


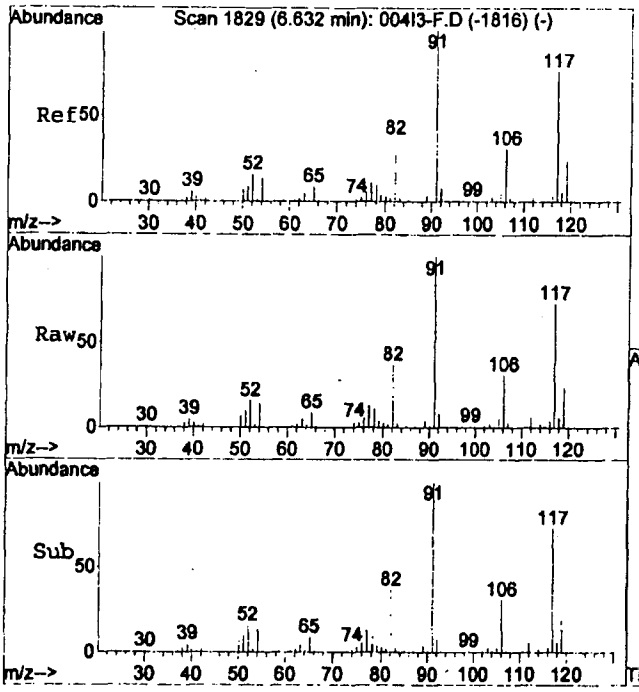


#28
Chlorobenzene
Concen: 36.58 ppm
RT: 6.60 min Scan# 1820
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:112 Resp: 1594424

Ion	Ratio	Lower	Upper
112	100		
56	4.1	2.7	5.1
114	32.6	23.0	42.6

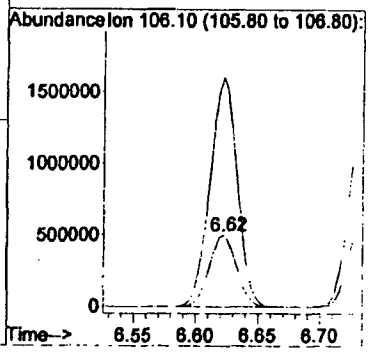


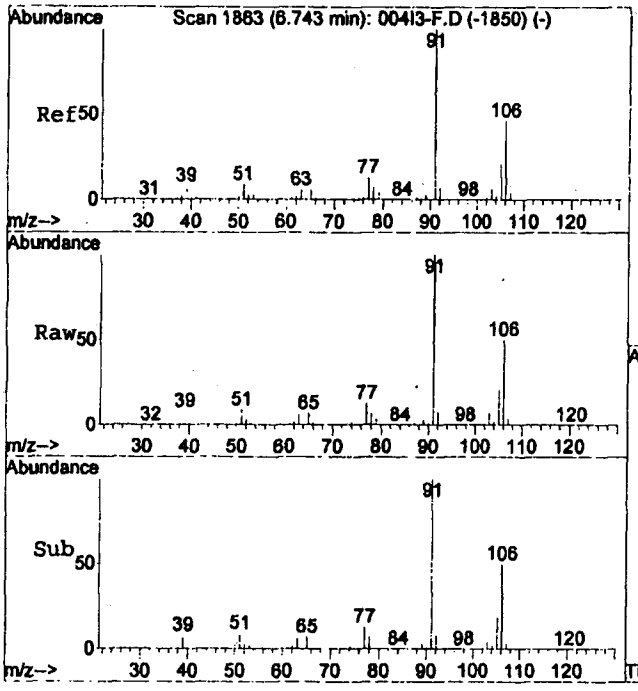


#29
Ethylbenzene
Concen: 36.17 ppm
RT: 6.62 min Scan# 1826
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:106 Resp: 757536

Ion	Ratio	Lower	Upper
106	100		
91	320.4	225.4	418.6

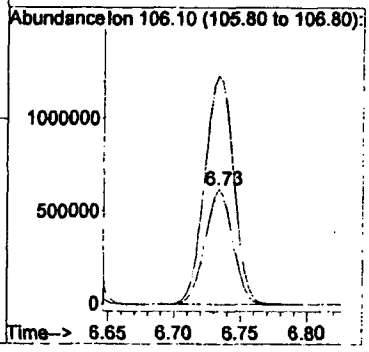


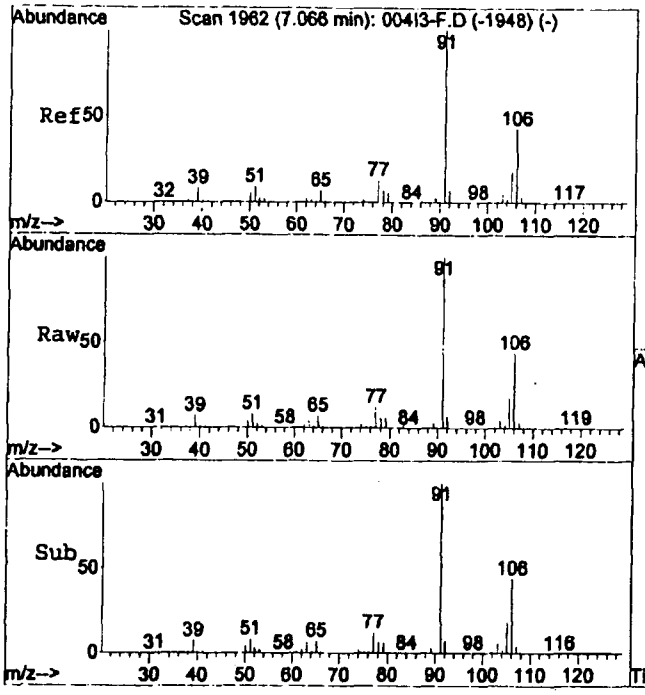


#30
m and p-xylene
Concen: 37.19 ppm
RT: 6.73 min Scan# 1860
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:106 Resp: 883145

Ion	Ratio	Lower	Upper
106	100		
91	207.9	150.8	280.1

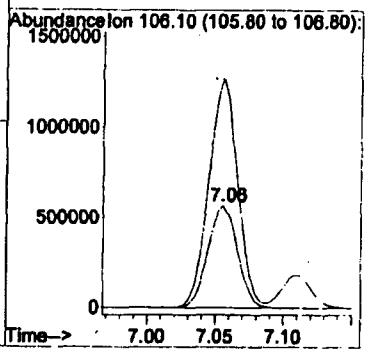


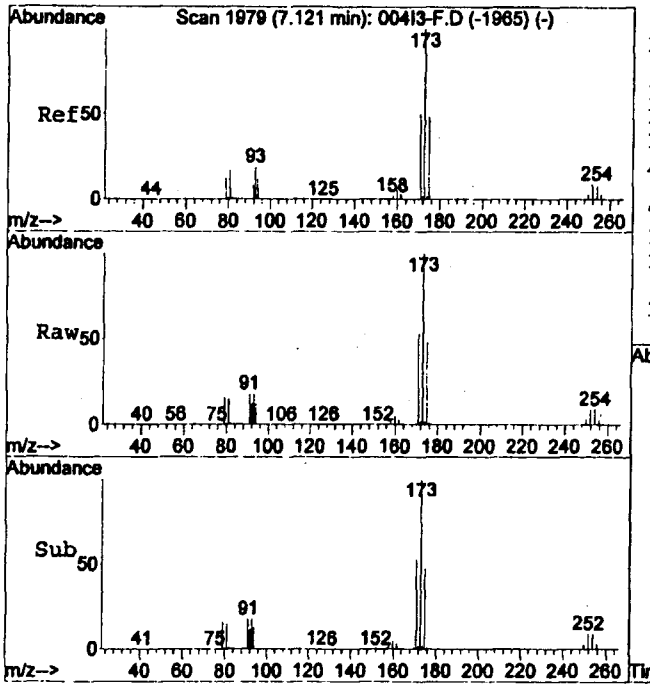


#31
o-xylene
Concen: 37.31 ppm
RT: 7.06 min Scan# 1959
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:106 Resp: 848091

Ion	Ratio	Lower	Upper
106	100		
91	218.5	159.0	295.4

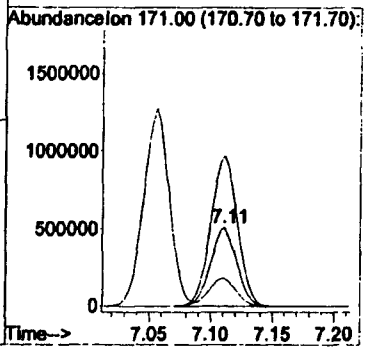


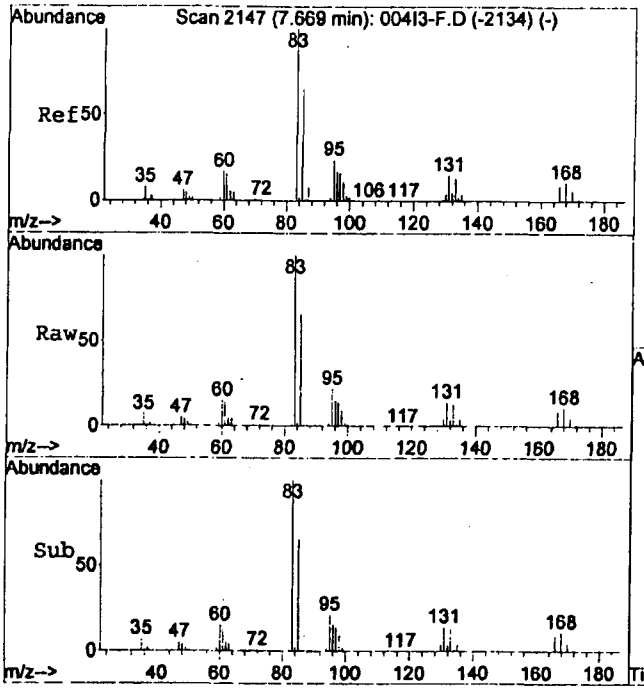


#32
Bromoform
Concen: 36.77 ppm
RT: 7.11 min Scan# 1976
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:171 Resp: 749415

Ion	Ratio	Lower	Upper
171	100		
91	35.7	26.7	49.5
173	194.7	137.5	255.4

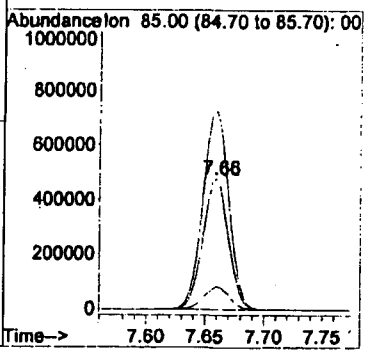


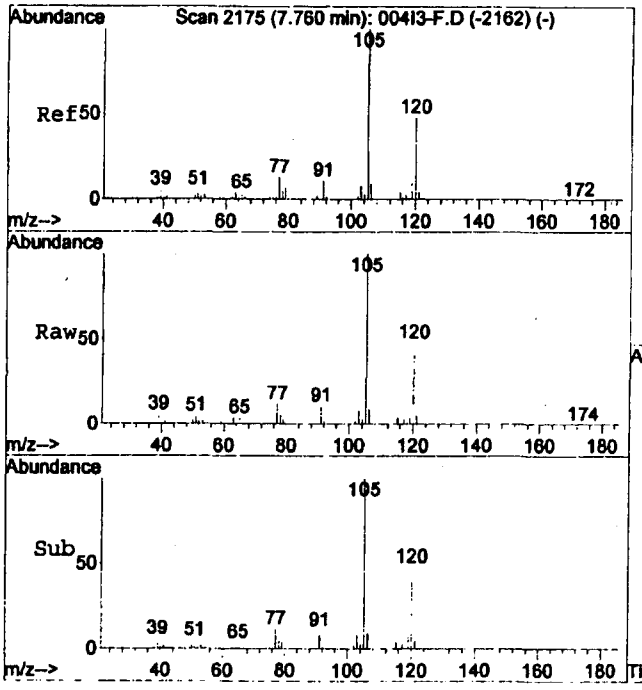


#34
1,1,2,2-Tetrachloroethane
Concen: 37.54 ppm
RT: 7.66 min Scan# 2144
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion: 85 Resp: 707520

Ion	Ratio	Lower	Upper
85	100		
168	16.8	12.2	22.6
83	154.5	106.9	198.5

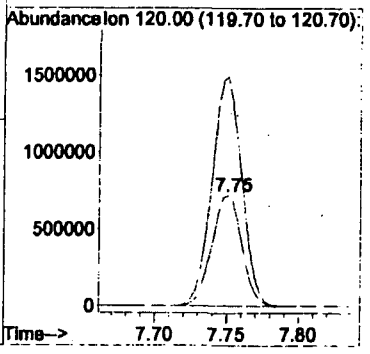


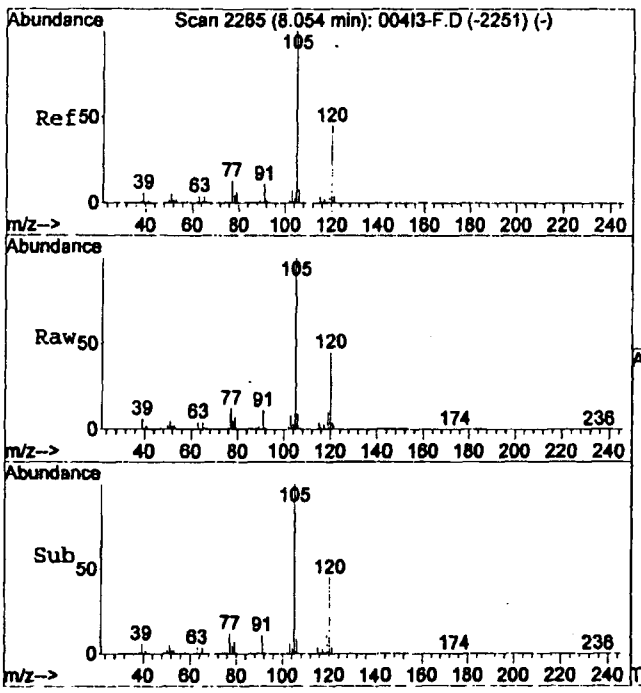


#35
1,3,5-Trimethylbenzene
Concen: 34.97 ppm
RT: 7.75 min Scan# 2172
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:120 Resp: 1041023

Ion	Ratio	Lower	Upper
120	100		
105	204.8	146.9	272.7

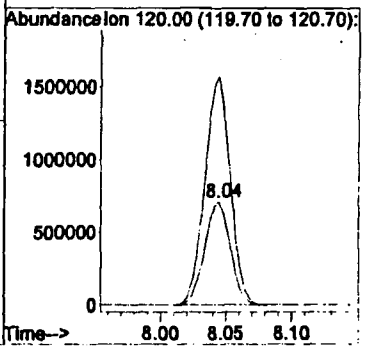




#36
1,2,4-Trimethylbenzene
Concen: 34.80 ppm
RT: 8.04 min Scan# 2262
Delta R.T. -0.01 min
Lab File: 002CC-F.D
Acq: 13 Aug 2011 10:07

Tgt Ion:120 Resp: 969063

Ion	Ratio	Lower	Upper
120	100		
105	219.5	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\007CC-F.D Vial: 7
Acq On : 13 Aug 2011 13:46 Operator: SO
Sample : ic2,CCAL2,2011-08-13,12:12:00,641.621 Inst : Instrumen
Misc : 882.595,26.6,SO,,, Multiplr: 1.00
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 13:55:08 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:55:08 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

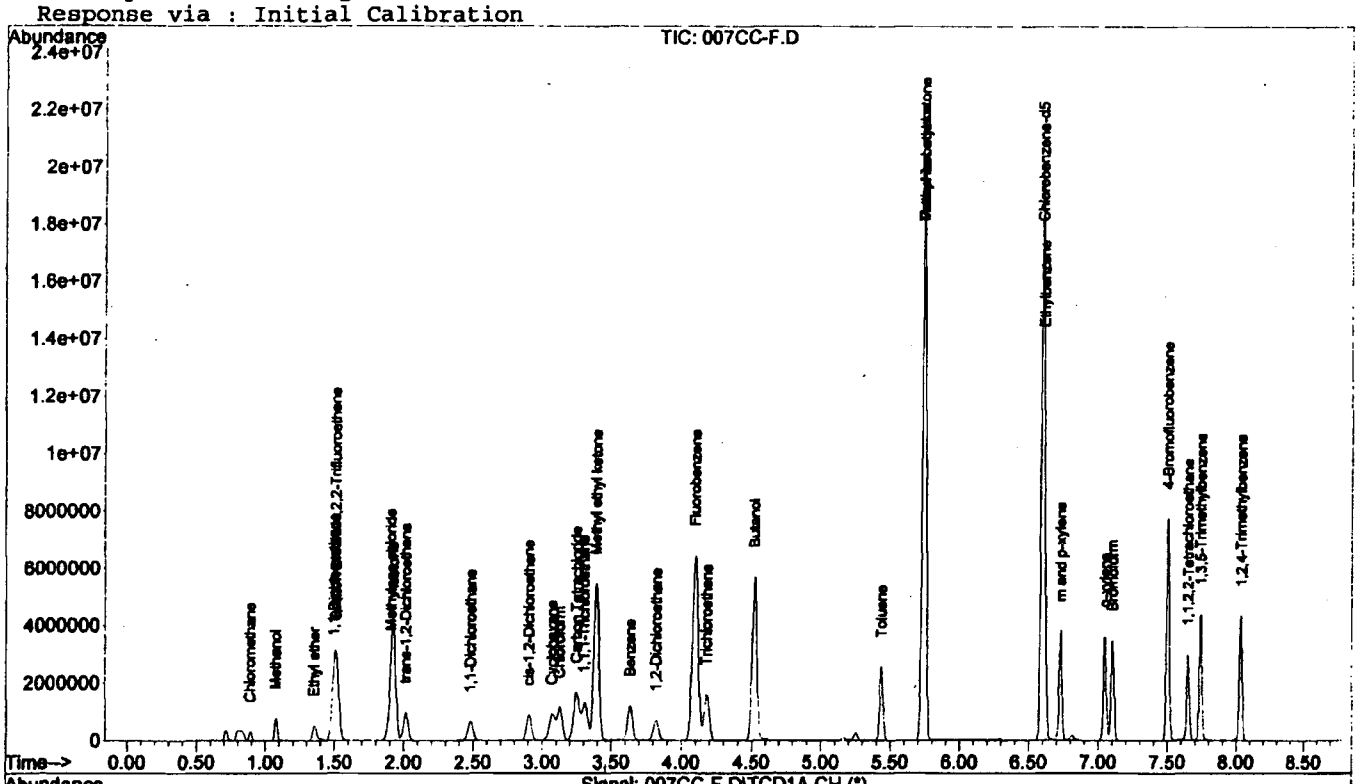
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) Fluorobenzene	4.10	96	9137667	201.00	ppm	-0.03
24) Chlorobenzene-d5	6.60	117	8366970	176.00	ppm	-0.02
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.50	95	2182368	35.89	ppm	-0.02
Target Compounds						Qvalue
1) Hydrogen	2.79	GC1	72567	0.7162	perce	100
2) Methane	5.75	GC1	34841	0.7264	perce	100
4) Chloromethane	0.89	50	242833	38.6751	ppm	98
5) Methanol	1.08	31	613248	345.1750	ppm	100
6) Ethyl ether	1.36	59	231009	38.2914	ppm	98
7) 1,1-Dichloroethene	1.49	96	442324	40.5618	ppm	93
8) 1,1,2-Trichloro-1,2,2-Trif	1.52	101	1091255	39.4972	ppm	98
9) Acetone	1.92	58	1643022	418.4715	ppm	78
10) Carbon Disulfide	1.52	76	1183354	41.7437	ppm	97
11) Methylene chloride	1.90	84	369495	41.8249	ppm	94
12) trans-1,2-Dichloroethene	2.02	96	484681	42.0004	ppm	96
13) 1,1-Dichloroethane	2.48	63	802802	39.3926	ppm	99
14) cis-1,2-Dichloroethene	2.91	96	490479	41.8648	ppm	97
15) Methyl ethyl ketone	3.39	72	2278729	409.2930	ppm	90
16) Chloroform	3.12	83	1199028	37.1846	ppm	98
17) 1,1,1-Trichloroethane	3.31	97	1337799	34.9076	ppm	99
18) Cyclohexane	3.07	56	598760	43.4091	ppm	96
19) Carbon Tetrachloride	3.25	82	340997	32.8885	ppm	98
20) Benzene	3.64	78	1360182	41.5377	ppm	98
21) 1,2-Dichloroethane	3.82	62	827443	34.1748	ppm	97
22) Trichloroethene	4.19	130	756926	40.3229	ppm	96
23) Butanol	4.52	55	668157	407.8884	ppm	94
25) Methyl isobutyl ketone	5.74	100	2163122	414.9447	ppm	99
26) Toluene	5.44	92	1082668	41.9433	ppm	99
27) Tetrachloroethene	5.73	166	1207913	38.9632	ppm	97
28) Chlorobenzene	6.59	112	1736383	39.3806	ppm	100
29) Ethylbenzene	6.62	106	825106	38.9484	ppm	97
30) m and p-xylene	6.73	106	955347	39.7682	ppm	94
31) o-xylene	7.05	106	906892	39.4380	ppm	95
32) Bromoform	7.10	171	810237	39.2944	ppm	98
34) 1,1,2,2-Tetrachloroethane	7.65	85	767407	40.2521	ppm	98
35) 1,3,5-Trimethylbenzene	7.74	120	1091545	36.2480	ppm	98
36) 1,2,4-Trimethylbenzene	8.03	120	1023221	36.3211	ppm	94

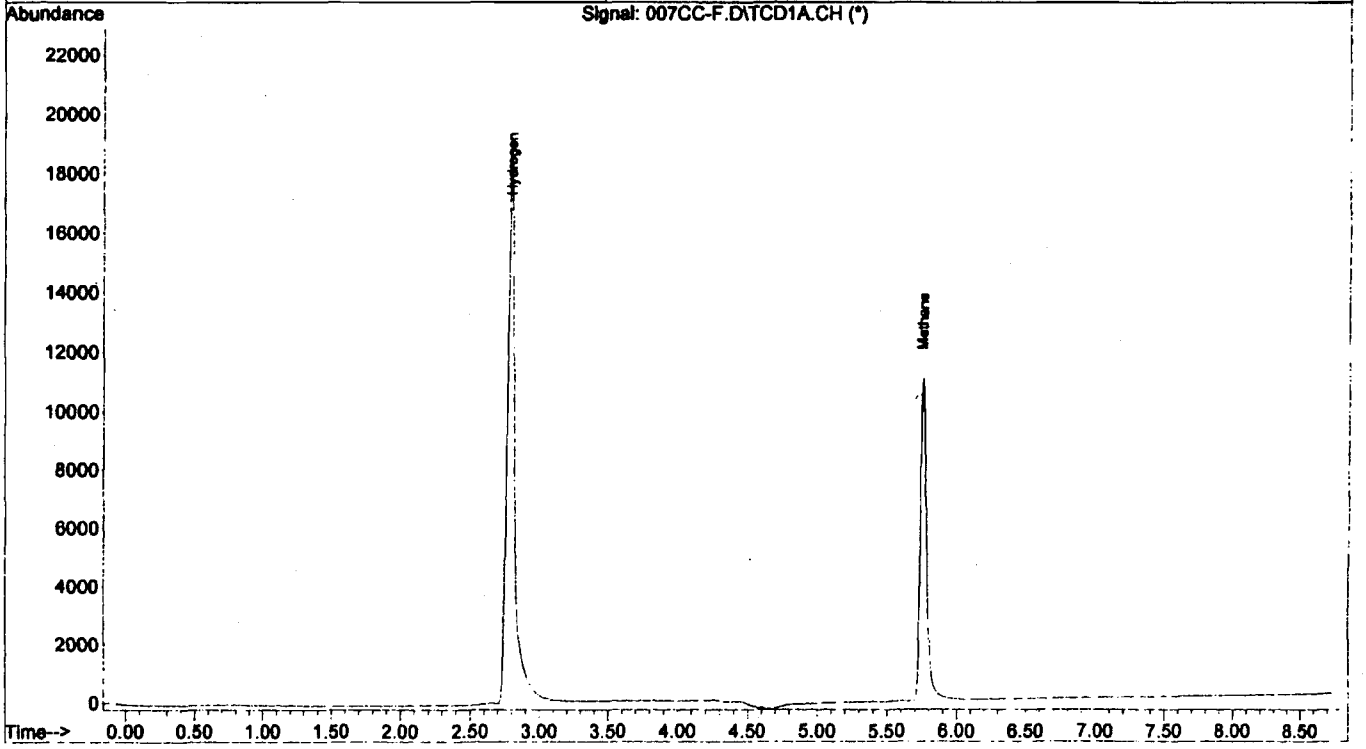
(#) = qualifier out of range (m) = manual integration
007CC-F.D VOCGAS.M Mon Aug 15 10:14:46 2011 Page 1

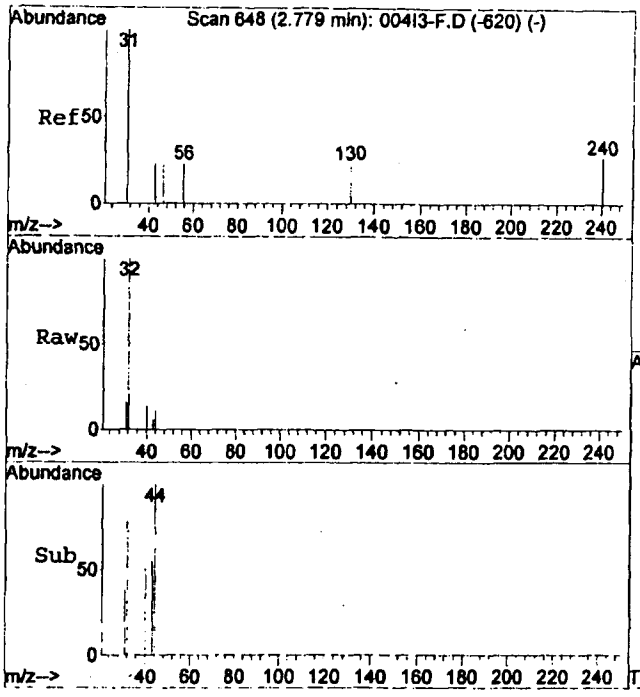
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\007CC-F.D Vial: 7
Acq On : 13 Aug 2011 13:46 Operator: SO
Sample : ic2,CCAL2,2011-08-13,12:12:00,641.621 Inst : Instrumen
Misc : 882.595,26.6,SO,,, Multiplr: 1.00
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 13:55 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

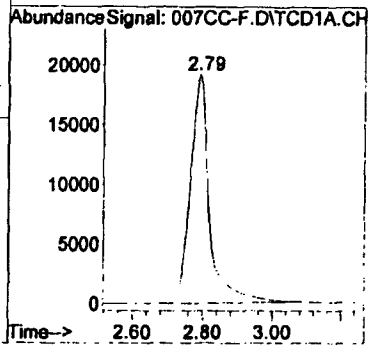


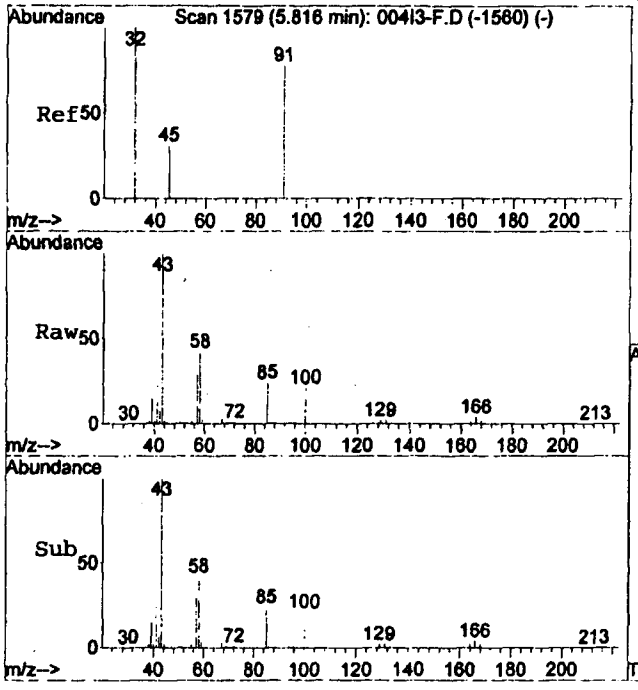




#1
Hydrogen
Concen: 0.72 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

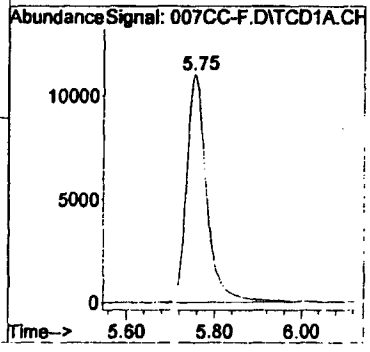
Tgt Sig:GC1 Resp: 72567

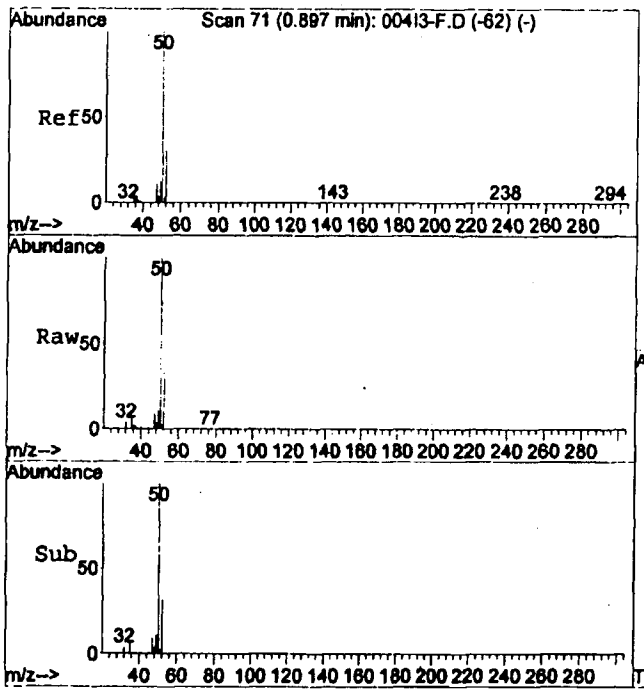




#2
Methane
Concen: 0.73 percent
RT: 5.75 min
Delta R.T. -0.07 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Sig:GC1 Resp: 34841

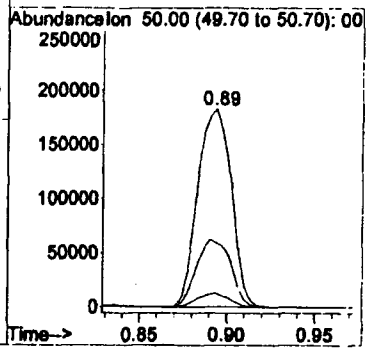


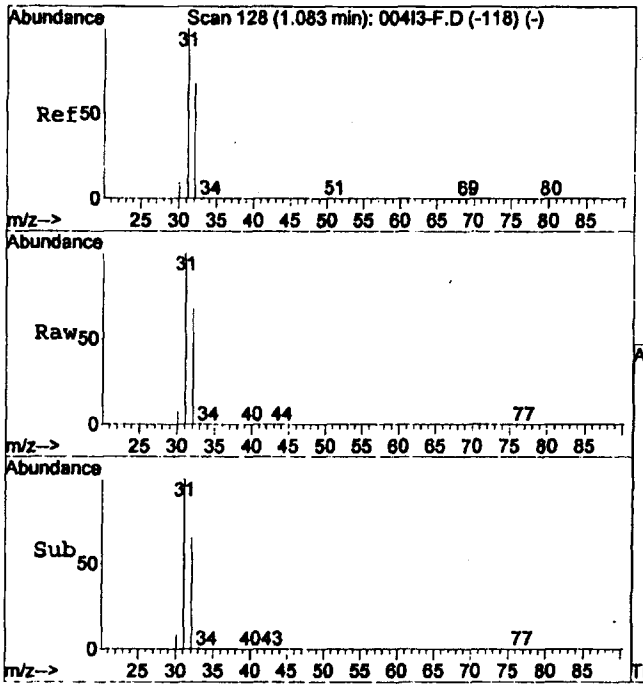


#4
Chloromethane
Concen: 38.68 ppm
RT: 0.89 min Scan# 70
Delta R.T. -0.00 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 50 Resp: 242833

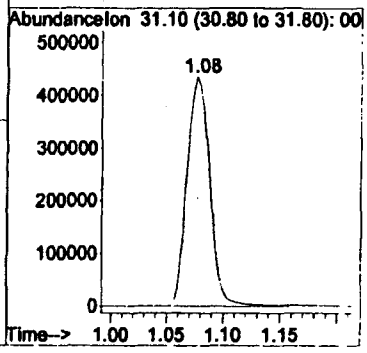
Ion	Ratio	Lower	Upper
50	100		
35	6.4	5.3	9.8
52	34.4	23.2	43.2

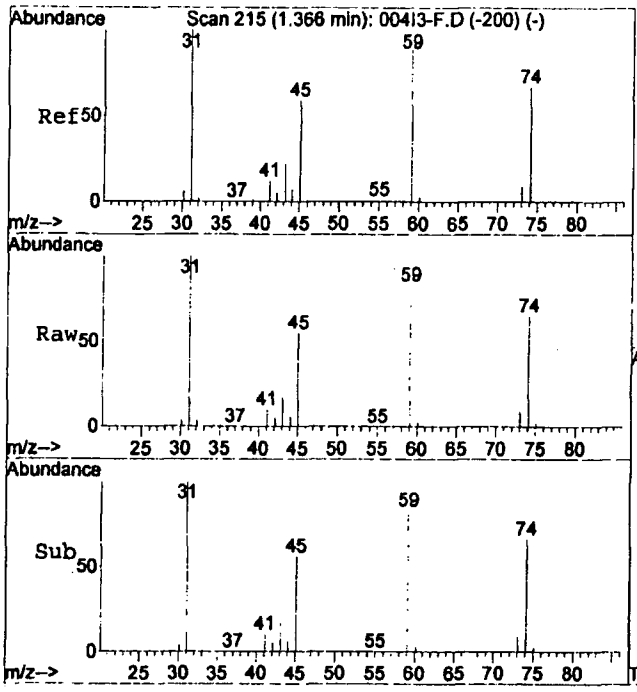




#5
Methanol
Concen: 345.18 ppm
RT: 1.08 min Scan# 126
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 31 Resp: 613248

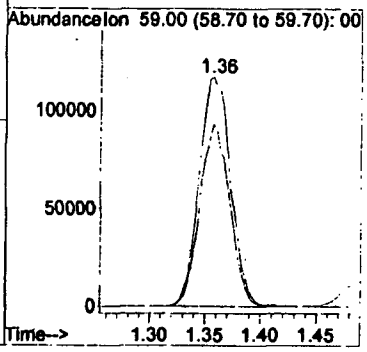


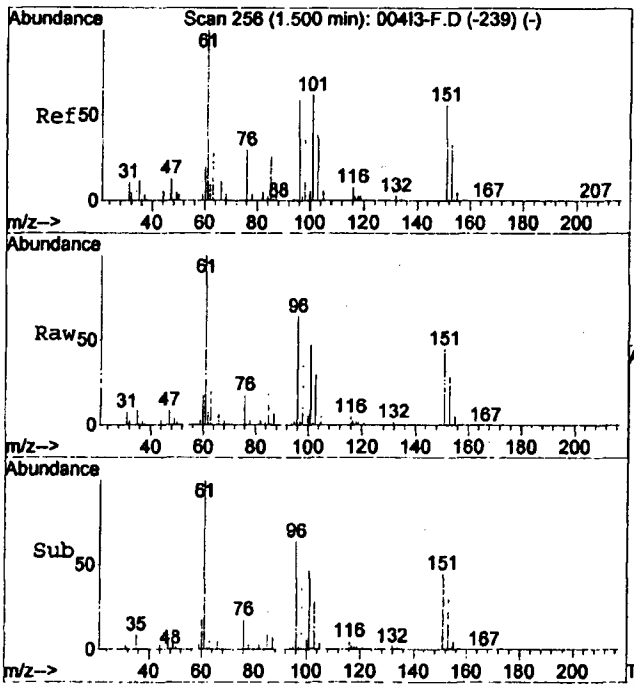


#6
Ethyl ether
Concen: 38.29 ppm
RT: 1.36 min Scan# 212
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 59 Resp: 231009

Ion	Ratio	Lower	Upper
59	100		
74	75.7	51.7	95.9

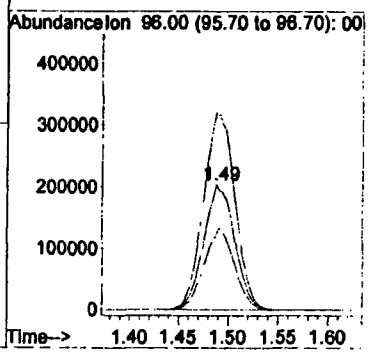


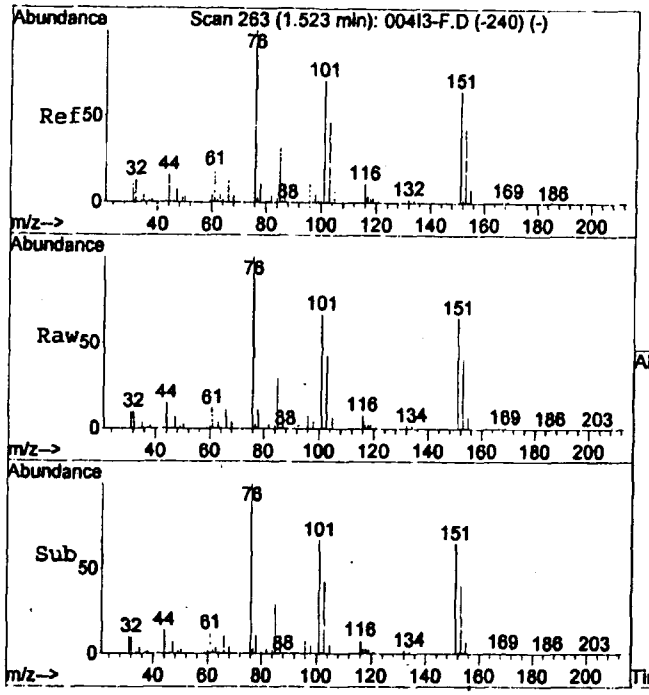


#7
1,1-Dichloroethene
Concen: 40.56 ppm
RT: 1.49 min Scan# 252
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 96 Resp: 442324

Ion	Ratio	Lower	Upper
96	100		
61	160.2	121.2	225.0
98	63.8	44.9	83.3

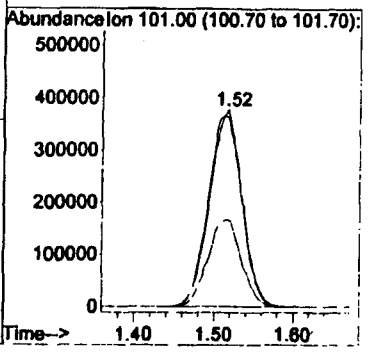


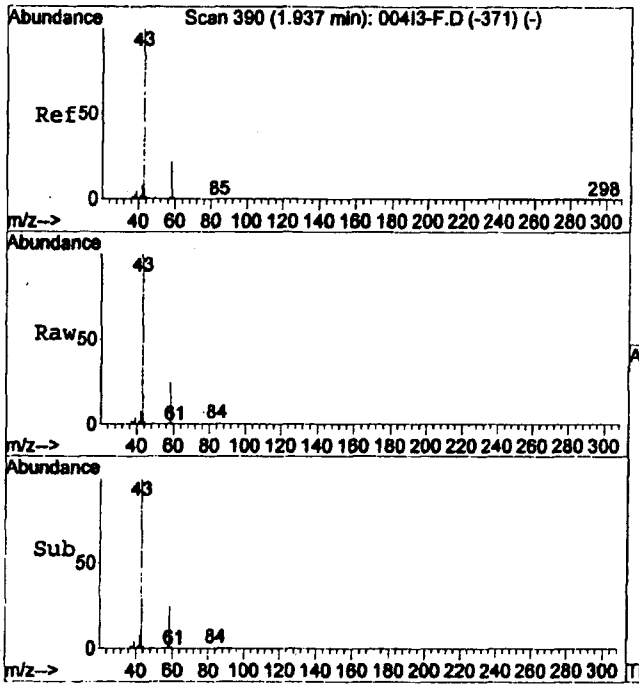


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 39.50 ppm
RT: 1.52 min Scan# 261
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:101 Resp: 1091255

Ion	Ratio	Lower	Upper
101	100		
85	45.0	32.3	59.9
151	97.6	66.8	124.2

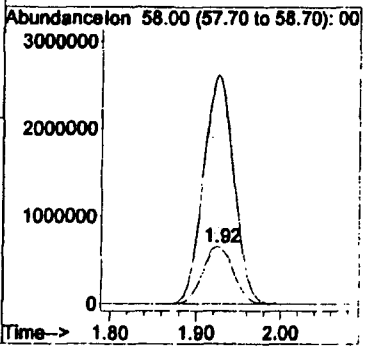


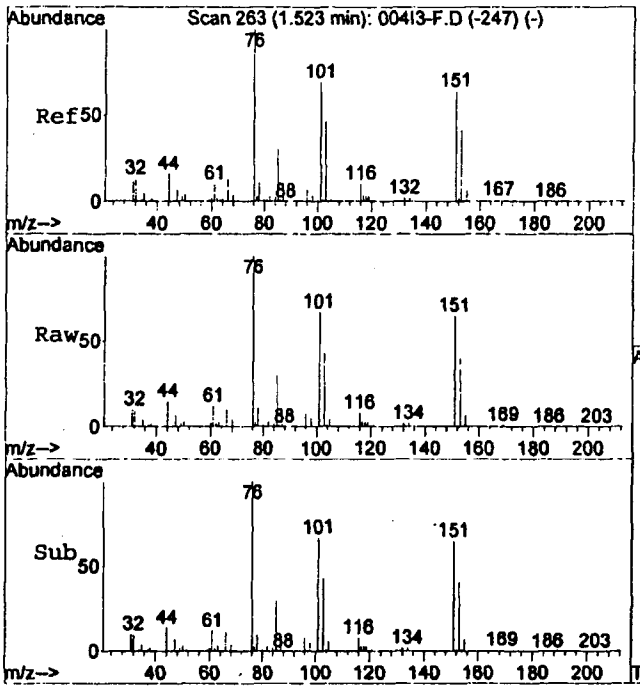


#9
Acetone
Concen: 418.47 ppm
RT: 1.92 min Scan# 386
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 58 Resp: 1643022

Ion	Ratio	Lower	Upper
58	100		
43	396.0	317.7	590.1

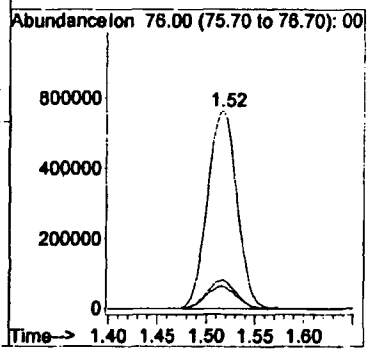


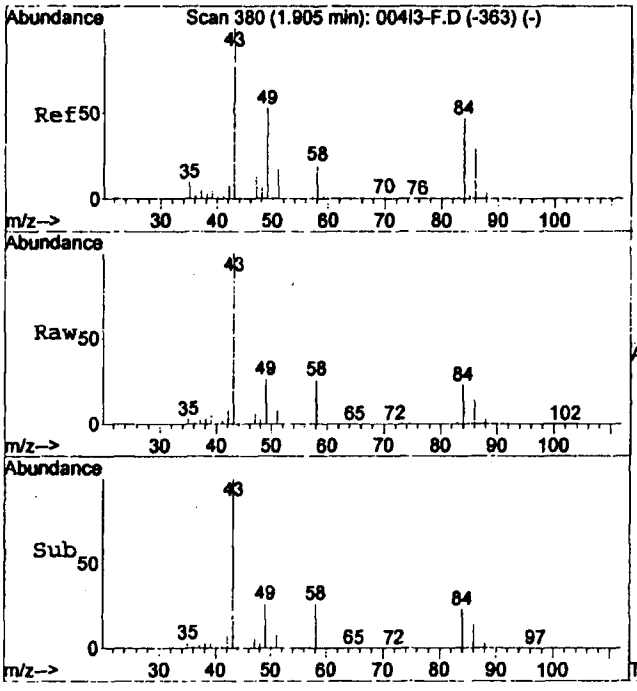


#10
Carbon Disulfide
Concen: 41.74 ppm
RT: 1.52 min Scan# 261
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 76 Resp: 1183354

Ion	Ratio	Lower	Upper
76	100		
44	14.5	11.5	21.5
78	11.3	7.6	14.2

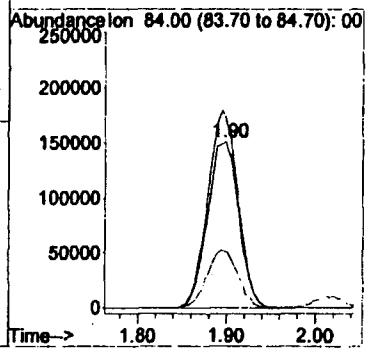


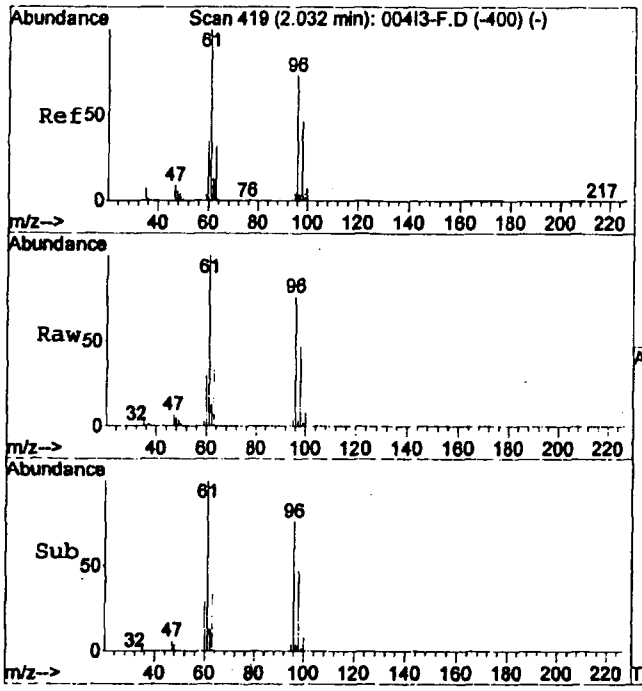


#11
Methylene chloride
Concen: 41.82 ppm
RT: 1.90 min Scan# 378
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 84 Resp: 369495

Ion	Ratio	Lower	Upper
84	100		
49	114.7	85.8	159.4
51	34.0	25.6	47.6

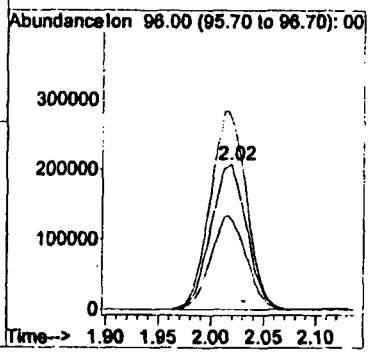


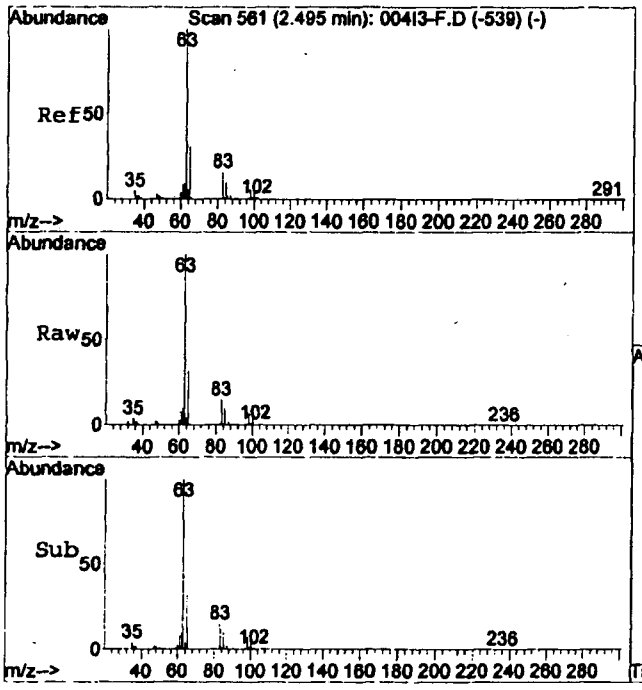


#12
trans-1,2-Dichloroethene
Concen: 42.00 ppm
RT: 2.02 min Scan# 415
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 96 Resp: 484681

Ion	Ratio	Lower	Upper
96	100		
61	137.7	100.3	186.3
98	63.9	45.6	84.8

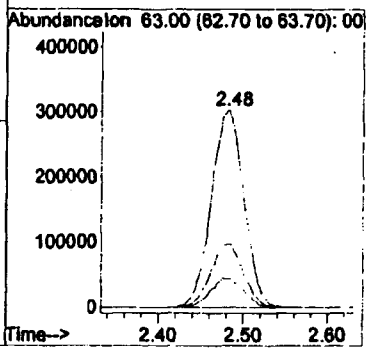


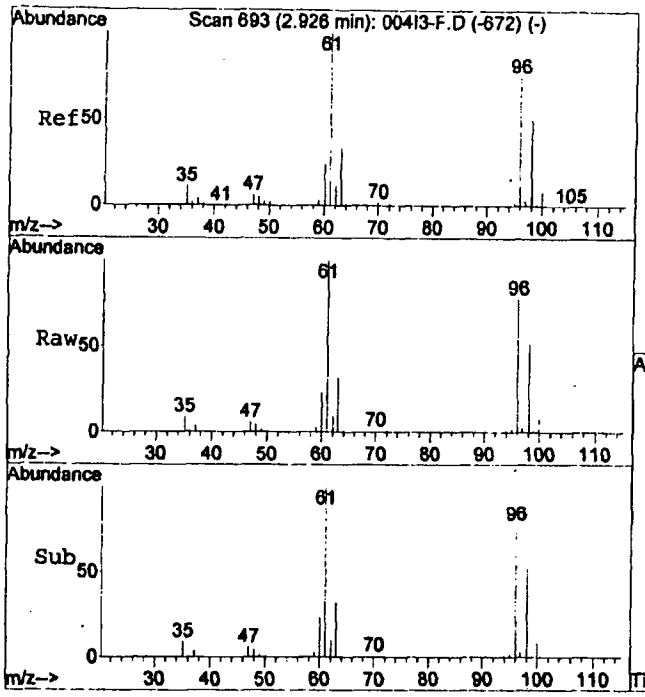


#13
1,1-Dichloroethane
Concen: 39.39 ppm
RT: 2.48 min Scan# 557
Delta R.T. -0.01 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 63 Resp: 802802

Ion	Ratio	Lower	Upper
63	100		
83	15.0	10.7	19.9
65	32.3	22.1	41.1

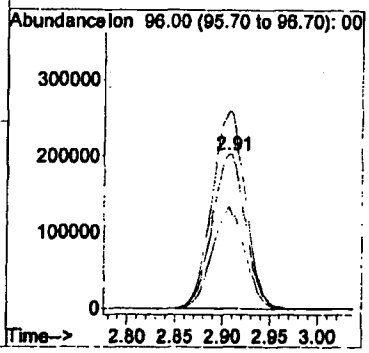


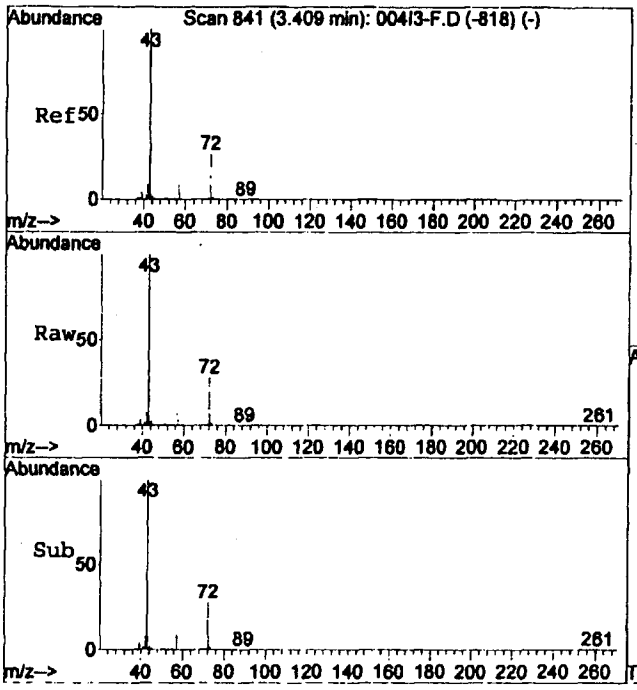


#14
cis-1,2-Dichloroethene
Concen: 41.86 ppm
RT: 2.91 min Scan# 687
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 96 Resp: 490479

Ion	Ratio	Lower	Upper
96	100		
61	128.5	94.0	174.6
98	64.4	45.2	84.0

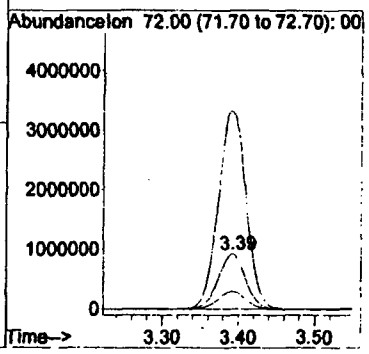


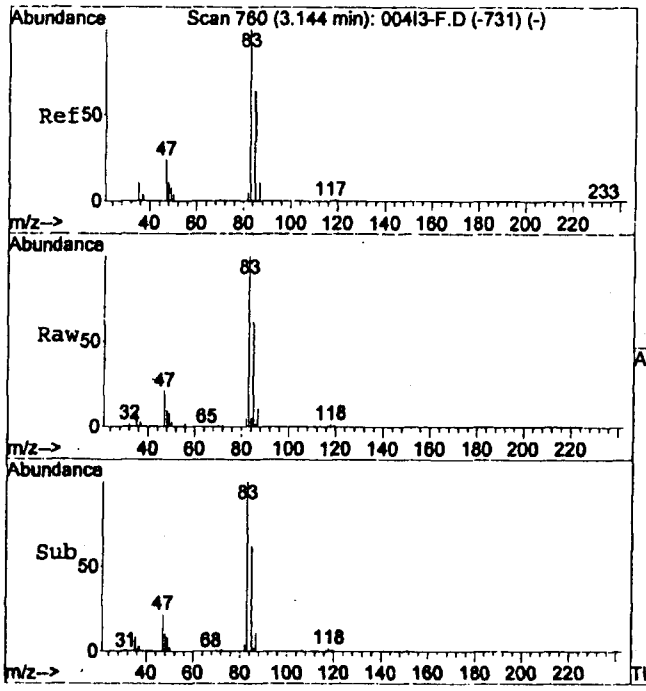


#15
Methyl ethyl ketone
Concen: 409.29 ppm
RT: 3.39 min Scan# 836
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 72 Resp: 2278729

Ion	Ratio	Lower	Upper
72	100		
57	32.1	23.7	43.9
43	368.4	274.5	509.7

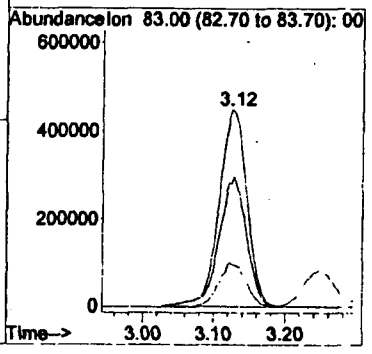


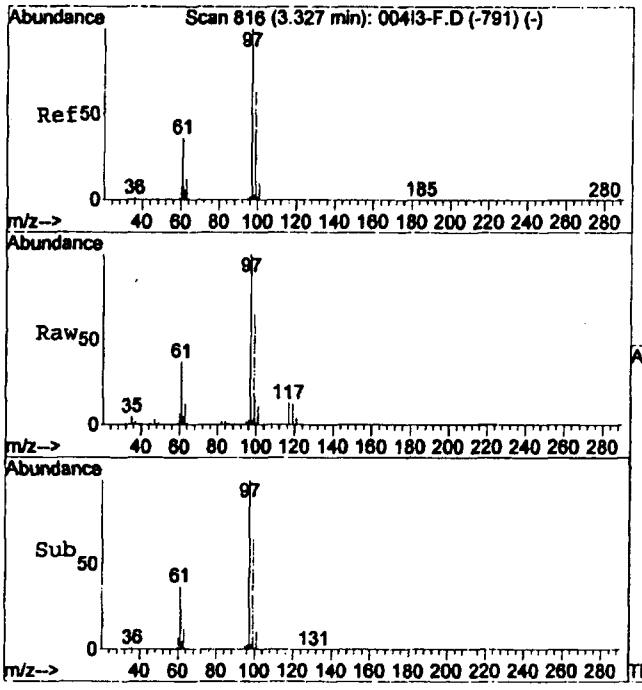


#16
Chloroform
Concen: 37.18 ppm
RT: 3.12 min Scan# 754
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 83 Resp: 1199028

Ion	Ratio	Lower	Upper
83	100		
47	21.7	16.6	30.8
85	65.9	45.1	83.7

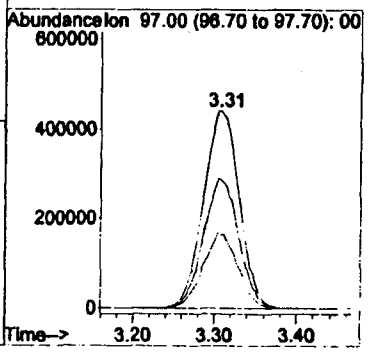


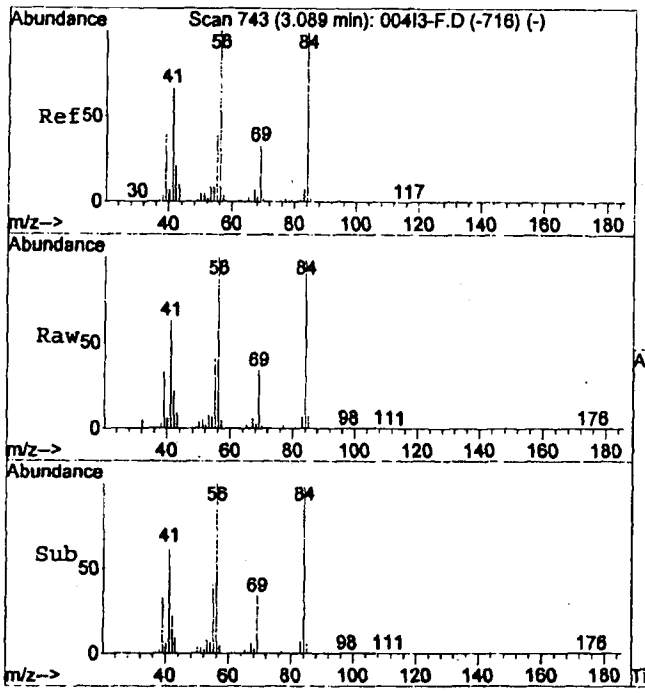


#17
1,1,1-Trichloroethane
Concen: 34.91 ppm
RT: 3.31 min Scan# 810
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 97 Resp: 1337799

Ion	Ratio	Lower	Upper
97	100		
61	37.0	26.1	48.5
99	64.7	45.0	83.6

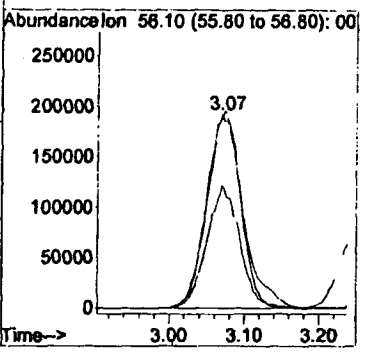


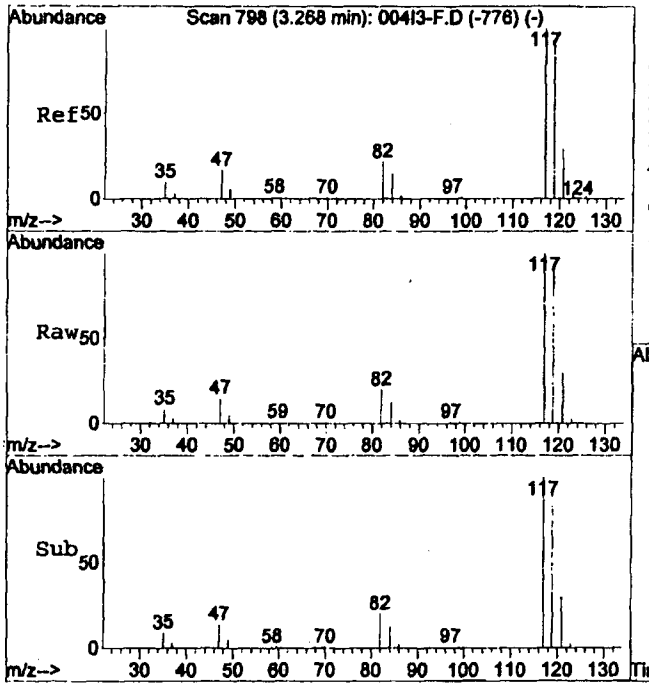


#18
Cyclohexane
Concen: 43.41 ppm
RT: 3.07 min Scan# 737
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 56 Resp: 598760

Ion	Ratio	Lower	Upper
56	100		
84	107.0	75.7	140.7
41	61.1	47.6	88.4

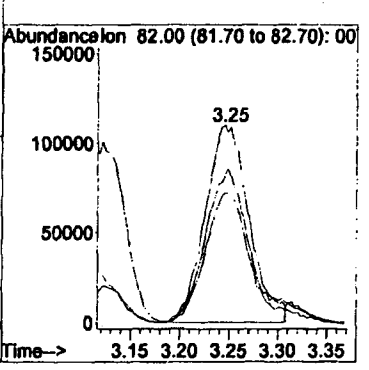


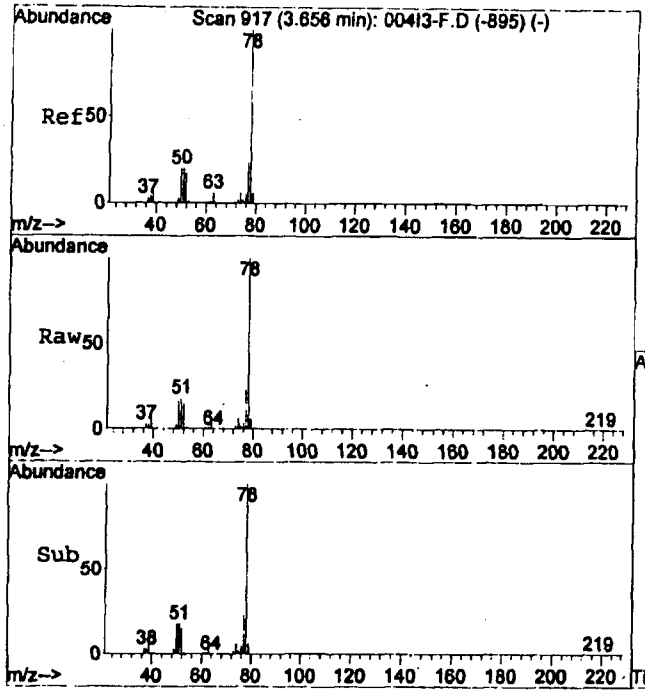


#19
Carbon Tetrachloride
Concen: 32.89 ppm
RT: 3.25 min Scan# 791
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 82 Resp: 340997

Ion	Ratio	Lower	Upper
82	100		
47	73.9	51.1	94.9
84	63.6	43.1	80.1

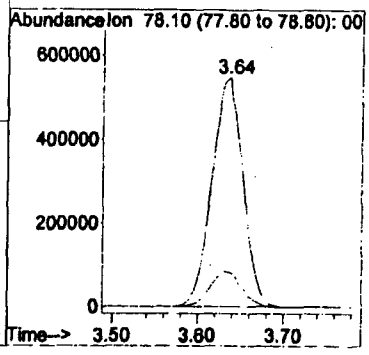


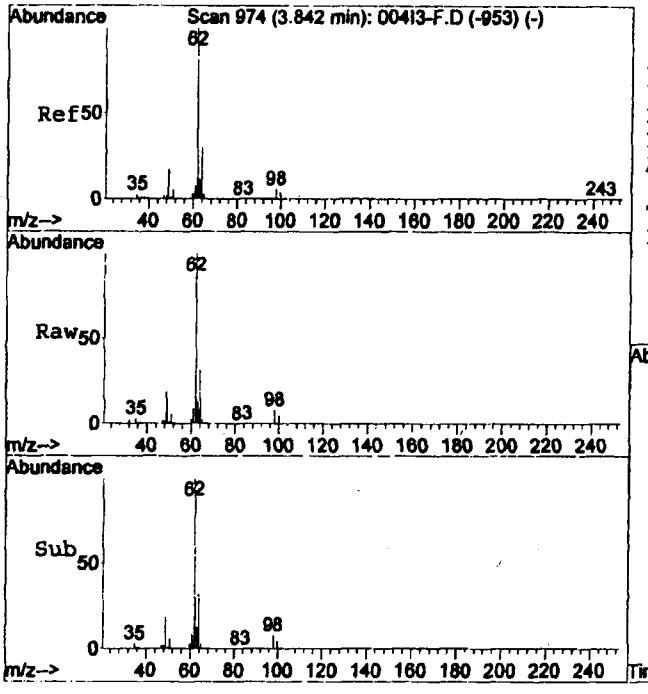


#20
Benzene
Concen: 41.54 ppm
RT: 3.64 min Scan# 911
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 78 Resp: 1360182

Ion	Ratio	Lower	Upper
78	100		
52	15.6	11.6	21.6

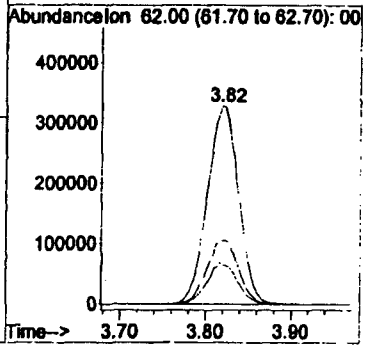


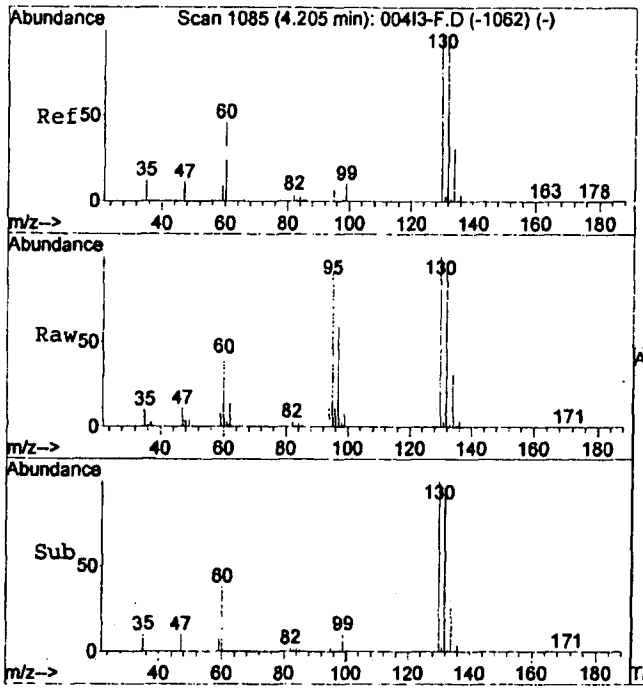


#21
1,2-Dichloroethane
Concen: 34.17 ppm
RT: 3.82 min Scan# 967
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 62 Resp: 827443

Ion	Ratio	Lower	Upper
62	100		
49	20.3	12.7	23.7
64	32.8	22.4	41.6

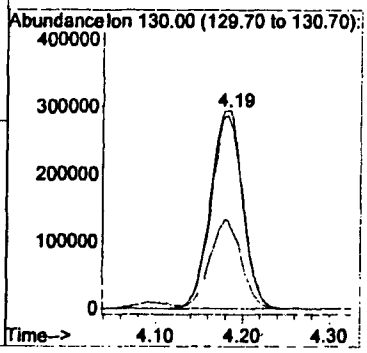


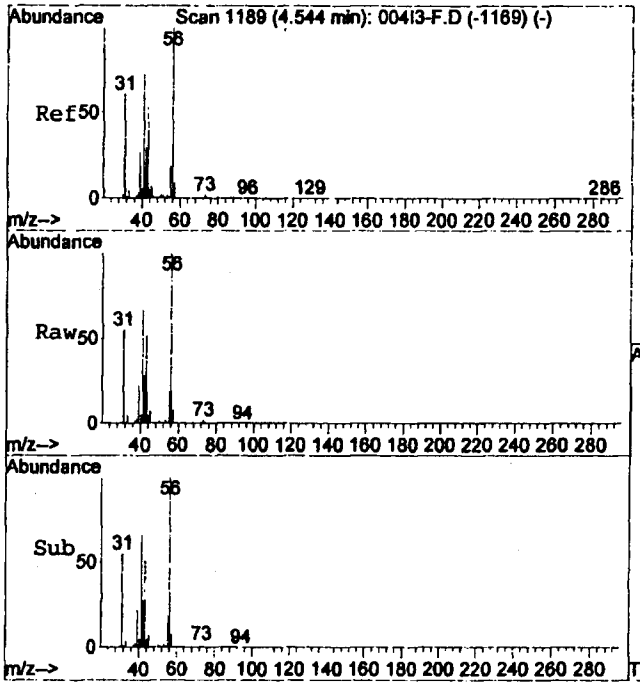


#22
Trichloroethene
Concen: 40.32 ppm
RT: 4.19 min Scan# 1079
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:130 Resp: 756926

Ion	Ratio	Lower	Upper
130	100		
60	43.7	35.2	65.4
132	96.5	68.0	126.4

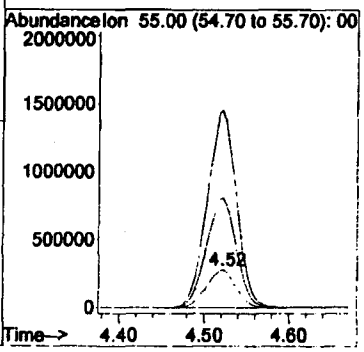


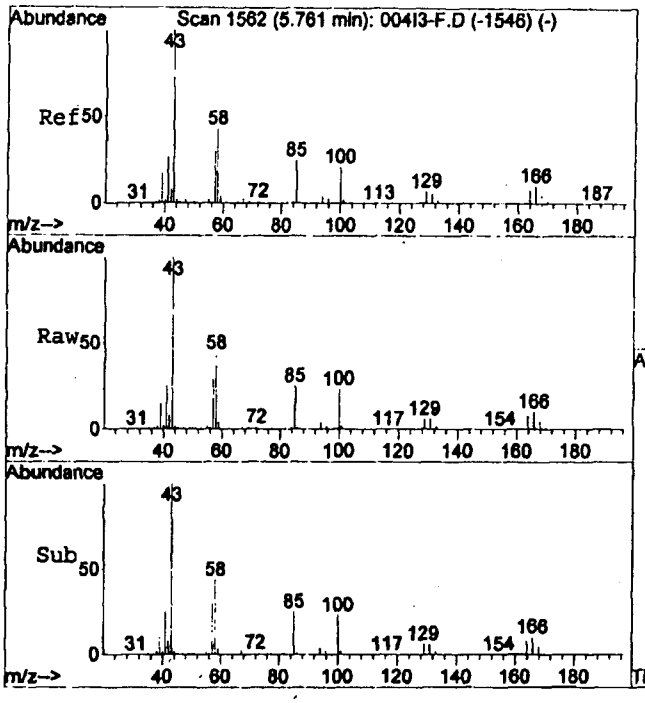


#23
Butanol
Concen: 407.89 ppm
RT: 4.52 min Scan# 1182
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 55 Resp: 668157

Ion	Ratio	Lower	Upper
55	100		
31	293.9	218.1	405.1
56	519.1	355.3	659.9

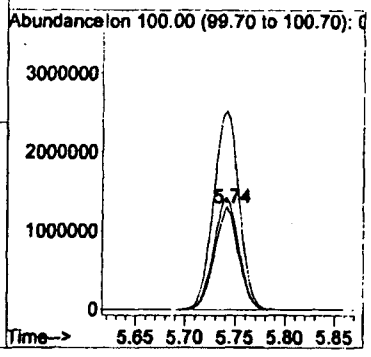


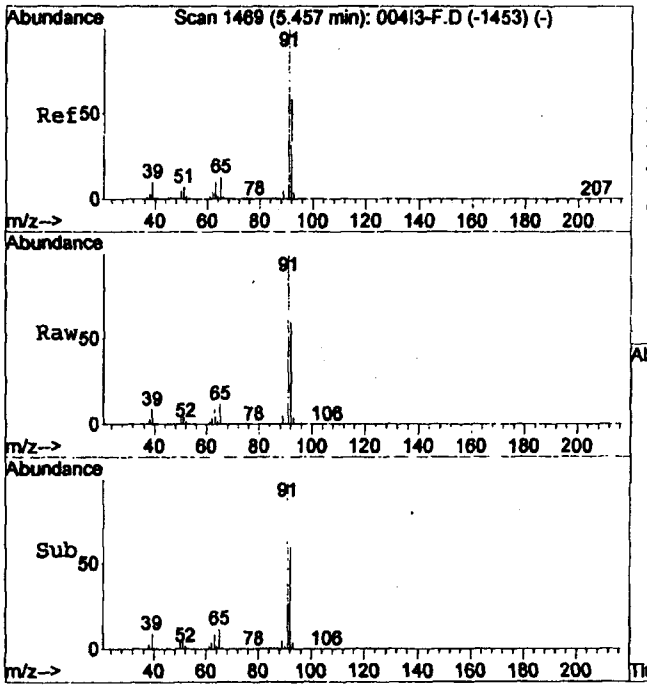


#25
Methyl isobutyl ketone
Concen: 414.94 ppm
RT: 5.74 min Scan# 1556
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:100 Resp: 2163122

Ion	Ratio	Lower	Upper
100	100		
58	206.2	144.8	268.8
85	113.8	81.6	151.6

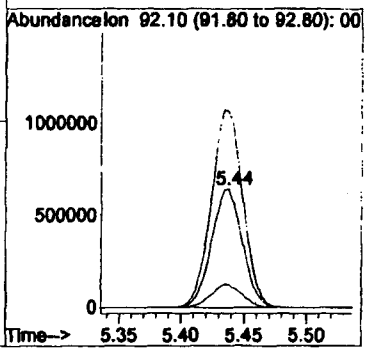


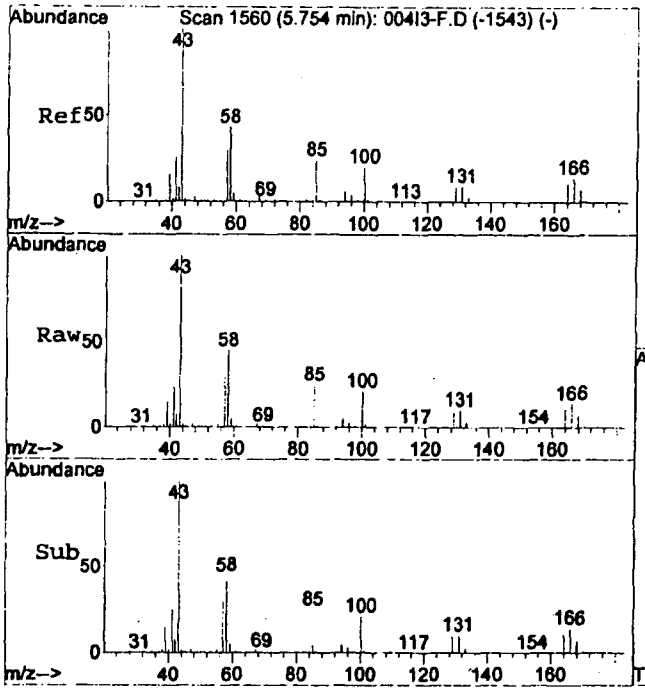


#26
Toluene
Concen: 41.94 ppm
RT: 5.44 min Scan# 1463
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 92 Resp: 1082668

Ion	Ratio	Lower	Upper
92	100		
91	170.3	120.1	223.1
65	19.5	14.4	26.8

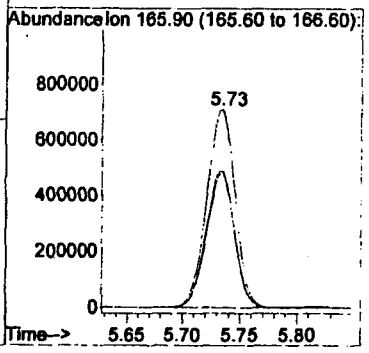


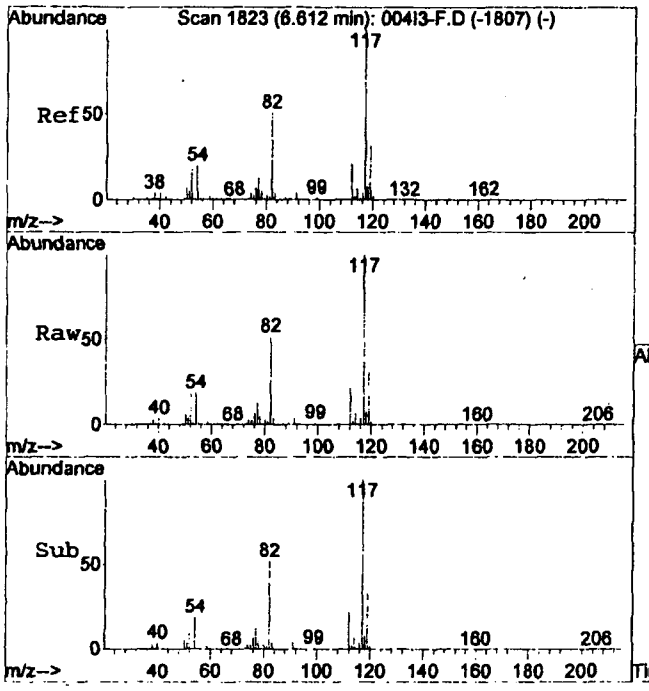


#27
Tetrachloroethene
Concen: 38.96 ppm
RT: 5.73 min Scan# 1554
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:166 Resp: 1207913

Ion	Ratio	Lower	Upper
166	100		
129	68.7	46.3	86.1
131	67.8	45.7	84.9

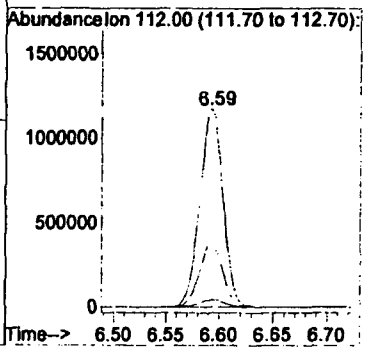


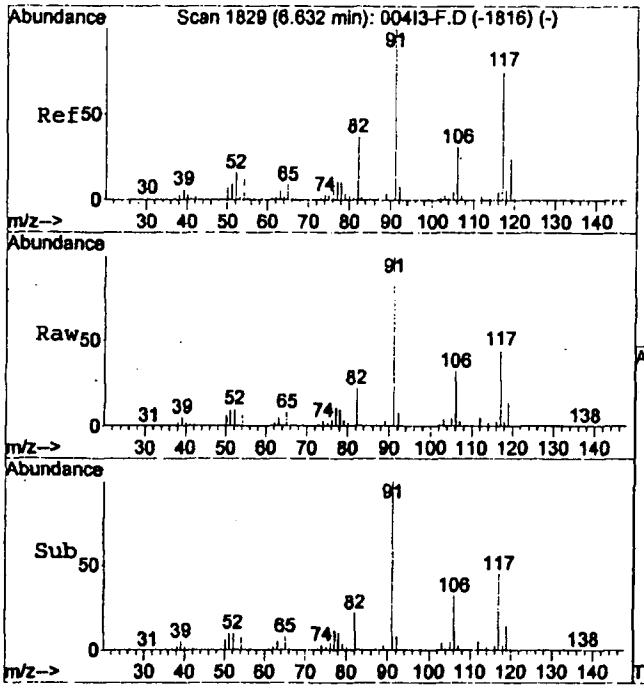


#28
Chlorobenzene
Concen: 39.38 ppm
RT: 6.59 min Scan# 1817
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:112 Resp: 1736383

Ion	Ratio	Lower	Upper
112	100		
56	3.9	2.7	5.1
114	32.5	23.0	42.6

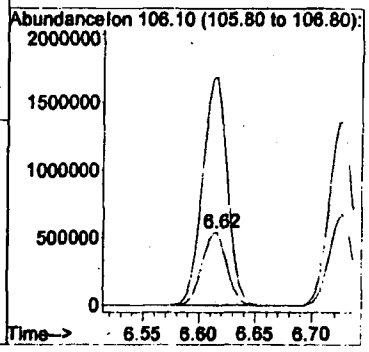


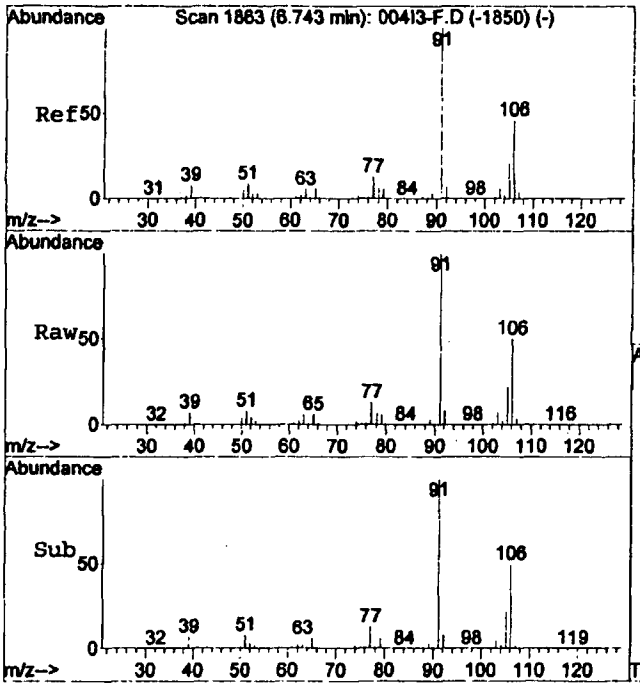


#29
Ethylbenzene
Concen: 38.95 ppm
RT: 6.62 min Scan# 1824
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:106 Resp: 825106

Ion	Ratio	Lower	Upper
106	100		
91	315.0	225.4	418.6

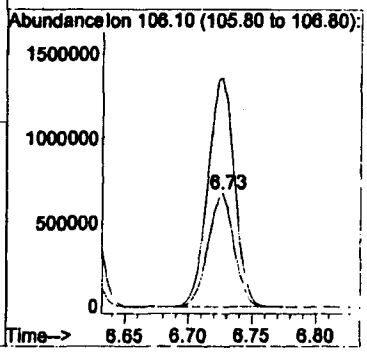


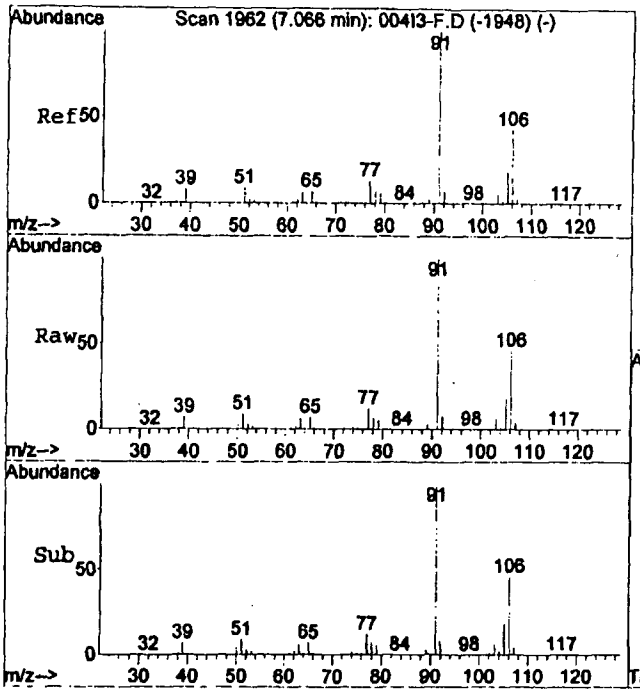


#30
m and p-xylene
Concen: 39.77 ppm
RT: 6.73 min Scan# 1858
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:106 Resp: 955347

Ion	Ratio	Lower	Upper
106	100		
91	206.0	150.8	280.1

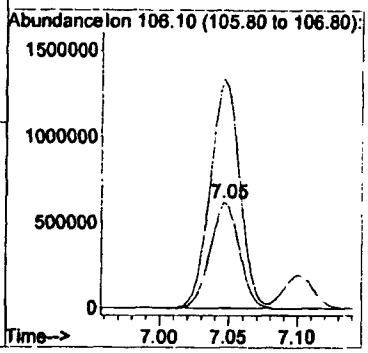


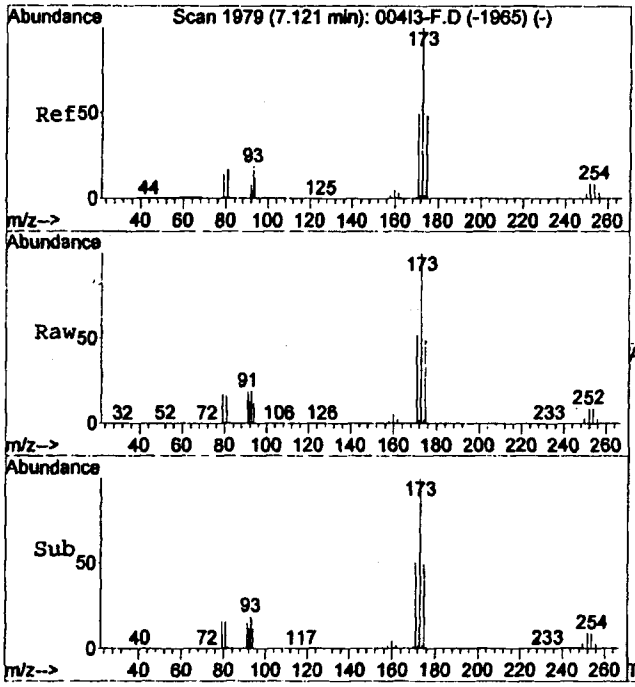


#31
o-xylene
Concen: 39.44 ppm
RT: 7.05 min Scan# 1956
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:106 Resp: 906892

Ion	Ratio	Lower	Upper
106	100		
91	218.6	159.0	295.4

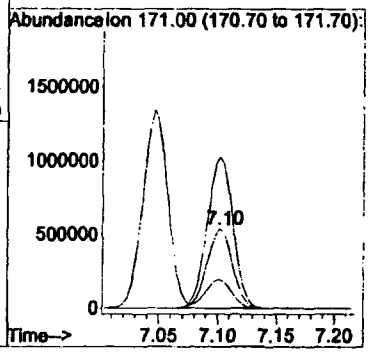


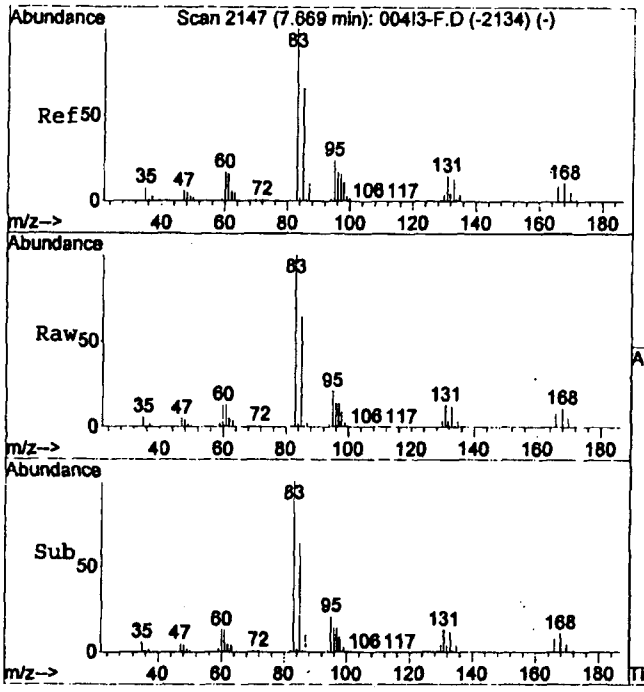


#32
Bromoform
Concen: 39.29 ppm
RT: 7.10 min Scan# 1973
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:171 Resp: 810237

Ion	Ratio	Lower	Upper
171	100		
91	36.1	26.7	49.5
173	194.4	137.5	255.4

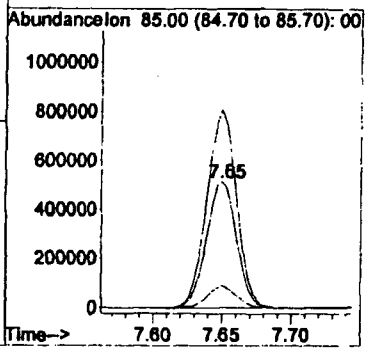


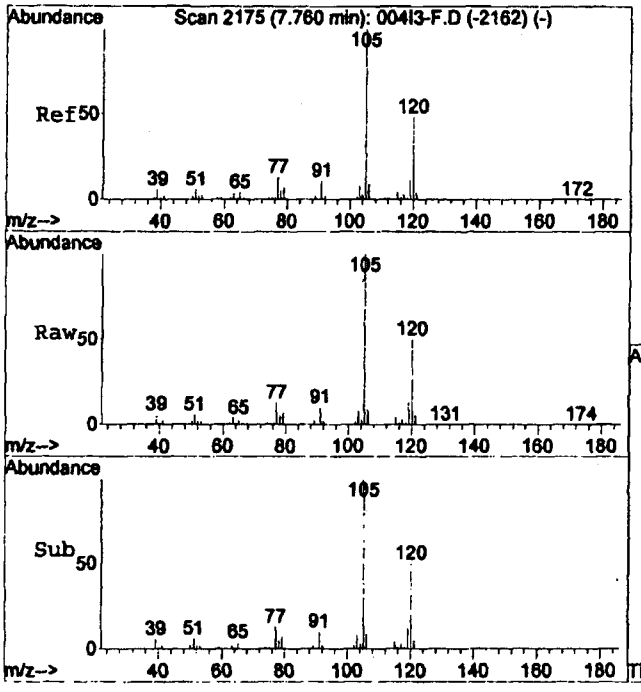


#34
1,1,2,2-Tetrachloroethane
Concen: 40.25 ppm
RT: 7.65 min Scan# 2141
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion: 85 Resp: 767407

Ion	Ratio	Lower	Upper
85	100		
168	16.4	12.2	22.6
83	155.0	106.9	198.5

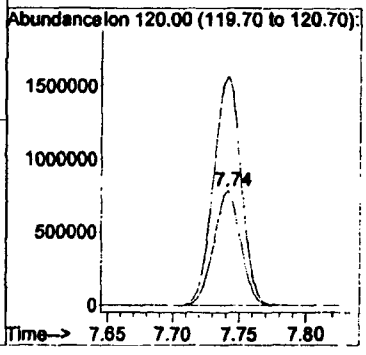


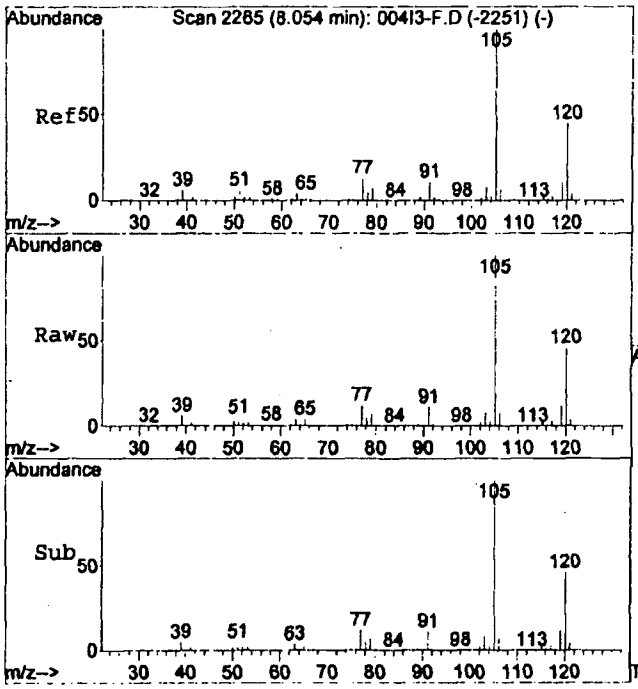


#35
1,3,5-Trimethylbenzene
Concen: 36.25 ppm
RT: 7.74 min Scan# 2169
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:120 Resp: 1091545

Ion	Ratio	Lower	Upper
120	100		
105	206.0	146.9	272.7

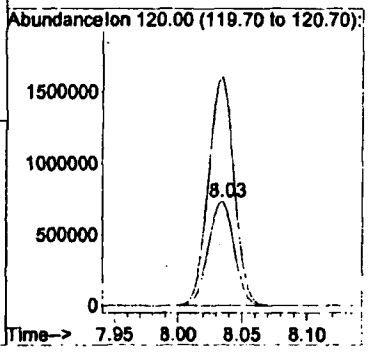




#36
1,2,4-Trimethylbenzene
Concen: 36.32 ppm
RT: 8.03 min Scan# 2259
Delta R.T. -0.02 min
Lab File: 007CC-F.D
Acq: 13 Aug 2011 13:46

Tgt Ion:120 Resp: 1023221

Ion	Ratio	Lower	Upper
120	100		
105	217.6	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\003LC-F.D Vial: 3
Acq On : 13 Aug 2011 10:26 Operator: CB
Sample : ic2,LCS1,2011-08-13,09:27:21,641.865 Inst : Instrumen
Misc : 907.132,24.2,CB,,, Multiplr: 1.41
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:35:17 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 10:19:49 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

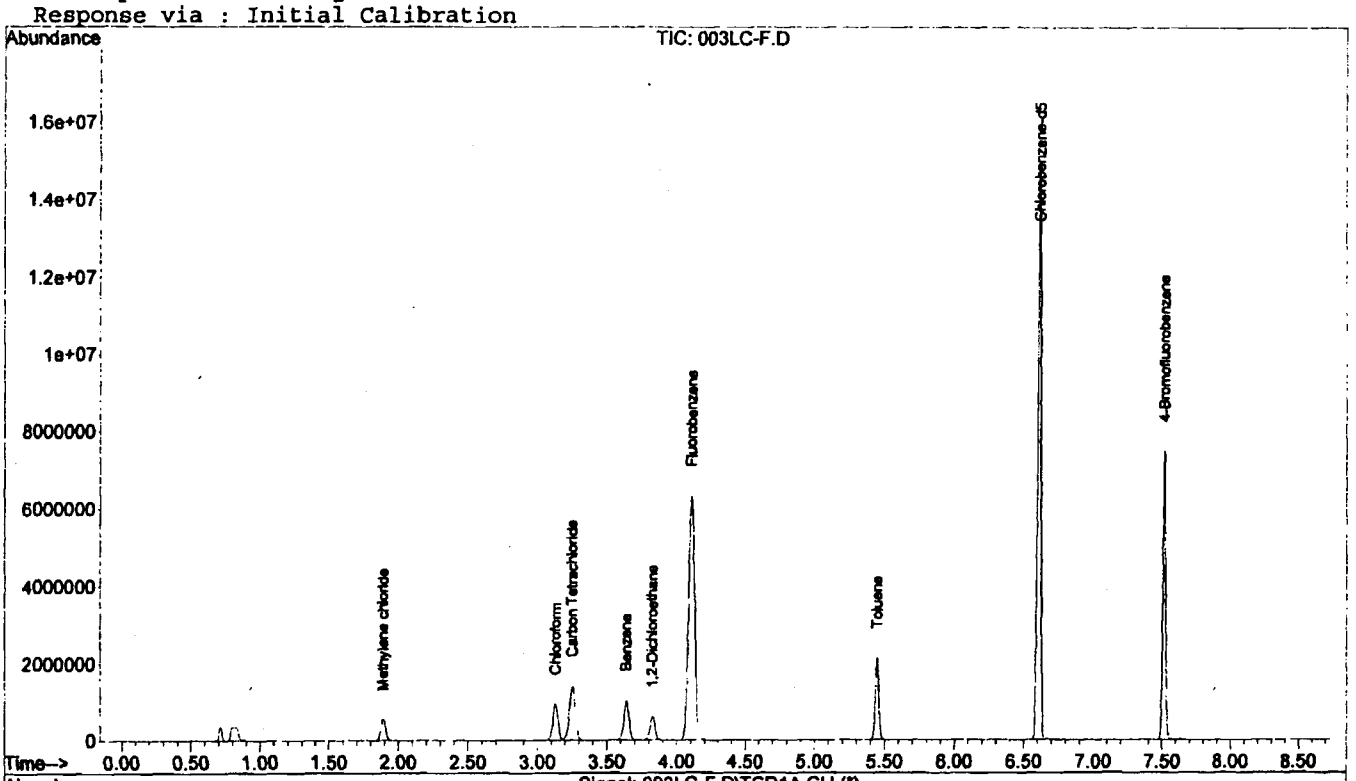
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) Fluorobenzene	4.10	96	9053624	201.00	ppm	-0.02
24) Chlorobenzene-d5	6.61	117	7846642	176.00	ppm	0.00
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.51	95	2088944	51.77	ppm	0.00
Target Compounds						Qvalue
1) Hydrogen	2.77	GC1	36362	0.5072	perce	100
2) Methane	5.74	GC1	17224	0.5075	perce	100
11) Methylene chloride	1.89	84	333776	53.8917	ppm	92
16) Chloroform	3.13	83	1004823	44.4492	ppm	99
19) Carbon Tetrachloride	3.25	82	284719	39.1697	ppm	98
20) Benzene	3.64	78	1163371	50.6763	ppm	98
21) 1,2-Dichloroethane	3.83	62	724872	42.7042	ppm	98
26) Toluene	5.44	92	899225	52.4987	ppm	98

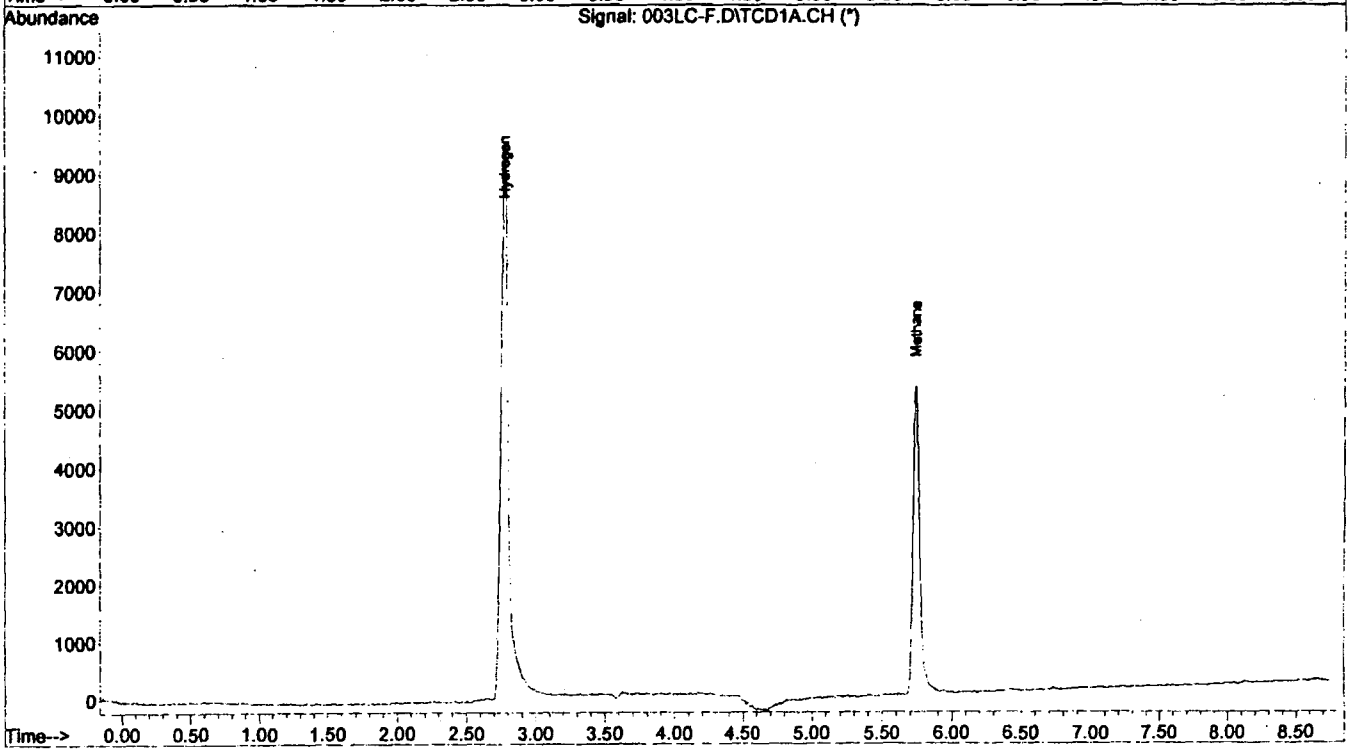
(#) = qualifier out of range (m) = manual integration
003LC-F.D VOCGAS.M Mon Aug 15 09:53:02 2011 Page 1

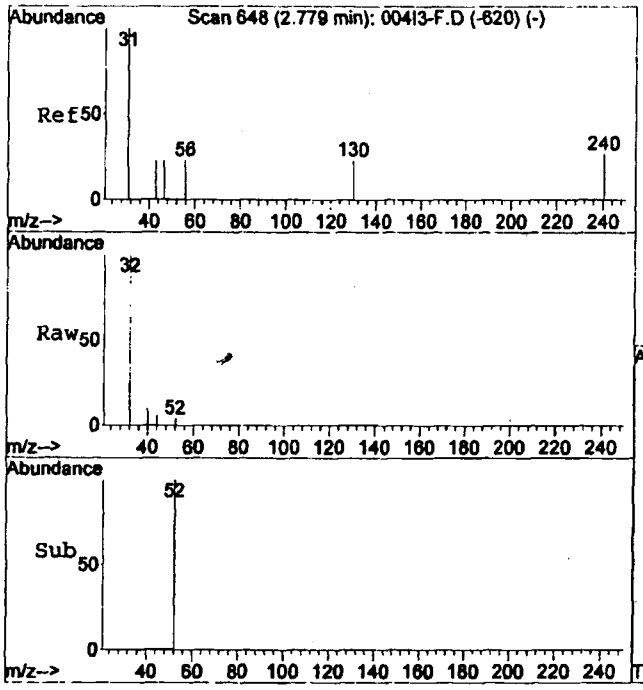
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\003LC-F.D Vial: 3
Acq On : 13 Aug 2011 10:26 Operator: CB
Sample : ic2,LCS1,2011-08-13,09:27:21,641.865 Inst : Instrumen
Misc : 907.132,24.2,CB,,, Multiplr: 1.41
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:35 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Initial Calibration

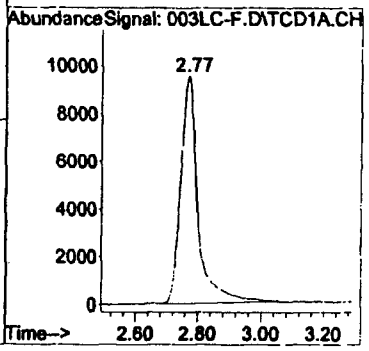


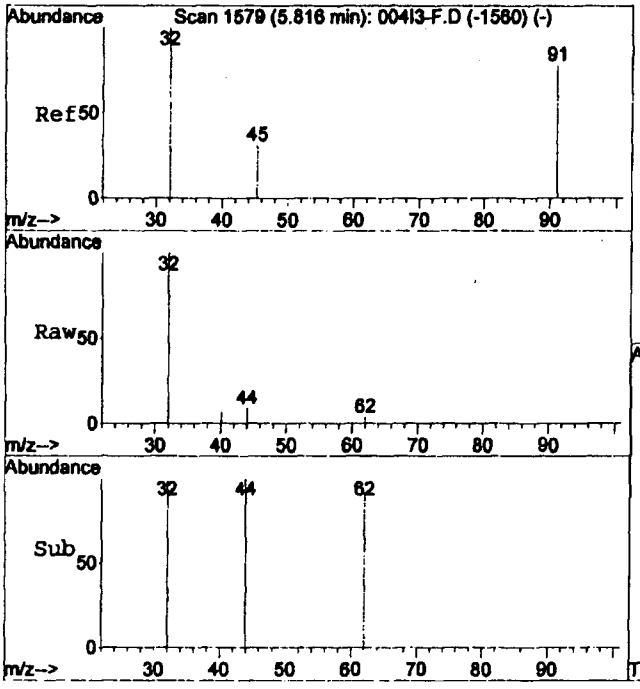




#1
Hydrogen
Concen: 0.51 percent
RT: 2.77 min
Delta R.T. -0.01 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

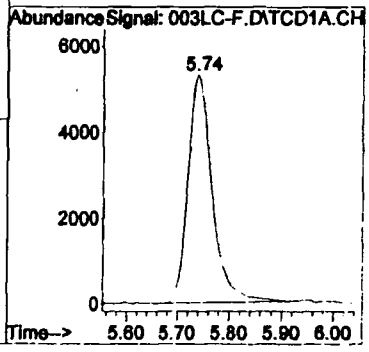
Tgt Sig:GC1 Resp: 36362

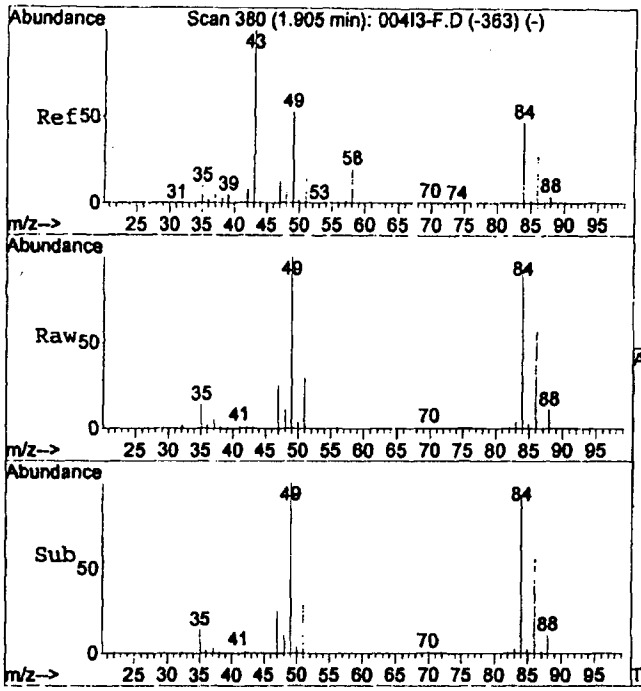




#2
Methane
Concen: 0.51 percent
RT: 5.74 min
Delta R.T. -0.08 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Sig:GC1 Resp: 17224

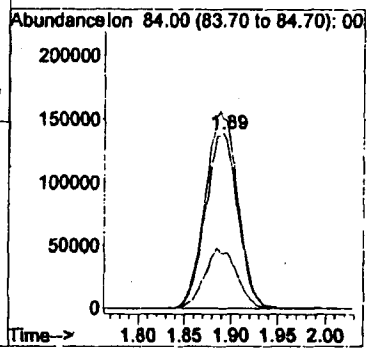


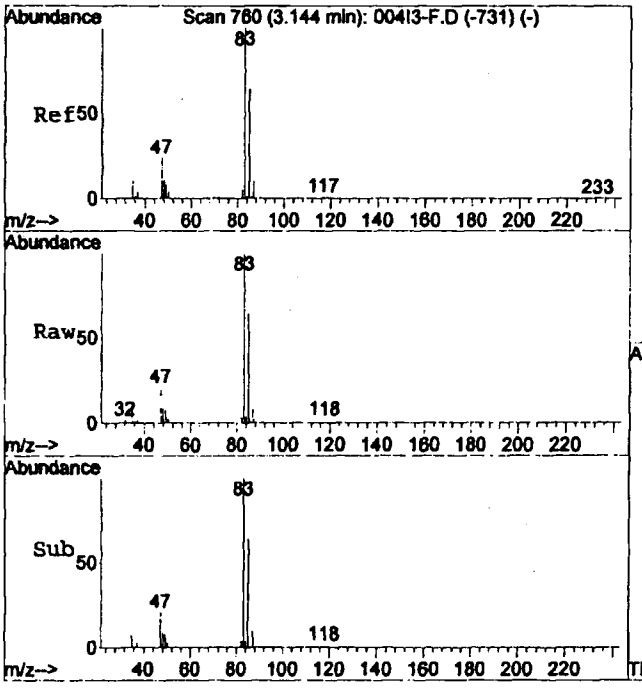


#11
Methylene chloride
Concen: 53.89 ppm
RT: 1.89 min Scan# 376
Delta R.T. -0.01 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 84 Resp: 333776

Ion	Ratio	Lower	Upper
84	100		
49	112.6	85.8	159.4
51	33.7	25.6	47.6

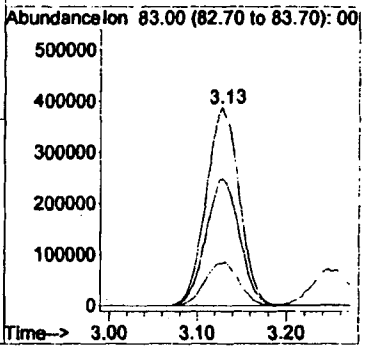


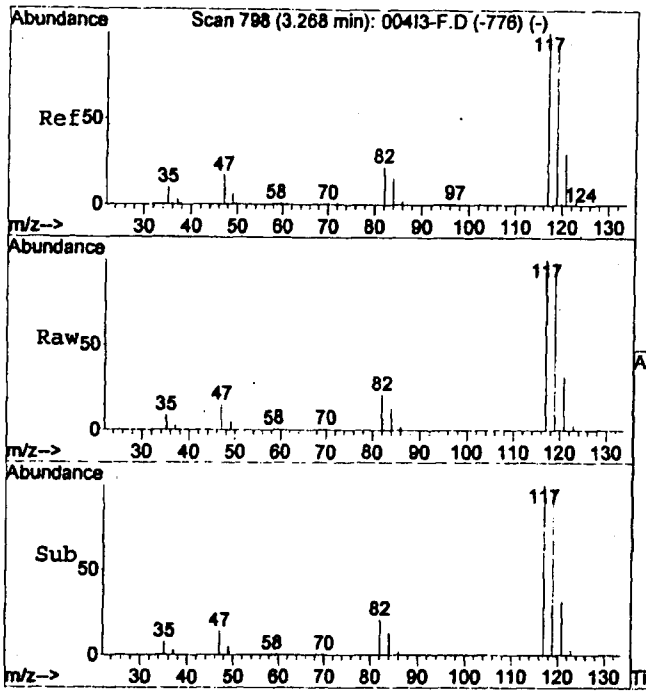


#16
Chloroform
Concen: 44.45 ppm
RT: 3.13 min Scan# 755
Delta R.T. -0.02 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 83 Resp: 1004823

Ion	Ratio	Lower	Upper
83	100		
47	22.3	16.6	30.8
85	64.8	45.1	83.7

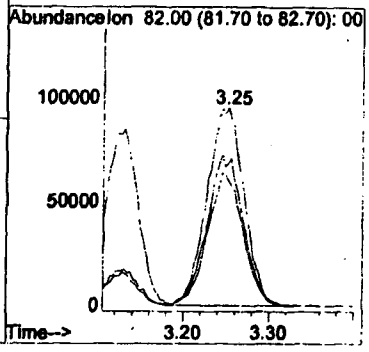


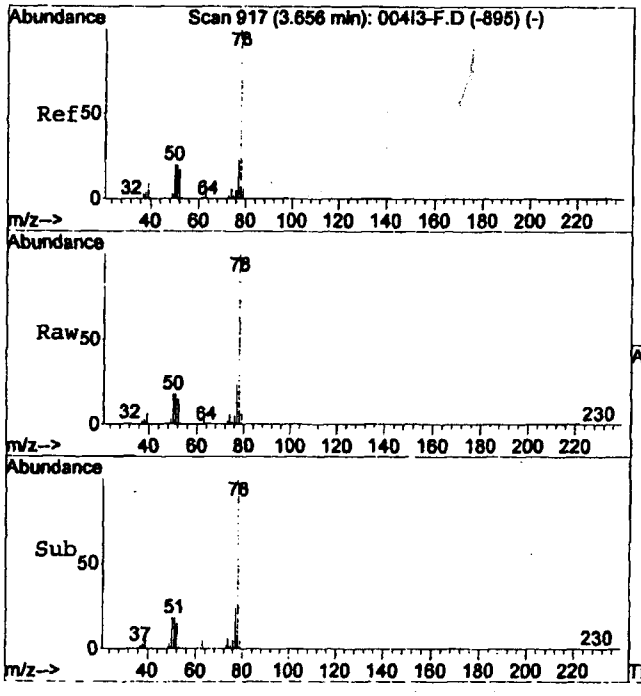


#19
Carbon Tetrachloride
Concen: 39.17 ppm
RT: 3.25 min Scan# 793
Delta R.T. -0.02 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 82 Resp: 284719

Ion	Ratio	Lower	Upper
82	100		
47	74.1	51.1	94.9
84	64.2	43.1	80.1

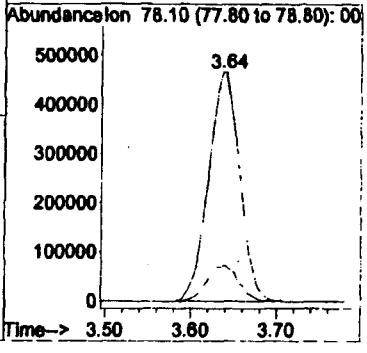


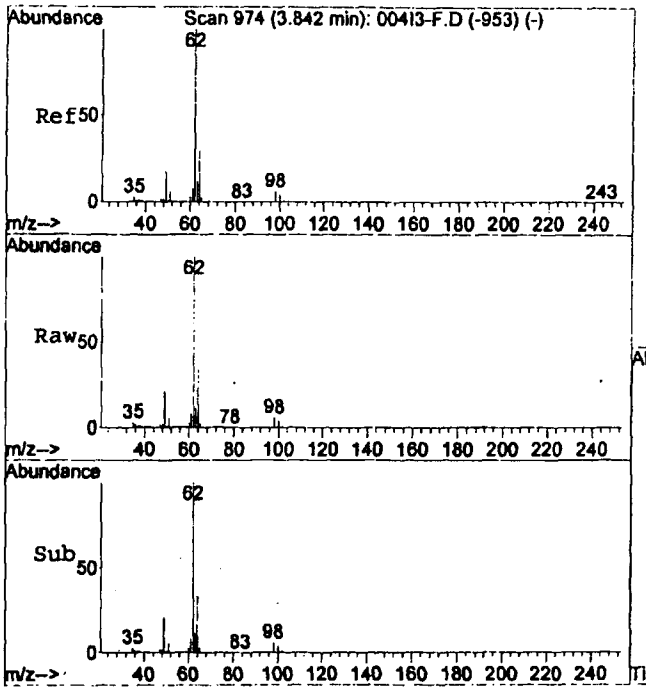


#20
Benzene
Concen: 50.68 ppm
RT: 3.64 min Scan# 911
Delta R.T. -0.02 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 78 Resp: 1163371

Ion	Ratio	Lower	Upper
78	100		
52	15.8	11.6	21.6

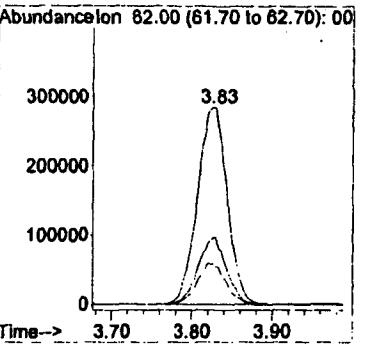


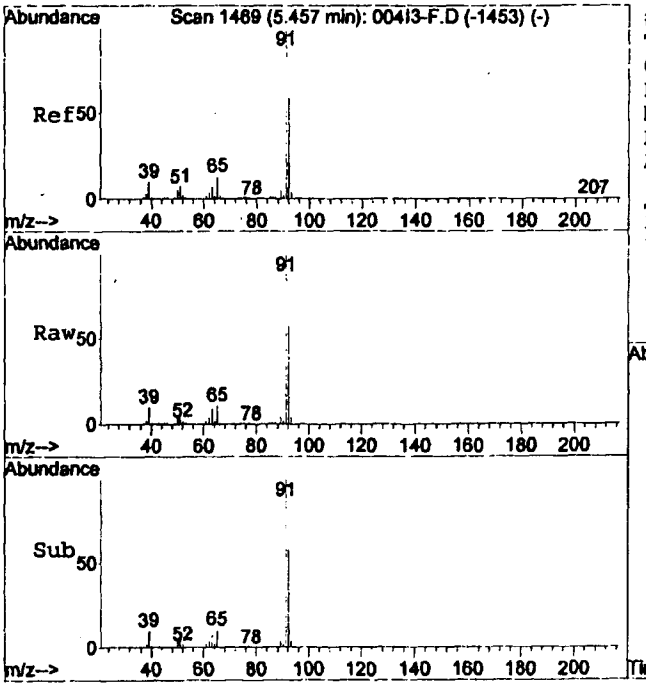


#21
1,2-Dichloroethane
Concen: 42.70 ppm
RT: 3.83 min Scan# 969
Delta R.T. -0.02 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 62 Resp: 724872

Ion	Ratio	Lower	Upper
62	100		
49	19.9	12.7	23.7
64	32.3	22.4	41.6

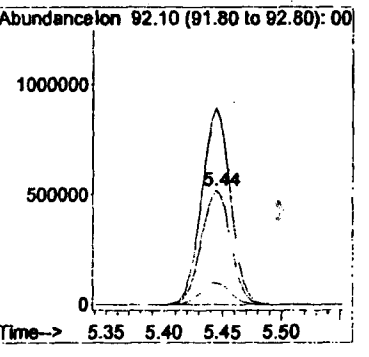




#26
Toluene
Concen: 52.50 ppm
RT: 5.44 min Scan# 1465
Delta R.T. -0.01 min
Lab File: 003LC-F.D
Acq: 13 Aug 2011 10:26

Tgt Ion: 92 Resp: 899225

Ion	Ratio	Lower	Upper
92	100		
91	168.9	120.1	223.1
65	19.3	14.4	26.8



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\008LC-F.D Vial: 8
Acq On : 13 Aug 2011 14:03 Operator: SO
Sample : ic3,LCS2,2011-08-13,12:17:04,641.774 Inst : Instrumen
Misc : 890.530,26.9,SO,,, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:12:31 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

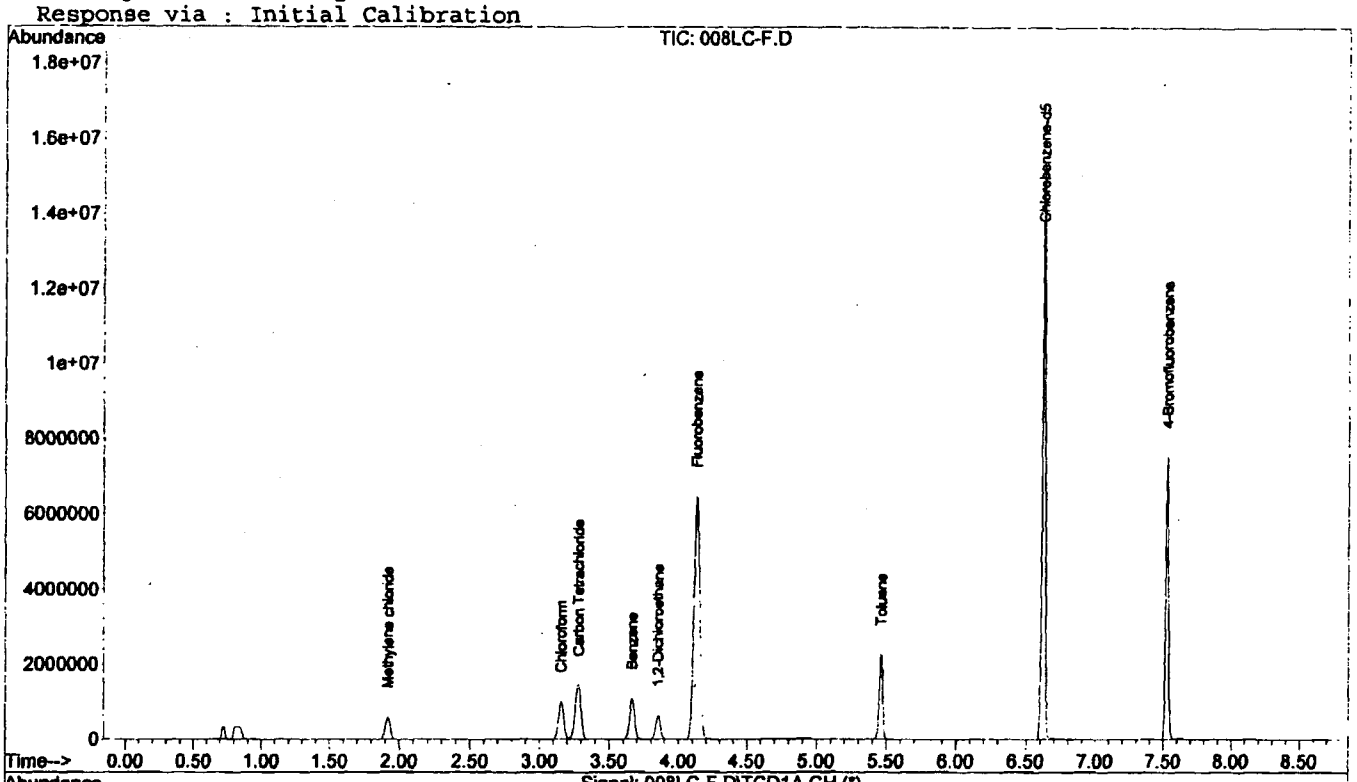
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) Fluorobenzene	4.13	96	9268249	201.00	ppm	0.00
24) Chlorobenzene-d5	6.62	117	8018228	176.00	ppm	0.00
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.53	95	2136664	50.88	ppm	0.00
Target Compounds						Qvalue
1) Hydrogen	2.79	GC1	37044	0.5073	perce	100
2) Methane	5.76	GC1	17254	0.4992	perce	100
11) Methylene chloride	1.91	84	348628	53.9875	ppm	93
16) Chloroform	3.15	83	1033534	43.8494	ppm	99
19) Carbon Tetrachloride	3.27	82	291045	38.4024	ppm	98
20) Benzene	3.66	78	1236537	51.6603	ppm	97
21) 1,2-Dichloroethane	3.85	62	745864	42.1437	ppm	97
26) Toluene	5.46	92	964097	54.0811	ppm	99

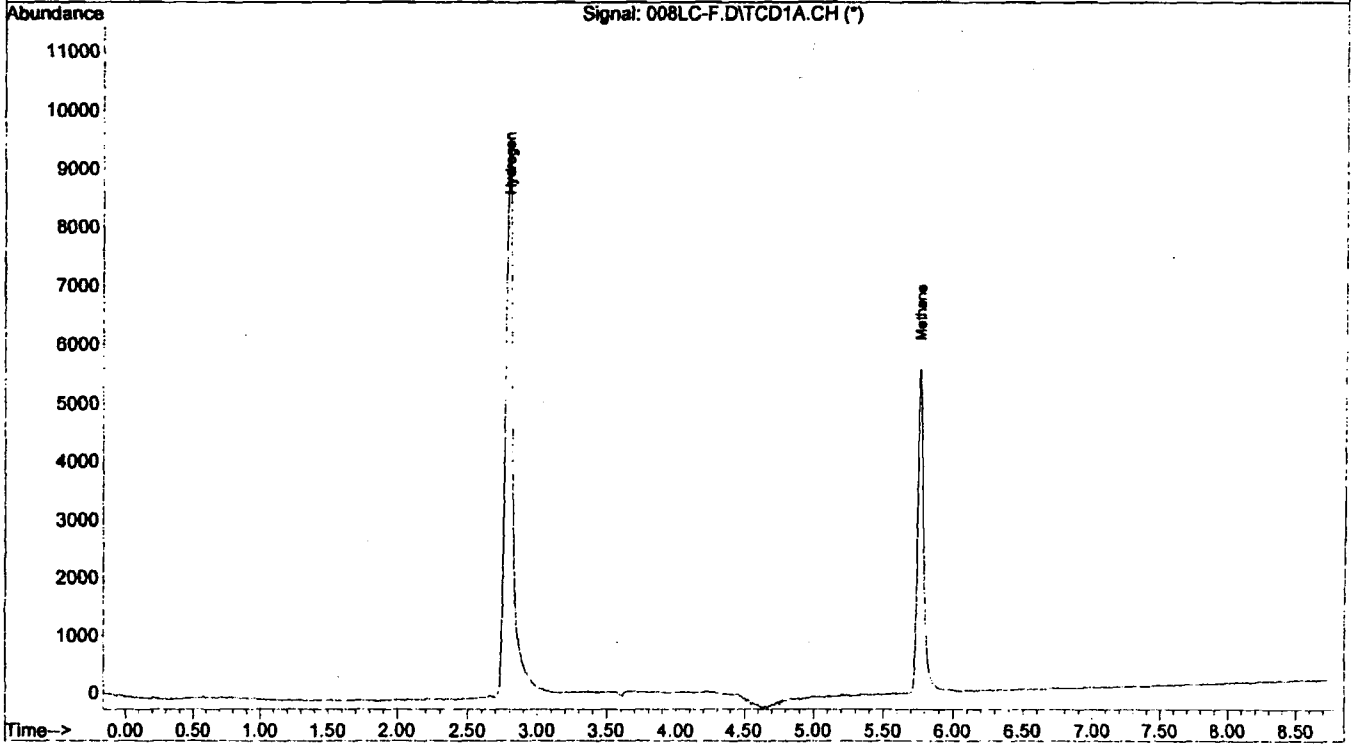
(#) = qualifier out of range (m) = manual integration
008LC-F.D VOCGAS.M Mon Aug 15 10:17:01 2011 Page 1

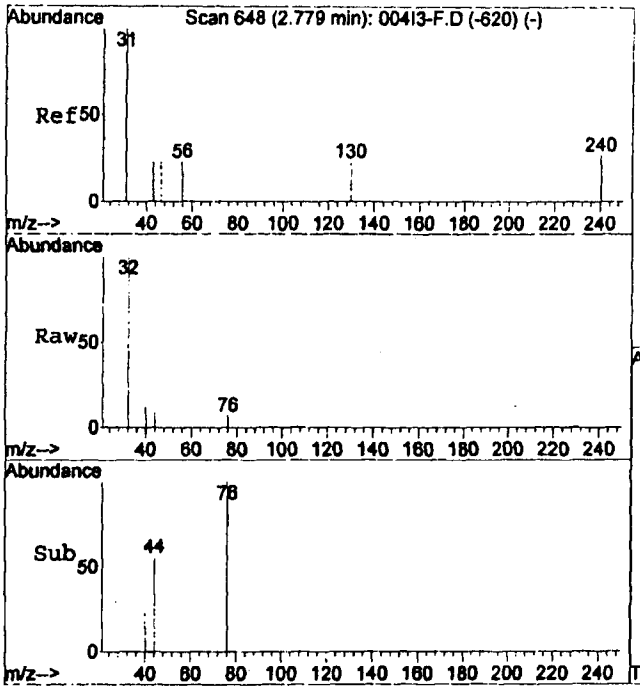
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\008LC-F.D Vial: 8
Acq On : 13 Aug 2011 14:03 Operator: SO
Sample : ic3,LCS2,2011-08-13,12:17:04,641.774 Inst : Instrumen
Misc : 890.530,26.9,SO,,, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:12 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

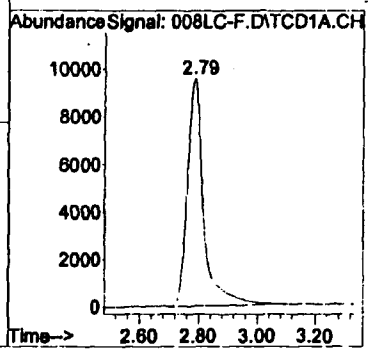


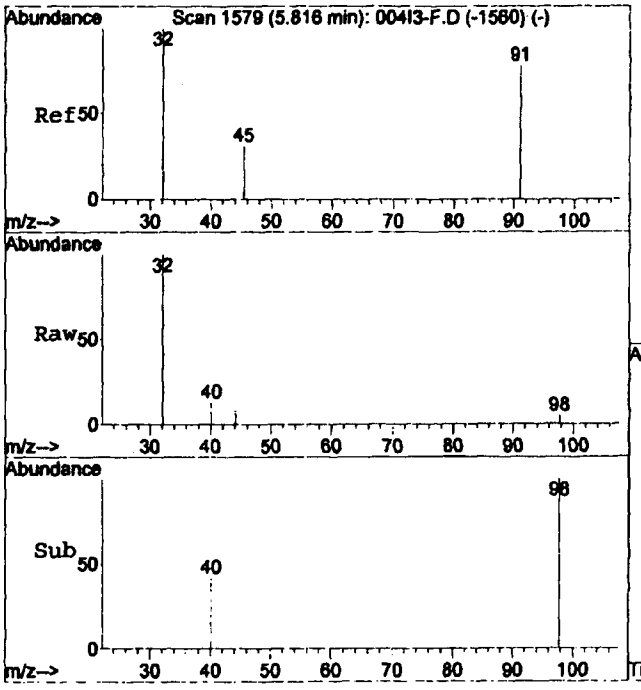




#1
Hydrogen
Concen: 0.51 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

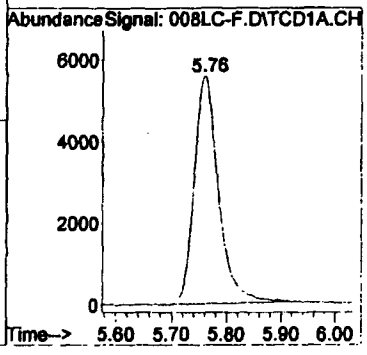
Tgt Sig:GC1 Resp: 37044

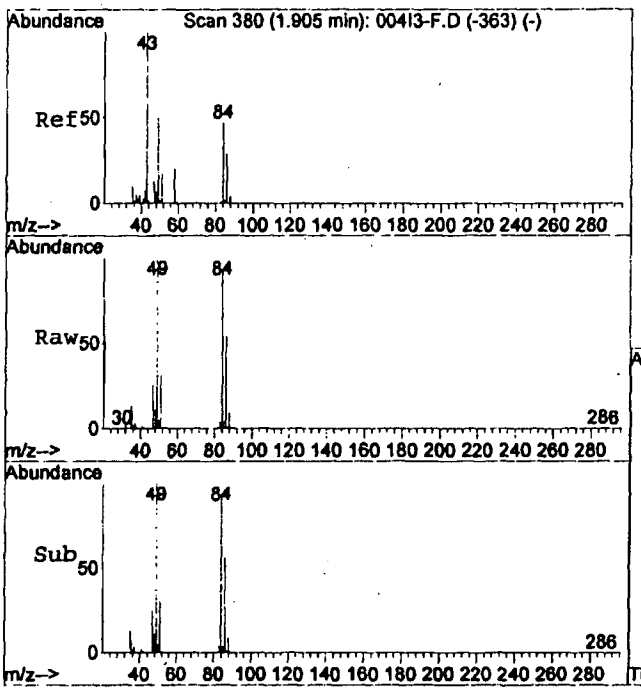




#2
Methane
Concen: 0.50 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Sig:GC1 Resp: 17254

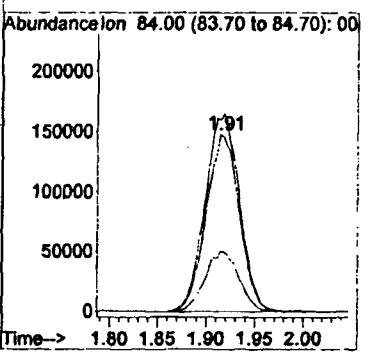


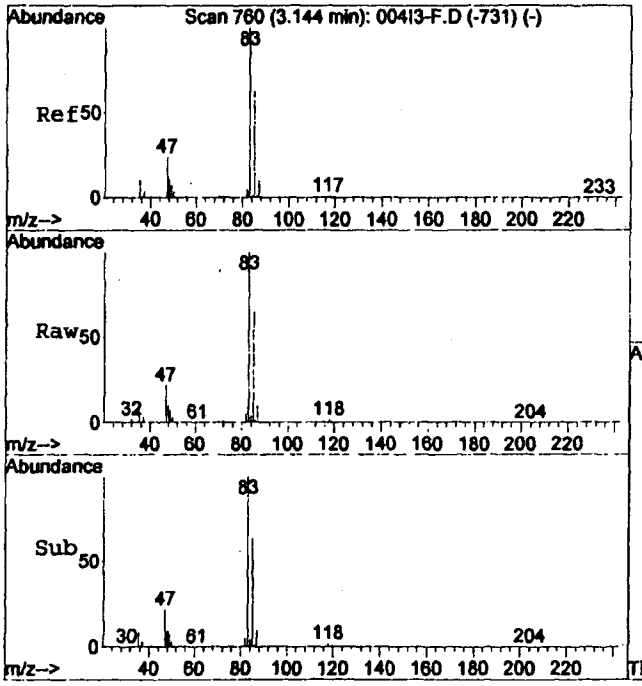


#11
Methylene chloride
Concen: 53.99 ppm
RT: 1.91 min Scan# 383
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 84 Resp: 348628

Ion	Ratio	Lower	Upper
84	100		
49	114.3	85.8	159.4
51	34.2	25.6	47.6

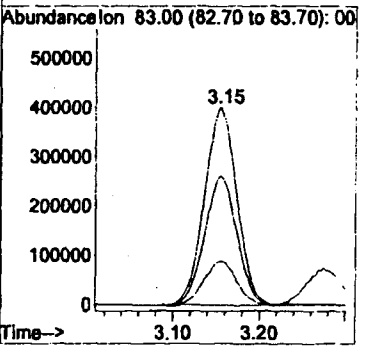


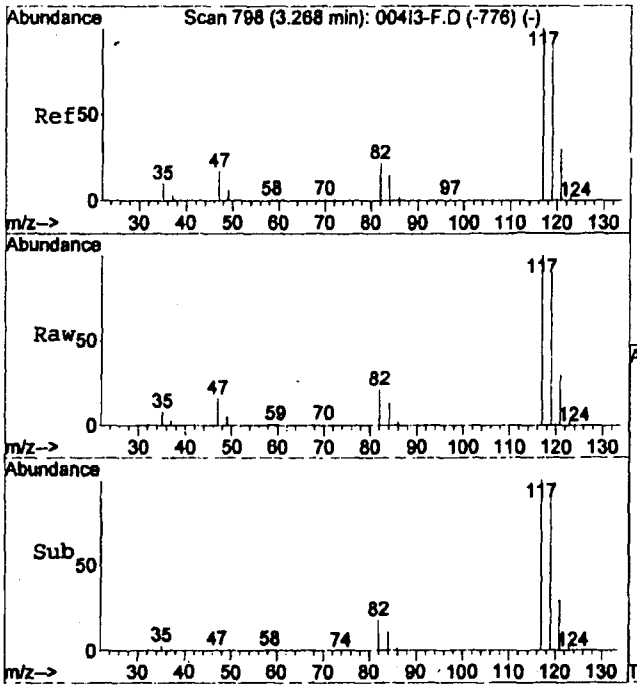


#16
Chloroform
Concen: 43.85 ppm
RT: 3.15 min Scan# 763
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 83 Resp: 1033534

Ion	Ratio	Lower	Upper
83	100		
47	22.4	16.6	30.8
85	65.2	45.1	83.7

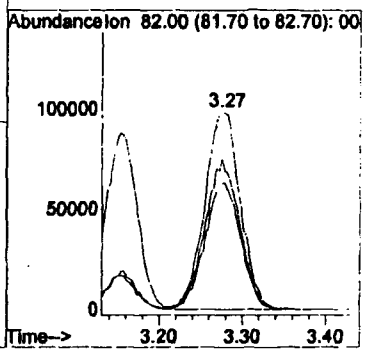


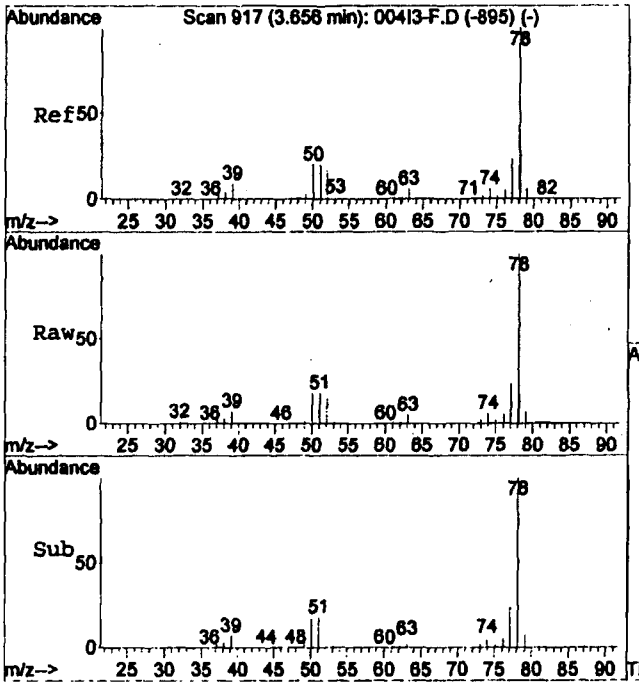


#19
Carbon Tetrachloride
Concen: 38.40 ppm
RT: 3.27 min Scan# 800
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 82 Resp: 291045

Ion	Ratio	Lower	Upper
82	100		
47	74.1	51.1	94.9
84	64.1	43.1	80.1

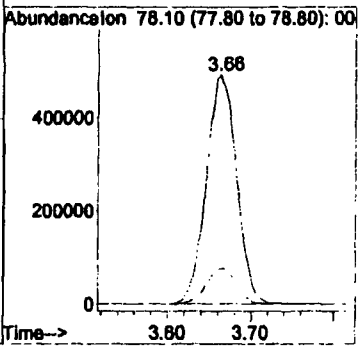


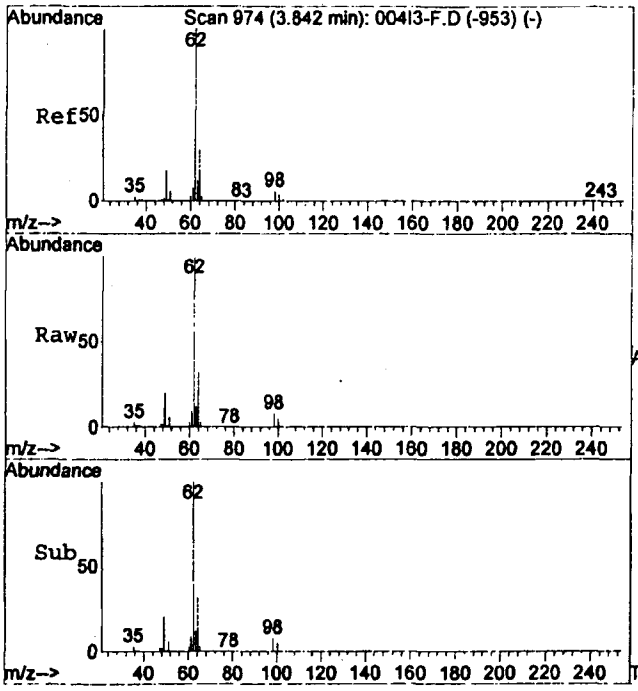


#20
Benzene
Concen: 51.66 ppm
RT: 3.66 min Scan# 919
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 78 Resp: 1236537

Ion	Ratio	Lower	Upper
78	100		
52	15.5	11.6	21.6

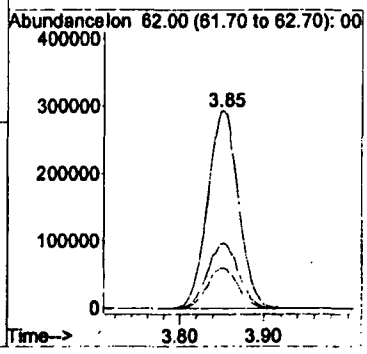


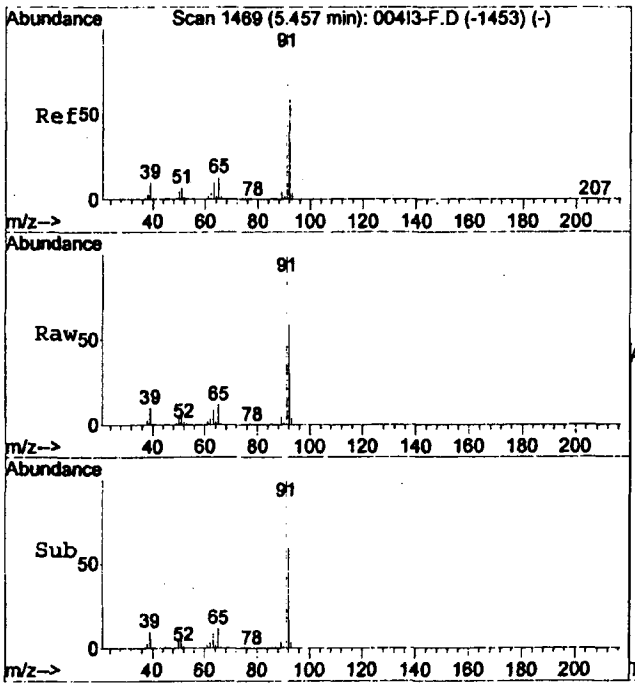


#21
1,2-Dichloroethane
Concen: 42.14 ppm
RT: 3.85 min Scan# 976
Delta R.T. 0.01 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 62 Resp: 745864

Ion	Ratio	Lower	Upper
62	100		
49	20.3	12.7	23.7
64	33.0	22.4	41.6

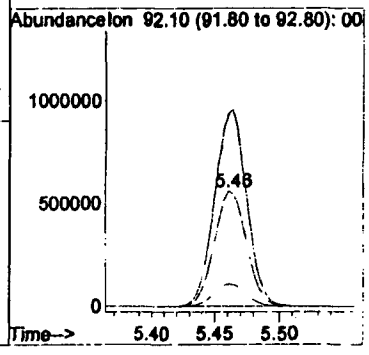




#26
Toluene
Concen: 54.08 ppm
RT: 5.46 min Scan# 1470
Delta R.T. 0.00 min
Lab File: 008LC-F.D
Acq: 13 Aug 2011 14:03

Tgt Ion: 92 Resp: 964097

Ion	Ratio	Lower	Upper
92	100		
91	170.5	120.1	223.1
65	19.4	14.4	26.8



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\004EB-F.D Vial: 4
Acq On : 13 Aug 2011 10:40 Operator: CB
Sample : ic16,EB,2011-08-13,09:40:07,642.384 Inst : Instrumen
Misc : 910.947,24.5,CB,,, Multiplr: 1.42
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:48:53 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 10:19:49 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

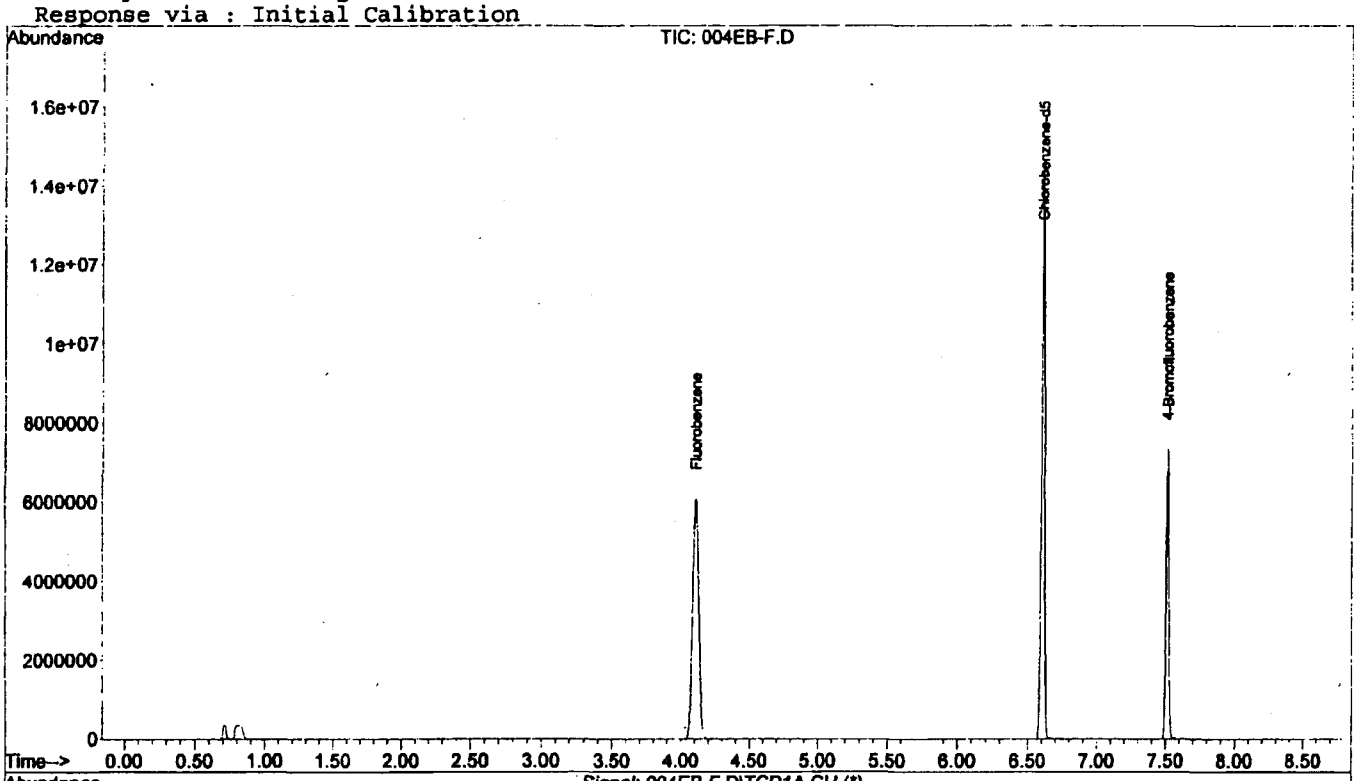
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) Fluorobenzene	4.10	96	8644058	201.00	ppm	-0.02
24) Chlorobenzene-d5	6.61	117	7537731	176.00	ppm	0.00
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.51	95	2009269	52.01	ppm	0.00
Target Compounds						Qvalue

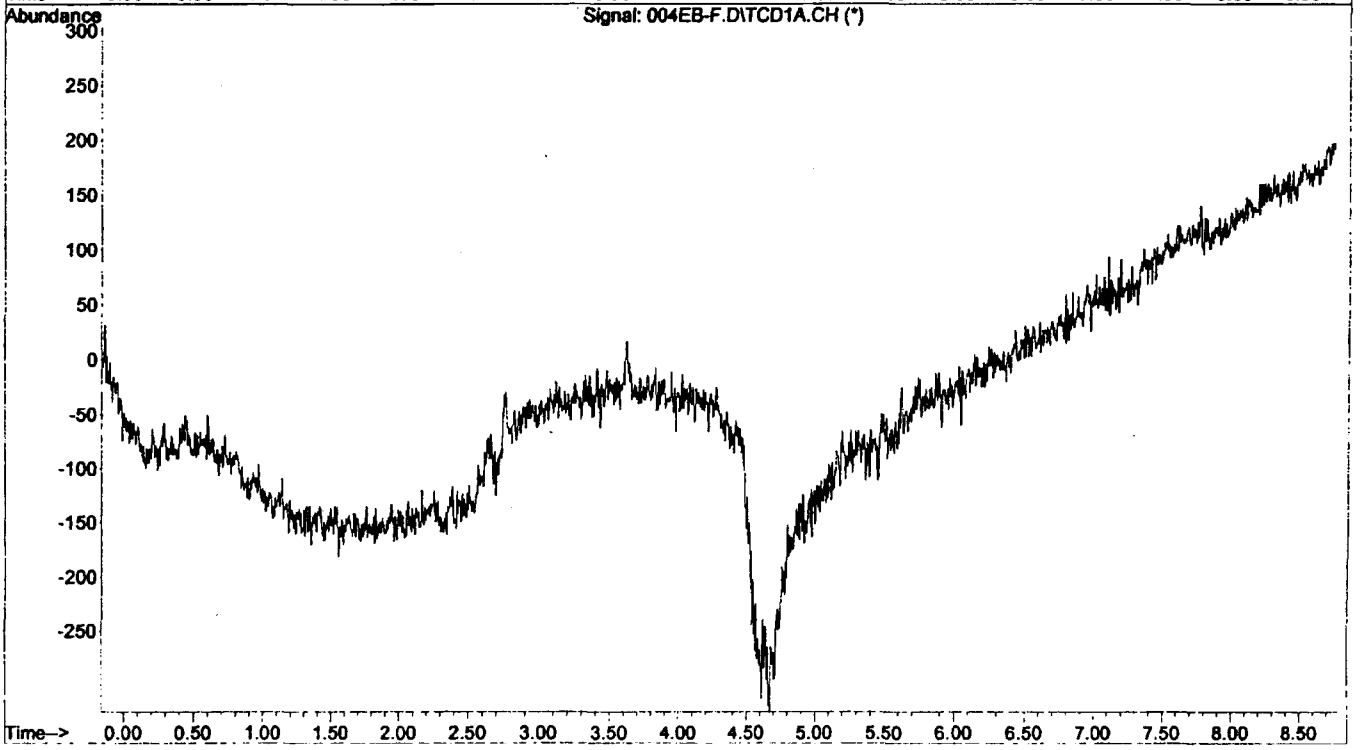
(#) = qualifier out of range (m) = manual integration
004EB-F.D VOCGAS.M Mon Aug 15 09:53:55 2011 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\004EB-F.D Vial: 4
Acq On : 13 Aug 2011 10:40 Operator: CB
Sample : ic16,EB,2011-08-13,09:40:07,642.384 Inst : Instrumen
Misc : 910.947,24.5,CB,,, Multiplr: 1.42
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 10:48 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\005FB-F.D Vial: 5
Acq On : 13 Aug 2011 10:53 Operator: CB
Sample : dr3,FB,2011-08-13,09:46:55,635.334 Inst : Instrumen
Misc : 900.937,24.6,CB,,, Multiplr: 1.42
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 11:02:27 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 10:19:49 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

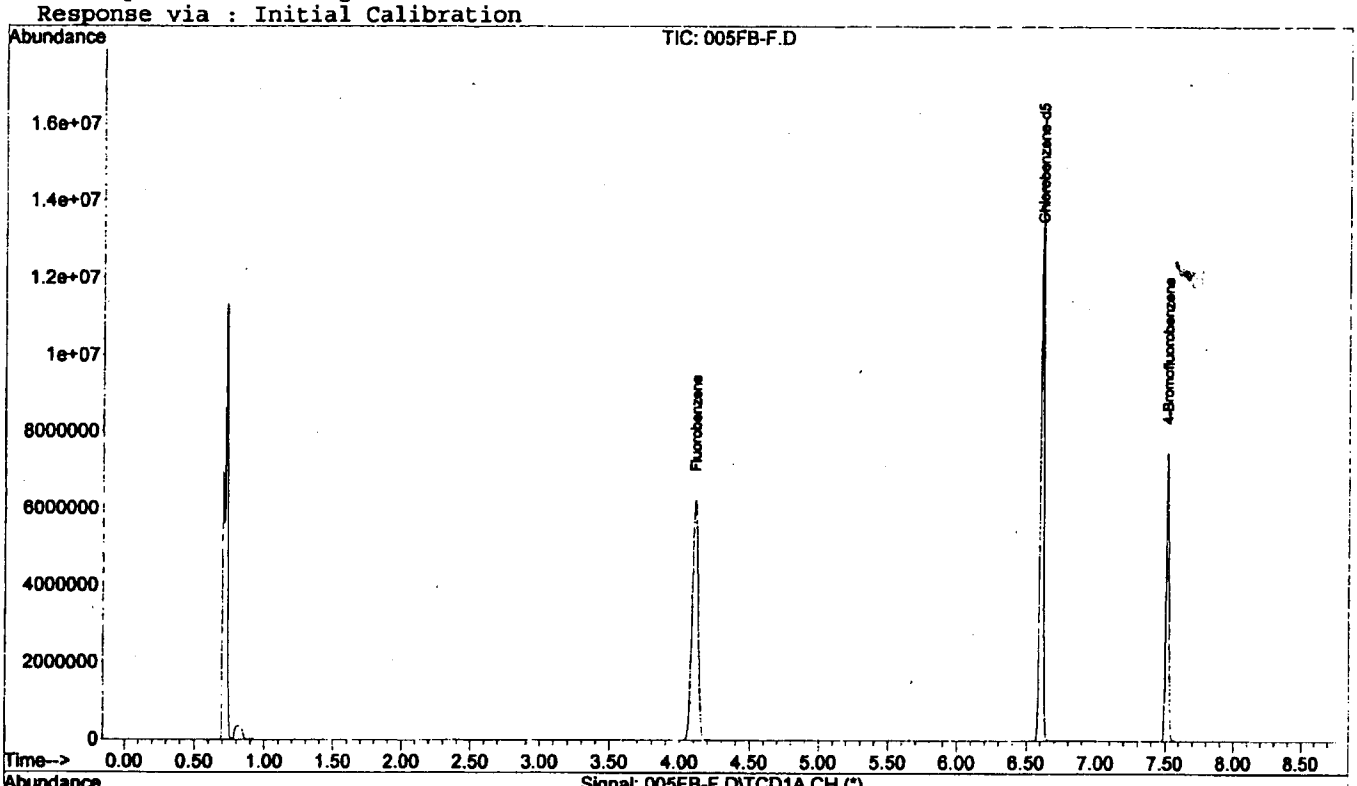
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
3) Fluorobenzene	4.11	96	8898022	201.00 ppm	-0.02
24) Chlorobenzene-d5	6.61	117	7733979	176.00 ppm	0.00
System Monitoring Compounds					
33) 4-Bromofluorobenzene	7.51	95	2071897	52.27 ppm	0.00
Target Compounds					Qvalue

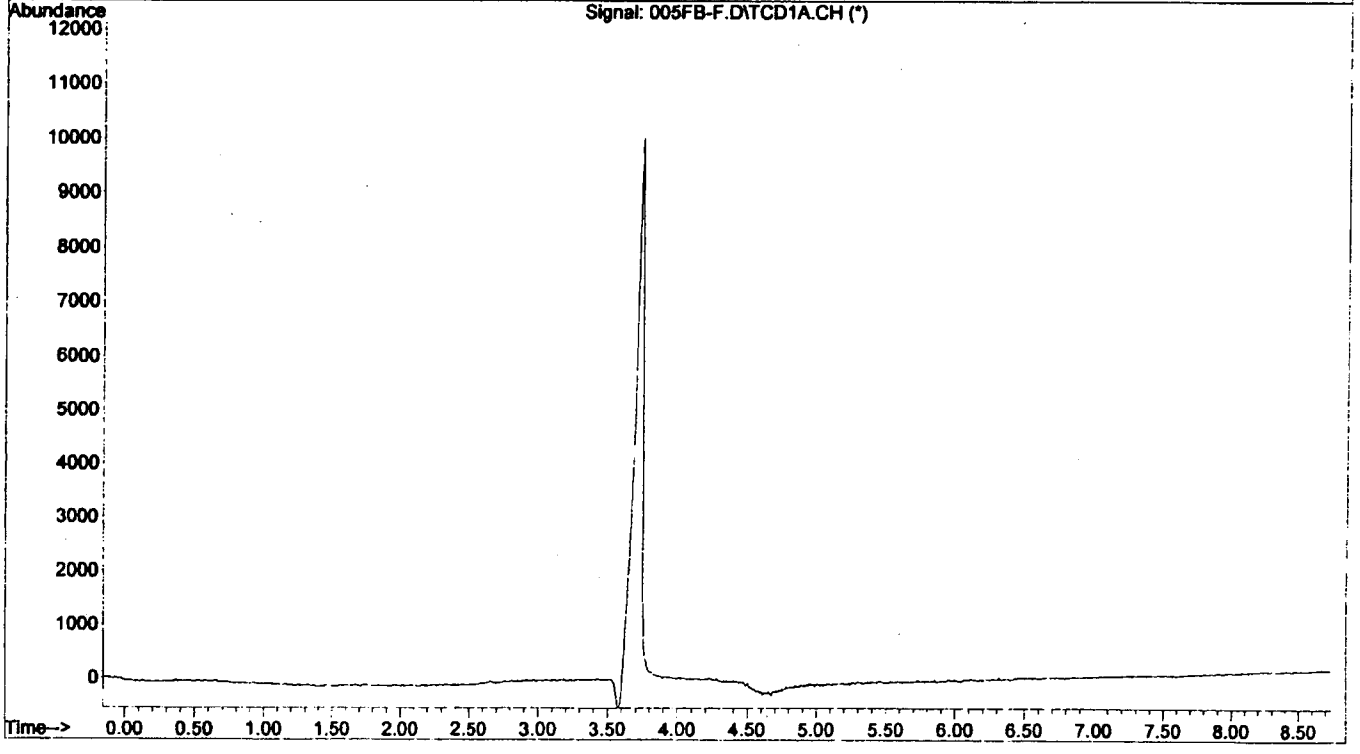
(#) = qualifier out of range (m) = manual integration
005FB-F.D VOCGAS.M Mon Aug 15 09:55:10 2011 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\005FB-F.D Vial: 5
Acq On : 13 Aug 2011 10:53 Operator: CB
Sample : dr3,FB,2011-08-13,09:46:55,635.334 Inst : Instrumen
Misc : 900.937,24.6,CB,,, Multiplr: 1.42
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 11:02 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 09:42:49 2011
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\009DR-F.D Vial: 9
Acq On : 13 Aug 2011 14:17 Operator: SO
Sample : ic8,MDL1,2011-08-13,12:36:46,1.39335 Inst : Instrumen
Misc : HS111 00014B-01,27.2,SO, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:26:08 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

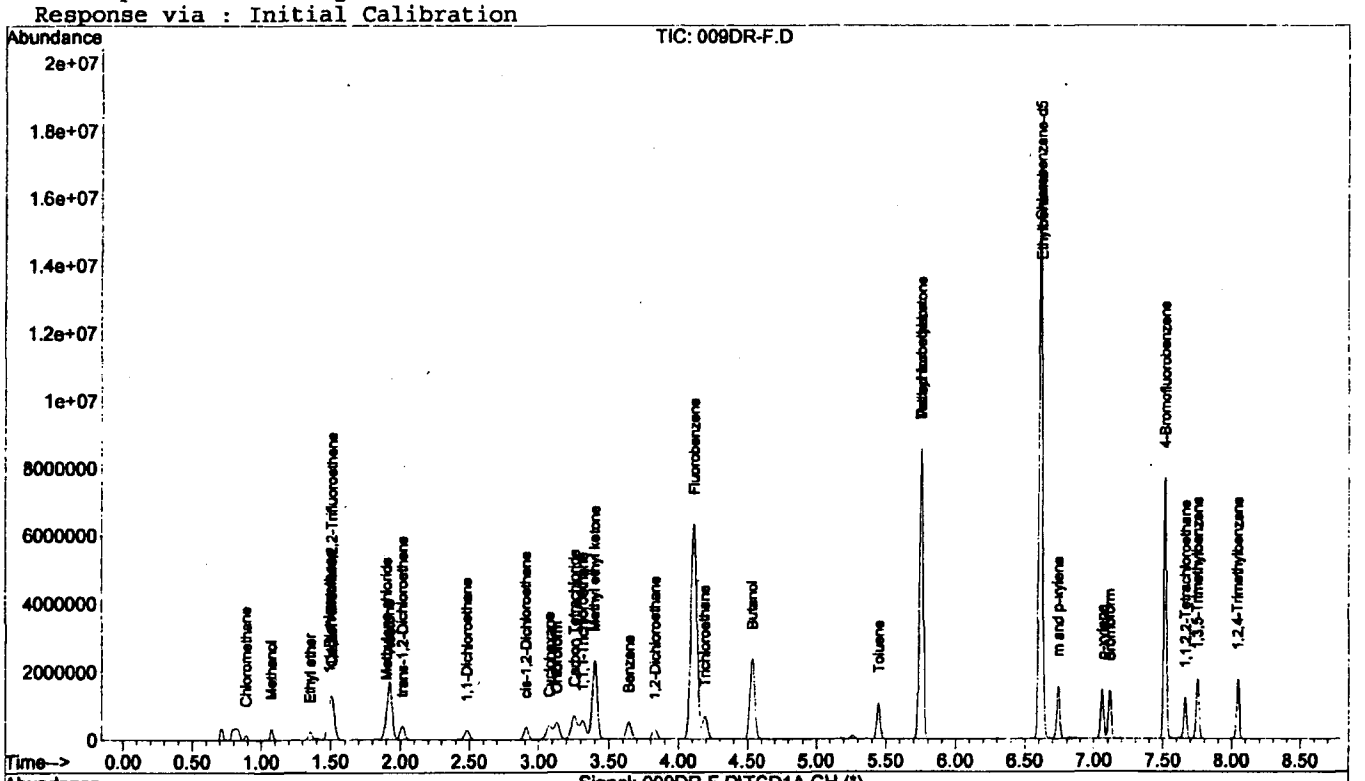
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.11	96	9155535	201.00	ppm		-0.01
24) Chlorobenzene-d5	6.61	117	8185284	176.00	ppm		0.00
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.52	95	2170424	50.83	ppm		0.00
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	36603	0.5034	perce		100
2) Methane	5.76	GC1	17170	0.4988	perce		100
4) Chloromethane	0.89	50	99934	22.1334	ppm		98
5) Methanol	1.07	31	267356	209.2690	ppm		100
6) Ethyl ether	1.36	59	95880	22.1010	ppm		96
7) 1,1-Dichloroethene	1.48	96	183652	23.4199	ppm		92
8) 1,1,2-Trichloro-1,2,2-Trif	1.51	101	454658	22.8843	ppm		98
9) Acetone	1.92	58	695477	246.3299	ppm		77
10) Carbon Disulfide	1.51	76	486634	23.8721	ppm		96
11) Methylene chloride	1.89	84	159068	25.0392	ppm		91
12) trans-1,2-Dichloroethene	2.02	96	202221	24.3689	ppm		96
13) 1,1-Dichloroethane	2.49	63	337719	23.0448	ppm		100
14) cis-1,2-Dichloroethene	2.91	96	203720	24.1810	ppm		96
15) Methyl ethyl ketone	3.40	72	956354	238.8758	ppm		92
16) Chloroform	3.13	83	497302	21.4470	ppm		98
17) 1,1,1-Trichloroethane	3.32	97	551469	20.0107	ppm		100
18) Cyclohexane	3.08	56	249690	25.1734	ppm		96
19) Carbon Tetrachloride	3.26	82	148413	19.9057	ppm		99
20) Benzene	3.64	78	572316	24.3048	ppm		99
21) 1,2-Dichloroethane	3.83	62	347515	19.9597	ppm		97
22) Trichloroethene	4.19	130	318413	23.5886	ppm		97
23) Butanol	4.53	55	272118	231.0106	ppm		95
25) Methyl isobutyl ketone	5.75	100	849951	232.2190	ppm		96
26) Toluene	5.45	92	452040	24.9425	ppm		100
27) Tetrachloroethene	5.74	166	481535	22.1229	ppm		95
28) Chlorobenzene	6.60	112	723220	23.3616	ppm	#	98
29) Ethylbenzene	6.63	106	341188	22.9387	ppm		99
30) m and p-xylene	6.74	106	398787	23.6435	ppm		92
31) o-xylene	7.06	106	375104	23.2330	ppm		94
32) Bromoform	7.11	171	325593	22.4900	ppm		98
34) 1,1,2,2-Tetrachloroethane	7.66	85	316602	23.6521	ppm		99
35) 1,3,5-Trimethylbenzene	7.75	120	444450	21.0213	ppm		96
36) 1,2,4-Trimethylbenzene	8.05	120	407318	20.5929	ppm		95

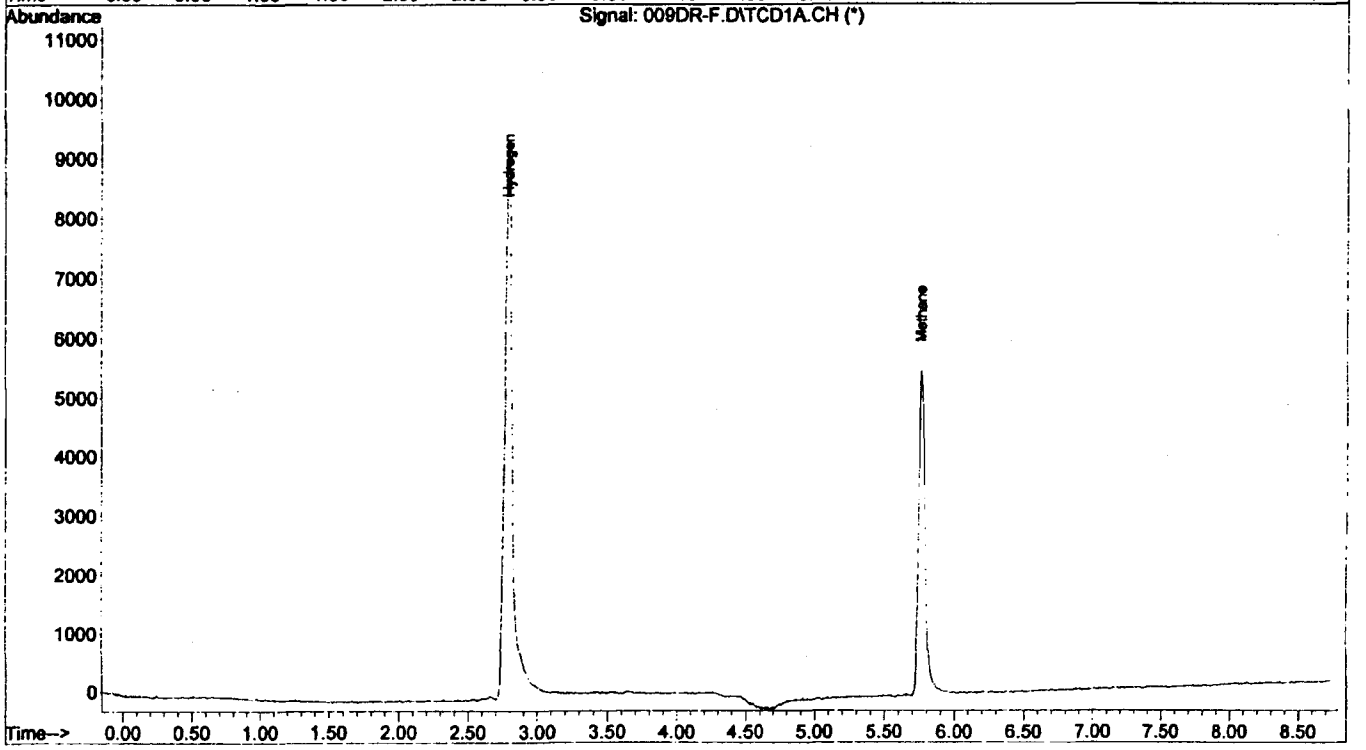
(#) = qualifier out of range (m) = manual integration
009DR-F.D VOCGAS.M Mon Aug 15 10:25:07 2011

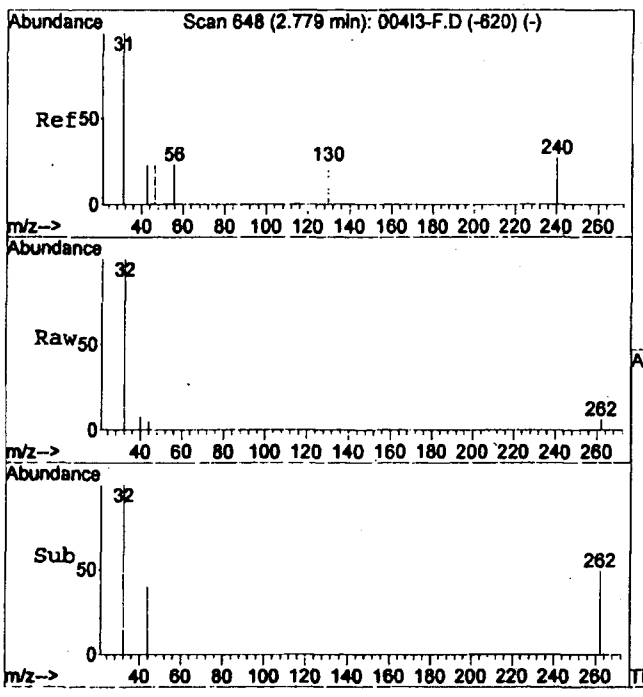
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\009DR-F.D Vial: 9
Acq On : 13 Aug 2011 14:17 Operator: SO
Sample : ic8,MDL1,2011-08-13,12:36:46,1.39335 Inst : Instrumen
Misc : HS111 00014B-01,27.2,SO, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:26 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

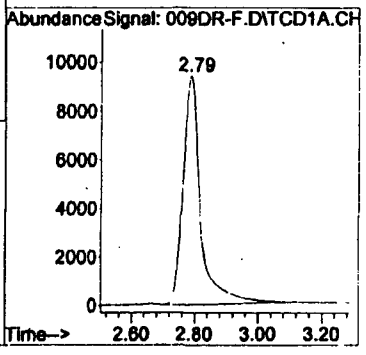


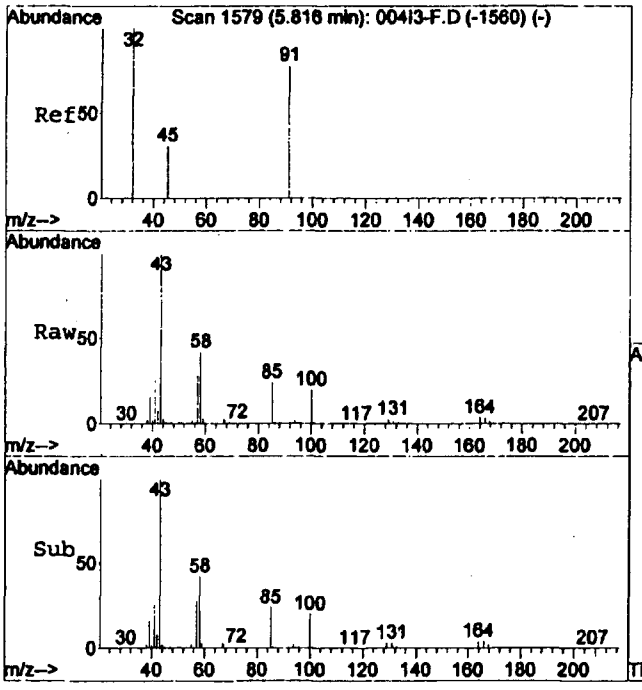




#1
Hydrogen
Concen: 0.50 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

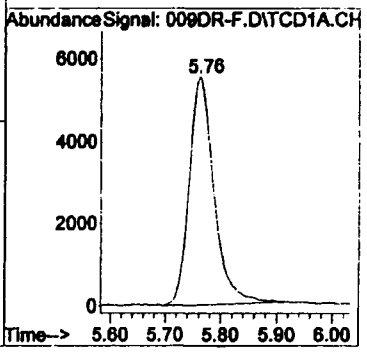
Tgt Sig:GC1 Resp: 36603

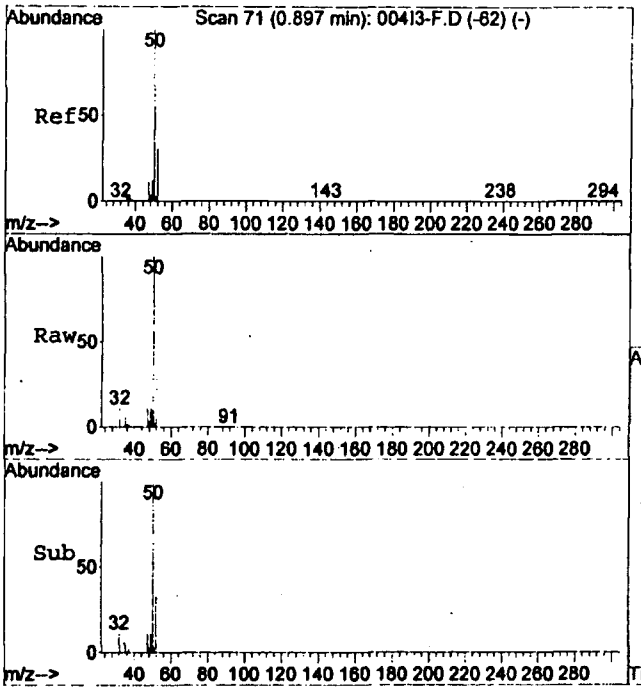




#2
Methane
Concen: 0.50 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Sig:GC1 Resp: 17170

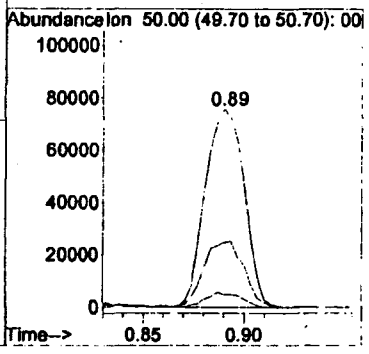


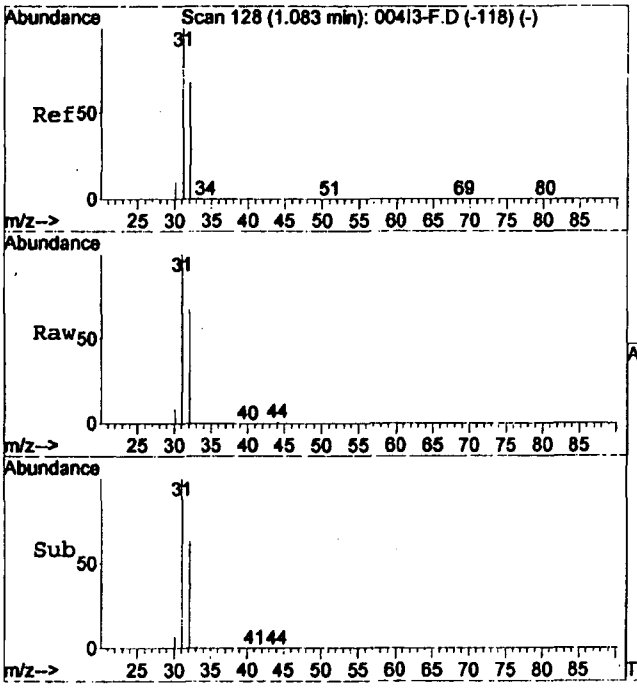


#4
Chloromethane
Concen: 22.13 ppm
RT: 0.89 min Scan# 69
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 50 Resp: 99934

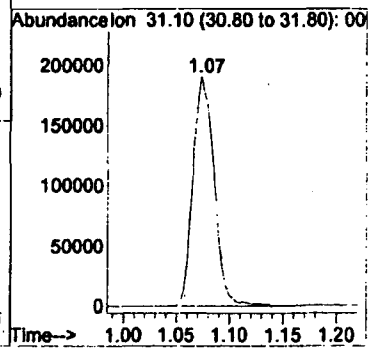
Ion	Ratio	Lower	Upper
50	100		
35	6.7	5.3	9.8
52	34.0	23.2	43.2

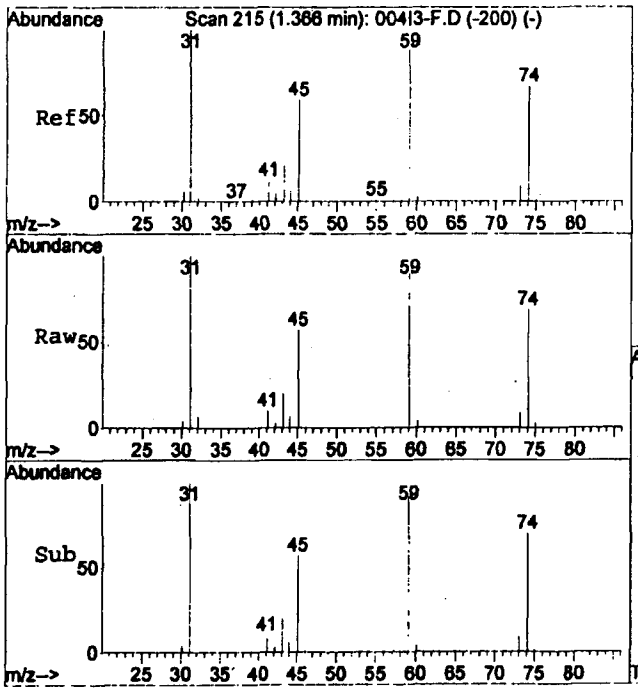




#5
Methanol
Concen: 209.27 ppm
RT: 1.07 min Scan# 125
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 31 Resp: 267356

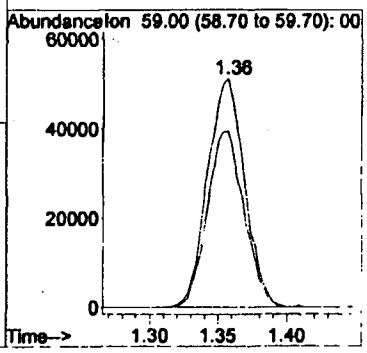


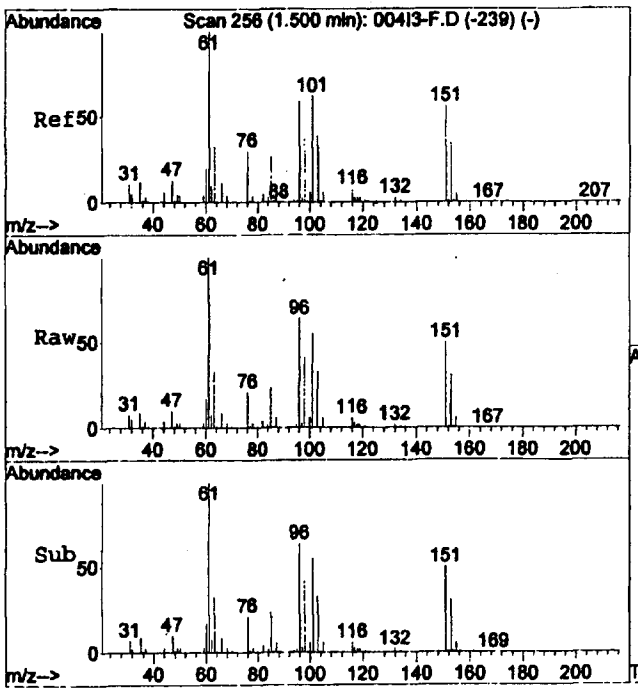


#6
Ethyl ether
Concen: 22.10 ppm
RT: 1.36 min Scan# 212
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 59 Resp: 95880

Ion	Ratio	Lower	Upper
59	100		
74	76.9	51.7	95.9

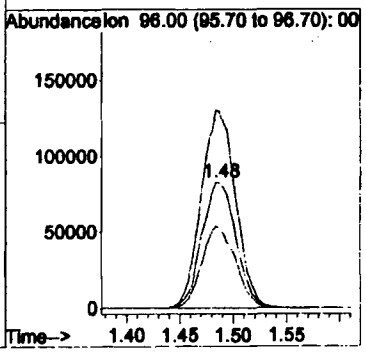


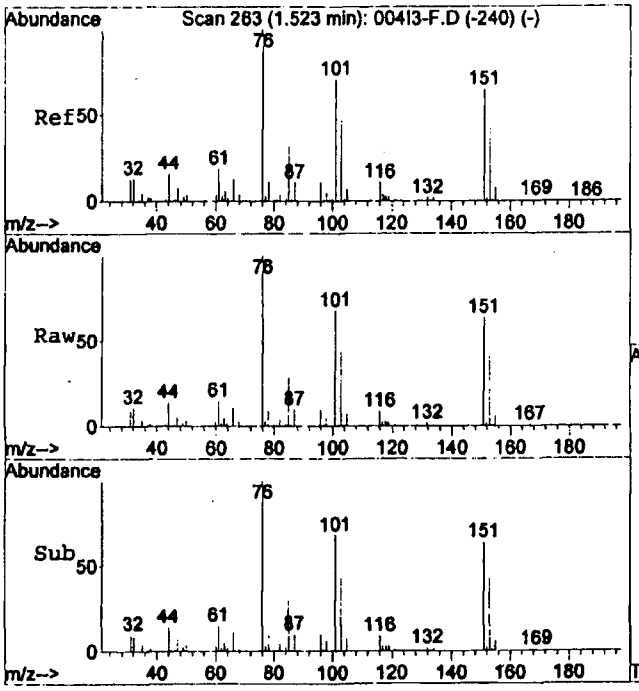


#7
1,1-Dichloroethene
Concen: 23.42 ppm
RT: 1.48 min Scan# 251
Delta R.T. -0.02 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 96 Resp: 183652

Ion	Ratio	Lower	Upper
96	100		
61	158.2	121.2	225.0
98	63.5	44.9	83.3

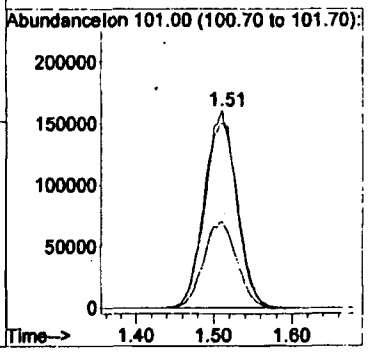


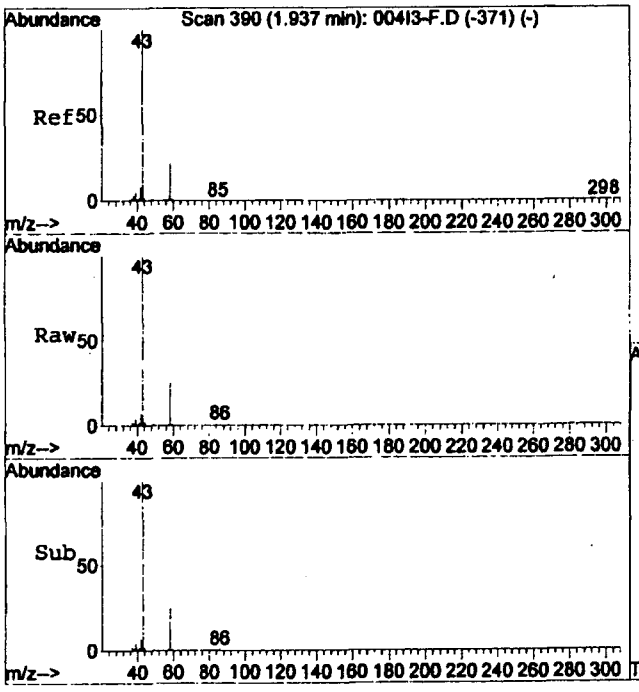


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.88 ppm
RT: 1.51 min Scan# 259
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:101 Resp: 454658

Ion	Ratio	Lower	Upper
101	100		
85	45.1	32.3	59.9
151	97.7	66.8	124.2

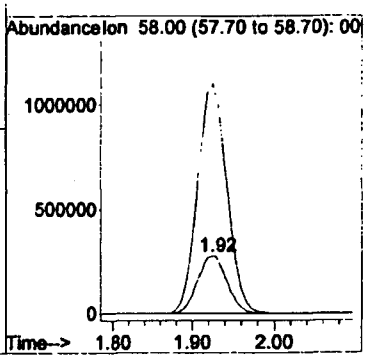


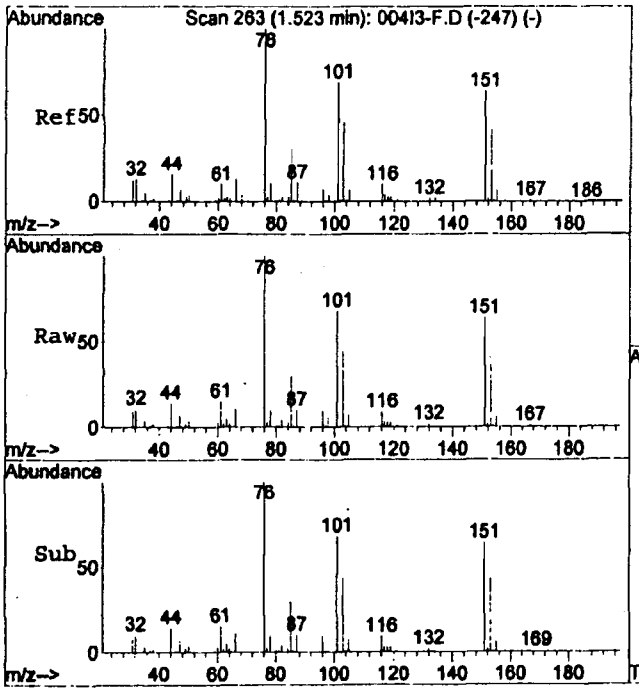


#9
Acetone
Concen: 246.33 ppm
RT: 1.92 min Scan# 386
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 58 Resp: 695477

Ion	Ratio	Lower	Upper
58	100		
43	394.1	317.7	590.1

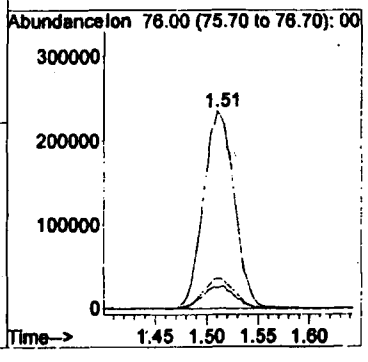


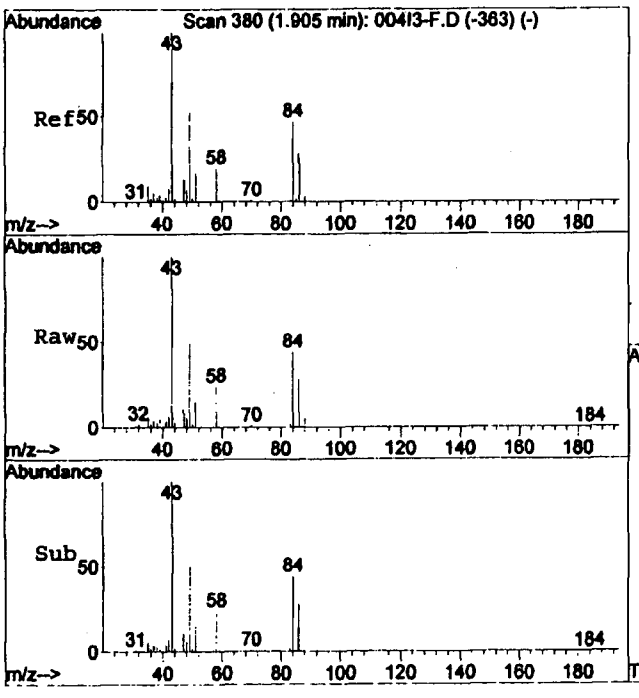


#10
Carbon Disulfide
Concen: 23.87 ppm
RT: 1.51 min Scan# 259
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 76 Resp: 486634

Ion	Ratio	Lower	Upper
76	100		
44	14.5	11.5	21.5
78	10.0	7.6	14.2

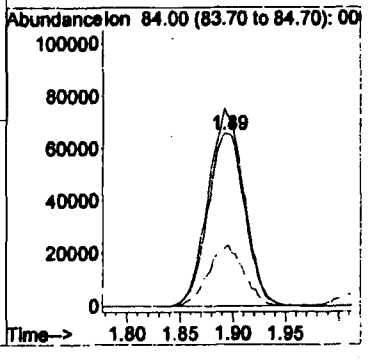


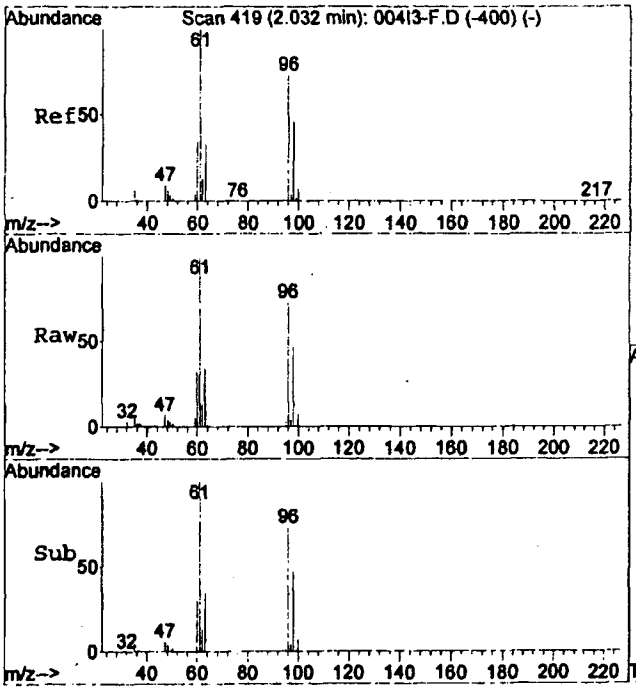


#11
Methylene chloride
Concen: 25.04 ppm
RT: 1.89 min Scan# 376
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 84 Resp: 159068

Ion	Ratio	Lower	Upper
84	100		
49	111.3	85.8	159.4
51	33.4	25.6	47.6

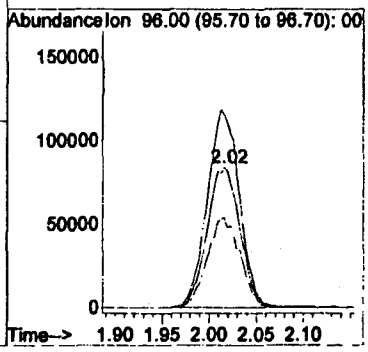


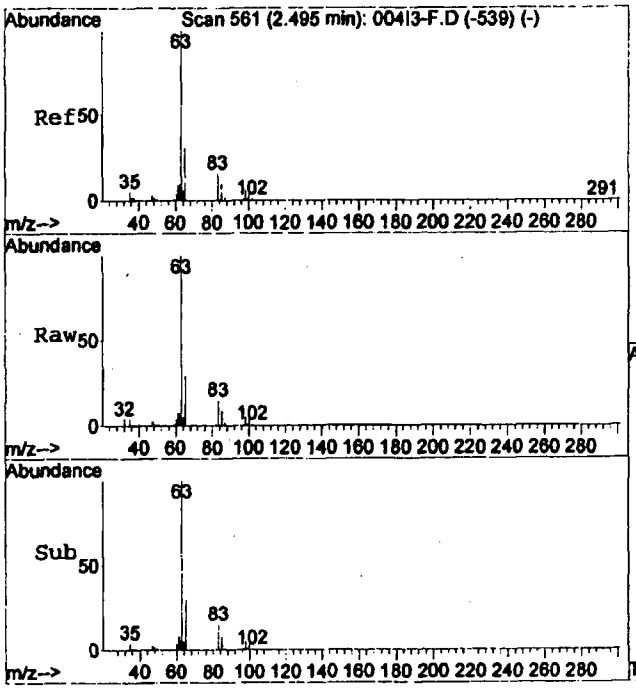


#12
trans-1,2-Dichloroethene
Concen: 24.37 ppm
RT: 2.02 min Scan# 414
Delta R.T. -0.02 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 96 Resp: 202221

Ion	Ratio	Lower	Upper
96	100		
61	137.9	100.3	186.3
98	63.8	45.6	84.8

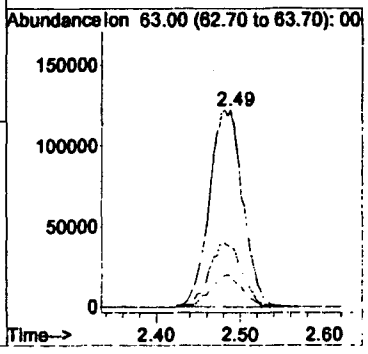


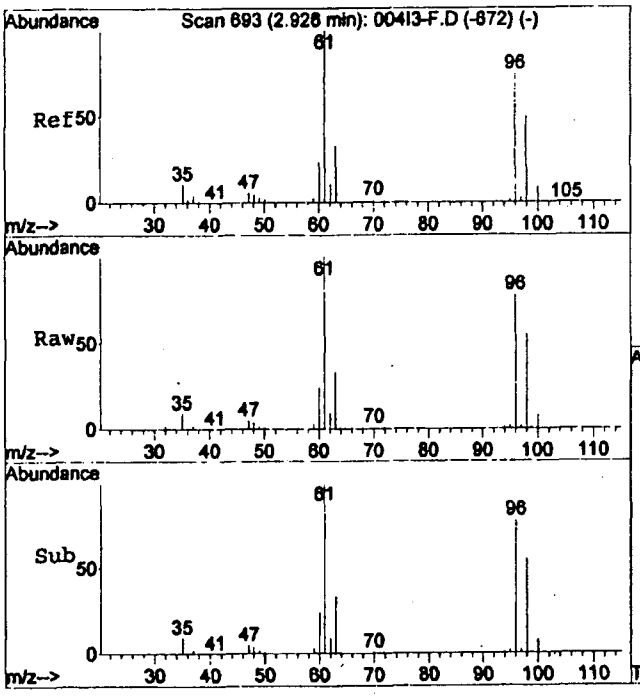


#13
1,1-Dichloroethane
Concen: 23.04 ppm
RT: 2.49 min Scan# 559
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 63 Resp: 337719

Ion	Ratio	Lower	Upper
63	100		
83	15.2	10.7	19.9
65	31.7	22.1	41.1

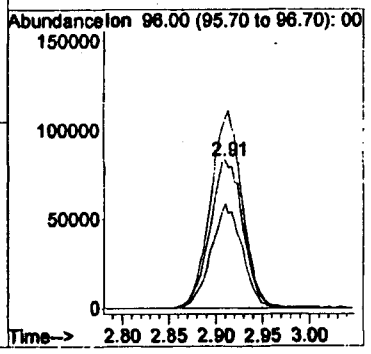


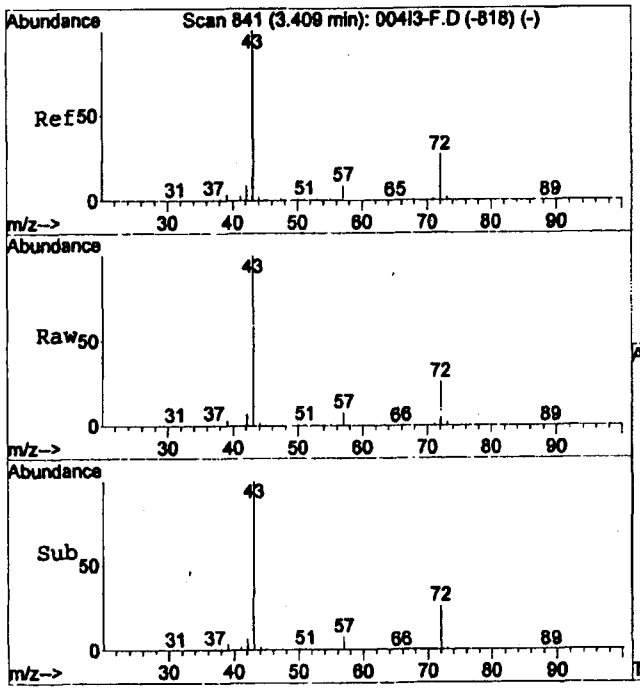


#14
cis-1,2-Dichloroethene
Concen: 24.18 ppm
RT: 2.91 min Scan# 688
Delta R.T. -0.02 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 96 Resp: 203720

Ion	Ratio	Lower	Upper
96	100		
61	128.4	94.0	174.6
98	66.2	45.2	84.0

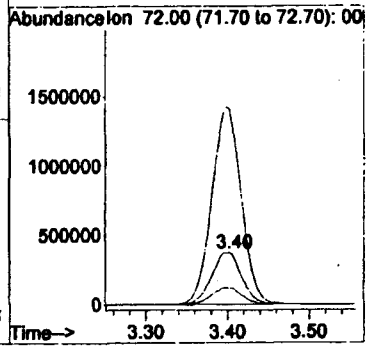


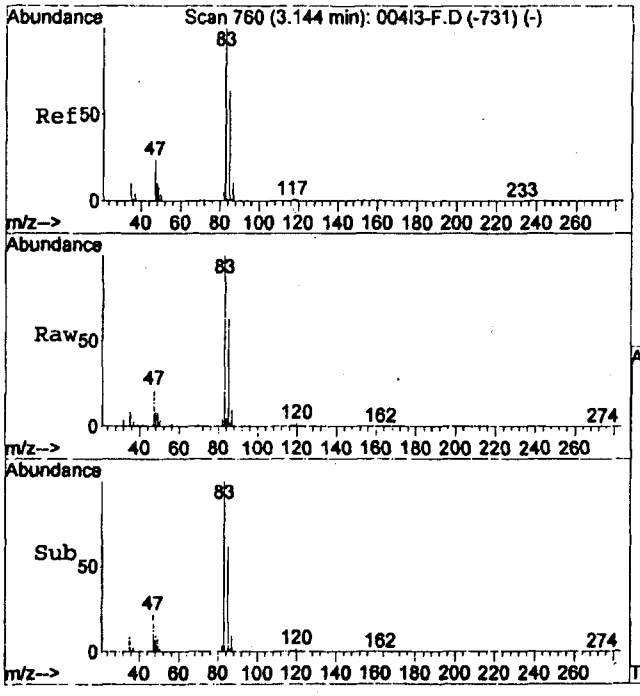


#15
Methyl ethyl ketone
Concen: 238.88 ppm
RT: 3.40 min Scan# 839
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 72 Resp: 956354

Ion	Ratio	Lower	Upper
72	100		
57	32.4	23.7	43.9
43	371.7	274.5	509.7

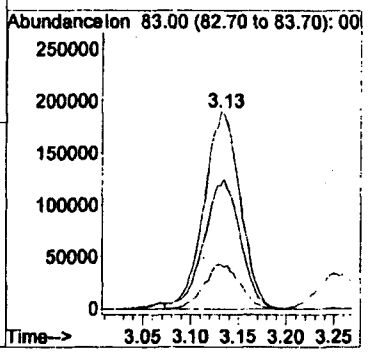


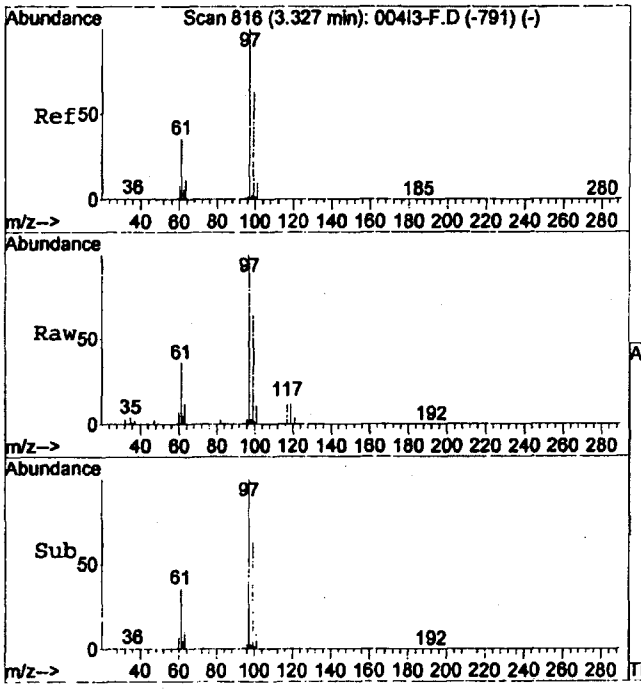


#16
Chloroform
Concen: 21.45 ppm
RT: 3.13 min Scan# 756
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 83 Resp: 497302

Ion	Ratio	Lower	Upper
83	100		
47	22.2	16.6	30.8
85	65.7	45.1	83.7

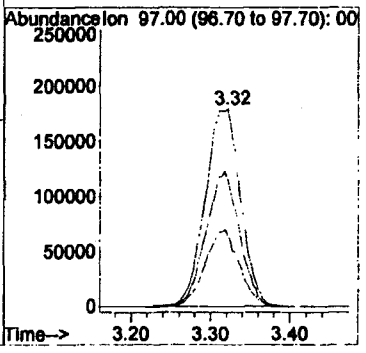


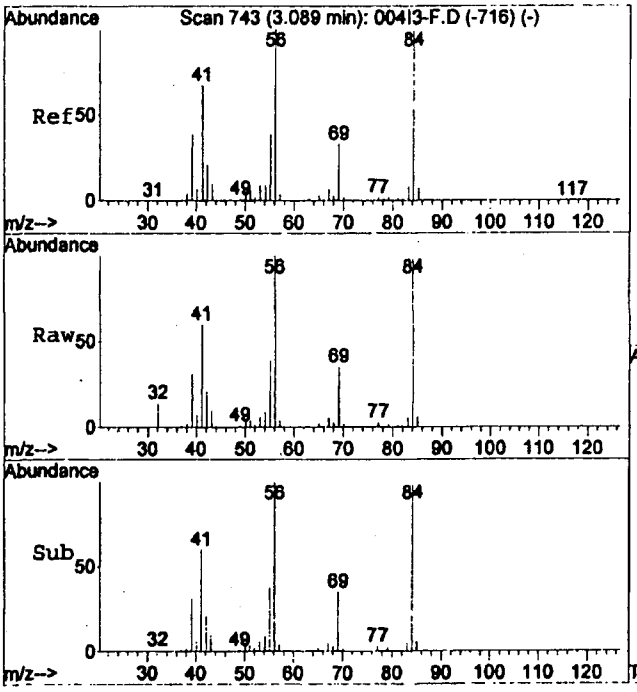


#17
1,1,1-Trichloroethane
Concen: 20.01 ppm
RT: 3.32 min Scan# 814
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 97 Resp: 551469

Ion	Ratio	Lower	Upper
97	100		
61	37.2	26.1	48.5
99	64.3	45.0	83.6

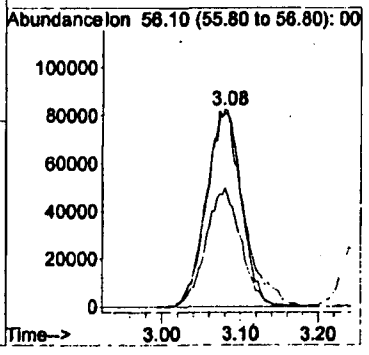


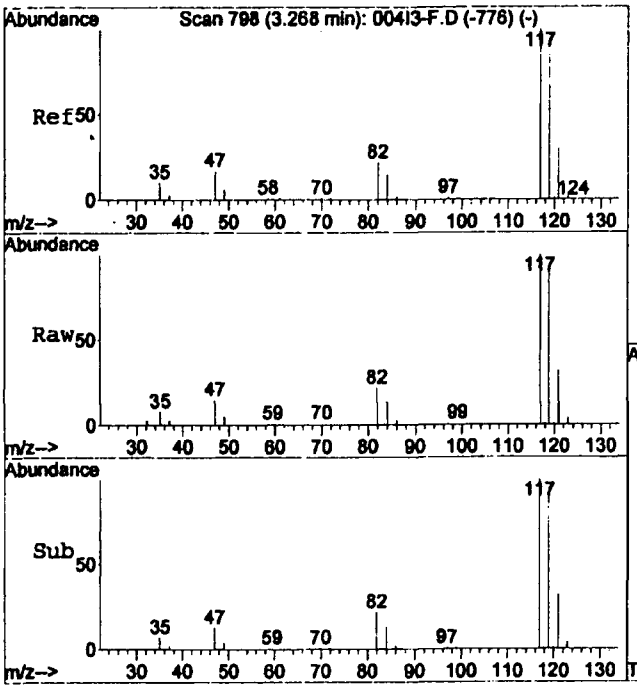


#18
Cyclohexane
Concen: 25.17 ppm
RT: 3.08 min Scan# 740
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 56 Resp: 249690

Ion	Ratio	Lower	Upper
56	100		
84	109.1	75.7	140.7
41	61.4	47.6	88.4

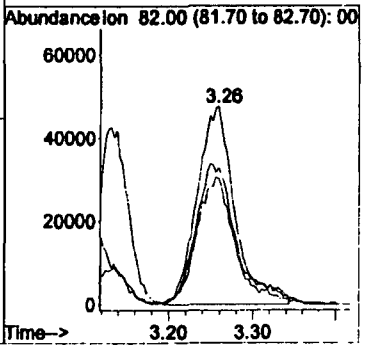


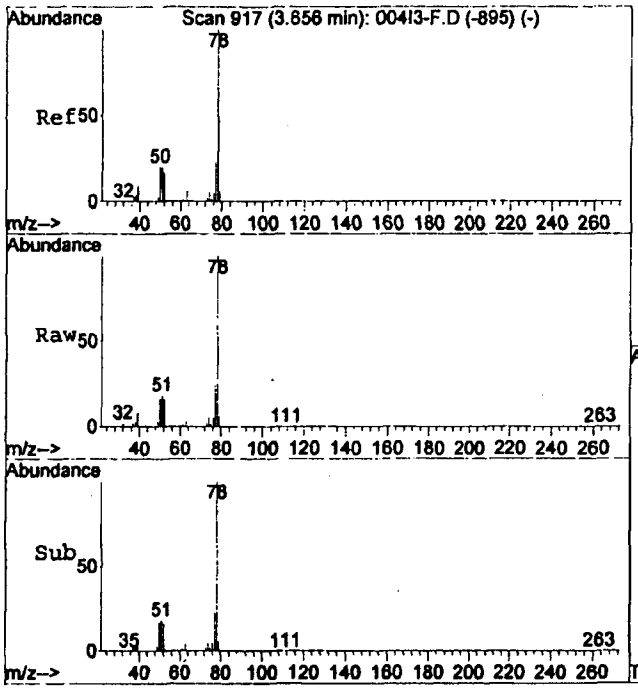


#19
Carbon Tetrachloride
Concen: 19.91 ppm
RT: 3.26 min Scan# 795
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 82 Resp: 148413

Ion	Ratio	Lower	Upper
82	100		
47	72.4	51.1	94.9
84	62.0	43.1	80.1

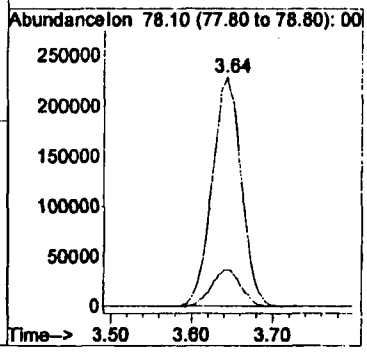


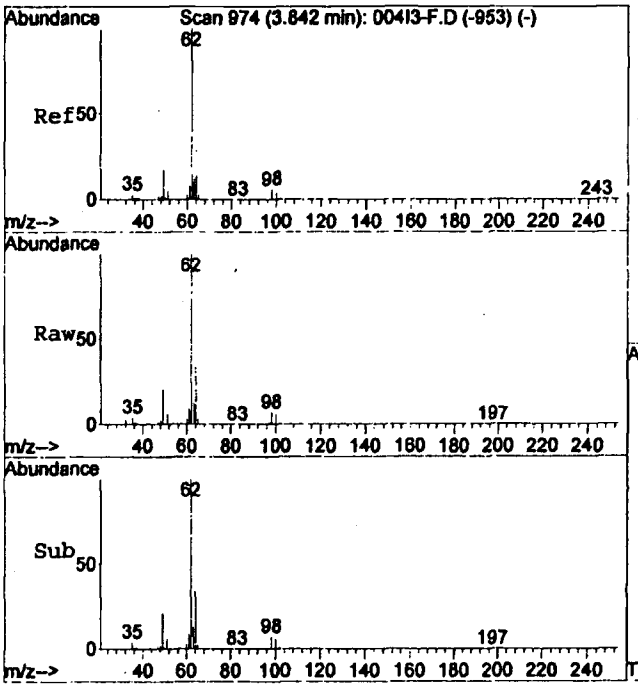


#20
Benzene
Concen: 24.30 ppm
RT: 3.64 min Scan# 913
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 78 Resp: 572316

Ion	Ratio	Lower	Upper
78	100		
52	16.0	11.6	21.6

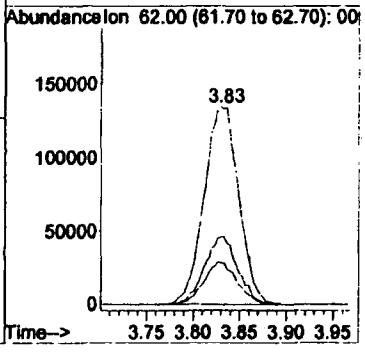


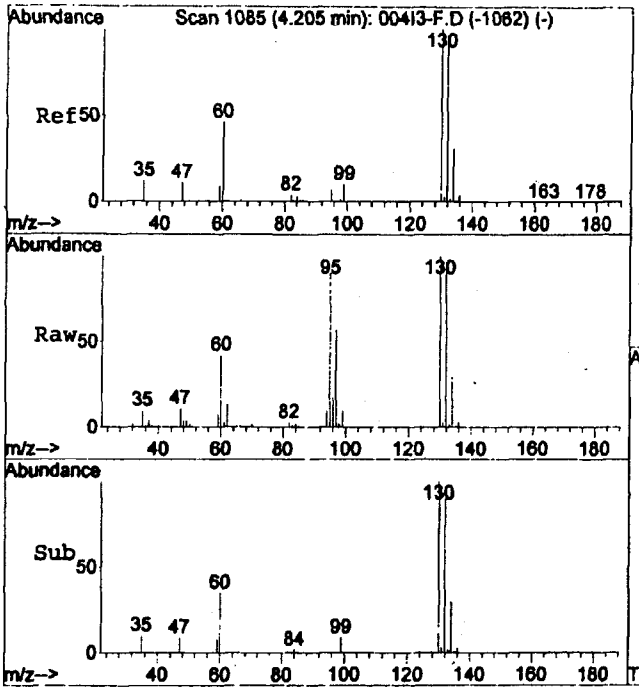


#21
1,2-Dichloroethane
Concen: 19.96 ppm
RT: 3.83 min Scan# 970
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 62 Resp: 347515

Ion	Ratio	Lower	Upper
62	100		
49	20.4	12.7	23.7
64	32.7	22.4	41.6

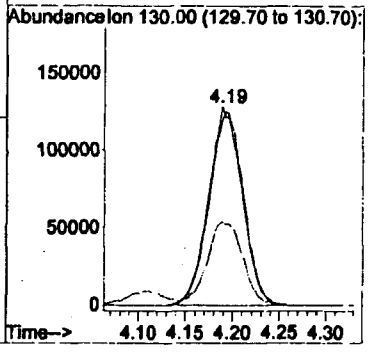


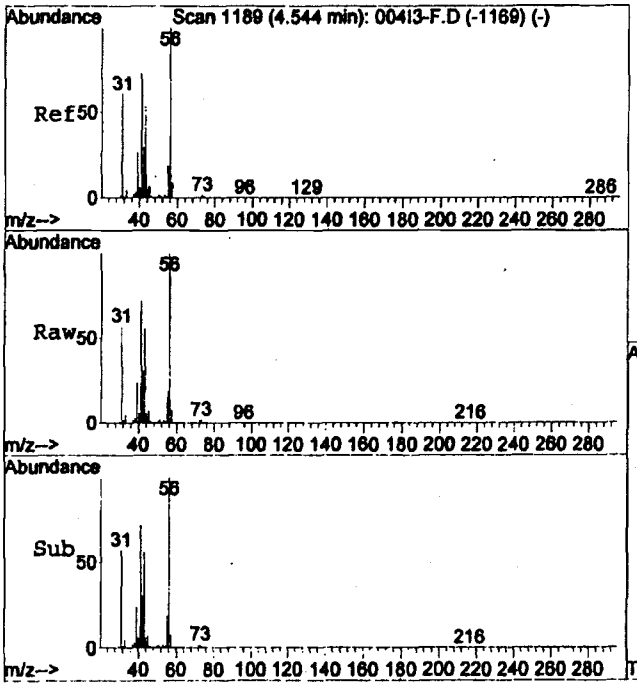


#22
Trichloroethene
Concen: 23.59 ppm
RT: 4.19 min Scan# 1080
Delta R.T. -0.02 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:130 Resp: 318413

Ion	Ratio	Lower	Upper
130	100		
60	43.9	35.2	65.4
132	97.1	68.0	126.4

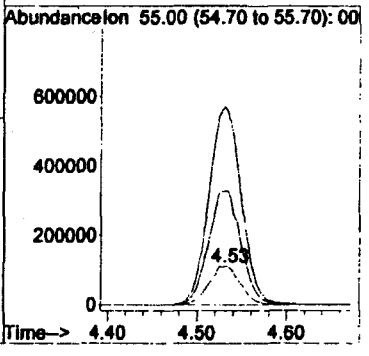


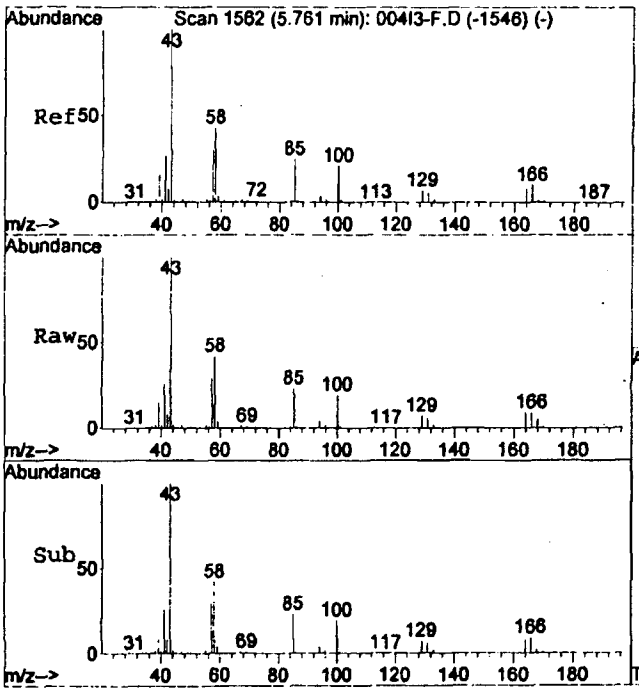


#23
Butanol
Concen: 231.01 ppm
RT: 4.53 min Scan# 1185
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 55 Resp: 272118

Ion	Ratio	Lower	Upper
55	100		
31	301.0	218.1	405.1
56	521.8	355.3	659.9

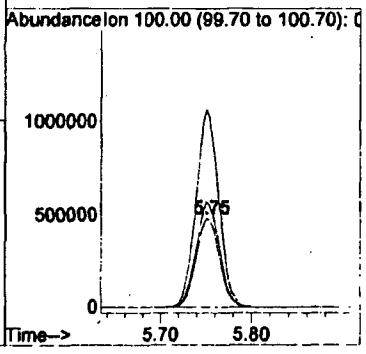


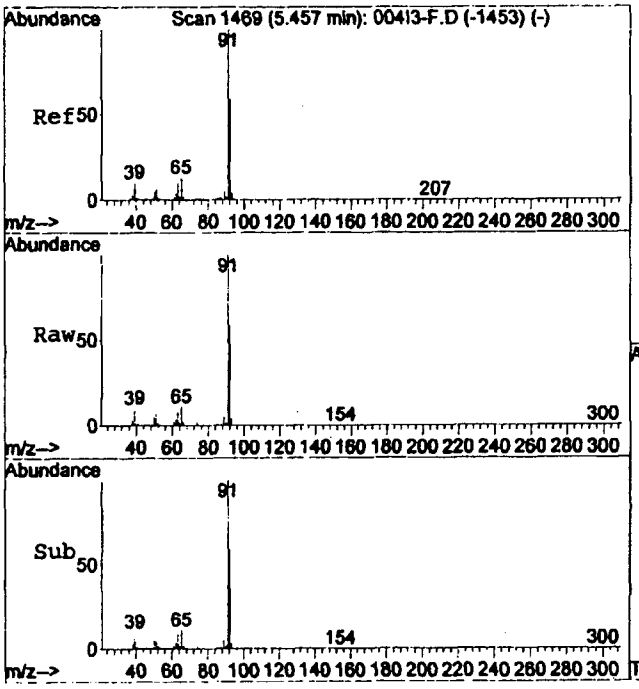


#25
Methyl isobutyl ketone
Concen: 232.22 ppm
RT: 5.75 min Scan# 1559
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:100 Resp: 849951

Ion	Ratio	Lower	Upper
100	100		
58	215.8	144.8	268.8
85	116.7	81.6	151.6

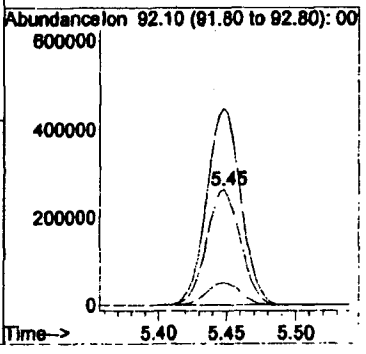


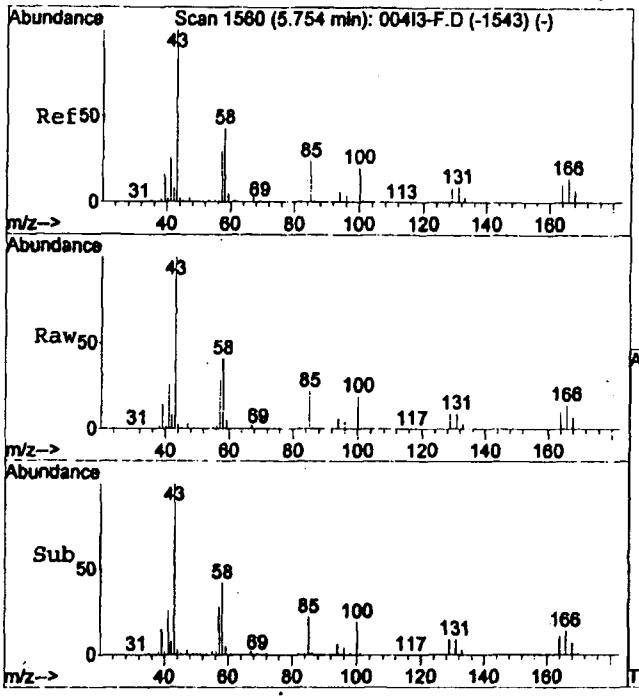


#26
Toluene
Concen: 24.94 ppm
RT: 5.45 min Scan# 1466
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 92 Resp: 452040

Ion	Ratio	Lower	Upper
92	100		
91	171.2	120.1	223.1
65	19.5	14.4	26.8

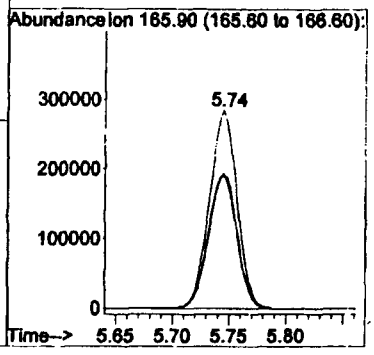


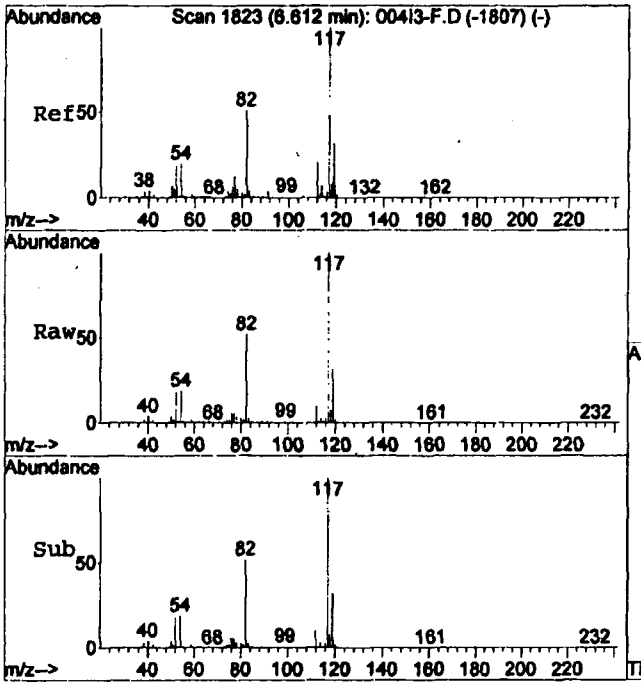


#27
Tetrachloroethene
Concen: 22.12 ppm
RT: 5.74 min Scan# 1557
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:166 Resp: 481535

Ion	Ratio	Lower	Upper
166	100		
129	70.4	46.3	86.1
131	69.2	45.7	84.9

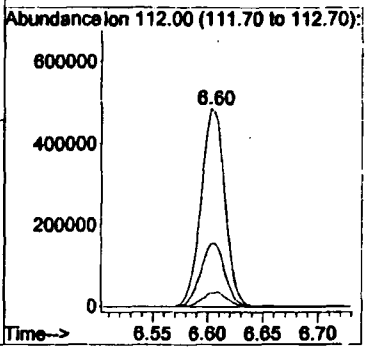


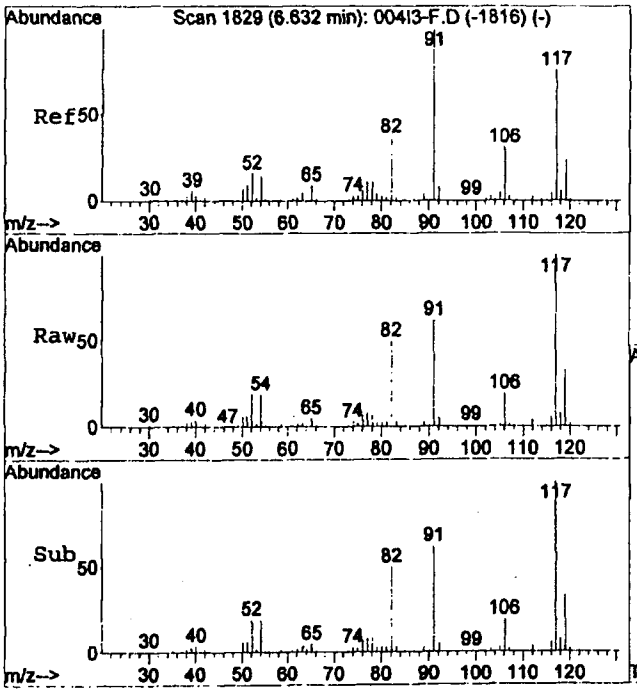


#28
Chlorobenzene
Concen: 23.36 ppm
RT: 6.60 min Scan# 1820
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:112 Resp: 723220

Ion	Ratio	Lower	Upper
112	100		
56	7.2	2.7	5.1#
114	32.5	23.0	42.6

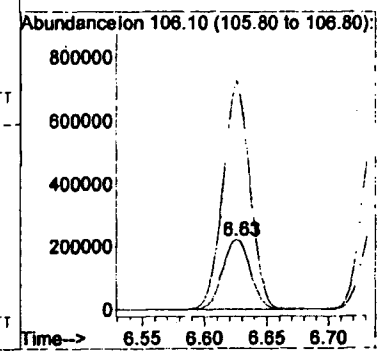


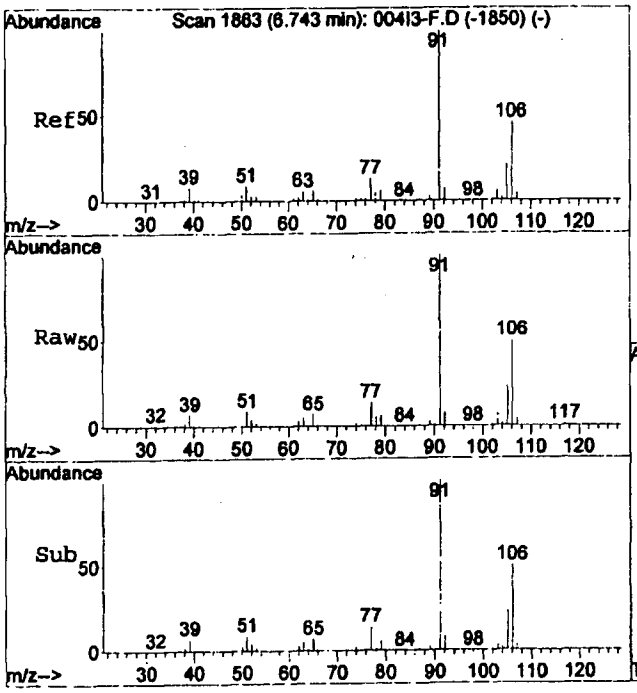


#29
Ethylbenzene
Concen: 22.94 ppm
RT: 6.63 min Scan# 1827
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:106 Resp: 341188

Ion	Ratio	Lower	Upper
106	100		
91	319.4	225.4	418.6

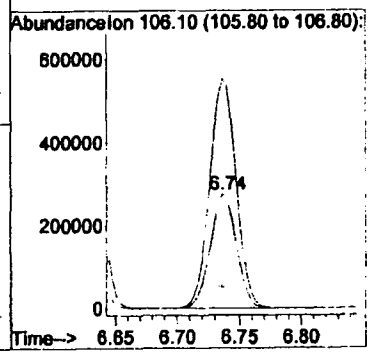


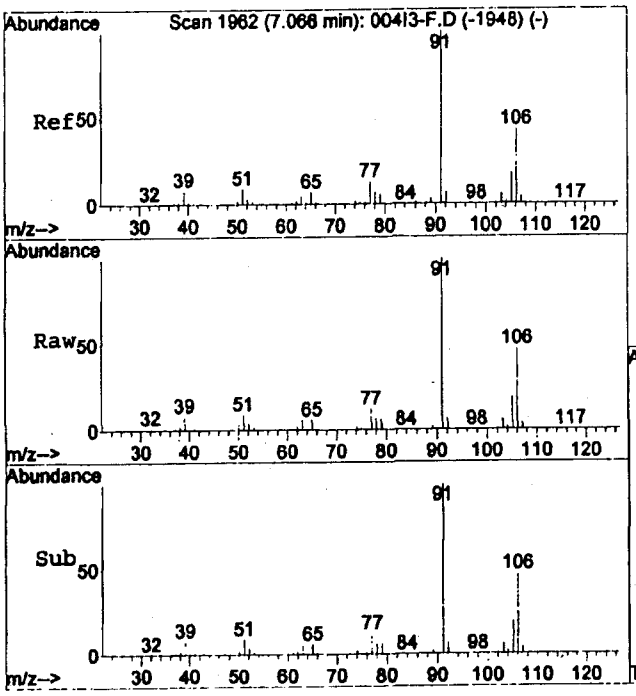


#30
m and p-xylene
Concen: 23.64 ppm
RT: 6.74 min Scan# 1861
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:106 Resp: 398787

Ion	Ratio	Lower	Upper
106	100		
91	202.9	150.8	280.1

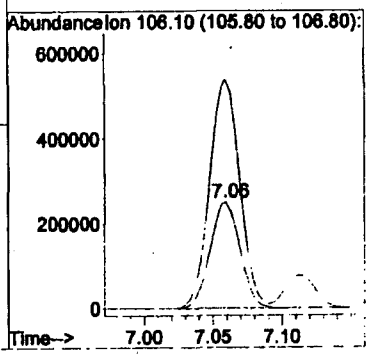


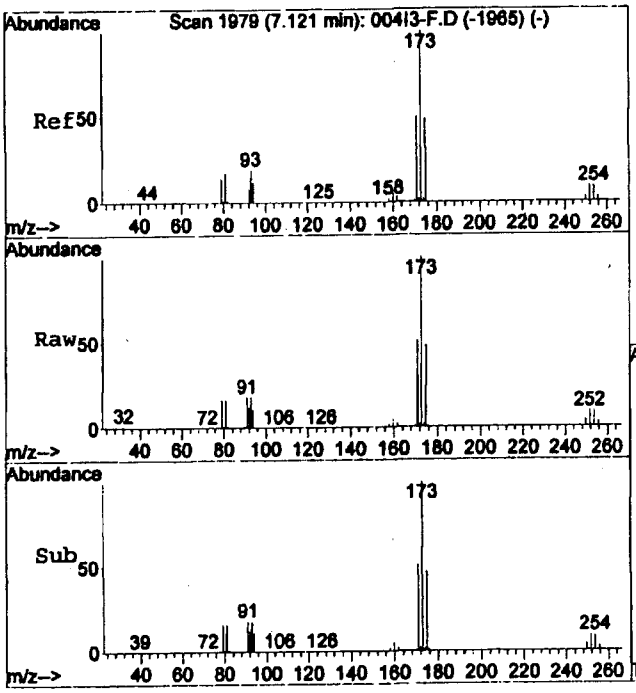


#31
o-xylene
Concen: 23.23 ppm
RT: 7.06 min Scan# 1960
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:106 Resp: 375104

Ion	Ratio	Lower	Upper
106	100		
91	216.6	159.0	295.4

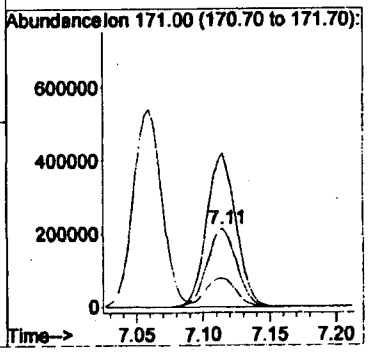


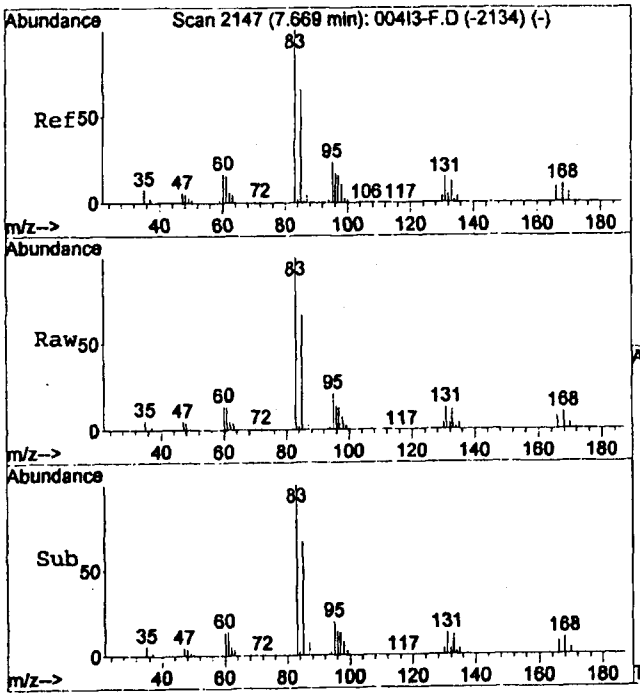


#32
Bromoform
Concen: 22.49 ppm
RT: 7.11 min Scan# 1977
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:171 Resp: 325593

Ion	Ratio	Lower	Upper
171	100		
91	37.1	26.7	49.5
173	194.2	137.5	255.4

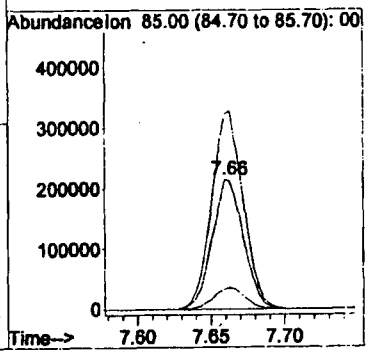


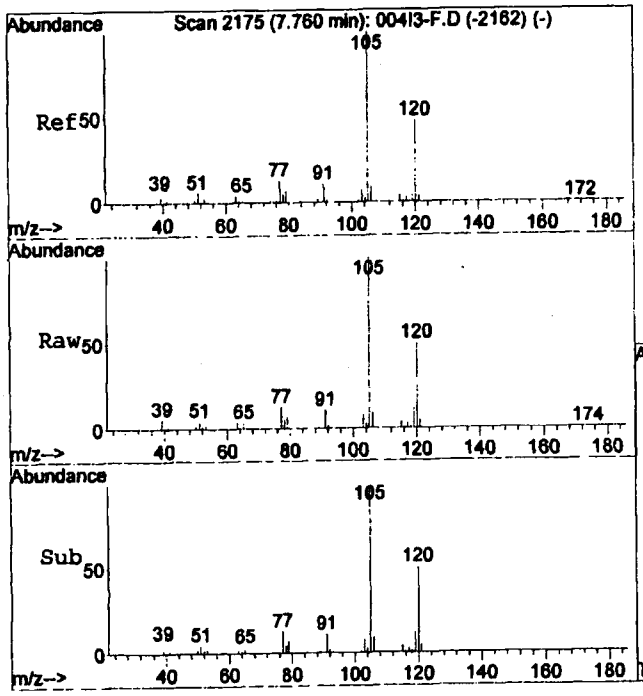


#34
1,1,2,2-Tetrachloroethane
Concen: 23.65 ppm
RT: 7.66 min Scan# 2144
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion: 85 Resp: 316602

Ion	Ratio	Lower	Upper
85	100		
168	16.4	12.2	22.6
83	153.8	106.9	198.5

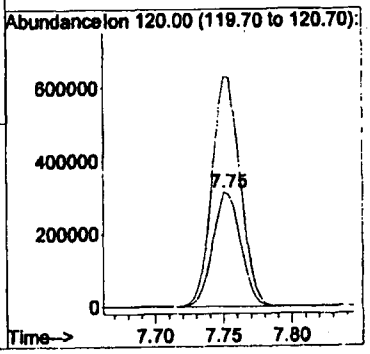


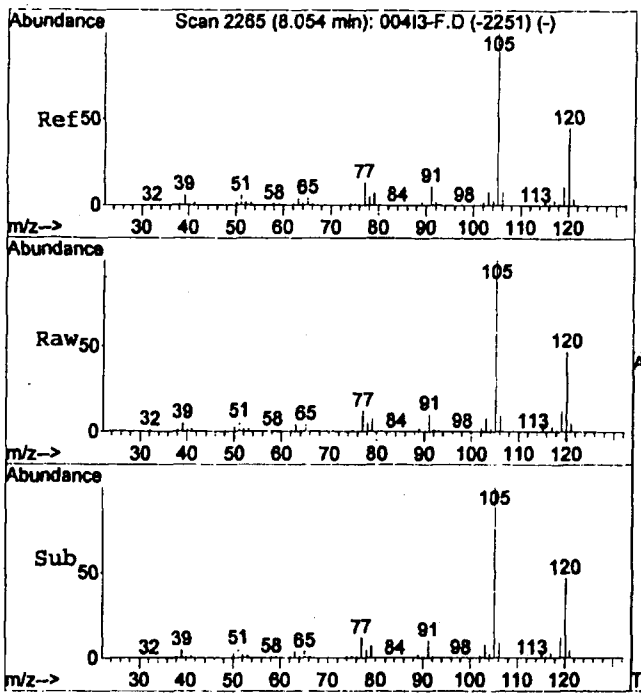


#35
1,3,5-Trimethylbenzene
Concen: 21.02 ppm
RT: 7.75 min Scan# 2172
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:120 Resp: 444450

Ion	Ratio	Lower	Upper
120	100		
105	203.2	146.9	272.7

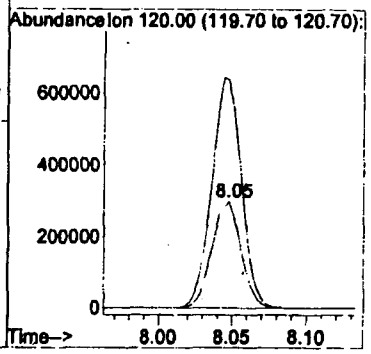




#36
1,2,4-Trimethylbenzene
Concen: 20.59 ppm
RT: 8.05 min Scan# 2263
Delta R.T. -0.01 min
Lab File: 009DR-F.D
Acq: 13 Aug 2011 14:17

Tgt Ion:120 Resp: 407318

Ion	Ratio	Lower	Upper
120	100		
105	219.2	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\010DR-F.D Vial: 10
Acq On : 13 Aug 2011 14:30 Operator: SO
Sample : ic9,MDL2,2011-08-13,12:44:31,1.40242 Inst : Instrumen
Misc : HS111 00014B-02,27.2,SO, Multiplr: 1.40
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 15 10:31:47 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
3) Fluorobenzene	4.10	96	9420070	201.00 ppm		-0.02
24) Chlorobenzene-d5	6.60	117	8366684	176.00 ppm		-0.02
System Monitoring Compounds						
33) 4-Bromofluorobenzene	7.50	95	2212900	51.04 ppm		-0.02
Target Compounds						Qvalue
1) Hydrogen	2.79	GC1	36533	0.5057 perce		100
2) Methane	5.76	GC1	17393	0.5086 perce		100
4) Chloromethane	0.89	50	102612	22.2321 ppm		99
5) Methanol	1.08	31	259301	198.5485 ppm		100
6) Ethyl ether	1.36	59	100097	22.5711 ppm		98
7) 1,1-Dichloroethene	1.49	96	188723	23.5430 ppm		92
8) 1,1,2-Trichloro-1,2,2-Trif	1.52	101	461089	22.7031 ppm		98
9) Acetone	1.93	58	714447	247.5437 ppm		74
10) Carbon Disulfide	1.52	76	506149	24.2892 ppm		96
11) Methylene chloride	1.90	84	163783	25.2205 ppm		91
12) trans-1,2-Dichloroethene	2.02	96	214162	25.2464 ppm		93
13) 1,1-Dichloroethane	2.49	63	343998	22.9626 ppm		99
14) cis-1,2-Dichloroethene	2.91	96	214803	24.9418 ppm		94
15) Methyl ethyl ketone	3.39	72	982853	240.1538 ppm		92
16) Chloroform	3.13	83	513865	21.6791 ppm		96
17) 1,1,1-Trichloroethane	3.31	97	561841	19.9435 ppm		100
18) Cyclohexane	3.08	56	263484	25.9861 ppm		96
19) Carbon Tetrachloride	3.25	82	141160	18.5210 ppm		94
20) Benzene	3.63	78	595377	24.7341 ppm		97
21) 1,2-Dichloroethane	3.82	62	348216	19.5648 ppm		96
22) Trichloroethene	4.18	130	329811	23.9014 ppm		96
23) Butanol	4.52	55	280640	233.0621 ppm		93
25) Methyl isobutyl ketone	5.74	100	884441	237.9420 ppm		97
26) Toluene	5.44	92	477486	25.9431 ppm		98
27) Tetrachloroethene	5.73	166	510300	23.0854 ppm		96
28) Chlorobenzene	6.59	112	765216	24.3396 ppm	#	98
29) Ethylbenzene	6.62	106	368470	24.3936 ppm		99
30) m and p-xylene	6.73	106	430811	25.1510 ppm		93
31) o-xylene	7.05	106	414958	25.3079 ppm		93
32) Bromoform	7.10	171	351188	23.8865 ppm		99
34) 1,1,2,2-Tetrachloroethane	7.65	85	353084	25.9737 ppm		99
35) 1,3,5-Trimethylbenzene	7.74	120	526327	24.5127 ppm		97
36) 1,2,4-Trimethylbenzene	8.03	120	499353	24.8594 ppm		97

(#) = qualifier out of range (m) = manual integration
010DR-F.D VOCGAS.M Mon Aug 15 10:32:11 2011

Quantitation Report (QT Reviewed)

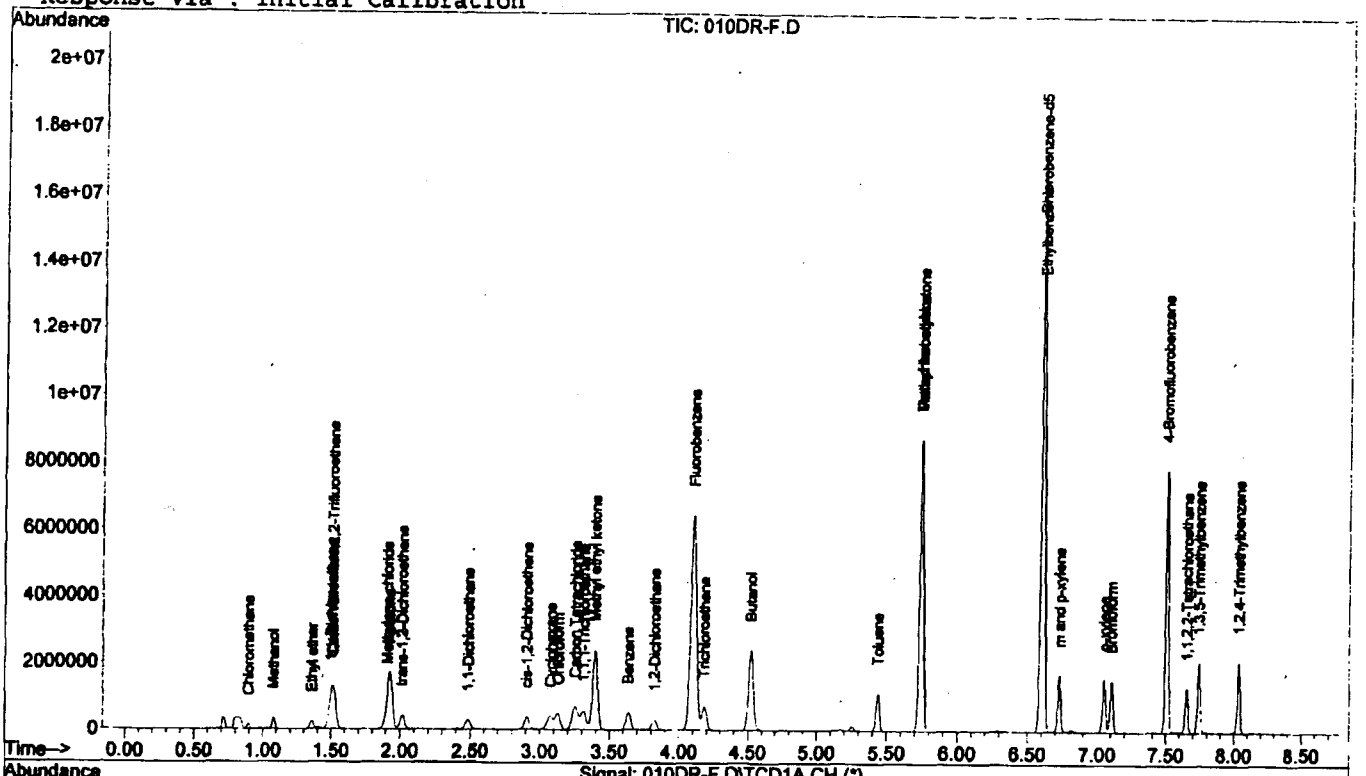
Data File : C:\HPCHEM\1\DATA\HS111 00014B\010DR-F.D
Acq On : 13 Aug 2011 14:30
Sample : ic9,MDL2,2011-08-13,12:44:31,1.40242
Misc : HS111 00014B-02,27.2,SO;

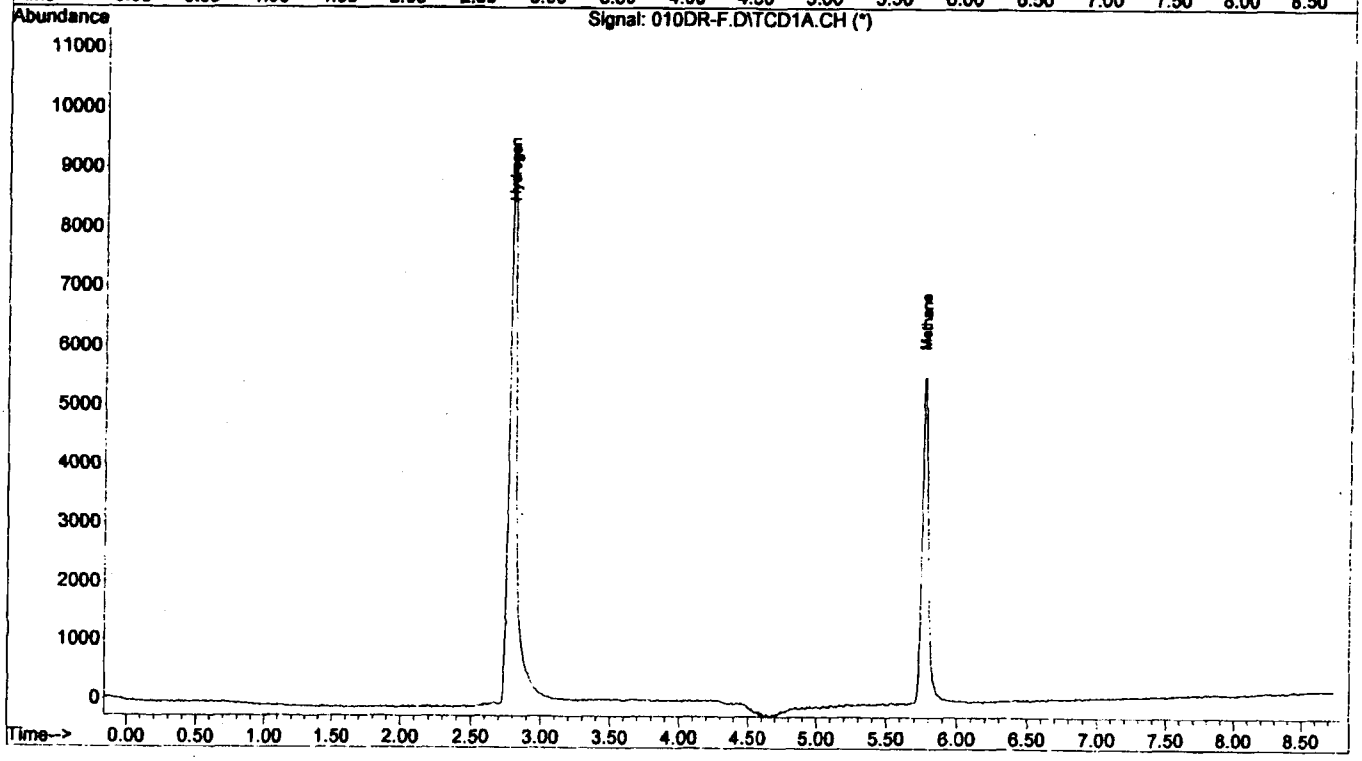
Vial: 10
Operator: SO
Inst : Instrumen
Multiplr: 1.40
Sample Amount: 0.00

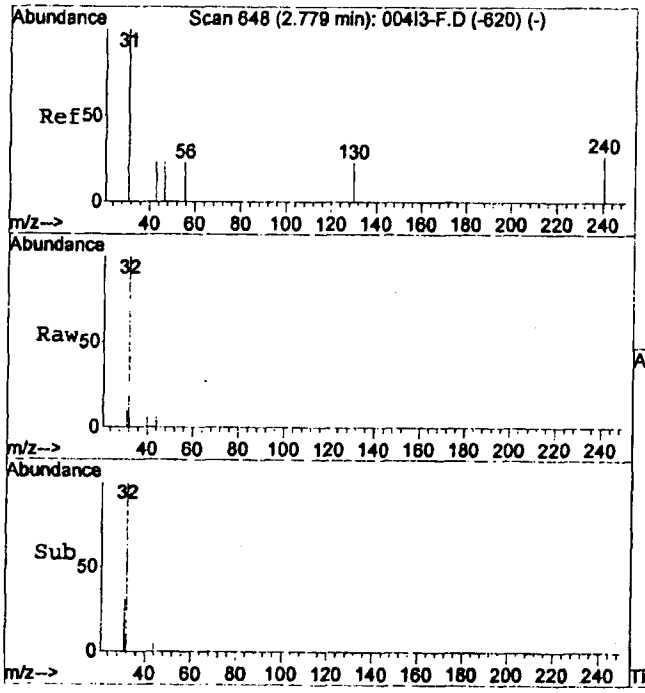
MS Integration Params: RTEINT.P
Quant Time: Aug 15 10:31 2011

GC Integration Params: RTEINT2.P
Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

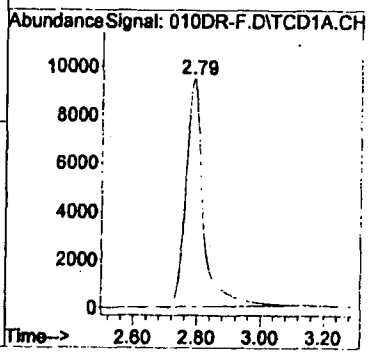


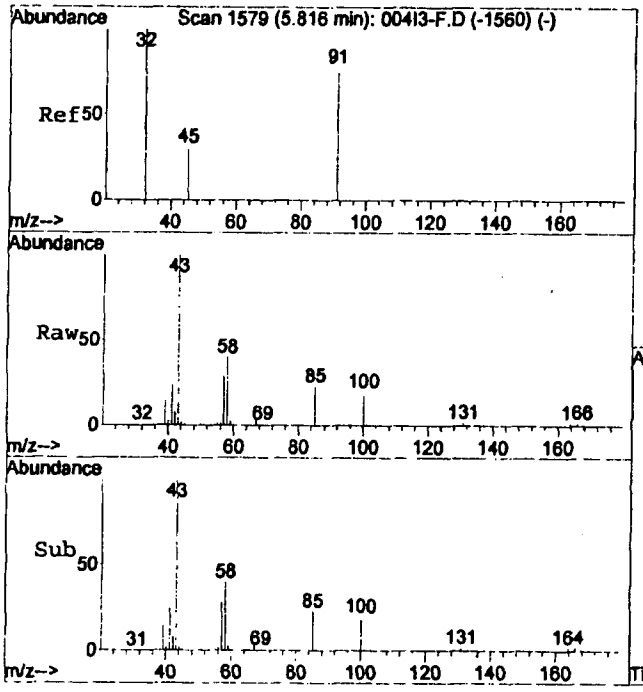




#1
Hydrogen
Concen: 0.51 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

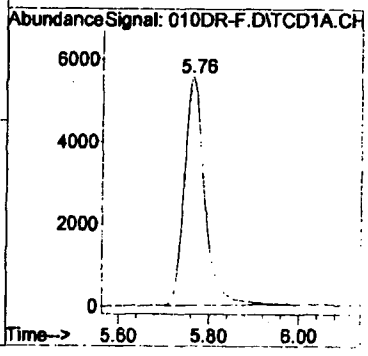
Tgt Sig:GC1 Resp: 36533

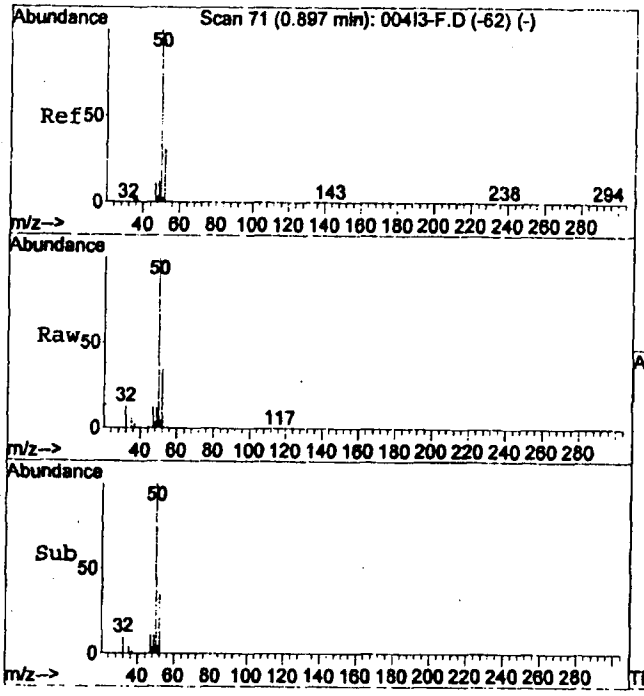




#2
Methane
Concen: 0.51 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Sig:GC1 Resp: 17393

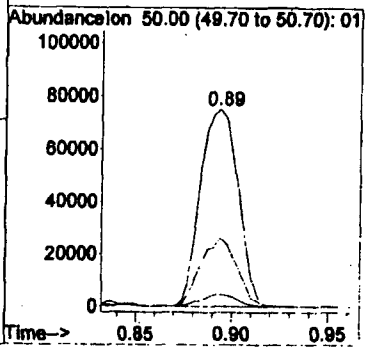


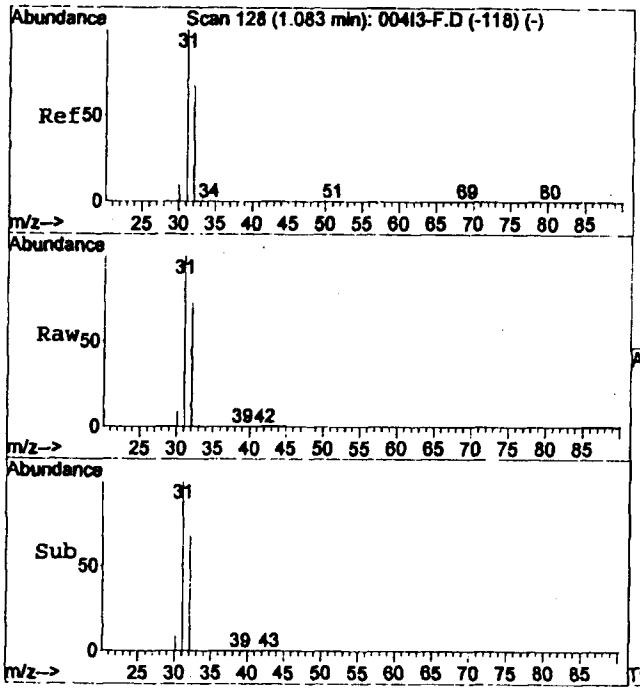


#4
Chloromethane
Concen: 22.23 ppm
RT: 0.89 min Scan# 70
Delta R.T. -0.00 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 50 Resp: 102612

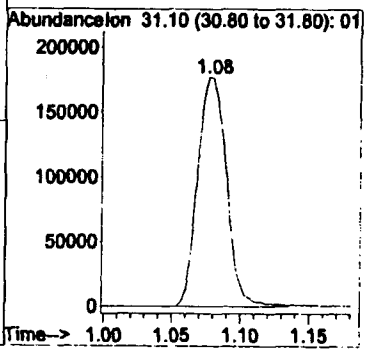
Ion	Ratio	Lower	Upper
50	100		
35	5.7	5.3	9.8
52	33.5	23.2	43.2

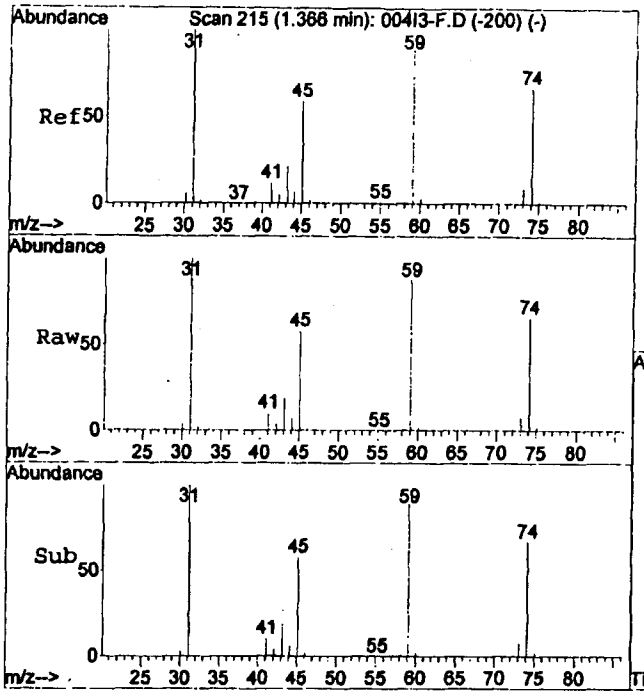




#5
Methanol
Concen: 198.55 ppm
RT: 1.08 min Scan# 126
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 31 Resp: 259301

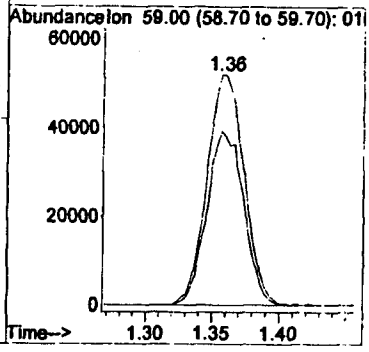


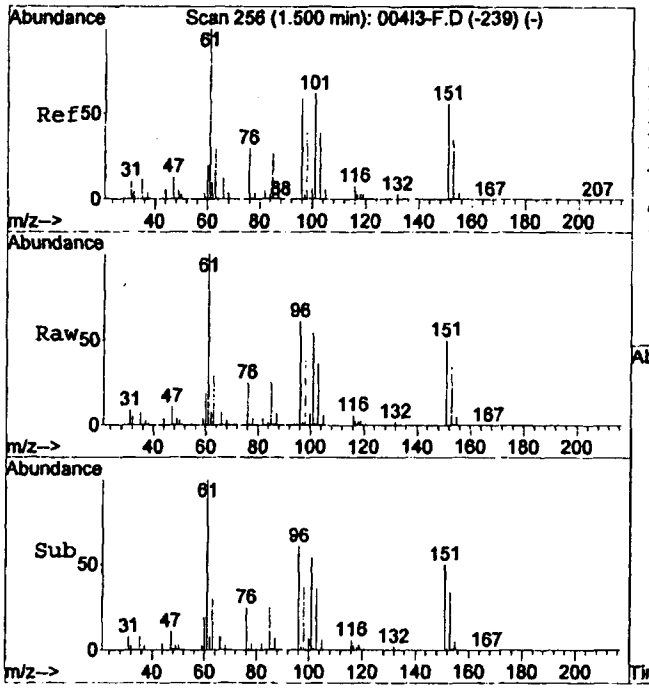


#6
Ethyl ether
Concen: 22.57 ppm
RT: 1.36 min Scan# 212
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 59 Resp: 100097

Ion	Ratio	Lower	Upper
59	100		
74	75.1	51.7	95.9

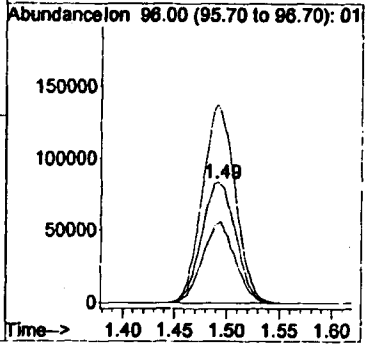


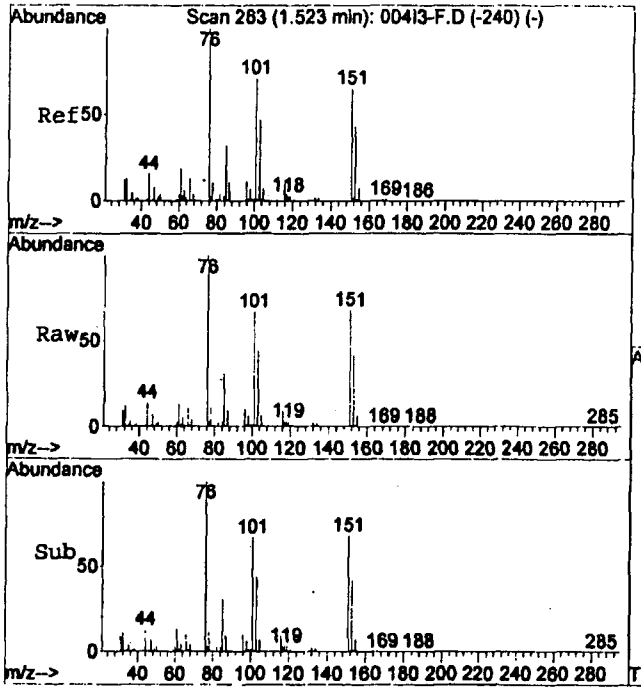


#7
1,1-Dichloroethene
Concen: 23.54 ppm
RT: 1.49 min Scan# 253
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 96 Resp: 188723

Ion	Ratio	Lower	Upper
96	100		
61	158.8	121.2	225.0
98	63.7	44.9	83.3

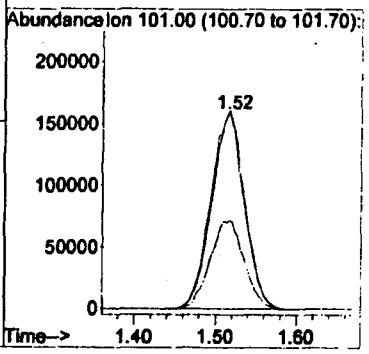


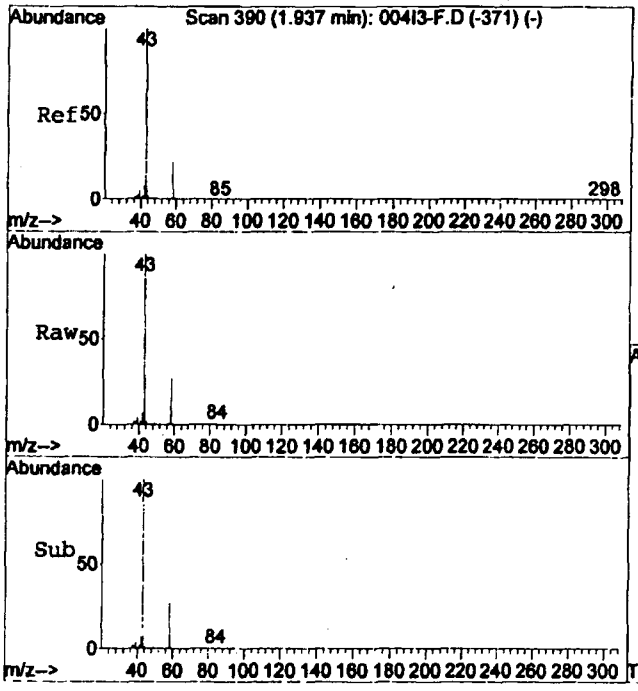


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.70 ppm
RT: 1.52 min Scan# 261
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:101 Resp: 461089

Ion	Ratio	Lower	Upper
101	100		
85	45.3	32.3	59.9
151	97.2	66.8	124.2

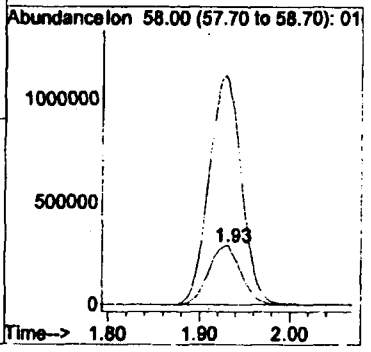


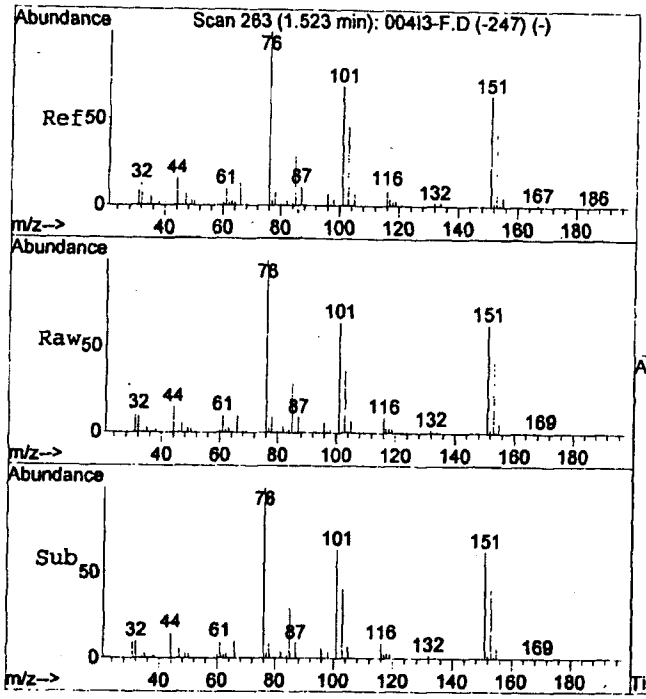


#9
Acetone
Concen: 247.54 ppm
RT: 1.93 min Scan# 388
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 58 Resp: 714447

Ion	Ratio	Lower	Upper
58	100		
43	387.9	317.7	590.1

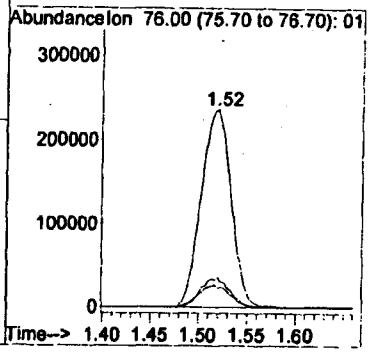


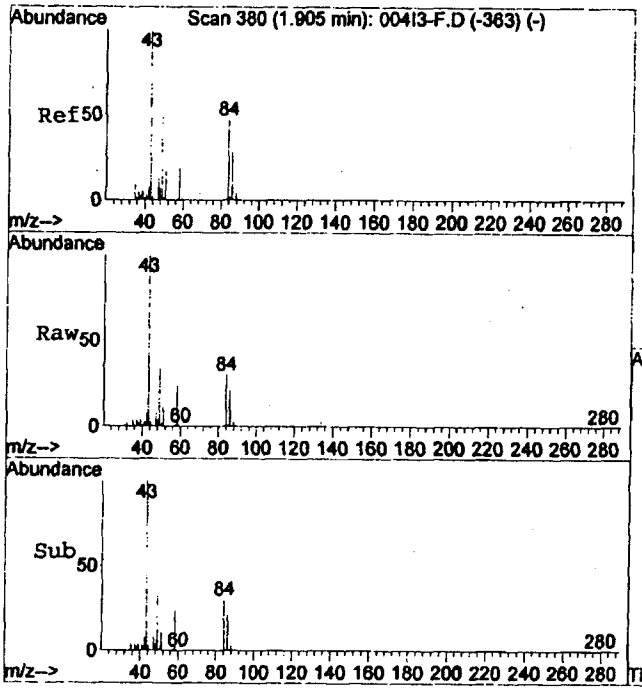


#10
Carbon Disulfide
Concen: 24.29 ppm
RT: 1.52 min Scan# 262
Delta R.T. -0.00 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 76 Resp: 506149

Ion	Ratio	Lower	Upper
76	100		
44	14.8	11.5	21.5
78	9.5	7.6	14.2

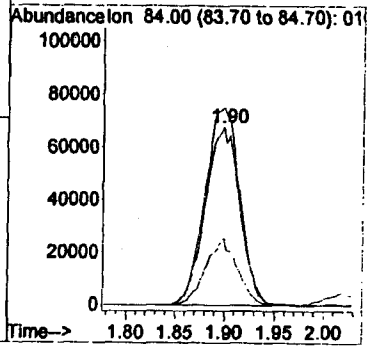


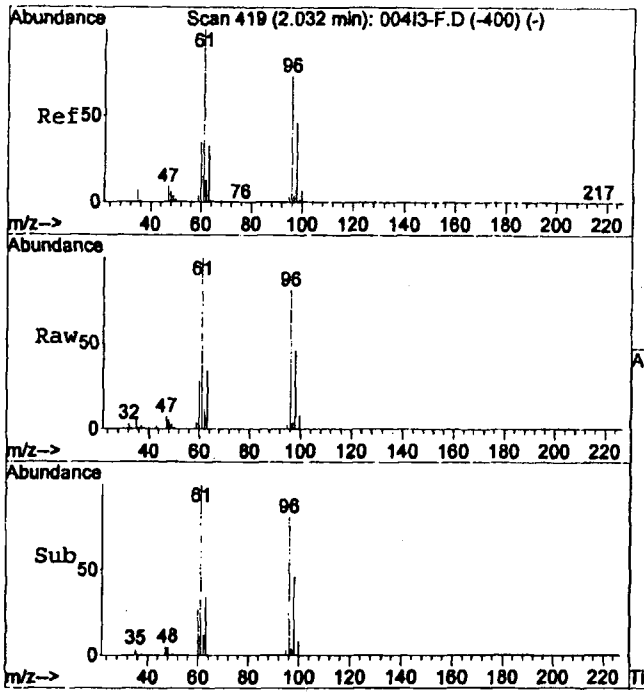


#11
Methylene chloride
Concen: 25.22 ppm
RT: 1.90 min Scan# 378
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 84 Resp: 163783

Ion	Ratio	Lower	Upper
84	100		
49	111.6	85.8	159.4
51	33.8	25.6	47.6

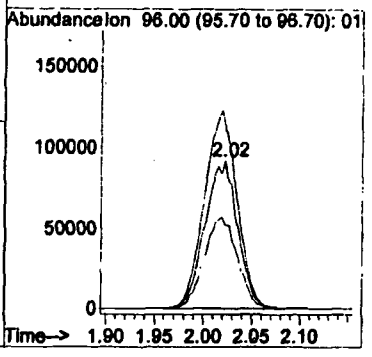


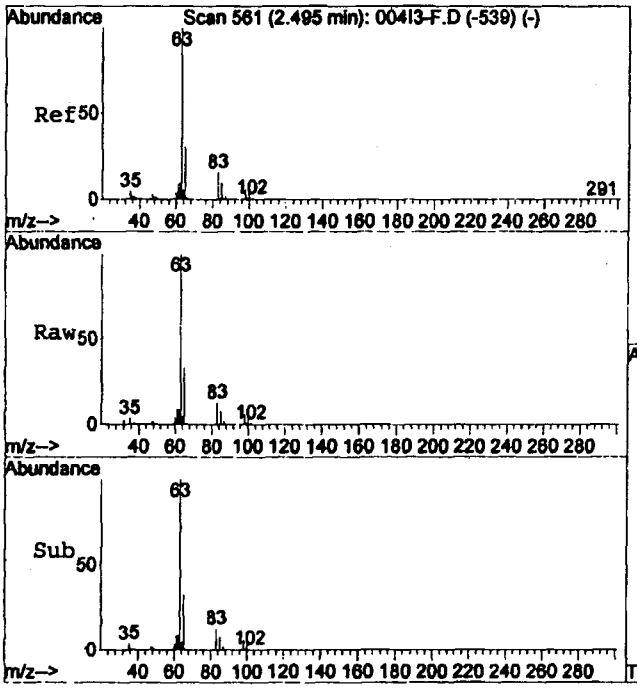


#12
trans-1,2-Dichloroethene
Concen: 25.25 ppm
RT: 2.02 min Scan# 416
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 96 Resp: 214162

Ion	Ratio	Lower	Upper
96	100		
61	133.0	100.3	186.3
98	62.5	45.6	84.8

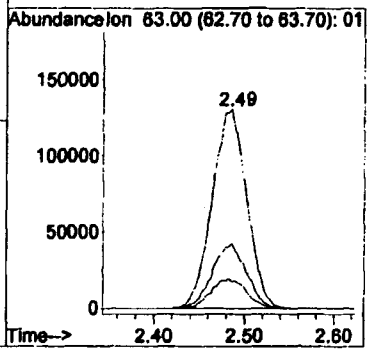


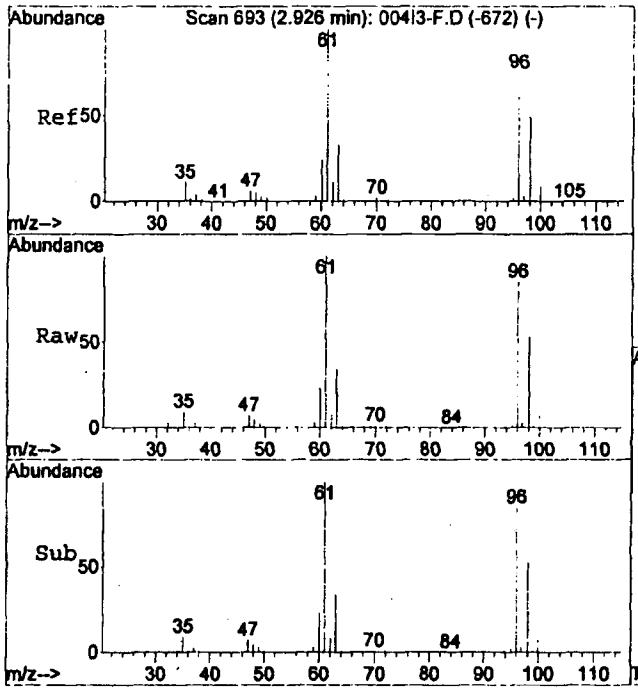


#13
1,1-Dichloroethane
Concen: 22.96 ppm
RT: 2.49 min Scan# 558
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 63 Resp: 343998

Ion	Ratio	Lower	Upper
63	100		
83	15.2	10.7	19.9
65	32.2	22.1	41.1

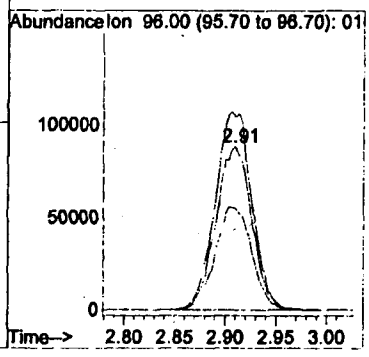


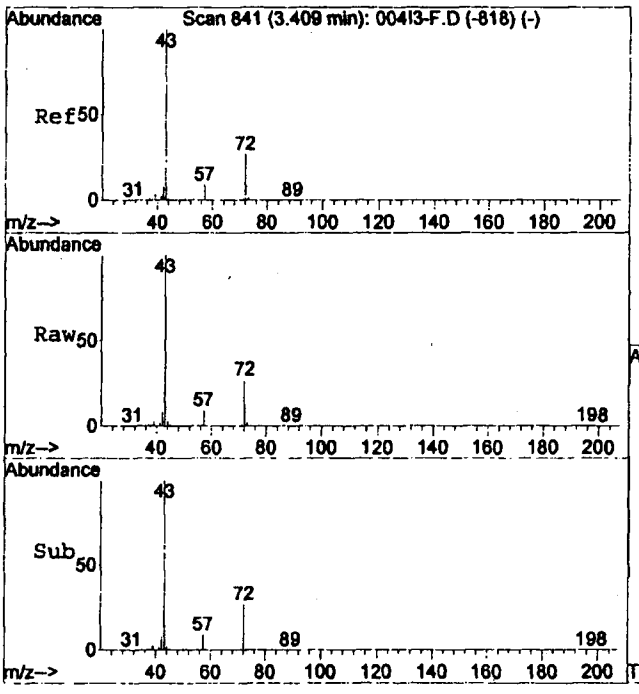


#14
cis-1,2-Dichloroethene
Concen: 24.94 ppm
RT: 2.91 min Scan# 688
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 96 Resp: 214803

Ion	Ratio	Lower	Upper
96	100		
61	124.2	94.0	174.6
98	64.0	45.2	84.0

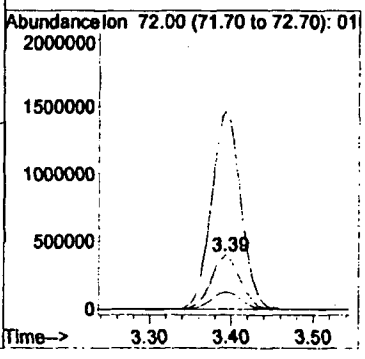


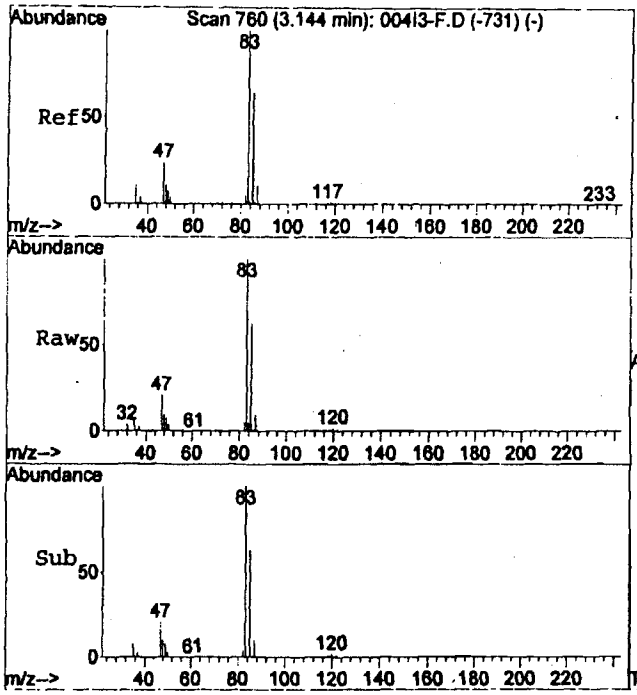


#15
Methyl ethyl ketone
Concen: 240.15 ppm
RT: 3.39 min Scan# 836
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 72 Resp: 982853

Ion	Ratio	Lower	Upper
72	100		
57	32.4	23.7	43.9
43	371.4	274.5	509.7

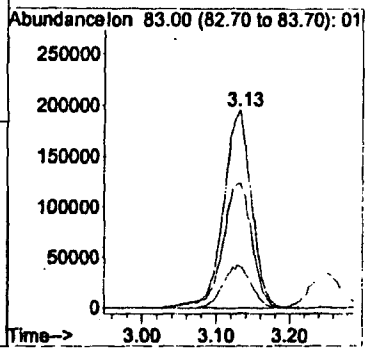


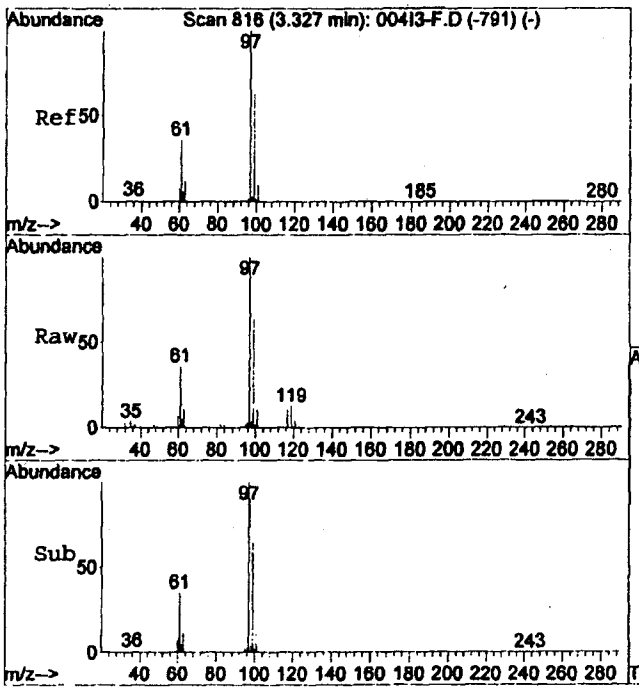


#16
Chloroform
Concen: 21.68 ppm
RT: 3.13 min Scan# 756
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 83 Resp: 513865

Ion	Ratio	Lower	Upper
83	100		
47	21.5	16.6	30.8
85	66.9	45.1	83.7

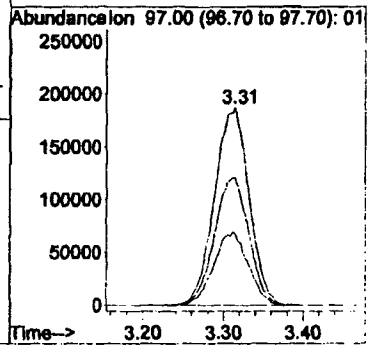


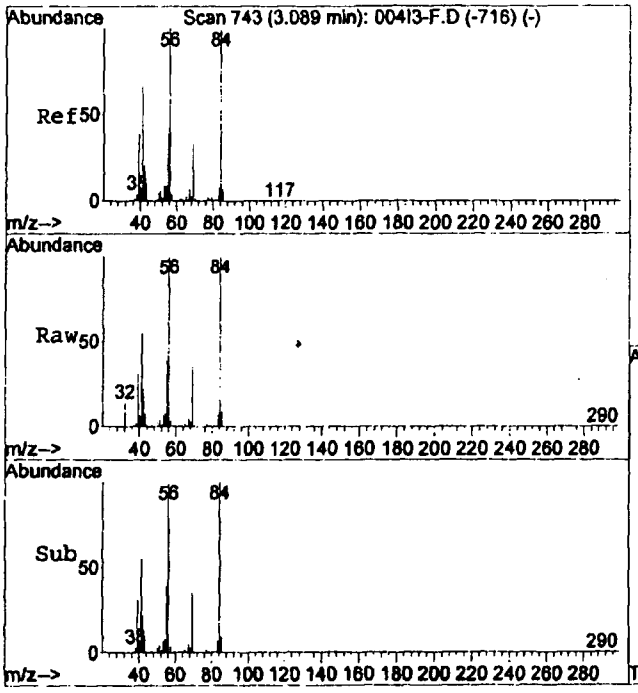


#17
1,1,1-Trichloroethane
Concen: 19.94 ppm
RT: 3.31 min Scan# 812
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 97 Resp: 561841

Ion	Ratio	Lower	Upper
97	100		
61	37.0	26.1	48.5
99	64.5	45.0	83.6

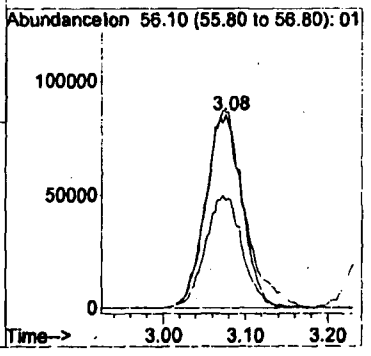


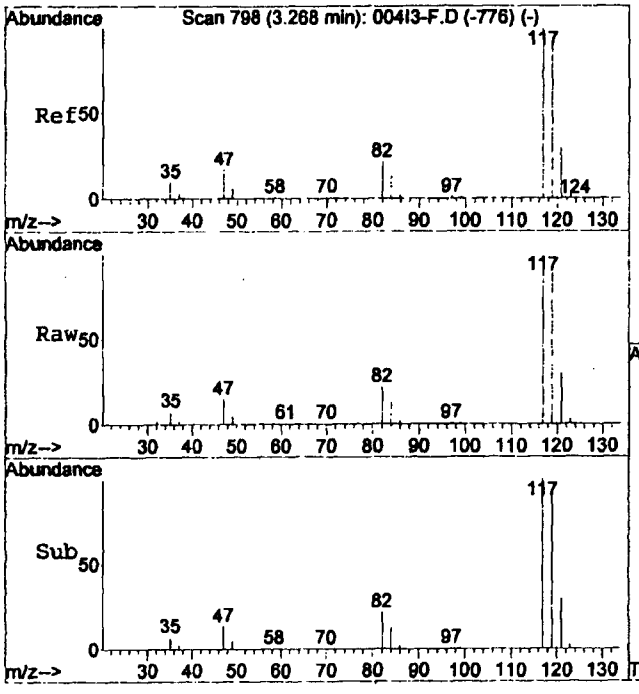


#18
Cyclohexane
Concen: 25.99 ppm
RT: 3.08 min Scan# 739
Delta R.T. -0.01 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 56 Resp: 263484

Ion	Ratio	Lower	Upper
56	100		
84	107.9	75.7	140.7
41	59.0	47.6	88.4

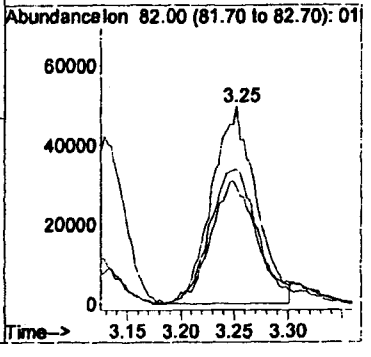


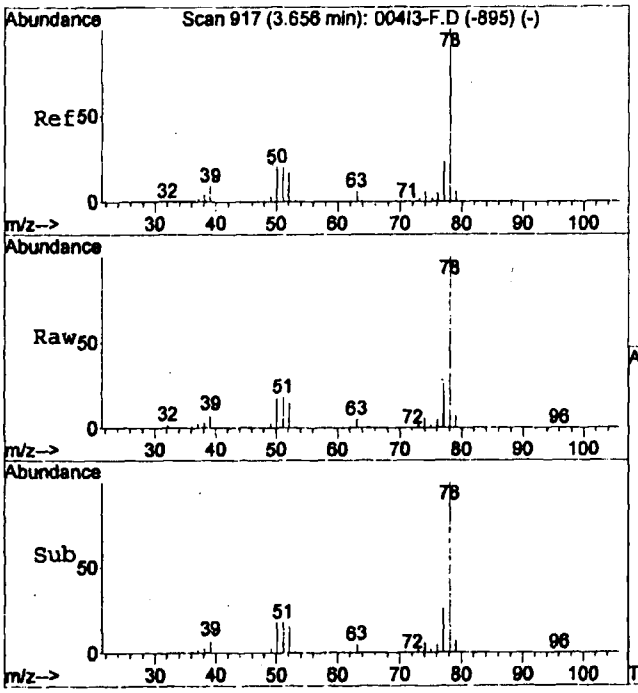


#19
Carbon Tetrachloride
Concen: 18.52 ppm
RT: 3.25 min Scan# 793
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 82 Resp: 141160

Ion	Ratio	Lower	Upper
82	100		
47	77.5	51.1	94.9
84	66.4	43.1	80.1

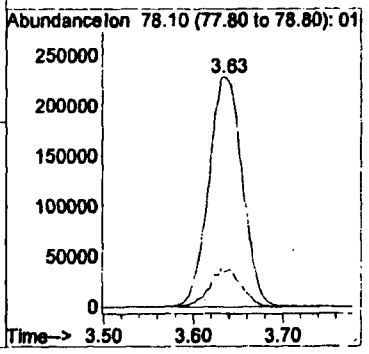


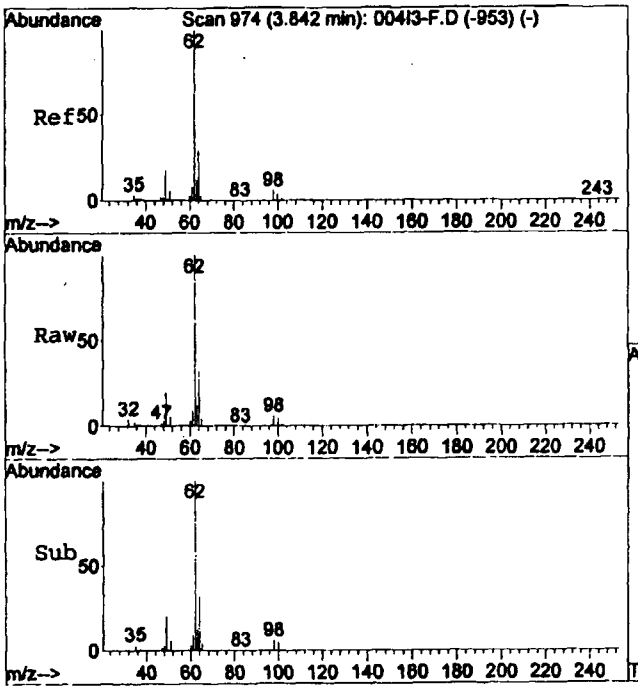


#20
Benzene
Concen: 24.73 ppm
RT: 3.63 min Scan# 910
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 78 Resp: 595377

Ion	Ratio	Lower	Upper
78	100		
52	15.5	11.6	21.6

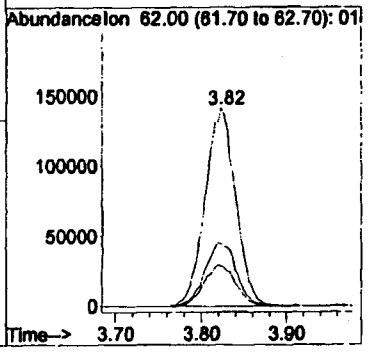


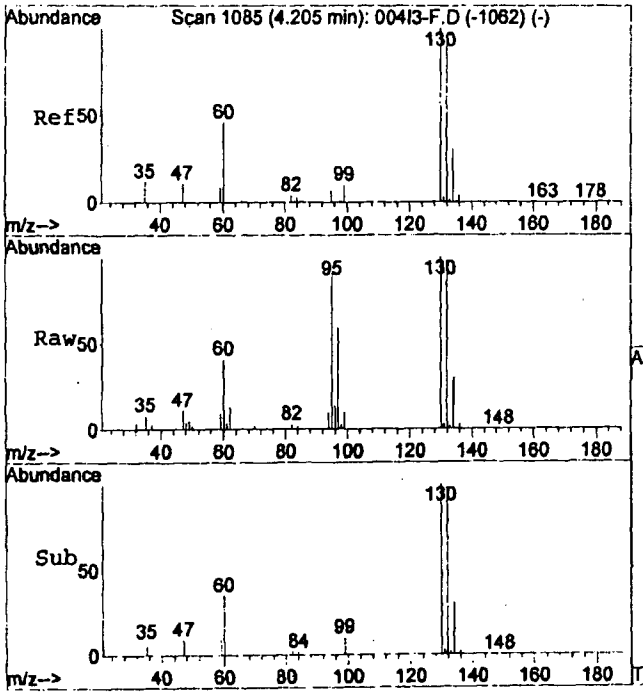


#21
1,2-Dichloroethane
Concen: 19.56 ppm
RT: 3.82 min Scan# 968
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 62 Resp: 348216

Ion	Ratio	Lower	Upper
62	100		
49	21.4	12.7	23.7
64	32.9	22.4	41.6

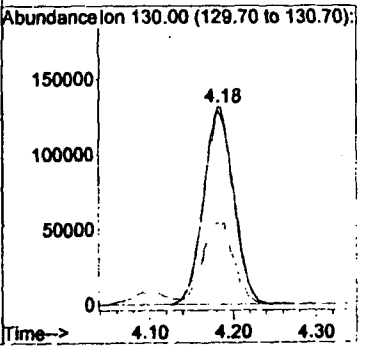


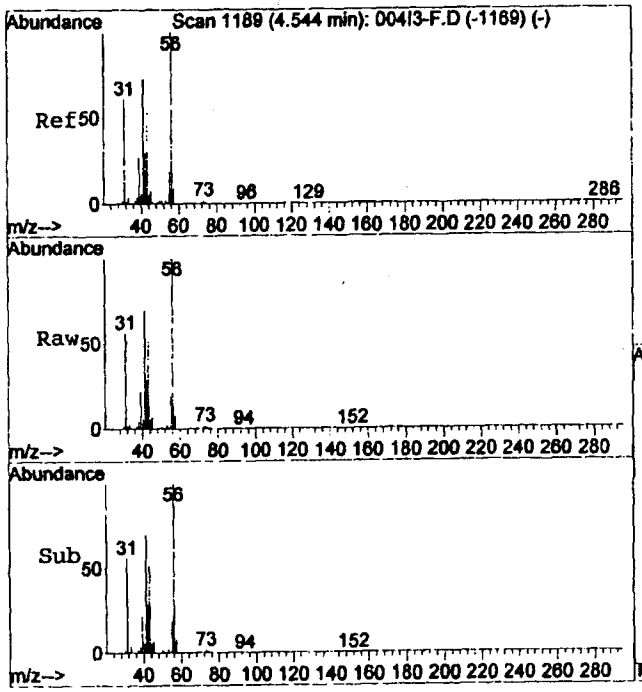


#22
Trichloroethene
Concen: 23.90 ppm
RT: 4.18 min Scan# 1078
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:130 Resp: 329811

Ion	Ratio	Lower	Upper
130	100		
60	42.4	35.2	65.4
132	97.4	68.0	126.4

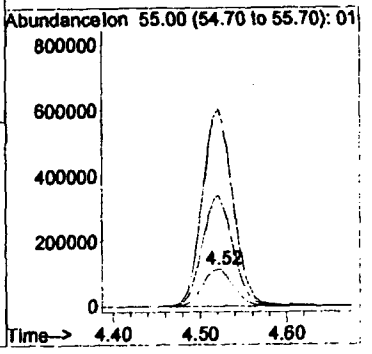


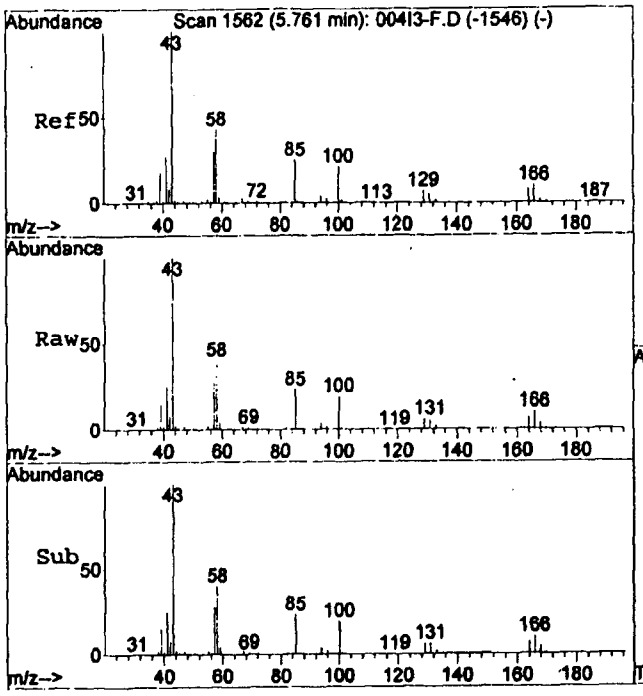


#23
Butanol
Concen: 233.06 ppm
RT: 4.52 min Scan# 1182
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 55 Resp: 280640

Ion	Ratio	Lower	Upper
55	100		
31	295.8	218.1	405.1
56	523.5	355.3	659.9

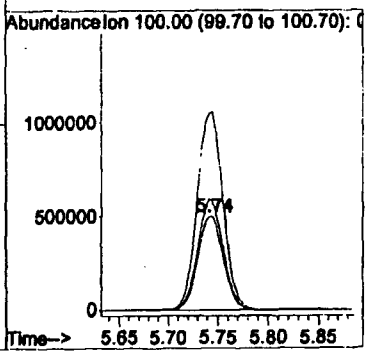


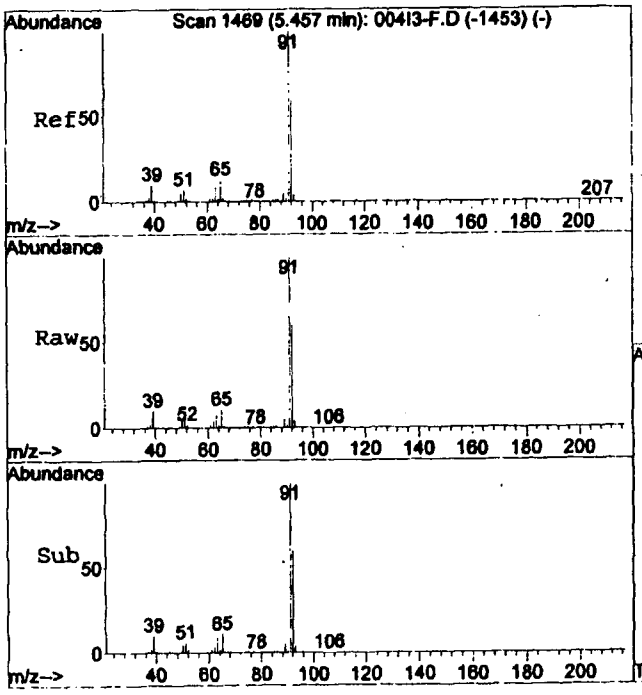


#25
Methyl isobutyl ketone
Concen: 237.94 ppm
RT: 5.74 min Scan# 1556
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:100 Resp: 884441

Ion	Ratio	Lower	Upper
100	100		
58	213.1	144.8	268.8
85	116.4	81.6	151.6

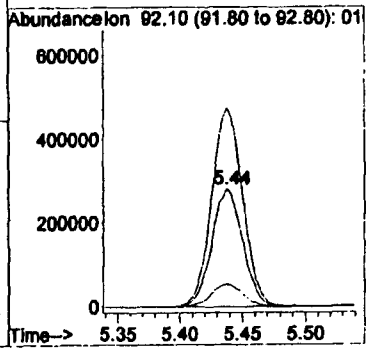


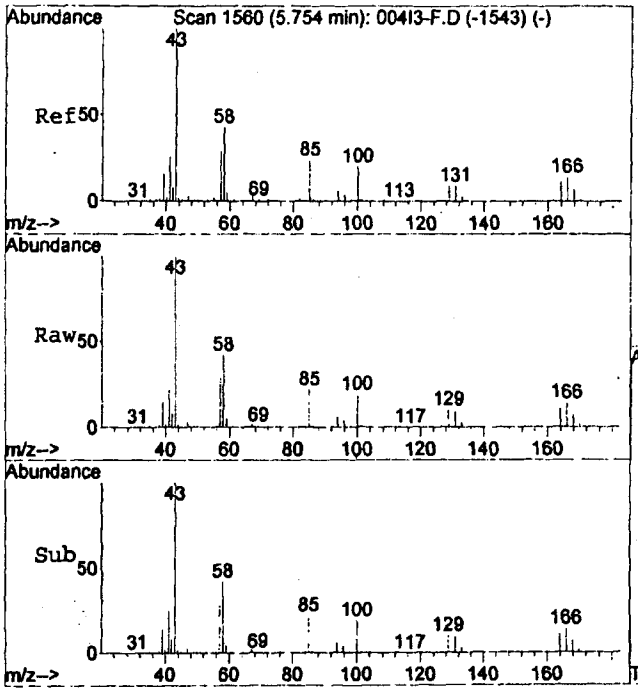


#26
Toluene
Concen: 25.94 ppm
RT: 5.44 min Scan# 1463
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 92 Resp: 477486

Ion	Ratio	Lower	Upper
92	100		
91	169.3	120.1	223.1
65	19.3	14.4	26.8

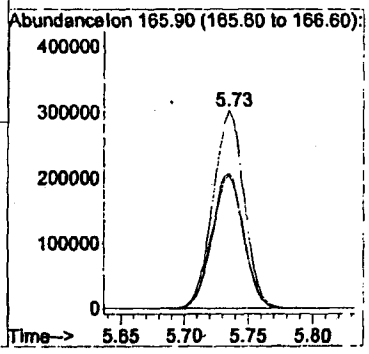


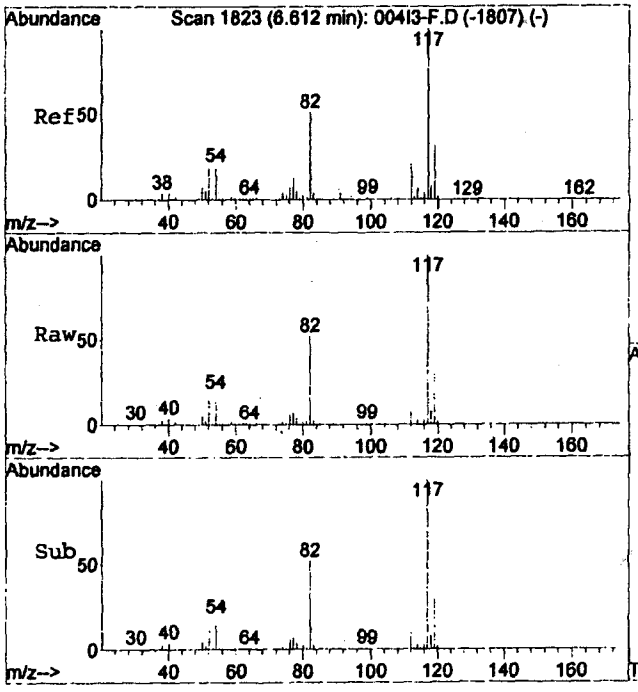


#27
Tetrachloroethene
Concen: 23.09 ppm
RT: 5.73 min Scan# 1554
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:166 Resp: 510300

Ion	Ratio	Lower	Upper
166	100		
129	69.8	46.3	86.1
131	68.0	45.7	84.9

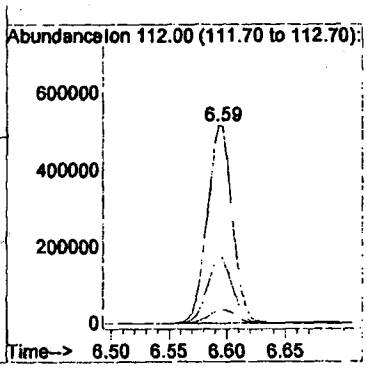


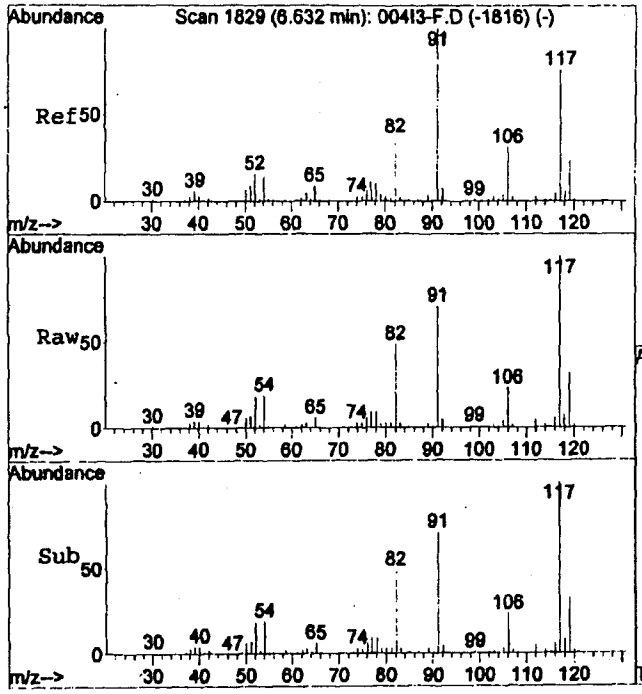


#28
Chlorobenzene
Concen: 24.34 ppm
RT: 6.59 min Scan# 1817
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:112 Resp: 765216

Ion	Ratio	Lower	Upper
112	100		
56	7.1	2.7	5.1#
114	33.1	23.0	42.6

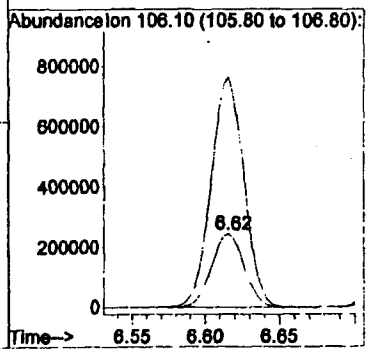


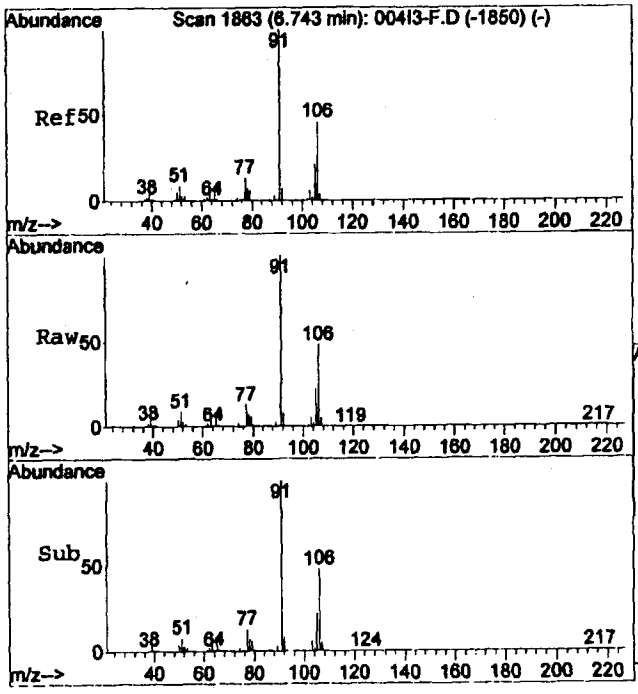


#29
Ethylbenzene
Concen: 24.39 ppm
RT: 6.62 min Scan# 1824
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:106 Resp: 368470

Ion	Ratio	Lower	Upper
106	100		
91	319.1	225.4	418.6

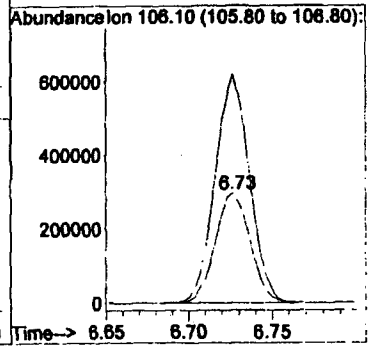


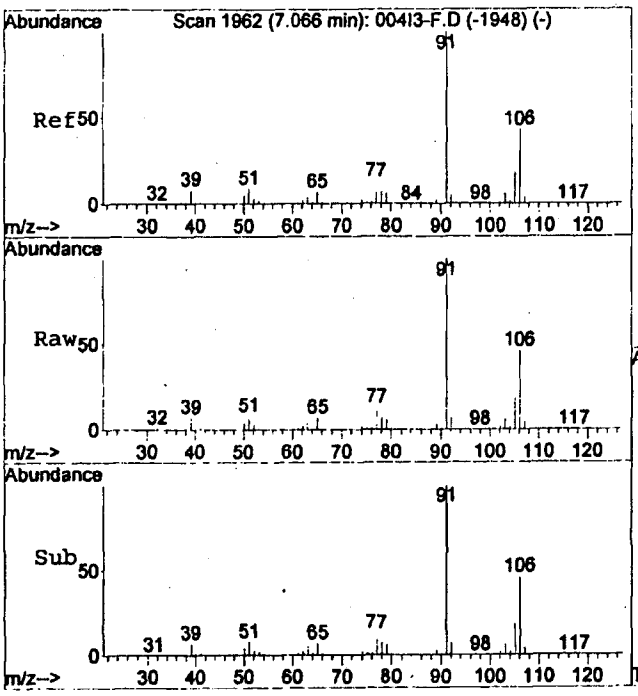


#30
m and p-xylene
Concen: 25.15 ppm
RT: 6.73 min Scan# 1858
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:106 Resp: 430811

Ion	Ratio	Lower	Upper
106	100		
91	204.6	150.8	280.1

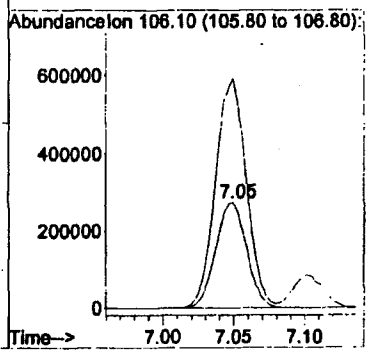


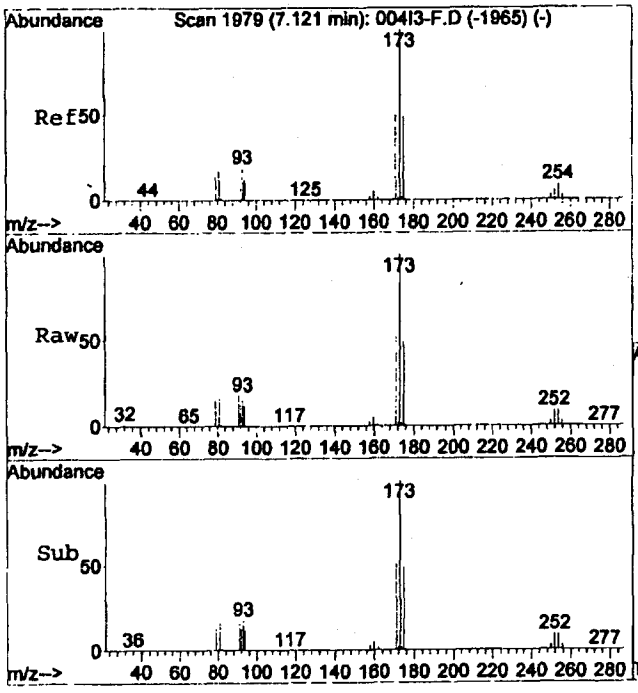


#31
o-xylene
Concen: 25.31 ppm
RT: 7.05 min Scan# 1957
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:106 Resp: 414958

Ion	Ratio	Lower	Upper
106	100		
91	215.2	159.0	295.4

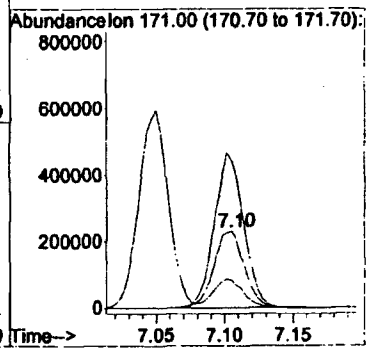


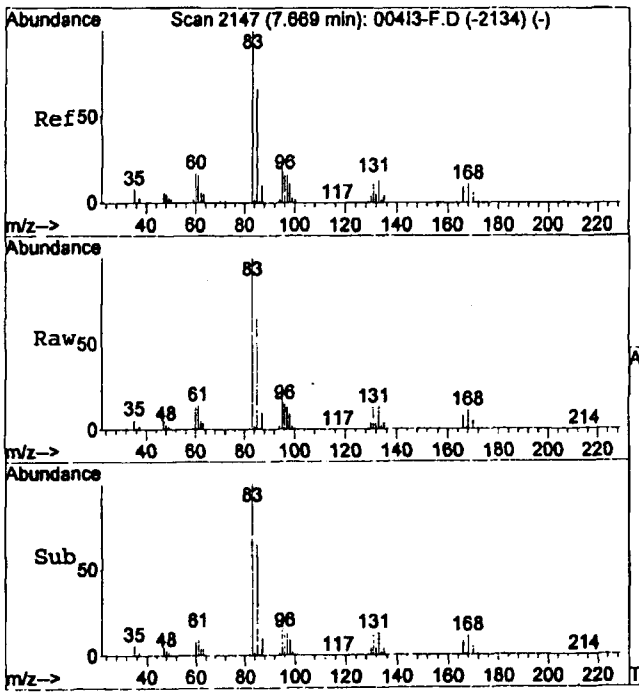


#32
Bromoform
Concen: 23.89 ppm
RT: 7.10 min Scan# 1974
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:171 Resp: 351188

Ion	Ratio	Lower	Upper
171	100		
91	36.5	26.7	49.5
173	195.8	137.5	255.4

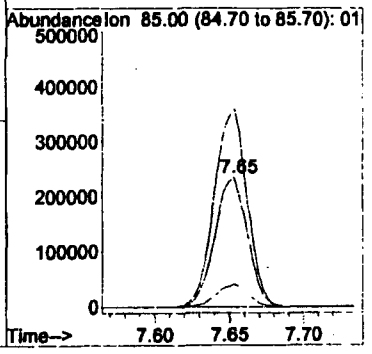


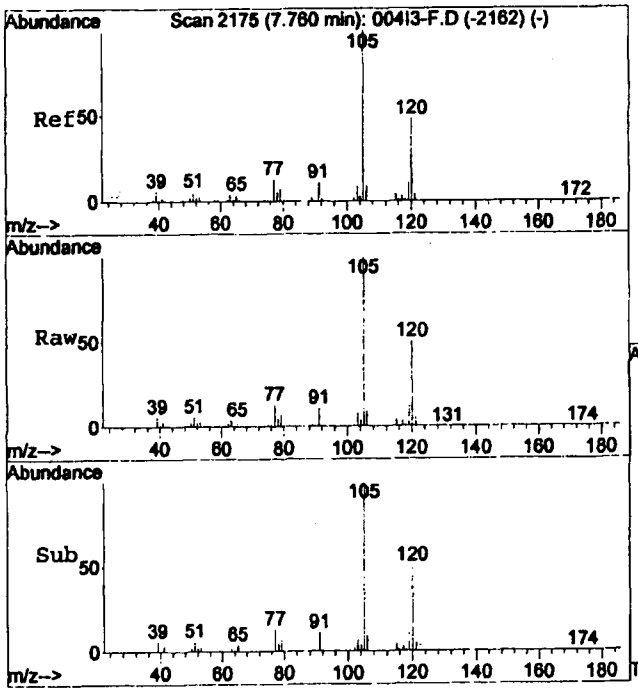


#34
1,1,2,2-Tetrachloroethane
Concen: 25.97 ppm
RT: 7.65 min Scan# 2142
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion: 85 Resp: 353084

Ion	Ratio	Lower	Upper
85	100		
168	16.6	12.2	22.6
83	153.2	106.9	198.5

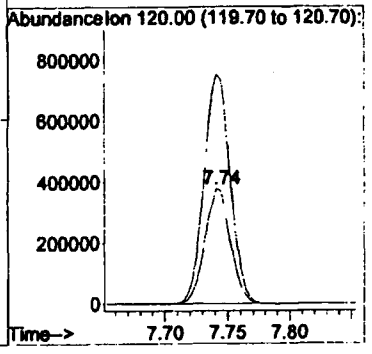


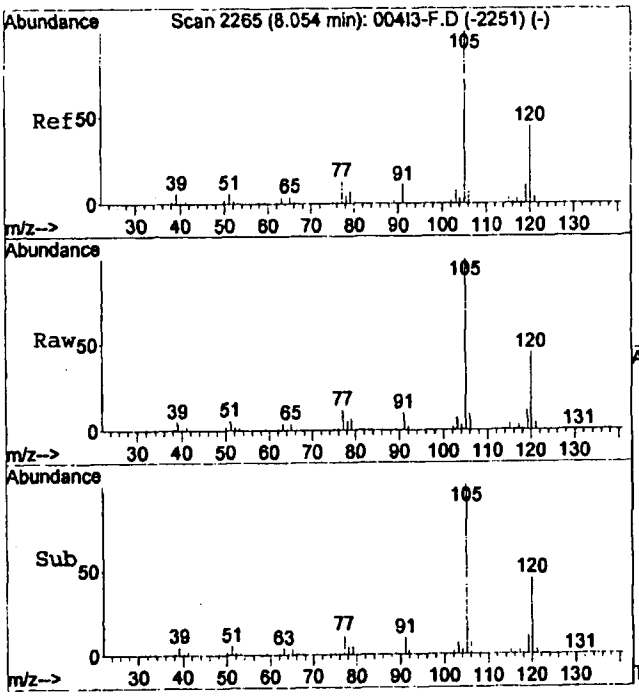


#35
1,3,5-Trimethylbenzene
Concen: 24.51 ppm
RT: 7.74 min Scan# 2169
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:120 Resp: 526327

Ion	Ratio	Lower	Upper
120	100		
105	205.1	146.9	272.7

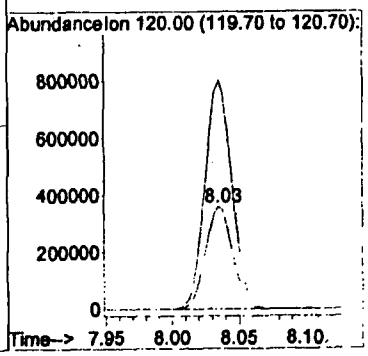




#36
1,2,4-Trimethylbenzene
Concen: 24.86 ppm
RT: 8.03 min Scan# 2259
Delta R.T. -0.02 min
Lab File: 010DR-F.D
Acq: 13 Aug 2011 14:30

Tgt Ion:120 Resp: 499353

Ion	Ratio	Lower	Upper
120	100		
105	221.2	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\011DR-F.D Vial: 11
Acq On : 13 Aug 2011 14:44 Operator: SO
Sample : ic10,MDL3,2011-08-13,12:51:19,1.35598 Inst : Instrumen
Misc : HS111 00014B-03,27.5,SO, Multiplr: 1.36
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:53:21 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

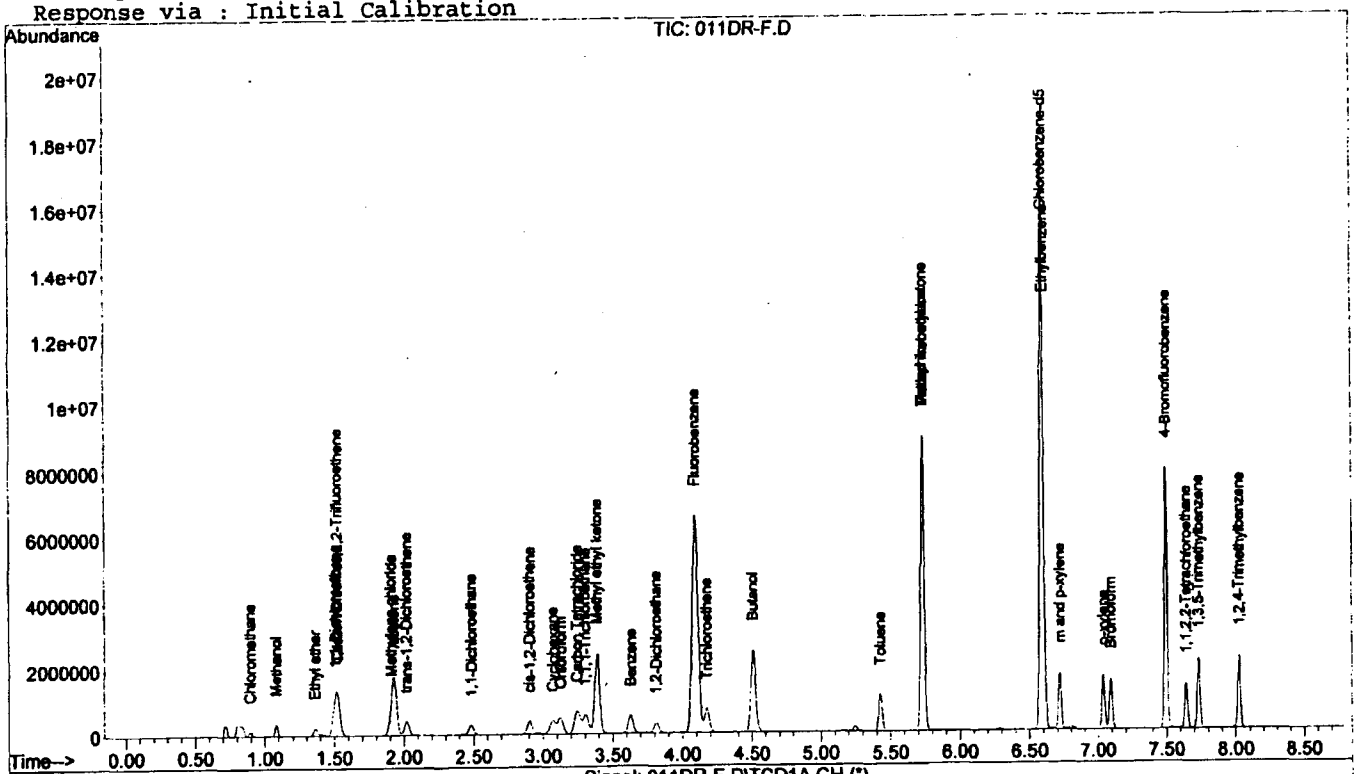
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.09	96	9559829	201.00	ppm		-0.03
24) Chlorobenzene-d5	6.59	117	8469426	176.00	ppm		-0.03
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.49	95	2232956	49.19	ppm		-0.03
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	37210	0.4980	perce		100
2) Methane	5.76	GC1	17643	0.4988	perce		100
4) Chloromethane	0.89	50	107384	22.1667	ppm		98
5) Methanol	1.08	31	283328	206.6956	ppm		100
6) Ethyl ether	1.36	59	104187	22.3833	ppm		99
7) 1,1-Dichloroethene	1.50	96	197634	23.4897	ppm		91
8) 1,1,2-Trichloro-1,2,2-Trif	1.52	101	483710	22.6915	ppm		99
9) Acetone	1.93	58	743711	245.5077	ppm		72
10) Carbon Disulfide	1.52	76	521603	23.8481	ppm		98
11) Methylene chloride	1.90	84	167011	24.5024	ppm		92
12) trans-1,2-Dichloroethene	2.02	96	216952	24.3669	ppm		95
13) 1,1-Dichloroethane	2.49	63	352757	22.4347	ppm		99
14) cis-1,2-Dichloroethene	2.91	96	221084	24.4582	ppm		94
15) Methyl ethyl ketone	3.39	72	1012634	235.7396	ppm		90
16) Chloroform	3.12	83	521045	20.9434	ppm		97
17) 1,1,1-Trichloroethane	3.30	97	563036	19.0416	ppm		99
18) Cyclohexane	3.07	56	270253	25.3944	ppm		95
19) Carbon Tetrachloride	3.24	82	147523	18.4413	ppm		97
20) Benzene	3.63	78	611362	24.1981	ppm		98
21) 1,2-Dichloroethane	3.81	62	349509	18.7096	ppm		97
22) Trichloroethene	4.17	130	338618	23.3801	ppm		95
23) Butanol	4.51	55	287187	227.2302	ppm		93
25) Methyl isobutyl ketone	5.73	100	902290	231.8584	ppm		97
26) Toluene	5.43	92	485298	25.1851	ppm		99
27) Tetrachloroethene	5.72	166	517946	22.3806	ppm		97
28) Chlorobenzene	6.58	112	771427	23.4369	ppm	#	99
29) Ethylbenzene	6.61	106	370378	23.4203	ppm		100
30) m and p-xylene	6.72	106	438520	24.4530	ppm		92
31) o-xylene	7.04	106	421809	24.5721	ppm		94
32) Bromoform	7.09	171	354818	23.0511	ppm		99
34) 1,1,2,2-Tetrachloroethane	7.64	85	360043	25.2979	ppm		98
35) 1,3,5-Trimethylbenzene	7.73	120	540794	24.0570	ppm		96
36) 1,2,4-Trimethylbenzene	8.02	120	515964	24.5345	ppm		94

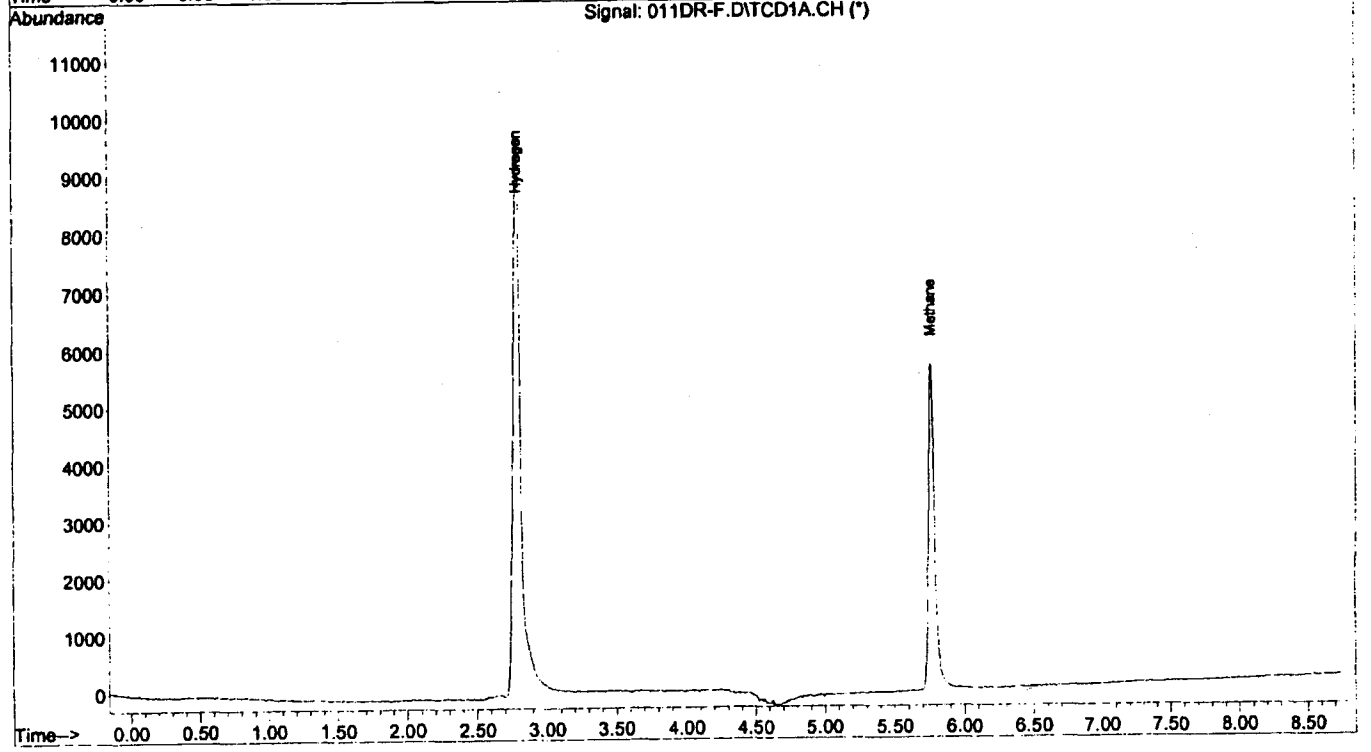
(#) = qualifier out of range (m) = manual integration
011DR-F.D VOCGAS.M Mon Aug 15 10:43:56 2011

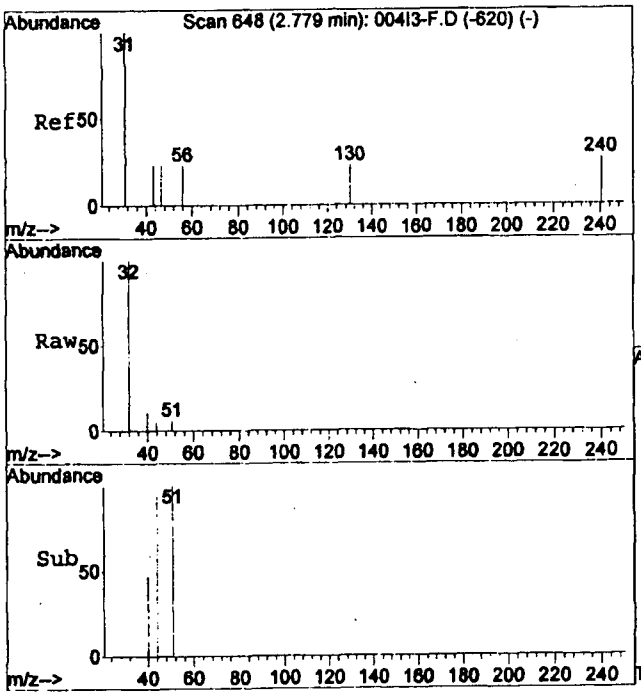
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\011DR-F.D Vial: 11
Acq On : 13 Aug 2011 14:44 Operator: SO
Sample : ic10,MDL3,2011-08-13,12:51:19,1.35598 Inst : Instrumen
Misc : HS111 00014B-03,27.5,SO, Multiplr: 1.36
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 14:53 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

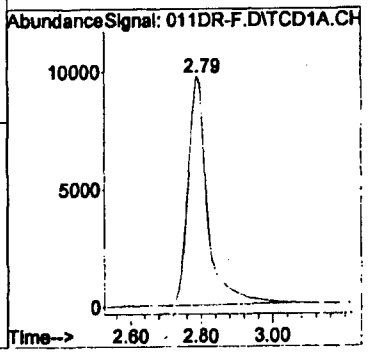


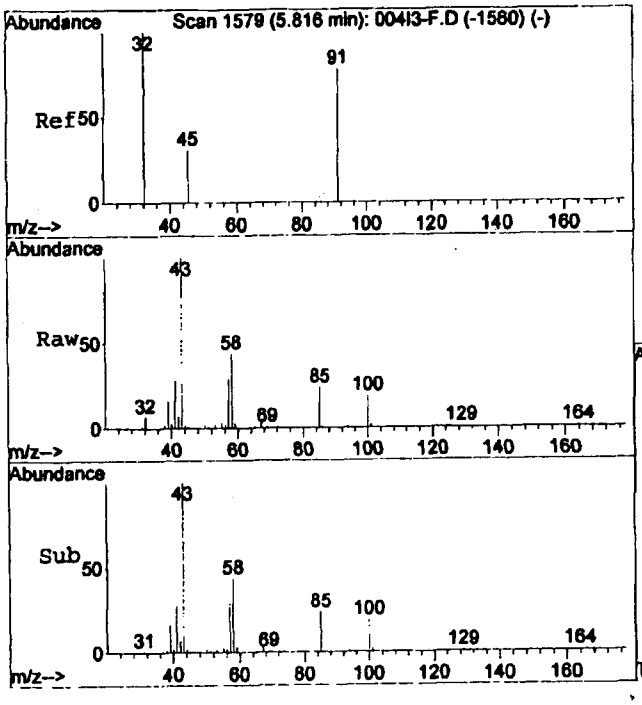




#1
Hydrogen
Concen: 0.50 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

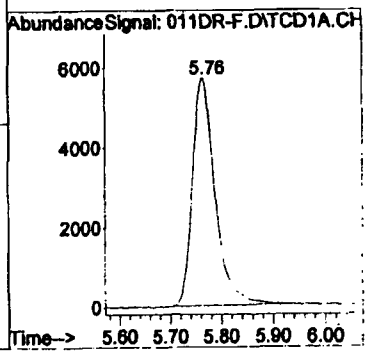
Tgt Sig:GC1 Resp: 37210

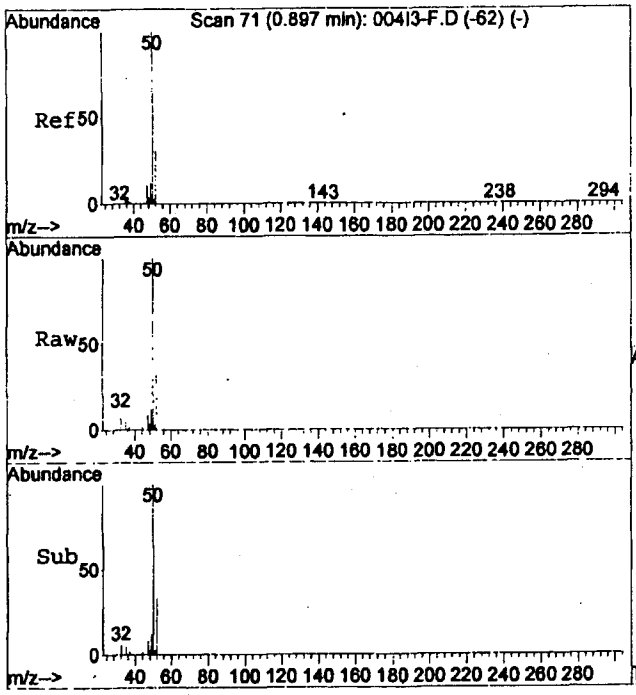




#2
Methane
Concen: 0.50 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Sig:GC1 Resp: 17643

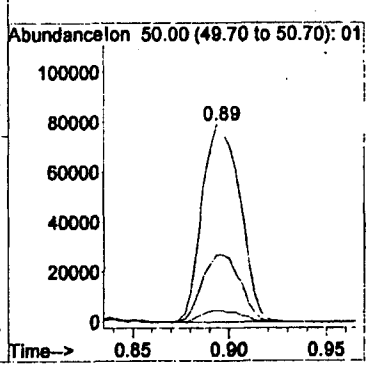


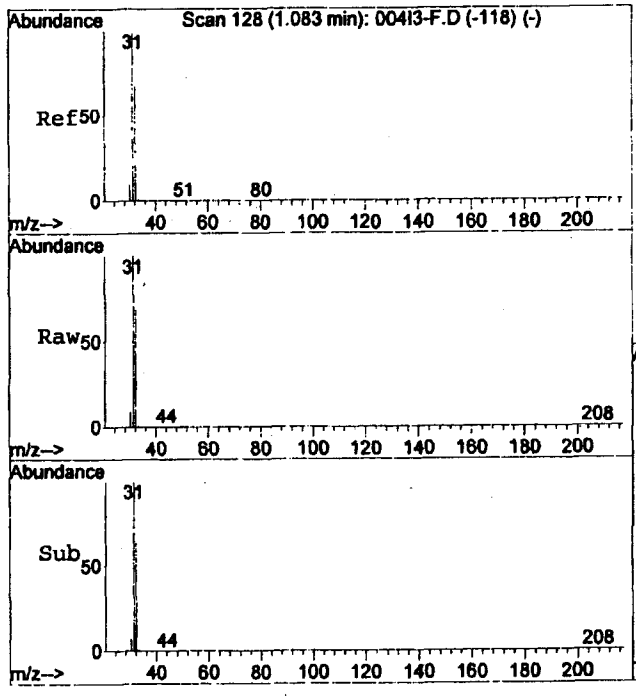


#4
Chloromethane
Concen: 22.17 ppm
RT: 0.89 min Scan# 70
Delta R.T. -0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 50 Resp: 107384

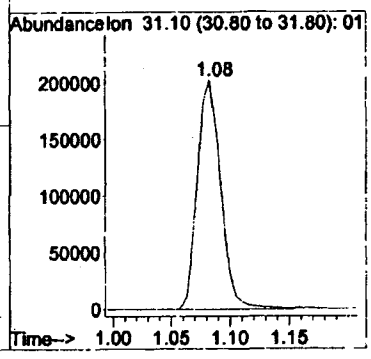
Ion	Ratio	Lower	Upper
50	100		
35	5.8	5.3	9.8
52	34.0	23.2	43.2

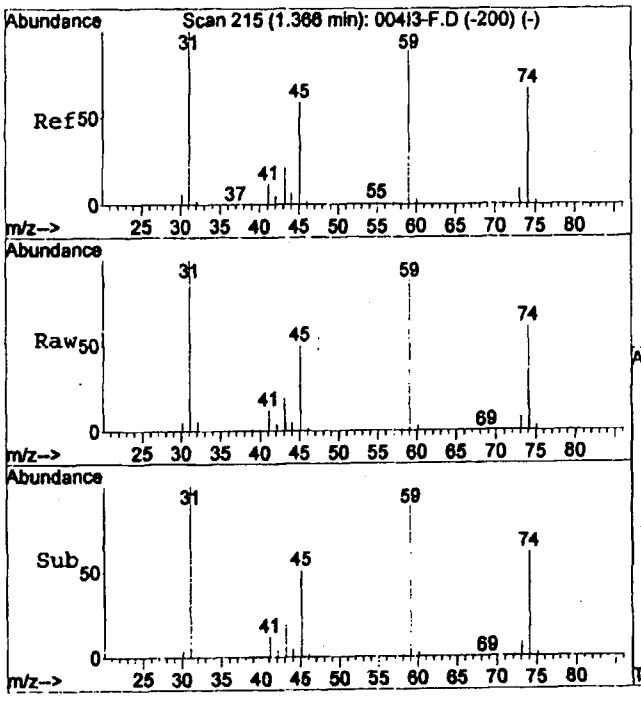




#5
Methanol
Concen: 206.70 ppm
RT: 1.08 min Scan# 128
Delta R.T. 0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 31 Resp: 283328

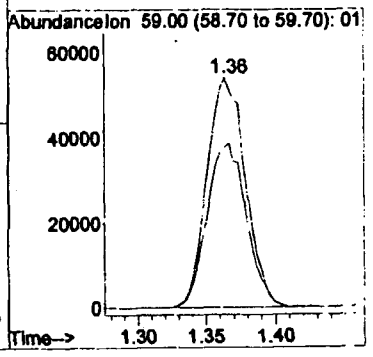


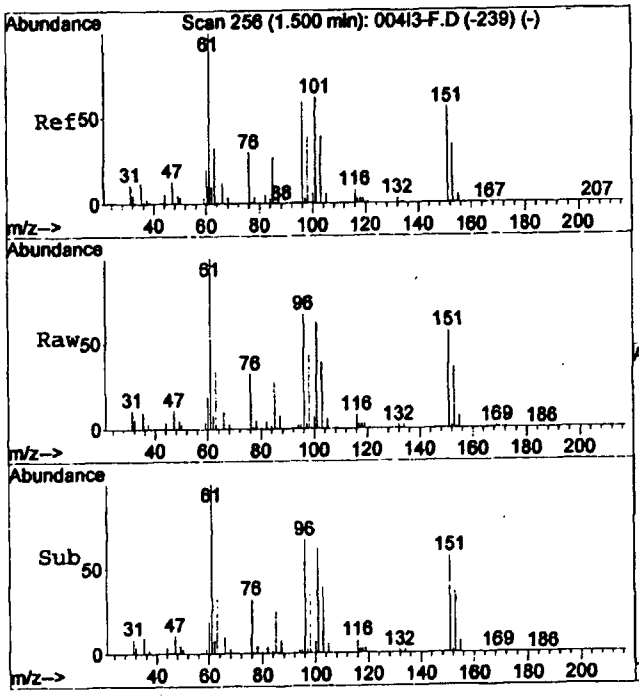


#6
Ethyl ether
Concen: 22.38 ppm
RT: 1.36 min Scan# 214
Delta R.T. -0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 59 Resp: 104187

Ion	Ratio	Lower	Upper
59	100		
74	73.2	51.7	95.9

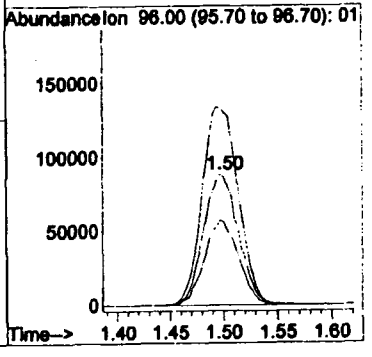


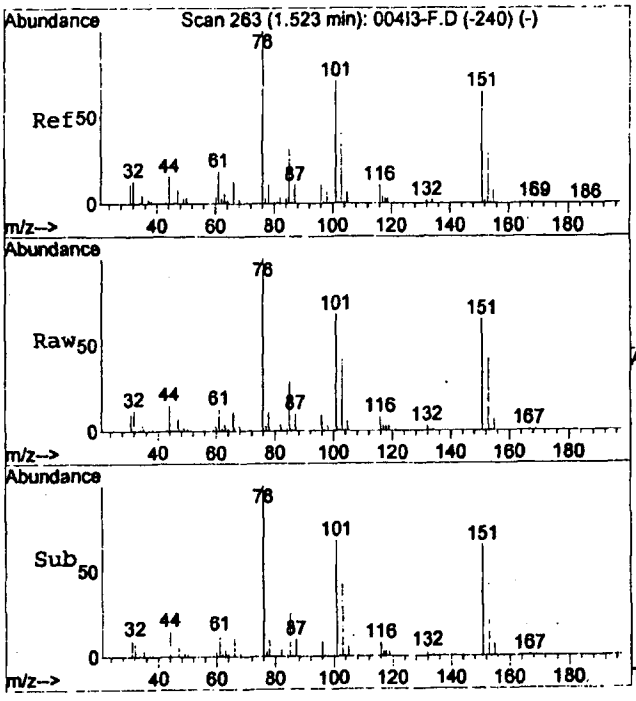


#7
1,1-Dichloroethene
Concen: 23.49 ppm
RT: 1.50 min Scan# 255
Delta R.T. -0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 96 Resp: 197634

Ion	Ratio	Lower	Upper
96	100		
61	156.8	121.2	225.0
98	63.4	44.9	83.3

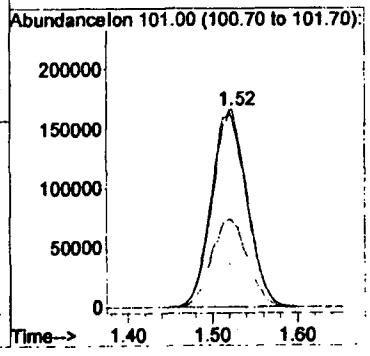


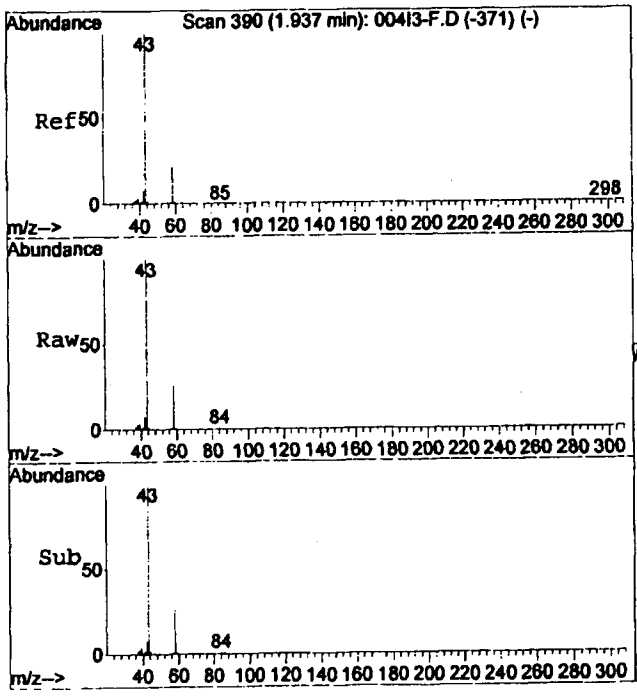


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.69 ppm
RT: 1.52 min Scan# 263
Delta R.T. 0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:101 Resp: 483710

Ion	Ratio	Lower	Upper
101	100		
85	44.4	32.3	59.9
151	96.0	66.8	124.2

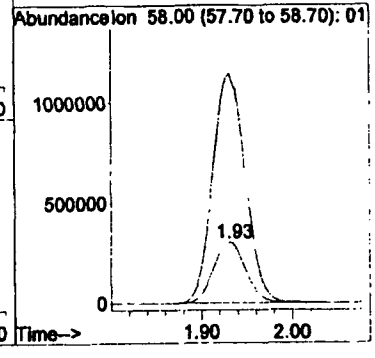


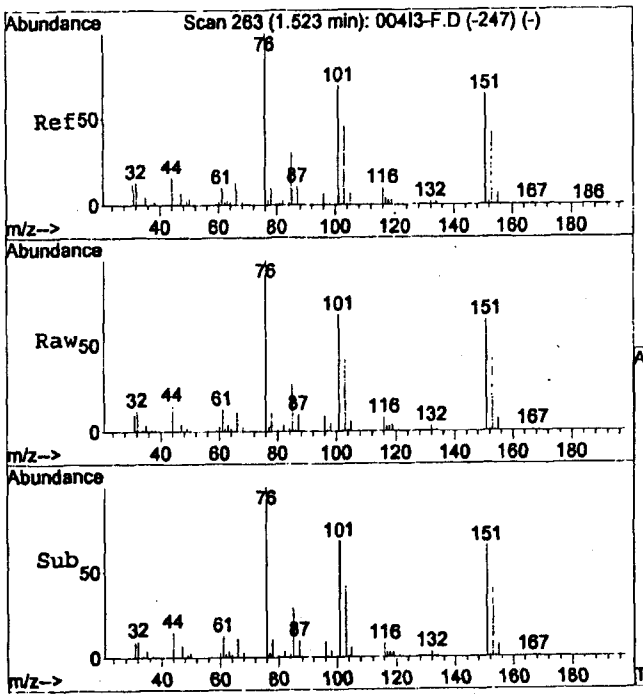


#9
Acetone
Concen: 245.51 ppm
RT: 1.93 min Scan# 388
Delta R.T. -0.01 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 58 Resp: 743711

Ion	Ratio	Lower	Upper
58	100		
43	382.2	317.7	590.1

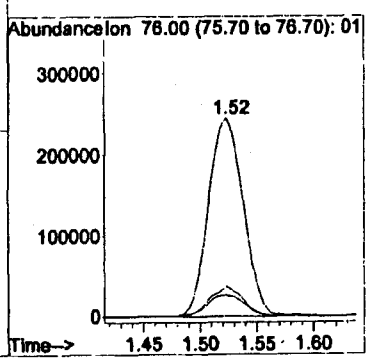


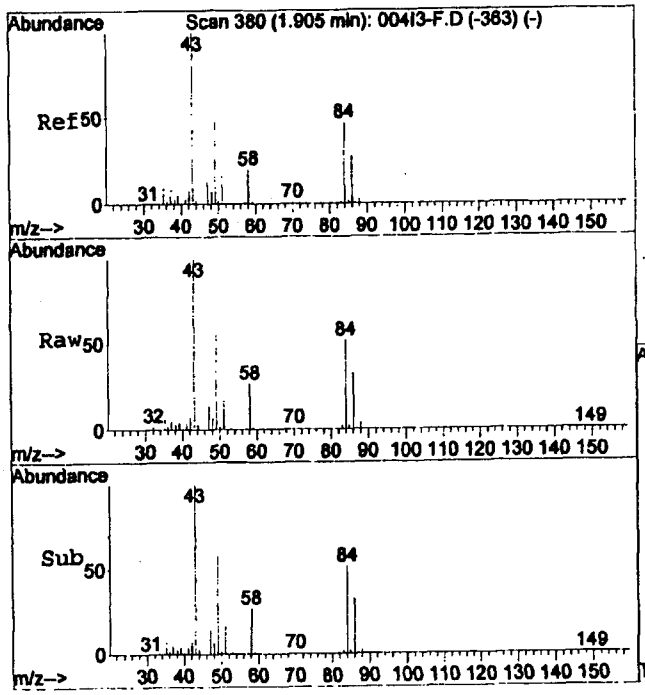


#10
Carbon Disulfide
Concen: 23.85 ppm
RT: 1.52 min Scan# 263
Delta R.T. 0.00 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 76 Resp: 521603

Ion	Ratio	Lower	Upper
76	100		
44	15.0	11.5	21.5
78	10.7	7.6	14.2

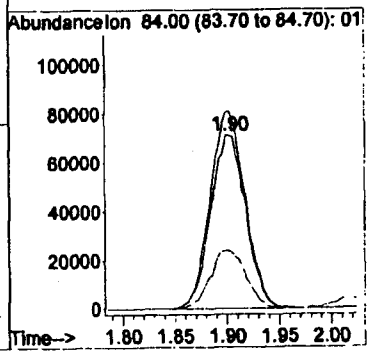


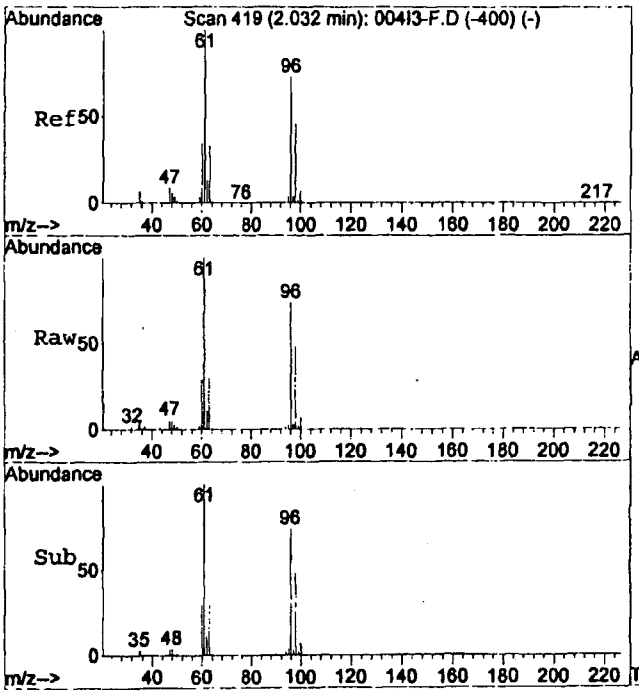


#11
Methylene chloride
Concen: 24.50 ppm
RT: 1.90 min Scan# 378
Delta R.T. -0.01 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 84 Resp: 167011

Ion	Ratio	Lower	Upper
84	100		
49	113.0	85.8	159.4
51	34.2	25.6	47.6

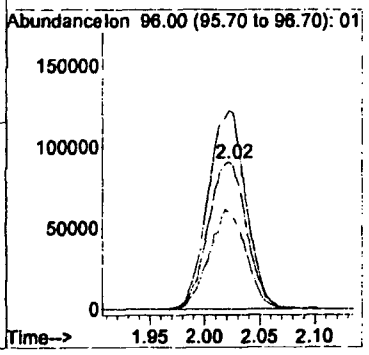


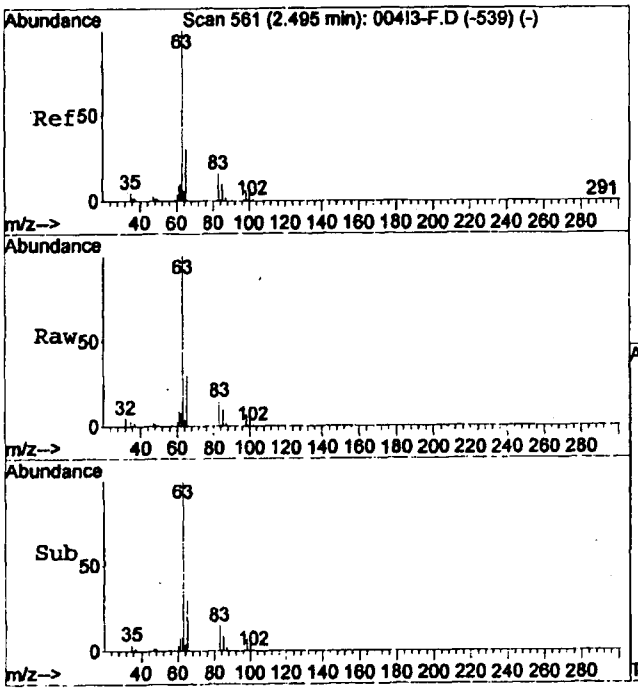


#12
trans-1,2-Dichloroethene
Concen: 24.37 ppm
RT: 2.02 min Scan# 416
Delta R.T. -0.01 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 96 Resp: 216952

Ion	Ratio	Lower	Upper
96	100		
61	134.1	100.3	186.3
98	64.7	45.6	84.8

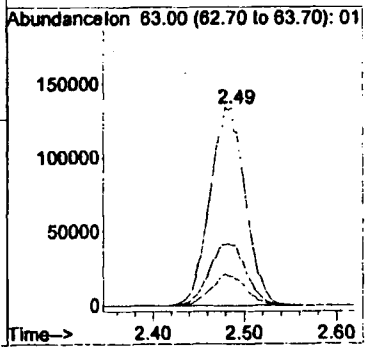


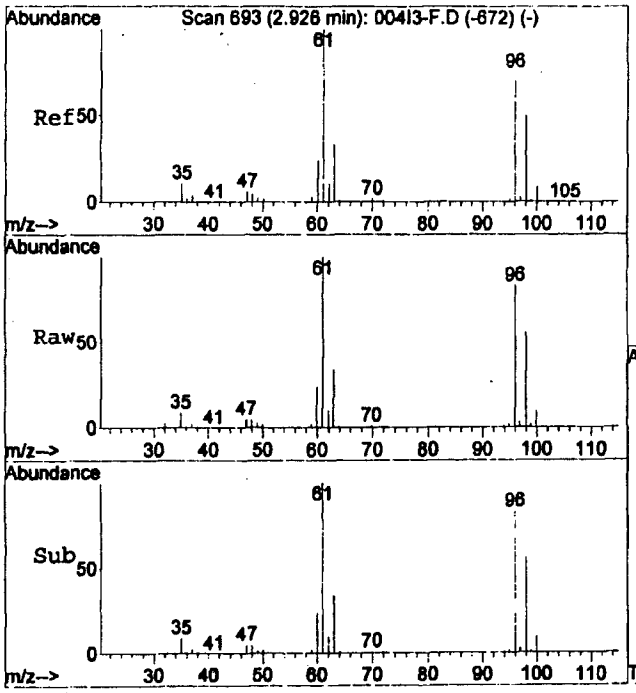


#13
1,1-Dichloroethane
Concen: 22.43 ppm
RT: 2.49 min Scan# 558
Delta R.T. -0.01 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 63 Resp: 352757

Ion	Ratio	Lower	Upper
63	100		
83	15.3	10.7	19.9
65	32.6	22.1	41.1

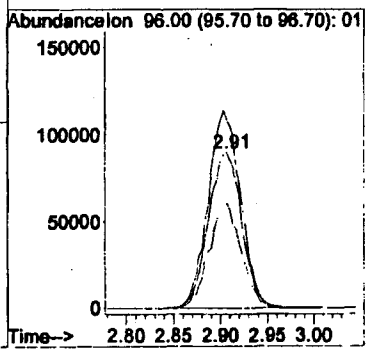


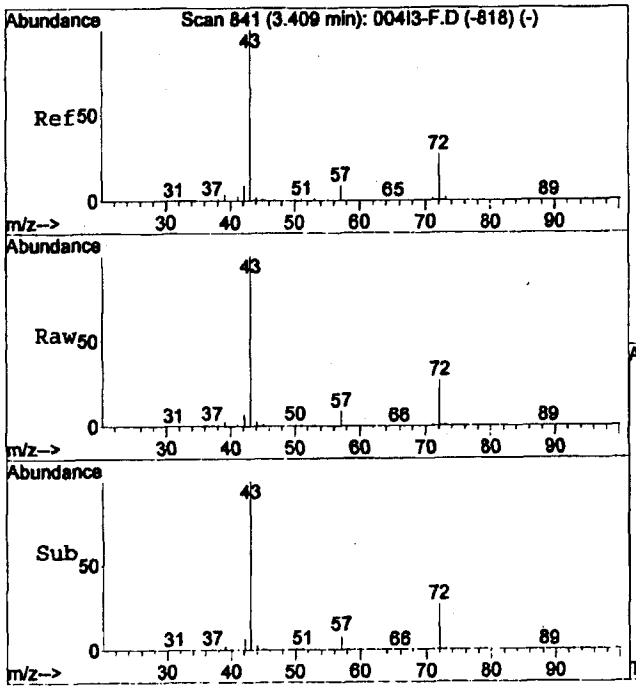


#14
cis-1,2-Dichloroethene
Concen: 24.46 ppm
RT: 2.91 min Scan# 687
Delta R.T. -0.02 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 96 Resp: 221084

Ion	Ratio	Lower	Upper
96	100		
61	123.7	94.0	174.6
98	64.4	45.2	84.0

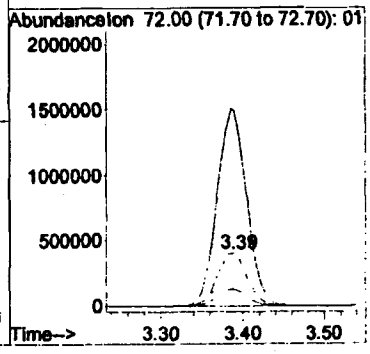


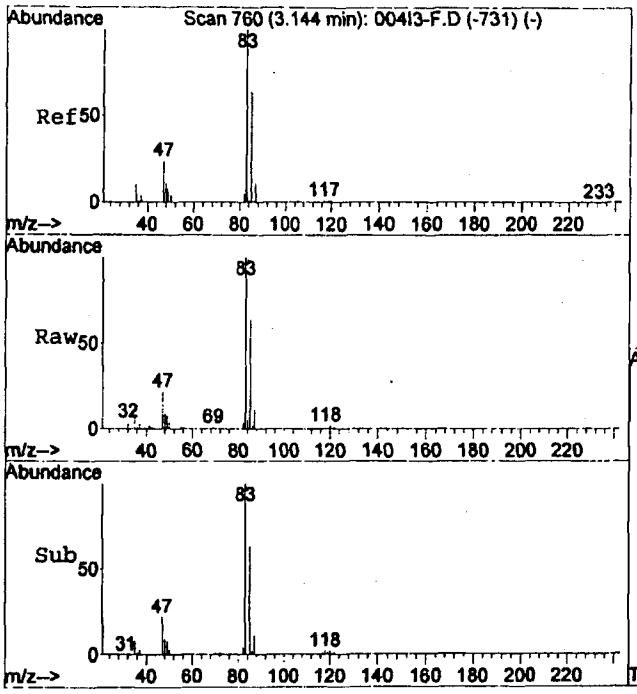


#15
Methyl ethyl ketone
Concen: 235.74 ppm
RT: 3.39 min Scan# 835
Delta R.T. -0.02 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 72 Resp: 1012634

Ion	Ratio	Lower	Upper
72	100		
57	31.9	23.7	43.9
43	367.9	274.5	509.7

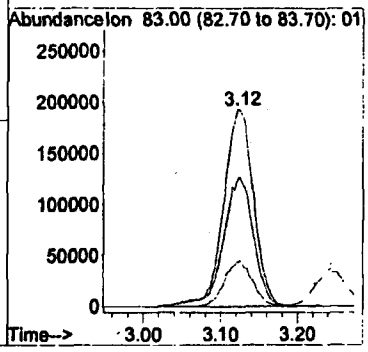


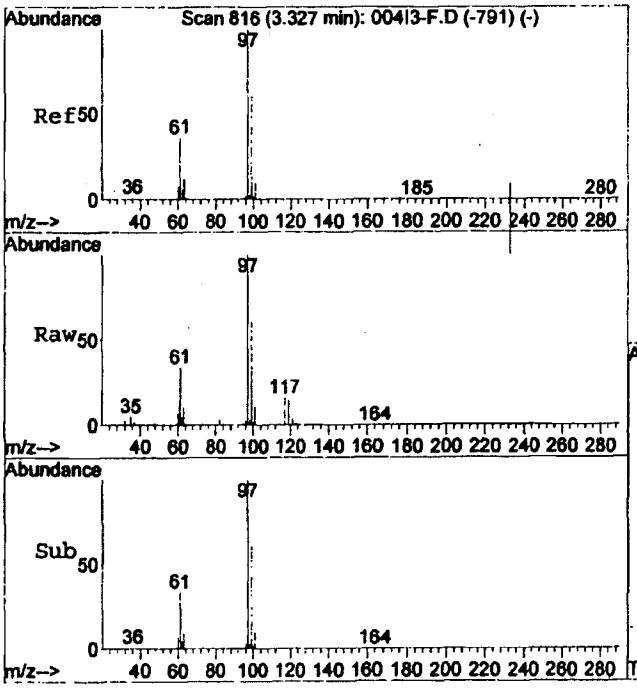


#16
Chloroform
Concen: 20.94 ppm
RT: 3.12 min Scan# 753
Delta R.T. -0.02 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 83 Resp: 521045

Ion	Ratio	Lower	Upper
83	100		
47	21.6	16.6	30.8
85	66.6	45.1	83.7

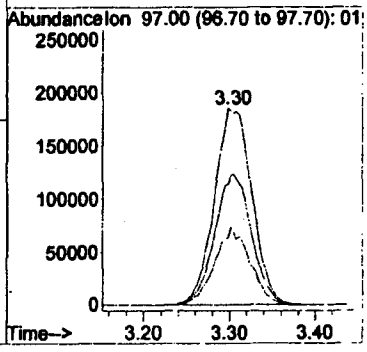


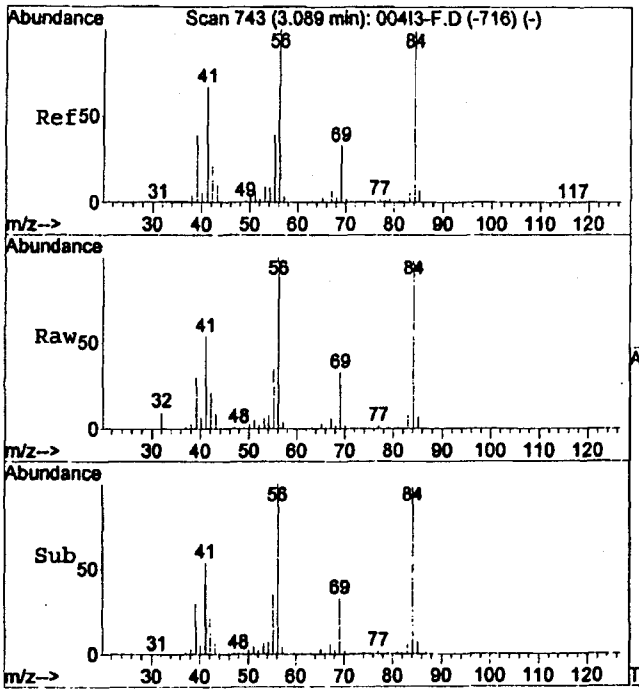


#17
1,1,1-Trichloroethane
Concen: 19.04 ppm
RT: 3.30 min Scan# 807
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 97 Resp: 563036

Ion	Ratio	Lower	Upper
97	100		
61	37.3	26.1	48.5
99	65.2	45.0	83.6

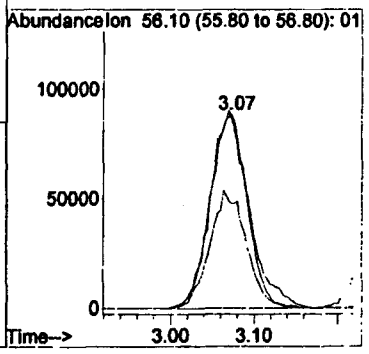


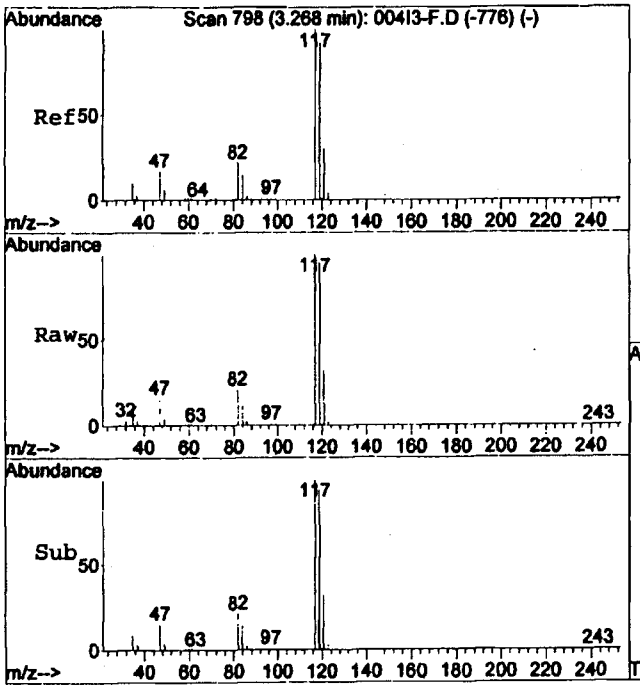


#18
Cyclohexane
Concen: 25.39 ppm
RT: 3.07 min Scan# 738
Delta R.T. -0.02 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 56 Resp: 270253

Ion	Ratio	Lower	Upper
56	100		
84	106.0	75.7	140.7
41	59.6	47.6	88.4

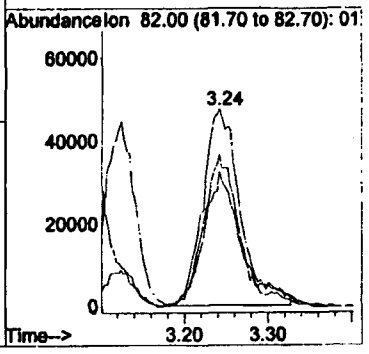


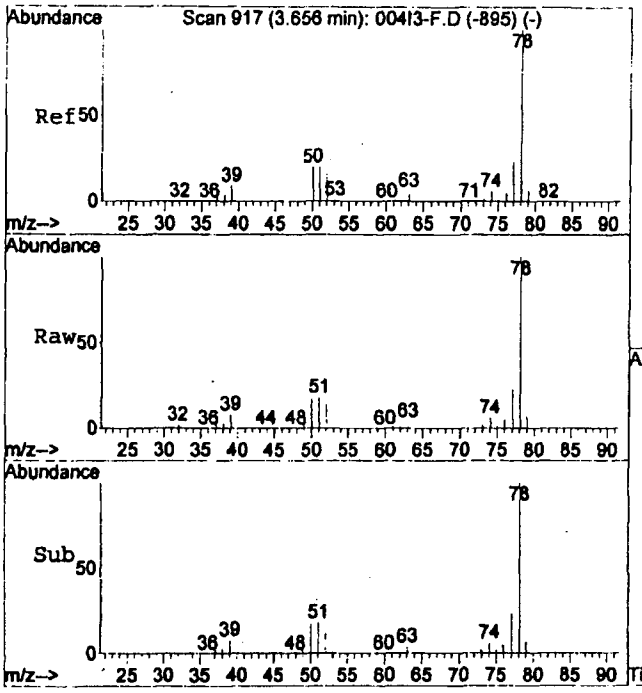


#19
Carbon Tetrachloride
Concen: 18.44 ppm
RT: 3.24 min Scan# 790
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 82 Resp: 147523

Ion	Ratio	Lower	Upper
82	100		
47	70.1	51.1	94.9
84	62.7	43.1	80.1

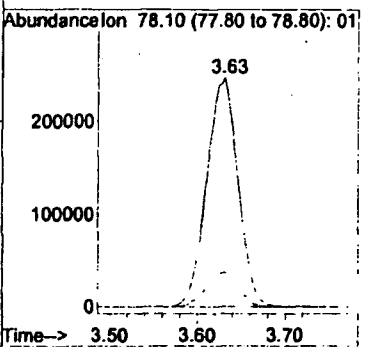


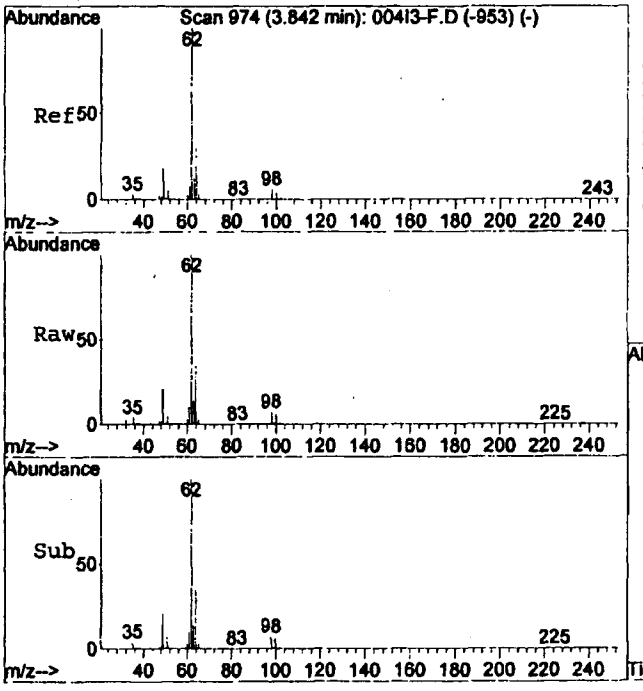


#20
Benzene
Concen: 24.20 ppm
RT: 3.63 min Scan# 909
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 78 Resp: 611362

Ion	Ratio	Lower	Upper
78	100		
52	15.9	11.6	21.6

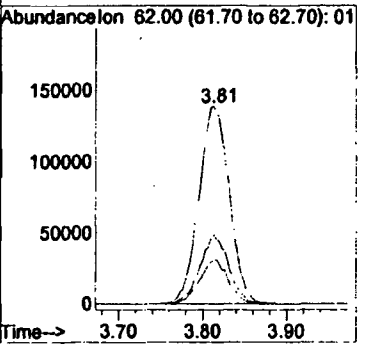


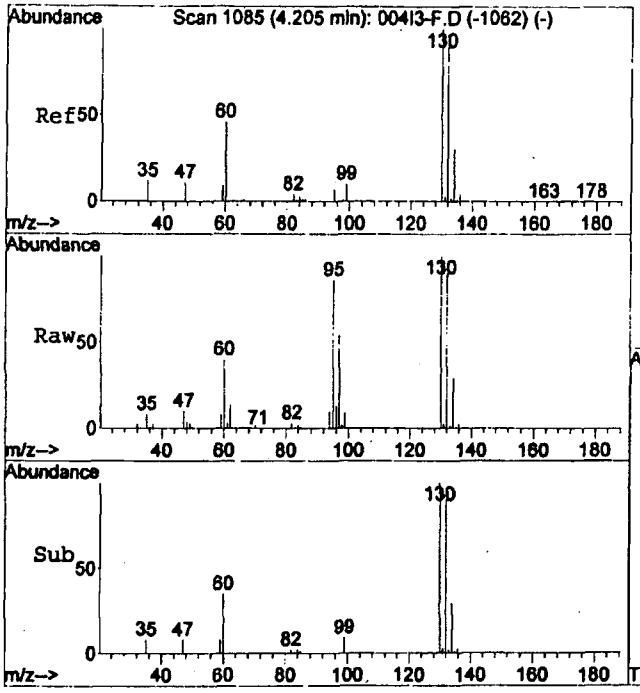


#21
1,2-Dichloroethane
Concen: 18.71 ppm
RT: 3.81 min Scan# 965
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 62 Resp: 349509

Ion	Ratio	Lower	Upper
62	100		
49	21.0	12.7	23.7
64	33.1	22.4	41.6

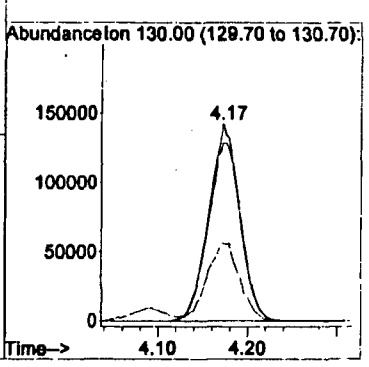


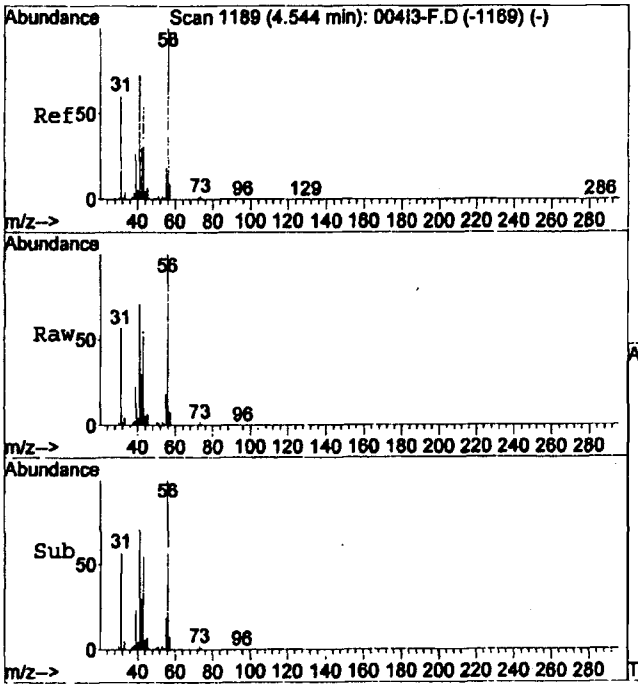


#22
Trichloroethene
Concen: 23.38 ppm
RT: 4.17 min Scan# 1075
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:130 Resp: 338618

Ion	Ratio	Lower	Upper
130	100		
60	41.7	35.2	65.4
132	96.6	68.0	126.4

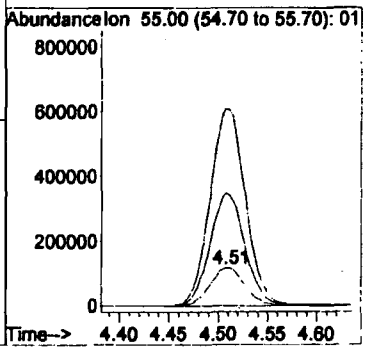


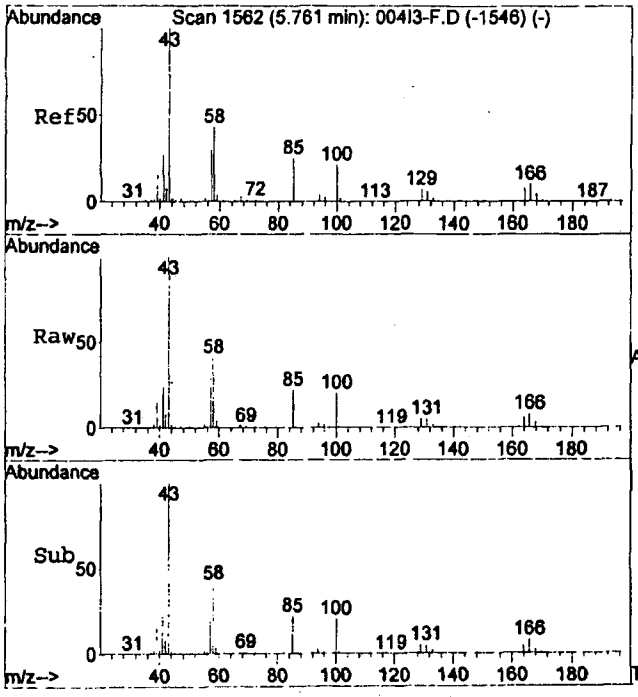


#23
Butanol
Concen: 227.23 ppm
RT: 4.51 min Scan# 1178
Delta R.T. -0.04 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 55 Resp: 287187

Ion	Ratio	Lower	Upper
55	100		
31	297.4	218.1	405.1
56	527.2	355.3	659.9

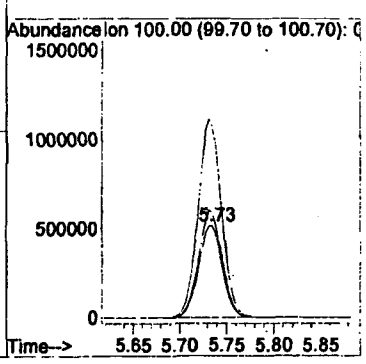


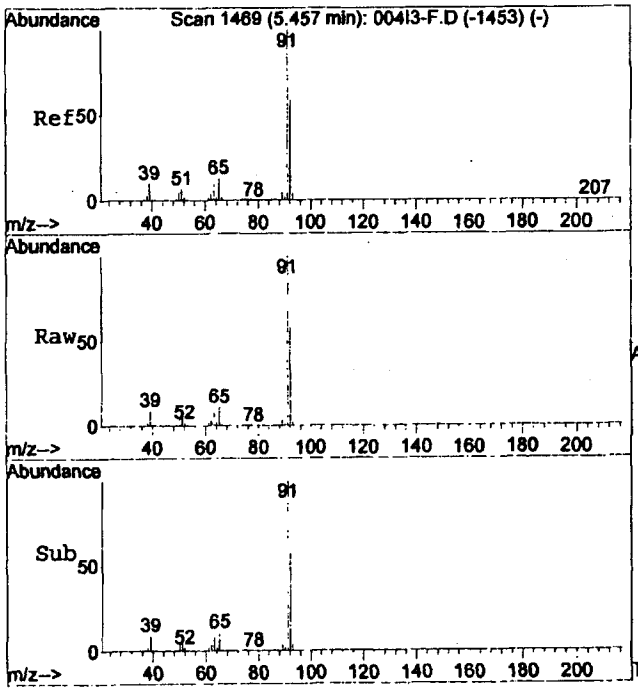


#25
Methyl isobutyl ketone
Concen: 231.86 ppm
RT: 5.73 min Scan# 1554
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:100 Resp: 902290

Ion	Ratio	Lower	Upper
100	100		
58	213.6	144.8	268.8
85	115.1	81.6	151.6

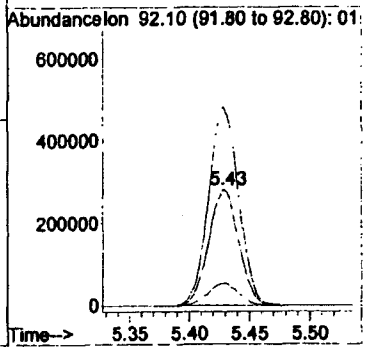


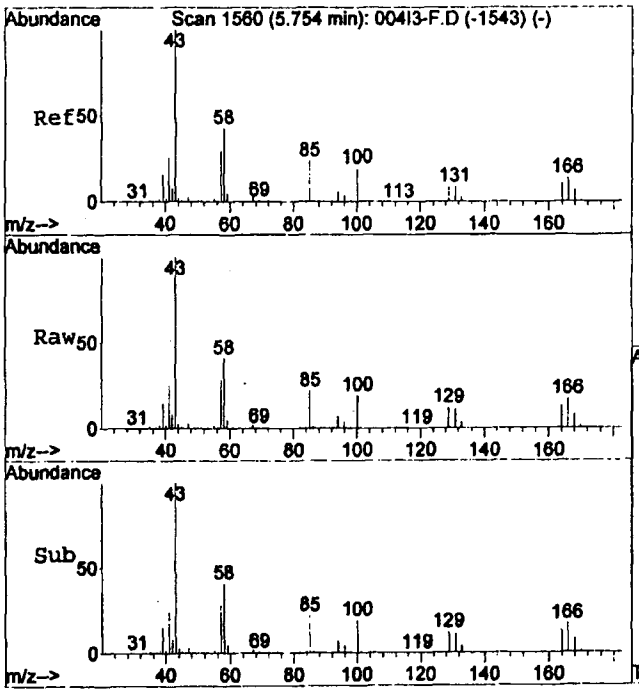


#26
Toluene
Concen: 25.19 ppm
RT: 5.43 min Scan# 1460
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 92 Resp: 485298

Ion	Ratio	Lower	Upper
92	100		
91	170.7	120.1	223.1
65	19.3	14.4	26.8

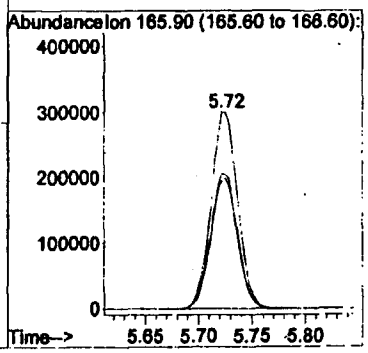


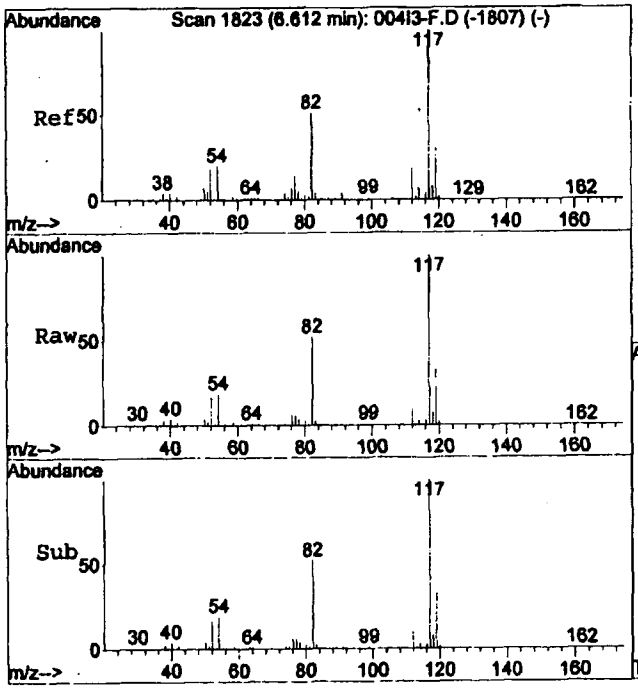


#27
Tetrachloroethene
Concen: 22.38 ppm
RT: 5.72 min Scan# 1550
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:166 Resp: 517946

Ion	Ratio	Lower	Upper
166	100		
129	69.2	46.3	86.1
131	67.5	45.7	84.9

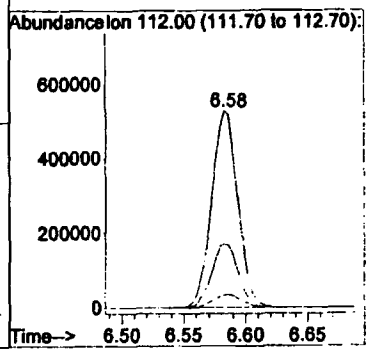


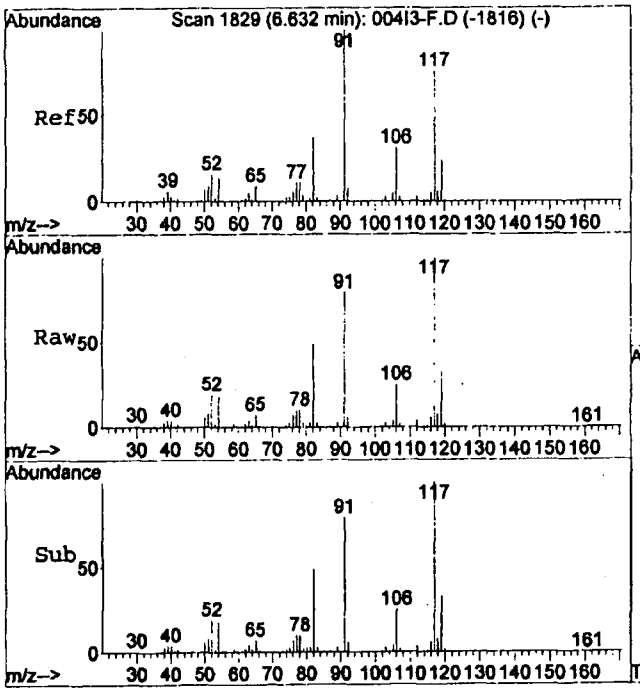


#28
Chlorobenzene
Concen: 23.44 ppm
RT: 6.58 min Scan# 1814
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:112 Resp: 771427

Ion	Ratio	Lower	Upper
112	100		
56	6.9	2.7	5.1#
114	33.0	23.0	42.6

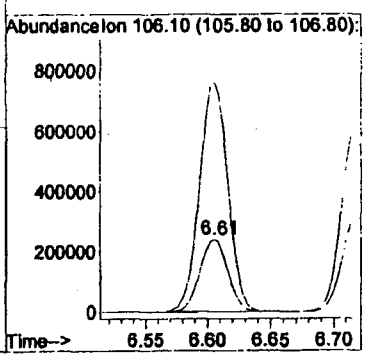


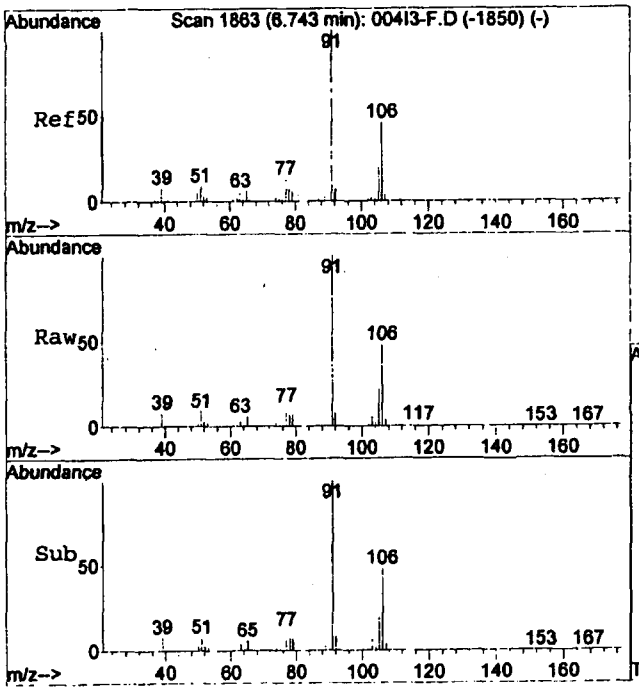


#29
Ethylbenzene
Concen: 23.42 ppm
RT: 6.61 min Scan# 1821
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:106 Resp: 370378

Ion	Ratio	Lower	Upper
106	100		
91	321.0	225.4	418.6

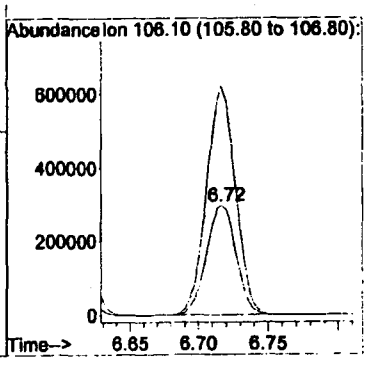


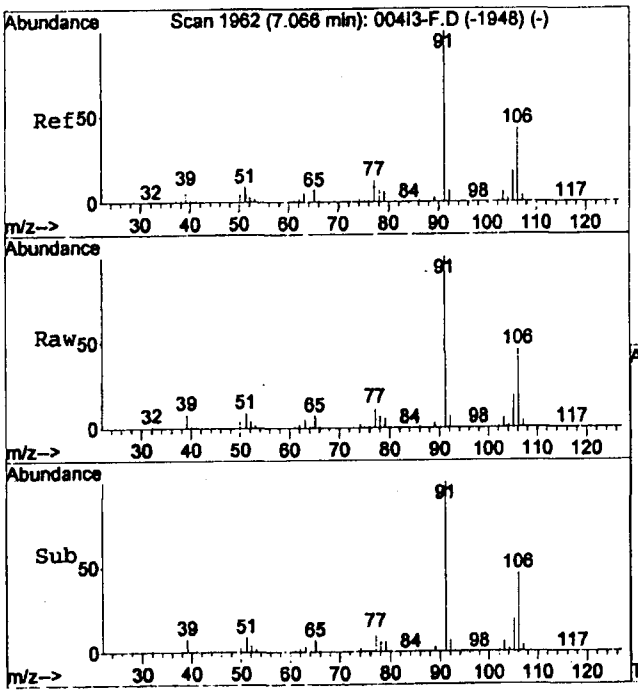


#30
m and p-xylene
Concen: 24.45 ppm
RT: 6.72 min Scan# 1855
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:106 Resp: 438520

Ion	Ratio	Lower	Upper
106	100		
91	203.1	150.8	280.1

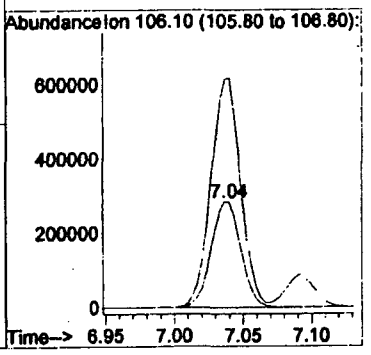


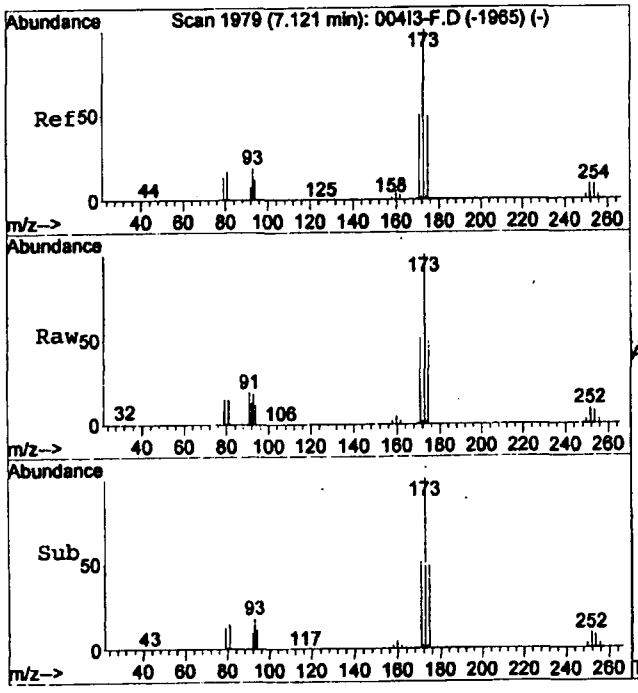


#31
o-xylene
Concen: 24.57 ppm
RT: 7.04 min Scan# 1953
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:106 Resp: 421809

Ion	Ratio	Lower	Upper
106	100		
91	216.8	159.0	295.4

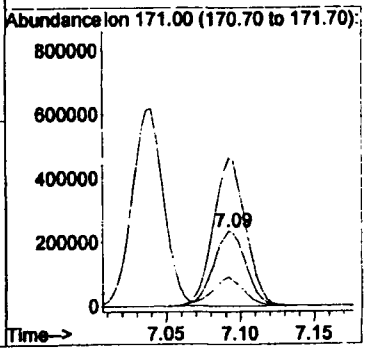


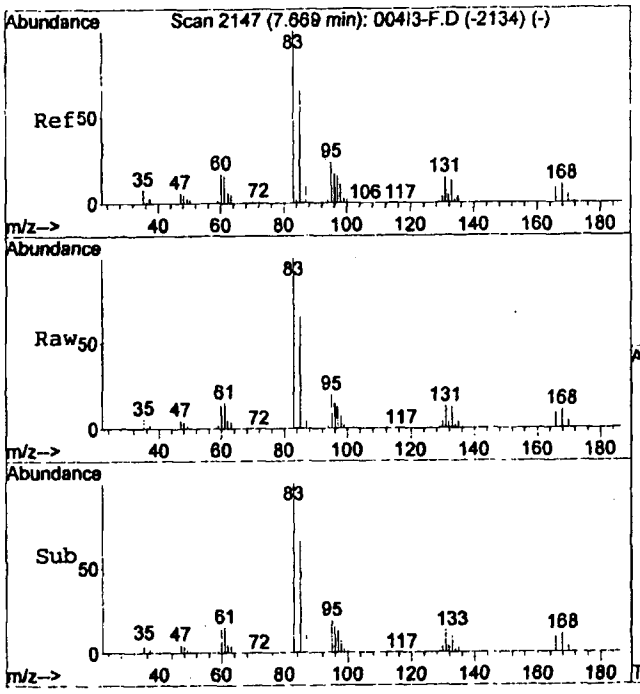


#32
Bromoform
Concen: 23.05 ppm
RT: 7.09 min Scan# 1970
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:171 Resp: 354818

Ion	Ratio	Lower	Upper
171	100		
91	36.4	26.7	49.5
173	196.1	137.5	255.4

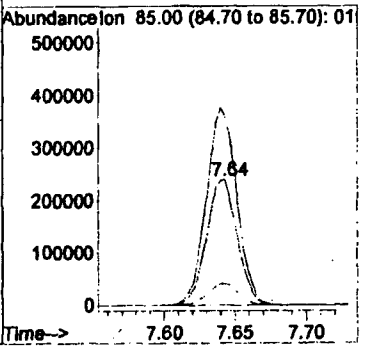


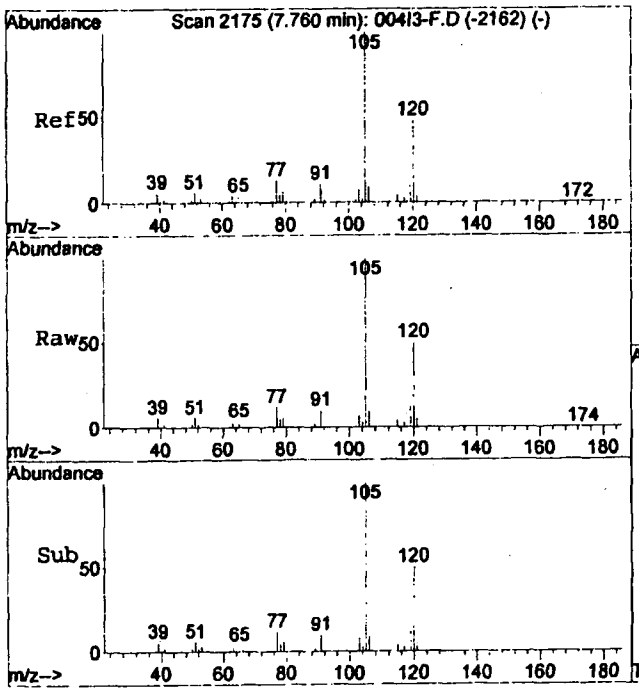


#34
1,1,2,2-Tetrachloroethane
Concen: 25.30 ppm
RT: 7.64 min Scan# 2139
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion: 85 Resp: 360043

Ion	Ratio	Lower	Upper
85	100		
168	16.7	12.2	22.6
83	155.4	106.9	198.5

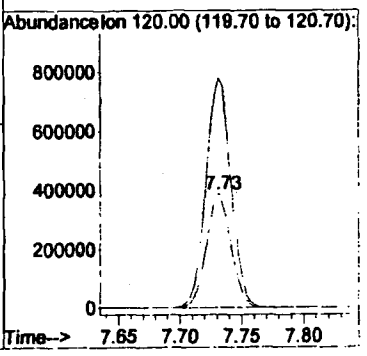


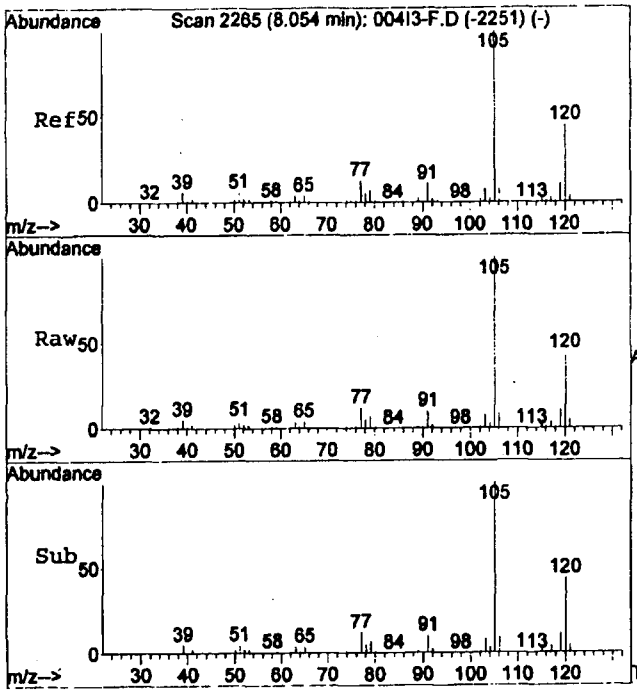


#35
1,3,5-Trimethylbenzene
Concen: 24.06 ppm
RT: 7.73 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:120 Resp: 540794

Ion	Ratio	Lower	Upper
120	100		
105	204.0	146.9	272.7

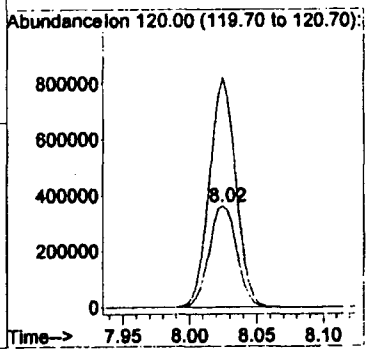




#36
1,2,4-Trimethylbenzene
Concen: 24.53 ppm
RT: 8.02 min Scan# 2256
Delta R.T. -0.03 min
Lab File: 011DR-F.D
Acq: 13 Aug 2011 14:44

Tgt Ion:120 Resp: 515964

Ion	Ratio	Lower	Upper
120	100		
105	216.7	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\012DR-F.D Vial: 12
Acq On : 13 Aug 2011 14:58 Operator: SO
Sample : ic11,MDL4,2011-08-13,13:00:29,1.38303 Inst : Instrumen
Misc : HS111 00014B-04,27.5,SO, Multiplr: 1.38
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:06:56 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

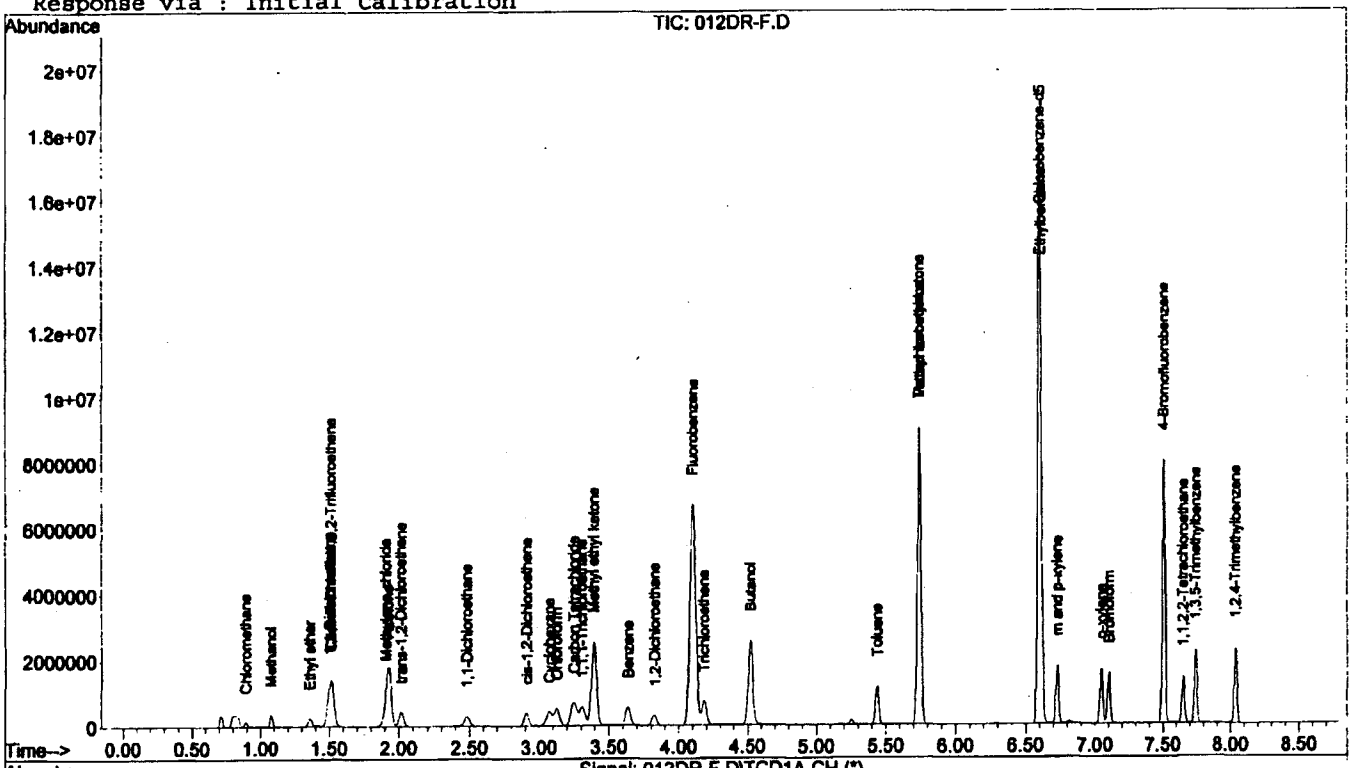
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.10	96	9763970	201.00	ppm		-0.02
24) Chlorobenzene-d5	6.60	117	8584681	176.00	ppm		-0.02
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.50	95	2275758	50.45	ppm		-0.02
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	37377	0.5102	perce		100
2) Methane	5.76	GC1	17413	0.5021	perce		100
4) Chloromethane	0.89	50	111553	22.9956	ppm		99
5) Methanol	1.08	31	281344	204.9658	ppm		100
6) Ethyl ether	1.36	59	102541	21.9994	ppm		96
7) 1,1-Dichloroethene	1.49	96	200240	23.7667	ppm		90
8) 1,1,2-Trichloro-1,2,2-Trif	1.51	101	493712	23.1289	ppm		98
9) Acetone	1.93	58	773677	255.0484	ppm		70
10) Carbon Disulfide	1.52	76	538292	24.5773	ppm		95
11) Methylene chloride	1.90	84	171441	25.1178	ppm		93
12) trans-1,2-Dichloroethene	2.02	96	224082	25.1330	ppm		95
13) 1,1-Dichloroethane	2.48	63	360564	22.8997	ppm	#	94
14) cis-1,2-Dichloroethene	2.91	96	226373	25.0088	ppm		94
15) Methyl ethyl ketone	3.39	72	1042940	242.4607	ppm		89
16) Chloroform	3.12	83	532072	21.3572	ppm		97
17) 1,1,1-Trichloroethane	3.31	97	574578	19.4052	ppm	#	91
18) Cyclohexane	3.07	56	280665	26.3364	ppm		95
19) Carbon Tetrachloride	3.25	82	146186	18.2490	ppm		98
20) Benzene	3.64	78	631718	24.9694	ppm		98
21) 1,2-Dichloroethane	3.83	62	358487	19.1638	ppm		97
22) Trichloroethene	4.18	130	345126	23.7967	ppm		96
23) Butanol	4.52	55	295935	233.8297	ppm		94
25) Methyl isobutyl ketone	5.74	100	919589	237.7818	ppm		96
26) Toluene	5.44	92	495830	25.8926	ppm		98
27) Tetrachloroethene	5.73	166	526303	22.8839	ppm		97
28) Chlorobenzene	6.60	112	799769	24.4499	ppm	#	99
29) Ethylbenzene	6.62	106	380959	24.2401	ppm		99
30) m and p-xylene	6.73	106	448051	25.1408	ppm		94
31) o-xylene	7.05	106	438749	25.7188	ppm		92
32) Bromoform	7.10	171	365603	23.9004	ppm		98
34) 1,1,2,2-Tetrachloroethane	7.65	85	375632	26.5583	ppm		99
35) 1,3,5-Trimethylbenzene	7.74	120	558786	25.0129	ppm		97
36) 1,2,4-Trimethylbenzene	8.03	120	534255	25.5631	ppm		95

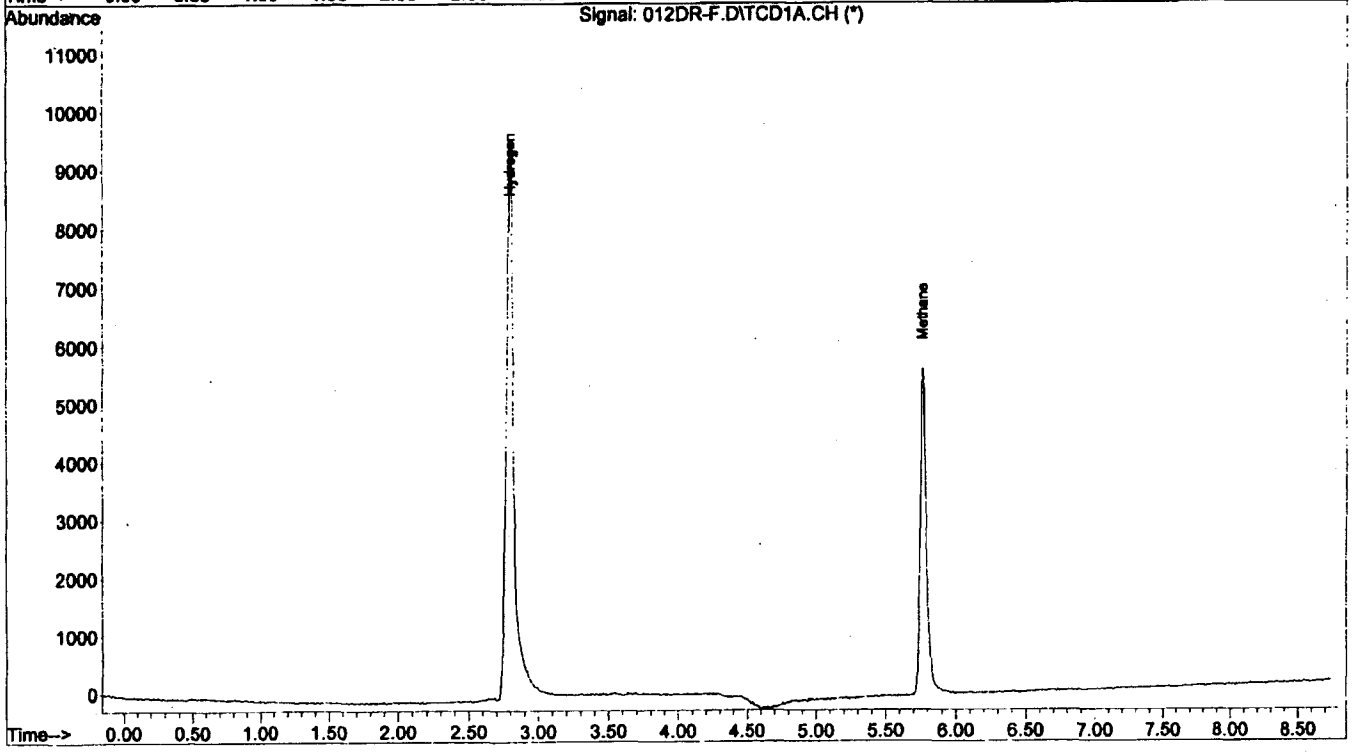
(#) = qualifier out of range (m) = manual integration
012DR-F.D VOCGAS.M Mon Aug 15 11:10:11 2011

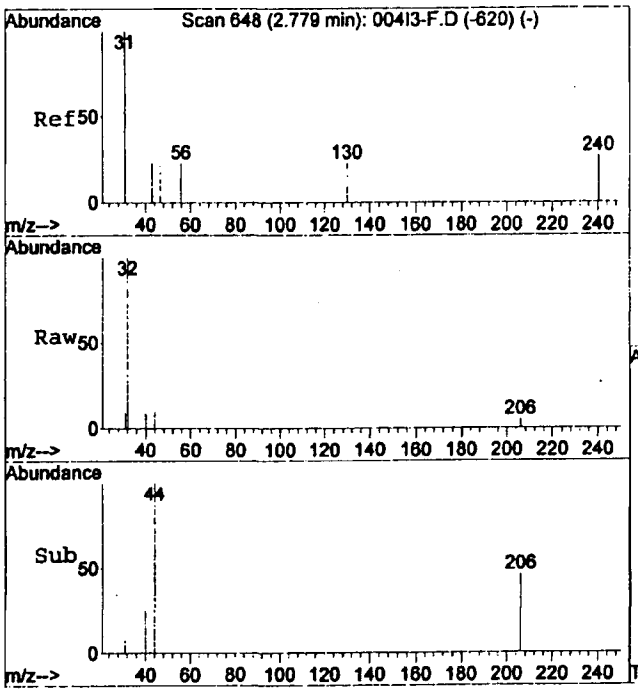
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\012DR-F.D Vial: 12
Acq On : 13 Aug 2011 14:58 Operator: SO
Sample : ic11,MDL4,2011-08-13,13:00:29,1.38303 Inst : Instrumen
Misc : HS111 00014B-04,27.5,SO, Multiplr: 1.38
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:06 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

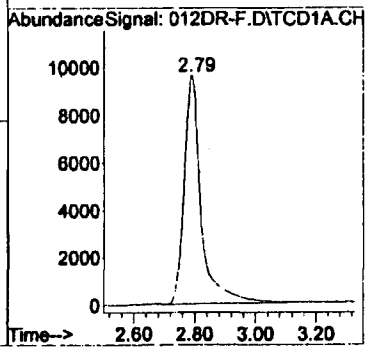


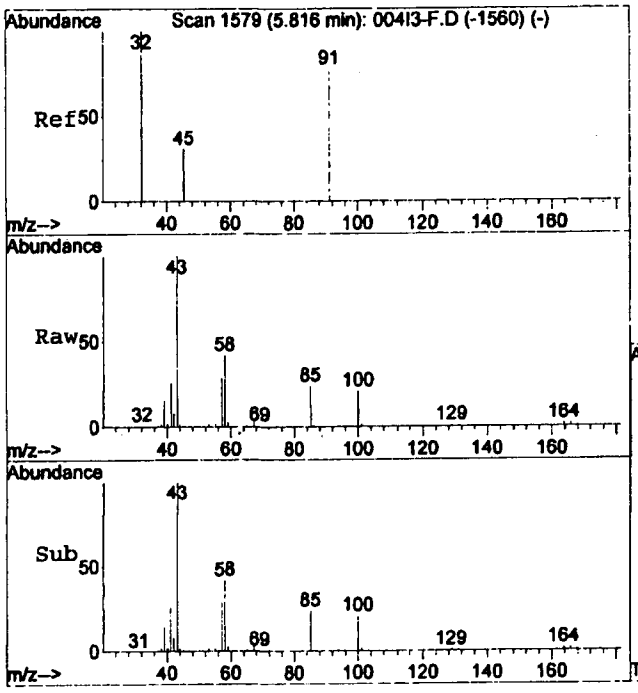




#1
Hydrogen
Concen: 0.51 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

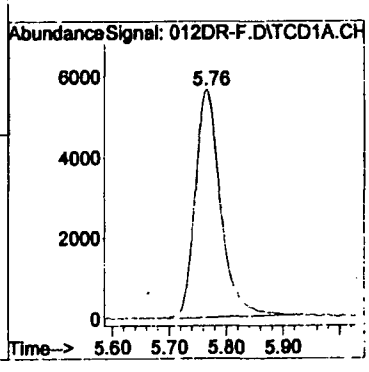
Tgt Sig:GC1 Resp: 37377

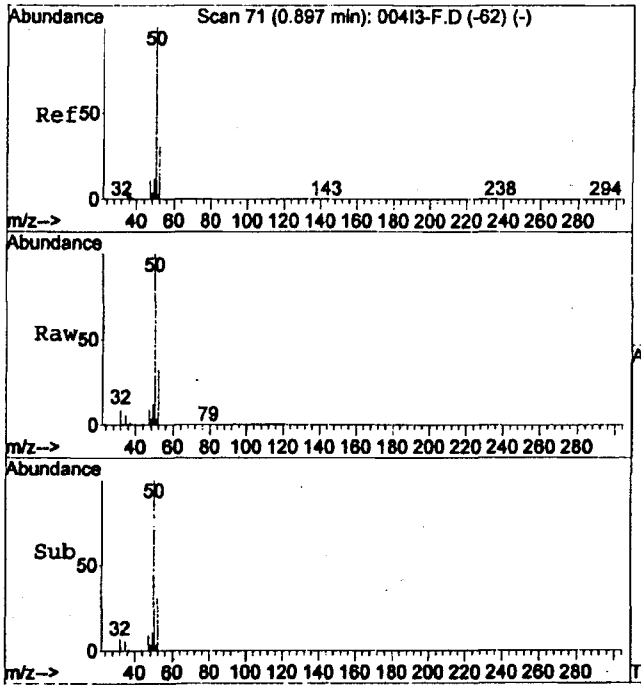




#2
Methane
Concen: 0.50 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Sig:GC1 Resp: 17413

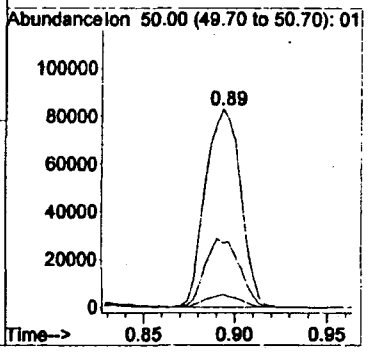


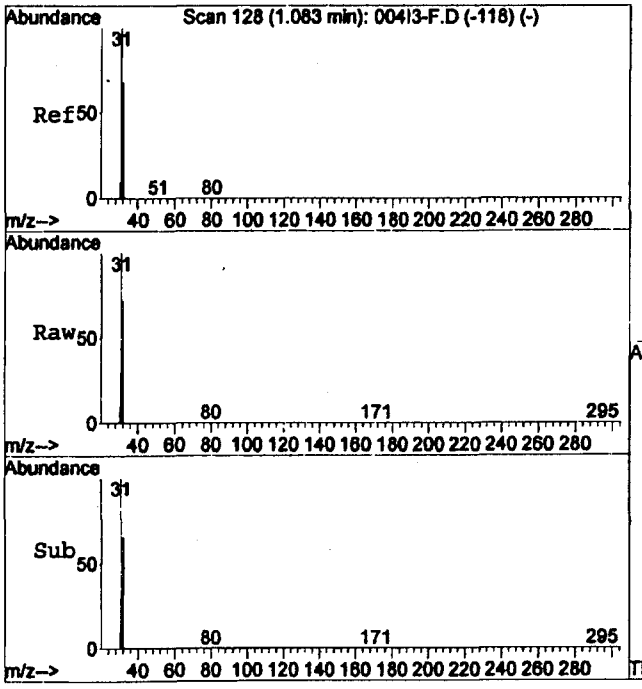


#4
Chloromethane
Concen: 23.00 ppm
RT: 0.89 min Scan# 70
Delta R.T. -0.00 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 50 Resp: 111553

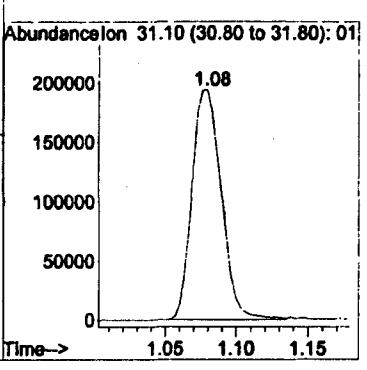
Ion	Ratio	Lower	Upper
50	100		
35	5.8	5.3	9.8
52	33.5	23.2	43.2

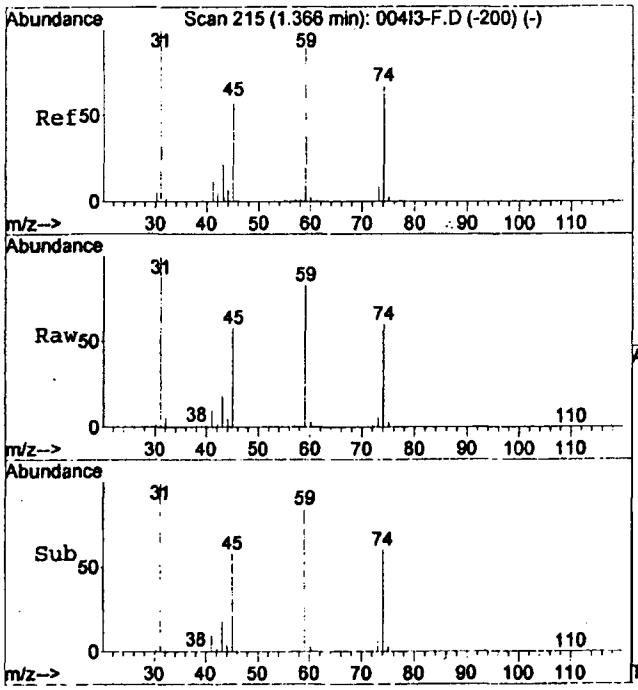




#5
Methanol
Concen: 204.97 ppm
RT: 1.08 min Scan# 127
Delta R.T. -0.00 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 31 Resp: 281344

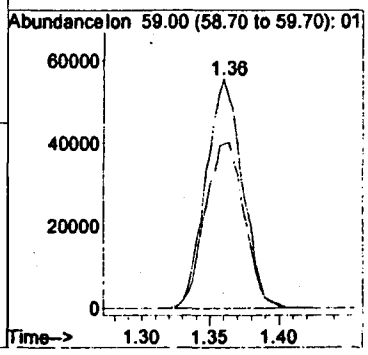


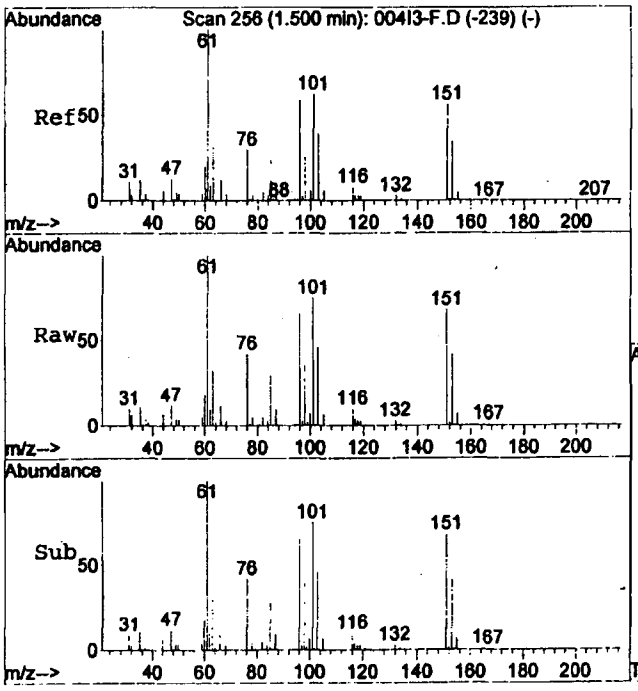


#6
Ethyl ether
Concen: 22.00 ppm
RT: 1.36 min Scan# 213
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 59 Resp: 102541

Ion	Ratio	Lower	Upper
59	100		
74	77.1	51.7	95.9

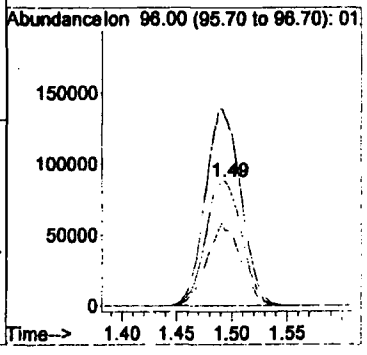


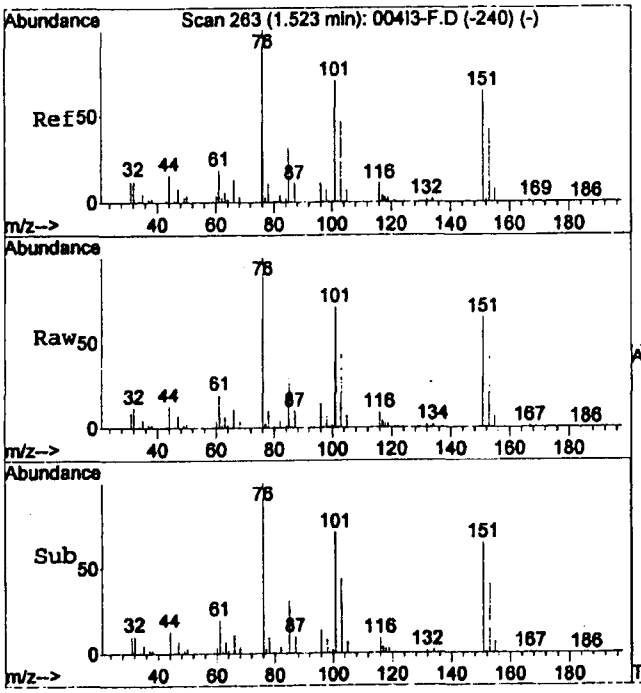


#7
1,1-Dichloroethene
Concen: 23.77 ppm
RT: 1.49 min Scan# 254
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 96 Resp: 200240

Ion	Ratio	Lower	Upper
96	100		
61	155.2	121.2	225.0
98	62.8	44.9	83.3

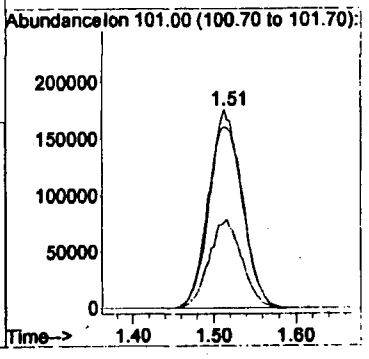


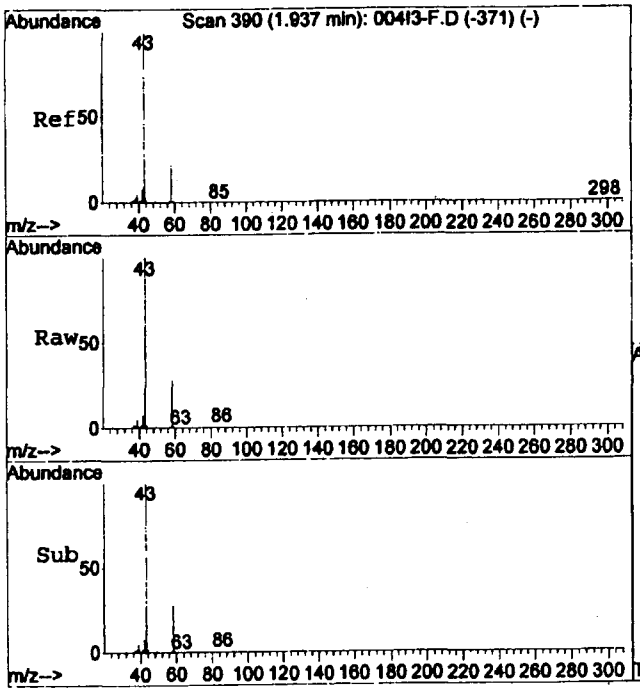


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 23.13 ppm
RT: 1.51 min Scan# 260
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:101 Resp: 493712

Ion	Ratio	Lower	Upper
101	100		
85	44.4	32.3	59.9
151	96.9	66.8	124.2

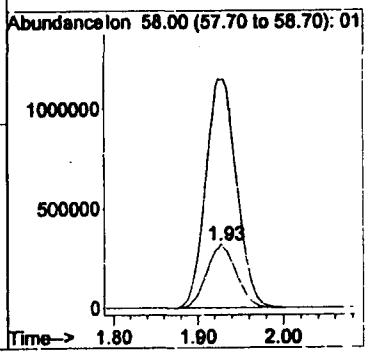


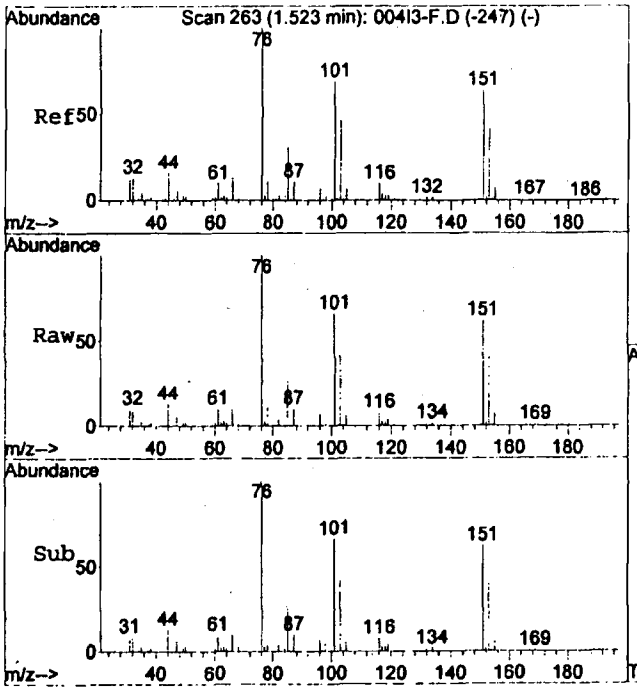


#9
Acetone
Concen: 255.05 ppm
RT: 1.93 min Scan# 387
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 58 Resp: 773677

Ion	Ratio	Lower	Upper
58	100		
43	376.7	317.7	590.1

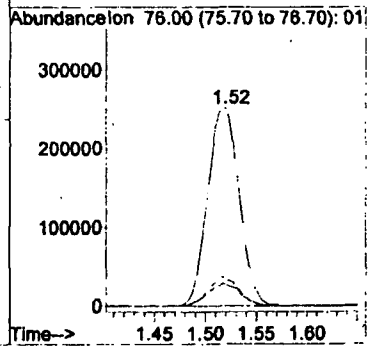


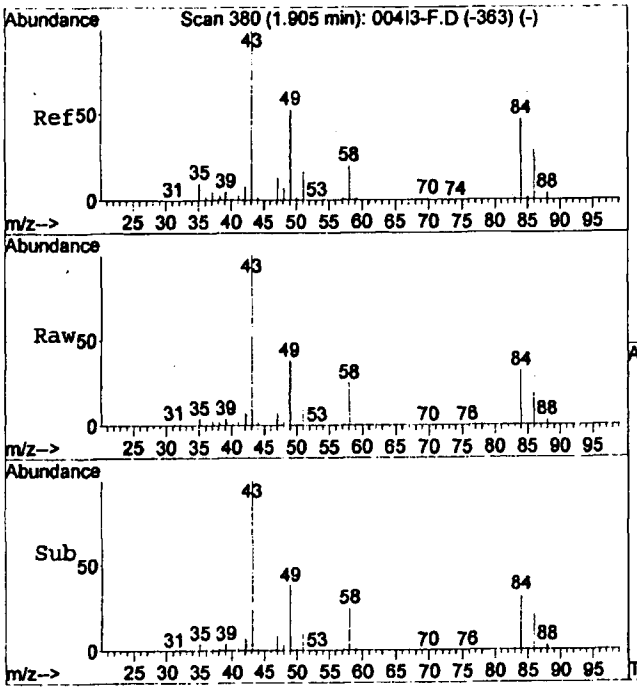


#10
Carbon Disulfide
Concen: 24.58 ppm
RT: 1.52 min Scan# 262
Delta R.T. -0.00 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 76 Resp: 538292

Ion	Ratio	Lower	Upper
76	100		
44	12.8	11.5	21.5
78	10.8	7.6	14.2

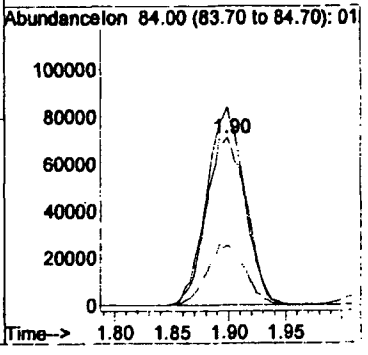


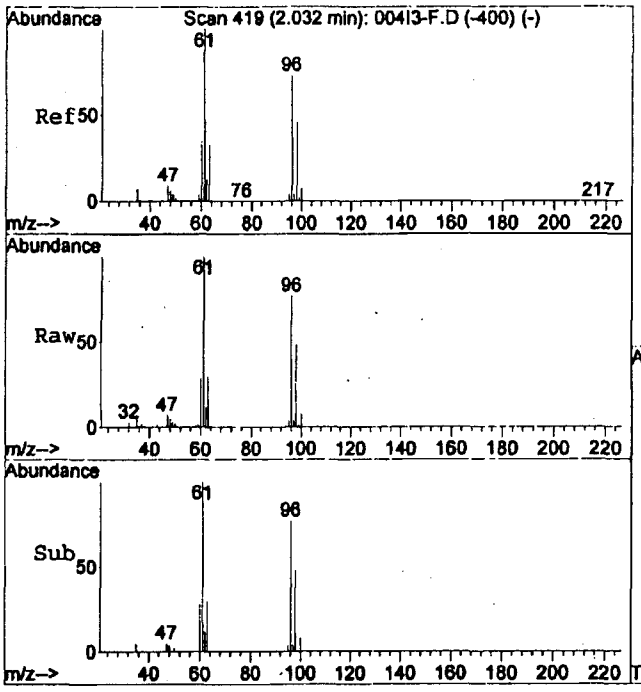


#11
Methylene chloride
Concen: 25.12 ppm
RT: 1.90 min Scan# 378
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 84 Resp: 171441

Ion	Ratio	Lower	Upper
84	100		
49	113.8	85.8	159.4
51	34.3	25.6	47.6

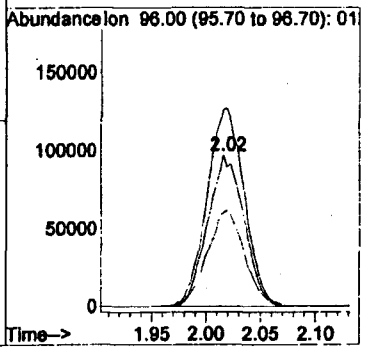


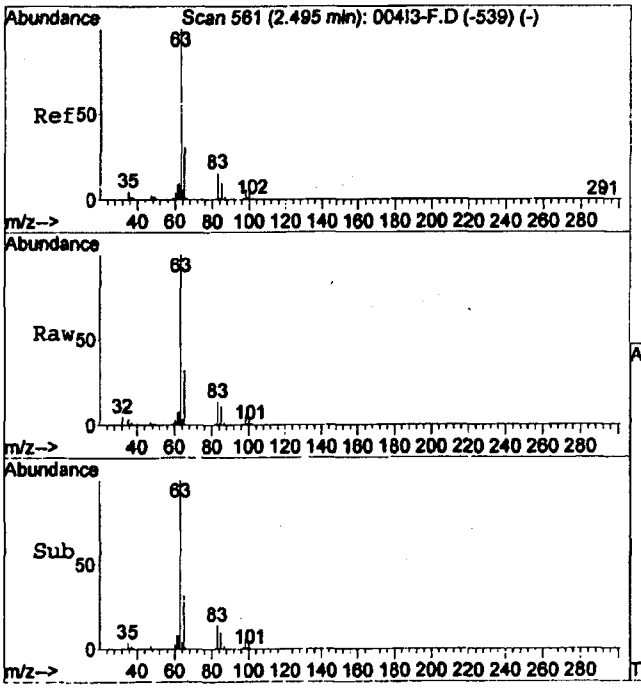


#12
trans-1,2-Dichloroethene
Concen: 25.13 ppm
RT: 2.02 min Scan# 414
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 96 Resp: 224082

Ion	Ratio	Lower	Upper
96	100		
61	134.4	100.3	186.3
98	64.2	45.6	84.8

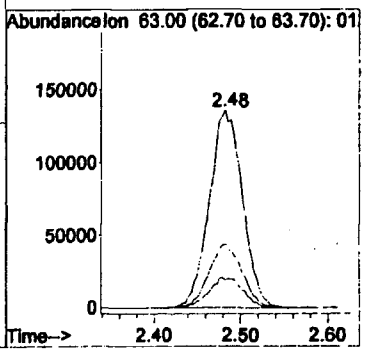


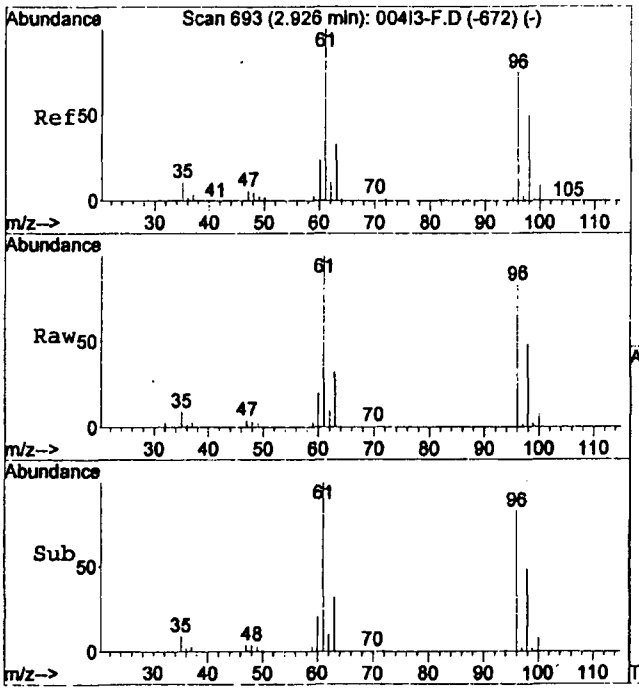


#13
1,1-Dichloroethane
Concen: 22.90 ppm
RT: 2.48 min Scan# 557
Delta R.T. -0.01 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 63 Resp: 360564

Ion	Ratio	Lower	Upper
63	100		
83	7.9	10.7	19.9#
65	32.0	22.1	41.1

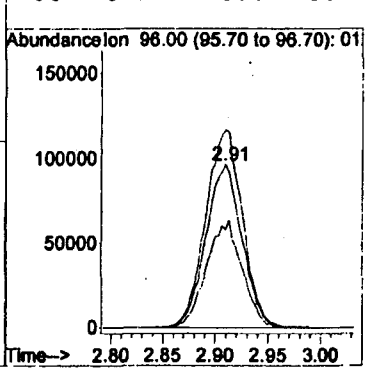


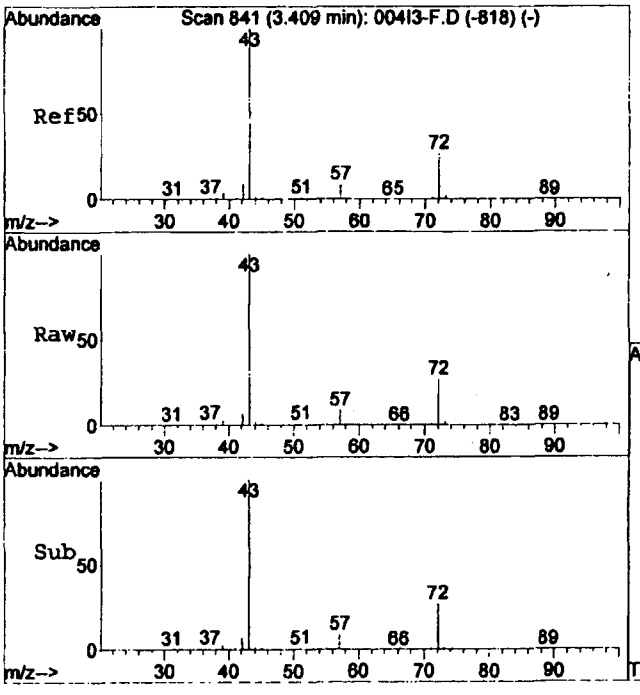


#14
cis-1,2-Dichloroethene
Concen: 25.01 ppm
RT: 2.91 min Scan# 688
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 96 Resp: 226373

Ion	Ratio	Lower	Upper
96	100		
61	124.0	94.0	174.6
98	64.6	45.2	84.0

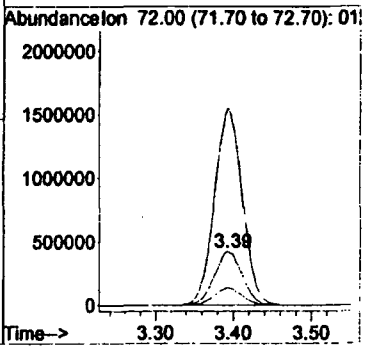


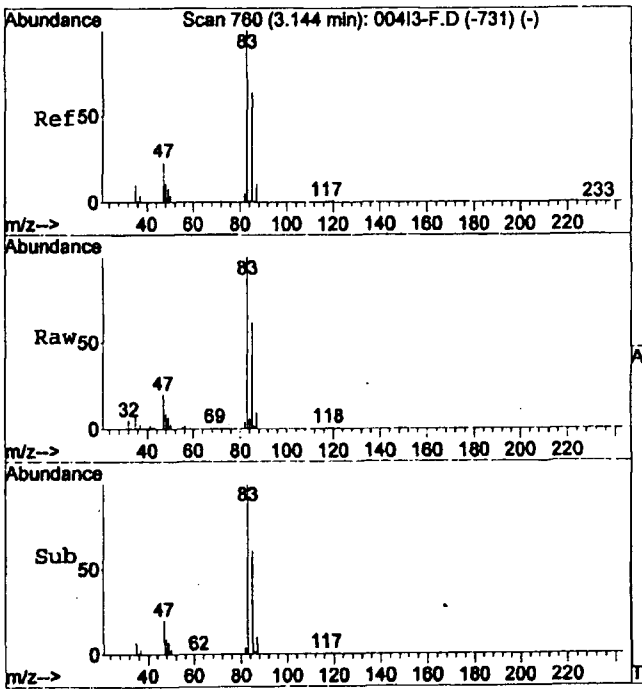


#15
Methyl ethyl ketone
Concen: 242.46 ppm
RT: 3.39 min Scan# 836
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 72 Resp: 1042940

Ion	Ratio	Lower	Upper
72	100		
57	31.9	23.7	43.9
43	365.7	274.5	509.7

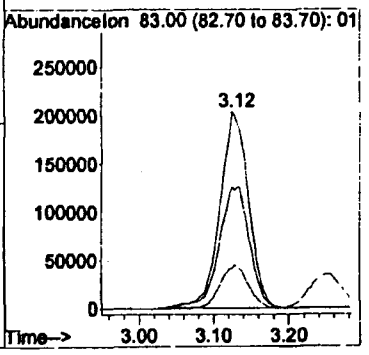


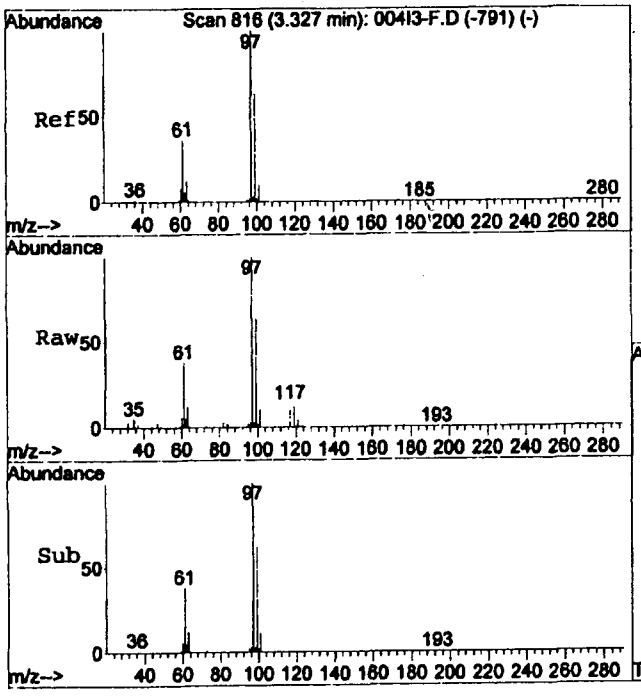


#16
Chloroform
Concen: 21.36 ppm
RT: 3.12 min Scan# 754
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 83 Resp: 532072

Ion	Ratio	Lower	Upper
83	100		
47	21.3	16.6	30.8
85	66.6	45.1	83.7

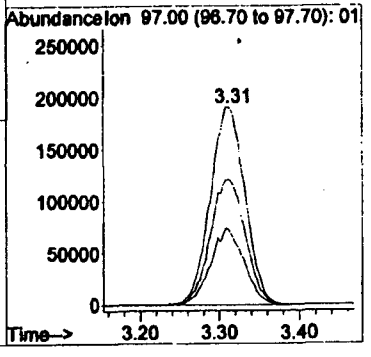


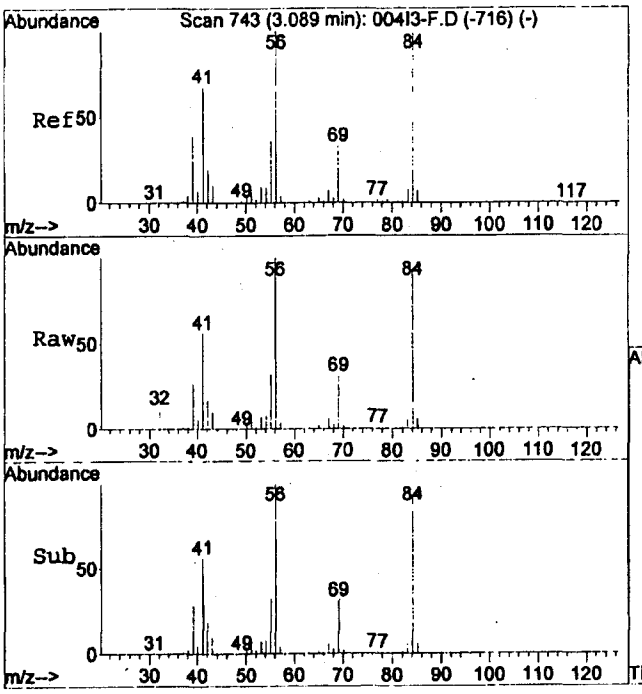


#17
1,1,1-Trichloroethane
Concen: 19.41 ppm
RT: 3.31 min Scan# 811
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 97 Resp: 574578

Ion	Ratio	Lower	Upper
97	100		
61	23.6	26.1	48.5#
99	64.2	45.0	83.6

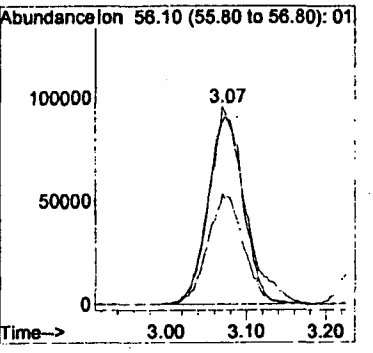


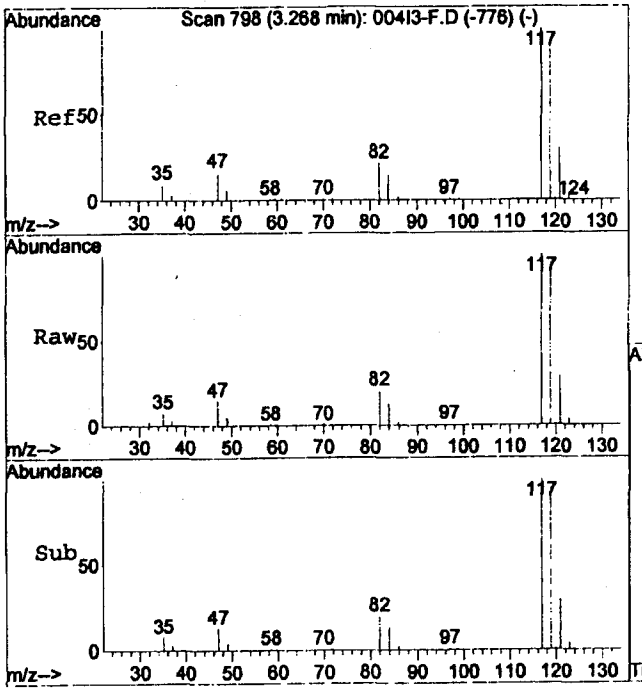


#18
Cyclohexane
Concen: 26.34 ppm
RT: 3.07 min Scan# 737
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 56 Resp: 280665

Ion	Ratio	Lower	Upper
56	100		
84	106.3	75.7	140.7
41	59.0	47.6	88.4

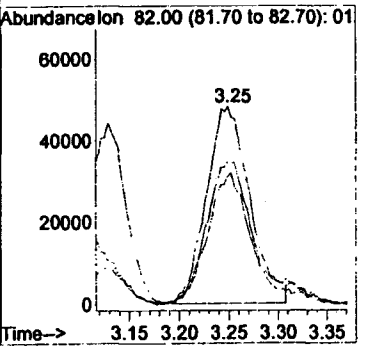


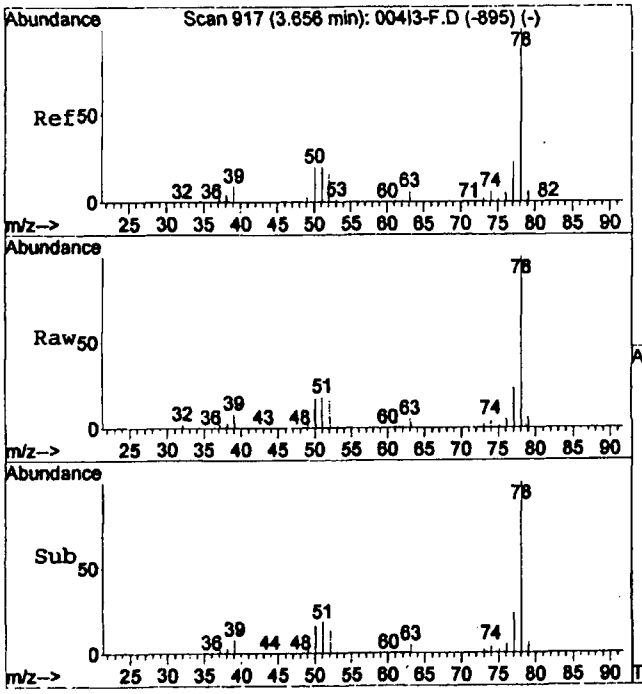


#19
Carbon Tetrachloride
Concen: 18.25 ppm
RT: 3.25 min Scan# 792
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 82 Resp: 146186

Ion	Ratio	Lower	Upper
82	100		
47	73.3	51.1	94.9
84	64.6	43.1	80.1

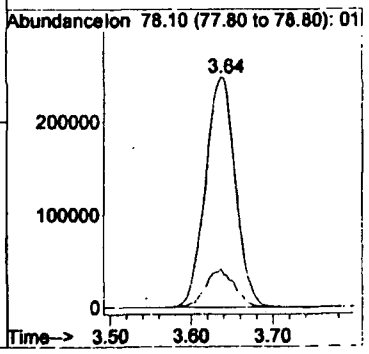


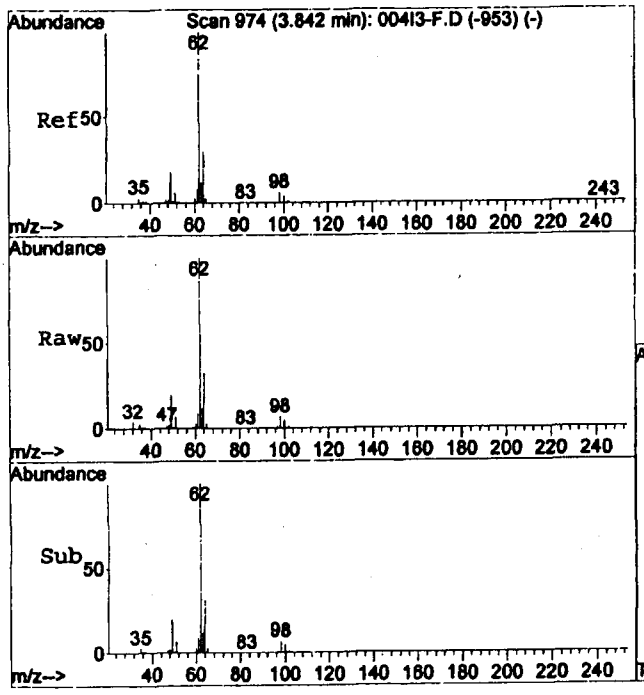


#20
Benzene
Concen: 24.97 ppm
RT: 3.64 min Scan# 911
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 78 Resp: 631718

Ion	Ratio	Lower	Upper
78	100		
52	15.6	11.6	21.6

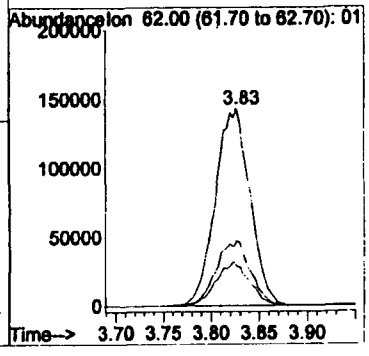


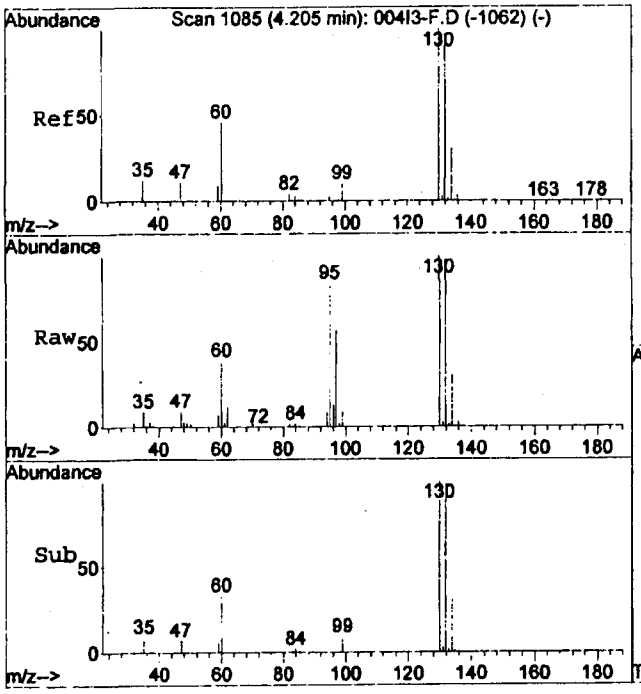


#21
1,2-Dichloroethane
Concen: 19.16 ppm
RT: 3.83 min Scan# 969
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 62 Resp: 358487

Ion	Ratio	Lower	Upper
62	100		
49	21.4	12.7	23.7
64	32.4	22.4	41.6

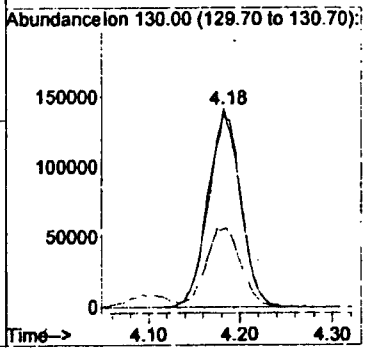


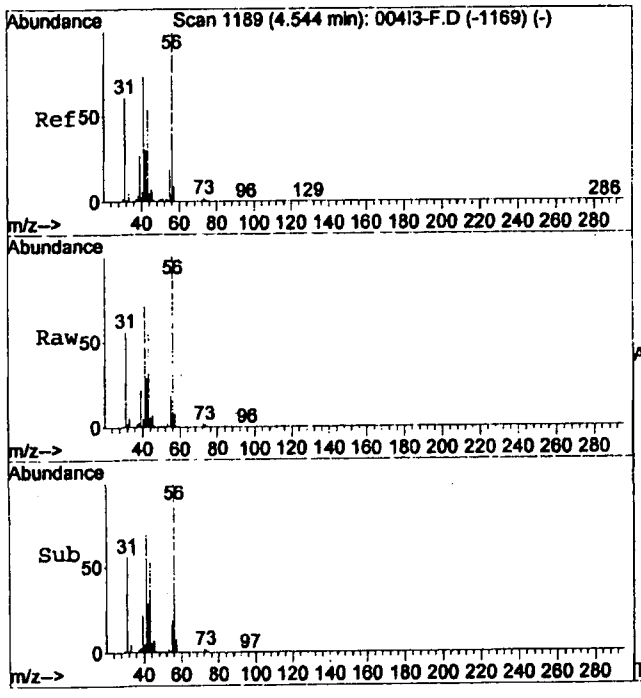


#22
Trichloroethene
Concen: 23.80 ppm
RT: 4.18 min Scan# 1078
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:130 Resp: 345126

Ion	Ratio	Lower	Upper
130	100		
60	42.4	35.2	65.4
132	97.4	68.0	126.4

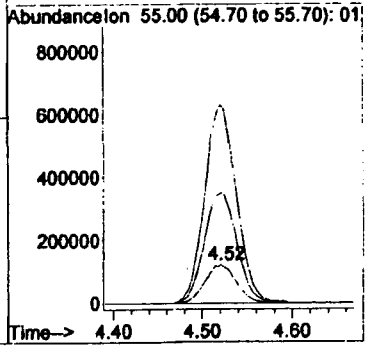


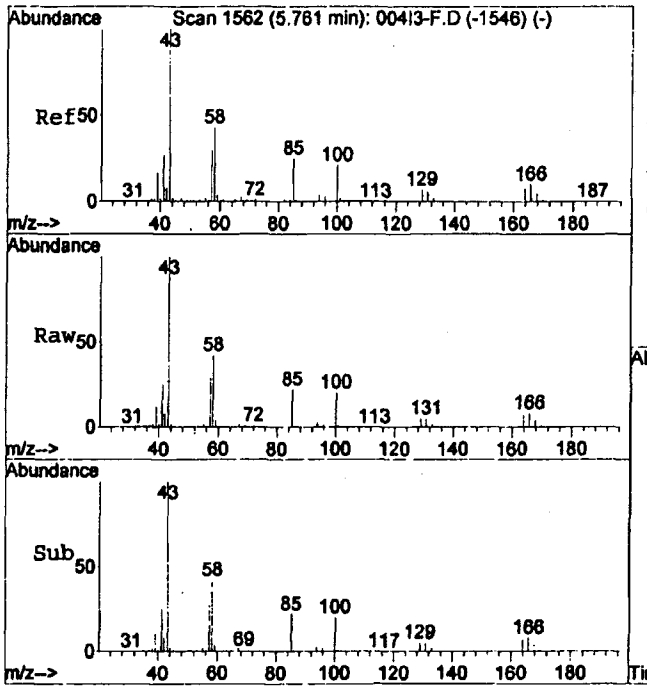


#23
Butanol
Concen: 233.83 ppm
RT: 4.52 min Scan# 1182
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 55 Resp: 295935

Ion	Ratio	Lower	Upper
55	100		
31	297.3	218.1	405.1
56	520.5	355.3	659.9

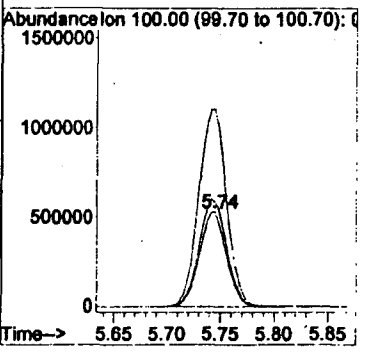


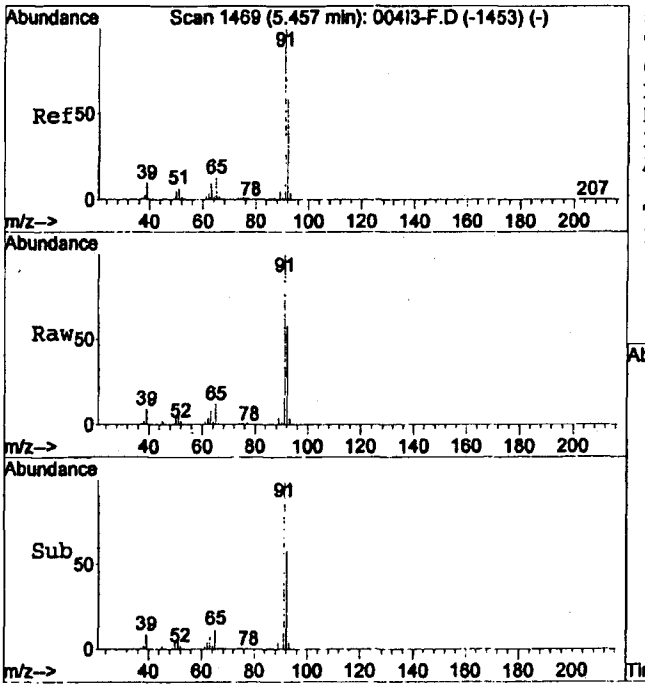


#25
Methyl isobutyl ketone
Concen: 237.78 ppm
RT: 5.74 min Scan# 1557
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:100 Resp: 919589

Ion	Ratio	Lower	Upper
100	100		
58	215.0	144.8	268.8
85	116.1	81.6	151.6

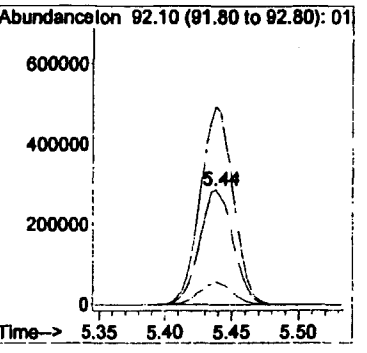


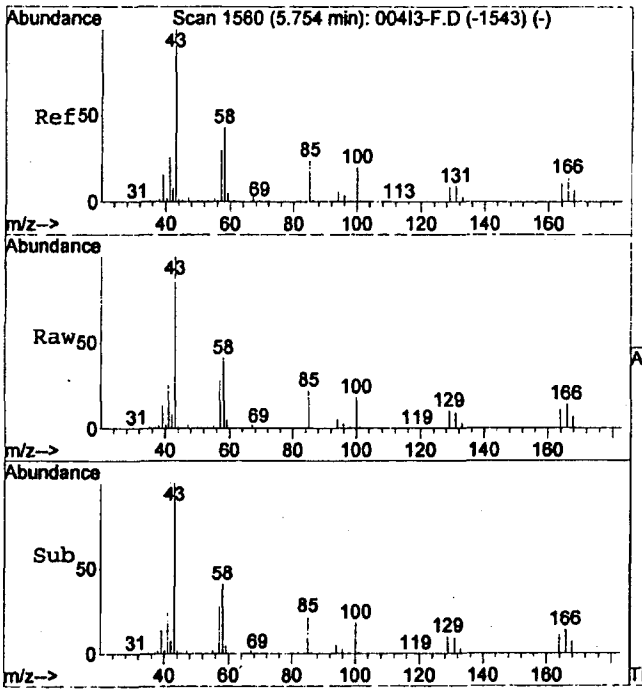


#26
Toluene
Concen: 25.89 ppm
RT: 5.44 min Scan# 1463
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 92 Resp: 495830

Ion	Ratio	Lower	Upper
92	100		
91	169.6	120.1	223.1
65	19.1	14.4	26.8

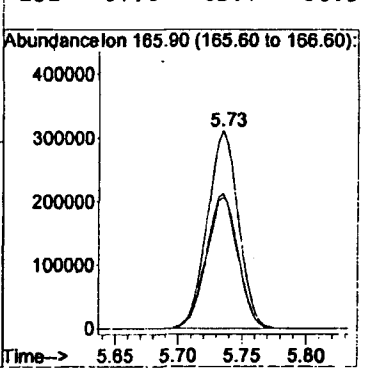


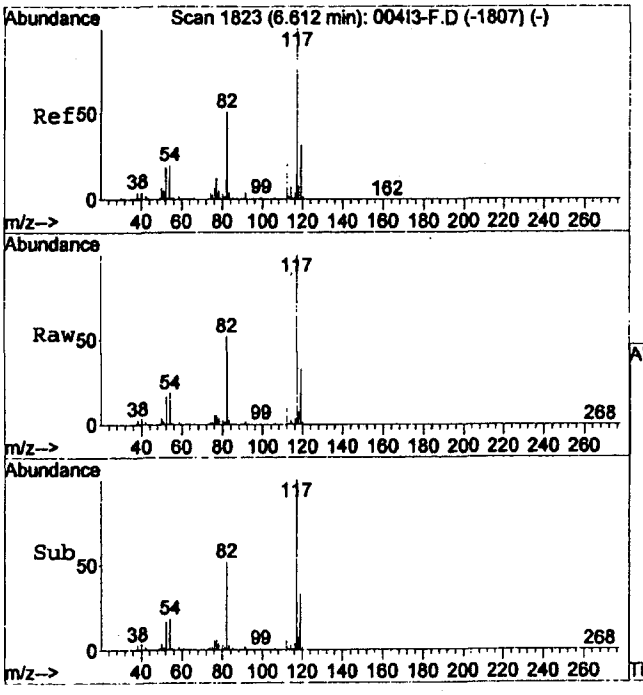


#27
Tetrachloroethene
Concen: 22.88 ppm
RT: 5.73 min Scan# 1554
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:166 Resp: 526303

Ion	Ratio	Lower	Upper
166	100		
129	69.1	46.3	86.1
131	67.4	45.7	84.9

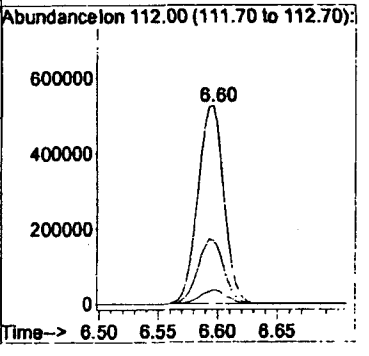


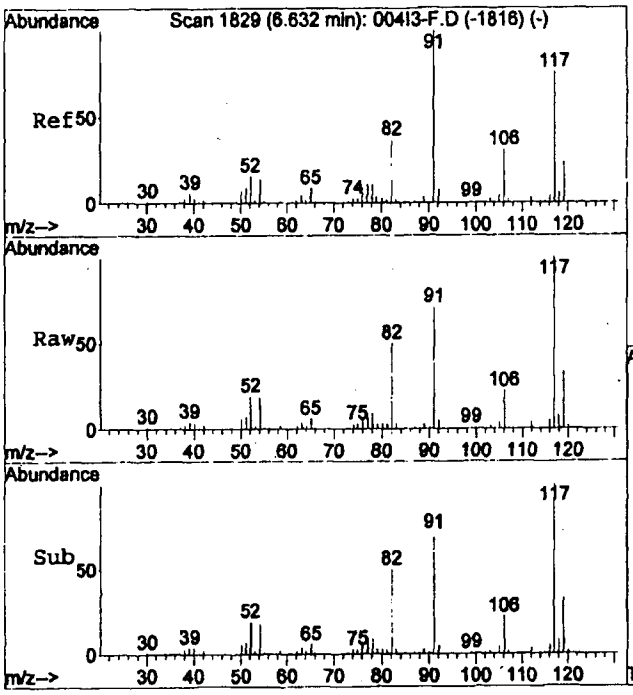


#28
Chlorobenzene
Concen: 24.45 ppm
RT: 6.60 min Scan# 1818
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:112 Resp: 799769

Ion	Ratio	Lower	Upper
112	100		
56	6.9	2.7	5.1#
114	32.6	23.0	42.6

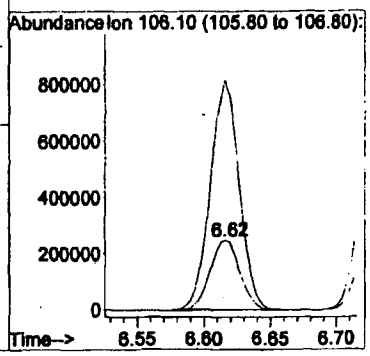


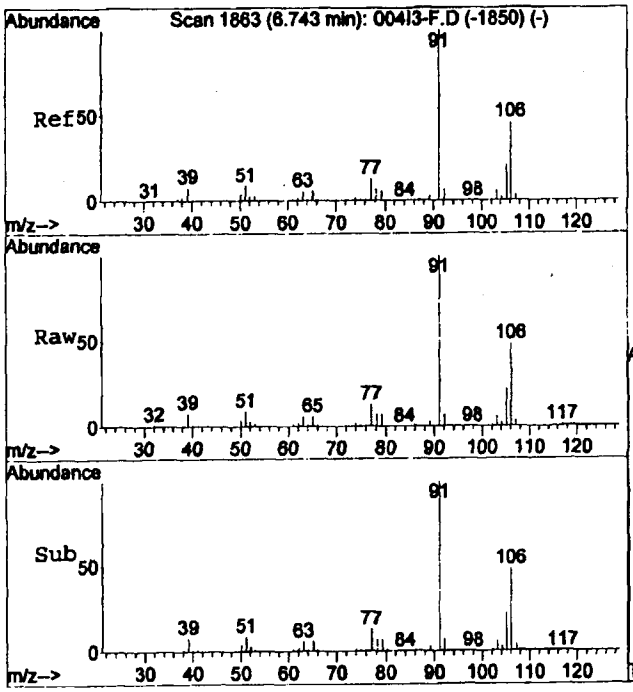


#29
Ethylbenzene
Concen: 24.24 ppm
RT: 6.62 min Scan# 1824
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:106 Resp: 380959

Ion	Ratio	Lower	Upper
106	100		
91	320.5	225.4	418.6

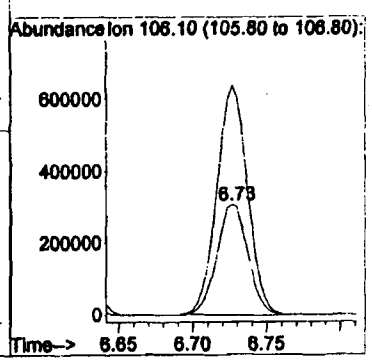


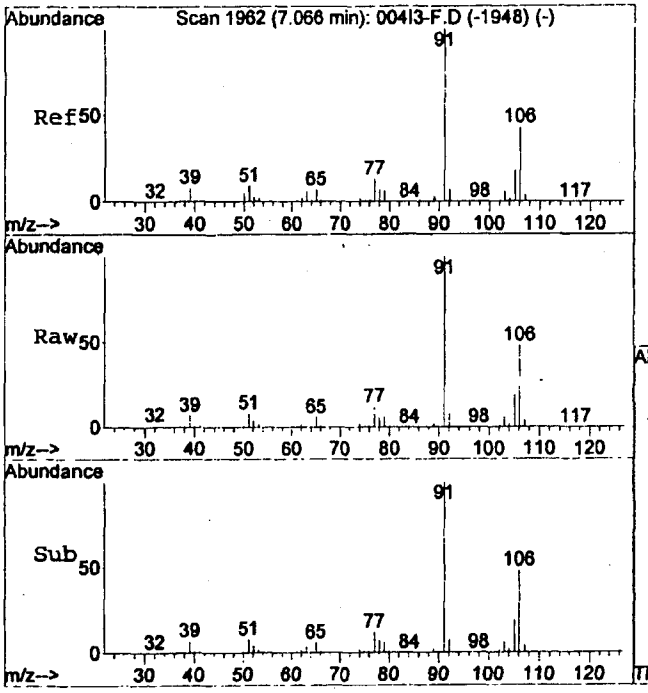


#30
m and p-xylene
Concen: 25.14 ppm
RT: 6.73 min Scan# 1858
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:106 Resp: 448051

Ion	Ratio	Lower	Upper
106	100		
91	205.2	150.8	280.1

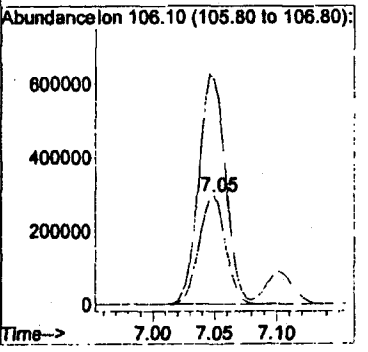


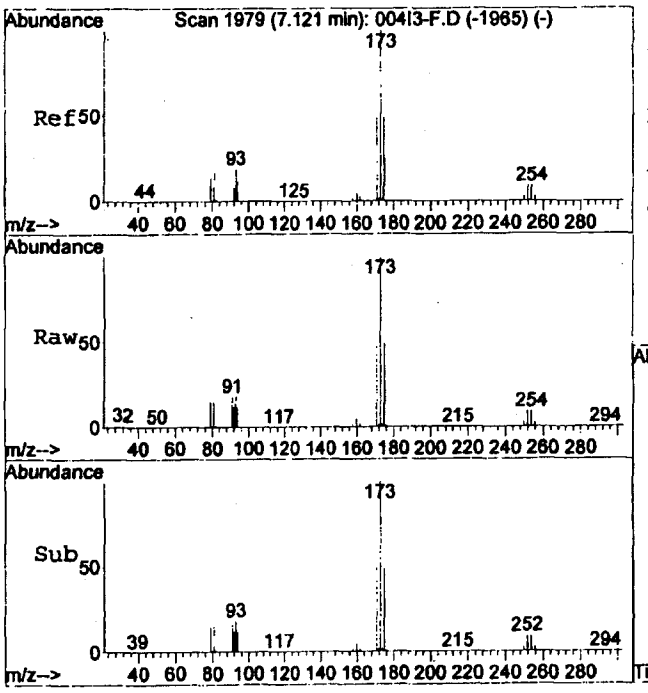


#31
o-xylene
Concen: 25.72 ppm
RT: 7.05 min Scan# 1957
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:106 Resp: 438749

Ion	Ratio	Lower	Upper
106	100		
91	214.1	159.0	295.4

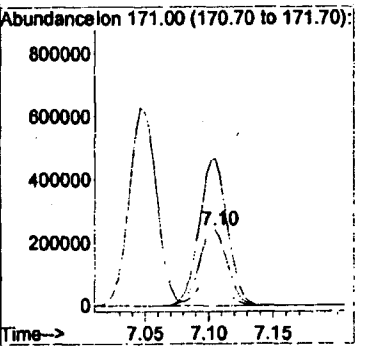


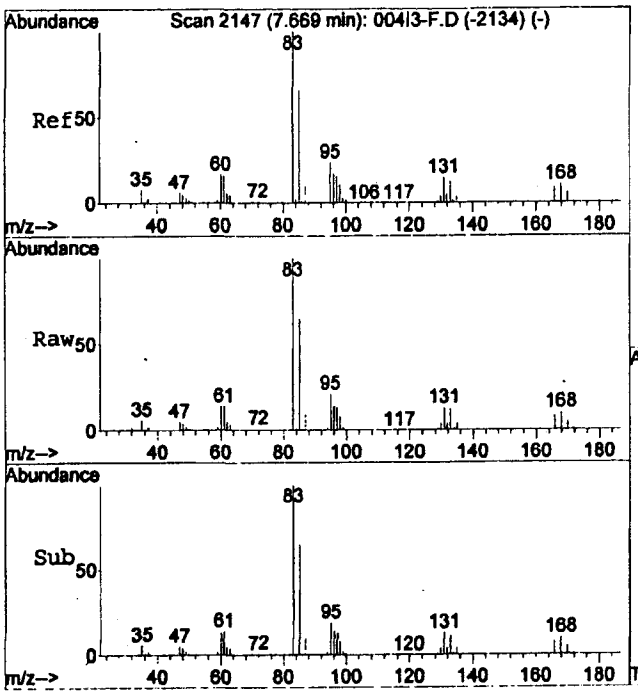


#32
Bromoform
Concen: 23.90 ppm
RT: 7.10 min Scan# 1974
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:171 Resp: 365603

Ion	Ratio	Lower	Upper
171	100		
91	36.1	26.7	49.5
173	193.5	137.5	255.4

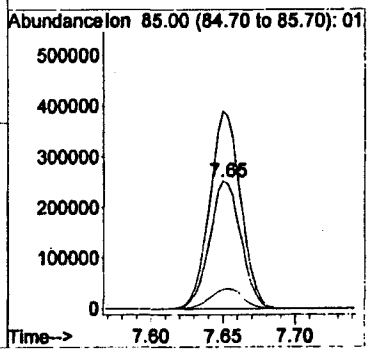


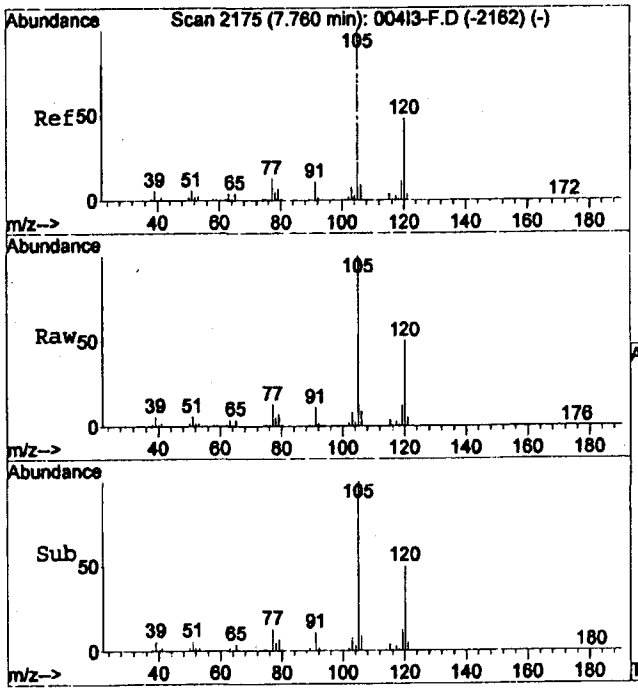


#34
1,1,2,2-Tetrachloroethane
Concen: 26.56 ppm
RT: 7.65 min Scan# 2141
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion: 85 Resp: 375632

Ion	Ratio	Lower	Upper
85	100		
168	16.1	12.2	22.6
83	153.1	106.9	198.5

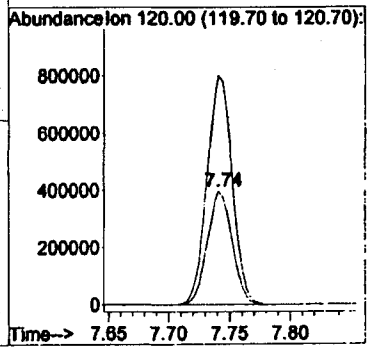


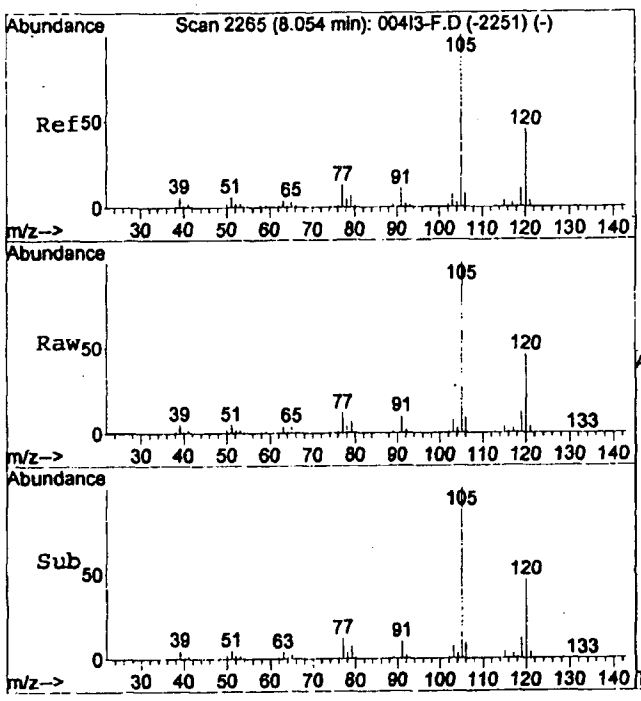


#35
1,3,5-Trimethylbenzene
Concen: 25.01 ppm
RT: 7.74 min Scan# 2169
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:120 Resp: 558786

Ion	Ratio	Lower	Upper
120	100		
105	204.8	146.9	272.7

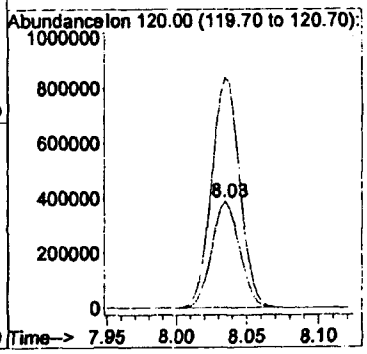




#36
1,2,4-Trimethylbenzene
Concen: 25.56 ppm
RT: 8.03 min Scan# 2259
Delta R.T. -0.02 min
Lab File: 012DR-F.D
Acq: 13 Aug 2011 14:58

Tgt Ion:120 Resp: 534255

Ion	Ratio	Lower	Upper
120	100		
105	218.1	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\013DR-F.D Vial: 13
Acq On : 13 Aug 2011 15:11 Operator: SO
Sample : ic12,MDL5,2011-08-13,13:08:12,1.40257 Inst : Instrumen
Misc : HS111 00014B-05,27.4,SO, Multiplr: 1.40
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:20:33 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

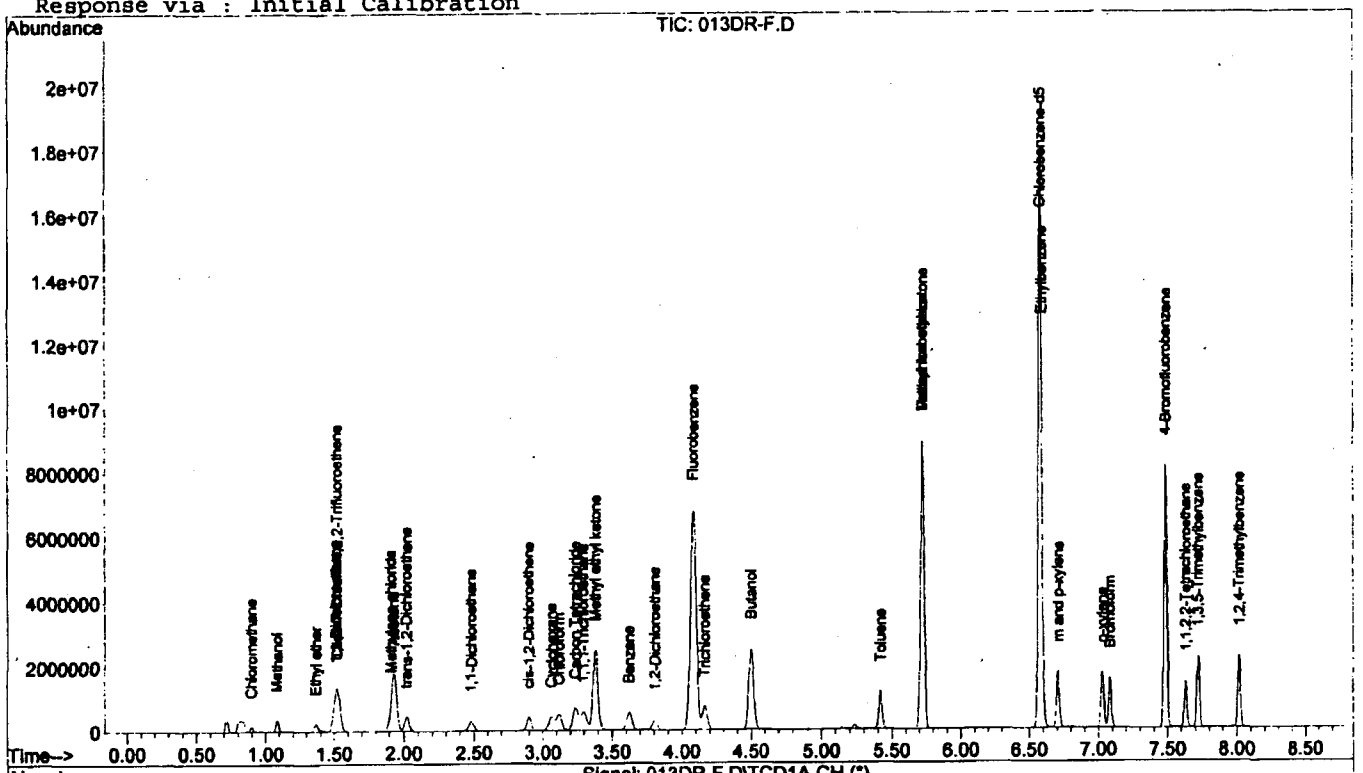
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.08	96	9906124	201.00	ppm		-0.04
24) Chlorobenzene-d5	6.58	117	8663146	176.00	ppm		-0.04
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.48	95	2285399	50.91	ppm		-0.04
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	36418	0.5041	perce		100
2) Methane	5.76	GC1	17519	0.5123	perce		100
4) Chloromethane	0.90	50	109110	22.4825	ppm		98
5) Methanol	1.09	31	271465	197.6847	ppm		100
6) Ethyl ether	1.37	59	105413	22.6059	ppm		99
7) 1,1-Dichloroethene	1.50	96	198756	23.5805	ppm		90
8) 1,1,2-Trichloro-1,2,2-Trif	1.53	101	480622	22.5061	ppm		97
9) Acetone	1.93	58	748652	246.6940	ppm		70
10) Carbon Disulfide	1.53	76	527081	24.0552	ppm		96
11) Methylene chloride	1.90	84	168843	24.7266	ppm		91
12) trans-1,2-Dichloroethene	2.03	96	219606	24.6206	ppm		93
13) 1,1-Dichloroethane	2.48	63	356236	22.6152	ppm		100
14) cis-1,2-Dichloroethene	2.90	96	220609	24.3617	ppm		94
15) Methyl ethyl ketone	3.38	72	1034189	240.3243	ppm		88
16) Chloroform	3.12	83	518949	20.8216	ppm		96
17) 1,1,1-Trichloroethane	3.29	97	560178	18.9109	ppm		100
18) Cyclohexane	3.06	56	272836	25.5909	ppm		95
19) Carbon Tetrachloride	3.24	82	141730	17.6852	ppm		97
20) Benzene	3.62	78	618216	24.4254	ppm		97
21) 1,2-Dichloroethane	3.81	62	345303	18.4512	ppm		96
22) Trichloroethene	4.16	130	347403	23.9435	ppm		94
23) Butanol	4.50	55	286841	226.5480	ppm		93
25) Methyl isobutyl ketone	5.72	100	903301	234.7247	ppm		96
26) Toluene	5.42	92	498704	26.1714	ppm		98
27) Tetrachloroethene	5.72	166	522463	22.8293	ppm		97
28) Chlorobenzene	6.57	112	791162	24.3063	ppm	#	99
29) Ethylbenzene	6.60	106	374684	23.9586	ppm		100
30) m and p-xylene	6.71	106	444462	25.0627	ppm		93
31) o-xylene	7.03	106	433915	25.5612	ppm		92
32) Bromoform	7.08	171	356121	23.3956	ppm		99
34) 1,1,2,2-Tetrachloroethane	7.63	85	369813	26.2761	ppm		98
35) 1,3,5-Trimethylbenzene	7.72	120	555629	24.9945	ppm		96
36) 1,2,4-Trimethylbenzene	8.01	120	533107	25.6343	ppm		93

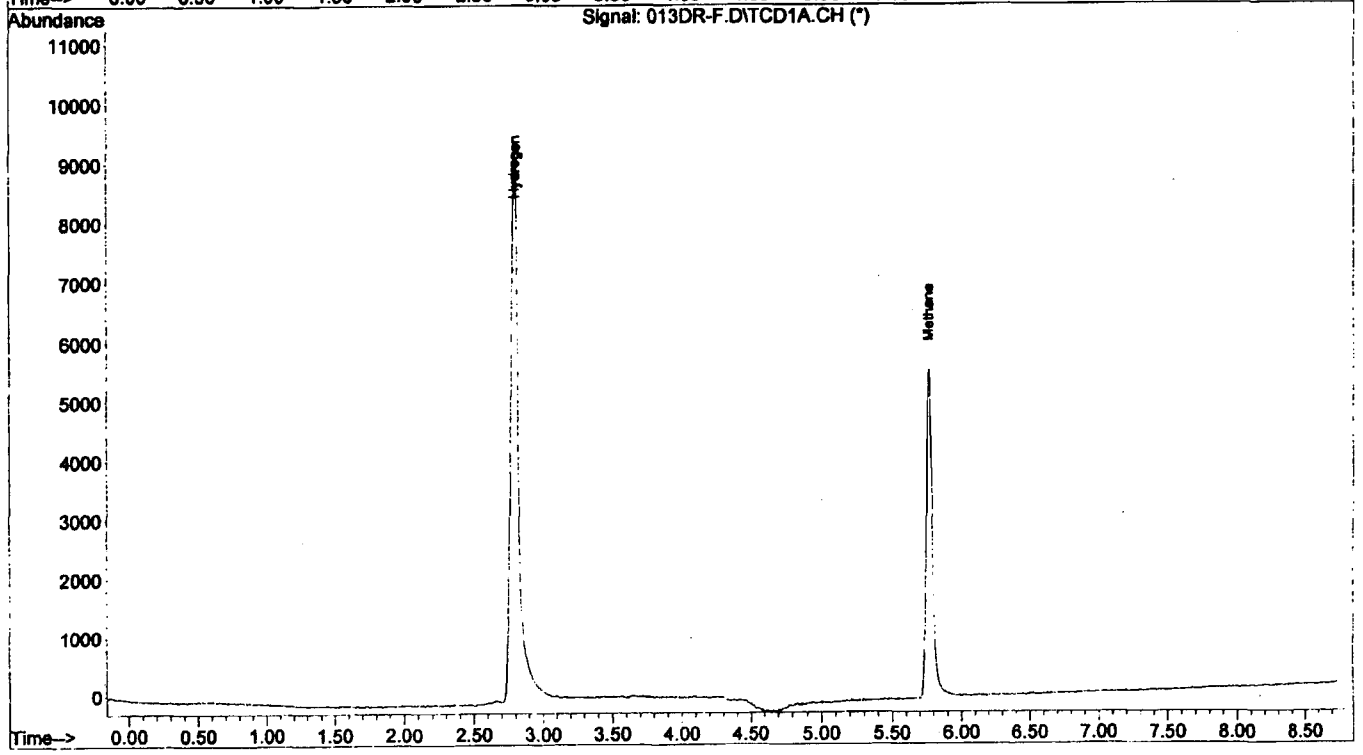
(#) = qualifier out of range (m) = manual integration

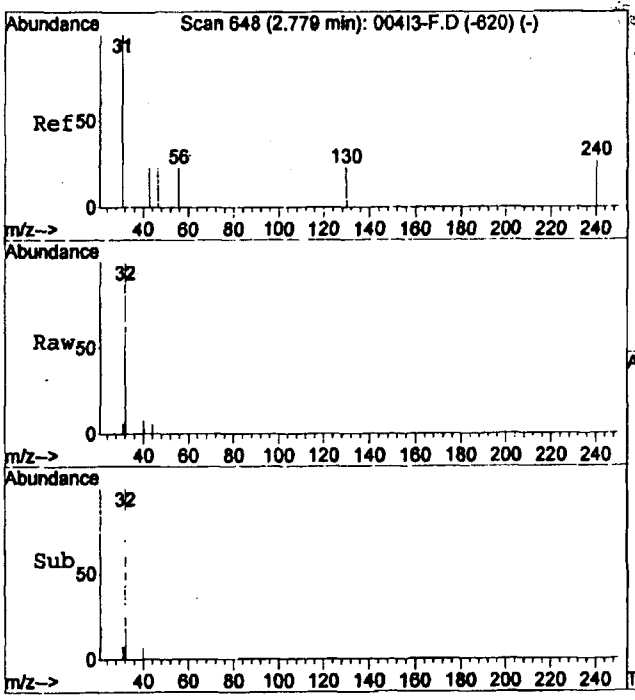
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\013DR-F.D Vial: 13
Acq On : 13 Aug 2011 15:11 Operator: SO
Sample : ic12,MDL5,2011-08-13,13:08:12,1.40257 Inst : Instrumen
Misc : HS111 00014B-05,27.4,SO, Multiplr: 1.40
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:20 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

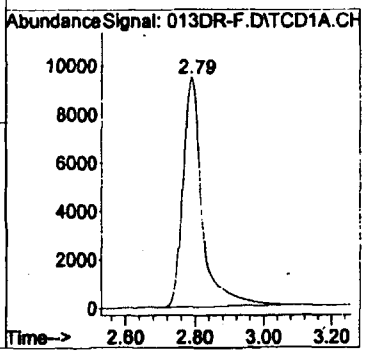


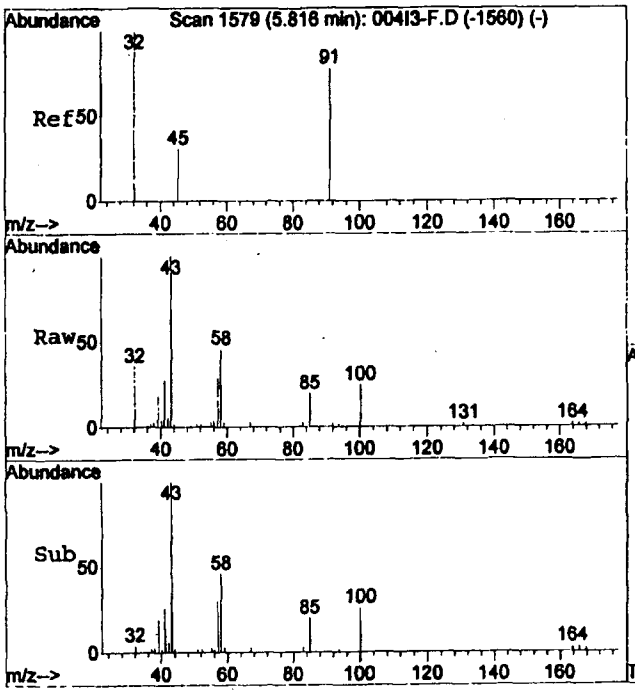




#1
Hydrogen
Concen: 0.50 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

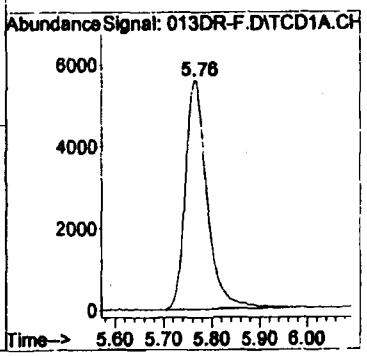
Tgt Sig:GC1 Resp: 36418

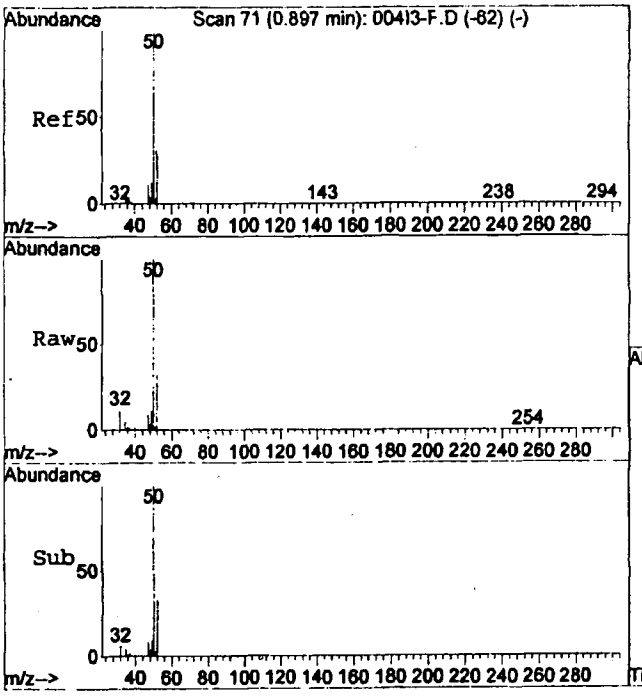




#2
Methane
Concen: 0.51 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Sig:GC1 Resp: 17519

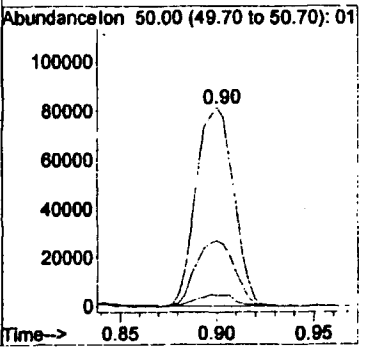


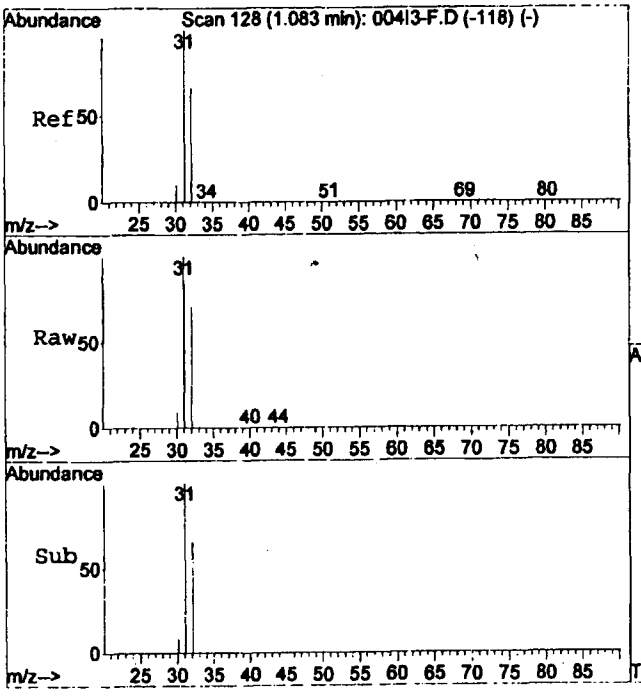


#4
Chloromethane
Concen: 22.48 ppm
RT: 0.90 min Scan# 72
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 50 Resp: 109110

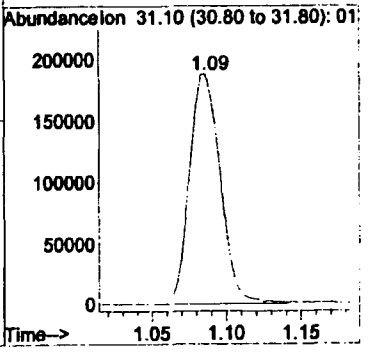
Ion	Ratio	Lower	Upper
50	100		
35	5.5	5.3	9.8
52	33.8	23.2	43.2

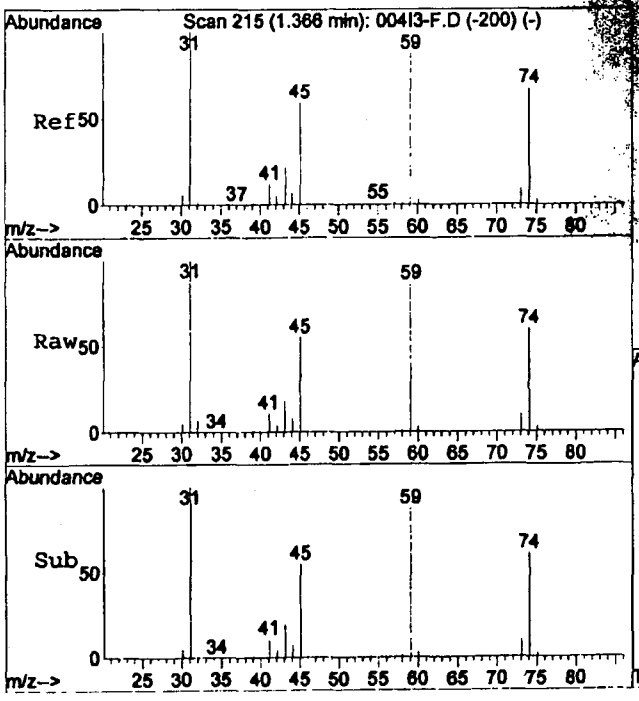




#5
Methanol
Concen: 197.68 ppm
RT: 1.09 min Scan# 129
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 31 Resp: 271465

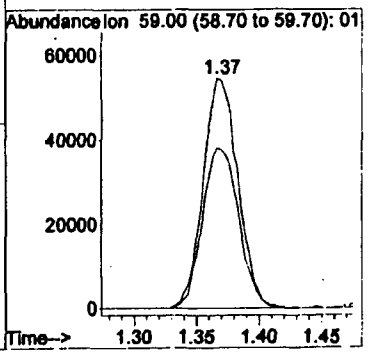


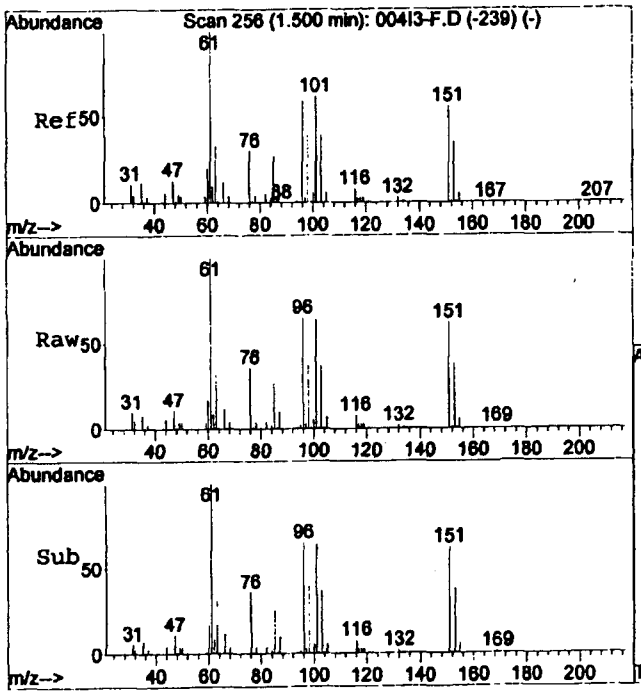


#6
Methyl ether
Concen: 22.61 ppm
RT: 1.37 min Scan# 215
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 59 Resp: 105413

Ion	Ratio	Lower	Upper
59	100		
74	72.8	51.7	95.9

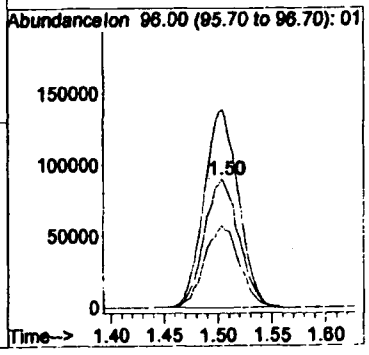


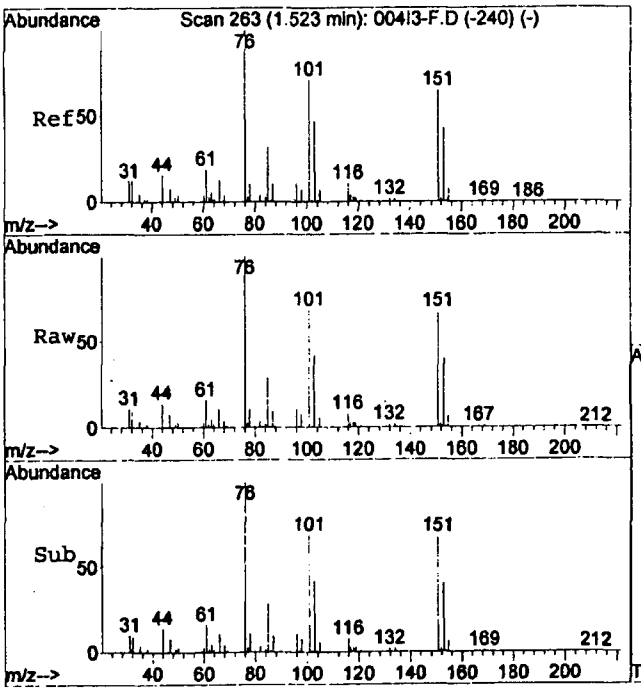


#7
1,1-Dichloroethene
Concen: 23.58 ppm
RT: 1.50 min Scan# 257
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 96 Resp: 198756

Ion	Ratio	Lower	Upper
96	100		
61	154.5	121.2	225.0
98	64.0	44.9	83.3

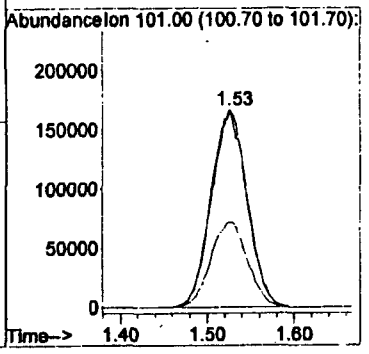


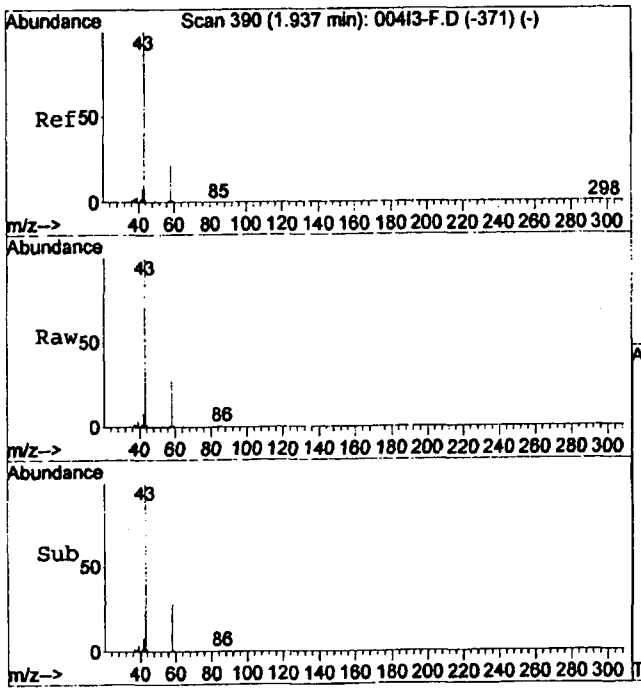


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.51 ppm
RT: 1.53 min Scan# 264
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:101 Resp: 480622

Ion	Ratio	Lower	Upper
101	100		
85	43.7	32.3	59.9
151	97.9	66.8	124.2

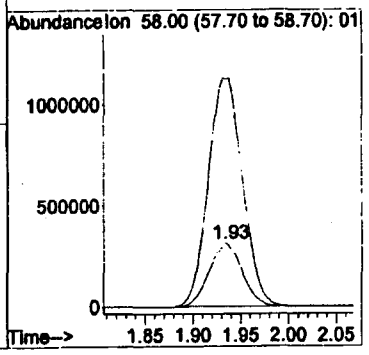


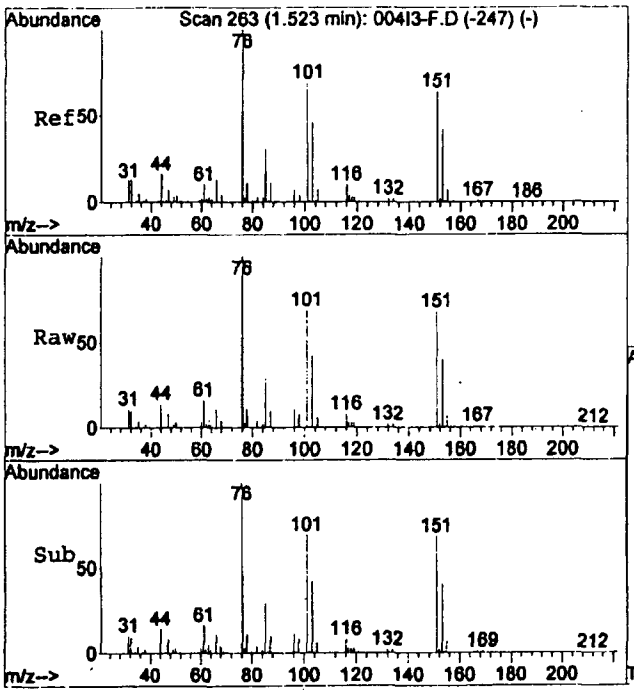


#9
Acetone
Concen: 246.69 ppm
RT: 1.93 min Scan# 389
Delta R.T. -0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 58 Resp: 748652

Ion	Ratio	Lower	Upper
58	100		
43	375.2	317.7	590.1

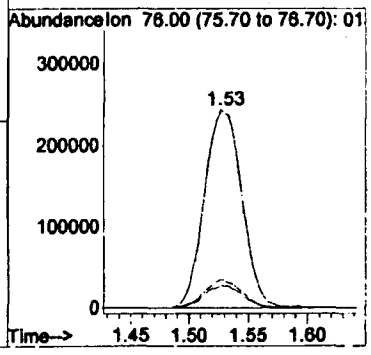


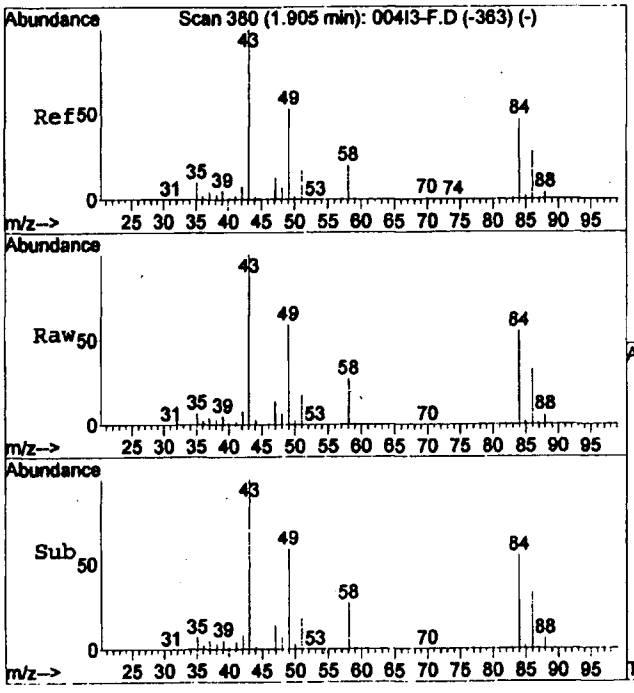


#10
Carbon Disulfide
Concen: 24.06 ppm
RT: 1.53 min Scan# 264
Delta R.T. 0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 76 Resp: 527081

Ion	Ratio	Lower	Upper
76	100		
44	13.8	11.5	21.5
78	10.9	7.6	14.2

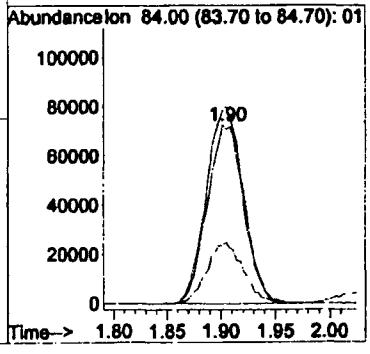


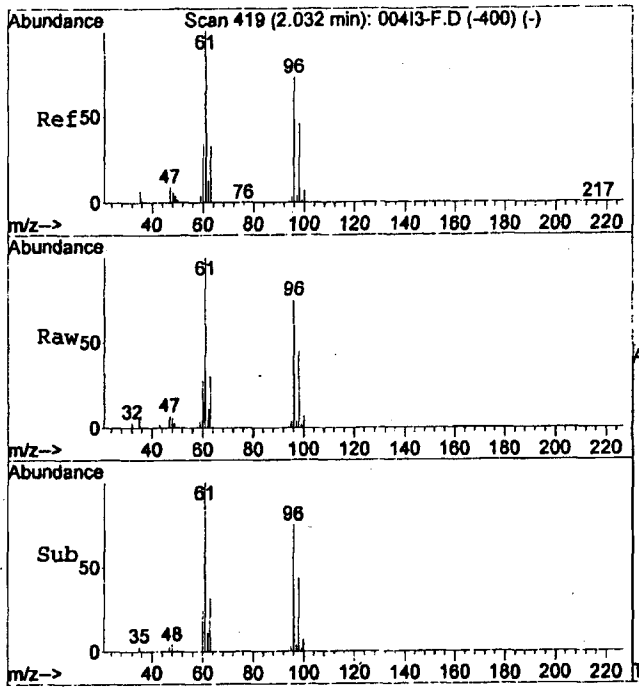


#11
Methylene chloride
Concen: 24.73 ppm
RT: 1.90 min Scan# 379
Delta R.T. -0.00 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 84 Resp: 168843

Ion	Ratio	Lower	Upper
84	100		
49	111.0	85.8	159.4
51	33.7	25.6	47.6

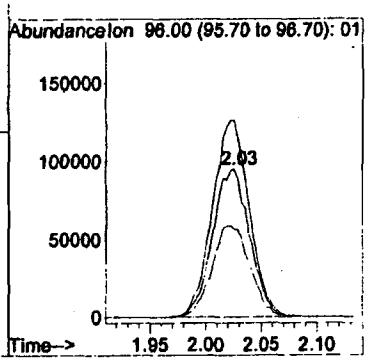


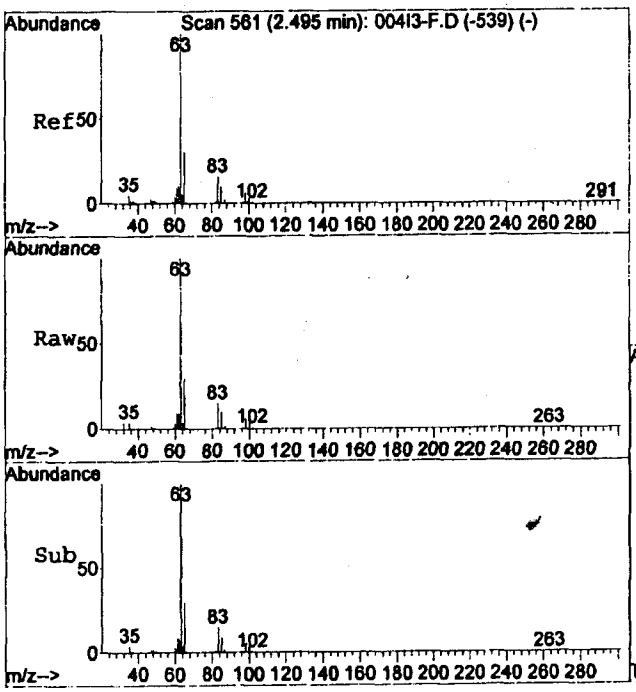


#12
trans-1,2-Dichloroethene
Concen: 24.62 ppm
RT: 2.03 min Scan# 417
Delta R.T. -0.01 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 96 Resp: 219606

Ion	Ratio	Lower	Upper
96	100		
61	132.5	100.3	186.3
98	63.5	45.6	84.8

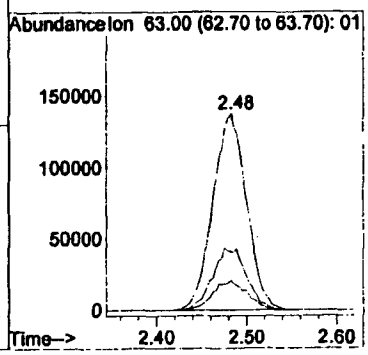


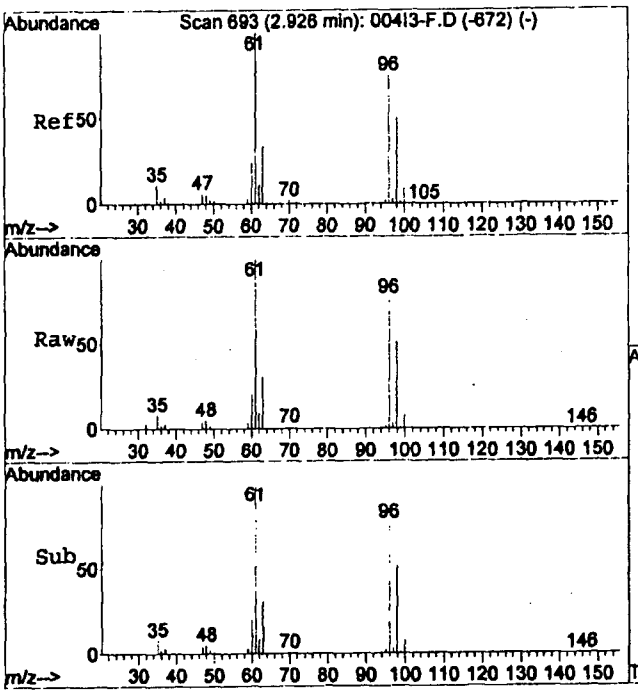


#13
1,1-Dichloroethane
Concen: 22.62 ppm
RT: 2.48 min Scan# 557
Delta R.T. -0.01 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 63 Resp: 356236

Ion	Ratio	Lower	Upper
63	100		
83	14.9	10.7	19.9
65	31.7	22.1	41.1

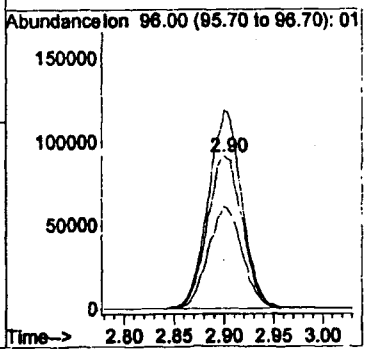


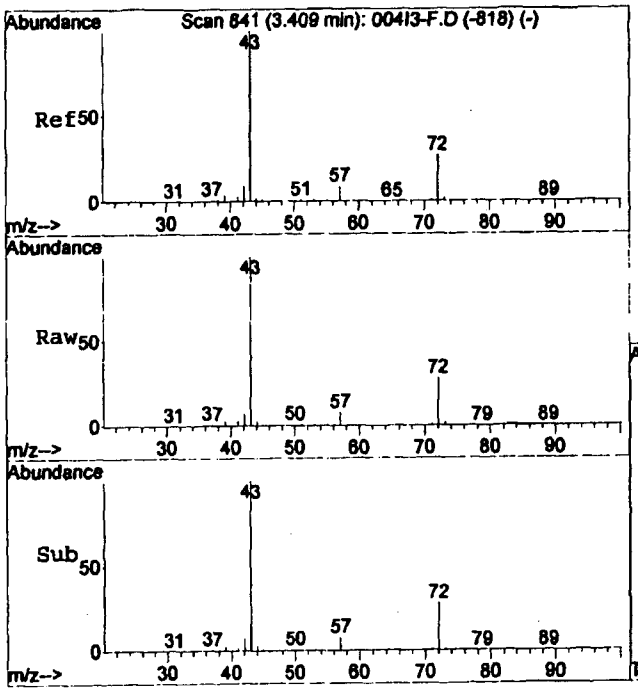


#14
cis-1,2-Dichloroethene
Concen: 24.36 ppm
RT: 2.90 min Scan# 685
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 96 Resp: 220609

Ion	Ratio	Lower	Upper
96	100		
61	124.8	94.0	174.6
98	64.3	45.2	84.0

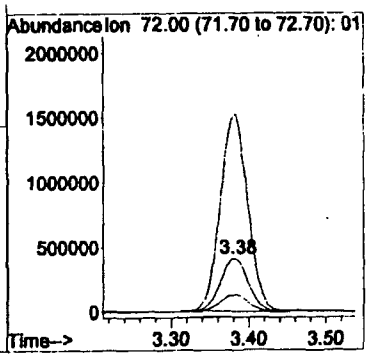


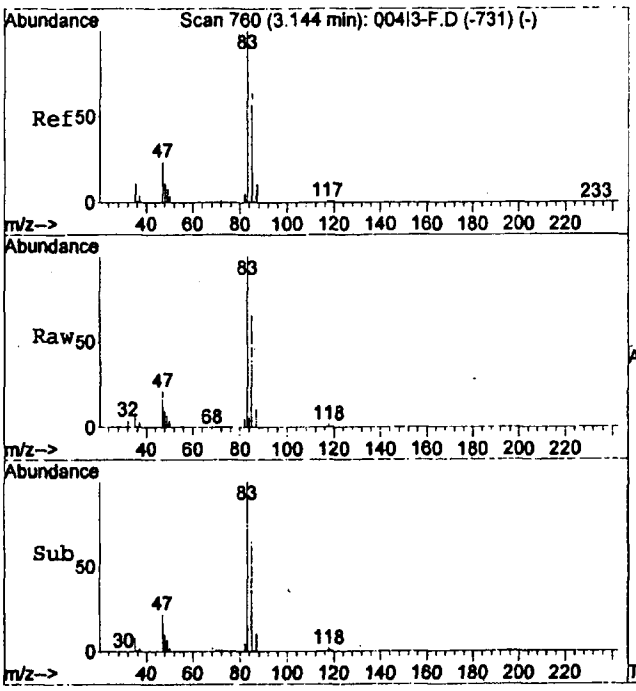


#15
Methyl ethyl ketone
Concen: 240.32 ppm
RT: 3.38 min Scan# 832
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 72 Resp: 1034189

Ion	Ratio	Lower	Upper
72	100		
57	31.5	23.7	43.9
43	362.8	274.5	509.7

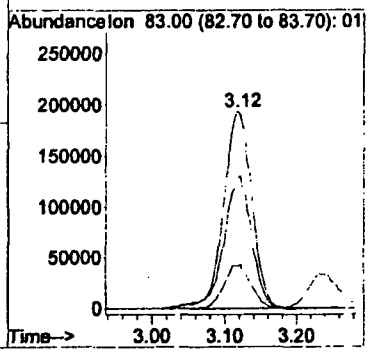


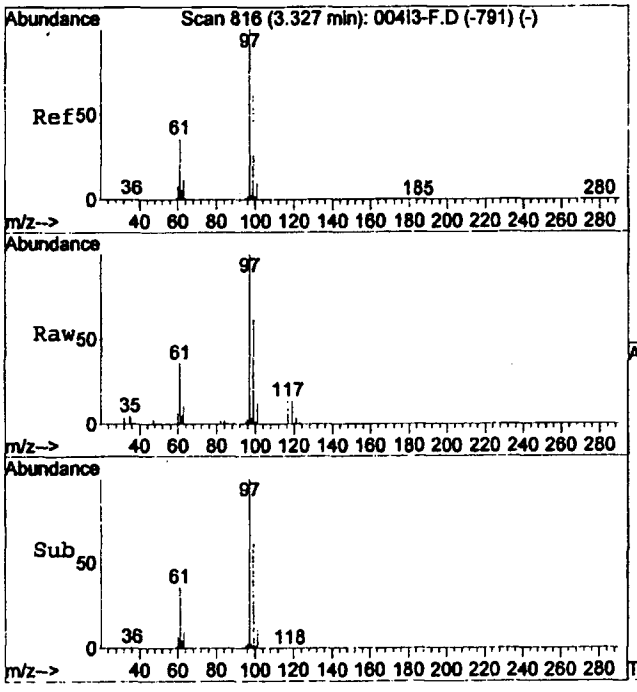


#16
Chloroform
Concen: 20.82 ppm
RT: 3.12 min Scan# 752
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 83 Resp: 518949

Ion	Ratio	Lower	Upper
83	100		
47	21.0	16.6	30.8
85	66.7	45.1	83.7

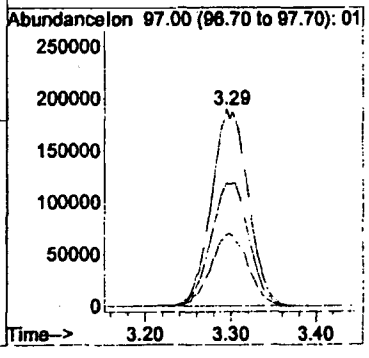


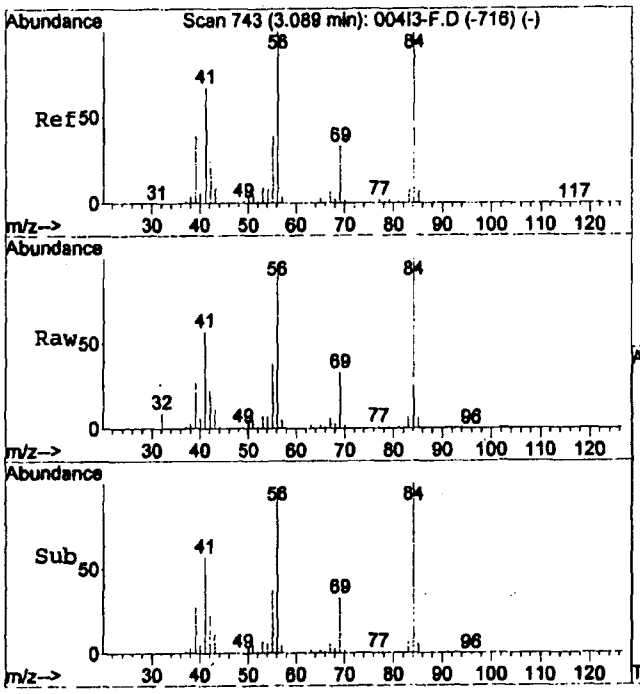


#17
1,1,1-Trichloroethane
Concen: 18.91 ppm
RT: 3.29 min Scan# 806
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 97 Resp: 560178

Ion	Ratio	Lower	Upper
97	100		
61	36.9	26.1	48.5
99	64.5	45.0	83.6

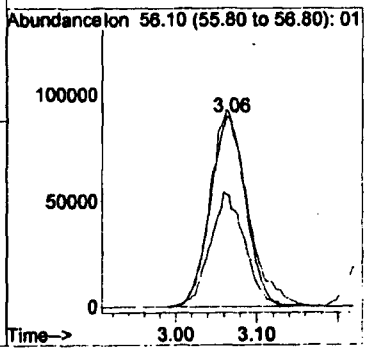


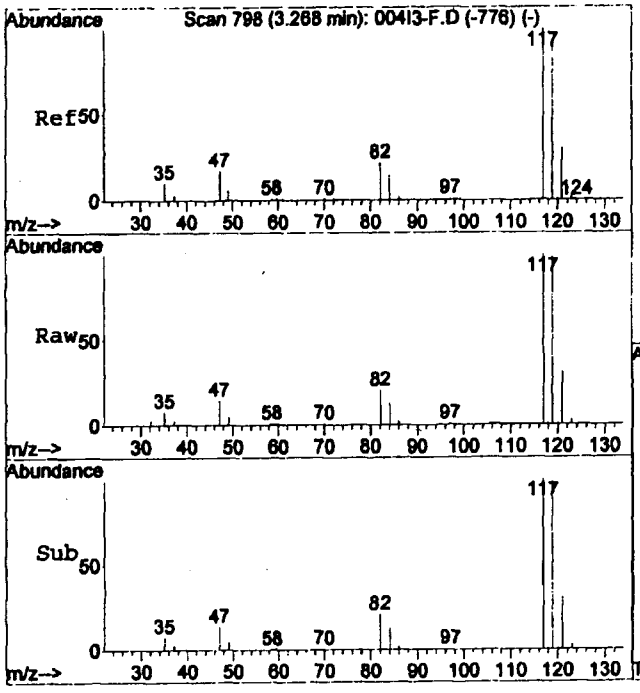


#18
Cyclohexane
Concen: 25.59 ppm
RT: 3.06 min Scan# 735
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 56 Resp: 272836

Ion	Ratio	Lower	Upper
56	100		
84	107.7	75.7	140.7
41	58.2	47.6	88.4

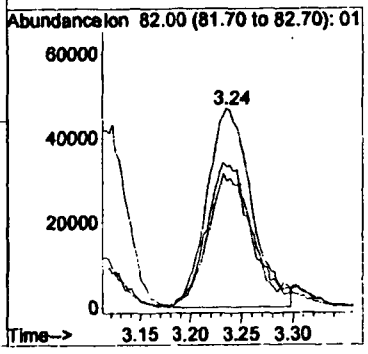


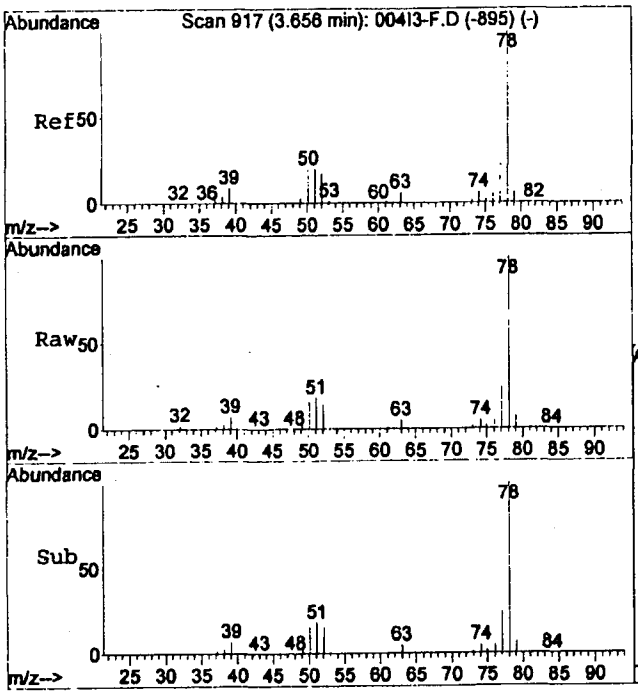


#19
Carbon Tetrachloride
Concen: 17.69 ppm
RT: 3.24 min Scan# 788
Delta R.T. -0.03 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 82 Resp: 141730

Ion	Ratio	Lower	Upper
82	100		
47	72.0	51.1	94.9
84	65.8	43.1	80.1

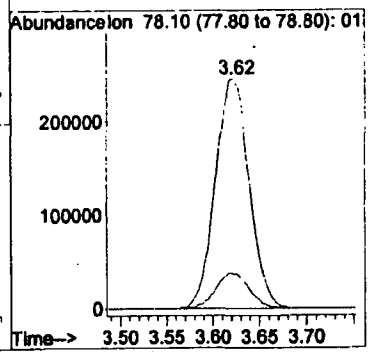


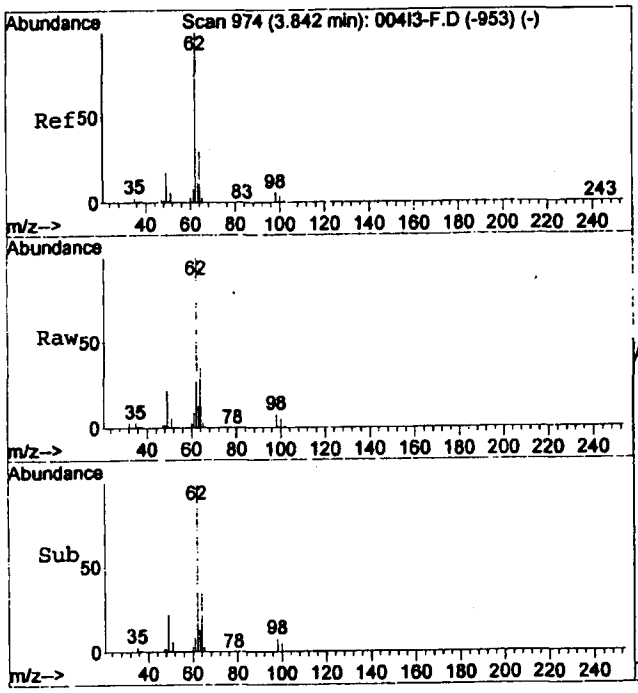


#20
Benzene
Concen: 24.43 ppm
RT: 3.62 min Scan# 906
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 78 Resp: 618216

Ion	Ratio	Lower	Upper
78	100		
52	15.2	11.6	21.6

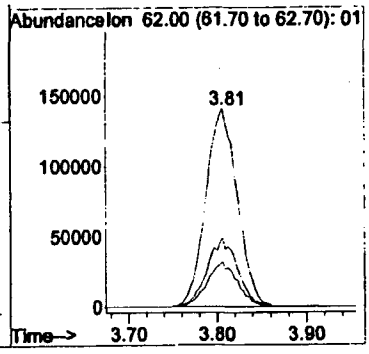


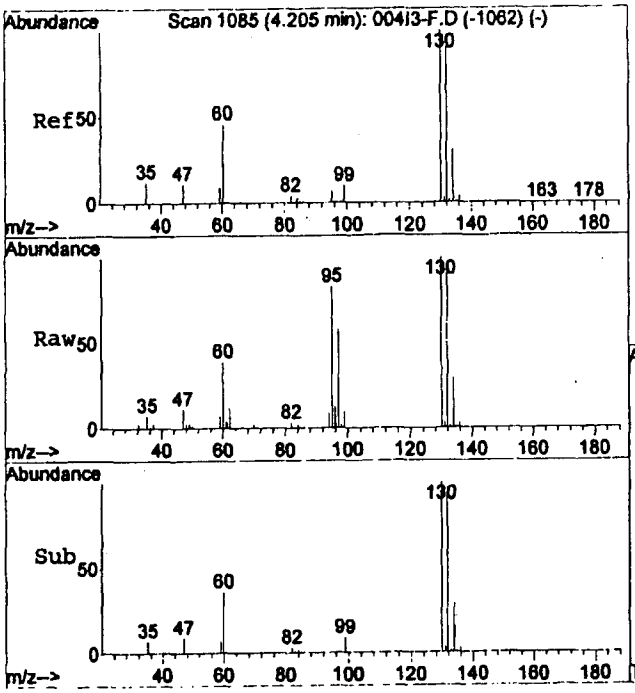


#21
1,2-Dichloroethane
Concen: 18.45 ppm
RT: 3.81 min Scan# 963
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 62 Resp: 345303

Ion	Ratio	Lower	Upper
62	100		
49	21.7	12.7	23.7
64	33.3	22.4	41.6

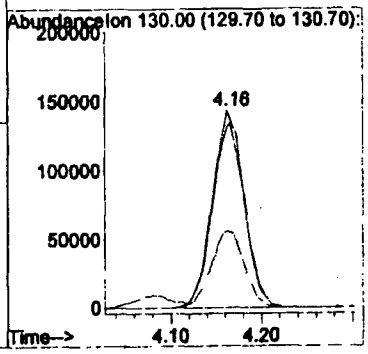


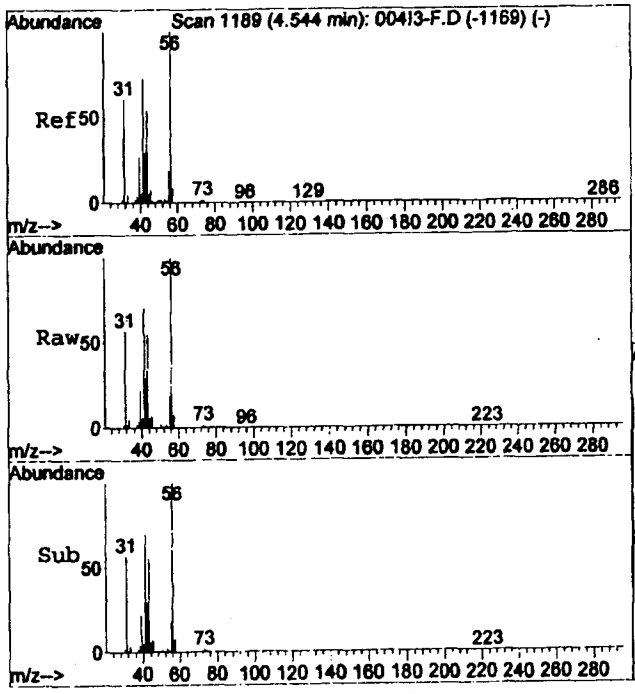


#22
Trichloroethene
Concen: 23.94 ppm
RT: 4.16 min Scan# 1072
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:130 Resp: 347403

Ion	Ratio	Lower	Upper
130	100		
60	40.4	35.2	65.4
132	95.3	68.0	126.4

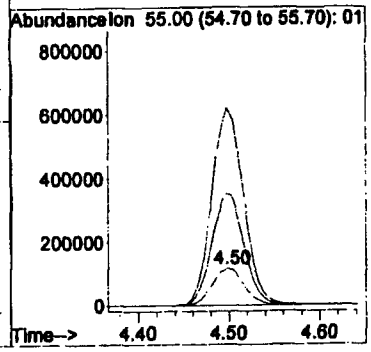


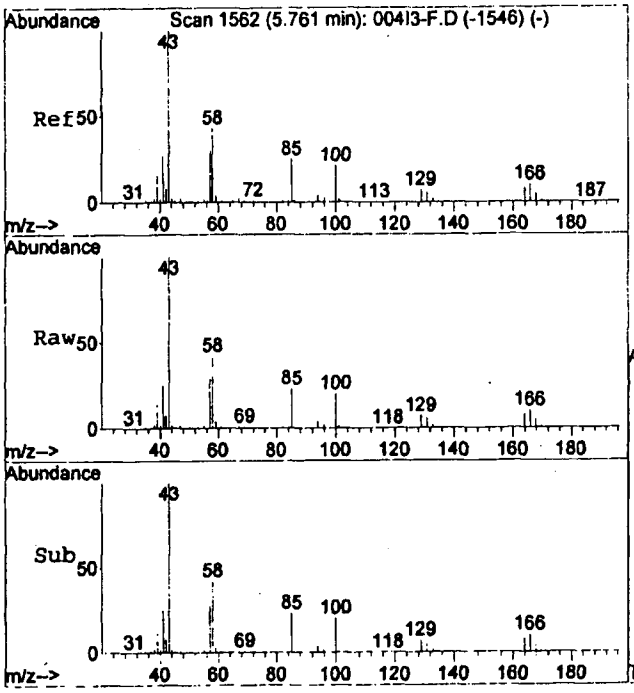


#23
Butanol
Concen: 226.55 ppm
RT: 4.50 min Scan# 1175
Delta R.T. -0.05 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 55 Resp: 286841

Ion	Ratio	Lower	Upper
55	100		
31	301.8	218.1	405.1
56	528.6	355.3	659.9

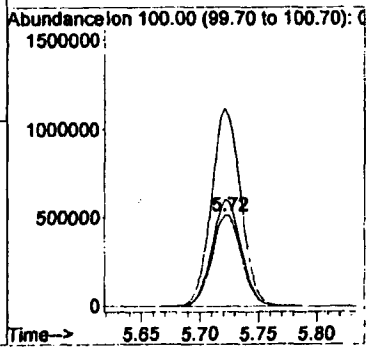


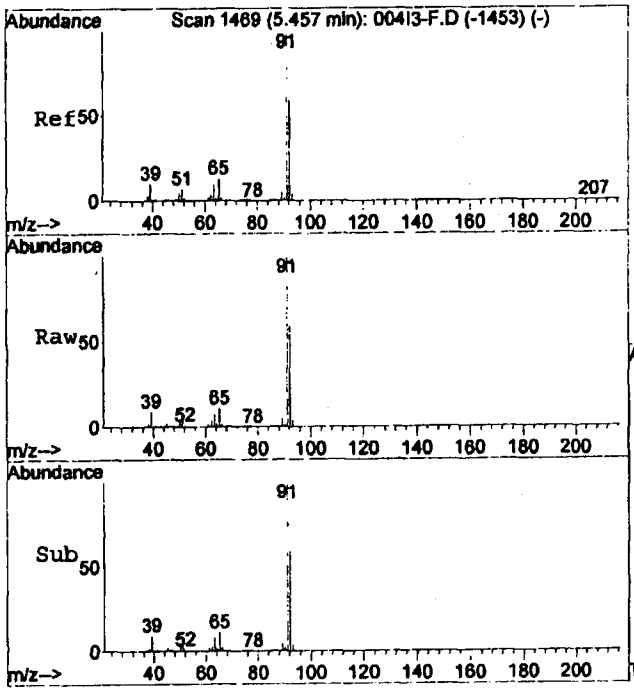


#25
Methyl isobutyl ketone
Concen: 234.72 ppm
RT: 5.72 min Scan# 1550
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:100 Resp: 903301

Ion	Ratio	Lower	Upper
100	100		
58	214.9	144.8	268.8
85	115.0	81.6	151.6

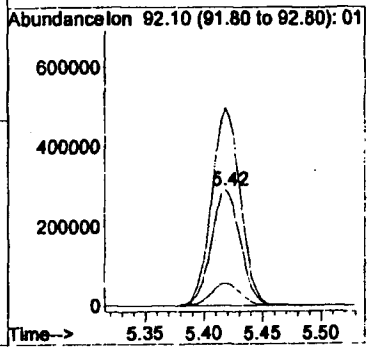


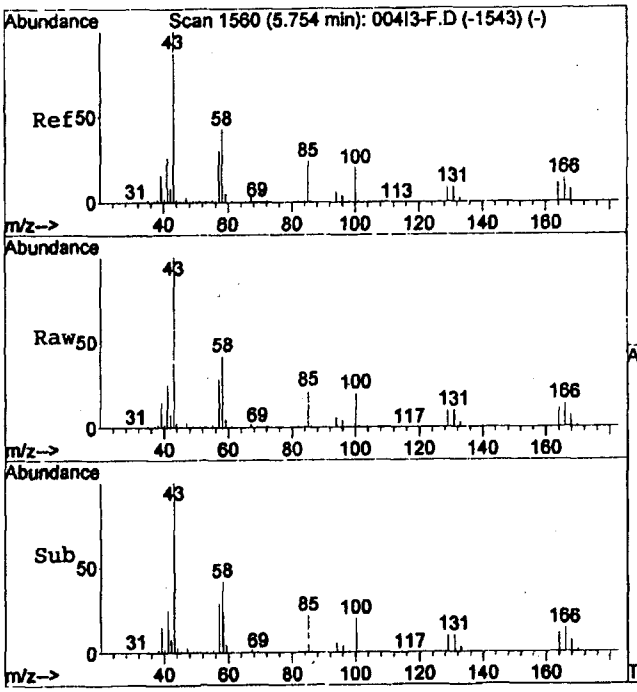


#26
Toluene
Concen: 26.17 ppm
RT: 5.42 min Scan# 1457
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 92 Resp: 498704

Ion	Ratio	Lower	Upper
92	100		
91	169.2	120.1	223.1
65	19.2	14.4	26.8

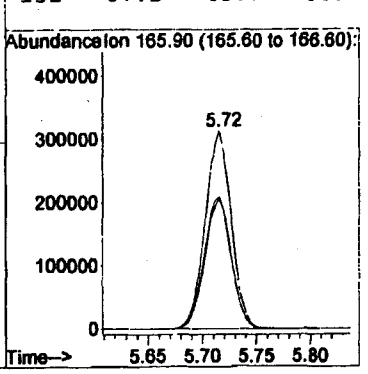


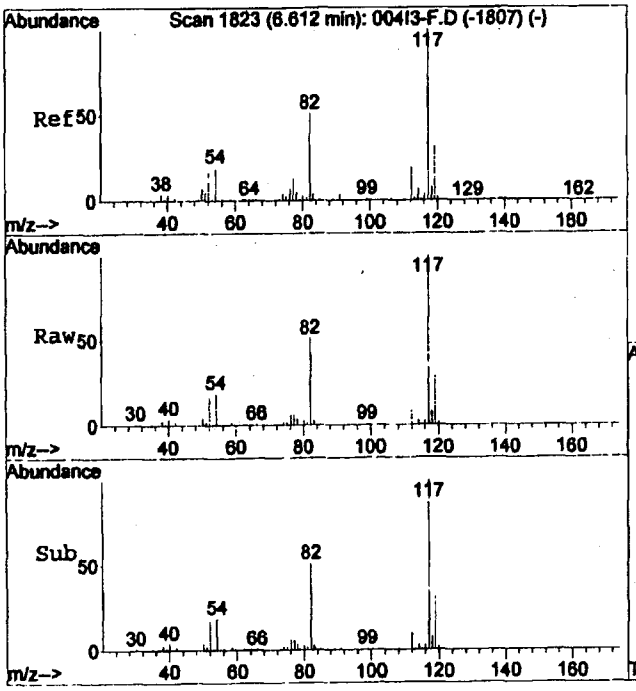


#27
Tetrachloroethene
Concen: 22.83 ppm
RT: 5.72 min Scan# 1548
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:166 Resp: 522463

Ion	Ratio	Lower	Upper
166	100		
129	68.7	46.3	86.1
131	67.1	45.7	84.9

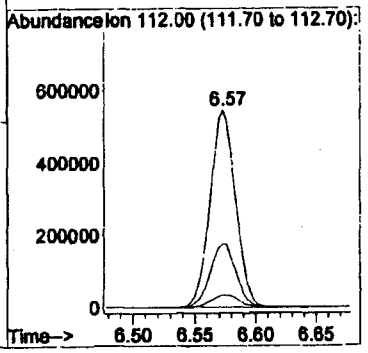


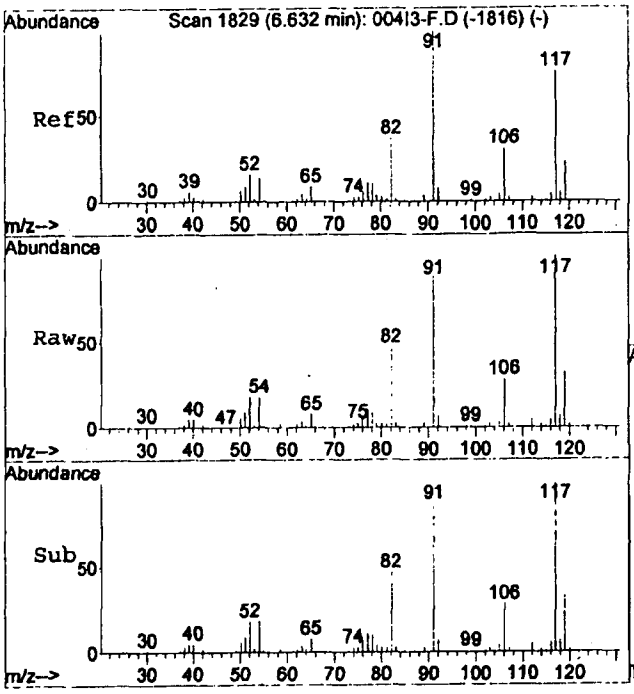


#28
Chlorobenzene
Concen: 24.31 ppm
RT: 6.57 min Scan# 1811
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:112 Resp: 791162

Ion	Ratio	Lower	Upper
112	100		
56	6.9	2.7	5.1#
114	32.7	23.0	42.6

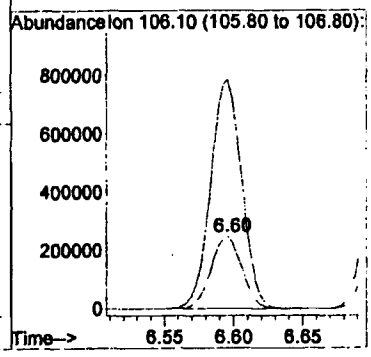


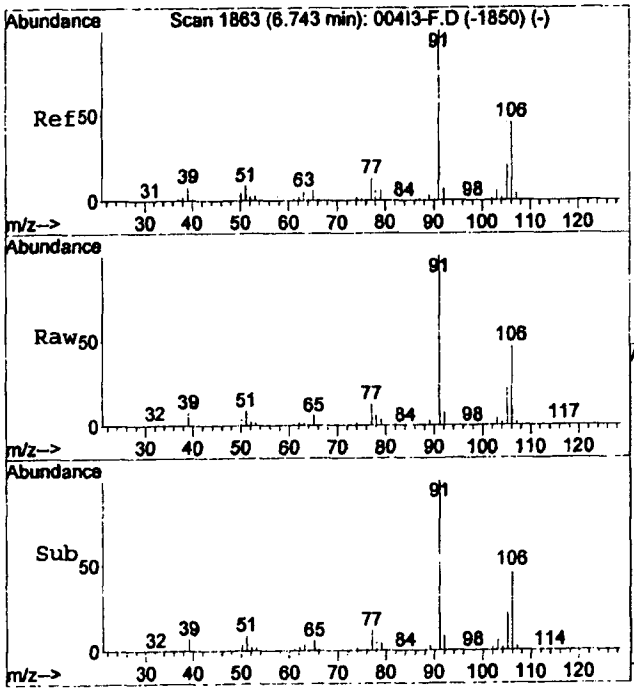


#29
Ethylbenzene
Concen: 23.96 ppm
RT: 6.60 min Scan# 1818
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:106 Resp: 374684

Ion	Ratio	Lower	Upper
106	100		
91	321.8	225.4	418.6

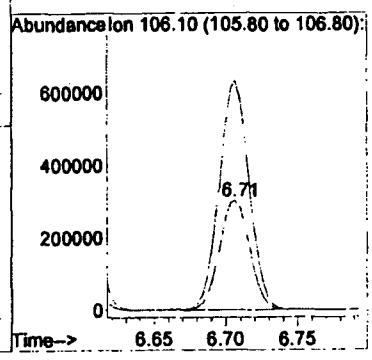


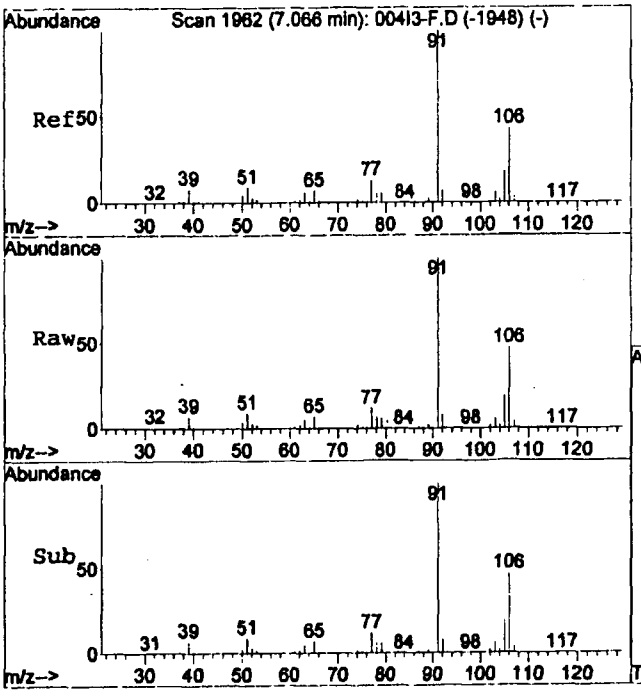


#30
m and p-xylene
Concen: 25.06 ppm
RT: 6.71 min Scan# 1852
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:106 Resp: 444462

Ion	Ratio	Lower	Upper
106	100		
91	203.8	150.8	280.1

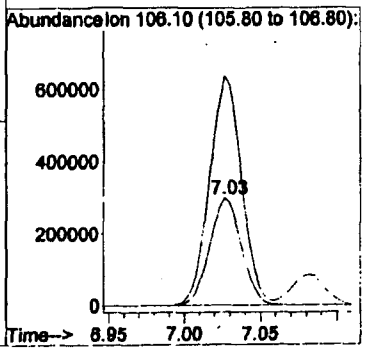


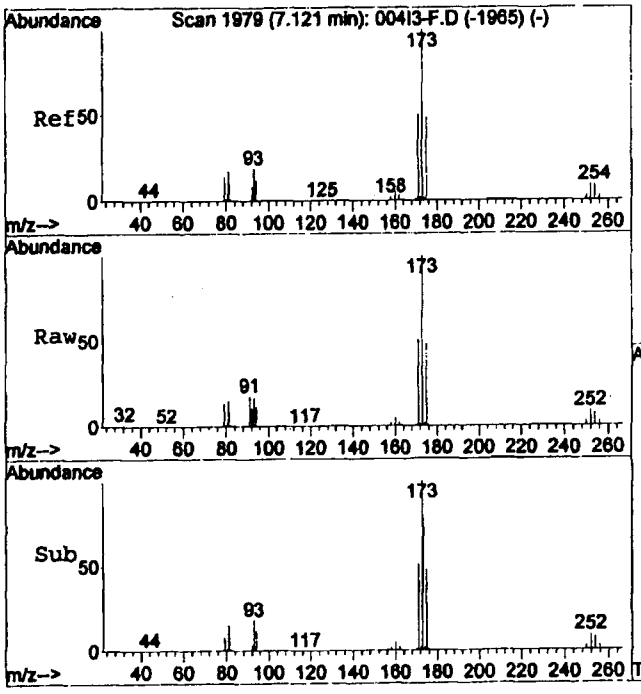


#31
o-xylene
Concen: 25.56 ppm
RT: 7.03 min Scan# 1950
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:106 Resp: 433915

Ion	Ratio	Lower	Upper
106	100		
91	214.6	159.0	295.4

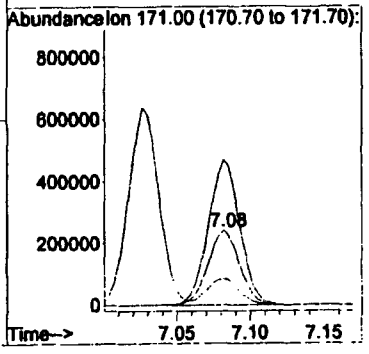


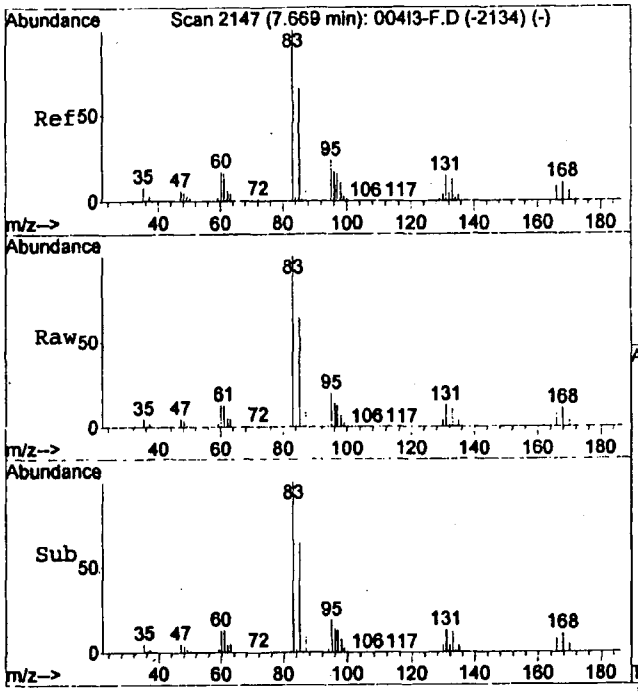


#32
Bromoform
Concen: 23.40 ppm
RT: 7.08 min Scan# 1967
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:171 Resp: 356121

Ion	Ratio	Lower	Upper
171	100		
91	35.7	26.7	49.5
173	196.0	137.5	255.4

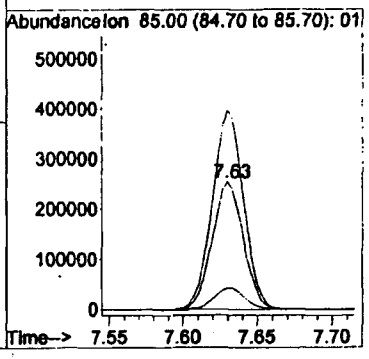


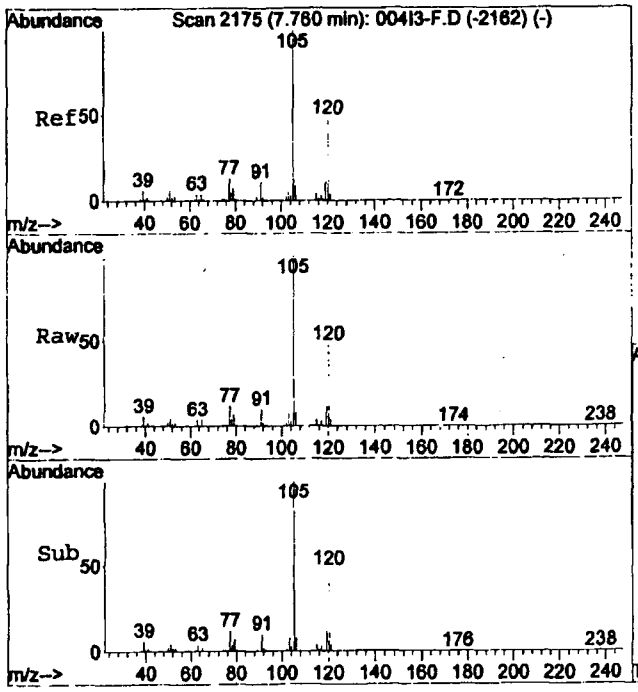


#34
1,1,2,2-Tetrachloroethane
Concen: 26.28 ppm
RT: 7.63 min Scan# 2135
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion: 85 Resp: 369813

Ion	Ratio	Lower	Upper
85	100		
168	16.5	12.2	22.6
83	156.0	106.9	198.5

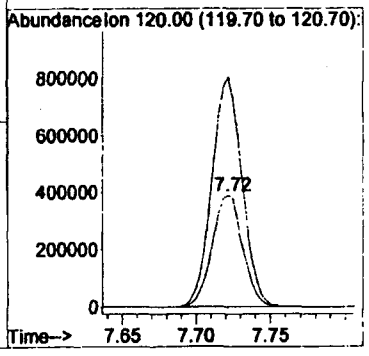


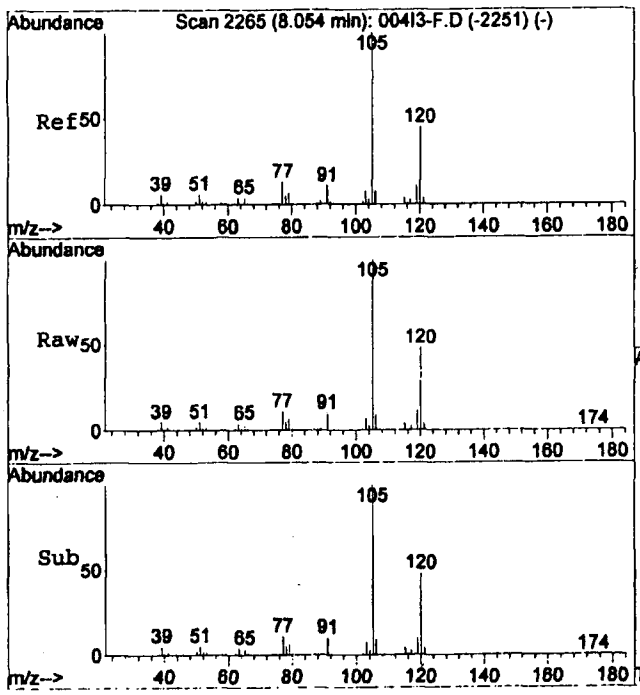


#35
1,3,5-Trimethylbenzene
Concen: 24.99 ppm
RT: 7.72 min Scan# 2163
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:120 Resp: 555629

Ion	Ratio	Lower	Upper
120	100		
105	204.2	146.9	272.7

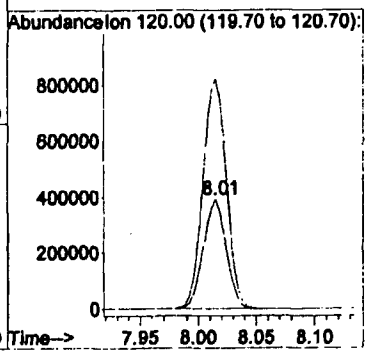




#36
1,2,4-Trimethylbenzene
Concen: 25.63 ppm
RT: 8.01 min Scan# 2253
Delta R.T. -0.04 min
Lab File: 013DR-F.D
Acq: 13 Aug 2011 15:11

Tgt Ion:120 Resp: 533107

Ion	Ratio	Lower	Upper
120	100		
105	215.1	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\014DR-F.D Vial: 14
Acq On : 13 Aug 2011 15:25 Operator: SO
Sample : ic13,MDL6,2011-08-13,13:16:33,1.38878 Inst : Instrumen
Misc : HS111 00014B-06,27.5,SO, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:34:18 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

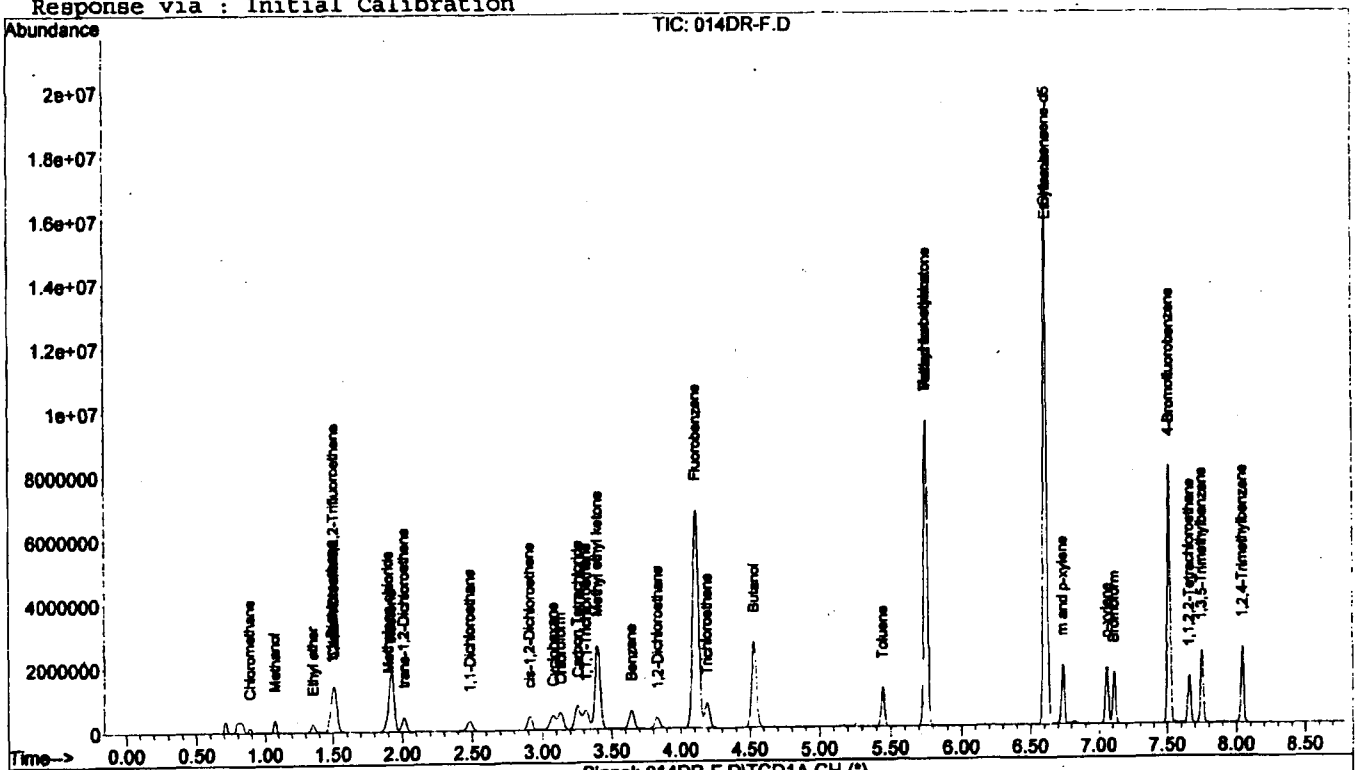
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.11	96	10085035	201.00	ppm		-0.01
24) Chlorobenzene-d5	6.61	117	8808414	176.00	ppm		0.00
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.52	95	2325106	50.44	ppm		0.00
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	36974	0.5068	perce		100
2) Methane	5.76	GC1	17666	0.5115	perce		100
4) Chloromethane	0.89	50	111938	22.4333	ppm		98
5) Methanol	1.08	31	295649	209.3973	ppm		100
6) Ethyl ether	1.35	59	107489	22.4196	ppm		97
7) 1,1-Dichloroethene	1.49	96	206470	23.8246	ppm		91
8) 1,1,2-Trichloro-1,2,2-Trif	1.51	101	497303	22.6492	ppm		98
9) Acetone	1.92	58	810875	259.8770	ppm		70
10) Carbon Disulfide	1.51	76	550378	24.4303	ppm		95
11) Methylene chloride	1.89	84	180192	25.6657	ppm		91
12) trans-1,2-Dichloroethene	2.02	96	235000	25.6246	ppm		94
13) 1,1-Dichloroethane	2.49	63	381734	23.5699	ppm		99
14) cis-1,2-Dichloroethene	2.91	96	236431	25.3936	ppm		94
15) Methyl ethyl ketone	3.40	72	1101808	249.0227	ppm		90
16) Chloroform	3.13	83	552347	21.5545	ppm		96
17) 1,1,1-Trichloroethane	3.31	97	599343	19.6787	ppm		100
18) Cyclohexane	3.08	56	295711	26.9766	ppm		94
19) Carbon Tetrachloride	3.26	82	150314	18.2425	ppm		97
20) Benzene	3.64	78	671543	25.8054	ppm		97
21) 1,2-Dichloroethane	3.83	62	371250	19.2942	ppm		96
22) Trichloroethene	4.19	130	359891	24.1247	ppm		95
23) Butanol	4.53	55	313719	240.9878	ppm		93
25) Methyl isobutyl ketone	5.75	100	980037	248.0023	ppm		96
26) Toluene	5.45	92	532471	27.2124	ppm		99
27) Tetrachloroethene	5.75	166	560698	23.8590	ppm		98
28) Chlorobenzene	6.61	112	842049	25.1929	ppm	#	99
29) Ethylbenzene	6.63	106	406546	25.3159	ppm		98
30) m and p-xylene	6.74	106	480326	26.3764	ppm		91
31) o-xylene	7.06	106	463908	26.6131	ppm		92
32) Bromoform	7.11	171	382696	24.4837	ppm		99
34) 1,1,2,2-Tetrachloroethane	7.66	85	395195	27.3450	ppm		98
35) 1,3,5-Trimethylbenzene	7.75	120	590765	25.8798	ppm		96
36) 1,2,4-Trimethylbenzene	8.05	120	564204	26.4198	ppm		94

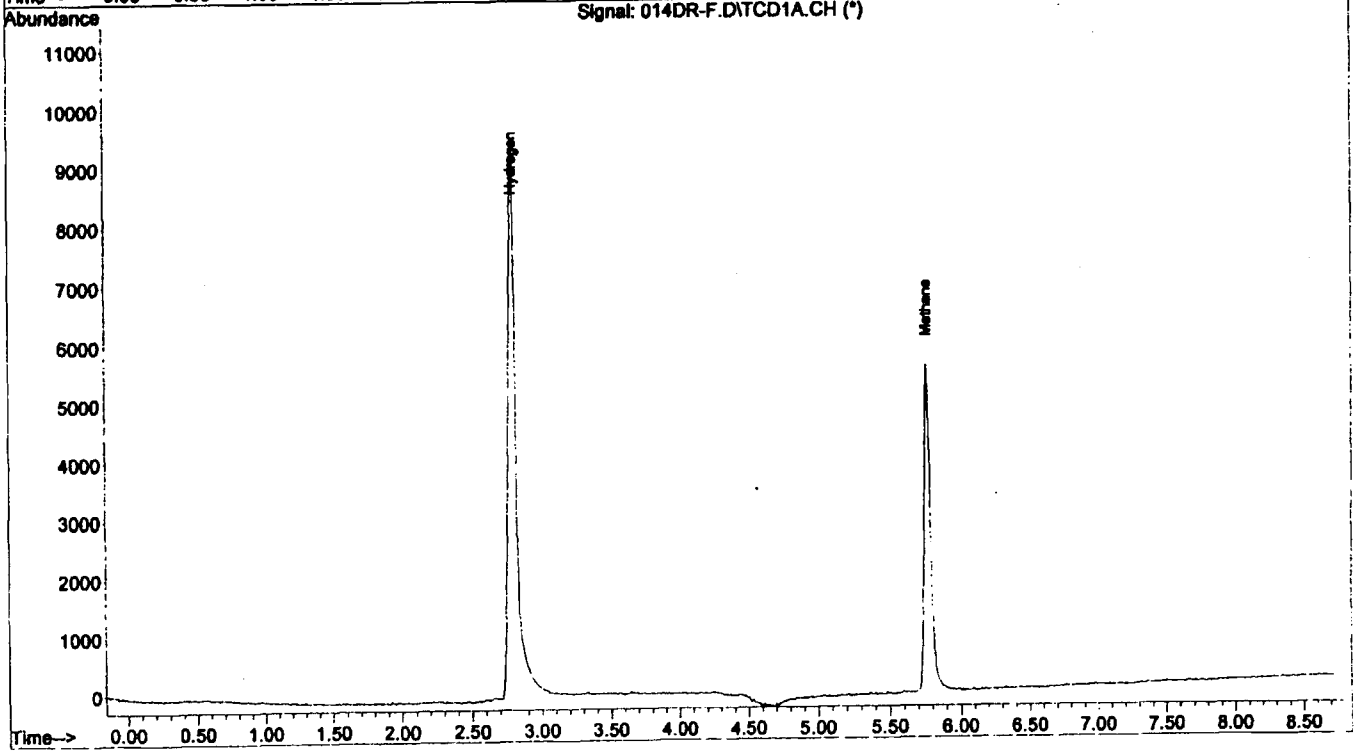
(#) = qualifier out of range (m) = manual integration
014DR-F.D VOCGAS.M Mon Aug 15 11:11:10 2011 Page 1

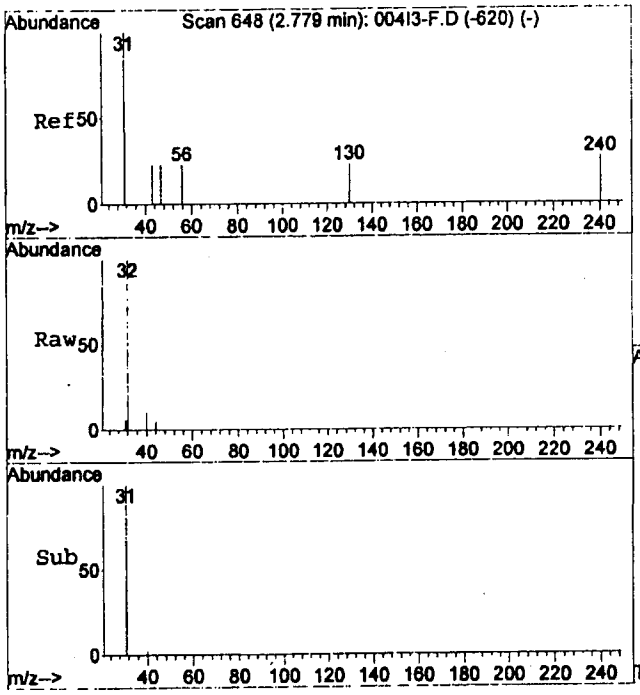
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\014DR-F.D Vial: 14
Acq On : 13 Aug 2011 15:25 Operator: SO
Sample : ic13,MDL6,2011-08-13,13:16:33,1.38878 Inst : Instrumen
Misc : HS111 00014B-06,27.5,SO, Multiplr: 1.39
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:34 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

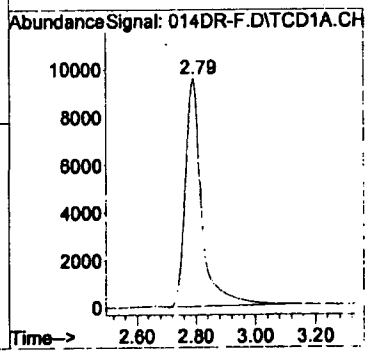


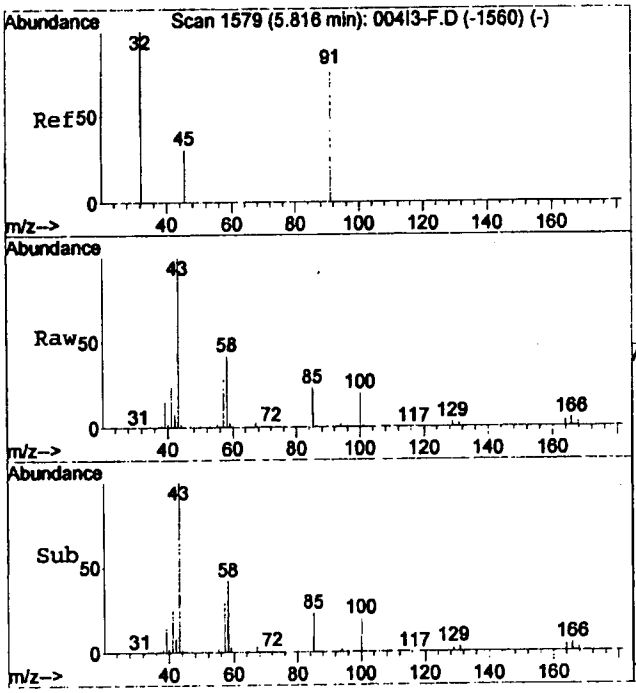




#1
Hydrogen
Concen: 0.51 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

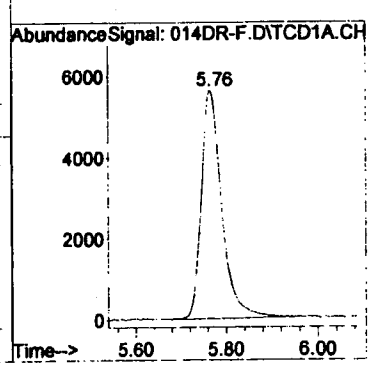
Tgt Sig:GC1 Resp: 36974

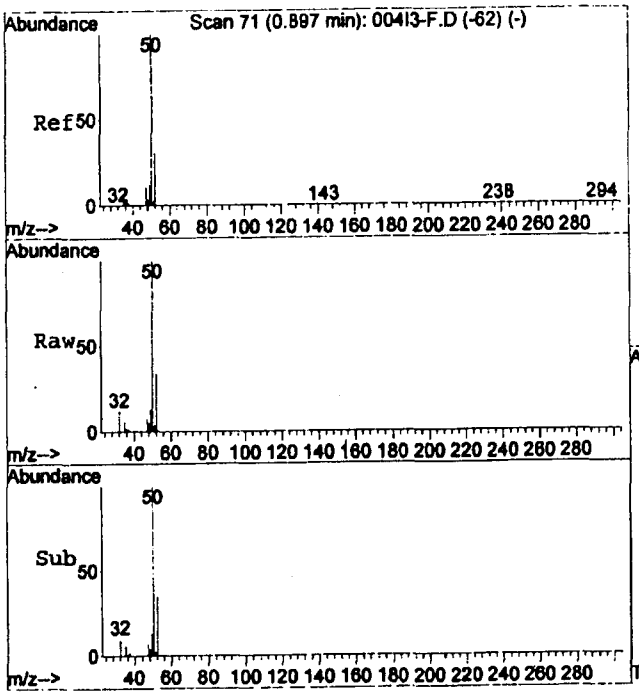




#2
Methane
Concen: 0.51 percent
RT: 5.76 min
Delta R.T. -0.06 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Sig:GC1 Resp: 17666

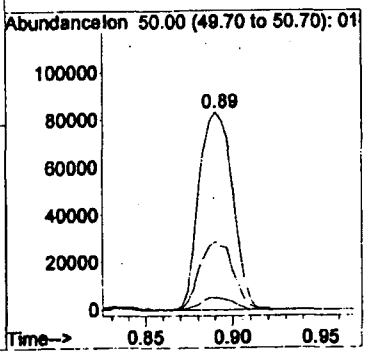


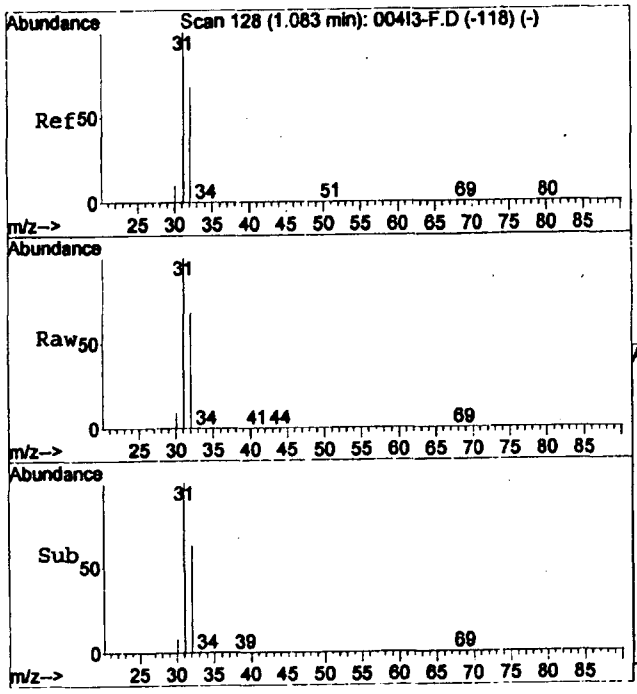


#4
Chloromethane
Concen: 22.43 ppm
RT: 0.89 min Scan# 69
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 50 Resp: 111938

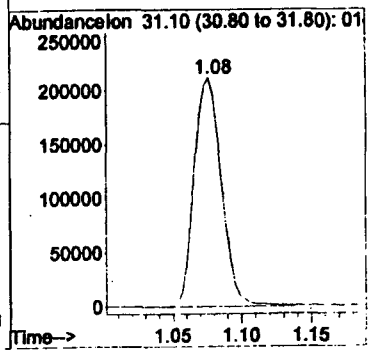
Ion	Ratio	Lower	Upper
50	100		
35	5.7	5.3	9.8
52	34.2	23.2	43.2

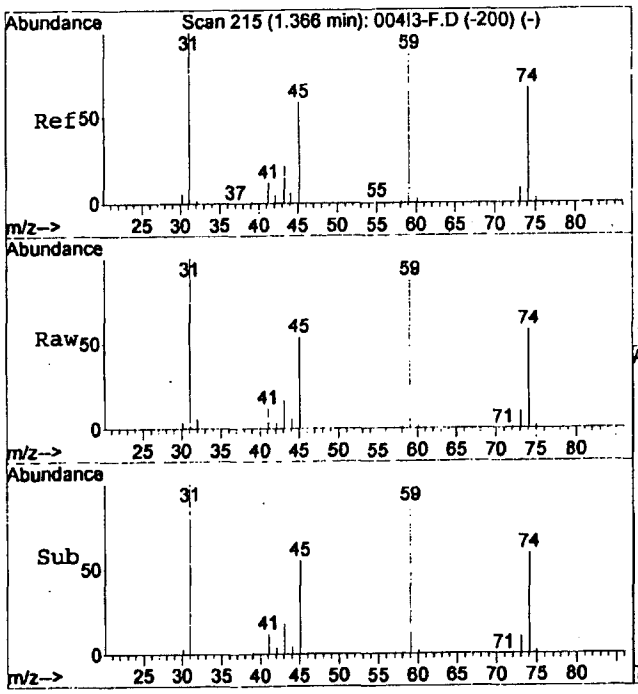




#5
Methanol
Concen: 209.40 ppm
RT: 1.08 min Scan# 126
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 31 Resp: 295649

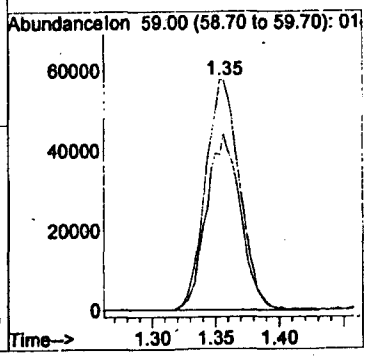


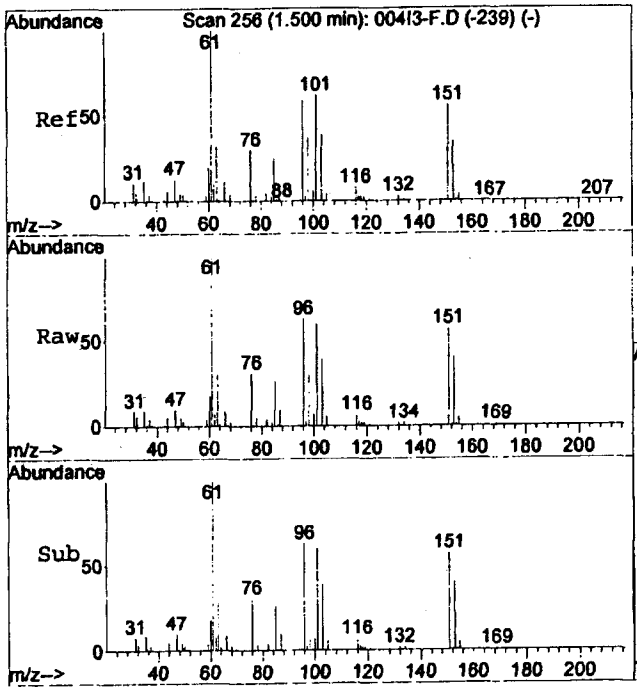


#6
Ethyl ether
Concen: 22.42 ppm
RT: 1.35 min Scan# 211
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 59 Resp: 107489

Ion	Ratio	Lower	Upper
59	100		
74	76.3	51.7	95.9

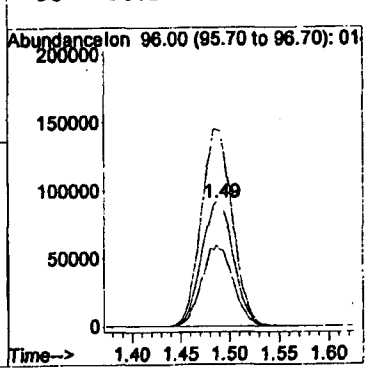


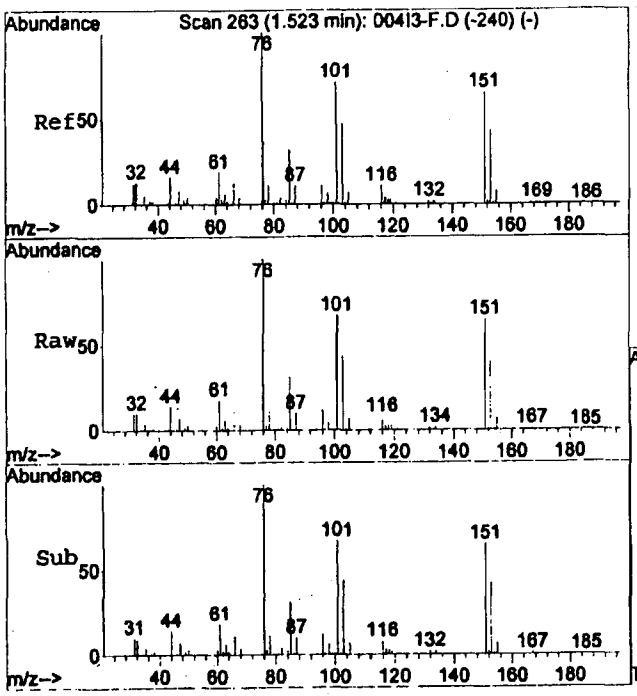


#7
1,1-Dichloroethene
Concen: 23.82 ppm
RT: 1.49 min Scan# 252
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 96 Resp: 206470

Ion	Ratio	Lower	Upper
96	100		
61	155.4	121.2	225.0
98	64.1	44.9	83.3

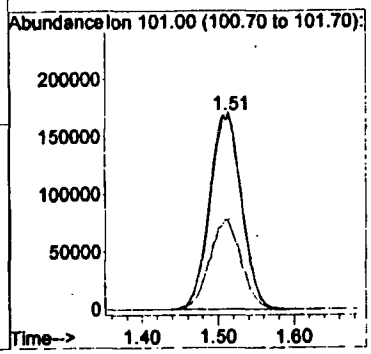


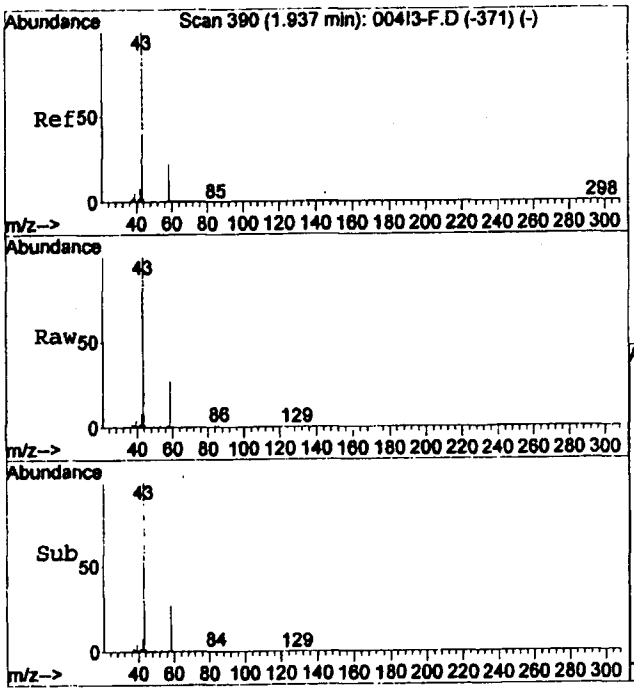


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.65 ppm
RT: 1.51 min Scan# 259
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:101 Resp: 497303

Ion	Ratio	Lower	Upper
101	100		
85	44.3	32.3	59.9
151	97.8	66.8	124.2

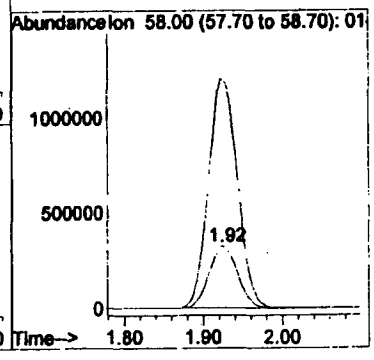


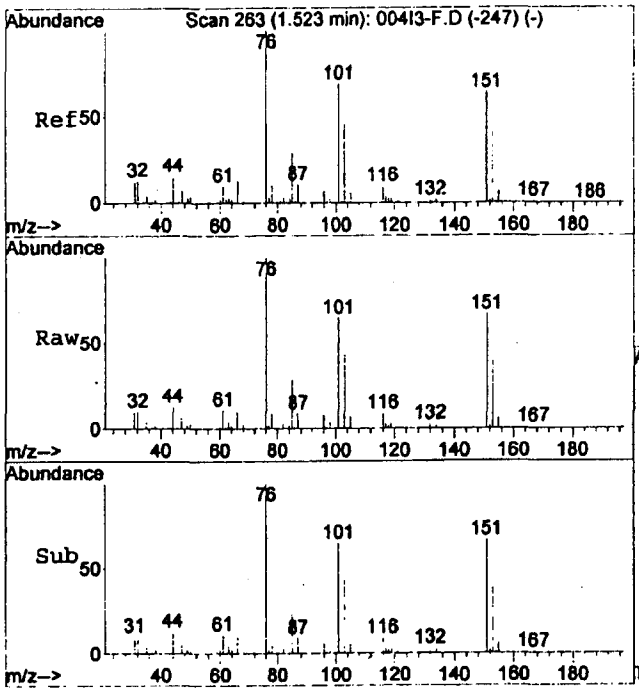


#9
Acetone
Concen: 259.88 ppm
RT: 1.92 min Scan# 386
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 58 Resp: 810875

Ion	Ratio	Lower	Upper
58	100		
43	376.1	317.7	590.1

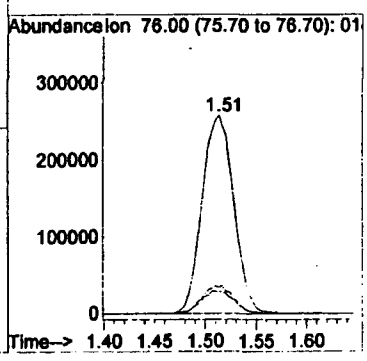


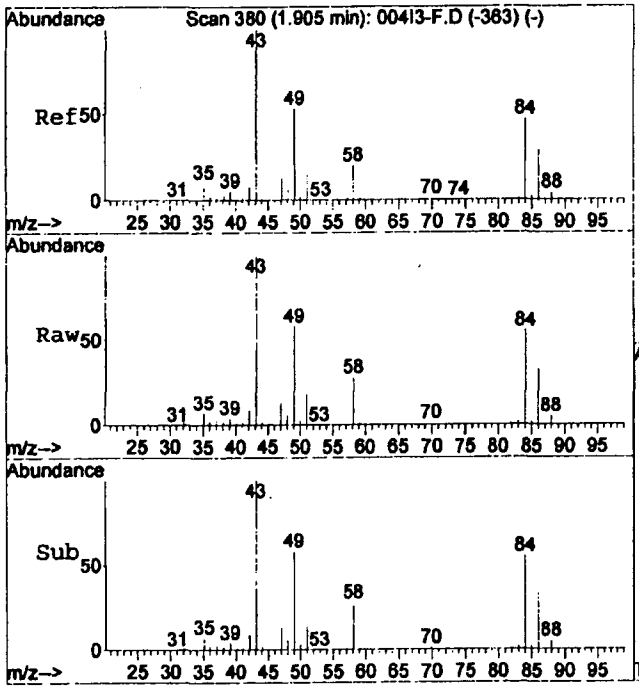


#10
Carbon Disulfide
Concen: 24.43 ppm
RT: 1.51 min Scan# 260
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 76 Resp: 550378

Ion	Ratio	Lower	Upper
76	100		
44	13.0	11.5	21.5
78	10.4	7.6	14.2

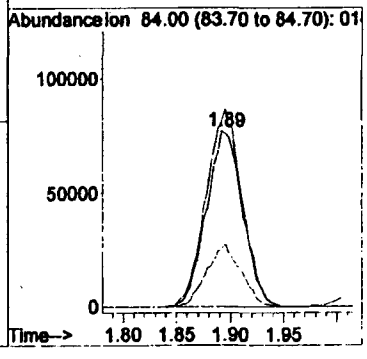


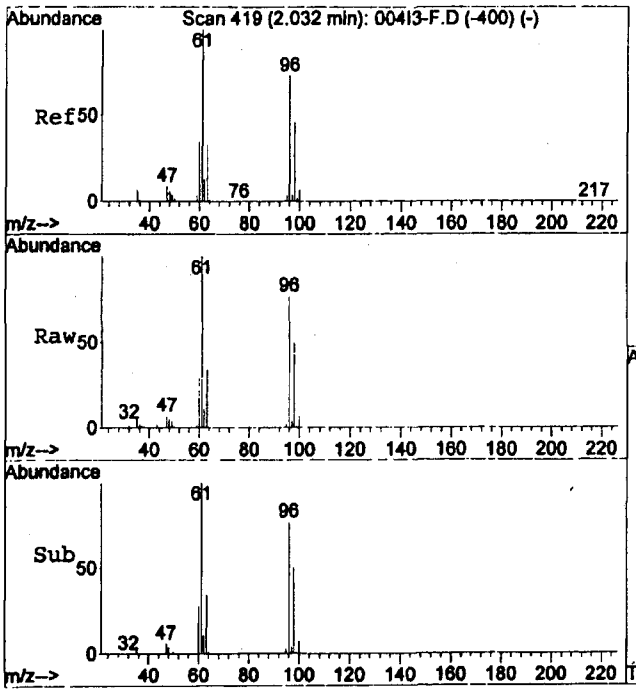


#11
Methylene chloride
Concen: 25.67 ppm
RT: 1.89 min Scan# 376
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 84 Resp: 180192

Ion	Ratio	Lower	Upper
84	100		
49	111.4	85.8	159.4
51	33.7	25.6	47.6

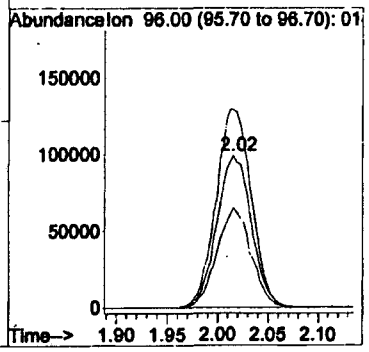


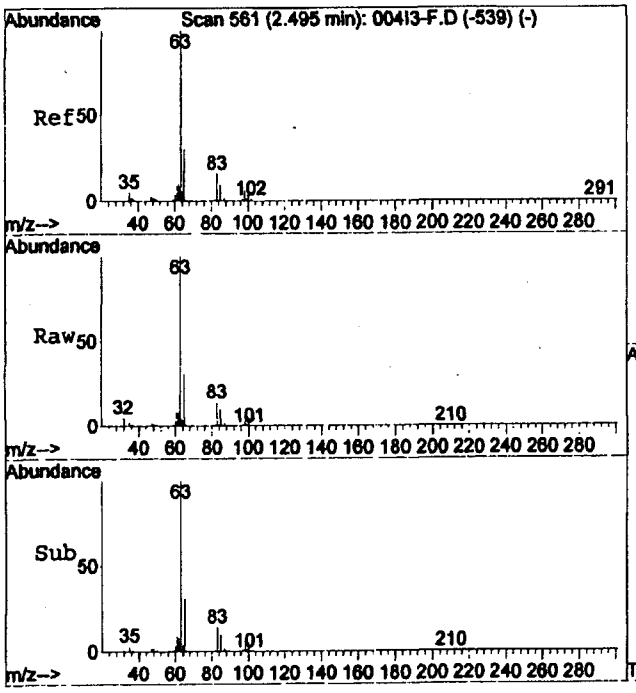


#12
trans-1,2-Dichloroethene
Concen: 25.62 ppm
RT: 2.02 min Scan# 414
Delta R.T. -0.02 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 96 Resp: 235000

Ion	Ratio	Lower	Upper
96	100		
61	133.5	100.3	186.3
98	64.6	45.6	84.8

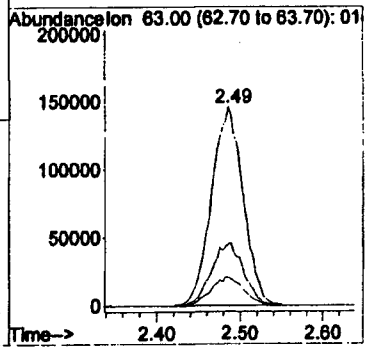


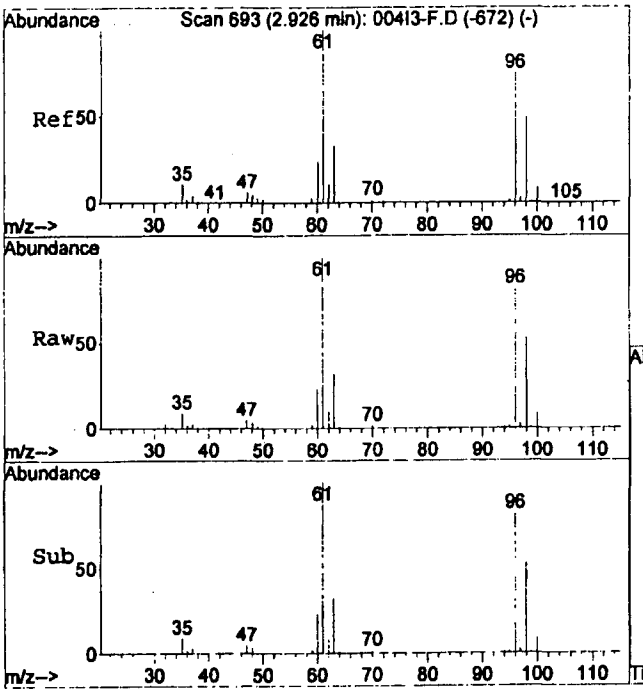


#13
1,1-Dichloroethane
Concen: 23.57 ppm
RT: 2.49 min Scan# 558
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 63 Resp: 381734

Ion	Ratio	Lower	Upper
63	100		
83	14.5	10.7	19.9
65	31.9	22.1	41.1

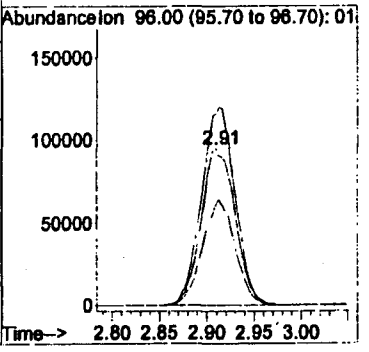


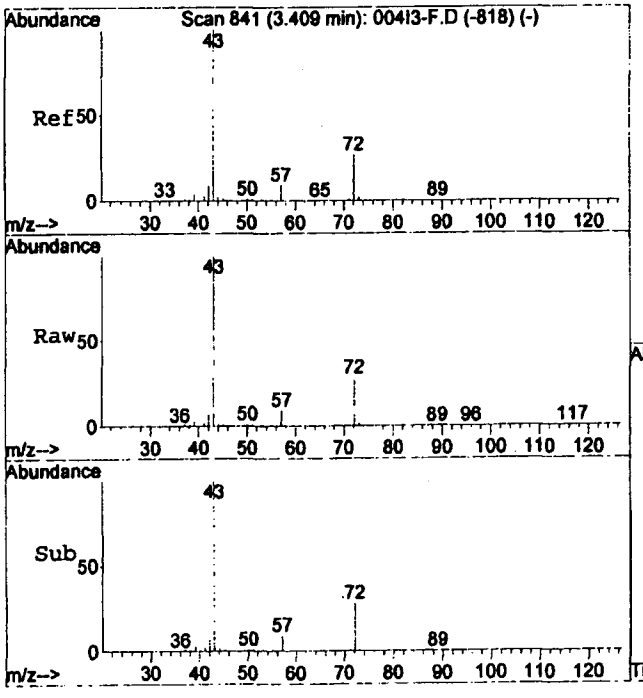


#14
cis-1,2-Dichloroethene
Concen: 25.39 ppm
RT: 2.91 min Scan# 688
Delta R.T. -0.02 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 96 Resp: 236431

Ion	Ratio	Lower	Upper
96	100		
61	124.4	94.0	174.6
98	64.5	45.2	84.0

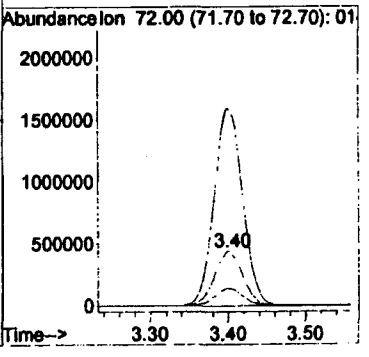


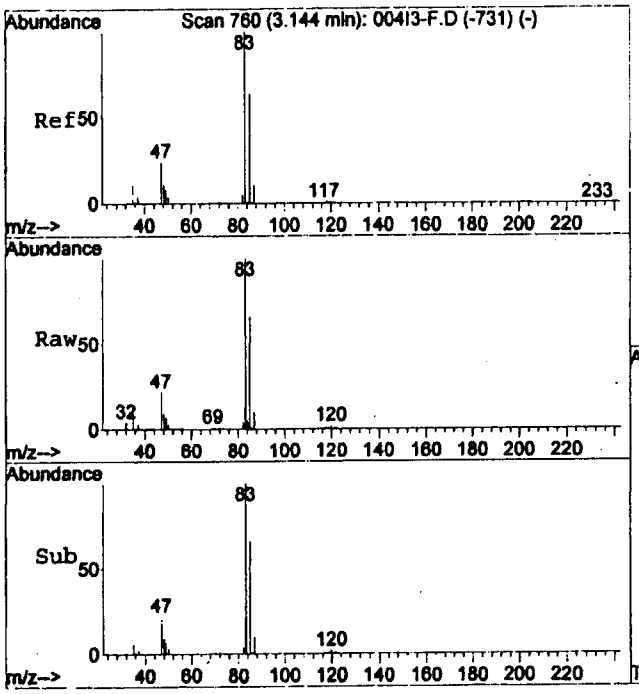


#15
Methyl ethyl ketone
Concen: 249.02 ppm
RT: 3.40 min Scan# 838
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 72 Resp: 1101808

Ion	Ratio	Lower	Upper
72	100		
57	32.1	23.7	43.9
43	367.1	274.5	509.7

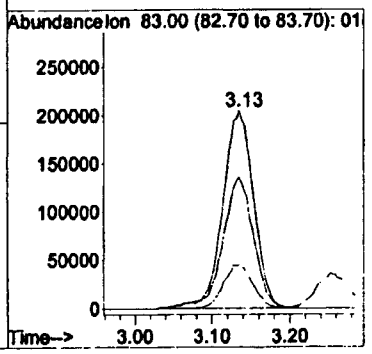


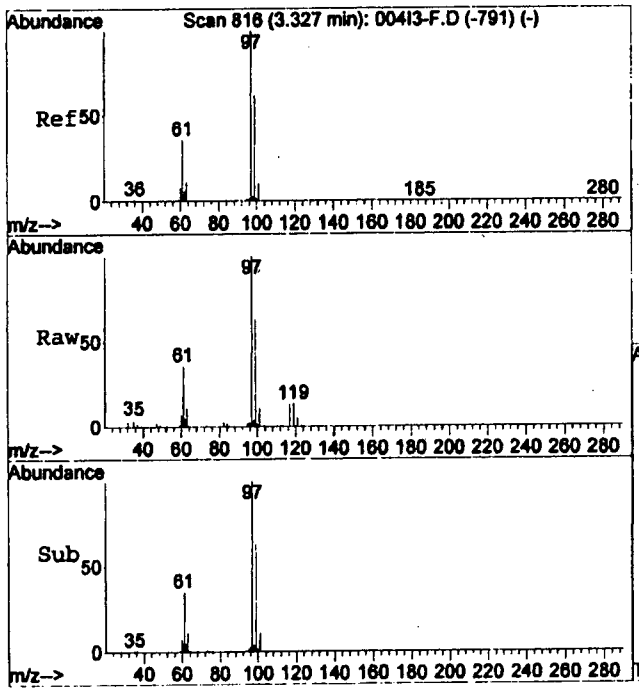


#16
Chloroform
Concen: 21.55 ppm
RT: 3.13 min Scan# 757
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 83 Resp: 552347

Ion	Ratio	Lower	Upper
83	100		
47	21.1	16.6	30.8
85	66.8	45.1	83.7

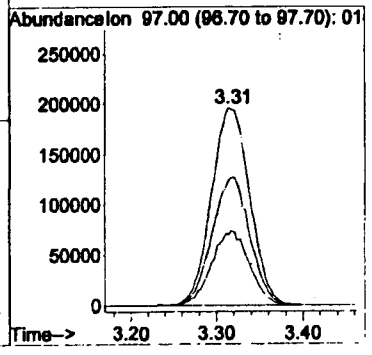


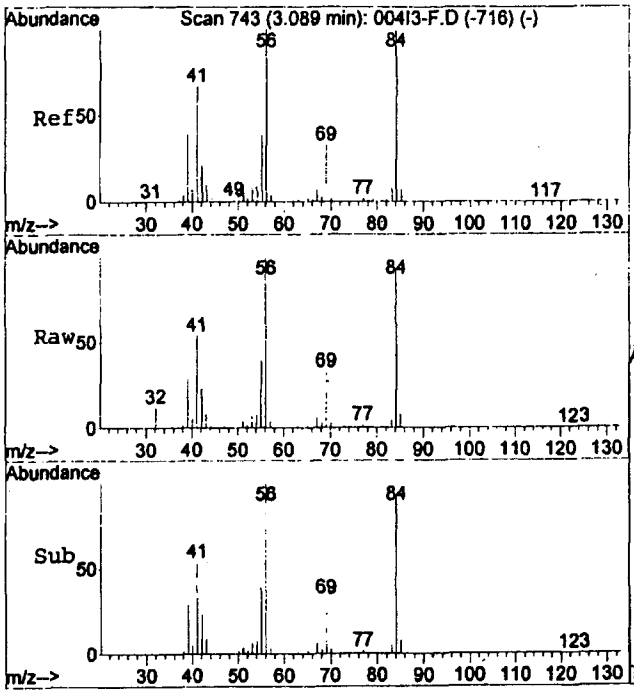


#17
1,1,1-Trichloroethane
Concen: 19.68 ppm
RT: 3.31 min Scan# 812
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 97 Resp: 599343

Ion	Ratio	Lower	Upper
97	100		
61	37.0	26.1	48.5
99	64.1	45.0	83.6

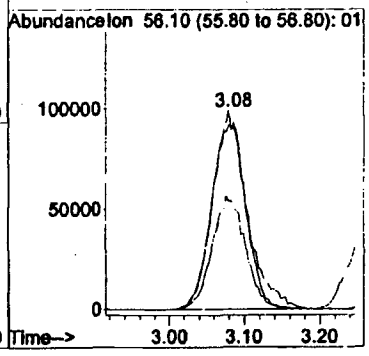


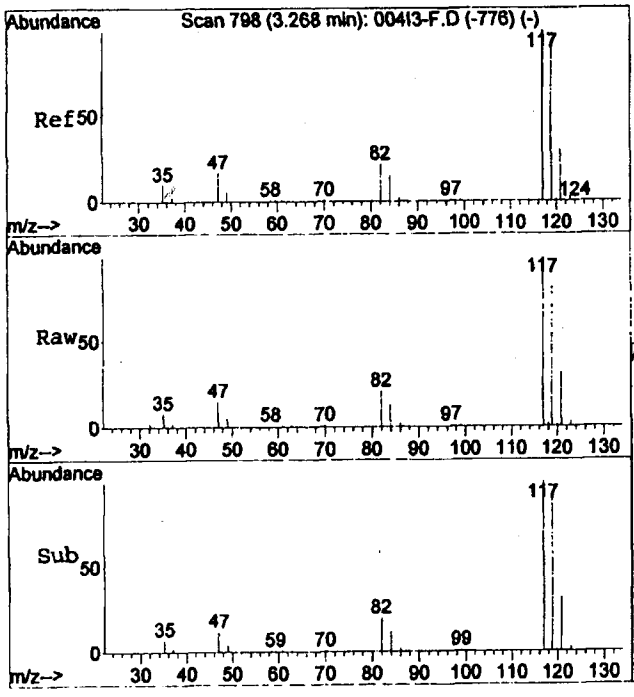


#18
Cyclohexane
Concen: 26.98 ppm
RT: 3.08 min Scan# 740
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 56 Resp: 295711

Ion	Ratio	Lower	Upper
56	100		
84	105.8	75.7	140.7
41	58.8	47.6	88.4

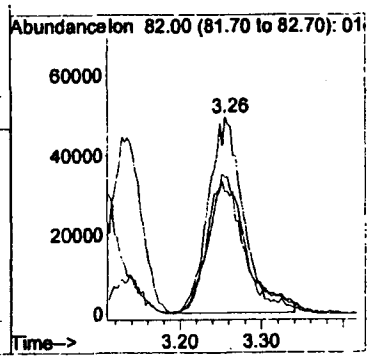


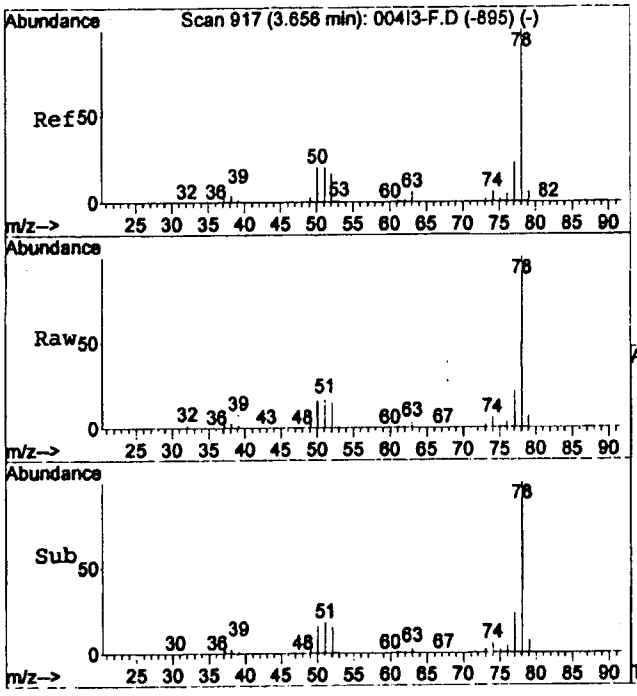


#19
Carbon Tetrachloride
Concen: 18.24 ppm
RT: 3.26 min Scan# 794
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 82 Resp: 150314

Ion	Ratio	Lower	Upper
82	100		
47	72.8	51.1	94.9
84	66.9	43.1	80.1

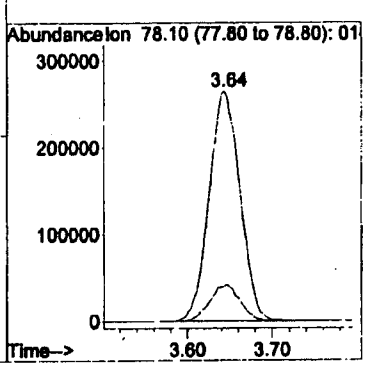


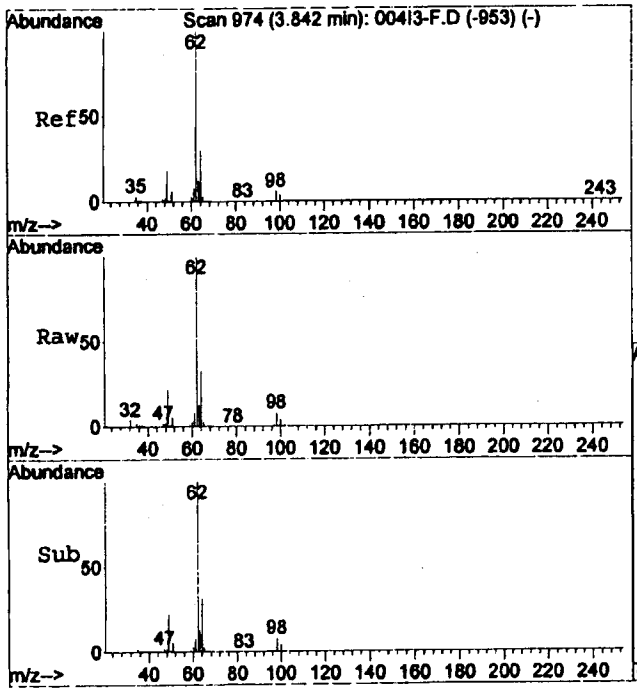


#20
Benzene
Concen: 25.81 ppm
RT: 3.64 min Scan# 913
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 78 Resp: 671543

Ion	Ratio	Lower	Upper
78	100		
52	15.2	11.6	21.6

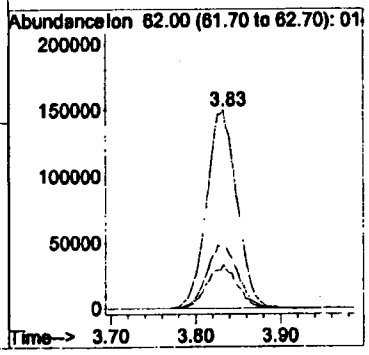


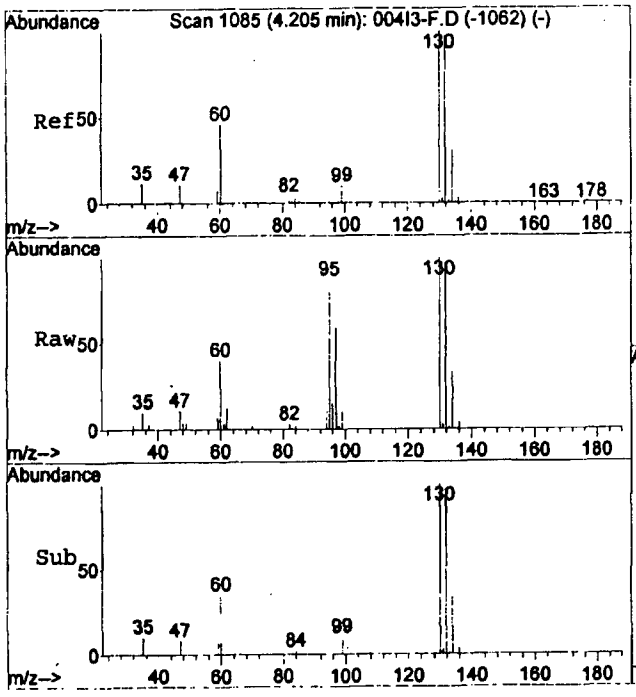


#21
1,2-Dichloroethane
Concen: 19.29 ppm
RT: 3.83 min Scan# 971
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 62 Resp: 371250

Ion	Ratio	Lower	Upper
62	100		
49	21.3	12.7	23.7
64	32.9	22.4	41.6

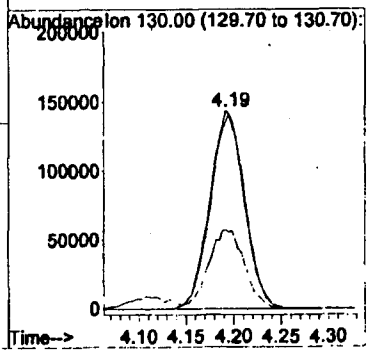


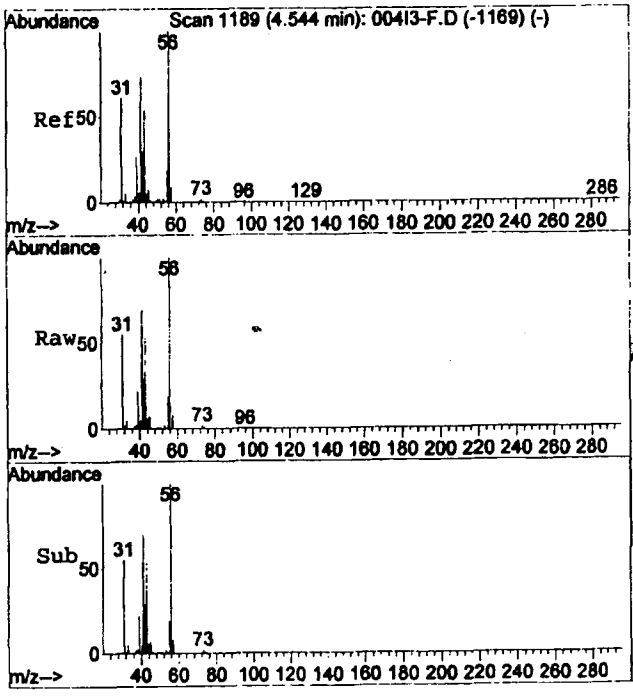


#22
Trichloroethene
Concen: 24.12 ppm
RT: 4.19 min Scan# 1081
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:130 Resp: 359891

Ion	Ratio	Lower	Upper
130	100		
60	40.9	35.2	65.4
132	97.2	68.0	126.4

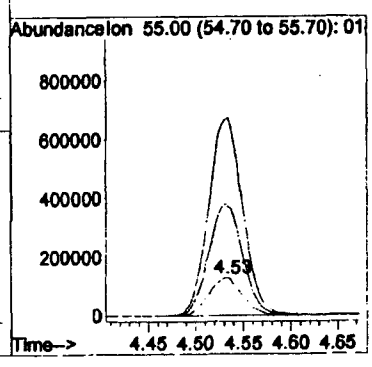


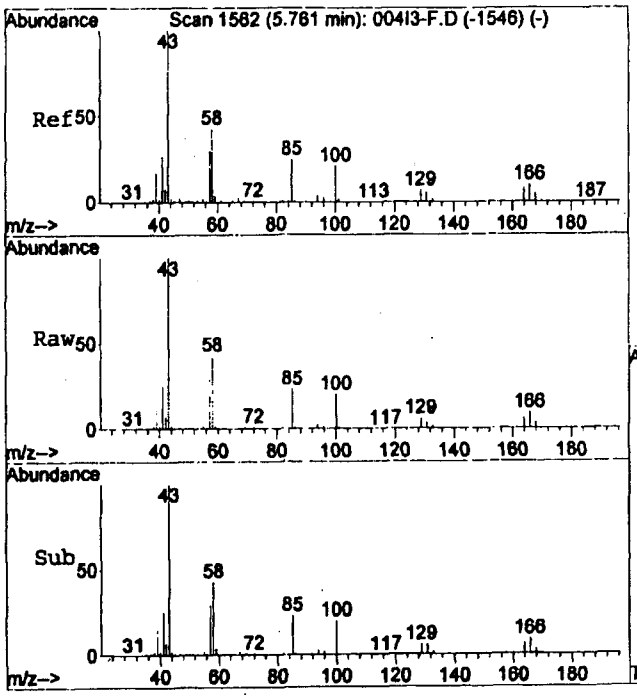


#23
Butanol
Concen: 240.99 ppm
RT: 4.53 min Scan# 1186
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 55 Resp: 313719

Ion	Ratio	Lower	Upper
55	100		
31	298.7	218.1	405.1
56	529.2	355.3	659.9

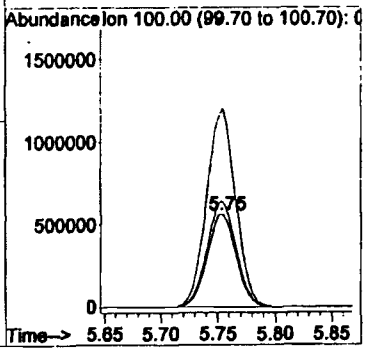


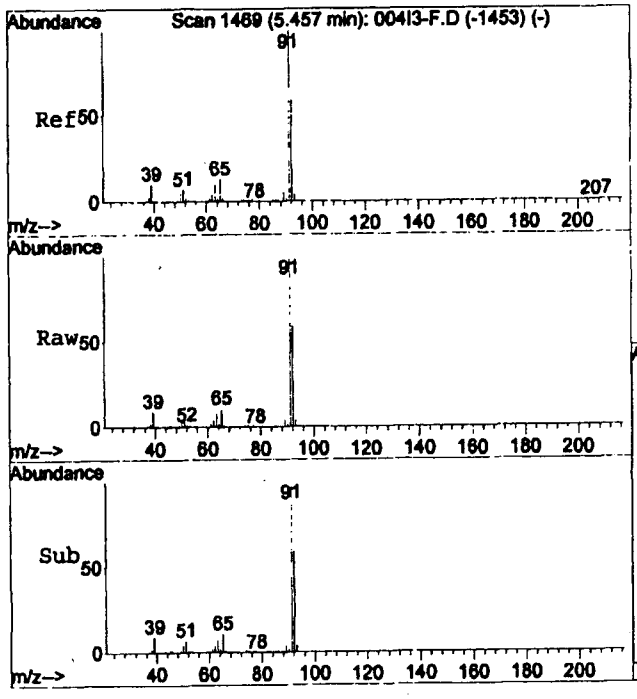


#25
Methyl isobutyl ketone
Concen: 248.00 ppm
RT: 5.75 min Scan# 1560
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:100 Resp: 980037

Ion	Ratio	Lower	Upper
100	100		
58	213.6	144.8	268.8
85	114.3	81.6	151.6

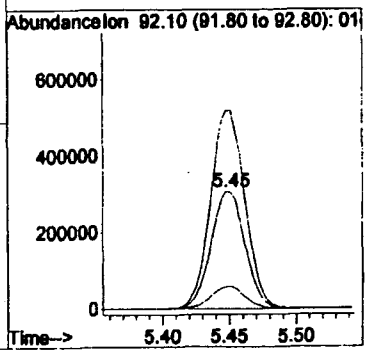


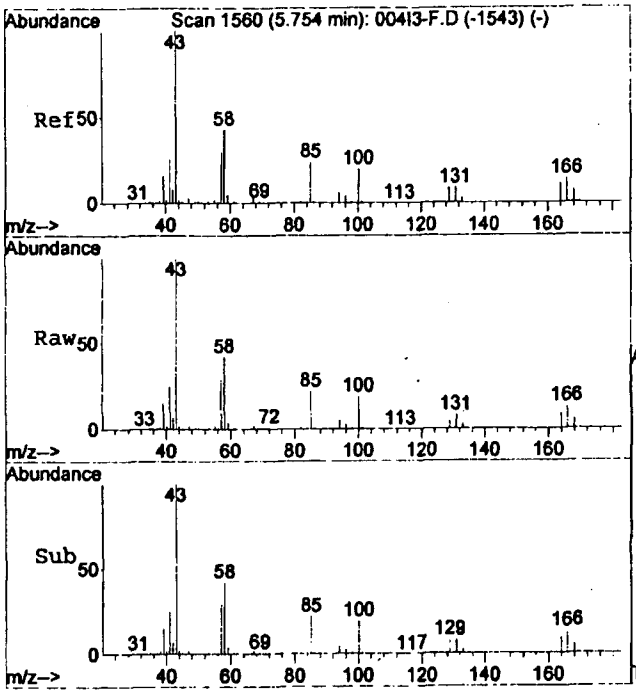


#26
Toluene
Concen: 27.21 ppm
RT: 5.45 min Scan# 1466
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 92 Resp: 532471

Ion	Ratio	Lower	Upper
92	100		
91	170.7	120.1	223.1
65	18.8	14.4	26.8

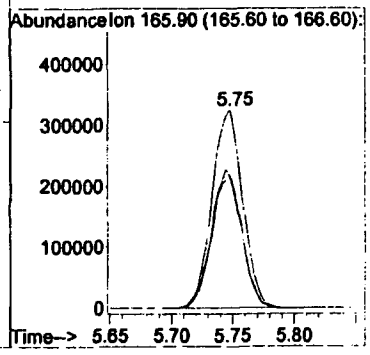


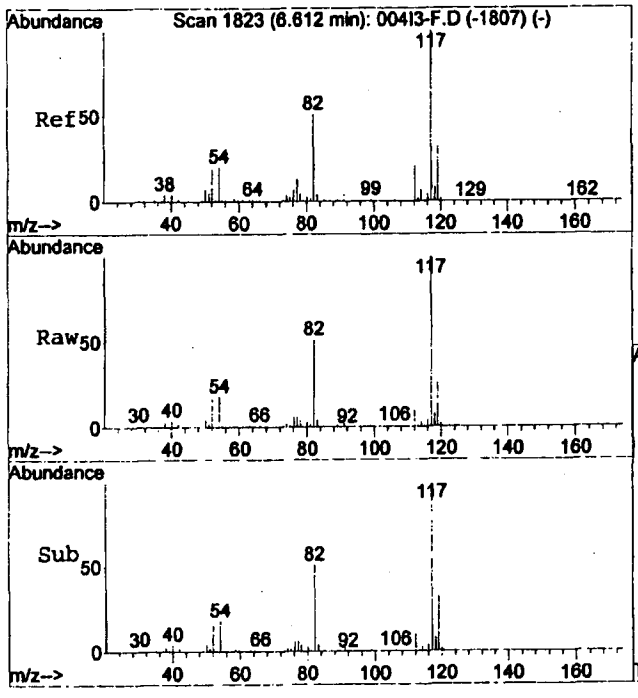


#27
Tetrachloroethene
Concen: 23.86 ppm
RT: 5.75 min Scan# 1558
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:166 Resp: 560698

Ion	Ratio	Lower	Upper
166	100		
129	68.7	46.3	86.1
131	66.7	45.7	84.9

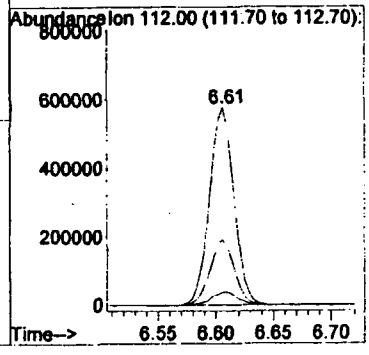


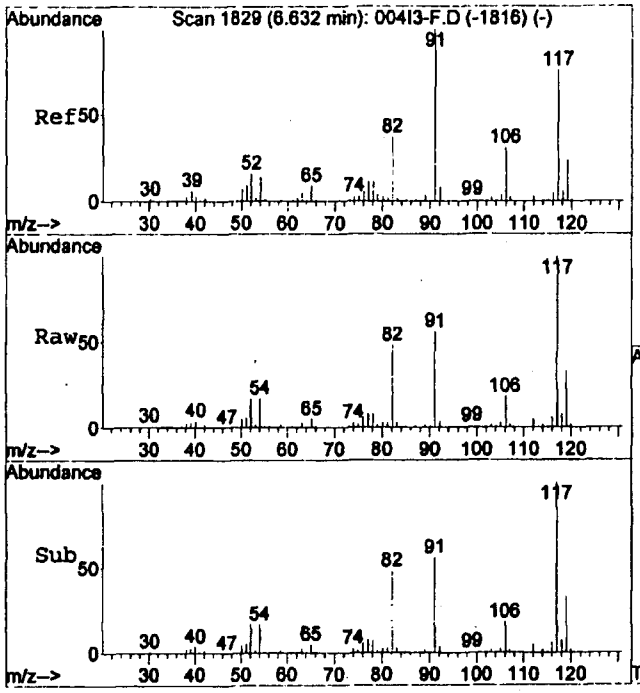


#28
Chlorobenzene
Concen: 25.19 ppm
RT: 6.61 min Scan# 1821
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:112 Resp: 842049

Ion	Ratio	Lower	Upper
112	100		
56	6.7	2.7	5.1#
114	32.6	23.0	42.6

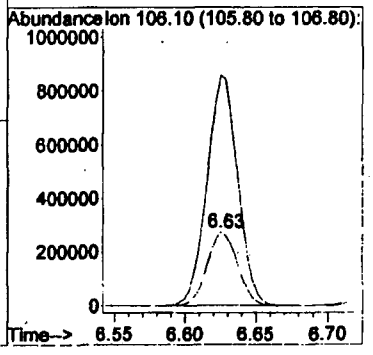


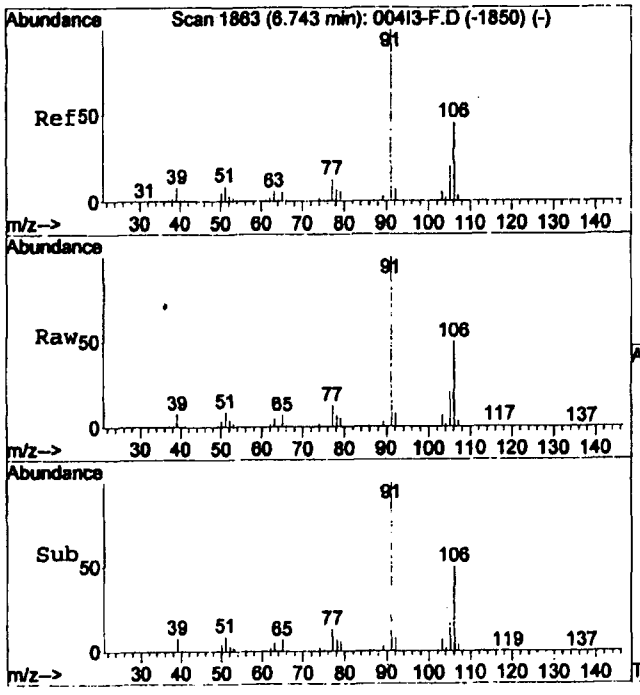


#29
Ethylbenzene
Concen: 25.32 ppm
RT: 6.63 min Scan# 1827
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:106 Resp: 406546

Ion	Ratio	Lower	Upper
106	100		
91	318.1	225.4	418.6

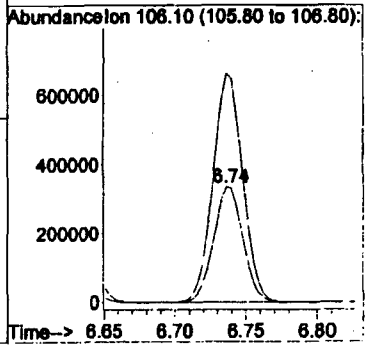


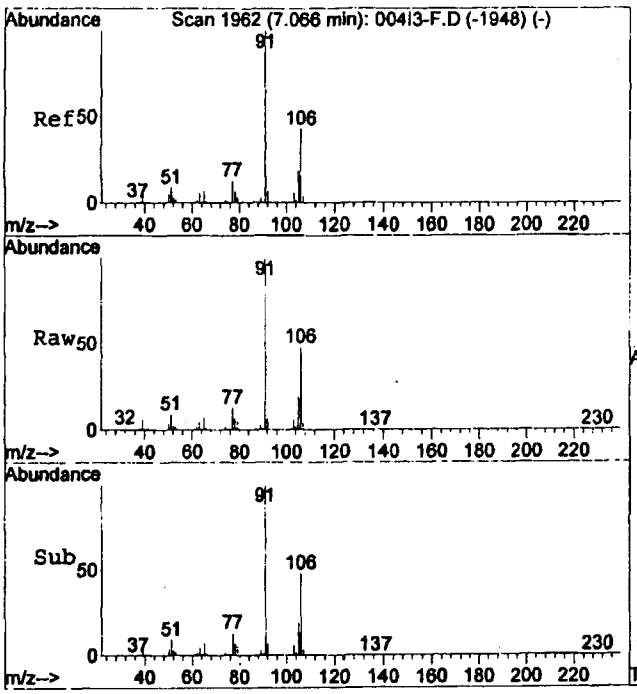


#30
m and p-xylene
Concen: 26.38 ppm
RT: 6.74 min Scan# 1861
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:106 Resp: 480326

Ion	Ratio	Lower	Upper
106	100		
91	200.8	150.8	280.1

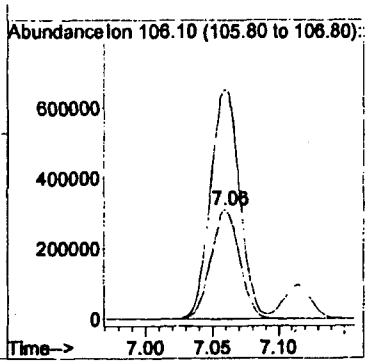


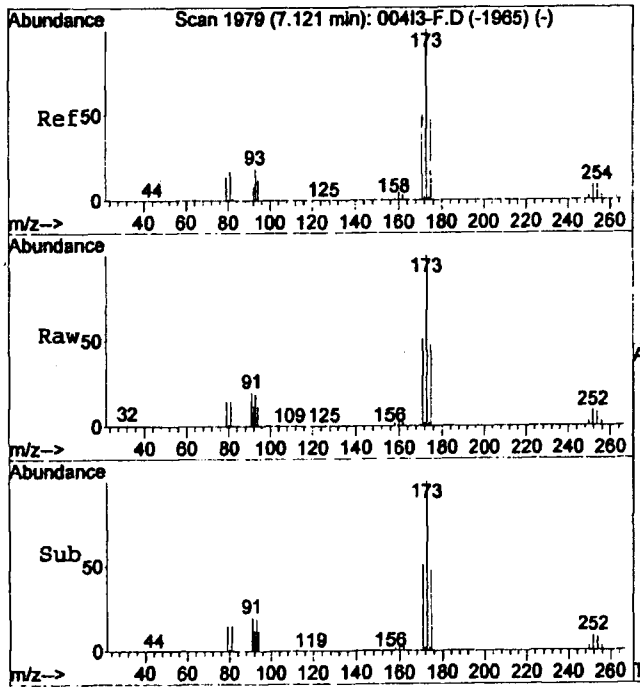


#31
o-xylene
Concen: 26.61 ppm
RT: 7.06 min Scan# 1960
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:106 Resp: 463908

Ion	Ratio	Lower	Upper
106	100		
91	214.6	159.0	295.4

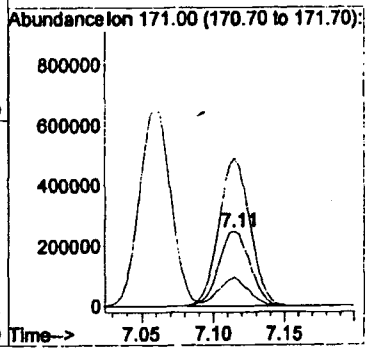


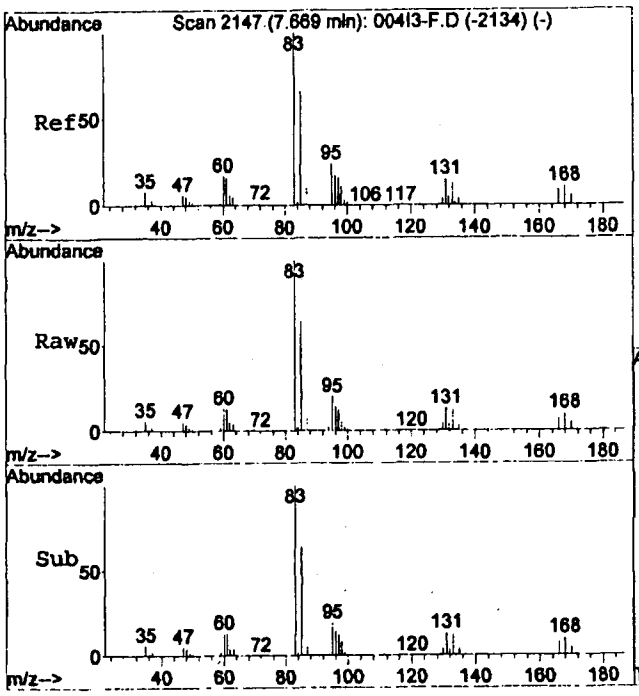


#32
Bromoform
Concen: 24.48 ppm
RT: 7.11 min Scan# 1977
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:171 Resp: 382696

Ion	Ratio	Lower	Upper
171	100		
91	35.8	26.7	49.5
173	195.4	137.5	255.4

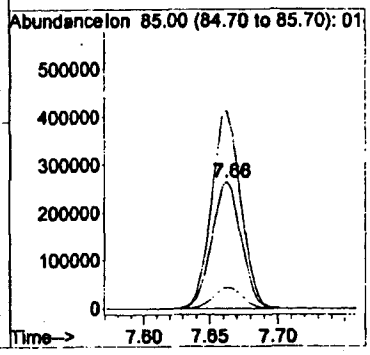


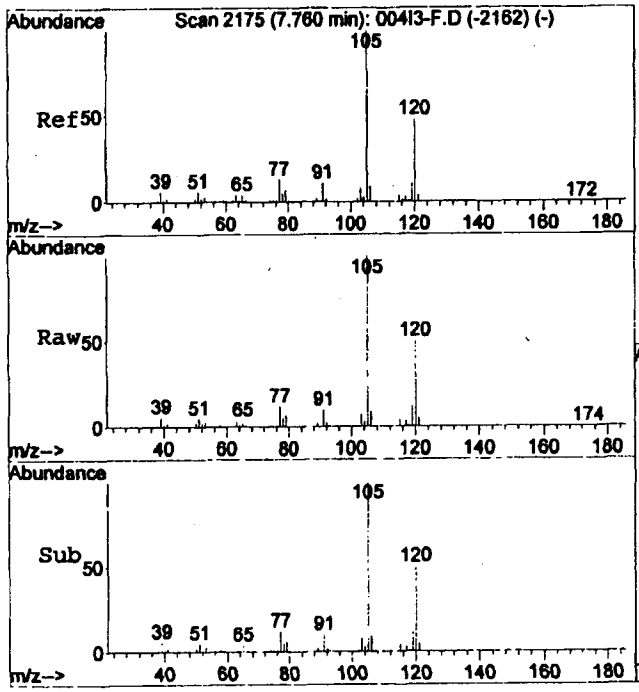


#34
1,1,2,2-Tetrachloroethane
Concen: 27.34 ppm
RT: 7.66 min Scan# 2145
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion: 85 Resp: 395195

Ion	Ratio	Lower	Upper
85	100		
168	16.1	12.2	22.6
83	155.2	106.9	198.5

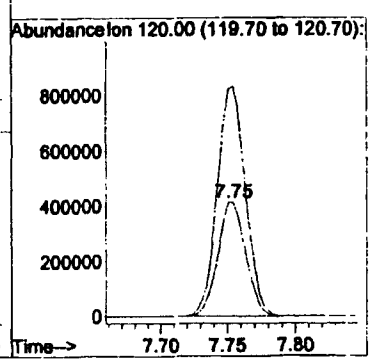


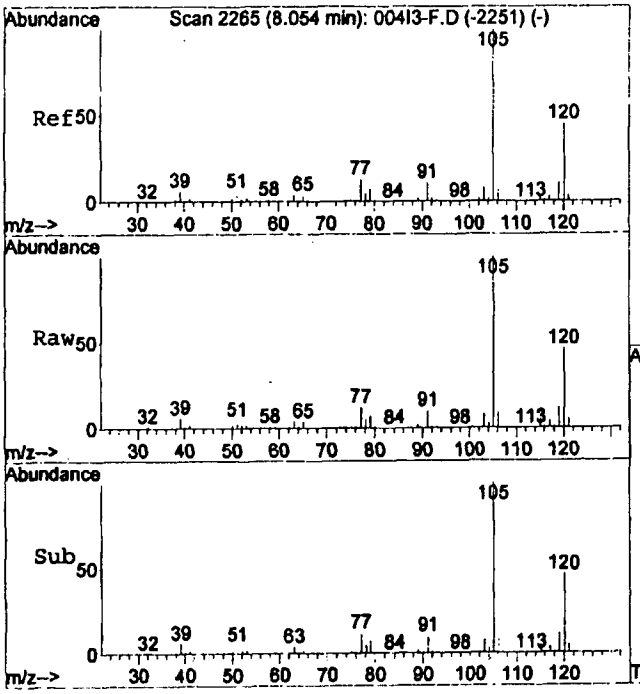


#35
1,3,5-Trimethylbenzene
Concen: 25.88 ppm
RT: 7.75 min Scan# 2172
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:120 Resp: 590765

Ion	Ratio	Lower	Upper
120	100		
105	203.1	146.9	272.7

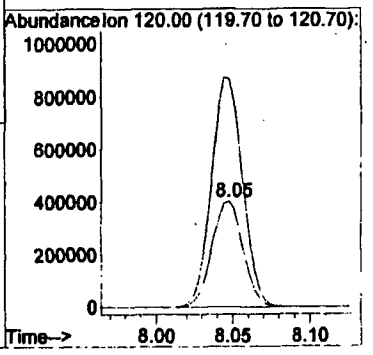




#36
1,2,4-Trimethylbenzene
Concen: 26.42 ppm
RT: 8.05 min Scan# 2263
Delta R.T. -0.01 min
Lab File: 014DR-F.D
Acq: 13 Aug 2011 15:25

Tgt Ion:120 Resp: 564204

Ion	Ratio	Lower	Upper
120	100		
105	216.5	158.7	294.7



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\015DR-F.D Vial: 15
Acq On : 13 Aug 2011 15:39 Operator: SO
Sample : ic14,MDL7,2011-08-13,13:27:40,1.4051 Inst : Instrumen
Misc : HS111 00014B-07,27.7,SO, Multiplr: 1.41
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:47:52 2011 Quant Results File: VOCGAS.RES

Quant Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Sat Aug 13 13:57:28 2011
Response via : Initial Calibration
DataAcq Meth : VOCGAS

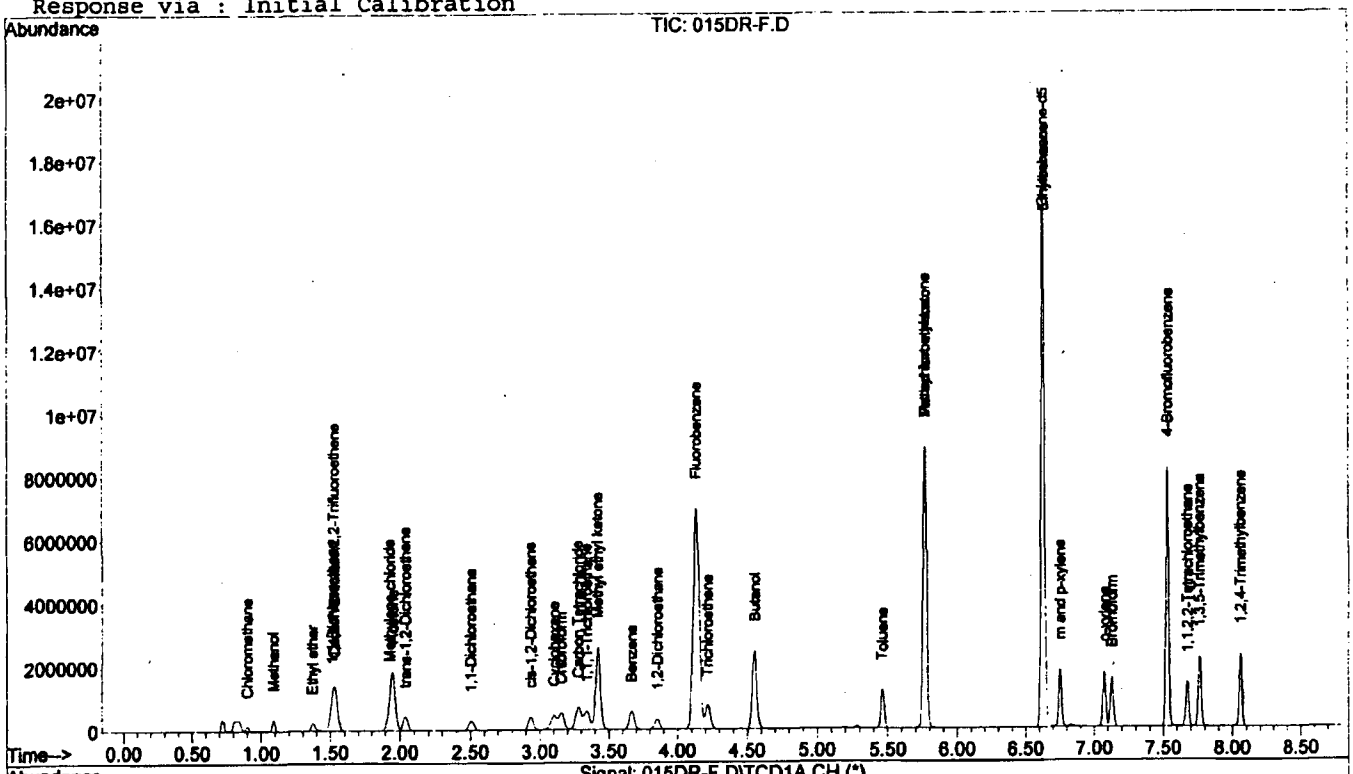
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
3) Fluorobenzene	4.13	96	10222947	201.00	ppm		0.00
24) Chlorobenzene-d5	6.62	117	8877174	176.00	ppm		0.00
System Monitoring Compounds							
33) 4-Bromofluorobenzene	7.53	95	2341582	51.00	ppm		0.00
Target Compounds							Qvalue
1) Hydrogen	2.79	GC1	36811	0.5105	perce		100
2) Methane	5.77	GC1	17469	0.5118	perce		100
4) Chloromethane	0.91	50	113504	22.7039	ppm		98
5) Methanol	1.09	31	280272	198.1296	ppm		100
6) Ethyl ether	1.37	59	109423	22.7797	ppm		98
7) 1,1-Dichloroethene	1.51	96	208914	24.0609	ppm		90
8) 1,1,2-Trichloro-1,2,2-Trif	1.53	101	500716	22.7614	ppm		97
9) Acetone	1.95	58	802708	256.7713	ppm		69
10) Carbon Disulfide	1.54	76	562116	24.9040	ppm		96
11) Methylene chloride	1.92	84	181877	25.8565	ppm		91
12) trans-1,2-Dichloroethene	2.04	96	234724	25.5459	ppm		94
13) 1,1-Dichloroethane	2.51	63	381271	23.4967	ppm		100
14) cis-1,2-Dichloroethene	2.94	96	239546	25.6793	ppm		93
15) Methyl ethyl ketone	3.42	72	1077652	243.1009	ppm		90
16) Chloroform	3.16	83	544180	21.1955	ppm		96
17) 1,1,1-Trichloroethane	3.34	97	585867	19.1997	ppm		99
18) Cyclohexane	3.10	56	296744	27.0195	ppm		93
19) Carbon Tetrachloride	3.27	82	143458	17.3774	ppm		96
20) Benzene	3.67	78	660714	25.3411	ppm		98
21) 1,2-Dichloroethane	3.85	62	363854	18.8739	ppm		97
22) Trichloroethene	4.21	130	362850	24.2768	ppm		94
23) Butanol	4.55	55	285485	218.8833	ppm		93
25) Methyl isobutyl ketone	5.76	100	905232	229.9693	ppm		96
26) Toluene	5.46	92	517235	26.5373	ppm		99
27) Tetrachloroethene	5.76	166	539964	23.0667	ppm		96
28) Chlorobenzene	6.62	112	821422	24.6720	ppm	#	99
29) Ethylbenzene	6.64	106	393134	24.5766	ppm		99
30) m and p-xylene	6.75	106	469159	25.8640	ppm		91
31) o-xylene	7.07	106	444319	25.5891	ppm		93
32) Bromoform	7.13	171	367362	23.5947	ppm		98
34) 1,1,2,2-Tetrachloroethane	7.68	85	382525	26.5719	ppm		98
35) 1,3,5-Trimethylbenzene	7.76	120	576808	25.3673	ppm		94
36) 1,2,4-Trimethylbenzene	8.06	120	548043	25.7635	ppm		93

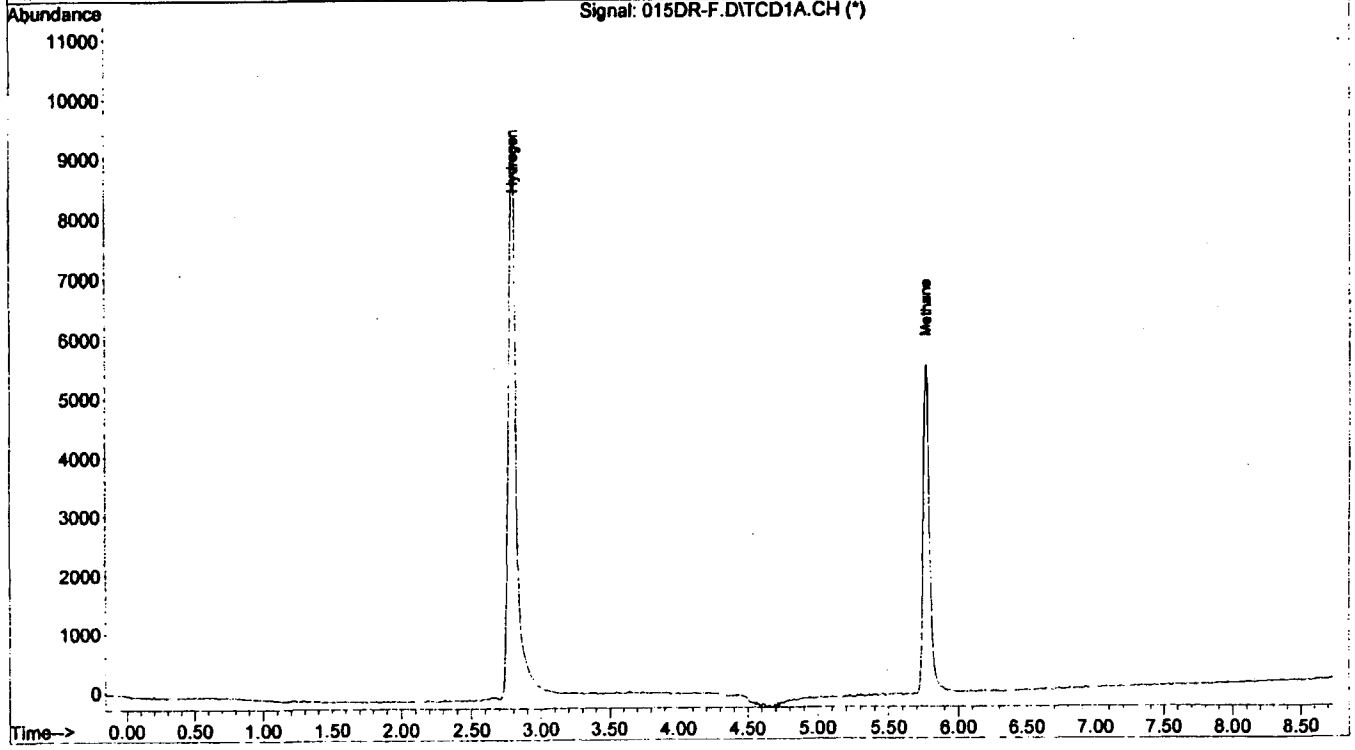
(#) = qualifier out of range (m) = manual integration
015DR-F.D VOCGAS.M Mon Aug 15 11:11:46 2011

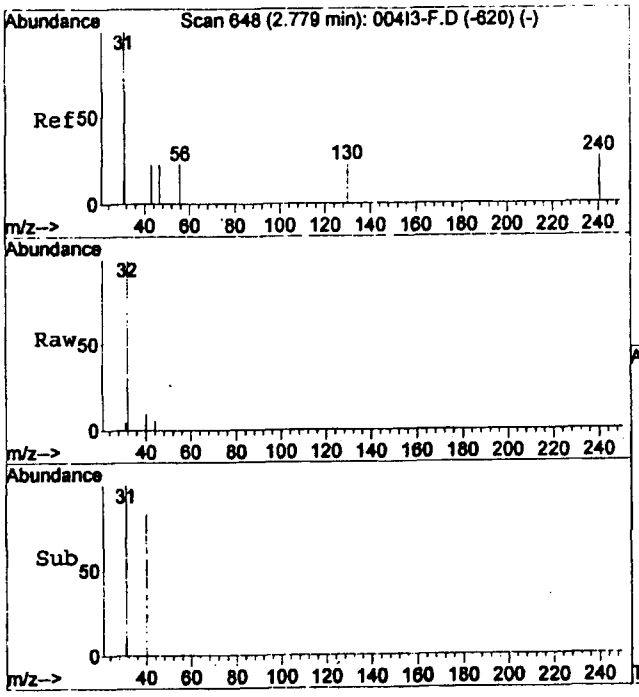
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\HS111 00014B\015DR-F.D Vial: 15
Acq On : 13 Aug 2011 15:39 Operator: SO
Sample : ic14,MDL7,2011-08-13,13:27:40,1.4051 Inst : Instrumen
Misc : HS111 00014B-07,27.7,SO, Multiplr: 1.41
Sample Amount: 0.00
MS Integration Params: RTEINT.P GC Integration Params: RTEINT2.P
Quant Time: Aug 13 15:47 2011 Quant Results File: VOCGAS.RES

Method : C:\HPCHEM\1\METHODS\VOCGAS.M (RTE Integrator; Aligned)
Title : TRU HGAS VOA Compounds
Last Update : Mon Aug 15 10:13:08 2011
Response via : Initial Calibration

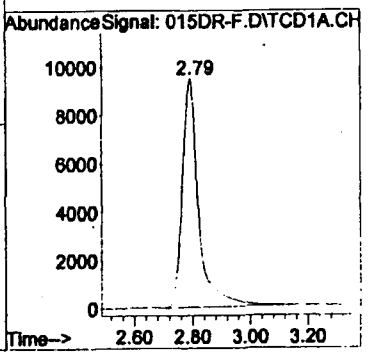


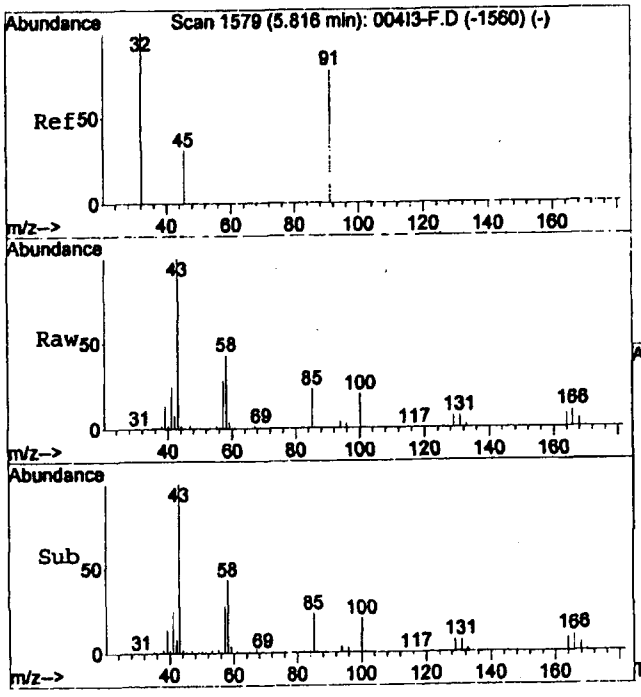




#1
Hydrogen
Concen: 0.51 percent
RT: 2.79 min
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

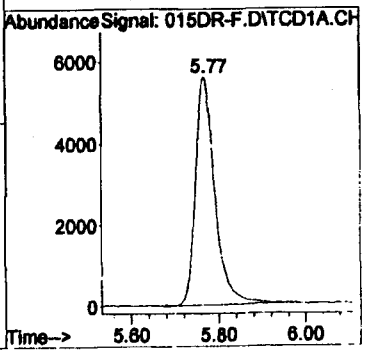
Tgt Sig:GC1 Resp: 36811

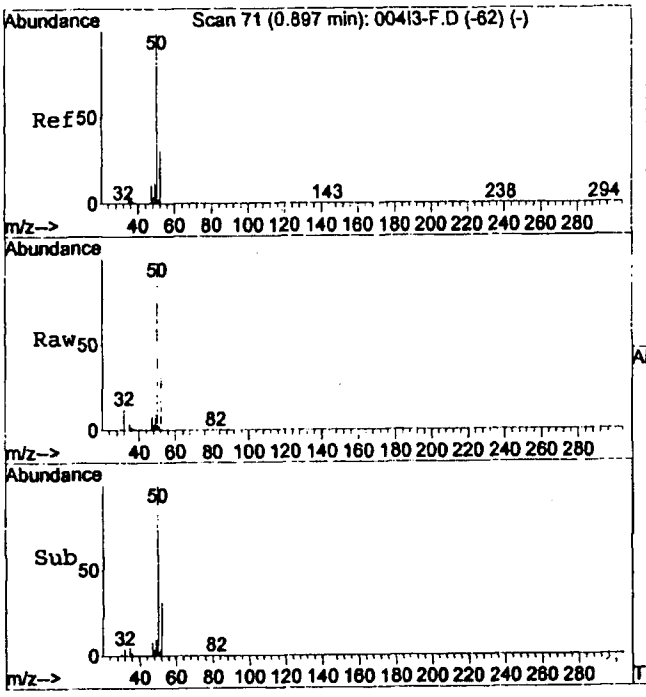




#2
Methane
Concen: 0.51 percent
RT: 5.77 min
Delta R.T. -0.05 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Sig:GC1 Resp: 17469

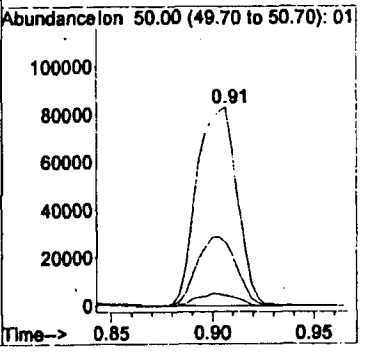


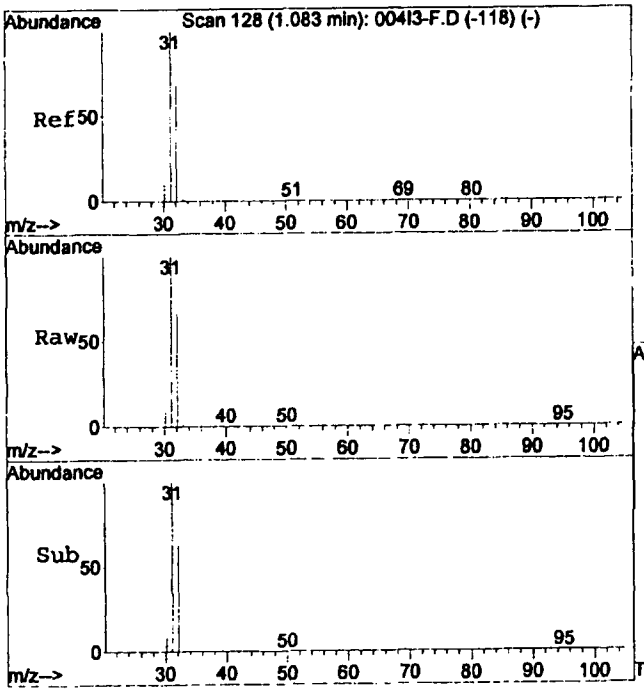


#4
Chloromethane
Concen: 22.70 ppm
RT: 0.91 min Scan# 74
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 50 Resp: 113504

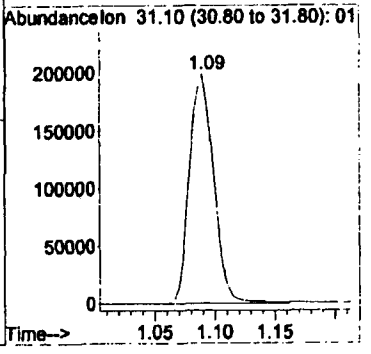
Ion	Ratio	Lower	Upper
50	100		
35	5.9	5.3	9.8
52	33.8	23.2	43.2

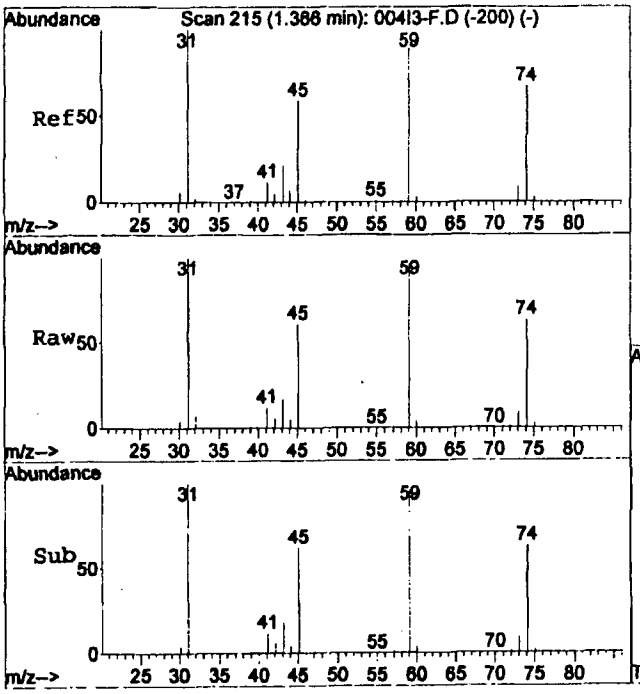




#5
Methanol
Concen: 198.13 ppm
RT: 1.09 min Scan# 130
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 31 Resp: 280272

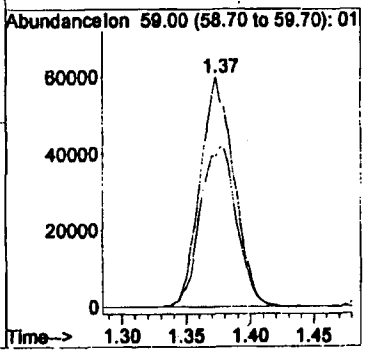


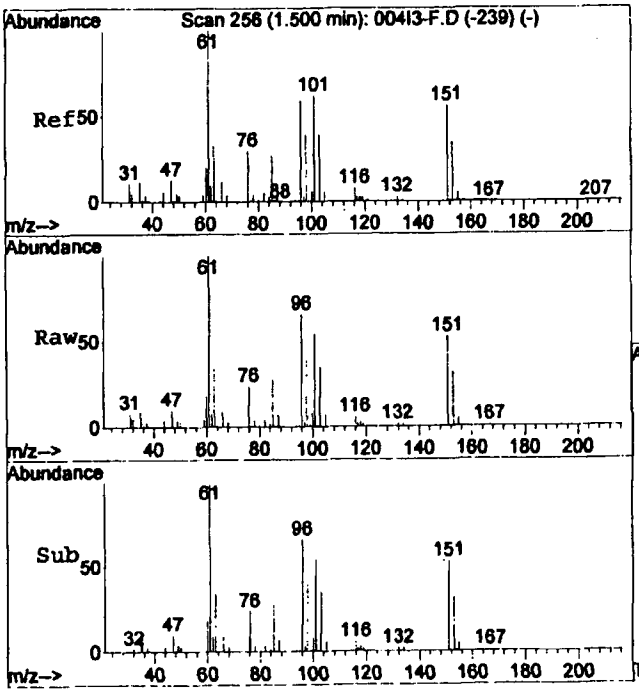


#6
Ethyl ether
Concen: 22.78 ppm
RT: 1.37 min Scan# 217
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 59 Resp: 109423

Ion	Ratio	Lower	Upper
59	100		
74	75.3	51.7	95.9

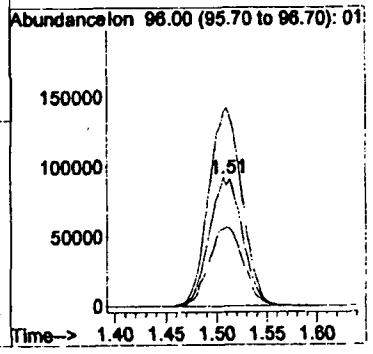


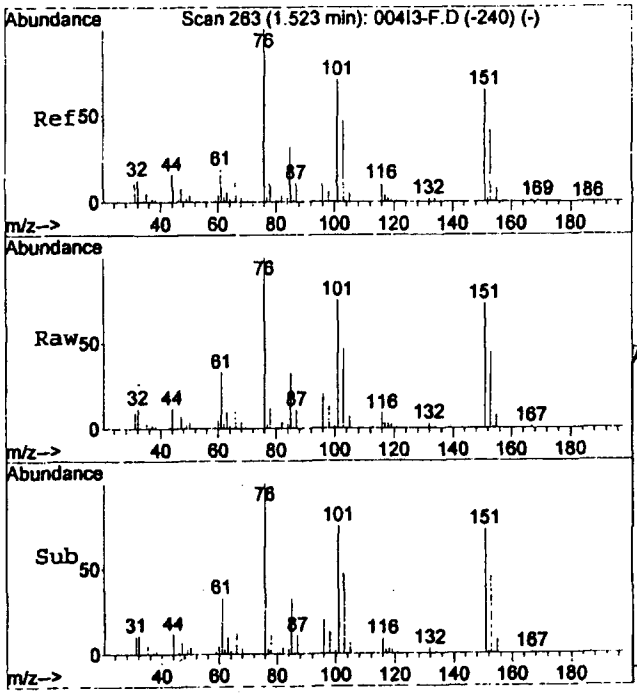


#7
1,1-Dichloroethene
Concen: 24.06 ppm
RT: 1.51 min Scan# 258
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 96 Resp: 208914

Ion	Ratio	Lower	Upper
96	100		
61	154.4	121.2	225.0
98	63.1	44.9	83.3

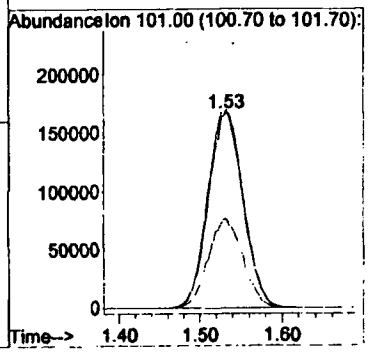


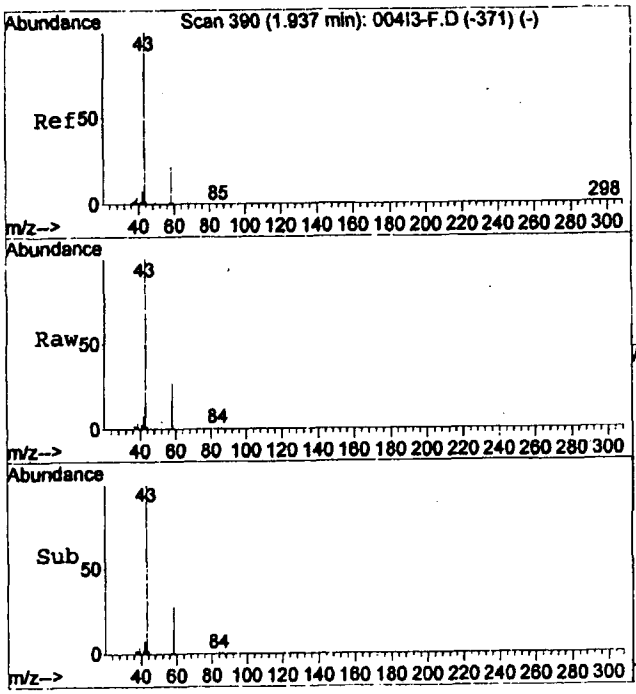


#8
1,1,2-Trichloro-1,2,2-Trifluoroethene
Concen: 22.76 ppm
RT: 1.53 min Scan# 264
Delta R.T. 0.00 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:101 Resp: 500716

Ion	Ratio	Lower	Upper
101	100		
85	44.2	32.3	59.9
151	98.8	66.8	124.2

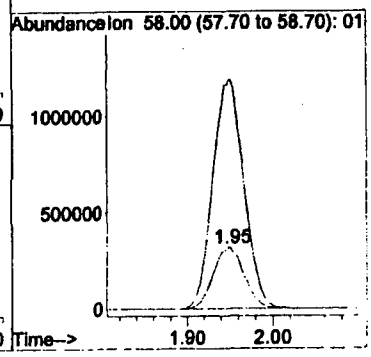


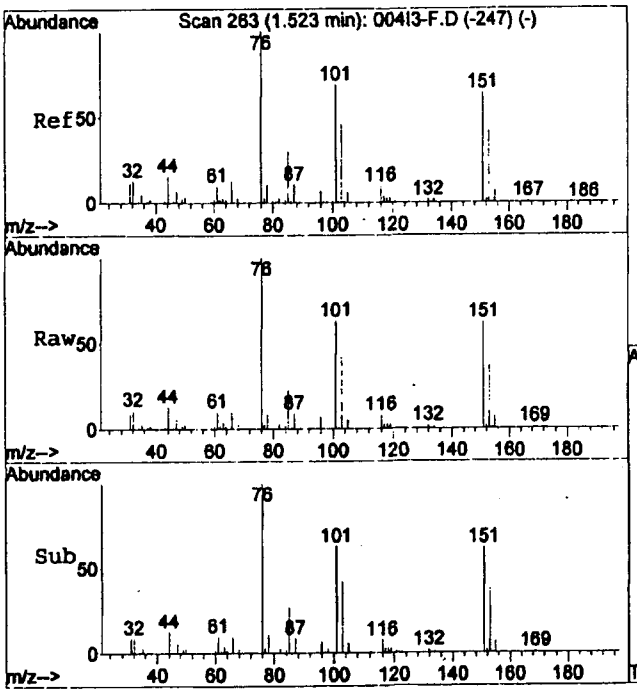


#9
Acetone
Concen: 256.77 ppm
RT: 1.95 min Scan# 393
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 58 Resp: 802708

Ion	Ratio	Lower	Upper
58	100		
43	373.1	317.7	590.1

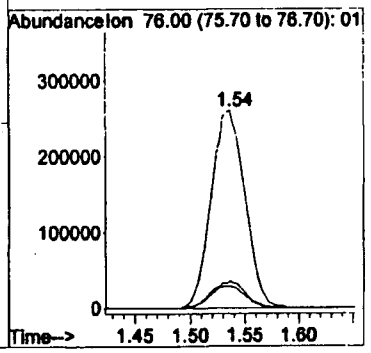


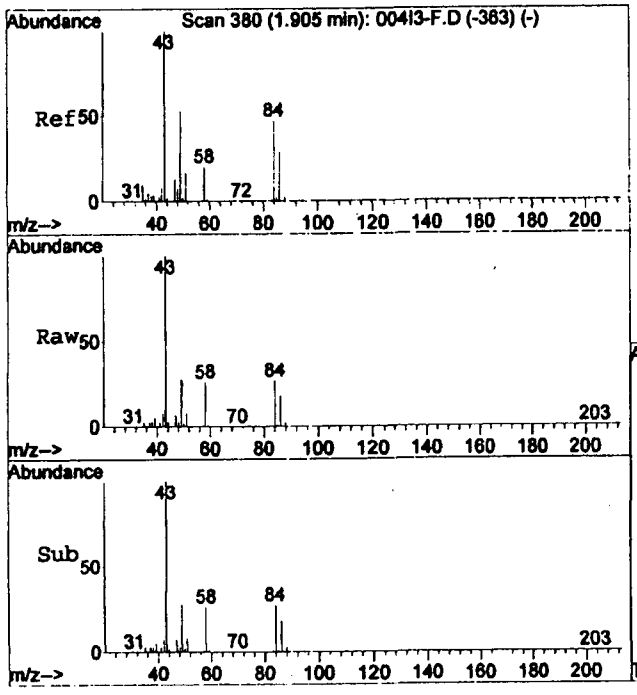


#10
Carbon Disulfide
Concen: 24.90 ppm
RT: 1.54 min Scan# 267
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 76 Resp: 562116

Ion	Ratio	Lower	Upper
76	100		
44	13.5	11.5	21.5
78	10.9	7.6	14.2

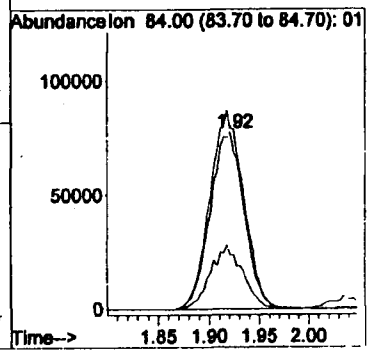


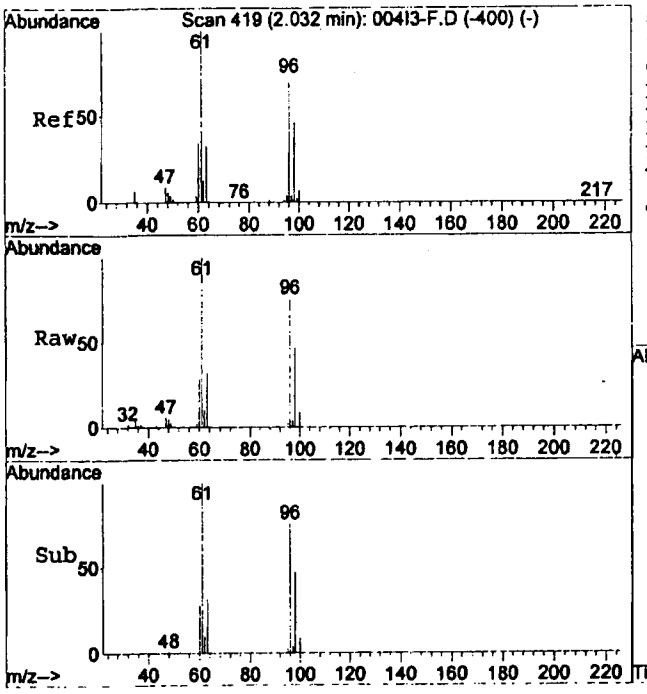


#11
Methylene chloride
Concen: 25.86 ppm
RT: 1.92 min Scan# 385
Delta R.T. 0.02 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 84 Resp: 181877

Ion	Ratio	Lower	Upper
84	100		
49	111.0	85.8	159.4
51	34.1	25.6	47.6

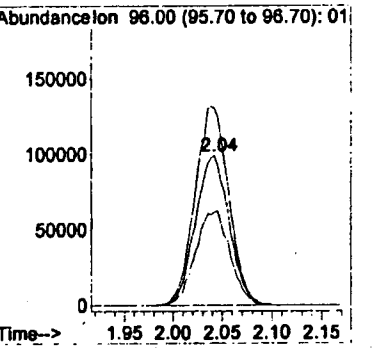


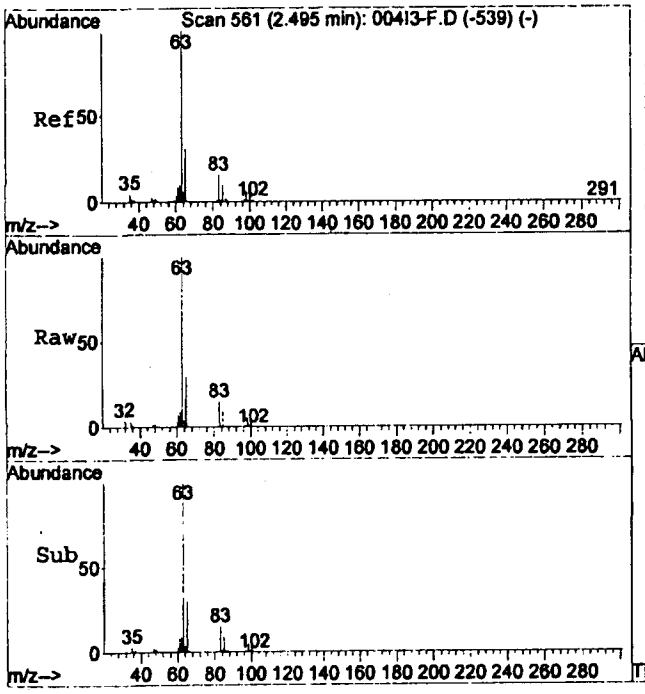


#12
trans-1,2-Dichloroethene
Concen: 25.55 ppm
RT: 2.04 min Scan# 422
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 96 Resp: 234724

Ion	Ratio	Lower	Upper
96	100		
61	133.0	100.3	186.3
98	64.5	45.6	84.8

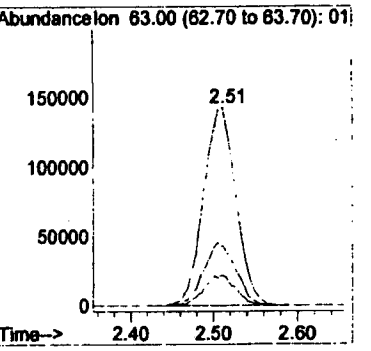


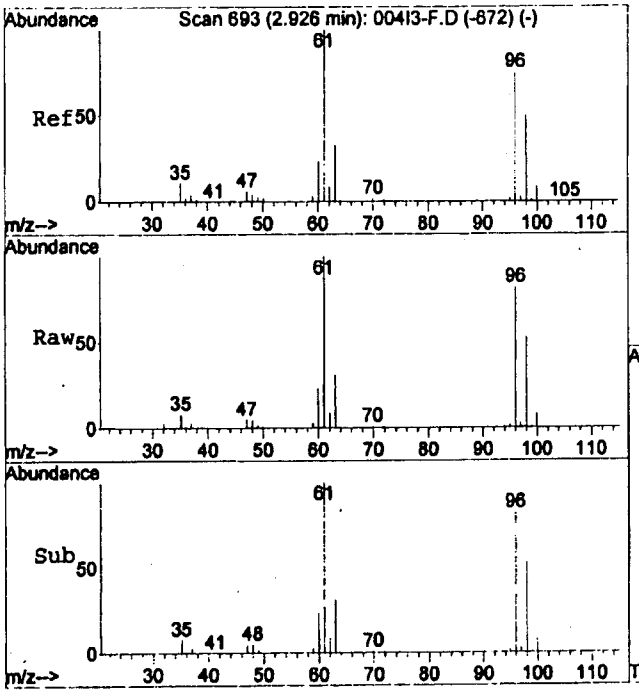


#13
1,1-Dichloroethane
Concen: 23.50 ppm
RT: 2.51 min Scan# 566
Delta R.T. 0.02 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 63 Resp: 381271

Ion	Ratio	Lower	Upper
63	100		
83	14.8	10.7	19.9
65	31.5	22.1	41.1

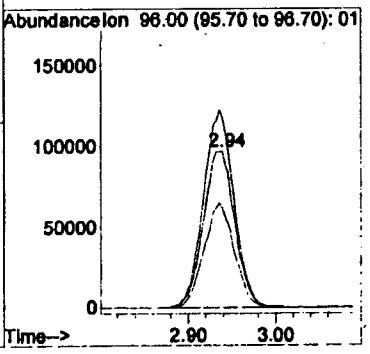


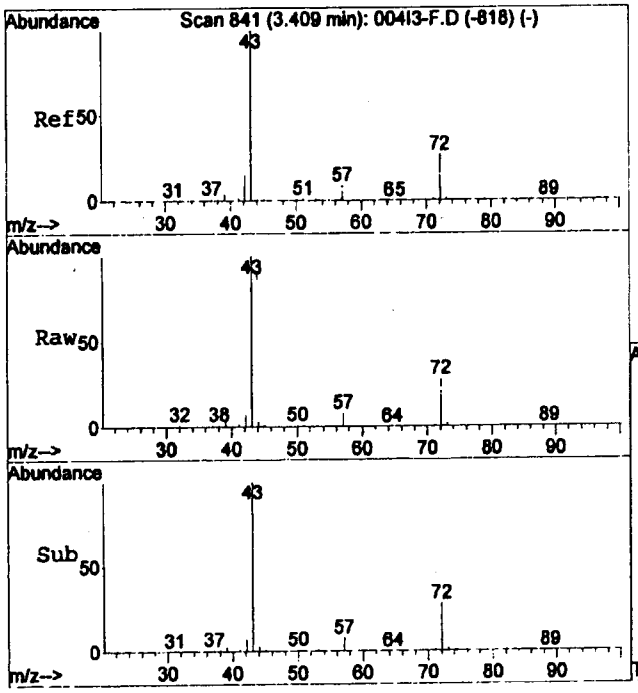


#14
cis-1,2-Dichloroethene
Concen: 25.68 ppm
RT: 2.94 min Scan# 697
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 96 Resp: 239546

Ion	Ratio	Lower	Upper
96	100		
61	122.5	94.0	174.6
98	64.2	45.2	84.0

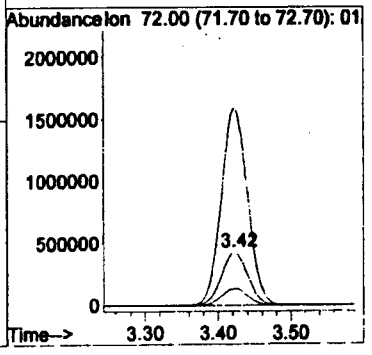


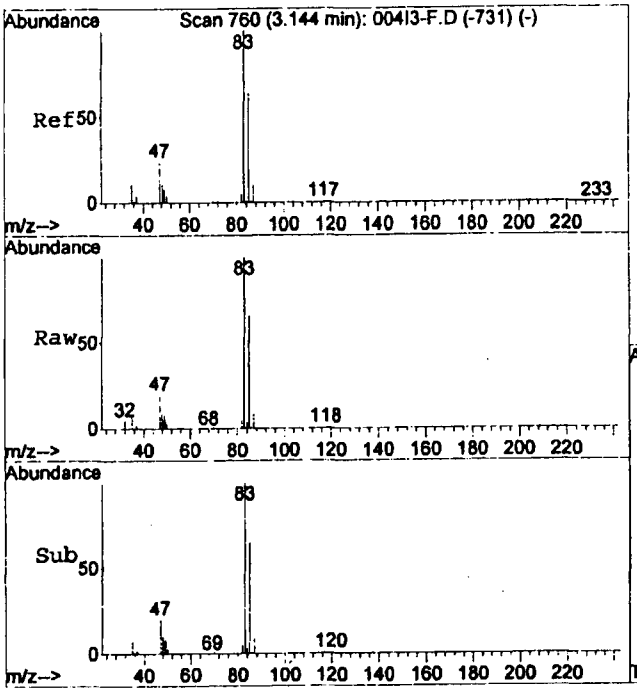


#15
Methyl ethyl ketone
Concen: 243.10 ppm
RT: 3.42 min Scan# 845
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 72 Resp: 1077652

Ion	Ratio	Lower	Upper
72	100		
57	31.6	23.7	43.9
43	367.0	274.5	509.7

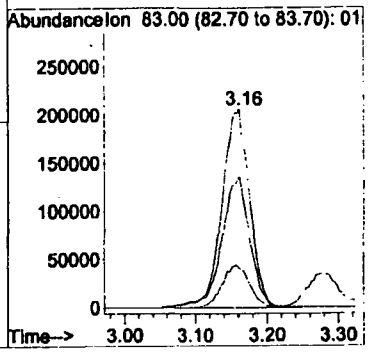


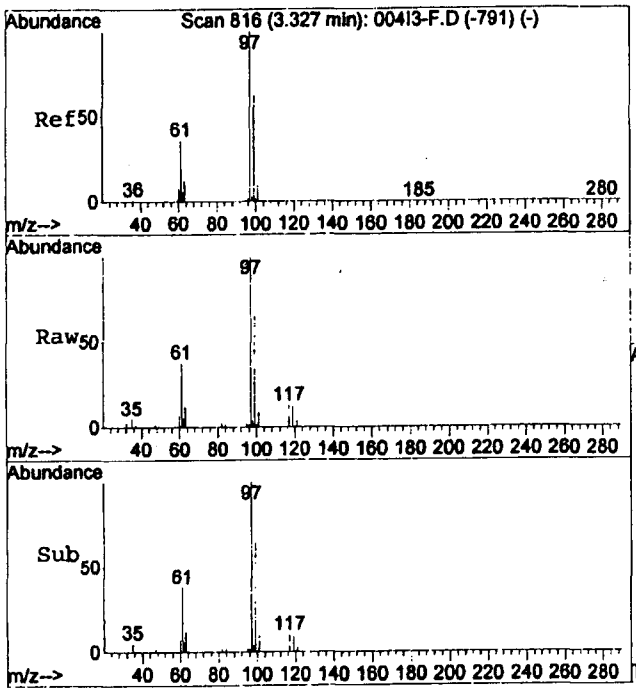


#16
Chloroform
Concen: 21.20 ppm
RT: 3.16 min Scan# 765
Delta R.T. 0.02 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 83 Resp: 544180

Ion	Ratio	Lower	Upper
83	100		
47	20.9	16.6	30.8
85	66.9	45.1	83.7

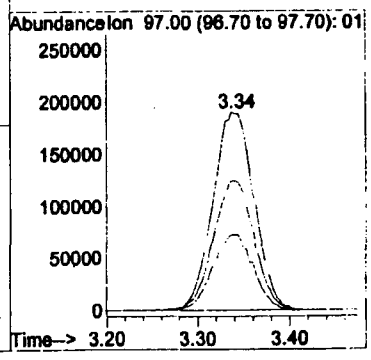


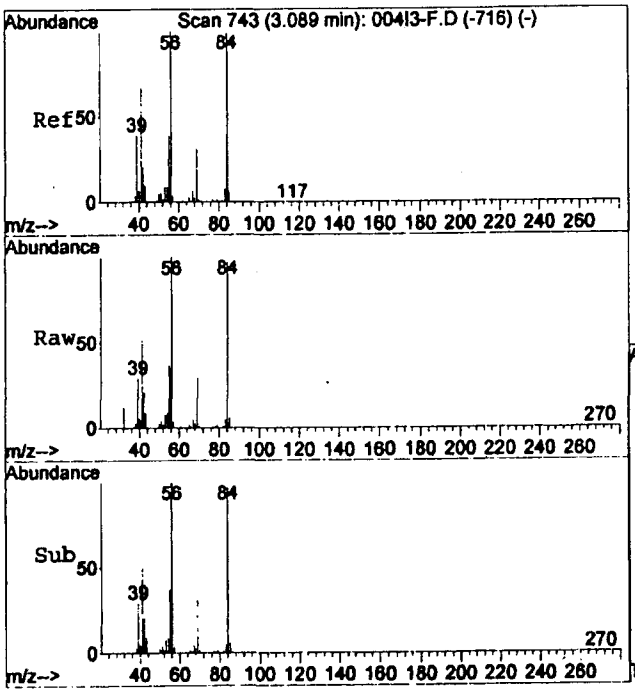


#17
1,1,1-Trichloroethane
Concen: 19.20 ppm
RT: 3.34 min Scan# 819
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 97 Resp: 585867

Ion	Ratio	Lower	Upper
97	100		
61	37.7	26.1	48.5
99	64.6	45.0	83.6

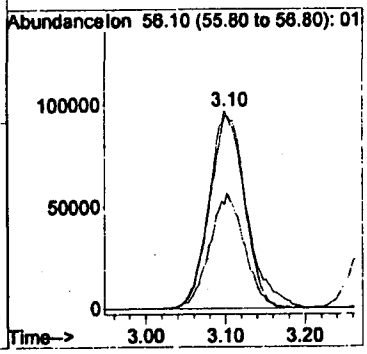


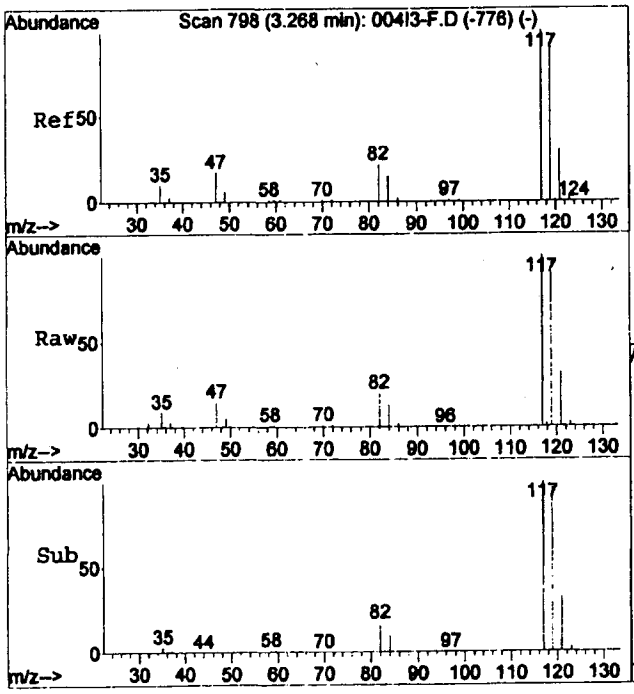


#18
Cyclohexane
Concen: 27.02 ppm
RT: 3.10 min Scan# 746
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 56 Resp: 296744

Ion	Ratio	Lower	Upper
56	100		
84	104.3	75.7	140.7
41	57.4	47.6	88.4

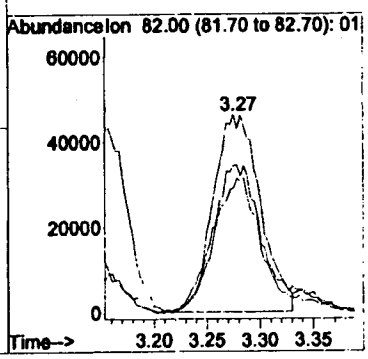


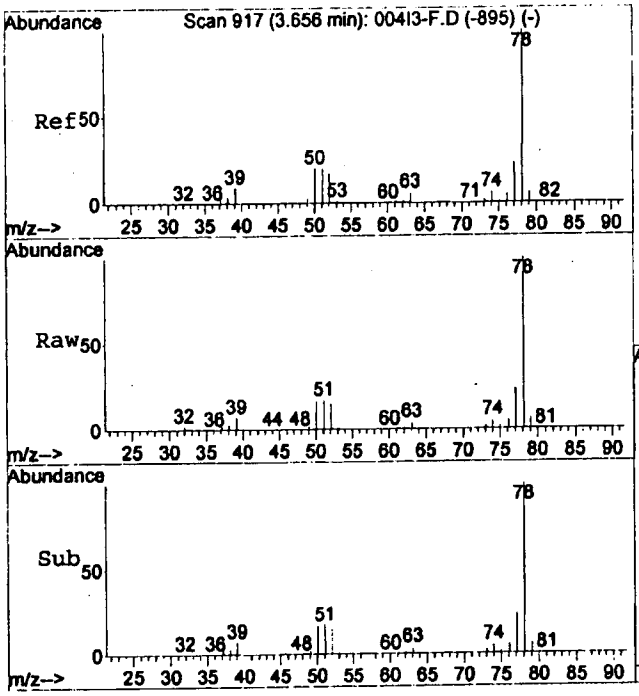


#19
Carbon Tetrachloride
Concen: 17.38 ppm
RT: 3.27 min Scan# 800
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 82 Resp: 143458

Ion	Ratio	Lower	Upper
82	100		
47	72.8	51.1	94.9
84	68.7	43.1	80.1

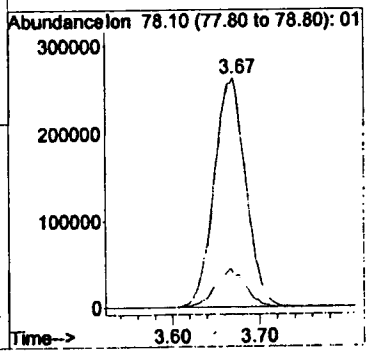


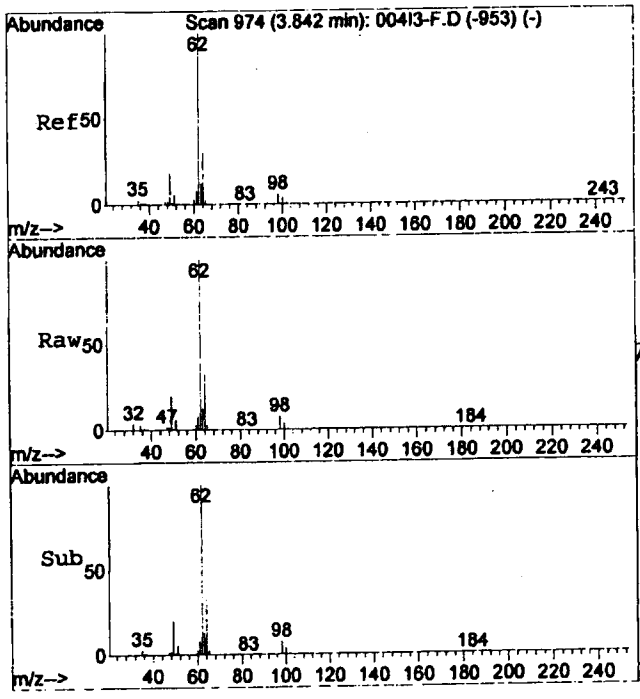


#20
Benzene
Concen: 25.34 ppm
RT: 3.67 min Scan# 921
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 78 Resp: 660714

Ion	Ratio	Lower	Upper
78	100		
52	15.5	11.6	21.6

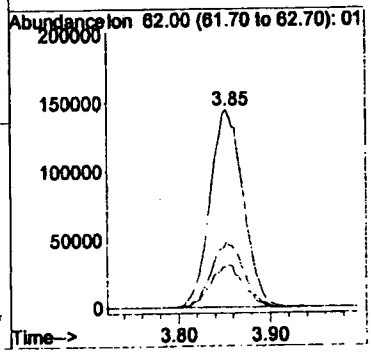


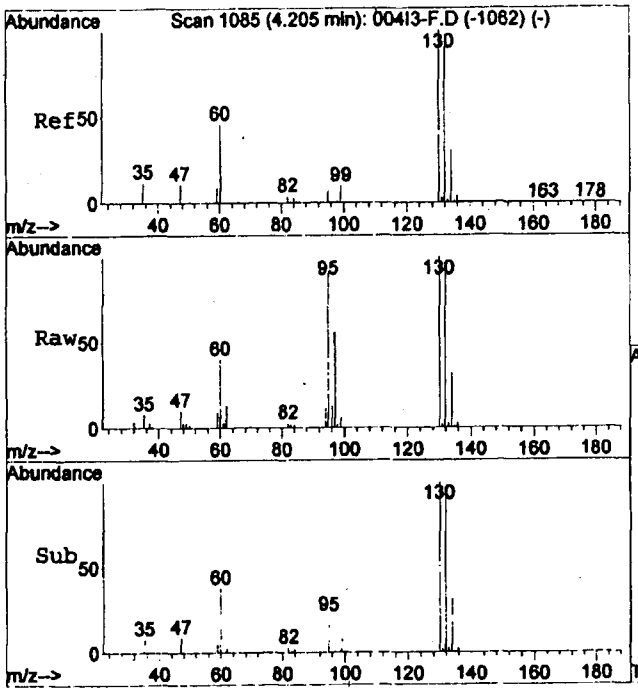


#21
1,2-Dichloroethane
Concen: 18.87 ppm
RT: 3.85 min Scan# 977
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 62 Resp: 363854

Ion	Ratio	Lower	Upper
62	100		
49	21.3	12.7	23.7
64	32.5	22.4	41.6

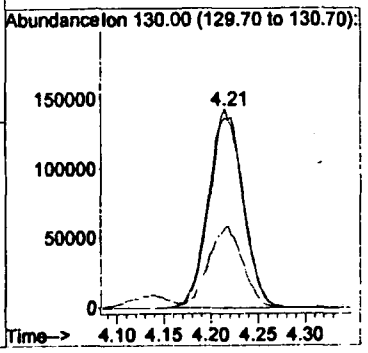


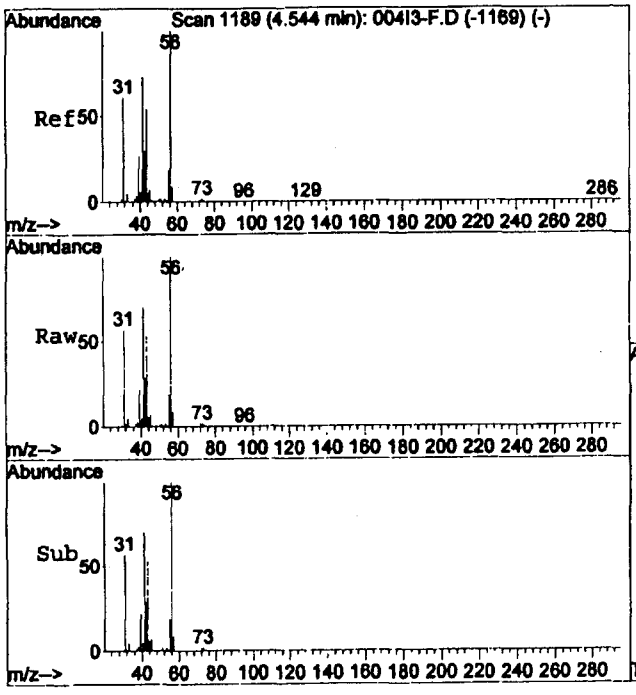


#22
Trichloroethene
Concen: 24.28 ppm
RT: 4.21 min Scan# 1088
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:130 Resp: 362850

Ion	Ratio	Lower	Upper
130	100		
60	40.0	35.2	65.4
132	95.8	68.0	126.4

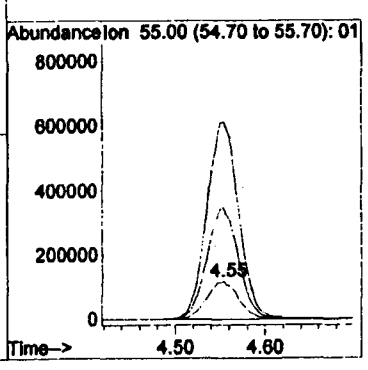


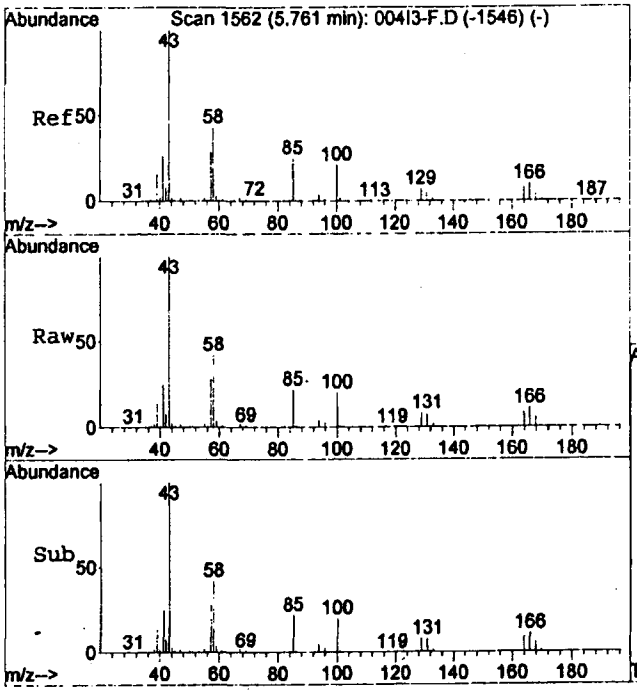


#23
Butanol
Concen: 218.88 ppm
RT: 4.55 min Scan# 1192
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 55 Resp: 285485

Ion	Ratio	Lower	Upper
55	100		
31	294.2	218.1	405.1
56	523.8	355.3	659.9

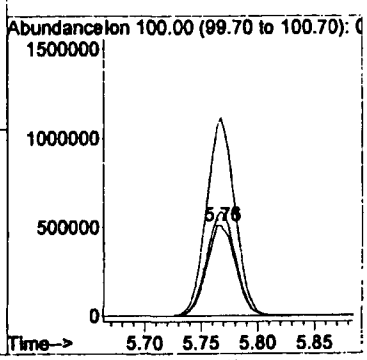


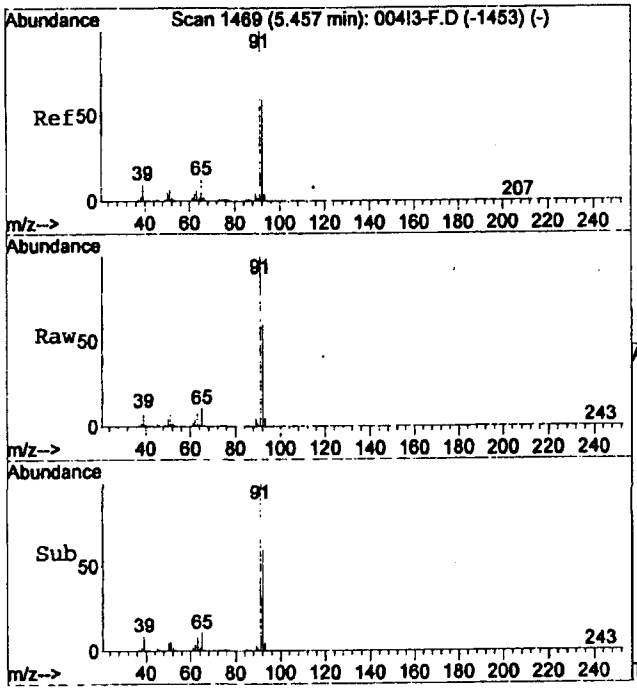


#25
Methyl isobutyl ketone
Concen: 229.97 ppm
RT: 5.76 min Scan# 1563
Delta R.T. 0.00 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:100 Resp: 905232

Ion	Ratio	Lower	Upper
100	100		
58	214.0	144.8	268.8
85	114.9	81.6	151.6

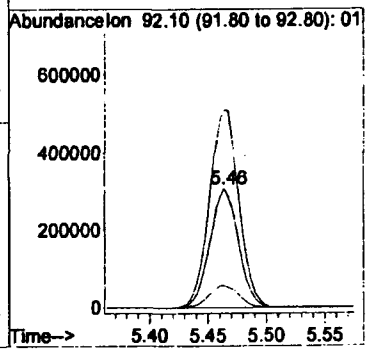


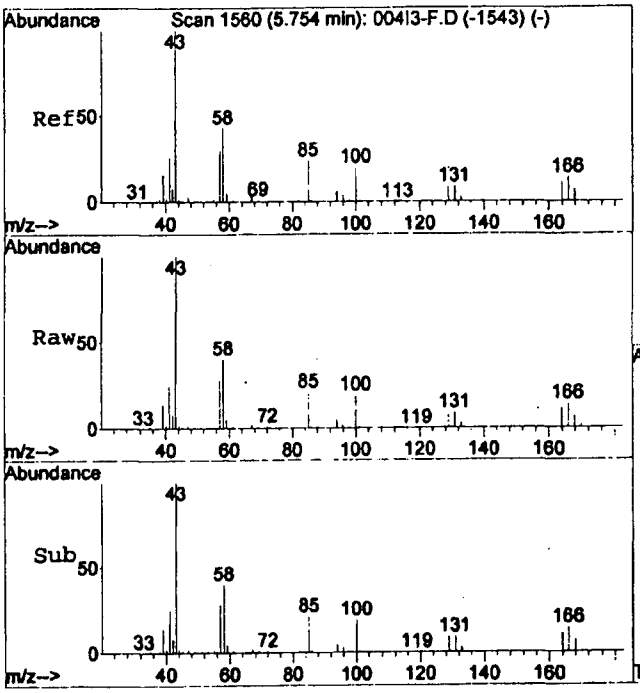


#26
Toluene
Concen: 26.54 ppm
RT: 5.46 min Scan# 1471
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 92 Resp: 517235

Ion	Ratio	Lower	Upper
92	100		
91	170.8	120.1	223.1
65	19.2	14.4	26.8

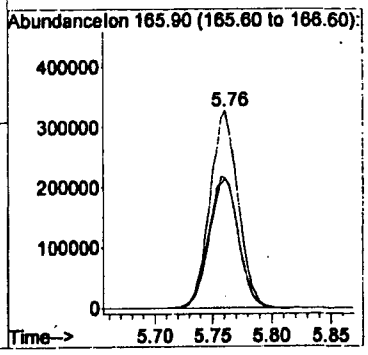


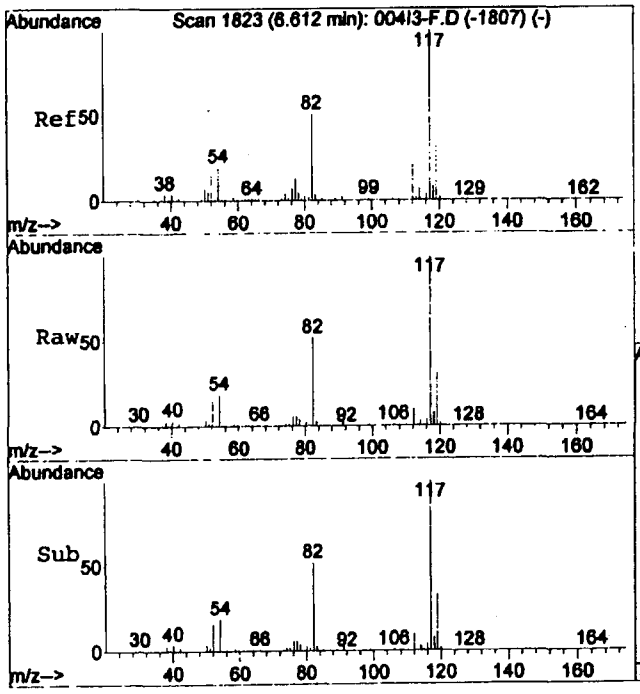


#27
Tetrachloroethene
Concen: 23.07 ppm
RT: 5.76 min Scan# 1562
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:166 Resp: 539964

Ion	Ratio	Lower	Upper
166	100		
129	69.3	46.3	86.1
131	68.1	45.7	84.9

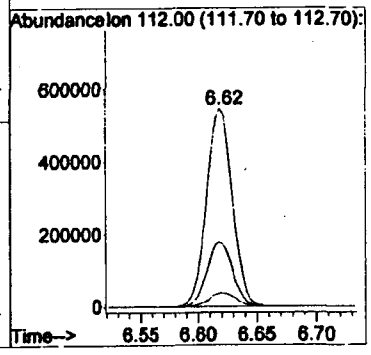


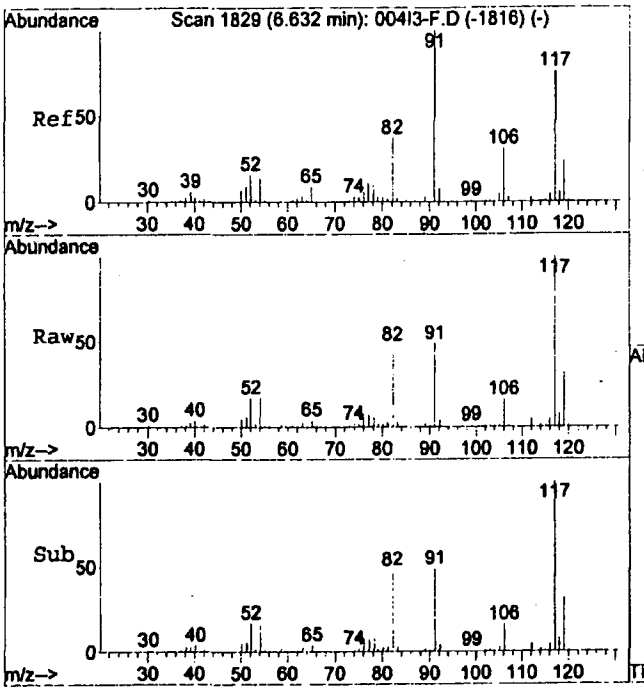


#28
Chlorobenzene
Concen: 24.67 ppm
RT: 6.62 min Scan# 1825
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:112 Resp: 821422

Ion	Ratio	Lower	Upper
112	100		
56	7.0	2.7	5.1#
114	32.6	23.0	42.6

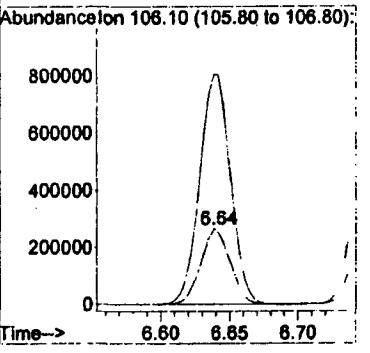


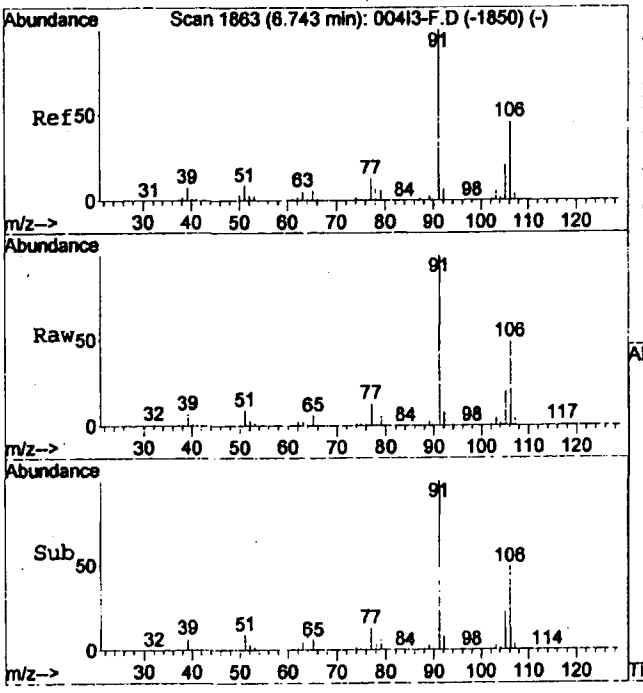


#29
Ethylbenzene
Concen: 24.58 ppm
RT: 6.64 min Scan# 1831
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:106 Resp: 393134

Ion	Ratio	Lower	Upper
106	100		
91	319.6	225.4	418.6

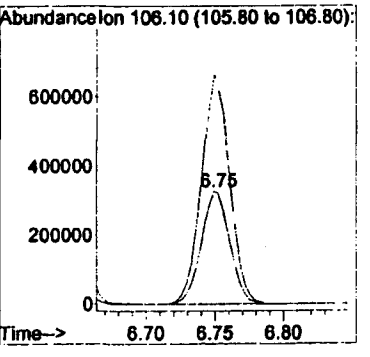


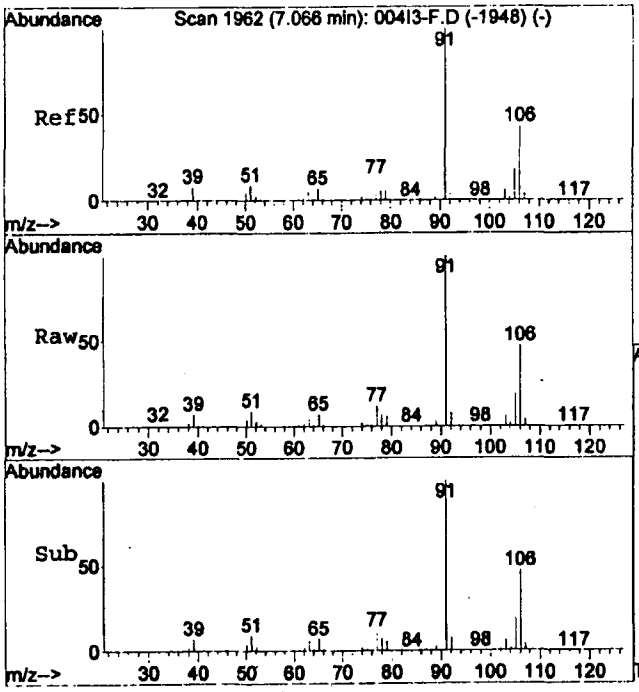


#30
m and p-xylene
Concen: 25.86 ppm
RT: 6.75 min Scan# 1865
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:106 Resp: 469159

Ion	Ratio	Lower	Upper
106	100		
91	200.8	150.8	280.1

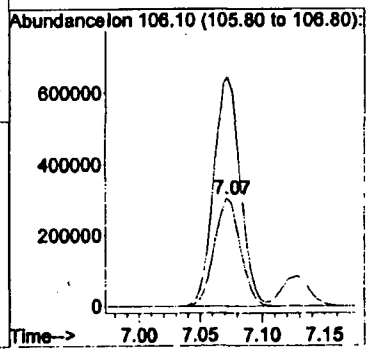


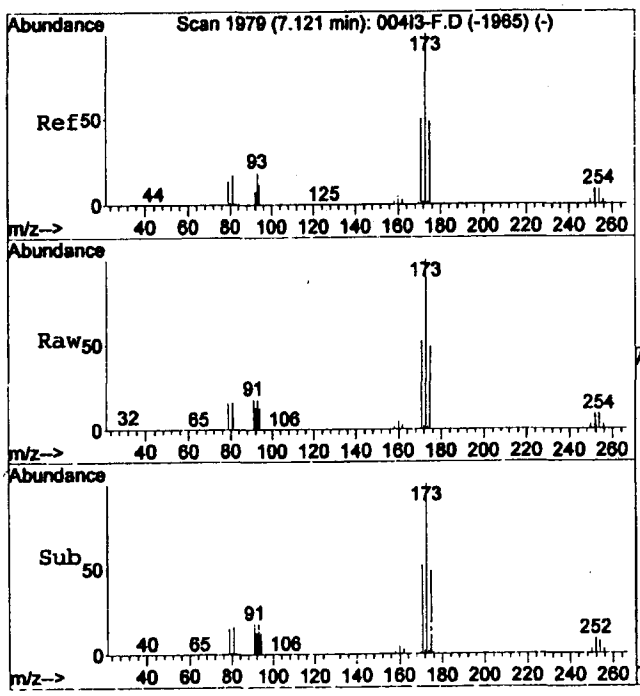


#31
o-xylene
Concen: 25.59 ppm
RT: 7.07 min Scan# 1964
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:106 Resp: 444319

Ion	Ratio	Lower	Upper
106	100		
91	216.1	159.0	295.4

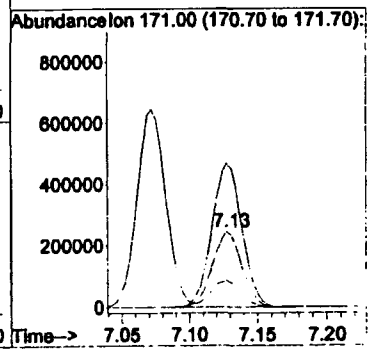


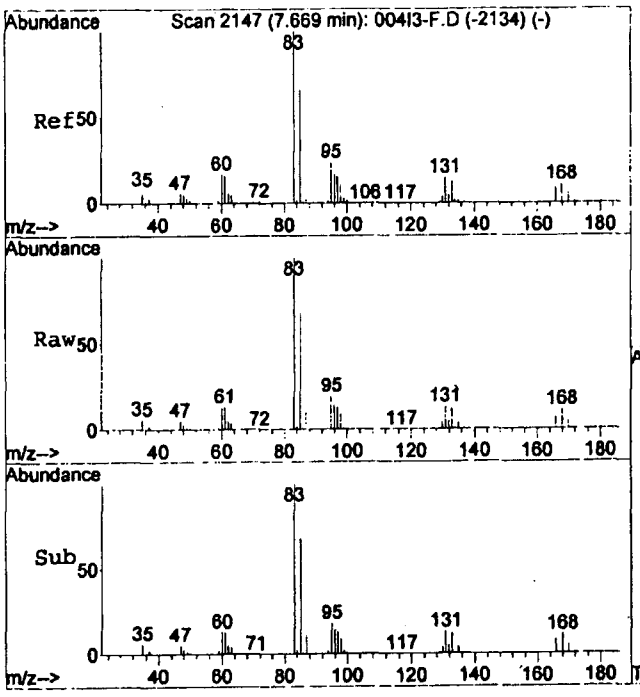


#32
Bromoform
Concen: 23.59 ppm
RT: 7.13 min Scan# 1981
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:171 Resp: 367362

Ion	Ratio	Lower	Upper
171	100		
91	35.4	26.7	49.5
173	195.0	137.5	255.4

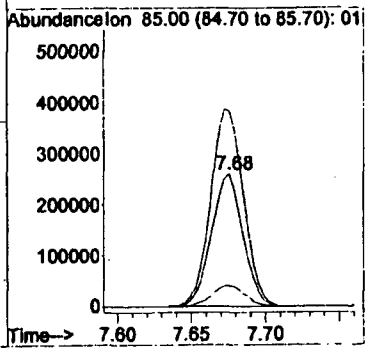


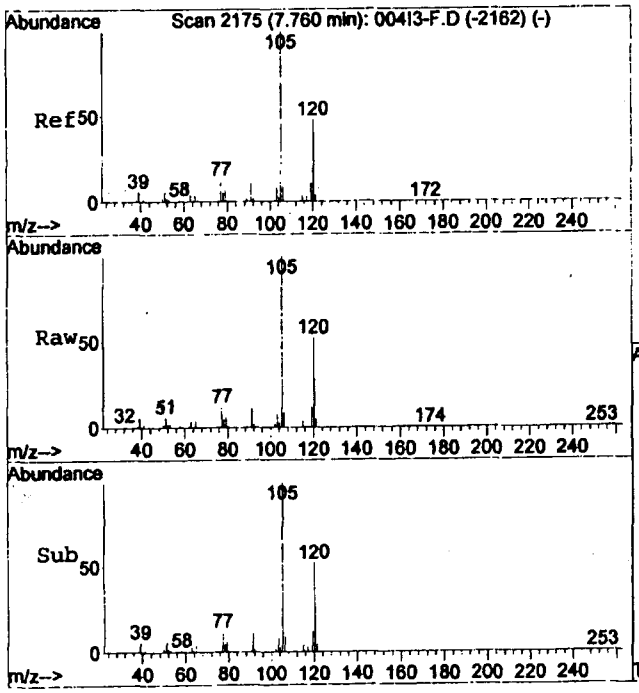


#34
1,1,2,2-Tetrachloroethane
Concen: 26.57 ppm
RT: 7.68 min Scan# 2149
Delta R.T. 0.01 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion: 85 Resp: 382525

Ion	Ratio	Lower	Upper
85	100		
168	16.5	12.2	22.6
83	155.2	106.9	198.5

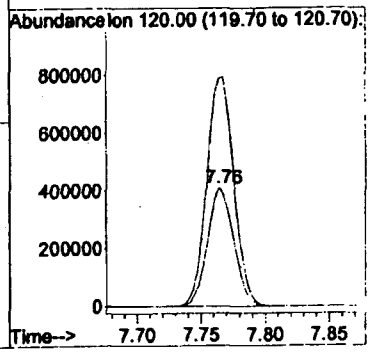


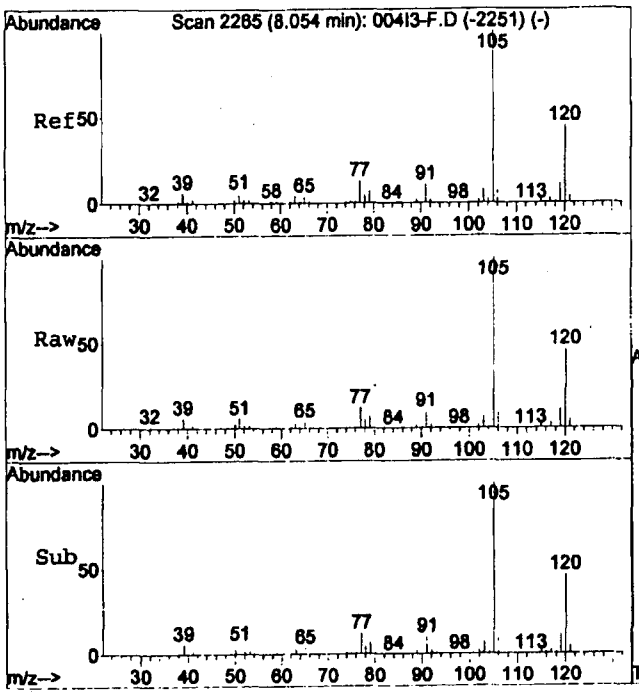


#35
1,3,5-Trimethylbenzene
Concen: 25.37 ppm
RT: 7.76 min Scan# 2176
Delta R.T. 0.00 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:120 Resp: 576808

Ion	Ratio	Lower	Upper
120	100		
105	200.0	146.9	272.7

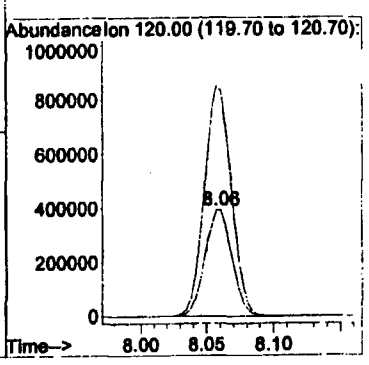




#36
1,2,4-Trimethylbenzene
Concen: 25.76 ppm
RT: 8.06 min Scan# 2266
Delta R.T. 0.00 min
Lab File: 015DR-F.D
Acq: 13 Aug 2011 15:39

Tgt Ion:120 Resp: 548043

Ion	Ratio	Lower	Upper
120	100		
105	215.4	158.7	294.7



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; Configuration file for HGAS Sampling System
; 6/11/1998 jhc 030929  mtw

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SplitMethod=VOCGASSP
SplitRatio=na
SampleVolume=500 mL
Year=04
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FBAlias=OB
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Procedure=OI-43
Revision=20

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BENZENE=50
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Hydrogen=0.5
Methane=0.5

[REPORT]
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Form8Rows=24
Form4Rows=40

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[OPERATOR]
ID=

[COMPOUND]
1=Chloromethane
2=Methanol
3=Ethyl ether
4=1,1-Dichloroethene
5=1,1,2-Trichloro-1,2,2-Trifluoroethene
6=Acetone
7=Carbon Disulfide
8=Methylene chloride
9=trans-1,2-Dichloroethene
10=1,1-Dichloroethane
11=cis-1,2-Dichloroethene
12=Methyl ethyl ketone
13=Chloroform
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comments.||No comment.
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A10,HS111_00014,icMDL3,707.663|IC10,2011-08-13,14:40:57 Delivered (707.663).
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A12,HS111_00014,icMDL5,718.192|IC12,2011-08-13,15:08:09 Delivered (718.192).
A13,HS111_00014,icMDL6,714.438|IC13,2011-08-13,15:21:57 Delivered (714.438).
A14,HS111_00014,icMDL7,731.071|IC14,2011-08-13,15:35:32 Delivered (731.071).

ITR REVIEW OF GC/MS CALIBRATION/MDL DATA

CORRECTION LOG

Date Reviewed: 8/16/11 Instrument: Z-221-001-A

Type.of Data for Review: Calibration _____ MDLs/MPSs X

#	Page	Error or Omission

JW 8/16/11

Signature and Date: [signature]

Idaho Treatment Group

INTEROFFICE MEMORANDUM

RECORD
CMC 09/19/2012

To: Sue Peterman
TRU Programs Manager

From: Steve Carpenter
Acceptable Knowledge/Alternate Site Project Manager

FOR INFORMATION ONLY

Date: January 5, 2012

Subject: Final Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2 - SPC-001-12

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 population was defined with a minimum of 3,000 and a maximum of 4,000 containers (reference Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 2, SPC-015-10 and the Addendum SPC-004-11). Container selection and sampling were completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identified additional BN510.1 Boxline containers. The container numbers within these Reconciliation periodic reports were sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 2 container list. Attachment 1 provides the final sequential listing of random numbers and the containers identified for BN510.1 Boxline Lot 2 with a maximum container population of 4,000.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 2. Ten random numbers and ten contingency random numbers were generated for the maximum population as specified in MP-TRUW-8.25. Sequential numbers were assigned to the random numbers in the order that they were generated. The list was sorted by the random number in ascending order. The first ten random numbers on the list that have acceptable containers associated with them were headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant were monitored as containers qualified for the required sample (n) and are determined when the required sampling is completed. The observed sample n^* is checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2, (including a Characterization Information Summary Report) presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Table 1 identifies the final candidate containers for BN510.1 Boxline Lot 2 with sequence numbers for a maximum population size of 4,000 containers. Table 1 also documents the selection of additional container sequence numbers to serve as contingency samples if needed. The selected random numbers, identified in Table 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot was updated periodically with the containers that were provided by the Reconciliation Group since the initial sample selection memorandum. Selected containers were set aside. Containers confirmed as a sample "n" container, were headspace gas sampled. Table 1 below identifies the selected containers that were selected for headspace gas sampling. Containers 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 from the maximum population were sampled. These are the first 10 randomly selected containers for a population of 4,000 containers that were available for Lot 2.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	1	0.000020	2399	BN10406800
2	2	0.000259	1761	BN10400134
3	3	0.000601	2572	BN10408764
4	4	0.000725	1603	BN10398725
	5	0.000935	3979	BN10429587
5	6	0.001189	2969	BN10413998
6	7	0.001990	161	BN10381425
	8	0.002274	3446	BN10421829
7	9	0.002567	304	BN10382812
8	10	0.002629	1410	BN10396291
9	c1	0.002780	720	BN10388108
10	c2	0.002870	2757	BN10410445
c1	c3	0.003005	1670	BN10399250
	c4	0.003077	3248	BN10418907
c2	c5	0.003159	1013	BN10391867
c3	c6	0.003191	2061	BN10403257
c4	c7	0.003580	963	BN10391073
	c8	0.003686	3008	BN10414714
c5	c9	0.003965	2423	BN10407048
c6	c10	0.004778	968	BN10391078
c7		0.004884	1353	BN10395482
c8		0.005970	739	BN10388302
c9		0.006080	2769	BN10410497
		0.006325	3087	BN10416157
c10		0.006729	2543	BN10408364

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments
1. Container list for BN510.1 Boxline, Lot 2
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Caralea Hinkle-Daniel
Dave Haar
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 2

Minimum Population = 3,000
Maximum Population = 4,000

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.312263	1	BN10376273
		0.567552	2	BN10376276
		0.770726	3	BN10376277
		0.394933	4	BN10376280
		0.871194	5	BN10376283
		0.563289	6	BN10377054
		0.199676	7	BN10379696
		0.269744	8	BN10379697
		0.934024	9	BN10379698
		0.218199	10	BN10379699
		0.393658	11	BN10379700
		0.327281	12	BN10379701
		0.160871	13	BN10379702
		0.205505	14	BN10379703
		0.709447	15	BN10379704
		0.373267	16	BN10379705
		0.818819	17	BN10379706
		0.751591	18	BN10379707
		0.174123	19	BN10379708
		0.845460	20	BN10379709
		0.406343	21	BN10379710
		0.520202	22	BN10379711
		0.145230	23	BN10379712
		0.579569	24	BN10379714
		0.106722	25	BN10379715
		0.279754	26	BN10379716
		0.850679	27	BN10379717
		0.688057	28	BN10379718
		0.352543	29	BN10379719
		0.606054	30	BN10379878
		0.284771	31	BN10379879
		0.683335	32	BN10379880
		0.997004	33	BN10379881
		0.509745	34	BN10379882
		0.289015	35	BN10379883
		0.567839	36	BN10379884
		0.111163	37	BN10379885

		0.289258	38	BN10379886
		0.379822	39	BN10379887
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		0.295879	41	BN10379889
		0.471384	42	BN10380003
		0.955423	43	BN10380004
		0.635179	44	BN10380005
		0.289851	45	BN10380006
		0.123618	46	BN10380007
		0.438455	47	BN10380008
		0.959959	48	BN10380009
		0.977243	49	BN10380010
		0.750582	50	BN10380011
		0.659341	51	BN10380012
		0.751979	52	BN10380013
		0.477742	53	BN10380014
		0.627569	54	BN10380166
		0.776025	55	BN10380167
		0.509103	56	BN10380168
		0.384857	57	BN10380169
		0.850547	58	BN10380170
		0.905508	59	BN10380171
		0.135829	60	BN10380172
		0.882162	61	BN10380173
		0.607771	62	BN10380174
		0.284801	63	BN10380175
		0.406865	64	BN10380176
		0.520801	65	BN10380177
		0.312732	66	BN10380229
		0.015975	67	BN10380230
		0.117376	68	BN10380231
		0.350256	69	BN10380232
		0.850695	70	BN10380233
		0.240964	71	BN10380234
		0.779452	72	BN10380235
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		0.498680	74	BN10380237
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		0.241231	81	BN10380327
		0.330095	82	BN10380328

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		0.072136	3981	BN10429589
		0.067907	3982	BN10429590
		0.593282	3983	BN10429591
		0.891747	3984	BN10429593
		0.317230	3985	BN10429633
		0.603283	3986	BN10429634
		0.069859	3987	BN10429635
		0.816694	3988	BN10429636
		0.052367	3989	BN10429637
		0.517626	3990	BN10429638
		0.169986	3991	BN10429639
		0.797250	3992	BN10429640
		0.439005	3993	BN10429641
		0.464924	3994	BN10429642
		0.204211	3995	BN10429643
		0.985608	3996	BN10429644
		0.705165	3997	BN10429762

		0.818570	3998	BN10429763
		0.569333	3999	BN10429764
		0.675137	4000	BN10429765

Attachment 2 – Randomly Selected Container Report
January 5, 2012
SPC-001-12
Page 1 of 2

AMWTP Advanced Mixed Waste Treatment Project	Randomly Selected Container Report	Form-1196, Rev. 5 Effective: 09/26/07 Page 1 of 1

Implementing Document: MP-TRUW-8.25

Waste Stream Lot: BN510.1 Boxline Lot 2

Population Size of Waste Stream Lot: 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature 12.12 Date

Idaho Treatment Group

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FOR INFORMATION ONLY

RECORD
CMC 01/16/2012

To: Sue Peterman
TRU Programs Manager

From: Steve Carpenter
Acceptable Knowledge/Alternate Site Project Manager

Date: January 9, 2012

Re: Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3 – SPC-002-12

This memorandum contains the subsequent headspace gas random sample selection candidates for waste stream BN510.1 Boxline Lot 3. The final subsequent headspace gas random sample selection memorandum will be submitted upon identification of all containers in the waste stream lot.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 3 population is defined with a minimum of 2,400 and a maximum of 4,000 containers. Container selection and sampling will be completed as defined in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling Analysis*. Periodic reports will be generated from the Advanced Mixed Waste Treatment Project's (AMWTP's) Reconciliation group that identifies additional BN510.1 boxline containers that have been generated since the selection memo. The container numbers within the Reconciliation periodic reports will be sorted in ascending order by the container number and added to the BN510.1 Boxline Lot 3 container list. Attachment 1 provides a listing of containers by sequential numbers. The final container listing for BN510.1 Boxline Lot 3 will be generated after either the minimum or maximum container populations are reached.

The AMWTP TRU Program Manager may reduce the size of the BN510.1 Boxline Lot 3. In the case where the population is less than 2,400 containers, the AMWTP TRU Program Manager will ensure that the containers selected for sampling are sufficient to characterize the waste stream. If containers originally identified for sampling are not generated, containers in the population not already sampled and shipped will be used to randomly select the remaining required number of containers to be sampled.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP has estimated that the required number of samples (n) for characterization of this waste stream lot will not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A of the Characterization Information Summary Report included in the approved BN510.1 waste stream profile package.

3. RANDOM SELECTION PROCESS

Based on the estimation of the required number of samples, a minimum of ten samples is required to support characterization of BN510.1 Boxline Lot 3. Ten containers will be selected and available for headspace gas sampling. Random numbers will be generated for the lot population as specified in MP-TRUW-8.25. Sequential numbers will be assigned random numbers in the order that they were generated. The list will be sorted by the random number in ascending order. At a minimum, the first ten random numbers on the list, from the final population, that have acceptable containers associated with them will be headspace gas sampled.

4. CONFIRMATION OF THE SAMPLE SIZE

Interim and final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant will be performed as containers qualify for the required sample (n) and determined when the required sampling is completed. The observed sample n^* will be checked against the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. A sampling report presenting this information will be developed after sampling is completed.

5. CONTAINERS SELECTED

Attachment 1 identifies the initial candidate containers for BN510.1 Boxline Lot 3. The selected random numbers and contingency random numbers, identified in Attachment 1, were generated in accordance with MP-TRUW-8.25. The container listing for this lot will be updated periodically with the containers provided by the Reconciliation Group. Selected containers will be set aside. Containers confirmed as a sample (n) container, will be headspace gas sampled. Table 1 below identifies the selected random numbers and random contingency. Nonconformance reports will be issued as appropriate against the containers that require substitution to ensure that these containers are appropriately characterized.

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	
2	3	0.002097027	1044	
3	4	0.002528466	436	
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	
	9	0.003626498	3863	
	10	0.004061868	3294	
8	C1	0.004168875	579	
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

If you have any questions or comments, please contact me at 557-6323.

SPC/skc

Attachments

1. Container List for BN510.1 Boxline, Lot 3
2. Randomly Selected Container Report, Form 1196

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Jason Lance
Larry Porter
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

Waste Stream: BN510.1 Boxline	Lot: 3

Minimum Population = 2,400
Maximum Population = 4,000

Selected Minimum Pop.	Selected Maximum Pop.	Random Number	Sequential Number	AMWTP Number
		0.44961053	1	BN10429766
		0.57930168	2	BN10429767
		0.94553686	3	BN10429768
		0.16864582	4	BN10429769
		0.14578049	5	BN10429770
		0.85340558	6	BN10429771
		0.70819678	7	BN10429773
		0.26782434	8	BN10429844
		0.84808269	9	BN10429845
		0.87499601	10	BN10429846
		0.5161643	11	BN10429847
		0.68566252	12	BN10429848
		0.30462207	13	BN10429849
		0.75084563	14	BN10429850
		0.81176208	15	BN10429851
		0.08750119	16	BN10429852
		0.19612618	17	BN10429853
		0.47980093	18	BN10429854
		0.06715434	19	BN10429855
		0.75507742	20	BN10429985
		0.87312739	21	BN10429986
		0.78087451	22	BN10429987
		0.72840607	23	BN10429988
		0.9587114	24	BN10429989
		0.93974598	25	BN10429990
		0.36651717	26	BN10429991
		0.01599271	27	BN10429992
		0.06794842	28	BN10430046
		0.03335898	29	BN10430056
		0.65055064	30	
		0.260013	31	
		0.6185905	32	
		0.46053685	33	
		0.29861499	34	
		0.822144	35	
		0.97056575	36	
		0.73276838	37	
		0.40092478	38	
		0.96859328	39	
		0.444199	40	
		0.46553625	41	
		0.09463902	42	
		0.46803888	43	
		0.07591143	44	
		0.65838204	45	
		0.28921897	46	
		0.35685404	47	
		0.23783536	48	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.603617	49	
		0.03788705	50	
		0.15243544	51	
		0.21342936	52	
		0.71056966	53	
		0.21136323	54	
		0.74793657	55	
		0.18192411	56	
		0.91369545	57	
		0.74521496	58	
		0.83412714	59	
		0.52396202	60	
		0.0596082	61	
		0.11338912	62	
		0.64674775	63	
		0.62412906	64	
		0.49667793	65	
		0.18787862	66	
		0.66016326	67	
		0.33578444	68	
		0.34055136	69	
		0.83143621	70	
		0.30420431	71	
		0.9067279	72	
		0.74159806	73	
		0.69325716	74	
		0.62883559	75	
		0.4205253	76	
		0.42966387	77	
		0.83042719	78	
		0.27085476	79	
		0.35648155	80	
		0.20405544	81	
		0.04542122	82	
		0.39965453	83	
		0.09203514	84	
		0.21851488	85	
		0.55430681	86	
		0.5599386	87	
		0.32941037	88	
		0.57399225	89	
		0.91628268	90	
		0.58849702	91	
		0.15001272	92	
		0.82794461	93	
		0.38487895	94	
		0.68347537	95	
		0.92359075	96	
		0.52767974	97	
		0.67165485	98	
		0.7543007	99	
		0.94251998	100	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.577634	101	
		0.18641534	102	
		0.88908883	103	
		0.01275273	104	
		0.6652153	105	
		0.03368352	106	
		0.84212635	107	
		0.67621026	108	
1	2	0.00206785	109	
		0.04381898	110	
		0.05808201	111	
		0.80653143	112	
		0.65666393	113	
		0.62072937	114	
		0.77090593	115	
		0.25390474	116	
		0.8997522	117	
		0.53578116	118	
		0.53388139	119	
		0.93604499	120	
		0.06615361	121	
		0.37183377	122	
		0.55928983	123	
		0.30973716	124	
		0.61540227	125	
		0.78725548	126	
		0.15293963	127	
		0.49122705	128	
		0.54821334	129	
		0.14984083	130	
		0.93310521	131	
7	8	0.00333858	132	
		0.28989277	133	
		0.45914133	134	
		0.14456234	135	
		0.57210176	136	
		0.204236	137	
		0.67000304	138	
		0.85884983	139	
		0.11214262	140	
		0.50485179	141	
		0.9888514	142	
		0.6057719	143	
		0.73395841	144	
		0.94732964	145	
		0.48363648	146	
		0.86396018	147	
		0.21275821	148	
		0.80874258	149	
		0.27179657	150	
		0.65197586	151	
		0.59330089	152	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.58943605	153	
		0.56291359	154	
		0.97499086	155	
		0.94061114	156	
		0.76955308	157	
		0.23790668	158	
		0.30791334	159	
		0.39892722	160	
		0.02794978	161	
		0.23873478	162	
		0.21969889	163	
		0.67893367	164	
		0.97084851	165	
		0.16201381	166	
		0.6046876	167	
		0.07778461	168	
		0.8441472	169	
		0.35506008	170	
		0.25114727	171	
		0.15253789	172	
		0.56813748	173	
		0.22717404	174	
		0.3350687	175	
		0.43272149	176	
		0.03423586	177	
		0.11453265	178	
		0.5963251	179	
		0.94899795	180	
		0.38067952	181	
		0.04354604	182	
		0.79837885	183	
		0.76412791	184	
		0.5856722	185	
		0.2779023	186	
		0.03335045	187	
		0.41250451	188	
		0.55113959	189	
		0.59357837	190	
		0.18827101	191	
		0.27727168	192	
		0.75436117	193	
		0.2895075	194	
		0.53924767	195	
		0.30263503	196	
		0.79447913	197	
		0.50580022	198	
		0.71257152	199	
		0.83609912	200	
		0.01897065	201	
		0.22743216	202	
		0.18306162	203	
		0.44093278	204	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55418229	205	
		0.97671744	206	
		0.24095978	207	
		0.3280798	208	
		0.58399193	209	
		0.507784	210	
		0.80793457	211	
		0.1252063	212	
		0.29199264	213	
		0.86541238	214	
		0.27031464	215	
		0.91376964	216	
		0.83938045	217	
		0.47505368	218	
		0.25014991	219	
		0.22819935	220	
		0.18244498	221	
		0.27635301	222	
		0.86247014	223	
		0.77752312	224	
		0.92013822	225	
		0.13635228	226	
		0.18614961	227	
		0.9252214	228	
		0.82805393	229	
		0.874686	230	
		0.59404723	231	
		0.90198558	232	
		0.31807033	233	
		0.99653958	234	
		0.42092645	235	
		0.61135354	236	
		0.89033926	237	
		0.06380212	238	
		0.63518329	239	
		0.66922309	240	
		0.53059127	241	
		0.10956023	242	
		0.3642236	243	
		0.5524196	244	
		0.1961307	245	
		0.3413316	246	
		0.53952268	247	
		0.9522015	248	
		0.05215245	249	
		0.32453857	250	
		0.27717977	251	
		0.70276298	252	
		0.31269357	253	
		0.46020108	254	
		0.96971578	255	
		0.6707212	256	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.17673568	257	
		0.58985449	258	
		0.90068009	259	
		0.59356286	260	
		0.51127781	261	
		0.67890742	262	
		0.83888298	263	
		0.57532835	264	
		0.64879191	265	
		0.97755083	266	
		0.61238207	267	
		0.0201351	268	
		0.32417139	269	
		0.63035214	270	
		0.56112649	271	
		0.57351809	272	
		0.7378014	273	
		0.87013704	274	
		0.88777839	275	
		0.30218835	276	
		0.26452334	277	
		0.62163844	278	
		0.53861572	279	
		0.9821855	280	
		0.12937308	281	
		0.2698108	282	
		0.65984469	283	
		0.58178831	284	
		0.6684138	285	
		0.42405583	286	
		0.28627515	287	
		0.90495591	288	
		0.15098513	289	
		0.34190845	290	
		0.79858822	291	
		0.82430688	292	
		0.52020421	293	
		0.92907297	294	
		0.42556852	295	
		0.19855126	296	
		0.278706	297	
		0.6518017	298	
		0.25347157	299	
		0.65069806	300	
		0.12156415	301	
		0.98475052	302	
		0.56412075	303	
		0.65202519	304	
		0.38443259	305	
		0.54159357	306	
		0.69434343	307	
		0.72089871	308	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.50498854	309	
		0.54654055	310	
		0.57705414	311	
		0.38371498	312	
		0.95748882	313	
		0.15943928	314	
		0.58411179	315	
		0.92976452	316	
		0.1810721	317	
		0.40653417	318	
		0.51462423	319	
		0.23656958	320	
		0.29490037	321	
		0.47133898	322	
		0.54610302	323	
		0.13749584	324	
		0.82361549	325	
		0.06404795	326	
		0.74298384	327	
		0.70550827	328	
		0.6623158	329	
		0.23435559	330	
		0.70191698	331	
		0.0167767	332	
		0.7691549	333	
		0.46578582	334	
		0.20864608	335	
		0.31254898	336	
		0.32597613	337	
		0.79909057	338	
		0.05052673	339	
		0.27033723	340	
		0.48520241	341	
		0.27195941	342	
		0.29173583	343	
		0.32424643	344	
		0.85475206	345	
		0.70246751	346	
		0.7767464	347	
		0.91084446	348	
		0.10190975	349	
		0.20910077	350	
		0.34268557	351	
		0.44226747	352	
		0.03726463	353	
		0.18993869	354	
		0.99593061	355	
		0.56130747	356	
		0.7221347	357	
		0.25157888	358	
		0.8221431	359	
		0.56915278	360	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64690931	361	
		0.75960784	362	
		0.65843568	363	
		0.91661617	364	
		0.77632236	365	
		0.11256819	366	
		0.74746784	367	
		0.98783291	368	
		0.81110586	369	
		0.78730967	370	
		0.54980838	371	
		0.71090959	372	
		0.17376119	373	
		0.83780558	374	
		0.72566838	375	
		0.34819883	376	
		0.29956363	377	
		0.36590762	378	
		0.49811762	379	
		0.42490494	380	
		0.21339213	381	
		0.37161766	382	
		0.82844054	383	
		0.18027282	384	
		0.60395549	385	
		0.52438617	386	
		0.9983971	387	
		0.17068078	388	
		0.62340772	389	
		0.91128121	390	
		0.97450829	391	
		0.23016175	392	
		0.38836732	393	
		0.21384609	394	
		0.40784166	395	
		0.70412951	396	
		0.19645217	397	
		0.79365798	398	
		0.25218142	399	
		0.75326875	400	
		0.66920647	401	
		0.93633501	402	
		0.19464985	403	
		0.13538777	404	
		0.2453149	405	
		0.51570553	406	
		0.26071764	407	
		0.4857179	408	
		0.93458327	409	
		0.72642377	410	
		0.69882556	411	
		0.19811856	412	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31928015	413	
		0.90310989	414	
		0.27328689	415	
		0.17795643	416	
		0.22856966	417	
		0.76857635	418	
		0.81447264	419	
		0.15161988	420	
		0.96473667	421	
		0.74179102	422	
		0.14812352	423	
		0.88032122	424	
		0.8099142	425	
		0.59888469	426	
		0.78206444	427	
		0.61878962	428	
		0.79297285	429	
		0.29619366	430	
		0.75582816	431	
		0.57162218	432	
		0.70967036	433	
		0.0211292	434	
		0.34993965	435	
3	4	0.00252847	436	
		0.12046022	437	
		0.95804219	438	
		0.48884515	439	
		0.92638355	440	
		0.05017275	441	
		0.73921543	442	
		0.42565825	443	
		0.31133657	444	
		0.71308312	445	
		0.45621086	446	
		0.02723668	447	
		0.03380388	448	
		0.0245653	449	
		0.96065065	450	
		0.56621643	451	
		0.9670225	452	
		0.86783636	453	
		0.52877845	454	
		0.76669866	455	
		0.63016247	456	
		0.77649983	457	
		0.40807728	458	
		0.16687215	459	
		0.46784344	460	
		0.91313387	461	
		0.31078107	462	
		0.51844426	463	
		0.90149495	464	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73639585	465	
		0.52915012	466	
		0.24440544	467	
		0.79124049	468	
		0.53113217	469	
		0.45518918	470	
		0.72325671	471	
		0.97084242	472	
		0.46695701	473	
		0.13793062	474	
		0.60698766	475	
		0.57718708	476	
		0.91432502	477	
		0.14074639	478	
		0.92073245	479	
		0.26233204	480	
		0.63183267	481	
		0.99459547	482	
		0.07886519	483	
		0.50959889	484	
		0.51689981	485	
		0.23018147	486	
		0.60911475	487	
		0.05781777	488	
		0.12425645	489	
		0.65229891	490	
		0.09702213	491	
		0.62681321	492	
		0.28880537	493	
		0.22202804	494	
		0.37538193	495	
		0.96575297	496	
		0.90212953	497	
		0.53819341	498	
		0.49855111	499	
		0.09548543	500	
		0.03532865	501	
		0.42816791	502	
		0.67745952	503	
		0.04593083	504	
		0.70678958	505	
		0.71047176	506	
		0.84263034	507	
		0.85031348	508	
		0.8050347	509	
		0.35334937	510	
		0.23080083	511	
		0.20818361	512	
		0.97996838	513	
		0.3424679	514	
		0.70162947	515	
		0.37604957	516	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.56246266	517	
		0.0806392	518	
		0.17770945	519	
		0.53391806	520	
		0.54144996	521	
		0.320664	522	
		0.9818243	523	
		0.46155111	524	
		0.74658476	525	
		0.85239126	526	
		0.20680626	527	
		0.5977697	528	
		0.71201308	529	
		0.90706582	530	
		0.03860619	531	
		0.97177136	532	
		0.47984623	533	
		0.5877673	534	
		0.28267456	535	
		0.34812333	536	
		0.59306421	537	
		0.98072145	538	
		0.16864761	539	
		0.97428428	540	
		0.60903945	541	
		0.0144332	542	
		0.24328088	543	
		0.28083984	544	
		0.40715965	545	
		0.77314353	546	
		0.14451462	547	
		0.85951791	548	
		0.89307806	549	
		0.71608079	550	
		0.55596805	551	
		0.52808274	552	
		0.57403787	553	
		0.45659786	554	
		0.97967655	555	
		0.91456922	556	
		0.39891782	557	
		0.7557061	558	
		0.83984439	559	
		0.16410349	560	
		0.30470086	561	
		0.44652177	562	
		0.54048615	563	
		0.13431381	564	
		0.38677136	565	
		0.52075933	566	
		0.06778891	567	
		0.60948413	568	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53946388	569	
		0.71520799	570	
		0.23734526	571	
		0.15908531	572	
		0.48797003	573	
		0.51160012	574	
		0.86673684	575	
		0.32959011	576	
		0.59362059	577	
		0.48846297	578	
8	C1	0.00416887	579	
		0.19012345	580	
		0.11640234	581	
		0.35849484	582	
		0.42169346	583	
		0.33461434	584	
		0.38797575	585	
		0.42201916	586	
		0.74977244	587	
		0.60036535	588	
		0.07084193	589	
		0.18292861	590	
		0.98061852	591	
		0.82230016	592	
		0.39617994	593	
		0.02203395	594	
		0.57138656	595	
		0.85344045	596	
		0.77497395	597	
		0.45607362	598	
		0.03028913	599	
		0.97084033	600	
		0.58564738	601	
		0.04700016	602	
		0.6772045	603	
		0.52662494	604	
		0.29652829	605	
		0.84753929	606	
		0.41374743	607	
		0.38023744	608	
		0.37075261	609	
		0.66411807	610	
		0.26112009	611	
		0.98064214	612	
		0.91566079	613	
		0.04973986	614	
		0.69625211	615	
		0.85334328	616	
		0.93337388	617	
		0.66683655	618	
		0.53851515	619	
		0.20152379	620	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18161677	621	
		0.18571329	622	
		0.2114824	623	
		0.11552931	624	
		0.29452122	625	
		0.93520428	626	
		0.53032104	627	
		0.39045759	628	
		0.50855294	629	
		0.86214147	630	
		0.40027464	631	
		0.88237524	632	
		0.72064932	633	
		0.32151851	634	
		0.13149453	635	
		0.58979728	636	
		0.90085604	637	
		0.52624064	638	
		0.04638652	639	
		0.82922859	640	
		0.12333225	641	
		0.22693434	642	
		0.76409573	643	
		0.7145501	644	
		0.23432657	645	
		0.93533834	646	
		0.90163134	647	
		0.97871467	648	
		0.10756463	649	
		0.87811969	650	
		0.94504874	651	
		0.74732613	652	
		0.15378354	653	
		0.87945951	654	
		0.65049841	655	
		0.36124887	656	
		0.01203216	657	
		0.18318953	658	
		0.09002524	659	
		0.63140322	660	
		0.61746937	661	
		0.92967613	662	
		0.09483215	663	
		0.17547795	664	
		0.7888428	665	
		0.80347948	666	
		0.64476507	667	
		0.09449254	668	
		0.14617972	669	
		0.13371673	670	
		0.42705766	671	
		0.5761637	672	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.18075605	673	
		0.4396773	674	
		0.88225664	675	
		0.44248027	676	
		0.55619507	677	
		0.14589571	678	
		0.01563995	679	
		0.21860949	680	
		0.30244145	681	
		0.31631444	682	
		0.20108941	683	
		0.25554224	684	
		0.58239748	685	
		0.03946508	686	
		0.85034165	687	
		0.78871933	688	
		0.15679674	689	
		0.13689008	690	
		0.34016233	691	
		0.85960972	692	
		0.57608965	693	
		0.09759402	694	
		0.74805124	695	
		0.4492634	696	
		0.95797816	697	
		0.7638196	698	
		0.64365969	699	
		0.64571949	700	
		0.59433686	701	
		0.08472983	702	
		0.93746631	703	
		0.46474329	704	
		0.76854747	705	
		0.10052351	706	
		0.94233949	707	
		0.15501241	708	
		0.33327564	709	
		0.11974644	710	
		0.59362595	711	
		0.06437781	712	
		0.07431163	713	
		0.56106594	714	
		0.28417295	715	
		0.4861889	716	
		0.58651664	717	
		0.09091835	718	
		0.53622391	719	
		0.48431691	720	
		0.47097067	721	
		0.89131915	722	
		0.14793645	723	
		0.21635354	724	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.46678505	725	
		0.1362522	726	
		0.61210493	727	
		0.87493131	728	
		0.32487733	729	
		0.62867293	730	
		0.09646085	731	
		0.55796114	732	
		0.51511672	733	
		0.1942396	734	
		0.38038577	735	
		0.94494135	736	
		0.22410544	737	
		0.29842861	738	
		0.65768226	739	
		0.74844642	740	
		0.28502113	741	
		0.63742743	742	
		0.28750848	743	
		0.52973344	744	
		0.63187193	745	
		0.29292178	746	
		0.3305456	747	
		0.10019116	748	
		0.45827267	749	
		0.71343733	750	
		0.95457699	751	
		0.28117348	752	
		0.7728985	753	
		0.21628733	754	
		0.39051701	755	
		0.79690152	756	
		0.97110126	757	
		0.62224992	758	
		0.38601215	759	
		0.60037154	760	
		0.68068897	761	
		0.67177556	762	
		0.23965083	763	
		0.60683208	764	
		0.30128073	765	
		0.58441939	766	
		0.67101279	767	
		0.35057206	768	
		0.05290817	769	
		0.67191465	770	
		0.22196896	771	
		0.9672525	772	
		0.89060915	773	
		0.95384393	774	
		0.31324993	775	
		0.48413593	776	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19315423	777	
		0.91543818	778	
		0.99825973	779	
		0.07790483	780	
		0.28938271	781	
		0.33846088	782	
		0.13472946	783	
		0.97780281	784	
		0.18581784	785	
		0.41860433	786	
		0.91749162	787	
		0.323374	788	
		0.8413337	789	
		0.20278119	790	
		0.94336681	791	
		0.22728112	792	
		0.21898409	793	
		0.11545943	794	
		0.55251227	795	
		0.38020644	796	
		0.72115155	797	
		0.32463318	798	
		0.10171116	799	
		0.29680628	800	
		0.70843228	801	
		0.76309209	802	
		0.15940313	803	
		0.40915116	804	
		0.36391472	805	
		0.94627736	806	
		0.11248395	807	
		0.58199437	808	
		0.18468547	809	
		0.09375494	810	
		0.4132169	811	
		0.03504936	812	
		0.45719272	813	
		0.6448787	814	
		0.43211979	815	
		0.23198721	816	
		0.12807361	817	
		0.63942254	818	
		0.43950689	819	
		0.48287267	820	
		0.20034038	821	
		0.79381414	822	
		0.30016609	823	
		0.96724658	824	
		0.64223051	825	
		0.04728157	826	
		0.52788018	827	
		0.12994951	828	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.64834434	829	
		0.83288916	830	
		0.26782936	831	
		0.99522004	832	
		0.3677366	833	
		0.73840554	834	
		0.70221451	835	
		0.52285263	836	
		0.63568866	837	
		0.33523843	838	
		0.20004506	839	
		0.44134512	840	
		0.96614434	841	
		0.29293494	842	
		0.5787681	843	
		0.94409358	844	
		0.00915194	845	
		0.05981305	846	
		0.14574388	847	
		0.34772044	848	
		0.44263006	849	
		0.51286441	850	
		0.572406	851	
		0.20844574	852	
		0.23644045	853	
		0.34258538	854	
		0.49569084	855	
		0.9073296	856	
		0.7155047	857	
		0.91502528	858	
		0.25846294	859	
		0.65150577	860	
		0.49537268	861	
		0.95464099	862	
		0.98626044	863	
		0.27766088	864	
		0.80308652	865	
		0.95884298	866	
		0.06560592	867	
		0.98553928	868	
		0.22315413	869	
		0.2367601	870	
		0.17503295	871	
		0.74544461	872	
		0.66024965	873	
		0.33751503	874	
		0.98248688	875	
		0.5401248	876	
		0.33347962	877	
		0.1733835	878	
		0.08403261	879	
		0.29819446	880	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97419387	881	
		0.05632946	882	
		0.74566702	883	
		0.66191772	884	
		0.76995278	885	
		0.21108537	886	
		0.76314086	887	
		0.61782246	888	
		0.42042093	889	
		0.20610666	890	
		0.94783213	891	
		0.10795403	892	
		0.95411863	893	
		0.06861511	894	
		0.4788462	895	
		0.18511333	896	
		0.3263025	897	
		0.91194408	898	
		0.76312827	899	
		0.72239747	900	
		0.31179969	901	
		0.1379207	902	
		0.05511441	903	
		0.17890096	904	
		0.03197637	905	
		0.91208748	906	
		0.69404284	907	
		0.24986698	908	
		0.78256731	909	
		0.86943107	910	
		0.83013411	911	
		0.80696296	912	
		0.98502403	913	
		0.12777362	914	
		0.7822075	915	
		0.98616248	916	
		0.65038816	917	
		0.7920312	918	
		0.19195583	919	
		0.15078346	920	
		0.80062441	921	
		0.96201717	922	
		0.36765666	923	
		0.12943267	924	
		0.48508991	925	
		0.19029758	926	
		0.06894041	927	
		0.75378505	928	
		0.54049172	929	
		0.88105288	930	
		0.44655908	931	
		0.21812021	932	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.88485653	933	
		0.4826945	934	
		0.50769076	935	
		0.78694787	936	
		0.30299804	937	
		0.09095481	938	
		0.38128119	939	
		0.13721578	940	
		0.24075643	941	
		0.36194784	942	
		0.82273876	943	
		0.98123756	944	
		0.04647382	945	
		0.73949702	946	
		0.39480686	947	
		0.08709554	948	
C6		0.00667747	949	
		0.36652174	950	
		0.19405891	951	
		0.21348482	952	
		0.63650565	953	
		0.71337666	954	
		0.11387473	955	
		0.13005294	956	
		0.34110022	957	
		0.70025152	958	
		0.15057247	959	
		0.46517226	960	
		0.97098861	961	
		0.48909154	962	
		0.36410473	963	
		0.02015242	964	
		0.01285222	965	
		0.39213532	966	
		0.83339145	967	
		0.27311887	968	
		0.87556167	969	
		0.65122728	970	
		0.60184892	971	
		0.07472003	972	
		0.85993223	973	
		0.99912234	974	
		0.2583392	975	
		0.95340016	976	
		0.13160221	977	
		0.85150863	978	
		0.46736756	979	
		0.35732584	980	
		0.85466014	981	
		0.28547236	982	
C1	C7	0.00581343	983	
		0.91142368	984	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47745858	985	
		0.12889445	986	
		0.31235596	987	
		0.94165612	988	
		0.1108212	989	
		0.76614305	990	
		0.62117295	991	
		0.51763494	992	
		0.01546199	993	
		0.54912274	994	
		0.57002842	995	
		0.33836107	996	
		0.83653953	997	
		0.31767715	998	
		0.88765013	999	
		0.45408612	1000	
		0.2898	1001	
		0.74438552	1002	
		0.27991129	1003	
		0.47713278	1004	
		0.42307254	1005	
		0.95285267	1006	
		0.35851733	1007	
		0.44832708	1008	
		0.56087784	1009	
		0.52220892	1010	
		0.64426595	1011	
		0.76933177	1012	
		0.3920119	1013	
		0.97033336	1014	
		0.4725732	1015	
		0.66973993	1016	
		0.04000135	1017	
		0.34197596	1018	
		0.42163795	1019	
		0.66896049	1020	
		0.98029141	1021	
		0.83187061	1022	
		0.79008876	1023	
		0.82908214	1024	
		0.5753702	1025	
		0.53465088	1026	
		0.5685641	1027	
		0.61533668	1028	
		0.76002922	1029	
		0.38882505	1030	
		0.09642237	1031	
		0.74881269	1032	
		0.20177985	1033	
10	C5	0.00541701	1034	
		0.17741042	1035	
		0.6799087	1036	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.37379607	1037	
		0.98316077	1038	
		0.04432666	1039	
		0.47695915	1040	
		0.8515431	1041	
		0.06690842	1042	
		0.2484429	1043	
2	3	0.00209703	1044	
		0.63007791	1045	
		0.53742855	1046	
		0.03521524	1047	
		0.8174056	1048	
		0.96059069	1049	
		0.9464773	1050	
		0.06933002	1051	
		0.16661572	1052	
		0.77973243	1053	
		0.17011847	1054	
		0.47428413	1055	
		0.31785223	1056	
		0.21402714	1057	
		0.61987366	1058	
		0.47096829	1059	
		0.91056098	1060	
		0.21919046	1061	
		0.19818459	1062	
		0.02903294	1063	
		0.14347913	1064	
		0.06529671	1065	
		0.08418091	1066	
		0.14485008	1067	
		0.10008815	1068	
		0.40954991	1069	
		0.63703232	1070	
		0.34761374	1071	
		0.56399258	1072	
		0.54669626	1073	
		0.35448501	1074	
		0.47391589	1075	
		0.89505371	1076	
		0.83090771	1077	
		0.12433535	1078	
		0.12946357	1079	
		0.52844501	1080	
		0.72347714	1081	
		0.84050636	1082	
		0.65410842	1083	
		0.47391726	1084	
		0.36526967	1085	
		0.80446582	1086	
		0.27472611	1087	
		0.48578903	1088	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.6576506	1089	
		0.69972523	1090	
		0.74758866	1091	
		0.27991107	1092	
		0.16910795	1093	
		0.2121923	1094	
C8		0.00737049	1095	
		0.21337083	1096	
		0.6232689	1097	
		0.68340771	1098	
		0.31294819	1099	
		0.11337704	1100	
		0.15380038	1101	
		0.65907966	1102	
		0.46511051	1103	
		0.06893036	1104	
		0.76770579	1105	
		0.33894078	1106	
		0.0606044	1107	
		0.74895527	1108	
		0.21019588	1109	
		0.31809575	1110	
		0.14864767	1111	
		0.96856918	1112	
		0.59731427	1113	
		0.97945733	1114	
		0.02179903	1115	
		0.36010723	1116	
		0.80992025	1117	
		0.01389985	1118	
		0.96031406	1119	
		0.24672918	1120	
		0.3920675	1121	
		0.25355139	1122	
		0.80884103	1123	
		0.93651281	1124	
		0.11023621	1125	
		0.2507095	1126	
		0.71276022	1127	
C7		0.00703115	1128	
		0.61338777	1129	
		0.49702562	1130	
		0.32317609	1131	
		0.74576656	1132	
		0.14865906	1133	
		0.37794588	1134	
		0.32796799	1135	
		0.54398147	1136	
		0.56786951	1137	
		0.93384013	1138	
		0.62666976	1139	
		0.49827402	1140	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.84005363	1141	
		0.61490969	1142	
		0.49420155	1143	
		0.47018295	1144	
		0.64627926	1145	
		0.32062911	1146	
		0.59144747	1147	
		0.92933096	1148	
		0.83148568	1149	
		0.47710823	1150	
		0.71744227	1151	
		0.3292334	1152	
		0.38759164	1153	
		0.33993023	1154	
		0.90927634	1155	
		0.69598662	1156	
		0.93660035	1157	
		0.94725628	1158	
		0.83743171	1159	
		0.17082257	1160	
		0.7078545	1161	
		0.90343631	1162	
		0.32316498	1163	
		0.24504955	1164	
		0.77107881	1165	
		0.57193388	1166	
		0.5017698	1167	
		0.50770765	1168	
		0.4198839	1169	
		0.70709191	1170	
		0.59111171	1171	
		0.80954572	1172	
		0.23261906	1173	
		0.39545667	1174	
		0.22487042	1175	
		0.50282691	1176	
		0.45504401	1177	
		0.72238126	1178	
		0.66049877	1179	
		0.20096171	1180	
		0.66296315	1181	
		0.44656454	1182	
		0.12928109	1183	
		0.09007082	1184	
		0.49833299	1185	
		0.78938467	1186	
		0.66995598	1187	
		0.05989262	1188	
		0.7882271	1189	
		0.77131022	1190	
		0.69896992	1191	
		0.4012483	1192	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76733144	1193	
		0.07565446	1194	
		0.6524029	1195	
		0.25588861	1196	
		0.21367516	1197	
		0.08015695	1198	
		0.6879374	1199	
		0.01431896	1200	
		0.8827897	1201	
		0.67657505	1202	
		0.80103918	1203	
		0.99165206	1204	
		0.25604465	1205	
		0.33576159	1206	
		0.54440567	1207	
		0.7130397	1208	
		0.12870417	1209	
		0.48698784	1210	
		0.0778413	1211	
		0.96908333	1212	
		0.24673016	1213	
		0.21205264	1214	
		0.34121589	1215	
		0.53670412	1216	
		0.08316983	1217	
		0.11287765	1218	
		0.37842756	1219	
		0.57879433	1220	
		0.47187952	1221	
		0.79889191	1222	
		0.36996297	1223	
		0.05793239	1224	
		0.62807256	1225	
		0.53107868	1226	
		0.07160101	1227	
		0.22374399	1228	
		0.89941496	1229	
		0.4322625	1230	
		0.9756016	1231	
		0.16225726	1232	
		0.59122959	1233	
		0.7169035	1234	
		0.26413559	1235	
		0.75797646	1236	
		0.55329914	1237	
		0.83311864	1238	
		0.74737312	1239	
		0.90585402	1240	
		0.4410047	1241	
		0.27110861	1242	
		0.15041071	1243	
		0.70233466	1244	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.63888267	1245	
		0.93589799	1246	
		0.45651024	1247	
		0.62959154	1248	
		0.43379081	1249	
		0.62949388	1250	
		0.0190725	1251	
		0.52192704	1252	
		0.05605988	1253	
		0.42010484	1254	
		0.94584348	1255	
		0.69009542	1256	
		0.56024932	1257	
		0.82498533	1258	
		0.08908253	1259	
		0.44448058	1260	
		0.34595371	1261	
		0.94458049	1262	
		0.48537254	1263	
		0.41400297	1264	
		0.41888852	1265	
		0.49720515	1266	
		0.28745657	1267	
		0.72284949	1268	
		0.91981144	1269	
		0.36313538	1270	
		0.99238183	1271	
		0.21417278	1272	
		0.71091444	1273	
		0.62099499	1274	
		0.25299141	1275	
		0.09539299	1276	
		0.36371793	1277	
		0.54734173	1278	
		0.72962065	1279	
		0.04121617	1280	
		0.91239902	1281	
		0.66049107	1282	
		0.1394379	1283	
		0.35687058	1284	
		0.53003686	1285	
		0.69820909	1286	
		0.53770196	1287	
		0.42915929	1288	
		0.54313443	1289	
		0.7439162	1290	
		0.54165298	1291	
		0.5086339	1292	
		0.36005337	1293	
		0.28613743	1294	
		0.3955657	1295	
		0.72910386	1296	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.71345631	1297	
		0.87959806	1298	
		0.36161908	1299	
		0.48804671	1300	
		0.16543402	1301	
		0.3131298	1302	
		0.86795528	1303	
		0.50177257	1304	
		0.10703045	1305	
		0.17684346	1306	
		0.63499549	1307	
		0.95346741	1308	
		0.91058551	1309	
		0.15471037	1310	
		0.81638464	1311	
		0.53501736	1312	
		0.8815431	1313	
		0.77507844	1314	
		0.5029548	1315	
		0.83001677	1316	
		0.21465888	1317	
		0.33260536	1318	
		0.62978647	1319	
		0.8332468	1320	
		0.57301539	1321	
		0.9685965	1322	
		0.37206835	1323	
		0.60261507	1324	
		0.16122082	1325	
		0.8590722	1326	
		0.69728264	1327	
		0.29272158	1328	
		0.83915721	1329	
		0.67958705	1330	
		0.67315451	1331	
		0.62976318	1332	
		0.94000857	1333	
		0.27911914	1334	
		0.98988443	1335	
		0.24872431	1336	
		0.07457963	1337	
		0.84685483	1338	
		0.81144814	1339	
		0.21929248	1340	
		0.2014923	1341	
		0.54550248	1342	
		0.83666595	1343	
		0.29919787	1344	
		0.16424991	1345	
		0.81046026	1346	
		0.69507812	1347	
		0.40870076	1348	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.91376929	1349	
		0.4766798	1350	
		0.34075129	1351	
		0.92277352	1352	
		0.04757599	1353	
		0.70620712	1354	
		0.89823083	1355	
		0.41839707	1356	
		0.78088319	1357	
		0.84038756	1358	
		0.69125408	1359	
		0.52239099	1360	
		0.72130932	1361	
		0.28704072	1362	
		0.38815961	1363	
		0.29369737	1364	
		0.43991003	1365	
		0.7183417	1366	
		0.21155779	1367	
		0.51039817	1368	
4	5	0.00253195	1369	
		0.4822261	1370	
		0.69044074	1371	
		0.33743473	1372	
		0.89804319	1373	
		0.2178654	1374	
		0.09689603	1375	
		0.10998095	1376	
		0.33939127	1377	
		0.47044478	1378	
		0.84018043	1379	
		0.60037833	1380	
		0.27713149	1381	
		0.03422532	1382	
		0.41650962	1383	
		0.54172469	1384	
		0.55919853	1385	
		0.31388979	1386	
		0.21634621	1387	
		0.33818962	1388	
		0.81690604	1389	
		0.20683151	1390	
		0.85610117	1391	
		0.57017717	1392	
		0.49958321	1393	
		0.31686115	1394	
		0.23527777	1395	
		0.31447565	1396	
		0.60776528	1397	
		0.85337889	1398	
		0.39133482	1399	
		0.11877925	1400	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.97208827	1401	
		0.09599566	1402	
		0.76991659	1403	
		0.41472002	1404	
		0.50274162	1405	
		0.34109062	1406	
		0.98110748	1407	
		0.96612387	1408	
		0.36634939	1409	
		0.20357592	1410	
		0.59352964	1411	
		0.25219535	1412	
		0.39435993	1413	
		0.79903859	1414	
		0.01994383	1415	
		0.19800288	1416	
		0.09283735	1417	
		0.16698787	1418	
		0.23744113	1419	
		0.52614102	1420	
		0.58896012	1421	
		0.24539341	1422	
		0.86802443	1423	
		0.9350959	1424	
		0.30480567	1425	
		0.41567334	1426	
		0.65234939	1427	
		0.66331356	1428	
		0.71464253	1429	
		0.46197174	1430	
		0.92691256	1431	
		0.97208832	1432	
		0.49908295	1433	
		0.74083379	1434	
		0.59260838	1435	
		0.33935375	1436	
		0.4349695	1437	
		0.68628518	1438	
		0.18229914	1439	
		0.74952824	1440	
		0.87708354	1441	
		0.32889032	1442	
		0.91496326	1443	
		0.83647037	1444	
		0.23001441	1445	
		0.70355605	1446	
		0.1317414	1447	
		0.83895352	1448	
		0.93696543	1449	
		0.71256406	1450	
		0.45713554	1451	
		0.9781367	1452	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.81330059	1453	
		0.37991884	1454	
		0.38398305	1455	
		0.50262863	1456	
		0.52145391	1457	
		0.9252449	1458	
		0.14839089	1459	
		0.01929965	1460	
		0.20521785	1461	
		0.25922522	1462	
		0.05676048	1463	
		0.48675927	1464	
		0.09012128	1465	
		0.38505027	1466	
		0.58365057	1467	
		0.835061	1468	
		0.81506075	1469	
		0.71819293	1470	
		0.69626855	1471	
		0.29877856	1472	
		0.72163073	1473	
		0.66614113	1474	
		0.4261221	1475	
		0.6517153	1476	
		0.02101582	1477	
		0.22575576	1478	
		0.13052162	1479	
		0.05789419	1480	
		0.52721993	1481	
		0.88890126	1482	
		0.43737649	1483	
		0.41603182	1484	
		0.21850834	1485	
		0.92312367	1486	
		0.53411509	1487	
		0.44990205	1488	
		0.21062224	1489	
		0.0981981	1490	
		0.04169638	1491	
		0.47203385	1492	
		0.62291595	1493	
		0.92189651	1494	
		0.54810582	1495	
		0.93131732	1496	
		0.74763138	1497	
		0.77472431	1498	
		0.63034541	1499	
		0.01141913	1500	
		0.59421781	1501	
		0.67528225	1502	
		0.69295694	1503	
		0.68087426	1504	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.76259408	1505	
		0.82120595	1506	
		0.30538372	1507	
		0.83196323	1508	
		0.65404786	1509	
		0.50367601	1510	
		0.68259245	1511	
		0.49081598	1512	
		0.09368377	1513	
		0.53566825	1514	
		0.42912815	1515	
		0.88789585	1516	
		0.32300006	1517	
		0.33710505	1518	
		0.84542167	1519	
		0.76366378	1520	
		0.61093636	1521	
		0.38595016	1522	
		0.49199925	1523	
		0.68681017	1524	
		0.21509486	1525	
		0.0389738	1526	
		0.84635678	1527	
		0.48077901	1528	
		0.91064125	1529	
		0.7154107	1530	
		0.41807246	1531	
		0.66777197	1532	
		0.79054642	1533	
		0.11945504	1534	
		0.13680743	1535	
		0.27586632	1536	
		0.08796317	1537	
		0.70524093	1538	
		0.22100846	1539	
		0.93060938	1540	
		0.80387341	1541	
		0.64558656	1542	
		0.01142014	1543	
		0.47442184	1544	
		0.17094715	1545	
		0.41745781	1546	
		0.92767859	1547	
		0.93927929	1548	
		0.01425703	1549	
		0.48884631	1550	
		0.21288746	1551	
		0.29351816	1552	
		0.86340345	1553	
		0.96010426	1554	
		0.61717631	1555	
		0.80018202	1556	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75814798	1557	
		0.78311531	1558	
		0.65292943	1559	
		0.93722436	1560	
		0.40775579	1561	
		0.15947537	1562	
		0.12088259	1563	
		0.92515959	1564	
		0.9303991	1565	
		0.2225404	1566	
		0.45928992	1567	
		0.59972607	1568	
		0.7029491	1569	
		0.89426612	1570	
		0.38053646	1571	
		0.36413286	1572	
		0.48625132	1573	
		0.70571832	1574	
		0.30447416	1575	
		0.3662313	1576	
		0.67308107	1577	
		0.80218466	1578	
		0.46259965	1579	
C9		0.00816246	1580	
		0.12926466	1581	
		0.74620628	1582	
		0.0345193	1583	
		0.59375621	1584	
		0.02413858	1585	
		0.65868388	1586	
		0.76048477	1587	
		0.32147535	1588	
		0.3269079	1589	
		0.11964059	1590	
		0.92253204	1591	
		0.3072326	1592	
		0.02051759	1593	
		0.93980904	1594	
		0.63299895	1595	
		0.34316858	1596	
		0.50407558	1597	
		0.49613844	1598	
		0.9218059	1599	
		0.84695804	1600	
		0.71934241	1601	
		0.01293314	1602	
		0.72033128	1603	
		0.49565664	1604	
		0.97952628	1605	
		0.49498034	1606	
		0.4996934	1607	
		0.87672279	1608	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.38247323	1609	
		0.99745468	1610	
		0.6899717	1611	
		0.19776026	1612	
		0.11577338	1613	
		0.6767614	1614	
		0.25733982	1615	
		0.81196606	1616	
		0.02183033	1617	
		0.28374541	1618	
		0.57250916	1619	
		0.02345918	1620	
		0.56613117	1621	
		0.80488393	1622	
		0.24390572	1623	
		0.99925778	1624	
		0.81149574	1625	
		0.51167207	1626	
		0.43569437	1627	
		0.52552912	1628	
		0.98751974	1629	
		0.41873131	1630	
		0.57511594	1631	
		0.29299963	1632	
		0.45349037	1633	
		0.48347042	1634	
		0.91391529	1635	
		0.94571818	1636	
		0.83005367	1637	
		0.36538242	1638	
		0.60177213	1639	
		0.33535482	1640	
		0.22578292	1641	
		0.18691119	1642	
		0.39489986	1643	
		0.18179054	1644	
		0.93071207	1645	
		0.0108097	1646	
		0.81180621	1647	
		0.6432785	1648	
		0.96874287	1649	
		0.26584778	1650	
		0.71001649	1651	
		0.78721161	1652	
		0.06320387	1653	
		0.22546154	1654	
		0.77465066	1655	
		0.97042685	1656	
		0.61078968	1657	
		0.76237348	1658	
		0.4398428	1659	
		0.39022616	1660	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.10209111	1661	
		0.26599053	1662	
		0.13644363	1663	
		0.75616375	1664	
		0.97841574	1665	
		0.666528	1666	
		0.0864844	1667	
		0.5900732	1668	
		0.45800061	1669	
		0.05885226	1670	
		0.72958709	1671	
		0.70497087	1672	
		0.96782744	1673	
		0.72958003	1674	
		0.78067352	1675	
		0.38851242	1676	
		0.87394513	1677	
		0.55314328	1678	
		0.46811784	1679	
		0.83359671	1680	
		0.76482367	1681	
		0.05401582	1682	
		0.02556161	1683	
		0.69243233	1684	
		0.54666355	1685	
		0.05666357	1686	
		0.99952849	1687	
		0.01782163	1688	
		0.56473459	1689	
		0.87193262	1690	
		0.42810867	1691	
		0.20931133	1692	
		0.90836962	1693	
		0.73704706	1694	
		0.48975789	1695	
C4		0.00607367	1696	
		0.69749394	1697	
		0.98868863	1698	
		0.21781644	1699	
		0.50639083	1700	
		0.57087753	1701	
		0.6847112	1702	
		0.17039344	1703	
		0.40479544	1704	
		0.80908379	1705	
		0.07917961	1706	
		0.95978461	1707	
		0.42449552	1708	
		0.44222671	1709	
		0.34361019	1710	
		0.0371488	1711	
		0.19579102	1712	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52768384	1713	
		0.27319282	1714	
		0.4720311	1715	
		0.05807292	1716	
		0.77234261	1717	
		0.08222709	1718	
		0.74970073	1719	
		0.6071946	1720	
		0.04968365	1721	
		0.9168815	1722	
		0.06063604	1723	
		0.62117726	1724	
		0.83730589	1725	
		0.69209271	1726	
		0.18331351	1727	
		0.84175432	1728	
		0.78065506	1729	
		0.63946261	1730	
		0.83292618	1731	
		0.52460868	1732	
		0.73828717	1733	
		0.64415743	1734	
		0.12795388	1735	
		0.73914867	1736	
		0.20000492	1737	
		0.68940688	1738	
		0.30466668	1739	
		0.10421145	1740	
		0.12752603	1741	
		0.72000019	1742	
		0.61236238	1743	
		0.41872153	1744	
		0.50139276	1745	
		0.35464849	1746	
		0.1314306	1747	
		0.31413456	1748	
		0.73607349	1749	
		0.03019021	1750	
		0.30949515	1751	
		0.76141254	1752	
		0.29180515	1753	
		0.66355513	1754	
		0.44039707	1755	
		0.42259592	1756	
		0.19765173	1757	
		0.7905131	1758	
		0.03236796	1759	
		0.44145136	1760	
		0.83887197	1761	
		0.17476458	1762	
		0.08019559	1763	
		0.09834901	1764	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.02651376	1765	
		0.17790848	1766	
		0.83857612	1767	
		0.80415392	1768	
		0.48017546	1769	
		0.76305168	1770	
		0.04293328	1771	
		0.39910532	1772	
		0.61500978	1773	
		0.88991022	1774	
		0.12746722	1775	
		0.51636859	1776	
		0.47033733	1777	
		0.23805294	1778	
		0.13946655	1779	
		0.02138207	1780	
		0.93982714	1781	
		0.58884276	1782	
		0.75974188	1783	
		0.17691755	1784	
		0.99742638	1785	
		0.46403426	1786	
		0.29897976	1787	
		0.54683001	1788	
		0.55031902	1789	
5	6	0.00270493	1790	
		0.59961895	1791	
		0.15491567	1792	
		0.35526272	1793	
		0.35641322	1794	
		0.12423397	1795	
		0.02774984	1796	
		0.63331205	1797	
		0.92354556	1798	
		0.87984427	1799	
		0.07693537	1800	
		0.14045801	1801	
		0.68805269	1802	
		0.26748399	1803	
		0.15627921	1804	
		0.08355631	1805	
		0.95507833	1806	
		0.55274375	1807	
		0.25880303	1808	
		0.97659125	1809	
		0.0608323	1810	
		0.76857044	1811	
		0.29969971	1812	
		0.87353281	1813	
		0.43890761	1814	
		0.7599815	1815	
		0.15227454	1816	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.19162114	1817	
		0.82379769	1818	
		0.72426077	1819	
		0.86449243	1820	
		0.95605394	1821	
		0.89732354	1822	
		0.92162274	1823	
		0.75172843	1824	
		0.23557888	1825	
		0.6484977	1826	
		0.60444199	1827	
		0.38177592	1828	
9	C2	0.00420876	1829	
		0.80807121	1830	
		0.31366093	1831	
		0.05324793	1832	
		0.86331944	1833	
		0.22100532	1834	
		0.72358601	1835	
		0.59786619	1836	
		0.21564726	1837	
		0.10813205	1838	
		0.39240346	1839	
		0.75021064	1840	
		0.97047813	1841	
		0.63770483	1842	
		0.97556153	1843	
		0.23852203	1844	
		0.62633126	1845	
		0.7913691	1846	
		0.99063534	1847	
		0.41843186	1848	
		0.33424042	1849	
		0.64869304	1850	
		0.71835847	1851	
		0.24774113	1852	
		0.15376265	1853	
		0.32518006	1854	
		0.97907291	1855	
		0.34544313	1856	
		0.5175263	1857	
		0.35037975	1858	
		0.28583054	1859	
		0.85244032	1860	
		0.74041993	1861	
		0.20316348	1862	
		0.77399329	1863	
		0.87371141	1864	
		0.85940979	1865	
		0.04748537	1866	
		0.16648035	1867	
		0.02462666	1868	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75277384	1869	
		0.00831522	1870	
		0.23015027	1871	
		0.98396212	1872	
		0.3588123	1873	
		0.08817186	1874	
		0.64438443	1875	
		0.60136759	1876	
		0.39842118	1877	
		0.59105198	1878	
		0.16431294	1879	
		0.84930508	1880	
		0.28622832	1881	
		0.32528869	1882	
		0.76426296	1883	
		0.53124885	1884	
		0.64634578	1885	
		0.89517318	1886	
		0.80377879	1887	
		0.09688757	1888	
		0.54922356	1889	
		0.7736844	1890	
		0.11079809	1891	
		0.09341702	1892	
		0.94755489	1893	
		0.25370886	1894	
		0.48371187	1895	
		0.60184359	1896	
		0.75100336	1897	
		0.93947995	1898	
		0.72777562	1899	
		0.53082568	1900	
		0.80196849	1901	
		0.52369816	1902	
		0.40958354	1903	
		0.6141218	1904	
		0.34084033	1905	
		0.62356903	1906	
		0.73503867	1907	
		0.76912477	1908	
		0.27927827	1909	
		0.0429997	1910	
		0.44656401	1911	
		0.61928143	1912	
		0.45974791	1913	
		0.45374735	1914	
		0.51350302	1915	
		0.25701612	1916	
		0.33167562	1917	
		0.72330157	1918	
		0.98247998	1919	
		0.82354468	1920	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.99937238	1921	
		0.52236779	1922	
		0.59390968	1923	
		0.32597122	1924	
		0.20459893	1925	
		0.280375	1926	
		0.68089969	1927	
		0.37639659	1928	
		0.67362164	1929	
		0.28274007	1930	
		0.08630467	1931	
		0.98089178	1932	
		0.37766234	1933	
		0.62725767	1934	
		0.64639802	1935	
		0.01425422	1936	
		0.36838223	1937	
		0.59843179	1938	
		0.18785052	1939	
		0.01271804	1940	
		0.86268601	1941	
		0.10001025	1942	
		0.29065364	1943	
		0.66214259	1944	
		0.71648044	1945	
		0.30028979	1946	
		0.78685522	1947	
		0.43315613	1948	
		0.48613831	1949	
		0.94731889	1950	
		0.9686658	1951	
		0.64366531	1952	
		0.2886582	1953	
		0.50575876	1954	
		0.28251286	1955	
		0.49537195	1956	
		0.09333014	1957	
		0.78191496	1958	
		0.24334098	1959	
		0.56531651	1960	
		0.20968723	1961	
		0.46985844	1962	
		0.7984539	1963	
		0.31963352	1964	
		0.01500875	1965	
		0.97315581	1966	
		0.59378502	1967	
		0.2619407	1968	
		0.12258504	1969	
		0.05588679	1970	
		0.0485401	1971	
		0.65840481	1972	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.5838885	1973	
		0.30365831	1974	
		0.65835957	1975	
		0.57906773	1976	
		0.51309334	1977	
		0.31825594	1978	
		0.52954218	1979	
		0.15869061	1980	
		0.35602672	1981	
		0.3375115	1982	
		0.99705718	1983	
		0.53621872	1984	
		0.85058769	1985	
		0.67002883	1986	
		0.21129104	1987	
		0.14649493	1988	
		0.39020248	1989	
		0.16284178	1990	
		0.83306806	1991	
C10		0.00821735	1992	
		0.78971285	1993	
		0.78034593	1994	
		0.46827487	1995	
		0.06241847	1996	
		0.73310729	1997	
		0.72738588	1998	
		0.47606426	1999	
		0.11329635	2000	
		0.55797225	2001	
		0.17863528	2002	
		0.35825291	2003	
		0.79686497	2004	
		0.08724327	2005	
		0.80744675	2006	
		0.39910801	2007	
		0.38263308	2008	
		0.93944638	2009	
		0.52373917	2010	
		0.77188053	2011	
		0.43937014	2012	
		0.41990833	2013	
		0.47612587	2014	
		0.65659572	2015	
		0.6385261	2016	
		0.30137145	2017	
		0.47901986	2018	
		0.02006625	2019	
		0.80050683	2020	
		0.97326022	2021	
		0.99898332	2022	
C2	C8	0.00590758	2023	
		0.33407207	2024	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32795634	2025	
		0.13223725	2026	
		0.90204974	2027	
		0.55775212	2028	
		0.28422347	2029	
		0.84503956	2030	
		0.58023965	2031	
		0.50520627	2032	
		0.67521409	2033	
		0.15277757	2034	
		0.81036709	2035	
		0.53100969	2036	
		0.44256588	2037	
		0.26090013	2038	
		0.52667557	2039	
		0.71240057	2040	
		0.56568889	2041	
		0.59278607	2042	
		0.97452048	2043	
		0.55029904	2044	
		0.45305276	2045	
		0.53315818	2046	
		0.71859486	2047	
		0.46955199	2048	
		0.58195873	2049	
		0.44543398	2050	
		0.19320145	2051	
		0.23250339	2052	
		0.06638428	2053	
		0.96231658	2054	
		0.01956614	2055	
		0.24715633	2056	
		0.69291275	2057	
		0.51811441	2058	
		0.6031599	2059	
		0.85339945	2060	
		0.51198765	2061	
		0.31178722	2062	
		0.7426702	2063	
		0.39766823	2064	
		0.48908391	2065	
		0.153115	2066	
		0.64533889	2067	
		0.66885131	2068	
		0.41622493	2069	
		0.23635732	2070	
		0.39548785	2071	
		0.52076211	2072	
		0.84590525	2073	
		0.26400463	2074	
		0.30835653	2075	
		0.16776789	2076	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.57177675	2077	
		0.17797385	2078	
		0.32937133	2079	
		0.56125116	2080	
		0.56074203	2081	
		0.90538603	2082	
		0.81349933	2083	
		0.3745434	2084	
		0.37370473	2085	
		0.14102031	2086	
		0.46838302	2087	
		0.73183589	2088	
		0.35972927	2089	
		0.76998435	2090	
		0.56505011	2091	
		0.82499386	2092	
		0.79163055	2093	
		0.72767823	2094	
		0.71361088	2095	
		0.25047596	2096	
		0.0643495	2097	
		0.31123184	2098	
		0.72291549	2099	
		0.28459292	2100	
		0.62278681	2101	
		0.19237098	2102	
		0.65304537	2103	
		0.23972356	2104	
		0.44946739	2105	
		0.91025205	2106	
		0.71387249	2107	
		0.31149527	2108	
		0.2251348	2109	
		0.6482239	2110	
		0.97253569	2111	
		0.93629601	2112	
		0.16405622	2113	
		0.04823058	2114	
		0.50136101	2115	
		0.43917556	2116	
		0.3888675	2117	
		0.71082601	2118	
		0.58200435	2119	
		0.59827044	2120	
		0.36102497	2121	
		0.56294763	2122	
		0.3230792	2123	
		0.92507514	2124	
		0.82102048	2125	
		0.77439919	2126	
		0.95257357	2127	
		0.88860529	2128	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61397179	2129	
		0.44235015	2130	
		0.59502704	2131	
		0.72043944	2132	
		0.25940122	2133	
		0.57924316	2134	
		0.81400577	2135	
		0.28762866	2136	
		0.36813456	2137	
		0.94258169	2138	
		0.38980897	2139	
		0.84061763	2140	
		0.48623096	2141	
		0.07635672	2142	
		0.05617473	2143	
		0.77369064	2144	
		0.30381927	2145	
		0.9988668	2146	
		0.46430918	2147	
		0.95420779	2148	
		0.45798306	2149	
		0.35421824	2150	
		0.44494429	2151	
		0.82626435	2152	
		0.28425355	2153	
		0.5820833	2154	
C3	C10	0.00605446	2155	
		0.757153	2156	
		0.81568309	2157	
		0.85672358	2158	
		0.71022344	2159	
		0.23392692	2160	
		0.28199792	2161	
		0.76801946	2162	
		0.47606155	2163	
		0.59138205	2164	
		0.72579465	2165	
		0.6975133	2166	
		0.87363628	2167	
		0.48512619	2168	
		0.37777863	2169	
		0.09764349	2170	
		0.89000195	2171	
		0.59193591	2172	
		0.69048867	2173	
		0.14142661	2174	
		0.50875965	2175	
		0.93919655	2176	
		0.81526044	2177	
		0.78395025	2178	
		0.98301096	2179	
		0.79484722	2180	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.92168298	2181	
6	7	0.00301624	2182	
		0.88133375	2183	
		0.98859107	2184	
		0.82367843	2185	
		0.51252154	2186	
		0.30683101	2187	
		0.58894536	2188	
		0.9522499	2189	
		0.82658634	2190	
		0.4795889	2191	
		0.64377375	2192	
		0.67194432	2193	
		0.73036826	2194	
		0.19198896	2195	
		0.0918651	2196	
		0.4892125	2197	
		0.4018638	2198	
		0.4615277	2199	
		0.73031495	2200	
		0.96147221	2201	
		0.90078366	2202	
		0.64771196	2203	
		0.63485839	2204	
		0.59809049	2205	
		0.49005374	2206	
		0.981683	2207	
		0.92625549	2208	
		0.21110459	2209	
		0.69256682	2210	
		0.30555002	2211	
		0.48930913	2212	
		0.19745105	2213	
		0.46002718	2214	
		0.14598672	2215	
		0.56928239	2216	
		0.52257971	2217	
		0.3091643	2218	
		0.48480116	2219	
		0.82762199	2220	
		0.4518679	2221	
		0.74483482	2222	
		0.88555761	2223	
		0.49268209	2224	
		0.15707909	2225	
		0.33264429	2226	
		0.32523533	2227	
		0.88460813	2228	
		0.7991386	2229	
		0.8297646	2230	
		0.91989349	2231	
		0.19699806	2232	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.11736832	2233	
		0.24894874	2234	
		0.28915822	2235	
		0.07857772	2236	
		0.91558931	2237	
C5		0.00619021	2238	
		0.32190573	2239	
		0.68975699	2240	
		0.72041699	2241	
		0.76888221	2242	
		0.76768809	2243	
		0.94560827	2244	
		0.66871996	2245	
		0.03161427	2246	
		0.1499699	2247	
		0.3374151	2248	
		0.40066918	2249	
		0.96941557	2250	
		0.74457193	2251	
		0.38355452	2252	
		0.31479486	2253	
		0.56348533	2254	
		0.15442942	2255	
		0.26190023	2256	
		0.07428236	2257	
		0.47605265	2258	
		0.96180312	2259	
		0.11284416	2260	
		0.91296676	2261	
		0.6364855	2262	
		0.42898015	2263	
		0.44645013	2264	
		0.1153235	2265	
		0.70409568	2266	
		0.29345546	2267	
		0.24128665	2268	
		0.66841217	2269	
		0.02807858	2270	
		0.09555696	2271	
		0.55021687	2272	
		0.44161211	2273	
		0.88103636	2274	
		0.19852424	2275	
		0.97220637	2276	
		0.80524957	2277	
		0.36756781	2278	
		0.84372441	2279	
		0.07477912	2280	
		0.24136222	2281	
		0.54160585	2282	
		0.36528841	2283	
		0.98245197	2284	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30776127	2285	
		0.6807318	2286	
		0.27175471	2287	
		0.97066299	2288	
		0.68379181	2289	
		0.58973393	2290	
		0.11997861	2291	
		0.27315608	2292	
		0.49018077	2293	
		0.3233722	2294	
		0.23243969	2295	
		0.74914592	2296	
		0.81430576	2297	
		0.54747537	2298	
		0.77479261	2299	
		0.64669048	2300	
		0.89876294	2301	
		0.79453923	2302	
		0.48970054	2303	
		0.38060764	2304	
		0.74404245	2305	
		0.50416907	2306	
		0.7383154	2307	
		0.49435106	2308	
		0.36857648	2309	
		0.41986721	2310	
		0.42314495	2311	
		0.36184354	2312	
		0.1074157	2313	
		0.37998327	2314	
		0.46539478	2315	
		0.68987266	2316	
		0.01281459	2317	
		0.04515233	2318	
		0.95799922	2319	
		0.74514088	2320	
		0.34070657	2321	
		0.13105681	2322	
		0.71884131	2323	
		0.59080029	2324	
		0.83316563	2325	
		0.23413552	2326	
		0.49720758	2327	
		0.13863934	2328	
		0.26430425	2329	
		0.4397412	2330	
		0.63899423	2331	
		0.79331201	2332	
		0.33805779	2333	
		0.27646768	2334	
		0.33178561	2335	
		0.14319833	2336	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.23560276	2337	
		0.97147976	2338	
		0.94641713	2339	
		0.45883848	2340	
		0.560439	2341	
		0.0924527	2342	
		0.37481611	2343	
		0.46657785	2344	
		0.65200854	2345	
		0.98327952	2346	
		0.80161123	2347	
		0.57392613	2348	
		0.07574107	2349	
		0.9969538	2350	
		0.17258508	2351	
		0.42108949	2352	
		0.55902665	2353	
		0.08787336	2354	
		0.76284609	2355	
		0.12509323	2356	
		0.05500506	2357	
		0.65602327	2358	
		0.08256154	2359	
		0.15465029	2360	
		0.64509026	2361	
		0.30039216	2362	
		0.81290402	2363	
		0.61448581	2364	
		0.38917302	2365	
		0.90866457	2366	
		0.22690182	2367	
		0.35502047	2368	
		0.22447363	2369	
		0.31592038	2370	
		0.52230333	2371	
		0.34065484	2372	
		0.43198851	2373	
		0.45408699	2374	
		0.65985669	2375	
		0.05683687	2376	
		0.69912123	2377	
		0.0165671	2378	
		0.76927702	2379	
		0.42332824	2380	
		0.14992557	2381	
		0.66573185	2382	
		0.53392639	2383	
		0.17086761	2384	
		0.54848117	2385	
		0.92355992	2386	
		0.64901637	2387	
		0.59062945	2388	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7614985	2389	
		0.7951376	2390	
		0.3406973	2391	
		0.36604723	2392	
		0.32021936	2393	
		0.0558592	2394	
		0.96851298	2395	
		0.78232598	2396	
		0.44007836	2397	
		0.90104205	2398	
		0.71536926	2399	
		0.57347118	2400	
		0.2117435	2401	
		0.70391341	2402	
		0.8913779	2403	
		0.26294873	2404	
		0.72769021	2405	
		0.48440429	2406	
		0.64339916	2407	
		0.62668109	2408	
		0.68543003	2409	
		0.3489976	2410	
		0.8230914	2411	
		0.8494614	2412	
		0.06925937	2413	
		0.91675779	2414	
		0.1995463	2415	
		0.09494047	2416	
		0.67918043	2417	
		0.47871058	2418	
		0.77827417	2419	
		0.33131026	2420	
		0.96575946	2421	
		0.71542835	2422	
		0.63261962	2423	
		0.818884	2424	
		0.52973868	2425	
		0.05551063	2426	
		0.44665784	2427	
		0.02753565	2428	
		0.438096	2429	
		0.44373414	2430	
	C4	0.0047364	2431	
		0.45679308	2432	
		0.69287253	2433	
		0.74153934	2434	
		0.3135299	2435	
		0.32022307	2436	
		0.45662861	2437	
		0.72468926	2438	
		0.83824627	2439	
		0.27299058	2440	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.75588322	2441	
		0.32502457	2442	
		0.80519179	2443	
		0.85238931	2444	
		0.24537217	2445	
		0.87813642	2446	
		0.89740062	2447	
		0.44600338	2448	
		0.47552077	2449	
		0.02752373	2450	
		0.12705632	2451	
		0.42193479	2452	
		0.74142252	2453	
		0.58591465	2454	
		0.08865331	2455	
		0.82499875	2456	
		0.28859297	2457	
		0.5766366	2458	
		0.86594569	2459	
		0.24791238	2460	
		0.83236897	2461	
		0.55042099	2462	
		0.55853458	2463	
		0.93824215	2464	
		0.79024915	2465	
		0.94318041	2466	
		0.12781551	2467	
		0.26378945	2468	
		0.67826083	2469	
		0.0780538	2470	
		0.12691667	2471	
		0.45769324	2472	
		0.97167277	2473	
		0.90442516	2474	
		0.20332903	2475	
		0.09625359	2476	
		0.8025034	2477	
		0.88832426	2478	
		0.2341294	2479	
		0.66230523	2480	
		0.0960114	2481	
		0.78522232	2482	
		0.39380173	2483	
		0.20699873	2484	
		0.91720416	2485	
		0.94559241	2486	
		0.73722028	2487	
		0.72371585	2488	
		0.67582704	2489	
		0.03335265	2490	
		0.4293335	2491	
		0.2370042	2492	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53288096	2493	
		0.27644588	2494	
		0.5221261	2495	
		0.6326745	2496	
		0.22452812	2497	
		0.20790951	2498	
		0.02197751	2499	
		0.89355775	2500	
		0.91429843	2501	
		0.53573416	2502	
		0.75643717	2503	
		0.0628314	2504	
		0.78733016	2505	
		0.1412121	2506	
		0.92558199	2507	
		0.70320935	2508	
		0.35283269	2509	
		0.85890931	2510	
		0.3901903	2511	
		0.0145184	2512	
		0.36056904	2513	
		0.55194684	2514	
		0.82588566	2515	
		0.5338877	2516	
		0.34390626	2517	
		0.71106021	2518	
		0.31849174	2519	
		0.17801482	2520	
		0.29777951	2521	
		0.77997953	2522	
		0.66933893	2523	
		0.37211523	2524	
		0.0957463	2525	
		0.58618094	2526	
		0.9319913	2527	
		0.40787711	2528	
		0.60787567	2529	
		0.16398861	2530	
		0.18153654	2531	
		0.99675932	2532	
		0.78987957	2533	
		0.33032491	2534	
		0.75144517	2535	
		0.98279409	2536	
		0.2876313	2537	
		0.44371214	2538	
		0.67074824	2539	
		0.69065834	2540	
		0.35057197	2541	
		0.31051345	2542	
		0.38611752	2543	
		0.91238492	2544	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.73170395	2545	
		0.44982985	2546	
		0.56401851	2547	
		0.23736003	2548	
		0.20724307	2549	
		0.77120779	2550	
		0.10896801	2551	
		0.44331852	2552	
		0.4593368	2553	
		0.91425503	2554	
		0.81135189	2555	
		0.46807877	2556	
		0.03843423	2557	
		0.03493984	2558	
		0.29192058	2559	
		0.54964548	2560	
		0.7375133	2561	
		0.71981846	2562	
		0.04643683	2563	
		0.57649164	2564	
		0.20989036	2565	
		0.67234415	2566	
		0.92097028	2567	
		0.19818761	2568	
		0.07214511	2569	
		0.58542583	2570	
		0.23802996	2571	
		0.25821848	2572	
		0.11787121	2573	
		0.99764326	2574	
		0.90644528	2575	
		0.53223786	2576	
		0.64659074	2577	
		0.08805871	2578	
		0.82681064	2579	
		0.28336669	2580	
		0.90297201	2581	
		0.34504392	2582	
		0.55546169	2583	
		0.81827516	2584	
		0.69633083	2585	
		0.32014104	2586	
		0.65348327	2587	
		0.30751981	2588	
		0.07015524	2589	
		0.86044627	2590	
		0.39148483	2591	
		0.52504022	2592	
		0.03715098	2593	
		0.70822478	2594	
		0.09829014	2595	
		0.91691511	2596	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.48932299	2597	
		0.71893461	2598	
		0.8652058	2599	
		0.93437188	2600	
		0.81780987	2601	
		0.63750997	2602	
		0.89194507	2603	
		0.83097845	2604	
		0.25768556	2605	
		0.92409051	2606	
		0.0772029	2607	
		0.7310651	2608	
		0.1990716	2609	
		0.608739	2610	
		0.90983932	2611	
		0.21344561	2612	
		0.86447499	2613	
		0.58905154	2614	
		0.68871564	2615	
		0.31189394	2616	
		0.88675411	2617	
		0.8742628	2618	
		0.16742195	2619	
		0.6826457	2620	
		0.79123212	2621	
		0.47043832	2622	
		0.43145996	2623	
		0.94041753	2624	
		0.93434539	2625	
		0.80861037	2626	
		0.60001239	2627	
		0.98938791	2628	
		0.23634813	2629	
		0.79821965	2630	
		0.97866483	2631	
		0.74365577	2632	
		0.3699983	2633	
		0.13266648	2634	
		0.45872957	2635	
		0.99045648	2636	
		0.30252657	2637	
		0.66170163	2638	
		0.11879707	2639	
		0.46130624	2640	
		0.67970807	2641	
		0.45058253	2642	
		0.23463586	2643	
		0.2496918	2644	
		0.5654139	2645	
		0.56281433	2646	
		0.13191591	2647	
		0.51087899	2648	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.43731589	2649	
		0.88269184	2650	
		0.27351869	2651	
		0.34533223	2652	
		0.02861974	2653	
		0.02800328	2654	
		0.5980699	2655	
		0.48293952	2656	
		0.4020327	2657	
		0.83869221	2658	
		0.23201277	2659	
		0.12421676	2660	
		0.70969336	2661	
		0.36881189	2662	
		0.33604782	2663	
		0.64859507	2664	
		0.26339335	2665	
		0.69676374	2666	
		0.70104573	2667	
		0.51666922	2668	
		0.21373131	2669	
		0.64319474	2670	
		0.36554019	2671	
		0.87312891	2672	
		0.84324833	2673	
		0.75208137	2674	
		0.98077235	2675	
		0.50282912	2676	
		0.2005007	2677	
		0.12517858	2678	
		0.25012694	2679	
		0.41423525	2680	
		0.15907731	2681	
		0.76149596	2682	
		0.74753244	2683	
		0.16300146	2684	
		0.99319449	2685	
		0.75744372	2686	
		0.41993043	2687	
		0.79407675	2688	
		0.18140837	2689	
		0.83310473	2690	
		0.26094313	2691	
		0.22541426	2692	
		0.18867839	2693	
		0.50505494	2694	
		0.04601817	2695	
		0.35500209	2696	
		0.88630471	2697	
		0.83548418	2698	
		0.85460995	2699	
		0.34766645	2700	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.15866892	2701	
		0.17564277	2702	
		0.2158169	2703	
		0.81121855	2704	
		0.48865573	2705	
		0.21362238	2706	
		0.96761699	2707	
		0.30283487	2708	
		0.2112282	2709	
		0.8439537	2710	
		0.21412514	2711	
		0.81849063	2712	
		0.99049125	2713	
		0.03947202	2714	
		0.51807498	2715	
		0.28605961	2716	
		0.57231504	2717	
		0.09324267	2718	
		0.4965258	2719	
		0.24420793	2720	
		0.66326501	2721	
		0.71593075	2722	
		0.7459985	2723	
		0.22940074	2724	
		0.11691681	2725	
		0.04241426	2726	
		0.85252067	2727	
		0.06239362	2728	
		0.04924003	2729	
		0.5598817	2730	
		0.24850457	2731	
		0.89197184	2732	
		0.34569166	2733	
		0.19296615	2734	
		0.65941123	2735	
		0.55944746	2736	
		0.90715601	2737	
		0.4121371	2738	
		0.57183917	2739	
		0.59040763	2740	
		0.88560126	2741	
		0.3059601	2742	
		0.84381035	2743	
		0.47989988	2744	
		0.58535796	2745	
		0.23683113	2746	
		0.29824144	2747	
		0.71390813	2748	
		0.1916631	2749	
		0.09482602	2750	
		0.63448545	2751	
		0.60486605	2752	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.47940664	2753	
		0.79991553	2754	
		0.40017857	2755	
		0.46091884	2756	
		0.23422131	2757	
		0.53830075	2758	
		0.309782	2759	
		0.11949728	2760	
		0.34004898	2761	
		0.70900552	2762	
		0.37846862	2763	
		0.09037697	2764	
		0.99318957	2765	
		0.55018651	2766	
		0.7881685	2767	
		0.13149427	2768	
		0.32613137	2769	
		0.20451511	2770	
		0.31553286	2771	
		0.0868122	2772	
		0.55512825	2773	
		0.87716355	2774	
		0.05540241	2775	
		0.30892949	2776	
		0.44707888	2777	
		0.39053342	2778	
		0.59371853	2779	
		0.65240283	2780	
		0.09072255	2781	
		0.81579671	2782	
		0.01026417	2783	
		0.91652534	2784	
		0.70588334	2785	
		0.63467125	2786	
		0.96379299	2787	
		0.3561376	2788	
		0.88867677	2789	
		0.05529779	2790	
		0.68881062	2791	
		0.79532896	2792	
		0.44436119	2793	
		0.72963311	2794	
		0.34259082	2795	
		0.87341812	2796	
		0.33117424	2797	
		0.68065615	2798	
		0.68127229	2799	
		0.82031257	2800	
		0.75502242	2801	
	C6	0.00547389	2802	
		0.60614136	2803	
		0.67820035	2804	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.52507693	2805	
		0.1157868	2806	
		0.32337783	2807	
		0.06737105	2808	
		0.30083622	2809	
		0.66978758	2810	
		0.28974623	2811	
		0.30604712	2812	
		0.48904556	2813	
		0.11084055	2814	
		0.82699978	2815	
		0.52692888	2816	
		0.73028342	2817	
		0.84012269	2818	
		0.55269039	2819	
		0.81272626	2820	
		0.40420671	2821	
		0.39508478	2822	
		0.56874296	2823	
		0.57688802	2824	
		0.68638913	2825	
		0.25623076	2826	
		0.90049054	2827	
		0.72940448	2828	
		0.7274673	2829	
		0.79389415	2830	
		0.62142627	2831	
		0.38661702	2832	
		0.98810606	2833	
		0.8326072	2834	
		0.26191056	2835	
		0.19621872	2836	
		0.98689334	2837	
		0.1403711	2838	
		0.84876049	2839	
		0.4555812	2840	
		0.80682365	2841	
		0.40765072	2842	
		0.84204195	2843	
		0.35414104	2844	
		0.1081462	2845	
		0.49709978	2846	
		0.1020997	2847	
		0.35129849	2848	
		0.02263173	2849	
		0.63454377	2850	
		0.11678395	2851	
		0.68444699	2852	
		0.53860215	2853	
		0.80070392	2854	
		0.68949955	2855	
		0.82875768	2856	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55522104	2857	
		0.26842659	2858	
		0.54607703	2859	
		0.72247882	2860	
		0.2266599	2861	
		0.28432393	2862	
		0.4635332	2863	
		0.17198308	2864	
		0.08740443	2865	
		0.15834914	2866	
		0.20593448	2867	
		0.40719689	2868	
		0.75274432	2869	
		0.29960013	2870	
		0.79703216	2871	
		0.50953298	2872	
		0.45813352	2873	
		0.09695337	2874	
		0.03653088	2875	
		0.19865355	2876	
		0.9262575	2877	
		0.77167126	2878	
		0.21773531	2879	
		0.05344338	2880	
		0.91352374	2881	
		0.77878379	2882	
		0.47296121	2883	
		0.72272663	2884	
		0.44747951	2885	
		0.57785252	2886	
		0.79317188	2887	
		0.47425255	2888	
		0.11817191	2889	
		0.32872206	2890	
		0.31826331	2891	
		0.81313882	2892	
		0.35815521	2893	
		0.94190719	2894	
		0.20823411	2895	
		0.72707053	2896	
		0.21163101	2897	
		0.49203768	2898	
		0.48483062	2899	
		0.78779913	2900	
		0.37916407	2901	
		0.09973949	2902	
		0.97277929	2903	
		0.58205587	2904	
		0.47995507	2905	
		0.80266899	2906	
		0.04560089	2907	
		0.77529794	2908	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.30735868	2909	
		0.48951955	2910	
		0.82012591	2911	
		0.2176364	2912	
		0.42302858	2913	
		0.82979235	2914	
		0.51179919	2915	
		0.13645923	2916	
		0.29059498	2917	
		0.45651267	2918	
		0.70080452	2919	
		0.27628977	2920	
		0.90095771	2921	
		0.36475921	2922	
		0.22631982	2923	
		0.93617358	2924	
		0.83174661	2925	
		0.39215757	2926	
		0.30905762	2927	
		0.43680954	2928	
		0.85478136	2929	
		0.89608502	2930	
		0.09162821	2931	
		0.65797495	2932	
		0.27063646	2933	
		0.36318234	2934	
		0.89565319	2935	
		0.02757494	2936	
		0.59966124	2937	
		0.47630178	2938	
		0.05063951	2939	
		0.79332474	2940	
		0.70969977	2941	
		0.40967308	2942	
		0.81266132	2943	
		0.70801457	2944	
		0.1411859	2945	
		0.3313206	2946	
		0.88110564	2947	
		0.49787782	2948	
		0.93636385	2949	
		0.81477104	2950	
		0.40456693	2951	
		0.65973382	2952	
		0.48211064	2953	
		0.04563482	2954	
		0.60735757	2955	
		0.84597649	2956	
		0.94423755	2957	
		0.889001	2958	
		0.54370281	2959	
		0.65223241	2960	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.66493834	2961	
		0.64111407	2962	
		0.72499319	2963	
		0.20098152	2964	
		0.69792181	2965	
		0.72308793	2966	
		0.36194376	2967	
		0.24275291	2968	
		0.78118482	2969	
		0.44661687	2970	
		0.83119885	2971	
		0.14423064	2972	
		0.48804716	2973	
		0.75639517	2974	
		0.43611176	2975	
		0.4582023	2976	
		0.06691858	2977	
		0.30809183	2978	
		0.23746788	2979	
		0.1745311	2980	
		0.41023001	2981	
		0.73027997	2982	
		0.99088152	2983	
		0.55633873	2984	
		0.52140077	2985	
		0.92395106	2986	
		0.2354426	2987	
		0.89782088	2988	
		0.27105376	2989	
		0.01433016	2990	
		0.52305839	2991	
		0.23862349	2992	
		0.27351329	2993	
		0.401552	2994	
		0.77161193	2995	
		0.20371248	2996	
		0.97278566	2997	
		0.61333708	2998	
		0.51839916	2999	
		0.80841727	3000	
		0.72575025	3001	
		0.22654027	3002	
		0.2560457	3003	
		0.64135508	3004	
		0.10511189	3005	
		0.97857468	3006	
		0.62643179	3007	
		0.93237807	3008	
		0.29851743	3009	
		0.3805991	3010	
		0.2981209	3011	
		0.89012095	3012	

Selected Minimum Pops	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.27565947	3013	
		0.46806939	3014	
		0.24877343	3015	
		0.46384356	3016	
		0.68850642	3017	
		0.00809124	3018	
		0.55645983	3019	
		0.70646154	3020	
		0.11048337	3021	
		0.83408169	3022	
		0.93858096	3023	
		0.36660324	3024	
		0.69837727	3025	
		0.11189632	3026	
		0.62054426	3027	
		0.69809715	3028	
		0.83440621	3029	
		0.6005003	3030	
		0.74937164	3031	
		0.9977705	3032	
		0.05026903	3033	
		0.53319325	3034	
		0.50020819	3035	
		0.64628449	3036	
		0.83456443	3037	
		0.16866094	3038	
		0.77649563	3039	
		0.53907058	3040	
		0.39269052	3041	
		0.74732943	3042	
		0.39541945	3043	
		0.66114493	3044	
		0.16848836	3045	
		0.34367071	3046	
		0.41165698	3047	
		0.55606043	3048	
		0.08801732	3049	
		0.04452454	3050	
		0.21074807	3051	
		0.4861899	3052	
		0.48055206	3053	
		0.28998535	3054	
		0.30273561	3055	
		0.53952096	3056	
		0.57604599	3057	
		0.84566082	3058	
		0.1742941	3059	
		0.59517335	3060	
		0.32772686	3061	
		0.07533817	3062	
		0.52553756	3063	
		0.151614	3064	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.34253106	3065	
		0.90929265	3066	
		0.1652253	3067	
		0.18327814	3068	
		0.24885995	3069	
		0.18836916	3070	
		0.03373627	3071	
		0.51221274	3072	
		0.89806941	3073	
		0.01459143	3074	
		0.06423765	3075	
		0.12900282	3076	
		0.4153969	3077	
		0.9131243	3078	
		0.40818248	3079	
		0.20305042	3080	
		0.3939076	3081	
		0.86965705	3082	
		0.51214429	3083	
		0.33668769	3084	
		0.43773902	3085	
		0.91629666	3086	
		0.26374716	3087	
		0.77043302	3088	
		0.31438285	3089	
		0.26224594	3090	
		0.464582	3091	
		0.92678397	3092	
		0.92709781	3093	
		0.95856354	3094	
		0.75139517	3095	
		0.1466922	3096	
		0.38405628	3097	
		0.28934177	3098	
		0.73116008	3099	
		0.68724979	3100	
		0.40585498	3101	
		0.88606882	3102	
		0.58868624	3103	
		0.86311208	3104	
		0.22688174	3105	
		0.95993146	3106	
		0.14535582	3107	
		0.85797321	3108	
		0.87619462	3109	
		0.26708468	3110	
		0.14373344	3111	
		0.67332274	3112	
		0.423732	3113	
		0.36729833	3114	
		0.89956818	3115	
		0.8779758	3116	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.55158135	3117	
		0.89600415	3118	
		0.1017725	3119	
		0.94439748	3120	
		0.56798899	3121	
		0.03327358	3122	
		0.58738273	3123	
		0.2878904	3124	
		0.8510583	3125	
		0.57452112	3126	
		0.34259698	3127	
		0.22278383	3128	
		0.14822714	3129	
		0.33782654	3130	
		0.17971338	3131	
		0.83673842	3132	
		0.33424101	3133	
		0.87473594	3134	
		0.74272101	3135	
		0.87021283	3136	
		0.23692765	3137	
		0.54600577	3138	
		0.11739931	3139	
		0.75269246	3140	
		0.57194978	3141	
		0.66898698	3142	
		0.65025961	3143	
		0.11885711	3144	
		0.35059146	3145	
		0.25206851	3146	
		0.70079442	3147	
		0.44147261	3148	
		0.74992923	3149	
		0.63648097	3150	
		0.94843593	3151	
		0.63470239	3152	
		0.294583	3153	
		0.63520166	3154	
		0.88789473	3155	
		0.34369962	3156	
		0.23535879	3157	
		0.22043388	3158	
		0.44436393	3159	
		0.52893056	3160	
		0.54364244	3161	
		0.7500053	3162	
		0.43205555	3163	
		0.65959815	3164	
		0.39250308	3165	
		0.96477305	3166	
		0.83553217	3167	
		0.04426851	3168	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.29551656	3169	
		0.89412649	3170	
		0.38188138	3171	
		0.70308948	3172	
		0.29979826	3173	
		0.67546062	3174	
		0.76753257	3175	
		0.86973817	3176	
		0.89172205	3177	
	C3	0.00440666	3178	
		0.27529107	3179	
		0.64823377	3180	
		0.91536221	3181	
		0.43244059	3182	
		0.10820092	3183	
		0.88083979	3184	
		0.1034922	3185	
		0.93900774	3186	
		0.07779688	3187	
		0.54756578	3188	
		0.81080424	3189	
		0.62212826	3190	
		0.9795345	3191	
		0.38812732	3192	
		0.58299573	3193	
		0.87190747	3194	
		0.70466702	3195	
		0.30063694	3196	
		0.12866411	3197	
		0.76951303	3198	
		0.58814417	3199	
		0.64941834	3200	
		0.56461948	3201	
		0.80271553	3202	
		0.78038149	3203	
		0.81829569	3204	
		0.5973553	3205	
		0.55762924	3206	
		0.75874359	3207	
		0.99794791	3208	
		0.62945926	3209	
		0.59511337	3210	
		0.92145169	3211	
		0.31979184	3212	
		0.14726072	3213	
		0.61639601	3214	
		0.25799213	3215	
		0.05013722	3216	
		0.33922555	3217	
		0.78572001	3218	
		0.12832396	3219	
		0.57460155	3220	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.41169551	3221	
		0.57115697	3222	
		0.64848284	3223	
		0.26680773	3224	
		0.05161179	3225	
		0.71704108	3226	
		0.14629569	3227	
		0.2653843	3228	
		0.45604316	3229	
		0.41545179	3230	
		0.50927834	3231	
		0.91841484	3232	
		0.3683719	3233	
		0.85247095	3234	
		0.28159718	3235	
		0.66599547	3236	
		0.10302147	3237	
		0.84930771	3238	
		0.46555795	3239	
		0.9320039	3240	
		0.97708228	3241	
		0.56794826	3242	
		0.29552806	3243	
		0.69243971	3244	
		0.93978919	3245	
		0.69623401	3246	
		0.4503364	3247	
		0.34153082	3248	
		0.46703046	3249	
		0.94844962	3250	
		0.52105161	3251	
		0.80563458	3252	
		0.39505215	3253	
		0.24180267	3254	
		0.67735056	3255	
		0.51161881	3256	
		0.16167833	3257	
		0.42213209	3258	
		0.43531525	3259	
		0.56774622	3260	
		0.55604769	3261	
		0.99488744	3262	
		0.65046619	3263	
		0.98650704	3264	
		0.86764488	3265	
		0.55433421	3266	
		0.67099686	3267	
		0.44122363	3268	
		0.93246011	3269	
		0.59636283	3270	
		0.39715236	3271	
		0.6984924	3272	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.21516069	3273	
		0.37761619	3274	
		0.58714411	3275	
		0.01750158	3276	
		0.54035601	3277	
		0.19334757	3278	
		0.34790417	3279	
		0.9912441	3280	
		0.01395446	3281	
		0.55585515	3282	
		0.15382187	3283	
		0.07401933	3284	
		0.01890174	3285	
		0.72728852	3286	
		0.87776818	3287	
		0.74433633	3288	
		0.05683562	3289	
		0.72269172	3290	
		0.9075743	3291	
		0.52567802	3292	
		0.33729211	3293	
	10	0.00406187	3294	
		0.50222619	3295	
		0.74057162	3296	
		0.31881916	3297	
		0.97048707	3298	
		0.88121764	3299	
		0.46414949	3300	
		0.51397452	3301	
		0.55207657	3302	
		0.14455833	3303	
		0.52766702	3304	
		0.76776488	3305	
		0.49474221	3306	
		0.3957261	3307	
		0.46874352	3308	
		0.36719992	3309	
		0.60193092	3310	
		0.21881513	3311	
		0.12253873	3312	
		0.33932611	3313	
		0.66755075	3314	
		0.62697648	3315	
		0.03767	3316	
		0.98110822	3317	
		0.85721163	3318	
		0.64553168	3319	
		0.43482329	3320	
		0.34077738	3321	
		0.0871197	3322	
		0.9420697	3323	
		0.1340752	3324	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.61805743	3325	
		0.7355913	3326	
		0.25359927	3327	
		0.0471895	3328	
		0.92793398	3329	
		0.5068829	3330	
		0.90336681	3331	
		0.12729062	3332	
		0.38008394	3333	
		0.31391538	3334	
		0.72717557	3335	
		0.52817938	3336	
		0.11371982	3337	
		0.37889679	3338	
		0.88252166	3339	
		0.88074696	3340	
		0.20318007	3341	
		0.4824982	3342	
		0.2024603	3343	
		0.35235015	3344	
		0.06202549	3345	
		0.29695369	3346	
		0.68559845	3347	
		0.83391596	3348	
		0.45213893	3349	
		0.79431556	3350	
		0.30873937	3351	
		0.27567633	3352	
		0.49415441	3353	
		0.95743158	3354	
		0.45662806	3355	
		0.05336767	3356	
		0.20051753	3357	
		0.52996093	3358	
		0.77402721	3359	
		0.04092716	3360	
		0.84588	3361	
		0.48710504	3362	
		0.78706288	3363	
		0.18010416	3364	
		0.35825565	3365	
		0.2125417	3366	
		0.92911125	3367	
		0.49340895	3368	
		0.748386	3369	
		0.65296857	3370	
		0.03929514	3371	
		0.87435904	3372	
		0.27092264	3373	
		0.67587899	3374	
		0.26617942	3375	
		0.96626794	3376	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.78458962	3377	
		0.27295571	3378	
		0.18039468	3379	
		0.91714955	3380	
		0.94920445	3381	
		0.19103711	3382	
		0.96771905	3383	
		0.88679945	3384	
		0.69956103	3385	
		0.1700117	3386	
		0.29492136	3387	
		0.76715037	3388	
		0.96132259	3389	
		0.74856177	3390	
		0.59988515	3391	
		0.08292325	3392	
		0.7704305	3393	
		0.41893594	3394	
		0.75257615	3395	
		0.2033782	3396	
		0.34479357	3397	
		0.40322643	3398	
		0.90342648	3399	
		0.30847925	3400	
		0.89176351	3401	
		0.57917631	3402	
		0.67343074	3403	
		0.13436956	3404	
		0.09256279	3405	
		0.0389947	3406	
		0.75176982	3407	
		0.6089337	3408	
		0.45248373	3409	
		0.21159236	3410	
		0.03777263	3411	
		0.15247407	3412	
		0.84038492	3413	
		0.28828014	3414	
		0.35812158	3415	
		0.95723238	3416	
		0.461685	3417	
		0.09422089	3418	
		0.55244733	3419	
		0.1094819	3420	
		0.88160578	3421	
		0.8031362	3422	
		0.53858302	3423	
		0.58471875	3424	
		0.34396944	3425	
		0.29049195	3426	
		0.45520596	3427	
		0.7361108	3428	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.59876502	3429	
		0.53847502	3430	
		0.43467429	3431	
		0.83160946	3432	
		0.05152309	3433	
		0.38533871	3434	
		0.10878648	3435	
		0.27598752	3436	
		0.18377271	3437	
		0.2392246	3438	
		0.72778046	3439	
		0.89466988	3440	
		0.05493187	3441	
		0.27500933	3442	
		0.81777308	3443	
		0.11146993	3444	
		0.3376569	3445	
		0.62173365	3446	
		0.65232455	3447	
		0.21463155	3448	
		0.26001318	3449	
		0.74688889	3450	
		0.36136854	3451	
		0.27862911	3452	
		0.99359184	3453	
		0.75056505	3454	
		0.78799463	3455	
		0.08311107	3456	
		0.18237551	3457	
		0.5092366	3458	
		0.36252358	3459	
		0.7275974	3460	
		0.79611245	3461	
		0.32368887	3462	
		0.37724594	3463	
		0.48697087	3464	
		0.16629257	3465	
		0.56115096	3466	
		0.25887237	3467	
		0.97665039	3468	
		0.05849579	3469	
		0.26169076	3470	
		0.16879604	3471	
		0.78334041	3472	
		0.84822591	3473	
		0.59280346	3474	
		0.18660995	3475	
		0.03865192	3476	
		0.06164833	3477	
		0.27520964	3478	
		0.34556203	3479	
		0.68846491	3480	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.05245581	3481	
		0.06755482	3482	
		0.04376885	3483	
		0.84288634	3484	
		0.16092106	3485	
		0.25054499	3486	
		0.19301729	3487	
		0.57727826	3488	
		0.11070003	3489	
		0.51828725	3490	
		0.80199472	3491	
		0.67635011	3492	
		0.29396686	3493	
		0.23621939	3494	
		0.53026319	3495	
		0.18320568	3496	
		0.67846665	3497	
		0.31929503	3498	
		0.5972405	3499	
		0.08700821	3500	
		0.92739924	3501	
		0.13776707	3502	
		0.05699549	3503	
		0.52494399	3504	
		0.94337077	3505	
		0.38483268	3506	
		0.58461655	3507	
		0.2073897	3508	
		0.06439141	3509	
		0.2957508	3510	
		0.22541638	3511	
		0.81196165	3512	
		0.06759142	3513	
		0.501932	3514	
		0.22455341	3515	
		0.76830206	3516	
		0.86010105	3517	
		0.54571557	3518	
		0.67365641	3519	
		0.95984968	3520	
		0.24860613	3521	
		0.17829027	3522	
		0.22556322	3523	
		0.87900745	3524	
		0.57782864	3525	
		0.76120476	3526	
		0.45162157	3527	
		0.40053605	3528	
		0.87957555	3529	
		0.42447539	3530	
		0.85940644	3531	
		0.27656407	3532	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.2914243	3533	
		0.86304444	3534	
		0.23430834	3535	
		0.30964326	3536	
		0.20642107	3537	
		0.81078101	3538	
		0.86609036	3539	
		0.27355406	3540	
		0.63586937	3541	
		0.4332891	3542	
		0.28303563	3543	
		0.68867014	3544	
		0.93754187	3545	
		0.90470819	3546	
		0.36006741	3547	
		0.02246609	3548	
		0.94597047	3549	
		0.79714615	3550	
		0.81617338	3551	
		0.4308031	3552	
		0.79497219	3553	
		0.92458226	3554	
		0.56822936	3555	
		0.82327377	3556	
		0.30843937	3557	
		0.48942993	3558	
		0.33157337	3559	
		0.72602799	3560	
		0.94984916	3561	
		0.48323738	3562	
		0.69765392	3563	
		0.79940403	3564	
		0.56452405	3565	
		0.6721519	3566	
		0.5705243	3567	
		0.65185747	3568	
		0.60770807	3569	
		0.16521276	3570	
		0.76765041	3571	
		0.33638112	3572	
		0.412619	3573	
		0.78420464	3574	
		0.09150019	3575	
		0.366547	3576	
		0.57858177	3577	
		0.63593947	3578	
		0.59802653	3579	
		0.10208001	3580	
		0.62689519	3581	
		0.76797571	3582	
		0.41849292	3583	
		0.0293356	3584	

Selected Minimum Pop.	Selected Maximum Pop.	Random Number	Sequential Number	AMWTP Number
		0.1544074	3585	
		0.54689012	3586	
		0.39574005	3587	
		0.37492696	3588	
		0.06753874	3589	
		0.3821629	3590	
		0.02772475	3591	
		0.359136	3592	
		0.95254835	3593	
		0.44747689	3594	
		0.59434256	3595	
		0.50622433	3596	
		0.56409039	3597	
		0.16483203	3598	
		0.29501722	3599	
		0.43716193	3600	
		0.09423197	3601	
		0.7051404	3602	
		0.74870651	3603	
		0.76844513	3604	
		0.91651181	3605	
		0.12598618	3606	
		0.89440659	3607	
		0.7052325	3608	
		0.46997704	3609	
		0.74533229	3610	
		0.50072715	3611	
		0.47719228	3612	
		0.55779637	3613	
		0.67825735	3614	
		0.51226227	3615	
		0.59545273	3616	
	C9	0.00591241	3617	
		0.51732141	3618	
		0.24959674	3619	
		0.38663991	3620	
		0.58243416	3621	
		0.42593051	3622	
		0.88845348	3623	
		0.18521246	3624	
		0.56794162	3625	
		0.98551751	3626	
		0.77059623	3627	
		0.09295328	3628	
		0.2082594	3629	
		0.81880116	3630	
		0.05831134	3631	
		0.68638517	3632	
		0.12001561	3633	
		0.01282097	3634	
		0.33379795	3635	
		0.92197131	3636	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.51946997	3637	
		0.45107712	3638	
		0.76177447	3639	
		0.81782982	3640	
		0.0777488	3641	
		0.34051131	3642	
		0.62896373	3643	
		0.86477433	3644	
		0.36983181	3645	
		0.94996266	3646	
		0.98319438	3647	
		0.03259718	3648	
		0.80626791	3649	
		0.14257428	3650	
		0.9145532	3651	
		0.64862021	3652	
		0.82957102	3653	
		0.53064779	3654	
		0.30531641	3655	
		0.1605117	3656	
		0.8940098	3657	
		0.2724904	3658	
		0.56130358	3659	
		0.09222319	3660	
		0.80250184	3661	
		0.90697127	3662	
		0.33528134	3663	
		0.37676948	3664	
		0.64212247	3665	
		0.03878268	3666	
		0.15703437	3667	
		0.58118642	3668	
		0.06236538	3669	
		0.2908503	3670	
		0.49680196	3671	
		0.78787331	3672	
		0.43682863	3673	
		0.54321814	3674	
		0.9787502	3675	
		0.57203624	3676	
		0.88041055	3677	
		0.12674946	3678	
		0.50747225	3679	
		0.76286059	3680	
		0.89222471	3681	
		0.87394056	3682	
		0.70674725	3683	
		0.94080827	3684	
		0.5535005	3685	
		0.10216274	3686	
		0.47084767	3687	
		0.50904384	3688	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.53586907	3689	
		0.19612465	3690	
		0.81336222	3691	
		0.49967926	3692	
		0.87378594	3693	
		0.66052424	3694	
	1	0.0016047	3695	
		0.03584658	3696	
		0.59271112	3697	
		0.22188451	3698	
		0.58280557	3699	
		0.22163626	3700	
		0.08279708	3701	
		0.04042356	3702	
		0.39889778	3703	
		0.28587777	3704	
		0.53038673	3705	
		0.17006184	3706	
		0.97646508	3707	
		0.73730851	3708	
		0.2287015	3709	
		0.53869562	3710	
		0.74511374	3711	
		0.5442312	3712	
		0.21236746	3713	
		0.41579854	3714	
		0.25115617	3715	
		0.19221282	3716	
		0.285589	3717	
		0.24520413	3718	
		0.68173516	3719	
		0.08921851	3720	
		0.1672582	3721	
		0.57844242	3722	
		0.19023237	3723	
		0.81489198	3724	
		0.38398127	3725	
		0.57575529	3726	
		0.39288597	3727	
		0.48379325	3728	
		0.49774505	3729	
		0.94043477	3730	
		0.34920138	3731	
		0.75051707	3732	
		0.79668151	3733	
		0.3032382	3734	
		0.29666638	3735	
		0.12998008	3736	
		0.1955727	3737	
		0.2088491	3738	
		0.87884733	3739	
		0.83465643	3740	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.13798826	3741	
		0.68737857	3742	
		0.00610255	3743	
		0.68465267	3744	
		0.19526055	3745	
		0.44583275	3746	
		0.86014011	3747	
		0.77831131	3748	
		0.91813657	3749	
		0.0567078	3750	
		0.62985843	3751	
		0.04365572	3752	
		0.12895217	3753	
		0.50466834	3754	
		0.52836213	3755	
		0.64946387	3756	
		0.06779647	3757	
		0.71054936	3758	
		0.24693201	3759	
		0.42964635	3760	
		0.77321495	3761	
		0.47704066	3762	
		0.94276316	3763	
		0.94228369	3764	
		0.47447981	3765	
		0.72333341	3766	
		0.88829577	3767	
		0.08216809	3768	
		0.42172035	3769	
		0.5830969	3770	
		0.37107684	3771	
		0.35583958	3772	
		0.03859487	3773	
		0.39230072	3774	
		0.94175995	3775	
		0.27523117	3776	
		0.46873876	3777	
		0.55724871	3778	
		0.94132422	3779	
		0.76934976	3780	
		0.30842669	3781	
		0.6651458	3782	
		0.14770172	3783	
		0.35167856	3784	
		0.60200649	3785	
		0.42515231	3786	
		0.69352376	3787	
		0.442058	3788	
		0.35764942	3789	
		0.93718139	3790	
		0.3542975	3791	
		0.45920737	3792	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.7162012	3793	
		0.24654389	3794	
		0.02012979	3795	
		0.36804737	3796	
		0.36171649	3797	
		0.35441414	3798	
		0.90858505	3799	
		0.50691481	3800	
		0.92869782	3801	
		0.99285255	3802	
		0.34290428	3803	
		0.91408954	3804	
		0.67889745	3805	
		0.03196407	3806	
		0.35268651	3807	
		0.73930383	3808	
		0.37621642	3809	
		0.77671132	3810	
		0.24897946	3811	
		0.81308205	3812	
		0.44043652	3813	
		0.02413601	3814	
		0.4626201	3815	
		0.28162015	3816	
		0.26227893	3817	
		0.97578812	3818	
		0.37242227	3819	
		0.23073543	3820	
		0.44313671	3821	
		0.27385471	3822	
		0.84868197	3823	
		0.11517972	3824	
		0.44900236	3825	
		0.68776859	3826	
		0.769786	3827	
		0.40336579	3828	
		0.0099511	3829	
		0.70322439	3830	
		0.52854579	3831	
		0.4165271	3832	
		0.66626215	3833	
		0.81789579	3834	
		0.68002321	3835	
		0.4138838	3836	
		0.5097642	3837	
		0.89823814	3838	
		0.28344561	3839	
		0.67854919	3840	
		0.97019442	3841	
		0.218998	3842	
		0.77989434	3843	
		0.06310512	3844	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.31662802	3845	
		0.4443766	3846	
		0.36621931	3847	
		0.10060263	3848	
		0.22417292	3849	
		0.65162322	3850	
		0.85064726	3851	
		0.56591635	3852	
		0.94463298	3853	
		0.28516738	3854	
		0.25200313	3855	
		0.22168574	3856	
		0.04518524	3857	
		0.04099928	3858	
		0.19917726	3859	
		0.78030669	3860	
		0.48065324	3861	
		0.42631878	3862	
	9	0.0036265	3863	
		0.58723584	3864	
		0.22534015	3865	
		0.109647	3866	
		0.79180297	3867	
		0.42507036	3868	
		0.74277435	3869	
		0.18483569	3870	
		0.16112945	3871	
		0.45960065	3872	
		0.12268824	3873	
		0.94958612	3874	
		0.45852138	3875	
		0.72959375	3876	
		0.55910863	3877	
		0.60897824	3878	
		0.69385602	3879	
		0.31871409	3880	
		0.25506801	3881	
		0.22183875	3882	
		0.68932557	3883	
		0.62086968	3884	
		0.24118029	3885	
		0.56915835	3886	
		0.01119862	3887	
		0.21608665	3888	
		0.53516228	3889	
		0.9647399	3890	
		0.55411051	3891	
		0.34633432	3892	
		0.51999044	3893	
		0.33734559	3894	
		0.35970469	3895	
		0.97856977	3896	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.32854282	3897	
		0.91507781	3898	
		0.04510475	3899	
		0.28431711	3900	
		0.74411707	3901	
		0.32790588	3902	
		0.51286614	3903	
		0.18329244	3904	
		0.76848296	3905	
		0.27061901	3906	
		0.09964973	3907	
		0.02078376	3908	
		0.25695479	3909	
		0.50665061	3910	
		0.08473523	3911	
		0.87372247	3912	
		0.14214782	3913	
		0.49901941	3914	
		0.17246946	3915	
		0.57125965	3916	
		0.45449021	3917	
		0.04732803	3918	
		0.16473922	3919	
		0.33454331	3920	
		0.89991579	3921	
		0.341538	3922	
		0.51943432	3923	
		0.2041854	3924	
		0.21762871	3925	
		0.94484137	3926	
		0.67561074	3927	
		0.45955111	3928	
		0.63388751	3929	
		0.21509566	3930	
		0.6823966	3931	
		0.63339437	3932	
		0.40719987	3933	
		0.11928836	3934	
		0.41453127	3935	
		0.60010624	3936	
		0.27124163	3937	
		0.85208317	3938	
		0.23797999	3939	
		0.06199801	3940	
		0.74746413	3941	
		0.92771665	3942	
		0.02330923	3943	
		0.69960742	3944	
		0.22039289	3945	
		0.52919273	3946	
		0.43074483	3947	
		0.24421137	3948	

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
		0.89614218	3949	
		0.27489096	3950	
		0.78716036	3951	
		0.48814261	3952	
		0.06628242	3953	
		0.63319295	3954	
		0.61156256	3955	
		0.62109962	3956	
		0.34527464	3957	
		0.59762907	3958	
		0.78970358	3959	
		0.15676431	3960	
		0.1741499	3961	
		0.88334194	3962	
		0.5406021	3963	
		0.61308963	3964	
		0.17967053	3965	
		0.2117157	3966	
		0.47751567	3967	
		0.1496899	3968	
		0.97019907	3969	
		0.41131947	3970	
		0.08845274	3971	
		0.13013439	3972	
		0.74104503	3973	
		0.47312522	3974	
		0.98249609	3975	
		0.45619943	3976	
		0.99625133	3977	
		0.26430325	3978	
		0.92505246	3979	
		0.84263926	3980	
		0.77073244	3981	
		0.48831609	3982	
		0.81093507	3983	
		0.82021329	3984	
		0.08369643	3985	
		0.63391868	3986	
		0.08003177	3987	
		0.60591649	3988	
		0.28246203	3989	
		0.41226001	3990	
		0.70435345	3991	
		0.470686	3992	
		0.07836683	3993	
		0.03360085	3994	
		0.85262375	3995	
		0.75198068	3996	
		0.95115581	3997	
		0.75437844	3998	
		0.04565188	3999	
		0.19027711	4000	

Waste Stream Lot: BN510.1 Boxline Lot 3

Population Size of Waste Stream Lot: 2,400 to 4,000

Preliminary Selection: N/A

Attach a list of drums used in preliminary estimate.

Random Selection is for: ☐ Solids or ☒ Headspace Gas Sampling

Number of Containers to be Cored/Headspace Gas Sampled: 10

Attach calculations used to determine the required sample size, as applicable.

Random Selection Method: Excel Spreadsheet

Attach copy of Excel spreadsheet which includes equation used to generate random number.

- Attach a list of the container numbers that correspond to the randomly selected numbers, or
- Attach a list of the randomly selected candidate container sequence numbers, if this is for an indeterminate subsequent sample population.
- If any substitutions were made, attach documentation and include reason for substitution, method for selecting new container, and identification of new container.

The container selection documented with this form have been randomly selected from the specified population per MP-TRUW-8.25.

SPM Signature

1.3.12

Date

FOR INFORMATION ONLY

Idaho Treatment Group

RECORD
CMC 09/19/2012

INTEROFFICE MEMORANDUM

To: Sue Peterman, TRU Programs Manager

From: Steve Carpenter, Alternate Site Project Manager/Acceptable Knowledge Manager

Date: February 1, 2012

Subject: Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2 – SPC-007-12

This memorandum contains the Headspace Gas Sampling Report for the BN510.1 Boxline Lot 2.

The purpose of this sampling report is to provide the sampling characterization data from the headspace gas sampling of randomly selected containers from the BN510.1 Boxline Lot 2, the second lot from an indeterminate waste stream, in accordance with MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. The Reconciliation with Data Quality Objectives and Characterization Information Summary Report are included as Attachments 1 and 2.

1. POPULATION DEFINITION

The BN510.1 Boxline Lot 2 drum population is identified as 4,000 containers. Ten containers within this population have been selected for sampling as defined in MP-TRUW-8.25. Periodic reports were generated from the Advanced Mixed Waste Treatment Project's Reconciliation Group that identified BN510.1 Boxline containers. The container numbers within the Reconciliation reports were sorted in ascending order by container ID and added to the BN510.1 Boxline Lot 2 container list. A list of the containers is included in the final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (n) for characterization of this waste stream would not exceed ten. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 2. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for

sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 3,000 containers to provide the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 2 is documented in memo SPC-015-10 and SPC-004-11. The list of containers and their corresponding sequential and random numbers are included in the final subsequent headspace gas random sample selection memorandum, SPC-001-12.

4. CONFIRMATION OF THE SAMPLE SIZE

The observed sample n* has been checked against the estimate for the number of samples (n) as specified in Appendix A of MP-TRUW-8.25. The observed sample n* estimate did not result in greater than 20 percent more samples than originally estimated. Final mean and variance estimates and the 90% upper confidence level (UCL_{90}) of the mean concentration for each contaminant have been determined. No assignment or assessment added analytes or an associated Environmental Protection Agency hazardous waste number.

5. CONTAINERS SELECTED

Ten containers were selected for headspace gas sampling in accordance with MP-TRUW-8.25. No substitutions were required. Table 1 below identifies the selected containers.

Table 1. BN510.1 Boxline Lot 2 Selected Containers

Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
1	0.000020	2399	BN10406800
2	0.000259	1761	BN10400134
3	0.000601	2572	BN10408764
4	0.000725	1603	BN10398725
5	0.000935	3979	BN10429587
6	0.001189	2969	BN10413998
7	0.001990	161	BN10381425
8	0.002274	3446	BN10421829
9	0.002567	304	BN10382812
10	0.002629	1410	BN10396291

If you have any questions or comments, please contact me at 557-6323.

SPC/nk

Attachments
1. Reconciliation with Data Quality Objectives
2. Characterization Information Summary Report

cc: George Byram
Dave Haar
Caralea Hinkle-Daniel
Rachelle Hubler
Jim Jackson
Jason Kettel
Nancy Kirk
Jason Lance
Lyle Ryman
Eric Schweinsberg
Wes Skaar
Matt Storms
Travis Thompson
AMWTP Correspondence Control

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
1. Have all containers in the lot been assigned an appropriate Waste Matrix Code?	☒	☐	☐	
2. Have waste material parameter weights been established for each container in the lot?	☒	☐	☐	
3. Does each waste container of waste contain transuranic (TRU) radioactive waste?	☒	☐	☐	
4. Have mean concentrations, 90% Upper Confidence Level (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for each Volatile Organic Compound (VOC) in the headspace gas of waste containers in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (If applicable)	☒	☐	☐	
5. For solid sampling, have mean concentrations, UCL_{90} values for the mean concentrations, standard deviations, and number of samples collected for VOCs, Semi-Volatile Organic Compounds (SVOCs), and metals in the waste stream lot been evaluated against the constituent hazardous waste number assignments? (if applicable)	☐	☐	☒	Random headspace gas sampling and analysis is performed in accordance with MP-TRUW-8.25. Solid sampling is not required for this waste stream.

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
6. Does the waste stream exhibit a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C?	☒	☐	☐	
7. Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D?	☒	☐	☐	
8. Can the waste stream be classified as hazardous or nonhazardous at the UCL_{90}?	☒	☐	☐	
9. Was an appropriate packaging configuration and Drum Age Criteria (DAC) applied and documented in the headspace gas sampling documentation and was the drum age criteria met prior to sampling?	☒	☐	☐	
10. Have all tentatively identified compounds (TICs) been appropriately identified and reported in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, Section C3-1, for the lot?	☒	☐	☐	
11. Have the overall completeness, comparability, and representativeness quality assurance objectives (QAOs) been met for each of the analytical and testing procedures as specified in	☒	☐	☐	

WSPF No.: BN510.1 Lot 2

Data Quality Objective	Yes	No	N/A	Comment
MP-TRUW-8.2, Section C3-2 through C3-9, for the lot?				
12. Have the program required quantitation limits (PRQLs) for all analyses been met for the lot?	☒	☐	☐	
13. Was an Open nonconformance report (NCR) search performed for all containers/pucks/source containers on the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
14. Was an Open NCR search performed for all batches in the final list for the waste stream profile/reconciliation lot?	☒	☐	☐	NCR search only applicable to headspace gas sampling batch data reports.
15. Were all batches identified in the waste stream profile form (WSPF) or reconciliation lot complete through site project manager (SPM) signature release? List any batches identified as not complete through validation.	☒	☐	☐	Applicable only to headspace gas sampling batch data reports.
16. Were any open NCRs found that are applicable to the waste stream profile/reconciliation lot? List NCR, container, and batch.	☐	☒	☐	There are no open NCRs for any of the containers or batch data reports associated with the CIS.
17. Is there an approved AK Sufficiency Determination for this waste stream?	☐	☒	☐	

	Printed name	Signature	Date
Site Project Manager	Nancy Kirk	Nancy Kirk	2/1/2012
2nd Site Project Manager	Wes Skaar	Wes Skaar	2/1/2012

WSPF Number: BN510.1 Lot Number: 2

SPM

Printed Name: **Nancy Kirk** Signature: Nancy Kirk Date: **2/1/2012**

2nd SPM

Printed Name: **Wes Skaar** Signature: Wes Skaar Date: **2/1/2012**

SPM signature indicates that the information presented in this package is consistent with analytical batch reports and indicates concurrence with all information presented in this report.

WSPF Number: BN510.1 Lot Number: 2

Characterization Information Summary

Characterization Description:

Container selection and number of samples for Headspace Gas Sampling of S5000 waste streams and Solids Sampling of S3000/S4000 waste streams have been evaluated and meet the requirements established in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

Y ☒ N ☐ NA ☐

For "N" or "NA," provide rationale.

Selection Process:

The evaluation to determine the required number of samples for BN510.1 Boxline Lot 2 is presented in Attachment A. The required number of samples was calculated for each analyte from Table 4.4.1 of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Permit with reported detections and two or more applicable samples. Applicable samples are all samples that are not diluted non-detects. The required number of samples (*n*) was determined using Appendix A of MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

The BN510.1 Boxline Lot 2 maximum drum population is identified as 4,000 containers. Ten containers within this population were selected for sampling as defined in MP-TRUW-8.25. The final subsequent headspace gas random sample selection memorandum for BN510.1 Boxline Lot 2, SPC-001-12 includes the list of randomly selected containers, the list of containers assigned to BN510.1 Boxline Lot 2, and the Randomly Selected Container Report, Form-1196.

The sampling was conducted by AMWTP using procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. The ten randomly selected containers were sampled and met the required number of samples.

Data Results:

The statistical evaluation of the analytical data collected for BN510.1 Boxline Lot 2 was performed in accordance with MP-TRUW-8.25 and is presented in Table 1A. Tentatively Identified Compounds (TICs) that were detected in this lot are detailed in Table 1B. Table 5 lists the correlation of container numbers to headspace gas analysis data packages. Table 7 lists the correlation of container numbers to headspace gas sample numbers. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for toxicity characteristic compounds and to assign and/or confirm EPA HWNs for the BN510.1 waste stream.

HWNs are assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). The headspace sampling UCL_{90} results for 1,1,1-Trichloroethane and tolulene were above their associated PRQL values and support the assignment of HWNs F001/F002 and F005 by AK for these analytes (Table 1A).

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

WSPF Number: BN510.1 Lot Number: 2

Table 1A. Headspace Gas Summary Data.

Analyte	No. of Samples	No. of Samples Above MDL [a]	Trans-formation Used	Maximum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Transformed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10	-
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100	-
Ethyl ether	10	0	None	0.800	0.656	0.186	b	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	b	-	10	D029 [d]
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100	-
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	b	-	10	
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10	
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	b	-	100	F005 [d]
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	F001/F002 [g]
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	b	-	10	F001 [d]
Benzene	10	0	None	0.950	0.860	0.077	b	-	10	F005 [d]
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	b	-	10	D028 [d]
Butanol	10	0	None	14.0	12.8	1.55	b	-	100	-
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100	-
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	F005 [g]
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	b	-	10	F001/F002 [d]
Chlorobenzene	10	0	None	1.05	0.780	0.232	b	-	10	-
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10	-
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10	-
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10	-
Bromoform	10	0	None	1.00	0.940	0.052	b	-	10	-
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	b	-	10	-
Cyclohexane [c, f]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10	-
Carbon disulfide [e]	10	0	None	0.700	0.660	0.052	b	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	10	0	None	3.05	1.76	1.11	b	-	10	-
1,3,5-Trimethylbenzene [f]	10	0	None	2.50	1.48	0.878	b	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

g. These HWNs, assigned by AK, were confirmed by characterization and are retained for this waste stream.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Statistics Performed by:

Printed Name: Jason Kettel Signature: Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 1B. Headspace Gas Summary Data – Tentatively Identified Compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No. of Samples Containing TIC in Lot	No. of Containers Sampled in Lot	% Detected in Lot	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	6	10	60	19	24	79.2
Trichlorofluoromethane	87	0	10	0	1	24	4.2
Isopropyl alcohol	98	1	10	10	1	24	4.2
1,2-Dichloropropane	110	1	10	10	1	24	4.2

Note: Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Did the data support EPA Hazardous Waste Numbers assigned by AK? Yes ✓ No _____

If no, describe the basis for assigning EPA Hazardous Waste Number(s):

Calculations performed by:

Printed Name: Nancy Kirk Signature: Nancy Kirk Date: 2/1/2012

Verification of % Detected Calculation:

Printed Name: Jason Kettel Signature: _____ Date: 2/1/2012

WSPF Number: BN510.1 Lot Number: 2

Table 5. Correlation of Container Identification Numbers to Data Package.

Container No.	Headspace Gas Analysis Data Package	RTR Data Package	RA Data Package	VE Data Package	Solid Sampling Data Package	Solid Analysis Data Package
BN10406800	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10400134	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10408764	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10398725	HS111-00009	N/A	N/A	N/A	N/A	N/A
BN10429587	HS112-00002	N/A	N/A	N/A	N/A	N/A
BN10413998	HS111-00018	N/A	N/A	N/A	N/A	N/A
BN10381425	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10421829	HS111-00023	N/A	N/A	N/A	N/A	N/A
BN10382812	HS111-00004	N/A	N/A	N/A	N/A	N/A
BN10396291	HS111-00009	N/A	N/A	N/A	N/A	N/A

Note: These containers are being used for headspace sampling data only in this CIS Report. RTR or VE and RA will be performed for these containers and validated prior to certification for shipment to WIPP.

WSPF Number: BN510.1 Lot Number: 2

Table 7. Correlation of Container Numbers to Sample Numbers.

Container No.	Headspace Gas Sample Number	Solid Sample Number(s)
BN10406800	HS111_00009B-10	N/A
BN10400134	HS111_00009B-03	N/A
BN10408764	HS111_00018B-01	N/A
BN10398725	HS111_00009B-06	N/A
BN10429587	HS112_00002B-01	N/A
BN10413998	HS111_00018B-05	N/A
BN10381425	HS111_00004B-07	N/A
BN10421829	HS111_00023B-03	N/A
BN10382812	HS111_00004B-06	N/A
BN10396291	HS111_00009B-07	N/A

Attachment A
Evaluation of Required Number of Samples. BN510.1 Boxline Lot 2

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{95} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
Chloromethane [c]	10	3	Natural log	1.79	0.302	0.604	0.566	2.30	10		HWN not required to be applied [d]
Methanol	10	1	None	42.0	23.6	11.2	28.5	-	100		HWN not required to be applied [d]
Ethyl ether	10	0	None	0.800	0.656	0.186	-	-	10		No samples above MDL
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	10	1	Natural log	3.22	-0.060	1.27	0.494	2.30	10		HWNs F001/F002 applied
1,1-Dichloroethylene	10	0	None	1.05	0.772	0.359	-	-	10		HWN D029 applied
Acetone [c]	10	2	Natural log	5.39	2.69	0.993	3.13	4.61	100		HWN not required to be applied [d]
Methylene chloride [c]	10	6	Natural log	5.89	1.22	2.02	2.10	2.30	10	10	HWN F002 applied
trans-1,2-Dichloroethylene	10	0	None	0.850	0.790	0.052	-	-	10		No samples above MDL
1,1-Dichloroethane [c]	10	2	Natural log	0.993	-0.134	0.532	0.099	2.30	10		HWN not required to be applied [d]
Methyl ethyl ketone	10	0	None	7.00	6.80	0.258	-	-	100		HWN F005 applied
Chloroform [c]	10	2	Natural log	0.742	-0.162	0.445	0.032	2.30	10	10	HWN D022 applied
1,1,1-Trichloroethane [c]	10	5	Natural log	5.89	1.52	1.94	2.36	2.30	10	10	HWNs F001/F002 applied
Carbon tetrachloride	10	0	None	1.25	1.13	0.103	-	-	10		HWN F001 applied
Benzene	10	0	None	0.950	0.860	0.077	-	-	10		HWN F005 applied
1,2-Dichloroethane	10	0	None	1.25	1.07	0.232	-	-	10		HWN D028 applied
Butanol	10	0	None	14.0	12.8	1.55	-	-	100		No samples above MDL
Trichloroethylene [c]	10	5	Natural log	3.43	0.892	1.44	1.52	2.30	10		HWNs F001/F002 applied
Methyl isobutyl ketone [c]	10	1	Natural log	4.03	2.40	0.571	2.65	4.61	100		HWN not required to be applied [d]
Toluene [c]	10	10	Natural log	4.48	2.00	1.21	2.52	2.30	10	10	HWN F005 applied
Tetrachloroethylene	10	0	None	0.900	0.810	0.077	-	-	10		HWN F001/F002 applied
Chlorobenzene	10	0	None	1.05	0.780	0.232	-	-	10		No samples above MDL
Ethyl benzene [c]	10	2	Natural log	2.10	0.320	0.709	0.630	2.30	10		HWN not required to be applied [d]

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [e, f]	Comments
m- & p-Xylene [c]	10	2	Natural log	3.09	0.635	1.23	1.17	2.30	10		HWN not required to be applied [d]
o-Xylene [c]	10	2	Natural log	2.71	0.583	1.00	1.02	2.30	10		HWN not required to be applied [d]
Bromoform	10	0	None	1.00	0.940	0.052	-	-	10		No samples above MDL
1,1,2,2-Tetrachloroethane	10	0	None	1.85	1.34	0.439	-	-	10		No samples above MDL
Cyclohexane [c]	10	1	Natural log	2.29	0.260	0.721	0.575	2.30	10		HWN not required to be applied [d]
Carbon disulfide	10	0	None	0.700	0.660	0.052	-	-	10		HWN F005 applied
1,2,4-Trimethylbenzene	10	0	None	3.05	1.76	1.11	-	-	10		No samples above MDL
1,3,5-Trimethylbenzene	10	0	None	2.50	1.48	0.878	-	-	10		No samples above MDL

a. The mean and standard deviation presented are the mean and standard deviation of the MDLs (after dividing by 2) for all measurements that are below detection. If all measurements are below detection, the UCL_{90} is not calculated.

b. The Shapiro-Wilk test for normality was applied to data prior to determination of maximum, mean, SD, and UCL_{90}.

c. If a transformation is applied to the distribution to improve normality prior to calculating the mean and variance, then this same transformation is applied to the PRQL for that analyte.

d. The HWN for characteristic or listed hazardous waste is not assigned based on AK, and the UCL_{90} is below the PRQL.

e. If there are no samples above the MDL for a given analyte, then that analyte will not be used to define the number of required samples.

f. If the calculated sample size is less than 10, then the number of required samples is set to the program-defined minimum of 10

Idaho Treatment Group

RECORD
CMC 05/03/2012

INTEROFFICE MEMORANDUM

To: Steve Carpenter
Alternate Site Project Manager/Acceptable Knowledge Manager

From: Nancy Kirk NDK
Acceptable Knowledge Expert

FOR INFORMATION ONLY

Date: May 3, 2012

Re: Preliminary Statistics of Headspace Gas Sampling for BN510.1 Waste Stream – NDK-001-12

The purpose of this memorandum is to summarize the preliminary statistical results for the headspace gas sampling data of the BN510.1 waste stream that have been sampled to date (Reference Attachments 1 and 2). The preliminary statistical results include headspace gas sampling data associated with the randomly selected and contingency containers from BN510.1 Boxline Lots 1, 2 and 3 that have been sampled as of April 5, 2012.

1. POPULATION DEFINITION

The BN510.1 waste stream currently consists of three boxline lots for a maximum population of 8,014 containers. No lots have been established for BN510.1 Lined Direct Feed (LDF) containers. Fourteen containers were assigned to BN510.1 Boxline Lot 1 as documented in memorandum SPC-014-10, *Headspace Gas Random Selection Memorandum for BN510.1 Boxline Lot 1*. The maximum of 4,000 containers was assigned to BN510.1 Boxline Lot 2 as documented in memorandum SPC-001-12, *Final Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2 and SPC-004-11, *Addendum to Subsequent Headspace Gas Random Sample Selection for BN510.1 Boxline Lot* 2. A maximum of 4,000 containers is identified for BN510.1 Boxline Lot 3 as documented in memorandum SPC-002-12, *Subsequent Headspace Gas Random Sample Selection Memorandum for BN510.1 Boxline Lot 3*. Periodic reports are generated by the Advanced Mixed Waste Treatment Project's (AMWTP) Reconciliation Group to identify candidate containers for BN510.1 Boxline Lot 3. The container numbers within each reconciliation report are sorted in ascending order by the container number and added to the Lot 3 container list. A final subsequent headspace gas random sample selection memorandum will be issued documenting this list of containers when Lot 3 is completed. A headspace gas sampling report memorandum will also be issued summarizing the characterization data for the waste stream upon completion of sampling for Lot 3.

2. ESTIMATION OF REQUIRED NUMBER OF SAMPLES

The AMWTP estimated that the required number of samples (*n*) for characterization of this waste stream would not exceed ten for BN510.1 Boxline Lot 3. This estimation was based upon the final required number of samples identified in Attachment A to the Characterization Information Summary for the BN510.1 waste stream.

3. RANDOM SELECTION PROCESS

Based on the estimated required number of samples, a minimum of ten samples is necessary to support characterization of BN510.1 Boxline Lot 3. The sequential positions for sampling have been randomly selected as specified in MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*. Random numbers were assigned to the sequential numbers (1 through 4,000 for the maximum population). The list was then sorted by random number. The twenty sequential numbers corresponding to the twenty lowest random numbers from the maximum population were identified as randomly selected containers for sampling (ten randomly selected containers plus ten randomly selected contingency containers). This process was repeated for the minimum population of 2,400 containers. This provides the set of random selections for any final population between the minimum and maximum populations. The random selection of containers for sampling of BN510.1 Boxline Lot 3 is documented in memo SPC-002-12. The list of containers and their corresponding sequential and random numbers will be included in the final subsequent headspace gas random sample selection memorandum.

4. CONTAINERS SELECTED

As of April 5, 2012, 43 containers (including fourteen from Boxline Lot 1) have been sampled in accordance with procedure INST-OI-43, *HGAS Sampling and Analysis Operations*. All fourteen containers (100%) that were sampled and analyzed from BN510.1 Boxline Lot 1 are identified in memorandum SPC-014-10. The twenty-five containers that were randomly selected and sampled from BN510.1 Boxline Lot 2 are identified in memorandum SPC-001-12. The headspace sampling data from BN510.1 Boxline Lot 2 are summarized in memorandum SPC-001-12, *Headspace Gas Sampling Report Memorandum for BN510.1 Boxline Lot 2*. The containers that have been sampled to date from BN510.1 Boxline Lot 3 are identified in Table 1.

2110

Table 1. BN510.1 Boxline Lot 3 Selected Containers

Selected Minimum Pop	Selected Maximum Pop	Random Number	Sequential Number	AMWTP Number
	1	0.001604696	3695	
1	2	0.002067852	109	BN10430658
2	3	0.002097027	1044	
3	4	0.002528466	436	BN10433911
4	5	0.002531948	1369	
5	6	0.002704933	1790	
6	7	0.003016235	2182	
7	8	0.003338578	132	BN10430910
	9	0.003626498	3863 *	
	10	0.004061868	3294	
8	C1	0.004168875	579	BN10435873
9	C2	0.004208764	1829	
	C3	0.004406658	3178	
	C4	0.004736398	2431	
10	C5	0.00541701	1034	
	C6	0.005473895	2802	
C1	C7	0.00581343	983	
C2	C8	0.00590758	2023	
	C9	0.00591241	3617	
C3	C10	0.006054458	2155	
C4		0.006073666	1696	
		0.006102551	3743	
C5		0.006190213	2238	
C6		0.00667747	949	
C7		0.00703115	1128	
C8		0.007370494	1095	
		0.008091236	3018	
C9		0.008162463	1580	
C10		0.008217345	1992	

5. DATA RESULTS

The statistical evaluation of the analytical data collected for BN510.1 waste stream was performed in accordance with MP-TRUW-8.25 and is summarized in Tables 1A and 2A in Attachments 1 and 2, respectively. Attachment 1 includes all data collected to date for both randomly selected containers and randomly selected contingency containers from Lots 1, 2

and 3. Attachment 2 includes only the data collected to date for the randomly selected containers from Lots 1, 2 and 3. Tentatively Identified Compounds (TICs) that were detected in the waste stream are detailed in Tables 1B and 2B in Attachments 1 and 2, respectively. The headspace gas analysis results were used to determine the maximum and mean concentrations, standard deviation (SD), and 90% upper confidence level of the mean concentration (UCL_{90}) for each constituent and to assign and/or confirm EPA HWNs for the BN510.1 waste stream. HWNs were assigned based on acceptable knowledge (AK). HWNs assigned by AK are applied to the waste stream even if headspace gas analytical results for the assigned compounds are not above the program-required quantitation limit (PRQL). None of the headspace sampling UCL_{90} results were above their associated PRQL.

In conclusion, no additional HWNs need to be assigned and the originally assigned HWNs from the BN510.1 Waste Stream Profile Form are retained. The HWN assignment for this waste stream includes toxicity characteristic HWNs D004, D005, D006, D007, D008, D009, D010, D011, D022, D027, D028, D029, D030, D034, and D043 and listed HWNs F001, F002, F004, F005, F006, F007, and F009.

If you have any questions or comments, please contact me at 557-6447.

NDK/nk

Attachments

1. Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
2. Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

cc: George Byram
Caralea Hinkle-Daniel
Wes Skaar
AMWTP Correspondence Control

Attachment 1 - Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)
May 3, 2012
NDK-02-12

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	43	8	Natural log	2.21	0.256	0.631	0.381	2.30	10	-
Methanol	43	2	None	42.0	26.3	9.65	28.2	-	100	-
Ethyl ether	43	0	None	1.00	0.771	0.212	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	43	4	Natural log	3.43	0.016	0.867	0.188	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	43	0	None	1.05	0.878	0.294	[b]	-	10	D029 [d]
Acetone [c]	43	7	Natural log	5.39	2.57	0.742	2.72	4.61	100	-
Methylene chloride [c]	43	28	Natural log	6.36	1.78	2.04	2.19	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	43	0	None	1.25	0.947	0.219	[b]	-	10	
1,1-Dichloroethane [c]	43	3	Natural log	0.993	-0.087	0.366	-0.014	2.30	10	
Methyl ethyl ketone	43	0	None	12.0	8.58	2.43	[b]	-	100	F005 [d]
Chloroform [c]	43	5	Natural log	4.37	0.161	0.797	0.319	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	43	14	Natural log	5.89	0.978	1.18	1.21	2.30	10	F001/F002 [d]
Carbon tetrachloride [c]	43	4	Natural log	5.97	0.687	0.984	0.882	2.30	10	F001 [d]
Benzene [c]	43	3	Natural log	0.875	-0.019	0.260	0.033	2.30	10	F005 [d]
1,2-Dichloroethane	43	0	None	2.10	1.43	0.508	[b]	-	10	D028 [d]
Butanol	43	0	None	30.0	18.9	8.07	[b]	-	100	-
Trichloroethylene [c]	43	17	Natural log	4.14	0.763	1.15	0.991	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	43	1	Natural log	4.03	2.52	0.403	2.60	4.61	100	-
Toluene [c]	43	25	Natural log	4.48	1.24	1.36	1.51	2.30	10	F005 [d]
Tetrachloroethylene [c]	43	3	Natural log	2.56	-0.028	0.466	0.064	2.30	10	F001/F002 [d]
Chlorobenzene	43	0	None	1.05	0.865	0.216	[b]	-	10	-
Ethyl benzene [c]	43	5	Natural log	2.10	0.200	0.492	0.297	2.30	10	-
m&p-Xylene [c]	43	8	Natural log	3.09	0.442	0.831	0.607	2.30	10	-
o-Xylene [c]	43	4	Natural log	2.71	0.267	0.586	0.383	2.30	10	-
Bromoform	43	0	None	1.55	1.13	0.301	[b]	-	10	-
1,1,2,2-Tetrachloroethane	43	0	None	1.85	1.31	0.328	[b]	-	10	-
Cyclohexane [e, f]	43	2	Natural log	2.29	0.163	0.391	0.240	2.30	10	-
Carbon disulfide [e]	43	0	None	1.25	0.852	0.282	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	43	0	None	3.05	1.60	0.842	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	43	0	None	2.50	1.42	0.653	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP.

Preliminary Statistical Results for Randomly Selected Containers (Including Contingencies)

Table 1B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	30	43	69.8
Trichlorofluoromethane	2000	4	43	9.3
Ethane, bromo-	31	1	43	2.3
Isopropyl alcohol	98	1	43	2.3
1,2-Dichloropropane	110	1	43	2.3
1,1-Dimethylthanol	370	2	43	4.7

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

Attachment 2 - Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)
May 1, 2012
NDK-002-12

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2A. Headspace gas summary data.

Analyte	No. of Samples	No. of Samples above MDL [a]	Trans-formation Used	Maxi-mum (ppmv)	Mean (ppmv)	Standard Deviation (ppmv)	UCL_{90} (ppmv)	Trans-formed PRQL	PRQL (ppmv)	EPA Number
Chloromethane [c, e]	27	3	Natural log	1.79	0.136	0.454	0.251	2.30	10	-
Methanol	27	1	None	42.0	28.4	9.67	30.9	-	100	-
Ethyl ether	27	0	None	1.00	0.826	0.218	[b]	-	10	-
1,1,2-Trichloro-1,2,2-trifluoroethane [c]	27	1	Natural log	3.22	-0.020	0.794	0.181	2.30	10	F001/F002 [d]
1,1-Dichloroethylene	27	0	None	1.05	0.910	0.273	[b]	-	10	D029 [d]
Acetone [c]	27	3	Natural log	5.39	2.56	0.803	2.76	4.61	100	-
Methylene chloride [c]	27	16	Natural log	6.36	1.46	1.89	1.94	2.30	10	F001/F002 [d]
trans-1,2-Dichloroethylene	27	0	None	1.25	1.04	0.227	[b]	-	10	
1,1-Dichloroethane [c]	27	2	Natural log	0.993	0.042	0.371	0.136	2.30	10	
Methyl ethyl ketone	27	0	None	12.0	9.57	2.59	[b]	-	100	F005 [d]
Chloroform [c]	27	3	Natural log	1.25	0.146	0.453	0.261	2.30	10	D022 [d]
1,1,1-Trichloroethane [c]	27	7	Natural log	5.89	1.03	1.25	1.35	2.30	10	F001/F002 [d]
Carbon tetrachloride	27	0	None	3.00	2.14	0.920	[b]	-	10	F001 [d]
Benzene	27	0	None	1.10	0.983	0.134	[b]	-	10	F005 [d]
1,2-Dichloroethane	27	0	None	2.10	1.61	0.541	[b]	-	10	D028 [d]
Butanol	27	0	None	30.0	22.2	8.53	[b]	-	100	-
Trichloroethylene [c]	27	8	Natural log	3.43	0.670	1.08	0.942	2.30	10	F001/F002 [d]
Methyl isobutyl ketone [c]	27	1	Natural log	4.03	2.68	0.425	2.79	4.61	100	-
Toluene [c]	27	13	Natural log	4.48	0.962	1.34	1.30	2.30	10	F005 [d]
Tetrachloroethylene	27	0	None	1.05	0.937	0.129	[b]	-	10	F001/F002 [d]
Chlorobenzene	27	0	None	1.05	0.931	0.192	[b]	-	10	-
Ethyl benzene [c]	27	2	Natural log	2.10	0.178	0.446	0.291	2.30	10	-
m&p-Xylene [c]	27	3	Natural log	3.09	0.364	0.785	0.563	2.30	10	-
o-Xylene [c]	27	2	Natural log	2.71	0.296	0.641	0.458	2.30	10	-
Bromoform	27	0	None	1.55	1.25	0.323	[b]	-	10	-
1,1,2,2-Tetrachloroethane	27	0	None	1.85	1.32	0.283	[b]	-	10	-
Cyclohexane [c, f]	27	2	Natural log	2.29	0.258	0.465	0.376	2.30	10	-
Carbon disulfide [e]	27	0	None	1.25	0.963	0.305	[b]	-	10	F005 [d]
1,2,4-Trimethylbenzene [f]	27	0	None	3.05	1.59	0.742	[b]	-	10	-
1,3,5-Trimethylbenzene [f]	27	0	None	2.50	1.45	0.561	[b]	-	10	-

Notes:

a. When a measurement is reported as below detection, one-half the analysis method detection limit (MDL) is used. Note that the MDL for a given analyte may vary from sample to sample.

b. The mean and standard deviation presented are the mean and standard deviation of the method detection limits (after dividing by two). All measurements are below detection; therefore, the upper 90% confidence limit is not calculated.

c. The maximum, mean, SD, UCL_{90}, and PRQL for these analytes are presented as transformed values.

d. The HWNs for these constituents have been applied based on acceptable knowledge.

e. Carbon disulfide (CAS No. 75-15-0) and chloromethane (CAS No. 74-87-3) are not target analytes for this waste stream but will be reported because they have been added as a target compound for other waste streams at AMWTP.

f. Cyclohexane (CAS No. 110-82-7), 1,2,4-trimethylbenzene (CAS No. 95-63-6), and 1,3,5-trimethylbenzene (CAS No. 108-67-8) are not target analytes for this waste stream but will be reported because they have been added as target compounds on the Agilent system at the AMWTP..

Preliminary Statistical Results for Randomly Selected Containers (Excluding Contingencies)

Table 2B. Headspace gas summary data – tentatively identified compounds.

Tentatively Identified Compound	Maximum Observed Estimated Concentrations in Waste Stream to Date (ppmv)	No of Samples Containing TIC in Waste Stream to Date	No. of Containers Sampled in Waste Stream to Date	% Detected in Waste Stream to Date
Cyclotetrasiloxane, octamethyl	110	21	27	77.8
Trichlorofluoromethane	87	1	27	3.7
Isopropyl Alcohol	98	1	27	3.7
1,2-Dichloropropane	110	2	27	7.4

Cyclotetrasiloxane, octamethyl is not listed in Appendix VIII of 40 CFR Part 261.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 09:48

RTR1

Batch Type Real Time Radiography

Batch Report No. RTR11-00378

Batch Id RTR11-00378

Open Date 29-OCT-11 13:50:10

Close Date 31-OCT-11 14:08:39

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10305466	RF-742	0000079830	29-OCT-11 13:50:10	Original	P	AARON ATWELL
10359732	RF-002	0000079832	29-OCT-11 14:58:37	Original	P	BILL HUGGINS
10352328	RF-002	0000079834	29-OCT-11 16:02:18	Original	P	BILL HUGGINS
10359724	RF-002	0000079836	29-OCT-11 16:31:46	Original	P	BILL HUGGINS
10359839	RF-002	0000079839	29-OCT-11 17:00:36	Original	P	BILL HUGGINS
10352328	RF-002	0000079840	29-OCT-11 17:23:31	RTR OIO	P	KENT KEARN
10305446	RF-741	0000079843	30-OCT-11 10:43:03	Original	P	SETH OLDHAM
10327937	RF-743	0000079844	30-OCT-11 11:19:17	Original	P	SETH OLDHAM
10310351	RF-743	0000079845	30-OCT-11 11:56:19	Original	P	SETH OLDHAM
10352566	RF-002	0000079846	30-OCT-11 12:30:26	Original	P	SETH OLDHAM
10362886	RF-003	0000079848	30-OCT-11 14:52:49	Original	P	DANNY GREEN
10326223	RF-741	0000079851	30-OCT-11 16:26:23	Original	P	DANNY GREEN
10326229	RF-741	0000079854	30-OCT-11 16:59:14	Original	P	DANNY GREEN
10326229	RF-741	0000079855	30-OCT-11 17:27:54	Replicate / Duplicate	P	BILL HUGGINS
10362555	RF-002	0000079857	30-OCT-11 18:02:38	Original	P	DANNY GREEN
10306983	RF-750	0000079859	31-OCT-11 10:18:07	Original	P	SETH OLDHAM
10311323	RF-741	0000079860	31-OCT-11 10:47:40	Original	P	SETH OLDHAM
10306926	RF-750	0000079862	31-OCT-11 11:25:28	Original	P	DANNY GREEN
10314262	RF-742	0000079863	31-OCT-11 11:44:56	Original	P	DANNY GREEN
10310102	RF-743	0000079866	31-OCT-11 12:27:40	Original	P	DANNY GREEN
10311327	RF-741	0000079867	31-OCT-11 13:27:16	Original	P	SETH OLDHAM
10310208	RF-743	0000079869	31-OCT-11 14:08:39	Original	P	SETH OLDHAM

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
RBTHOMPSON	01-NOV-11 10:21:59	Initial ITR review of batch.
RBTHOMPSON	04-NOV-11 10:37:27	Drum #10305466, Correct the Recording ID. Please review and Correct.
RBTHOMPSON	09-NOV-11 07:14:21	Demote to OPS.
AATWELL	15-NOV-11 07:29:50	Esigned.
DGASPER	17-NOV-11 14:52:12	200% Review Completed
RBTHOMPSON	18-NOV-11 06:57:05	Reviewed Rework as complete.
RBTHOMPSON	18-NOV-11 07:09:34	Promote to SPM.
KBURNSIDE	21-NOV-11 11:06:01	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2130176	RBTHOMPSON	09-NOV-2011 07:14:21	Demote to OPS.
2132357	AATWELL	15-NOV-2011 07:29:50	
2133208	RBTHOMPSON	18-NOV-2011 07:09:34	Promote to SPM.
2134650	KBURNSIDE	21-NOV-2011 11:06:01	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 09:48

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00378

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10310208	66499	OPEN	31-OCT-11	
10310351	66478	OPEN	30-OCT-11	
10311323	66492	OPEN	31-OCT-11	
10311327	66497	OPEN	31-OCT-11	
10326223	66479	OPEN	30-OCT-11	
10326223	66480	OPEN	30-OCT-11	
10359724	66474	OPEN	29-OCT-11	
10359732	66470	OPEN	29-OCT-11	
10362886	66508	OPEN	01-NOV-11	

*****End of Non-Conformance Report*****

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 09-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10326229; on October 30, 2011 the Replicate scan was performed by a qualified operator. There were small differences between the Original and Replicate. I agree with the Original Operator. No rework required
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10352328; on October 29, 2011 the OIO scan was performed by a qualified operator.

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 09-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			There were small differences between the Original and OIO. I agree with the Original Operator. No rework required.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	No		See Batch Comments.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		Se batch Comments

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 18-NOV-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10326229; on October 30, 2011 the Replicate scan was performed by a qualified operator. There were small differences between the Original and Replicate. I agree with the Original Operator. No rework required
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10352328; on October 29, 2011 the OIO scan was performed by a qualified operator.

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 18-NOV-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			There were small differences between the Original and OIO. I agree with the Original Operator. No rework required.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		Se batch Comments

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 21-NOV-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10352328 on 10/29/11 @ 1723. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00378 **Open Date** 29-OCT-11 **Close Date** 31-OCT-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2134650	KBURNSIDE	21-NOV-11	SPM	SPM reviewed and approved.
2133208	RBTHOMPSON	18-NOV-11	ITR	Promote to SPM.
2130176	RBTHOMPSON	09-NOV-11	ITR	Demote to OPS.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012

Time: 09:49

Batch Id RTR11-00378 **Container Id** 10305466 **Analysis Id** 0000079830

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 13:50 **Gross Weight** 698.985 **Lbs.** **Net Weight** 556.985 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-742 Pits 11 & 12 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-JUL-2009 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be sludge.
Corrected recording ID, AA 11-15-11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 97

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10305466 **Analysis Id** 0000079830

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	556.985
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2132356	AATWELL	15-NOV-2011 07:29	Completed rework
2125124	BHUGGINS	29-OCT-2011 13:50	

Batch Id RTR11-00378 **Container Id** 10359732 **Analysis Id** 0000079832

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 14:58 **Gross Weight** 593.145 **Lbs.** **Net Weight** 450.145 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 04-MAY-2010 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 5 pints **Comment** 5 Pints liquid in waste at bottom of container.

Prohibited Liquids Present Yes **Comment** Liquid greater than 1% in waste

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	5.000	PINTS	1.000	5.000

Batch Id RTR11-00378 **Container Id** 10359732 **Analysis Id** 0000079832

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	450.145
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125642	BHUGGINS	29-OCT-2011 14:58	

Batch Id RTR11-00378 **Container Id** 10352328 **Analysis Id** 0000079834

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 16:02 **Gross Weight** 630.630 Lbs. **Net Weight** 487.630 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-MAR-2010 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10352328 **Analysis Id** 0000079834

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	487.630
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125653	BHUGGINS	29-OCT-2011 16:02	

Batch Id RTR11-00378 **Container Id** 10359724 **Analysis Id** 0000079836

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 16:31 **Gross Weight** 599.760 **Lbs.** **Net Weight** 456.760 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 04-MAY-2010 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 6 pints **Containerized Liquid Amt** 0 pints

Other Liquids 6 pints **Comment** 6 Pints liquid in waste at bottom of drum

Prohibited Liquids Present Yes **Comment** Liquid greater than 1% in waste

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	6.000	PINTS	1.000	6.000

Batch Id RTR11-00378 **Container Id** 10359724 **Analysis Id** 0000079836

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	456.760
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125667	BHUGGINS	29-OCT-2011 16:31	

Batch Id RTR11-00378 **Container Id** 10359839 **Analysis Id** 0000079839

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 17:00 **Gross Weight** 679.140 **Lbs.** **Net Weight** 537.140 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-MAY-2010 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 98

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10359839 **Analysis Id** 0000079839

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	100.000	536.140
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125675	BHUGGINS	29-OCT-2011 17:00	

Batch Id RTR11-00378 **Container Id** 10352328 **Analysis Id** 0000079840

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 29-OCT-2011 17:23 **Gross Weight** 630.630 **Lbs.** **Net Weight** 487.630 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 31-MAR-2010 00:00 **Operator** KKEARN

Result Comment Waste consists of a sludge

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10352328 **Analysis Id** 0000079840

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	487.630
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	04-NOV-2011 10:39	RBTHOMPSON	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	No

Comment

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2128254	RBTHOMPSON	04-NOV-2011 10:39	OIO

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125684	KKEARN	29-OCT-2011 17:23	

Batch Id RTR11-00378 **Container Id** 10305446 **Analysis Id** 0000079843

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 10:43 **Gross Weight** 681.345 **Lbs.** **Net Weight** 538.345 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-AUG-2009 00:00 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
1 quart polly bottle	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10305446 **Analysis Id** 0000079843

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	100.000	537.845
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125745	SOLDHAM	30-OCT-2011 10:43	

Batch Id RTR11-00378 **Container Id** 10327937 **Analysis Id** 0000079844

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 11:19 **Gross Weight** 452.025 **Lbs.** **Net Weight** 309.025 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 16:55 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Acceptable	PCB waste / No liquid
			PCB Mass (lbs)	309.03	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10327937 **Analysis Id** 0000079844

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	308.025
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125751	SOLDHAM	30-OCT-2011 11:19	

Batch Id RTR11-00378 **Container Id** 10310351 **Analysis Id** 0000079845

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 11:56 **Gross Weight** 427.770 **Lbs.** **Net Weight** 284.770 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-AUG-2009 03:17 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 94

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .3 pints

Other Liquids .3 pints **Comment** 0.2 pint of liquid located below the top chine. 0.1 pint of liquid located below the middle chine.

Prohibited Liquids Present Yes **Comment** Liquid with PCB waste.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	PCB waste with liquid
			PCB Mass (lbs)	284.77	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Organic Matrix	0.300	PINTS	1.000	0.300

83 GAL

Batch Id RTR11-00378 **Container Id** 10310351 **Analysis Id** 0000079845

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	284.770
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125754	SOLDHAM	30-OCT-2011 11:56	

Batch Id RTR11-00378 **Container Id** 10352566 **Analysis Id** 0000079846

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 12:30 **Gross Weight** 542.430 **Lbs.** **Net Weight** 398.430 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-JUN-2010 00:00 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

2 LAYERS CONFINEMENT

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

nts **Comment**

it No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10352566 **Analysis Id** 0000079846

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	398.430
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125755	SOLDHAM	30-OCT-2011 12:30	

Batch Id RTR11-00378 **Container Id** 10362886 **Analysis Id** 0000079848

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 14:52 **Gross Weight** 654.885 **Lbs.** **Net Weight** 510.885 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-003 Organic Setups, Oil Solids

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-MAY-2010 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.
Scanned by Jeff Duncan

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1 pints **Containerized Liquid Amt** 0 pints

Other Liquids 1 pints **Comment** 1 pts of liquid at the bottom of drum.

Prohibited Liquids Present Yes **Comment** PCBs with liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	PCBs with liquid
			PCB Mass (lbs)	510.89	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Organic Matrix	1.000	PINTS	1.000	1.000

Batch Id RTR11-00378 **Container Id** 10362886 **Analysis Id** 0000079848

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	510.885
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125788	DGREEN	30-OCT-2011 14:52	

Batch Id RTR11-00378 **Container Id** 10326223 **Analysis Id** 0000079851

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 16:26 **Gross Weight** 626.220 **Lbs.** **Net Weight** 484.220 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.
Scan performed by Jeff Duncan.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 98

Bag Closure Method No Bags

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 2.5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 2.5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 2.5 pts of liquid in a large poly bottle, at the bottom of waste.

Prohibited Liquids Present Yes **Comment** > 60ml internal container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Large poly bottle at the bottom of waste

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Large poly bottle	1.000	EACH	1.500	1.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	2.500	PINTS	1.000	2.500

Batch Id RTR11-00378 **Container Id** 10326223 **Analysis Id** 0000079851

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	100.000	482.720
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125848	DGREEN	30-OCT-2011 16:26	

Batch Id RTR11-00378 **Container Id** 10326229 **Analysis Id** 0000079854

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 16:59 **Gross Weight** 564.480 **Lbs.** **Net Weight** 421.480 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10326229 **Analysis Id** 0000079854

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	421.480
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125886	DGREEN	30-OCT-2011 16:59	

Batch Id RTR11-00378 **Container Id** 10326229 **Analysis Id** 0000079855

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 17:27 **Gross Weight** 564.480 **Lbs.** **Net Weight** 421.480 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 92

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cured Cement (Other Inorganics)	6.000	PINTS	1.125	6.750

Batch Id RTR11-00378 **Container Id** 10326229 **Analysis Id** 0000079855

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.750
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	414.730
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125898	BHUGGINS	30-OCT-2011 17:27	

Batch Id RTR11-00378 **Container Id** 10362555 **Analysis Id** 0000079857

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 30-OCT-2011 18:02 **Gross Weight** 659.295 Lbs. **Net Weight** 515.295 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-MAY-2010 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .25 pints

Other Liquids .25 pints **Comment** Approx. .25 pt. liquid located in a couple of pockets near the bottom of the drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400
Liquids for Inorganic Matrix	0.250	PINTS	1.000	0.250

Batch Id RTR11-00378 **Container Id** 10362555 **Analysis Id** 0000079857

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.400
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	506.895
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2125920	DGREEN	30-OCT-2011 18:02	

Batch Id RTR11-00378 **Container Id** 10306983 **Analysis Id** 0000079859

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 10:18 **Gross Weight** 183.015 Lbs. **Net Weight** 39.015 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-AUG-2009 00:00 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 93

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No . **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00378 **Container Id** 10306983 **Analysis Id** 0000079859

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	37.335
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126162	SOLDHAM	31-OCT-2011 10:18	

Batch Id RTR11-00378 **Container Id** 10311323 **Analysis Id** 0000079860

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 10:47 **Gross Weight** 535.815 Lbs. **Net Weight** 392.815 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-AUG-2009 00:00 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 87

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 12 pints

Other Liquids 12 pints **Comment** 12.0 pints of liquid located at the bottom of the waste.

Prohibited Liquids Present Yes **Comment** Liquid >1%

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal can	2.000	EACH	0.500	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	12.000	PINTS	1.000	12.000

Batch Id RTR11-00378 **Container Id** 10311323 **Analysis Id** 0000079860

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	391.815
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126169	SOLDHAM	31-OCT-2011 10:47	

Batch Id RTR11-00378 **Container Id** 10306926 **Analysis Id** 0000079862

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 11:25 **Gross Weight** 220.500 Lbs. **Net Weight** 76.500 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-AUG-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, rags, & cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead peices, lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	4.000	4.000
lead peices, lead tape	1.000	EACH	0.500	0.500
metal waste	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR11-00378 **Container Id** 10306926 **Analysis Id** 0000079862

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	69.910
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126199	DGREEN	31-OCT-2011 11:25	

Batch Id RTR11-00378 **Container Id** 10314262 **Analysis Id** 0000079863

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 11:44 **Gross Weight** 546.840 **Lbs.** **Net Weight** 403.840 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-742 Pits 11 & 12 Second Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-SEP-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10314262 **Analysis Id** 0000079863

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	403.840
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126207	DGREEN	31-OCT-2011 11:44	

Batch Id RTR11-00378 **Container Id** 10310102 **Analysis Id** 0000079866

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 12:27 **Gross Weight** 500.535 **Lbs.** **Net Weight** 357.535 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-AUG-2009 09:00 **Operator** DGREEN

Result Comment Waste appears to consist of sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Acceptable	No Liquid
			PCB Mass (lbs)	357.54	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00378 **Container Id** 10310102 **Analysis Id** 0000079866

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	357.535
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126237	DGREEN	31-OCT-2011 12:27	

Batch Id RTR11-00378 **Container Id** 10311327 **Analysis Id** 0000079867

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 13:27 **Gross Weight** 211.680 Lbs. **Net Weight** 68.680 Lbs

Equipment Z-213-106 **Waste Matrix Code** S3121 **IDC** RF-741 Pits 11 & 12 First Stage Sludge

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-AUG-2009 00:00 **Operator** SOLDHAM

Result Comment This drum contains sludge in plastic sample containers.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .4 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .6 pints

Other Liquids .2 pints **Comment** 0.2 pint of liquid in a plastic container located at the middle chine.
0.2 pint of liquid in a plastic container located at the bottom chine.
0.1 pint of liquid in bagging located at the bottom of the waste.
0.1 pint of liquid in bagging licated at the middle chine.

Prohibited Liquids Present Yes **Comment** Container with liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Batch Id RTR11-00378 **Container Id** 10311327 **Analysis Id** 0000079867

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Polly bottle / No lid	1.000	EACH	2.000	2.000
1 Quart Plastic Container w/ Lid	40.000	EACH	0.140	5.600

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	0.600	PINTS	1.000	0.600

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.600
Inorganic matrix	100.000	61.080
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126307	SOLDHAM	31-OCT-2011 13:27	

Batch Id RTR11-00378 **Container Id** 10310208 **Analysis Id** 0000079869

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 31-OCT-2011 14:08 **Gross Weight** 595.350 **Lbs.** **Net Weight** 452.350 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR11-00213 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-AUG-2009 05:17 **Operator** SOLDHAM

Result Comment This drum contains sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 94

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .2 pints

Other Liquids .2 pints **Comment** 0.2 pint of liquid located at the middle chine.

Prohibited Liquids Present Yes **Comment** PCB waste with liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	PCB waste with liquid
			PCB Mass (lbs)	452.35	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Organic Matrix	0.200	PINTS	1.000	0.200

Batch Id RTR11-00378 **Container Id** 10310208 **Analysis Id** 0000079869

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	452.350
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2126316	SOLDHAM	31-OCT-2011 14:08	

End of RTR Analysis Report

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Advanced Mixed Waste Treatment Project

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RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 09:50

RTR Batch Id: RTR11-00378 **Container Id:** 10326229 **Equipment Id:** Z-213-106

Container type Description: **drum, 83 Gallon** Gen-IDC: **RF-741** Gross Weight(Lbs): **564.48**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000079854	30-OCT-2011 16:59	0000079855	30-OCT-2011 17:27
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	2RTR11-00213		2RTR11-00213	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	DANNY GREEN		BILL HUGGINS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S3000	S3121	S3000	S3121
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	1		1	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	85		92	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR11-00378 **Container Id:** 10326229 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Waste appears to consist of sludge.	The waste in this container appears to be primarily sludge.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2128252	RBTHOMPSON	04-NOV-11	

-----End of RTR Replicate Comparison Report-----

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Advanced Mixed Waste Treatment Project

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Batch Report Coversheet

Date: 01-Oct-2012

Time: 10:30

Batch Type Real Time Radiography **Batch Report No.** RTR11-00387

Batch Id RTR11-00387 **Open Date** 07-NOV-11 17:38:03 **Close Date** 09-NOV-11 17:06:31

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10295757	RF-750	0000080024	07-NOV-11 17:38:03	Original	P	KENT KEARN
10304013	RF-750	0000080026	08-NOV-11 10:52:00	Original	P	AARON ATWELL
10326592	RF-750	0000080029	08-NOV-11 11:22:26	Original	P	AARON ATWELL
10326273	RF-750	0000080030	08-NOV-11 12:15:46	Original	P	AARON ATWELL
10314266	RF-750	0000080033	08-NOV-11 13:02:37	Original	P	KENT KEARN
10314260	RF-750	0000080035	08-NOV-11 13:28:55	Original	P	JOHN CUMMINGS
10326295	RF-750	0000080036	08-NOV-11 13:53:46	Original	P	JOHN CUMMINGS
10326245	RF-750	0000080038	08-NOV-11 14:13:15	Original	P	JOHN CUMMINGS
10326245	RF-750	0000080039	08-NOV-11 15:00:31	Replicate / Duplicate	P	DANNY GREEN
10314266	RF-750	0000080040	08-NOV-11 15:15:58	RTR OIO	P	DANNY GREEN
10323858	RF-750	0000080042	08-NOV-11 15:43:34	Original	P	KENT KEARN
10309151	RF-750	0000080044	08-NOV-11 16:04:35	Original	P	KENT KEARN
10311492	RF-750	0000080046	08-NOV-11 16:30:58	Original	P	KENT KEARN
10308454	RF-750	0000080047	08-NOV-11 16:59:53	Original	P	KATHY BIRCH
10023736	RF-337	0000080049	09-NOV-11 10:16:22	Original	P	DIANNA MOORE
10314326	RF-750	0000080054	09-NOV-11 13:24:00	Original	P	MICHAEL RICKS
10023730	RF-337	0000080056	09-NOV-11 13:51:58	Original	P	MICHAEL RICKS
10308691	RF-750	0000080057	09-NOV-11 14:22:56	Original	P	MICHAEL RICKS
10041202	RF-336	0000080060	09-NOV-11 15:47:10	Original	P	MICHAEL RICKS
10308737	RF-750	0000080061	09-NOV-11 16:04:21	Original	P	MICHAEL RICKS
10308676	UN-00A	0000080062	09-NOV-11 16:39:23	Original	P	KRISANN HUGHES
10313898	RF-750	0000080065	09-NOV-11 17:06:31	Original	P	MICHAEL RICKS

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
RMORRIS	29-NOV-11 10:56:55	29-NOV-11 RMORRIS AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11
KBIRCH	01-DEC-11 18:08:49	rework completed
RMORRIS	13-DEC-11 07:49:56	29-NOV-11 RMORRIS AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11 13-DEC-11 RMORRIS AKE This batch promoted. RCM 12/13/11
MSORENSON	30-DEC-11 07:12:10	Performing level 1 validation per MP-TRUW-8.8.
MSORENSON	30-DEC-11 16:05:54	Rework drum # 10314260. Per A/V recording please move the 0.50 pints of liquid identified by the operator from between the liner and drum to other liquids.
MSORENSON	30-DEC-11 16:05:54	Rework drum # 10308676. Please answer LA Candidate "Yes", PCBs present yes prohibited for PCB liquids, correct PCB mass to 461.17, Change Remaining Contents of Container to 100% Organic matrix, and move the 8 pints of liquid identified from Liquids for Inorganic Matrix to Liquids for Organic Matrix.
MSORENSON	30-DEC-11 16:05:54	Rework drum # 10326295. Please correct recording Id to 2RTR11-00217.
MSORENSON	30-DEC-11 16:05:54	Rework drum # 10326245 analysis Id 0000080038 (original to replicate). Please correct recording Id to 2RTR11-00217 answer lead Yes acceptable, and add 0.10 pints of lead tape (other metals).
MSORENSON	30-DEC-11 17:18:48	Waiting for AK evaluation of RF-750 containers before demoting for rework.
MSORENSON	04-JAN-12 11:50:15	Demote to operations for rework.
JCUMMINGS	06-JAN-12 11:57:14	rework completed
CHINKLE	10-JAN-12 11:36:09	29-NOV-11 RMORRIS AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11 13-DEC-11 RMORRIS AKE This batch promoted. RCM 12/13/11 10-JAN-12 CHINKLE AKE This batch is promoted. chd 1/10/12
MSORENSON	12-JAN-12 07:43:50	Rework drum # 10308676. Please answer LA Candidate "Yes",
MSORENSON	12-JAN-12 07:47:46	Demote to Operations for rework.
KHUGHES	12-JAN-12 08:01:50	completed rework
CHINKLE	12-JAN-12 08:15:04	29-NOV-11 RMORRIS AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11 13-DEC-11 RMORRIS AKE This batch promoted. RCM 12/13/11 10-JAN-12 CHINKLE AKE This batch is promoted. chd 1/10/12 12-JAN-12 CHINKLE AKE This batch is promoted. chd 1/12/12
MSORENSON	12-JAN-12 10:07:19	Rework appears to be completed satisfactorily. Promote to SPM.
KBURNSIDE	27-JAN-12 11:05:58	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2138678	KBIRCH	01-DEC-2011 18:08:49	rework completed
2154181	MSORENSON	04-JAN-2012 11:50:15	Demote to operations for rework.
2155917	JCUMMINGS	06-JAN-2012 11:57:14	rework completed
2159751	MSORENSON	12-JAN-2012 07:47:46	Demote to Operations for rework.
2159759	KHUGHES	12-JAN-2012 08:01:50	completed rework
2159811	MSORENSON	12-JAN-2012 10:07:19	Rework appears to be completed satisfactorily. Promote to SPM.
2169459	KBURNSIDE	27-JAN-2012 11:05:58	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

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Non-Conformance Report

Date: 01-Oct-2012

Time: 10:30

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00387

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10023730	66685	CLOSED	09-NOV-11	01-MAY-12
10023736	66676	OPEN	09-NOV-11	
10308454	66659	CLOSED	08-NOV-11	08-MAY-12
10308676	66692	OPEN	09-NOV-11	
10308676	66693	OPEN	09-NOV-11	
10308691	66686	CLOSED	09-NOV-11	25-JUL-12
10314260	66642	CLOSED	08-NOV-11	25-APR-12
10326273	66636	OPEN	08-NOV-11	
10326273	66637	OPEN	08-NOV-11	
10326295	66647	CLOSED	08-NOV-11	14-MAY-12
10326295	66648	CLOSED	08-NOV-11	14-MAY-12
10326592	66634	CLOSED	08-NOV-11	14-MAY-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

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Checklist Report

Date: 01-Oct-2012

Time: 10:31

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 04-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	No		See batch comments
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See batch comments
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR11-00387 on drum 10326245, on 11/08/11. The original operator entered the recording Id as 2RTR11-00387 and answered lead No, The replicate operator entered the recording Id as 2RTR11-00217, and answered lead Yes acceptable for 0.10 pints of lead tape. I agree with the replicate operator. There were other minor differences none of which affect the

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 04-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
			DQO's or disposition of the container. See batch comments for rework done to original.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		An independent qualified operator performed OIO for batch RTR11-00387, on drum 10314266 on 11/08/11. The Original operator entered 85% fill factor, The OIO operator entered 80% Fill Factor. I agree with the original operator. There were other minor differences between the exams none of which affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 12-JAN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR11-00387 on drum 10326245, on 11/08/11. The original operator entered the recording Id as 2RTR11-00387 and answered lead No, The replicate operator entered the recording Id as 2RTR11-00217, and answered lead Yes acceptable for 0.10 pints of lead tape. I agree with the replicate operator. There were other minor differences none of which affect the

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 12-JAN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
			DQO's or disposition of the container. See batch comments for rework done to original.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		An independent qualified operator performed OIO for batch RTR11-00387, on drum 10314266 on 11/08/11. The Original operator entered 85% fill factor, The OIO operator entered 80% Fill Factor. I agree with the original operator. There were other minor differences between the exams none of which affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 12-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR11-00387 on drum 10326245, on 11/08/11. The original operator entered the recording Id as 2RTR11-00387 and answered lead No, The replicate operator entered the recording Id as 2RTR11-00217, and answered lead Yes acceptable for 0.10 pints of lead tape. I agree with the replicate operator. There were other minor differences none of which affect the

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 12-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
			DQO's or disposition of the container. See batch comments for rework done to original.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		An independent qualified operator performed OIO for batch RTR11-00387, on drum 10314266 on 11/08/11. The Original operator entered 85% fill factor, The OIO operator entered 80% Fill Factor. I agree with the original operator. There were other minor differences between the exams none of which affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 27-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10308676

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 27-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10314266 on 11/08/11 at 1515. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00387 **Open Date** 07-NOV-11 **Close Date** 09-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2169459	KBURNSIDE	27-JAN-12	SPM	SPM reviewed and approved.
2159811	MSORENSON	12-JAN-12	ITR	Rework appears to be completed satisfactorily. Promote to SPM.
2159751	MSORENSON	12-JAN-12	ITR	Demote to Operations for rework.
2154181	MSORENSON	04-JAN-12	ITR	Demote to operations for rework.

Batch Id RTR11-00387 **Container Id** 10295757 **Analysis Id** 0000080024

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 07-NOV-2011 17:38 **Gross Weight** 191.835 Lbs. **Net Weight** 48.835 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-JUN-2009 00:00 **Operator** KKEARN

Result Comment Waste consists od paper, cardboard, and wood

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead TIDs and lead sheeting	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
wire and misc. metal	1.000	EACH	2.000	2.000
plastic sheeting and plastic rings	1.000	EACH	5.000	5.000
lead TIDs and lead sheeting	1.000	EACH	10.000	10.000
Plastic bag for waste	5.000	EACH	0.250	1.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10295757 **Analysis Id** 0000080024

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	10.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	30.585
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129605	KKEARN	07-NOV-2011 17:38	

Batch Id RTR11-00387 **Container Id** 10304013 **Analysis Id** 0000080026

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 10:52 **Gross Weight** 235.935 Lbs. **Net Weight** 92.935 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-JUL-2009 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of cardboard paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 99

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	not used as shielding	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	30.000	30.000
plstic waste	1.000	EACH	8.000	8.000
lead tape	1.000	EACH	0.100	0.100
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00387 **Container Id** 10304013 **Analysis Id** 0000080026

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	30.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	1.680
Cellulosics	100.000	52.655
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	8.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129851	AATWELL	08-NOV-2011 10:52	

Batch Id RTR11-00387 **Container Id** 10326592 **Analysis Id** 0000080029

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 11:22 **Gross Weight** 198.450 Lbs. **Net Weight** 54.450 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 09:21 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of PPE, towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 8.09 pints **Containerized Liquid Amt** 0 pints

Other Liquids 8.09 pints **Comment** Aprox .09 pints of liquid in bagging at bottom chine and aprox 8 pints of liquid in bagging at bottom of drum.

Prohibited Liquids Present Yes **Comment** >1%

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	4.000	EACH	0.250	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	8.090	PINTS	1.000	8.090

Batch Id RTR11-00387 **Container Id** 10326592 **Analysis Id** 0000080029

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.090
Cellulosics	100.000	45.360
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129865	AATWELL	08-NOV-2011 11:22	

Batch Id RTR11-00387 **Container Id** 10326273 **Analysis Id** 0000080030

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 12:15 **Gross Weight** 302.085 **Lbs.** **Net Weight** 159.085 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 16:40 **Operator** AATWELL

Result Comment Waste appears to be pieces of graphite.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 60.53 pints **Containerized Liquid Amt** 0 pints

Other Liquids 60.53 pint **Comment** Aprox .03 pints of liquid in bagging at middle chine, aprox .50 pints of liquid in bagging between middle and bottom chines and aprox 60 pints of liquid at bottom of drum

Prohibited Liquids Present Yes **Comment** >1%

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable unable to penetrate approximately bottom 6 inches of waste

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Fiber pack	1.000	EACH	6.000	6.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00387 **Container Id** 10326273 **Analysis Id** 0000080030

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	60.530	PINTS	1.000	60.530

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	152.835
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129874	AATWELL	08-NOV-2011 12:15	

Batch Id RTR11-00387 **Container Id** 10314266 **Analysis Id** 0000080033

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 13:02 **Gross Weight** 189.630 Lbs. **Net Weight** 46.630 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-SEP-2009 15:10 **Operator** KKEARN

Result Comment Waste consists of towels, wipes, and rags

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .03 pt of liquid in a poly bottle near the bottom of the waste

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
poly bottles, tubing, and plastic sheeting	1.000	EACH	3.000	3.000
buckets, tools, misc. metal	1.000	EACH	6.000	6.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Batch Id RTR11-00387 **Container Id** 10314266 **Analysis Id** 0000080033

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.870
Cellulosics	100.000	36.510
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129917	KKEARN	08-NOV-2011 13:02	

Batch Id RTR11-00387 **Container Id** 10314260 **Analysis Id** 0000080035

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 13:28 **Gross Weight** 220.500 **Lbs.** **Net Weight** 76.500 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-SEP-2009 15:47 **Operator** KKEARN

Result Comment Waste consists of leaded rubber gloves
Changed liquids from between liner and drum to other liquids. JSC 01/06/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .5 pints **Containerized Liquid Amt** 0 pints

Other Liquids .5 pints **Comment** .5 pt of liquid in the bagging near the bottom of the waste

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	leaded rubber gloves	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead gloves

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	8.000	EACH	0.250	2.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Batch Id RTR11-00387 **Container Id** 10314260 **Analysis Id** 0000080035

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.500
Cellulosics	0.000	0.000
Rubber	100.000	74.000
Plastic (Waste Materials)	0.000	2.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2155912	JCUMMINGS	06-JAN-2012 11:50	
2129926	KKEARN	08-NOV-2011 13:28	

Batch Id RTR11-00387 **Container Id** 10326295 **Analysis Id** 0000080036

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 13:53 **Gross Weight** 200.655 Lbs. **Net Weight** 56.655 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-2009 14:52 **Operator** KKEARN

Result Comment Waste consists of towels and rags
Corrected recording ID. JSC 01/06/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 16 pints **Containerized Liquid Amt** 0 pints

Other Liquids 16 pints **Comment** 16 pt of liquid at the bottom of the waste

Prohibited Liquids Present Yes **Comment** >1 %

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable bottom of the waste

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
nuts	1.000	EACH	1.000	1.000
Plastic bag for waste	5.000	EACH	0.250	1.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	16.000	PINTS	1.000	16.000

Batch Id RTR11-00387 **Container Id** 10326295 **Analysis Id** 0000080036

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	16,000
Cellulosics	100.000	38.405
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2155916	JCUMMINGS	06-JAN-2012 11:56	rework completed
2129950	KKEARN	08-NOV-2011 13:53	

Batch Id RTR11-00387 **Container Id** 10326245 **Analysis Id** 0000080038

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 14:13 **Gross Weight** 216.090 **Lbs.** **Net Weight** 72.090 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-NOV-2009 23:34 **Operator** KKEARN

Result Comment Waste consists of paper, rags, coveralls, and wipes
Corrected recording ID and added lead to waste parameters and anwsered yes to lead accepable. JSC 01/06/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.100	0.100
nuts, wire, misc. metal	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420

Batch Id RTR11-00387 **Container Id** 10326245 **Analysis Id** 0000080038

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	0.420
Cellulosics	100.000	70.320
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2155915	JCUMMINGS	06-JAN-2012 11:55	rework completed
2129957	KKEARN	08-NOV-2011 14:13	

Batch Id RTR11-00387 **Container Id** 10326245 **Analysis Id** 0000080039

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 15:00 **Gross Weight** 216.090 Lbs. **Net Weight** 72.090 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-NOV-2009 23:34 **Operator** DGREEN

Result Comment Waste appears to consist of wipes, rags, & coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	3.000	3.000
metal waste	1.000	EACH	0.500	0.500
lead tape	1.000	EACH	0.100	0.100
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR11-00387 **Container Id** 10326245 **Analysis Id** 0000080039

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	1.260
Cellulosics	100.000	66.980
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129972	DGREEN	08-NOV-2011 15:00	

Batch Id RTR11-00387 **Container Id** 10314266 **Analysis Id** 0000080040

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 15:15 **Gross Weight** 189.630 Lbs. **Net Weight** 46.630 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 16-SEP-2009 15:10 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .02 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .02 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** Approx. .02 pt. liquid in a poly bottle near the bottom of the drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.020	PINTS	1.000	0.020

Batch Id RTR11-00387 **Container Id** 10314266 **Analysis Id** 0000080040

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.020
Cellulosics	100.000	39.360
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	30-DEC-2011 07:09	MSORENSON	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment There were only minor differences between the exams none of which affect the DQO's or disposition of the container.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151504	MSORENSON	30-DEC-2011 07:09	OIO comparison complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2129978	DGREEN	08-NOV-2011 15:15	

Batch Id RTR11-00387 **Container Id** 10323858 **Analysis Id** 0000080042

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 15:43 **Gross Weight** 209.475 Lbs. **Net Weight** 66.475 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-OCT-2009 10:34 **Operator** KKEARN

Result Comment Waste consists of lab ware and broken glass

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.500	0.500
poly bottles	1.000	EACH	7.000	7.000
Plastic bag for waste	6.000	EACH	0.250	1.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10323858 **Analysis Id** 0000080042

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	100.000	57.475
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	8.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130006	KKEARN	08-NOV-2011 15:43	

Batch Id RTR11-00387 **Container Id** 10309151 **Analysis Id** 0000080044

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 16:04 **Gross Weight** 229.320 Lbs. **Net Weight** 85.320 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2009 00:00 **Operator** KKEARN

Result Comment Waste consists of wood

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheeting	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal plate and misc. metal	1.000	EACH	10.000	10.000
lead sheeting	1.000	EACH	12.000	12.000
Fiber pack	2.000	EACH	6.000	12.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10309151 **Analysis Id** 0000080044

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	12.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	62.820
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130017	KKEARN	08-NOV-2011 16:04	

Batch Id RTR11-00387 **Container Id** 10311492 **Analysis Id** 0000080046

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 16:30 **Gross Weight** 205.065 Lbs. **Net Weight** 61.065 Lbs

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 11:48 **Operator** KKEARN

Result Comment Waste consists of towels, wipes, and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .09 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .09 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .09 in poly bottles near the bottom of the waste

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
poly bottles and misc. plastic	1.000	EACH	3.000	3.000
tools, bolts and misc. metal	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.090	PINTS	1.000	0.090

Batch Id RTR11-00387 **Container Id** 10311492 **Analysis Id** 0000080046

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.090
Cellulosics	100.000	55.725
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130037	KKEARN	08-NOV-2011 16:30	

Batch Id RTR11-00387 **Container Id** 10308454 **Analysis Id** 0000080047

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 08-NOV-2011 16:59 **Gross Weight** 202.860 **Lbs.** **Net Weight** 59.860 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-AUG-2009 00:00 **Operator** KKEARN

Result Comment Waste consists of lead sheeting
AK does not concur with the recommended IDC, UN-00B, for container 10308454 because the container was retrieved from cargo container 168 and contains WG Pu. Instead, AK recommends an IDC of RF-750. RCM 11/28/11
Rework: corrected IDC correct? to No. KLB 12/1/11
AK concurs with the recommended IDC, RF-750, for container 10308454. No AKR or NCR is necessary. RCM 12/13/11

Package

IDC Correct Yes **Recommended IDC** RF-750 **Summary Category** S5000

Idc Change Reason retrieved from cargo container 168 and contains WG Pu

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 30

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheeting	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead sheeting

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
cardboard	1.000	EACH	2.000	2.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10308454 **Analysis Id** 0000080047

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	57.360
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2144217	RMORRIS	13-DEC-2011 07:49	This batch promoted. RCM 12/13/11
2138677	KBIRCH	01-DEC-2011 18:08	
2137497	RMORRIS	29-NOV-2011 10:56	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11
2130050	KKEARN	08-NOV-2011 16:59	

Batch Id RTR11-00387 **Container Id** 10023736 **Analysis Id** 0000080049

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 10:16 **Gross Weight** 359.415 **Lbs.** **Net Weight** 200.415 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-JUN-1996 00:00 **Operator** DMOORE

Result Comment Remaining waste appears to be broken up plexiglas.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Waste is impenetrable in areas.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00387 **Container Id** 10023736 **Analysis Id** 0000080049

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	197.055
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130230	DMOORE	09-NOV-2011 10:16	

Batch Id RTR11-00387 **Container Id** 10314326 **Analysis Id** 0000080054

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 13:24 **Gross Weight** 200.655 Lbs. **Net Weight** 56.655 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-AUG-1970 00:00 **Operator** MRICKS

Result Comment Overpacked 55 gal drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 91

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metal	1.000	EACH	8.000	8.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10314326 **Analysis Id** 0000080054

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.600
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.400
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	48.155
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130304	MRICKS	09-NOV-2011 13:24	

Batch Id RTR11-00387 **Container Id** 10023730 **Analysis Id** 0000080056

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 13:51 **Gross Weight** 218.295 **Lbs.** **Net Weight** 59.295 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-DEC-1995 00:00 **Operator** MRICKS

Result Comment Overpacked 55 gal drum contains plastic bottles, bags and tubing.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .63 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .63 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 4 gal bottles below bottom chine, all have >60 ml liquid.

Prohibited Liquids Present Yes **Comment** >60mil containerized

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250
Poly bottles (1 gal)	7.000	EACH	1.000	7.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040
Liquids for Other Inorganics	0.630	PINTS	1.000	0.630

Batch Id RTR11-00387 **Container Id** 10023730 **Analysis Id** 0000080056

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.670
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	53.625
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130309	MRICKS	09-NOV-2011 13:51	

Batch Id RTR11-00387 **Container Id** 10308691 **Analysis Id** 0000080057

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 14:22 **Gross Weight** 328.545 **Lbs.** **Net Weight** 185.545 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2009 11:58 **Operator** MRICKS

Result Comment Overpacked 55 gal drum contains metal objects.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 91

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment** .

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	impenetrable near bottom of drum	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable appears to be lead near bottom of drum

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
paper, rags , wood,plastic	50.000	EACH	1.000	50.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10308691 **Analysis Id** 0000080057

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	5.000	6.765
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	95.000	128.530
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	20.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	30.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130324	MRICKS	09-NOV-2011 14:22	

Batch Id RTR11-00387 **Container Id** 10041202 **Analysis Id** 0000080060

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 15:47 **Gross Weight** 218.295 **Lbs.** **Net Weight** 59.295 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-JUN-1997 00:00 **Operator** MRICKS

Result Comment Overpacked 55 gal drum contains plastic bags, tubing and bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.100	0.100
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00387 **Container Id** 10041202 **Analysis Id** 0000080060

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	3.360
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	55.835
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130342	MRICKS	09-NOV-2011 15:47	

Batch Id RTR11-00387 **Container Id** 10308737 **Analysis Id** 0000080061

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 16:04 **Gross Weight** 198.450 Lbs. **Net Weight** 54.450 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-AUG-2009 00:00 **Operator** MRICKS

Result Comment Overpacked 55 gal drum contains paper and rags and plastic PPE and bags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 93

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10308737 **Analysis Id** 0000080061

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	50.000	27.100
Rubber	0.000	0.000
Plastic (Waste Materials)	50.000	27.350
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130354	MRICKS	09-NOV-2011 16:04	

Batch Id RTR11-00387 **Container Id** 10308676 **Analysis Id** 0000080062

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 16:39 **Gross Weight** 604.170 **Lbs.** **Net Weight** 461.170 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3900 **IDC** UN-00A Undefined Homogeneous Solids

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2009 00:00 **Operator** MRICKS

Result Comment Overpacked 55 gal drum appears to contain sludge.
AK concurs with the recommended IDC change from RF-750 to UN-00A for container 10308676. No AKR or NCR is required. RCM 11/28/11
Corrected PCB tabs and changed liquid and remaining contents to organic. JSC 01/06/12
AK concurs with the assigned IDC, UN-00A, for container 10308676. This container was returned to the AK Queue because of other rework. No further AK action is required. CHD 01/10/12.
rework--updated LA liquid field. K.H. 01-12-12
AK concurs with the assigned IDC, UN-00A, for container 10308676. This container was returned to the AK Queue because of other rework. No further AK action is required. CHD 01/12/12.

Package

IDC Correct Yes **Recommended IDC** UN-00A **Summary Category** S3000

Idc Change Reason Waste appears to be a typical sludge.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** Yes

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 8 pints

Other Liquids 8 pints **Comment** 8 pints on top of waste.

Prohibited Liquids Present Yes **Comment** >1%

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	Yes - Prohibited	PCB liquids
			PCB Mass (lbs)	461.17	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable sludge

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10308676 **Analysis Id** 0000080062

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Organic Matrix	8.000	PINTS	1.000	8.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	461.170
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2159763	CHINKLE	12-JAN-2012 08:15	This batch is promoted. chd 1/12/12
2159758	KHUGHES	12-JAN-2012 08:01	rework
2158495	CHINKLE	10-JAN-2012 11:36	This batch is promoted. chd 1/10/12
2155910	JCUMMINGS	06-JAN-2012 11:47	rework completed
2137496	RMORRIS	29-NOV-2011 10:56	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10308454. RCM 11/28/11
2130365	MRICKS	09-NOV-2011 16:39	

Batch Id RTR11-00387 **Container Id** 10313898 **Analysis Id** 0000080065

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 09-NOV-2011 17:06 **Gross Weight** 191.835 Lbs. **Net Weight** 48.835 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00217 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-SEP-2009 05:33 **Operator** MRICKS

Result Comment Overpacked 55 gal drum appears to contain misc metal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 91

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment** .

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic bags	1.000	EACH	3.000	3.000
30 gal drum	1.000	EACH	30.000	30.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00387 **Container Id** 10313898 **Analysis Id** 0000080065

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	45.585
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2130378	MRICKS	09-NOV-2011 17:06	

End of RTR Analysis Report

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 10:33

RTR Batch Id: RTR11-00387 **Container Id:** 10326245 **Equipment Id:** Z-213-106

Container type Description: **drum, 83 Gallon** Gen-IDC: **RF-750** Gross Weight(Lbs): **216.09**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000080038	08-NOV-2011 14:13	0000080039	08-NOV-2011 15:00
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	2RTR11-00387		2RTR11-00217	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	KENT KEARN		DANNY GREEN	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5490	S5000	S5490
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	3		3	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	85		80	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		Yes, Acceptable	lead tape
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR11-00387 **Container Id:** 10326245 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Waste consists of paper, rags, coveralls, and wipes	Waste appears to consist of wipes, rags, & coveralls.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2151223	MSORENSON	29-DEC-11	Replicate comparison complete.

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet -

Date: 01-Oct-2012

Time: 11:10

Batch Type Real Time Radiography

Batch Report No. RTR11-00401

Batch Id RTR11-00401

Open Date 21-NOV-11 10:32:20

Close Date 23-NOV-11 08:50:51

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10303903	RF-750	0000080332	21-NOV-11 10:32:20	Original	P	DANNY GREEN
10306955	RF-750	0000080333	21-NOV-11 11:03:45	Original	P	DANNY GREEN
10311329	RF-750	0000080334	21-NOV-11 11:27:20	Original	P	DANNY GREEN
10313267	RF-750	0000080335	21-NOV-11 11:58:29	Original	P	DANNY GREEN
10312434	RF-750	0000080336	21-NOV-11 12:36:18	Original	P	DANNY GREEN
10311770	RF-750	0000080337	21-NOV-11 13:37:45	Original	P	CINDY TIEGS
10312431	RF-750	0000080338	21-NOV-11 14:23:29	Original	P	SETH OLDHAM
10243944	RF-960	0000080339	21-NOV-11 14:54:19	Original	P	SETH OLDHAM
10312434	RF-750	0000080341	21-NOV-11 15:18:21	RTR OIO	P	SETH OLDHAM
10107173	RF-330	0000080343	21-NOV-11 18:14:44	Original	P	SETH OLDHAM
10311878	RF-752	0000080345	22-NOV-11 10:03:31	Original	P	FRANK KUCK
10243942	RF-330	0000080348	22-NOV-11 11:01:26	Original	P	FRANK KUCK
10243930	RF-336	0000080349	22-NOV-11 11:29:37	Original	P	FRANK KUCK
10312176	RF-750	0000080351	22-NOV-11 12:00:40	Original	P	FRANK KUCK
10041173	RF-336	0000080354	22-NOV-11 13:55:32	Original	P	MARK SORENSON
10311468	RF-750	0000080357	22-NOV-11 14:38:54	Original	P	CINDY TIEGS
10311481	RF-750	0000080359	22-NOV-11 15:42:01	Original	P	BILL HUGGINS
10312190	RF-750	0000080360	22-NOV-11 16:07:28	Original	P	BILL HUGGINS
10312190	RF-750	0000080362	22-NOV-11 16:42:52	Replicate / Duplicate	P	DANNY GREEN
10312145	RF-750	0000080364	22-NOV-11 17:43:27	Original	P	CINDY TIEGS
10311467	RF-750	0000080366	22-NOV-11 18:06:18	Original	P	BILL HUGGINS
10313902	RF-743	0000080368	23-NOV-11 08:50:51	Original	P	SETH OLDHAM
10311878	RF-752	0000266505	02-MAR-12 09:01:46	Supplemental	P	MIKE BECK

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	12-DEC-11 08:09:33	12-DEC-11 CHINKLE AKE Batch promoted. chd 12/12/11
KHUGHES	21-DEC-11 18:05:33	(rework) Container 10311770, please ensure respirator filters that have been entered into Waste Items by Weight is 70% Aluminum-based Metals/Alloys and 30% Cellulosics.
KHUGHES	21-DEC-11 18:05:33	(rework) Container 10311468, please enter "No" into Prohibited Liquids Present field. Ensure liquid comment is removed.
KHUGHES	21-DEC-11 18:05:33	(rework) Container 10312145, please change ".05" to ".5" in the liquid comment.
KHUGHES	21-DEC-11 18:10:43	return for rework
CTIEGS	30-DEC-11 10:30:49	Rework complete.
KHUGHES	30-DEC-11 10:38:38	rework complete and sat.
KHUGHES	30-DEC-11 10:42:44	promote to SPM
KBURNSIDE	27-JAN-12 08:59:55	Container 10041173 has drum bag listed in packaging materials and "no bags" listed in closure method. Please review and update as necessary.
KHUGHES	31-JAN-12 15:51:01	(rework) Container 10041173, please ensure "Twisted and Taped" is entered into Bag Closure Method field.
KHUGHES	31-JAN-12 15:54:35	return for rework
MSORENSON	31-JAN-12 16:03:22	Rework completed.
KHUGHES	31-JAN-12 16:04:56	rework complete and sat.
KHUGHES	31-JAN-12 16:05:14	promote to SPM
KBURNSIDE	01-FEB-12 08:05:46	SPM reviewed and approved.

**********RTR/VE Update (RVU) Comments**********

Written By	Date	Comment
DLEE	06-MAR-12 15:06:22	This RVU was validated to MP-TRUW-8.8.
DLEE	06-MAR-12 15:07:03	There is no rework for RVU 10311878 analysis Id 0000266505.
DLEE	06-MAR-12 15:07:23	Promote to SPM.

Batch Report Coversheet

**********************Batch E-Signature History***********************

Approval ID	User ID	Signature Date	Comment
2148081	KHUGHES	21-DEC-2011 18:10:44	return for rework
2151685	CTIEGS	30-DEC-2011 10:30:49	Rework complete.
2151710	KHUGHES	30-DEC-2011 10:42:44	promote to SPM
2169375	KBURNSIDE	27-JAN-2012 08:59:55	Container 10041173 has drum bag listed in packaging materials and "no bags" listed in closure method. Please review and update as necessary.
2172888	KHUGHES	31-JAN-2012 15:54:35	return for rework
2172891	MSORENSON	31-JAN-2012 16:03:22	Rework completed.
2172892	KHUGHES	31-JAN-2012 16:05:14	promote to SPM
2173292	KBURNSIDE	01-FEB-2012 08:05:46	SPM reviewed and approved.

**********************RTR/VE Update (RVU) E-Signature History**********************

Approval ID	User ID	Signature Date	Comment
2186883	DLEE	06-MAR-2012 15:07:23	Promote to SPM.

******* End of Batch Report Coversheet Report *******

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 11:10

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00401

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10041173	66949	CLOSED	22-NOV-11	02-MAY-12
10041173	66950	CLOSED	22-NOV-11	02-MAY-12
10107173	66929	OPEN	21-NOV-11	
10107173	66930	OPEN	21-NOV-11	
10107173	66931	OPEN	21-NOV-11	
10243942	67294	OPEN	08-DEC-11	
10243944	67292	OPEN	08-DEC-11	
10303903	66912	OPEN	21-NOV-11	
10311468	66954	CLOSED	22-NOV-11	02-MAY-12
10311468	66956	CLOSED	22-NOV-11	02-MAY-12
10311770	66918	OPEN	21-NOV-11	
10311878	66944	OPEN	22-NOV-11	
10311878	66945	OPEN	22-NOV-11	
10311878	69091	OPEN	21-FEB-12	
10312431	66924	OPEN	21-NOV-11	
10313267	66914	OPEN	21-NOV-11	

*****End of Non-Conformance Report*****

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 21-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		see batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10312190, observation date 11-22-11. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10312434, observation date 11-21-11. No significant differences between original and

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 21-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			independent observation. During the original exam the respirator filters are identified. Operator comments that they are insignificant to the waste. I agree with the operator, there are approx. 3 filters.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 30-DEC-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10312190, observation date 11-22-11. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10312434, observation date 11-21-11. No significant differences between original and

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 30-DEC-11 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			independent observation. During the original exam the respirator filters are identified. Operator comments that they are insignificant to the waste. I agree with the operator, there are approx. 3 filters.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 31-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10312190, observation date 11-22-11. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10312434, observation date 11-21-11. No significant differences between original and

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 31-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			independent observation. During the original exam the respirator filters are identified. Operator comments that they are insignificant to the waste. I agree with the operator, there are approx. 3 filters.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 31-JAN-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10312190, observation date 11-22-11. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10312434, observation date 11-21-11. No significant differences between original and

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 31-JAN-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			independent observation. During the original exam the respirator filters are identified. Operator comments that they are insignificant to the waste. I agree with the operator, there are approx. 3 filters.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 27-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-11-703 R4, NCR-67292, AKR-10-698 R4, NCR-67294, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10243944 and 10243942

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 27-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10312434 on 11/21/11 at 1518. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	Container 10041173 has drum bag listed in packaging materials and "no bags" listed in closure method.

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 01-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-11-703 R4, NCR-67292, AKR-10-698 R4, NCR-67294, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10243944 and 10243942

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 01-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10312434 on 11/21/11 at 1518. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2173292	KBURNSIDE	01-FEB-12	SPM	SPM reviewed and approved.
2172892	KHUGHES	31-JAN-12	ITR	promote to SPM
2172888	KHUGHES	31-JAN-12	ITR	return for rework
2169375	KBURNSIDE	27-JAN-12	SPM	Container 10041173 has drum bag listed in packaging materials and "no bags" listed in closure method. Please review and update as necessary.
2151710	KHUGHES	30-DEC-11	ITR	promote to SPM
2148081	KHUGHES	21-DEC-11	ITR	return for rework

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012

Time: 11:11

Batch Id RTR11-00401 **Container Id** 10303903 **Analysis Id** 0000080332

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 10:32 **Gross Weight** 209.475 Lbs. **Net Weight** 65.475 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-JUL-2009 10:46 **Operator** DGREEN

Result Comment Waste appears to consist primarily of plastic sheeting,

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead pieces	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can near center of the waste	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
wipes & rags	1.000	EACH	3.000	3.000
metal waste	1.000	EACH	1.000	1.000
lead pieces	1.000	EACH	1.000	1.000
Aerosol Can	1.000	EACH	0.240	0.240

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR11-00401 **Container Id** 10303903 **Analysis Id** 0000080332

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.240
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	3.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	58.975
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134621	DGREEN	21-NOV-2011 10:32	

Batch Id RTR11-00401 **Container Id** 10306955 **Analysis Id** 0000080333

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 11:03 **Gross Weight** 218.295 Lbs. **Net Weight** 75.295 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-AUG-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, rags, & cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead pieces	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	6.000	6.000
plastic waste	1.000	EACH	8.000	8.000
respirator cartridges	8.000	EACH	0.250	2.000
lead pieces	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10306955 **Analysis Id** 0000080333

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	1.400
Other metals	0.000	1.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	58.895
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	8.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134647	DGREEN	21-NOV-2011 11:03	

Batch Id RTR11-00401 **Container Id** 10311329 **Analysis Id** 0000080334

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 11:27 **Gross Weight** 200.655 Lbs. **Net Weight** 56.655 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-AUG-2009 22:05 **Operator** DGREEN

Result Comment Waste appears to consist primarily of plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 99

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
dirt	1.000	EACH	6.000	6.000
wipes, rags, wood	1.000	EACH	10.000	10.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10311329 **Analysis Id** 0000080334

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	10.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	40.655
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	6.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134663	DGREEN	21-NOV-2011 11:27	

Batch Id RTR11-00401 **Container Id** 10313267 **Analysis Id** 0000080335

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 11:58 **Gross Weight** 198.450 **Lbs.** **Net Weight** 55.450 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-SEP-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, rags, & coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 1.84 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1.97 pints **Containerized Liquid Amt** 0 pints

Other Liquids .13 pints **Comment** .09 pt. in a 1 gallon poly bottle, 1 pt. in spray bottle, .13 pt. in bagging, & .75 pt. in a small poly bottle.

Prohibited Liquids Present Yes **Comment** > 60 mL internal container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	6.000	6.000
small poly bottle	1.000	EACH	0.250	0.250
spray bottle	1.000	EACH	0.500	0.500
metal waste	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00401 **Container Id** 10313267 **Analysis Id** 0000080335

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	1.970	PINTS	1.000	1.970

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.970
Cellulosics	100.000	45.480
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134670	DGREEN	21-NOV-2011 11:58	

Batch Id RTR11-00401 **Container Id** 10312434 **Analysis Id** 0000080336

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 12:36 **Gross Weight** 246.960 **Lbs.** **Net Weight** 102.960 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 22:46 **Operator** DGREEN

Result Comment Waste appears to consist primarily of plastic- sheeting & a tarp.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
wipes, rags	1.000	EACH	5.000	5.000
dirt	1.000	EACH	3.000	3.000
lead tape	1.000	EACH	0.500	0.500
metal waste	1.000	EACH	3.000	3.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00401 **Container Id** 10312434 **Analysis Id** 0000080336

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	5.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	88.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	3.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134672	DGREEN	21-NOV-2011 12:36	

RTR Analysis Report

Batch Id RTR11-00401 **Container Id** 10311770 **Analysis Id** 0000080337

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 13:37 **Gross Weight** 189.630 Lbs. **Net Weight** 45.630 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-AUG-2009 14:33 **Operator** SOLDHAM

Result Comment This drum contains paper and rags.
Rework corrected waste parameters for respirators.CT 12/30/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .3 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .3 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 0.3 pint of liquid in a plastic bottle located above the bottom chine.

Prohibited Liquids Present Yes **Comment** container with liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape & lead debris	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator filters	50.000	EACH	0.250	12.500
misc. metal	1.000	EACH	4.000	4.000
glass bottles	1.000	EACH	1.000	1.000
plastic sheeting & plastic bottles	1.000	EACH	4.000	4.000
lead tape & lead debris	1.000	EACH	1.000	1.000
Plastic bag for waste	5.000	EACH	0.250	1.250

Batch Id RTR11-00401 **Container Id** 10311770 **Analysis Id** 0000080337

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.300	PINTS	1.000	0.300

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	8.750
Other metals	0.000	1.000
Other Inorganic Materials	0.000	1.300
Cellulosics	100.000	25.330
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151665	CTIEGS	30-DEC-2011 10:21	
2134685	SOLDHAM	21-NOV-2011 13:37	

Batch Id RTR11-00401 **Container Id** 10312431 **Analysis Id** 0000080338

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 14:23 **Gross Weight** 187.425 Lbs. **Net Weight** 45.425 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 23:02 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting and plastic bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .53 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .53 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .03 pint of liquid in a 1 qt. plastic bottle located below the top chine.
0.5 pint of liquid in a 5 qt. polly bottle located at the middle chine.

Prohibited Liquids Present Yes **Comment** liquid in a container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	5 qt. plastic bottle with a lid located at the middle chine.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
5 qt. plastic bottle	1.000	EACH	1.000	1.000
lead tape	4.000	EACH	0.500	2.000
misc. metal	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00401 **Container Id** 10312431 **Analysis Id** 0000080338

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Liquids for Other Inorganics	0.530	PINTS	1.000	0.530

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	2.000
Other Inorganic Materials	0.000	2.210
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	40.215
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134696	SOLDHAM	21-NOV-2011 14:23	

Batch Id RTR11-00401 **Container Id** 10243944 **Analysis Id** 0000080339

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 14:54 **Gross Weight** 271.215 Lbs. **Net Weight** 127.215 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2008 12:08 **Operator** SOLDHAM

Result Comment This drum contains construction rubble (sheetrock).
AK concurs with the recommended IDC change from RF-371 to RF-960 for container 10243944. AKR-11-703 Rev. 4 was attached to NCR 67292 to support this change. CHD 12/12/11

Package

IDC Correct Yes **Recommended IDC** RF-960 **Summary Category** S5000

Idc Change Reason The waste is mostly sheetrock. (construction rubble)

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 96

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting	1.000	EACH	4.000	4.000
wood and paper	1.000	EACH	5.000	5.000
misc. metal	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00401 **Container Id** 10243944 **Analysis Id** 0000080339

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	113.215
Cellulosics	0.000	9.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143542	CHINKLE	12-DEC-2011 08:09	Batch promoted. chd 12/12/11
2134702	SOLDHAM	21-NOV-2011 14:54	

Batch Id RTR11-00401 **Container Id** 10312434 **Analysis Id** 0000080341

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 21-NOV-2011 15:18 **Gross Weight** 246.960 **Lbs.** **Net Weight** 102.960 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 22:46 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	1.000	1.000
misc. metal	2.000	EACH	4.000	8.000
wood and paper	2.000	EACH	2.000	4.000
respirator filters	25.000	EACH	0.250	6.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00401 **Container Id** 10312434 **Analysis Id** 0000080341

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	8.000
Aluminum-based Metals/Alloys	0.000	1.563
Other metals	0.000	1.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	8.688
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	81.190
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	20-DEC-2011 15:51	KHUGHES	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	No

Comment No significant differences between original and independent observation. During the original exam the respirator filters are identified. Operator comments that they are insignificant to the waste. I agree with the operator, there are approx. 3 filters.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2147463	KHUGHES	20-DEC-2011 15:51	valid

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134709	SOLDHAM	21-NOV-2011 15:18	

Batch Id RTR11-00401 **Container Id** 10107173 **Analysis Id** 0000080343

Container Type 83u 83 Gallon unmarked and non-DOT apprvd cntr **Analysis Status** Pass

RTR Date 21-NOV-2011 18:14 **Gross Weight** 266.805 Lbs. **Net Weight** 106.805 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-JUN-2006 17:39 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting and plastic bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 4

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 2 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 2 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1.0 pint of liquid in a 1 gallon polly bottle located at the middle chine. Several polly bottles have a small amount of liquid (total amount is 1.0 pint)

Prohibited Liquids Present Yes **Comment** liquid in a container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead apron	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	2 gallon polly bottles with lids

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Paper and rags	1.000	EACH	10.000	10.000
2 gallon polly bottle	2.000	EACH	2.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber apron	2.000	EACH	5.250	10.500

Batch Id RTR11-00401 **Container Id** 10107173 **Analysis Id** 0000080343

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	25.000	PINTS	0.420	10.500
Liquids for Other Inorganics	2.000	PINTS	1.000	2.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	12.500
Cellulosics	0.000	10.000
Rubber	0.000	10.500
Plastic (Waste Materials)	100.000	73.805
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134725	SOLDHAM	21-NOV-2011 18:14	

Batch Id RTR11-00401 **Container Id** 10311878 **Analysis Id** 0000080345

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 10:03 **Gross Weight** 224.910 Lbs. **Net Weight** 82.910 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-752 Pits 11 and 12 Debris Waste from Non-RF Facilities

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **Approval Level** SPM

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 23:26 **Operator** FKUCK **OIO** No

Result Comment

Waste appears to be primarily plastic sheeting and blocks.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method No Bags

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 5 pints

Other Liquids 0 pints **Comment** 7 polybottles located at the bottom of the waste, all of them contain liquid. also a 1 gal. polybottle in the middle 5 gallon bucket with 1 pint of liquid.

Prohibited Liquids Present Yes **Comment** > 1% by volume and > 60 ml. containerized.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	3 five gallon buckets.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Batch Id RTR11-00401 **Container Id** 10311878 **Analysis Id** 0000080345

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
cardboard	1.000	EACH	2.000	2.000
polybottles	7.000	EACH	0.500	3.500
glass bottle	1.000	EACH	1.000	1.000
five gallon bucket	3.000	EACH	5.000	15.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000
1 Gal. Paint Can w/ Lid	1.000	EACH	0.840	0.840

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	50.000	PINTS	0.420	21.000
Liquids for Other Inorganics	5.000	PINTS	1.000	5.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	27.000
Cellulosics	0.000	2.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	38.070
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134907	FKUCK	22-NOV-2011 10:03	

Batch Id RTR11-00401 **Container Id** 10243942 **Analysis Id** 0000080348

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 11:01 **Gross Weight** 260.190 **Lbs.** **Net Weight** 116.190 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2008 12:14 **Operator** FKUCK

Result Comment Waste consists primarily of towels, wipes, cloth coveralls and small wood blocks.
AK concurs with the recommended IDC change from RF-480 to RF-330 for container 10243942. AKR-10-698 Rev.4 was attached to NCR 67294 to support this change. CHD 12/12/11

Package

IDC Correct Yes **Recommended IDC** RF-330 **Summary Category** S5000

Idc Change Reason Waste consists primarily of towels, wipes, cloth coveralls and small wood blocks.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	5.000	5.000
plastic bucket, sheeting and polybottles	1.000	EACH	15.000	15.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00401 **Container Id** 10243942 **Analysis Id** 0000080348

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	92.830
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	15.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2143543	CHINKLE	12-DEC-2011 08:09	Batch promoted. chd 12/12/11
2134920	FKUCK	22-NOV-2011 11:01	

Batch Id RTR11-00401 **Container Id** 10243930 **Analysis Id** 0000080349

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 11:29 **Gross Weight** 297.675 Lbs. **Net Weight** 153.675 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-AUG-2008 12:57 **Operator** FKUCK

Result Comment Waste consists of towels, wipes, cardboard, cloth coveralls and wood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead solder on a light bulb	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead solder	1.000	EACH	0.100	0.100
Asphalt	1.000	EACH	50.000	50.000
metal debris	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00401 **Container Id** 10243930 **Analysis Id** 0000080349

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	50.860
Cellulosics	100.000	94.215
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	2.500
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134927	FKUCK	22-NOV-2011 11:29	

Batch Id RTR11-00401 **Container Id** 10312176 **Analysis Id** 0000080351

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 12:00 **Gross Weight** 224.910 **Lbs.** **Net Weight** 80.910 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-SEP-2009 15:49 **Operator** FKUCK

Result Comment Waste consists primarily of towels, wipes and cloth coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
safety shoes	4.000	EACH	1.000	4.000
plastic sheeting, bags, polybottles	1.000	EACH	15.000	15.000
lead tape	1.000	EACH	0.250	0.250
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10312176 **Analysis Id** 0000080351

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	2.000
Cellulosics	100.000	61.410
Rubber	0.000	1.000
Plastic (Waste Materials)	0.000	15.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2134945	FKUCK	22-NOV-2011 12:00	

Batch Id RTR11-00401 **Container Id** 10041173 **Analysis Id** 0000080354

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 13:55 **Gross Weight** 308.700 **Lbs.** **Net Weight** 165.700 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-JUN-1996 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of cadboard,paper and PPE. Rework: Answered closure method Twisted and Taped. MS 01/31/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .05 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .24 pints

Other Liquids .19 pints **Comment** 1.5 TBSP Liquid in 1Quart poly bottle at mid container.Additional 6 TBSP Liquid in waste at mid container.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape and Lead PPE.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Large sealed poly bottle at mid container approx dim 6"dia x 10" long.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Impenetrable lead PPE at bottom of container.Operator unable to verify absence of prohibited items.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Batch Id RTR11-00401 **Container Id** 10041173 **Analysis Id** 0000080354

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal Debris	1.000	EACH	1.000	1.000
Poly bottles and tubing	1.000	EACH	2.000	2.000
Sheeting and bagging	1.000	EACH	3.000	3.000
D-CELL BATTERIES	3.000	EACH	0.250	0.750
Lead PPE	1.000	EACH	4.000	4.000
Large poly bottle	1.000	EACH	0.750	0.750
Lead tape	1.000	EACH	0.080	0.080
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Liquids for Other Inorganics	0.240	PINTS	1.000	0.240

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	4.830
Other Inorganic Materials	0.000	0.660
Cellulosics	100.000	153.070
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.140
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2172890	MSORENSON	31-JAN-2012 16:02	Rework
2135009	BHUGGINS	22-NOV-2011 13:55	

Batch Id RTR11-00401 **Container Id** 10311468 **Analysis Id** 0000080357

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 14:38 **Gross Weight** 218.295 **Lbs.** **Net Weight** 75.295 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 16:55 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily plastic in the form of sheeting,bagging and tubing. Rework updated liquid field. CT 12/30/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .13 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .13 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1.5 TBSP Liquid in 1qt poly bottle at mid container.0.5 TBSP Liquid in Small poly bottle at bottom of container.2 TBSP Liquid in aerosol can at bottom of container.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	Aerosol can at bottom of container	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Batch Id RTR11-00401 **Container Id** 10311468 **Analysis Id** 0000080357

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Guage	1.000	EACH	0.080	0.080
Metal debris	1.000	EACH	1.000	1.000
Cardboard	1.000	EACH	2.000	2.000
Paper and rags	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140
Aerosol Can	1.000	EACH	0.240	0.240

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.130	PINTS	1.000	0.130

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.320
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.130
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	67.845
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151672	CTIEGS	30-DEC-2011 10:25	
2135040	BHUGGINS	22-NOV-2011 14:38	

Batch Id RTR11-00401 **Container Id** 10311481 **Analysis Id** 0000080359

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 15:42 **Gross Weight** 198.450 Lbs. **Net Weight** 54.450 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 15:33 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of paper,rags and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	TID'S	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal Debris	1.000	EACH	5.000	5.000
Reinforced plastic hose	1.000	EACH	3.000	3.000
Lead TID'S	1.000	EACH	0.050	0.050

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10311481 **Analysis Id** 0000080359

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.050
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	46.400
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2135047	BHUGGINS	22-NOV-2011 15:42	

Batch Id RTR11-00401 **Container Id** 10312190 **Analysis Id** 0000080360

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 16:07 **Gross Weight** 183.015 Lbs. **Net Weight** 40.015 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-SEP-2009 14:31 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of paper,rags and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead solder and Lead Tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal debris	1.000	EACH	1.000	1.000
Light Bulb	1.000	EACH	0.050	0.050
Lead Tape	1.000	EACH	0.080	0.080
Plastic sheeting	1.000	EACH	1.000	1.000
Metal cans	1.000	EACH	4.000	4.000
Lead solder	1.000	EACH	0.030	0.030

Batch Id RTR11-00401 **Container Id** 10312190 **Analysis Id** 0000080360

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.110
Other Inorganic Materials	0.000	0.050
Cellulosics	100.000	33.855
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2135054	BHUGGINS	22-NOV-2011 16:07	

Batch Id RTR11-00401 **Container Id** 10312190 **Analysis Id** 0000080362

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 16:42 **Gross Weight** 183.015 Lbs. **Net Weight** 40.015 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-SEP-2009 14:31 **Operator** DGREEN

Result Comment Waste appears to consist primarily of cardboard, wipes, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheeting	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	2.000	2.000
plastic waste	1.000	EACH	1.000	1.000
lead sheeting	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10312190 **Analysis Id** 0000080362

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	36.015
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2135082	DGREEN	22-NOV-2011 16:42	

Batch Id RTR11-00401 **Container Id** 10312145 **Analysis Id** 0000080364

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 17:43 **Gross Weight** 178.605 Lbs. **Net Weight** 35.605 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-SEP-2009 17:26 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily plastic in the form of sheeting,bagging and Lab Ware. Rework updated liquid field. CT 12/30/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .02 pints

Other Liquids .02 pints **Comment** .5 TBSP Liquid in waste at bottom of container.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Scrap Lead	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Paper and Rags	1.000	EACH	3.000	3.000
Scrap Lead	1.000	EACH	0.120	0.120
Glass Jar	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Gal. Paint Can Lid	2.000	EACH	0.140	0.280

Batch Id RTR11-00401 **Container Id** 10312145 **Analysis Id** 0000080364

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.020	PINTS	1.000	0.020

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.280
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	1.020
Cellulosics	0.000	3.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	31.185
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151683	CTIEGS	30-DEC-2011 10:29	
2135111	BHUGGINS	22-NOV-2011 17:43	

-RTR Analysis Report

Batch Id RTR11-00401 **Container Id** 10311467 **Analysis Id** 0000080366

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 22-NOV-2011 18:06 **Gross Weight** 191.835 Lbs. **Net Weight** 48.835 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 16:58 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of cardboard,paper, and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic tubing	1.000	EACH	0.500	0.500
Tiles and sheeting	1.000	EACH	5.000	5.000
Metal Debris	1.000	EACH	2.000	2.000
Pipe and fittings	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140

Batch Id RTR11-00401 **Container Id** 10311467 **Analysis Id** 0000080366

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	36.945
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.890
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2135122	BHUGGINS	22-NOV-2011 18:10	
2135118	BHUGGINS	22-NOV-2011 18:06	

Batch Id RTR11-00401 **Container Id** 10313902 **Analysis Id** 0000080368

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 23-NOV-2011 08:50 **Gross Weight** 593.145 **Lbs.** **Net Weight** 451.145 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S3114 **IDC** RF-743 Pits 11 & 12 Organic Setups

Recording Id 2RTR11-00224 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-AUG-1970 00:00 **Operator** SOLDHAM

Result Comment This drum contains an inverted 55 gallon drum containing sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 100

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	Yes - Acceptable	PCB waste
			PCB Mass (lbs)	451.15	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00401 **Container Id** 10313902 **Analysis Id** 0000080368

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	100.000	451.145
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2135261	SOLDHAM	23-NOV-2011 08:50	

—End of RTR Analysis Report—

AMWTP

Date: 01-Oct-2012

RTR Replicate Comparison Report

Time: 11:13

RTR Batch Id: RTR11-00401 Container Id: 10312190 Equipment Id: Z-213-106

Container type Description: drum, 83 Gallon Gen-IDC: RF-750 Gross Weight(Lbs): 183.015

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000080360	22-NOV-2011 16:07	0000080362	22-NOV-2011 16:42
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	2RTR11-00224		2RTR11-00224	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	BILL HUGGINS		DANNY GREEN	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5490	S5000	S5490
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	1		1	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	97		95	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	Yes, Acceptable	Lead solder and Lead Tape	Yes, Acceptable	lead sheeting
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Time: 11:13

RTR Batch Id: RTR11-00401 Container Id: 10312190 Equipment Id: Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	The waste in this container appears to be primarily cellulosics in the form of paper,rags and cardboard.	Waste appears to consist primarily of cardboard, wipes, & rags.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2147228	KHUGHES	20-DEC-11	valid

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR/VE Update Analysis Report

Date: 01-Oct-2012

Time: 11:13

Affected Batch RTR11-00401 **Container Id** 10311878 **Analysis Id** 0000266505 **Analysis Status** Passed

VE Date 02-MAR-12 09:01:46
Procedure Id INST-FOI-17
Gross Weight 224.91 lbs.
Gen-IDC Id RF-752 Pits 11 and 12 Debris Waste from Non-RF Facilities
Proc Rev 24
Net Weight 82.91 lbs.
Waste Matrix S5490
Equipment ID VE NGW C FAC
Container Type C
Summary Category Group S5000
Affected Analysis ID 0000080345
Operator 1 MIKE BECK
Operator 2 ANDREW WOOD

General

Rigid Liner Present? No **Liner Punctured?** Yes **Liner Hole Size:** 20" in. **Liner Type** NO LINER
Liner Lid Present No **Fill Factor** 95 %

Liquids

Liquids Present? Yes **Comment** 7 polybottles located at the bottom of the waste, all of them contain liquid. also a 1 gal. polybottle in the middle 5 gallon bucket with 1 pint of liquid.
Liquid Between Liner and Drum 0 pints
Other Liquids 0 pints
Internal Container with Liquid 5 pints
Total Liquid Amount 5 pints
Containerized Liquid pints

Prohibited Liquids Present Yes > 1% by volume and > 60 ml. containerized.
Internal Container with Liquid Yes
Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	Comment
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Impenetrable Dense Objects?	No	
Sealed Containers Over 4 liters?	Yes	3 five gallon buckets.

RTR/VE Update Analysis Report

Affected Batch RTR11-00401 **Container Id** 10311878 **Analysis Id** 0000266505

IDC Verification

Is IDC correct? No **Recommended IDC** RF-752 Pits 11 and 12 Debris Waste from Non-RF Facilities

IDC Change Reason Per applicable NCR

Visual Exam Comment {Waste appears to be primarily plastic sheeting and blocks. - RTR comment from rtr batch RTR11-00401} RVU created to change IDC per NCR #69091 MB 03/02/12

Closure

Closure Date 05-SEP-09 23:26:32 **Closure Method** No Bags

Layers Of Confinement 1 **Overpack Required?** No

New Steel Lid? No

IDC CODES

Current Container IDC Code: RF-752 **Recommended IDC Code:** RF-752

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
cardboard	1.000	EACH	2.000	2.000
polybottles	7.000	EACH	0.500	3.500
glass bottle	1.000	EACH	1.000	1.000
five gallon bucket	3.000	EACH	5.000	15.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000
1 Gal. Paint Can w/ Lid	1.000	EACH	0.840	0.840

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	50.000	PINTS	0.420	21.000
Liquids for Other Inorganics	5.000	PINTS	1.000	5.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	27.000
Cellulosics	0.000	2.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	38.070
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Container Filters

WDS Filter Code	Event	Event Date	Entered By	Remove	Other Filter Model	Exclude

Affected Batch RTR11-00401 **Container Id** 10311878 **Analysis Id** 0000266505

E-Signature History

Esig Approval Id	User ID	E-signature Date	Comment
2184876	MBECK	02-MAR-12 09:01:49	RVU created to change IDC per NCR #69091 MB 03/02/12
2184877	AWOOD	02-MAR-12 09:01:50	

End of RTR/VE Update Analysis Report

RTR/VE Update(RVU) Checklist Report

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Container	10311878	**Analysis**	0000266505
Reviewer	DENISE LEE	**Approval Level**	Independent Technical Reviewer
Approval Date	06-MAR-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		The only documentation associated with this RTR/VE Update is the following: RTR/VE Update Analysis Report ITR checklist (Form-1412) Batch Data Report Supplemental Comment Form (Form-1491) Associated NCRs (referenced in WTS)
2. Are there 20 containers or less in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
3. Was the image quality indicator (IQI) satisfactory?	N/A		This ITR checklist is for RTR/VE Update only.
4. Does every container in the batch reference an audio/video recording?	N/A		This ITR checklist is for RTR/VE Update only.
5. Is there a completed radiography data analysis for each container in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		Both VE Operators have a their current qualification
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	N/A		This ITR checklist is for RTR/VE Update only.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	N/A		This ITR checklist is for RTR/VE Update only.
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This ITR checklist is for RTR/VE Update only.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch,	N/A		This ITR checklist is for RTR/VE Update only.

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Container	10311878	**Analysis**	0000266505
Reviewer	DENISE LEE	**Approval Level**	Independent Technical Reviewer
Approval Date	06-MAR-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	N/A		This ITR checklist is for RTR/VE Update only.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	N/A		This ITR checklist is for RTR/VE Update only.
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	N/A		Not all QAOs were checked.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Container	10311878	**Analysis**	0000266505
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	08-OCT-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	No AKR required.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	N/A	MP-TRUW-8.2, C3-4a	This checklist is for RTR update only.
(10) Do the waste container contents match the WMC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Container 10311878 **Analysis** 0000266505
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 08-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
waste stream description and identify the absence of prohibited items?		B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	An audio/video recording is not required for an RVU.
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	RVU is for IDC chnage. No AKR required.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	N/A	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	Not applicable for RTR Update.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	N/A	MP-TRUW-8.2, C1-3 and C3-4a	Not applicable for RTR Update.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	The operators that performed this update were VE qualified.
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	N/A	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	N/A	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	This checklist is for RTR update only. All applicable data is included.

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Container	10311878	**Analysis**	0000266505
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	08-OCT-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00401 **Open Date** 21-NOV-11 **Close Date** 23-NOV-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2360568	NSTYHL	08-OCT-12	SPM	SPM review complete. Approve RVU.
2186883	DLEE	06-MAR-12	ITR	Promote to SPM.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 11:54

Batch Type Real Time Radiography **Batch Report No.** RTR11-00414

Batch Id RTR11-00414 **Open Date** 05-DEC-11 08:33:00 **Close Date** 06-DEC-11 12:04:19

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10368056	RF-330	0000080618	05-DEC-11 08:33:00	Original	P	SHAWN JORDAN
10245487	RF-440	0000080619	05-DEC-11 08:51:21	Original	P	SHAWN JORDAN
10242739	RF-330	0000080621	05-DEC-11 09:09:09	Original	P	SHAWN JORDAN
10028126	RF-376	0000080622	05-DEC-11 09:42:16	Original	NR	SHAWN JORDAN
10368056	RF-330	0000080624	05-DEC-11 10:15:03	RTR OIO	P	MICHAEL RICKS
10245487	RF-440	0000080626	05-DEC-11 11:00:19	Replicate / Duplicate	P	MICHAEL RICKS
10371631	RF-330	0000080628	05-DEC-11 11:56:19	Original	P	SHAWN JORDAN
10368990	RF-336	0000080630	05-DEC-11 12:18:04	Original	P	SHAWN JORDAN
10245489	RF-330	0000080632	05-DEC-11 13:04:17	Original	P	MICHAEL RICKS
10371838	RF-480	0000080636	05-DEC-11 14:22:23	Original	P	MICHAEL RICKS
10359370	RF-330	0000080638	05-DEC-11 15:10:39	Original	P	MICHAEL RICKS
10352025	RF-330	0000080639	05-DEC-11 15:32:07	Original	P	SETH OLDHAM
10359216	RF-336	0000080641	05-DEC-11 16:20:22	Original	NR	CRAIG SIMMONS
10339104	RF-336	0000080643	05-DEC-11 16:51:05	Original	P	SETH OLDHAM
10005569	RF-320	0000080647	05-DEC-11 17:56:10	Original	NR	MICHAEL RICKS
10006063	RF-440	0000080649	06-DEC-11 08:29:59	Original	P	CINDY TIEGS
10036565	RF-376	0000080650	06-DEC-11 08:57:40	Original	P	CINDY TIEGS
10339146	RF-336	0000080652	06-DEC-11 09:22:43	Original	P	CINDY TIEGS
10333723	RF-336	0000080653	06-DEC-11 09:50:27	Original	P	CINDY TIEGS
10008932	RF-480	0000080656	06-DEC-11 10:51:45	Original	NR	CINDY TIEGS
10006001	RF-440	0000080658	06-DEC-11 11:29:33	Original	P	SETH OLDHAM
10006014	RF-442	0000080659	06-DEC-11 12:04:19	Original	P	CINDY TIEGS

INFORMATION ONLY

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
KBIRCH	18-APR-12 09:29:31	Esigned.
CHINKLE	23-APR-12 06:46:58	23-APR-12 CHINKLE AKE This batch is promoted. chd 4/23/12
DLEE	07-MAY-12 10:00:56	Rework drum 10359216 Operator needs to correct the Liquid waste parameters to Liquids for Other Inorganic.
DLEE	07-MAY-12 10:00:56	Rework drum 10339104 Operator needs to remove Misc. Metals from the waste parameters and re"Add Items" the first "Add Item" is 4.8 lbs Misc. Metal in Iron-based Metals/Alloys and the second "Add Item" is 0.20 lbs Lead Tape in 100% Other Metals.
DLEE	07-MAY-12 10:00:56	Rework drum 10352025 Operator needs to remove Misc. Metals from the waste parameters and re"Add Items" the first "Add Item" is 4.5 lbs Misc. Metal in Iron-based Metals/Alloys and the second "Add Item" is 0.50 lbs Lead Tape in 100% Other Metals.
DLEE	07-MAY-12 10:00:56	This batch was validated to MP-TRUW-8.8.
DLEE	07-MAY-12 10:00:56	Rework drum 10006001 Operator needs to correct Layers of Confinement from 2 to 3 and Sealed Containers Over 4L from No to Yes, due to clamshells in waste. The waste parameters need correct by "Add Item" of 14 Clamshells at 1 lbs each in 100% Plastic (waste materials) with the Identified Layer as Yes and remove the poly bottles quart size from Waste Items by Weight.
DLEE	07-MAY-12 10:04:21	Demote to Operations for rework.
SOLDHAM	09-MAY-12 14:55:25	Rework complete.
DLEE	10-MAY-12 06:22:26	Rework completed to satisfaction and no 200% review required. Promote to SPM.
KBURNSIDE	14-MAY-12 10:58:39	Container 10359216 has no closure date associated with the container and the container has (2) poly bottles listed in packaging material. Please update as necessary.
DLEE	15-MAY-12 08:38:17	Rework drum 10359216 Operator needs to correct Layers of Confinement to 4. The 1.5 gal poly bottles in packaging materials needs removed and re-"Add Item" of two 1.5 gal poly bottles at 1.5 lbs with identified layers as yes and item type in waste item by weight section of the waste parameters.
DLEE	15-MAY-12 08:42:00	Demote to Operations for rework.
CSIMMONS	15-MAY-12 13:48:57	Rework complete.
DLEE	15-MAY-12 15:52:12	Drum 10359216 has no closure date. Non-report. LLW/MLLW drum DKL 5/15/12
DLEE	15-MAY-12 16:02:23	Promote to SPM.
KBURNSIDE	01-JUN-12 08:44:32	SPM reviewed and approved.
SCANIFF	20-AUG-12 11:51:15	Drum 10005569 non-reported from batch RTR11-00414 so that drum could be re-RTR'd.

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2212504	KBIRCH	18-APR-2012 09:29:31	
2226539	DLEE	07-MAY-2012 10:04:21	Demote to Operations for rework.
2228565	SOLDHAM	09-MAY-2012 14:55:25	Rework complete.
2228998	DLEE	10-MAY-2012 06:22:26	Rework completed to satisfaction and no 200% review required. Promote to SPM.
2231995	KBURNSIDE	14-MAY-2012 10:58:39	Container 10359216 has no closure date associated with the container and the container has (2) poly bottles listed in packaging material. Please update as necessary.
2232513	DLEE	15-MAY-2012 08:42:00	Demote to Operations for rework.
2232746	CSIMMONS	15-MAY-2012 13:48:57	Rework complete.
2232851	DLEE	15-MAY-2012 15:52:12	Drum 10359216 has no closure date. Non-report. LLW/MLLW drum DKL 5/15/12
2232866	DLEE	15-MAY-2012 16:02:23	Promote to SPM.
2245467	KBURNSIDE	01-JUN-2012 08:44:33	SPM reviewed and approved.
2313595	SCANIFF	20-AUG-2012 11:51:15	Drum 10005569 non-reported from batch RTR11-00414 so that drum could be re-RTR'd.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 11:55

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00414

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID or related Batch ID	Trackwise Number	Status	Opened Date	Closed Date
10005569	70464	CLOSED	01-MAY-12	17-SEP-12
10005569	67199	CLOSED	05-DEC-11	17-SEP-12
10005569	67200	CLOSED	05-DEC-11	17-SEP-12
10005569	72474	OPEN	10-SEP-12	
10005569	72475	OPEN	10-SEP-12	
10005569	8684	CLOSED	29-JUL-04	03-MAY-12
10006001	14195	CLOSED	02-MAY-05	08-MAY-12
10006001	14196	CLOSED	02-MAY-05	08-MAY-12
10006001	67218	OPEN	06-DEC-11	
10006001	67219	OPEN	06-DEC-11	
10006001	70583	OPEN	07-MAY-12	
10006001	70584	OPEN	07-MAY-12	
10006014	10535	CLOSED	03-OCT-04	24-MAY-06
10006014	67222	CLOSED	06-DEC-11	06-SEP-12
10006014	67223	CLOSED	06-DEC-11	06-SEP-12
10006014	7998	CLOSED	14-JUL-04	24-MAY-06
10006063	14222	CLOSED	04-MAY-05	03-MAY-12
10006063	67203	OPEN	06-DEC-11	
10006063	67204	OPEN	06-DEC-11	
10008850	10493	CLOSED	01-OCT-04	18-MAR-05
10008851	10493	CLOSED	01-OCT-04	18-MAR-05
10008852	10493	CLOSED	01-OCT-04	18-MAR-05
10008853	10493	CLOSED	01-OCT-04	18-MAR-05
10008858	10493	CLOSED	01-OCT-04	18-MAR-05
10008925	10493	CLOSED	01-OCT-04	18-MAR-05
10008926	10493	CLOSED	01-OCT-04	18-MAR-05
10008927	10493	CLOSED	01-OCT-04	18-MAR-05
10008932	10493	CLOSED	01-OCT-04	18-MAR-05
10008932	67215	CLOSED	06-DEC-11	06-APR-12
10008932	67216	CLOSED	06-DEC-11	06-APR-12
10008932	67217	CLOSED	06-DEC-11	06-APR-12
10008932	8756	CLOSED	07-AUG-04	10-NOV-04
10008932	8757	CLOSED	07-AUG-04	06-APR-12
10008933	10493	CLOSED	01-OCT-04	18-MAR-05
10008935	10493	CLOSED	01-OCT-04	18-MAR-05
10020457	10493	CLOSED	01-OCT-04	18-MAR-05
10020458	10493	CLOSED	01-OCT-04	18-MAR-05
10020463	10493	CLOSED	01-OCT-04	18-MAR-05
10020464	10493	CLOSED	01-OCT-04	18-MAR-05
10021261	10493	CLOSED	01-OCT-04	18-MAR-05
10021272	10493	CLOSED	01-OCT-04	18-MAR-05

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 11:55

Container ID or related Batch ID	Trackwise Number	Status	Opened Date	Closed Date
10021919	10493	CLOSED	01-OCT-04	18-MAR-05
10021932	10493	CLOSED	01-OCT-04	18-MAR-05
10021950	10493	CLOSED	01-OCT-04	18-MAR-05
10028126	14855	CLOSED	23-MAY-05	06-APR-12
10028126	67156	CLOSED	05-DEC-11	06-APR-12
10028126	67157	CLOSED	05-DEC-11	06-APR-12
10036565	13848	CLOSED	12-APR-05	14-JUN-12
10036565	67205	CLOSED	06-DEC-11	14-JUN-12
10036565	67206	CLOSED	06-DEC-11	14-JUN-12
10333723	67210	OPEN	06-DEC-11	
10339104	67198	OPEN	05-DEC-11	
10359216	67197	OPEN	05-DEC-11	
10359216	70767	OPEN	15-MAY-12	
10368990	67173	OPEN	05-DEC-11	
10371631	67168	OPEN	05-DEC-11	
10371838	67187	OPEN	05-DEC-11	
10371838	67188	OPEN	05-DEC-11	
10371838	70248	OPEN	18-APR-12	
10005569	66951	CLOSED	22-NOV-11	01-MAY-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Checklist Report

Date: 01-Oct-2012
Time: 11:55

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer
Approval Date 07-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		See batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	No		See batch comments
14. Was the presence or absence of prohibited items properly documented?	No		See batch comments
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10245487 was the replicate exam done on 12/5/11 .Original Operator enters 80% Fill Factor and remaining waste as 100% Other Inorganic Materials. The Replicate Operator enters 96% Fill Factor and remaining waste as 100% Plastic (Waste Materials). I agree with the Original Operator. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.

Checklist Report

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 07-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10368056 was exam on 12/5/11. Original Operator enters 85% Fill Factor and the OIO Operator enters 96% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	No		See batch comments
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10245487 was the replicate exam done on 12/5/11 .Original Operator enters 80% Fill Factor and remaining waste as 100% Other Inorganic Materials. The Replicate Operator enters 96% Fill Factor and remaining waste as 100% Plastic (Waste Materials). I agree with the Original Operator. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 10-MAY-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10368056 was exam on 12/5/11. Original Operator enters 85% Fill Factor and the OIO Operator enters 96% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 15-MAY-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10245487 was the replicate exam done on 12/5/11 .Original Operator enters 80% Fill Factor and remaining waste as 100% Other Inorganic Materials. The Replicate Operator enters 96% Fill Factor and remaining waste as 100% Plastic (Waste Materials). I agree with the Original Operator. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer	DENISE LEE	**Approval Level**	Independent Technical Reviewer
Approval Date	15-MAY-12	**Review Iteration**	3

Question Text	Answer	Requirement	Comment
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10368056 was exam on 12/5/11. Original Operator enters 85% Fill Factor and the OIO Operator enters 96% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Checklist Report

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 15-MAY-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Drum 10245487 was the replicate exam done on 12/5/11 .Original Operator enters 80% Fill Factor and remaining waste as 100% Other Inorganic Materials. The Replicate Operator enters 96% Fill Factor and remaining waste as 100% Plastic (Waste Materials). I agree with the Original Operator. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer DENISE LEE **Approval Level** Independent Technical Reviewer

Approval Date 15-MAY-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		OIO Drum 10368056 was exam on 12/5/11. Original Operator enters 85% Fill Factor and the OIO Operator enters 96% Fill Factor. There were other minor differences between the exams; These don't affect the disposition of the container or the DQOs.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 14-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-736 R3, NCR-70248, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10371838

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 14-MAY-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10368056 on 12/5/11 at 1015. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	Container 10359216 has no closure date associated with the container and the container has (2) poly bottles listed in packaging material.

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 01-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-736 R3, NCR-70248, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10371838

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 01-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10368056 on 12/5/11 at 1015. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00414 **Open Date** 05-DEC-11 **Close Date** 06-DEC-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2245467	KBURNSIDE	01-JUN-12	SPM	SPM reviewed and approved.
2232866	DLEE	15-MAY-12	ITR	Promote to SPM.
2232513	DLEE	15-MAY-12	ITR	Demote to Operations for rework.
2231995	KBURNSIDE	14-MAY-12	SPM	Container 10359216 has no closure date associated with the container and the container has (2) poly bottles listed in packaging material. Please update as necessary.
2228998	DLEE	10-MAY-12	ITR	Rework completed to satisfaction and no 200% review required. Promote to SPM.
2226539	DLEE	07-MAY-12	ITR	Demote to Operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012

Time: 15:58

Batch Id RTR11-00414 **Container Id** 10368056 **Analysis Id** 0000080618

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 08:33 **Gross Weight** 138.915 **Lbs** **Net Weight** 77.915 **Lbs**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-AUG-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags and coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	16.000	PINTS	0.125	2.000

Batch Id RTR11-00414 **Container Id** 10368056 **Analysis Id** 0000080618

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.000
Cellulosics	100.000	75.915
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140118	SJORDAN	05-DEC-2011 08:33	

Batch Id RTR11-00414 **Container Id** 10245487 **Analysis Id** 0000080619

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 08:51 **Gross Weight** 180.810 Lbs. **Net Weight** 119.810 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5122 **IDC** RF-440 Glass

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-NOV-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be sheets of glass.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00414 **Container Id** 10245487 **Analysis Id** 0000080619

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	114.310
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140173	SJORDAN	05-DEC-2011 08:51	

Batch Id RTR11-00414 **Container Id** 10242739 **Analysis Id** 0000080621

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass.

RTR Date 05-DEC-2011 09:09 **Gross Weight** 127.890 Lbs. **Net Weight** 66.890 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-DEC-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags, tape rolls and coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00414 **Container Id** 10242739 **Analysis Id** 0000080621

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	63.870
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140176	SJORDAN	05-DEC-2011 09:09	

Batch Id RTR11-00414 **Container Id** 10028126 **Analysis Id** 0000080622

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Non Reportable

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment

RTR Analysis Report

Batch Id RTR11-00414 **Container Id** 10368056 **Analysis Id** 0000080624

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 10:15 **Gross Weight** 138.915 Lbs. **Net Weight** 77.915 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 18-AUG-1971 00:00 **Operator** MRICKS

Result Comment Drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 96

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	16.000	PINTS	0.125	2.000

Batch Id RTR11-00414 **Container Id** 10368056 **Analysis Id** 0000080624

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.000
Cellulosics	100.000	75.915
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	24-APR-2012 16:30	DLEE	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment OIO Check completed.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2216247	DLEE	24-APR-2012 16:30	OIO Check completed.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140195	MRICKS	05-DEC-2011 10:15	

RTR Analysis Report

Batch Id RTR11-00414 **Container Id** 10245487 **Analysis Id** 0000080626

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 11:00 **Gross Weight** 180.810 Lbs. **Net Weight** 119.810 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5900 **IDC** RF-440 Glass

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-NOV-1971 00:00 **Operator** MRICKS

Result Comment Waste appears to be plastic glove box pieces.

Package

IDC Correct **Recommended IDC** UN-00B **Summary Category** S5000

Idc Change Reason Majority of waste appears to be plastic not glass

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 96

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Glove box ports.	1.000	EACH	12.000	12.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00414 **Container Id** 10245487 **Analysis Id** 0000080626

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	12.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	98.770
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140226	MRICKS	05-DEC-2011 11:00	

Batch Id RTR11-00414 **Container Id** 10371631 **Analysis Id** 0000080628

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 11:56 **Gross Weight** 136.710 Lbs. **Net Weight** 75.710 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging and plastic bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 1.25 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1.25 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .75 pints of liquid in a quart poly bottle near middle chine of drum and .50 pints of liquid in a quart poly bottle near bottom chine of drum.

Prohibited Liquids Present Yes **Comment** Internal containers with >60 mL of liquid.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
quart poly bottle	2.000	EACH	0.250	0.500
metal debris	1.000	EACH	20.000	20.000
Cardboard liner	1.000	EACH	4.000	4.000

Batch Id RTR11-00414 **Container Id** 10371631 **Analysis Id** 0000080628

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Liquids for Other Inorganics	1.250	PINTS	1.000	1.250

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	20.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.510
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	49.200
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140256	SJORDAN	05-DEC-2011 11:56	

RTR Analysis Report

Batch Id RTR11-00414 **Container Id** 10368990 **Analysis Id** 0000080630

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 12:18 **Gross Weight** 183.015 Lbs. **Net Weight** 122.015 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-AUG-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging, plastic bottles and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .03 pints of liquid in a small poly bottle near bottom of drum.

Prohibited Liquids Present Yes **Comment** Internal container with >3% by volume liquid.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
small poly bottle	1.000	EACH	0.100	0.100
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Batch Id RTR11-00414 **Container Id** 10368990 **Analysis Id** 0000080630

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.550
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	115.465
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140260	SJORDAN	05-DEC-2011 12:18	

Batch Id RTR11-00414 **Container Id** 10245489 **Analysis Id** 0000080632

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 13:04 **Gross Weight** 125.685 Lbs. **Net Weight** 64.685 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-SEP-1971 00:00 **Operator** MRICKS

Result Comment Drum contains paper and rags, and plastic sheeting and bags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1 pints **Containerized Liquid Amt** 0 pints

Other Liquids 1 pints **Comment** 1 pint in bag at bottom chine level.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	16.000	PINTS	0.125	2.000
Liquids for Other Inorganics	1.000	PINTS	1.000	1.000

Batch Id RTR11-00414 **Container Id** 10245489 **Analysis Id** 0000080632

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.000
Cellulosics	50.000	30.718
Rubber	0.000	0.000
Plastic (Waste Materials)	50.000	30.968
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140268	MRICKS	05-DEC-2011 13:04	

Batch Id RTR11-00414 **Container Id** 10371838 **Analysis Id** 0000080636

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 14:22 **Gross Weight** 143.325 **Lbs.** **Net Weight** 82.325 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-OCT-1971 00:00 **Operator** MRICKS

Result Comment Drum primarily contains metal containers.
AK concurs with the recommended IDC change from RF-336 to RF-480 for container 10371838. AKR-12-736 was revised (R3) and attached to NCR 70248 to support this change. CHD 4/23/12

Package

IDC Correct Yes **Recommended IDC** RF-480 **Summary Category** S5000

Idc Change Reason Majority of waste appears to be metal, no paper and rags.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 16 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 16 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 2-About 6 pints in container that appears to be 6 quart poly bottle, near top of waste and below.
2- gal glass bottles , one with 3.5 pints liquid and the other with about .5 pints liquid.

Prohibited Liquids Present Yes **Comment** >1%, >60ml

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	2 bottles with liquid

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Batch Id RTR11-00414 **Container Id** 10371838 **Analysis Id** 0000080636

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
gal glass bottles	2.000	EACH	2.000	4.000
misc plastic lab ware	1.000	EACH	3.000	3.000
1.5 gal poly bottles	2.000	EACH	1.500	3.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520
Liquids for Other Inorganics	16.000	PINTS	1.000	16.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	95.000	47.315
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	5.000	2.490
Other Inorganic Materials	0.000	22.520
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2215336	CHINKLE	23-APR-2012 06:46	This batch is promoted. chd 4/23/12
2140313	MRICKS	05-DEC-2011 14:22	

RTR Analysis Report

Batch Id RTR11-00414 **Container Id** 10359370 **Analysis Id** 0000080638

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 15:10 **Gross Weight** 141.120 **Lbs.** **Net Weight** 80.120 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-DEC-1971 00:00 **Operator** MRICKS

Result Comment Drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	5.000	EACH	0.250	1.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR11-00414 **Container Id** 10359370 **Analysis Id** 0000080638

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.200
Cellulosics	100.000	74.670
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140324	MRICKS	05-DEC-2011 15:10	

Batch Id RTR11-00414 **Container Id** 10352025 **Analysis Id** 0000080639

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 15:32 **Gross Weight** 145.530 **Lbs.** **Net Weight** 84.530 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-DEC-1971 00:00 **Operator** MRICKS

Result Comment Drum contains paper and rags.
Rework to correct waste parameters. ESO 05/09/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 96

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.500	0.500
misc. metal	1.000	EACH	4.500	4.500
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	7.000	PINTS	0.420	2.940

Batch Id RTR11-00414 **Container Id** 10352025 **Analysis Id** 0000080639

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	2.940
Cellulosics	100.000	75.090
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2228563	SOLDHAM	09-MAY-2012 14:52	
2140332	MRICKS	05-DEC-2011 15:32	

Batch Id RTR11-00414 **Container Id** 10359216 **Analysis Id** 0000080641

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Non Reportable

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment

Batch Id RTR11-00414 **Container Id** 10339104 **Analysis Id** 0000080643

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-DEC-2011 16:51 **Gross Weight** 167.580 **Lbs.** **Net Weight** 106.580 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-DEC-1971 00:00 **Operator** MRICKS

Result Comment Drum contains paper and rags.
Rework to correct waste parameters. ESO 05/09/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .4 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .4 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .35 pints in quart metal container near top of waste .05 pints in quart metal container near bottom chine.

Prohibited Liquids Present Yes **Comment** >60ml

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.200	0.200
misc. metal	1.000	EACH	4.800	4.800
Plastic bag for waste	1.000	EACH	0.250	0.250
Metal can	2.000	EACH	0.500	1.000

Batch Id RTR11-00414 **Container Id** 10339104 **Analysis Id** 0000080643

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.400	PINTS	1.000	0.400

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.800
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.200
Other Inorganic Materials	0.000	0.400
Cellulosics	100.000	99.930
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2228562	SOLDHAM	09-MAY-2012 14:50	
2140379	MRICKS	05-DEC-2011 16:51	

Batch Id RTR11-00414 **Container Id** 10005569 **Analysis Id** 0000080647

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Non Reportable

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment

Batch Id RTR11-00414 **Container Id** 10006063 **Analysis Id** 0000080649

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 06-DEC-2011 08:29 **Gross Weight** 403.520 Lbs. **Net Weight** 327.520 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5122 **IDC** RF-440 Glass

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-JUN-1986 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead lined 55-gal drum with poly bottles of broken glass.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 66

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead lined	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead lined impenetrable areas

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	17.000	EACH	0.250	4.250
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000
Poly bottles (1 gal)	17.000	EACH	1.000	17.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00414 **Container Id** 10006063 **Analysis Id** 0000080649

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	100.000	206.270
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	21.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140523	CTIEGS	06-DEC-2011 08:30	

Batch Id RTR11-00414 **Container Id** 10036565 **Analysis Id** 0000080650

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 06-DEC-2011 08:57 **Gross Weight** 284.450 **Lbs.** **Net Weight** 207.450 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-OCT-1977 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain cemented insulation and flu-flo filter media.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areas of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator at top	1.000	EACH	3.000	3.000
plastic bagging, poly bottles, tubing	1.000	EACH	20.000	20.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00414 **Container Id** 10036565 **Analysis Id** 0000080650

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.450
Other metals	0.000	100.000
Other Inorganic Materials	100.000	84.200
Cellulosics	0.000	0.150
Rubber	0.000	2.400
Plastic (Waste Materials)	0.000	20.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140538	CTIEGS	06-DEC-2011 08:57	

RTR Analysis Report

Batch Id RTR11-00414 **Container Id** 10339146 **Analysis Id** 0000080652

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 06-DEC-2011 09:22 **Gross Weight** 156.555 Lbs. **Net Weight** 95.555 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-DEC-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .01 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .01 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** poly bottle toward bottom of waste liquid.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape towards bottom	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.250	0.250
misc metals, clip, flashlight, can	1.000	EACH	3.000	3.000
poly bottle,	1.000	EACH	0.140	0.140
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	5.000	PINTS	0.420	2.100
Liquids for Other Inorganics	0.010	PINTS	1.000	0.010

Batch Id RTR11-00414 **Container Id** 10339146 **Analysis Id** 0000080652

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	2.110
Cellulosics	100.000	89.805
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.390
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140546	CTIEGS	06-DEC-2011 09:22	

Batch Id RTR11-00414 **Container Id** 10333723 **Analysis Id** 0000080653

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 06-DEC-2011 09:50 **Gross Weight** 211.680 **Lbs.** **Net Weight** 150.680 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-DEC-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 4.56 pints **Containerized Liquid Amt** 0 pints

Other Liquids 4.06 pints **Comment** .06 pts in tubing, .50 pts in poly bottle at bottom, 4.00 pts liquid in bagging at bottom of waste.

Prohibited Liquids Present Yes **Comment** >60ml >1% by volume liquid

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
tubing, plasting baggin.	1.000	EACH	5.000	5.000
aluminum filter mesh	1.000	EACH	3.000	3.000
misc metals, round fire alarm	1.000	EACH	3.000	3.000
respirtaor	1.000	EACH	3.000	3.000
poly bottle	1.000	EACH	0.140	0.140
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00414 **Container Id** 10333723 **Analysis Id** 0000080653

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	6.000	PINTS	0.125	0.750
Liquids for Other Inorganics	4.560	PINTS	1.000	4.560

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	3.450
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.310
Cellulosics	100.000	131.130
Rubber	0.000	2.400
Plastic (Waste Materials)	0.000	5.390
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140563	CTIEGS	06-DEC-2011 09:50	

Batch Id RTR11-00414 **Container Id** 10008932 **Analysis Id** 0000080656

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Non Reportable

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment

Batch Id RTR11-00414 **Container Id** 10006001 **Analysis Id** 0000080658

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 06-DEC-2011 11:29 **Gross Weight** 383.670 Lbs. **Net Weight** 307.670 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5122 **IDC** RF-440 Glass

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-APR-1986 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead lined 55gal drum with poly bottles with broken glass .
Rework to correct waste parameters and layers of confinement and sealed containers >4L. ESO 05/09/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	clamshells

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areasof waste lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
clamshell	14.000	EACH	1.000	14.000
Plastic bag for waste	16.000	EACH	0.250	4.000
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000
Poly bottles (1 gal)	14.000	EACH	1.000	14.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00414 **Container Id** 10006001 **Analysis Id** 0000080658

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	100.000	175.670
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	32.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2228556	SOLDHAM	09-MAY-2012 14:46	
2140610	CTIEGS	06-DEC-2011 11:29	

Batch Id RTR11-00414 **Container Id** 10006014 **Analysis Id** 0000080659

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 06-DEC-2011 12:04 **Gross Weight** 266.810 **Lbs.** **Net Weight** 190.810 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5122 **IDC** RF-442 Raschig Rings, Leached

Recording Id 1RTR11-00219 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-MAR-1982 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead lined 55 gal drum two fiber packes with raschig rings.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areas of the waste due to the lead liner

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Fiber pack	2.000	EACH	6.000	12.000
Plastic bag for waste	6.000	EACH	0.250	1.500
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00414 **Container Id** 10006014 **Analysis Id** 0000080659

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	100.000	77.310
Cellulosics	0.000	12.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2140622	CTIEGS	06-DEC-2011 12:04	

End of RTR Analysis Report

AMWTP

Date: 01-Oct-2012

RTR Replicate Comparison Report

Time: 11:57

RTR Batch Id: RTR11-00414 Container Id: 10245487 Equipment Id: Z-213-101

Container type Description: drum, 55 Gallon Drum (17H) Gen-IDC: RF-440 Gross Weight(Lbs): 180.81

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000080619	05-DEC-2011 08:51	0000080626	05-DEC-2011 11:00
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	1RTR11-00219		1RTR11-00219	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	SHAWN JORDAN		MICHAEL RICKS	
IDC Ok? / Recommended IDC:	Y		X	UN-00B
IDC Change Reason:			Majority of waste appears to be plastic not glass	
Summary Category / Waste matrix Code:	S5000	S5122	S5000	S5900
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	3		3	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	80		96	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

RTR Batch Id: RTR11-00414 **Container Id:** 10245487 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Drum contents appear to be sheets of glass.	Waste appears to be plastic glove box pieces.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2216293	DLEE	24-APR-12	Replicate Comparison completed.

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 12:38

Batch Type Real Time Radiography

Batch Report No. RTR11-00426

Batch Id RTR11-00426

Open Date 15-DEC-11 17:48:02

Close Date 17-DEC-11 09:14:45

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10041217	MD-836	0000080901	15-DEC-11 17:48:02	Original	P	MICHAEL RICKS
10311479	RF-750	0000080902	15-DEC-11 18:12:11	Original	P	MICHAEL RICKS
10015483	RF-336	0000080904	16-DEC-11 08:56:52	Original	P	SETH OLDHAM
10312198	RF-750	0000080905	16-DEC-11 09:29:02	Original	P	SETH OLDHAM
10343023	RF-750	0000080907	16-DEC-11 09:51:14	Original	P	SETH OLDHAM
10014727	RF-336	0000080908	16-DEC-11 10:17:55	Original	P	SETH OLDHAM
10015483	RF-336	0000080909	16-DEC-11 11:00:59	Replicate / Duplicate	P	BILL HUGGINS
10014727	RF-336	0000080910	16-DEC-11 11:21:58	RTR OIO	P	SAMUEL PHILLIPS
10308201	RF-750	0000080912	16-DEC-11 11:58:55	Original	P	SETH OLDHAM
10140503	RF-750	0000080913	16-DEC-11 12:24:17	Original	P	SETH OLDHAM
10140568	RF-750	0000080914	16-DEC-11 13:17:48	Original	P	DANNY GREEN
10343045	RF-750	0000080916	16-DEC-11 13:44:58	Original	P	DANNY GREEN
10310461	RF-750	0000080917	16-DEC-11 14:16:54	Original	P	DANNY GREEN
10314331	UN-00B	0000080919	16-DEC-11 14:32:16	Original	P	DENISE LEE
10308359	RF-750	0000080920	16-DEC-11 15:02:17	Original	P	MICHAEL RICKS
10308367	UN-00B	0000080922	16-DEC-11 15:15:25	Original	P	DANNY GREEN
10366179	RF-441	0000080923	16-DEC-11 16:17:53	Original	P	DANNY GREEN
10359402	RF-337	0000080924	16-DEC-11 16:49:17	Original	P	DANNY GREEN
10255790	RF-336	0000080926	16-DEC-11 17:29:56	Original	P	DANNY GREEN
10367009	RF-371	0000080929	16-DEC-11 17:53:53	Original	P	DANNY GREEN
10255302	RF-374	0000080931	17-DEC-11 08:54:23	Original	P	DENISE LEE
10023728	RF-336	0000080932	17-DEC-11 09:14:45	Original	P	KENT KEARN
10308367	UN-00B	0000266115	21-FEB-12 13:34:53	Supplemental	P	STEVE ESPLIN

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
GTEDFORD	21-DEC-11 12:53:11	21-DEC-11 GTEDFORD AKE Recommended IDC is accepted.
CSIMMONS	24-DEC-11 15:16:39	Container 10308359: The operator identified a non-leaded rubber glove that didn't get added to the waste parameters in WTS. Please review and make changes as needed.
CSIMMONS	24-DEC-11 15:16:39	Container 10311479: There was a ½ inch plywood spacer entered as packaging in WTS that was not identified during the exam. This entry should be removed .Please review and make changes as needed.
CSIMMONS	24-DEC-11 15:16:39	Container 10041217: The operator identified a ½ inch ply would spacer that didn't get added to packaging in waste parameters. Please review and make changes as needed.
CSIMMONS	24-DEC-11 15:16:39	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	24-DEC-11 15:21:19	Sent batch to operations for rework.
MRICKS	27-DEC-11 14:58:43	rework complete
CSIMMONS	31-DEC-11 09:23:13	Reviewed rework: It appears to be complete and correct.
CSIMMONS	02-JAN-12 07:40:17	Container 10255302:The correct matrix code is not populating.
CSIMMONS	02-JAN-12 07:42:03	Sent batch to operations for WMC issue.
KBIRCH	02-JAN-12 08:17:25	WMC issue
CSIMMONS	02-JAN-12 08:36:05	Operations wasn't able to correct WMC issue for container 10255302.
CSIMMONS	02-JAN-12 11:34:24	Sent batch back to operations for WMC issue.
KBIRCH	02-JAN-12 13:04:09	rework complete
NKIRK	02-JAN-12 14:01:18	21-DEC-11 GTEDFORD AKE Recommended IDC is accepted. 02-JAN-12 NKIRK AKE Reject to ITR to get correct WMC to populate. ndk
SPHILLIPS	03-JAN-12 08:21:15	Rework complete
CSIMMONS	10-JAN-12 08:08:48	Per AK review of CRD container 10314331 requires rework to change from RF750 to UN-00B.
CSIMMONS	10-JAN-12 08:10:57	Sent batch to operations for AK rework.
DLEE	11-JAN-12 13:41:10	Rework completed.
RMORRIS	12-JAN-12 08:27:53	21-DEC-11 GTEDFORD AKE Recommended IDC is accepted. 02-JAN-12 NKIRK AKE Reject to ITR to get correct WMC to populate. ndk 12-JAN-12 RMORRIS AKE This batch promoted. RCM 01/12/12
CSIMMONS	16-JAN-12 11:25:43	Reviewed rework: It appears to be complete and correct.
CSIMMONS	16-JAN-12 11:25:43	Container 10255302: Per RPT-TRUW-05 the correct Waste Matrix Code for this drum is S5490.This WMS is not populating in WTS (It is showing S5420) which is the code that was assigned to this IDC of RF-374 before the code was changed per note 55. in RPT-TRUW-05(WMC change for IDC RF-374 from S5420 to S5490 [AKR-06-407]) During the exam the operator did identify this condition. Because this container is low level debris waste and the future processing of the container the WMC will be changed at that time. No further attempt will be made to correct the code. Was requested by SPM to promote batch with container WMC as is.
CSIMMONS	16-JAN-12 11:25:43	Promoted batch to SPM level.
KBURNSIDE	18-JAN-12 16:03:14	SPM reviewed and approved.

**********RTR/VE Update (RVU) Comments**********

Written By	Date	Comment
CSIMMONS	07-MAR-12 10:29:46	This RVU was validated to MP-TRUW-8.8.
CSIMMONS	07-MAR-12 10:30:19	There is no rework for RVU drum 10308367 analysis Id 0000266115.
CSIMMONS	07-MAR-12 10:39:30	p

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2149135	CSIMMONS	24-DEC-2011 15:21:19	Sent batch to operations for rework.
2149995	MRICKS	27-DEC-2011 14:58:43	rework complete
2152749	CSIMMONS	02-JAN-2012 07:42:03	Sent batch to operations for WMC issue.
2152752	KBIRCH	02-JAN-2012 08:17:25	WMC issue
2152812	CSIMMONS	02-JAN-2012 11:34:24	Sent batch back to operations for WMC issue.
2152869	KBIRCH	02-JAN-2012 13:04:09	rework complete
2153260	SPHILLIPS	03-JAN-2012 08:21:15	Rework complete
2158193	CSIMMONS	10-JAN-2012 08:10:57	Sent batch to operations for AK rework.
2159336	DLEE	11-JAN-2012 13:41:11	Rework completed.
2162497	CSIMMONS	16-JAN-2012 11:25:43	Promoted batch to SPM level.
2164230	KBURNSIDE	18-JAN-2012 16:03:14	SPM reviewed and approved.

**********RTR/VE Update (RVU) E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2187765	CSIMMONS	07-MAR-2012 10:39:30	p

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 12:39

*******Batch NCR(s)*******

Batch Type	RTR	Batch ID	RTR11-00426

Trackwise Number	Status	Opened Date	Closed Date

*******Container NCR(s)*******

Container ID (Or related Batch ID)	Trackwise Number	Status	Opened Date	Closed Date
10023728	67552	CLOSED	17-DEC-11	30-AUG-12
10041217	67542	OPEN	15-DEC-11	
10308367	68852	OPEN	07-FEB-12	
10310461	67544	OPEN	16-DEC-11	
10343023	67543	OPEN	16-DEC-11	
10366179	67682	OPEN	21-DEC-11	

*******End of Non-Conformance Report*******

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 01-Oct-2012

Time: 12:39

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 24-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See batch comments.
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10015483 on 12/16/11. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was preformed on container 10014727 on 12/16/11. There were minor differences

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 24-DEC-11 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 02-JAN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10015483 on 12/16/11. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was preformed on container 10014727 on 12/16/11. There were minor differences

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 02-JAN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Checklist Report

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 02-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10015483 on 12/16/11. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was preformed on container 10014727 on 12/16/11. There were minor differences

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 02-JAN-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10015483 on 12/16/11. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was preformed on container 10014727 on 12/16/11. There were minor differences

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 10-JAN-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 16-JAN-12 **Review Iteration** 5

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10015483 on 12/16/11. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was preformed on container 10014727 on 12/16/11. There were minor differences

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 16-JAN-12 **Review Iteration** 5

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 18-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-10-696 R1 and NCR-67682
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	Container 10255302 has an incorrect WMC listing in WTS of S5420 the correct WMC for this container should be S5490. This container is a low level container and is not WIPP shippable therefore this container will be shipped low level SDOP or direct ship not affected by this characterization data.
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 18-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?		C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	10314331 and 10366179
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10014727 on 12/16/11 at 1121. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2164230	KBURNSIDE	18-JAN-12	SPM	SPM reviewed and approved.
2162497	CSIMMONS	16-JAN-12	ITR	Promoted batch to SPM level.
2158193	CSIMMONS	10-JAN-12	ITR	Sent batch to operations for AK rework.
2152812	CSIMMONS	02-JAN-12	ITR	Sent batch back to operations for WMC issue.
2152749	CSIMMONS	02-JAN-12	ITR	Sent batch to operations for WMC issue.
2149135	CSIMMONS	24-DEC-11	ITR	Sent batch to operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012
Time: 12:39

Batch Id RTR11-00426 **Container Id** 10041217 **Analysis Id** 0000080901

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 15-DEC-2011 17:48 **Gross Weight** 765.135 **Lbs.** **Net Weight** 604.735 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S3121 **IDC** MD-836 High Level Sludge/Cement

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 26-NOV-1996 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily sludge
Rework, add 1/2" plywood spacer into packaging, MMR 12/27/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? No **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 0

Fill Factor 90

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000
1/2 Inch Plywood Spacer (Packaging)	1.000	EACH	2.400	2.400

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00426 **Container Id** 10041217 **Analysis Id** 0000080901

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	604.735
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	2.400

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2149982	MRICKS	27-DEC-2011 14:52	
2145314	BHUGGINS	15-DEC-2011 17:48	

RTR Analysis Report

Batch Id RTR11-00426 **Container Id** 10311479 **Analysis Id** 0000080902

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 15-DEC-2011 18:12 **Gross Weight** 209.475 Lbs. **Net Weight** 65.475 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-SEP-2009 15:37 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of Cardboard,Paper,rags and wood. Rework, removed plywood spacer from packaging, MMR 12/27/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1TBSP Liquid in 1qt poly bottle at bottom of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead Solder,Lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic tubing	1.000	EACH	1.000	1.000
Light Bulbs	1.000	EACH	1.000	1.000
Lead Solder,Lead tape	1.000	EACH	0.120	0.120
Metal Debris	1.000	EACH	5.000	5.000
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140

Batch Id RTR11-00426 **Container Id** 10311479 **Analysis Id** 0000080902

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	1.870
Cellulosics	100.000	57.345
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.140
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2149993	MRICKS	27-DEC-2011 14:58	
2145323	BHUGGINS	15-DEC-2011 18:21	
2145322	BHUGGINS	15-DEC-2011 18:12	

Batch Id RTR11-00426 **Container Id** 10015483 **Analysis Id** 0000080904

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 08:56 **Gross Weight** 326.340 Lbs. **Net Weight** 182.340 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-JUN-1996 00:00 **Operator** SOLDHAM

Result Comment This drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
flashlight battery	2.000	EACH	0.250	0.500
respirator filter	2.000	EACH	0.250	0.500
respirator	1.000	EACH	3.000	3.000
plastic sheeting	1.000	EACH	5.000	5.000
misc. metal	4.000	EACH	1.000	4.000
lead tape	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000
Poly bottles (1 gal)	2.000	EACH	1.000	2.000

Batch Id RTR11-00426 **Container Id** 10015483 **Analysis Id** 0000080904

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.375
Other metals	0.000	0.750
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	166.375
Rubber	0.000	3.000
Plastic (Waste Materials)	0.000	7.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145452	SOLDHAM	16-DEC-2011 08:56	

Batch Id RTR11-00426 **Container Id** 10312198 **Analysis Id** 0000080905

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 09:29 **Gross Weight** 178.605 **Lbs.** **Net Weight** 35.605 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-AUG-2009 17:16 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting and plastic bottles and plastic PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .12 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .12 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .03 pint of liquid in a quart polly bottle located at the middle chine. .09 pint of liquid in pint bottle located at the bottom chine.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	2.000	EACH	0.250	0.500
paper products	1.000	EACH	2.000	2.000
misc. metal	2.000	EACH	1.000	2.000

Batch Id RTR11-00426 **Container Id** 10312198 **Analysis Id** 0000080905

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.120	PINTS	1.000	0.120

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	0.120
Cellulosics	0.000	2.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	30.985
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145456	SOLDHAM	16-DEC-2011 09:29	

Batch Id RTR11-00426 **Container Id** 10343023 **Analysis Id** 0000080907

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 09:51 **Gross Weight** 780.570 **Lbs.** **Net Weight** 638.570 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-JAN-2010 00:00 **Operator** SOLDHAM

Result Comment This drum contains lead sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 95

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead sheeting - impenetrable	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable The waste could not be penetrated at max. power.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00426 **Container Id** 10343023 **Analysis Id** 0000080907

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	638.570
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145466	SOLDHAM	16-DEC-2011 09:51	

Batch Id RTR11-00426 **Container Id** 10014727 **Analysis Id** 0000080908

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 10:17 **Gross Weight** 231.525 **Lbs.** **Net Weight** 71.525 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-MAR-1996 00:00 **Operator** SOLDHAM

Result Comment This drum contains plastic sheeting and plastic PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00426 **Container Id** 10014727 **Analysis Id** 0000080908

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	69.005
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145481	SOLDHAM	16-DEC-2011 10:17	

Batch Id RTR11-00426 **Container Id** 10015483 **Analysis Id** 0000080909

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 11:00 **Gross Weight** 326.340 Lbs. **Net Weight** 182.340 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-JUN-1996 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of paper,rags and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead Tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Filter Housings	2.000	EACH	0.120	0.240
Half face respirator	1.000	EACH	0.500	0.500
Lead Tape	1.000	EACH	0.180	0.180
Metal Debris	1.000	EACH	10.000	10.000
D-Cell batteries	3.000	EACH	0.250	0.750
Cardboard liner	1.000	EACH	4.000	4.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000

Batch Id RTR11-00426 **Container Id** 10015483 **Analysis Id** 0000080909

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.240
Other metals	0.000	0.930
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	168.830
Rubber	0.000	0.500
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145490	BHUGGINS	16-DEC-2011 11:01	

Batch Id RTR11-00426 **Container Id** 10014727 **Analysis Id** 0000080910

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 11:21 **Gross Weight** 231.525 **Lbs.** **Net Weight** 71.525 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 08-MAR-1996 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Plastic waste in the form of PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE I

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Paper and rags	1.000	EACH	6.000	6.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR11-00426 **Container Id** 10014727 **Analysis Id** 0000080910

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.200
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	61.325
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	24-DEC-2011 10:04	CSIMMONS	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment There were minor differences between the exams these differences don't affect the DQOs or disposition of the drum.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2149091	CSIMMONS	24-DEC-2011 10:04	OIO checklist complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145498	SPHILLIPS	16-DEC-2011 11:21	

Batch Id RTR11-00426 **Container Id** 10308201 **Analysis Id** 0000080912

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 11:58 **Gross Weight** 167.580 **Lbs.** **Net Weight** 23.580 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-AUG-2009 16:23 **Operator** SOLDHAM

Result Comment This drum conatins cardboard and paper.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 4

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00426 **Container Id** 10308201 **Analysis Id** 0000080912

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	23.080
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145506	SOLDHAM	16-DEC-2011 11:58	

Batch Id RTR11-00426 **Container Id** 10140503 **Analysis Id** 0000080913

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 12:24 **Gross Weight** 222.705 Lbs. **Net Weight** 79.705 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-AUG-1975 00:00 **Operator** SOLDHAM

Result Comment This drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead soder and tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	3.000	EACH	2.000	6.000
lead soder and tape	1.000	EACH	0.250	0.250
misc. metal	3.000	EACH	1.000	3.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	60.000	PINTS	0.420	25.200

Batch Id RTR11-00426 **Container Id** 10140503 **Analysis Id** 0000080913

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	25.200
Cellulosics	100.000	44.755
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145514	SOLDHAM	16-DEC-2011 12:24	

Batch Id RTR11-00426 **Container Id** 10140568 **Analysis Id** 0000080914

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 13:17 **Gross Weight** 282.240 Lbs. **Net Weight** 140.240 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-OCT-1975 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of cardboard, wipes, rags, & wood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 90

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheeting throughout the waste	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	3.000	3.000
lead sheeting	1.000	EACH	20.000	20.000
rubber gloves	1.000	EACH	3.000	3.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	120.000	PINTS	0.420	50.400

Batch Id RTR11-00426 **Container Id** 10140568 **Analysis Id** 0000080914

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	20.000
Other Inorganic Materials	0.000	50.400
Cellulosics	100.000	58.840
Rubber	0.000	3.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145532	DGREEN	16-DEC-2011 13:17	

Batch Id RTR11-00426 **Container Id** 10343045 **Analysis Id** 0000080916

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 13:44 **Gross Weight** 211.680 Lbs. **Net Weight** 67.680 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-JAN-2010 17:34 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, rags, & cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead bits	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	6.000	6.000
metal waste	1.000	EACH	2.000	2.000
lead bits	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00426 **Container Id** 10343045 **Analysis Id** 0000080916

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	53.390
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145554	DGREEN	16-DEC-2011 13:44	

Batch Id RTR11-00426 **Container Id** 10310461 **Analysis Id** 0000080917

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 14:16 **Gross Weight** 280.035 Lbs. **Net Weight** 137.035 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-AUG-2009 03:06 **Operator** DGREEN

Result Comment Waste appears to consist of wipes & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** Approx. .50 pt. liquid in a plastic container near the bottom of the waste.

Prohibited Liquids Present Yes **Comment** > 60 mL internal container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic container	1.000	EACH	0.250	0.250
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	1.000	1.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Batch Id RTR11-00426 **Container Id** 10310461 **Analysis Id** 0000080917

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.500
Cellulosics	100.000	129.785
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145608	DGREEN	16-DEC-2011 14:16	

Batch Id RTR11-00426 **Container Id** 10314331 **Analysis Id** 0000080919

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 14:32 **Gross Weight** 163.170 Lbs. **Net Weight** 19.170 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5900 **IDC** UN-00B Undefined Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-AUG-1970 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of cardboard, wipes, & rags.
Changed IDC per AKE request. DKL 1/11/12
AK concurs with the recommended IDC change from RF-750 to UN-00B for container 10314331 because the generator cannot be confirmed as Rocky Flats. No AKR or NCR is necessary. RCM 01/12/12

Package

IDC Correct Yes **Recommended IDC** UN-00B **Summary Category** S5000

Idc Change Reason per AKE request

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.050	0.050
metal waste	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00426 **Container Id** 10314331 **Analysis Id** 0000080919

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.050
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	17.870
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2159772	RMORRIS	12-JAN-2012 08:27	This batch promoted. RCM 01/12/12
2158982	DLEE	11-JAN-2012 06:19	
2145622	DGREEN	16-DEC-2011 14:32	

Batch Id RTR11-00426 **Container Id** 10308359 **Analysis Id** 0000080920

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 15:02 **Gross Weight** 194.040 Lbs. **Net Weight** 50.040 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-750 Pits 11 & 12 Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-AUG-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of cardboard, wipes, & rags.
Rework, added rubber glove to waste parameters to match recording, MMR 12/27/11

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
rubber glove	1.000	EACH	1.000	1.000
metal waste	1.000	EACH	1.000	1.000
plastic waste	1.000	EACH	10.000	10.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00426 **Container Id** 10308359 **Analysis Id** 0000080920

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	34.680
Rubber	0.000	1.000
Plastic (Waste Materials)	0.000	10.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2149989	MRICKS	27-DEC-2011 14:56	
2145663	DGREEN	16-DEC-2011 15:02	

Batch Id RTR11-00426 **Container Id** 10308367 **Analysis Id** 0000080922

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 15:15 **Gross Weight** 187.425 Lbs. **Net Weight** 43.425 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** UN-00B Undefined Debris

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-AUG-2009 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of plastic containers.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	12.000	12.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00426 **Container Id** 10308367 **Analysis Id** 0000080922

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	12.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	26.385
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145669	DGREEN	16-DEC-2011 15:15	

Batch Id RTR11-00426 **Container Id** 10366179 **Analysis Id** 0000080923

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 16:17 **Gross Weight** 443.205 **Lbs.** **Net Weight** 299.205 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5100 **IDC** RF-441 Raschig Rings, Unleached

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-JUN-2010 15:35 **Operator** DGREEN

Result Comment Waste appears to consist of raschig rings.
AK concurs with the recommended IDC change from RF-950 to RF-441 for container 10366179. AKR-10-696 Rev. 1 was attached to NCR 67682 to support this change.

Package

IDC Correct Yes **Recommended IDC** RF-441 **Summary Category** S5000

Idc Change Reason Waste appears to consist of raschig rings.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00426 **Container Id** 10366179 **Analysis Id** 0000080923

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	295.205
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2147902	GTEDFORD	21-DEC-2011 12:53	Recommended IDC is accepted.
2145675	DGREEN	16-DEC-2011 16:17	

Batch Id RTR11-00426 **Container Id** 10359402 **Analysis Id** 0000080924

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 16:49 **Gross Weight** 246.960 Lbs. **Net Weight** 103.960 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-MAY-2010 09:32 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	35.000	35.000
plastic waste	1.000	EACH	5.000	5.000
pipe insulation	1.000	EACH	6.000	6.000
flashlight batteries	9.000	EACH	0.250	2.250
lead tape	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00426 **Container Id** 10359402 **Analysis Id** 0000080924

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	35.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	3.250
Other Inorganic Materials	0.000	6.840
Cellulosics	100.000	53.620
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145682	DGREEN	16-DEC-2011 16:49	

Batch Id RTR11-00426 **Container Id** 10255790 **Analysis Id** 0000080926

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 17:29 **Gross Weight** 377.055 Lbs. **Net Weight** 233.055 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-OCT-2008 21:42 **Operator** DGREEN

Result Comment Waste appears to consist primarily of wipes, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	10.000	10.000
metal waste	1.000	EACH	2.000	2.000
flashlight batteries	12.000	EACH	0.250	3.000
lead tape	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR11-00426 **Container Id** 10255790 **Analysis Id** 0000080926

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	6.000
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	209.765
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145686	DGREEN	16-DEC-2011 17:29	

Batch Id RTR11-00426 **Container Id** 10367009 **Analysis Id** 0000080929

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 16-DEC-2011 17:53 **Gross Weight** 401.310 Lbs. **Net Weight** 257.310 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-JUN-2010 15:14 **Operator** DGREEN

Result Comment Waste appears to consist of cinderblock & concrete chunks.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	18.000	PINTS	0.420	7.560

Batch Id RTR11-00426 **Container Id** 10367009 **Analysis Id** 0000080929

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	250.060
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145689	DGREEN	16-DEC-2011 17:53	

Batch Id RTR11-00426 **Container Id** 10255302 **Analysis Id** 0000080931

Container Type 85 FOR NEW DRUM - 85 **Analysis Status** Pass

RTR Date 17-DEC-2011 08:54 **Gross Weight** 308.700 **Lbs.** **Net Weight** 146.700 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5420 **IDC** RF-374 Blacktop, Concrete, Dirt, and Sand

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-OCT-2008 22:29 **Operator** KKEARN

Result Comment Waste consists of floor tiles.
Rework to correct WMC. KLB 1/2/12
Reject recommended IDC of UN-00B in favor of RF-374. This is being rejected in order to populate the correct WMC. NDK 1/2/12
Corrected IDC to RF-374 SP 01/03/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR11-00426 **Container Id** 10255302 **Analysis Id** 0000080931

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	146.450
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	146.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2158984	DLEE	11-JAN-2012 06:22	Correcting WMC
2158983	DLEE	11-JAN-2012 06:21	
2153229	SPHILLIPS	03-JAN-2012 07:41	
2152901	NKIRK	02-JAN-2012 14:01	Reject to ITR to get correct WMC to populate. ndk
2152867	KBIRCH	02-JAN-2012 13:03	
2152751	KBIRCH	02-JAN-2012 08:16	
2152750	KBIRCH	02-JAN-2012 08:15	no rework preformed
2145760	KKEARN	17-DEC-2011 08:54	

Batch Id RTR11-00426 **Container Id** 10023728 **Analysis Id** 0000080932

Container Type C drum, 83 Gallon **Analysis Status** Pass

RTR Date 17-DEC-2011 09:14 **Gross Weight** 242.550 Lbs. **Net Weight** 82.550 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00226 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-JUN-1996 00:00 **Operator** KKEARN

Result Comment Waste consists of coveralls, wipes, and rags

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 3 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 3 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 3 pints of liquid in a bucket and in 2 paint can at bottom of waste

Prohibited Liquids Present Yes **Comment** >60 mils

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
bucket	1.000	EACH	2.000	2.000
repirator	1.000	EACH	1.000	1.000
respirator cartridges	1.000	EACH	7.000	7.000
Metal can	2.000	EACH	0.500	1.000

Batch Id RTR11-00426 **Container Id** 10023728 **Analysis Id** 0000080932

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	3.000	PINTS	1.000	3.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	4.900
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.840
Cellulosics	100.000	69.810
Rubber	0.000	1.000
Plastic (Waste Materials)	0.000	2.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2145763	KKEARN	17-DEC-2011 09:14	

End of RTR Analysis Report

AMWTP

Date: 01-Oct-2012

RTR Replicate Comparison Report

Time: 12:41

RTR Batch Id: RTR11-00426 Container Id: 10015483 Equipment Id: Z-213-101

Container type Description: drum, 83 Gallon Gen-IDC: RF-336 Gross Weight(Lbs): 326.34

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000080904	16-DEC-2011 08:56	0000080909	16-DEC-2011 11:00
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	1RTR11-00226		1RTR11-00226	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	SETH OLDHAM		BILL HUGGINS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5300	S5000	S5300
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	95		98	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	Yes, Acceptable	lead tape	Yes, Acceptable	Lead Tape
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

RTR Batch Id: RTR11-00426 **Container Id:** 10015483 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	This drum contains paper and rags.	The waste in this container appears to be primarily cellulosics in the form of paper,rags and PPE.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2149088	CSIMMONS	24-DEC-11	Signed replicate comparison.

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR/VE Update Analysis Report

Date: 08-Oct-2012

Time: 07:12

Affected Batch RTR11-00426 **Container Id** 10308367 **Analysis Id** 0000266115 **Analysis Status** Passed

VE Date 21-FEB-12 13:34:53 **Procedure Id** INST-FOI-17 **Gross Weight** 187.43 lbs.

Gen-IDC Id UN-00B Undefined Debris **Proc Rev** 24 **Net Weight** 43.43 lbs.

Waste Matrix S5900 **Summary Category Group** S5000 **Equipment ID** VE NGW C FAC

Container Type C **Affected Analysis ID** 0000080922

Operator 1 STEVE ESPLIN **Operator 2** MATT HUTSON

General

Rigid Liner Present? No **Liner Punctured?** Yes **Liner Hole Size:** 20" in. **Liner Type** NO LINER

Liner Lid Present No **Fill Factor** 90 %

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Internal Container with Liquid 0 pints **Total Liquid Amount** 0 pints

Containerized Liquid pints

Prohibited Liquids Present No

Internal Container with Liquid No

Containerized Liquid

Affected Batch RTR11-00426 **Container Id** 10308367 **Analysis Id** 0000266115

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging	No	
Impenetrable Dense Objects?	No	
Sealed Containers Over 4 liters?	No	

IDC Verification

Is IDC correct? No **Recommended IDC** UN-00B Undefined Debris

IDC Change Reason Per applicable NCR

Visual Exam Comment {Waste appears to consist of plastic containers. - RTR comment from rtr batch RTR11-00426} RVU generated per applicable NCR. MH 2/21/12

Closure

Closure Date 16-AUG-09 00:00:00 **Closure Method** Twisted and Taped

Layers Of Confinement 2 **Overpack Required?** No

New Steel Lid? No

RTR/VE Update Analysis Report

Affected Batch RTR11-00426 **Container Id** 10308367 **Analysis Id** 0000266115

IDC CODES

Current Container IDC Code: UN-00B **Recommended IDC Code:** UN-00B

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000
55-GAL DRUM (17c)	1.000	EACH	59.000	59.000

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
metal waste	1.000	EACH	12.000	12.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	12.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	26.385
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	142.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Container Filters

WDS Filter Code	Event	Event Date	Entered By	Remove	Other Filter Model	Exclude

E-Signature History

Esig Approval Id	User ID	E-signature Date	Comment
2181680	SESPLIN	21-FEB-12 13:34:54	
2181681	MHUTSON	21-FEB-12 13:34:55	Complete

------End of RTR/VE Update Analysis Report------

RTR/VE Update(RVU) Checklist Report

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer
Approval Date 07-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		The only documentation associated with this RTR/VE Update is the following: RTR/VE Update Analysis Report ITR checklist (Form-1412) Batch Data Report Supplemental Comment Form (Form-1491) Associated NCRs (referenced in WTS)
2. Are there 20 containers or less in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
3. Was the image quality indicator (IQI) satisfactory?	N/A		This ITR checklist is for RTR/VE Update only.
4. Does every container in the batch reference an audio/video recording?	N/A		This ITR checklist is for RTR/VE Update only.
5. Is there a completed radiography data analysis for each container in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		Both VE Operators have their current qualification.
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	N/A		Both VE Operators have their current qualification.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	N/A		This ITR checklist is for RTR/VE Update only.
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This ITR checklist is for RTR/VE Update only.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch,	N/A		Both VE Operators have their current qualification.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	CRAIG SIMMONS	**Approval Level**	Independent Technical Reviewer
Approval Date	07-MAR-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	N/A		Both VE Operators have their current qualification.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	N/A		Both VE Operators have their current qualification.
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	N/A		Both VE Operators have their current qualification.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework was identified for this RVU.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 08-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	RVU is for IDC change. No AKR required.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	N/A	MP-TRUW-8.2, C3-4a	This checklist is for RTR update only.
(10) Do the waste container contents match the WMC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	08-OCT-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
waste stream description and identify the absence of prohibited items?		B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C1-3	None identified.
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	An audio/video recording is not required for an RVU
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	No AKR required.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	N/A	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	Not applicable for RTR Update.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	N/A	MP-TRUW-8.2, C1-3 and C3-4a	Not applicable for RTR Update.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	The operators that performed this update were VE qualified.
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	N/A	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	N/A	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	08-OCT-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 09-OCT-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	RVU is for IDC change. No AKR required.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	N/A	MP-TRUW-8.2, C3-4a	This checklist is for RTR update only.
(10) Do the waste container contents match the WMC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 09-OCT-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
waste stream description and identify the absence of prohibited items?		B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C1-3	None identified.
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	An audio/video recording is not required for an RVU
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	No AKR required.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	N/A	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	Not applicable for RTR Update.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	N/A	MP-TRUW-8.2, C1-3 and C3-4a	Not applicable for RTR Update.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	The operators that performed this update were VE qualified.
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	N/A	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	N/A	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	09-OCT-12	**Review Iteration**	2

Question Text	Answer	Requirement	Comment
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 09-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	RVU is for IDC change. No AKR required.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	N/A	MP-TRUW-8.2, C3-4a	This checklist is for RTR update only.
(10) Do the waste container contents match the WMC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 09-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
waste stream description and identify the absence of prohibited items?		B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C1-3	None identified.
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	An audio/video recording is not required for an RVU
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	No AKR required.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	N/A	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	Not applicable for RTR Update.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	N/A	MP-TRUW-8.2, C1-3 and C3-4a	Not applicable for RTR Update.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	The operators that performed this update were VE qualified.
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	N/A	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	N/A	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	09-OCT-12	**Review Iteration**	3

Question Text	Answer	Requirement	Comment
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	No	MP-TRUW-8.2, C3 10b(2)	See batch comments.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 09-OCT-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	RVU is for IDC change. No AKR required.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	N/A	MP-TRUW-8.2, C3-4a	This checklist is for RTR update only.
(10) Do the waste container contents match the WMC,	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 09-OCT-12 **Review Iteration** 4

Question Text	Answer	Requirement	Comment
waste stream description and identify the absence of prohibited items?		B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C1-3	None identified.
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	An audio/video recording is not required for an RVU
(13) Have the IDC, WMC, and/or waste stream for all containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.	No	MP-TRUW-8.2, C1-3 and C3-4a	No AKR required.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	N/A	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	Not applicable for RTR Update.
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	N/A	MP-TRUW-8.2, C1-3 and C3-4a	Not applicable for RTR Update.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	The operators that performed this update were VE qualified.
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	N/A	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	N/A	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	NICK STYHL	**Approval Level**	SPM Data Validation
Approval Date	09-OCT-12	**Review Iteration**	4

Question Text	Answer	Requirement	Comment
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	CRAIG SIMMONS	**Approval Level**	Independent Technical Reviewer
Approval Date	09-OCT-12	**Review Iteration**	2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		The only documentation associated with this RTR/VE Update is the following: RTR/VE Update Analysis Report ITR checklist (Form-1412) Batch Data Report Supplemental Comment Form (Form-1491) Associated NCRs (referenced in WTS)
2. Are there 20 containers or less in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
3. Was the image quality indicator (IQI) satisfactory?	N/A		This ITR checklist is for RTR/VE Update only.
4. Does every container in the batch reference an audio/video recording?	N/A		This ITR checklist is for RTR/VE Update only.
5. Is there a completed radiography data analysis for each container in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		Both VE Operators have their current qualification.
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	N/A		Both VE Operators have their current qualification.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	N/A		This ITR checklist is for RTR/VE Update only.
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This ITR checklist is for RTR/VE Update only.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch,	N/A		This ITR checklist is for RTR/VE Update only.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container	10308367	**Analysis**	0000266115
Reviewer	CRAIG SIMMONS	**Approval Level**	Independent Technical Reviewer
Approval Date	09-OCT-12	**Review Iteration**	2

Question Text	Answer	Requirement	Comment
whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	N/A		This ITR checklist is for RTR/VE Update only.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	N/A		This ITR checklist is for RTR/VE Update only.
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	N/A		This ITR checklist is for RTR/VE Update only.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework was identified for this RVU.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer
Approval Date 09-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		The only documentation associated with this RTR/VE Update is the following: RTR/VE Update Analysis Report ITR checklist (Form-1412) Batch Data Report Supplemental Comment Form (Form-1491) Associated NCRs (referenced in WTS)
2. Are there 20 containers or less in the batch?	N/A		This ITR checklist is for RTR/VE Update only.
3. Was the image quality indicator (IQI) satisfactory?	N/A		This ITR checklist is for RTR/VE Update only.
4. Does every container in the batch reference an audio/video recording?	N/A		This ITR checklist is for RTR/VE Update only.
5. Is there a completed radiography data analysis for each container in the batch?	N/A		This ITR checklist is for RTR/VE Update only
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		Both VE Operators have their current qualification.
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	N/A		This ITR checklist is for RTR/VE Update only.
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	N/A		This ITR checklist is for RTR/VE Update only.
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		This ITR checklist is for RTR/VE Update only.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch,	N/A		This ITR checklist is for RTR/VE Update only.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Container 10308367 **Analysis** 0000266115
Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer
Approval Date 09-OCT-12 **Review Iteration** 3

Question Text	Answer	Requirement	Comment
whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	N/A		This ITR checklist is for RTR/VE Update only.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	N/A		This ITR checklist is for RTR/VE Update only.
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	N/A		This ITR checklist is for RTR/VE Update only.
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework was identified for this RVU.

Batch Id RTR11-00426 **Open Date** 15-DEC-11 **Close Date** 17-DEC-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2361487	NSTYHL	09-OCT-12	SPM	Approve RVU.
2361268	CSIMMONS	09-OCT-12	ITR	Promoted batch to SPM level.
2361257	NSTYHL	09-OCT-12	SPM	Demote to ITR.
2361099	CSIMMONS	09-OCT-12	ITR	Rework complete Promoted RVU to SPM level.
2360596	NSTYHL	08-OCT-12	SPM	Demote to ITR.
2187765	CSIMMONS	07-MAR-12	ITR	p

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 13:22

Batch Type Real Time Radiography
Batch Report No. RTR11-00442
Batch Id RTR11-00442
Open Date 30-DEC-11 12:02:34
Close Date 31-DEC-11 14:06:30
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10048412	RF-802	0000081258	30-DEC-11 12:02:34	Original	P	SETH OLDHAM
10242772	RF-337	0000081261	30-DEC-11 12:43:47	Original	P	NANCY BUNCE
10018309	RF-409	0000081262	30-DEC-11 13:27:41	Original	P	CINDY TIEGS
10006256	RF-001	0000081265	30-DEC-11 14:14:40	Original	P	CINDY TIEGS
10359359	RF-336	0000081267	30-DEC-11 14:54:30	Original	P	CINDY TIEGS
10032073	RF-376	0000081268	30-DEC-11 15:19:43	Original	P	CINDY TIEGS
10082698	RF-337	0000081270	30-DEC-11 15:44:54	Original	P	CINDY TIEGS
10102171	RF-336	0000081272	30-DEC-11 16:12:04	Original	P	CINDY TIEGS
10005426	RF-376	0000081274	30-DEC-11 17:07:15	Original	P	CINDY TIEGS
10032208	RF-376	0000081276	30-DEC-11 17:27:44	Original	P	CINDY TIEGS
10006108	RF-376	0000081277	30-DEC-11 17:45:31	Original	P	CINDY TIEGS
10032586	RF-337	0000081279	30-DEC-11 18:06:30	Original	P	CINDY TIEGS
10060223	RF-421	0000081280	31-DEC-11 10:14:07	Original	P	DANNY GREEN
10330159	RF-360	0000081281	31-DEC-11 10:28:32	Original	P	DANNY GREEN
10244044	RF-360	0000081282	31-DEC-11 10:46:00	Original	P	DANNY GREEN
10242820	RF-336	0000081283	31-DEC-11 10:59:52	Original	P	DANNY GREEN
10330159	RF-360	0000081285	31-DEC-11 11:26:13	Replicate / Duplicate	P	BILL HUGGINS
10244044	RF-360	0000081286	31-DEC-11 11:41:02	RTR OIO	P	BILL HUGGINS
10099566	RF-481	0000081288	31-DEC-11 12:10:04	Original	P	DANNY GREEN
10245486	RF-490	0000081289	31-DEC-11 12:32:21	Original	P	DANNY GREEN
10031634	RF-481	0000081291	31-DEC-11 13:33:09	Original	P	BILL HUGGINS
10031540	RF-376	0000081293	31-DEC-11 14:05:30	Original	P	BILL HUGGINS

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
RMORRIS	05-JAN-12 14:32:55	05-JAN-12 RMORRIS AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10048412. RCM 01/05/12
SOLDHAM	18-JAN-12 10:24:27	Rework completed per AK recommendation. ESO 01/18/12
DGASPER	19-JAN-12 18:26:08	Initial validation performed electronically per MP-TRUW-8.8.
DGASPER	20-JAN-12 16:22:17	Awaiting 200% review of AMWTP sludge containers.
JSIMONSON	21-JAN-12 16:30:28	200% review of AMWTP sludge drums 10048412 and 10006256 complete.
DGASPER	21-JAN-12 17:35:30	Promote batch to SPM level.
KBURNSIDE	24-JAN-12 09:12:43	SPM reviewed and approved.

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2163948	SOLDHAM	18-JAN-2012 10:24:27	Rework completed per AK recommendation. ESO 01/18/12
2166730	DGASPER	21-JAN-2012 17:35:30	Promote batch to SPM level.
2167963	KBURNSIDE	24-JAN-2012 09:12:43	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 13:23

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR11-00442

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID or related Batch ID	Trackwise Number	Status	Opened Date	Closed Date
10005426	14282	CLOSED	06-MAY-05	30-JAN-12
10005426	67928	OPEN	30-DEC-11	
10005426	67929	OPEN	30-DEC-11	
10006108	67931	CLOSED	30-DEC-11	09-MAY-12
10006108	8807	CLOSED	09-AUG-04	30-JAN-12
10006256	67920	OPEN	30-DEC-11	
10006256	67921	OPEN	30-DEC-11	
10006256	67922	OPEN	30-DEC-11	
10006256	9411	CLOSED	24-AUG-04	30-JAN-12
10018309	16599	CLOSED	05-JUL-05	30-JAN-12
10018309	67917	OPEN	30-DEC-11	
10018309	67918	CLOSED	30-DEC-11	30-JAN-12
10031540	15118	CLOSED	01-JUN-05	30-JAN-12
10031540	67940	CLOSED	31-DEC-11	04-APR-12
10031634	15120	CLOSED	02-JUN-05	30-JAN-12
10031634	67938	CLOSED	31-DEC-11	04-APR-12
10032073	15821	CLOSED	14-JUN-05	30-JAN-12
10032073	67924	CLOSED	30-DEC-11	26-APR-12
10032208	15544	CLOSED	09-JUN-05	30-JAN-12
10032208	67930	CLOSED	30-DEC-11	27-APR-12
10032586	14533	CLOSED	13-MAY-05	16-JUN-06
10032586	67932	CLOSED	30-DEC-11	15-AUG-12
10032586	67933	CLOSED	30-DEC-11	15-AUG-12
10048412	16577	CLOSED	05-JUL-05	30-JAN-12
10048412	67912	OPEN	30-DEC-11	
10048412	67913	OPEN	30-DEC-11	
10048412	67914	OPEN	30-DEC-11	
10060223	67934	OPEN	31-DEC-11	
10082698	35885	CLOSED	25-NOV-07	30-JAN-12
10082698	35940	CLOSED	27-NOV-07	30-JAN-12
10082698	67925	CLOSED	30-DEC-11	09-MAY-12
10082698	67926	CLOSED	30-DEC-11	09-MAY-12
10082698	67927	CLOSED	30-DEC-11	09-MAY-12
10099566	67936	CLOSED	31-DEC-11	26-JUN-12
10242772	67915	CLOSED	30-DEC-11	18-JUL-12
10245486	68025	CLOSED	04-JAN-12	28-MAR-12
10082698	34322	CLOSED	16-AUG-07	11-DEC-07

*****End of Non-Conformance Report*****

Batch Id RTR11-00442 **Open Date** 30-DEC-11 **Close Date** 31-DEC-11

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer

Approval Date 21-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR11-00442 on drum10330159, on 12/31/11. Original operator entered 98% Fill Factor, 5 lbs cellulosic filters, 1 lb metal waste, and 4 pts Oil Dri. Replicate operator entered 98% Fill Factor, 2 lbs cellulosic filters, 2 lbs metal waste, and 5 pts Uncured Cement. No significant issues that effect the original disposition have been identified.

Checklist Report

Batch Id RTR11-00442 **Open Date** 30-DEC-11 **Close Date** 31-DEC-11

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer

Approval Date 21-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		An independent qualified operator performed OIO for batch RTR11-00442, on drum 10244044, on 12/31/11. Original operator entered 95% Fill Factor, 20 lbs Insulation, 1 lb metal waste, and 8 pts Oil Dri. OIO operator entered 98% Fill Factor, 10 lbs Insulation, 4 lb metal waste, and 4 pts Uncured Cement. No significant issues that effect the original disposition have been identified.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id RTR11-00442 **Open Date** 30-DEC-11 **Close Date** 31-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 24-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-735, NCR-68025, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10245486

Batch Id RTR11-00442 **Open Date** 30-DEC-11 **Close Date** 31-DEC-11

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 24-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10244044 on 12/31/11 at 1141. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Checklist Report

Batch Id RTR11-00442 **Open Date** 30-DEC-11 **Close Date** 31-DEC-11

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2167963	KBURNSIDE	24-JAN-12	SPM	SPM reviewed and approved.
2166730	DGASPER	21-JAN-12	ITR	Promote batch to SPM level.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012

Time: 13:23

Batch Id RTR11-00442 **Container Id** 10048412 **Analysis Id** 0000081258

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 30-DEC-2011 12:02 **Gross Weight** 319.730 **Lbs.** **Net Weight** 243.730 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S3150 **IDC** RF-802 Solidified Laboratory Waste

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-SEP-1987 00:00 **Operator** NBUNCE

Result Comment The remaining waste appears to be solidified waste within poly containers.
AK does not concur with the recommended IDC change from RF-802 to UN-00A for container 10048412 because the container contents are consistent with RF-802 and the container is in a core lot. Instead, AK recommends retention of the historical IDC, RF-802. RCM 01/05/12
Rework completed per AK recommendation. ESO 01/18/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Sealed poly containers

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Could not verify the absense of prohibited items.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
> 4L sealed poly container	1.000	EACH	1.000	1.000
Misc. metal, fittings	1.000	EACH	3.000	3.000
Plastic tubing, sheeting	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000
Poly bottles (1 gal)	12.000	EACH	1.000	12.000

Batch Id RTR11-00442 **Container Id** 10048412 **Analysis Id** 0000081258

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	15.250
Inorganic matrix	100.000	125.480
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163947	SOLDHAM	18-JAN-2012 10:23	
2155076	RMORRIS	05-JAN-2012 14:32	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10048412. RCM 01/05/12
2151788	NBUNCE	30-DEC-2011 12:02	

RTR Analysis Report

Batch Id RTR11-00442 **Container Id** 10242772 **Analysis Id** 0000081261

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 12:43 **Gross Weight** 149.940 Lbs. **Net Weight** 88.940 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-JUN-1972 00:00 **Operator** NBUNCE

Result Comment The remaining waste appears to be plastic in the form of: sheeting, tubing, poly containers.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .17 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .18 pints **Containerized Liquid Amt** 0 pints

Other Liquids .01 pints **Comment** 0.01pts. 1st shine from bottom of drum within the waste. Poly container with > 60 ml. in the center section of the drum.

Prohibited Liquids Present Yes **Comment** > 60ml in a poly container

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Paper and rags	1.000	EACH	1.000	1.000
Misc. metal, tool, bolts, screws, angle iron	1.000	EACH	3.000	3.000
Poly container with liquid	1.000	EACH	0.250	0.250
razor knife blade	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000

Batch Id RTR11-00442 **Container Id** 10242772 **Analysis Id** 0000081261

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Liquids for Other Inorganics	0.180	PINTS	1.000	0.180

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.250
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.440
Cellulosics	0.000	5.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	79.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151801	NBUNCE	30-DEC-2011 12:43	

Batch Id RTR11-00442 **Container Id** 10018309 **Analysis Id** 0000081262

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 30-DEC-2011 13:27 **Gross Weight** 240.350 Lbs. **Net Weight** 163.350 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S3141 **IDC** RF-409 Molten Salt-30% Unpulverized

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-JAN-1985 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain two fiber packs with lead liners with cans of molten salt.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead lined fiber packs	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable lead lined fiber packs

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead liner in fiber packs	2.000	EACH	25.000	50.000
1/2 gal produce cans	18.000	EACH	0.410	7.380
Fiber pack	2.000	EACH	6.000	12.000
Plastic bag for waste	18.000	EACH	0.250	4.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10018309 **Analysis Id** 0000081262

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.380
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	100.000	89.470
Cellulosics	0.000	12.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151847	CTIEGS	30-DEC-2011 13:27	

Batch Id RTR11-00442 **Container Id** 10006256 **Analysis Id** 0000081265

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 30-DEC-2011 14:14 **Gross Weight** 562.280 Lbs. **Net Weight** 482.280 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S3121 **IDC** RF-001 First Stage Sludge

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-OCT-1985 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain sludge with lead taped liner.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 5 pints **Comment** liquid in pockets along sides of waste.

Prohibited Liquids Present Yes **Comment** >1% by volume

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead taped liner inhibits external surface dose rates.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable lead taped liner inhibits full examination of contents.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead taped liner	1.000	EACH	25.000	25.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Inorganic Matrix	5.000	PINTS	1.000	5.000

Batch Id RTR11-00442 **Container Id** 10006256 **Analysis Id** 0000081265

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	25.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	457.280
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	21.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151928	CTIEGS	30-DEC-2011 14:14	

Batch Id RTR11-00442 **Container Id** 10359359 **Analysis Id** 0000081267

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 14:54 **Gross Weight** 180.810 Lbs. **Net Weight** 120.810 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-NOV-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags .

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
1/2 quart glass bottle	1.000	EACH	0.250	0.250
misc metals, knife, band	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	24.000	PINTS	0.420	10.080

Batch Id RTR11-00442 **Container Id** 10359359 **Analysis Id** 0000081267

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	10.330
Cellulosics	100.000	108.480
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151949	CTIEGS	30-DEC-2011 14:54	

Batch Id RTR11-00442 **Container Id** 10032073 **Analysis Id** 0000081268

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 15:19 **Gross Weight** 266.810 **Lbs.** **Net Weight** 189.810 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-MAY-1977 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain lead liner, with approx 16, 8x8 filters.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	16.000	EACH	0.250	4.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10032073 **Analysis Id** 0000081268

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	13.581
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	122.229
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151985	CTIEGS	30-DEC-2011 15:19	

Batch Id RTR11-00442 **Container Id** 10082698 **Analysis Id** 0000081270

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 15:44 **Gross Weight** 326.340 **Lbs.** **Net Weight** 249.340 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Wash, PVC

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-AUG-1973 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain poly bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .12 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .12 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** liquid in poly bottles, vial.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Rejected	lead liner
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	Yes	poly bottled

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense areas of waste and lead liner.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
>4 liter poly bottle	1.000	EACH	1.500	1.500
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360
Liquids for Other Inorganics	0.120	PINTS	1.000	0.120

Batch Id RTR11-00442 **Container Id** 10082698 **Analysis Id** 0000081270

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	100.000
Other Inorganic Materials	0.000	3.480
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	145.860
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2151993	CTIEGS	30-DEC-2011 15:44	

Batch Id RTR11-00442 **Container Id** 10102171 **Analysis Id** 0000081272

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 16:12 **Gross Weight** 141.120 Lbs. **Net Weight** 64.120 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-JUL-1974 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1 pints **Containerized Liquid Amt** 0 pints

Other Liquids 1 pints **Comment** liquid in bagging around poly bottle toward bottom of waste and bagging at bottom.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	20.000	EACH	0.250	5.000
Poly bottles (1 gal)	2.000	EACH	1.000	2.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	1.000	PINTS	1.000	1.000

Batch Id RTR11-00442 **Container Id** 10102171 **Analysis Id** 0000081272

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.840
Cellulosics	100.000	55.280
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152003	CTIEGS	30-DEC-2011 16:12	

Batch Id RTR11-00442 **Container Id** 10005426 **Analysis Id** 0000081274

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 30-DEC-2011 17:07 **Gross Weight** 332.960 **Lbs.** **Net Weight** 255.960 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-JUN-1984 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain cremented insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense areas through out the waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
poly bottles	2.000	EACH	0.500	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10005426 **Analysis Id** 0000081274

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	100.000	204.710
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152044	CTIEGS	30-DEC-2011 17:07	

Batch Id RTR11-00442 **Container Id** 10032208 **Analysis Id** 0000081276

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 17:27 **Gross Weight** 244.760 **Lbs.** **Net Weight** 167.760 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 31-MAY-1977 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain approx 12, 8x8 filters.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	12.000	EACH	0.250	3.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10032208 **Analysis Id** 0000081276

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	11.476
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	103.284
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152056	CTIEGS	30-DEC-2011 17:27	

Batch Id RTR11-00442 **Container Id** 10006108 **Analysis Id** 0000081277

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 30-DEC-2011 17:45 **Gross Weight** 229.320 Lbs. **Net Weight** 152.320 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-MAY-1986 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain approx 12, 8x8 filters.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 3

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Rejected	lead liner
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	12.000	EACH	0.250	3.000
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10006108 **Analysis Id** 0000081277

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	10.000	9.932
Other metals	0.000	50.000
Other Inorganic Materials	0.000	0.000
Cellulosics	90.000	89.388
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152065	CTIEGS	30-DEC-2011 17:45	

Batch Id RTR11-00442 **Container Id** 10032586 **Analysis Id** 0000081279

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 30-DEC-2011 18:06 **Gross Weight** 372.650 **Lbs.** **Net Weight** 297.650 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5319 **IDC** RF-337 Plastics, Teflon, Wash, PVC

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-JAN-1977 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain bagging, poly bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 0

Fill Factor 66

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	lead liner, and piece of lead in waste	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areas and lead liner and piece

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead sheeting piece	1.000	EACH	35.000	35.000
piping, cans	1.000	EACH	2.000	2.000
Drum lead-liner (1/8"x28"x72")(.4lb/in.cubed)	1.000	EACH	100.000	100.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00442 **Container Id** 10032586 **Analysis Id** 0000081279

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	135.000
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	158.970
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	16.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152075	CTIEGS	30-DEC-2011 18:06	

Batch Id RTR11-00442 **Container Id** 10060223 **Analysis Id** 0000081280

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 10:14 **Gross Weight** 216.090 **Lbs.** **Net Weight** 140.090 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S3111 **IDC** RF-421 Ash Heels

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-FEB-1978 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of ash heels.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 2

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 4

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	clamshells throughout the drum.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
clamshells	5.000	EACH	2.000	10.000
Plastic bag for waste	16.000	EACH	0.250	4.000
Poly bottles (1 gal)	12.000	EACH	1.000	12.000
1 Gal. Paint Can w/ Lid	2.000	EACH	0.840	1.680

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00442 **Container Id** 10060223 **Analysis Id** 0000081280

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.680
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	112.410
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	26.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152397	DGREEN	31-DEC-2011 10:14	

Batch Id RTR11-00442 **Container Id** 10330159 **Analysis Id** 0000081281

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 10:28 **Gross Weight** 105.840 **Lbs.** **Net Weight** 44.840 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-JUN-1972 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
filters	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR11-00442 **Container Id** 10330159 **Analysis Id** 0000081281

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	34.840
Cellulosics	0.000	9.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152398	DGREEN	31-DEC-2011 10:28	

Batch Id RTR11-00442 **Container Id** 10244044 **Analysis Id** 0000081282

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 10:46 **Gross Weight** 132.300 Lbs. **Net Weight** 71.300 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-APR-1972 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of filter media.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
insulation	1.000	EACH	20.000	20.000
metal waste	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00442 **Container Id** 10244044 **Analysis Id** 0000081282

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	23.360
Cellulosics	100.000	46.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152402	DGREEN	31-DEC-2011 10:46	

Batch Id RTR11-00442 **Container Id** 10242820 **Analysis Id** 0000081283

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 10:59 **Gross Weight** 167.580 Lbs. **Net Weight** 106.580 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-JUL-1970 00:00 **Operator** DGREEN

Result Comment Waste appears to consist primarily of coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator cartridges	8.000	EACH	0.250	2.000
metal waste	1.000	EACH	4.000	4.000
plastic waste	1.000	EACH	4.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR11-00442 **Container Id** 10242820 **Analysis Id** 0000081283

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	1.400
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	94.410
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152407	DGREEN	31-DEC-2011 10:59	

Batch Id RTR11-00442 **Container Id** 10330159 **Analysis Id** 0000081285

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 11:26 **Gross Weight** 105.840 **Lbs.** **Net Weight** 44.840 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-JUN-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Stick pins and wire	1.000	EACH	2.000	2.000
Furnace filters	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Uncured Cement	5.000	PINTS	3.000	15.000

Batch Id RTR11-00442 **Container Id** 10330159 **Analysis Id** 0000081285

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	36.840
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152421	BHUGGINS	31-DEC-2011 11:26	

Batch Id RTR11-00442 **Container Id** 10244044 **Analysis Id** 0000081286

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 11:41 **Gross Weight** 132.300 **Lbs.** **Net Weight** 71.300 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 15-APR-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cellulosics in the form of filter media.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Insulation	1.000	EACH	10.000	10.000
Stick pins and wire	1.000	EACH	4.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Uncured Cement	4.000	PINTS	3.000	12.000

Batch Id RTR11-00442 **Container Id** 10244044 **Analysis Id** 0000081286

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	22.000
Cellulosics	100.000	45.300
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	19-JAN-2012 17:07	DGASPER	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant issues that effect the original disposition have been identified.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2165005	DGASPER	19-JAN-2012 17:07	OIO review complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152426	BHUGGINS	31-DEC-2011 11:41	

Batch Id RTR11-00442 **Container Id** 10099566 **Analysis Id** 0000081288

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 12:10 **Gross Weight** 255.780 Lbs. **Net Weight** 178.780 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-481 Leached Non-special Source Metal

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-FEB-1974 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of metal- tools, uni-strut, piping, & sheetmetal.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** Yes

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can at the bottom of the waste.	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250
Aerosol Can	1.000	EACH	0.240	0.240

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR11-00442 **Container Id** 10099566 **Analysis Id** 0000081288

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	173.490
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152432	DGREEN	31-DEC-2011 12:10	

Batch Id RTR11-00442 **Container Id** 10245486 **Analysis Id** 0000081289

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 12:32 **Gross Weight** 132.300 Lbs. **Net Weight** 71.300 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-490 HEPA Filters and CWS Filters

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-JUN-1972 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of wood frame HEPA filters.
AK concurs with the recommended IDC change from RF-337 to RF-490 for container 10245486. AKR-12-735 was attached to NCR 68025 to support this change. RCM 01/05/12

Package

IDC Correct Yes **Recommended IDC** RF-490 **Summary Category** S5000

Idc Change Reason Waste appears to consist of wood frame HEPA filters.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 4

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR11-00442 **Container Id** 10245486 **Analysis Id** 0000081289

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	62.440
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2155075	RMORRIS	05-JAN-2012 14:32	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10048412. RCM 01/05/12
2152433	DGREEN	31-DEC-2011 12:32	

Batch Id RTR11-00442 **Container Id** 10031634 **Analysis Id** 0000081291

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 13:33 **Gross Weight** 231.530 Lbs. **Net Weight** 154.530 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-481 Leached Non-special Source Metal

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-JUN-1977 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily metal in the form of 1 gal cans.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	Lead Liner and multiple Lead taped 1 gal cans for shielding purposes.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead Tape	1.000	EACH	15.000	15.000
Plastic bagging	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR11-00442 **Container Id** 10031634 **Analysis Id** 0000081291

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	85.280
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	65.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152455	BHUGGINS	31-DEC-2011 13:33	

Batch Id RTR11-00442 **Container Id** 10031540 **Analysis Id** 0000081293

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 31-DEC-2011 14:05 **Gross Weight** 224.910 **Lbs.** **Net Weight** 148.910 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-376 Cemented Insulation and Filter Media

Recording Id 1RTR11-00234 **Procedure Id** INST-OI-12 **Revision** 47 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-MAY-1977 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily cemented insulation

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 50

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Rejected	Presence of lead liner.
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bagging and tubing	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Drum lead-liner (1/16"x28"x72")	1.000	EACH	50.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Uncured Cement	15.000	PINTS	3.000	45.000

Batch Id RTR11-00442 **Container Id** 10031540 **Analysis Id** 0000081293

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	100.000	93.660
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2152465	BHUGGINS	31-DEC-2011 14:05	

End of RTR Analysis Report

RTR Replicate Comparison Report

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR11-00442 **Container Id:** 10330159 **Equipment Id:** Z-213-101

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-360** Gross Weight(Lbs): **105.84**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000081281	31-DEC-2011 10:28	0000081285	31-DEC-2011 11:26
Procedure /Revision:	INST-OI-12	47	INST-OI-12	47
Recording Media Id:	1RTR11-00234		1RTR11-00234	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	DANNY GREEN		BILL HUGGINS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5410	S5000	S5410
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	98		98	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

RTR Batch Id: RTR11-00442 **Container Id:** 10330159 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Waste appears to consist primarily of insulation.	The waste in this container appears to be primarily Insulation.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2164997	DGASPER	19-JAN-12	Replicate comparison complete.

-----End of RTR Replicate Comparison Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 13:49

Batch Type Real Time Radiography

Batch Report No. RTR12-00015

Batch Id RTR12-00015

Open Date 16-JAN-12 14:48:11

Close Date 18-JAN-12 09:45:15

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10221774	RF-900	0000081621	16-JAN-12 14:48:11	Original	P	SAMUEL PHILLIPS
10218077	RF-900	0000081623	16-JAN-12 15:00:41	Original	P	CONLEY BEEBE
10215863	RF-900	0000081626	16-JAN-12 16:36:13	Original	P	SAMUEL PHILLIPS
10174255	RF-900	0000081628	16-JAN-12 16:53:41	Original	P	SAMUEL PHILLIPS
10202182	RF-464	0000081630	16-JAN-12 17:21:03	Original	P	SAMUEL PHILLIPS
10186075	RF-900	0000081631	16-JAN-12 17:36:07	Original	P	SAMUEL PHILLIPS
10202182	RF-464	0000081634	16-JAN-12 18:07:47	RTR OIO	P	AARON ATWELL
10170331	RF-960	0000081638	17-JAN-12 11:24:46	Original	P	CONLEY BEEBE
10226856	RF-900	0000081640	17-JAN-12 12:16:52	Original	P	JEFF DUNCAN
10233356	RF-336	0000081643	17-JAN-12 13:32:47	Original	P	FRANK KUCK
10234763	RF-900	0000081646	17-JAN-12 13:53:09	Original	P	FRANK KUCK
10147350	RF-336	0000081648	17-JAN-12 14:39:39	Original	P	FRANK KUCK
10181613	RF-900	0000081650	17-JAN-12 15:00:29	Original	P	FRANK KUCK
10159751	RF-960	0000081651	17-JAN-12 15:10:48	Original	P	CONLEY BEEBE
10333704	RF-336	0000081652	17-JAN-12 15:34:36	Original	P	FRANK KUCK
10333704	RF-336	0000081654	17-JAN-12 16:08:44	Replicate / Duplicate	P	BILL HUGGINS
10330464	RF-336	0000081657	17-JAN-12 16:48:54	Original	P	FRANK KUCK
10102264	RF-336	0000081659	17-JAN-12 17:09:01	Original	P	FRANK KUCK
10244060	RF-336	0000081660	17-JAN-12 17:37:16	Original	P	FRANK KUCK
10102249	RF-330	0000081663	17-JAN-12 17:53:34	Original	P	FRANK KUCK
10244063	RF-336	0000081667	18-JAN-12 08:58:58	Original	P	DANNY GREEN
10202205	RF-330	0000081668	18-JAN-12 09:44:14	Original	P	DANNY GREEN

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	23-JAN-12 09:59:30	23-JAN-12 CHINKLE AKE This batch is promoted. CHD 01/23/12
CSIMMONS	26-JAN-12 17:38:19	Container 10218077: Per review of the audio/video recording the Liner Lid Deformed question should be answered "No". Please review and make changes as needed.
CSIMMONS	26-JAN-12 17:38:19	Container 10170331: The operator identified the waste as concrete, but entered the reason for impenetrable as black top. Please review and make changes as needed.
CSIMMONS	26-JAN-12 17:38:19	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	26-JAN-12 17:38:19	Container 10159751: The recording id was entered incorrectly. The correct id is 2RTR12-00009. Please review and make changes as needed.
CSIMMONS	26-JAN-12 17:41:38	Sent batch to operations for rework.
CBEEBE	31-JAN-12 10:12:18	Rework complete per batch comments. cb 01/31/12
CSIMMONS	01-FEB-12 07:54:24	Reviewed rework: It appears to be complete and correct.
CSIMMONS	01-FEB-12 07:54:25	Promoted batch to SPM level.
KBURNSIDE	02-FEB-12 08:24:54	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2169103	CSIMMONS	26-JAN-2012 17:41:39	Sent batch to operations for rework.
2172585	CBEEBE	31-JAN-2012 10:12:18	Rework complete per batch comments. cb 01/31/12
2173277	CSIMMONS	01-FEB-2012 07:54:25	Promoted batch to SPM level.
2173940	KBURNSIDE	02-FEB-2012 08:24:54	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 13:49

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00015

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10333704	51019	OPEN	28-JAN-10	
10159751	68316	CLOSED	17-JAN-12	05-JUL-12
10170331	68313	CLOSED	17-JAN-12	12-APR-12
10215863	68296	CLOSED	16-JAN-12	22-MAR-12
10233356	68361	CLOSED	19-JAN-12	21-MAR-12
10330464	68319	CLOSED	17-JAN-12	22-MAR-12
10147350	33481	OPEN	14-AUG-07	
10333704	50847	CLOSED	21-JAN-10	28-JAN-10

*****End of Non-Conformance Report*****

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 26-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		See batch comments.
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10333704 on 01/16/12. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10202182 on 01/16/12. There were minor differences

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 26-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Checklist Report

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 01-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		See batch comments.
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was preformed on container 10333704 on 01/16/12. There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10202182 on 01/16/12. There were minor differences

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 01-FEB-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation
Approval Date 02-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-742, NCR-68361, and RPT-TRUW-05.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	Yes	MP-TRUW-8.2, C1-3 and	

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 02-FEB-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10202182 on 1/16/12 at 1807. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00015 **Open Date** 16-JAN-12 **Close Date** 18-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2173940	KBURNSIDE	02-FEB-12	SPM	SPM reviewed and approved.
2173277	CSIMMONS	01-FEB-12	ITR	Promoted batch to SPM level.
2169103	CSIMMONS	26-JAN-12	ITR	Sent batch to operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
RTR Analysis Report

Date: 01-Oct-2012
Time: 13:49

Batch Id RTR12-00015 **Container Id** 10221774 **Analysis Id** 0000081621

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 14:48 **Gross Weight** 196.245 **Lbs.** **Net Weight** 120.245 **Lbs.**
Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.
Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 08-MAR-1972 00:00 **Operator** SPHILLIPS
Result Comment This drum contains Cellulosics in the form of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? Yes **LinerType** TYPE 1
Liner Punctured? Yes **Sharp Objects?** No
Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? No **Layers Of Confinement** 2
Fill Factor 90
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheet located at bottom of waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	2.000	EACH	15.000	30.000
lead sheet	1.000	EACH	10.000	10.000
plastic waste	2.000	EACH	5.000	10.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	25.000	PINTS	0.420	10.500

Batch Id RTR12-00015 **Container Id** 10221774 **Analysis Id** 0000081621

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	30.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	10.000
Other Inorganic Materials	0.000	10.500
Cellulosics	100.000	59.495
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162674	SPHILLIPS	16-JAN-2012 14:48	

Batch Id RTR12-00015 **Container Id** 10218077 **Analysis Id** 0000081623

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 15:00 **Gross Weight** 187.425 Lbs. **Net Weight** 111.425 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-FEB-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Plastic waste in the form of sheeting and bagging
Rework: Corrected "Liner Lid Deformed" to No. cb. 01/31/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
D-cell batteries	5.000	EACH	0.250	1.250
Metal debris	1.000	EACH	10.000	10.000
Paper and rags	1.000	EACH	8.000	8.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	30.000	PINTS	0.420	12.600

Batch Id RTR12-00015 **Container Id** 10218077 **Analysis Id** 0000081623

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.250
Other Inorganic Materials	0.000	12.600
Cellulosics	0.000	8.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	79.575
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2172582	CBEEBE	31-JAN-2012 10:07	
2162675	SPHILLIPS	16-JAN-2012 15:00	

Batch Id RTR12-00015 **Container Id** 10215863 **Analysis Id** 0000081626

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 16:36 **Gross Weight** 216.090 Lbs. **Net Weight** 140.090 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 11-FEB-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead TID located just below bottom chime	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Unable to penatrate bottom 4"of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	1.000	1.000
Lead TID	1.000	EACH	0.010	0.010
plastic waste	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	25.000	PINTS	0.420	10.500

Batch Id RTR12-00015 **Container Id** 10215863 **Analysis Id** 0000081626

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.010
Other Inorganic Materials	0.000	10.500
Cellulosics	100.000	123.330
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162737	SPHILLIPS	16-JAN-2012 16:36	

Batch Id RTR12-00015 **Container Id** 10174255 **Analysis Id** 0000081628

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 16:53 **Gross Weight** 196.245 Lbs. **Net Weight** 119.245 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-NOV-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Cellulosics in the form of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	25.000	25.000
Plastic waste	1.000	EACH	10.000	10.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00015 **Container Id** 10174255 **Analysis Id** 0000081628

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	25.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.400
Cellulosics	100.000	75.845
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162749	SPHILLIPS	16-JAN-2012 16:53	

Batch Id RTR12-00015 **Container Id** 10202182 **Analysis Id** 0000081630

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 17:21 **Gross Weight** 381.465 **Lbs.** **Net Weight** 322.465 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-464 Benelex and Plexiglass

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-APR-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Plexiglas in the form of sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 95

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00015 **Container Id** 10202182 **Analysis Id** 0000081630

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	318.465
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162755	SPHILLIPS	16-JAN-2012 17:21	

Batch Id RTR12-00015 **Container Id** 10186075 **Analysis Id** 0000081631

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 17:36 **Gross Weight** 158.760 **Lbs.** **Net Weight** 82.760 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-JUL-1972 00:00 **Operator** SPHILLIPS

Result Comment This drum contains Plastic waste in the form of sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	small amount of lead solder on a small motor at center if waste.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
paper and rags	1.000	EACH	5.000	5.000
lead solder	1.000	EACH	0.010	0.010
Metal debris	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00015 **Container Id** 10186075 **Analysis Id** 0000081631

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.010
Other Inorganic Materials	0.000	8.400
Cellulosics	0.000	5.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	64.350
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162796	SPHILLIPS	16-JAN-2012 17:36	

Batch Id RTR12-00015 **Container Id** 10202182 **Analysis Id** 0000081634

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 16-JAN-2012 18:07 **Gross Weight** 381.465 Lbs. **Net Weight** 322.465 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-464 Benelex and Plexiglass

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 05-APR-1972 00:00 **Operator** AATWELL

Result Comment Waste appears to be sheets of plexiglass.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 0

Fill Factor 98

Bag Closure Method No Bags

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00015 **Container Id** 10202182 **Analysis Id** 0000081634

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	318.465
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2162809	AATWELL	16-JAN-2012 18:07	

Batch Id RTR12-00015 **Container Id** 10170331 **Analysis Id** 0000081638

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 11:24 **Gross Weight** 445.410 Lbs. **Net Weight** 384.410 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-MAY-1972 00:00 **Operator** JDUNCAN

Result Comment Wsate appears to consist of concrete
Rework: Changed comment for "Impenetrable Dense Object". cb 01/31/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Acceptable Concrete

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc Metal	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR12-00015 **Container Id** 10170331 **Analysis Id** 0000081638

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	375.410
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2172583	CBEEBE	31-JAN-2012 10:10	Rework complete per batch comments. cb 01/31/12
2163271	JDUNCAN	17-JAN-2012 11:24	

Batch Id RTR12-00015 **Container Id** 10226856 **Analysis Id** 0000081640

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 12:16 **Gross Weight** 183.015 Lbs. **Net Weight** 122.015 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-JAN-1972 00:00 **Operator** JDUNCAN

Result Comment Waste appears to consist of paper, rags and plastic.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic waste	1.000	EACH	2.000	2.000
Misc Metal	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00015 **Container Id** 10226856 **Analysis Id** 0000081640

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	114.405
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163293	JDUNCAN	17-JAN-2012 12:16	

Batch Id RTR12-00015 **Container Id** 10233356 **Analysis Id** 0000081643

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 13:32 **Gross Weight** 196.245 **Lbs.** **Net Weight** 135.245 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-DEC-1971 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of towels and wipes.

AK concurs with the recommended IDC change from RF-950 to RF-336 for container 10233356. AKR-12-742 was attached to NCR 68361 to support this change. CHD 01/23/12

Package

IDC Correct Yes **Recommended IDC** RF-336 **Summary Category** S5000

Idc Change Reason Waste consists primarily of towels and wipes. RF-336 is circled on both travelers, top and side

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .06 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .06 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** two polybottles located near bottom chine of drum on side of waste. both with 1 Tablespoon of liquid.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal tools	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	8.000	EACH	0.140	1.120

Batch Id RTR12-00015 **Container Id** 10233356 **Analysis Id** 0000081643

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720
Liquids for Other Inorganics	0.060	PINTS	1.000	0.060

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.780
Cellulosics	100.000	122.095
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2167671	CHINKLE	23-JAN-2012 09:59	This batch is promoted. CHD 01/23/12
2163325	FKUCK	17-JAN-2012 13:32	

Batch Id RTR12-00015 **Container Id** 10234763 **Analysis Id** 0000081646

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 13:53 **Gross Weight** 196.245 Lbs. **Net Weight** 135.245 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-NOV-1971 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tid's	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tid's	1.000	EACH	0.100	0.100
metal tools and misc. debris.	1.000	EACH	10.000	10.000
plastic sheeting	1.000	EACH	10.000	10.000
respirator cartridges	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	32.000	PINTS	0.420	13.440

Batch Id RTR12-00015 **Container Id** 10234763 **Analysis Id** 0000081646

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	2.800
Other metals	0.000	0.100
Other Inorganic Materials	0.000	13.440
Cellulosics	100.000	98.655
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163334	FKUCK	17-JAN-2012 13:53	

Batch Id RTR12-00015 **Container Id** 10147350 **Analysis Id** 0000081648

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 14:39 **Gross Weight** 152.145 Lbs. **Net Weight** 91.145 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 28-AUG-1972 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of plastic sheeting, tarps and buckets.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal tools and small debris	1.000	EACH	10.000	10.000
cardboard, towels and wipes	1.000	EACH	10.000	10.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00015 **Container Id** 10147350 **Analysis Id** 0000081648

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	10.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	68.625
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163371	FKUCK	17-JAN-2012 14:39	

Batch Id RTR12-00015 **Container Id** 10181613 **Analysis Id** 0000081650

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 15:00 **Gross Weight** 174.195 Lbs. **Net Weight** 97.195 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-DEC-1972 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic tubing.	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420

Batch Id RTR12-00015 **Container Id** 10181613 **Analysis Id** 0000081650

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	100.000	92.525
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163381	FKUCK	17-JAN-2012 15:00	

RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10159751 **Analysis Id** 0000081651

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 15:10 **Gross Weight** 456.435 Lbs. **Net Weight** 380.435 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-960 Concrete, Asphalt, etc.

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 04-DEC-1972 00:00 **Operator** FKUCK

Result Comment Waste consists of broken bricks.
Rework: Corrected "Recording ID" cb 01/31/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable broken bricks

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00015 **Container Id** 10159751 **Analysis Id** 0000081651

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	380.435
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2172584	CBEEBE	31-JAN-2012 10:11	Rework complete per batch comments. cb 01/31/12
2163391	FKUCK	17-JAN-2012 15:10	

Batch Id RTR12-00015 **Container Id** 10333704 **Analysis Id** 0000081652

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 15:34 **Gross Weight** 165.375 **Lbs.** **Net Weight** 104.375 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-NOV-1971 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .06 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .12 pints **Containerized Liquid Amt** 0 pints

Other Liquids .06 pints **Comment** 2 polybottles, each with 1 Tablespoon of liquid located near the bottom of the waste, also 2 Tablespoons in bagging on side of waste, middle of container.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
small metal debris.	1.000	EACH	1.000	1.000
plastic sheeting, small containers and polybottles	1.000	EACH	10.000	10.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.120	PINTS	1.000	0.120

Batch Id RTR12-00015 **Container Id** 10333704 **Analysis Id** 0000081652

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.120
Cellulosics	100.000	93.005
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163403	FKUCK	17-JAN-2012 15:34	

Batch Id RTR12-00015 **Container Id** 10333704 **Analysis Id** 0000081654

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 16:08 **Gross Weight** 165.375 Lbs. **Net Weight** 104.375 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 23-NOV-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of Paper,Rags and Cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .08 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .14 pints **Containerized Liquid Amt** 0 pints

Other Liquids .06 pints **Comment** 1 QT poly bottle with 1TBSP Liquid at mid container.second 1QT poly bottle with 1.5 TBSP liquid at mid container.2TBSP Liquid in waste at bottom drum chine.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal Debris	1.000	EACH	2.000	2.000
Poly bottles and bagging	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	2.000	EACH	0.140	0.280

RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10333704 **Analysis Id** 0000081654

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.140	PINTS	1.000	0.140

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.140
Cellulosics	100.000	97.705
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.530
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163419	BHUGGINS	17-JAN-2012 16:08	

Batch Id RTR12-00015 **Container Id** 10330464 **Analysis Id** 0000081657

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 16:48 **Gross Weight** 138.915 Lbs. **Net Weight** 77.915 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 28-DEC-1971 00:00 **Operator** FKUCK

Result Comment Waste consists primarily of cloth coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .13 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .13 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1/4 cup inside a polybottle located near the top of the waste.

Prohibited Liquids Present Yes **Comment** > 60ml. containerized

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360
Liquids for Other Inorganics	0.130	PINTS	1.000	0.130

Batch Id RTR12-00015 **Container Id** 10330464 **Analysis Id** 0000081657

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.490
Cellulosics	100.000	71.785
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.640
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163454	FKUCK	17-JAN-2012 16:48	

RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10102264 **Analysis Id** 0000081659

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 17:09 **Gross Weight** 216.090 Lbs. **Net Weight** 155.090 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 26-DEC-1973 00:00 **Operator** FKUCK

Result Comment Waste consists of paper and cloth coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal tools and couplers	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
1Micron Ful-flo Filter	2.000	EACH	1.040	2.080

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00015 **Container Id** 10102264 **Analysis Id** 0000081659

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	150.010
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.080
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163468	FKUCK	17-JAN-2012 17:09	

Batch Id RTR12-00015 **Container Id** 10244060 **Analysis Id** 0000081660

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 17:37 **Gross Weight** 180.810 Lbs. **Net Weight** 119.810 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-JAN-1972 00:00 **Operator** FKUCK

Result Comment Waste consists of towels, wipes, wood and cloth coveralls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1 Tablespoon located inside a 1 gallon polybottle located on the side of the waste near the bottom of the drum

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead TID, lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic sheeting, bags, polybottles	1.000	EACH	10.000	10.000
lead tape, and lead TID	1.000	EACH	5.000	5.000
metal debris	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00015 **Container Id** 10244060 **Analysis Id** 0000081660

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	5.000
Other Inorganic Materials	0.000	0.030
Cellulosics	100.000	102.530
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163484	FKUCK	17-JAN-2012 17:37	

Batch Id RTR12-00015 **Container Id** 10102249 **Analysis Id** 0000081663

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 17-JAN-2012 17:53 **Gross Weight** 255.780 **Lbs.** **Net Weight** 195.780 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-JAN-1974 00:00 **Operator** FKUCK

Result Comment Waste appears to be primarily towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	3.000	3.000
plastic sheeting	2.000	EACH	20.000	40.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10102249 **Analysis Id** 0000081663

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	152.780
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	40.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163492	FKUCK	17-JAN-2012 17:53	

Batch Id RTR12-00015 **Container Id** 10244063 **Analysis Id** 0000081667

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 18-JAN-2012 08:58 **Gross Weight** 165.375 Lbs. **Net Weight** 104.375 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-JAN-1972 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of wipes, rags, & cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00015 **Container Id** 10244063 **Analysis Id** 0000081667

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.360
Cellulosics	100.000	94.015
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163903	DGREEN	18-JAN-2012 08:58	

RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10202205 **Analysis Id** 0000081668

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 18-JAN-2012 09:44 **Gross Weight** 160.965 Lbs. **Net Weight** 99.965 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00009 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-MAR-1972 00:00 **Operator** DGREEN

Result Comment Waste appears to consist of wipes, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	1.000	1.000
lead tape	1.000	EACH	4.000	4.000
d-cell battery	1.000	EACH	0.250	0.250
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

-RTR Analysis Report

Batch Id RTR12-00015 **Container Id** 10202205 **Analysis Id** 0000081668

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	4.250
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	86.945
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2163933	DGREEN	18-JAN-2012 09:44	

End of RTR Analysis Report

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 13:51

RTR Batch Id: RTR12-00015 **Container Id:** 10333704 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-336** Gross Weight(Lbs): **165.375**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000081652	17-JAN-2012 15:34	0000081654	17-JAN-2012 16:08
Procedure /Revision:	INST-OI-12	47 FC-2	INST-OI-12	47 FC-2
Recording Media Id:	2RTR12-00009		2RTR12-00009	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	FRANK KUCK		BILL HUGGINS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5300	S5000	S5300
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	3		3	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	95		97	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	Y		Y	
Internal Container with Liquid	Y		Y	
Containerized Liquid	N	2 polybottles, each with 1 Tablespoon of liquid located near the bottom of the waste, also 2 Tablespoons in bagging on side of waste, middle of container.	N	1 QT poly bottle with 1TBSP Liquid at mid container.second 1QT poly bottle with 1.5 TBSP liquid at mid container.2TBSP Liquid in waste at bottom drum chine.
Other Liquids:	.06		.06	
Internal Container with Liquid Amt:	.06		.08	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	.12		.14	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	

RTR Replicate Comparison Report

Time: 13:51

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR12-00015 **Container Id:** 10333704 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Wet Cell Batteries Detected?	N	N
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Waste consists primarily of towels and wipes.	The waste in this container appears to be primarily Cellulosics in the form of Paper,Rags and Cardboard.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2169042	CSIMMONS	26-JAN-12	Signed replicate comparison.

-----End of RTR Replicate Comparison Report-----

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time: 14:08

Batch Type Real Time Radiography
Batch Report No. RTR12-00029
Batch Id RTR12-00029
Open Date 27-JAN-12 10:02:47
Close Date 05-MAR-12 11:47:21
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10004991	RF-336	0000081942	27-JAN-12 10:02:47	Original	P	KENT KEARN
10160067	RF-336	0000081943	27-JAN-12 10:26:51	Original	P	KENT KEARN
10151561	RF-371	0000081945	27-JAN-12 10:44:39	Original	P	KENT KEARN
10242742	RF-337	0000081947	27-JAN-12 11:03:39	Original	P	KENT KEARN
10369039	RF-330	0000082143	02-MAR-12 18:22:15	Original	P	CONLEY BEEBE
10369051	RF-320	0000082144	03-MAR-12 09:39:19	Original	P	DAVEY SUMNERS
10366521	RF-336	0000082145	03-MAR-12 10:08:15	Original	P	DAVEY SUMNERS
10367006	RF-330	0000082146	03-MAR-12 10:50:48	Original	P	DAVEY SUMNERS
10369035	RF-371	0000082147	03-MAR-12 12:02:43	Original	P	DAVEY SUMNERS
10369035	RF-371	0000082149	03-MAR-12 13:01:38	Replicate / Duplicate	P	CINDY TIEGS
10366521	RF-336	0000082150	03-MAR-12 13:26:25	RTR OIO	P	CINDY TIEGS
10370315	RF-336	0000082151	03-MAR-12 14:00:37	Original	P	CINDY TIEGS
10366669	RF-330	0000082153	03-MAR-12 14:22:59	Original	P	CINDY TIEGS
10368219	RF-330	0000082154	03-MAR-12 14:58:27	Original	P	CINDY TIEGS
10368654	RF-480	0000082155	03-MAR-12 15:18:28	Original	P	CINDY TIEGS
10368903	RF-330	0000082156	03-MAR-12 16:07:40	Original	P	CINDY TIEGS
10370409	RF-950	0000082157	03-MAR-12 16:22:25	Original	P	CINDY TIEGS
10366370	RF-336	0000082158	03-MAR-12 16:45:56	Original	P	SETH OLDHAM
10368093	RF-360	0000082159	03-MAR-12 17:10:30	Original	P	DENISE LEE
10370412	RF-330	0000082160	05-MAR-12 11:00:53	Original	P	DANNY GREEN
10364200	RF-480	0000082161	05-MAR-12 11:26:15	Original	P	DANNY GREEN
10368100	RF-336	0000082162	05-MAR-12 11:46:20	Original	P	DANNY GREEN

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	07-MAR-12 13:09:04	07-MAR-12 CHINKLE AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/7/12
AATWELL	14-MAR-12 07:41:46	AK rework complete
CHINKLE	14-MAR-12 13:49:14	07-MAR-12 CHINKLE AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/7/12 14-MAR-12 CHINKLE AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/14/12
DLEE	14-MAR-12 15:12:41	Rework completed.
CSIMMONS	21-MAR-12 11:44:03	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	21-MAR-12 11:44:03	Container 10366370: The prohibited compressed gasses question should be answered "Yes" to account for the aerosol can identified by the operator during the exam. Please review and make changes as needed.
CSIMMONS	21-MAR-12 11:46:29	Sent batch to operations for rework.
SOLDHAM	22-MAR-12 16:31:40	Rework complete
CSIMMONS	23-MAR-12 07:55:22	Promoted batch to SPM level.
CSIMMONS	23-MAR-12 07:55:22	Reviewed rework: It appears to be complete and correct.
KBURNSIDE	21-AUG-12 14:07:48	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2191130	AATWELL	14-MAR-2012 07:41:46	AK rework complete
2191429	DLEE	14-MAR-2012 15:12:41	Rework completed.
2194916	CSIMMONS	21-MAR-2012 11:46:29	Sent batch to operations for rework.
2195649	SOLDHAM	22-MAR-2012 16:31:40	Rework complete
2195923	CSIMMONS	23-MAR-2012 07:55:22	Promoted batch to SPM level.
2314572	KBURNSIDE	21-AUG-2012 14:07:48	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 14:08

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00029		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10151561	26831	OPEN	31-MAR-07	
10151561	68591	OPEN	27-JAN-12	
10160067	68588	OPEN	27-JAN-12	
10364200	69323	CLOSED	07-MAR-12	27-MAR-12
10366370	69263	CLOSED	03-MAR-12	25-SEP-12
10367006	69257	OPEN	03-MAR-12	
10368093	69502	CLOSED	14-MAR-12	14-MAR-12
10369035	69258	CLOSED	03-MAR-12	25-SEP-12
10369039	69249	OPEN	02-MAR-12	
10369051	69254	CLOSED	03-MAR-12	25-SEP-12
10004991	31324	CLOSED	13-AUG-07	27-MAR-12
10368093	55809	CLOSED	29-SEP-10	12-APR-12
10368903	55809	CLOSED	29-SEP-10	12-APR-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Checklist Report

Date: 01-Oct-2012
Time: 14:09

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer
Approval Date 21-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	No		See batch comments.
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was performed on container 10369035 on 03/03/12 There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10366521on 03/03/12. The original operator

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 21-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			added 5 lbs of plastic packaging materials. The OIO operator added 2 lbs of plastic packaging materials. I agree with the original operator. There were other minor differences between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 23-MAR-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was performed on container 10369035 on 03/03/12 There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10366521on 03/03/12. The original operator

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 23-MAR-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			added 5 lbs of plastic packaging materials. The OIO operator added 2 lbs of plastic packaging materials. I agree with the original operator. There were other minor differences between the exams these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 21-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-733 R4, NCR-69323, and RPT-TRUW-05
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10368096, 10364200

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation
Approval Date 21-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10366521 on 3/03/12 at 1326. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00029 **Open Date** 27-JAN-12 **Close Date** 05-MAR-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2314572	KBURNSIDE	21-AUG-12	SPM	SPM reviewed and approved.
2195923	CSIMMONS	23-MAR-12	ITR	Promoted batch to SPM level.
2194916	CSIMMONS	21-MAR-12	ITR	Sent batch to operations for rework.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
RTR Analysis Report

Date: 01-Oct-2012
Time: 14:09

Batch Id RTR12-00029 **Container Id** 10004991 **Analysis Id** 0000081942

Container Type 001 drum, 55 Gallon (17C) **Analysis Status** Pass

RTR Date 27-JAN-2012 10:02 **Gross Weight** 130.095 **Lbs.** **Net Weight** 53.095 **Lbs.**
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist
Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 18-MAY-1983 00:00 **Operator** KKEARN
Result Comment Waste consists of towels, wipes, and rags

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? Yes **LinerType** TYPE 2
Liner Punctured? Yes **Sharp Objects?** No
Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? No **Layers Of Confinement** 3
Fill Factor 65
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes
Internal Container with Liquid .06 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Containerized Liquid Amt 0 pints
Total Liquid Amount .06 pints
Other Liquids 0 pints **Comment** .06 pt of liquid in 2 1 gallon poly bottles
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
tools and misc. metal	1.000	EACH	1.000	1.000
poly bottles and plastic bags	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	0.060	PINTS	1.000	0.060

Batch Id RTR12-00029 **Container Id** 10004991 **Analysis Id** 0000081942

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.900
Cellulosics	100.000	45.945
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2169393	KKEARN	27-JAN-2012 10:02	

Batch Id RTR12-00029 **Container Id** 10160067 **Analysis Id** 0000081943

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 27-JAN-2012 10:26 **Gross Weight** 176.400 **Lbs.** **Net Weight** 115.400 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 18-NOV-1972 00:00 **Operator** KKEARN

Result Comment Waste consists of towels, wipes, and rags

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .5 pints

Other Liquids 0 pints **Comment** .5 pt of liquid in a plastic bottle

Prohibited Liquids Present Yes **Comment** >60 mils

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator cartridges	1.000	EACH	0.500	0.500
tools and misc. metal	1.000	EACH	3.000	3.000
lead tape	1.000	EACH	0.250	0.250
plastic bottles and misc. plastic	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Batch Id RTR12-00029 **Container Id** 10160067 **Analysis Id** 0000081943

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	1.340
Cellulosics	100.000	108.410
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.400
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2169413	KKEARN	27-JAN-2012 10:26	

Batch Id RTR12-00029 **Container Id** 10151561 **Analysis Id** 0000081945

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 27-JAN-2012 10:44 **Gross Weight** 432.180 **Lbs.** **Net Weight** 355.180 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-JUL-1972 00:00 **Operator** KKEARN

Result Comment Waste consists of brick

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable most of the drum is to dense to penetrate

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00029 **Container Id** 10151561 **Analysis Id** 0000081945

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	350.930
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2169433	KKEARN	27-JAN-2012 10:44	

Batch Id RTR12-00029 **Container Id** 10242742 **Analysis Id** 0000081947

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 27-JAN-2012 11:03 **Gross Weight** 121.275 Lbs. **Net Weight** 60.275 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-SEP-1971 00:00 **Operator** KKEARN

Result Comment Waste consists of PPE and plastic sheeting

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
boots	1.000	EACH	4.000	4.000
tools, screws, and misc. metal	1.000	EACH	2.000	2.000
respirator cartridges	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00029 **Container Id** 10242742 **Analysis Id** 0000081947

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.200
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.400
Cellulosics	0.000	4.050
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	45.625
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2169448	KKEARN	27-JAN-2012 11:03	

Batch Id RTR12-00029 **Container Id** 10369039 **Analysis Id** 0000082143

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-MAR-2012 18:22 **Gross Weight** 169.785 **Lbs.** **Net Weight** 108.785 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-SEP-1971 00:00 **Operator** CBEEBE

Result Comment The remaining waste apprars to be paper and rags,towels,coveralls,tape rolls,ect.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 4

Fill Factor 65

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape, leaded rubber gloves	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	30 gallon drum w/ lid.

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc. plastic tubing, bottles, ect.	1.000	EACH	4.000	4.000
Graphite	1.000	EACH	1.000	1.000
Misc.Scrap metal	1.000	EACH	1.000	1.000
lead tape	1.000	EACH	4.000	4.000
30 gallon drum and lid	1.000	EACH	30.000	30.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber glove	6.000	EACH	5.500	33.000

Batch Id RTR12-00029 **Container Id** 10369039 **Analysis Id** 0000082143

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	40.000	PINTS	0.420	16.800

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	31.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	4.000
Other Inorganic Materials	0.000	17.800
Cellulosics	100.000	18.735
Rubber	0.000	33.000
Plastic (Waste Materials)	0.000	4.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2184966	CBEEBE	02-MAR-2012 18:22	

Batch Id RTR12-00029 **Container Id** 10369051 **Analysis Id** 0000082144

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 09:39 **Gross Weight** 394.695 **Lbs.** **Net Weight** 333.695 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-320 Heavy Non-special Source Metal

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-OCT-1971 00:00 **Operator** DSUMNERS

Result Comment Remaining waste is primarily metal equipment/ other metals.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense impenetrable equipment

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00029 **Container Id** 10369051 **Analysis Id** 0000082144

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	327.685
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2184985	DSUMNERS	03-MAR-2012 09:39	

Batch Id RTR12-00029 **Container Id** 10366521 **Analysis Id** 0000082145

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 10:08 **Gross Weight** 211.680 **Lbs.** **Net Weight** 147.680 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-OCT-1971 00:00 **Operator** DSUMNERS

Result Comment Remaining waste appears to be primarily cellulosics.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 80

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
flashlight	1.000	EACH	0.500	0.500
D-cell batteries	2.000	EACH	0.250	0.500
Drum Bag	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00029 **Container Id** 10366521 **Analysis Id** 0000082145

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	140.640
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	5.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2184987	DSUMNERS	03-MAR-2012 10:08	

Batch Id RTR12-00029 **Container Id** 10367006 **Analysis Id** 0000082146

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 10:50 **Gross Weight** 110.250 **Lbs.** **Net Weight** 49.250 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-OCT-1971 00:00 **Operator** DSUMNERS

Result Comment Remaining waste apears to be primarily cellulosics.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .3 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .3 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** poly bottle with approx .3 pints liquid at bottom near the side.

Prohibited Liquids Present Yes **Comment** containerized liquid > 60 ml

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
poly bottle	1.000	EACH	0.250	0.250
plastic tubing	1.000	EACH	5.000	5.000
light metal debris, cord, lockwire, fasteners	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360
Liquids for Other Inorganics	0.300	PINTS	1.000	0.300

Batch Id RTR12-00029 **Container Id** 10367006 **Analysis Id** 0000082146

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	3.660
Cellulosics	100.000	38.340
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2184997	DSUMNERS	03-MAR-2012 10:50	

Batch Id RTR12-00029 **Container Id** 10369035 **Analysis Id** 0000082147

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 12:02 **Gross Weight** 383.670 **Lbs.** **Net Weight** 323.670 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-OCT-1971 00:00 **Operator** DSUMNERS

Result Comment Remaining waste appears to be primarily other inorganic materials, fire brick .

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense impenetrable material

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris, spikes, wire re-enforcement	1.000	EACH	30.000	30.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00029 **Container Id** 10369035 **Analysis Id** 0000082147

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	30.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	289.670
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185010	DSUMNERS	03-MAR-2012 12:02	

Batch Id RTR12-00029 **Container Id** 10369035 **Analysis Id** 0000082149

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 13:01 **Gross Weight** 383.670 **Lbs.** **Net Weight** 323.670 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain fire brick.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable dense areas of waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
ful-flo filters polypropylene	1.000	EACH	2.000	2.000
misc metals, nails, wire	1.000	EACH	20.000	20.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360

Batch Id RTR12-00029 **Container Id** 10369035 **Analysis Id** 0000082149

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	20.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	297.670
Cellulosics	0.000	6.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185018	CTIEGS	03-MAR-2012 13:01	

Batch Id RTR12-00029 **Container Id** 10366521 **Analysis Id** 0000082150

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 13:26 **Gross Weight** 211.680 Lbs. **Net Weight** 150.680 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 03-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, cardboard, PPE, floor brush.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
flash light	1.000	EACH	1.000	1.000
D-cell batteries	2.000	EACH	0.250	0.500
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00029 **Container Id** 10366521 **Analysis Id** 0000082150

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	146.410
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	20-MAR-2012 14:26	CSIMMONS	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	No
			3.Do you agree with the operator?	No

Comment The original operator added 5 lbs of plastic packaging materials.
The OIO operator added 2 lbs of plastic packaging materials.
I agree with the original operator.
There were other minor differences between the exams these differences don't affect the DQOs or disposition of the drum.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2194338	CSIMMONS	20-MAR-2012 14:26	OIO checklist complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185021	CTIEGS	03-MAR-2012 13:26	

Batch Id RTR12-00029 **Container Id** 10370315 **Analysis Id** 0000082151

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 14:00 **Gross Weight** 141.120 **Lbs.** **Net Weight** 80.120 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, floor push brooms, ice cream cartons, PPE .

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metals,hack saw,putty knife,chain,flashlights	1.000	EACH	15.000	15.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00029 **Container Id** 10370315 **Analysis Id** 0000082151

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	62.600
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185032	CTIEGS	03-MAR-2012 14:02	
2185031	CTIEGS	03-MAR-2012 14:00	

Batch Id RTR12-00029 **Container Id** 10366669 **Analysis Id** 0000082153

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 14:22 **Gross Weight** 127.890 **Lbs.** **Net Weight** 66.890 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-NOV-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags ,PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape at top, square piece	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape and square piece	2.000	EACH	0.500	1.000
misc metals, steel toes,	1.000	EACH	4.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00029 **Container Id** 10366669 **Analysis Id** 0000082153

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	1.260
Cellulosics	100.000	60.380
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185034	CTIEGS	03-MAR-2012 14:22	

Batch Id RTR12-00029 **Container Id** 10368219 **Analysis Id** 0000082154

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 14:58 **Gross Weight** 209.475 Lbs. **Net Weight** 148.475 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-SEP-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, mop head.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead pan	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metals, valves,tools,pipe,strapping.	1.000	EACH	50.000	50.000
lead pan	1.000	EACH	10.000	10.000
Plastic bag for waste	3.000	EACH	0.250	0.750
Poly bottles (1 gal)	3.000	EACH	1.000	3.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00029 **Container Id** 10368219 **Analysis Id** 0000082154

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	50.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	10.000
Other Inorganic Materials	0.000	8.400
Cellulosics	100.000	76.325
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185058	CTIEGS	03-MAR-2012 14:58	

Batch Id RTR12-00029 **Container Id** 10368654 **Analysis Id** 0000082155

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 15:18 **Gross Weight** 233.730 **Lbs.** **Net Weight** 172.730 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-SEP-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain misc metals, motor, electrcial cords, tools, electrcial parts.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	2 lead bricks at bottom	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
wood, brush	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500
Lead brick 2 x 4 x 8 in.	2.000	EACH	25.000	50.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00029 **Container Id** 10368654 **Analysis Id** 0000082155

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	106.830
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	50.000
Other Inorganic Materials	0.000	8.400
Cellulosics	0.000	7.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185062	CTIEGS	03-MAR-2012 15:18	

Batch Id RTR12-00029 **Container Id** 10368903 **Analysis Id** 0000082156

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 16:07 **Gross Weight** 187.425 Lbs. **Net Weight** 126.425 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-NOV-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain cardboard, paper and rags, wood,

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead taped small lids	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metals, nails brackets, can	1.000	EACH	5.000	5.000
lead taped lids	2.000	EACH	0.500	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	18.500	PINTS	0.420	7.770

Batch Id RTR12-00029 **Container Id** 10368903 **Analysis Id** 0000082156

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	7.770
Cellulosics	100.000	112.155
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185074	CTIEGS	03-MAR-2012 16:07	

Batch Id RTR12-00029 **Container Id** 10370409 **Analysis Id** 0000082157

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 16:22 **Gross Weight** 121.275 **Lbs.** **Net Weight** 60.275 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5490 **IDC** RF-950 LSA Metals, Glass, etc.

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 15-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste apppears to contain volrath cans.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00029 **Container Id** 10370409 **Analysis Id** 0000082157

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	58.765
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185075	CTIEGS	03-MAR-2012 16:22	

Batch Id RTR12-00029 **Container Id** 10366370 **Analysis Id** 0000082158

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 16:45 **Gross Weight** 160.965 Lbs. **Net Weight** 99.965 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-AUG-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE
Rework to correct compressed gas question. ESO 03/22/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead round TID's	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	Aerosol can	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead TIDs	1.000	EACH	5.000	5.000
misc metals, bucket, pipe, tubes	1.000	EACH	10.000	10.000
Cardboard liner	1.000	EACH	4.000	4.000
Fiber pack	1.000	EACH	6.000	6.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Aerosol Can	1.000	EACH	0.240	0.240

Batch Id RTR12-00029 **Container Id** 10366370 **Analysis Id** 0000082158

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.240
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	5.000
Other Inorganic Materials	0.000	8.400
Cellulosics	100.000	76.075
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2195647	SOLDHAM	22-MAR-2012 16:30	
2185080	CTIEGS	03-MAR-2012 16:45	

Batch Id RTR12-00029 **Container Id** 10368093 **Analysis Id** 0000082159

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-MAR-2012 17:10 **Gross Weight** 114.660 **Lbs.** **Net Weight** 53.660 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-SEP-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain pipe insulation.
AK does not concur with the recommended IDC change from RF-330 to RF-338 for container 10368093 because the waste was retrieved from Pad 1 Cell 2. Instead, AK recommends an IDC of RF-760. CHD 3/7/12
Changed IDC per AK, 03-14-12 AA
AK does not concur with the recommended IDC change from RF-330 to RF-760 for container 10368093 because further investigation of photos taken at retrieval shows the IDC to be RF-360 (Insulation). Instead, AK recommends an IDC of RF-360. CHD 3/14/12
Rework to agree with IDC change. DKL 3/14/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 75

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00029 **Container Id** 10368093 **Analysis Id** 0000082159

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	49.660
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2191427	DLEE	14-MAR-2012 15:12	
2191405	CHINKLE	14-MAR-2012 13:49	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/14/12
2191129	AATWELL	14-MAR-2012 07:41	
2187794	CHINKLE	07-MAR-2012 13:09	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/7/12
2185086	CTIEGS	03-MAR-2012 17:10	

Batch Id RTR12-00029 **Container Id** 10370412 **Analysis Id** 0000082160

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-MAR-2012 11:00 **Gross Weight** 136.710 **Lbs.** **Net Weight** 75.710 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 04-OCT-1971 00:00 **Operator** DGREEN

Result Comment Operating to OI-12 Rev. 47 FC-3.
Waste appears to consist of primarily of cardboard, paper, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
metal waste	1.000	EACH	3.000	3.000
rubber gaskets	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720

Batch Id RTR12-00029 **Container Id** 10370412 **Analysis Id** 0000082160

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.720
Cellulosics	100.000	55.990
Rubber	0.000	5.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185609	DGREEN	05-MAR-2012 11:00	

Batch Id RTR12-00029 **Container Id** 10364200 **Analysis Id** 0000082161

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-MAR-2012 11:26 **Gross Weight** 288.855 Lbs. **Net Weight** 227.855 Lbs

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-NOV-1971 00:00 **Operator** DGREEN

Result Comment Operating to OI-12 Rev. 47 FC-3.
Waste appears to consist of sheetmetal baffles or dampers.

AK concurs with the recommended IDC change from RF-330 to RF-480 for container 10364200. AKR-12-733 was revised (R4) and attached to NCR 69323 to support this change. CHD 3/7/12

Package

IDC Correct Yes **Recommended IDC** RF-480 **Summary Category** S5000

Idc Change Reason Waste appears to consist of sheetmetal baffles or dampers.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720

Batch Id RTR12-00029 **Container Id** 10364200 **Analysis Id** 0000082161

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	214.885
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.720
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2187795	CHINKLE	07-MAR-2012 13:09	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10368093. CHD 3/7/12
2185639	DGREEN	05-MAR-2012 11:26	

AMWTP
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AMWTP

RTR Analysis Report

Date: 01-Oct-2012
Time: 14:09

Batch Id RTR12-00029 **Container Id** 10368100 **Analysis Id** 0000082162
Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 05-MAR-2012 11:46 **Gross Weight** 163.170 **Lbs.** **Net Weight** 102.170 **Lbs.**
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist
Recording Id 1RTR12-00017 **Procedure Id** INST-OI-12 **Revision** 47 FC-2 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 24-SEP-1971 00:00 **Operator** DGREEN
Result Comment Operating to OI-12 Rev. 47 FC-3.
Waste appears to consist primarily of paper, wipes, & rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 2
Fill Factor 95
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount .25 pints **Containerized Liquid Amt** 0 pints
Other Liquids .25 pints **Comment** Approx. .25 pt. liquid located in a few pockets near the center of the waste.
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal waste	1.000	EACH	20.000	20.000
filter canister	1.000	EACH	4.000	4.000
plastic waste	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

RTR Analysis Report

Date: 01-Oct-2012

Time: 14:09

Batch Id RTR12-00029 **Container Id** 10368100 **Analysis Id** 0000082162

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040
Liquids for Other Inorganics	0.250	PINTS	1.000	0.250

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	20.000
Aluminum-based Metals/Alloys	0.000	2.800
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.290
Cellulosics	100.000	68.080
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2185648	DGREEN	05-MAR-2012 11:46	

-----End of RTR Analysis Report-----

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RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 14:11

RTR Batch Id: RTR12-00029 **Container Id:** 10369035 **Equipment Id:** Z-213-101

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-371** Gross Weight(Lbs): **383.67**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000082147	03-MAR-2012 12:02	0000082149	03-MAR-2012 13:01
Procedure /Revision:	INST-OI-12	47 FC-2	INST-OI-12	47 FC-2
Recording Media Id:	1RTR12-00017		1RTR12-00017	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	DAVEY SUMNERS		CINDY TIEGS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5123	S5000	S5123
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	1		1	
Sharp Objects?	Y		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	90		90	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

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RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 14:11

RTR Batch Id: RTR12-00029 **Container Id:** 10369035 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	Yes, Unacceptable dense impenetrable material	Yes, Unacceptable dense areas of waste.
Result Comment:	Remaining waste appears to be primarily other inorganic materials, fire brick .	Remaining waste appears to contain fire brick.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2194386	CSIMMONS	20-MAR-12	Signed replicate comparison.

-----End of RTR Replicate Comparison Report-----

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Batch Report Coversheet

Date: 01-Oct-2012

Time: 14:04

Batch Type Real Time Radiography
Batch Report No. RTR12-00054
Batch Id RTR12-00054
Open Date 03-APR-12 12:22:41
Close Date 04-APR-12 17:16:20
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-101 RTR Station Left (213-101)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10107467	RF-336	0000082550	03-APR-12 12:22:41	Original	P	MICHAEL RICKS
10239257	RF-360	0000082552	03-APR-12 13:08:52	Original	P	JOHN CUMMINGS
10242930	RF-330	0000082553	03-APR-12 13:40:03	Original	P	JOHN CUMMINGS
10242829	RF-330	0000082554	03-APR-12 14:07:30	Original	P	JOHN CUMMINGS
10107467	RF-336	0000082555	03-APR-12 14:23:58	RTR OIO	P	JOHN CUMMINGS
10242930	RF-330	0000082556	03-APR-12 14:48:56	Replicate / Duplicate	P	MICHAEL RICKS
10100451	RF-004	0000082558	03-APR-12 15:32:23	Original	P	JOHN CUMMINGS
10085087	RF-336	0000082560	03-APR-12 16:13:51	Original	P	JOHN CUMMINGS
10100096	RF-336	0000082561	03-APR-12 17:05:21	Original	P	JOHN CUMMINGS
10156377	RF-330	0000082562	03-APR-12 17:34:19	Original	P	JOHN CUMMINGS
10106996	RF-480	0000082563	04-APR-12 08:47:23	Original	P	SHAWN JORDAN
10090600	RF-336	0000082564	04-APR-12 09:10:42	Original	P	SHAWN JORDAN
10100098	RF-330	0000082565	04-APR-12 09:33:16	Original	P	SHAWN JORDAN
10100426	RF-336	0000082566	04-APR-12 11:07:14	Original	P	SHAWN JORDAN
10124716	RF-970	0000082568	04-APR-12 11:34:47	Original	P	SHAWN JORDAN
10218404	RF-330	0000082569	04-APR-12 13:28:45	Original	P	JOHN CUMMINGS
10093573	RF-336	0000082571	04-APR-12 14:17:08	Original	P	SAMUEL PHILLIPS
10217547	RF-002	0000082572	04-APR-12 14:48:42	Original	P	JOHN CUMMINGS
10088532	RF-900	0000082574	04-APR-12 15:28:53	Original	P	JOHN CUMMINGS
10093684	RF-336	0000082576	04-APR-12 16:02:52	Original	P	JOHN CUMMINGS
10217560	RF-480	0000082577	04-APR-12 16:47:53	Original	P	JOHN CUMMINGS
10130054	RF-330	0000082578	04-APR-12 17:15:19	Original	P	JOHN CUMMINGS

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	05-APR-12 07:37:40	05-APR-12 CHINKLE AKE This batch is promoted. chd 4/5/12
DGASPER	13-APR-12 12:47:08	Initial validation performed electronically per MP-TRUW-8.8
DGASPER	14-APR-12 10:38:51	Container Id 10093573 The Add material item "poly bottle > 4 liters" was entered as "Plastic" (packaging material), 100%, in Waste Parameters. Please re-enter the item as "Plastic" (waste material), 100%, in Waste Parameters.
DGASPER	14-APR-12 10:38:51	Demote batch to Operations level for rework.
SPHILLIPS	14-APR-12 15:21:03	Rework Complete
DGASPER	14-APR-12 15:37:16	Operator rework completed SAT.
DGASPER	14-APR-12 15:37:17	Awaiting 200% review of AMWTP sludge containers.
CSIMMONS	14-APR-12 16:23:40	200% review complete.
DGASPER	14-APR-12 16:40:54	Promote batch to SPM level.
KBURNSIDE	16-APR-12 09:22:17	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2210319	DGASPER	14-APR-2012 10:38:51	Demote batch to Operations level for rework.
2210459	SPHILLIPS	14-APR-2012 15:21:03	Rework Complete
2210469	DGASPER	14-APR-2012 16:40:54	Promote batch to SPM level.
2210996	KBURNSIDE	16-APR-2012 09:22:17	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

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Non-Conformance Report

Date: 01-Oct-2012
Time: 14:04

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00054		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10088532	69979	OPEN	04-APR-12	
10090600	69949	OPEN	04-APR-12	
10093573	69972	OPEN	04-APR-12	
10093573	69974	OPEN	04-APR-12	
10100451	28651	CLOSED	07-JUL-07	16-APR-12
10106996	23720	CLOSED	11-SEP-06	24-OCT-06
10106996	23951	CLOSED	27-SEP-06	19-APR-12
10217560	69983	CLOSED	04-APR-12	10-JUL-12
10217560	69984	CLOSED	04-APR-12	10-JUL-12
10217560	69985	CLOSED	05-APR-12	19-APR-12
10218404	69964	OPEN	04-APR-12	
10242829	69927	CLOSED	03-APR-12	24-JUL-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

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Checklist Report

Date: 01-Oct-2012
Time: 14:05

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer
Approval Date 14-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See Batch Comments.
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR12-00054 on drum10242930, on 04/03/12. Original operator entered 95% Fill Factor, and 1 pt Oil-Dri. Replicate operator entered 97% Fill Factor, and 12 pts Oil-Dri. No significant issues that effect the original disposition have been identified.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		An independent qualified operator performed OIO for batch RTR12-00054, on drum 10107467, on

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer

Approval Date 14-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			04/03/12. Original operator entered 99% Fill Factor, 1.5 lbs Metal, 15 pts Oil-Dri, 2 plastic bag for waste, and .2 pts liquid. OIO operator entered 98% Fill Factor, 2 lbs Metal, 16 pts Oil-Dri, 1 plastic bag for waste, and .03 pts liquid. No significant issues that effect the original disposition have been identified.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer
Approval Date 14-APR-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	Yes		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		A qualified independent operator has performed replicate exam for batch RTR12-00054 on drum10242930, on 04/03/12. Original operator entered 95% Fill Factor, and 1 pt Oil-Dri. Replicate operator entered 97% Fill Factor, and 12 pts Oil-Dri. No significant issues that effect the original disposition have been identified.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		An independent qualified operator performed OIO for batch RTR12-00054, on drum 10107467, on

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer DENNY GASPER **Approval Level** Independent Technical Reviewer
Approval Date 14-APR-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			04/03/12. Original operator entered 99% Fill Factor, 1.5 lbs Metal, 15 pts Oil-Dri, 2 plastic bag for waste, and .2 pts liquid. OIO operator entered 98% Fill Factor, 2 lbs Metal, 16 pts Oil-Dri, 1 plastic bag for waste, and .03 pts liquid. No significant issues that effect the original disposition have been identified.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 16-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	AKR-12-733 R6, NCR-69985, and RPT-TRUW-05.
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	10217560

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation
Approval Date 16-APR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10107467 on 4/3/12 at 1423. No issues or concerns identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00054 **Open Date** 03-APR-12 **Close Date** 04-APR-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2210996	KBURNSIDE	16-APR-12	SPM	SPM reviewed and approved.
2210469	DGASPER	14-APR-12	ITR	Promote batch to SPM level.
2210319	DGASPER	14-APR-12	ITR	Demote batch to Operations level for rework.

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Advanced Mixed Waste Treatment Project

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RTR Analysis Report

Date: 01-Oct-2012
Time: 14:05

Batch Id RTR12-00054 **Container Id** 10107467 **Analysis Id** 0000082550

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 12:22 **Gross Weight** 286.650 **Lbs.** **Net Weight** 225.650 **Lbs.**
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 08-NOV-1973 00:00 **Operator** MRICKS
Result Comment Drum contains paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 3
Fill Factor 99
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes
Internal Container with Liquid 0 pints
Liquid Between Liner & Drum 0 pints
Total Liquid Amount .2 pints
Other Liquids .2 pints
Prohibited Liquids Present No
Internal Container with Liquid No
LA Candidate No
Containerized Liquid
Containerized Liquid Amt 0 pints
Comment .2 pints in bagging at middle chine level.
Comment

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metal	1.000	EACH	1.500	1.500
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	15.000	PINTS	0.420	6.300
Liquids for Other Inorganics	0.200	PINTS	1.000	0.200

Batch Id RTR12-00054 **Container Id** 10107467 **Analysis Id** 0000082550

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.500
Cellulosics	100.000	217.150
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2203894	MRICKS	03-APR-2012 12:22	

Batch Id RTR12-00054 **Container Id** 10239257 **Analysis Id** 0000082552

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 13:08 **Gross Weight** 103.635 Lbs. **Net Weight** 42.635 Lbs.
Equipment Z-213-101 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 29-DEC-1971 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 3
Fill Factor 98
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc. metal	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00054 **Container Id** 10239257 **Analysis Id** 0000082552

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	40.385
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2203912	JCUMMINGS	03-APR-2012 13:15	Forgot to enter waste description in result comment field.
2203909	JCUMMINGS	03-APR-2012 13:08	

Batch Id RTR12-00054 **Container Id** 10242930 **Analysis Id** 0000082553

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 13:40 **Gross Weight** 149.940 Lbs. **Net Weight** 88.940 Lbs.
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 20-DEC-1971 00:00 **Operator** JCUMMINGS
Result Comment Contents of this drum is primarily wood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 2
Fill Factor 95
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420

Batch Id RTR12-00054 **Container Id** 10242930 **Analysis Id** 0000082553

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	100.000	88.520
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2203933	JCUMMINGS	03-APR-2012 13:40	

Batch Id RTR12-00054 **Container Id** 10242829 **Analysis Id** 0000082554

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 14:07 **Gross Weight** 123.480 **Lbs.** **Net Weight** 63.480 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-JAN-1972 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily paper and rags,cardboard and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .25 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .25 pints

Other Liquids 0 pints **Comment** .25 pints in metal can in the middle of the waste.

Prohibited Liquids Present Yes **Comment** > 60 ml.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc. metal	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Liquids for Other Inorganics	0.250	PINTS	1.000	0.250

Batch Id RTR12-00054 **Container Id** 10242829 **Analysis Id** 0000082554

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.930
Cellulosics	100.000	58.300
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2203972	JCUMMINGS	03-APR-2012 14:07	

Batch Id RTR12-00054 **Container Id** 10107467 **Analysis Id** 0000082555

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 14:23 **Gross Weight** 286.650 **Lbs.** **Net Weight** 225.650 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 08-NOV-1973 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .03 pints **Containerized Liquid Amt** 0 pints

Other Liquids .03 pints **Comment** .03 pints in bagging at middle chine.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc. metal	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Batch Id RTR12-00054 **Container Id** 10107467 **Analysis Id** 0000082555

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.750
Cellulosics	100.000	216.650
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	13-APR-2012 11:26	DGASPER	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant issues that effect the original disposition have been identified.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2209902	DGASPER	13-APR-2012 11:26	OIO review complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2203998	JCUMMINGS	03-APR-2012 14:23	

Batch Id RTR12-00054 **Container Id** 10242930 **Analysis Id** 0000082556

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 14:48 **Gross Weight** 149.940 Lbs. **Net Weight** 88.940 Lbs.
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No
Audio Visual Ok? Yes **Closure Date** 20-DEC-1971 00:00 **Operator** MRICKS
Result Comment Drum contains pieces of wood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 2
Fill Factor 97
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00054 **Container Id** 10242930 **Analysis Id** 0000082556

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	83.900
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204065	MRICKS	03-APR-2012 14:48	

Batch Id RTR12-00054 **Container Id** 10100451 **Analysis Id** 0000082558

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 15:32 **Gross Weight** 551.250 **Lbs.** **Net Weight** 471.250 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S3150 **IDC** RF-004 Special Setups

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-MAR-1974 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000
O-ring plastic bag	1.000	EACH	4.000	4.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00054 **Container Id** 10100451 **Analysis Id** 0000082558

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	471.250
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	21.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204123	JCUMMINGS	03-APR-2012 15:32	

Batch Id RTR12-00054 **Container Id** 10085087 **Analysis Id** 0000082560

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 16:13 **Gross Weight** 198.450 **Lbs.** **Net Weight** 138.450 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 26-JUN-1973 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic bagging, poly drum lids and tygon tubing.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .02 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .52 pints

Other Liquids .5 pints **Comment** .02 pints in poly bottle in the middle of the waste. .25 pints in bagging at middle chine. .25 pints in bagging in the middle of the drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
d-cell batteries	1.000	EACH	0.500	0.500
misc. metal	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00054 **Container Id** 10085087 **Analysis Id** 0000082560

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Liquids for Other Inorganics	0.520	PINTS	1.000	0.520

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.500
Other Inorganic Materials	0.000	0.940
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	127.010
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204163	JCUMMINGS	03-APR-2012 16:13	

Batch Id RTR12-00054 **Container Id** 10100096 **Analysis Id** 0000082561

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 17:05 **Gross Weight** 332.955 **Lbs.** **Net Weight** 271.955 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 30-MAR-1974 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 99

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead sheeting	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc. metal	1.000	EACH	5.000	5.000
plastic debris	1.000	EACH	5.000	5.000
lead sheeting	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00054 **Container Id** 10100096 **Analysis Id** 0000082561

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	6.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	255.705
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204217	JCUMMINGS	03-APR-2012 17:05	

Batch Id RTR12-00054 **Container Id** 10156377 **Analysis Id** 0000082562

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-APR-2012 17:34 **Gross Weight** 167.580 Lbs. **Net Weight** 106.580 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-MAY-1972 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily paper cardboard and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Acceptable	lead button
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc.metal	1.000	EACH	8.000	8.000
plastic sheeting	1.000	EACH	5.000	5.000
d-cell bateries and lead button	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00054 **Container Id** 10156377 **Analysis Id** 0000082562

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	8.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	87.540
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204236	JCUMMINGS	03-APR-2012 17:34	

Batch Id RTR12-00054 **Container Id** 10106996 **Analysis Id** 0000082563

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 08:47 **Gross Weight** 299.880 **Lbs.** **Net Weight** 238.880 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-OCT-1973 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be metal shavings, pipe, scrap metal and angle iron.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead disks near middle chine of drum.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
LEAD DISKS	1.000	EACH	20.000	20.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00054 **Container Id** 10106996 **Analysis Id** 0000082563

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	210.680
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	20.000
Other Inorganic Materials	0.000	4.200
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204763	SJORDAN	04-APR-2012 08:47	

Batch Id RTR12-00054 **Container Id** 10090600 **Analysis Id** 0000082564

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 09:10 **Gross Weight** 158.760 Lbs. **Net Weight** 97.760 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 03-OCT-1973 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** Liquid in two poly bottles between bottom chine and bottom of drum.

Prohibited Liquids Present Yes **Comment** Internal containers with > 60 mL of liquid.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	1.000	EACH	2.000	2.000
poly bottle	2.000	EACH	0.100	0.200
metal debris	1.000	EACH	1.000	1.000
Dry cell batteries	2.000	EACH	1.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00054 **Container Id** 10090600 **Analysis Id** 0000082564

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	2.000
Other Inorganic Materials	0.000	2.180
Cellulosics	100.000	90.130
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.450
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204785	SJORDAN	04-APR-2012 09:10	

Batch Id RTR12-00054 **Container Id** 10100098 **Analysis Id** 0000082565

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 09:33 **Gross Weight** 202.860 **Lbs.** **Net Weight** 141.860 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-APR-1974 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be PPE and plastic bagging.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	5.000	5.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720

Batch Id RTR12-00054 **Container Id** 10100098 **Analysis Id** 0000082565

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	6.720
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	130.140
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204799	SJORDAN	04-APR-2012 09:33	

Batch Id RTR12-00054 **Container Id** 10100426 **Analysis Id** 0000082566

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 11:07 **Gross Weight** 255.780 **Lbs.** **Net Weight** 178.780 **Lbs.**
Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 13-MAR-1974 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? Yes **LinerType** TYPE 1
Liner Punctured? Yes **Sharp Objects?** No
Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? No **Layers Of Confinement** 3
Fill Factor 90
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	leaded rubber gloves near middle chine of drum.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Leaded rubber glove	2.000	EACH	5.500	11.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	20.000	PINTS	0.420	8.400

Batch Id RTR12-00054 **Container Id** 10100426 **Analysis Id** 0000082566

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs .
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.400
Cellulosics	100.000	155.130
Rubber	0.000	11.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204950	SJORDAN	04-APR-2012 11:07	

Batch Id RTR12-00054 **Container Id** 10124716 **Analysis Id** 0000082568

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 11:34 **Gross Weight** 176.400 **Lbs.** **Net Weight** 99.400 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5320 **IDC** RF-970 Wood

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-NOV-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plywood.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	0.500	0.500
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	6.000	EACH	0.250	1.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00054 **Container Id** 10124716 **Analysis Id** 0000082568

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	94.880
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	18.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2204983	SJORDAN	04-APR-2012 11:34	

Batch Id RTR12-00054 **Container Id** 10218404 **Analysis Id** 0000082569

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 13:28 **Gross Weight** 136.710 Lbs. **Net Weight** 75.710 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-NOV-1971 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic bagging.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .75 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1 pints **Containerized Liquid Amt** 0 pints

Other Liquids .25 pints **Comment** .75 pints in poly bottle at the top of the waste. .25 pints in bagging in the middle of the waste.

Prohibited Liquids Present Yes **Comment** > 60 ml containerized

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc. metal	1.000	EACH	2.000	2.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720
Liquids for Other Inorganics	1.000	PINTS	1.000	1.000

Batch Id RTR12-00054 **Container Id** 10218404 **Analysis Id** 0000082569

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	7.720
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	65.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205031	JCUMMINGS	04-APR-2012 13:28	

Batch Id RTR12-00054 **Container Id** 10093573 **Analysis Id** 0000082571

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 14:17 **Gross Weight** 227.115 **Lbs.** **Net Weight** 167.115 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-OCT-1973 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic debris, poly bottles and sheeting. Rework Added plastic waste materal in waste paramaters SP 04/14/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 99

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 1.5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1.5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1 pint in poly bottle in the middle of the waste. .5 pints in poly bottle in the middle of the waste.

Prohibited Liquids Present Yes **Comment** >60 ml containerized

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	poly bottle in the middle of the waste with liquid

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly Bottle >4L	1.000	EACH	3.000	3.000
lead tape	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000

Batch Id RTR12-00054 **Container Id** 10093573 **Analysis Id** 0000082571

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	8.000	PINTS	0.420	3.360
Liquids for Other Inorganics	1.500	PINTS	1.000	1.500

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	4.860
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	157.255
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2210457	SPHILLIPS	14-APR-2012 15:20	Rework Complete
2205080	JCUMMINGS	04-APR-2012 14:17	

Batch Id RTR12-00054 **Container Id** 10217547 **Analysis Id** 0000082572

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 14:48 **Gross Weight** 485.100 Lbs. **Net Weight** 409.100 Lbs.
Equipment Z-213-101 **Waste Matrix Code** S3121 **IDC** RF-002 Second Stage Sludge
Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 23-FEB-1972 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily sludge.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S3000
Idc Change Reason
Rigid Liner Present? Yes **LinerType** TYPE 1
Liner Punctured? Yes **Sharp Objects?** No
Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? No **Layers Of Confinement** 1
Fill Factor 95
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00054 **Container Id** 10217547 **Analysis Id** 0000082572

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	100.000	409.100
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205141	JCUMMINGS	04-APR-2012 14:48	

Batch Id RTR12-00054 **Container Id** 10088532 **Analysis Id** 0000082574

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 15:28 **Gross Weight** 183.015 Lbs. **Net Weight** 107.015 Lbs.

Equipment Z-213-101 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-MAY-1973 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic bagging, poly bottles and tygon tubing.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? No **Sharp Objects?** Yes

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? Yes **Layers Of Confinement** 1

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc. metal	1.000	EACH	5.000	5.000
D-cell batteries	4.000	EACH	0.250	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00054 **Container Id** 10088532 **Analysis Id** 0000082574

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	4.200
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	96.815
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205171	JCUMMINGS	04-APR-2012 15:28	

Batch Id RTR12-00054 **Container Id** 10093684 **Analysis Id** 0000082576

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 16:02 **Gross Weight** 264.600 **Lbs.** **Net Weight** 203.600 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 16-NOV-1973 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic bagging, sheeting and poly bottles.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .5 pints

Other Liquids .5 pints **Comment** .5 pints in bagging in various areas in the middle of the waste.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc. metal	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Batch Id RTR12-00054 **Container Id** 10093684 **Analysis Id** 0000082576

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	6.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	5.540
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	188.060
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205201	JCUMMINGS	04-APR-2012 16:02	

Batch Id RTR12-00054 **Container Id** 10217560 **Analysis Id** 0000082577

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 16:47 **Gross Weight** 194.040 **Lbs.** **Net Weight** 133.040 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-FEB-1972 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily metal cans, pipe and wire.
AK concurs with the recommended IDC change from RF-330 to RF-480 for container 10217560. AKR-12-733 was revised (R6) and attached to NCR 69985 to support this change. CHD 4/5/12

Package

IDC Correct Yes **Recommended IDC** RF-480 **Summary Category** S5000

Idc Change Reason Contents of this drum is primarily metal cans,pipe and wire.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid 1 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 1 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 1 pint in aerosol cans in the middle of the waste..

Prohibited Liquids Present Yes **Comment** containerized liquid >60 ml

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead security seals	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	3 aerosol cans	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead security seals	1.000	EACH	1.000	1.000
poly bottles and tygon tubing	1.000	EACH	10.000	10.000
Cardboard liner	1.000	EACH	4.000	4.000
Aerosol Can	3.000	EACH	0.240	0.720

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Liquids for Other Inorganics	1.000	PINTS	1.000	1.000

Batch Id RTR12-00054 **Container Id** 10217560 **Analysis Id** 0000082577

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	117.040
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	1.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205638	CHINKLE	05-APR-2012 07:37	This batch is promoted. chd 4/5/12
2205230	JCUMMINGS	04-APR-2012 16:47	

Batch Id RTR12-00054 **Container Id** 10130054 **Analysis Id** 0000082578

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 04-APR-2012 17:15 **Gross Weight** 189.630 **Lbs.** **Net Weight** 128.630 **Lbs.**

Equipment Z-213-101 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 1RTR12-00033 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 22-SEP-1972 00:00 **Operator** JCUMMINGS

Result Comment Contents of this drum is primarily plastic bagging and sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape and security seals	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Misc. metal	1.000	EACH	8.000	8.000
lead tape and security seals	1.000	EACH	1.000	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00054 **Container Id** 10130054 **Analysis Id** 0000082578

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	8.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	119.630
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2205246	JCUMMINGS	04-APR-2012 17:15	

-----End of RTR Analysis Report-----

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 14:07

RTR Batch Id: RTR12-00054 **Container Id:** 10242930 **Equipment Id:** Z-213-101

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-330** Gross Weight(Lbs): **149.94**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000082553	03-APR-2012 13:40	0000082556	03-APR-2012 14:48
Procedure /Revision:	INST-OI-12	47 FC-3	INST-OI-12	47 FC-3
Recording Media Id:	1RTR12-00033		1RTR12-00033	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	JOHN CUMMINGS		MICHAEL RICKS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5300	S5000	S5300
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	95		97	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Time: 14:07

RTR Batch Id: RTR12-00054 **Container Id:** 10242930 **Equipment Id:** Z-213-101

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Contents of this drum is primarily wood.	Drum contains pieces of wood.

E-signature

Esig Approval ID	User ID	Signature Date	Comment
2209901	DGASPER	13-APR-12	Replicate comparison complete.

-----End of RTR Replicate Comparison Report-----

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 01-Oct-2012

Time:-13:57

Batch Type Real Time Radiography
Batch Report No. RTR12-00081
Batch Id RTR12-00081
Open Date 21-MAY-12 11:11:31
Close Date 22-MAY-12 17:48:21
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10366256	RF-336	0000083220	21-MAY-12 11:11:31	Original	P	SHAWN JORDAN
10370589	RF-330	0000083221	21-MAY-12 11:31:08	Original	P	SHAWN JORDAN
10366583	RF-330	0000083222	21-MAY-12 11:55:47	Original	P	SHAWN JORDAN
10367000	RF-371	0000083223	21-MAY-12 12:14:25	Original	P	SHAWN JORDAN
10370589	RF-330	0000083226	21-MAY-12 13:09:34	Replicate / Duplicate	P	CINDY TIEGS
10366256	RF-336	0000083229	21-MAY-12 13:32:06	RTR OIO	P	CINDY TIEGS
10241082	RF-480	0000083231	21-MAY-12 14:02:53	Original	P	MARK SORENSON
10241001	RF-330	0000083233	21-MAY-12 14:29:38	Original	P	CINDY TIEGS
10241135	RF-371	0000083235	21-MAY-12 14:47:21	Original	P	CINDY TIEGS
10241122	RF-330	0000083236	21-MAY-12 15:08:09	Original	P	CINDY TIEGS
10198109	RF-900	0000083239	21-MAY-12 15:57:15	Original	P	CINDY TIEGS
10156259	RF-900	0000083243	21-MAY-12 16:44:05	Original	P	MARK SORENSON
10220388	RF-330	0000083245	21-MAY-12 17:01:14	Original	P	CINDY TIEGS
10242830	RF-330	0000083247	21-MAY-12 17:22:11	Original	P	CINDY TIEGS
10099524	RF-337	0000083268	22-MAY-12 14:38:40	Original	P	SHAWN JORDAN
10235046	RF-374	0000083269	22-MAY-12 14:58:36	Original	P	SHAWN JORDAN
10235057	RF-337	0000083271	22-MAY-12 15:23:31	Original	P	SHAWN JORDAN
10241121	RF-320	0000083273	22-MAY-12 15:47:54	Original	P	MARK SORENSON
10241133	RF-330	0000083274	22-MAY-12 16:16:59	Original	P	SHAWN JORDAN
10234778	RF-330	0000083276	22-MAY-12 16:38:27	Original	P	MARK SORENSON
10241136	RF-360	0000083278	22-MAY-12 17:23:56	Original	P	SHAWN JORDAN
10242145	RF-330	0000083281	22-MAY-12 17:47:20	Original	P	SHAWN JORDAN

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	23-MAY-12 09:06:52	23-MAY-12 CHINKLE AKE Batch is promoted. chd 5/23/12
KHUGHES	07-JUN-12 14:09:18	Validated electronically.
KHUGHES	13-JUN-12 06:48:41	(rework) Container 10241121, please ensure Recording Id is 2RTR12-00049.
KHUGHES	13-JUN-12 06:48:41	(rework) Container 10156259, please ensure knives are entered into Waste Parameters; Quantity "2", Wt "1lbs" and 100% Iron-based Metals/Alloys.
KHUGHES	13-JUN-12 06:48:41	(rework) Container 10241082, please enter vials into Waste Items by Weight quantity "1" "1 lbs", at "100%" Other Inorganic Materials.
KHUGHES	13-JUN-12 06:48:41	(rework) Container 10234778 please ensure Recording Id is 2RTR12-00049.
KHUGHES	13-JUN-12 06:53:57	return for rework
MSORENSON	13-JUN-12 13:57:55	Rework completed.
KHUGHES	13-JUN-12 14:03:34	rework complete and sat.
KHUGHES	13-JUN-12 14:24:21	promote to SPM
NSTYHL	14-JUN-12 12:27:40	Initial SPM review of the batch.
NSTYHL	14-JUN-12 12:27:40	Approve batch.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2257012	KHUGHES	13-JUN-2012 06:53:57	return for rework
2257360	MSORENSON	13-JUN-2012 13:57:55	Rework completed.
2257369	KHUGHES	13-JUN-2012 14:24:21	promote to SPM
2258015	NSTYHL	14-JUN-2012 12:27:40	Approve batch.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 01-Oct-2012

Time: 13:57

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00081

Trackwise Number	Status	Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10235046	70871	OPEN	22-MAY-12	
10235046	70885	CLOSED	23-MAY-12	21-JUN-12
10235057	70872	CLOSED	22-MAY-12	25-SEP-12
10235057	70874	CLOSED	22-MAY-12	22-JUN-12
10235057	70882	CLOSED	23-MAY-12	21-JUN-12
10241001	70857	CLOSED	21-MAY-12	05-JUL-12
10241121	70875	CLOSED	22-MAY-12	25-JUN-12
10241133	70876	CLOSED	22-MAY-12	05-JUL-12
10241135	70859	CLOSED	21-MAY-12	05-JUL-12

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Checklist Report

Date: 01-Oct-2012
Time: 13:57

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer
Approval Date 13-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	No		see batch comments
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10370589, observation date 05-21-12. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10366256, observation date 05-21-12. No significant differences between original and OIO.

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer	KRISANN HUGHES	**Approval Level**	Independent Technical Reviewer
Approval Date	13-JUN-12	**Review Iteration**	1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		see batch comments

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer

Approval Date 13-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		Container 10370589, observation date 05-21-12. No significant differences between original and replicate exams.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		Container 10366256, observation date 05-21-12. No significant differences between original and OIO.

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer KRISANN HUGHES **Approval Level** Independent Technical Reviewer
Approval Date 13-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		see batch comments

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 14-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	MP-TRUW-05, MP-TRUW-06, MP-TRUW-12 AKR-11-730 (R4) AKR-10-690 (R2)
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	Containers 10234056 and 10235057 received IDC

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 14-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	changes per their respective AKR's.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10366256 examined on 5/21/12, no issues identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00081 **Open Date** 21-MAY-12 **Close Date** 22-MAY-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2258015	NSTYHL	14-JUN-12	SPM	Approve batch.
2257369	KHUGHES	13-JUN-12	ITR	promote to SPM
2257012	KHUGHES	13-JUN-12	ITR	return for rework

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
RTR Analysis Report

Date: 01-Oct-2012
Time: 13:58

Batch Id RTR12-00081 **Container Id** 10366256 **Analysis Id** 0000083220

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 11:11 **Gross Weight** 163.170 Lbs. **Net Weight** 102.170 Lbs.
Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist
Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** **Operator** SJORDAN
Result Comment Drum contents appear to be paper, rags and tape rolls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 3
Fill Factor 100
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		Mercury Present?	No	
Wet Cell Batteries?	No		Explosives?	No	
Prohibited Compressed Gases?	No		PCBs Present?	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	1.000	1.000
D-Cell battery	1.000	EACH	0.250	0.250
respirator cartridge	4.000	EACH	0.250	1.000
rubber mask	2.000	EACH	1.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1/2 Gal Poly Bottle	1.000	EACH	0.460	0.460

Batch Id RTR12-00081 **Container Id** 10366256 **Analysis Id** 0000083220

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.000
Aluminum-based Metals/Alloys	0.000	0.700
Other metals	0.000	0.250
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	92.470
Rubber	0.000	2.000
Plastic (Waste Materials)	0.000	0.710
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236495	SJORDAN	21-MAY-2012 11:11	

Batch Id RTR12-00081 **Container Id** 10370589 **Analysis Id** 0000083221

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 11:31 **Gross Weight** 136.710 Lbs. **Net Weight** 75.710 Lbs.
Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry
Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 14-OCT-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging and plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 3
Fill Factor 95
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No
Internal Container with Liquid 0 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints
Other Liquids 0 pints **Comment**
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.100	0.100
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR12-00081 **Container Id** 10370589 **Analysis Id** 0000083221

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	73.930
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236499	SJORDAN	21-MAY-2012 11:31	

Batch Id RTR12-00081 **Container Id** 10366583 **Analysis Id** 0000083222

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 11:55 **Gross Weight** 123.480 Lbs. **Net Weight** 62.480 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-OCT-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .06 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .06 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** liquid in a quart size poly bottle in bottom of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
quart poly bottle	1.000	EACH	0.250	0.250
plastic debris	1.000	EACH	5.000	5.000
lead tape	1.000	EACH	0.100	0.100
metal debris	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00081 **Container Id** 10366583 **Analysis Id** 0000083222

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040
Liquids for Other Inorganics	0.060	PINTS	1.000	0.060

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	5.100
Cellulosics	100.000	48.780
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236508	SJORDAN	21-MAY-2012 11:55	

Batch Id RTR12-00081 **Container Id** 10367000 **Analysis Id** 0000083223

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 12:14 **Gross Weight** 240.345 **Lbs.** **Net Weight** 180.345 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-OCT-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be Fire Brick.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 60

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	1.000	EACH	10.000	10.000
metal debris	1.000	EACH	10.000	10.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	32.000	PINTS	0.420	13.440

Batch Id RTR12-00081 **Container Id** 10367000 **Analysis Id** 0000083223

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	10.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	156.345
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236527	SJORDAN	21-MAY-2012 12:14	

Batch Id RTR12-00081 **Container Id** 10370589 **Analysis Id** 0000083226

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 13:09 **Gross Weight** 136.710 Lbs. **Net Weight** 75.710 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-OCT-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain plastic sheeting.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Acceptable	lead tape
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
paper and rags	1.000	EACH	10.000	10.000
lead tape	1.000	EACH	0.140	0.140
Plastic bag for waste	5.000	EACH	0.250	1.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00081 **Container Id** 10370589 **Analysis Id** 0000083226

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.140
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	10.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	64.730
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236537	CTIEGS	21-MAY-2012 13:09	

Batch Id RTR12-00081 **Container Id** 10366256 **Analysis Id** 0000083229

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 13:32 **Gross Weight** 163.170 **Lbs.** **Net Weight** 102.170 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
poly bottle	1.000	EACH	0.500	0.500
misc metals, steel toes.	1.000	EACH	2.000	2.000
D-cell batterie	1.000	EACH	0.250	0.250
respirator cartridges	4.000	EACH	0.240	0.960
respirator masks	2.000	EACH	2.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Batch Id RTR12-00081 **Container Id** 10366256 **Analysis Id** 0000083229

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.672
Other metals	0.000	0.250
Other Inorganic Materials	0.000	4.200
Cellulosics	100.000	90.298
Rubber	0.000	4.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	29-MAY-2012 07:59	KHUGHES	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment No significant differences between original and independent observation.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2242434	KHUGHES	29-MAY-2012 07:59	valid

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236545	CTIEGS	21-MAY-2012 13:32	

Batch Id RTR12-00081 **Container Id** 10241082 **Analysis Id** 0000083231

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 14:02 **Gross Weight** 110.250 **Lbs.** **Net Weight** 49.250 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-JAN-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain misc metals, shavings, brackets, wire, metal vials. Rework- Added Vials to waste parameters. MS 06/13/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 70

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vials	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00081 **Container Id** 10241082 **Analysis Id** 0000083231

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	43.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2257357	MSORENSON	13-JUN-2012 13:55	Rework
2236555	CTIEGS	21-MAY-2012 14:02	

Batch Id RTR12-00081 **Container Id** 10241001 **Analysis Id** 0000083233

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 14:29 **Gross Weight** 165.375 **Lbs.** **Net Weight** 104.375 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-DEC-1971 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** .50 pts liquid in aerosol can at bottom.

Prohibited Liquids Present Yes **Comment** >60ml liquid in aerosol can at bottom

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead buttons at bottom	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
respirator cartridges	1.000	EACH	4.000	4.000
respirator masks	1.000	EACH	6.000	6.000
dry cell batterie	1.000	EACH	15.000	15.000
lead buttons	1.000	EACH	0.250	0.250
D-cell batteries	15.000	EACH	0.250	3.750
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Aerosol Can	1.000	EACH	0.240	0.240

Batch Id RTR12-00081 **Container Id** 10241001 **Analysis Id** 0000083233

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	5.000	PINTS	0.420	2.100
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.240
Aluminum-based Metals/Alloys	0.000	2.800
Other metals	0.000	19.000
Other Inorganic Materials	0.000	2.600
Cellulosics	100.000	73.485
Rubber	0.000	6.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236576	CTIEGS	21-MAY-2012 14:29	

Batch Id RTR12-00081 **Container Id** 10241135 **Analysis Id** 0000083235

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 14:47 **Gross Weight** 363.825 Lbs. **Net Weight** 302.825 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5123 **IDC** RF-371 Fire Brick

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 26-JAN-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain fire brick.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable areas of the waste.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00081 **Container Id** 10241135 **Analysis Id** 0000083235

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	298.575
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236582	CTIEGS	21-MAY-2012 14:47	

Batch Id RTR12-00081 **Container Id** 10241122 **Analysis Id** 0000083236

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 15:08 **Gross Weight** 149.940 Lbs. **Net Weight** 89.940 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-JAN-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metals	1.000	EACH	2.000	2.000
plastic sheeting, poly bottles	1.000	EACH	6.000	6.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	18.000	PINTS	0.420	7.560

Batch Id RTR12-00081 **Container Id** 10241122 **Analysis Id** 0000083236

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	7.560
Cellulosics	100.000	73.630
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	6.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236587	CTIEGS	21-MAY-2012 15:08	

Batch Id RTR12-00081 **Container Id** 10198109 **Analysis Id** 0000083239

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 15:57 **Gross Weight** 171.990 Lbs. **Net Weight** 95.990 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 10-APR-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** Yes

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead piece, TID	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
misc metals,	1.000	EACH	1.000	1.000
knife	1.000	EACH	2.000	2.000
lead piece, TID	1.000	EACH	0.250	0.250
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Ice Cream Carton	3.000	EACH	0.320	0.960

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040

Batch Id RTR12-00081 **Container Id** 10198109 **Analysis Id** 0000083239

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	5.040
Cellulosics	100.000	87.450
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236624	CTIEGS	21-MAY-2012 15:57	

Batch Id RTR12-00081 **Container Id** 10156259 **Analysis Id** 0000083243

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 16:44 **Gross Weight** 211.680 **Lbs.** **Net Weight** 135.680 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5390 **IDC** RF-900 LSA Paper, Plastic, etc.

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-NOV-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags.
Rework-Added knives to waste parameters. MS 06/13/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** Yes

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 2

Fill Factor 70

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .01 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .01 pints

Other Liquids 0 pints **Comment** .01 pts liquid in ice cream carton middle of waste.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Knives	2.000	EACH	1.000	2.000
D-cell battery	1.000	EACH	0.250	0.250
Plastic bag for waste	2.000	EACH	0.250	0.500
1 Ice Cream Carton	4.000	EACH	0.320	1.280

Batch Id RTR12-00081 **Container Id** 10156259 **Analysis Id** 0000083243

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	24.000	PINTS	0.420	10.080
Liquids for Other Inorganics	0.010	PINTS	1.000	0.010

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	10.090
Cellulosics	100.000	122.840
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2257352	MSORENSON	13-JUN-2012 13:51	rework
2236648	CTIEGS	21-MAY-2012 16:44	

Batch Id RTR12-00081 **Container Id** 10220388 **Analysis Id** 0000083245

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 17:01 **Gross Weight** 174.195 Lbs. **Net Weight** 113.195 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 14-FEB-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE, tape rolls .

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment
Lead?	Yes, Acceptable	lead tape
Wet Cell Batteries?	No	
Prohibited Compressed Gases?	No	
Non-Mixed Hazardous Waste Present?	No	

	Value	Comment
Mercury Present?	No	
Explosives?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Sealed Containers Over 4L?	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00081 **Container Id** 10220388 **Analysis Id** 0000083245

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	1.260
Cellulosics	100.000	111.685
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236663	CTIEGS	21-MAY-2012 17:01	

Batch Id RTR12-00081 **Container Id** 10242830 **Analysis Id** 0000083247

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 21-MAY-2012 17:22 **Gross Weight** 176.400 **Lbs.** **Net Weight** 115.400 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-JAN-1972 00:00 **Operator** CTIEGS

Result Comment Remaining waste appears to contain paper and rags, PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
hose	1.000	EACH	3.000	3.000
misc metals, can	1.000	EACH	5.000	5.000
wire spools	1.000	EACH	15.000	15.000
lead tape	1.000	EACH	0.250	0.250
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR12-00081 **Container Id** 10242830 **Analysis Id** 0000083247

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	20.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	1.680
Cellulosics	100.000	89.720
Rubber	0.000	3.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2236684	CTIEGS	21-MAY-2012 17:22	

Batch Id RTR12-00081 **Container Id** 10099524 **Analysis Id** 0000083268

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 14:38 **Gross Weight** 116.865 Lbs. **Net Weight** 55.865 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-MAR-1974 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags, cardboard and tape rolls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 100

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic debris	1.000	EACH	5.000	5.000
metal debris	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00081 **Container Id** 10099524 **Analysis Id** 0000083268

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	46.775
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237105	SJORDAN	22-MAY-2012 14:38	

Batch Id RTR12-00081 **Container Id** 10235046 **Analysis Id** 0000083269

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 14:58 **Gross Weight** 412.335 **Lbs.** **Net Weight** 352.335 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-374 Blacktop, Concrete and Construction Rubble

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 29-NOV-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be contsruction rubble.
AK concurs with the recommended IDC change from RF-371 to RF-374 for container 10235046. AKR-11-730 was revised (R4 and attached to NCR 70885 to support this change. CHD 5/23/12

Package

IDC Correct Yes **Recommended IDC** RF-374 **Summary Category** S5000

Idc Change Reason Drum contents appear to be construction rubble.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable Impenetrable waste throughout drum.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal pipe	1.000	EACH	4.000	4.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	24.000	PINTS	0.420	10.080

Batch Id RTR12-00081 **Container Id** 10235046 **Analysis Id** 0000083269

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	4.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	344.335
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237553	CHINKLE	23-MAY-2012 09:06	Batch is promoted. chd 5/23/12
2237108	SJORDAN	22-MAY-2012 14:58	

Batch Id RTR12-00081 **Container Id** 10235057 **Analysis Id** 0000083271

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 15:23 **Gross Weight** 185.220 **Lbs.** **Net Weight** 124.220 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 10-DEC-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be plastic bagging and PPE.
AK concurs with the recommended IDC change from RF-371 to RF-337 for container 10235057. AKR-10-690 was revised (R2) and attached to NCR 70882 to support this change. CHD 5/23/12

Package

IDC Correct Yes **Recommended IDC** RF-337 **Summary Category** S5000

Idc Change Reason Drum contents appear to be plastic bagging and PPE.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .5 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .5 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** Liquid in a aerosol can near bottom chine of drum.

Prohibited Liquids Present Yes **Comment** Internal container with >60 mL of liquid.

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can with liquid near bottom chine of drum.	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	3.000	3.000
plywood	1.000	EACH	5.000	5.000
lead tape	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
Aerosol Can	1.000	EACH	0.240	0.240

Batch Id RTR12-00081 **Container Id** 10235057 **Analysis Id** 0000083271

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Vermiculite (95 gm/liter) .125 lb/pint	12.000	PINTS	0.125	1.500
Liquids for Other Inorganics	0.500	PINTS	1.000	0.500

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.240
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	2.000
Cellulosics	0.000	9.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	109.730
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237552	CHINKLE	23-MAY-2012 09:06	Batch is promoted. chd 5/23/12
2237113	SJORDAN	22-MAY-2012 15:23	

Batch Id RTR12-00081 **Container Id** 10241121 **Analysis Id** 0000083273

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 15:47 **Gross Weight** 407.925 **Lbs.** **Net Weight** 346.925 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-320 Heavy Non-special Source Metal

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 24-JAN-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be instrument covers.
Rework-Corrected recording Id. MS 06/13/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** Yes

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable impenetrable waste throughout drum.

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Dry batteries	1.000	EACH	20.000	20.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	10.000	PINTS	0.420	4.200

Batch Id RTR12-00081 **Container Id** 10241121 **Analysis Id** 0000083273

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	318.725
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	20.000
Other Inorganic Materials	0.000	4.200
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2257359	MSORENSON	13-JUN-2012 13:57	rework
2237131	SJORDAN	22-MAY-2012 15:47	

Batch Id RTR12-00081 **Container Id** 10241133 **Analysis Id** 0000083274

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 16:16 **Gross Weight** 132.300 Lbs. **Net Weight** 71.300 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-JAN-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape near bottom of drum.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	Yes	aerosol can near middle chine of drum.	**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
metal debris	1.000	EACH	5.000	5.000
plastic debris	1.000	EACH	5.000	5.000
d-cell battery	3.000	EACH	0.250	0.750
lead tape	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000
Aerosol Can	1.000	EACH	0.240	0.240

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00081 **Container Id** 10241133 **Analysis Id** 0000083274

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.240
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	59.220
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237137	SJORDAN	22-MAY-2012 16:17	

Batch Id RTR12-00081 **Container Id** 10234778 **Analysis Id** 0000083276

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 16:38 **Gross Weight** 147.735 Lbs. **Net Weight** 86.735 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-DEC-1971 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper and rags.
Rework-Corrected recording Id. MS 06/13/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .31 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .31 pints

Other Liquids 0 pints **Comment** Liquid in poly bottles near bottom chine of drum.

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
pint poly bottles	10.000	EACH	0.120	1.200
lead tape	1.000	EACH	0.100	0.100
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	16.000	PINTS	0.420	6.720
Liquids for Other Inorganics	0.310	PINTS	1.000	0.310

Batch Id RTR12-00081 **Container Id** 10234778 **Analysis Id** 0000083276

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	7.030
Cellulosics	100.000	77.655
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.950
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2257355	MSORENSON	13-JUN-2012 13:53	rework
2237150	SJORDAN	22-MAY-2012 16:38	

Batch Id RTR12-00081 **Container Id** 10241136 **Analysis Id** 0000083278

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 17:23 **Gross Weight** 147.735 Lbs. **Net Weight** 71.735 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5410 **IDC** RF-360 Insulation

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 26-JAN-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be Asbestos insulation.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? Yes **LinerType** TYPE 1

Liner Punctured? Yes **Sharp Objects?** No

Liner Lid Present? Yes **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? No **Layers Of Confinement** 1

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
90 mil liner	1.000	EACH	16.000	16.000
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	32.000	PINTS	0.420	13.440

Batch Id RTR12-00081 **Container Id** 10241136 **Analysis Id** 0000083278

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	100.000	71.735
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	17.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237166	SJORDAN	22-MAY-2012 17:23	

Batch Id RTR12-00081 **Container Id** 10242145 **Analysis Id** 0000083281

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 22-MAY-2012 17:47 **Gross Weight** 141.120 Lbs. **Net Weight** 80.120 Lbs.

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00049 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-JAN-1972 00:00 **Operator** SJORDAN

Result Comment Drum contents appear to be paper, rags, cardboard and tape rolls.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
lead tape	1.000	EACH	1.500	1.500
D-Cell batteries	8.000	EACH	0.250	2.000
metal debris	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00081 **Container Id** 10242145 **Analysis Id** 0000083281

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	3.500
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	73.530
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2237185	SJORDAN	22-MAY-2012 17:47	

End of RTR Analysis Report

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RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 14:00

RTR Batch Id: RTR12-00081 **Container Id:** 10370589 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-330** Gross Weight(Lbs): **136.71**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000083221	21-MAY-2012 11:31	0000083226	21-MAY-2012 13:09
Procedure /Revision:	INST-OI-12	47 FC-3	INST-OI-12	47 FC-3
Recording Media Id:	2RTR12-00049		2RTR12-00049	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	SHAWN JORDAN		CINDY TIEGS	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5300	S5000	S5300
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	3		3	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	95		85	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	Yes, Acceptable	lead tape	Yes, Acceptable	lead tape
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report - Time: 14:00

Advanced Mixed Waste Treatment Project

RTR Batch Id: RTR12-00081 **Container Id:** 10370589 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	Drum contents appear to be plastic bagging and plastic sheeting.	Remaining waste appears to contain plastic sheeting.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2242382	KHUGHES	29-MAY-12	valid

-----End of RTR Replicate Comparison Report-----

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Advanced Mixed Waste Treatment Project

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Batch Report Coversheet

Date: 01-Oct-2012

Time: 13:48

Batch Type Real Time Radiography
Batch Report No. RTR12-00096
Batch Id RTR12-00096
Open Date 02-JUN-12 14:40:45
Close Date 03-JUN-12 16:23:49
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id Z-213-106 RTR Station Right (213-106)

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10368866	RF-336	0000083559	02-JUN-12 14:40:45	Original	P	DANNY GREEN
10368134	RF-330	0000083562	02-JUN-12 15:00:49	Original	P	BILL HUGGINS
10366366	RF-480	0000083563	02-JUN-12 15:39:40	Original	P	BILL HUGGINS
10362461	RF-336	0000083564	02-JUN-12 15:53:56	Original	P	BILL HUGGINS
10366366	RF-480	0000083567	02-JUN-12 16:24:21	Replicate / Duplicate	P	AARON ATWELL
10135772	RF-480	0000083570	02-JUN-12 17:12:19	Original	P	BILL HUGGINS
10135358	RF-336	0000083571	02-JUN-12 17:34:29	Original	P	BILL HUGGINS
10368733	RF-336	0000083572	02-JUN-12 17:49:32	Original	P	BILL HUGGINS
10367385	RF-480	0000083573	02-JUN-12 18:05:40	Original	P	DANNY GREEN
10330166	RF-336	0000083574	03-JUN-12 08:29:58	Original	P	AARON ATWELL
10366632	RF-337	0000083575	03-JUN-12 08:55:20	Original	P	AARON ATWELL
10367990	RF-990	0000083578	03-JUN-12 10:22:07	Original	P	CONLEY BEEBE
10242144	RF-330	0000083579	03-JUN-12 10:44:25	Original	P	AARON ATWELL
10241016	RF-330	0000083581	03-JUN-12 11:24:01	Original	P	AARON ATWELL
10359240	RF-330	0000083583	03-JUN-12 11:40:43	Original	P	AARON ATWELL
10368003	RF-950	0000083584	03-JUN-12 12:00:37	Original	P	AARON ATWELL
10368003	RF-950	0000083587	03-JUN-12 12:49:32	RTR OIO	P	BILL HUGGINS
10359241	RF-330	0000083588	03-JUN-12 13:06:30	Original	P	BILL HUGGINS
10370299	RF-336	0000083591	03-JUN-12 13:56:41	Original	P	BILL HUGGINS
10241017	RF-330	0000083594	03-JUN-12 14:17:53	Original	P	DANNY GREEN
10241031	RF-480	0000083595	03-JUN-12 15:57:47	Original	P	BILL HUGGINS
10241085	RF-330	0000083596	03-JUN-12 16:22:47	Original	P	BILL HUGGINS

INFORMATION ONLY

**********Batch Comments**********

Written By	Date	Comment
CHINKLE	04-JUN-12 13:26:58	04-JUN-12 CHINKLE AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10367990. CHD 6/4/12
CBEEBE	05-JUN-12 09:16:31	Rework complete.
CHINKLE	05-JUN-12 14:15:01	04-JUN-12 CHINKLE AKE This batch is returned for rework. AK does not concur with the recommended IDC change for container 10367990. CHD 6/4/12 05-JUN-12 CHINKLE AKE Batch is promoted. chd 6/5/12
CSIMMONS	18-JUN-12 09:05:14	Container 10367385: Per review of the audio/video recording with SME there was a large metal container that appears to be sealed that wasn't identified by the operator. There should be an entry made in waste parameters for large metal container (3 lbs).The Sealed Containers > 4 L question should be answered (Yes) with comment. NCR 71384 was generated for this condition. Please review and make changes as needed.
CSIMMONS	18-JUN-12 09:05:14	Container 10241017: There should be an entry made for 1 leaded apron and 2 leaded rubber gloves made in waste parameters in WTS to account for the items identified by the operator during the exam. The lead comment should be updated to reflect the gloves and apron. Please review and make changes as needed.
CSIMMONS	18-JUN-12 09:05:14	Container 10368866: The Bag Closure method should be corrected to Twisted and Taped to account for the 2 drum bags and plastic bag for waste identified by the operator in the waste. Please review and make changes as needed.
CSIMMONS	18-JUN-12 09:05:14	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	18-JUN-12 09:05:14	Sent batch to operations for rework.
DGREEN	18-JUN-12 10:19:32	Rework complete.
CSIMMONS	18-JUN-12 11:12:28	Promoted batch to SPM level.
CSIMMONS	18-JUN-12 11:12:28	Reviewed rework: It appears to be complete and correct.
NSTYHL	17-JUL-12 14:16:49	Approve batch.
NSTYHL	17-JUL-12 14:16:49	Initial SPM review of the batch.

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Batch Report Coversheet

Date: 01-Oct-2012

Time: 13:48

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2249185	CBEEBE	05-JUN-2012 09:16:31	Rework complete.
2260783	CSIMMONS	18-JUN-2012 09:05:14	Sent batch to operations for rework.
2260821	DGREEN	18-JUN-2012 10:19:32	Rework complete.
2260842	CSIMMONS	18-JUN-2012 11:12:28	Promoted batch to SPM level.
2281345	NSTYHL	17-JUL-2012 14:16:49	Approve batch.

***** End of Batch Report Coversheet Report *****

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Non-Conformance Report

Date: 01-Oct-2012

Time: 13:49

*****Batch NCR(s)*****

Batch Type	RTR	Batch ID	RTR12-00096		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date
10135358	26445	CLOSED	09-MAR-07	01-AUG-12
10135358	71079	CLOSED	02-JUN-12	06-AUG-12
10135772	25669	CLOSED	26-JAN-07	19-JUL-12
10135772	71077	OPEN	02-JUN-12	
10367385	71384	OPEN	18-JUN-12	
10367990	71086	OPEN	03-JUN-12	
10367990	71134	CLOSED	05-JUN-12	20-JUL-12

*****End of Non-Conformance Report*****

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Checklist Report

Date: 01-Oct-2012

Time: 13:49

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 18-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	No		See batch comments.
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	No		See batch comments.
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		Exam of this batch was performed in June.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was performed on container 10366366 on 06/02/12 There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10368003 on 06/03/12 There were minor differences between

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 18-JUN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			the exams; these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 18-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
1. Is the Batch Data Report (BDR) and Quality Assurance (QA) documentation complete with the following: o Real-Time Radiography (RTR) Batch Coversheet o Table of Contents (manual review only) o RTR Analysis reports o Replicate Scan o Replicate Comparison o Independent Observation o ITR checklist (Form-1412, manual review only) o Form-1491, Batch Data Report Supplemental Comment Form (manual review only) o Associated NCRs (referenced in Waste Tracking System [WTS]) o Audio/Video Recording References?	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was the image quality indicator (IQI) satisfactory?	Yes		
4. Does every container in the batch reference an audio/video recording?	Yes		
5. Is there a completed radiography data analysis for each container in the batch?	Yes		
6. Was each RTR Operator qualified at the time of the radiography event?	Yes		
7. Was the data generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum) or INST-OI-81, Real Time Radiography Operations (WIPP Certification for Boxes)?	Yes		
8. Was the correct procedure and revision documented on all analysis reports?	Yes		
9. Has the E-signature History review been performed?	Yes		
10. Does the RTR operator confirm that the physical form matched the waste stream description and waste matrix code?	Yes		
11. Does the packaging weight plus the net weight equal the gross weight of the container in the estimated waste material parameters?	Yes		
12. Were all entries into the waste material items section assigned to the correct waste material parameters?	Yes		
13. Has the description of rigid liners and layers of confinement been properly documented, as applicable?	Yes		
14. Was the presence or absence of prohibited items properly documented?	Yes		
15. If prohibited items were identified, have appropriate nonconformance reports (NCRs) been generated?	Yes		
16. Were the containers examined between October and April in compliance with the preheat requirements?	N/A		Exam of this batch was performed in June.
17. Were all proper units and significant figures used for all reported volumes/weights?	Yes		
18. Was there a valid replicate scan performed (at least one container per day, or once per testing batch, whichever is less frequent)? o Record the container number, the replicate observation date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.	Yes		The replicate scan was performed on container 10366366 on 06/02/12 There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.
19. Was there a valid Operator Independent Observation (OIO) (not the replicate) performed (at least one container	Yes		The OIO scan was performed on container 10368003 on 06/03/12 There were minor differences between

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 18-JUN-12 **Review Iteration** 2

Question Text	Answer	Requirement	Comment
per day, or once per testing batch, whichever is less frequent)? o Record the container number and the OIO date in the comment section of this checklist. o Record any issues or concerns in the batch comment section.			the exams; these differences don't affect the DQOs or disposition of the drum.
20. Were any significant differences identified that would affect the original disposition of the replicate and OIO, or affect data quality objectives (DQOs)? If so, ensure an NCR was generated and WTS flagged.	No		
21. Were the RTR quality assurance objectives (QAOs) met? o Precision o Accuracy o Completeness o Comparability	Yes		
22. Were any NCRs generated for containers containing prohibited items, or any non-conforming conditions that failed to meet DQOs or QAOs? o If so, include the NCRs, as appropriate, in the BDR.	Yes		
23. Were the rework requirements clearly identified in WTS or on the BDR?	Yes		See batch comments.

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation

Approval Date 17-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Is the Independent Technical Review checklist complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were polychlorinated biphenyls (PCBs), mercury, lead, or other hazardous contaminants consistent with the waste stream acceptable knowledge (AK) Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified in this waste?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the real-time radiography (RTR) consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the containers in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes (WMCs) and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	Yes	MP-TRUW-8.2, C4-3	MP-TRUW-05, MP-TRUW-06, MP-TRUW-12 AKR-12-758
(9) Have all applicable Quality Assurance Objectives (QAOs) been met, including precision, accuracy, completeness, and comparability, by using the appropriate acceptance criteria for each as specified in MP-TRUW-8.2, Quality Assurance Project Plan Section C3-4? Precision ¿ Verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern, as evidenced by a satisfactory Image Quality Indicator (IQI). ¿ Have discrepancies, if any, between radiography operators been reconciled? Accuracy ¿ Use of a target to tune the image for maximum sharpness as evidenced by a satisfactory IQI and by requiring operators to successfully identify 100% of the required items in a training container during initial and subsequent qualifications. Completeness ¿ An audio/videotape (or equivalent media) of the radiography examination and a validated radiography data form will be obtained for 100% of the retrievably stored waste container in the program for all waste containers subject to radiography. Comparability ¿ Use of standardized radiography procedures and operator qualifications.	Yes	MP-TRUW-8.2, C3-4a	
(10) Do the waste container contents match the WMC, waste stream description and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C1-3 and B3-11	
(11) If residual liquids exist in the container, is an estimate of quantity given?	Yes	MP-TRUW-8.2, C1-3	
(12) Do the individual container reports contain the (a) IDC, (b) Waste Matrix Code, (c) audio/video recording reference, (d) gross container weight, (e) waste material parameter weights, and (f) signature and date of examination?	Yes	MP-TRUW-8.2, C1-3 and C3-11a	
(13) Have the IDC, WMC, and/or waste stream for all	No	MP-TRUW-8.2, C1-3 and	Container 10367990 received an IDC change per its

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Reviewer NICK STYHL **Approval Level** SPM Data Validation
Approval Date 17-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
containers in the batch remained the same as originally assigned by the historical designation? If not, note the container number in the comment field and notify the Acceptable Knowledge Expert (AKE) if NCR does not exist on the WMC and IDC change.		C3-4a	respective AKR.
(14) Was a replicate scan performed by an independent operator on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container?	Yes	MP-TRUW-8.2, B1-3, C3-4a, and C3-10b(1)	
(15) Has an independent observation of one scan (not the replicate) been performed by a qualified operator that was not involved in the original scan of the waste container, at a rate of once per day or once per batch, whichever is less frequent? Record date of observation and any issues or concerns in the comment section.	Yes	MP-TRUW-8.2, C1-3 and C3-4a	Container 10368003 examined on 6/3/12, no issues identified.
(16) Did personnel having current qualifications perform all RTR examinations?	Yes	MP-TRUW-8.1, Appendix F	
(17) Verify the correct procedure and revision number were used for all containers in this batch.	Yes	MP-TRUW-8.2, C3-4a	
(18) Verify the audio and video checks were performed and are satisfactory.	Yes	MP-TRUW-8.2, C3-4a	
(19) Verify that there are 20 or fewer containers in the batch.	Yes	MP-TRUW-8.2, C1-3	
(20) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered accordingly)? - RTR Batch Coversheet - Table of Contents (manual review only) - RTR Analysis reports - Replicate Scan - Replicate Comparison - Independent Observation - Form-1412, ITR checklist - Associated NCRs - Form, 1491, Batch Data Report Supplemental Comment Form, as applicable - Audio/Video Recording References	Yes	MP-TRUW-8.2, C3 10b(2)	
(21) Review all NCR(s) (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(22) Is all data associated with this BDR acceptable for signature release?	Yes	MP-TRUW-8.2, C3 10b(2)	

Batch Id RTR12-00096 **Open Date** 02-JUN-12 **Close Date** 03-JUN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2281345	NSTYHL	17-JUL-12	SPM	Approve batch.
2260842	CSIMMONS	18-JUN-12	ITR	Promoted batch to SPM level.
2260783	CSIMMONS	18-JUN-12	ITR	Sent batch to operations for rework.

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RTR Analysis Report

Date: 01-Oct-2012
Time: 13:49

Batch Id RTR12-00096 **Container Id** 10368866 **Analysis Id** 0000083559

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 14:40 **Gross Weight** 130.095 **Lbs.** **Net Weight** 69.095 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 08-NOV-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper,rags,wipes,towels and Cardboard. Rework: corrected bag closure method. DGG 06/18/12.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead banding	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Bagging,tubing,poly bottle top	1.000	EACH	0.500	0.500
Lead banding	1.000	EACH	0.120	0.120
Metal TIDS,Banding and wire	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10368866 **Analysis Id** 0000083559

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	63.705
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2260820	DGREEN	18-JUN-2012 10:19	
2246907	BHUGGINS	02-JUN-2012 14:40	

Batch Id RTR12-00096 **Container Id** 10368134 **Analysis Id** 0000083562

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 15:00 **Gross Weight** 165.375 **Lbs.** **Net Weight** 104.375 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 12-NOV-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily plastic in the form of sheeting,bagging,tubing,poly bottles and PPE.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .09 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount .09 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment** 3 TBSP Liquid in large poly bottle at mid container

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Wire,cans,chain,harware	1.000	EACH	20.000	20.000
Wood,paper and rags	1.000	EACH	10.000	10.000
Lead tape	1.000	EACH	0.120	0.120
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520
Liquids for Other Inorganics	0.090	PINTS	1.000	0.090

Batch Id RTR12-00096 **Container Id** 10368134 **Analysis Id** 0000083562

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	20.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	2.610
Cellulosics	0.000	14.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	67.645
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246911	BHUGGINS	02-JUN-2012 15:00	

Batch Id RTR12-00096 **Container Id** 10366366 **Analysis Id** 0000083563

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 15:39 **Gross Weight** 163.170 **Lbs.** **Net Weight** 102.170 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Metal in the form of cut up wire fence panels.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	28.000	PINTS	0.420	11.760

Batch Id RTR12-00096 **Container Id** 10366366 **Analysis Id** 0000083563

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	86.410
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	11.760
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246931	BHUGGINS	02-JUN-2012 15:39	

Batch Id RTR12-00096 **Container Id** 10362461 **Analysis Id** 0000083564

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 15:53 **Gross Weight** 152.145 **Lbs.** **Net Weight** 92.145 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 13-NOV-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper,rags,wipes and towels.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	1.000	EACH	1.000	1.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead tape	1.000	EACH	0.100	0.100
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR12-00096 **Container Id** 10362461 **Analysis Id** 0000083564

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.100
Other Inorganic Materials	0.000	1.680
Cellulosics	100.000	90.115
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	1.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246938	BHUGGINS	02-JUN-2012 15:53	

Batch Id RTR12-00096 **Container Id** 10366366 **Analysis Id** 0000083567

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 16:24 **Gross Weight** 163.170 **Lbs.** **Net Weight** 102.170 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** Yes **OIO** No

Audio Visual Ok? Yes **Closure Date** **Operator** AATWELL

Result Comment Waste is metal debris in the form of heavy gauge wire.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	35.000	PINTS	0.420	14.700

Batch Id RTR12-00096 **Container Id** 10366366 **Analysis Id** 0000083567

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	83.470
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	14.700
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246959	AATWELL	02-JUN-2012 16:24	

Batch Id RTR12-00096 **Container Id** 10135772 **Analysis Id** 0000083570

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 17:12 **Gross Weight** 330.750 **Lbs.** **Net Weight** 269.750 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 01-OCT-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily metal in the form of a 30gal drum,pipe and steel plating.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 66

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Rejected	1/16" thick lead liner in a 30 gal drum	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
1/16" thick lead liner for 30 gal drum	1.000	EACH	40.000	40.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	50.000	PINTS	0.420	21.000

Batch Id RTR12-00096 **Container Id** 10135772 **Analysis Id** 0000083570

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	204.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	40.000
Other Inorganic Materials	0.000	21.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246983	BHUGGINS	02-JUN-2012 17:12	

Batch Id RTR12-00096 **Container Id** 10135358 **Analysis Id** 0000083571

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 17:34 **Gross Weight** 264.600 **Lbs.** **Net Weight** 203.600 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-SEP-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead TID'S and solder.	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable — Two impenetrable containers at bottom of drum.Operator unable to verify absence of prohibited items

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead TID'S and solder.	1.000	EACH	0.120	0.120
Handtools and Hardware	1.000	EACH	8.000	8.000
Graphite	1.000	EACH	30.000	30.000
Cardboard liner	1.000	EACH	4.000	4.000
Poly bottles (1 gal)	1.000	EACH	1.000	1.000
8802 Vollrath Can w/ Lid	1.000	EACH	1.140	1.140

Batch Id RTR12-00096 **Container Id** 10135358 **Analysis Id** 0000083571

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	9.140
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	32.520
Cellulosics	100.000	160.820
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2246999	BHUGGINS	02-JUN-2012 17:34	

Batch Id RTR12-00096 **Container Id** 10368733 **Analysis Id** 0000083572

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 17:49 **Gross Weight** 158.760 **Lbs.** **Net Weight** 97.760 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-SEP-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper,rags,cardboard and PPE

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Lead tape	1.000	EACH	0.120	0.120
Hand tools and hardware	1.000	EACH	5.000	5.000
Plastic bagging and poly bottles	1.000	EACH	10.000	10.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260

Batch Id RTR12-00096 **Container Id** 10368733 **Analysis Id** 0000083572

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	1.260
Cellulosics	100.000	81.130
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247011	BHUGGINS	02-JUN-2012 17:49	

Batch Id RTR12-00096 **Container Id** 10367385 **Analysis Id** 0000083573

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 02-JUN-2012 18:05 **Gross Weight** 202.860 **Lbs.** **Net Weight** 141.860 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 06-OCT-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily metal in the form of lighting equipment,wire,Conduit,cans,hand tools and electric motors. Rework: Corrected waste parameters & sealed container question. DGG 06/18/12.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 97

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Solder	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	Yes	Lage metal container

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
large metal container	1.000	EACH	3.000	3.000
Solder	1.000	EACH	0.050	0.050
Plastic bagging	1.000	EACH	3.000	3.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00096 **Container Id** 10367385 **Analysis Id** 0000083573

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	134.560
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.050
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2260819	DGREEN	18-JUN-2012 10:18	
2247022	BHUGGINS	02-JUN-2012 18:05	

Batch Id RTR12-00096 **Container Id** 10330166 **Analysis Id** 0000083574

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 08:29 **Gross Weight** 130.095 **Lbs.** **Net Weight** 69.095 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-DEC-1971 00:00 **Operator** AATWELL

Result Comment Waste is primarily cellulosics in the form of PPE, towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	small spot of lead on a light bulb	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Poly tubing	1.000	EACH	2.000	2.000
lead	1.000	EACH	0.010	0.010
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	2.000	EACH	0.250	0.500

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10330166 **Analysis Id** 0000083574

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.010
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	64.065
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247375	AATWELL	03-JUN-2012 08:30	

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
RTR Analysis Report

Date: 01-Oct-2012
Time: 13:49

Batch Id RTR12-00096 **Container Id** 10366632 **Analysis Id** 0000083575

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 08:55 **Gross Weight** 156.555 **Lbs.** **Net Weight** 95.555 **Lbs.**
Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-337 Plastics, Teflon, Washables, PVC
Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM
Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No
Audio Visual Ok? Yes **Closure Date** 12-NOV-1971 00:00 **Operator** AATWELL

Result Comment Waste is primarily cellulosics in the form of cardboard, paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000
Idc Change Reason
Rigid Liner Present? No **LinerType** NO LINER
Liner Punctured? N/A **Sharp Objects?** No
Liner Lid Present? No **Sharp Objects Are Protected?** Yes
Liner Lid Deformed? N/A **Layers Of Confinement** 2
Fill Factor 98
Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes
Internal Container with Liquid .01 pints **LA Candidate** No
Liquid Between Liner & Drum 0 pints **Containerized Liquid**
Containerized Liquid Amt 0 pints
Total Liquid Amount .01 pints
Other Liquids 0 pints **Comment** poly bottle between middle and bottom chines with aprox .01 pints of liquid in it
Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No
Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No
Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No
Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
plastic waste	1.000	EACH	5.000	5.000
poly bottle	1.000	EACH	0.250	0.250
Lead tape	1.000	EACH	0.250	0.250
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Liquids for Other Inorganics	0.010	PINTS	1.000	0.010

Batch Id RTR12-00096 **Container Id** 10366632 **Analysis Id** 0000083575

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.250
Other Inorganic Materials	0.000	0.850
Cellulosics	100.000	89.205
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247423	AATWELL	03-JUN-2012 08:55	

Batch Id RTR12-00096 **Container Id** 10367990 **Analysis Id** 0000083578

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 10:22 **Gross Weight** 637.245 **Lbs.** **Net Weight** 576.245 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S4200 **IDC** RF-990 Dirt

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 09-SEP-1971 00:00 **Operator** AATWELL

Result Comment Waste appears to be dirt and gravel, mostly impenetrable.
Info off of Rocky Flats travler has hand written IDC 370 with "Concrete, Sand, Etc" circled, also has a gross weight on the travler of 287 lbs, Remarks section on travler reads "776 construction".
Recomend an IDC of UN-00C Undefined Soil.
AK does not concur with the recommended IDC change from RF-370 to UN-00C for container 10367990 because RF-990 is a better fit. Instead, AK recommends an IDC of RF-990. CHD 6/4/12
Rework: Corrected IDC change per AK. cb 06/05/12
AK concurs with the recommended IDC change from RF-370 to RF-990 for container 10367990. AKR-12-758 was attached to NCR 71134 to support this change. CHD 6/5/12

Package

IDC Correct Yes **Recommended IDC** RF-990 **Summary Category** S4000

Idc Change Reason Waste appears to be dirt / gravel. Corrected IDC per AK.

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 85

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? Yes - Unacceptable majority of waste is impenetrable

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	2.000	EACH	4.000	8.000

Batch Id RTR12-00096 **Container Id** 10367990 **Analysis Id** 0000083578

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	8.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	100.000	565.725
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2249463	CHINKLE	05-JUN-2012 14:14	Batch is promoted. chd 6/5/12
2249181	CBEEBE	05-JUN-2012 09:15	Rework:
2248483	CHINKLE	04-JUN-2012 13:26	This batch is returned for rework. AK does not concur with the recommended IDC change for container 10367990. CHD 6/4/12
2247467	AATWELL	03-JUN-2012 10:22	

Batch Id RTR12-00096 **Container Id** 10242144 **Analysis Id** 0000083579

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 10:44 **Gross Weight** 158.760 **Lbs.** **Net Weight** 97.760 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 21-JAN-1972 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape, not used as shielding	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic waste	1.000	EACH	10.000	10.000
Metal debris	1.000	EACH	5.000	5.000
Battery pack	2.000	EACH	2.000	4.000
Lead tape	1.000	EACH	1.000	1.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10242144 **Analysis Id** 0000083579

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	5.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	5.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	74.990
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247481	AATWELL	03-JUN-2012 10:44	

Batch Id RTR12-00096 **Container Id** 10241016 **Analysis Id** 0000083581

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 11:24 **Gross Weight** 114.660 **Lbs.** **Net Weight** 53.660 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 27-JAN-1972 00:00 **Operator** AATWELL

Result Comment Waste appears to be primarily cellulosics in the form of paper and rags.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	lead tape	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Metal debris	1.000	EACH	15.000	15.000
Lead tape	1.000	EACH	1.000	1.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	3.000	EACH	0.250	0.750

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10241016 **Analysis Id** 0000083581

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	1.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	34.390
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247496	AATWELL	03-JUN-2012 11:24	

Batch Id RTR12-00096 **Container Id** 10359240 **Analysis Id** 0000083583

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 11:40 **Gross Weight** 125.685 **Lbs.** **Net Weight** 64.685 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 02-NOV-1971 00:00 **Operator** AATWELL

Result Comment Waste is primarily cellulosics in the form of PPE, cardboard, towels and wipes.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	4.000	EACH	0.250	1.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10359240 **Analysis Id** 0000083583

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	100.000	61.165
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247516	AATWELL	03-JUN-2012 11:40	

Batch Id RTR12-00096 **Container Id** 10368003 **Analysis Id** 0000083584

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 12:00 **Gross Weight** 388.080 **Lbs.** **Net Weight** 327.080 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-950 LSA Metals, Glass, etc.

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 07-OCT-1971 00:00 **Operator** AATWELL

Result Comment Waste is primarily metal debris in the form of paint bucket, expanded metal, pipe and pipe fittings.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 90

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Towels, wipes & wood	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	6.000	PINTS	0.420	2.520

Batch Id RTR12-00096 **Container Id** 10368003 **Analysis Id** 0000083584

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	315.310
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.520
Cellulosics	0.000	9.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247521	AATWELL	03-JUN-2012 12:00	

Batch Id RTR12-00096 **Container Id** 10368003 **Analysis Id** 0000083587

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 12:49 **Gross Weight** 388.080 **Lbs.** **Net Weight** 327.080 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5490 **IDC** RF-950 LSA Metals, Glass, etc.

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** Yes

Audio Visual Ok? Yes **Closure Date** 07-OCT-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily metal in the form of a metal 5 gal bucket,Expanded metal and scrap pipe and fittings.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Sheeting and bagging	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680

Batch Id RTR12-00096 **Container Id** 10368003 **Analysis Id** 0000083587

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	316.150
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

RTR Independent Observation

Obsolete	Performed	User Name	Checklist	Answer
No	17-JUN-2012 17:22	CSIMMONS	1.Was an independent observation performed?	Yes
			2.Were all items on the recording media identified correctly in WTS?	Yes
			3.Do you agree with the operator?	Yes

Comment There were minor differences between the exams; these differences don't affect the DQOs or disposition of the drum.

Independent Observation Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2260604	CSIMMONS	17-JUN-2012 17:22	OIO checklist complete.

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247542	BHUGGINS	03-JUN-2012 12:49	

Batch Id RTR12-00096 **Container Id** 10359241 **Analysis Id** 0000083588

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 13:06 **Gross Weight** 123.480 **Lbs.** **Net Weight** 62.480 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 05-NOV-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily plastic in the form of sheeting,bagging,poly bottles and piping.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Hardware	1.000	EACH	2.000	2.000
Paper and rags	1.000	EACH	15.000	15.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)

Batch Id RTR12-00096 **Container Id** 10359241 **Analysis Id** 0000083588

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	19.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	41.480
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247564	BHUGGINS	03-JUN-2012 13:06	

Batch Id RTR12-00096 **Container Id** 10370299 **Analysis Id** 0000083591

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 13:56 **Gross Weight** 149.940 **Lbs.** **Net Weight** 88.940 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-336 Paper and Rags-Moist

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 25-OCT-1971 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of Paper,rags,wipes,towels and cardboard.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 88

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? Yes **Internal Container with Liquid** Yes

Internal Container with Liquid .03 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Containerized Liquid Amt 0 pints

Total Liquid Amount .03 pints

Other Liquids 0 pints **Comment** 1 TBSP Liquid in poly bottle at mid container

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead TID'S	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Dry Cell battery packs	2.000	EACH	5.000	10.000
Plastic bagging	1.000	EACH	10.000	10.000
Metal Brackets	1.000	EACH	1.000	1.000
Lead TID'S	1.000	EACH	0.120	0.120
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250
1 Quart Plastic Container w/ Lid	1.000	EACH	0.140	0.140
1 Gal. Paint Can w/ Lid	1.000	EACH	0.840	0.840

Batch Id RTR12-00096 **Container Id** 10370299 **Analysis Id** 0000083591

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	12.000	PINTS	0.420	5.040
Liquids for Other Inorganics	0.030	PINTS	1.000	0.030

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	11.120
Other Inorganic Materials	0.000	5.070
Cellulosics	100.000	61.520
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	10.390
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247596	BHUGGINS	03-JUN-2012 13:56	

Batch Id RTR12-00096 **Container Id** 10241017 **Analysis Id** 0000083594

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 14:17 **Gross Weight** 125.685 **Lbs.** **Net Weight** 64.685 **Lbs.**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 20-JAN-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper,rags and cardboard.
Rework: Corrected the waste parameters & lead question. DGG 06/18/12

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	Yes, Acceptable	Lead tape, leaded gloves & apron	**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Wire and Hardware	1.000	EACH	2.000	2.000
Lead tape	1.000	EACH	0.120	0.120
Cardboard liner	1.000	EACH	4.000	4.000
Leaded rubber glove	2.000	EACH	5.500	11.000
Leaded rubber apron	1.000	EACH	5.250	5.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00096 **Container Id** 10241017 **Analysis Id** 0000083594

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.120
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	45.475
Rubber	0.000	16.250
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2260817	DGREEN	18-JUN-2012 10:16	
2247608	BHUGGINS	03-JUN-2012 14:17	

Batch Id RTR12-00096 **Container Id** 10241031 **Analysis Id** 0000083595

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 15:57 **Gross Weight** 132.300 **Lbs.** **Net Weight** 71.300 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5112 **IDC** RF-480 Non-special Source Metal

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 19-JAN-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily metal in the form of large round duct work and pipe.

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 3

Fill Factor 98

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Plastic bagging	1.000	EACH	2.000	2.000
Cardboard liner	1.000	EACH	4.000	4.000
Plastic bag for waste	1.000	EACH	0.250	0.250

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00096 **Container Id** 10241031 **Analysis Id** 0000083595

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	64.210
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	4.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.250
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247641	BHUGGINS	03-JUN-2012 15:57	

Batch Id RTR12-00096 **Container Id** 10241085 **Analysis Id** 0000083596

Container Type A drum, 55 Gallon Drum (17H) **Analysis Status** Pass

RTR Date 03-JUN-2012 16:22 **Gross Weight** 108.045 **Lbs.** **Net Weight** 47.045 **Lbs**

Equipment Z-213-106 **Waste Matrix Code** S5300 **IDC** RF-330 Paper and Rags-Dry

Recording Id 2RTR12-00058 **Procedure Id** INST-OI-12 **Revision** 47 FC-3 **Approval Level** SPM

Is Test Pattern Resolution Ok? Yes **Start Side** A **Replicate** No **OIO** No

Audio Visual Ok? Yes **Closure Date** 17-JAN-1972 00:00 **Operator** BHUGGINS

Result Comment The waste in this container appears to be primarily Cellulosics in the form of paper,rags and cardboard

Package

IDC Correct Yes **Recommended IDC** **Summary Category** S5000

Idc Change Reason

Rigid Liner Present? No **LinerType** NO LINER

Liner Punctured? N/A **Sharp Objects?** No

Liner Lid Present? No **Sharp Objects Are Protected?** Yes

Liner Lid Deformed? N/A **Layers Of Confinement** 2

Fill Factor 95

Bag Closure Method Twisted and Taped

Liquids

Liquid Present? No **Internal Container with Liquid** No

Internal Container with Liquid 0 pints **LA Candidate** No

Liquid Between Liner & Drum 0 pints **Containerized Liquid**

Total Liquid Amount 0 pints **Containerized Liquid Amt** 0 pints

Other Liquids 0 pints **Comment**

Prohibited Liquids Present No **Comment**

Contents-Drum or Box

	Value	Comment		Value	Comment
Lead?	No		**Mercury Present?**	No	
Wet Cell Batteries?	No		**Explosives?**	No	
Prohibited Compressed Gases?	No		**PCBs Present?**	No	
			PCB Mass (lbs)	0	
Non-Mixed Hazardous Waste Present?	No		**Sealed Containers Over 4L?**	No	

Non-Radionuclide Pyrophoric Materials Present? No

Waste exhibiting the characteristics of Ignitability, Corrosivity or Reactivity Present? No

Wastes Incompatible with backfill, seal and panel closure materials, container and packaging materials,shipping container or other wastes? No

Impenetrable Dense Objects? No

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Drum plastic bag	2.000	EACH	1.000	2.000

Waste Items byWeight

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Small Hardware	1.000	EACH	2.000	2.000
Poly bottles,tubing and goggles	1.000	EACH	5.000	5.000
Cardboard liner	1.000	EACH	4.000	4.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt(lbs)	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840

Batch Id RTR12-00096 **Container Id** 10241085 **Analysis Id** 0000083596

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	2.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	100.000	39.205
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	2.000
Cellulosics Packaging	0.000	0.000

Analysis Esignature History

Esig Approval Id	User Id	Esignature Date	Comment
2247660	BHUGGINS	03-JUN-2012 16:22	

End of RTR Analysis Report

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

RTR Replicate Comparison Report

Date: 01-Oct-2012

Time: 13:52

RTR Batch Id: RTR12-00096 **Container Id:** 10366366 **Equipment Id:** Z-213-106

Container type Description: **drum, 55 Gallon Drum (17H)** Gen-IDC: **RF-480** Gross Weight(Lbs): **163.17**

	Original Analysis		Replicate Analysis	
Analysis Id / Date:	0000083563	02-JUN-2012 15:39	0000083567	02-JUN-2012 16:24
Procedure /Revision:	INST-OI-12	47 FC-3	INST-OI-12	47 FC-3
Recording Media Id:	2RTR12-00058		2RTR12-00058	
Starting Position:	A		A	
Is Test Pattern Resolution Ok?	Y		Y	
Audio Visual Ok?	Y		Y	
Personnel Name:	BILL HUGGINS		AARON ATWELL	
IDC Ok? / Recommended IDC:	Y		Y	
IDC Change Reason:				
Summary Category / Waste matrix Code:	S5000	S5112	S5000	S5112
Packaging				
Rigid Liner Present?	N		N	
Liner Type Code:	NO LINER		NO LINER	
Liner Punctured:	NA		NA	
Liner Lid Deformed:	NA		NA	
Layers Of Confinement:	2		2	
Sharp Objects?	N		N	
Sharp Objects Protected?	Y		Y	
Fill Factor(%):	98		97	
Bag Closure Method:	Twisted and Taped		Twisted and Taped	
Liner Lid Present?:	N		N	
Liquids: (Volume in Pints)				
Liquid Present?	N		N	
Internal Container with Liquid	N		N	
Containerized Liquid	N		N	
Other Liquids:	0		0	
Internal Container with Liquid Amt:	0		0	
Liquid Between Liner and Drum:	0		0	
Containerized Liquid:	0		0	
Total Liquid Amount:	0		0	
LA Candidate?	N		N	
Prohibited Liquids Present	N		N	

Contents:	Y/N	Comments	Y/N	Comments
Sealed Containers over 4L?	N		N	
Lead Present?	N		N	
Explosives Present?	N		N	
Mercury Present?	N		N	
Wet Cell Batteries Detected?	N		N	

RTR Replicate Comparison Report

Time: 13:52

RTR Batch Id: RTR12-00096 **Container Id:** 10366366 **Equipment Id:** Z-213-106

	Original Analysis	Replicate Analysis
Prohibited Compressed Gas Present?	N	N
PCBs Present?	No	No
PCB Mass (lbs)	0	0
Non-Radionuclide Pyrophoric Materials Present?	N	N
Waste exhibiting the characteristics of ignitability, Corrosivity or reactivity Present?	N	N
Non-Mixed Hazardous Waste Present?	N	N
Waste Incompatibles with backfill, Seal and panel closure materials, container and packaging material, shipping container or other wastes?	N	N
Impenetrable Dense Objects?	No	No
Result Comment:	The waste in this container appears to be primarily Metal in the form of cut up wire fence panels.	Waste is metal debris in the form of heavy gauge wire.

----------E-signature----------

Esig Approval ID	User ID	Signature Date	Comment
2260330	CSIMMONS	17-JUN-12	Signed replicate comparison.

-----End of RTR Replicate Comparison Report-----

AMWTP TRAINING DEPARTMENT

JOB ANALYSIS TASK PLAN

FOR
Real Time Radiography

At
WMF-634/610

Date: 8/1/12

Revision: 12

Instructional Analyst: D. Butler

Todd Golberg Training Manager/Supervisor Print/Type Name	REVIEW Training Manager/Supervisor Signature	114532 S No.	08/16/2012 Date
C. Stepzinski Line Manager/Supervisor Print/Type Name	APPROVAL Line Manager/Supervisor Signature	90421 S No.	08/16/2012 Date

Submitted By: D. Butler Date: May 5, 2012

REVISION / MODIFICATION RECORD

Change Number	Affected Pages	Description of Change	Management Approval	Date
0		Initial Issue		
1-5		No information on record.		
6	-		C. Sisson	7/23/05
7		No information on record.	L. Evens	4/11/07
8		Added OI-60 RTR Quick Scan to section 3.0; added Impenetrable objects to section 4.5.3; removed OI-71; removed six month surveillance for RTR 1001 from section 2.0; distinguish the difference between 90 mil. Liner types with a qualified operator.	C. Sisson	6/16/08
9	All	New format; added items related to new standard. Deleted Yellow drums.	B. Warner	8/23/09
10	Various	Added Safety Basis related tasks.	B. Warner	5/27/10
11	Various	Revised to reflect changes to RTR equipment (Updated/replaced some components; replaced Image Intensifier with Flat Panel detector).	C. Stepzinski	June 19, 2012
12	Various	Revised to reflect deletion of RTR from RPT-TSR-03.	C. Stepzinski	8/16/12

Using a tabletop approach, the team develops a valid task list for the job position and selected tasks as "non-formal training," "pre-train," "train," and "over-train". The results are provided in Attachment 1 and Attachment 2. The tabletop process included the following steps:

1. Generate an initial task list from the existing job analysis, if available.
2. Assemble SME panel from the work arena.
3. Orient the team to the process.
4. Review the boundaries of the job analysis.
5. Verify task list is complete using a combination of these methods:
   a. Group discussion
   b. Review existing job analysis.

6. Revise task list (if necessary) to add missing tasks identified by the SME panel.
7. Validate task list to be applicable to the position.
8. Select tasks for training based on the following criteria:
   a. No Training tasks (impact: not included in formal training program)
      - task performed often enough that one does not forget how to do it
      - there is low difficulty when performing task
      - there is low probability of error when performing task
      - improper task performance makes no difference in plant operations or harm to personnel (low consequences of error)
      - task can be learned and competently performed with just mentoring, informal OJT, job experience, and/or a job aid/procedures

   b. Pre-Train tasks (impact: tasks are taught formally, on an as-needed basis)
      - task is only performed once every 2-1/2 to 5+ years
      - time would be available for training prior to need for task performance
      - if task is performed improperly, there are moderate – to high – consequences

   c. Train tasks (impact: tasks are formally taught once during initial training using boilerplate lesson plans and tests)
      - improper task performance may impair reliability of a system or process or may require a UOR (moderate consequences of error)
      - related task performance maintains proficiency on this task
      - one-time training is sufficient to learn competent task performance

   d. Over-Train tasks (impact: tasks are taught formally in initial and continuing training using more detailed lesson plans and tests)
      - task requires frequent practice to maintain proficiency
      - proper task performance is critical to safety (extreme consequences—serious injury, death, or site emergency) task performed seldom enough that one may forget how to perform task

The participants involved in creating the Job Analysis Task List include:

Print Name:	Dave Butler	Signature:		Emp No.:	103532	Date:	
Job Title:	Training Specialist	Phone No.:	557-7371				
Print Name:	Jason Hayne	Signature:		Emp No.:	85880	Date:	
Job Title:	RTR SME	Phone No.:	557-6463				
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
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Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					
Print Name:		Signature:		Emp No.:		Date:	
Job Title:		Phone No.:					

If you have any questions or require further information, please contact the Instructional Analyst.

Attachment 1

TASK NUMBER	TASK STATEMENT	TASK SELECTION			
		NT	PT	T	OT
Job Analysis Chronology: Document meetings held and accomplishments of the meetings 4-26-2012: Reviewed Task list with RTR SME to modify tasks with regards to new equipment to be installed.					
A	**Basic Principles**				
1.	Describe X-ray radiation		X		
2.	Describe how X-rays produce images		X		
3.	Describe how X-rays are produced		X		
B	**Perform quality control**				**X**
C	**System and Component Knowledge**				
1.	Explain where System and Components are found and their functions			X	
2.	X-ray shielded enclosure			X	
3.	X-ray head and copper filters			X	
4.	Flat Panel Detector			X	
5.	Camara & Monitor			X	
6.	Limit Switches			X	
7.	Homing sequence			X	
8.	Power isolation switches			X	
9.	Interlocks			X	
10.	Warning devices			X	
11.	System keys			X	
12.	High Voltage generators			X	
13.	Cooling System			X	
14.	e-stops and resets			X	
15.	Cart speed, Drum rotator direction and speed			X	
16.	Bump strips			X	
17.	X-Ray Shutters			X	
D	**Production Operating Knowledge and Skills**				
1.	Inspect RTR for operability				X
2.	IQI			X	
3.	Perform Start-up of RTR system			X	
4.	Perform X-ray warm-up			X	
5.	Prepare recording system			X	
6.	Perform normal X-ray			X	
7.	Indentify IDCs			X	
8.	Input information into WTS			X	

9.	Perform rework			X	
10.	Operate RTR System 1001			X	
11.	Load Cart			X	
12.	Scan Waste Container into WTS			X	
E	**WIPP Criteria**				
1.	Material Parameter Data			X	
2.	Packaging configuration			X	
3.	Prohibited Items			X	
4.	Weight and Volume Estimations			X	
F	**Emergency and Abnormal conditions**				
1.	Fire Alarm				X
2.	Dropped Waste Container				X
3.	Breached Container				X
4.	CAM Alarm				X
5.	Spill / Contamination Release				X
6.	Injured Person				X
7.	Loss of Ventilation/Air System				X
8.	Loss of Commercial Power				X
9.	Evacuation				X
10.	Take Cover				X
11.	X-Ray fails to energize				X
12.	X-Ray fails to de-energize				X
G	**Safety Basis – Knowledge of ANSI N43.3 Requirements**				
1.	Perform RTR Daily Safety Check				X
2.	Perform or simulate RTR semi-annual interlock checks				X
3.	Verify completion of RTR semi-annual shielding survey.				X
4.	Applicability, Condition, Action(s) for ANSI N 43.3 RTR System and associated surveillance checks				X
5.	Basic scenario description for accident: Exposure to Direct Radiation from RTR Unit				X
6.	Location and safety function of the Safety Components for RTR system 101 or 106, and 1001.				X
7.	Complete required action(s) upon failure to meet ANSI N43.3 Requirements				X

*NT = No Training PT = Pre-train T = Train OT = Over Train

AMWTP - Employee Training History

Employee: HUGGINS, WILLIAM (000107618)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
MP-RS&C-6.16	9	SEALED RADIOACTIVE SOURCE CONTROL	11/02/09
MP-RS&C-6.22	10	RADIOLOGICAL SURVEY PROGRAM	03/07/12
MP-SCTY-16.10	6	NUCLEAR MATERIAL SOURCE CONTROL	10/31/11
MP-SCTY-16.10	3	NUCLEAR MATERIAL SOURCE CONTROL	01/21/10
MP-TRUW-8.39	7	RTR OPERATOR PROFICIENCY PROGRAM	05/24/12
PLN-SCTY-16.9	3	MATERIAL CONTROL AND ACCOUNTABILITY PLAN	10/31/11
POL-003	6	ITG INJURY-FREE WORKPLACE POLICY	02/17/12
POL-023	2	AMWTP ENVIRONMENTAL POLICY	02/17/12
POL-024	0	AMWTP Migratory Bird Policy	02/16/11
POL-024	REF	AMWTP Migratory Bird Policy	06/28/10
POL-025	1	GENERAL PPE POLICY	02/17/12
POL-026	0	PERSONAL CELL PHONE/ELECTRONIC EQUIPMENT POLICY	10/01/10
POL-108	0	KEY EXPECTATIONS FOR THE SAFE PERFORMANCE OF WORK	02/17/12

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCNMSU2A	NUC MATERIAL SEALED RS USER	01/21/10	01/21/12
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	01/21/10	01/21/12
QPOT07D0	STORAGE & WASTE MOVEMENT	04/08/10	04/08/12
QCRADOTI	LIMITED RADIOLOGICAL SURVEYS	05/03/10	05/03/12
QPOT03A0	REAL TIME RADIOGRAPHY	05/10/10	05/10/12
AMWHAZ	HAZWOPER QUAL	08/16/10	08/23/11
QCCBFFL0	COUNTER BALANCE FORKLIFTS	01/24/11	01/24/14
QPOT3D00	BOX ASSAY	04/12/11	04/12/13
QPOT03B0	DRUM ASSAY	04/12/11	04/12/13
QTOWTRAC	TOW TRACTOR OPERATIONS	07/01/11	07/01/14
AMWRAD02	RAD WORKER 2	08/11/11	09/11/13
AMWHAZ	HAZWOPER QUAL	08/18/11	08/18/12
QCNMSU2A	NUC MATERIAL SEALED RS USER	11/29/11	11/29/13
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	01/10/12	01/10/14
QPOT07D0	STORAGE & WASTE MOVEMENT	04/09/12	04/09/14
QPOT03A0	REAL TIME RADIOGRAPHY	05/02/12	05/02/14
HOISTRIG	HOISTING AND RIGGING	05/10/12	05/10/15
AMWHAZ	HAZWOPER QUAL	08/08/12	08/08/13

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	12/17/09	
AF1020	INDIVIDUAL TRAINING PLAN	12/17/09	
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	01/21/10	01/21/11
AFQP009	ADDENDUM FOR QPOT3A REV 10 RTR	06/23/10	
AWIQR167	AMWTP INSTRUCTOR QUALIFICATION RECORD FORM 1670	07/13/10	03/23/14

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	QPOT3A Rev. 10

Employee Name William R Huggins S# 107618

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Jeremy Szabo	Jeremy Szabo	05/02/12
Characterization Production Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam	Remedial Form (If used)	Exception Form (If used)
	☑	☐	☐

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Jeremy Szabo	Jeremy Szabo	05/02/12
Title	Print Name	Signature	Date

Qual Pack Issued By :	Kathy Merrill	Kathy Merrill	4/16/12
	Print Name	Signature	Date

TRAINING DEPT.
MAY 02 2012
Initials

Qualification Package Approval Section

Line Manager Approval	B. Warner	Signature on file	5/26
	Print Name	Signature	Da

Training Manager Approval	R. Hartline	Signature on file
	Print Name	Signature

MAY 03 AM
QC

Employee Name William R Huggins S# 107618

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	6/16/08
9	All	Updated format and incorporated evaluation standard.	9/8/09
10	Various	Added Safety Basis Related Items.	5/26/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
A	9	Change words in section 6.0 from "green drum" to "QAPJP container"	B. Warner (Signature on File)	12/27/10
B	5	Added item 3.1.1- LLW/MLLW Disposition Program	J. Szabo (Signature on File)	02/13/12

* Manager signature required for modifications.

Employee Name William R Huggins S# 102618

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Bill R Huggins	Bill R Huggins	BRH
William Huggins	William Huggins	WH
KaTae Taylor	KaTae Taylor	KT
Frank Kuck	Frank Kuck	FK
Steve Massey	Steve Massey	SM
Kathy Birch	Kathy Birch	KB
Jeremy Szabo	Jeremy Szabo	JMS

Employee Name William R Huggins S# 107618

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634/610 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 05/1/12

	Date Requirement Was Completed	**Signature** (ISIH or SS)	**Date**
2.1 Current Visual Acuity Exam	07/31/11	WS Mg	04/30/12

Employee Name William R Huggins S# 107618

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
Mod B.		
3.1.1 0AWT1118, LLW/MLLW Disposition Program	1/18/12	24 Months
3.1.2 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	4/23/12	24 Months
3.1.3 0AWT 2369 RTR Technical Safety Requirements	4/23/12	24 Months

Training Representative or SS verify initial training courses are complete:	Signature	Date
	Rallie Taylor	4/23/12

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None	NA	NA

Employee Name William R Huggins S# 107618

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SS Signature	Date
3.4.1 Safety Basis (DSA, TSR, USQ, SER)		05/01/12
3.4.2 Criticality Working Requirements (CWRs)		04/24/12
3.4.3 Applicability, Condition, Action(s) for LCO 3.1; RTR System and associated surveillance requirement(s) SR 4.1.1, 4.1.2, 4.1.3.		04/24/12

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessrnent.

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.1 **Basic Principles**			
4.1.1 Inspect RTR for operability.	P S	FK	04/24/12

Employee Name William R Huggins S# 107618

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.2 **Safety Basis/Technical Safety Requirements**			
4.2.1 Perform surveillance SR 4.1.1 (RTR)	(P)	ZK	04/24/12
4.2.2 Perform surveillance SR 4.1.2 (RTR)	P(S)	ZK	04/24/12
4.2.3 Verify completion of surveillance SR 4.1.3 (RTR)	(P)	ZK	04/24/12
4.2.4 Simulate or discuss required action(s) upon failure to meet LCO 3.1 Real Time Radiography System	S(D)	ZK	04/24/12
4.3 **Quality Control**			
4.3.1 State the requirements and frequency for verifying the image quality through viewing an Image Test pattern.	(D)	ZK	04/24/12
4.3.2 State the requirements and frequency for performing the independent replicate scan.	(D)	ZK	04/24/12
4.3.3 State the requirements and frequency for performing the independent observation.	(D)	ZK	04/24/12
4.3.4 Describe the requirements for a batch size.	(D)	ZK	04/24/12
4.3.5 State the requirements for performance of test and training drums and the frequency in which they must be done.	(D)	ZK	04/24/12

Employee Name William R Huggins S# 102618

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the evaluator indicates successful performance of the task. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	Evaluator Signature	Date
5.1 Fire / Alarm (INST-OI-12, INST-OI-26)	S (D)		04/24/12
5.2 Location of fire extinguishers / fire alarm boxes	S (D)		04/24/12
5.3 Dropped waste container (INST-OI-11)	S (D)		04/24/12
5.4 Breached Container (INST-OI-11, INST-OI-84)	S (D)		04/24/12
5.5 CAM Alarm (INST-OI-11, INST-OI-12)	S (D)		04/24/12
5.6 Spill / Contamination Release (INST-OI-88, MP-EC&P-7.10)	S (D)		04/24/12
5.7 Injured Person (0AWT2402, 0AWT2521)	S (D)		04/24/12
5.8 Loss of ventilation/air system (INST-OI-12, INST-OI-33)	S (D)		04/24/12
5.9 Loss of Commercial Power (INST-OI-12, INST-OI-26)	S (D)		04/24/12
5.10 Evacuation (T2402)	S (D)		04/24/12
5.11 Take Cover (T2402)	S (D)		04/24/12
5.12 X-ray fails to energize (INST-OI-12)	S (D)		04/24/12
5.13 X-ray fails to de-energize (INST-OI-12)	S (D)		04/24/12

Employee Name William A Huggins S# 107618

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 1 Score: 91% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	RaMae Taylor Exam Proctor Signature	5/1/12 Date

Verify that biannual ~~green drum~~ QAPjP container evaluation has been performed or is current	Kathy Bird RTR SME Signature	5/1/12 Date Mod A

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
SS Title	WS Alley Signature	05/01/12 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP - Employee Training History

Employee: HUGGINS, WILLIAM (000107618)

Date Range: 10/17/2009 to 10/17/2012

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWIQR167	AMWTP INSTRUCTOR QUALIFICATION RECORD FORM 1670	07/13/10	03/23/14
AF1018	EMPLOYEE POSITION DESCRIPTION	08/12/10	
AFQP020	ADDENDUM FOR STORAGE & WASTE MOVEMENT REV 5	10/28/10	
AFRTRSWB	RTR BI ANNUAL SWB	11/04/10	05/04/11
AFSNORMV	PERFORMING SNOW REMOVAL ACTIVITIES	11/08/10	11/08/11
AFSNOBLO	PERFORMING SNOW REMOVAL ACTIVITIES WITH SNOW BLOWE	11/08/10	11/08/11
AFRTRSWB	RTR BI ANNUAL SWB	01/23/11	07/23/11
AFPARBEK	PERFORMING PRODUCTION LIFTING ACTIVITIES	01/24/11	
AFWALDON	PERFORMING PRODUCTION LIFTING ACTIVITIES WITH WALD	01/24/11	
AFVCRAFT	PPLA WITH THE VALLEY DRUM HANDLING FIXTURE	01/24/11	
AFVISACU	VISUAL ACUTIY EXAMINATION	07/31/11	07/31/12
AFRTRDRU	RTR BI ANNUAL DRUM	12/16/11	06/16/12
AFRTRDRU	RTR BI ANNUAL DRUM	05/08/12	11/08/12
AFQRTR11	ADDENDUM FOR QPOT3A RTR OPERATIONS	07/05/12	
AFVISACU	VISUAL ACUTIY EXAMINATION	07/11/12	07/11/13
AFQP044	ADDENDUM FOR STORAGE & WASTE MOVEMENT	09/21/12	
AFQP047	ADDENDUM REAL TIME RADIOGRAPHY	10/01/12	
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	10/09/12	
AF1018	EMPLOYEE POSITION DESCRIPTION	10/09/12	
AF1020	INDIVIDUAL TRAINING PLAN	10/09/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGAMW0000052	Safety Expectations for 2012	01/02/12
TGISIH0000013	PPE Expiration	03/10/11
TGMAIN0000085	Rigging Equipment Storage and Care	08/29/12
TGOPS0000014	Review Field Change 1 to procedures OI-12 R44, OI-41 R13, OI-60 R10, OI-81 R6	08/19/10
TGOPS0000018	Valley Drum Handler Use and Adjustment	08/23/10
TGOPS0000069	Brief Characterization RTR operators on INST-OI-12 Rev 44 FC-3. AI 55556	09/15/10
TGOPS0000070	OI-12 Rev 44 FC-2. AI 55515	09/16/10
TGOPS0000071	INST-OI-12 Rev 44 FC 4	09/16/10
TGOPS0000072	INST-OI-12 Rev 44 FC-5. AI 55582	09/17/10
TGOPS0000081	INST-OI-12 Rev 45 FC-1 and INST-OI-41 Rev 13 FC-2. AI 55670	09/23/10
TGOPS0000106	Review changes made to INST-OI-81 R6FC1 by DCR9568	09/30/10
TGOPS0000107	Review changes made to INST-OI-60 R10FC1 by DCR9567	09/30/10
TGOPS0000111	Review Changes to INST-OI-99 Rev 1 FC 2 by DCR 9521	10/01/10
TGOPS0000125	Forklift Battery Charging	11/13/10
TGOPS0000168	Quarterly Waste Handling Training Topics	12/02/10
TGOPS0000171	INST-FOI-27 rev 18	12/11/10
TGOPS0000180	Equipment Ownership, Log Keeping, and working to detailed instructions. AI 55697	12/21/10
TGOPS0000181	NCR placement for Characterization Assay units.	12/21/10
TGOPS0000190	Fact Finding for RTR-106 TSR Violation	12/27/10
TGOPS0000192	Lessons Learned from RTR TSR violation.	12/31/10

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Bill Huggins **S#:** 107618

1.0 Scope

This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S#: 101592

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	1 gallon poly bottle 1 pint of liquid
2. Aerosol can, unpunctured, with liquid	✓	Pint of liquid
3. Full poly bottle (app. 16 oz)	✓	1 pint poly bottle 1 pint of liquid
4. Coveralls	✓	PPE coveralls
5. Tools including crescent wrench	✓	Hand tools Crescent wrench
6. Aerosol can, empty and punctured	✓	punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	1 quart poly bottle empty
8. Lead rubber glove	✓	good use of tools
9. Empty paint can	✓	one gallon paint can
10. Pieces of wood	✓	2x4's or wood
11. 1 gallon poly container with 3 TBSP liquid	✓	4 Tbs of liquid
12. Horsetails	✓	Plastic bags for Waste drum bag

Score: Pass

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 5/8/12

Candidate Signature: Bill Huggins Date: 5/9/12

type 4 liner, full face respirator, cardboard, plastic tubbing, plastic sheeting, pipe, lead taped poly bottle empty Calrath can, one gallon poly bottle 1 pint of liquid

QC RX
MAY 09 2012

AMWTP - Employee Training History

Employee: GREEN, DANNY (000107612)

ate Range: 1/1/1995 to 9/27/2012

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWRAD02	RAD WORKER 2	08/15/07	09/14/09
AMWHAZ24	AMWTP 24 HOUR HAZWOPER	09/10/07	09/10/08
AMWPELAE	PERFORMANCE EXAM LOTO FOR LAE	10/03/07	10/03/08
AQGET001	GENERAL EMPLOYEE TRAINING	10/10/07	
QCNMSU2A	NUC MATERIAL SEALED RS USER	11/13/07	11/13/09
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	12/05/07	12/05/09
QCCBFFL0	COUNTER BALANCE FORKLIFTS	01/24/08	01/24/11
QPOT03A0	REAL TIME RADIOGRAPHY	04/03/08	04/03/10
QPOT07D0	STORAGE & WASTE MOVEMENT	04/12/08	04/12/10
AMWHAZ	HAZWOPER QUAL	09/08/08	09/08/09
QPHEATER	OPERATOR MAXI-HEAT WMF-636	10/23/08	10/23/10
QCSNOBLO	SNOWBLOWER OPERATOR	12/22/08	
QTOWTRAC	TOW TRACTOR OPERATIONS	06/01/09	06/01/12
QPOT3D00	BOX ASSAY	07/14/09	07/14/11
QPOT03B0	DRUM ASSAY	07/27/09	07/27/11
AMWHAZ	HAZWOPER QUAL	08/03/09	08/03/10
AMWHAZ	HAZWOPER QUAL	08/06/09	08/06/10
AMWRAD02	RAD WORKER 2	08/06/09	09/06/11
QCMDSNO0	SNOW REMOVAL REV. 7	10/09/09	
QCNMSU2A	NUC MATERIAL SEALED RS USER	11/03/09	11/03/11
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	11/30/09	11/30/11
QPOT03A0	REAL TIME RADIOGRAPHY	03/15/10	03/15/12
QPOT07D0	STORAGE & WASTE MOVEMENT	04/08/10	04/08/12
AMWHAZ	HAZWOPER QUAL	07/06/10	07/06/11
QPOT7G	WASTE PACKAGING	07/08/10	07/08/12
QCCBFFL0	COUNTER BALANCE FORKLIFTS	05/10/11	05/10/14
HOISTRIG	HOISTING AND RIGGING	05/10/11	05/10/14
AMWHAZ	HAZWOPER QUAL	06/07/11	06/07/12
QPOT3D00	BOX ASSAY	07/11/11	07/11/13
QPOT03B0	DRUM ASSAY	07/11/11	07/11/13
AMWRAD02	RAD WORKER 2	08/11/11	09/11/13
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	10/06/11	10/06/13
QCNMSU2A	NUC MATERIAL SEALED RS USER	10/31/11	10/31/13
QPOT03A0	REAL TIME RADIOGRAPHY	02/28/12	02/28/14
QPOT07D0	STORAGE & WASTE MOVEMENT	03/28/12	03/28/14
AMWHAZ	HAZWOPER QUAL	05/03/12	05/03/13
QCFLATBD	FLATBED TRUCK (BOBTAIL)	05/10/12	05/10/15

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	01/24/08	01/24/09
AMWCBFPE	COUNTER BALANCE FORKLIFT EVAL	01/07/09	01/07/10
AF1018	EMPLOYEE POSITION DESCRIPTION	07/17/09	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/04/09	

AMWTP - Employee Training History

Employee: GREEN, DANNY (0001076 2)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
POL-025	1	GENERAL PPE POLICY	02/18/12
POL-026	0	PERSONAL CELL PHONE/ELECTRONIC EQUIPMENT POLICY	10/01/10
POL-108	0	KEY EXPECTATIONS FOR THE SAFE PERFORMANCE OF WORK	02/18/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/05/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QCNMSU2A	NUC MATERIAL SEALED RS USER	11/03/09	11/03/11
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	11/30/09	11/30/11
QPOT03A0	REAL TIME RADIOGRAPHY	03/15/10	03/15/12
QPOT07D0	STORAGE & WASTE MOVEMENT	04/08/10	04/08/12
AMWHAZ	HAZWOPER QUAL	07/06/10	07/06/11
QPOT7G	WASTE PACKAGING	07/08/10	07/08/12
QCCBFFL0	COUNTER BALANCE FORKLIFTS	05/10/11	05/10/14
HOISTRIG	HOISTING AND RIGGING	05/10/11	05/10/14
AMWHAZ	HAZWOPER QUAL	06/07/11	06/07/12
QPOT3D00	BOX ASSAY	07/11/11	07/11/13
QPOT03B0	DRUM ASSAY	07/11/11	07/11/13
AMWRAD02	RAD WORKER 2	08/11/11	09/11/13
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	10/06/11	10/06/13
QCNMSU2A	NUC MATERIAL SEALED RS USER	10/31/11	10/31/13
QPOT03A0	REAL TIME RADIOGRAPHY	02/28/12	02/28/14
QPOT07D0	STORAGE & WASTE MOVEMENT	03/28/12	03/28/14
AMWHAZ	HAZWOPER QUAL	05/03/12	05/03/13
QCFLATBD	FLATBED TRUCK (BOBTAIL)	05/10/12	05/10/15

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	12/17/09	
AF1020	INDIVIDUAL TRAINING PLAN	12/17/09	
AMWDR018	FISSILE MATERIAL HANDLER - DRUM/BOX	03/10/10	
AFQP009	ADDENDUM FOR QPOT3A REV 10 RTR	06/28/10	
AWIQR167	AMWTP INSTRUCTOR QUALIFICATION RECORD FORM 1670	07/05/10	03/23/14
AF1018	EMPLOYEE POSITION DESCRIPTION	08/17/10	
AFQP020	ADDENDUM FOR STORAGE & WASTE MOVEMENT REV 5	10/21/10	
AFSNORMV	PERFORMING SNOW REMOVAL ACTIVITIES	10/26/10	10/26/11
AFSNOBLO	PERFORMING SNOW REMOVAL ACTIVITIES WITH SNOW BLOWE	10/26/10	10/26/11
AFRTRSWB	RTR BI ANNUAL SWB	02/14/11	08/14/11
AFBLHOOK	HOISTRIG WITH BELOW-THE-HOOK LIFTING DEVICES	05/10/11	
AFPARBEK	PERFORMING PRODUCTION LIFTING ACTIVITIES	05/10/11	
AFWALDON	PERFORMING PRODUCTION LIFTING ACTIVITIES WITH WALD	05/10/11	
AFEETWEB	PPLA WITH THE EET CORPORATION DRUM WEB 5585	05/10/11	

QC 3/17/10

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project RE-QUALIFICATION PACKAGE Real-Time Radiography	QPOT3A Rev. 9

Employee Name DANNY GREEN S# 107612

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Clinton E Sisson	C E Sisson	3/15/10
Characterization Production Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☐ (If used)	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	B Warner	B Warner	03/15/10
Title	Print Name	Signature	Date

Qual Pack Issued By :	CMIDGYETTE	C Midgyette	02/05/10
	Print Name	Signature	Date

TRAINING DEPT.
MAR 16 2010

Qualification Package Approval Section

initials KH

Line Manager Approval	B. Warner	B Warner	09/08/09
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Ralph Hartline	9/28/09
	Print Name	Signature	Date

QC 3/17/10 KH

Employee Name Danny Green S# 107612

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	06/16/08
9	All	Updated format and incorporated evaluation standard.	9-8-09

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name D GREEN S# 10762

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
CMIDGYETTE	Cmidgyette	CM
B. Warner	B Warner	BW
Mike Brooks	Mike Brooks	MB
Danny Green	Danny Green	DG
Frank Kuck	Frank Kuck	FK
Jason Hayne	Jason Hayne	JH
Cameron Stamey	Cameron Stamey	CS
Aaron Buckskin	Aaron Buckskin	AB
Clinton E Sisson	C Sisson	CS

Employee Name D GREEN S# 107612

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 02/08/10

		Date Requirement Was Completed	**Signature** (ISIH or SS)	**Date**
2.1	Current Visual Acuity Exam	2/3/09		2/11/10

Employee Name D GREEN S# 107612

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 NONE 02/05/10 CM	NA	NA

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None 02/05/10 CM	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None 02/05/10 CM	NA	NA

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SS Signature	Date
3.4.1 Criticality Working Requirements (CWRs)		02/08/10
3.4.2 Technical Safety Requirements (TSR) RPT-TSR-03		02/08/10

Employee Name Danny Green S# 107612

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.1 **Basic Principles**			**RTR SME Signature**
4.1.1 Inspect RTR for operability.	(P)/S	ZL	
4.2 **Operator Knowledge and Skills**			**OJT / SME Signature**
4.2.1 LCO daily check.	(P) S	ZL	
4.3 **Quality Control**			**SME / SS Signature**
4.3.1 State the requirements and frequency for verifying the image quality through viewing an Image Test pattern.	(D)	JH	
4.3.2 State the requirements and frequency for performing the independent replicate scan.	(D)	JH	
4.3.3 State the requirements and frequency for performing the independent observation.	(D)	JH	
4.3.4 Describe the requirements for a batch size.	(D)	JH	
4.3.5 State the requirements for performance of test and training drums and the frequency in which they must be done.	(D)	JH	

Employee Name Danny Green S# 107612

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Inst. Initials	Evaluator Signature	Date
5.1	Fire / Alarm (INST-OI22; INST-OI-12)	S(D)	ZJC		03/10/10
5.2	Dropped waste container (INST-OI-11)	S(D)	ZJC		03/10/10
5.3	Breached Container (INST-OI-11; INST-OI-12)	S(D)	ZJC		03/10/10
5.4	Spill / Contamination Release (INST-OI-88)	S(D)	ZJC		03/10/10
5.5	Loss of ventilation/air system (INST-OI-33; INST-OI-12)	S(D)	ZJC		03/10/10
5.6	Loss of Commercial Power (INST-OI-12; INST-OI-26)	S(D)	ZJC		03/10/10
5.7	Injured Person (0AWT2402)	S(D)	ZJC		03/10/10
5.8	CAM Alarm (INST-OI-11; INST-OI-12)	S(D)	ZJC		03/10/10
5.9	Evacuation (0AWT2402)	S(D)	ZJC		03/10/10
5.10	Take Cover (0AWT2402)	S(D)	ZJC		03/10/10
5.11	X-ray fails to energize (INST-OI-12)	S(D)	ZJC		03/10/10
5.12	X-ray fails to de-energize (INST-OI-12)	S(D)	ZJC		03/10/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 9**

Employee Name Danny Green S# 10762

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 91%

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached)

Re-exam # / Score: / (N/A if first exam is passed with 80% or greater)

Exam Passed	Exam Proctor Signature	Date
		3-10-10

Verify that biannual green drum evaluation has been performed or is current	RTR SME Signature	Date
		3/10/10

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

Characterization SS		03/10/10
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Danny Green **S#:** 107612

1.0 Scope

This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S #: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	1/8 pint of liquid
2. Aerosol can, unpunctured, with liquid	✓	.75 pints of liquids
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	Zippers taped Coveralls
5. Tools including crescent wrench	✓	Crescent wrench C Clamp Vise Grips
6. Aerosol can, empty and punctured	✓	punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	1 pint poly bottle
8. Lead rubber glove	✓	good use of tools
9. Empty paint can	✓	one gallon paint can
10. Pieces of wood	✓	2x4 lumber
11. 1 gallon poly container with 3 TBSP liquid	✓	1/4 cup of liquid
12. Horsetails	✓	twisted & taped drum bags

Score: Pass

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 5/8/12

Candidate Signature: [signature] Date: 05/08/12

QC RECEIVED MAY 09 2012

type 4 liner, respirator mask, plastic tubing, pipe clamp, metal plate, velcrath can, lead taped poly bottle, one gallon poly with 1 pint liquid, 3 Tbs of liquid in poly bottle taped in mold,

AMWTP - Employee Training History

Employee: KEARN, KENT (000101528)

Date Range: 10/17/2009 to 10/17/2012

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWRAD02	RAD WORKER 2	03/03/11	04/03/13
QPOT3D00	BOX ASSAY	09/28/11	09/28/13
QPOT03B0	DRUM ASSAY	09/28/11	09/28/13
AMWHAZ	HAZWOPER QUAL	12/08/11	12/08/12
QCNMSU2A	NUC MATERIAL SEALED RS USER	01/11/12	01/11/14
QPOT07D0	STORAGE & WASTE MOVEMENT	01/11/12	01/11/14
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	02/27/12	02/27/14
QCRADOTI	LIMITED RADIOLOGICAL SURVEYS	02/28/12	02/28/14
HOISTRIG	HOISTING AND RIGGING	03/06/12	03/06/15
QPOT03A0	REAL TIME RADIOGRAPHY	07/26/12	07/26/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AFQP009	ADDENDUM FOR QPOT3A REV 10 RTR	05/27/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/18/10	
AFSNORMV	PERFORMING SNOW REMOVAL ACTIVITIES	10/27/10	10/27/11
AFSNOBLO	PERFORMING SNOW REMOVAL ACTIVITIES WITH SNOW BLOWE	10/27/10	10/27/11
AFQP020	ADDENDUM FOR STORAGE & WASTE MOVEMENT REV 5	10/28/10	
AFRTRSWB	RTR BI ANNUAL SWB	02/14/11	08/14/11
AFVISACU	VISUAL ACUTIY EXAMINATION	07/31/11	07/31/12
AFQC0007	ADDENDUM FOR WASTE PACKAGING	09/12/11	
AFQP031	ADDENDUM FOR WMF-634 DRUM VENT SYSTEM	09/28/11	
AFRTRDRU	RTR BI ANNUAL DRUM	11/21/11	05/21/12
AFRTRDRU	RTR BI ANNUAL DRUM	05/08/12	11/08/12
AFQRTR11	ADDENDUM FOR QPOT3A RTR OPERATIONS	07/03/12	
AFVISACU	VISUAL ACUTIY EXAMINATION	07/12/12	07/12/13
AFQP044	ADDENDUM FOR STORAGE & WASTE MOVEMENT	09/05/12	
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	10/09/12	
AF1018	EMPLOYEE POSITION DESCRIPTION	10/09/12	
AF1020	INDIVIDUAL TRAINING PLAN	10/09/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGAMW0000052	Safety Expectations for 2012	01/02/12
TGISIH0000013	PPE Expiration	03/10/11
TGMAIN0000085	Rigging Equipment Storage and Care	08/29/12
TGOPS0000014	Review Field Change 1 to procedures OI-12 R44, OI-41 R13, OI-60 R10, OI-81 R6	08/19/10
TGOPS0000015	INST-OI-45 R11 FC1 and R12	08/19/10
TGOPS0000018	Valley Drum Handler Use and Adjustment	08/23/10
TGOPS0000069	Brief Characterization RTR operators on INST-OI-12 Rev 44 FC-3. AI 55556	09/15/10
TGOPS0000070	OI-12 Rev 44 FC-2. AI 55515	09/16/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 11**

Employee Name Kent Kearn S# 101528

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	George Fussell		7-26-12
Characterization and Storage Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	George Fussell		7-26-12
Title	Print Name	Signature	Date

Qual Pack Issued By :	KaNae Taylor	KaNae Taylor	7/3/12
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Stepzinski	Signature on File	6/18/12
	Print Name	Signature	Date

Training Manager Approval	Dave Butler	Signature on File	6/18/12
	Print Name	Signature	Date

QA B

2012

Employee Name Kent Kerr S# 101528

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	6/16/08
9	All	Updated format and incorporated evaluation standard.	9/8/09
10	Various	Added Safety Basis Related Items.	5/26/10
11	Various	Replaced language regarding Image Intensifier with Flat Panel detector due to an update to RTR equipment.	6/18/12

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 11**

Employee Name Kent Keen S# 101528

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
RaNae Taylor	RaNae Taylor	RT
Frank Kuck	Frank Kuck	FK
Kent Keen	Kent Keen	KK
T.L. Moore	T.L. Moore	TLM
Aaron Buckskin	Aaron Buckskin	AB
Kathy Birch	Kathy Birch	KB
GEORGE Fussell	George Fussell	GF

Employee Name Kent Kenner S# 601525

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634/610 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 7-26-12

	Date Requirement Was Completed	**Signature** (ISIH or SS)	**Date**
2.1 Current Visual Acuity Exam	07/12/12		07/26/12

Employee Name Kat Lewis S# 101525

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, LLW/MLLW Disposition Program (CBT)	1/19/12	24 Months
3.1.2 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	5/24/12	24 Months
3.1.3 0AWT 2369 RTR Technical Safety Requirements	5/24/12	24 Months

Training Representative or SS verify initial training courses are complete:	RaMae Taylor Signature	7/3/12 Date

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None	NA	NA

Employee Name Kurt Keaton S# 101555

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SS Signature	Date
3.4.1 Safety Basis (DSA, TSR, USQ, SER)		7/21/12
3.4.2 Criticality Working Requirements (CWRs)		07/03/12
3.4.3 Applicability, Condition, Action(s) for LCO 3.1; RTR System and associated surveillance requirement(s) SR 4.1.1, 4.1.2, 4.1.3.		07/03/12

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	Evaluator Signature & date
4.1 **Basic Principles**		
4.1.1 Inspect RTR for operability.	P (S)	07/03/12
4.2 **Quality Control**		
4.2.1 State the requirements and frequency for verifying the image quality through viewing an Image Test pattern.	(D)	07/03/12

Employee Name Kurt Kreuer S# 101526

	P S D	Evaluator Signature & date
4.2.2 State the requirements and frequency for performing the independent replicate scan.	D	07/03/12
4.2.3 State the requirements and frequency for performing the independent observation.	D	07/03/12
4.2.4 Describe the requirements for a batch size.	D	07/03/12
4.2.5 State the requirements for performance of test and training drums and the frequency in which they must be done.	D	07/03/12
4.3 Safety Basis/Technical Safety Requirements		
4.3.1 Discuss the SR 4.1.1, 4.1.2, and 4.1.3	D	07/03/12
4.3.2 Perform surveillance SR 4.1.1 (RTR 101/106)	P/S	07/03/12
4.3.3 Perform surveillance SR 4.1.2 (RTR 101/106)	P/S	07/03/12
4.3.4 Verify completion of surveillance SR 4.1.3 (RTR 101/106)	P	07/03/12
4.3.5 Perform surveillance SR 4.1.1 (RTR 1001)	P/S	07/03/12
4.3.6 Perform surveillance SR 4.1.2 (RTR 1001)	P/S	07/03/12
4.3.7 Simulate or discuss required action(s) upon failure to meet LCO 3.1 Real Time Radiography System	S/D	07/03/12
4.3.8 Discuss the basic scenario description for the Design Basis Accident for RTR.	D	07/03/12
4.3.9 Locate and describe the safety functions of the Safety Significant System and Components for RTR system 101/106 and 1001.	P	07/03/12

Employee Name Kent Keown S# 10155

5.0 ***Emergency / Abnormal Conditions***
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the evaluator indicates successful performance of the task. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	Evaluator Signature	Date
5.1 Fire / Alarm (INST-OI-12, INST-OI-26)	S/D		02/03/12
5.2 Location of fire extinguishers / fire alarm boxes	S/D		02/03/12
5.3 Dropped waste container (INST-OI-11)	S/D		02/03/12
5.4 Breached Container (INST-OI-11, INST-OI-84)	S/D		02/03/12
5.5 CAM Alarm (INST-OI-11, INST-OI-12)	S/D		02/03/12
5.6 Spill / Contamination Release (INST-OI-88, MP-EC&P-7.10)	S/D		02/03/12
5.7 Injured Person (0AWT2402, 0AWT2521)	S/D		02/03/12
5.8 Loss of ventilation/air system (INST-OI-12, INST-OI-33)	S/D		02/03/12
5.9 Loss of Commercial Power (INST-OI-12, INST-OI-26)	S/D		02/03/12
5.10 Evacuation (T2402)	S/D		02/03/12
5.11 Take Cover (T2402)	S/D		02/03/12
5.12 X-ray fails to energize (INST-OI-12)	S/D		02/03/12
5.13 X-ray fails to de-energize (INST-OI-12)	S/D		02/03/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 11**

Employee Name Kent Kraemer S# 101525

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 2 Score: 88% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	RaNae Taylor Exam Proctor Signature	7/26/12 Date

Verify that biannual QAPjP container evaluation has been performed or is current	Kathy Birch RTR SME Signature	7/26/12 Date

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Characterization SS Title	 Signature	07/26/12 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP - Employee Training History

Employee: KEARN, KENT (000101528)

Date Range: 10/17/2009 to 10/17/2012

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWRAD02	RAD WORKER 2	03/03/11	04/03/13
QPOT3D00	BOX ASSAY	09/28/11	09/28/13
QPOT03B0	DRUM ASSAY	09/28/11	09/28/13
AMWHAZ	HAZWOPER QUAL	12/08/11	12/08/12
QCNMSU2A	NUC MATERIAL SEALED RS USER	01/11/12	01/11/14
QPOT07D0	STORAGE & WASTE MOVEMENT	01/11/12	01/11/14
QCWMF634	WMF-634 GENERAL AREA CHECKLIST	02/27/12	02/27/14
QCRADOTI	LIMITED RADIOLOGICAL SURVEYS	02/28/12	02/28/14
HOISTRIG	HOISTING AND RIGGING	03/06/12	03/06/15
QPOT03A0	REAL TIME RADIOGRAPHY	07/26/12	07/26/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AFQP009	ADDENDUM FOR QPOT3A REV 10 RTR	05/27/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/18/10	
AFSNORMV	PERFORMING SNOW REMOVAL ACTIVITIES	10/27/10	10/27/11
AFSNOBLO	PERFORMING SNOW REMOVAL ACTIVITIES WITH SNOW BLOWE	10/27/10	10/27/11
AFQP020	ADDENDUM FOR STORAGE & WASTE MOVEMENT REV 5	10/28/10	
AFRTRSWB	RTR BI ANNUAL SWB	02/14/11	08/14/11
AFVISACU	VISUAL ACUTIY EXAMINATION	07/31/11	07/31/12
AFQC0007	ADDENDUM FOR WASTE PACKAGING	09/12/11	
AFQP031	ADDENDUM FOR WMF-634 DRUM VENT SYSTEM	09/28/11	
~~AFRTRDRU~~	~~RTR BI ANNUAL DRUM~~	~~11/21/11~~	~~05/21/12~~
AFRTRDRU	RTR BI ANNUAL DRUM	05/08/12	11/08/12
AFQRTR11	ADDENDUM FOR QPOT3A RTR OPERATIONS	07/03/12	
AFVISACU	VISUAL ACUTIY EXAMINATION	07/12/12	07/12/13
AFQP044	ADDENDUM FOR STORAGE & WASTE MOVEMENT	09/05/12	
AWPRO005	AMWTP RCRA UNIT WORKER TRAINING PROFILE	10/09/12	
AF1018	EMPLOYEE POSITION DESCRIPTION	10/09/12	
AF1020	INDIVIDUAL TRAINING PLAN	10/09/12	

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGAMW0000052	Safety Expectations for 2012	01/02/12
TGISIH0000013	PPE Expiration	03/10/11
TGMAIN0000085	Rigging Equipment Storage and Care	08/29/12
TGOPS0000014	Review Field Change 1 to procedures OI-12 R44, OI-41 R13, OI-60 R10, OI-81 R6	08/19/10
TGOPS0000015	INST-OI-45 R11 FC1 and R12	08/19/10
TGOPS0000018	Valley Drum Handler Use and Adjustment	08/23/10
TGOPS0000069	Brief Characterization RTR operators on INST-OI-12 Rev 44 FC-3. AI 55556	09/15/10
TGOPS0000070	OI-12 Rev 44 FC-2. AI 55515	09/16/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* ***RTR Bi Annual Drum***	**AFRTRDRU** **Rev. 0**

Employee Name: Kent Kearn **S#:** 101528

1.0 Scope

This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S#: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	one gallon poly bottle 1 pint of liquid
2. Aerosol can, unpunctured, with liquid	✓	1/2 pint of liquid
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	zipper coveralls
5. Tools including crescent wrench	✓	Wrenches & clamp
6. Aerosol can, empty and punctured	✓	punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	4-1 pint poly bottle
8. Lead rubber glove	✓	good use of tools
9. Empty paint can	✓	
10. Pieces of wood	✓	
11. 1 gallon poly container with 3 TBSP liquid	✓	one gallon poly bottle 1/2 cup of liquid
12. Horsetails	✓	twisted and taped

Score: Pass

Results have been reviewed with ~~Candidate~~ by SME:

SME Signature: Kathy Birch Date: 5/8/12

Candidate Signature: _____ Date: 5/8/12

QCR

MAY 09 2012

type 4 liner, respirator, tubbing, plastic sheeting, pipe wrath can, lab ware, 1 gallon poly bottle with pint of liquid. lead taped poly bottle, empty,

AMWTP - Employee Training History

Employee: HAYNE, JASON (000085880)

Date Range: 10/16/2009 to 10/16/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
MP-Q&SI-5.4	20	IDENTIFICATION OF NONCONFORMING CONDITIONS	04/11/11
MP-Q&SI-5.4	19	IDENTIFICATION OF NONCONFORMING CONDITIONS	06/30/10
MP-RTQP-14.4	16	PERSONNEL QUALIFICATION AND CERTIFICATION	08/23/10
MP-TRUW-8.1	20	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	12/29/10
MP-TRUW-8.1	19	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	06/30/10
MP-TRUW-8.1	18	CERTIFICATION PLAN FOR INL TRANSURANIC WASTE	01/08/10
MP-TRUW-8.2	14	QUALITY ASSURANCE PROJECT PLAN	12/29/10
MP-TRUW-8.2	13	QUALITY ASSURANCE PROJECT PLAN	06/30/10
MP-TRUW-8.2	12	QUALITY ASSURANCE PROJECT PLAN	01/08/10
MP-TRUW-8.34	6	WIPP SAMPLE TRANSFERS	08/23/10
MP-TRUW-8.39	7	RTR OPERATOR PROFICIENCY PROGRAM	06/04/12
MP-TRUW-8.39	6	RTR OPERATOR PROFICIENCY PROGRAM	05/10/10
MP-TRUW-8.5	25	TRU WASTE CERTIFICATION	12/15/09
MP-TRUW-8.8	30	LEVEL I DATA VALIDATION	12/29/10
MP-TRUW-8.8	29	LEVEL I DATA VALIDATION	06/30/10
PD-LLW-03	2	OFFSITE LLW/MLLW DISPOSITION PROJECT DESCRIPTION	01/11/12
POL-024	REF	AMWTP Migratory Bird Policy	06/23/10
POL-026	0	PERSONAL CELL PHONE/ELECTRONIC EQUIPMENT POLICY	09/29/10
QAPP-01	12	QUALITY ASSURANCE PROGRAM PLAN	03/24/11
RPT-TRUW-05	29	WASTE MATRIX CODE REFERENCE MANUAL	03/06/12
RPT-TRUW-05	27	WASTE MATRIX CODE REFERENCE MANUAL	06/15/11
RPT-TRUW-05	26	WASTE MATRIX CODE REFERENCE MANUAL	05/05/11
RPT-TRUW-05	25	WASTE MATRIX CODE REFERENCE MANUAL	12/15/10
RPT-TRUW-05	24	WASTE MATRIX CODE REFERENCE MANUAL	06/29/10
RPT-TRUW-05	23	WASTE MATRIX CODE REFERENCE MANUAL	12/10/09
RPT-TRUW-06	13	ACCEPTABLE KNOWLEDGE BASELINE DOCUMENT FOR AMWTP W	07/26/11
RPT-TRUW-06	12	AMWTP BASELINE AK FOR NEWLY GENERATED WASTE	08/25/10
RPT-TRUW-12	17	AMWTP WASTE STREAM DESIGNATIONS	07/26/11
RPT-TRUW-12	16	AMWTP WASTE STREAM DESIGNATIONS	03/24/11
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/05/10
RPT-TRUW-12	13	AMWTP WASTE STREAM DESIGNATIONS	03/17/10
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/23/10
TDP.PD.1	Ref	Interviewing Basics - A Guidebook to Interviewing	04/26/11
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/09/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QPOT03A0	REAL TIME RADIOGRAPHY	12/30/09	12/30/11
AMWHAZ	HAZWOPER QUAL	02/11/10	02/11/11
AMWHAZ	HAZWOPER QUAL	01/20/11	01/20/12
AMWRAD01	RAD WORKER 1	04/21/11	05/21/13
AMWHAZ	HAZWOPER QUAL	12/08/11	12/08/12
QPOT03A0	REAL TIME RADIOGRAPHY	12/21/11	12/21/13

AMWTP
Advanced Mixed Waste Treatment Project

REQUEST FOR AN EXCEPTION FROM TRAINING

FORM-1031
Rev. 3
MP-RTQP-14.3
Effective Date: 2/10/06

PART I

Employee Name Jason Hayne Date 12-21-11

Employee Number 003605 (85880)

Position RTR SME

Training to be Excepted

QPOT3A Real-time Radiography Re-qual

Justification (Include education, experience and other supporting information.)

Jason is the company's ASNT NDT Level III for RT and is responsible for the RTR program. Jason has generated the test associated with the initial RTR qualification and the re-qualification. He has also put the qualification and the re-qualification packages together for the RTR process.

James Jackson	JM Jackson	12/21/11	557-6361	056791
Submitted by Print/Type Name	Submitted by Signature	Date	Phone #	Employee #

PART II

I have reviewed the above named individual's previous training, experience, and education, and recommend APPROVAL ☒ / DISAPPROVAL ☐ **(check one)** of the request for an exception.

Mike Parrish	Butler for M. Parrish per telecon	12/21/11	x6704	901201
Training Manager Print/Type Name	Training Manager Signature	Date	Phone #	Employee #

Reason for disapproval:

DEC 21 2011

PART III

I have reviewed the above named individual's previous training, experience, and education and APPROVE ☒ / DISAPPROVE ☐ **(check one)** the exception. **I acknowledge that it is my responsibility to ensure this individual is technically qualified to perform assigned duties.**

J. M. JACKSON	JM Jackson	12/21/11	056791
Responsible Manager Print/Type Name	Responsible Manager Signature	Date	Employee #

Send completed form to the Training Administrator

Butler, Dave

From: Mike Parrish [mike@promeritas.com]
Sent: Wednesday, December 21, 2011 8:23 PM
To: Butler, Dave; Parrish, Michael E.
Cc: Hinsley, Gene E.; Hayne, Jason
Subject: RE: Signature for exception

Agreed. I know Jason and the SME is good enough.

Mike

Michael E Parrish, PMP

President/ CEO

Promeritas SBCG, Inc.

356 Sanderson Street, Suite B-4 (Box 7)

Alcoa, TN 37701

865.228.2912

866.669.7079 Fax

mike@promeritas.com

From: Butler, Dave [mailto:Dave.Butler@amwtp.inl.gov]
Sent: Wednesday, December 21, 2011 5:04 PM
To: mike@promeritas.com; Parrish, Michael E.
Cc: Hinsley, Gene E.; Hayne, Jason
Subject: Signature for exception

Mike,

I have spoken with Gene H. concerning an exception form for Jason Hayne (85880). He would like to be excepted from the RTR requal as he is the RTR-SME and as such is responsible for the RTR program. He has generated the exam bank, teaches the RTR Theory class, assembles the test/green drums used in the qual. process, and acts as an OJT for the qual.

After discussion with Gene I have signed for you on the exception form. I will attach this email to the exception form.

Dave Butler

AMWTP Training
EDF-417
Office: 557-0979
Cell: 351-0811

AMWTP Advanced Mixed Waste Treatment Project	**REQUEST FOR AN EXCEPTION FROM TRAINING**	FORM-1031 Rev. 3 MP-RTQP-14.3 Effective Date: 2/10/06 Page 1 of 1

PART I

Employee Name Jason Hayne Date 10-05-11

Employee Number 85880

Position RTR SME Lead

Training to be Excepted

AFRTRDRU, AFRTRSWB (QAPjP containers), RTR PIBs, Changing Requirements,

Justification (Include education, experience and other supporting information.)

QAPjP containers were brought into town and rebuilt. Jason was in charge of rebuilding and configuring of the new containers. Along with that he observes RTR/ITR operators perform their QAPjP containers. Jason also puts together the information that goes into the RTR PIBs and presents that information to RTR/ITR operators. Jason also ensures that the RTR operating procedures are compliant with the requirements.

Susan Peterman	S Peterman	10/6/11	575-302-0343	5114080
Submitted by Print/Type Name	Submitted by Signature	Date	Phone #	Employee #

PART II

I have reviewed the above named individual's previous training, experience, and education, and recommend APPROVAL ☒ / DISAPPROVAL ☐ **(check one)** of the request for an exception.

Michael Parrish		10/12/2011	6704	901201
Training Manager Print/Type Name	Training Manager Signature	Date	Phone #	Employee #

TRAINING DEPT

OCT 20 2011

Initials

Reason for disapproval:

PART III

I have reviewed the above named individual's previous training, experience, and education and APPROVE ☐ / DISAPPROVE ☐ **(check one)** the exception. **I acknowledge that it is my responsibility to ensure this individual is technically qualified to perform assigned duties.**

Susan Peterman	S Peterman	10/24/11	5114080
Responsible Manager Print/Type Name	Responsible Manager Signature	Date	Employee #

Send completed form to the Training Administrator

OC 10-24-11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 9**

Employee Name Jason Hayne S# 85890

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: Brian Warner	Jason Hayne for Brian Warner	Per email	12-30-09
Characterization Production Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑ (If used)	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.		N/A - See attached email.	N/A - See attached email.	N/A
	Title	Print Name	Signature	Date

Qual Pack Issued By :	Stu Sturdevant	Stu Sturdevant	12/30/09
	Print Name	Signature	Date

TRAINING DEPT.
JAN 07 2010

Qualification Package Approval Section

Initials

Line Manager Approval	B. Warner	B Warner	09/08/09
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Ralph Hartline	9/28/09
	Print Name	Signature	Date

Employee Name Jason Hayne S# 85880

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	06/16/08
9	All	Updated format and incorporated evaluation standard.	9-8-09

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 9**

Employee Name Jason Hayne S# 85880

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Matt Thompson		MT
J. M. Jackson		JMJ
Stu Sturdevant		SS

Employee Name Jason Hayne S# 85880

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 12/30/09

	Date Requirement Was Completed	**Signature** (ISIH or SS)	**Date**
2.1 Current Visual Acuity Exam	1-31-09		12-30-09

Employee Name Jason Hayne S# 85880

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 NONE	NA	NA

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None	NA	NA

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SS Signature	Date
3.4.1 Criticality Working Requirements (CWRs)	MT	12/30/09
3.4.2 Technical Safety Requirements (TSR) RPT-TSR-03	MT	12/30/09

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 9**

Employee Name Jason Hayne S# 85880

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.1 **Basic Principles**			**RTR SME Signature**
4.1.1 Inspect RTR for operability.	P (S)	MT	12/30/09
4.2 **Operator Knowledge and Skills**			**OJT / SME Signature**
4.2.1 LCO daily check.	P (S)	MT	12/30/09
4.3 **Quality Control**			**SME / SS Signature**
4.3.1 State the requirements and frequency for verifying the image quality through viewing an Image Test pattern.	(D)	MT	12/30/09
4.3.2 State the requirements and frequency for performing the independent replicate scan.	(D)	MT	12/30/09
4.3.3 State the requirements and frequency for performing the independent observation.	(D)	MT	12/30/09
4.3.4 Describe the requirements for a batch size.	(D)	MT	12/30/09
4.3.5 State the requirements for performance of test and training drums and the frequency in which they must be done.	(D)	MT	12/30/09

Employee Name Jason Hayes S# 85880

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Inst. Initials	Evaluator Signature	Date
5.1	Fire / Alarm (INST-OI22; INST-OI-12)	S(D)	MT		12/30/09
5.2	Dropped waste container (INST-OI-11)	S(D)	MT		12/30/09
5.3	Breached Container (INST-OI-11; INST-OI-12)	S(D)	MT		12/30/09
5.4	Spill / Contamination Release (INST-OI-88)	S(D)	MT		12/30/09
5.5	Loss of ventilation/air system (INST-OI-33; INST-OI-12)	S(D)	MT		12/30/09
5.6	Loss of Commercial Power (INST-OI-12; INST-OI-26)	S(D)	MT		12/30/09
5.7	Injured Person (0AWT2402)	S(D)	MT		12/30/09
5.8	CAM Alarm (INST-OI-11; INST-OI-12)	S(D)	MT		12/30/09
5.9	Evacuation (0AWT2402)	S(D)	MT		12/30/09
5.10	Take Cover (0AWT2402)	S(D)	MT		12/30/09
5.11	X-ray fails to energize (INST-OI-12)	S(D)	MT		12/30/09
5.12	X-ray fails to de-energize (INST-OI-12)	S(D)	MT		12/30/09

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 9**

Employee Name Jason Hayne S# 85880

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 97%

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached)

Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	Exam Proctor Signature	Date 12/30/09

Verify that biannual green drum evaluation has been performed or is current	RTR SME Signature	Date 12/30/09

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

LI MANAGER		12/30/09
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

Reed, Dot

From: Warner, Brian
Sent: Wednesday, December 30, 2009 12:10 PM
To: Hayne, Jason
Cc: Reed, Dot
Subject: RE: re-qual for RTR

I have interviewed Jason Hayne for his RTR operator re-qualification and find his knowledge is satisfactory. Please sign the Production Manager signature in his qualification package for me per this e-mail.

V/R
Brian Warner
Deputy Production Manager, Characterization/Treatment

From: Hayne, Jason
Sent: Wednesday, December 30, 2009 10:59 AM
To: Warner, Brian; Sisson, Clint E.
Subject: re-qual for RTR

Sirs,

I am in town today and am needing one more signature on my qual pack to turn it in. Which one of you is here today and can you do it per telecom? Let me know please. Thanks.

Jason Hayne
RTR SME Lead
ASNT Level III
Office 557-6463
Site 557-7067
Cell 351-2031

Hayne, Jason

From: Jackson, Jim M.
Sent: Tuesday, January 05, 2010 9:00 AM
To: Hayne, Jason
Subject: RE: RTR login role in WTS

I concur

Thank you, JJ.

Jim Jackson, AMWTP
Level 1 Validation/Deputy TRU Programs Manager
850 Energy Drive, EDF Room 227
Idaho Falls, ID 83415
e-mail: jackjm@amwtp.inl.gov
office phone: 208-557-6361, cell: 208-521-9942
www.amwtp.gov

From: Hayne, Jason
Sent: Tuesday, January 05, 2010 8:59 AM
To: Jackson, Jim M.
Subject: RTR login role in WTS

Jim,

Per our discussion, can you send your concurrence to mark N/A on my RTR re-qualification in the boxes for the 1268 WTS login form. Due to the fact that I do not manipulate any data in WTS the login role for RTR operator is not needed for my re-qualification. Thank you.

Jason Hayne
RTR SME Lead
ASNT Level III
Office 557-6463
Site 557-7067
Cell 351-2031

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION EXAM #1* ***Real-Time Radiography Operator***	**QP-OT-3-A**

Employee Name Jason Hayne Employee # 85880

Real-Time Radiography Operator

Comprehensive Qualification Examination #1

Approval signatures on Exam Bank Rev. 9

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION EXAM #1* ***Real-Time Radiography Operator***	**QP-OT-3-A**

1.0 Examinee Information

This exam consists of 35 questions; each question is worth 1 points. 28 points are required for a passing score.

Exam administered by: _____ (signature)

Exam graded by: _____ (signature) 97% (score)

Review of exam/questions missed acknowledged by examinee _____ (signature)

EXAMINATION INSTRUCTIONS

1. Print your name in the blank provided on the cover sheet.
2. Each question is worth 1 point.
3. Partial credit may be given. Answer each question as completely as possible. Partial credit will not be given on single answer multiple choice questions or true/false questions.
4. Circle the letter preceding the correct answer to each multiple choice or True/False question. Write all fill-in answers clearly. Mark all answers on the exam in black or blue ink only.
5. Multiple choice questions have only one correct answer.
6. ***Talk only with the proctor (administrator) if you need clarification of a question. The proctor is not permitted to provide you with an answer or evaluate the accuracy of your answer.***
7. ***Cheating will not be tolerated. Anyone caught or suspected of cheating will be removed from the area and management notified. An individual caught cheating is subject to disciplinary action including discharge.***
8. Turn in your finished exam which will be graded and reviewed by you and the proctor. If you fail the exam, your signature and date are required in the box above. Remedial training may be required.
9. Sign and date below, which indicates you have read, understood, and will comply with the above instructions.

Name: _____ **Date:** 12-3-09
Signature (see Examination Instruction #9 above)

1. Which adjustment will ordinarily be used when attempting to get X-ray penetration of very dense material? (OI-12, task 4)
   a) Kv adjustment.
   b) mV adjustment.
   c) mA adjustment
   d) Both a and c

2. Leaving the camera and X-ray unit directed on the same spot for an extended period of time may result in: (AWT4301)
   a) Damage to the X-ray unit.
   b) Damage to the camera.
   c) Damage to the image intensifier.
   d) Damage to the video recording system.

3. What type of residual liquid is prohibited? (OI-12)
   a) Liquid >1% by volume inside a sludge drum
   b) Liquid <1%, but >1" inside a poly bottle in a debris drum
   c) Liquid >1" in a poly bottle in a sludge drum
   d) All the above

4. A 1 gal poly bottle is considered? (OI-12, task 6)
   a) A layer of confinement
   b) Packaging material.
   c) Waste material.
   d) None of the above.

5. What is the maximum capacity for each drum position on the RTR system cart? (OI-12, task 2)
   a) 1,000 lbs
   b) 1,100 lbs
   c) 1,200 lbs
   d) 800 lbs

6. A drum bag that is zipped and tied should be entered into WTS with a closure method of: (OI-12, task 6)
   a) A filtered bag
   b) Twisted and taped
   c) Twisted and tied
   d) Folded and taped

7. A 5 gal bucket with a lid is considered: (OI-12)
   a) A layer of confinement
   b) A sealed container >4 liters
   c) Waste item by weight
   d) All the above

8. In order for a 90 mil liner to be considered as vented: (OI-12)
   a) The banding strap must be loose or missing.
   b) A pathway for air flow must be greater than the size of a .3 inch diameter hole.
   c) Liner lid is missing.
   d) Both B and C.

9. The velocity of electrons striking the target in an X-ray tube is a function of: (AWT4301)
   a) The atomic number of the cathode material.
   b) The atomic number of the filament material.
   c) The voltage difference between the cathode and anode.
   d) The current flow in the rectifier circuit.

10. Plastic packaging is defined as: (OI-12)
   a) Any bag with a confirmed closure method containing waste.
   b) The two outermost layers of confinement, which encapsulate all of the waste in the drum.
   c) Is packaging only if it is an O-ring bag.
   d) None of the above.

11. Fiber packs are: (OI-12)
   a) Layers of containment.
   b) Containers greater than 4 liters.
   c) Packaging.
   d) None of the above.

12. What should the RTR operator do if there is a CAM alarming in WMF-634?
   a) Scream and run
   b) Continue operation because there is no immediate danger inside the RTR control room.
   c) Stop x-rays, remove key form x-ray control console, notify co-workers and leave affected area immediately and inform the RT, the STL, or designated alternate.
   d) Notify the STL, WTS, and Shift manager

13. Which statement about batteries is correct? (OI-12)
   a) Only 6 Volt and D-cell are acceptable.
   b) Only wet-cell batteries with confirmed liquids are treatment.
   c) All batteries are treatment.
   d) All batteries are acceptable.

14. Clamshells screwed together are: (OI-12)
    a) A layer of containment.
    b) Sealed container greater than 4 liters.
    c) Sealed container greater than 4 liters only if sealed by tape.
    d) Both A and B.

15. Which of the shutters have sharper, more distinct edges when viewed on the screen? (AWT4301)
    a) I.I. shutters.
    b) X-ray shutters.
    c) Recording shutters.
    d) X-ray shielded enclosure shutters.

16. What is the maximum capacity for the RTR system cart? (OI-12)
    a) 10,000 lbs
    b) 10,100 lbs
    c) 10,200 lbs
    d) 8,000 lbs

17. A 55 gallon drum is considered: (OI-12)
    a) A layer of containment.
    b) Packaging material.
    c) Waste material.
    d) All other metals.

18. When scanning containers into RTR 101, send them to location _____. (OI-11)
    a) 7.
    b) 18.
    c) 19.
    d) 71.

19. The X-ray enclosure is considered a: (OI-11)
    a) Radiation Area.
    b) High Radiation Area.
    c) Very High Radiation Area.
    d) Extreme Radiation Area.

20. A sealed Volrath can, >4 liters, is considered: (OI-12)
    a) A layer of confinement.
    b) Prohibited Item.
    c) Waste material.
    d) All of the above.

21. Which item is not entered on the RTR Status Log form 1374 or in the ESOMS? (OT3A.02.02)
    a) Surveillance Requirement #4.1.1.
    b) IQI results.
    c) System warm-up completion time.
    d) WTS warm up time requirement.

22. The Code of Federal Regulations requires a safety delay between X-ray initiation and commencement. To satisfy AMWTP LCO 3.1, the delay must be greater than: (OT3A.05.12)
    a) 10 seconds.
    b) 15 seconds.
    c) 20 seconds.
    d) 30 seconds.

23. ANSI N43.3 requires _____ inspections of the RTR shielding. (RPT-TSR-03)
    a) Quarterly
    b) Semi-annual
    c) Annual
    d) Biannual

24. If modifications or maintenance has been made to any of the RTR safety systems or features then the AMWTP Configuration Management Process and the AMWTP Work Control process requests _____ before return to service. (RPT-TSR-03)
    a) A walkdown
    b) A functional test
    c) That the system be taken out of suspension mode
    d) A post job brief be given to the RTR operator

25. Which of the following are safety functions of the RTR? (RPT-TSR-03)
    a) Shielding & Door interlock system
    b) Audible alarm & visual warning sign
    c) 20-second delay function
    d) Emergency shutdown switches
    e) All of the above

26. Which of the following are examples of work control and safety documents:
    a) Safety analyses
    b) Safety manuals
    c) Training plans
    d) Procedures
    e) All of the above

27. "Identify Hazards" is :
    a) The first component of the five core functions
    b) The second component of the five core functions
    c) The second component of the eight guiding principles
    d) The main component in VPP

28. Which of the following have been considered under the Design Basis Accidents?
    a) Vehicle subsidence on stack
    b) Earthquake
    c) RTR Direct Radiation Exposure
    d) Loss of Power in AMWTF
    e) All of the above

29. If modifications or maintenance has been made to any of the RTR safety systems or features then the AMWTP Configuration Management Process and the AMWTP Work Control process requests _____ before return to service. (RPT-TSR-03)
    a) A walkdown
    b) A functional test
    c) That the system be taken out of suspension mode
    d) A post job brief be given to the RTR operator

30. What should the RTR operator do if there is a CAM alarming in WMF-634? (OT3A.07.02)
    a) Scream and run
    b) Continue operation because there is no immediate danger inside the RTR control room.
    c) Stop x-rays, remove key form x-ray control console, notify co-workers and leave affected area immediately and inform the RT, the SS, or designated alternate.
    d) Notify the SS, WTS, and Shift manager

31. Before leaving the RTR control console unattended, the x-ray controller must be placed in the _____ mode and the key must be removed and maintained under operator control or stored in the master key locker. (OI-12)
    a) Suspension
    b) Stand By
    c) Operational
    d) Pause

32. The RTR units must be placed into _____ immediately whenever an RTR door interlock system, audible and visual warning signal, minimum 20 second delay function, emergency shutdown switch, or shielding is not OPERABLE when the RTR is capable of generating x-rays. (OI-12)
    a) Suspension
    b) Stand By
    c) Operational
    d) Emergency shutdown

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 10**

Employee Name SOLDHAM S# 65893

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	B. Warner		04/11/11
Characterization Production Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam	Remedial Form (If used)	Exception Form (If used)
	☒	☐	☐

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	B. Warner		04/11/11
Title	Print Name	Signature	Date

Qual Pack Issued By :	CMIDGYETTE		01/27/11
	Print Name	Signature	Date

2

Qualification Package Approval Section

Line Manager Approval	B. Warner	Signature on file	5/26/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	5/26/10
	Print Name	Signature	Date

QC R

Employee Name Edwin S. Oldham S# 65893

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	6/16/08
9	All	Updated format and incorporated evaluation standard.	9/8/09
10	Various	Added Safety Basis Related Items.	5/26/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
A	9	Change words in section 6.0 from "green drum" to "QAPJP container"	B. Warner (Signature on File)	12/27/10

* Manager signature required for modifications.

Employee Name $OLDHAM S# 65893

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly,si gn and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
CMIDGYETTE		
Lew Frye		
Seth Oldham		
Jesse Howard		
Quinton Messick		
B. Warner		

Employee Name GOLDHAM S# 65893

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634/610 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

C Hidayette FOR B WARNER — Employee's Production Manager — 01/27/11 — Date

		Date Requirement Was Completed	**Signature** (ISM or SS)	**Date**
2.1	Current Visual Acuity Exam	07/31/10		1/11/11

Employee Name SOLDHAM S# 65893

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	03/23/11	24 Months
3.1.2 0AWT 2369 RTR Technical Safety Requirements	03/23/11	24 Months

Training Representative or SS verify initial training courses are complete:	Signature	Date 03/23/11

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None 01/27/11	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None 01/27/11	NA	NA

Employee Name Edwin S. Oldham S# 65893

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SS Signature	Date
3.4.1 Safety Basis (DSA, TSR, USQ, SER)		04/08/11
3.4.2 Criticality Working Requirements (CWRs)		03/23/11
3.4.3 Applicability, Condition, Action(s) for LCO 3.1; RTR System and associated surveillance requirement(s) SR 4.1.1, 4.1.2, 4.1.3.		03/23/11

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.1 **Basic Principles**			
4.1.1 Inspect RTR for operability.	(P) S	JH	Jesse Howard 03/22/11

Employee Name Edwin S. Oldham S# 65893

	P S D	OJT Inst. Initials	Evaluator Signature & date
4.2 **Safety Basis/Technical Safety Requirements**			
4.2.1 Perform surveillance SR 4.1.1 (RTR)	(P)	JH	Jesse Howard 03/22/11
4.2.2 Perform surveillance SR 4.1.2 (RTR)	P(S)	JH	Jesse Howard 03/15/11
4.2.3 Verify completion of surveillance SR 4.1.3 (RTR)	(P)	JH	Jesse Howard 03/22/11
4.2.4 Simulate or discuss required action(s) upon failure to meet LCO 3.1 Real Time Radiography System	S(D)	JH	Jesse Howard 03/15/11
4.3 **Quality Control**			
4.3.1 State the requirem ents and frequency for verifying the image quality through viewing an Image Test pattern.	(D)	JH	Jesse Howard 03/15/11
4.3.2 State the requirements and frequency for performing the independent replicate scan.	(D)	JH	Jesse Howard 03/15/11
4.3.3 State the requirements and frequency for performing the independent observation.	(D)	JH	Jesse Howard 03/15/11
4.3.4 Describe the requirements for a batch size.	(D)	JH	Jesse Howard 03/15/11
4.3.5 State the requirements for performance of test and training drums and the frequency in which they must be done.	(D)	JH	Jesse Howard 03/15/11

Employee Name Edwin S. Oldham S# 65893

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the evaluator indicates successful performance of the task. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	Evaluator Signature	Date
5.1 Fire / Alarm (INST-OI-12, INST-OI-26)	S (D)		03/23/11
5.2 Location of fire extinguishers / fire alarm boxes	S (D)		03/23/11
5.3 Dropped waste container (INST-OI-11)	S (D)		03/23/11
5.4 Breached Container (INST-OI-11, INST-OI-84)	S (D)		03/23/11
5.5 CAM Alarm (INST-OI-11, INST-OI-12)	S (D)		03/23/11
5.6 Spill / Contamination Release (INST-OI-88, MP-EC&P-7.10)	S (D)		03/23/11
5.7 Injured Person (0AWT2402, 0AWT2521)	S (D)		03/23/11
5.8 Loss of ventilation/air system (INST-OI-12, INST-OI-33)	S (D)		03/23/11
5.9 Loss of Commercial Power (INST-OI-12, INST-OI-26)	S (D)		03/23/11
5.10 Evacuation (T2402)	S (D)		03/23/11
5.11 Take Cover (T2402)	S (D)		03/23/11
5.12 X-ray fails to energize (INST-OI-12)	S (D)		03/23/11
5.13 X-ray fails to de-energize (INST-OI-12)	S (D)		03/23/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 10**

Employee Name Edwin S. Oldham S# 65893

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 2 Score: 100% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	C Midgyette Exam Proctor Signature	03/25/11 Date

Verify that biannual ~~green drum~~ QAPjP container evaluation has been performed or is current	JASON HAYNE RTR SME PER TELCON C Midgyette RTR SME Signature	03/25/11 Date

Mod A

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Characterization SS Title	 Signature	04/08/11 Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Seth Oldham **S#:** 65893

1.0 **Scope**
This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S#: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	1 gallon poly bottle 1 pint of liquid
2. Aerosol can, unpunctured, with liquid	✓	1 cup of liquid, not punctured
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	zipper coveralls
5. Tools including crescent wrench	✓	wrenches
6. Aerosol can, empty and punctured	✓	good use of tools no liquids, punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	1 pint poly bottle empty
8. Lead rubber glove	✓	fingers, good use of tools
9. Empty paint can	✓	Empty 1 gallon paint can
10. Pieces of wood	✓	2x4's wood
11. 1 gallon poly container with 3 TBSP liquid	✓	1 gallon poly bottle 3 Tbs of liquid
12. Horsetails	✓	twisted and taped drum bags

Score: Pass

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 5/8/12

Candidate Signature: E. Seth Oldham Date: 05-08-12

QCR MAY 09 2012

type 4 liner, respirator mask, plastic lubbing & Shielding metal tubes, Velrath can, lab ware, 1 cup of liquid in poly bottle, lead taped bottle empty, lead.

AMWTP - Employee Training History

Employee: SORENSON, MARK (000101562)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-05	30	WASTE MATRIX CODE REFERENCE MANUAL	10/02/12
RPT-TRUW-05	29	WASTE MATRIX CODE REFERENCE MANUAL	03/09/12
RPT-TRUW-05	27	WASTE MATRIX CODE REFERENCE MANUAL	06/18/11
RPT-TRUW-05	26	WASTE MATRIX CODE REFERENCE MANUAL	05/11/11
RPT-TRUW-05	25	WASTE MATRIX CODE REFERENCE MANUAL	12/14/10
RPT-TRUW-05	24	WASTE MATRIX CODE REFERENCE MANUAL	06/23/10
RPT-TRUW-05	23	WASTE MATRIX CODE REFERENCE MANUAL	12/07/09
RPT-TRUW-06	13	ACCEPTABLE KNOWLEDGE BASELINE DOCUMENT FOR AMWTP W	07/28/11
RPT-TRUW-06	12	AMWTP BASELINE AK FOR NEWLY GENERATED WASTE	08/25/10
RPT-TRUW-07	16	DETERMINATION OF RADIOISOTOPIC CONTENT IN TRU WAST	10/05/10
RPT-TRUW-09	7	ACCEPTABLE KNOWLEDGE SUMMARY FOR FIRST/SECOND STAG	10/13/10
RPT-TRUW-12	18	AMWTP WASTE STREAM DESIGNATIONS	03/09/12
RPT-TRUW-12	17	AMWTP WASTE STREAM DESIGNATIONS	07/28/11
RPT-TRUW-12	16	AMWTP WASTE STREAM DESIGNATIONS	03/26/11
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/03/10
RPT-TRUW-12	13	AMWTP WASTE STREAM DESIGNATIONS	04/02/10
RPT-TRUW-13	6	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	10/13/10
RPT-TRUW-19	2	POPULATION DETERMINATION FOR WASTE STREAM PROFILES	10/19/10
RPT-TRUW-43	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR FILTER DEBRIS WAS	10/04/10
RPT-TRUW-44	1	ACCEPTABLE KNOWLEDGE SUMMARY FOR NON-SPECIAL SOURC	10/04/10
RPT-TRUW-52	0	ACCEPTABLE KNOWLEDGE SUMMARY FOR FIREBRICK DEBRIS	10/13/10
RPT-TRUW-53	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR MOUND DEBRIS WAST	10/13/10
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/24/10
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	05/12/11
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	05/12/11
RPT-TRUW-65	0	POTENTIALLY PROBLEMATIC WASTE FORMS: INVENTORY AN	10/03/10
RPT-TRUW-83	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	09/27/12
RPT-TRUW-86	0	IDENTIFICATION OF PACK DATES FOR WASTE POTENTIALLY	10/22/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/05/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	02/11/10	02/11/11
AMWHAZ	HAZWOPER QUAL	02/03/11	02/03/12
QPITR03A	LEVEL 1 VALIDATION ITR	04/12/11	04/12/13
AMWRAD02	RAD WORKER 2	06/07/11	07/07/13
QCVEE001	VISUAL EXAMINATION EXPERT	06/13/11	06/13/13
QPVE0001	VISUAL EXAMINER	07/29/11	07/29/13
QPOT03A0	REAL TIME RADIOGRAPHY	12/12/11	12/12/13
AMWHAZ	HAZWOPER QUAL	01/31/12	01/31/13
QCITR0VE	LEVEL 1 VALIDATION ITR VE	03/19/12	03/19/14
QCTECHSP	TECH VERIFICATION SPEC I & II	03/19/12	03/19/14
QCITRRTR	LEVEL I VAL ITR REV FOR RTR	03/26/12	03/26/14

AMWTP Advanced Mixed Waste Treatment Project	**Qualification/Certification Endorsement Form**	Form-1657 Rev. 1 Effective Date: 12/23/09 Page 1 of 1

Implementing Document: MP-RTQP-14.4

This form is used to verify qualification packages are complete and to document supervisory and management approval of the qualification.

Candidate's Name: Mark Sorenson Employee S No : 101562

Qual/Cert Title: Level I Validation Qual Code: QPITR3A Revision No.: 0

☐ Qualification ☒ Requalification ☐ Certification ☐ Recertification

VERIFICATION AND RECOMMENDATION OF QUALIFICATION/CERTIFICATION

Supervisor Recommendation for Qualification
(Supervisor verifies qualification package is complete and recommends for qualification.)

Printed Name: Jim Jackson	Signature:	Date: 4/12/11

MANAGEMENT APPROVAL OF QUALIFICATION/CERTIFICATION

Plant Shift Manager//Dept. Manager Approval

Printed Name: Jim Jackson ~~Kiki Torres~~ DB 4-11-11	Signature:	Date: 4/12/11

Production/Plant Manager Approval
(For DOE Order 5480.20 certified positions only)

Printed Name:	Signature:	Date:

QUALIFICATION ENTERED INTO TRAIN

Kathy Merrill Training Representative Print/Type Name	Kathy Merrill Training Representative Signature	4-12-11 Date

Level 1 Validation
QP-ITR-3-A
RTR, Drum Coring, and VE Independent Technical Review
Re-Qualification Checklist Rev. 2

Training Specialist:	Signature M Sharp Michelle Sharp	Date 1/31/06
Subject Matter Expert Review:	Signature Jackie Bayless	Date 2/1/06
Training Manager Approval:	Signature Penny Pink by M Sharp per email Penny Pink	Date 2/1/06.
Line Manager/Supervisor Approval:	Signature Joan M. Connally	Date 2/1/06

AMWTP

Position Re-Qualification Checklist

Qualification Package #: QP-ITR-3-A **Revision:** 2

Element Title: RTR/Drum Coring/VE Independent Technical Reviewer

Employee Name: Mark Sorenson **Employee Number:** 101562

Note: The following items, if applicable, must be completed prior to re-qualification being granted to this employee. If items are not applicable, a member of the Training Organization will mark N/A in the box and initial and date the item.

ITEM NUMBER	RE-QUALIFICATION TRAINING TOPIC	INITIAL	DATE
1	Completion of Radiation Worker I (T2722) or Radiation Worker II Training T2724 4-20-09	DB	4-4-2011
2	8 Hour HazWoper Refresher T2520 2-3-11 (includes HWMA/RCRA Orientation, and HazCom)	DB	4-4-2011
3	Facility Access Annual Refresher T2402 2-17-11	DB	4-4-2011
4	Current OPOT03A qualification 4-22-09	DB	4-4-2011
5	Written Examination (score of 80% or greater) 100%	DB	4-11-11

Training Completion Verified By: _____ Date: 4-11-11
Training Specialist or Coordinator

Re-qualification Recommended: _____ Date: 4/12/11
Shift Manager

Re-qualification Approved: _____ Date: 4/12/11
TRU Programs Manager (or designee)

AMWTP - Employee Training History

Employee: SORENSON, MARK (000101562)

Date Range: 10/17/2009 to 10/17/2012

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AFTASKLC	TASK LIST CONTROLLER	05/25/10	
AFTASKLC	TASK LIST CONTROLLER	05/27/10	
AF1018	EMPLOYEE POSITION DESCRIPTION	08/09/10	
AFRTRSWB	RTR BI ANNUAL SWB	01/25/11	07/25/11
AFVISACU	VISUAL ACUTIY EXAMINATION	01/31/11	01/31/12
AFINSTR	CLASSROOM INSTRUCTOR QUALIFICATION RECORD	12/13/11	12/13/14
[redacted]	RTR BI ANNUAL DRUM	12/29/11	06/29/12
AFVISACU	VISUAL ACUTIY EXAMINATION	01/05/12	01/05/13
AF1018	EMPLOYEE POSITION DESCRIPTION	01/30/12	
AWIQR167	AMWTP INSTRUCTOR QUALIFICATION RECORD FORM 1670	05/07/12	05/07/15
AFRTRDRU	RTR BI ANNUAL DRUM	05/11/12	11/11/12

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGOPS0000415	VE Boxline Process Improvement Brief August 2011	08/05/11
TGOPS0000466	VE Boxline Process Improvement Brief September 2011	09/21/11
TGOPS0000476	VE Boxline Process Improvement Brief October 2011	10/17/11
TGOPS0000575	Expectations for Safe Work - TSR	02/14/12
TGOPS0000578	Retrieval Status	02/29/12
TGRTR0000018	RTR PIB	07/18/11
TGRTR0000020	Process Improvement Briefing	09/20/11
TGSAF0000006	October All-Hands Safety Meeting	10/20/10
TGSAF0000008	Safety Briefing December 2010	12/06/10
TGSAF0000010	ISMS Map To Safety and Conduct of Operations Pocket Guide	04/26/11
TGSAF0000019	AMWTP Back-To-Work Safety Pause 11/28/2011	11/28/11
TGTRU0000004	ConOps Tailgate for ITR/SPMD (CAR 61367 - AI-62297)	06/01/11
TGTRU0000034	Task List Drum Vent Restrictions	08/23/11
TGTRU0000035	CAR 61367 (AI-62296) Procedure Revision Briefing	08/31/11
TGTRU0000043	Characterization requiring RTR/VE Updates (RVUs)	03/22/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* ***RTR Bi Annual Drum***	**AFRTRDRU** **Rev. 0**

Employee Name: Mark Sorenson **S#:** 101562

1.0 **Scope**
This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S #: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	one gallon poly bottle 1 cup of liquid
2. Aerosol can, unpunctured, with liquid	✓	1 cup of liquid not punctured
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	Zippers P.P.E.
5. Tools including crescent wrench	✓	crescent wrench box end wrench
6. Aerosol can, empty and punctured	✓	punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	1 pint poly bottle empty
8. Lead rubber glove	✓	
9. Empty paint can	✓	one gallon paint can
10. Pieces of wood	✓	2x4'S
11. 1 gallon poly container with 3 TBSP liquid	✓	3Tbs of liquid one gallon poly bottle
12. Horsetails	✓	poly bag drum bag twisted & taped

Score: Pass

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 5/11/12

Candidate Signature: Mark Sorenson Date: 5/11/12

TRAINING DEPT
MAY 15 2012

type 4 lint, cardboard, respirator mask, tygon tubing, metal pipe, lead taped container empty, Calcetin can with small caps, one gallon poly bottle with lab ware, glass pint size bottle, scrap metal pipe, clamp, 7-intake metal.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	QPOT3A Rev. 10

Employee Name Denise Lee S# C1645

REAL-TIME RADIOGRAPHY

Requalification Package Number: QPOT3A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Jeremy Szabo		01/24/11
Characterization Production Manager	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☒	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Denny Casper		1/31/11
Title	Print Name	Signature	Date

Qual Pack Issued By :	Dave Butler		1-3-11
	Print Name	Signature	Date

JAN 31 2011

Qualification Package Approval Section

Line Manager Approval	B. Warner	Signature on file	5/26/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	5/26/10
	Print Name	Signature	Date

JC 2-1-11 KM

Employee Name Denise Lee S# 61645

Revision History

Revision Number	Affected Pages	Description of Change	Date
1-7	All	No Record	
8	All	Issued to align with current initial qualification.	6/16/08
9	All	Updated format and incorporated evaluation standard.	9/8/09
10	Various	Added Safety Basis Related Items.	5/26/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
A	9	Change words in section 6.0 from "green drum" to "QAPJP container"	B. Warner (Signature on File)	12/27/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project RE-QUALIFICATION PACKAGE Real-Time Radiography	QPOT3A Rev. 10

Employee Name Denise Lee S# 61645

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Thane Bolander	Thane Bolander	TWB
Denny Gasper		DL
Lew Frye		MF
R.L. Moore		RLM
~~Kathy Birch~~ KB 1/11/11	~~Kathy Birch~~	~~KB~~
J.M.J JACKSON		JMJ
Kathy Birch	Kathy Birch	KB
Dave Butler		DB
Derek Cox		DSC
Jeremy Szabo		JMS

Employee Name Denise Lee S# 41645

1.0 Scope

This qualification package was developed for the re-qualification of the Real-Time Radiography Operations (QPOT3A) in WMF-634/610 at the AMWTP.

The operator will be qualified for 2 years.

The Technician may be disqualified because of, but not limited to Medical reasons, failing re-qualification exam, job performance deficiency, performs work in an unsafe manner or expiration of qualification

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for Operations Technicians performing Real-Time Radiography operations.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date 1/17/11

	Date Requirement Was Completed	Signature (SIH or SS)	Date
2.1 Current Visual Acuity Exam	1/13/11		1/13/11

Employee Name Denise Lee S# 61645

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT 2375, Safety Basis Continuing Training for Non-Facility Ops	1/13/11	24 Months
3.1.2 0AWT 2369 RTR Technical Safety Requirements	1/13/11	24 Months

Training Representative or SS verify initial training courses are complete:	Signature	Date
		1-17-11

Sign-off by the OJT Instructor or SS indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SS Signature	Date
3.2.1 None	NA	NA

3.3 Required Reading: Other Documents	OJT Instructor / SS Signature	Date
3.3.1 None	NA	NA

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION PACKAGE* *Real-Time Radiography*	**QPOT3A** **Rev. 10**

Employee Name Denise Lee S# 41645

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 97%

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached)

Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	Dave Butler	1-24-11
	Exam Proctor Signature	Date

Verify that biannual ~~green drum~~ QAPjP container evaluation has been performed or is current	Kathy Birch	1/16/11 Mod A
	RTR SME Signature	Date

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the Shift Supervisor (SS) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the SS has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

Derek Cox Chg SS		01/24/11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP - Employee Training History

Employee: LEE, DENISE (000061645)

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
RPT-TRUW-13	6	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	01/10/12
RPT-TRUW-19	2	POPULATION DETERMINATION FOR WASTE STREAM PROFILES	01/10/12
RPT-TRUW-56	4	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	11/15/11
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/23/10
RPT-TRUW-58	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	01/10/12
RPT-TRUW-59	3	ACCEPTABLE KNOWLEDGE SUMMARY FOR SPECIAL SETUPS WA	01/10/12
RPT-TRUW-60	0	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED WASTE	01/10/12
RPT-TRUW-63	5	ACCEPTABLE KNOWLEDGE SUMMARY FOR CEMENTED SLUDGE (	01/10/12
RPT-TRUW-83	2	ACCEPTABLE KNOWLEDGE SUMMARY FOR SUPERCOMPACTED DE	02/27/12
RPT-TSR-03	12	TECHNICAL SAFETY REQUIREMENTS	08/27/12
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/05/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	02/11/10	02/11/11
AMWRAD02	RAD WORKER 2	03/24/10	04/24/12
QPITR03A	LEVEL 1 VALIDATION ITR	04/08/10	04/08/12
QPOT03A0	REAL TIME RADIOGRAPHY	01/24/11	01/24/13
AMWHAZ	HAZWOPER QUAL	02/17/11	02/17/12
QPVE0001	VISUAL EXAMINER	07/19/11	07/19/13
QPITR03A	LEVEL 1 VALIDATION ITR	01/25/12	01/25/14
AMWHAZ	HAZWOPER QUAL	01/31/12	01/31/13
QCTECHSP	TECH VERIFICATION SPEC I & II	03/06/12	03/06/14
QCITR0VE	LEVEL 1 VALIDATION ITR VE	03/12/12	03/12/14
QCITRRTR	LEVEL I VAL ITR REV FOR RTR	03/12/12	03/12/14
AMWRAD02	RAD WORKER 2	03/22/12	03/22/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	08/08/10	
AFVISACU	VISUAL ACUTIY EXAMINATION	01/31/11	01/31/12
AFRTRSWB	RTR BI ANNUAL SWB	02/09/11	08/09/11
AWPRO004	AMWTP RCRA UNIT SUPPORT WORKER TP	04/07/11	
AF1020	INDIVIDUAL TRAINING PLAN	04/07/11	
[redacted]		11/21/11	05/21/12
AFVISACU	VISUAL ACUTIY EXAMINATION	01/03/12	01/03/13
AF1018	EMPLOYEE POSITION DESCRIPTION	01/18/12	
AF1020	INDIVIDUAL TRAINING PLAN	03/12/12	
AFRTRDRU	RTR BI ANNUAL DRUM	05/08/12	11/08/12
AFQRTR11	ADDENDUM FOR QPOT3A RTR OPERATIONS	08/04/12	
AFQP047	ADDENDUM REAL TIME RADIOGRAPHY	10/01/12	

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Denise Lee **S#:** 61645

1.0 **Scope**
This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S #: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	2 cups of liquid 1 gallon poly bottle
2. Aerosol can, unpunctured, with liquid	✓	3 cups of liquids
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	zippers tyvex
5. Tools including crescent wrench	✓	crescent wrench
6. Aerosol can, empty and punctured	✓	empty punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	1 pint poly bottle empty
8. Lead rubber glove	✓	good used of tools
9. Empty paint can	✓	grain (wood)
10. Pieces of wood	✓	empty can
11. 1 gallon poly container with 3 TBSP liquid	✓	3Tbs of liquid
12. Horsetails	✓	twisted & taped

Score: Pass

Results have been reviewed with ~~Candidate~~ by SME:

SME Signature: Kathy Birch Date: 5/8/12

Candidate Signature: Denise Lee Date: 5/8/12

TRAINING
MAY 09 2012

type 4 liner, respirator, tubbing plastic sheeting piping, metal plate, leaded glass, lab ware, one gallon poly bottle, 3 cups of liquid Velcrath cans, 1 gallon poly bottle 3Tbs of liquid. Lead taped container empty.

AMWTP - Employee Training History

Employee: [redacted] (00010309[redacted])

Date Range: 10/17/2009 to 10/17/2012

Required Reading

Read Code	Rev	Reading Description	Completion Date
MP-TRUW-8.2	15	QUALITY ASSURANCE PROJECT PLAN	03/09/12
MP-TRUW-8.2	14	QUALITY ASSURANCE PROJECT PLAN	12/29/10
MP-TRUW-8.2	13	QUALITY ASSURANCE PROJECT PLAN	07/01/10
MP-TRUW-8.2	12	QUALITY ASSURANCE PROJECT PLAN	01/01/10
MP-TRUW-8.34	6	WIPP SAMPLE TRANSFERS	08/18/10
MP-TRUW-8.39	7	RTR OPERATOR PROFICIENCY PROGRAM	05/22/12
MP-TRUW-8.39	6	RTR OPERATOR PROFICIENCY PROGRAM	04/30/10
MP-TRUW-8.5	25	TRU WASTE CERTIFICATION	12/16/09
MP-TRUW-8.8	32	LEVEL I DATA VALIDATION	09/27/12
MP-TRUW-8.8	31	LEVEL I DATA VALIDATION	08/05/11
MP-TRUW-8.8	30	LEVEL I DATA VALIDATION	12/29/10
MP-TRUW-8.8	29	LEVEL I DATA VALIDATION	07/01/10
PD-LLW-03	2	OFFSITE LLW/MLLW DISPOSITION PROJECT DESCRIPTION	02/22/12
POL-024	REF	AMWTP Migratory Bird Policy	06/23/10
POL-026	0	PERSONAL CELL PHONE/ELECTRONIC EQUIPMENT POLICY	09/30/10
QAPP-01	12	QUALITY ASSURANCE PROGRAM PLAN	03/09/11
RPT-TRUW-05	29	WASTE MATRIX CODE REFERENCE MANUAL	03/09/12
RPT-TRUW-05	27	WASTE MATRIX CODE REFERENCE MANUAL	06/18/11
RPT-TRUW-05	26	WASTE MATRIX CODE REFERENCE MANUAL	05/02/11
RPT-TRUW-05	25	WASTE MATRIX CODE REFERENCE MANUAL	12/10/10
RPT-TRUW-05	24	WASTE MATRIX CODE REFERENCE MANUAL	06/25/10
RPT-TRUW-05	23	WASTE MATRIX CODE REFERENCE MANUAL	12/14/09
RPT-TRUW-06	12	AMWTP BASELINE AK FOR NEWLY GENERATED WASTE	08/26/10
RPT-TRUW-12	17	AMWTP WASTE STREAM DESIGNATIONS	08/05/11
RPT-TRUW-12	16	AMWTP WASTE STREAM DESIGNATIONS	03/16/11
RPT-TRUW-12	14	AMWTP WASTE STREAM DESIGNATIONS	08/04/10
RPT-TRUW-12	13	AMWTP WASTE STREAM DESIGNATIONS	03/16/10
RPT-TRUW-56	4	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	03/09/12
RPT-TRUW-56	3	ACCEPTABLE KNOWLEDGE DOCUMENT FOR INL STORED TRANS	08/19/10
WILDLIFE-2011	0	Wildlife and AMWTP - Annual Awareness Assigned Rea	05/11/11

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
AMWHAZ	HAZWOPER QUAL	09/27/10	09/27/11
QPVE0001	VISUAL EXAMINER	10/06/10	10/06/12
AMWRAD02	RAD WORKER 2	10/28/10	11/28/12
QPOT03A0	REAL TIME RADIOGRAPHY	05/26/11	05/26/13
QPITR03A	**LEVEL 1 VALIDATION ITR**	**09/01/11**	**09/01/13**
AMWHAZ	HAZWOPER QUAL	09/22/11	09/22/12
QCTECHSP	TECH VERIFICATION SPEC I & II	03/26/12	03/26/14
QCITR0VE	LEVEL 1 VALIDATION ITR VE	08/07/12	08/07/14
QCITRRTR	LEVEL I VAL ITR REV FOR RTR	08/07/12	08/07/14
AMWHAZ	HAZWOPER QUAL	09/18/12	09/18/13

AMWTP Advanced Mixed Waste Treatment Project	**Qualification/Certification Endorsement Form**	Form-1657 Rev. 1 Effective Date: 12/23/09 Page 1 of 1

Implementing Document: MP-RTQP-14.4

This form is used to verify qualification packages are complete and to document supervisory and management approval of the qualification.

Candidate's Name: Roe Thompson Employee S No : 103095

Qual/Cert Title: Level I Validation Qual Code: QPITR3A Revision No.: 2

☐ Qualification ☒ Requalification ☐ Certification ☐ Recertification

VERIFICATION AND RECOMMENDATION OF QUALIFICATION/CERTIFICATION

Supervisor Recommendation for Qualification
(Supervisor verifies qualification package is complete and recommends for qualification.)

Printed Name: ~~Kevin Lundquist~~ KB 9/1/11	Signature: Kathy Birch	Date: 9/1/11

MANAGEMENT APPROVAL OF QUALIFICATION/CERTIFICATION

Plant Shift Manager//Dept. Manager Approval

Printed Name: Eric Schweinsberg	Signature:	Date: 9/1/11

Production/Plant Manager Approval
(For DOE Order 5480.20 certified positions only)

Printed Name:	Signature:	Date:

SEP 06 2011

Km

QUALIFICATION ENTERED INTO TRAIN

Kathy Merrill Training Representative Print/Type Name	Kathy Merrill Training Representative Signature	Sept 6, 2011 Date

Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *RE-QUALIFICATION CHECKLIST REVISION #2*	QP-ITR-3-A

Level 1 Validation
QP-ITR-3-A
RTR, Drum Coring, and VE Independent Technical Review
Re-Qualification Checklist Rev. 2

Training Specialist:	Signature Michelle Sharp	Date 1/31/06
Subject Matter Expert Review:	Signature	Date 2/1/06
Training Manager Approval:	Signature Penny Pink by Michelle Sharp per email	Date 2/1/06.
Line Manager/Supervisor Approval:	Signature Joan M. Connally	Date 2/1/06

AMWTP

Position Re-Qualification Checklist

Qualification Package #: QP-ITR-3-A **Revision: 2**

Element Title: RTR/Drum Coring/VE Independent Technical Reviewer

Employee Name: Roe Thompson **Employee Number:** 103095

Note: The following items, if applicable, must be completed prior to re-qualification being granted to this employee. If items are not applicable, a member of the Training Organization will mark N/A in the box and initial and date the item.

ITEM NUMBER	RE-QUALIFICATION TRAINING TOPIC	INITIAL	DATE
1	Completion of Radiation Worker I (T2722) or Radiation Worker II Training T2724 10-27-10	DB	8-8-11
2	8 Hour HazWoper Refresher T2520 (includes HWMA/RCRA Orientation, and HazCom) 9-27-10	DB	8-8-11
3	Facility Access Annual Refresher T2402 5-2-11	DB	8-8-11
4	Current OPOT03A qualification 5-26-11	DB	8-8-11
5	Written Examination (score of 80% or greater)	KM	9-1-11

Training Completion Verified By: _____ Date: 9-11-11
Training Specialist or Coordinator

Re-qualification Recommended: _____ Date: 9/15/11
Shift Manager

Re-qualification Approved: _____ Date: 9/1/11
TRU Programs Manager (or designee)

AMWTP - Employee Training History

Employee: THOMPSON, ROELONT (000103095)

Date Range: 10/17/2009 to 10/17/2012

Qualifications

Qual Code	Qualification Title	Qual Date	Expire Date
QPVE0001	VISUAL EXAMINER	09/25/12	09/25/14

Admin Forms

Admin Code	Title	Assign Date	Expire Date
AF1018	EMPLOYEE POSITION DESCRIPTION	08/10/10	
AFVISACU	VISUAL ACUTIY EXAMINATION	01/31/11	01/31/12
AFRTRSWB	RTR BI ANNUAL SWB	02/09/11	08/09/11
AFRTRDRU	RTR BI ANNUAL DRUM	11/20/11	05/20/12
AFVISACU	VISUAL ACUTIY EXAMINATION	01/05/12	01/05/13
AF1018	EMPLOYEE POSITION DESCRIPTION	01/30/12	
AFRTRDRU	RTR BI ANNUAL DRUM	05/11/12	11/11/12
AFRTRDRU	RTR BI ANNUAL DRUM	10/11/12	04/11/13

Tailgates

Tailgate Number	Tailgate Title	Completion Date
TGAMW0000007	Bechtel Ethics Awareness Training	11/01/10
TGAMW0000052	Safety Expectations for 2012	01/02/12
TGOPS0000575	Expectations for Safe Work - TSR	02/14/12
TGOPS0000578	Retrieval Status	02/29/12
TGRTR0000002	RTR PIB	09/22/10
TGRTR0000006	LANL-003 AK Briefing	10/28/10
TGRTR0000007	LANL-003 AK Briefing	10/28/10
TGRTR0000008	RTR PIB	11/29/10
TGRTR0000011	RTR PIB	02/24/11
TGRTR0000017	Training for complete data validation	07/06/11
TGRTR0000020	Process Improvement Briefing	09/20/11
TGRTR0000024	RTR upgrades discussion	07/11/12
TGSAF0000004	September Safety Pause	09/13/10
TGSAF0000010	ISMS Map To Safety and Conduct of Operations Pocket Guide	04/26/11
TGTRN0000040	Leadership Connection: Ethics	07/18/11
TGTRU0000004	ConOps Tailgate for ITR/SPMD (CAR 61367 - AI-62297)	06/01/11
TGTRU0000030	NCR 62740; Too many drums in a VEB batch	07/07/11
TGTRU0000035	CAR 61367 (AI-62296) Procedure Revision Briefing	08/31/11
TGTRU0000043	Characterization requiring RTR/VE Updates (RVUs)	03/22/12

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Roe Thompson **S#:** 103095

1.0 **Scope**
This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S #: 101522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	1 cup of liquid
2. Aerosol can, unpunctured, with liquid	✓	not punctured 2 cups of liquid
3. Full poly bottle (app. 16 oz)	✓	1 pint of liquid
4. Coveralls	✓	Tyvek P.P.E.
5. Tools including crescent wrench	✓	wrench tools
6. Aerosol can, empty and punctured	✓	empty good use wrench & tools
7. Empty 500 mL bottle (app. 1 pint)	✓	1 pint poly bottle empty
8. Lead rubber glove	✓	Good use & tools empty
9. Empty paint can	✓	
10. Pieces of wood	✓	2x4's
11. 1 gallon poly container with 3 TBSP liquid	✓	one gallon poly bottle 3TBS of liquid
12. Horsetails	✓	

Score: PASS

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 5/11/12

Candidate Signature: Roe Thom Date: 5/11/2012

TRAINING
MAY 15 2012

type 4 liner, respirator mask, tub bin, plastic metal, canister full of metal, one gallon poly bottle with labware 2 cups of liquid. lead taped poly bottle empty metal tub bin, rusty metal,

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project **RTR Bi Annual Drum**	**AFRTRDRU** **Rev. 0**

Employee Name: Roe Thompson **S#:** 103095

1.0 **Scope**
This administration form has been developed in order to document the training and knowledge of those individuals assigned to RTR Operations and Level I Validation (who maintain an RTR qualification). The examination of a QAPjP test container is a requirement of the WIPP WAC. The RTR Operator must identify all (100%) of the below items, and any prohibited items as defined by the WIPP WAC. Checking/marking the SAT column indicates satisfactory location and identification of the item.

RTR TEST DRUM #5.

SME Performing Evaluation: Kathy Birch S #: 10522

Item/Description	SAT	Comments
1. 1 gallon poly bottle with 1 cup water, inverted	✓	1 cup of liquid
2. Aerosol can, unpunctured, with liquid	✓	not punctured 2 cups of liquid
3. Full poly bottle (app. 16 oz)	✓	pint of liquid
4. Coveralls	✓	PPE
5. Tools including crescent wrench	✓	wrenches
6. Aerosol can, empty and punctured	✓	no liquid punctured
7. Empty 500 mL bottle (app. 1 pint)	✓	
8. Lead rubber glove	✓	good use of tools
9. Empty paint can	✓	paint can no liquid
10. Pieces of wood	✓	wood blocks
11. 1 gallon poly container with 3 TBSP liquid	✓	3 lbs of liquid
12. Horsetails	✓	twisted & taped

Score: PASS

Results have been reviewed with Candidate by SME:

SME Signature: Kathy Birch Date: 10/11/12

Candidate Signature: Roe Thompson Date: 10/11/12

type A liner, plastic tubbing, plaster bagging, piping poly bottle w/lead tape, gallon poly bottle 2 cups of liquid, lab ware, metals respirator,

QC FZ

RTR3

AMWTP Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP DATA - RTR

NCR #: 71293

Title: RTR Characterization

Originator: Duke, Jace	**Date Opened:** 06/12/12
Responsible Dept: Plant Manager	**Batch #:** RTR12-00103
Container ID: 10233822	**Tag Applied:** Yes

Characterization Problem:

Originator Sign By: Jace Duke	**Originator Sign Date:** 06/12/12

Production Comments: **Approved Remediation:** **SDOP**

unable to penetrate through the metal sheeting

Performed By: George Byram	**Performed Date:** 09/24/12

Waste Programs Evaluation/Verification:

SPM Verification: For this container, SDOP processing through the facility boxline will be an acceptable alternative remediation to Special Case Waste. Container data has been reviewed and verified to meet the AMWTF requirements as outlined in LST-EC&P-11. Per MP-TRUW-8.45, the completed and signed Form-1862 shall be used as objective evidence for closing any open NCRs associated with the planned SDOP. Additionally, sub-step 3.1.12.2 requires that all NCRs be closed prior to providing Form-1862 to operations for physical build of the SDOP. Container has been included on Form-1862, SDOP# SAF-661-12 (see attached). Actions required for closure of this NCR are complete.
Note: Containers processed through the facility boxline in a six drum over pack (SDOP) do not require inclusion on a random headspace gas sampling lot nor would any data previously obtained from headspace gas sampling be utilized in any fashion for waste stream characterization or WIPP certification. Once a container is processed via SDOP that container is destroyed and its contents repackaged and compacted. The resultant product drum will be included on a random headspace gas sampling lot prior to reconciliation, certification, and shipment to WIPP. For this reason, any headspace gas sampling data obtained prior to identification of the prohibited condition need not be non-reported from the batch data report nor does any additional evaluation or verification of the data need to be performed prior to closure of this NCR. GTB 9/24/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 09/24/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

QA closure comment:
1) Container 10233822 has been assigned IDC RF-480 and meets debris feedstock requirements.
2) Inner drums' FGE plus two sigma error sum is <325 g for the virtual SDOP.
3) Gross weight of the SDOP does not exceed 6,000 lb.
4) RTR and assay characterization have been completed. No prohibited items were identified that prevents container movement into the facility.
5) Form-1862 is attached as supporting documentation to support closure of this NCR and to allow the container to enter the AMWTP facility.
Corrective actions taken are complete and acceptable for NCR closure; allowing the container to be placed in an SDOP and enter the AMWTP facility. C. Robison 09-25-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/25/12

INFORMATION ONLY

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 68025

Title: AK Characterization

Originator: Morris, Randall	**Date Opened:** 01/04/12
Responsible Dept: Waste Programs	**Batch #:** RTR11-00442
Container ID: 10245486	**Tag Applied:** Yes

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Randall Morris	**Originator Sign Date:** 01/04/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

RTR recommended an IDC change from RF-337 to RF-490 for container 10245486. This is a change in WMC from S5300 to S5410, which requires an NCR (MP-TRUW-8.13, Rev. 24). RCM 01/04/12

AK concurs with the recommended IDC change from RF-337 to RF-490 for container 10245486. AKR-12-735 was attached to NCR 68025 to support this change. RCM 01/05/12

Performed By: Randall Morris	**Performed Date:** 01/05/12

Waste Programs Evaluation/Verification:

This container has been successfully characterized as part of RTR11-00442. The IDC associated with the container has been changed to RF-490, and AK review has been completed as required. Al required actions have been completed and this NCR is recommended for closure. GTB 3/28/12

SPM Verification Complete By: George Byram	**SPM Verification Complete Date:** 03/28/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

AK concurs with the recommended IDC change from RF-337 to RF-490 for container 10245486. AKR-12-735 was attached to NCR 68025 to support this change. RCM 01/05/12

QA Comment: Verified in WTS that container 10245486 shows an IDC of RF-490 and a WMC of S5410, which is in accordance with the approved and attached AKR-12-735. Verified that the RTR analysis shows the "Is IDC Correct" question answered as "Yes". This NCR is closed. C. Robison 03-28-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 03/28/12

AMWTP Advanced Mixed Waste Treatment Project	**Acceptable Knowledge Resolution (AKR) Checklist**	Form-1070, Rev. 3 Effective: 05/24/2006 Page 1 of 1

Implementing Document: MP-TRUW-8.13

Waste Stream or IDC: IDC RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

Evaluation Criteria	Yes	No	Documentation
1. Does the inconsistency require a change to the waste matrix code (WMC) or IDC, if appropriate? If yes, ensure that a NCR has been issued and complete evaluation items 4 through 9.	X		See attached
2. Does the inconsistency require the potential addition of a hazardous waste number (HWN) to an approved waste stream? If yes, complete items 7 and 8.		X	
3. Does the inconsistency require a change to the radionuclides associated with a waste stream? If yes, complete item 9.		X	
If items 1 through 3 are no, answer no for the rest of the evaluation and attach justification for items 1 and 2.	**Reevaluation required?**		
	Yes	**No**	
4. Verify and document that the waste materials to be reassigned a WMC were generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during radiography or visual examination.	X		See attached
5. Review existing information based on the historical container identification number and document all differences in HWN assignments and acceptable layers of confinement.	X		See attached
6. If inconsistencies exist in the acceptable knowledge (AK) information for the reassigned WMC, document the disposition of this container, and define the actions necessary to fully characterize the waste.		X	Not applicable
7. Reassess and document all sampling and analytical data associated with the waste.		X	Not applicable
8. If differences exist in the HWNs that were assigned, reassess and document all required AK information associated with the new designation. If a HWN needs to be added to an approved waste stream, ensure that an NCR has been issued.		X	Not applicable
9. Reassess and document AK associated with new radionuclide content determination and new waste stream designation.		X	Not applicable

Resolution: AK recommends an IDC change from RF-337 to RF-490.

Record required changes to AK record. (This includes updating reference data in WTS):

AK Expert: Randall C Mar 3rd 01/04/12
(signature) (date)

NOTE: *AKRs that address major actions require an NCR or CAR if actions are not complete before signature date.*

Waste Stream or IDC: ID-RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

References

1. RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual (P399A)
2. WM-F1-82-021, Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes (P024A)
3. RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste–Rocky Flats Plant (P649A)
4. RPT-TRUW-12, AMWTP Waste Stream Designations (P393A)
5. BN510.1 Supercompacted Debris Waste Stream Profile Package (P1030A)
6. RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements: AMWTP Baseline AK for Newly Generated Waste (P400A)
7. BN211 Filter Debris, Waste Stream Profile Package (P461A)
8. CCP-AK-INL-004, Central Characterization Project Acceptable Knowledge Summary Report for Rocky Flats Combustibles and Plastic Stored at the Idaho National Laboratory: Waste Stream ID-RF-S5300-A, Rev. 1 (P633A)
9. RPT-TRUW-86, Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (P1031A)

Container Information:

Container	RTR Batch	Historical ID	Prefix Date Range for IDC RF-490 [9]	Historical Pack Date	Historical Gross Weight (lb)	Scale Weight (lb)	NCR	AKR Rev.
10245486	RTR11-00442	IDRFP1C3B0037	*	06/05/72	138	132.3	68025	0

* This container does not have a historical prefix because the historical information was degraded during storage.

Background:

The Rocky Flats (RF) waste drum identified above was examined by RTR. Because of the observed container contents, the RTR operators recommended an IDC change from the historical IDC RF-337, Plastics, Teflon, Washables, PVC, to RF-490, HEPA Filters and CWS Filters.

Justification and/or Rationale

AK indicates that IDC RF-337 waste consists of plastic and non-leaded rubber waste including debris items in the form of empty bottles, piping, tubing, glovebox windows, bags, tape, sheeting, and protective clothing (e.g., supplied air suits, surgeon's gloves, booties, respirator masks, parts and cartridges, and non-leaded glovebox gloves), etc. The types of plastic include polyethylene, polypropylene, PVC, Teflon, tygon, and Plexiglas. The types of rubber include latex, neoprene, Hypalon and Viton). RF-490 waste may also contain any amounts of cloth, paper and wood products including items such as wipes and paper. The waste may only contain < 50% by volume glass and metal debris items (e.g., metal respirator cartridges, raschig rings, nails, cans, vials, bottles, lead sheeting, bolts, pipe, welding rods, batteries, tools, and wire). [1, 2, 3, 8] AK indicates that IDC RF-490 waste includes primarily whole 24 x 24 x 12 inch HEPA filters. Pre-1976 waste includes CWS (Chemical Warfare Service) filters. RF-490 waste also includes Absolute 8 x 8-in glovebox filters, prefilters, insulation, and respirator filters. Filter media include asbestos type, fiberglass and paper types. The waste may also contain cellulosic and plastic debris items (e.g., cardboard). [1, 2, 3, 7] The container contents identified by RTR are more consistent with the RF-490 waste than with the RF-337 waste.

Waste Stream or IDC: ID-RF-337 AKR Number: AKR-12-735

Batch Number: See attached Container ID: See attached

Inconsistency: IDC change from RF-337 to RF-490

The packaging identified by RTR is consistent with expected variation of the packaging configuration for IDC RF-490 waste. [1, 2, 3]

The historical data are consistent with the recommended IDC change to RF-490. The container pack date is within the historical pack date range for RF-490 (January 1971 – July 1989). [6] The historical weight and the AMWTP scale weight are not significantly different.

IDC RF-337 is assigned WMC S5300 (Organic Debris); IDC RF-490 is assigned WMC S5410 (Composite Filters) which more accurately reflects the physical form of the waste identified in the RTR. [1] Both IDCs are included in the supercompactor feedstock, BN510.1. [5]

The HWNs assigned to IDC RF-337 under direct-ship WSPF ID-RF-S5300-A are identical to those assigned to IDC RF-490 (D004 – D011, D022, D028, D029, F001, F002, F005 – F007, and F009) are a subset of those assigned to IDC RF-490 under direct-ship WSPF BN211 . [4, 7, 8] Both wastes are also included in the Supercompactor feedstock debris wastes (BN510.1) where they are assigned HWNs D004 – D011, D022, D027 – D030, D034, D037, D043, F001, F002, F004 – F007, and F009. [5]

Resolution and Corrective Actions

AK recommends an IDC change from RF-337 to RF-490 for the container listed above. This recommendation is based on the AK information, historical drum information, and the RTR observations. This AKR will be used to close the related NCR.

AMWTP
Advanced Mixed Waste Treatment Project

NON-CONFORMANCE REPORT

WIPP Data - AK

NCR #: 68706

Title: AK Characterization

Originator: Hinkle-Daniel, Caralea	**Date Opened:** 02/01/12
Responsible Dept: Waste Programs	**Batch #:** RTR11-00434
Container ID: 10120214	**Tag Applied:** No

Characterization Problem: Inappropriate WMC Assignment

Originator Sign By: Caralea Hinkle-Daniel	**Originator Sign Date:** 02/01/12

Production Comments: **Approved Remediation:** **AK Evaluation Required**

RTR recommended an IDC change from MD-848 to MD-836 for container 10120214. This is a change in WMC from S5490 to S3121, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 2/1/12

AK concurs with the recommended IDC change from MD-848 to MD-836 for container 10120214. AKR-12-745 was attached to NCR 68706 to support this change. CHD 2/1/12

Performed By: Caralea Hinkle-Daniel	**Performed Date:** 02/01/12

Waste Programs Evaluation/Verification:

SPM Verification: I have verified that AK evaluation was completed on 2/1/2012. The AKE concurred with the IDC change and attached AKR-12-275 to support the IDC change. I have verified in WTS, that the IDC for container 10120214 is MD-836 and the Waste Matrix Code is S3121. All required actions have been completed. S. Caniff 9/27/2012

SPM Verification Complete By: Sean Caniff	**SPM Verification Complete Date:** 09/27/12
MLLW/LLW Verification Complete By:	**MLLW/LLW Verification Complete Date:**

QA Closure Comments:

RTR recommended an IDC change from MD-848 to MD-836 for container 10120214. This is a change in WMC from S5490 to S3120, which requires an NCR (MP-TRUW-8.13, Rev. 23). CHD 2/1/12

AK concurs with the recommended IDC change from MD-848 to MD-836 for container 10120214. AKR-12-745 was attached to NCR 68706 to support this change. CHD 2/1/12

QA Closure Comment: Verified in WTS that container 10120214 has an IDC of MD-836 and a WMC of S3121 as required by the approved/attached AKR-12-745. No further action is required of this NCR. C. Robison 09-27-12

QA Add'l Action Reqd By:	**QA Add'l Action Reqd Date:**
QA Verification Complete By: Camille Robison	**QA Verification Comp Date:** 09/27/12

AMWTP Advanced Mixed Waste Treatment Project	**Acceptable Knowledge Resolution (AKR) Checklist**	Form-1070, Rev. 3 Effective: 05/24/2006 Page 1 of 1

Implementing Document: MP-TRUW-8.13

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

Batch Number: See attached Container ID: See attached

Inconsistency: Change the IDC from MD-848 to MD-836 based on RTR data.

Evaluation Criteria	Yes	No	Documentation
1. Does the inconsistency require a change to the waste matrix code (WMC) or IDC, if appropriate? If yes, ensure that a NCR has been issued and complete evaluation items 4 through 9.	X		See attached
2. Does the inconsistency require the potential addition of a hazardous waste number (HWN) to an approved waste stream? If yes, complete items 7 and 8.		X	
3. Does the inconsistency require a change to the radionuclides associated with a waste stream? If yes, complete item 9.		X	
If items 1 through 3 are no, answer no for the rest of the evaluation and attach justification for items 1 and 2.	**Reevaluation required?**		
	Yes	**No**	
4. Verify and document that the waste materials to be reassigned a WMC were generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameters identified during radiography or visual examination.	X		See attached
5. Review existing information based on the historical container identification number and document all differences in HWN assignments and acceptable layers of confinement.	X		See attached
6. If inconsistencies exist in the acceptable knowledge (AK) information for the reassigned WMC, document the disposition of this container, and define the actions necessary to fully characterize the waste.	X		See attached
7. Reassess and document all sampling and analytical data associated with the waste.		X	Not Applicable
8. If differences exist in the HWNs that were assigned, reassess and document all required AK information associated with the new designation. If a HWN needs to be added to an approved waste stream, ensure that an NCR has been issued.		X	Not Applicable
9. Reassess and document AK associated with new radionuclide content determination and new waste stream designation.		X	Not Applicable

Resolution: Change the IDC to MD-836.

Record required changes to AK record. (This includes updating reference data in WTS):
No AK documents need to be revised based on this change.

AK Expert: Caralea Huckle-Darnell (signature) 2-1-12 (date)

NOTE: *AKRs that address major actions require an NCR or CAR if actions are not complete before signature date*

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

Batch Number: See Table Container ID: See Table

Inconsistency: IDC change from MD-848 to MD-836 based on RTR data

References:

1. RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual [P399A]
2. RPT-TRUW-12, AMWTP Waste Stream Designations [P393A]
3. RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements: AMWTP Baseline AK for Newly Generated Waste [P400A]
4. RPT-TRUW-13, Acceptable Knowledge Document for INEEL Stored Transuranic Waste – Mound Plant Waste [P418A]
5. BN304 Mound Debris Waste Stream Profile Package [P604A]
6. BN510.1 Supercompacted Debris Waste Stream Profile Package (P1030A)
7. RPT-TRUW-86, Identification of Pack Dates for Waste Potentially Included in the AMWTP Inventory (P1031A)
8. BN836 Mound Cemented Sludge, Waste Stream Profile Package (P646A)

Container Information:

Container No.	Batch No.	Historical ID	Pack Date	Historical Gross Weight (lb)	AMWTP Scale Weight (lb)	NCR No.	AKR Rev No.
10120214	RTR11-00434	IDMD740001485	01/15/75	639.34	648.27	68706	0

Background:

The Mound Laboratory (MD) waste containers in the table above were examined by RTR. The RTR operators recommended an IDC change from the historical IDC of MD-848, LSA< 100 nCi/g Non-combustible, to MD-836, High Level Sludge/Cement. The listed container was subjected to an AK evaluation of historical information including pack dates, gross weights, packaging, and hazardous waste numbers (HWNs).

Justification and/or Rationale:

AK indicates that IDC MD-848 waste includes non-line generated noncombustible wastes such as tools, pipe, equipment, metal, glass, concrete, plaster, bricks, and dirt. MD-848 may also contain limited amounts of combustible wastes (paper, rags, etc.). [1, 4] AK indicates that IDC MD-836 contains cemented sludge (sometimes called solidified sludge/liquid) generated from processing all low-level, alpha contaminated liquids wastes (shower water and soap, decontamination water, cooling water, some acids and caustics, etc.) from building floor drains, laundry and labs. The waste was generated by mixing approximately 40-gallons of dewatered sludge with 2 to 2 ½ bags of Portland cement resulting in a solidified waste. [1, 2, 4, 8] This AK information was used as the basis for the waste stream description for waste stream profile MD-836, Mound Cemented Sludge. [8]

IDC MD-848 is assigned the Waste Matrix Code (WMC) S5490 (Unknown/Other Heterogeneous Debris). [1] IDC MD-836 is assigned WMC S3121 (Wastewater Treatment Sludges) which more accurately reflects the physical form of the waste identified in the RTR.

The historical data are consistent with the recommended IDC change. The packaging identified by RTR in the listed containers is consistent with expected variation of the packaging configuration for MD-836 waste. The

Waste Stream or IDC: MD-848 AKR Number: AKR-12-745

Batch Number: See Table Container ID: See Table

Inconsistency: IDC change from MD-848 to MD-836 based on RTR data

historical weights and the AMWTP scale weights are not significantly different. The listed containers have pack dates within the generation date range for IDC MD-836 (January 1974 – June 1985). (8)

The HWNs assigned to MD-836 under direct-ship WSPF BN836 are D004 – D011, F001, F002, and F005. (8) Hazardous waste numbers (HWNs) assigned to IDC MD-848 in accordance with approved AMWTP Waste Stream Profile Form (WSPF) BN304 include: F001, F002, F005, F007, F009, D004 through D011, D022 and D029. (2, 4, 5) Hazardous waste numbers assigned to supercompacted waste (i.e., TRU waste) in accordance with approved WSPF BN510.1 include: F001, F002, F004, F005, F006, F007, F009, D004 through D011, D022, D0027, D028 and D029, D030, D034, D037, and D0043. (6)

Resolution and Corrective Actions:

This AKR supports the IDC change to IDC MD-836 for the listed container and can be used to close the above listed NCRs. No changes need to be made in the AK record.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

VE1
Date: 02-Oct-2012
Time: 12:04

Batch Type VE Boxline
Batch Report No. VEB12-00044
Batch Id VEB12-00044
Open Date 17-JAN-12 03:16:06
Close Date 17-JAN-12 08:53:24
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10431254	BN-508	0000263770	17-JAN-12 03:16:06	Original	P	SHIRLEY PEREZ
10431384	BN-508	0000263771	17-JAN-12 03:18:32	Original	P	SHIRLEY PEREZ
10431390	BN-508	0000263772	17-JAN-12 03:45:54	Original	P	REX BUSH
10431255	BN-508	0000263773	17-JAN-12 03:35:59	Original	P	JAMES YOUNG
10431392	BN-508	0000263774	17-JAN-12 04:09:18	Original	P	REX BUSH
10431256	BN-508	0000263775	17-JAN-12 03:58:44	Original	P	JAMES YOUNG
10431383	BN-508	0000263776	17-JAN-12 04:06:42	Original	P	JAMES YOUNG
10431382	BN-508	0000263778	17-JAN-12 04:43:55	Original	P	REX BUSH
10431377	BN-508	0000263779	17-JAN-12 05:07:37	Original	P	REX BUSH
10431391	BN-508	0000263781	17-JAN-12 04:54:49	Original	P	JAMES YOUNG
10431385	BN-508	0000263785	17-JAN-12 05:39:33	Original	P	REX BUSH
10431386	BN-508	0000263788	17-JAN-12 07:42:49	Original	P	HOWARD SHELL
10431449	BN-508	0000263789	17-JAN-12 07:59:02	Original	P	HOWARD SHELL
10431387	BN-508	0000263790	17-JAN-12 08:13:49	Original	P	JEFF MARTINEZ
10431380	BN-508	0000263791	17-JAN-12 08:12:37	Original	P	HOWARD SHELL
10431388	BN-508	0000263792	17-JAN-12 08:21:00	Original	P	JEFF MARTINEZ
10431378	BN-508	0000263793	17-JAN-12 08:29:00	Original	P	HOWARD SHELL
10431379	BN-508	0000263794	17-JAN-12 08:41:05	Original	P	HOWARD SHELL
10431450	BN-508	0000263795	17-JAN-12 08:42:00	Original	P	JEFF MARTINEZ
10431456	BN-508	0000263797	17-JAN-12 08:52:24	Original	P	JEFF MARTINEZ

**********Batch Comments**********

Written By	Date	Comment
CWASYLOW	17-JAN-12 15:51:55	Batch being validated to MP-TRUW-8.8.
CWASYLOW	17-JAN-12 15:51:55	ITR review of the batch.
CWASYLOW	17-JAN-12 15:51:55	No Rework required.
CWASYLOW	17-JAN-12 15:51:55	No NCR's associated to the batch
CWASYLOW	17-JAN-12 15:52:15	Batch promoted to SPM
KBURNSIDE	18-JAN-12 07:27:47	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2163412	CWASYLOW	17-JAN-2012 15:52:15	Batch promoted to SPM
2163855	KBURNSIDE	18-JAN-2012 07:27:47	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 12:44

Batch Id VEB12-00044 **Container Id** 10431254 **Analysis Id** 0000263770

VE Date 17-JAN-12 03:16:06 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 154.35 lbs

Closure Date 17-JAN-12 03:16:06 **Procedure Id** INST-FOI-17 **Net Weight** 128.35 lbs

Container Type 55 **Revision** 23

Operator 1 SHIRLEY PEREZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 GUY MATLOCK **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431254 **Analysis Id** 0000263770

Visual Exam Comment The remaining waste by weight percent is Iron Base Metal/Alloy consisting of scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Plastic	6.000	PINTS	0.937	5.620

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	121.760
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2162953	SPEREZ	17-JAN-12 03:16:06	
2162954	GMATLOCK	17-JAN-12 03:16:08	

Batch Id VEB12-00044 **Container Id** 10431384 **Analysis Id** 0000263771

VE Date 17-JAN-12 03:18:32 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 17-JAN-12 03:18:32 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 23

Operator 1 SHIRLEY PEREZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 GUY MATLOCK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 25 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431384 **Analysis Id** 0000263771

Visual Exam Comment The remaining waste by weight percent is Iron Base Metal/Alloy consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	66.610
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162955	SPEREZ	17-JAN-12 03:18:32	
2162956	GMATLOCK	17-JAN-12 03:18:32	

Batch Id VEB12-00044 **Container Id** 10431390 **Analysis Id** 0000263772

VE Date 17-JAN-12 03:45:54 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 17-JAN-12 03:45:54 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 23

Operator 1 REX BUSH **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 TIM OZBURN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 25 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431390 **Analysis Id** 0000263772

Visual Exam Comment Remaining waste by weight percent is 100% plastic consisting of drum liners, Bags, and tape.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Iron	1.000	PINTS	7.807	7.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	57.830
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162959	RBUSH1	17-JAN-12 03:45:54	
2162960	TOZBURN	17-JAN-12 03:45:57	

Batch Id VEB12-00044 **Container Id** 10431255 **Analysis Id** 0000263773

VE Date 17-JAN-12 03:35:59 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 141.12 lbs

Closure Date 17-JAN-12 03:35:59 **Procedure Id** INST-FOI-17 **Net Weight** 115.12 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CHARLES WOOD **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431255 **Analysis Id** 0000263773

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	115.120
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162957	JYOUNG	17-JAN-12 03:35:59	
2162958	CWOOD	17-JAN-12 03:36:01	

Batch Id VEB12-00044 **Container Id** 10431392 **Analysis Id** 0000263774

VE Date 17-JAN-12 04:09:18 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 209.48 lbs

Closure Date 17-JAN-12 04:09:18 **Procedure Id** INST-FOI-17 **Net Weight** 183.48 lbs

Container Type 55 **Revision** 23

Operator 1 REX BUSH **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 TIM OZBURN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431392 **Analysis Id** 0000263774

Visual Exam Comment The remaining waste by weight percent is Iron Base Metal/Alloy consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Wood	6.000	PINTS	0.702	4.210
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	175.485
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.180
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162965	RBUSH1	17-JAN-12 04:09:18	
2162966	TOZBURN	17-JAN-12 04:09:18	

Batch Id VEB12-00044 **Container Id** 10431256 **Analysis Id** 0000263775

VE Date 17-JAN-12 03:58:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 125.69 lbs

Closure Date 17-JAN-12 03:58:44 **Procedure Id** INST-FOI-17 **Net Weight** 99.69 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CHARLES WOOD **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431256 **Analysis Id** 0000263775

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Rubber	1.000	PINTS	1.554	1.550
Plastic	6.000	PINTS	0.937	5.620

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	89.605
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162961	JYOUNG	17-JAN-12 03:58:45	
2162962	CWOOD	17-JAN-12 03:58:47	

Batch Id VEB12-00044 **Container Id** 10431383 **Analysis Id** 0000263776

VE Date 17-JAN-12 04:06:42 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 152.15 lbs

Closure Date 17-JAN-12 04:06:42 **Procedure Id** INST-FOI-17 **Net Weight** 126.15 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CHARLES WOOD **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431383 **Analysis Id** 0000263776

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Paper	3.000	PINTS	0.969	2.910
Rubber	1.000	PINTS	1.554	1.550
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	117.095
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	2.910
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162963	JYOUNG	17-JAN-12 04:06:43	
2162964	CWOOD	17-JAN-12 04:06:45	

Batch Id VEB12-00044 **Container Id** 10431382 **Analysis Id** 0000263778

VE Date 17-JAN-12 04:43:55 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 17-JAN-12 04:43:55 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 23

Operator 1 REX BUSH **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 TIM OZBURN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431382 **Analysis Id** 0000263778

Visual Exam Comment The remaining waste by weight percent is 100% plastic consisting of bags, tape, PPE, and drum liners.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	5.000	PINTS	0.969	4.850
Rubber	1.000	PINTS	1.554	1.550
Iron	1.000	PINTS	7.807	7.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.850
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	52.400
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2162984	RBUSH1	17-JAN-12 04:43:56	
2162985	TOZBURN	17-JAN-12 04:43:58	

Batch Id VEB12-00044 **Container Id** 10431377 **Analysis Id** 0000263779

VE Date 17-JAN-12 05:07:37 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 156.56 lbs

Closure Date 17-JAN-12 05:07:37 **Procedure Id** INST-FOI-17 **Net Weight** 130.56 lbs

Container Type 55 **Revision** 23

Operator 1 REX BUSH **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 TIM OZBURN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431377 **Analysis Id** 0000263779

Visual Exam Comment The remaining waste by weight percent is Iron Base Metal/Alloy consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Wood	2.000	PINTS	0.702	1.400
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	125.345
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.340
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162990	RBUSH1	17-JAN-12 05:07:37	
2162991	TOZBURN	17-JAN-12 05:07:40	

Batch Id VEB12-00044 **Container Id** 10431391 **Analysis Id** 0000263781

VE Date 17-JAN-12 04:54:49 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 lbs

Closure Date 17-JAN-12 04:54:49 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 lbs

Container Type 55 **Revision** 23

Operator 1 JAMES YOUNG **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 CHARLES WOOD **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431391 **Analysis Id** 0000263781

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Paper	2.000	PINTS	0.969	1.940
Plastic	8.000	PINTS	0.937	7.500

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	122.900
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	0.000	1.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2162988	JYOUNG	17-JAN-12 04:54:49	
2162989	CWOOD	17-JAN-12 04:54:51	

Batch Id VEB12-00044 **Container Id** 10431385 **Analysis Id** 0000263785

VE Date 17-JAN-12 05:39:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 224.91 lbs

Closure Date 17-JAN-12 05:39:33 **Procedure Id** INST-FOI-17 **Net Weight** 198.91 lbs

Container Type 55 **Revision** 23

Operator 1 REX BUSH **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 TIM OZBURN **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431385 **Analysis Id** 0000263785

Visual Exam Comment The remaining waste by weight percent is Iron Base Metal/Alloy consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	2.000	PINTS	0.702	1.400
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	195.640
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.400
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163011	RBUSH1	17-JAN-12 05:39:33	
2163012	TOZBURN	17-JAN-12 05:39:35	

Batch Id VEB12-00044 **Container Id** 10431386 **Analysis Id** 0000263788

VE Date 17-JAN-12 07:42:49 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 61.74 lbs

Closure Date 17-JAN-12 07:42:49 **Procedure Id** INST-FOI-17 **Net Weight** 35.74 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 68 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431386 **Analysis Id** 0000263788

Visual Exam Comment The remaining waste by weight pecent is plastic consisting of bags and liners.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	4.000	PINTS	0.702	2.810
Cardboard	1.000	PINTS	0.833	0.830

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.640
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	32.100
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163046	HSHELL	17-JAN-12 07:42:50	
2163047	MREIDER	17-JAN-12 07:42:53	

Batch Id VEB12-00044 **Container Id** 10431449 **Analysis Id** 0000263789

VE Date 17-JAN-12 07:59:02 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 152.15 lbs

Closure Date 17-JAN-12 07:59:02 **Procedure Id** INST-FOI-17 **Net Weight** 126.15 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431449 **Analysis Id** 0000263789

Visual Exam Comment The remaining waste by weight pecent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	125.205
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163055	HSHELL	17-JAN-12 07:59:02	
2163056	MREIDER	17-JAN-12 07:59:04	

Batch Id VEB12-00044 **Container Id** 10431387 **Analysis Id** 0000263790

VE Date 17-JAN-12 08:13:49 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 lbs

Closure Date 17-JAN-12 08:13:49 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 lbs

Container Type 55 **Revision** 23

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431387 **Analysis Id** 0000263790

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	3.000	PINTS	0.833	2.500
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	64.770
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.500
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163064	JMARTINEZ	17-JAN-12 08:13:49	
2163065	JBAILEY	17-JAN-12 08:13:51	

Batch Id VEB12-00044 **Container Id** 10431380 **Analysis Id** 0000263791

VE Date 17-JAN-12 08:12:37 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 17-JAN-12 08:12:37 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431380 **Analysis Id** 0000263791

Visual Exam Comment The remaining waste by weight pecent is cellulosicis consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	1.000	PINTS	7.807	7.810
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	95.345
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163062	HSHELL	17-JAN-12 08:12:37	
2163063	MREIDER	17-JAN-12 08:12:40	

Batch Id VEB12-00044 **Container Id** 10431388 **Analysis Id** 0000263792

VE Date 17-JAN-12 08:21:00 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 lbs

Closure Date 17-JAN-12 08:21:00 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 lbs

Container Type 55 **Revision** 23

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431388 **Analysis Id** 0000263792

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	4.000	PINTS	0.833	3.330
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	64.880
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.330
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163067	JMARTINEZ	17-JAN-12 08:21:00	
2163068	JBAILEY	17-JAN-12 08:21:04	

Batch Id VEB12-00044 **Container Id** 10431378 **Analysis Id** 0000263793

VE Date 17-JAN-12 08:29:00 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 202.86 lbs

Closure Date 17-JAN-12 08:29:00 **Procedure Id** INST-FOI-17 **Net Weight** 176.86 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 72 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431378 **Analysis Id** 0000263793

Visual Exam Comment The remaining waste by weight pecent is cellulosicis consisting of wood debris.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	1.000	PINTS	7.807	7.810
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	167.180
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163090	HSHELL	17-JAN-12 08:29:00	
2163091	MREIDER	17-JAN-12 08:29:03	

Batch Id VEB12-00044 **Container Id** 10431379 **Analysis Id** 0000263794

VE Date 17-JAN-12 08:41:05 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 90.41 lbs

Closure Date 17-JAN-12 08:41:05 **Procedure Id** INST-FOI-17 **Net Weight** 64.41 lbs

Container Type 55 **Revision** 23

Operator 1 HOWARD SHELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MIKE REIDER **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 62 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431379 **Analysis Id** 0000263794

Visual Exam Comment The remaining waste by weight pecent is cellulosicis consisting of wood debris.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10075063	destroyed @ 676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	0.500	PINTS	7.807	3.900
Plastic	1.000	PINTS	0.937	0.940

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.900
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	59.565
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2163100	HSHELL	17-JAN-12 08:41:05	
2163101	MREIDER	17-JAN-12 08:41:07	

Batch Id VEB12-00044 **Container Id** 10431450 **Analysis Id** 0000263795

VE Date 17-JAN-12 08:42:00 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 123.48 lbs

Closure Date 17-JAN-12 08:42:00 **Procedure Id** INST-FOI-17 **Net Weight** 97.48 lbs

Container Type 55 **Revision** 23

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 66 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431450 **Analysis Id** 0000263795

Visual Exam Comment The remaining waste by weight percent is scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	2.000	PINTS	0.833	1.670
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	93.940
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.670
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2163102	JMARTINEZ	17-JAN-12 08:42:01	
2163103	JBAILEY	17-JAN-12 08:42:03	

Batch Id VEB12-00044 **Container Id** 10431456 **Analysis Id** 0000263797

VE Date 17-JAN-12 08:52:24 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 17-JAN-12 08:52:24 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 23

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 64 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00044 **Container Id** 10431456 **Analysis Id** 0000263797

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10430536	destroyed @ 676- SHD/1	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	3.000	PINTS	0.420	1.260
Cardboard	1.000	PINTS	0.833	0.830

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	102.005
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.260
Cellulosics	0.000	0.830
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2163110	JMARTINEZ	17-JAN-12 08:52:24	
2163111	JBAILEY	17-JAN-12 08:52:26	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP
Checklist Report

Date: 02-Oct-2012
Time: 13:03

Batch Id VEB12-00044 **Open Date** 17-JAN-12 **Close Date** 17-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer
Approval Date 17-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		Analytical Balance Calibration Check sheet was not used. All weights were estimated. Audio/Video Recording References are not required.
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not required for VEB batches.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not required for VEB batches.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		The Initial IDC was assigned to containers during this VEB process.
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		Liner Puncture Status, Packaging Configuration, Filter data and Liner Hole diameter are not applicable for this VEB batch type.
16. Have filters been installed or removed from drum as	N/A		Containers are not equipped with Filters.

Batch Id VEB12-00044 **Open Date** 17-JAN-12 **Close Date** 17-JAN-12

Reviewer CHAD WASYLOW **Approval Level** Independent Technical Reviewer
Approval Date 17-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
recorded in WTS, as applicable?			
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not required for VEB batches.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not required for VEB batches.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not required for VEB batches.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	N/A		No NCRs.
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No operator rework.

Batch Id VEB12-00044 **Open Date** 17-JAN-12 **Close Date** 17-JAN-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 18-JAN-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	None identified.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	None identified.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00044 **Open Date** 17-JAN-12 **Close Date** 17-JAN-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2163855	KBURNSIDE	18-JAN-12	SPM	SPM reviewed and approved.
2163412	CWASYLOW	17-JAN-12	ITR	Batch promoted to SPM

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 11:01

Batch Id	VEB12-00044	**Container Id**	10431377
Batch Id	VEB12-00044	**Container Id**	10431384
Batch Id	VEB12-00044	**Container Id**	10431383
Batch Id	VEB12-00044	**Container Id**	10431391
Batch Id	VEB12-00044	**Container Id**	10431380
Batch Id	VEB12-00044	**Container Id**	10431255
Batch Id	VEB12-00044	**Container Id**	10431256
Batch Id	VEB12-00044	**Container Id**	10431390
Batch Id	VEB12-00044	**Container Id**	10431385
Batch Id	VEB12-00044	**Container Id**	10431456
Batch Id	VEB12-00044	**Container Id**	10431254
Batch Id	VEB12-00044	**Container Id**	10431382
Batch Id	VEB12-00044	**Container Id**	10431378
Batch Id	VEB12-00044	**Container Id**	10431449
Batch Id	VEB12-00044	**Container Id**	10431388
Batch Id	VEB12-00044	**Container Id**	10431379
Batch Id	VEB12-00044	**Container Id**	10431450
Batch Id	VEB12-00044	**Container Id**	10431392
Batch Id	VEB12-00044	**Container Id**	10431386
Batch Id	VEB12-00044	**Container Id**	10431387

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Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 11:00

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00044		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 16:04

Batch Type Visual Exam Newly Generated Waste Closure
Batch Report No. VNC12-00156
Batch Id VNC12-00156
Open Date 05-SEP-12 16:08:45
Close Date 05-SEP-12 16:09:01
Batch Status AP
Test Facility Idaho AMWTP

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10458432	BN-500	0000284977	05-SEP-12 16:08:45	Original	P	GLADE GILCHRIST

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Advanced Mixed Waste Treatment Project

Batch Report Coversheet

Time: 16:04

**********Batch Comments**********

Written By	Date	Comment
GGILCHRIST	05-SEP-12 16:09:02	Esigned.
RWALKER	19-SEP-12 13:58:00	Container ID 10458432 Analysis ID 0000284977 the operators entered the incorrect date in the Closure Visual Exam Comment section as 8/05/12. The VE Date is 05-Sep-2012. There is no rework required for this mistake.
RWALKER	19-SEP-12 13:58:00	Package ID 10458437 Analysis Id 0000284975 the operators entered the incorrect date in the General Visual Exam Comment section as 8/05/12. The VE Date is 05-Sep-2012. There is no rework required for this mistake.
RWALKER	19-SEP-12 13:58:00	Promoted batch to SPM level.
RWALKER	19-SEP-12 13:58:00	This batch was validated electronically per MP-TRUW-8.8.
RWALKER	19-SEP-12 13:58:00	There was no rework for this batch.
SCANIFF	24-SEP-12 12:12:05	Promote.

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Batch Report Coversheet

Time: 16:04

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2329175	GGILCHRIST	05-SEP-2012 16:09:02	
2340301	RWALKER	19-SEP-2012 13:58:00	Promoted batch to SPM level.
2345088	SCANIFF	24-SEP-2012 12:12:05	Promote.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

VE Newly Generated Waste Closure Report

Time: 16:04

Batch Id VNC12-00156 **Container Id** 10458432 **Analysis Id** 0000284977

Analysis Status Pass **Testing Facility** Idaho AMWTP

SAA Location 633, SF **VE Date** 05-SEP-2012 16:08 **IDC** BN-500

Equipment Id FAC-VNC

Procedure Id INST-FOI-17 **Revision** 25 **VE Weight in Lbs.** 119.07 **Net Weight in Lbs.** 60.07

Container Type 425

Operator 1 GLADE GILCHRIST **Operator 2** BRETT CAPELL

General

Rigid Liner Present? No **Liner Punctured?** Yes **Liner Type** NO LINER

Layers Of Confinement 3 **Fill Factor (In %)** 90 **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints

Containerized Liquid 0 pints

Internal Container with Liquid 0 pints

Other Liquids 0 pints

Total Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid No

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Mercury Contaminated>1000PPM	No	
Beryllium Contaminants Present?	No	
Explosives Present?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Pyrophorics Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Wet Cell Batteries Present?	No	
Hazardous Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

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VE Newly Generated Waste Closure Report

Time: 16:04

Batch Id VNC12-00156 **Container Id** 10458432 **Analysis Id** 0000284977

Waste Summary

Package ID	Material Item	Qty	Unit	Unit Wt	Est. Item Wt Lbs
10458432	Container tare weight	1.00	Each	59.00	59.00
10458437		1.00	Each	60.07	60.07
	Estimated Total Weight--->				119.07

Waste Parameters

Waste Parameter	Weight Lbs
Aluminum-based Metals/Alloys	3.12
Other metals	0.00
Plastic (Waste Materials)	19.87
Organic matrix	0.00
Steel (packaging materials)	59.00
Other Inorganic Materials	0.00
Soils/gravel	0.00
Inorganic matrix	0.00
Plastic (packaging materials)	0.00
Iron-based Metals/Alloys	27.75
Rubber	4.18
Cellulosics Packaging	0.00
Cellulosics	5.15
Total Weight--->	119.07

IDC Verification

Is IDC correct? Yes **Recommended IDC**

IDC Change Reason

Closure Method Twisted and Taped **Waste Matrix Code** S5490

Closure Date 05-SEP-12 16:08:45

Pack. Material Tare Wt. lbs 59

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	59.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000
Total--->	100.00	59.00

Container Filters

WDS Filter Code	Event	Event Date	Entered By	Remove	Other Filter Model	Exclude
NF19SD	VE NGW Closure	05-Sep-2012	GGILCHRIST	N		

Filter Comment

AMWTP
Advanced Mixed Waste Treatment Project

VE Newly Generated Waste Closure Report

Time: 16:04

Batch Id VNC12-00156 **Container Id** 10458432 **Analysis Id** 0000284977

Visual Exam Comment The remaining weight by weight percent is 100% plastic consisting of plastic bags, PPE, and Tape. This waste was generated from a HEPA filter changout of AFU-760-202 in Bldg. 675 Room 212F. GHG 8/05/12.

E-Signature History

Esig Approval I	User	Esig Date	Comment
2329174	BCAPELL	05-SEP-2012 16:08:50	
2329173	GGILCHRIST	05-SEP-2012 16:08:48	

------End of VE Newly Generated Waste Closure Report-----

AMWTP
Advanced Mixed Waste Treatment Project

VE Newly Generated Waste Package Report

Time: 16:04

Batch Id VNC12-00156

Analysis ID 0000284975 **Package ID** 10458437 **SAA Container ID** 10458432

VE Date 05-SEP-2012 16:04 **Package Wt.** 60.07 Lbs **Waste Activity** Maintenance Activity

Operator 1 GLADE GILCHRIST **Equipment Id** FAC-VNC **Procedure Id** INST-FOI-17

Operator 2 BRETT CAPELL **Revision** 25

General

Closure Method Twisted and Taped **IDC** BN-500 **IDC Desc** Newly Generated Debris (not BN-508)

Visual Exam Comment The remaining weight by weight percent is 100% plastic consisting of plastic bags, PPE, and Tape. This waste was generated from a HEPA filter changout of AFU-760-202 in Bldg. 675 Room 212F. GHG 8/05/12.

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Internal Container with Liquid 0 pints **Total Liquid** 0 pints

Containerized Liquid pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	Comment
Prohibited Compressed Gas Present?	No	
Mercury Contaminated>1000PPM	No	
Explosives Present?	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Pyrophorics Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Wet Cell Batteries Present?	No	
Beryllium Contaminants Present?	No	
Hazardous Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

Source Container

Is there a Source Container? No

Source Container ID	Location	IDC

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Advanced Mixed Waste Treatment Project

VE Newly Generated Waste Package Report

Time: 16:04

Batch Id VNC12-00156

Analysis ID 0000284975 **Package ID** 10458437

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic bag for waste	3.000	EACH	0.250	0.750
Volks Cylindrical HEPA Filter	1.000	EACH	37.000	37.000

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.500	PINTS	0.969	1.450
Rubber	1.500	PINTS	1.554	2.330
Aluminum	1.000	PINTS	3.123	3.120

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	27.750
Aluminum-based Metals/Alloys	0.000	3.120
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.150
Rubber	0.000	4.180
Plastic (Waste Materials)	100.000	19.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	0.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000
Total Weight --->		60.070

ESignature

Esig Id	User Id	Date	Comment
2329168	BCAPELL	05-SEP-2012 16:04:14	
2329167	GGILCHRIST	05-SEP-2012 16:04:12	

------End of VE Newly Generated Waste Package Report-----

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:05

Batch Id VNC12-00156 **Open Date** 05-SEP-12 **Close Date** 05-SEP-12

Reviewer REED WALKER **Approval Level** Independent Technical Reviewer

Approval Date 19-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	Yes		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:05

Batch Id VNC12-00156 **Open Date** 05-SEP-12 **Close Date** 05-SEP-12

Reviewer REED WALKER **Approval Level** Independent Technical Reviewer

Approval Date 19-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		No NCRs.
26. Were the rework requirements clearly identified in WTS or on the BDR?	No		No rework.

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:05

Batch Id VNC12-00156 **Open Date** 05-SEP-12 **Close Date** 05-SEP-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 24-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC, WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VNC12-00156 **Open Date** 05-SEP-12 **Close Date** 05-SEP-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 24-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

AMWTP
Advanced Mixed Waste Treatment Project

Checklist Report

Time: 16:05

Batch Id VNC12-00156 **Open Date** 05-SEP-12 **Close Date** 05-SEP-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2345088	SCANIFF	24-SEP-12	SPM	Promote.
2340301	RWALKER	19-SEP-12	ITR	Promoted batch to SPM level.

AMWTP
Advanced Mixed Waste Treatment Project

Non-Conformance Report

Time: 16:05

*****Batch NCR(s)*****

Batch Type	VNC	Batch ID	VNC12-00156		
Trackwise Number		Status		Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

Time: 16:05

Scale Check Event Report

Batch Id VNC12-00156 **Container Id** 10458432

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 02-Oct-2012

Time: 13:25

Batch Type VE Boxline

Batch Report No. VEB12-00200

Batch Id VEB12-00200

Open Date 25-MAR-12 09:33:21

Close Date 25-MAR-12 15:48:20

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10436209	BN-508	0000268066	25-MAR-12 09:33:21	Original	P	PAUL HURLEY
10436208	BN-508	0000268067	25-MAR-12 09:39:26	Original	P	AARON FENN
10436269	BN-508	0000268068	25-MAR-12 09:42:57	Original	P	SARA FELLOWS
10436281	BN-508	0000268069	25-MAR-12 10:00:04	Original	P	SARA FELLOWS
10436272	BN-508	0000268071	25-MAR-12 11:02:46	Original	P	PAUL HURLEY
10436280	BN-508	0000268072	25-MAR-12 11:03:07	Original	P	SARA FELLOWS
10435988	BN-508	0000268073	25-MAR-12 11:19:51	Original	P	SARA FELLOWS
10436279	BN-508	0000268074	25-MAR-12 11:14:46	Original	P	PAUL HURLEY
10436268	BN-508	0000268076	25-MAR-12 11:25:33	Original	P	PAUL HURLEY
10436271	BN-508	0000268080	25-MAR-12 12:58:46	Original	P	SARA FELLOWS
10436247	BN-508	0000268082	25-MAR-12 13:14:59	Original	P	SARA FELLOWS
10435756	BN-508	0000268086	25-MAR-12 13:44:46	Original	P	SARA FELLOWS
10436275	BN-508	0000268087	25-MAR-12 13:52:36	Original	P	SARA FELLOWS
10436265	BN-508	0000268088	25-MAR-12 14:03:33	Original	P	SARA FELLOWS
10436267	BN-508	0000268092	25-MAR-12 14:48:40	Original	P	PAUL HURLEY
10436276	BN-508	0000268093	25-MAR-12 14:50:22	Original	P	SARA FELLOWS
10436264	BN-508	0000268095	25-MAR-12 14:59:47	Original	P	SARA FELLOWS
10436266	BN-508	0000268096	25-MAR-12 15:09:55	Original	P	PAUL HURLEY
10436278	BN-508	0000268097	25-MAR-12 15:35:33	Original	P	SARA FELLOWS
10436277	BN-508	0000268098	25-MAR-12 15:47:21	Original	P	SARA FELLOWS

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
RBTHOMPSON	26-MAR-12 07:48:35	Initial ITR review of Batch.
RBTHOMPSON	26-MAR-12 09:29:52	ITR review complete.
RBTHOMPSON	26-MAR-12 09:29:52	Promote to SPM.
SCANIFF	26-MAR-12 12:59:27	Promote.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 02-Oct-2012

Time: 13:25

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2197637	RBTHOMPSON	26-MAR-2012 09:29:52	Promote to SPM.
2197873	SCANIFF	26-MAR-2012 12:59:27	Promote.

***** End of Batch Report Coversheet Report *****

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 15:37

Batch Id VEB12-00200 **Container Id** 10436209 **Analysis Id** 0000268066

VE Date 25-MAR-12 09:33:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 156.56 lbs

Closure Date 25-MAR-12 09:33:21 **Procedure Id** INST-FOI-17 **Net Weight** 130.56 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 40 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436209 **Analysis Id** 0000268066

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of cardboard paper and kemwipes.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434022	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	2.000	PINTS	1.125	2.250
Rubber	1.000	PINTS	1.554	1.550
Iron	1.000	PINTS	7.807	7.810
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.250
Cellulosics	100.000	118.005
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196898	PHURLEY	25-MAR-12 09:33:21	
2196899	RMINTON	25-MAR-12 09:33:23	

Batch Id VEB12-00200 **Container Id** 10436208 **Analysis Id** 0000268067

VE Date 25-MAR-12 09:39:26 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs

Closure Date 25-MAR-12 09:39:26 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs

Container Type 55 **Revision** 24

Operator 1 AARON FENN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 DARREN BUTTE **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436208 **Analysis Id** 0000268067

Visual Exam Comment Remaining waste by weight by weight percent is plastic consisting of sheeting and bags.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10435285	destroyed @ 676- BXI/16	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	4.000	PINTS	0.969	3.880
Rubber	4.000	PINTS	1.554	6.220
Iron	0.500	PINTS	7.807	3.900

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.900
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.880
Rubber	0.000	6.220
Plastic (Waste Materials)	100.000	74.660
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196900	AFENN	25-MAR-12 09:39:26	
2196901	DBUTTE	25-MAR-12 09:39:27	

Batch Id VEB12-00200 **Container Id** 10436269 **Analysis Id** 0000268068

VE Date 25-MAR-12 09:42:57 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 123.48 lbs

Closure Date 25-MAR-12 09:42:57 **Procedure Id** INST-FOI-17 **Net Weight** 97.48 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436269 **Analysis Id** 0000268068

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of plywood and wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10433766	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	97.480
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196903	SFELLOWS	25-MAR-12 09:42:57	
2196904	SHIGH	25-MAR-12 09:42:58	

Batch Id VEB12-00200 **Container Id** 10436281 **Analysis Id** 0000268069

VE Date 25-MAR-12 10:00:04 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 72.77 lbs

Closure Date 25-MAR-12 10:00:04 **Procedure Id** INST-FOI-17 **Net Weight** 46.77 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436281 **Analysis Id** 0000268069

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of plywood and wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10433766	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	46.765
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196908	SFELLOWS	25-MAR-12 10:00:05	
2196909	SHIGH	25-MAR-12 10:00:07	

Batch Id VEB12-00200 **Container Id** 10436272 **Analysis Id** 0000268071

VE Date 25-MAR-12 11:02:46 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 25-MAR-12 11:02:46 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 78 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00200 **Container Id** 10436272 **Analysis Id** 0000268071

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of scrap wood.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10225179	destroyed @ 676- BXI/16	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	67.265
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2196919	PHURLEY	25-MAR-12 11:02:46	
2196920	RMINTON	25-MAR-12 11:02:48	

Batch Id VEB12-00200 **Container Id** 10436280 **Analysis Id** 0000268072

VE Date 25-MAR-12 11:03:07 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 160.97 lbs

Closure Date 25-MAR-12 11:03:07 **Procedure Id** INST-FOI-17 **Net Weight** 134.97 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436280 **Analysis Id** 0000268072

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10433766	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	134.965
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196921	SFELLOWS	25-MAR-12 11:03:07	
2196922	SHIGH	25-MAR-12 11:03:07	

Batch Id VEB12-00200 **Container Id** 10435988 **Analysis Id** 0000268073

VE Date 25-MAR-12 11:19:51 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs

Closure Date 25-MAR-12 11:19:51 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10435988 **Analysis Id** 0000268073

Visual Exam Comment Remaining waste by weight percent is plastic (Waste Materials) consisting of bags, sheeting, tape and PPE.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10433766	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	6.000	PINTS	0.969	5.810
Rubber	3.000	PINTS	1.554	4.660

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.810
Rubber	0.000	4.660
Plastic (Waste Materials)	100.000	75.985
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196926	SFELLOWS	25-MAR-12 11:19:51	
2196927	SHIGH	25-MAR-12 11:19:53	

Batch Id VEB12-00200 **Container Id** 10436279 **Analysis Id** 0000268074

VE Date 25-MAR-12 11:14:46 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 25-MAR-12 11:14:46 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 81 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436279 **Analysis Id** 0000268074

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of scrap wood.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10225179	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	68.815
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196923	PHURLEY	25-MAR-12 11:14:46	
2196924	RMINTON	25-MAR-12 11:14:49	

Batch Id VEB12-00200 **Container Id** 10436268 **Analysis Id** 0000268076

VE Date 25-MAR-12 11:25:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs

Closure Date 25-MAR-12 11:25:33 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 82 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436268 **Analysis Id** 0000268076

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of scrap wood.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10225179	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	86.455
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196928	PHURLEY	25-MAR-12 11:25:34	
2196929	RMINTON	25-MAR-12 11:25:36	

Batch Id VEB12-00200 **Container Id** 10436271 **Analysis Id** 0000268080

VE Date 25-MAR-12 12:58:46 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 167.58 lbs

Closure Date 25-MAR-12 12:58:46 **Procedure Id** INST-FOI-17 **Net Weight** 141.58 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436271 **Analysis Id** 0000268080

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	139.640
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196968	SFELLOWS	25-MAR-12 12:58:46	
2196969	SHIGH	25-MAR-12 12:58:48	

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 02-Oct-2012

Time: 15:37

Batch Id VEB12-00200 **Container Id** 10436247 **Analysis Id** 0000268082

VE Date 25-MAR-12 13:14:59 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 lbs

Closure Date 25-MAR-12 13:14:59 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436247 **Analysis Id** 0000268082

Visual Exam Comment Remaining waste by weight percent is plastic (Waste Materials) consisting of bags, sheeting, tape and PPE.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	4.000	PINTS	0.420	1.680
Paper	8.000	PINTS	0.969	7.750
Rubber	1.000	PINTS	1.554	1.550

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	1.680
Cellulosics	0.000	7.750
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	73.270
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196971	SFELLOWS	25-MAR-12 13:14:59	
2196972	SHIGH	25-MAR-12 13:15:02	

Batch Id VEB12-00200 **Container Id** 10435756 **Analysis Id** 0000268086

VE Date 25-MAR-12 13:44:46 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 25-MAR-12 13:44:46 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10435756 **Analysis Id** 0000268086

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Rubber	1.000	PINTS	1.554	1.550
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	99.705
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196988	SFELLOWS	25-MAR-12 13:44:47	
2196989	SHIGH	25-MAR-12 13:44:48	

Batch Id VEB12-00200 **Container Id** 10436275 **Analysis Id** 0000268087

VE Date 25-MAR-12 13:52:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 105.84 **lbs**

Closure Date 25-MAR-12 13:52:36 **Procedure Id** INST-FOI-17 **Net Weight** 79.84 **lbs**

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---*General*---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---*Liquids*---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---*Contents*---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---*IDC Verification*---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436275 **Analysis Id** 0000268087

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	5.000	PINTS	1.554	7.770
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	68.260
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	7.770
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2196994	SFELLOWS	25-MAR-12 13:52:36	
2196996	SHIGH	25-MAR-12 13:52:38	

Batch Id VEB12-00200 **Container Id** 10436265 **Analysis Id** 0000268088

VE Date 25-MAR-12 14:03:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 88.20 lbs

Closure Date 25-MAR-12 14:03:33 **Procedure Id** INST-FOI-17 **Net Weight** 62.20 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436265 **Analysis Id** 0000268088

Visual Exam Comment Remaining waste by weight percent is Rubber, consisting of gloves.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Paper	2.000	PINTS	0.969	1.940
Iron	0.250	PINTS	7.807	1.950
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.950
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	0.000	1.940
Rubber	100.000	56.020
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197031	SFELLOWS	25-MAR-12 14:03:33	
2197032	SHIGH	25-MAR-12 14:03:35	

Batch Id VEB12-00200 **Container Id** 10436267 **Analysis Id** 0000268092

VE Date 25-MAR-12 14:48:40 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 108.05 lbs

Closure Date 25-MAR-12 14:48:40 **Procedure Id** INST-FOI-17 **Net Weight** 82.05 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 77 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436267 **Analysis Id** 0000268092

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of scrap wood.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10225179	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	82.045
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197073	PHURLEY	25-MAR-12 14:48:41	
2197074	RMINTON	25-MAR-12 14:48:43	

Batch Id VEB12-00200 **Container Id** 10436276 **Analysis Id** 0000268093

VE Date 25-MAR-12 14:50:22 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs

Closure Date 25-MAR-12 14:50:22 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436276 **Analysis Id** 0000268093

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Plastic	5.000	PINTS	0.937	4.690

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	78.855
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.690
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197075	SFELLOWS	25-MAR-12 14:50:22	
2197076	SHIGH	25-MAR-12 14:50:24	

Batch Id VEB12-00200 **Container Id** 10436264 **Analysis Id** 0000268095

VE Date 25-MAR-12 14:59:47 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 145.53 lbs

Closure Date 25-MAR-12 14:59:47 **Procedure Id** INST-FOI-17 **Net Weight** 119.53 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00200 **Container Id** 10436264 **Analysis Id** 0000268095

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Paper	3.000	PINTS	0.969	2.910
Rubber	1.000	PINTS	1.554	1.550
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	111.840
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	0.000	2.910
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197082	SFELLOWS	25-MAR-12 14:59:47	
2197083	SHIGH	25-MAR-12 14:59:47	

Batch Id VEB12-00200 **Container Id** 10436266 **Analysis Id** 0000268096

VE Date 25-MAR-12 15:09:55 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 94.82 lbs

Closure Date 25-MAR-12 15:09:55 **Procedure Id** INST-FOI-17 **Net Weight** 68.82 lbs

Container Type 55 **Revision** 24

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 ROBERT MINTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 76 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436266 **Analysis Id** 0000268096

Visual Exam Comment remaining waste by weight percent is 100% cellulosics consisting of scrap wood.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10225179	destroyed @ 676- BXI/16	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	68.815
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197085	PHURLEY	25-MAR-12 15:09:55	
2197086	RMINTON	25-MAR-12 15:09:56	

Batch Id VEB12-00200 **Container Id** 10436278 **Analysis Id** 0000268097

VE Date 25-MAR-12 15:35:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 lbs

Closure Date 25-MAR-12 15:35:33 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00200 **Container Id** 10436278 **Analysis Id** 0000268097

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	8.000	PINTS	0.937	7.500

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	96.595
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	7.500
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197093	SFELLOWS	25-MAR-12 15:35:33	
2197095	SHIGH	25-MAR-12 15:35:35	

Batch Id VEB12-00200 **Container Id** 10436277 **Analysis Id** 0000268098

VE Date 25-MAR-12 15:47:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 165.38 lbs

Closure Date 25-MAR-12 15:47:21 **Procedure Id** INST-FOI-17 **Net Weight** 139.38 lbs

Container Type 55 **Revision** 24

Operator 1 SARA FELLOWS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHANE HIGH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00200 **Container Id** 10436277 **Analysis Id** 0000268098

Visual Exam Comment Remaining waste by weight percent is iron based metals consisting of scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10434487	destroyed @ 676- BXI/16	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	3.000	PINTS	1.554	4.660
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	130.905
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2197107	SFELLOWS	25-MAR-12 15:47:21	
2197108	SHIGH	25-MAR-12 15:47:23	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 02-Oct-2012

Time: 15:57

Batch Id VEB12-00200 **Open Date** 25-MAR-12 **Close Date** 25-MAR-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 26-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB12-00200 **Open Date** 25-MAR-12 **Close Date** 25-MAR-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer
Approval Date 26-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB12-00200 **Open Date** 25-MAR-12 **Close Date** 25-MAR-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 26-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies. Referenced Truw-05 and TRUW -83.
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	N/A	MP-TRUW-8.2, C-3c and C1-4	The IDC, WMC and summary category for newly generated waste are assigned by the operators during the VE technique event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No observable liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	N/A	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00200 **Open Date** 25-MAR-12 **Close Date** 25-MAR-12

Reviewer SEAN CANIFF **Approval Level** SPM Data Validation

Approval Date 26-MAR-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	VE technique for newly generated waste does not require an audio/video record.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VE.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch data.
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00200 **Open Date** 25-MAR-12 **Close Date** 25-MAR-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2197873	SCANIFF	26-MAR-12	SPM	Promote.
2197637	RBTHOMPSON	26-MAR-12	ITR	Promote to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 11:05

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00200		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 11:06

Batch Id	VEB12-00200	**Container Id**	10436271
Batch Id	VEB12-00200	**Container Id**	10436247
Batch Id	VEB12-00200	**Container Id**	10436278
Batch Id	VEB12-00200	**Container Id**	10436209
Batch Id	VEB12-00200	**Container Id**	10436265
Batch Id	VEB12-00200	**Container Id**	10436276
Batch Id	VEB12-00200	**Container Id**	10436277
Batch Id	VEB12-00200	**Container Id**	10436281
Batch Id	VEB12-00200	**Container Id**	10436280
Batch Id	VEB12-00200	**Container Id**	10435988
Batch Id	VEB12-00200	**Container Id**	10436279
Batch Id	VEB12-00200	**Container Id**	10436268
Batch Id	VEB12-00200	**Container Id**	10435756
Batch Id	VEB12-00200	**Container Id**	10436266
Batch Id	VEB12-00200	**Container Id**	10436208
Batch Id	VEB12-00200	**Container Id**	10436269
Batch Id	VEB12-00200	**Container Id**	10436272
Batch Id	VEB12-00200	**Container Id**	10436264
Batch Id	VEB12-00200	**Container Id**	10436275
Batch Id	VEB12-00200	**Container Id**	10436267

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 03-Oct-2012

Time: 09:51

Batch Type VE Boxline
Batch Report No. VEB12-00540
Batch Id VEB12-00540
Open Date 03-JUL-12 19:36:36
Close Date 03-JUL-12 22:43:55
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10447882	BN-508	0000277631	03-JUL-12 19:36:36	Original	P	ROBERT MINTON
10447890	BN-508	0000277632	03-JUL-12 19:42:46	Original	P	ROBERT MINTON
10447883	BN-508	0000277633	03-JUL-12 19:56:07	Original	P	MIKE REIDER
10447741	BN-508	0000277634	03-JUL-12 19:58:34	Original	P	JEFF MARTINEZ
10447885	BN-508	0000277637	03-JUL-12 20:07:05	Original	P	MIKE REIDER
10447739	BN-508	0000277641	03-JUL-12 20:46:13	Original	P	JEFF MARTINEZ
10447983	BN-508	0000277642	03-JUL-12 20:50:18	Original	P	ROBERT MINTON
10447982	BN-508	0000277643	03-JUL-12 21:09:53	Original	P	MIKE REIDER
10447879	BN-508	0000277644	03-JUL-12 21:10:12	Original	P	ROBERT MINTON
10447880	BN-508	0000277646	03-JUL-12 21:28:26	Original	P	JEFF MARTINEZ
10447981	BN-508	0000277647	03-JUL-12 21:41:55	Original	P	MIKE REIDER
10447881	BN-508	0000277648	03-JUL-12 21:51:53	Original	P	JEFF MARTINEZ
10447878	BN-508	0000277649	03-JUL-12 21:49:25	Original	P	MIKE REIDER
10447976	BN-508	0000277652	03-JUL-12 22:07:50	Original	P	MIKE REIDER
10447876	BN-508	0000277654	03-JUL-12 22:22:10	Original	P	MIKE REIDER
10447979	BN-508	0000277655	03-JUL-12 22:19:29	Original	P	ROBERT MINTON
10447980	BN-508	0000277656	03-JUL-12 22:25:08	Original	P	JEFF MARTINEZ
10447877	BN-508	0000277657	03-JUL-12 22:25:28	Original	P	ROBERT MINTON
10447977	BN-508	0000277658	03-JUL-12 22:36:30	Original	P	ROBERT MINTON
10447975	BN-508	0000277660	03-JUL-12 22:42:55	Original	P	MIKE REIDER

**********Batch Comments**********

Written By	Date	Comment
CSIMMONS	05-JUL-12 07:47:12	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	05-JUL-12 07:47:12	Promoted batch to SPM level.
CROJAS	05-JUL-12 08:48:49	Validation completed. Promote Batch.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2271282	CSIMMONS	05-JUL-2012 07:47:12	Promoted batch to SPM level.
2271309	CROJAS	05-JUL-2012 08:48:49	Validation completed. Promote Batch.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 09:53

Batch Id VEB12-00540 **Container Id** 10447882 **Analysis Id** 0000277631

VE Date 03-JUL-12 19:36:36 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 03-JUL-12 19:36:36 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 80 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447882 **Analysis Id** 0000277631

Visual Exam Comment Remaining waste by weight percent is Plastics- misc. plastic, plastic bags, plastic PPE

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447086	destroyed @ 676- BXI/9	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Paper	3.000	PINTS	0.969	2.910
Rubber	4.000	PINTS	1.554	6.220
Cardboard	2.000	PINTS	0.833	1.670

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	4.580
Rubber	0.000	6.220
Plastic (Waste Materials)	100.000	54.970
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270453	RMINTON	03-JUL-12 19:36:37	
2270454	NKEMPTON	03-JUL-12 19:36:39	

Batch Id VEB12-00540 **Container Id** 10447890 **Analysis Id** 0000277632

VE Date 03-JUL-12 19:42:46 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 63.95 lbs

Closure Date 03-JUL-12 19:42:46 **Procedure Id** INST-FOI-17 **Net Weight** 37.95 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00540 **Container Id** 10447890 **Analysis Id** 0000277632

Visual Exam Comment Remaining waste by weight percent is Plastics- misc. plastic, plastic bags

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447086	destroyed @ 676- BXI/9	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	2.000	PINTS	0.420	0.840
Paper	1.000	PINTS	0.969	0.970
Rubber	1.500	PINTS	1.554	2.330
Cardboard	1.000	PINTS	0.833	0.830
Iron	0.500	PINTS	7.807	3.900

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	3.900
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.840
Cellulosics	0.000	1.800
Rubber	0.000	2.330
Plastic (Waste Materials)	100.000	29.075
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270456	RMINTON	03-JUL-12 19:42:47	
2270457	NKEMPTON	03-JUL-12 19:42:50	

Batch Id VEB12-00540 **Container Id** 10447883 **Analysis Id** 0000277633

VE Date 03-JUL-12 19:56:07 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 03-JUL-12 19:56:07 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447883 **Analysis Id** 0000277633

Visual Exam Comment The remaining waste by weight percent is plastics, plastic bags, sheeting

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	5.000	PINTS	1.554	7.770

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	7.770
Plastic (Waste Materials)	100.000	56.900
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270461	MREIDER	03-JUL-12 19:56:07	
2270462	JBAILEY	03-JUL-12 19:56:09	

Batch Id VEB12-00540 **Container Id** 10447741 **Analysis Id** 0000277634

VE Date 03-JUL-12 19:58:34 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 **lbs**

Closure Date 03-JUL-12 19:58:34 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 **lbs**

Container Type 55 **Revision** 24

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NOLAN JACOBS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447741 **Analysis Id** 0000277634

Visual Exam Comment The remaining waste by weight percent is Plastic sheeting, bags & PPE.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10445128	destroyed @ 676- BXI/15	BN-519
10445318	destroyed @ 676- BXI/15	BN-519

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Iron	2.000	PINTS	7.807	15.610

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.610
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	88.485
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270463	JMARTINEZ	03-JUL-12 19:58:34	
2270464	NJACOBS	03-JUL-12 19:58:35	

Batch Id VEB12-00540 **Container Id** 10447885 **Analysis Id** 0000277637

VE Date 03-JUL-12 20:07:05 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 03-JUL-12 20:07:05 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447885 **Analysis Id** 0000277637

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of paper and cloth coveralls

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	4.000	PINTS	1.554	6.220
Plastic	6.000	PINTS	0.937	5.620

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	54.770
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	5.620
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270467	MREIDER	03-JUL-12 20:07:05	
2270468	JBAILEY	03-JUL-12 20:07:06	

Batch Id VEB12-00540 **Container Id** 10447739 **Analysis Id** 0000277641

VE Date 03-JUL-12 20:46:13 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 116.87 lbs

Closure Date 03-JUL-12 20:46:13 **Procedure Id** INST-FOI-17 **Net Weight** 90.87 lbs

Container Type 55 **Revision** 24

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NOLAN JACOBS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447739 **Analysis Id** 0000277641

Visual Exam Comment The remaining waste by weight percent is plastic bags sheeting & PPE.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10445128	destroyed @ 676- BXI/15	BN-519
10445318	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	2.000	PINTS	0.702	1.400
Iron	2.000	PINTS	7.807	15.610

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	15.610
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.400
Rubber	0.000	0.000
Plastic (Waste Materials)	100.000	73.855
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270483	JMARTINEZ	03-JUL-12 20:46:13	
2270484	NJACOBS	03-JUL-12 20:46:15	

Batch Id VEB12-00540 **Container Id** 10447983 **Analysis Id** 0000277642

VE Date 03-JUL-12 20:50:18 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 103.64 **lbs**

Closure Date 03-JUL-12 20:50:18 **Procedure Id** INST-FOI-17 **Net Weight** 77.64 **lbs**

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447983 **Analysis Id** 0000277642

Visual Exam Comment Remaining waste by weight percent is Iron-based Metals/Alloys- crushed drum, ring, lid

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447086	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	4.000	PINTS	0.969	3.880
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	70.945
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.880
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270486	RMINTON	03-JUL-12 20:50:18	
2270487	NKEMPTON	03-JUL-12 20:50:20	

Batch Id VEB12-00540 **Container Id** 10447982 **Analysis Id** 0000277643

VE Date 03-JUL-12 21:09:53 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 74.97 lbs

Closure Date 03-JUL-12 21:09:53 **Procedure Id** INST-FOI-17 **Net Weight** 48.97 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447982 **Analysis Id** 0000277643

Visual Exam Comment The remaining waste by weight percent is plastics, plastic bags, sheeting

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	2.000	EACH	1.860	3.720

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Rubber	2.000	PINTS	1.554	3.110

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.690
Rubber	0.000	3.110
Plastic (Waste Materials)	100.000	41.170
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270490	MREIDER	03-JUL-12 21:09:53	
2270491	JBAILEY	03-JUL-12 21:09:56	

Batch Id VEB12-00540 **Container Id** 10447879 **Analysis Id** 0000277644

VE Date 03-JUL-12 21:10:12 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 295.47 lbs

Closure Date 03-JUL-12 21:10:12 **Procedure Id** INST-FOI-17 **Net Weight** 269.47 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 45 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447879 **Analysis Id** 0000277644

Visual Exam Comment Remaining waste by weight percent is Other Metals- Lead pails/buckets

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447086	destroyed @ 676- BXI/9	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Stainless Steel	1.000	PINTS	8.328	8.330

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	8.330
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	260.170
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270492	RMINTON	03-JUL-12 21:10:12	
2270493	NKEMPTON	03-JUL-12 21:10:12	

Batch Id VEB12-00540 **Container Id** 10447880 **Analysis Id** 0000277646

VE Date 03-JUL-12 21:28:26 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 149.94 lbs

Closure Date 03-JUL-12 21:28:26 **Procedure Id** INST-FOI-17 **Net Weight** 123.94 lbs

Container Type 55 **Revision** 24

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NOLAN JACOBS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447880 **Analysis Id** 0000277646

Visual Exam Comment The remaining waste by weight percent is scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10445128	destroyed @ 676- BXI/15	BN-519
10445318	destroyed @ 676- BXI/15	BN-519

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	2.000	PINTS	0.833	1.670
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	120.400
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.670
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270497	JMARTINEZ	03-JUL-12 21:28:27	
2270498	NJACOBS	03-JUL-12 21:28:31	

Batch Id VEB12-00540 **Container Id** 10447981 **Analysis Id** 0000277647

VE Date 03-JUL-12 21:41:55 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 99.23 lbs

Closure Date 03-JUL-12 21:41:55 **Procedure Id** INST-FOI-17 **Net Weight** 73.23 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447981 **Analysis Id** 0000277647

Visual Exam Comment The remaining waste by weight percent is paper, coveralls and cardboard

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	2.000	PINTS	1.554	3.110
Plastic	5.000	PINTS	0.937	4.690

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	65.425
Rubber	0.000	3.110
Plastic (Waste Materials)	0.000	4.690
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270505	MREIDER	03-JUL-12 21:41:56	
2270506	JBAILEY	03-JUL-12 21:41:57	

Batch Id VEB12-00540 **Container Id** 10447881 **Analysis Id** 0000277648

VE Date 03-JUL-12 21:51:53 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 176.40 **lbs**

Closure Date 03-JUL-12 21:51:53 **Procedure Id** INST-FOI-17 **Net Weight** 150.40 **lbs**

Container Type 55 **Revision** 24

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NOLAN JACOBS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 69 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

VE Boxline and Repackaging Report

Batch Id VEB12-00540 **Container Id** 10447881 **Analysis Id** 0000277648

Visual Exam Comment The remaining waste by weight percent is scrap metal.

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10445128	destroyed @ 676- BXI/15	BN-519
10445318	destroyed @ 676- BXI/15	BN-519

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	6.000	PINTS	0.702	4.210
Plastic	5.000	PINTS	0.937	4.690

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	141.500
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.210
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	4.690
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270509	JMARTINEZ	03-JUL-12 21:51:53	
2270510	NJACOBS	03-JUL-12 21:51:54	

Batch Id VEB12-00540 **Container Id** 10447878 **Analysis Id** 0000277649

VE Date 03-JUL-12 21:49:25 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 238.14 lbs

Closure Date 03-JUL-12 21:49:25 **Procedure Id** INST-FOI-17 **Net Weight** 212.14 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447878 **Analysis Id** 0000277649

Visual Exam Comment The remaining waste by weight percent is scrap metal

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	2.000	EACH	1.860	3.720

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	4.000	PINTS	1.554	6.220
Plastic	3.000	PINTS	0.937	2.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	199.390
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.720
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270507	MREIDER	03-JUL-12 21:49:26	
2270508	JBAILEY	03-JUL-12 21:49:27	

Batch Id VEB12-00540 **Container Id** 10447976 **Analysis Id** 0000277652

VE Date 03-JUL-12 22:07:50 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 145.53 lbs

Closure Date 03-JUL-12 22:07:50 **Procedure Id** INST-FOI-17 **Net Weight** 119.53 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447976 **Analysis Id** 0000277652

Visual Exam Comment The remaining waste by weight percent is scrap metal

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	4.000	PINTS	1.554	6.220
Cardboard	1.000	PINTS	0.833	0.830
Plastic	4.000	PINTS	0.937	3.750

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	106.790
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.770
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270511	MREIDER	03-JUL-12 22:07:50	
2270512	JBAILEY	03-JUL-12 22:07:52	

Batch Id VEB12-00540 **Container Id** 10447876 **Analysis Id** 0000277654

VE Date 03-JUL-12 22:22:10 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 92.61 lbs

Closure Date 03-JUL-12 22:22:10 **Procedure Id** INST-FOI-17 **Net Weight** 66.61 lbs

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447876 **Analysis Id** 0000277654

Visual Exam Comment The remaining waste by weight percent is cardboard and paper

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	4.000	PINTS	1.554	6.220
Plastic	5.000	PINTS	0.937	4.690

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	55.700
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	4.690
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270525	MREIDER	03-JUL-12 22:22:10	
2270526	JBAILEY	03-JUL-12 22:22:11	

Batch Id VEB12-00540 **Container Id** 10447979 **Analysis Id** 0000277655

VE Date 03-JUL-12 22:19:29 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 lbs

Closure Date 03-JUL-12 22:19:29 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447979 **Analysis Id** 0000277655

Visual Exam Comment Remaining waste by weight percent is Cellulosics- misc. scrap wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10446604	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Aquaset Absorbent	2.000	PINTS	1.200	2.400

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.400
Cellulosics	100.000	81.850
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270520	RMINTON	03-JUL-12 22:19:29	
2270521	NKEMPTON	03-JUL-12 22:19:32	

Batch Id VEB12-00540 **Container Id** 10447980 **Analysis Id** 0000277656

VE Date 03-JUL-12 22:25:08 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 176.40 lbs

Closure Date 03-JUL-12 22:25:08 **Procedure Id** INST-FOI-17 **Net Weight** 150.40 lbs

Container Type 55 **Revision** 24

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NOLAN JACOBS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 68 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447980 **Analysis Id** 0000277656

Visual Exam Comment The remaining waste by weight percent is scrap metal.

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10445128	destroyed @ 676- BXI/15	BN-519
10445318	destroyed @ 676- BXI/15	BN-519

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	8.000	PINTS	0.702	5.620
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	141.030
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	5.620
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270527	JMARTINEZ	03-JUL-12 22:25:08	
2270528	NJACOBS	03-JUL-12 22:25:10	

Batch Id VEB12-00540 **Container Id** 10447877 **Analysis Id** 0000277657

VE Date 03-JUL-12 22:25:28 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 79.38 lbs

Closure Date 03-JUL-12 22:25:28 **Procedure Id** INST-FOI-17 **Net Weight** 53.38 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447877 **Analysis Id** 0000277657

Visual Exam Comment Remaining waste by weight percent is Cellulosics- misc. scrap wood

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10446604	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	53.380
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270529	RMINTON	03-JUL-12 22:25:28	
2270530	NKEMPTON	03-JUL-12 22:25:30	

Batch Id VEB12-00540 **Container Id** 10447977 **Analysis Id** 0000277658

VE Date 03-JUL-12 22:36:30 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 90.41 lbs

Closure Date 03-JUL-12 22:36:30 **Procedure Id** INST-FOI-17 **Net Weight** 64.41 lbs

Container Type 55 **Revision** 24

Operator 1 ROBERT MINTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 NATHAN KEMPTON **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447977 **Analysis Id** 0000277658

Visual Exam Comment Remaining waste by weight percent is Cellulosics- misc. scrap wood

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10446604	destroyed @ 676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	64.405
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2270533	RMINTON	03-JUL-12 22:36:31	
2270534	NKEMPTON	03-JUL-12 22:36:33	

Batch Id VEB12-00540 **Container Id** 10447975 **Analysis Id** 0000277660

VE Date 03-JUL-12 22:42:55 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 171.99 **lbs**

Closure Date 03-JUL-12 22:42:55 **Procedure Id** INST-FOI-17 **Net Weight** 145.99 **lbs**

Container Type 55 **Revision** 24

Operator 1 MIKE REIDER **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Batch Id VEB12-00540 **Container Id** 10447975 **Analysis Id** 0000277660

Visual Exam Comment The remaining waste by weight percent is scrap metal

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10043222	destroyed @ 676- SHD/1	RF-330

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	4.000	PINTS	0.969	3.880
Rubber	4.000	PINTS	1.554	6.220
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	133.080
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.880
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2270539	MREIDER	03-JUL-12 22:42:56	
2270541	JBAILEY	03-JUL-12 22:42:59	

---End of VE Boxline Report---

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 03-Oct-2012

Time: 10:10

Batch Id VEB12-00540 **Open Date** 03-JUL-12 **Close Date** 03-JUL-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 05-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not applicable for this VEB batch.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not applicable for this VEB batch.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as	N/A		Not applicable for this VEB batch.

Batch Id VEB12-00540 **Open Date** 03-JUL-12 **Close Date** 03-JUL-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 05-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
recorded in WTS, as applicable?			
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not applicable for this VEB batch.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not applicable for this VEB batch.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not applicable for this VEB batch.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework was identified for this batch.

Batch Id VEB12-00540 **Open Date** 03-JUL-12 **Close Date** 03-JUL-12

Reviewer CESAR ROJAS **Approval Level** SPM Data Validation

Approval Date 05-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	None identified.
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	No discrepancies identified. Reference: AMWTP-RPT-TRUW-05, AMWTP-RPT-TRUW-06, and AMWTP-RPT-TRUW-83
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	The IDC/WMC and Summary category for newly generated waste are assigned by the Operators during the VE Technique event The waste has no assignment until the VE operators complete the VE Technique Event.
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	No residual liquids exist.
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability. Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	As evidence by the Bach Data Report and corresponding checklists. All applicable data is present

Batch Id VEB12-00540 **Open Date** 03-JUL-12 **Close Date** 03-JUL-12

Reviewer CESAR ROJAS **Approval Level** SPM Data Validation

Approval Date 05-JUL-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	Audio video record is not required for this type of Batch.
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	Not required for VEB.
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	No NCRs are associated with this batch
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00540 **Open Date** 03-JUL-12 **Close Date** 03-JUL-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2271309	CROJAS	05-JUL-12	SPM	Validation completed. Promote Batch.
2271282	CSIMMONS	05-JUL-12	ITR	Promoted batch to SPM level.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 11:13

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00540		
Trackwise Number		Status		Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 11:14

Batch Id	VEB12-00540	**Container Id**	10447882
Batch Id	VEB12-00540	**Container Id**	10447977
Batch Id	VEB12-00540	**Container Id**	10447981
Batch Id	VEB12-00540	**Container Id**	10447881
Batch Id	VEB12-00540	**Container Id**	10447976
Batch Id	VEB12-00540	**Container Id**	10447876
Batch Id	VEB12-00540	**Container Id**	10447877
Batch Id	VEB12-00540	**Container Id**	10447890
Batch Id	VEB12-00540	**Container Id**	10447880
Batch Id	VEB12-00540	**Container Id**	10447885
Batch Id	VEB12-00540	**Container Id**	10447739
Batch Id	VEB12-00540	**Container Id**	10447983
Batch Id	VEB12-00540	**Container Id**	10447879
Batch Id	VEB12-00540	**Container Id**	10447982
Batch Id	VEB12-00540	**Container Id**	10447878
Batch Id	VEB12-00540	**Container Id**	10447980
Batch Id	VEB12-00540	**Container Id**	10447975
Batch Id	VEB12-00540	**Container Id**	10447883
Batch Id	VEB12-00540	**Container Id**	10447741
Batch Id	VEB12-00540	**Container Id**	10447979

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 03-Oct-2012

Time: 10:21

Batch Type VE Boxline **Batch Report No.** VEB12-00725

Batch Id VEB12-00725 **Open Date** 22-AUG-12 10:25:56 **Close Date** 22-AUG-12 20:45:56

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10456093	BN-508	0000283360	22-AUG-12 10:25:57	Original	P	GEORGE NALLEY
10456092	BN-508	0000283364	22-AUG-12 10:31:02	Original	P	GEORGE NALLEY
10456097	BN-508	0000283369	22-AUG-12 13:33:08	Original	P	GEORGE NALLEY
10456099	BN-508	0000283373	22-AUG-12 13:59:03	Original	P	GEORGE NALLEY
10456100	BN-508	0000283375	22-AUG-12 14:20:15	Original	P	GUY MATLOCK
10456091	BN-508	0000283376	22-AUG-12 14:28:21	Original	P	GUY MATLOCK
10456089	BN-508	0000283379	22-AUG-12 15:47:24	Original	P	GEORGE NALLEY
10456096	BN-508	0000283380	22-AUG-12 15:58:10	Original	P	GEORGE NALLEY
10456088	BN-508	0000283381	22-AUG-12 16:38:18	Original	P	GEORGE NALLEY
10456098	BN-508	0000283382	22-AUG-12 16:44:42	Original	P	GUY MATLOCK
10456086	BN-508	0000283384	22-AUG-12 16:52:31	Original	P	GUY MATLOCK
10456078	BN-508	0000283385	22-AUG-12 17:02:32	Original	P	GUY MATLOCK
10456095	BN-508	0000283386	22-AUG-12 17:05:33	Original	P	GEORGE NALLEY
10456087	BN-508	0000283387	22-AUG-12 17:12:58	Original	P	GEORGE NALLEY
10456077	BN-508	0000283388	22-AUG-12 17:10:14	Original	P	GUY MATLOCK
10456085	BN-508	0000283389	22-AUG-12 17:34:07	Original	P	GEORGE NALLEY
10456083	BN-508	0000283390	22-AUG-12 18:16:32	Original	P	GEORGE NALLEY
10456076	BN-508	0000283394	22-AUG-12 20:23:03	Original	P	NOLAN JACOBS
10456084	BN-508	0000283395	22-AUG-12 20:36:38	Original	P	NOLAN JACOBS
10456074	BN-508	0000283396	22-AUG-12 20:44:56	Original	P	JEFF MARTINEZ

**********Batch Comments**********

Written By	Date	Comment
RBTHOMPSON	23-AUG-12 07:24:23	Initial ITR review of Batch.
RBTHOMPSON	23-AUG-12 08:47:34	ITR review complete.
RBTHOMPSON	23-AUG-12 08:54:01	Promote to SPM.
KBURNSIDE	23-AUG-12 09:26:14	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2316360	RBTHOMPSON	23-AUG-2012 08:54:01	Promote to SPM.
2316365	KBURNSIDE	23-AUG-2012 09:26:14	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:22

Batch Id VEB12-00725 **Container Id** 10456093 **Analysis Id** 0000283360

VE Date 22-AUG-12 10:25:57 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 lbs.

Closure Date 22-AUG-12 10:25:57 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 lbs.

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	Comment
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is iron based metal consisting of scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00725 **Container Id** 10456093 **Analysis Id** 0000283360

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454499	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	1.000	PINTS	1.554	1.550
Plastic	3.000	PINTS	0.937	2.810
Floor Sweepings	2.000	PINTS	1.000	2.000

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	124.460
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.000
Cellulosics	0.000	1.940
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315529	GNALLEY	22-AUG-12 10:25:57	
2315530	RBUSH1	22-AUG-12 10:26:00	

Batch Id VEB12-00725 **Container Id** 10456092 **Analysis Id** 0000283364

VE Date 22-AUG-12 10:31:02 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 167.58 **lbs.**

Closure Date 22-AUG-12 10:31:02 **Procedure Id** INST-FOI-17 **Net Weight** 141.58 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is iron based metal consisting of scrap metal.

Batch Id VEB12-00725 **Container Id** 10456092 **Analysis Id** 0000283364

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454499	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	141.580
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315541	GNALLEY	22-AUG-12 10:31:03	
2315543	RBUSH1	22-AUG-12 10:31:10	

Batch Id VEB12-00725 **Container Id** 10456097 **Analysis Id** 0000283369

VE Date 22-AUG-12 13:33:08 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 125.69 **lbs.**

Closure Date 22-AUG-12 13:33:08 **Procedure Id** INST-FOI-17 **Net Weight** 99.69 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is iron based metal consisting of scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00725 **Container Id** 10456097 **Analysis Id** 0000283369

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454499	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	4.000	PINTS	0.937	3.750
Microcel-E	2.000	PINTS	0.120	0.240

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	95.695
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.240
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315760	GNALLEY	22-AUG-12 13:33:09	
2315761	RBUSH1	22-AUG-12 13:33:12	

Batch Id VEB12-00725 **Container Id** 10456099 **Analysis Id** 0000283373

VE Date 22-AUG-12 13:59:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 156.56 **lbs.**

Closure Date 22-AUG-12 13:59:03 **Procedure Id** INST-FOI-17 **Net Weight** 130.56 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is iron based metal consisting of scrap metal.

Batch Id VEB12-00725 **Container Id** 10456099 **Analysis Id** 0000283373

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454499	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	4.000	PINTS	0.969	3.880
Rubber	2.000	PINTS	1.554	3.110
Plastic	4.000	PINTS	0.937	3.750
Microcel-E	2.000	PINTS	0.120	0.240

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	119.575
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.240
Cellulosics	0.000	3.880
Rubber	0.000	3.110
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315791	GNALLEY	22-AUG-12 13:59:03	
2315792	RBUSH1	22-AUG-12 13:59:05	

Batch Id VEB12-00725 **Container Id** 10456100 **Analysis Id** 0000283375

VE Date 22-AUG-12 14:20:15 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 145.53 **lbs.**

Closure Date 22-AUG-12 14:20:15 **Procedure Id** INST-FOI-17 **Net Weight** 119.53 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456100 **Analysis Id** 0000283375

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	5.000	PINTS	0.969	4.850
Rubber	1.000	PINTS	1.554	1.550
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	109.380
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.850
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2315818	GMATLOCK	22-AUG-12 14:20:15	
2315819	SPEREZ	22-AUG-12 14:20:17	

Batch Id VEB12-00725 **Container Id** 10456091 **Analysis Id** 0000283376

VE Date 22-AUG-12 14:28:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 141.12 **lbs.**

Closure Date 22-AUG-12 14:28:21 **Procedure Id** INST-FOI-17 **Net Weight** 115.12 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456091 **Analysis Id** 0000283376

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	4.000	PINTS	0.969	3.880
Rubber	1.000	PINTS	1.554	1.550
Plastic	3.000	PINTS	0.937	2.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	106.880
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.880
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315834	GMATLOCK	22-AUG-12 14:28:21	
2315835	SPEREZ	22-AUG-12 14:28:25	

Batch Id VEB12-00725 **Container Id** 10456089 **Analysis Id** 0000283379

VE Date 22-AUG-12 15:47:24 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 99.23 lbs.

Closure Date 22-AUG-12 15:47:24 **Procedure Id** INST-FOI-17 **Net Weight** 73.23 lbs.

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

Batch Id VEB12-00725 **Container Id** 10456089 **Analysis Id** 0000283379

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	73.225
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2315920	GNALLEY	22-AUG-12 15:47:24	
2315921	RBUSH1	22-AUG-12 15:47:26	

Batch Id VEB12-00725 **Container Id** 10456096 **Analysis Id** 0000283380

VE Date 22-AUG-12 15:58:10 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 116.87 **lbs.**

Closure Date 22-AUG-12 15:58:10 **Procedure Id** INST-FOI-17 **Net Weight** 90.87 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

Batch Id VEB12-00725 **Container Id** 10456096 **Analysis Id** 0000283380

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	90.865
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315933	GNALLEY	22-AUG-12 15:58:10	
2315934	RBUSH1	22-AUG-12 15:58:12	

Batch Id VEB12-00725 **Container Id** 10456088 **Analysis Id** 0000283381

VE Date 22-AUG-12 16:38:18 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 90.41 **lbs.**

Closure Date 22-AUG-12 16:38:18 **Procedure Id** INST-FOI-17 **Net Weight** 64.41 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 68 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

Batch Id VEB12-00725 **Container Id** 10456088 **Analysis Id** 0000283381

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	64.405
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315983	GNALLEY	22-AUG-12 16:38:19	
2315984	RBUSH1	22-AUG-12 16:38:22	

Batch Id VEB12-00725 **Container Id** 10456098 **Analysis Id** 0000283382

VE Date 22-AUG-12 16:44:42 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 108.05 lbs.

Closure Date 22-AUG-12 16:44:42 **Procedure Id** INST-FOI-17 **Net Weight** 82.05 lbs.

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 55 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456098 **Analysis Id** 0000283382

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	5.000	PINTS	0.969	4.850

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	77.195
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.850
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2315985	GMATLOCK	22-AUG-12 16:44:42	
2315986	SPEREZ	22-AUG-12 16:44:43	

Batch Id VEB12-00725 **Container Id** 10456086 **Analysis Id** 0000283384

VE Date 22-AUG-12 16:52:31 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 125.69 **lbs.**

Closure Date 22-AUG-12 16:52:31 **Procedure Id** INST-FOI-17 **Net Weight** 99.69 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456086 **Analysis Id** 0000283384

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	6.000	PINTS	0.969	5.810
Rubber	1.000	PINTS	1.554	1.550
Cardboard	1.000	PINTS	0.833	0.830
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	87.745
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	6.640
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2315994	GMATLOCK	22-AUG-12 16:52:32	
2315995	SPEREZ	22-AUG-12 16:52:33	

Batch Id VEB12-00725 **Container Id** 10456078 **Analysis Id** 0000283385

VE Date 22-AUG-12 17:02:32 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 119.07 lbs.

Closure Date 22-AUG-12 17:02:32 **Procedure Id** INST-FOI-17 **Net Weight** 93.07 lbs.

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456078 **Analysis Id** 0000283385

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	10.000	PINTS	0.969	9.690
Rubber	1.000	PINTS	1.554	1.550
Plastic	3.000	PINTS	0.937	2.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	79.020
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	9.690
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316008	GMATLOCK	22-AUG-12 17:02:32	
2316009	SPEREZ	22-AUG-12 17:02:33	

Batch Id VEB12-00725 **Container Id** 10456095 **Analysis Id** 0000283386

VE Date 22-AUG-12 17:05:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 **lbs.**

Closure Date 22-AUG-12 17:05:33 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

VE Boxline and Repackaging Report

Batch Id VEB12-00725 **Container Id** 10456095 **Analysis Id** 0000283386

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	84.250
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316015	GNALLEY	22-AUG-12 17:05:33	
2316016	RBUSH1	22-AUG-12 17:05:35	

Batch Id VEB12-00725 **Container Id** 10456087 **Analysis Id** 0000283387

VE Date 22-AUG-12 17:12:58 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 **lbs.**

Closure Date 22-AUG-12 17:12:58 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

VE Boxline and Repackaging Report

Batch Id VEB12-00725 **Container Id** 10456087 **Analysis Id** 0000283387

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	71.020
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316027	GNALLEY	22-AUG-12 17:12:59	
2316028	RBUSH1	22-AUG-12 17:13:00	

Batch Id VEB12-00725 **Container Id** 10456077 **Analysis Id** 0000283388

VE Date 22-AUG-12 17:10:14 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 **lbs.**

Closure Date 22-AUG-12 17:10:14 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 **lbs.**

Container Type 55 **Revision** 25

Operator 1 GUY MATLOCK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 SHIRLEY PEREZ **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00725 **Container Id** 10456077 **Analysis Id** 0000283388

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454565	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	8.000	PINTS	0.969	7.750
Rubber	1.000	PINTS	1.554	1.550
Cardboard	1.000	PINTS	0.833	0.830
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	75.720
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	8.580
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2316019	GMATLOCK	22-AUG-12 17:10:14	
2316020	SPEREZ	22-AUG-12 17:10:15	

Batch Id VEB12-00725 **Container Id** 10456085 **Analysis Id** 0000283389

VE Date 22-AUG-12 17:34:07 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 83.79 lbs.

Closure Date 22-AUG-12 17:34:07 **Procedure Id** INST-FOI-17 **Net Weight** 57.79 lbs.

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of scrap wood.

Batch Id VEB12-00725 **Container Id** 10456085 **Analysis Id** 0000283389

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	57.790
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316036	GNALLEY	22-AUG-12 17:34:07	
2316037	RBUSH1	22-AUG-12 17:34:11	

Batch Id VEB12-00725 **Container Id** 10456083 **Analysis Id** 0000283390

VE Date 22-AUG-12 18:16:32 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 275.63 lbs.

Closure Date 22-AUG-12 18:16:32 **Procedure Id** INST-FOI-17 **Net Weight** 249.63 lbs.

Container Type 55 **Revision** 25

Operator 1 GEORGE NALLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 REX BUSH **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is iron based metal consisting of scrap metal.

Batch Id VEB12-00725 **Container Id** 10456083 **Analysis Id** 0000283390

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	2.000	PINTS	0.833	1.670
Plastic	3.000	PINTS	0.937	2.810
Drywall	7.000	PINTS	1.500	10.500

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	234.645
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	10.500
Cellulosics	0.000	1.670
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316048	GNALLEY	22-AUG-12 18:16:33	
2316049	RBUSH1	22-AUG-12 18:16:36	

Batch Id VEB12-00725 **Container Id** 10456076 **Analysis Id** 0000283394

VE Date 22-AUG-12 20:23:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 119.07 **lbs.**

Closure Date 22-AUG-12 20:23:03 **Procedure Id** INST-FOI-17 **Net Weight** 93.07 **lbs.**

Container Type 55 **Revision** 25

Operator 1 NOLAN JACOBS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of wood debris.

Batch Id VEB12-00725 **Container Id** 10456076 **Analysis Id** 0000283394

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10453469	destroyed @ 676- BXI/9	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	93.070
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2316066	NJACOBS	22-AUG-12 20:23:04	
2316067	JBAILEY	22-AUG-12 20:23:05	

Batch Id VEB12-00725 **Container Id** 10456084 **Analysis Id** 0000283395

VE Date 22-AUG-12 20:36:38 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 119.07 lbs.

Closure Date 22-AUG-12 20:36:38 **Procedure Id** INST-FOI-17 **Net Weight** 93.07 lbs.

Container Type 55 **Revision** 25

Operator 1 NOLAN JACOBS **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JEFFREY K BAILEY **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 76 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is cellulosics consisting of wood debris.

Batch Id VEB12-00725 **Container Id** 10456084 **Analysis Id** 0000283395

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10453469	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	93.070
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2316074	NJACOBS	22-AUG-12 20:36:39	
2316075	JBAILEY	22-AUG-12 20:36:42	

VE Boxline and Repackaging Report

Advanced Mixed Waste Treatment Project

Batch Id VEB12-00725 **Container Id** 10456074 **Analysis Id** 0000283396

VE Date 22-AUG-12 20:44:56 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 399.11 lbs.

Closure Date 22-AUG-12 20:44:56 **Procedure Id** INST-FOI-17 **Net Weight** 373.11 lbs.

Container Type 55 **Revision** 25

Operator 1 JEFF MARTINEZ **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 BRODY TRIPP **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 56 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The remaining waste by weight percent is lead.

Batch Id VEB12-00725 **Container Id** 10456074 **Analysis Id** 0000283396

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10454497	destroyed @ 676- BXI/15	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Gypsun	1.000	EACH	10.000	10.000

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	100.000	363.105
Other Inorganic Materials	0.000	10.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2316090	JMARTINEZ	22-AUG-12 20:44:56	
2316091	BTRIPP	22-AUG-12 20:44:57	

------End of VE Boxline Report------

Batch Id VEB12-00725 **Open Date** 22-AUG-12 **Close Date** 22-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 23-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		

Batch Id VEB12-00725 **Open Date** 22-AUG-12 **Close Date** 22-AUG-12

Reviewer ROE THOMPSON **Approval Level** Independent Technical Reviewer

Approval Date 23-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		

Batch Id VEB12-00725 **Open Date** 22-AUG-12 **Close Date** 22-AUG-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 23-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements?	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00725 **Open Date** 22-AUG-12 **Close Date** 22-AUG-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 23-AUG-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
· Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415) - Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00725 **Open Date** 22-AUG-12 **Close Date** 22-AUG-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2316365	KBURNSIDE	23-AUG-12	SPM	SPM reviewed and approved.
2316360	RBTHOMPSON	23-AUG-12	ITR	Promote to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 11:09

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00725		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 11:10

Batch Id	VEB12-00725	**Container Id**	10456096
Batch Id	VEB12-00725	**Container Id**	10456099
Batch Id	VEB12-00725	**Container Id**	10456091
Batch Id	VEB12-00725	**Container Id**	10456085
Batch Id	VEB12-00725	**Container Id**	10456084
Batch Id	VEB12-00725	**Container Id**	10456088
Batch Id	VEB12-00725	**Container Id**	10456098
Batch Id	VEB12-00725	**Container Id**	10456092
Batch Id	VEB12-00725	**Container Id**	10456074
Batch Id	VEB12-00725	**Container Id**	10456089
Batch Id	VEB12-00725	**Container Id**	10456078
Batch Id	VEB12-00725	**Container Id**	10456077
Batch Id	VEB12-00725	**Container Id**	10456083
Batch Id	VEB12-00725	**Container Id**	10456093
Batch Id	VEB12-00725	**Container Id**	10456100
Batch Id	VEB12-00725	**Container Id**	10456095
Batch Id	VEB12-00725	**Container Id**	10456087
Batch Id	VEB12-00725	**Container Id**	10456097
Batch Id	VEB12-00725	**Container Id**	10456086
Batch Id	VEB12-00725	**Container Id**	10456076

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 03-Oct-2012

Time: 10:16

Batch Type VE Boxline **Batch Report No.** VEB12-00764

Batch Id VEB12-00764 **Open Date** 01-SEP-12 08:14:31 **Close Date** 01-SEP-12 14:02:29

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10457764	BN-508	0000284328	01-SEP-12 08:14:31	Original	P	PAUL HURLEY
10457765	BN-508	0000284330	01-SEP-12 08:18:54	Original	P	PAUL HURLEY
10457756	BN-508	0000284332	01-SEP-12 08:32:49	Original	P	PAUL HURLEY
10457775	BN-508	0000284334	01-SEP-12 08:41:53	Original	P	PAUL HURLEY
10457755	BN-508	0000284335	01-SEP-12 08:58:44	Original	P	PAUL HURLEY
10457774	BN-508	0000284336	01-SEP-12 09:02:31	Original	P	PAUL HURLEY
10457754	BN-508	0000284338	01-SEP-12 09:17:14	Original	P	PAUL HURLEY
10457776	BN-508	0000284339	01-SEP-12 09:34:21	Original	P	PAUL HURLEY
10457753	BN-508	0000284345	01-SEP-12 11:27:27	Original	P	PAUL HURLEY
10457745	BN-508	0000284346	01-SEP-12 11:38:14	Original	P	PAUL HURLEY
10457752	BN-508	0000284350	01-SEP-12 11:48:29	Original	P	PAUL HURLEY
10457746	BN-508	0000284351	01-SEP-12 12:02:28	Original	P	PAUL HURLEY
10457750	BN-508	0000284352	01-SEP-12 12:10:03	Original	P	PAUL HURLEY
10457748	BN-508	0000284356	01-SEP-12 12:43:01	Original	P	NATHAN KEMPTON
10457749	BN-508	0000284357	01-SEP-12 12:45:50	Original	P	NATHAN KEMPTON
10457773	BN-508	0000284358	01-SEP-12 13:07:40	Original	P	NATHAN KEMPTON
10457822	BN-508	0000284360	01-SEP-12 13:19:40	Original	P	PAUL HURLEY
10457809	BN-508	0000284361	01-SEP-12 13:37:17	Original	P	PAUL HURLEY
10457821	BN-508	0000284362	01-SEP-12 13:51:19	Original	P	PAUL HURLEY
10457808	BN-508	0000284364	01-SEP-12 14:01:29	Original	P	PAUL HURLEY

**********Batch Comments**********

Written By	Date	Comment
MSORENSON	01-SEP-12 16:22:05	This batch was validated electronically per MP-TRUW-8.8.
MSORENSON	01-SEP-12 16:22:05	No rework identified. Promote to SPM.
KBURNSIDE	02-SEP-12 16:51:40	SPM reviewed and approved.

AMWTP

Batch Report Coversheet

Date: 03-Oct-2012

Time: 10:16

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2324859	MSORENSON	01-SEP-2012 16:22:05	No rework identified. Promote to SPM.
2325678	KBURNSIDE	02-SEP-2012 16:51:40	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 03-Oct-2012

Time: 10:16

Batch Id VEB12-00764 **Open Date** 01-SEP-12 **Close Date** 01-SEP-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 01-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

Batch Id VEB12-00764 **Open Date** 01-SEP-12 **Close Date** 01-SEP-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 01-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework identified.

Batch Id VEB12-00764 **Open Date** 01-SEP-12 **Close Date** 01-SEP-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00764 **Open Date** 01-SEP-12 **Close Date** 01-SEP-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00764 **Open Date** 01-SEP-12 **Close Date** 01-SEP-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2325678	KBURNSIDE	02-SEP-12	SPM	SPM reviewed and approved.
2324859	MSORENSON	01-SEP-12	ITR	No rework identified. Promote to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:17

Batch Id VEB12-00764 **Container Id** 10457764 **Analysis Id** 0000284328

VE Date 01-SEP-12 08:14:31 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 147.74 lbs.

Closure Date 01-SEP-12 08:14:31 **Procedure Id** INST-FOI-17 **Net Weight** 121.74 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 89 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:17

Batch Id VEB12-00764 **Container Id** 10457764 **Analysis Id** 0000284328

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	1.000	PINTS	1.554	1.550
Plastic	16.000	PINTS	0.937	14.990

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	103.255
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	14.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324590	PHURLEY	01-SEP-12 08:14:32	
2324591	ALOFTUS	01-SEP-12 08:14:34	

Batch Id VEB12-00764 **Container Id** 10457765 **Analysis Id** 0000284330

VE Date 01-SEP-12 08:18:54 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 127.89 **lbs.**

Closure Date 01-SEP-12 08:18:54 **Procedure Id** INST-FOI-17 **Net Weight** 101.89 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 86 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

Batch Id VEB12-00764 **Container Id** 10457765 **Analysis Id** 0000284330

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Rubber	2.000	PINTS	1.554	3.110
Plastic	16.000	PINTS	0.937	14.990

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	80.880
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	3.110
Plastic (Waste Materials)	0.000	14.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324592	PHURLEY	01-SEP-12 08:18:54	
2324593	ALOFTUS	01-SEP-12 08:18:56	

Batch Id VEB12-00764 **Container Id** 10457756 **Analysis Id** 0000284332

VE Date 01-SEP-12 08:32:49 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 202.86 lbs.

Closure Date 01-SEP-12 08:32:49 **Procedure Id** INST-FOI-17 **Net Weight** 176.86 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 79 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

Batch Id VEB12-00764 **Container Id** 10457756 **Analysis Id** 0000284332

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	3.000	PINTS	0.969	2.910
Rubber	3.000	PINTS	1.554	4.660
Plastic	3.000	PINTS	0.937	2.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	166.480
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.910
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324597	PHURLEY	01-SEP-12 08:32:49	
2324598	ALOFTUS	01-SEP-12 08:32:52	

Batch Id VEB12-00764 **Container Id** 10457775 **Analysis Id** 0000284334

VE Date 01-SEP-12 08:41:53 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 147.74 lbs.

Closure Date 01-SEP-12 08:41:53 **Procedure Id** INST-FOI-17 **Net Weight** 121.74 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 89 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaing waste by weight percent is plastic waste material consisting of ppe and bags.

Batch Id VEB12-00764 **Container Id** 10457775 **Analysis Id** 0000284334

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	8.000	PINTS	0.969	7.750
Rubber	3.000	PINTS	1.554	4.660
Iron	1.000	PINTS	7.807	7.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	7.750
Rubber	0.000	4.660
Plastic (Waste Materials)	100.000	101.515
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324603	PHURLEY	01-SEP-12 08:41:54	
2324604	ALOFTUS	01-SEP-12 08:41:55	

Batch Id VEB12-00764 **Container Id** 10457755 **Analysis Id** 0000284335

VE Date 01-SEP-12 08:58:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 187.43 **lbs.**

Closure Date 01-SEP-12 08:58:44 **Procedure Id** INST-FOI-17 **Net Weight** 161.43 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 89 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is plastic waste material consisting of plastic bags and ppe.

Batch Id VEB12-00764 **Container Id** 10457755 **Analysis Id** 0000284335

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	5.000	PINTS	0.969	4.850
Rubber	1.000	PINTS	1.554	1.550
Iron	1.000	PINTS	7.807	7.810

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	7.810
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.850
Rubber	0.000	1.550
Plastic (Waste Materials)	100.000	147.215
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324606	PHURLEY	01-SEP-12 08:58:45	
2324607	ALOFTUS	01-SEP-12 08:58:46	

Batch Id VEB12-00764 **Container Id** 10457774 **Analysis Id** 0000284336

VE Date 01-SEP-12 09:02:31 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 233.73 lbs.

Closure Date 01-SEP-12 09:02:31 **Procedure Id** INST-FOI-17 **Net Weight** 207.73 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

Batch Id VEB12-00764 **Container Id** 10457774 **Analysis Id** 0000284336

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	16.000	PINTS	0.937	14.990

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	192.740
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	14.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324612	PHURLEY	01-SEP-12 09:02:31	
2324613	ALOFTUS	01-SEP-12 09:02:33	

Batch Id VEB12-00764 **Container Id** 10457754 **Analysis Id** 0000284338

VE Date 01-SEP-12 09:17:14 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 227.12 lbs.

Closure Date 01-SEP-12 09:17:14 **Procedure Id** INST-FOI-17 **Net Weight** 201.12 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 88 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457754 **Analysis Id** 0000284338

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Aluminum	0.350	PINTS	3.123	1.090
Plastic	16.000	PINTS	0.937	14.990

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	185.035
Aluminum-based Metals/Alloys	0.000	1.090
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	14.990
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2324622	PHURLEY	01-SEP-12 09:17:14	
2324623	ALOFTUS	01-SEP-12 09:17:16	

Batch Id VEB12-00764 **Container Id** 10457776 **Analysis Id** 0000284339

VE Date 01-SEP-12 09:34:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 295.47 lbs.

Closure Date 01-SEP-12 09:34:21 **Procedure Id** INST-FOI-17 **Net Weight** 269.47 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 87 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457776 **Analysis Id** 0000284339

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447868	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	1.000	PINTS	0.420	0.420
Aluminum	1.000	PINTS	3.123	3.120

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	265.930
Aluminum-based Metals/Alloys	0.000	3.120
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.420
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2324651	PHURLEY	01-SEP-12 09:34:22	
2324652	ALOFTUS	01-SEP-12 09:34:25	

Batch Id VEB12-00764 **Container Id** 10457753 **Analysis Id** 0000284345

VE Date 01-SEP-12 11:27:27 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 119.07 lbs.

Closure Date 01-SEP-12 11:27:27 **Procedure Id** INST-FOI-17 **Net Weight** 93.07 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 80 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is scrap wood

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457753 **Analysis Id** 0000284345

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	93.070
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324702	PHURLEY	01-SEP-12 11:27:27	
2324703	ALOFTUS	01-SEP-12 11:27:29	

Batch Id VEB12-00764 **Container Id** 10457745 **Analysis Id** 0000284346

VE Date 01-SEP-12 11:38:14 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 138.92 **lbs.**

Closure Date 01-SEP-12 11:38:14 **Procedure Id** INST-FOI-17 **Net Weight** 112.92 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is scrap wood

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:17

Batch Id VEB12-00764 **Container Id** 10457745 **Analysis Id** 0000284346

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	112.915
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324709	PHURLEY	01-SEP-12 11:38:14	
2324710	ALOFTUS	01-SEP-12 11:38:16	

Batch Id VEB12-00764 **Container Id** 10457752 **Analysis Id** 0000284350

VE Date 01-SEP-12 11:48:29 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 132.30 **lbs.**

Closure Date 01-SEP-12 11:48:29 **Procedure Id** INST-FOI-17 **Net Weight** 106.30 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is scrap wood

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:17

Batch Id VEB12-00764 **Container Id** 10457752 **Analysis Id** 0000284350

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	106.300
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324716	PHURLEY	01-SEP-12 11:48:29	
2324717	ALOFTUS	01-SEP-12 11:48:31	

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457746 **Analysis Id** 0000284351

VE Date 01-SEP-12 12:02:28 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 114.66 lbs.

Closure Date 01-SEP-12 12:02:28 **Procedure Id** INST-FOI-17 **Net Weight** 88.66 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 75 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is scrap wood

Batch Id VEB12-00764 **Container Id** 10457746 **Analysis Id** 0000284351

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	88.660
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324724	PHURLEY	01-SEP-12 12:02:28	
2324725	ALOFTUS	01-SEP-12 12:02:30	

Batch Id VEB12-00764 **Container Id** 10457750 **Analysis Id** 0000284352

VE Date 01-SEP-12 12:10:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 86.00 **lbs.**

Closure Date 01-SEP-12 12:10:03 **Procedure Id** INST-FOI-17 **Net Weight** 60.00 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---*General*---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---*Liquids*---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---*Contents*---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---*IDC Verification*---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is scrap wood

VE Boxline and Repackaging Report

Advanced Mixed Waste Treatment Project

Batch Id VEB12-00764 **Container Id** 10457750 **Analysis Id** 0000284352

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	59.995
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324726	PHURLEY	01-SEP-12 12:10:03	
2324727	ALOFTUS	01-SEP-12 12:10:05	

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457748 **Analysis Id** 0000284356

VE Date 01-SEP-12 12:43:01 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 121.28 lbs.

Closure Date 01-SEP-12 12:43:01 **Procedure Id** INST-FOI-17 **Net Weight** 95.28 lbs.

Container Type 55 **Revision** 25

Operator 1 NATHAN KEMPTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Advanced Mixed Waste Treatment Project

Batch Id VEB12-00764 **Container Id** 10457748 **Analysis Id** 0000284356

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Aluminum	0.500	PINTS	3.123	1.560
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	89.905
Aluminum-based Metals/Alloys	0.000	1.560
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2324738	NKEMPTON	01-SEP-12 12:43:02	
2324739	ALOFTUS	01-SEP-12 12:43:05	

Batch Id VEB12-00764 **Container Id** 10457749 **Analysis Id** 0000284357

VE Date 01-SEP-12 12:45:50 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 79.38 lbs.

Closure Date 01-SEP-12 12:45:50 **Procedure Id** INST-FOI-17 **Net Weight** 53.38 lbs.

Container Type 55 **Revision** 25

Operator 1 NATHAN KEMPTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00764 **Container Id** 10457749 **Analysis Id** 0000284357

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	53.380
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324740	NKEMPTON	01-SEP-12 12:45:50	
2324741	ALOFTUS	01-SEP-12 12:45:52	

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457773 **Analysis Id** 0000284358

VE Date 01-SEP-12 13:07:40 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 147.74 lbs.

Closure Date 01-SEP-12 13:07:40 **Procedure Id** INST-FOI-17 **Net Weight** 121.74 lbs.

Container Type 55 **Revision** 25

Operator 1 NATHAN KEMPTON **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00764 **Container Id** 10457773 **Analysis Id** 0000284358

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Rubber	7.000	PINTS	1.554	10.880
Plastic	2.000	PINTS	0.937	1.870

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	108.015
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.970
Rubber	0.000	10.880
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324759	NKEMPTON	01-SEP-12 13:07:41	
2324760	ALOFTUS	01-SEP-12 13:07:43	

Batch Id VEB12-00764 **Container Id** 10457822 **Analysis Id** 0000284360

VE Date 01-SEP-12 13:19:40 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 156.56 **lbs.**

Closure Date 01-SEP-12 13:19:40 **Procedure Id** INST-FOI-17 **Net Weight** 130.56 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 81 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00764 **Container Id** 10457822 **Analysis Id** 0000284360

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	129.615
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324763	PHURLEY	01-SEP-12 13:19:41	
2324764	ALOFTUS	01-SEP-12 13:19:42	

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457809 **Analysis Id** 0000284361

VE Date 01-SEP-12 13:37:17 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 176.40 lbs.

Closure Date 01-SEP-12 13:37:17 **Procedure Id** INST-FOI-17 **Net Weight** 150.40 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 89 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457809 **Analysis Id** 0000284361

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	2.000	PINTS	1.554	3.110
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	143.480
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	3.110
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2324781	PHURLEY	01-SEP-12 13:37:17	
2324782	ALOFTUS	01-SEP-12 13:37:19	

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457821 **Analysis Id** 0000284362

VE Date 01-SEP-12 13:51:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 196.25 **lbs.**

Closure Date 01-SEP-12 13:51:19 **Procedure Id** INST-FOI-17 **Net Weight** 170.25 **lbs.**

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 88 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00764 **Container Id** 10457821 **Analysis Id** 0000284362

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	1.000	PINTS	1.554	1.550
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	164.885
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.940
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2324784	PHURLEY	01-SEP-12 13:51:20	
2324785	ALOFTUS	01-SEP-12 13:51:22	

Batch Id VEB12-00764 **Container Id** 10457808 **Analysis Id** 0000284364

VE Date 01-SEP-12 14:01:29 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 302.09 lbs.

Closure Date 01-SEP-12 14:01:29 **Procedure Id** INST-FOI-17 **Net Weight** 276.09 lbs.

Container Type 55 **Revision** 25

Operator 1 PAUL HURLEY **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 AUSTIN LOFTUS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 87 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment The waste by weight percent is Iron-based Metal/Alloys consisting of misc. scrap metal.

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 10:17

Batch Id VEB12-00764 **Container Id** 10457808 **Analysis Id** 0000284364

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447872	destroyed @ 676- BXI/15	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	1.000	PINTS	0.969	0.970
Rubber	1.000	PINTS	1.554	1.550
Glass	10.000	PINTS	2.082	20.820

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	252.745
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	20.820
Cellulosics	0.000	0.970
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2324786	PHURLEY	01-SEP-12 14:01:29	
2324787	ALOFTUS	01-SEP-12 14:01:31	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 10:19

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00764		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	**Trackwise Number**	**Status**	**Opened Date**	**Closed Date**

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 10:19

Batch Id	VEB12-00764	**Container Id**	10457809
Batch Id	VEB12-00764	**Container Id**	10457756
Batch Id	VEB12-00764	**Container Id**	10457755
Batch Id	VEB12-00764	**Container Id**	10457776
Batch Id	VEB12-00764	**Container Id**	10457764
Batch Id	VEB12-00764	**Container Id**	10457752
Batch Id	VEB12-00764	**Container Id**	10457773
Batch Id	VEB12-00764	**Container Id**	10457753
Batch Id	VEB12-00764	**Container Id**	10457745
Batch Id	VEB12-00764	**Container Id**	10457765
Batch Id	VEB12-00764	**Container Id**	10457775
Batch Id	VEB12-00764	**Container Id**	10457754
Batch Id	VEB12-00764	**Container Id**	10457746
Batch Id	VEB12-00764	**Container Id**	10457748
Batch Id	VEB12-00764	**Container Id**	10457749
Batch Id	VEB12-00764	**Container Id**	10457774
Batch Id	VEB12-00764	**Container Id**	10457750
Batch Id	VEB12-00764	**Container Id**	10457821
Batch Id	VEB12-00764	**Container Id**	10457808
Batch Id	VEB12-00764	**Container Id**	10457822

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 03-Oct-2012

Time: 09:20

Batch Type VE Boxline **Batch Report No.** VEB12-00766

Batch Id VEB12-00766 **Open Date** 02-SEP-12 02:09:03 **Close Date** 02-SEP-12 05:32:19

Batch Status AP

Test Facility Idaho AMWTP

Equipment Id VE BiD RPCK VE Box Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10457817	BN-508	0000284400	02-SEP-12 02:09:03	Original	P	ANTHONY CAIN
10457794	BN-508	0000284401	02-SEP-12 02:11:15	Original	P	MICHAEL BECK
10457802	BN-508	0000284402	02-SEP-12 02:19:22	Original	P	ANTHONY CAIN
10457801	BN-508	0000284403	02-SEP-12 02:22:44	Original	P	ANTHONY CAIN
10457795	BN-508	0000284404	02-SEP-12 02:43:44	Original	P	MICHAEL BECK
10457796	BN-508	0000284405	02-SEP-12 02:34:33	Original	P	ANTHONY CAIN
10457800	BN-508	0000284406	02-SEP-12 03:16:15	Original	P	RICHARD SCOTT
10457798	BN-508	0000284407	02-SEP-12 03:42:34	Original	P	RICHARD SCOTT
10457793	BN-508	0000284409	02-SEP-12 03:49:07	Original	P	ANTHONY CAIN
10457803	BN-508	0000284410	02-SEP-12 04:07:05	Original	P	ANTHONY CAIN
10457870	BN-508	0000284411	02-SEP-12 04:12:21	Original	P	ANTHONY CAIN
10457855	BN-508	0000284412	02-SEP-12 04:11:52	Original	P	RICHARD SCOTT
10457869	BN-508	0000284413	02-SEP-12 04:36:40	Original	P	ANTHONY CAIN
10457856	BN-508	0000284414	02-SEP-12 04:24:24	Original	P	RICHARD SCOTT
10457867	BN-508	0000284416	02-SEP-12 04:39:10	Original	P	RICHARD SCOTT
10457857	BN-508	0000284417	02-SEP-12 04:42:06	Original	P	ANTHONY CAIN
10457859	BN-508	0000284420	02-SEP-12 04:49:35	Original	P	RICHARD SCOTT
10457865	BN-508	0000284421	02-SEP-12 05:03:35	Original	P	RICHARD SCOTT
10457864	BN-508	0000284422	02-SEP-12 05:26:25	Original	P	RICHARD SCOTT
10457866	BN-508	0000284423	02-SEP-12 05:31:19	Original	P	ANTHONY CAIN

Batch Report Coversheet

**********Batch Comments**********

Written By	Date	Comment
MSORENSON	02-SEP-12 15:50:44	This batch was validated electronically per MP-TRUW-8.8.
MSORENSON	02-SEP-12 15:50:44	No rework identified. Promote to SPM.
KBURNSIDE	02-SEP-12 16:28:59	SPM reviewed and approved.

Batch Report Coversheet

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2325613	MSORENSON	02-SEP-2012 15:50:44	No rework identified. Promote to SPM.
2325659	KBURNSIDE	02-SEP-2012 16:29:00	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 03-Oct-2012

Time: 09:20

Batch Id VEB12-00766 **Open Date** 02-SEP-12 **Close Date** 02-SEP-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all	Yes		

Batch Id VEB12-00766 **Open Date** 02-SEP-12 **Close Date** 02-SEP-12

Reviewer MARK SORENSON **Approval Level** Independent Technical Reviewer

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
reported volumes/weights?			
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework required.

Batch Id VEB12-00766 **Open Date** 02-SEP-12 **Close Date** 02-SEP-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00766 **Open Date** 02-SEP-12 **Close Date** 02-SEP-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 02-SEP-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00766 **Open Date** 02-SEP-12 **Close Date** 02-SEP-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2325659	KBURNSIDE	02-SEP-12	SPM	SPM reviewed and approved.
2325613	MSORENSON	02-SEP-12	ITR	No rework identified. Promote to SPM.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 03-Oct-2012

Time: 09:20

Batch Id VEB12-00766 **Container Id** 10457817 **Analysis Id** 0000284400

VE Date 02-SEP-12 02:09:03 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 160.97 lbs.

Closure Date 02-SEP-12 02:09:03 **Procedure Id** INST-FOI-17 **Net Weight** 134.97 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457817 **Analysis Id** 0000284400

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10456002	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Glass	2.000	PINTS	2.082	4.160
Plastic	10.000	PINTS	0.937	9.370

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	121.435
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	4.160
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	9.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325077	TCAIN	02-SEP-12 02:09:04	
2325078	KDOWNS	02-SEP-12 02:09:05	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457794 **Analysis Id** 0000284401

VE Date 02-SEP-12 02:11:15 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 57.33 lbs.

Closure Date 02-SEP-12 02:11:15 **Procedure Id** INST-FOI-17 **Net Weight** 31.33 lbs.

Container Type 55 **Revision** 25

Operator 1 MICHAEL BECK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 RICHARD SCOTT **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

Batch Id VEB12-00766 **Container Id** 10457794 **Analysis Id** 0000284401

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	2.000	EACH	1.860	3.720

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	3.000	PINTS	1.554	4.660
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	22.010
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	3.720
Rubber	0.000	4.660
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325079	MBECK1	02-SEP-12 02:11:15	
2325080	RSCOTT	02-SEP-12 02:11:15	

Batch Id VEB12-00766 **Container Id** 10457802 **Analysis Id** 0000284402

VE Date 02-SEP-12 02:19:22 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 209.48 **lbs.**

Closure Date 02-SEP-12 02:19:22 **Procedure Id** INST-FOI-17 **Net Weight** 183.48 **lbs.**

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---*General*---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---*Liquids*---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---*Contents*---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---*IDC Verification*---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457802 **Analysis Id** 0000284402

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10456002	destroyed @ 676- BXI/9	BN-633

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	2.000	PINTS	1.125	2.250
Glass	6.000	PINTS	2.082	12.490

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	168.735
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	14.740
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325081	TCAIN	02-SEP-12 02:19:22	
2325082	KDOWNS	02-SEP-12 02:19:23	

Batch Id VEB12-00766 **Container Id** 10457801 **Analysis Id** 0000284403

VE Date 02-SEP-12 02:22:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 **lbs.**

Closure Date 02-SEP-12 02:22:44 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 **lbs.**

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---*General*---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---*Liquids*---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---*Contents*---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---*IDC Verification*---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457801 **Analysis Id** 0000284403

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10456002	destroyed @ 676- BXI/9	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Rubber	1.000	PINTS	1.554	1.550
Plastic	10.000	PINTS	0.937	9.370

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	75.535
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	1.550
Plastic (Waste Materials)	0.000	9.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2325083	TCAIN	02-SEP-12 02:22:44	
2325084	KDOWNS	02-SEP-12 02:22:45	

Batch Id VEB12-00766 **Container Id** 10457795 **Analysis Id** 0000284404

VE Date 02-SEP-12 02:43:44 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 127.89 **lbs.**

Closure Date 02-SEP-12 02:43:44 **Procedure Id** INST-FOI-17 **Net Weight** 101.89 **lbs.**

Container Type 55 **Revision** 25

Operator 1 MICHAEL BECK **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 RICHARD SCOTT **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metal / Alloys consisting of scrap metal.

Batch Id VEB12-00766 **Container Id** 10457795 **Analysis Id** 0000284404

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXl/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	1.000	EACH	1.860	1.860

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	1.000	PINTS	0.937	0.940

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	99.090
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.860
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.940
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325087	MBECK1	02-SEP-12 02:43:44	
2325088	RSCOTT	02-SEP-12 02:43:46	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457796 **Analysis Id** 0000284405

VE Date 02-SEP-12 02:34:33 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 158.76 lbs.

Closure Date 02-SEP-12 02:34:33 **Procedure Id** INST-FOI-17 **Net Weight** 132.76 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 50 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron based Metals/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457796 **Analysis Id** 0000284405

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10456002	destroyed @ 676- BXI/9	BN-633

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cured Cement (Other Inorganics)	2.000	PINTS	1.125	2.250
Wood	3.000	PINTS	0.702	2.110
Glass	3.000	PINTS	2.082	6.250

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	122.150
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	8.500
Cellulosics	0.000	2.110
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2325085	TCAIN	02-SEP-12 02:34:33	
2325086	KDOWNS	02-SEP-12 02:34:36	

Batch Id VEB12-00766 **Container Id** 10457800 **Analysis Id** 0000284406

VE Date 02-SEP-12 03:16:15 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 lbs.

Closure Date 02-SEP-12 03:16:15 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457800 **Analysis Id** 0000284406

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cardboard	5.000	PINTS	0.833	4.170

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	80.080
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	4.170
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325096	RSCOTT	02-SEP-12 03:16:15	
2325097	MBECK1	02-SEP-12 03:16:17	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457798 **Analysis Id** 0000284407

VE Date 02-SEP-12 03:42:34 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 149.94 lbs.

Closure Date 02-SEP-12 03:42:34 **Procedure Id** INST-FOI-17 **Net Weight** 123.94 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457798 **Analysis Id** 0000284407

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	123.940
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325107	RSCOTT	02-SEP-12 03:42:34	
2325108	MBECK1	02-SEP-12 03:42:37	

Batch Id VEB12-00766 **Container Id** 10457793 **Analysis Id** 0000284409

VE Date 02-SEP-12 03:49:07 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs.

Closure Date 02-SEP-12 03:49:07 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00766 **Container Id** 10457793 **Analysis Id** 0000284409

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	86.455
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325109	TCAIN	02-SEP-12 03:49:07	
2325110	KDOWNS	02-SEP-12 03:49:09	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457803 **Analysis Id** 0000284410

VE Date 02-SEP-12 04:07:05 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 123.48 lbs.

Closure Date 02-SEP-12 04:07:05 **Procedure Id** INST-FOI-17 **Net Weight** 97.48 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00766 **Container Id** 10457803 **Analysis Id** 0000284410

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	97.480
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325111	TCAIN	02-SEP-12 04:07:06	
2325112	KDOWNS	02-SEP-12 04:07:09	

Batch Id VEB12-00766 **Container Id** 10457870 **Analysis Id** 0000284411

VE Date 02-SEP-12 04:12:21 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 119.07 lbs.

Closure Date 02-SEP-12 04:12:21 **Procedure Id** INST-FOI-17 **Net Weight** 93.07 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00766 **Container Id** 10457870 **Analysis Id** 0000284411

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	93.070
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325115	TCAIN	02-SEP-12 04:12:21	
2325116	KDOWNS	02-SEP-12 04:12:22	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457855 **Analysis Id** 0000284412

VE Date 02-SEP-12 04:11:52 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 121.28 lbs.

Closure Date 02-SEP-12 04:11:52 **Procedure Id** INST-FOI-17 **Net Weight** 95.28 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457855 **Analysis Id** 0000284412

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Cotton Coveralls	1.000	EACH	1.860	1.860

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	93.415
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.860
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325113	RSCOTT	02-SEP-12 04:11:53	
2325114	MBECK1	02-SEP-12 04:11:54	

Batch Id VEB12-00766 **Container Id** 10457869 **Analysis Id** 0000284413

VE Date 02-SEP-12 04:36:40 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 125.69 lbs.

Closure Date 02-SEP-12 04:36:40 **Procedure Id** INST-FOI-17 **Net Weight** 99.69 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00766 **Container Id** 10457869 **Analysis Id** 0000284413

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	99.685
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325121	TCAIN	02-SEP-12 04:36:40	
2325122	KDOWNS	02-SEP-12 04:36:42	

Batch Id VEB12-00766 **Container Id** 10457856 **Analysis Id** 0000284414

VE Date 02-SEP-12 04:24:24 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 130.10 **lbs.**

Closure Date 02-SEP-12 04:24:24 **Procedure Id** INST-FOI-17 **Net Weight** 104.10 **lbs.**

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457856 **Analysis Id** 0000284414

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Plastic	10.000	PINTS	0.937	9.370

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	94.725
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	9.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325119	RSCOTT	02-SEP-12 04:24:24	
2325120	MBECK1	02-SEP-12 04:24:25	

Batch Id VEB12-00766 **Container Id** 10457867 **Analysis Id** 0000284416

VE Date 02-SEP-12 04:39:10 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 110.25 lbs.

Closure Date 02-SEP-12 04:39:10 **Procedure Id** INST-FOI-17 **Net Weight** 84.25 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457867 **Analysis Id** 0000284416

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	1.000	PINTS	0.702	0.700
Plastic	10.000	PINTS	0.937	9.370

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	74.180
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.700
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	9.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2325125	RSCOTT	02-SEP-12 04:39:10	
2325126	MBECK1	02-SEP-12 04:39:13	

Batch Id VEB12-00766 **Container Id** 10457857 **Analysis Id** 0000284417

VE Date 02-SEP-12 04:42:06 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 97.02 lbs.

Closure Date 02-SEP-12 04:42:06 **Procedure Id** INST-FOI-17 **Net Weight** 71.02 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 70 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? No **Are Sharp Objects Protected?** Yes

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Cellulosics consisting of wood debris.

Batch Id VEB12-00766 **Container Id** 10457857 **Analysis Id** 0000284417

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	0.000
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	100.000	71.020
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325129	TCAIN	02-SEP-12 04:42:06	
2325130	KDOWNS	02-SEP-12 04:42:07	

Batch Id VEB12-00766 **Container Id** 10457859 **Analysis Id** 0000284420

VE Date 02-SEP-12 04:49:35 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 112.46 lbs.

Closure Date 02-SEP-12 04:49:35 **Procedure Id** INST-FOI-17 **Net Weight** 86.46 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 60 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

Batch Id VEB12-00766 **Container Id** 10457859 **Analysis Id** 0000284420

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	86.455
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	0.000
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	0.000
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325133	RSCOTT	02-SEP-12 04:49:35	
2325134	MBECK1	02-SEP-12 04:49:37	

Batch Id VEB12-00766 **Container Id** 10457865 **Analysis Id** 0000284421

VE Date 02-SEP-12 05:03:35 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 171.99 lbs.

Closure Date 02-SEP-12 05:03:35 **Procedure Id** INST-FOI-17 **Net Weight** 145.99 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457865 **Analysis Id** 0000284421

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	3.000	PINTS	0.702	2.110
Plastic	2.000	PINTS	0.937	1.870

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	142.010
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	2.110
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	1.870
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2325139	RSCOTT	02-SEP-12 05:03:36	
2325140	MBECK1	02-SEP-12 05:03:37	

Batch Id VEB12-00766 **Container Id** 10457864 **Analysis Id** 0000284422

VE Date 02-SEP-12 05:26:25 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 154.35 lbs.

Closure Date 02-SEP-12 05:26:25 **Procedure Id** INST-FOI-17 **Net Weight** 128.35 lbs.

Container Type 55 **Revision** 25

Operator 1 RICHARD SCOTT **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 MICHAEL BECK **Equipment ID** VE BiD RPCK

---General---

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

---Liquids---

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

---Contents---

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

---IDC Verification---

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is iron based metal consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457864 **Analysis Id** 0000284422

Source Container

Is there a source container? Yes

Source Container ID	Location	IDC
10001130	676- BXI/9	RF-480

IDC CODES

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

Waste Material Items

Packaging Materials

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Weight

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

Waste Items by Volume

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Wood	1.000	PINTS	0.702	0.700
Cardboard	1.000	PINTS	0.833	0.830
Plastic	3.000	PINTS	0.937	2.810

Waste Parameters

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	124.010
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	0.000
Cellulosics	0.000	1.530
Rubber	0.000	0.000
Plastic (Waste Materials)	0.000	2.810
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

Esignature History

Esig Approval Id	User Id	E-signature Date	Comment
2325142	RSCOTT	02-SEP-12 05:26:26	
2325143	MBECK1	02-SEP-12 05:26:29	

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457866 **Analysis Id** 0000284423

VE Date 02-SEP-12 05:31:19 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 156.56 lbs.

Closure Date 02-SEP-12 05:31:19 **Procedure Id** INST-FOI-17 **Net Weight** 130.56 lbs.

Container Type 55 **Revision** 25

Operator 1 ANTHONY CAIN **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 KEN DOWNS **Equipment ID** VE BiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 65 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is Iron Based Metals/Alloys consisting of misc. scrap metal.

VE Boxline and Repackaging Report

Batch Id VEB12-00766 **Container Id** 10457866 **Analysis Id** 0000284423

---Source Container---

Is there a source container? Yes

Source Container ID	Location	IDC
10447988	destroyed @ 676- BXI/9	BN-541

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Oil-Dri (404 gm/liter) 0.42 lb/pint	5.000	PINTS	0.420	2.100
Rubber	4.000	PINTS	1.554	6.220
Plastic	4.000	PINTS	0.937	3.750

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	100.000	118.485
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	2.100
Cellulosics	0.000	0.000
Rubber	0.000	6.220
Plastic (Waste Materials)	0.000	3.750
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2325144	TCAIN	02-SEP-12 05:31:19	
2325145	KDOWNS	02-SEP-12 05:31:21	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 03-Oct-2012

Time: 09:23

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00766		
Trackwise Number		**Status**		**Opened Date**	**Closed Date**

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 03-Oct-2012

Time: 09:23

Batch Id	VEB12-00766	**Container Id**	10457802
Batch Id	VEB12-00766	**Container Id**	10457796
Batch Id	VEB12-00766	**Container Id**	10457800
Batch Id	VEB12-00766	**Container Id**	10457803
Batch Id	VEB12-00766	**Container Id**	10457869
Batch Id	VEB12-00766	**Container Id**	10457870
Batch Id	VEB12-00766	**Container Id**	10457801
Batch Id	VEB12-00766	**Container Id**	10457855
Batch Id	VEB12-00766	**Container Id**	10457866
Batch Id	VEB12-00766	**Container Id**	10457817
Batch Id	VEB12-00766	**Container Id**	10457798
Batch Id	VEB12-00766	**Container Id**	10457867
Batch Id	VEB12-00766	**Container Id**	10457865
Batch Id	VEB12-00766	**Container Id**	10457795
Batch Id	VEB12-00766	**Container Id**	10457856
Batch Id	VEB12-00766	**Container Id**	10457794
Batch Id	VEB12-00766	**Container Id**	10457857
Batch Id	VEB12-00766	**Container Id**	10457793
Batch Id	VEB12-00766	**Container Id**	10457859
Batch Id	VEB12-00766	**Container Id**	10457864

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Batch Report Coversheet

Date: 15-Oct-2012

Time: 11:10

Batch Type VE Boxline
Batch Report No. VEB12-00941
Batch Id VEB12-00941
Open Date 14-OCT-12 23:37:28
Close Date 14-OCT-12 23:37:37
Batch Status AP
Test Facility Idaho AMWTP
Equipment Id VE DiD RPCK VE Drum Repackaging Into Drums

Container Id	IDC	Analysis Id	Date Examined	QC Type	Analysis Status	Operator
10465284	BN-508	0000289691	14-OCT-12 23:37:28	Original	P	BRETT CAPELL

**********Batch Comments**********

Written By	Date	Comment
BCAPELL	14-OCT-12 23:37:38	Esigned.
CSIMMONS	15-OCT-12 09:01:26	Performing ITR level I validation per MP-TRUW- 8.8.
CSIMMONS	15-OCT-12 09:01:26	Promoted batch to SPM level.
KBURNSIDE	15-OCT-12 10:18:03	SPM reviewed and approved.

**********Batch E-Signature History**********

Approval ID	User ID	Signature Date	Comment
2366468	BCAPELL	14-OCT-2012 23:37:38	
2366649	CSIMMONS	15-OCT-2012 09:01:26	Promoted batch to SPM level.
2366675	KBURNSIDE	15-OCT-2012 10:18:03	SPM reviewed and approved.

***** End of Batch Report Coversheet Report *****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Checklist Report

Date: 15-Oct-2012

Time: 11:10

Batch Id VEB12-00941 **Open Date** 14-OCT-12 **Close Date** 14-OCT-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer

Approval Date 15-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
1. Is the QA documentation for the Batch Data Reports complete and includes data reports and QC results? o VE Batch Coversheet o Table of Contents (manual review only) o VE Analysis Reports o Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only) o ITR Checklist (Form-1415, manual review only) o Batch Data Report Supplemental Comment Form (Form-1491, manual review only) o Associated NCRs (referenced in WTS) o Audio/Video Recording References, if applicable	Yes		
2. Are there 20 containers or less in the batch?	Yes		
3. Was each VE Operator qualified at the time of the VE event?	Yes		
4. Was a VE data form completed for each container in the batch?	Yes		
Was the data generated in a technically correct manner using the correct revision of INST-OI-34, Non-facility Visual Examination, INST-FOI-17, Facility Visual Examination Operations, or INST-FOI-22, Visual Examination of S3000 Waste in the Facility, as applicable.	Yes		
6. Was the correct revision of the procedure documented on each analysis report?	Yes		
7. Was the E-signature History review performed?	Yes		
8. Was guidance from VEE documented, as applicable?	N/A		Not applicable for this VEB batch.
9. Does every drum reported in the batch have a valid audio/video recording (as applicable)?	N/A		Not applicable for this VEB batch.
10. Does the physical form match the waste stream description, waste matrix code and IDC?	Yes		
11. Did the VE event result in an IDC/Waste Matrix Code change? If so, was an NCR initiated?	No		
12. Were the waste material parameters documented correctly?	Yes		
13. Was the presence or absence of prohibited items properly identified? o If prohibited items were identified, were NCRs initiated?	Yes		
14. Has the description of rigid liners and layers of confinement been properly documented?	Yes		
15. Was the drum age criteria (DAC) entered correctly and completely? o Closure Method(s) o Liner Puncture Status o Layers of Confinement o Closure Date o Packaging Configuration o Type and number of filters, as applicable o Liner hole presence and diameter, as applicable	Yes		
16. Have filters been installed or removed from drum as recorded in WTS, as applicable?	N/A		Not applicable for this VEB batch.
17. Hand calculations and unit conversions are correct? o Does the packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight?	Yes		
18. Were all units and significant figures used correct for all reported volumes/weights?	Yes		

Batch Id VEB12-00941 **Open Date** 14-OCT-12 **Close Date** 14-OCT-12

Reviewer CRAIG SIMMONS **Approval Level** Independent Technical Reviewer
Approval Date 15-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
19. Has the data been reviewed for transcription errors as appropriate?	Yes		
20. Were the Visual Examination QAOs met? o Precision o Accuracy o Completeness o Comparability	Yes		
21. Is each data form signed by qualified VE Operators, as applicable per the appropriate procedure being used?	Yes		
22. Was the audio/video check satisfactory, as applicable?	N/A		Not applicable for this VEB batch.
23. Was the scale or balance check weight event satisfactory, as applicable?	N/A		Not applicable for this VEB batch.
24. Are the QC weight checks within the tolerance of the scale or balance, as applicable?	N/A		Not applicable for this VEB batch.
25. Were any NCRs generated for drums containing prohibited items or any nonconforming conditions that failed to meet DQOs or QAOs? o Include the NCRs as appropriate, in the Batch Data Report.	No		
26. Were the rework requirements clearly identified in WTS or on the BDR?	N/A		No rework was identified for this batch.

Batch Id VEB12-00941 **Open Date** 14-OCT-12 **Close Date** 14-OCT-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 15-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
(1) Has the batch received a Data Generation Level Independent Technical Review?	Yes	MP-TRUW-8.2, C3-10b(1)	
(2) Are the batch data review checklists complete?	Yes	MP-TRUW-8.2, C3-10b(1)	
(3) When identified, were PCBs, mercury, lead, or other hazardous contaminants consistent with the waste stream AK Summary Report(s) and/or AK documentation?	N/A	MP-TRUW-8.2, C4-3	
(4) Are any ignitable, corrosive, or reactive wastes identified?	No	MP-TRUW-8.2, C4-3	
(5) Are the packaging configurations identified on the VE consistent with the waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(6) Do the drums in this batch contain typical waste items consistent with waste stream AK Summary Report(s) and/or AK documentation?	Yes	MP-TRUW-8.2, C4-3	
(7) Are the Waste Matrix Codes and physical form descriptions consistent with AK?	Yes	MP-TRUW-8.2, C4-3	
(8) Have all AK discrepancies been resolved and have all AK Resolution checklists been approved? Reference all waste stream AK documentation used in review of this data package.	N/A	MP-TRUW-8.2, C4-3	
(9) Does the batch report identify the correct implementing procedure number and revision number used for this testing method?	Yes	MP-TRUW-8.2, C3-4 and Table C3-11	
(10) Have the Waste Matrix Code (WMC) and IDC for all drums in the batch remained the same as originally assigned by the historical designation? NOTE: If not, note the drum number in the comment field and notify the Acceptable Knowledge Expert (AKE) if an NCR does not exist for the WMC and IDC change.	Yes	MP-TRUW-8.2, C-3c and C1-4	
(11) Does the physical form of the waste match the WMC, waste stream description, and identify the absence of prohibited items?	Yes	MP-TRUW-8.2, C-3c and C1-4	
(12) If observable liquids exist in the drum, is an estimate of quantity given?	N/A	MP-TRUW-8.2, C-3c and C1-4	
(13) Precision: Have all discrepancies been reconciled between the operator and the ITR with regard to identification of WMC, liquids in excess of TSDF-WAC limits, and compressed gases?	Yes	MP-TRUW-8.2 C3-4b	
(14) Accuracy: Have all operators passed a comprehensive examination and demonstrated satisfactory performance in the presence of the VE expert during initial and subsequent qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(15) Completeness: Has a validated VE data form been obtained for 100% of the waste containers subject to VE?	Yes	MP-TRUW-8.2 C3-4b	
(16) Comparability: Has the comparability of VE data from different operators been enhanced by use of standardized VE procedures and operator qualifications?	Yes	MP-TRUW-8.2 C3-4b	
(17) Does the data for all containers within this batch meet the review, validation, and verification requirements? · Are proper units (e.g. Liters or pounds) and significant figure used? · Is the BDR complete (all pages identified in the BDR and numbered according)? - VE Batch Coversheet - Table of Contents (manual review only) - VE Analysis Reports - Analytical Balance Calibration Checklist (if applicable) - ITR Checklist (Form-1415)	Yes	MP-TRUW-8.2, C3-10b and Table C3-11	

Batch Id VEB12-00941 **Open Date** 14-OCT-12 **Close Date** 14-OCT-12

Reviewer KEN BURNSIDE **Approval Level** SPM Data Validation

Approval Date 15-OCT-12 **Review Iteration** 1

Question Text	Answer	Requirement	Comment
- Associated NCRs - Audio/Video Recordings (if applicable)			
(18) Do the drum reports contain the (a) Batch Data Report number and date, (b) waste container number (c)WMC, (d) implementing procedure and revision, (e) audio/video recording reference, (f) audio and video QC checks were performed and satisfactory, (g) verification that the physical form matches the waste stream description and WMC, (h) absence of prohibited items, (i) gross container weight, (j) waste material parameter weights, and (k) signature and date of examination (signatures of both operators when applicable)?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(19) Is the description of container contents detailed enough to provide verification of estimated weights for the waste matrix parameters identified?	Yes	MP-TRUW-8.2, C1-4 and Table C3-11	
(20) Is there a valid second weight check for every 10 items?	N/A	MP-TRUW-8.2, C1-4	
(21) Verification of two operator signatures when doing VE?	Yes	MP-TRUW-8.2, C-3d(1) and Table C3-11	
(22) Are there 20 or fewer containers in the batch?	Yes	MP-TRUW-8.2, C1-3 and C3-10	
(23) Review all NCRs (open and closed). Can the batch be approved?	Yes	MP-TRUW-8.2, C3-13	
(24) All data associated with this BDR is acceptable for signature release?	Yes	MP-TRUW-8.2, C3-10b and C3-10b(1)	

Batch Id VEB12-00941 **Open Date** 14-OCT-12 **Close Date** 14-OCT-12

Esignature History

Esig Approval ID	User ID	Esig Date	Approval Level	Comments
2366675	KBURNSIDE	15-OCT-12	SPM	SPM reviewed and approved.
2366649	CSIMMONS	15-OCT-12	ITR	Promoted batch to SPM level.

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 15-Oct-2012

Time: 11:10

Batch Id VEB12-00941 **Container Id** 10465284 **Analysis Id** 0000289691

VE Date 14-OCT-12 23:37:28 **Analysis Status** Pass

Gen-IDC Code BN-508 AMWTP Newly Generated Debris **VE Weight** 52.92 lbs

Closure Date 14-OCT-12 23:37:28 **Procedure Id** INST-FOI-17 **Net Weight** 26.92 lbs

Container Type 55 **Revision** 25

Operator 1 BRETT CAPELL **Waste Matrix** S5490 **Summary Category Group** S5000

Operator 2 JENNY CUMMINS **Equipment ID** VE DiD RPCK

General

Rigid Liner Present? No **Liner Type** NO LINER **Closure Method** No Bags

Liner Punctured? Yes **Layers Of Confinement** 0 **Fill Factor** 30 % **Liner Lid Present** No

Liquids

Liquids Present? No **Comment**

Liquid Between Liner and Drum 0 pints **Other Liquids** 0 pints

Containerized Liquid pints **Total Liquid Amount** 0 pints

Internal Container with Liquid 0 pints

Internal Container with Liquid No

Prohibited Liquids Present No

Containerized Liquid

Contents

Sharp Objects? Yes **Are Sharp Objects Protected?** No

	Value	*Comment*
Prohibited Compressed Gas Present?	No	
Explosives Present?	No	
Pyrophorics Present?	No	
Mercury Contaminated>1000PPM	No	
PCBs Present?	No	
PCB Mass (lbs)	0	
Wet Cell Batteries Present?	No	
Corrosives,Ignitables or Reactives Present?	No	
Beryllium Contaminates Present?	No	
Hazardous-Only Waste Present?	No	
Is Waste Incompatible with backfill, packaging materials, or shipping container materials?	No	
Sealed Containers Over 4L?	No	

IDC Verification

Is IDC correct? Yes **Recommended IDC** -

IDC Change Reason

Visual Exam Comment Remaining waste by weight percent is 100% Plastic consisting of bags, tape, and rings. Waste is from Supercompactor cleanout.

AMWTP

Advanced Mixed Waste Treatment Project

AMWTP

VE Boxline and Repackaging Report

Date: 15-Oct-2012

Time: 11:10

Batch Id VEB12-00941 **Container Id** 10465284 **Analysis Id** 0000289691

---Source Container---

Is there a source container? No

Source Container ID	Location	IDC

---IDC CODES---

Current Container IDC Code: BN-508 **Recommended IDC Code:** -

--- Waste Material Items---

---Packaging Materials---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Weight---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)

---Waste Items by Volume---

Material Item	Quantity	Unit	Unit Wt	Item Wt(lbs)
Paper	2.000	PINTS	0.969	1.940
Rubber	3.000	PINTS	1.554	4.660
Iron	0.250	PINTS	7.807	1.950
Floor Sweepings	7.000	PINTS	1.000	7.000

---Waste Parameters---

Waste Parameter	Remaining Weight %	Actual Weight Lbs
Iron-based Metals/Alloys	0.000	1.950
Aluminum-based Metals/Alloys	0.000	0.000
Other metals	0.000	0.000
Other Inorganic Materials	0.000	7.000
Cellulosics	0.000	1.940
Rubber	0.000	4.660
Plastic (Waste Materials)	100.000	11.370
Inorganic matrix	0.000	0.000
Organic matrix	0.000	0.000
Soils/gravel	0.000	0.000
Steel (packaging materials)	0.000	26.000
Plastic (packaging materials)	0.000	0.000
Cellulosics Packaging	0.000	0.000

---Esignature History---

Esig Approval Id	User Id	E-signature Date	Comment
2366466	BCAPELL	14-OCT-12 23:37:29	
2366467	JCUMMINS	14-OCT-12 23:37:31	

------End of VE Boxline Report------

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Non-Conformance Report

Date: 15-Oct-2012

Time: 11:11

*****Batch NCR(s)*****

Batch Type	VEB	Batch ID	VEB12-00941		
Trackwise Number		Status		Opened Date	Closed Date

*****Container NCR(s)*****

Container ID *or related Batch ID*	Trackwise Number	Status	Opened Date	Closed Date

*****End of Non-Conformance Report*****

AMWTP
Advanced Mixed Waste Treatment Project

AMWTP

Scale Check Event Report

Date: 15-Oct-2012

Time: 11:11

Batch Id VEB12-00941 **Container Id** 10465284

VE2

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Brett Capell S# 102262

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Jeremy Hampton		1-9-12
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Jeremy Hampton		1-9-12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Kathy Merrill		12/7/11
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

QC B

JAN 09 2012

Employee Name Brett Capell S# 102262

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

Employee Name Brett Gue LC S# 102262

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Brett Gue LC		B.C.
Ron Grise		
Jeremy Hampton		
Michael Lopez		
RaNae Taylor		

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Brett Cyrell S# 102262

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 1-9-12

		Date Requirement Was Completed	Signature (Training Representative or SS)	Date
2.1	Completion of VE qualification (QPVE0001).	2/22/10	Rattai Taylor	1/9/12

Employee Name Brett Gaul S# 102262

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17. MDD		1-9-12

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.		1-9-12
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).		1-9-12

Employee Name Brett Gaell S# 02262

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	(P) S	Ron A 1-9-12
4.2	Verify (concur with) examination-related data entered into WTS.	(P) S	Ron A 1-9-12
4.3	Identify closure methods and layers of confinement.	(P) S	Ron A 1-9-12
4.4	Discuss how to ensure DQOs are met.	(D)	Ron A 1-9-12
4.5	Identify packaging configurations.	(P) S	Ron A 1-9-12
4.6	Assign proper Waste Material Parameters to waste.	(P) S	Ron A 1-9-12
4.7	Perform weight and volume conversions using procedural aids.	(P) S	Ron A 1-9-12
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	(P) S	Ron A 1-9-12
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	(P) S	Ron A 1-9-12
4.10	Identify common and conditional waste items through VE or video.	(P) S	Ron A 1-9-12

AMWTP	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Brett Gaell S# 102262

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P S	1-9-12
4.12	Identify prohibited and suspect items through VE or video.	P S	1-9-12
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P S	1-9-12
4.14	Estimate volumes and nominal densities of waste.	P S	1-9-12
4.15	Identify rigid liner types and their status and condition.	P S	1-9-12
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P S	1-9-12
4.17	Perform Newly Generated Waste (NGW) package VE.	P S	1-9-12
4.18	Perform Newly Generated Waste Closure VE.	P S	1-9-12
4.19 N/A	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P S	1-9-12
4.20	Perform Boxline VE (BiD).	P S	1-9-12
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P S	1-9-12
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P S	1-9-12
4.23	Perform RVU for the final configuration of a Coring Drum.	P S	1-9-12
4.24	Perform RVU for the final configuration of a Treatment Drum.	P S	1-9-12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Brett Gell S# 102262

VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.25 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P/S	1-9-12

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S/D		01/09/12
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S/D		01/09/12
5.3	Dropped waste container (MP-EC&P-12.9)	S/D		01/09/12
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S/D		01/09/12
5.5	CAM Alarm (OI-11, RS&C-6.12)	S/D		01/09/12
5.6	Spill / Contamination Release (INST-OI-88)	S/D		01/09/12
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S/D		01/09/12
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S/D		01/09/12
5.9	Loss of Commercial Power (AOI-04)	S/D		01/09/12
5.10	Evacuation (EP&C-12.7)	S/D		01/09/12
5.11	Take Cover (EP&C-12.7)	S/D		01/09/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Brett Gaell S# 102262

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert		1-9-12
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name GLADE GILCHRIST S# 35456

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Brett Stacy		06/12/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Brett Stacy		06/12/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Walter Hart		3-10-11
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

JUN 21 2011

GC

JUN 20 2011

initials

Employee Name Glade McGilchrist S# 35456

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Glade H Gilchrist S# 35456

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Walter Hurst	Walter Hurst	WH
Pete Hingsten	Peter Hingsten	PH
Mel Clark	Mel Clark	MC
Ron Grise	Ron Grise	RG

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Glade H Gilchrist S# 35456

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training ***and is current*** on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Peter Hingston — Employee's Production Manager

3/10/11 — Date

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 Completion of VE qualification (QPVE0001).	8-12-09	Walter Hart	3-10-11

Employee Name Glade H Gilchrist S# 35456

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17. MOD B	Ron A	6-17-11

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	Ron A	6-17-11
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	Ron A	6-17-11

Employee Name Glade H Gilchrist S# 35456

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	(P) S	6-17-11
4.2	Verify (concur with) examination-related data entered into WTS.	(P) S	6-17-11
4.3	Identify closure methods and layers of confinement.	(P) S	6-17-11
4.4	Discuss how to ensure DQOs are met.	(D)	6-17-11
4.5	Identify packaging configurations.	(P) S	6-17-11
4.6	Assign proper Waste Material Parameters to waste.	(P) S	6-17-11
4.7	Perform weight and volume conversions using procedural aids.	(P) S	6-17-11
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	(P) S	6-17-11
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	(P) S	6-17-11
4.10	Identify common and conditional waste items through VE or video.	(P) S	6-17-11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Glade H Gilchrist S# 35156

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	(P) S	6-17-11
4.12	Identify prohibited and suspect items through VE or video.	(P) S	6-17-11
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	(P) S	6-17-11
4.14	Estimate volumes and nominal densities of waste.	(P) S	6-17-11
4.15	Identify rigid liner types and their status and condition.	(P) S	6-17-11
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	(P) S	6-17-11
4.17	Perform Newly Generated Waste (NGW) package VE.	(P) S	6-17-11
4.18	Perform Newly Generated Waste Closure VE.	(P) S	6-17-11
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P (S)	6-17-11
4.20	Perform Boxline VE (BiD).	(P) S	6-17-11
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	(P) S	6-17-11
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	(P) S	6-17-11
4.23	Perform RVU for the final configuration of a Coring Drum.	P (S)	6-17-11
4.24	Perform RVU for the final configuration of a Treatment Drum.	P (S)	6-17-11

MODA

Employee Name Glade H Gilchrist S# 35456

VE Over-Train Performance Objectives		PSD	Evaluator Signature & date
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P/S	6-17-11

5.0 Emergency / Abnormal Conditions

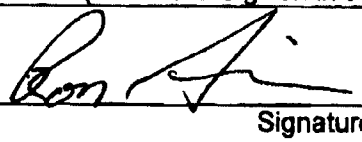
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		PSD	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	(S)D		6/17/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	(S)D		6/17/11
5.3	Dropped waste container (MP-EC&P-12.9)	(S)D		6/17/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	(S)D		6/17/11 6/9/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	(S)D		6/17/11
5.6	Spill / Contamination Release (INST-OI-88)	(S)D		6/17/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	(S)D		6/17/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	(S)D		6/17/11
5.9	Loss of Commercial Power (AOI-04)	(S)D		6/17/11
5.10	Evacuation (EP&C-12.7)	(S)D		6/17/11
5.11	Take Cover (EP&C-12.7)	(S)D		6/17/11

Employee Name Glade H Gilchrist S# 35456

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert		6-17-11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Level I Validation Independent Technical Reviewer for Visual Examination*	**QCITR0VE** **Rev 0**

Employee Name Roe Thompson S# 103095

Level I Validation ITR for Visual Examination

Qualification Package Number: QCITR0VE

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **TRU Programs Mgr.**	SM Peterman		8/7/12
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	SM Peterman		8/7/12
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		2/14/12
	Print Name	Signature	Date

AUG 07 2012

Qualification Checklist Approval Section

Line Manager Approval	Sue Peterman	Signature on File	1/24/12
	Print Name	Signature	Date

Training Manager Approval	Mike Parrish	Signature on File	01/25/12
	Print Name	Signature	Date

QLR

Employee Name Rae Thompson S# 103095

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	The ITR qualification was previously contained in one checklist (QPITR3A) which incorporated ITR duties for VE, Sampling/Coring, and RTR batch validation. Those ITR duties have now been split into three separate checklists for each ITR area. This checklist applies to ITR VE activities.	1/25/12

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Roe Thompson S# 103095

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Kathy Birch	Kathy Birch	KB
RaMae Taylor	RaMae Taylor	RT
SM Peterman	SM Peterman	SMP

1.0 Scope

This requalification checklist is developed to provide assurance that an individual performing level I validation of Sampling, RTR, or VE batch data in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, is qualified to perform the tasks associated with that function. This requalification is used for personnel performing ITR activities associated with these batches at AMWTP and who are currently qualified in the prerequisite qualifications listed below. This requalification document provides the candidate with a comprehensive foundation in the knowledge and skills required for compliant task performance. This qualification expires 24 months from the grant date.

Maintaining this qualification requires the individual to maintain current qualification in QPVE0001 (Visual Examiner). Recurring training must be completed prior to expiration.

Extended absences, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. may result in disqualification of the individual until any or all conditions are remediated.

Employee Name Roe Thompson S# 103095

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all general courses required for individuals performing Level I Validation activities.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 8/7/12

	Date Requirement Was Completed	**Signature** (Training Specialist or ITRLead)	**Date**
2.1 QPVE0001, Visual Examiner	10-6-10		2-14-12

Employee Name Roe Thompson S# 103095

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the ITR Lead or a Training Representative.

3.1	Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1	0AWT1118, LLW/MLLW Disposition Plan	2-13-12	24 months
3.1.2	0AWT2201, Quality Assurance	8-16-05	Initial/0 months
3.1.3	0AWT2701, Nuclear Theory	5-3-07	Initial/0 months
3.1.4	0AWT3104, TRUPACT II	7-24-07	Initial/0 months
3.1.5	0AWT3105, TRU Programs and WIPP WAP Overview OR 0AWT3101 AND 0AWT3108 AND 0AWT3111	4-7-05 6-29-06	Initial/0 months
Training representative or ITR Lead verify initial training courses are complete:	Dana Bath		2-14-12
	Signature		Date

Sign-off by the ITR Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2	Required Reading: Operating Instructions	ITR Lead Signature	Date
3.2.1	INST-OI-24, Packaging Radioactive Waste	Kathy Burch	3/9/12

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.1	MP-TRUW-8.1, AMWTP Certification Plan for INL Transuranic Waste	Kathy Burch	3/9/12
3.3.2	MP-TRUW-8.2, Quality Assurance Project Plan	Kathy Burch	3/9/12

Employee Name Rue Thompson S# 103095

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.3	MP-TRUW-8.8. Level I Data Validation	Kathy Birch	3/9/12
3.3.4	MP-Q&SI-5.3, Corrective Action	Kathy Birch	3/9/12
3.3.5	MP-Q&SI-5.4, Identification of Nonconforming Conditions	Kathy Birch	3/9/12
3.3.6	DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for WIPP	Kathy Birch	3/9/12
3.3.7	RPT-TRUW-05, Waste Matrix Code Reference Manual	Kathy Birch	3/9/12
3.3.8	RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant	Kathy Birch	3/9/12

Sign-off by the ITR Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.4	Knowledge:	ITR Lead Signature or as indicated	Date
3.4.1	Discuss WTS System Knowledge and how it applies to tasks covered in this qualification package.	Kathy Birch	3/9/12

Employee Name Roe Thompson S# 103095

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Sign-off by the ITR Lead indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.1	**Verification of BDR and QA documents**		
4.1.1	Discuss the items one would verify are complete on the VE Batch Data report coversheet.	(D)	Kathy Birch 3/9/12
4.1.2	Discuss the importance of the Table of Contents with regard to the VE Batch Data Report.	(D)	Kathy Birch 3/9/12
4.1.3	Demonstrate how to verify that a VE analysis report is complete.	(P)	Kathy Birch 3/9/12
4.1.4	Verify that an ITR Checklist is complete.	(P)	Kathy Birch 3/9/12
4.1.5	Discuss the purpose of the Batch Data Report Supplemental Comment form (1491).	(D)	Kathy Birch 3/9/12
4.1.6	Demonstrate the ability to reference associated NCRs in WTS.	(P)	Kathy Birch 3/9/12
4.1.7	Demonstrate how to verify that a VE operator is/was qualified at the time of a VE event.	(P)	Kathy Birch 3/9/12
4.2	**VE ITR Tasks**		
4.2.1	Demonstrate the ability to complete a VE ITR of a BDR.		Kathy Birch 3/9/12
4.2.2	Demonstrate how to access an operator-approved VE Batch Report from the manual BDR folder or WTS Data Review screen on the main menu, as applicable.	(P) S	Kathy Birch 3/9/12

Employee Name Roe Thompson S# 103095

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.3	Demonstrate how to ensure that NCRs that were generated during data generation are referenced and flagged in WTS, as applicable.	P S	Kathy Burd 3/9/12
4.2.4	Complete a data review in WTS or manually using Form-1415, and document all concerns and comments in WTS, or manually using Form-1415 or Form-1491.	P S	Kathy Burd 3/9/12
4.2.5	Demonstrate how to record the testing batch number and method/location on Form 1415.	P S	Kathy Burd 3/9/12
4.2.6	Demonstrate how to verify that the BDR and all QA documentation are complete in accordance with the applicable procedure by verifying all of the following: • VE Batch coversheet • Table of contents • VE analysis reports • Analytical balance Calibration Check Sheet (if applicable) • ITR Checklist (Form 1415) • Batch Data Report Supplemental Comment Form (Form 1491) • Associated NCRs (referenced in WTS) • A/V recording references	P S	Kathy Burd 3/9/12
4.2.7	Demonstrate how to verify that a VE data form was completed for each container in the batch.	P S	Kathy Burd 3/9/12
4.2.8	Demonstrate how to verify that the data was generated in a technically correct manner using the correct revision of INST-OI-34 or INST-OI-17.	P S	Kathy Burd 3/9/12
4.2.9	For each drum in a batch, demonstrate how to verify the following: • The E-Signature history was reviewed • For each VE event, two qualified operators agreed on the characterization of the waste as documented by manual or electronic signature. • Guidance from VEE is documented on the A/V	P S	Kathy Burd 3/9/12

Employee Name Rue Thompson S# 103095

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
medium and in WTS, as applicable. • Every drum has a valid A/V recording, as applicable. • The correct A/V medium identification (ID) was recorded on the WTS record. • The physical form matched the waste stream description, Waste Matrix Code (WMC), and Item Description Code (IDC). Batch #: UFB12-00152		Kathy Burch 3/9/12
4.2.10 Demonstrate how to verify the waste material parameters were documented correctly for the following: • The inventory of the waste container on the material items screen in WTS, which includes the description, units, weight or volume, and the correct assignment of the waste parameters. • The assignment of the bulk matrix including the description. • When a liner is present, it is included in the waste material parameter summary section as plastic packaging materials.	(P) S	Kathy Burch 3/9/12
4.2.11 Verify the presence or absence of prohibited items has been properly identified.	(P) S	Kathy Burch 3/9/12
4.2.12 Verify the description of rigid liners and layers of confinement have been properly documented.	(P) S	Kathy Burch 3/9/12
4.2.13 Demonstrate how to review the drum age criteria (DAC) for accuracy and completeness for the following: • Closure methods • Liner puncture status • Layers of confinement • Closure date • Packaging configuration • Type and number of filters, as applicable • Liner hole presence and diameter, as applicable	(P) S	Kathy Burch 3/9/12

Employee Name Roe Thompson S# 103095

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.14 Demonstrate how to verify that filters have been installed or removed from drum as recorded in WTS.	(P) S	Kathy Bird 3/9/12
4.2.15 Demonstrate how to verify hand calculations and unit conversions are recorded correctly in WTS. • The packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight.	(P) S	Kathy Bird 3/9/12
4.2.16 Demonstrate the ability to verify all units and significant figures used for reporting volumes/weights are correct.	(P) S	Kathy Bird 3/9/12
4.2.17 Demonstrate the ability to verify data for transcription errors, as appropriate.	(P) S	Kathy Bird 3/9/12
4.2.18 Discuss the VE QAOs and demonstrate how to verify the VE QAOs.	(P)	Kathy Bird 3/9/12
4.2.19 Demonstrate how to verify that the A/V check is satisfactory.	(P) S	Kathy Bird 3/9/12
4.2.20 Demonstrate how to verify that each data form is signed by qualified VE operators as applicable per the appropriate procedure being used.	(P) S	Kathy Bird 3/9/12
4.2.21 Demonstrate how to verify the scale or balance check weight event was satisfactory.	(P) S	Kathy Bird 3/9/12
4.2.22 Discuss the purpose of and demonstrate how to verify the QC weight checks are within the tolerance of the scale or balance.	(P) S	Kathy Bird 3/9/12
4.2.23 Discuss the scenarios when it would be appropriate to generate an NCR. • Containers that have prohibited items • Containers that fail to meet DQOs or QAOs • Containers that have a physical form, WMC, or IDC that does not match the waste stream description.	(D)	Kathy Bird 3/9/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Level I Validation Independent Technical Reviewer for Visual Examination*	**QCITR0VE** **Rev 0**

Employee Name Roe Thompson S# 103095

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.24	Discuss the appropriate actions to take if you discover that an NCR has not been generated for those items listed in the previous step.	(D)	Kathy Birch 3/9/12
4.2.25	Discuss the actions to take when a batch has been re-promoted from rework.	(D)	Kathy Birch 3/9/12
4.2.26	Discuss the forms that should be attached to the BDR and their purpose.	(D)	Kathy Birch 3/9/12
4.2.27	Demonstrate how to ensure that an RTR/VE Update has been completed.	(P)	Kathy Birch 3/9/12
4.2.28	Discuss the actions to take when approving the VE/ITR data?	(D)	Kathy Birch 3/9/12
4.2.29	Demonstrate how to approve the VE/ITR data.	(P) S	Kathy Birch 3/9/12

Employee Name Roe Thompson S# 103095

5.0	**Emergency / Abnormal Conditions**			
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.				
		S D	**ITR OJT or TRU Programs Mgr. Signature & date**	**Date**
5.1	Fire / Alarm	S (D)	Kathy Bird	3/9/12
5.2	Location of fire extinguishers / fire alarm boxes	S (D)	Kathy Bird	3/9/12
5.3	Spill / Contamination Release (MP-EC&P-7.10)	S (D)	Kathy Bird	3/9/12
5.4	Injured Person	S (D)	Kathy Bird	3/9/12
5.5	Evacuation (MP-EP&C-12.7)	S (D)	Kathy Bird	3/9/12
5.6	Take Cover (MP-EP&C-12.7)	S (D)	Kathy Bird	3/9/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Level I Validation Independent Technical Reviewer for Visual Examination*	**QCITR0VE** **Rev 0**

Employee Name Rue Thompson S# 103095

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 85%

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached. Not required if first exam is passed.)

Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	RaNae Taylor	8/1/12
	Exam Proctor Signature	Date

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the ITR Lead or TRU Programs Mgr. acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the ITR Lead or TRU Programs Mgr. has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

ITR Lead or TRU Programs Mgr.	Kathy Burch	8/2/12
Title	Signature	Date

Upon satisfactory completion of this requalification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Rex Bush S# 10184

VISUAL EXAMINER

Qualification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Darin Birch	Darin Birch	4/29/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Pete Hingston	Peter Hingston	5/9/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Walter Hoff	Walter Hoff	8-23-10
	Print Name	Signature	Date

MAY 09 2011

Qualification Package Approval Section

initials RE

Line Manager Approval	C. Sisson	Signature on file	03/25/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

MAY 10 2011
QC RE

Employee Name Rex Bush S# 101844

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes; Updated format and incorporated evaluation standard; remove Glovebox training as a prerequisite.	4/28/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	5	Add T3105, TRU Programs and WIPP WAP Overview to 3.1.3 in addition to T3111.	Jim Jackson– signature on file	5-27-10
3B	6	Delete item 3.3.8 as it as been suspended and is no longer in use.	Brian Warner signature on file	6/15/10

* Manager signature required for modifications.

Employee Name Rex Bush S# 101844

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Walter Hunt		WH
Jeremy Hampton		
J Tinsley		
R L Moore		
J D Young		
Mike Cook		
Darin Birch		

Employee Name Rex Bush S# 101844

1.0 Scope

QPVE0001, Visual Examiner is a technician level, activity-specific qualification. As such, it is not specific to any operational position. Standardized training for Visual Examination (VE) has been developed IAW MP-TRUW-8.2, Sec. B1-4, Visual Examination. This training includes specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the AMWTP.

This qualification package establishes the knowledge and skill requirements for personnel performing VE at AMWTP. Personnel will access HWMA/RCRA areas to perform visual examination of waste by direct examination using audio/visual equipment when required. VE personnel are re-qualified every two years.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employee's Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing Visual Examination.

The ITP also includes the qualification checklists for all applicable equipment that will be used by personnel performing VE activities.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — 8-23-10 Date

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Rex Bush S# 101844

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	2-5-10	Initial
3.1.2 0AWT2719 Airlock (CBT)	8-23-10	Initial
3.1.3 0AWT3111 WIPP WAC; or 0AWT3105 TRU Programs and WIPP WAP Overview (Mod. 3A)	11-20-07	Initial
3.1.4 0AWT3141, VE Indoctrination	1-11-11	Initial
3.1.5 0AWT3142, Visual Examination	1-13-11	Initial
3.1.6 0AWT3143, WTS & DQOs	1-14-11	Initial
3.1.7 0AWT4138C, AMWTP TrackWise System (CBT)	08-23-10	Initial

VEE SME or Lead, Training Representative or SS verify initial training courses are complete:	Signature	Date
		4/12/11

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 INST-FOI-17, Facility Visual Examination Ops.		1-14-11
3.2.2 INST-OI-24, Waste Packaging		1-14-11
3.2.3 INST-OI-34, Non-Facility Visual Examination Ops.		1-14-11

Employee Name Rex Bush S# 101844

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)		4-17-11
3.3.2 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria (for familiarization)		4-17-11
3.3.3 MP-Q&SI-5.3, Corrective Action		4-17-11
3.3.4 MP-Q&SI-5.4, Identification of Nonconforming Conditions		4-17-11
3.3.5 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste		4-17-11
3.3.6 MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP)		4-17-11
3.3.7 MP-TRUW-8.8, Level I Validation		4-17-11
3.3.8 RPT-CSA-01-1M, CSA Implementation Matrix MOD B	N/A	N/A
3.3.8 RPT-NFCS-05, Drum Contents Handling (EDF-0050)		4-17-11
3.3.9 RPT-NFCS-07, Treatment Facility (NE-006)		4-17-11
3.3.10 RPT-NFCS-08, Retrieval Ops. (NE-007)		4-17-11
3.3.11 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory		4-17-11
3.3.12 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual		4-17-11
3.3.13 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste		4-17-11

Employee Name Rex Bush S# 1018404

3.3 Required Reading: Other Documents	VEE	Date
3.3.15 RPT-TRUW-13, Acceptable Knowledge document for INL stored transuranic waste- Mound Plant Waste		1-14-11
3.3.16 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant		1-14-11

Sign-off by the VEE, SS, or indicated person indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss how the DSA and Safety Basis may apply to VE work.		4/17/11
3.4.2 Discuss how ISIH applies to VE work.		4/17/11
3.4.3 Discuss how Conduct of Operations applies to VE work.		4/17/11
3.4.4 Discuss how Criticality Safety applies to VE work.		
3.4.5 Discuss any Criticality Working Requirements (CWRs) that apply to VE work.		

Employee Name 101844 RexBush S# 101844

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle which one was used.

Initials by the VEE (as the OJT Instructor) indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 General Knowledge			
4.1.1 Generate (enter) examination related data into WTS.	(P)		4.29.11
4.1.2 Verify (concur with) examination-related data entered into WTS.	(P)		4.29.11
4.1.3 Locate and discuss waste material parameters and descriptions.	(P)		2-23-11
4.1.4 Identify closure methods and layers of confinement.	(P)		2 23 11
4.1.5 Locate and discuss Waste Matrix Codes and IDCs.	(P)		2 23 11
4.1.6 Discuss Nonconformance Report process (flag in WTS, Generation, Processing, and Closure).	(D)		4.17.11
4.1.7 Discuss where to obtain generator site waste characterization information.	(D)		2-23-11
4.1.8 Discuss how to ensure DQOs are met.	(D)		4.17.11

Employee Name Rex Bush S# 101864

	PSD	OJT Initials	Evaluator Signature & date
4.1.9 Discuss the available Audio/Video equipment and the requirements for their use.	D		2-23-11
4.1.10 Identify packaging configurations.	P		1-14-11
4.1.11 Assign proper Waste Material Parameters to waste.	P		2-23-11
4.1.12 Perform weight and volume conversions using procedural aids.	P		1-14-11
4.1.13 Assign the correct IDC and Waste Matrix Code during the VE process.	P		4-17-11
4.1.14 Discuss the pathway forward for nonconforming and prohibited items and the associated NCRs.	D		2-23-11
4.1.15 Identify common and conditional waste items through VE or video.	P		2-23-11
4.1.16 Identify packaging and waste materials.	P		1-14-11
4.1.17 Identify prohibited and suspect items through VE or video.	P		2-23-11
4.1.18 Identify secondary waste items through video or VE.	P		4-17-11
4.1.19 Assign correct IDCs for newly generated secondary waste and compacted waste.	P		4-17-11
4.1.20 Estimate volumes and nominal densities of waste: (X=[(n•0.473) • ρ] •2.2 (where X = pounds, n = pints, and ρ = density)	P		1-14-11
4.1.21 Demonstrate the ability to identify waste per DEQ requirements.	P		1-14-11
4.1.22 Demonstrate the ability to identify waste per NTS WAC requirements.	P		2-23-11
4.1.23 Identify rigid liner types and their status / condition.	P		1-14-11

Employee Name Rex Bush S# 1018494

	PSD	OJT Initials	Evaluator Signature & date
4.1.24 Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	(P)		
4.1.25 Discuss when VE cannot be used to meet the DQOs.	(D)		
4.2 Newly Generated Waste VE			
4.2.1 Perform or simulate Newly Generated Waste (NGW) package VE.	P/S		
4.2.2 Perform or simulate Newly Generated Waste Closure VE.	P/S		
4.3 Visual Examination of non-Boxline Legacy Waste Containers			
4.3.1 Perform or simulate VE of non-Boxline Legacy Waste.	P/S		
4.4 Visual Examination (Boxlines)			
4.4.1 Perform Boxline VE (BiD).	(P)		
4.4.2 Perform Boxline VE (DiD) using volume estimates and nominal densities.	(P)		
4.5 RTR/VE Update (RVU)			
4.5.1 Perform or simulate RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P/S		
4.5.2 Perform RVU for the final configuration of a Coring Drum.	(P)		
4.5.3 Perform RVU for the final configuration of a Treatment Drum.	(P)		
4.5.4 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	(P)		

Employee Name Rex Bush S# 101874

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Inst. Initials	Evaluator Signature	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)			4/19/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)			4/19/11
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)			4/19/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)			4/19/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)			4/19/11
5.6	Spill / Contamination Release (INST-OI-88)	S(D)			4/19/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)			4/19/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)			4/19/11
5.9	Loss of Commercial Power (AOI-04)	S(D)			4/19/11
5.10	Evacuation (EP&C-12.7)	S(D)			4/19/11
5.11	Take Cover (EP&C-12.7)	S(D)			4/19/11

Employee Name Rex Bush S# 1018414

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert	[signature]	4-29-11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

Treatment Facility Qualification Package/Checklist Extension

Extension past the qualification package/checklist 6-month completion requirement for **Rex Bush's #101844 QPVE0001 Visual Examiner** qualification is approved. Extension is necessary due to time available to train with VEE.

APPROVAL

Pete Hingston

Pete Hingston, Facility Production Manager

5/9/11

Date

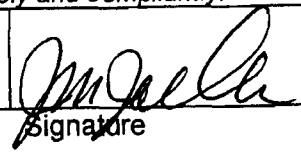
AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

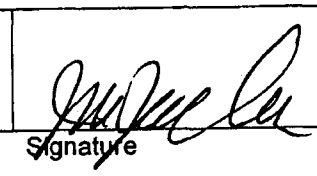
Employee Name Denny Gasper S# 100175

Visual Examination Expert

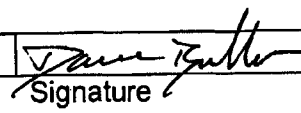
Qualification Package Number: QCVEE001

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **Level I Validation Manager** Manager Title	J.M. JACKSON Print Name	 Signature	6/2/11 Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	J.M. JACKSON Print Name/Title	 Signature	6/2/11 Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler Print Name	 Signature	3-2-2011 Date

TRAINING DEPT.
JUN 02 2011

Qualification Package Approval Section Initials

Line Manager Approval	Jim Jackson Print Name	Signature on file Signature	6/22/10 Date

Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	6/30/10 Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Gasper S# 100175

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	ALL	Initial Issue.	5-28-08
1	ALL	Made editorial corrections. Update to new format. Implemented Training/Evaluation Standard as applicable.	6-30-10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Gasper S# 100175

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler		DB
Dave Preston		DP
J. M. JACKSON		JMJ

Employee Name Denny Gasper S# 100175

1.0 Scope

The VEE will be familiar with the waste generating processes that have taken place at the AMWTP and will also be familiar with all types of waste being characterized at the AMWTP. The VEE is responsible for direction and implementation of the VE at the AMWTP. This individual is selected based on experience and training in the types of waste being characterized, and receives training in the same elements as the VE personnel with both formal training and OJT. Qualification of a VEE is based on familiarity with waste generating processes and familiarity with the types of waste being characterized.

The VEE will access HWMA/RCRA areas to provide direction to Visual Examiners and Operations Management concerning Visual Examination (VE) events and has the authority to set task lists and disposition codes in WTS. The VEE will also perform classroom and OJT instruction/performance assessment.

The QCVE0001 qualification is valid for 24 months afterwhich a requalification package must be completed to maintain qualified VEE status.

The VEE may be disqualified if any of the following conditions exist: Extended absence, identified training expires, failure to maintain Hazwoper Refresher training, performance deficiencies. Refer to MP-RTQP-14.4, Personnel Qualification and Certification.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of a VEE Lead.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification checklist.

Level I Validation Manager — Date: 6/2/11

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Denny Gasper S# 100175

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the VEE SME, VEE Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	6-28-07	Initial / 0
3.1.2 0AW T3141, Visual Examination Indoctrination	6-19-07	Initial / 0
3.1.3 0AW T3142, Visual Examination	6-20-07	Initial / 0
3.1.4 0AW T3143, WTS & DQOs	6-22-07	Initial / 0

Training Representative or a qualified **VEE Lead** verify initial training courses are complete:	Dave Fuller Signature	3-2-2011 Date

Sign-off by the VEE Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 **Required Reading: Operating Instructions**	VEE Lead or SME	Date
3.2.1 INST-OI-16 Drum Coring (For familiarity)	David J Preston	6/2/11
3.2.2 INST-OI-73 Manual Drum Coring *(For familiarity)*	David J Preston	6/2/11
3.2.3 INST-OI-12 RTR Ops (Drum) (Initial – for familiarity)	David J Preston	4/18/11
3.2.4 INST-OI-41 RTR Ops (Box) (For familiarity)	David J Preston	4/18/11

Employee Name Denny Harper S# 100175

3.2 Required Reading: Operating Instructions	VEE Lead or SME	Date
3.2.5 INST-OI-60 RTR Ops (Quick Scan) *(For familiarity)*	David J Preston	4/18/11
3.2.6 INST-OI-81 RTR Ops (WIPP Cert for Boxes) *(For familiarity)*	David J Preston	4/18/11
3.2.7 INST-FOI-21, Drummed Waste Handling Operations *(For familiarity)*	David J Preston	5/5/11
3.2.8 INST-FOI-23 SCW Ops. (For familiarity)	David J Preston	5/5/11
3.2.9 INST-FOI-25 SCW PAM Ops (For familiarity)	David J Preston	5/5/11
3.2.10 INST-FOI-16 Box Line Ops (For familiarity)	David J Preston	4/18/11
3.2.11 INST OI-11 Waste Container Handling *(For familiarity)*	David J Preston	4/18/11
3.2.12 INST-OI-23 Soil Removal Ops *(For familiarity)*	David J Preston	5/5/11
3.2.13 INST-OI-24, Waste Packaging	David J Preston	5/5/11
3.2.14 INST-OI-68 Drum Treatment Facility Ops *(For familiarity)*	David J Preston	4/18/11
3.2.15 INST-OI-34 Non-Facility Visual Examination Ops	David J Preston	4/18/11
3.2.16 INST-FOI-17 Facility Visual Examination Ops	David J Preston	4/18/11
3.2.17 INST-OI-75, Container-in-Container Sampling *(For familiarity)*	David J Preston	4/18/11

Employee Name Denny Gasper S# 100175

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.1 RPT-DSA-02, for Operations Chapters 4 & 5	David J Preston	5/10/11
3.3.2 MP-Q&SI-5.3, Corrective Action	David J Preston	5/10/11
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	David J Preston	5/10/11
3.3.4 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	David J Preston	4/18/11
3.3.5 MP-TRUW-8.2; Quality Assurance Project Plan (QAPjP)	David J Preston	4/18/11
3.3.6 MP-TRUW-8.5, TRU Waste Certification *(For familiarity)*	David J Preston	4/18/11
3.3.7 MP-TRUW-8.8, Level I Validation	David J Preston	4/18/11
3.3.8 MP-TRUW-8.13, Collection, Review, Confirmation, & Management of AK Documentation *(For familiarity)*	David J Preston	5/10/11
3.3.9 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory *(For familiarity)*	David J Preston	4/18/11
3.3.10 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual	David J Preston	4/18/11
3.3.11 RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements *(For familiarity)*	David J Preston	4/18/11
3.3.12 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge *(For familiarity)*	David J Preston	5/10/11
3.3.13 RPT-TRUW -12, AMWTP Waste Stream Designations	David J Preston	4/18/11

Employee Name Denny Gasper S# 100175

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.14 RPT-TRUW-13, Acceptable knowledge document for INL stored transuranic waste-Mound Plant Waste *(For familiarity)*	David J Dexter	4/18/11
3.3.15 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge *(For familiarity)*	David J Dexter	4/18/11
3.3.16 RPT-TRUW-23, Acceptable Knowledge Summary for solidified Acid/Caustic Waste (BN835) *(For familiarity)*	David J Dexter	4/18/11
3.3.17 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompactor Debris Waste (BN510)	David J Dexter	4/18/11
3.3.18 RPT-TRUW-44, Acceptable Knowledge Summary for Non Special Metal (BN296) *(For familiarity)*	David J Dexter	5/10/11
3.3.19 RPT-TRUW-46, Acceptable Knowledge Summary for Glass Debris Waste (BN243) *(For familiarity)*	David J Dexter	5/10/11
3.3.20 RPT-TRUW-48, Acceptable Knowledge Summary for Leaded Rubber Debris Waste (BN252) *(For familiarity)*	David J Dexter	5/10/11
3.3.21 RPT-TRUW-52, Acceptable Knowledge Summary for Firebrick Debris Waste (BN161) *(For familiarity)*	David J Dexter	5/10/11
3.3.22 RPT-TRUW-53, Acceptable Knowledge Summary for Mound Debris Waste (BN304) *(For familiarity)*	David J Dexter	5/10/11
3.3.23 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Dexter	4/18/11

Employee Name Denny Gasper S# 100175

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.24 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004) *(For familiarity)*	David J Preston	6/2/11
3.3.25 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836) *(For familiarity)*	David J Preston	6/2/11
3.3.26 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)	David J Preston	6/2/11
3.3.27 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria *(For familiarity)*	David J Preston	6/2/11
3.3.28 INEL-96/0280, Acceptable Knowledge (AK) Document for INEEL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Preston	6/2/11
3.3.29 NM4890139088, WIPP Hazardous Waste Permit Waste Analysis Plan *(Review changes – for impacts on VE)*	David J Preston	6/2/11
3.3.30 DOE/WIPP-02-3122, Contact-Handled Waste Acceptance Criteria for the Waste Isolation Pilot Plant (CH-WAC) *(Review changes – ~~for~~ impacts on VE)*	David J Preston	6/2/11
3.3.31 DOE/CBFO-94-1012, Quality Assurance Program Document *(Initial – for familiarity)*	David J Preston	6/2/11
3.3.32 40 CFR 260 to 265, and 268, RCRA Regulations associated with solid and hazardous waste determinations *(For familiarity)*	David J Preston	6/2/11

Employee Name Denny Gasper S# 100175

Sign-off by the VEE Lead or SME indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 **Knowledge:**	**VEE Lead or SME**	**Date**
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	David J Deaton	5/19/11
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	David J Deaton	5/19/11
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	David J Deaton	5/19/11
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	David J Deaton	5/19/11
3.4.5 Discuss Criticality Safety and how it applies to tasks covered in this qualification checklist.	David J Deaton	5/19/11
3.4.6 Discuss the overall responsibilities of the VEE.	David J Deaton	5/19/11

Employee Name Denny Grasper S# 100175

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle all that apply.

Initials by the VEE indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	VEE Initials	Evaluator Signature & date
4.1 VEE Performance Objectives			
4.1.1 Discuss and locate waste material parameters and descriptions.	(D)	DWP	David J Dexter 5/19/11
4.1.2 Discuss and identify closure method and layers of confinement through video or VE.	(P) S	DWP	David J Dexter 5/19/11
4.1.3 Identify filter models.	(P) S	DWP	David J Dexter 5/19/11
4.1.4 Identify rigid liner types and status/condition.	(P) S	DWP	David J Dexter 5/19/11
4.1.5 Discuss and identify waste drum configurations through video or VE.	(P) S	DWP	David J Dexter 5/19/11
4.1.6 Discuss and identify packaging and waste materials through video or VE.	(P) S	DWP	David J Dexter 5/19/11
4.1.7 Discuss and estimate Volumes and Nominal Densities through video or VE.	(P) S	DWP	David J Dexter 6/2/11
4.1.8 Identify common and conditional items in waste through video or VE.	(P) S	DWP	David J Dexter 5/19/11
4.1.9 Identify prohibited, suspect, or inconclusive items in waste through video or VE.	(P) S	DWP	David J Dexter 5/19/11

Employee Name Denny Gasper S# 100175

	PSD	VEE Initials	Evaluator Signature & date
4.1.10 Discuss and assign waste to waste material parameter categories.	(P)S	DJP	6/2/11 David J Aeston
4.1.11 Discuss and assign Waste Matrix Codes.	(P)S	DJP	6/7/11 David J Aeston
4.1.12 Identify and discuss IDCs for newly generated secondary waste and compacted waste.	P(S)	DJP	6/2/11 David J Aeston
4.1.13 Perform volume and weight conversions.	P(S)	DJP	6/2/11 David J Aeston
4.1.14 Generate (enter) and verify (concur with) examination-related data in WTS.	(P)S	DJP	5/19/11 David J Aeston
4.1.15 Discuss Audio/Video equipment available, and the requirements associated with their use.	(D)	DJP	6/2/11 David J Aeston
4.1.16 Define Data Quality Objectives (DQOs) for the VE program.	(D)	DJP	5/19/11 David J Aeston
4.1.17 Discuss conditions where a complete VE cannot be performed.	(D)	DJP	5/19/11 David J Aeston
4.1.18 Discuss integration of RTR/VE Update (RVU) with the original analysis and the Batch Data Report.	(D)	DJP	5/19/11 David J Aeston
4.1.19 Discuss the Data Review and Validation Process.	(D)	DJP	5/19/11 David J Aeston
4.1.20 Discuss the actions to be taken if assistance is required by operations to identify material in a breached container event in buildings WMF-628, 634, 635, and 676.	(D)	DJP	6/2/11 David J Aeston
4.1.21 Demonstrate the ability to perform Trackwise activities.	(P)	DJP	5/19/11 David J Aeston

Employee Name Denny Gasper S# 100175

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the VEE Lead or SME indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot simulate or discuss the task without coaching, terminate the Performance Assessment.

		S D	VEE Lead or SME	Evaluator Signature	Date
5.1	Discuss the conditions under which a VEE would need to change or override data in WTS.	S (D)	DP	David Gasper	6/2/11
5.2	Evacuation (MP-EP&C-12.7)	(S) D	DP	David Gasper	6/2/11
5.3	Take Cover (MP-EP&C-12.7)	(S) D	DP	David Gasper	6/2/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Denny Cusper S# 100175

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO EXAM REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert Lead or SME acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the individual recommending qualification of the candidate has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
VEE Lead or SME Title	David J Preston Signature	6/2/11 Date

Upon satisfactory completion of this qualification package, the Level I Validation Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Tim Ozburn S# 102309

VISUAL EXAMINER

Qualification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Darin Birch	Darin Birch	4/29/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Mel Clark	Mel Clark	4/30/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	WALTER HARTT	Walter Hartt	8-23-10
	Print Name	Signature	Date

TRAINING DEPT
MAY 02 2011

Qualification Package Approval Section Initials BE

Line Manager Approval	C. Sisson	Signature on file	03/25/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

MAY 03 2011

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Tim Ozburn S# 102309

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes; Updated format and incorporated evaluation standard; remove Glovebox training as a prerequisite.	4/28/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	5	Add T3105, TRU Programs and WIPP WAP Overview to 3.1.3 in addition to T3111.	Jim Jackson– signature on file	5-27-10
3B	6	Delete item 3.3.8 as it as been suspended and is no longer in use.	Brian Warner signature on file	6/15/10

* Manager signature required for modifications.

Employee Name Tim Ozburn S# 102309

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Walter Hoyt		WH
Jeremy Hampton		
Tim Ozburn		TO
J.W. Walker		JWW
R.L. Moore		RLM
J.D. Young		JDY
Mac Clark		MC
Daria Birch		DB

Employee Name Tim Osburn S# 102309

1.0 Scope

QPVE0001, Visual Examiner is a technician level, activity-specific qualification. As such, it is not specific to any operational position. Standardized training for Visual Examination (VE) has been developed IAW MP-TRUW-8.2, Sec. B1-4, Visual Examination. This training includes specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the AMWTP.

This qualification package establishes the knowledge and skill requirements for personnel performing VE at AMWTP. Personnel will access HWMA/RCRA areas to perform visual examination of waste by direct examination using audio/visual equipment when required. VE personnel are re-qualified every two years.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employee's Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing Visual Examination.

The ITP also includes the qualification checklists for all applicable equipment that will be used by personnel performing VE activities.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 9-23-10

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Tim Osburn S# 102309

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	2-12-10 WH	Initial
3.1.2 0AWT2719 Airlock (CBT)	7-20-04 WH	Initial
3.1.3 0AWT3111 WIPP WAC; or 0AWT3105 TRU Programs and WIPP WAP Overview (Mod. 3A)	1-29-04 WH	Initial
3.1.4 0AWT3141, VE Indoctrination	1-11-11 m	Initial
3.1.5 0AWT3142, Visual Examination	1-13-11 m	Initial
3.1.6 0AWT3143, WTS & DQOs	1-14-11 m	Initial
3.1.7 ✓ 0AWT4138C, AMWTP TrackWise System (CBT)	8-23-10 m	Initial

VEE SME or Lead, Training Representative or SS verify initial training courses are complete:	Signature	Date
	M Clark	4/19/11

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 INST-FOI-17, Facility Visual Examination Ops.	T Wack	1-14-11
3.2.2 INST-OI-24, Waste Packaging	T Wack	1-14-11
3.2.3 INST-OI-34, Non-Facility Visual Examination Ops.	T Wack	1-14-11

Employee Name Tim Eburn S# 102309

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)		4-28-11
3.3.2 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria (for familiarization)		4-28-11
3.3.3 MP-Q&SI-5.3, Corrective Action		4-28-11
3.3.4 MP-Q&SI-5.4, Identification of Nonconforming Conditions		4-28-11
3.3.5 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste		4-28-11
3.3.6 MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP)		4-28-11
3.3.7 MP-TRUW-8.8, Level I Validation		4-28-11
3.3.8 RPT-CSA-01-1M, CSA Implementation Matrix	MOD B N/A	N/A
3.3.8 RPT-NFCS-05, Drum Contents Handling (EDF-0050)		4-28-11
3.3.9 RPT-NFCS-07, Treatment Facility (NE-006)		4-28-11
3.3.10 RPT-NFCS-08, Retrieval Ops. (NE-007)		4-28-11
3.3.11 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory		4-28-11
3.3.12 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual		4-28-11
3.3.13 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste		4-28-11

Employee Name Tim Osborn S# 102309

3.3 Required Reading: Other Documents	VEE	Date
3.3.15 RPT-TRUW-13, Acceptable Knowledge document for INL stored transuranic waste- Mound Plant Waste		1-14-11
3.3.16 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant		1-14-11 ~~11-14~~ 1-14-11

Sign-off by the VEE, SS, or indicated person indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss how the DSA and Safety Basis may apply to VE work.		1-28-11
3.4.2 Discuss how ISIH applies to VE work.		1-28-11
3.4.3 Discuss how Conduct of Operations applies to VE work.		1-28-11
3.4.4 Discuss how Criticality Safety applies to VE work.		
3.4.5 Discuss any Criticality Working Requirements (CWRs) that apply to VE work.		

Employee Name Tim Osburn S# 102309

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle which one was used.

Initials by the VEE (as the OJT Instructor) indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 General Knowledge			
4.1.1 Generate (enter) examination related data into WTS.	(P)	TW	Tim Osburn 4-27-11
4.1.2 Verify (concur with) examination-related data entered into WTS.	(P)	TW	Tim Osburn 4-27-11
4.1.3 Locate and discuss waste material parameters and descriptions.	(P)	TW	Tim Osburn 4-27-11
4.1.4 Identify closure methods and layers of confinement.	(P)	TW	Tim Osburn 3-11-11
4.1.5 Locate and discuss Waste Matrix Codes and IDCs.	(P)	TW	Tim Osburn 3-11-11
4.1.6 Discuss Nonconformance Report process (flag in WTS, Generation, Processing, and Closure).	(D)	TW	Tim Osburn 3-11-11
4.1.7 Discuss where to obtain generator site waste characterization information.	(D)	TW	Tim Osburn 4-27-11
4.1.8 Discuss how to ensure DQOs are met.	(D)	TW	Tim Osburn 3-11-11

Employee Name Tim Ogburn S# 102309

	PSD	OJT Initials	Evaluator Signature & date
4.1.9 Discuss the available Audio/Video equipment and the requirements for their use.	(D)		1-14-11
4.1.10 Identify packaging configurations.	(P)		1-14-11
4.1.11 Assign proper Waste Material Parameters to waste.	(P)		4-28-11
4.1.12 Perform weight and volume conversions using procedural aids.	(P)		4-28-11
4.1.13 Assign the correct IDC and Waste Matrix Code during the VE process.	(P)		4-28-11
4.1.14 Discuss the pathway forward for nonconforming and prohibited items and the associated NCRs.	(D)		4-28-11
4.1.15 Identify common and conditional waste items through VE or video.	(P)		4-28-11
4.1.16 Identify packaging and waste materials.	(P)		1-14-11
4.1.17 Identify prohibited and suspect items through VE or video.	(P)		4-28-11
4.1.18 Identify secondary waste items through video or VE.	(P)		4-28-11
4.1.19 Assign correct IDCs for newly generated secondary waste and compacted waste.	(P)		4-28-11
4.1.20 Estimate volumes and nominal densities of waste: (X=[(n•0.473) • ρ] •2.2 (where X = pounds, n = pints, and ρ = density)	(P)		1-14-11
4.1.21 Demonstrate the ability to identify waste per DEQ requirements.	(P)		1-14-11
4.1.22 Demonstrate the ability to identify waste per NTS WAC requirements.	(P)		4-28-11
4.1.23 Identify rigid liner types and their status / condition.	(P)		1-14-11

Employee Name Tim Ozburn S# 102309

	P S D	OJT Initials	Evaluator Signature & date
4.1.24 Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P		4.22.11
4.1.25 Discuss when VE cannot be used to meet the DQOs.	(D)		1-14-11
4.2 Newly Generated Waste VE			
4.2.1 Perform or simulate Newly Generated Waste (NGW) package VE .	P/S		4-22-11
4.2.2 Perform or simulate Newly Generated Waste Closure VE.	P/S		4-22-11
4.3 Visual Examination of non-Boxline Legacy Waste Containers			
4.3.1 Perform or simulate VE of non-Boxline Legacy Waste.	P/S		4.22.11
4.4 Visual Examination (Boxlines)			
4.4.1 Perform Boxline VE (BiD).	P		4-22-11
4.4.2 Perform Boxline VE (DiD) using volume estimates and nominal densities.	(P)		4-22-11
4.5 RTR/VE Update (RVU)			
4.5.1 Perform or simulate RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P(S)		4.29.11
4.5.2 Perform RVU for the final configuration of a Coring Drum.	(P)		4.29.11
4.5.3 Perform RVU for the final configuration of a Treatment Drum.	P		4.29.11
4.5.4 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	(P)		4.29.11

Employee Name Tim Ozburn S# 102309

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Inst. Initials	Evaluator Signature	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)		JD Young	4/19/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)		JD Young	4/19/11
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)		JD Young	4/19/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)		JD Young	4/19/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)		JD Young	4/19/11
5.6	Spill / Contamination Release (INST-OI-88)	S(D)		JD Young	4/19/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)		JD Young	4/19/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)		JD Young	4/19/11
5.9	Loss of Commercial Power (AOI-04)	S(D)		JD Young	4/19/11
5.10	Evacuation (EP&C-12.7)	S(D)		JD Young	4/19/11
5.11	Take Cover (EP&C-12.7)	S(D)		JD Young	4/19/11

Employee Name Tim Osborn S# 102309

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 Recommendation for Qualification

After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

Visual Examination Expert		4.29.11
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

Treatment Facility Qualification Package/Checklist Extension

Extension past the qualification package/checklist 6-month completion requirement for **Tim Ozburn's #102309 QPVE0001 Visual Examiner** qualification is approved.
Extension is necessary due to time available to train with VEE and work schedule.

APPROVAL

Pete Hingston

Pete Hingston, Facility Production Manager

4/29/11

Date

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Brett Stacy		06/17/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Brett Stacy		06/20/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Terrell Gneiting		4/27/11
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

JUL 07 2011

TRAINING DEPT.
JUL 06 2011

Initials

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Shirley Perez S# 102313

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Shirley Perez	Shirley Perez	SJP
Ron Grise	Ron Grise	RG
Mike Clark	Mike Clark	MC
Brett Steen	Brett Steen	BS

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date 06/17/11

	Date Requirement Was Completed	Signature (Training Representative or SS)	Date
2.1 Completion of VE qualification (QPVE0001).	07/09/09	Mark Clark	06/07/11

Employee Name Shirley Perez S# 102313

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17. mod B	Ron A	6-17-11 ~~6-17-11~~ 6-17-11

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	Ron A	6-17-11
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	Ron A	6-17-11

Employee Name Shirley Perez S# 102313

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	(P) S	Ron A. 6-17-11
4.2	Verify (concur with) examination-related data entered into WTS.	(P) S	Ron A. 6-17-11
4.3	Identify closure methods and layers of confinement.	(P) S	Ron A. 6-17-11
4.4	Discuss how to ensure DQOs are met.	(D)	Ron A. 6-17-11
4.5	Identify packaging configurations.	P (S)	Ron A. 6-17-11
4.6	Assign proper Waste Material Parameters to waste.	(P) S	Ron A. 6-17-11
4.7	Perform weight and volume conversions using procedural aids.	(P) S	Ron A. 6-17-11
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	(P) S	Ron A. 6-17-11
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	(P) S	Ron A. 6-17-11
4.10	Identify common and conditional waste items through VE or video.	(P) S	Ron A. 6-17-11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P S	Ron A 6-17-11
4.12	Identify prohibited and suspect items through VE or video.	P S	Ron A 6-17-11
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P S	Ron A 6-17-11
4.14	Estimate volumes and nominal densities of waste.	P S	Ron A 6-17-11
4.15	Identify rigid liner types and their status and condition.	P S	Ron A 6-17-11
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P S	Ron A 6-17-11
4.17	Perform Newly Generated Waste (NGW) package VE.	P S	Ron A 6-17-11
4.18	Perform Newly Generated Waste Closure VE.	P S	Ron A 6-17-11
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P S	Ron A 6-17-11
4.20	Perform Boxline VE (BiD).	P S	Ron A 6-17-11
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P S	Ron A 6-17-11
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P S	Ron A 6-17-11
4.23	Perform RVU for the final configuration of a Coring Drum.	P S	Ron A 6-17-11
4.24	Perform RVU for the final configuration of a Treatment Drum.	P S	Ron A 6-17-11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P (S)	6-17-11

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	(S) D		6/17/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	(S) D		6/17/11
5.3	Dropped waste container (MP-EC&P-12.9)	(S) D		6/17/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	(S) D		6/17/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	(S) D		6/17/11
5.6	Spill / Contamination Release (INST-OI-88)	(S) D		6/17/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	(S) D		6/17/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	(S) D		6/17/11
5.9	Loss of Commercial Power (AOI-04)	(S) D		6/17/11
5.10	Evacuation (EP&C-12.7)	(S) D		6/17/11
5.11	Take Cover (EP&C-12.7)	(S) D		6/17/11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Shirley Perez S# 102313

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert Title	Ron A Signature	6-12-11 Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Paul Hurley S# 106238

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Jeremy Hampton		10-18-11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.			10/20/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Ted Simmons		8-2-11
	Print Name	Signature	Date

TRAINING DEPT.

Qualification Package Approval Section

OCT 24 2011

Initials

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Paul Hughes S# 106238

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Paul Hurley S# 10627

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Ted Simmons		TS
Brett Stacy		BS
Paul Hurley		PH
L. Tim Walker		LTW
Estes Hilzman		EH

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Paul Hurley S# 106278

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 08/08/11

	Date Requirement Was Completed	Signature (Training Representative or SS)	Date
2.1 Completion of VE qualification (QPVE0001).	10-28-09		8-2-11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Paul Hwing S# 106278

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17.	[signature]	10/18/11

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	[signature]	10/18/11
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	[signature]	10/18/11

Employee Name Paul Avery S# 10628

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	P(S)	Jwack 10/18/11
4.2	Verify (concur with) examination-related data entered into WTS.	P(S)	Jwack 10/18/11
4.3	Identify closure methods and layers of confinement.	P(S)	Jwack 10/18/11
4.4	Discuss how to ensure DQOs are met.	D	Jwack 10/18/11
4.5	Identify packaging configurations.	P(S)	Jwack 10/18/11
4.6	Assign proper Waste Material Parameters to waste.	P(S)	Jwack 10/18/11
4.7	Perform weight and volume conversions using procedural aids.	P(S)	Jwack 10/18/11
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	P(S)	Jwack 10/18/11
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P(S)	Jwack 10/18/11
4.10	Identify common and conditional waste items through VE or video.	P(S)	Jwack 10/18/11

Employee Name Paul Hurley S# 106278

	VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P S	Jwack 10/18/11
4.12	Identify prohibited and suspect items through VE or video.	P S	Jwack 10/18/11
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P S	Jwack 10/18/11
4.14	Estimate volumes and nominal densities of waste.	P S	Jwack 10/18/11
4.15	Identify rigid liner types and their status and condition.	P S	Jwack 10/18/11
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P S	Jwack 10/18/11
4.17	Perform Newly Generated Waste (NGW) package VE.	P S	Jwack 10/18/11
4.18	Perform Newly Generated Waste Closure VE.	P S	Jwack 10/18/11
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P S	Jwack 10/18/11
4.20	Perform Boxline VE (BiD).	P S	Jwack 10/18/11
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P S	Jwack 10/18/11
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P S	Jwack 10/18/11
4.23	Perform RVU for the final configuration of a Coring Drum.	P S	Jwack 10/18/11
4.24	Perform RVU for the final configuration of a Treatment Drum.	P S	Jwack 10/18/11

Employee Name Paul Hurley S# 106278

VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.25 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P(S)	[signature] 10/18/11

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)	[signature]	10/18/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)	[signature]	10/18/11
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)	[signature]	10/18/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)	[signature]	10/18/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)	[signature]	10/18/11
5.6	Spill / Contamination Release (INST-OI-88)	S(D)	[signature]	10/18/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)	[signature]	10/18/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)	[signature]	10/18/11
5.9	Loss of Commercial Power (AOI-04)	S(D)	[signature]	10/18/11
5.10	Evacuation (EP&C-12.7)	S(D)	[signature]	10/18/11
5.11	Take Cover (EP&C-12.7)	S(D)	[signature]	10/18/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Paul Hurley S# 10627

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert Title	 Signature	10/18/11 Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name JOHN OSBORNE S# 902774

VISUAL EXAMINER

Qualification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	David Wirkus		3/08/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	David Wirkus		3/8/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	CMIDGYETTE		12/06/10
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/25/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

Employee Name John Osborne S# 812774

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes; Updated format and incorporated evaluation standard; remove Glovebox training as a prerequisite.	4/28/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	5	Add T3105, TRU Programs and WIPP WAP Overview to 3.1.3 in addition to T3111.	Jim Jackson– signature on file	5/27/10
3B	6	Delete item 3.3.8 as it as been suspended and is no longer in use.	Brian Warner signature on file	6/15/10
3C	7	Add RPT-TRUW-86 to list of reading material- line item 3.3.17; Add SS to signature block in section 5.0	C. Sisson signature on file	08/27/10

* Manager signature required for modifications.

Employee Name J OSBORNE S# 902774

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly,sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
CMIDGYETTE	CMidgyette	CM
John Osborne	John Osborne	JO
L.M. Brugger	LM Brugger	LMB
L.J. Walter	LJ Walter	LJW
C.J. Basinger	CJ Basinger	CJB
David Wilkus	David Wilkus	DJW

Employee Name JOSBORNE S# 902774

1.0 Scope

QPVE0001, Visual Examiner is a technician level, activity-specific qualification. As such, it is not specific to any operational position. Standardized training for Visual Examination (VE) has been developed IAW MP-TRUW-8.2, Sec. B1-4, Visual Examination. This training includes specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the AMWTP.

This qualification package establishes the knowledge and skill requirements for personnel performing VE at AMWTP. Personnel will access HWMA/RCRA areas to perform visual examination of waste by direct examination using audio/visual equipment when required. VE personnel are re-qualified every two years.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employee's Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing Visual Examination.

The ITP also includes the qualification checklists for all applicable equipment that will be used by personnel performing VE activities.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Affidavit FOR BWARNER — 12/06/10
Employee's Production Manager — Date

		Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1	NONE 12/06/10 CH	NA	NA	NA

Employee Name J OSBORNE S# 902774

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	04/08/10	Initial
3.1.2 0AWT2719 Airlock (CBT)	12/07/10	Initial
3.1.3 0AWT3111 WIPP WAC; or 0AWT3105 TRU Programs and WIPP WAP Overview	11/17/09	Initial
3.1.4 0AWT3141, VE Indoctrination	01.4.11	Initial
3.1.5 0AWT3142, Visual Examination	01-13-11	Initial
3.1.6 0AWT3143, WTS & DQOs	01.14.11	Initial
3.1.7 0AWT4138C,AMWTP TrackWise System (CBT)	12/19/10	Initial

Mod. 3A

VEE SME or Lead, Training Representative or SS verify initial training courses are complete:	Signature	2.9.11 Date

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 INST-FOI-17, Facility Visual Examination Ops.		2.9.11
3.2.2 INST-OI-24, Waste Packaging		2.23.11
3.2.3 INST-OI-34, Non-Facility Visual Examination Ops.		2.9.11

Employee Name John Osborne S# 902774

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC) 1-7-11 ✓		2.23.11
3.3.2 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria (for familiarization) 1-7-11 ✓		2.23.11
3.3.3 MP-Q&SI-5.3, Corrective Action		2.23.11
3.3.4 MP-Q&SI-5.4, Identification of Nonconforming Conditions NCR is tracked		2.23.11
3.3.5 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste WAC staff		3-11-11
3.3.6 MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP) certification for WWP-WMP		3-11-11
3.3.7 MP-TRUW-8.8, Level I Validation who is responsible for above		3-11-11
3.3.8 RPT-CSA-01-1M, CSA Implementation Matrix N/A Mod. 3b		3-11-11
3.3.9 RPT-NFCS-05, Drum Contents Handling (EDF-0050) How contents are [illegible]		3-11-11
3.3.10 RPT-NFCS-07, Treatment Facility (NE-006) crit		3-11-11
3.3.11 RPT-NFCS-08, Retrieval Ops. (NE-007) crit		3-11-11
3.3.12 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory Letter upp. AC		3-11-11
3.3.13 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual ✓		2-9-11
3.3.14 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste ✓		3-11-11

Employee Name John Osborne S# 9027JW

3.3 Required Reading: Other Documents	VEE	Date
3.3.15 RPT-TRUW-13, Acceptable Knowledge document for INL stored transuranic waste- Mound Plant Waste Retain for record		3-11-11
3.3.16 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant Retain for Rec		3-11-11
3.3.17 RPT-TRUW-86, Identification of Pack Dates for Waste potentially included in the AMWTP Inventory		3-11-11

Mod. 3C

Sign-off by the VEE,SS , or indicated person indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss how the DSA and Safety Basis may apply to VE work.	Jared Y. Kelley	3/1/2011
3.4.2 Discuss how ISIH applies to VE work.	Jared Y. Kelley	3/1/2011
3.4.3 Discuss how Conduct of Operations applies to VE work.	Jared Y. Kelley	3/1/2011
3.4.4 Discuss how Criticality Safety applies to VE work.	M C Boerger	2/28/11
3.4.5 Discuss any Criticality Working Requirements (CWRs) that apply to VE work.	M C Boerger	2/28/11

Employee Name John Osborne S# 92177H

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated.C ircle which one was used.

Initials by the VEE (as the OJT Instructor) indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 General Knowledge			
4.1.1 Generate (enter) examination related data into WTS.	P		3-24-11
4.1.2 Verify (concur with) examination-related data entered into WTS.	P		3-24-11
4.1.3 Locate and discuss waste material parameters and descriptions.	P		3-11-11
4.1.4 Identify closure methods and layers of confinement.	P		2-23-11
4.1.5 Locate and discuss Waste Matrix Codes and IDCs.	P		2-23-11
4.1.6 Discuss Nonconformance Report process (flag in WTS, Generation, Processing, and Closure).	D		2-23-11
4.1.7 Discuss where to obtain generator site waste characterization information.	D		2-23-11
4.1.8 Discuss how to ensure DQOs are met.	D		2-23-11

Employee Name Tola Osborne S# 9227[illegible]

	PSD	OJT Initials	Evaluator Signature & date
4.1.9 Discuss the available Audio/Video equipment and the requirements for their use.	D	[illegible]	[illegible] 2-23-11
4.1.10 Identify packaging configurations.	P	[illegible]	[illegible] 2-23-11
4.1.11 Assign proper Waste Material Parameters to waste.	P	[illegible]	[illegible] 2-24-11
4.1.12 Perform weight and volume conversions using procedural aids.	P	[illegible]	[illegible] 3-11-11
4.1.13 Assign the correct IDC and Waste Matrix Code during the VE process.	P	[illegible]	[illegible] 3-24-11
4.1.14 Discuss the pathway forward for nonconforming and prohibited items and the associated NCRs.	D	[illegible]	[illegible] 2-23-11
4.1.15 Identify common and conditional waste items through VE or video.	P	[illegible]	[illegible] 3-11-11
4.1.16 Identify packaging and waste materials.	P	[illegible]	[illegible] 2-23-11
4.1.17 Identify prohibited and suspect items through VE or video.	P	[illegible]	[illegible] 3-11-11
4.1.18 Identify secondary waste items through video or VE.	P	[illegible]	[illegible] 3-11-11
4.1.19 Assign correct IDCs for newly generated secondary waste and compacted waste.	P	[illegible]	[illegible] 3-24-11
4.1.20 Estimate volumes and nominal densities of waste: (X=[(n•0.473) • ρ] •2.2 (where X = pounds, n = pints, and ρ = density)	P	[illegible]	[illegible] 2-23-11
4.1.21 Demonstrate the ability to identify waste per DEQ requirements.	P	[illegible]	[illegible] 3-11-11
4.1.22 Demonstrate the ability to identify waste per NTS WAC requirements.	P	[illegible]	[illegible] 2-23-11
4.1.23 Identify rigid liner types and their status / condition.	P	[illegible]	[illegible] 2-23-11

Employee Name John Osborne S# 22774

	PSD	OJT Initials	Evaluator Signature & date
4.1.24 Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P		3-11-11
4.1.25 Discuss when VE cannot be used to meet the DQOs.	D		3-24-11
4.2 Newly Generated Waste VE			
4.2.1 Perform or simulate Newly Generated Waste (NGW) package VE .	P/S		3-27-11
4.2.2 Perform or simulate Newly Generated Waste Closure VE.	P/S		3-27-11
4.3 Visual Examination of non-Boxline Legacy Waste Containers			
4.3.1 Perform or simulate VE of non-Boxline Legacy Waste.	P/S		3-24-11
4.4 Visual Examination (Boxlines)			
4.4.1 Perform Boxline VE (BiD).	P		3-27-11
4.4.2 Perform Boxline VE (DiD) using volume estimates and nominal densities.	P		3-27-11
4.5 RTR/VE Update (RVU)			
4.5.1 Perform or simulate RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P/S		3-24-11
4.5.2 Perform RVU for the final configuration of a Coring Drum.	P		3-24-11
4.5.3 Perform RVU for the final configuration of a Treatment Drum.	P		3-24-11
4.5.4 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P		3-24-11

Employee Name John Osborne S# 92774

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

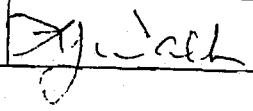
Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

Mod. 3C

		P S D	OJT Inst. Initials	SS Signature	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)	DJK	David Y Willey	03/01/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)	DJK	David Y Willey	03/01/11
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)	DJK	David Y Willey	03/01/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)	DJK	David Y Willey	03/01/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)	DJK	David Y Willey	03/01/11
5.6	Spill / Contamination Release (INST-OI-88)	S(D)	DJK	David Y Willey	03/01/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)	DJK	David Y Willey	03/01/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)	DJK	David Y Willey	03/01/11
5.9	Loss of Commercial Power (AOI-04)	S(D)	DJK	David Y Willey	03/01/11
5.10	Evacuation (EP&C-12.7)	S(D)	DJK	David Y Willey	03/01/11
5.11	Take Cover (EP&C-12.7)	S(D)	DJK	David Y Willey	03/01/11

Employee Name John Osborne S# 902776

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert Title	 Signature	3-27-11 Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Robert Minton S# 102448

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Brett Stiles for Jeremy Thompson		03/08/12
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Nathan Walton		03/01/12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	RaNae Taylor	RaNae Taylor	2/6/12
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

QIR

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Robert Minton S# 102448

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Robert Minter S# 102448

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
KaNae Taylor	KaNae Taylor	
Jeremy Hampton		
Austin Lofton		
LJ Walker		
Nathan Holton		
Brett Stacey		

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Robert Minton S# 16448

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager

Date 2-6-12

	Date Requirement Was Completed	Signature (Training Representative or SS)	Date
2.1 Completion of VE qualification (QPVE0001).	3/27/08	RaMae Taylor	2/6/12

Employee Name Robert Minton S# 10244

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17. mod B	[signature]	2/23/12

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	[signature]	2/23/12
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	[signature]	2/23/12

Employee Name Robert Minton S# 102448

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	P (S)	Mark 2/23/12
4.2	Verify (concur with) examination-related data entered into WTS.	P (S)	Mark 2/23/12
4.3	Identify closure methods and layers of confinement.	P (S)	Mark 2/23/12
4.4	Discuss how to ensure DQOs are met.	(D)	Mark 2/23/12
4.5	Identify packaging configurations.	P (S)	Mark 2/23/12
4.6	Assign proper Waste Material Parameters to waste.	P (S)	Mark 2/23/12
4.7	Perform weight and volume conversions using procedural aids.	P (S)	Mark 2/23/12
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	P (S)	Mark 2/23/12
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P (S)	Mark 2/23/12
4.10	Identify common and conditional waste items through VE or video.	P (S)	Mark 2/23/12

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Robert Morton S# 102418

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P S	RJ Wade 2/23/12
4.12	Identify prohibited and suspect items through VE or video.	P S	RJ Wade 2/23/12
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P S	RJ Wade 2/23/12
4.14	Estimate volumes and nominal densities of waste.	P S	RJ Wade 2/23/12
4.15	Identify rigid liner types and their status and condition.	P S	RJ Wade 2/23/12
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P S	RJ Wade 2/23/12
4.17	Perform Newly Generated Waste (NGW) package VE.	P S	RJ Wade 2/23/12
4.18	Perform Newly Generated Waste Closure VE.	P S	RJ Wade 2/23/12
4.19 MODA	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P S	RJ Wade 2/23/12
4.20	Perform Boxline VE (BiD).	P S	RJ Wade 2/23/12
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P S	RJ Wade 2/23/12
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P S	RJ Wade 2/23/12
4.23	Perform RVU for the final configuration of a Coring Drum.	P S	RJ Wade 2/23/12
4.24	Perform RVU for the final configuration of a Treatment Drum.	P S	RJ Wade 2/23/12

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Robert Munson S# 102448

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P S	2/23/12

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)		2/14/12
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)		2/14/12
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)		2/14/12
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)		2/14/12
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)		2/14/12
5.6	Spill / Contamination Release (INST-OI-88)	S(D)		2/14/12
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)		2/14/12
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)		2/14/12
5.9	Loss of Commercial Power (AOI-04)	S(D)		2/14/12
5.10	Evacuation (EP&C-12.7)	S(D)		2/14/12
5.11	Take Cover (EP&C-12.7)	S(D)		2/14/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Robert Minton S# 102448

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert		2/23/12
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Site Project Manager Designee

Qualification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:			
TRU Programs Manager	E-TORRES		2/17/11
Manager Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :			
	Dave Butler	Dave Butler	2/18/10
	Print Name	Signature	Date

FEB 22 2011

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg		2/2/10
	Print Name	Signature	Date
Training Manager Approval	Ralph Hartline		2/2/10
	Print Name	Signature	Date

QC 2-22-11 KM

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial issue of checklist.	2/27/07
1	All	Reformat to new format; update Task Analysis.	E. Schweinsberg

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Kenny Burnside	K B	KB
Nancy Kirk	Nancy Kirk	NOK
Dave Marquardt		
Nick Stahl		NS
Wes Skaar	Wes Skaar	WS
Eric Schweinsberg		ES
E-TORRES		ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

1.0 **Scope**
This qualification checklist has been developed in order to train and qualify individuals to perform the duties of a Site Project Manager Designee at AMWTP. Once qualified, the employee must complete this checklist again after 24 months to maintain qualified status. The employee may be disqualified for any or all of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 **Prerequisites**
Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.
The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training. Employee's Manager — Date: 10/14/10

	Date Requirement Was Completed	**Signature** (Training Specialist or SS)	**Date**
2.1 None	N/A	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Kenny Burnside S# 74620

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by an SPM Designee Lead or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT3101, TRU Programs Overview or 0AWT3105	7-15-03	0
3.1.2 0AWT3108, Waste Analysis Plan (WAP) or 0AWT3105	6-3-05	0
3.1.3 0AWT3111, WIPP Waste Acceptance Criteria or 0AWT3105	4-6-06	0
3.1.4 0AWT4101 or 0AWT4102, Conduct of Operations	4-13-04	0

Training Representative or SPM Designee Lead verify initial training courses are complete:	Dave Botts Signature	2/18/10 Date

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	W Shaan	12-11-10
3.3.2 MP-TRUW-8.2, Quality Assurance Project Plan	W Shaan	12-11-10
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	W Shaan	12-11-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.4 MP-TRUW-8.5, TRU Waste Certification	Wes Shaar	12-11-10
3.3.5 MP-TRUW-8.8, Level I Data Validation	Wes Shaar	12-11-10
3.3.6 MP-TRUW-8.9, Level II Data Validation	Wes Shaar	12-11-10
3.3.7 MP-TRUW-8.11, Data Reconciliation	Wes Shaar	12-19-10
3.3.8 MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation	Wes Shaar	12-19-10
3.3.9 MP-TRUW-8.14, Preparation of Waste Stream Profile Forms	Wes Shaar	12-11-10
3.3.10 MP-TRUW-8.25, Random Selection of containers for Headspace Gas and Solids Sampling and Analysis	Wes Shaar	12-11-10
3.3.11 MP-TRUW-8.44, Direct Load Standard Waste Box Planning	Wes Shaar	12-11-10
3.3.12 MP-TRUW-8.45, Six-Drum Overpack (SDOP) Process and Planning	Wes Shaar	12-19-10
3.3.13 INST-TRUW-8.13.1, TRU Program Site Project Office Process	Wes Shaar	12-19-10
3.3.14 INST-TRUW-8.13.2, Unknown Waste Process	Wes Shaar	12-19-10
3.3.15 RPT-TRUW-04, Acceptable Knowledge Document for the Batelle Columbus Laboratories Building JN-4	Wes Shaar	12-11-10
3.3.16 RPT-TRUW-05, Waste Matrix Code Reference Manual	Wes Shaar	12-11-10
3.3.17 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste	Wes Shaar	12-11-10
3.3.18 RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge	Wes Shaar	12-11-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Kenny Burnside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.19 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge (BNINW216)	Wes Shaar	12-11-10
3.3.20 RPT-TRUW-12, AMWTP Waste Stream Designations	Wes Shaar	12-19-10
3.3.21 RPT-TRUW-13, Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste	Wes Shaar	WS 12-11-10 ~~12-16-10~~ 12-11-10
3.3.22 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge (BNINW218)	Wes Shaar	12-19-10
3.3.23 RPT-TRUW-19, Population Determination for Waste Stream Profiles BNINW216 and BNINW218	Wes Shaar	12-19-10
3.3.24 RPT-TRUW-23, Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)	Wes Shaar	12-19-10
3.3.25 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510) Report 83	Wes Shaar	12-11-10
3.3.26 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant	Wes Shaar	WS 12-11-10 ~~12-19-10~~ 12-11-10
3.3.27 RPT-TRUW-58, Acceptable Knowledge Document for INL Stored Transuranic Waste – Sample Returns	Wes Shaar	WS 12-11-10 ~~12-19-10~~ 12-11-10
3.3.28 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004)	Wes Shaar	12-19-10
3.3.29 RPT-TRUW-60, Acceptable Knowledge Document for INL Stored Waste – Bettis Atomic Power Laboratory	Wes Shaar	12-19-10

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Kenny Burnside S# 74620

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.30 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836)	Wes Shaar	12-19-10
3.3.31 NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1- B6	Wes Shaar	12-19-10
3.3.32 DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaar	12-19-10
3.3.33 DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP)	Wes Shaar	12-19-10

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	Wes Shaar	12-27-10
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	Wes Shaar	12-11-10
3.4.5 Discuss how initial waste streams and waste stream lots are defined for Characterization.	Wes Shaar	11-17-10
3.4.6 Discuss the preparation of waste stream profile forms and waste stream Characterization Information Summary Reports.	Wes Shaar	11-17-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.7 Discuss Headspace Gas and Solid Sampling analysis for appropriate assignment of EPA Hazardous Waste Numbers.	Wes Shaw	12-27-10
3.4.8 Discuss identification and reporting of Tentatively Identified Compounds.	Wes Shaw	12-27-10

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee has completed the objective and is ready to be evaluated per MP-RTQP-14.13. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	OJT Initials	Evaluator Signature & date
4.1 Data Validation			
4.1.1 Demonstrate working knowledge and ability to validate one of each of the following SPM Designee batch types and one data reconciliation lot by performance checkout:	P		[illegible] 12-27-10
• RTR batch number: RTR10-00169	P		[illegible] 10-20-10
• Radioassay batch number: ASY10-02305	P		Nancy D Kent 10/19/10
• HGAS batch number: HGS10-00020			[illegible] 10/20/10
• VE batch number: VEB10-01089	P		[illegible] 11-8-10
• Core Sampling batch number: SSC10-00002	P		[illegible] 11/12/10
• Core Analysis batch number: ALD07045V	S		Wes Shaw 10/25/10
• Data Reconciliation Lot number: BN835.82	P		

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Site Project Manager Designee	QCSPM01A Rev 1

Employee Name Kenny Burnside S# K 74620 FB 2/18/10

	PSD	OJT Initials	Evaluator Signature & date
4.1.2 Demonstrate the ability to perform validation of SHENC batch data reports.	P	WS	Wes Shoar 12-19-10
4.1.3 Demonstrate the ability to perform validation of ALD batch data reports.	P	WS	Wes Shoar 12-19-10
4.2 Data Reconciliation			
4.2.1 Discuss the Data Reconciliation process.	D	WS	Wes Shoar 12-11-10
4.2.2 Demonstrate the ability to perform SPM Data Reconciliation.	P	WS	Wes Shoar 12-11-10
4.3 Software			
4.3.1 Demonstrate the ability to access WTS and locate screens for completion of SPM work.	P	WS	~~12-~~ Wes Shoar WS 12-19-10 12-19-10
4.3.2 Demonstrate the ability to access and navigate the Trackwise System from NCR creation to verification of NCR closure.	P	WS	Wes Shoar 12-19-10
4.3.3 Demonstrate the ability to access a spreadsheet for tracking completed validation and NCRs closed.	P	WS	Wes Shoar 12-19-10
4.4 Nonconformance Reports			
4.4.1 Discuss how a Nonconformance is processed, including discrepancy resolution and reporting.	D	WS	Wes Shoar 12-19-10
4.4.2 Demonstrate the ability to process nonconformance reports.	P	WS	Wes Shoar 12-19-10
4.4.3 Demonstrate the ability to perform SPM correction action verification.	P	WS	Wes Shoar 12-19-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Kenny Burnside S# 74620

5.0 **Emergency / Abnormal Conditions-** ***None Required***

6.0 **Examinations-** ***None Required***

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.		
SPM Designee Lead Title	Wes Shaw Signature	12-11-10 Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Level I Validation Independent Technical Reviewer for Visual Examination	QCITR0VE Rev 0

Employee Name Chad Wasylow S# 71479

Level I Validation ITR for Visual Examination

Qualification Package Number: QCITR0VE

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:			
TRU Programs Mgr.	SM Peterman		3/6/12
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.			
	SM Peterman		3/6/12
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		2/9/12
	Print Name	Signature	Date

Qualification Checklist Approval Section

Line Manager Approval	Sue Peterman	Signature on file	
	Print Name	Signature	Date

Training Manager Approval	Mike Parrish	Signature on file	
	Print Name	Signature	Date

Employee Name Chad Wasylow S# 71479

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	The ITR qualification was previously contained in one checklist (QPITR3A) which incorporated ITR duties for VE, Sampling/Coring, and RTR batch validation. Those ITR duties have now been split into three separate checklists for each ITR area. This checklist applies to ITR VE activities.	

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Chad Wasylow S# 71479

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Chad Wasylow	Chad Wasylow	CW
SM Peterman	SM Peterman	SMP
Kathy Bleck	Kathy Bleck	KB
[illegible]	[illegible]	[illegible]

1.0 Scope

This requalification checklist is developed to provide assurance that an individual performing level I validation of Sampling, RTR, or VE batch data in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, is qualified to perform the tasks associated with that function. This requalification is used for personnel performing ITR activities associated with these batches at AMWTP and who are currently qualified in the prerequisite qualifications listed below. This requalification document provides the candidate with a comprehensive foundation in the knowledge and skills required for compliant task performance. This qualification expires 24 months from the grant date.

Maintaining this qualification requires the individual to maintain current qualification in QPVE0001 (Visual Examiner). Recurring training must be completed prior to expiration.

Extended absences, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. may result in disqualification of the individual until any or all conditions are remediated.

Employee Name Chad Wasylciw S# 71479

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all general courses required for individuals performing Level I Validation activities.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 3/13/12

	Date Requirement Was Completed	**Signature** (Training Specialist or ITRLead)	**Date**
2.1 QPVE0001, Visual Examiner	4-20-10		2-9-12

Employee Name Chad Wasson S# 71479

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the ITR Lead or a Training Representative.

3.1	Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1	0AWT1118, LLW/MLLW Disposition Plan	3-12-12	24 months
3.1.2	0AWT2201, Quality Assurance	7-22-08	Initial/0 months
3.1.3	0AWT2701, Nuclear Theory	4-28-03	Initial/0 months
3.1.4	0AWT3104, TRUPACT II	5-1-03	Initial/0 months
3.1.5	0AWT3105, TRU Programs and WIPP WAP Overview OR 0AWT3101 AND 0AWT3108 AND 0AWT3111	5-1-03	Initial/0 months
Training representative or ITR Lead verify initial training courses are complete:	[signature]		3/13/12
	Signature		Date

Sign-off by the ITR Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2	Required Reading: Operating Instructions	ITR Lead Signature	Date
3.2.1	INST-OI-24, Packaging Radioactive Waste	Kathy Bird	3/31/12

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.1	MP-TRUW-8.1, AMWTP Certification Plan for INL Transuranic Waste	Kathy Bird	3/31/12
3.3.2	MP-TRUW-8.2, Quality Assurance Project Plan	Kathy Bird	3/31/12

Employee Name Chad Wasylow S# 71479

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.3	MP-TRUW-8.8. Level I Data Validation	Kathy Birch	3/21/12
3.3.4	MP-Q&SI-5.3, Corrective Action	Kathy Birch	3/21/12
3.3.5	MP-Q&SI-5.4, Identification of Nonconforming Conditions	Kathy Birch	3/21/12
3.3.6	DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for WIPP	Kathy Birch	3/21/12
3.3.7	RPT-TRUW-05, Waste Matrix Code Reference Manual	Kathy Birch	3/21/12
3.3.8	RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant	Kathy Birch	3/21/12

Sign-off by the ITR Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.4	Knowledge:	ITR Lead Signature or as indicated	Date
3.4.1	Discuss WTS System Knowledge and how it applies to tasks covered in this qualification package.	Kathy Birch	3/21/12

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Level I Validation Independent Technical Reviewer for Visual Examination	QCITR0VE Rev 0

Employee Name Chad Wasylow S# 71479

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Sign-off by the ITR Lead indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.1	**Verification of BDR and QA documents**		
4.1.1	Discuss the items one would verify are complete on the VE Batch Data report coversheet.	(D)	Kathy Birch 3/21/12
4.1.2	Discuss the importance of the Table of Contents with regard to the VE Batch Data Report.	(D)	Kathy Birch 3/21/12
4.1.3	Demonstrate how to verify that a VE analysis report is complete.	(P)	Kathy Birch 3/21/12
4.1.4	Verify that an ITR Checklist is complete.	(P)	Kathy Birch 3/21/12
4.1.5	Discuss the purpose of the Batch Data Report Supplemental Comment form (1491).	(D)	Kathy Birch 3/21/12
4.1.6	Demonstrate the ability to reference associated NCRs in WTS.	(P)	Kathy Birch 3/21/12
4.1.7	Demonstrate how to verify that a VE operator is/was qualified at the time of a VE event.	(P)	Kathy Birch 3/21/12
4.2	**VE ITR Tasks**		
4.2.1	Demonstrate the ability to complete a VE ITR of a BDR.	(P)	Kathy Birch 3/21/12
4.2.2	Demonstrate how to access an operator-approved VE Batch Report from the manual BDR folder or WTS Data Review screen on the main menu, as applicable.	(P) S	Kathy Birch 3/21/12

Employee Name Chad Wasylow S# 71479

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.3	Demonstrate how to ensure that NCRs that were generated during data generation are referenced and flagged in WTS, as applicable.	(P) S	Kathy Bird 3/21/12
4.2.4	Complete a data review in WTS or manually using Form-1415, and document all concerns and comments in WTS, or manually using Form-1415 or Form-1491.	(P) S	Kathy Bird 3/21/12
4.2.5	Demonstrate how to record the testing batch number and method/location on Form 1415.	(PS)	Kathy Bird 3/21/12
4.2.6	Demonstrate how to verify that the BDR and all QA documentation are complete in accordance with the applicable procedure by verifying all of the following: • VE Batch coversheet • Table of contents • VE analysis reports • Analytical balance Calibration Check Sheet (if applicable) • ITR Checklist (Form 1415) • Batch Data Report Supplemental Comment Form (Form 1491) • Associated NCRs (referenced in WTS) • A/V recording references	(P) S	Kathy Bird 3/21/12
4.2.7	Demonstrate how to verify that a VE data form was completed for each container in the batch.	(P) S	Kathy Bird 3/21/12
4.2.8	Demonstrate how to verify that the data was generated in a technically correct manner using the correct revision of INST-OI-34 or INST-OI-17.	(P) S	Kathy Bird 3/21/12
4.2.9	For each drum in a batch, demonstrate how to verify the following: • The E-Signature history was reviewed • For each VE event, two qualified operators agreed on the characterization of the waste as documented by manual or electronic signature. • Guidance from VEE is documented on the A/V	(P) S	Kathy Bird 3/21/12

Employee Name Chad Waylon S# 71479

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
medium and in WTS, as applicable. • Every drum has a valid A/V recording, as applicable. • The correct A/V medium identification (ID) was recorded on the WTS record. • The physical form matched the waste stream description, Waste Matrix Code (WMC), and Item Description Code (IDC). Batch #: WEB12-00002		Kathy Birch 3/21/12
4.2.10 Demonstrate how to verify the waste material parameters were documented correctly for the following: • The inventory of the waste container on the material items screen in WTS, which includes the description, units, weight or volume, and the correct assignment of the waste parameters. • The assignment of the bulk matrix including the description. • When a liner is present, it is included in the waste material parameter summary section as plastic packaging materials.	(P) S	Kathy Birch 3/21/12
4.2.11 Verify the presence or absence of prohibited items has been properly identified.	(P) S	Kathy Birch 3/21/12
4.2.12 Verify the description of rigid liners and layers of confinement have been properly documented.	(P) S	Kathy Birch 3/21/12
4.2.13 Demonstrate how to review the drum age criteria (DAC) for accuracy and completeness for the following: • Closure methods • Liner puncture status • Layers of confinement • Closure date • Packaging configuration • Type and number of filters, as applicable • Liner hole presence and diameter, as applicable	(P) S	Kathy Birch 3/21/12

Employee Name Chad Wasylow S# 71479

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.14 Demonstrate how to verify that filters have been installed or removed from drum as recorded in WTS.	(P) S	Kathy Birch 3/21/12
4.2.15 Demonstrate how to verify hand calculations and unit conversions are recorded correctly in WTS. • The packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight.	(P) S	Kathy Birch 3/21/12
4.2.16 Demonstrate the ability to verify all units and significant figures used for reporting volumes/weights are correct.	(P) S	Kathy Birch 3/21/12
4.2.17 Demonstrate the ability to verify data for transcription errors, as appropriate.	(P) S	Kathy Birch 3/21/12
4.2.18 Discuss the VE QAOs and demonstrate how to verify the VE QAOs.	(P)	Kathy Birch 3/21/12
4.2.19 Demonstrate how to verify that the A/V check is satisfactory.	(P) S	Kathy Birch 3/21/12
4.2.20 Demonstrate how to verify that each data form is signed by qualified VE operators as applicable per the appropriate procedure being used.	(P) S	Kathy Birch 3/21/12
4.2.21 Demonstrate how to verify the scale or balance check weight event was satisfactory.	(P) S	Kathy Birch 3/21/12
4.2.22 Discuss the purpose of and demonstrate how to verify the QC weight checks are within the tolerance of the scale or balance.	(P) S	Kathy Birch 3/21/12
4.2.23 Discuss the scenarios when it would be appropriate to generate an NCR. • Containers that have prohibited items • Containers that fail to meet DQOs or QAOs • Containers that have a physical form, WMC, or IDC that does not match the waste stream description.	(D)	Kathy Birch 3/21/12

Employee Name Chad Wasylenki S# 71479

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.24 Discuss the appropriate actions to take if you discover that an NCR has not been generated for those items listed in the previous step.	D	Kathy Bird 3/21/12
4.2.25 Discuss the actions to take when a batch has been re-promoted from rework.	D	Kathy Bird 3/21/12
4.2.26 Discuss the forms that should be attached to the BDR and their purpose.	D	Kathy Bird 3/21/12
4.2.27 Demonstrate how to ensure that an RTR/VE Update has been completed.	D	Kathy Bird 3/21/12
4.2.28 Discuss the actions to take when approving the VE/ITR data?	D	Kathy Bird 3/21/12
4.2.29 Demonstrate how to approve the VE/ITR data.	D S	Kathy Bird 3/21/12

Employee Name Chad Wasylow S# 71479

5.0 **Emergency / Abnormal Conditions**
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		S D	ITR OJT or TRU Programs Mgr. Signature & date	Date
5.1	Fire / Alarm	S (D)	Kathy Bird	3/21/12
5.2	Location of fire extinguishers / fire alarm boxes	S (D)	Kathy Bird	3/21/12
5.3	Spill / Contamination Release (MP-EC&P-7.10)	S (D)	Kathy Bird	3/21/12
5.4	Injured Person	S (D)	Kathy Bird	3/21/12
5.5	Evacuation (MP-EP&C-12.7)	S (D)	Kathy Bird	3/21/12
5.6	Take Cover (MP-EP&C-12.7)	S (D)	Kathy Bird	3/21/12

Employee Name Chad Wasylow S# 71479

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 1 Score: 87% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached. Not required if first exam is passed.) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	Exam Proctor Signature	Date

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the ITR Lead or TRU Programs Mgr. acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the ITR Lead or TRU Programs Mgr. has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
ITR Lead or TRU Programs Mgr. Title	Signature	3/26/12 Date

Upon satisfactory completion of this requalification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

Site Project Manager Designee

Requalification Checklist Number: QCSPM01A

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: TRU Programs Manager or Deputy Manager	E. TORRES		5/16/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		2/17/11
	Print Name	Signature	Date

MAY 17 2011

Qualification Checklist Approval Section

Line Manager Approval	Eric Schweinsberg	Signature on file	6/16/10
	Print Name	Signature	Date

Training Manager Approval	Ralph Hartline	Signature on file	6/16/10
	Print Name	Signature	Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

Revision History			
Revision Number	Affected Pages	Description of Change	Date
0	-	Rev. 0 requal. never existed as the initial qual. was used for both initial and requalification.	n/a
1	All	First version of SPM-Designee requal; given rev. 1 designation to be in sync with the initial qualification.	6/16/10

Modification Record				
Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
1A	7	Add to section 4.1: SPM Lead or manager may N/A any batch types that are not applicable to the SPM-Designee's specific job scope.		6/17/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

Signature Roster
Personnel signing blocks in this qualification checklist must print their name legibly, sign and initial. Signature by Evaluators indicates they have performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Dave MARQUARDT	Dave Marquardt	DM
Cesar Rojas	Cesar Rojas	CR
Nancy Kirk	Nancy Kirk	NK
Wes Skaar	Wes Skaar	WS
George Byram	George Byram	GB
Eric Schweinsberg	Eric Schweinsberg	ES
ENRIQUE TORRES	Enrique Torres	ET

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

1.0 Scope

This qualification checklist has been developed in order to requalifiy individuals acting as Site Project Manager Designees at AMWTP.

The employee's management will assign a target date for completion of this checklist not to exceed six months. TRU Programs Management may decide the path forward if the individual has not completed the checklist by the target date.

The individual may be disqualified for any of the following: extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include this checklist and any other required training.

Checklist completion target date:

Employee's Manager

5/16/11
Date

	Date Requirement Was Completed	**Signature** (Training Specialist or Waste Programs Lead)	**Date**
2.1 Completion of QCSPM01A qualification checklist	5/18/09		2/17/11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	N/A

Sign-off by the OJT Instructor or SPM Designee Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2 Required Reading: Operating Instructions	OJT Instructor / SPM Designee Lead Signature	Date
3.2.1 None	N/A	N/A

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.1 Discuss any recent changes to MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	Wes Shaar	4-26-11
3.3.2 Discuss any recent changes to MP-TRUW-8.2, Quality Assurance Project Plan.	Wes Shaar	4-26-11
3.3.3 Discuss any recent changes to MP-TRUW-8.5, TRU Waste Certification.	Wes Shaar	4-26-11
3.3.4 Discuss any recent changes to MP-TRUW-8.8, Level I Validation.	Wes Shaar	4-26-11
3.3.5 Discuss any recent changes to MP-TRUW-8.9, Level II Validation.	Wes Shaar	4-26-11

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

3.3 Required Reading: Other Documents	OJT Instructor / SPM Designee Lead Signature	Date
3.3.6 Discuss any recent changes to MP-TRUW-8.11, Data Reconciliation.	Wes Shaar	4-26-11
3.3.7 Discuss any recent changes to MP-TRUW-8.13.1, TRU Programs Site Project Office Process.	Wes Shaar	4-26-11
3.3.8 Discuss any recent changes to NM 4890139088-TSDF, WIPP Hazardous Waste Facility Permit, Appendix B, Waste Analysis Plan (WAP), B1-B6	Wes Shaar	4-26-11
3.3.9 Discuss any recent changes to DOE/CBFO-94-1012, Quality Assurance Program Document	Wes Shaar	4-26-11
3.3.10 Discuss any recent changes to DOE/WIPP-0203122, Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant (WIPP).	Wes Shaar	4-2611

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	OJT Instructor / SPM Designee Lead Signature	Date
3.4.1 None	N/A	N/A

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	QCSPM01A Rev 1

Employee Name Sean Caniff S# 104394

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated and reviewed by the SPM Lead or Manager to verify "proficiency" of the candidate for requalification.

Sign-off by the evaluator indicates proficiency of the task(s). If proficiency cannot be determined without coaching, terminate the Performance Assessment.

Mod 1A	P S D	Evaluator Signature (SPM Lead or Manager) & date
4.1 Data Validation (SPM Lead or Manager may N/A any of the batch types that do not apply to the SPM Designee job scope).		
4.1.1 Through discussion, review the elements below to demonstrate a working knowledge of and the ability to perform as an SPM/SPMD.		
• RTR Batch number RTR11-00096	D	
• Radioassay batch number ASY11-00828	D	
• HGAS batch number N/A	D	
• VE batch number ~~RTR~~ SPC VEB11-00311	D	
• Core Sampling batch number SSC10-00002	D	
• Core Analysis batch number N/A	D	
• Data Reconciliation Lot number BN510.1.0044	D	
4.1.2 Review of employee's recent performance and verification that performance continues to be satisfactory.	D	

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION CHECKLIST* *Site Project Manager Designee*	**QCSPM01A** **Rev 1**

Employee Name Sean Caniff S# 104394

5.0	**Emergency / Abnormal Conditions – None required for requalification**

6.0	**Examinations – No written exam required** (not a 5480.20A position)

7.0	**Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the **SPM Designee Lead** acknowledges that the trainee possesses the knowledge, skills, and abilities to continue to perform this job function correctly, safely and compliantly.

In addition, the **SPM Designee Lead** has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2.

SPM Designee Lead	George Bu	5/16/11
Title	Signature	Date

Upon satisfactory completion of this qualification checklist, the TRU Programs Manager/Deputy Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name Ryan Winn S# AW 2/6/11 110995 110995

VISUAL EXAMINER

Qualification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Julia Bagley	Julia Bagley	4/4/11
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Julia Bagley	Julia Bagley	4/4/11
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Ted Simmons		2/15/11
	Print Name	Signature	Date

Qualification Package Approval Section Initials RL

Line Manager Approval	C. Sisson	Signature on file	03/25/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

QC RL

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name Ryan Winn S# 110995

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes; Updated format and incorporated evaluation standard; remove Glovebox training as a prerequisite.	4/28/10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	5	Add T3105, TRU Programs and WIPP WAP Overview to 3.1.3 in addition to T3111.	Jim Jackson– signature on file	5/27/10
3B	6	Delete item 3.3.8 as it as been suspended and is no longer in use.	Brian Warner signature on file	6/15/10
3C	7	Add RPT-TRUW-86 to list of reading material- line item 3.3.17; Add SS to signature block in section 5.0	C. Sisson signature on file	08/27/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name Ryan Winn S# 110995

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
TED Simmons		TS
Ryan Winn	Ryan Winn	RW
L J WALKER	L J Walker	LJW
C. J. Basinger	C. J. Basinger	CJB
Janet Kelley	Janet Kelley	JKK
Julia Bayley	Julia Bayley	JB
RaNae Taylor	RaNae Taylor	RT

Employee Name Ryan Winn S# 110995

1.0 Scope

QPVE0001, Visual Examiner is a technician level, activity-specific qualification. As such, it is not specific to any operational position. Standardized training for Visual Examination (VE) has been developed IAW MP-TRUW-8.2, Sec. B1-4, Visual Examination. This training includes specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the AMWTP.

This qualification package establishes the knowledge and skill requirements for personnel performing VE at AMWTP. Personnel will access HWMA/RCRA areas to perform visual examination of waste by direct examination using audio/visual equipment when required. VE personnel are re-qualified every two years.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification package.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employee's Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing Visual Examination.

The ITP also includes the qualification checklists for all applicable equipment that will be used by personnel performing VE activities.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Julia Bagley Julia Bagley 2/16/11
Employee's Production Manager Date

		Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1	NONE	NA	NA	NA

02/05/11

Employee Name Ryan Winn S# 110995

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring)		Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1	0AWT1118, Nevada Test Site WAC (CBT)	3/16/10	Initial
3.1.2	0AWT2719 Airlock (CBT)	11/29/10	Initial
3.1.3	0AWT3111 WIPP WAC; or 0AWT3105 TRU Programs and WIPP WAP Overview	11/17/09	Initial
3.1.4	0AWT3141, VE Indoctrination	1/11/11	Initial
3.1.5	0AWT3142, Visual Examination	1/13/11	Initial
3.1.6	0AWT3143, WTS & DQOs	1/14/11	Initial
3.1.7	0AWT4138C, AMWTP TrackWise System (CBT)	2/28/11	Initial

Mod. 3A

VEE SME or Lead, Training Representative or SS verify initial training courses are complete:	RaNae Taylor Signature 2/15/11	Date 2/15/11

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions		VEE	Date
3.2.1	INST-FOI-17, Facility Visual Examination Ops.	Wall	2-23-11
3.2.2	INST-OI-24, Waste Packaging	Wall	2-23-11
3.2.3	INST-OI-34, Non-Facility Visual Examination Ops.	Wall	2-23-11

Employee Name Ryan Winn S# 110995

3.3 Required Reading Other Documents	EE	Date
3.3.1 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)	RJWalk	2-23-11
3.3.2 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria (for familiarization)	RJWalk	2-23-11
3.3.3 MP-Q&SI-5.3, Corrective Action	RJWalk	2-23-11
3.3.4 MP-Q&SI-5.4, Identification of Nonconforming Conditions	RJWalk	2-23-11
3.3.5 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	RJWalk	2-23-11
3.3.6 MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP)	RJWalk	2-23-11
3.3.7 MP-TRUW-8.8, Level I Validation	RJWalk	2-23-11
3.3.8 RPT-CSA-01-1M, CSA Implementation Matrix Mod. 3b	RJWalk	2-23-11
3.3.9 RPT-NFCS-05, Drum Contents Handling (EDF-0050)	RJWalk	2-23-11
3.3.10 RPT-NFCS-07, Treatment Facility (NE-006)	RJWalk	2-23-11
3.3.11 RPT-NFCS-08, Retrieval Ops. (NE-007)	RJWalk	2-23-11
3.3.12 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory	RJWalk	2-23-11
3.3.13 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual	RJWalk	2-23-11
3.3.14 RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste	RJWalk	2-23-11

Employee Name Ryan Winn S# 110995

3.3 Required Reading: Other Documents	VEE	Date
3.3.15 RPT-TRUW-13, Acceptable Knowledge document for INL stored transuranic waste- Mound Plant Waste		2-23-11
3.3.16 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant		2-23-11
3.3.17 RPT-TRUW-86, Identification of Pack Dates for Waste potentially included in the AMWTP Inventory		2-23-11

Mod. 3C

Sign-off by the VEE, SS, or indicated person indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge	VEE / SS Signature	Date
3.4.1 Discuss how the DSA and Safety Basis may apply to VE work.		2-15-11
3.4.2 Discuss how ISIH applies to VE work.		2-15-11
3.4.3 Discuss how Conduct of Operations applies to VE work.		2-15-11
3.4.4 Discuss how Criticality Safety applies to VE work.	Nuclear Safety Manager or Criticality Safety Officer	2/28/11
3.4.5 Discuss any Criticality Working Requirements (CWRs) that apply to VE work.	Nuclear Safety Manager or Criticality Safety Officer	2/28/11

Employee Name Ryan Winn S# 110995

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle which one was used.

Initials by the VEE (as the OJT Instructor) indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	OJT Initials	Evaluator Signature & date
4.1	**General Knowledge**			
4.1.1	Generate (enter) examination related data into WTS.	(P) S D	RW	Jack 4-3-11
4.1.2	Verify (concur with) examination-related data entered into WTS.	(P) S D	RW	Jack 4.3-11
4.1.3	Locate and discuss waste material parameters and descriptions.	(P) S D	RW	Jack 2-15-11
4.1.4	Identify closure methods and layers of confinement.	(P) S D	RW	Jack 2 15-11
4.1.5	Locate and discuss Waste Matrix Codes and IDCs.	(P) S D	RW	Jack 2-15-11
4.1.6	Discuss Nonconformance Report process (flag in WTS, Generation, Processing, and Closure).	(P) S D	RW	Jack 2-15-11
4.1.7	Discuss where to obtain generator site waste characterization information.	(P) S D	RW	Jack 2-15 11
4.1.8	Discuss how to ensure DQOs are met.	(P) S D	RW	Jack 2-15-11

Employee Name Ryan Winn S# 110995

	P/U/D	Initials	Evaluator Signature & date
4.1.9 Discuss the available Audio/Video equipment and the requirements for their use.	P	RW	RWinn 2-15-11
4.1.10 Identify packaging configurations.	P	RW	RWinn 2-15-11
4.1.11 Assign proper Waste Material Parameters to waste.	P	RW	RWinn 2-15-11
4.1.12 Perform weight and volume conversions using procedural aids.	P	RW	RWinn 2-15-11
4.1.13 Assign the correct IDC and Waste Matrix Code during the VE process.	P	RW	RWinn 2-15-11
4.1.14 Discuss the pathway forward for nonconforming and prohibited items and the associated NCRs.	P	RW	RWinn 2-15-11
4.1.15 Identify common and conditional waste items through VE or video.	P	RW	RWinn 2-15-11
4.1.16 Identify packaging and waste materials.	P	RW	RWinn 2-15-11
4.1.17 Identify prohibited and suspect items through VE or video.	P	RW	RWinn 2-15-11
4.1.18 Identify secondary waste items through video or VE.	P	RW	RWinn 2-15-11
4.1.19 Assign correct IDCs for newly generated secondary waste and compacted waste.	P	RW	RWinn 2-15-11
4.1.20 Estimate volumes and nominal densities of waste: (X=[(n•0.473) • ρ] •2.2 (where X = pounds, n = pints, and ρ = density)	P	RW	RWinn 2-15-11
4.1.21 Demonstrate the ability to identify waste per DEQ requirements.	P	RW	RWinn 2-15-11
4.1.22 Demonstrate the ability to identify waste per NTS WAC requirements.	P	RW	RWinn 2-15-11
4.1.23 Identify rigid liner types and their status / condition.	P	RW	RWinn 2-15-11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name Ryan Winn S# 110995

	P/S/D	OJT Initials / Evaluator Signature & date
4.1.24 Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	(D)	2-15-11
4.1.25 Discuss when VE cannot be used to meet the DQOs.	D	2-15-11
4.2 Newly Generated Waste VE		
4.2.1 Perform or simulate Newly Generated Waste (NGW) package VE .	P/(S)	4-3-11
4.2.2 Perform or simulate Newly Generated Waste Closure VE.	P/(S)	4-3-11
4.3 Visual Examination of non-Boxline Legacy Waste Containers		
4.3.1 Perform or simulate VE of non-Boxline Legacy Waste.	P/(S)	3-18-11
4.4 Visual Examination (Boxlines)		
4.4.1 Perform Boxline VE (BiD).	(P)	4-3-11
4.4.2 Perform Boxline VE (DiD) using volume estimates and nominal densities.	(P)	4-3-11
4.5 RTR/VE Update (RVU)		
4.5.1 Perform or simulate RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P(S)	3-18-11
4.5.2 Perform RVU for the final configuration of a Coring Drum.	(P)	3-18-11
4.5.3 Perform RVU for the final configuration of a Treatment Drum.	(P)	3-18-11
4.5.4 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	(P)	3-18-11

Employee Name Ryan Winn S# 110995

5.0 Emergency / Abnormal Conditions

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the OJT Instructor indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. Each training objective has been reviewed IAW with the Training/Evaluation Standard and the Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

Mod. 3C

		P S O	OJT Inst. Initials	SS Signature	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S (D)			3/1/11
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S (D)			3/1/11
5.3	Dropped waste container (MP-EC&P-12.9)	S (D)			3/1/11
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S (D)			3/1/11
5.5	CAM Alarm (OI-11, RS&C-6.12)	S (D)			3/1/11
5.6	Spill / Contamination Release (INST-OI-88)	S (D)			3/1/11
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S (D)			3/1/11
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S (D)			3/1/11
5.9	Loss of Commercial Power (AOI-04)	S (D)			3/1/11
5.10	Evacuation (EP&C-12.7)	S (D)			3/1/11
5.11	Take Cover (EP&C-12.7)	S (D)			3/1/11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examiner	Mod C QPVE0001 Rev. 3

Employee Name Ryan Winn S# 110995

6.0 Examinations (Sections 1-5 must be complete prior to testing)	NO TEST REQUIRED

7.0 Recommendation for Qualification		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert Title	Signature	4-3-11 Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION CHECKLIST Level I Validation Independent Technical Reviewer for Visual Examination	QCITR0VE Rev 0

Employee Name Reed Walker S# 78972

Level I Validation ITR for Visual Examination

Qualification Package Number: QCITR0VE

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **TRU Programs Mgr.**	SM Peterman		8/9/12
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	SM Peterman		8/8/12
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		7/9/12
	Print Name	Signature	Date

Qualification Checklist Approval Section AUG 09 2012

Line Manager Approval	Sue Peterman	Signature on file	1/24/12
	Print Name	Signature	Date

Training Manager Approval	Mike Parrish	Signature on file	1/25/12
	Print Name	Signature	Date

Employee Name REED A WALKER S# 78972

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	The ITR qualification was previously contained in one checklist (QPITR3A) which incorporated ITR duties for VE, Sampling/Coring, and RTR batch validation. Those ITR duties have now been split into three separate checklists for each ITR area. This checklist applies to ITR VE activities.	

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name REED A WALKER S# 78972

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Kathy Birch	Kathy Birch	KB
Cameron Stamps	Cameron Stamps	CS
SM Peterman	SM Peterman	SMP

1.0 Scope

This requalification checklist is developed to provide assurance that an individual performing level I validation of Sampling, RTR, or VE batch data in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, is qualified to perform the tasks associated with that function. This requalification is used for personnel performing ITR activities associated with these batches at AMWTP and who are currently qualified in the prerequisite qualifications listed below. This requalification document provides the candidate with a comprehensive foundation in the knowledge and skills required for compliant task performance. This qualification expires 24 months from the grant date.

Maintaining this qualification requires the individual to maintain current qualification in QPVE0001 (Visual Examiner). Recurring training must be completed prior to expiration.

Extended absences, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. may result in disqualification of the individual until any or all conditions are remediated.

Employee Name REED A WALKER S# 78972

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all general courses required for individuals performing Level I Validation activities.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 8/8/12

	Date Requirement Was Completed	**Signature** (Training Specialist or ITRLead)	**Date**
2.1 QPVE0001, Visual Examiner	7-21-10		2-9-12

Employee Name REED A WALKER JR S# 78972

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the ITR Lead or a Training Representative.

3.1	Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1	0AWT1118, LLW/MLLW Disposition Plan	1-11-12	24 months
3.1.2	0AWT2201, Quality Assurance	9-25-06	Initial/0 months
3.1.3	0AWT2701, Nuclear Theory	7-16-02	Initial/0 months
3.1.4	0AWT3104, TRUPACT II	7-23-02	Initial/0 months
3.1.5	0AWT3105, TRU Programs and WIPP WAP Overview OR 0AWT3101 AND 0AWT3108 AND 0AWT3111	7-23-02	Initial/0 months
Training representative or ITR Lead verify initial training courses are complete:	Dave Bulk		2-9-12
	Signature		Date

Sign-off by the ITR Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2	Required Reading: Operating Instructions	ITR Lead Signature	Date
3.2.1	INST-OI-24, Packaging Radioactive Waste	Kathy Birch	3/21/12

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.1	MP-TRUW-8.1, AMWTP Certification Plan for INL Transuranic Waste	Kathy Birch	3/21/12
3.3.2	MP-TRUW-8.2, Quality Assurance Project Plan	Kathy Birch	3/21/12

Employee Name REED A WALKER S# 78972

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.3	MP-TRUW-8.8. Level I Data Validation	Kathy Bird	3/21/12
3.3.4	MP-Q&SI-5.3, Corrective Action	Kathy Bird	3/21/12
3.3.5	MP-Q&SI-5.4, Identification of Nonconforming Conditions	Kathy Bird	3/21/12
3.3.6	DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for WIPP	Kathy Bird	3/21/12
3.3.7	RPT-TRUW-05, Waste Matrix Code Reference Manual	Kathy Bird	3/21/12
3.3.8	RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant	Kathy Bird	3/21/12

Sign-off by the ITR Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.4	Knowledge:	ITR Lead Signature or as indicated	Date
3.4.1	Discuss WTS System Knowledge and how it applies to tasks covered in this qualification package.	Kathy Bird	3/21/12

Employee Name REGIS A WALKER S# 78972

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Sign-off by the ITR Lead indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.1	**Verification of BDR and QA documents**		
4.1.1	Discuss the items one would verify are complete on the VE Batch Data report coversheet.	(D)	Kathy Birch 3/21/12
4.1.2	Discuss the importance of the Table of Contents with regard to the VE Batch Data Report.	(D)	Kathy Birch 3/21/12
4.1.3	Demonstrate how to verify that a VE analysis report is complete.	(P)	Kathy Birch 3/21/12
4.1.4	Verify that an ITR Checklist is complete.	(P)	Kathy Birch 3/21/12
4.1.5	Discuss the purpose of the Batch Data Report Supplemental Comment form (1491).	(D)	Kathy Birch 3/21/12
4.1.6	Demonstrate the ability to reference associated NCRs in WTS.	(P)	Kathy Birch 3/21/12
4.1.7	Demonstrate how to verify that a VE operator is/was qualified at the time of a VE event.	(P)	Kathy Birch 3/21/12
4.2	**VE ITR Tasks**		
4.2.1	Demonstrate the ability to complete a VE ITR of a BDR.	(P)	Kathy Birch 3/21/12
4.2.2	Demonstrate how to access an operator-approved VE Batch Report from the manual BDR folder or WTS Data Review screen on the main menu, as applicable.	(P) S	Kathy Birch 3/21/12

Employee Name REED A WALKER S# 78972

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.3	Demonstrate how to ensure that NCRs that were generated during data generation are referenced and flagged in WTS, as applicable.	P S	Kathy Bird 3/21/12
4.2.4	Complete a data review in WTS or manually using Form-1415, and document all concerns and comments in WTS, or manually using Form-1415 or Form-1491.	P S	Kathy Bird 3/21/12
4.2.5	Demonstrate how to record the testing batch number and method/location on Form 1415.	PS	Kathy Bird 3/21/12
4.2.6	Demonstrate how to verify that the BDR and all QA documentation are complete in accordance with the applicable procedure by verifying all of the following: • VE Batch coversheet • Table of contents • VE analysis reports • Analytical balance Calibration Check Sheet (if applicable) • ITR Checklist (Form 1415) • Batch Data Report Supplemental Comment Form (Form 1491) • Associated NCRs (referenced in WTS) • A/V recording references	P S	Kathy Bird 3/21/12
4.2.7	Demonstrate how to verify that a VE data form was completed for each container in the batch.	P S	Kathy Bird 3/21/12
4.2.8	Demonstrate how to verify that the data was generated in a technically correct manner using the correct revision of INST-OI-34 or INST-OI-17.	P S	Kathy Bird 3/21/12
4.2.9	For each drum in a batch, demonstrate how to verify the following: • The E-Signature history was reviewed • For each VE event, two qualified operators agreed on the characterization of the waste as documented by manual or electronic signature. • Guidance from VEE is documented on the A/V	P S	Kathy Bird 3/21/12

Employee Name REED A WALKER S# 78972

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
medium and in WTS, as applicable. • Every drum has a valid A/V recording, as applicable. • The correct A/V medium identification (ID) was recorded on the WTS record. • The physical form matched the waste stream description, Waste Matrix Code (WMC), and Item Description Code (IDC). Batch #: VEB12-00001		Kathy Bird 3/21/12
4.2.10 Demonstrate how to verify the waste material parameters were documented correctly for the following: • The inventory of the waste container on the material items screen in WTS, which includes the description, units, weight or volume, and the correct assignment of the waste parameters. • The assignment of the bulk matrix including the description. • When a liner is present, it is included in the waste material parameter summary section as plastic packaging materials.	(P) S	Kathy Bird 3/21/12
4.2.11 Verify the presence or absence of prohibited items has been properly identified.	(P) S	Kathy Bird 3/21/12
4.2.12 Verify the description of rigid liners and layers of confinement have been properly documented.	(P) S	Kathy Bird 3/21/12
4.2.13 Demonstrate how to review the drum age criteria (DAC) for accuracy and completeness for the following: • Closure methods • Liner puncture status • Layers of confinement • Closure date • Packaging configuration • Type and number of filters, as applicable • Liner hole presence and diameter, as applicable	(P) S	Kathy Bird 3/21/12

Employee Name REED A WALKER S# 78972

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.14 Demonstrate how to verify that filters have been installed or removed from drum as recorded in WTS.	(P) S	Kathy Birch 3/21/12
4.2.15 Demonstrate how to verify hand calculations and unit conversions are recorded correctly in WTS. • The packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight.	(P) S	Kathy Birch 3/21/12
4.2.16 Demonstrate the ability to verify all units and significant figures used for reporting volumes/weights are correct.	(P) S	Kathy Birch 3/21/12
4.2.17 Demonstrate the ability to verify data for transcription errors, as appropriate.	(P) S	Kathy Birch 3/21/12
4.2.18 Discuss the VE QAOs and demonstrate how to verify the VE QAOs.	(P)	Kathy Birch 3/21/12
4.2.19 Demonstrate how to verify that the A/V check is satisfactory.	(P) S	Kathy Birch 3/21/12
4.2.20 Demonstrate how to verify that each data form is signed by qualified VE operators as applicable per the appropriate procedure being used.	(P) S	Kathy Birch 3/21/12
4.2.21 Demonstrate how to verify the scale or balance check weight event was satisfactory.	(P) S	Kathy Birch 3/21/12
4.2.22 Discuss the purpose of and demonstrate how to verify the QC weight checks are within the tolerance of the scale or balance.	(P) S	Kathy Birch 3/21/12
4.2.23 Discuss the scenarios when it would be appropriate to generate an NCR. • Containers that have prohibited items • Containers that fail to meet DQOs or QAOs • Containers that have a physical form, WMC, or IDC that does not match the waste stream description.	(D)	Kathy Birch 3/21/12

Employee Name REED A WALKER S# 78972

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.24 Discuss the appropriate actions to take if you discover that an NCR has not been generated for those items listed in the previous step.	D	Kathy Birch 3/21/12
4.2.25 Discuss the actions to take when a batch has been re-promoted from rework.	D	Kathy Birch 3/21/12
4.2.26 Discuss the forms that should be attached to the BDR and their purpose.	D	Kathy Birch 3/21/12
4.2.27 Demonstrate how to ensure that an RTR/VE Update has been completed.	D	Kathy Birch 3/21/12
4.2.28 Discuss the actions to take when approving the VE/ITR data?	D	Kathy Birch 3/21/12
4.2.29 Demonstrate how to approve the VE/ITR data.	D S	Kathy Birch 3/21/12

Employee Name REED A WALKER S# 78972

5.0	**Emergency / Abnormal Conditions**			
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.				
		S D	**ITR OJT or TRU Programs Mgr. Signature & date**	**Date**
5.1	Fire / Alarm	S (D)	Kathy Bird	3/21/12
5.2	Location of fire extinguishers / fire alarm boxes	S (D)	Kathy Bird	3/21/12
5.3	Spill / Contamination Release (MP-EC&P-7.10)	S (D)	Kathy Bird	3/21/12
5.4	Injured Person	S (D)	Kathy Bird	3/21/12
5.5	Evacuation (MP-EP&C-12.7)	S (D)	Kathy Bird	3/21/12
5.6	Take Cover (MP-EP&C-12.7)	S (D)	Kathy Bird	3/21/12

Employee Name REED A WALKER S# 78972

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)		
Written Exam (80% required to pass) Exam #: 1 Score: 100% *(If first exam is failed the supervisor must assign remedial training)* Form-1039 attached ☐ (check box when completed form-1039 is attached. Not required if first exam is passed.) Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)		
Exam Passed	Exam Proctor Signature	8-8-12 Date

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the ITR Lead or TRU Programs Mgr. acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the ITR Lead or TRU Programs Mgr. has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
ITR Lead or TRU Programs Mgr. Title	Signature	8/8/12 Date

Upon satisfactory completion of this requalification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION CHECKLIST* *Level I Validation Independent Technical Reviewer for Visual Examination*	**QCITR0VE** **Rev 0**

Employee Name Mark Sorenson S# 101562

Level I Validation ITR for Visual Examination

Qualification Package Number: QCITR0VE

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **TRU Programs Mgr.**	SM Peterman	Sue Peterman	3/19/12
Manager Title	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	SM Peterman	Sue Peterman	3/19/12
Title	Print Name	Signature	Date

Required Attachments: Check box if attached	Written Exam ☑	Remedial Form ☐	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler	Dave Butler	2-14-12
	Print Name	Signature	Date

Qualification Checklist Approval Section

Line Manager Approval	Sue Peterman	Signature on File	1/24/12
	Print Name	Signature	Date

Training Manager Approval	Mike Parrish	Signature on File	01/25/12
	Print Name	Signature	Date

QI B

Employee Name Mark Sorenson S# 101562

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	The ITR qualification was previously contained in one checklist (QPITR3A) which incorporated ITR duties for VE, Sampling/Coring, and RTR batch validation. Those ITR duties have now been split into three separate checklists for each ITR area. This checklist applies to ITR VE activities.	1/25/12

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

Employee Name Mark Sorenson S# 101562

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Kathy Birch	Kathy Birch	KB
RaNae Taylor	RaNae Taylor	RT
SM Peterman	SM Peterman	SMP
RaNae Taylor	RaNae Taylor	RT

1.0 Scope

This requalification checklist is developed to provide assurance that an individual performing level I validation of Sampling, RTR, or VE batch data in accordance with the requirements of MP-TRUW-8.2, Quality Assurance Project Plan, is qualified to perform the tasks associated with that function. This requalification is used for personnel performing ITR activities associated with these batches at AMWTP and who are currently qualified in the prerequisite qualifications listed below. This requalification document provides the candidate with a comprehensive foundation in the knowledge and skills required for compliant task performance. This qualification expires 24 months from the grant date.

Maintaining this qualification requires the individual to maintain current qualification in QPVE0001 (Visual Examiner). Recurring training must be completed prior to expiration.

Extended absences, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. may result in disqualification of the individual until any or all conditions are remediated.

Employee Name Mark Sorenson S# 101562

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all general courses required for individuals performing Level I Validation activities.

The ITP also includes the qualification checklists for all applicable equipment that will be used by operators in this job scope.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 3/19/12

	Date Requirement Was Completed	**Signature** (Training Specialist or ITRLead)	**Date**
2.1 QPVE0001, Visual Examiner	7-29-11	Dave Burke	2-14-12

Employee Name Mark Sorenson S# 101562

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the ITR Lead or a Training Representative.

3.1	Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1	0AWT1118, LLW/MLLW Disposition Plan	2-13-12	24 months
3.1.2	0AWT2201, Quality Assurance	4-14-03	Initial/0 months
3.1.3	0AWT2701, Nuclear Theory	4-14-03	Initial/0 months
3.1.4	0AWT3104, TRUPACT II	4-17-03	Initial/0 months
3.1.5	0AWT3105, TRU Programs and WIPP WAP Overview OR 0AWT3101 AND 0AWT3108 AND 0AWT3111	3-10-09	Initial/0 months
Training representative or ITR Lead verify initial training courses are complete:	Signature		Date: 2-14-12

Sign-off by the ITR Lead indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.2	Required Reading: Operating Instructions	ITR Lead Signature	Date
3.2.1	INST-OI-24, Packaging Radioactive Waste	Kathey Birch	3/9/12

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.1	MP-TRUW-8.1, AMWTP Certification Plan for INL Transuranic Waste	Kathey Birch	3/9/12
3.3.2	MP-TRUW-8.2, Quality Assurance Project Plan	Kathey Birch	3/9/12

Employee Name Mark Sorenson S# 101562

3.3	Required Reading: Other Documents	ITR Lead Signature	Date
3.3.3	MP-TRUW-8.8. Level I Data Validation	Kathy Burch	3/9/12
3.3.4	MP-Q&SI-5.3, Corrective Action	Kathy Burch	3/9/12
3.3.5	MP-Q&SI-5.4, Identification of Nonconforming Conditions	Kathy Burch	3/9/12
3.3.6	DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for WIPP	Kathy Burch	3/9/12
3.3.7	RPT-TRUW-05, Waste Matrix Code Reference Manual	Kathy Burch	3/9/12
3.3.8	RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste-Rocky Flats Plant	Kathy Burch	3/9/12

Sign-off by the ITR Lead indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.4	Knowledge:	ITR Lead Signature or as indicated	Date
3.4.1	Discuss WTS System Knowledge and how it applies to tasks covered in this qualification package.	Kathy Burch	3/9/12

Employee Name Mark Sorenson S# 101562

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle which one was used.

Sign-off by the ITR Lead indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.1	**Verification of BDR and QA documents**		
4.1.1	Discuss the items one would verify are complete on the VE Batch Data report coversheet.	D	Kathy Birch 3/9/12
4.1.2	Discuss the importance of the Table of Contents with regard to the VE Batch Data Report.	D	Kathy Birch 3/9/12
4.1.3	Demonstrate how to verify that a VE analysis report is complete.	P	Kathy Birch 3/9/12
4.1.4	Verify that an ITR Checklist is complete.	P	Kathy Birch 3/9/12
4.1.5	Discuss the purpose of the Batch Data Report Supplemental Comment form (1491).	D	Kathy Birch 3/9/12
4.1.6	Demonstrate the ability to reference associated NCRs in WTS.	P	Kathy Birch 3/9/12
4.1.7	Demonstrate how to verify that a VE operator is/was qualified at the time of a VE event.	P	Kathy Birch 3/9/12
4.2	**VE ITR Tasks**		
4.2.1	Demonstrate the ability to complete a VE ITR of a BDR.		Kathy Birch 3/9/12
4.2.2	Demonstrate how to access an operator-approved VE Batch Report from the manual BDR folder or WTS Data Review screen on the main menu, as applicable.	P S	Kathy Birch 3/9/12

Employee Name Mark Sorenson S# 101562

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.3	Demonstrate how to ensure that NCRs that were generated during data generation are referenced and flagged in WTS, as applicable.	(P) S	Kathy Burch 3/9/12
4.2.4	Complete a data review in WTS or manually using Form-1415, and document all concerns and comments in WTS, or manually using Form-1415 or Form-1491.	(P) S	Kathy Burch 3/9/12
4.2.5	Demonstrate how to record the testing batch number and method/location on Form 1415.	(P) S	Kathy Burch 3/9/12
4.2.6	Demonstrate how to verify that the BDR and all QA documentation are complete in accordance with the applicable procedure by verifying all of the following: • VE Batch coversheet • Table of contents • VE analysis reports • Analytical balance Calibration Check Sheet (if applicable) • ITR Checklist (Form 1415) • Batch Data Report Supplemental Comment Form (Form 1491) • Associated NCRs (referenced in WTS) • A/V recording references	(P) S	Kathy Burch 3/9/12
4.2.7	Demonstrate how to verify that a VE data form was completed for each container in the batch.	(P) S	Kathy Burch 3/9/12
4.2.8	Demonstrate how to verify that the data was generated in a technically correct manner using the correct revision of INST-OI-34 or INST-OI-17.	(P) S	Kathy Burch 3/9/12
4.2.9	For each drum in a batch, demonstrate how to verify the following: • The E-Signature history was reviewed • For each VE event, two qualified operators agreed on the characterization of the waste as documented by manual or electronic signature. • Guidance from VEE is documented on the A/V	(P) S	Kathy Burch 3/9/12

Employee Name Mark Sorenson S# 101562

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
medium and in WTS, as applicable. • Every drum has a valid A/V recording, as applicable. • The correct A/V medium identification (ID) was recorded on the WTS record. • The physical form matched the waste stream description, Waste Matrix Code (WMC), and Item Description Code (IDC). Batch #: UEB11-00155		Kathy Bird 3/9/12
4.2.10 Demonstrate how to verify the waste material parameters were documented correctly for the following: • The inventory of the waste container on the material items screen in WTS, which includes the description, units, weight or volume, and the correct assignment of the waste parameters. • The assignment of the bulk matrix including the description. • When a liner is present, it is included in the waste material parameter summary section as plastic packaging materials.	(P) S	Kathy Bird 3/9/12
4.2.11 Verify the presence or absence of prohibited items has been properly identified.	(P) S	Kathy Bird 3/9/12
4.2.12 Verify the description of rigid liners and layers of confinement have been properly documented.	(P) S	Kathy Bird 3/9/12
4.2.13 Demonstrate how to review the drum age criteria (DAC) for accuracy and completeness for the following: • Closure methods • Liner puncture status • Layers of confinement • Closure date • Packaging configuration • Type and number of filters, as applicable • Liner hole presence and diameter, as applicable	(P) S	Kathy Bird 3/9/12

Employee Name Mark Swenson S# 101562

	P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.14 Demonstrate how to verify that filters have been installed or removed from drum as recorded in WTS.	(P) S	Kathy Birch 3/9/12
4.2.15 Demonstrate how to verify hand calculations and unit conversions are recorded correctly in WTS. • The packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight.	(P) S	Kathy Birch 3/9/12
4.2.16 Demonstrate the ability to verify all units and significant figures used for reporting volumes/weights are correct.	(P) S	Kathy Birch 3/9/12
4.2.17 Demonstrate the ability to verify data for transcription errors, as appropriate.	(P) S	Kathy Birch 3/9/12
4.2.18 Discuss the VE QAOs and demonstrate how to verify the VE QAOs.	(P)	Kathy Birch 3/9/12
4.2.19 Demonstrate how to verify that the A/V check is satisfactory.	(P) S	Kathy Birch 3/9/12
4.2.20 Demonstrate how to verify that each data form is signed by qualified VE operators as applicable per the appropriate procedure being used.	(P) S	Kathy Birch 3/9/12
4.2.21 Demonstrate how to verify the scale or balance check weight event was satisfactory.	(P) S	Kathy Birch 3/9/12
4.2.22 Discuss the purpose of and demonstrate how to verify the QC weight checks are within the tolerance of the scale or balance.	(P) S	Kathy Birch 3/9/12
4.2.23 Discuss the scenarios when it would be appropriate to generate an NCR. • Containers that have prohibited items • Containers that fail to meet DQOs or QAOs • Containers that have a physical form, WMC, or IDC that does not match the waste stream description.	(D)	Kathy Birch 3/9/12

Employee Name Mark Sorenson S# 101562

		P S D	ITR OJT or TRU Programs Mgr. Signature & date
4.2.24	Discuss the appropriate actions to take if you discover that an NCR has not been generated for those items listed in the previous step.	(D)	Kathy Burch 3/9/12
4.2.25	Discuss the actions to take when a batch has been re-promoted from rework.	(D)	Kathy Burch 3/9/12
4.2.26	Discuss the forms that should be attached to the BDR and their purpose.	(D)	Kathy Burch 3/9/12
4.2.27	Demonstrate how to ensure that an RTR/VE Update has been completed.	(P)	Kathy Burch 3/9/12
4.2.28	Discuss the actions to take when approving the VE/ITR data?	(D)	Kathy Burch 3/9/12
4.2.29	Demonstrate how to approve the VE/ITR data.	(P) S	Kathy Burch 3/9/12

Employee Name Mark Sorensen S# 101562

5.0 **Emergency / Abnormal Conditions**			
The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used. Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.			
	S D	**ITR OJT or TRU Programs Mgr. Signature & date**	**Date**
5.1 Fire / Alarm	S (D)	Kathy Bird	3/9/12
5.2 Location of fire extinguishers / fire alarm boxes	S (D)	Kathy Bird	3/9/12
5.3 Spill / Contamination Release (MP-EC&P-7.10)	S (D)	Kathy Bird	3/9/12
5.4 Injured Person	S (D)	Kathy Bird	3/9/12
5.5 Evacuation (MP-EP&C-12.7)	S (D)	Kathy Bird	3/9/12
5.6 Take Cover (MP-EP&C-12.7)	S (D)	Kathy Bird	3/9/12

Employee Name Mark Johnson S# 101562

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)

Written Exam (80% required to pass)

Exam #: 1 Score: 95

(If first exam is failed the supervisor must assign remedial training)

Form-1039 attached ☐ (check box when completed form-1039 is attached. Not required if first exam is passed.)

Re-exam # N/A Score: N/A (N/A if first exam is passed with 80% or greater)

Exam Passed	RaNae Taylor Exam Proctor Signature	3/19/12 Date

7.0 **Recommendation for Qualification**

After discussion with the candidate concerning this job scope, the ITR Lead or TRU Programs Mgr. acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

In addition, the ITR Lead or TRU Programs Mgr. has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)

ITR Lead or TRU Programs Mgr. Title	Signature	3/19/12 Date

Upon satisfactory completion of this requalification checklist, the TRU Programs Manager may grant Qualification to the trainee on the front cover of this qualification checklist.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Reed Walker S# 78972

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	SM Peterman		7/18/12
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	SM Peterman		7/18/12
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler		6/13/12
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

JUL 18 2012

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name REED A WALKER S# 78972

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 3; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10
3D	5	Item 3.1.1: Change course title and retrain interval due to course revision	C. Stepzinski (Signature on File)	02/23/12
3E	7	Delete OJT element (4.19) regarding the VE Legacy Waste due to change in procedure FOI-17.	C. Stepzinski (Signature on File	05/02/12
3F	7	Reinstate OJT element 4.19 per SME as it is still addressed in OI-34	C. Stepzinski (Signature on File	5/31/12

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name REED A WALKER S# 78472

Signature Roster
Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
Mark Sorenson	Mark Sorenson	M.S.
Derek Cox	Derek Cox	DSC
Ron Grise	Ron Grise	RG
SH Peterman	SH Peterman	SHP

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name REED A WALKER S# 78972

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training ***and is current*** on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Employee's Production Manager — Date: 1/18/12

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	Date
2.1 Completion of VE qualification (QPVE0001).	7-21-10		6/13/12

Employee Name REED A WARNER S# 71972

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring): Mod 3D	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 ~~None~~LLW/MLLW Disposition Plan	1-11-12	24 months
VEE SME or Lead, Training Representative or SS verify training courses are complete:	Signature	6-13-12 Date

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17.	Mark Swenson	6/14/12
3.3 Required Reading: Other Documents	**VEE**	**Date**
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	Mark Swenson	6/14/12
3.4.2 Discuss the any applicable Criticality Working	Mark Swenson	6/14/12

Employee Name REED A. WALKER S# 78972

3.4	Knowledge:	VEE / SS Signature	Date
	Requirements (CWRs).		

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	P (S)	Mark Dawson 6/14/12
4.2	Verify (concur with) examination-related data entered into WTS.	P (S)	Mark Dawson 6/14/12
4.3	Identify closure methods and layers of confinement.	P (S)	Mark Dawson 6/14/12
4.4	Discuss how to ensure DQOs are met.	(D)	Mark Dawson 6/14/12
4.5	Identify packaging configurations.	P (S)	Mark Dawson 6/14/12
4.6	Assign proper Waste Material Parameters to waste.	P (S)	Mark Dawson 6/14/12
4.7	Perform weight and volume conversions using procedural aids.	P (S)	Mark Dawson 6/14/12
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	P (S)	Mark Dawson 6/14/12
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P (S)	Mark Dawson 6/14/12

Employee Name REED A WARNER S# 78972

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.10	Identify common and conditional waste items through VE or video.	P(S)	Mark Sorenson 6/14/12
4.11	Identify packaging and waste materials.	P(S)	Mark Sorenson 6/14/12
4.12	Identify prohibited and suspect items through VE or video.	P(S)	Mark Sorenson 6/14/12
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P(S)	Mark Sorenson 6/14/12
4.14	Estimate volumes and nominal densities of waste.	P(S)	Mark Sorenson 6/14/12
4.15	Identify rigid liner types and their status and condition.	P(S)	Mark Sorenson 6/14/12
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P(S)	Mark Sorenson 6/14/12
4.17	Perform Newly Generated Waste (NGW) package VE.	P(S)	Mark Sorenson 6/14/12
4.18	Perform Newly Generated Waste Closure VE.	P(S)	Mark Sorenson 6/14/12
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility). Mod. 3F	P(S)	Mark Sorenson 6/14/12
4.20	Perform Boxline VE (BiD).	P(S)	Mark Sorenson 6/14/12
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P(S)	Mark Sorenson 6/14/12
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P(S)	Mark Sorenson 6/14/12
4.23	Perform RVU for the final configuration of a Coring Drum.	P(S)	Mark Sorenson 6/14/12

Employee Name REED A WALKER S# 78972

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.24	Perform RVU for the final configuration of a Treatment Drum.	P(S)	Mark Dorenson 6/14/12
4.25	Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P(S)	Mark Dorenson 6/14/12

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)		06/14/12
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)		06/14/12
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)		06/14/12
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)		06/14/12
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)		06/14/12
5.6	Spill / Contamination Release (INST-OI-88)	S(D)		06/14/12
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)		06/14/12
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)		06/14/12

Employee Name REED A WALKER S# 78972

	P S D	SS Signature Mod. 3C	Date
5.9 Loss of Commercial Power (AOI-04)	S (D)		06/14/12
5.10 Evacuation (EP&C-12.7)	S (D)		06/14/12
5.11 Take Cover (EP&C-12.7)	S (D)		06/14/12

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name REED A WALKER S# 78972

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert	Ron A	7-18-12
Title	Signature	Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Ron Grisc S# 103914

Visual Examination Expert

Qualification Package Number: QCVEE001

The manager granting qualific ation acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by: **Level I Validation Manager** Manager Title	J. M. JACKSON Print Name	Signature	05/12/11 Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	J. M. JACKSON Print Name/Title	Signature	5/12/11 Date

Required Attachments: Check box if attached	Remedial Form ☐ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	Dave Butler Print Name	Signature	12-15-10 Date

TRAINING DEPT.

MAY 12 2011

Initials

Qualification Package Approval Section

Line Manager Approval	Jim Jackson Print Name	Signature on file Signature	6/22/10 Date

Training Manager Approval	Ralph Hartline Print Name	Signature on file Signature	6/30/10 Date

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Ron Grise S# 103914

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	ALL	Initial Issue.	5-28-08
1	ALL	Made editorial corrections. Update to new format. Implemented Training/Evaluation Standard as applicable.	6-30-10

Modification Record

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Ron Grise S# 103914

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
Dave Butler	Dave Butler	DB
David J. Preston	David J Preston	DJP
J.M. JACKSON	J.M. Jackson	JMJ
Eric Schweinsberg	Eric Schweinsberg	ES

Employee Name Ron Grise S# 103914

1.0 Scope

The VEE will be familiar with the waste generating processes that have taken place at the AMWTP and will also be familiar with all types of waste being characterized at the AMWTP. The VEE is responsible for direction and implementation of the VE at the AMWTP. This individual is selected based on experience and training in the types of waste being characterized, and receives training in the same elements as the VE personnel with both formal training and OJT. Qualification of a VEE is based on familiarity with waste generating processes and familiarity with the types of waste being characterized.

The VEE will access HWMA/RCRA areas to provide direction to Visual Examiners and Operations Management concerning Visual Examination (VE) events and has the authority to set task lists and disposition codes in WTS. The VEE will also perform classroom and OJT instruction/performance assessment.

The QCVE0001 qualification is valid for 24 months afterwhich a requalification package must be completed to maintain qualified VEE status.

The VEE may be disqualified if any of the following conditions exist: Extended absence, identified training expires, failure to maintain Hazwoper Refresher training, performance deficiencies. Refer to MP-RTQP-14.4, Personnel Qualification and Certification.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this qualification checklist.

The Employee Position Description (EPD), Form-1018 has been reviewed or a new one completed to ensure the duties of this position are included and to verify the education and experience requirements have been satisfied. (MP-RTQP-14.1).

The employees Individual Training Plan (ITP), Form-1020, is current, or has been updated, to include the appropriate RCRA Profile and all courses required for personnel performing tasks in the capacity of a VEE Lead.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification checklist.

Level I Validation Manager — Date: 05/12/11

	Date Requirement Was Completed	**Signature** (Training Representative or SS)	**Date**
2.1 NONE	NA	NA	NA

Employee Name Ron Grise S# 103914

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the VEE SME, VEE Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 0AWT1118, Nevada Test Site WAC (CBT)	3-1-10	Initial / 0
3.1.2 0AW T3141, Visual Examination Indoctrination	5-21-07	Initial / 0
3.1.3 0AW T3142, Visual Examination	5-22-07	Initial / 0
3.1.4 0AW T3143, WTS & DQOs	5-24-07	Initial / 0

Training Representative or a qualified **VEE Lead** verify initial training courses are complete:	Dave Bolke	12-15-10
	Signature	Date

Sign-off by the VEE Lead indicates that each required reading has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 **Required Reading: Operating Instructions**	**VEE Lead or SME**	**Date**
3.2.1 INST-OI-16 Drum Coring (For familiarity)	David J Preston	4/11/11
3.2.2 INST-OI-73 Manual Drum Coring *(For familiarity)*	David J Preston	4/11/11
3.2.3 INST-OI-12 RTR Ops (Drum) (Initial – for familiarity)	David J Preston	4/11/11
3.2.4 INST-OI-41 RTR Ops (Box) (For familiarity)	David J Preston	4/11/11

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project QUALIFICATION PACKAGE Visual Examination Expert	QCVEE001 Rev 1

Employee Name Ron Grise S# 103914

3.2 Required Reading: Operating Instructions	VEE Lead or SME	Date
3.2.5 INST-OI-60 RTR Ops (Quick Scan) *(For familiarity)*	David J Preston	4/11/11
3.2.6 INST-OI-81 RTR Ops (WIPP Cert for Boxes) *(For familiarity)*	David J Preston	4/11/11
3.2.7 INST-FOI-21, Drummed Waste Handling Operations *(For familiarity)*	David J Preston	4/11/11
3.2.8 INST-FOI-23 SCW Ops. (For familiarity)	David J Preston	4/11/11
3.2.9 INST-FOI-25 SCW PAM Ops (For familiarity)	David J Preston	4/11/11
3.2.10 INST-FOI-16 Box Line Ops (For familiarity)	David J Preston	4/11/11
3.2.11 INST OI-11 Waste Container Handling *(For familiarity)*	David J Preston	4/11/11
3.2.12 INST-OI-23 Soil Removal Ops *(For familiarity)*	David J Preston	4/11/11
3.2.13 INST-OI-24, Waste Packaging	David J Preston	4/11/11
3.2.14 INST-OI-68 Drum Treatment Facility Ops *(For familiarity)*	David J Preston	4/25/11
3.2.15 INST-OI-34 Non-Facility Visual Examination Ops	David J Preston	4/25/11
3.2.16 INST-FOI-17 Facility Visual Examination Ops	David J Preston	4/25/11
3.2.17 INST-OI-75, Container-in-Container Sampling *(For familiarity)*	David J Preston	4/25/11

Employee Name Ron Grtse S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.1 RPT-DSA-02, for Operations Chapters 4 & 5	David J Preston	4/25/11
3.3.2 MP-Q&SI-5.3, Corrective Action	David J Preston	4/25/11
3.3.3 MP-Q&SI-5.4, Identification of Nonconforming Conditions	David J Preston	4/25/11
3.3.4 MP-TRUW-8.1, Certification Plan for INL Transuranic Waste	David J Preston	4/25/11
3.3.5 MP-TRUW-8.2; Quality Assurance Project Plan (QAPjP)	David J Preston	4/25/11
3.3.6 MP-TRUW-8.5, TRU Waste Certification *(For familiarity)*	David J Preston	5/3/11
3.3.7 MP-TRUW-8.8, Level I Validation	David J Preston	5/3/11
3.3.8 MP-TRUW-8.13, Collection, Review, Confirmation, & Management of AK Documentation *(For familiarity)*	David J Preston	5/3/11
3.3.9 RPT-TRUW-04, Acceptable Knowledge Document for the Battelle Columbus Laboratories Building JN-4 Plutonium Laboratory *(For familiarity)*	David J Preston	5/3/11
3.3.10 RPT-TRUW-05, AMWTP Waste Matrix Code Reference Manual	David J Preston	4/15/11
3.3.11 RPT-TRUW-06, AMWTP TRU Waste Management Acceptable Knowledge Elements *(For familiarity)*	David J Preston	5/3/11
3.3.12 RPT-TRUW-09, Acceptable Knowledge Summary for First/Second Stage Sludge *(For familiarity)*	David J Preston	5/3/11
3.3.13 RPT-TRUW -12, AMWTP Waste Stream Designations	David J Preston	5/3/11

Employee Name Ron Grise S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.14 RPT-TRUW-13, Acceptable knowledge document for INL stored transuranic waste-Mound Plant Waste *(For familiarity)*	David J Deaton	5/2/11
3.3.15 RPT-TRUW-15, Acceptable Knowledge Summary for Building 374 Sludge *(For familiarity)*	David J Deaton	5/2/11
3.3.16 RPT-TRUW-23, Acceptable Knowledge Summary for solidified Acid/Caustic Waste (BN835) *(For familiarity)*	David J Deaton	5/2/11
3.3.17 RPT-TRUW-30, Acceptable Knowledge Summary for Supercompactor Debris Waste (BN510)	David J Deaton	5/2/11
3.3.18 RPT-TRUW-44, Acceptable Knowledge Summary for Non Special Metal (BN296) *(For familiarity)*	David J Deaton	5/2/11
3.3.19 RPT-TRUW-46, Acceptable Knowledge Summary for Glass Debris Waste (BN243) *(For familiarity)*	David J Deaton	5/2/11
3.3.20 RPT-TRUW-48, Acceptable Knowledge Summary for Leaded Rubber Debris Waste (BN252) *(For familiarity)*	David J Deaton	5/2/11
3.3.21 RPT-TRUW-52, Acceptable Knowledge Summary for Firebrick Debris Waste (BN161) *(For familiarity)*	David J Deaton	5/2/11
3.3.22 RPT-TRUW-53, Acceptable Knowledge Summary for Mound Debris Waste (BN304) *(For familiarity)*	David J Deaton	5/2/11
3.3.23 RPT-TRUW-56, Acceptable Knowledge Document for INL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Deaton	5/2/11

Employee Name Ron Grise S# 103914

3.3 Required Reading: Other Documents	VEE Lead or SME	Date
3.3.24 RPT-TRUW-59, Acceptable Knowledge Summary for Special Setups Waste (BN004) *(For familiarity)*	David J Reeter	5/9/11
3.3.25 RPT-TRUW-63, Acceptable Knowledge Summary for Cemented Sludge (BN836) *(For familiarity)*	David J Reeter	5/9/11
3.3.26 CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)	David J Reeter	5/9/11
3.3.27 DOE/ NV-325, Nevada Test Site Waste Acceptance Criteria *(For familiarity)*	David J Reeter	5/9/11
3.3.28 INEL-96/0280, Acceptable Knowledge (AK) Document for INEEL Stored Transuranic Waste – Rocky Flats Plant *(For familiarity)*	David J Reeter	5/9/11
3.3.29 NM4890139088, WIPP Hazardous Waste Permit Waste Analysis Plan *(Review changes – for impacts on VE)*	David J Reeter	5/9/11
3.3.30 DOE/WIPP-02-3122, Contact-Handled Waste Acceptance Criteria for the Waste Isolation Pilot Plant (CH-WAC) *(Review changes – for impacts on VE)*	David J Reeter	5/9/11
3.3.31 DOE/CBFO-94-1012, Quality Assurance Program Document *(Initial – for familiarity)*	David J Reeter	5/9/11
3.3.32 40 CFR 260 to 265, and 268, RCRA Regulations associated with solid and hazardous waste determinations *(For familiarity)*	David J Reeter	5/9/11

Employee Name Ron Grise S# 103914

Sign-off by the VEE Lead or SME indicates that each knowledge item has been reviewed and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 **Knowledge:**	**VEE Lead or SME**	**Date**
3.4.1 Discuss the DSA and Safety Basis and how they apply to tasks covered in this qualification checklist.	David J Dexter	5/11/11 ~~5/11/12~~ DJD 5/11/11
3.4.2 Discuss ISIH and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 ~~5/11/12~~ DJD 5/11/11
3.4.3 Discuss ISMS and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 ~~5/11/12~~ DJD 5/11/11
3.4.4 Discuss Conduct of Operations and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 ~~5/11/12~~ DJD 5/11/11
3.4.5 Discuss Criticality Safety and how it applies to tasks covered in this qualification checklist.	David J Dexter	5/11/11 ~~5/11/12~~ DJD 5/11/11
3.4.6 Discuss the overall responsibilities of the VEE.	David J Dexter	5/11/11

Employee Name Ron Grise S# 103914

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. If there are two or more choices (P, S, or D), then circle all that apply.

Initials by the VEE indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

	P S D	VEE Initials	Evaluator Signature & date
4.1 VEE Performance Objectives			
4.1.1 Discuss and locate waste material parameters and descriptions.	(D)	DWP	David J Preston 4/11/11
4.1.2 Discuss and identify closure method and layers of confinement through video or VE.	(P) S	DWP	David J Preston 4/11/11
4.1.3 Identify filter models.	(P) S	DWP	David J Preston 4/11/11
4.1.4 Identify rigid liner types and status/condition.	(P) S	DWP	David J Preston 4/11/11
4.1.5 Discuss and identify waste drum configurations through video or VE.	P (S)	DWP	David J Preston 4/11/11
4.1.6 Discuss and identify packaging and waste materials through video or VE.	P (S)	DWP	David J Preston 4/11/11
4.1.7 Discuss and estimate Volumes and Nominal Densities through video or VE.	(P) S	DWP	David J Preston 4/11/11
4.1.8 Identify common and conditional items in waste through video or VE.	P (S)	DWP	David J Preston 4/11/11
4.1.9 Identify prohibited, suspect, or inconclusive items in waste through video or VE.	P (S)	DWP	David J Preston 4/11/11

Employee Name Ron Grise S# 103914

	P S D	VEE Initials	Evaluator Signature & date
4.1.10 Discuss and assign waste to waste material parameter categories.	(P)S	DMP	David J Preston 5/12/11
4.1.11 Discuss and assign Waste Matrix Codes.	(P)S	DMP	David J Preston 5/12/11
4.1.12 Identify and discuss IDCs for newly generated secondary waste and compacted waste.	(P)S	DMP	David J Preston 5/12/11
4.1.13 Perform volume and weight conversions.	(P)S	DMP	David J Preston 5/12/11
4.1.14 Generate (enter) and verify (concur with) examination-related data in WTS.	(P)S	DMP	David J Preston 5/12/11
4.1.15 Discuss Audio/Video equipment available, and the requirements associated with their use.	(D)	DMP	David J Preston 4/12/11
4.1.16 Define Data Quality Objectives (DQOs) for the VE program.	(D)	DMP	David J Preston 5/12/11
4.1.17 Discuss conditions where a complete VE cannot be performed.	(D)	DMP	David J Preston 5/12/11
4.1.18 Discuss integration of RTR/VE Update (RVU) with the original analysis and the Batch Data Report.	(D)	DMP	David J Preston 5/12/11
4.1.19 Discuss the Data Review and Validation Process.	(D)	DMP	David J Preston 5/12/11
4.1.20 Discuss the actions to be taken if assistance is required by operations to identify material in a breached container event in buildings WMF-628, 634, 635, and 676.	(D)	DMP	David J Preston 5/12/11
4.1.21 Demonstrate the ability to perform Trackwise activities.	(P)	DMP	David J Preston 5/12/11

Employee Name Ron Grise S# 103914

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

Initials by the VEE Lead or SME indicate that the Trainee is ready to be evaluated per MP-RTQP-14.13. The Trainee has a satisfactory understanding of how it pertains to his/her job responsibilities. It is noted that a successful practice cannot count as a successful OJT evaluation.

Sign-off by the evaluator indicates successful performance of the task. If the trainee cannot simulate or discuss the task without coaching, terminate the Performance Assessment.

		S D	VEE Lead or SME	Evaluator Signature	Date
5.1	Discuss the conditions under which a VEE would need to change or override data in WTS.	S (D)	DWP	David J Wester	5/12/14
5.2	Evacuation (MP-EP&C-12.7)	S (D)	DWP	David J Wester	5/12/14
5.3	Take Cover (MP-EP&C-12.7)	S (D)	DWP	David J Wester	5/12/14 DWP 5/12/14

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *QUALIFICATION PACKAGE* *Visual Examination Expert*	**QCVEE001** **Rev 1**

Employee Name Ron Grise S# 103914

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO EXAM REQUIRED**

7.0 **Recommendation for Qualification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert Lead or SME acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the individual recommending qualification of the candidate has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
VEE Lead or SME Title	David J Preston Signature	5/12/11 Date

Upon satisfactory completion of this qualification package, the Level I Validation Manager may grant Qualification to the trainee on the front cover of this qualification package.

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Guy Matlock S# 736946

VISUAL EXAMINER

Requalification Package Number: QPVE0001

The manager granting qualification acknowledges that the employee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly.

Qualification granted by:	Pete Hingston	Pete Hingston	12/16/10
Production Manager	Print Name	Signature	Date

Form-1268, Production System Access Request, has been submitted for the appropriate WTS role(s) for this individual.	Jeff Merrill	Jeff Merrill	12-16-10
	Print Name	Signature	Date

Required Attachments: Check box if attached	Remedial Form ☑ (If used)	Exception Form ☐ (If used)

Qual Pack Issued By :	P. REDDISH	JPDRLLC	12/15/10
	Print Name	Signature	Date

Qualification Package Approval Section

Line Manager Approval	C. Sisson	Signature on file	03/29/10
	Print Name	Signature	Date

Training Manager Approval	R. Hartline	Signature on file	04/28/10
	Print Name	Signature	Date

QC 12/18/10 CJ

DEC 17 2010 CJ

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Gary Mallick S# 23694

Revision History

Revision Number	Affected Pages	Description of Change	Date
0	All	Initial Issue. QPVE0001 was generated to replace QPOT4B and FQPOT10A. QPVEE0002 and QPVE0003 were generated as delta qualification for personnel who were current in QPOT4B and FQPOT10A.	05/30/07
1	All	Update the VE qual. pack to meet new WIPP 311 Permit Modifications. Retire QP-OT-4B Characterization VE; FQP-OT-10A Facility VE; QCCVEFVE Characterization Visual Examination Operators to qualify as Facility Visual Examination Operators; QPVE0002 Pre-Qualified Visual Examiner; and QPVE0003 Pre-Qualified Visual Examiner.	05/30/08
2	All	Revised JTAL to make more specific to VE tasks.	03/04/09
3	All	Made editorial changes. Updated format and incorporated evaluation standard.	3/29/10

Mod Letter	Affected Pages	Description of Change	Management Approval *	Date
3A	7	Change language in item 4.19 to say, "Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	D. Preston (Signature on file)	7-20-10
3B	5	3.2.1 – Change "INST-OI-17" to "INST-FOI-17".New format to include final qual. approval signature and attachments on front page; Included ITP/EPD paragraph on pg. 4; modified examination section (6.0) on last page and wording in section 7.0.	D. Preston (Signature on file)	7/20/10
3C	8	Add SS to signature line of section 5.0	Jeremy Szabo (Signature on file)	11/08/10

* Manager signature required for modifications.

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Guy Matlock S# 736946

Signature Roster

Personnel signing blocks in this qualification package must print their name legibly, sign and initial. Signature by Evaluators indicates they have used the Training/Evaluation Standard and performed evaluations IAW MP-RTQP-14.13. Copy this sheet if necessary.

Name (Printed)	Signature	Initials
P. REDDISH	P REDDISH	PR
Guy Matlock	Guy Matlock	GM
J. WALKER	J. Walker	JW
P. Hinston	Patty Hinston	PH
S. Hart	Steve Hart	SH

AMWTP Advanced Mixed Waste Treatment Project	Advanced Mixed Waste Treatment Project REQUALIFICATION PACKAGE Visual Examiner	QPVE0001 Rev. 3

Employee Name Guy Matlock S# 73696

1.0 Scope

This requalification package assures the knowledge and skill requirements for personnel performing VE at AMWTP are maintained. This requalification is valid for 24 months, after which, another requalification checklist must be completed to maintain qualification status.

Individuals may be disqualified for any of the following: Extended absence, identified training expires, failure of recurring proficiency/performance exams, performance deficiencies, etc. as applicable.

2.0 Prerequisites

Ensure the trainee has successfully completed the requirements listed below before completing this requalification package.

The employee has completed all initial training *and is current* on the applicable qualifications / checklists listed on the ITP to support this qualification package.

Peter Hinojosa — Employee's Production Manager — 12/15/10 — Date

	Date Requirement Was Completed	Signature (Training Representative or SS)	Date
2.1 Completion of VE qualification (QPVE0001).	12/18/09	TPDRCC	12/15/10

Employee Name Guy Mallard S# 736496

3.0 Initial & Continuing Training / Knowledge / Required Reading

The initial training courses identified pertain to the job function/duties and will be verified complete by the employee's SS, the VEE SME or Lead, or a Training Representative.

3.1 Training Courses (Indicate Courses that are Recurring):	Date Requirement was Complete	Recurring Training /Qualification Frequency
3.1.1 None	N/A	NA

Sign-off by the VEE indicates that each required reading has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities.

3.2 Required Reading: Operating Instructions	VEE	Date
3.2.1 Discuss any recent changes to INST-OI-34 and INST-FOI-17.	DJ Wack	12 15 10

3.3 Required Reading: Other Documents	VEE	Date
3.3.1 None	N/A	N/A

Sign-off by the OJT Instructor or SS indicates that each knowledge item has been reviewed IAW with the Training/Evaluation Standard and that the Trainee demonstrates a satisfactory understanding of how it pertains to their job responsibilities

3.4 Knowledge:	VEE / SS Signature	Date
3.4.1 Discuss any lessons learned concerning Visual Examination.	DJ Wack	12 15 10
3.4.2 Discuss the any applicable Criticality Working Requirements (CWRs).	DJ Wack	12 15 10

Employee Name Guy Matlock S# 73696

3.4 Knowledge:	VEE / SS Signature	Date

4.0 OJT Training Objectives

The elements below are to be performed (P), simulated (S), or discussed (D) as indicated. Circle all that apply.

Sign-off by the VEE (as the Evaluator) indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.1	Generate (enter) examination related data into WTS.	P (S)	G. Matlock 12 15 10
4.2	Verify (concur with) examination-related data entered into WTS.	P (S)	G. Matlock 12 15 10
4.3	Identify closure methods and layers of confinement.	P (S)	G. Matlock 12-15-10
4.4	Discuss how to ensure DQOs are met.	(D)	G. Matlock 12 15 10
4.5	Identify packaging configurations.	P (S)	G. Matlock 12 15 10
4.6	Assign proper Waste Material Parameters to waste.	P (S)	G. Matlock 12 15 10
4.7	Perform weight and volume conversions using procedural aids.	P (S)	G. Matlock 12 15 10
4.8	Assign the correct IDC and Waste Matrix Code during the VE process.	P (S)	G. Matlock 12 15 10
4.9	Identify the path forward for prohibited and nonconforming items and the associated NCRs.	P (S)	G. Matlock 12-15-10
4.10	Identify common and conditional waste items through VE or video.	P (S)	G. Matlock 12-15-10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Guy Matlock S# 73696

VE Over-Train Performance Objectives		P S D	Evaluator Signature & date
4.11	Identify packaging and waste materials.	P(S)	GMatlock 12 15 10
4.12	Identify prohibited and suspect items through VE or video.	P(S)	GMatlock 12-15-10
4.13	Assign correct IDCs for newly generated secondary waste and compacted waste.	P(S)	GMatlock 12 15 10
4.14	Estimate volumes and nominal densities of waste.	P(S)	GMatlock 12 15 10
4.15	Identify rigid liner types and their status and condition.	P(S)	GMatlock 12 15 10
4.16	Identify filter models and update WTS for filter removal/insertion on the Container Filters screen.	P(S)	GMatlock 12 15 10
4.17	Perform Newly Generated Waste (NGW) package VE.	P(S)	GMatlock 12 15 10
4.18	Perform Newly Generated Waste Closure VE.	P(S)	GMatlock 12-15-10
4.19	Perform VE of Non-Boxline Legacy Waste (Facility) or VE of Legacy Waste (Non-Facility).	P(S)	GMatlock 12 15 10
4.20	Perform Boxline VE (BiD).	P(S)	GMatlock 12 15 10
4.21	Perform Boxline VE (DiD) using volume estimates and nominal densities.	P(S)	GMatlock 12 15 10
4.22	Perform RTR VE Update (RVU) for Prohibited Item removal (using volume estimates and nominal densities).	P(S)	GMatlock 12-15-10
4.23	Perform RVU for the final configuration of a Coring Drum.	P(S)	GMatlock 12-15-10
4.24	Perform RVU for the final configuration of a Treatment Drum.	P(S)	GMatlock 12 15 10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	QPVE0001 Rev. 3

Employee Name Guy Matlock S# 736946

VE Over-Train Performance Objectives	P S D	Evaluator Signature & date
4.25 Perform an update of an NCR for Treatment or the removal of suspect / prohibited items.	P(S)	G Matlock 12 15 10

5.0 *Emergency / Abnormal Conditions*

The elements below are to be simulated (S) or discussed (D) as indicated. If both S and D are indicated, then circle which one was used.

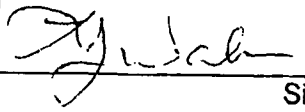
Sign-off by the SS indicates successful performance of the task. If the trainee cannot perform the task without coaching, terminate the Performance Assessment.

		P S D	SS Signature Mod. 3C	Date
5.1	Fire / Alarm (OI-33, FOI-16, AOI-10, RS&C-6.12)	S(D)	Alex Hsu	12/15/10
5.2	Location of fire extinguishers / fire alarm boxes in WMF-634, 676, and 628.	S(D)	Alex Hsu	12/15/10
5.3	Dropped waste container (MP-EC&P-12.9)	S(D)	Alex Hsu	12/15/10
5.4	Breached Container (INST-OI-11; INST-FOI-20)	S(D)	Alex Hsu	12/15/10
5.5	CAM Alarm (OI-11, RS&C-6.12)	S(D)	Alex Hsu	12/15/10
5.6	Spill / Contamination Release (INST-OI-88)	S(D)	Alex Hsu	12/15/10
5.7	Injured Person (MP-ISIH-2.54, RS&C-6.12)	S(D)	Alex Hsu	12/15/10
5.8	Loss of ventilation/air system (OI-11, AOI-05, OI-16, OI-33)	S(D)	Alex Hsu	12/15/10
5.9	Loss of Commercial Power (AOI-04)	S(D)	Alex Hsu	12/15/10
5.10	Evacuation (EP&C-12.7)	S(D)	Alex Hsu	12/15/10
5.11	Take Cover (EP&C-12.7)	S(D)	Alex Hsu	12/15/10

AMWTP Advanced Mixed Waste Treatment Project	*Advanced Mixed Waste Treatment Project* *REQUALIFICATION PACKAGE* *Visual Examiner*	**QPVE0001** **Rev. 3**

Employee Name Guy Matlock S# 73696

6.0 **Examinations** (Sections 1-5 must be complete prior to testing)	**NO TEST REQUIRED**

7.0 **Recommendation for Requalification**		
After discussion with the candidate concerning this job scope, the Visual Examination Expert (VEE) acknowledges that the trainee possesses the knowledge, skills, and abilities to perform this job function correctly the first time, safely and compliantly. In addition, the VEE has completed the quality validation of this document in accordance with the requirements in MP-DOCS-18.2. (Guidance is given in the Training/Evaluation Standard)		
Visual Examination Expert Title	 Signature	12-15-10 Date

Upon satisfactory completion of this qualification package, the Characterization or Facility Production Manager may grant Re-Qualification to the trainee on the front cover of this re-qualification package.

AMWTP Advanced Mixed Waste Treatment Proj	**Remedial Training Program Form**	FORM-1039 Rev. 1 MP-RTQP-14.14 Effective Date: 10/01/05 Page 1 of 1

Trainee Name: Guy Matlock	Employee Number: 73696
Program/Course Title: QPVE0001 Visual Examiner FQPOT13C Packet Assay FQPOT10B Remote Equipment QCLOTOAE LOTO Authorized Employee	Pass Criteria: Successful completion of applicable qualification packages/checklists.

Reason for Remedial Training:

Disqualification

Training to be Completed	Date Completed	Signature of Instructor/Supervisor
QPVE0001 Visual Examiner	12/16/10	Peter Hingston
FQPOT13C Packet Assay	12/23/10	Peter Hingston
FQPOT10B Remote Equipment	1/6/11	Peter Hingston
QCLOTOAE LOTO Authorized Employee	12/15/10	Peter Hingston

Date to be Completed:
1/29/2011 For FQPOT13C and QPVE0001 at 12/14/10

Remedial training program agreed as prepared above.

Guy Matlock 12/14/10
Trainee Signature / Date

Peter Hingston 12/14/10
Supervisor Signature / Date

Remedial training program completed as instructed above.

Guy Matlock 2/23/11 Trainee's Signature/Date	Peter Hingston 2/23/11 Supervisor's Signature/Date

Idaho Treatment Group

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To: Distribution

From: S. M. Peterman, TRU Waste Programs Manager

Date: October 8, 2011

Re: Advanced Mixed Waste Treatment Project Visual Examination Expert Designees – SMP-01-11

In accordance with the Waste Analysis Plan of the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit Section C1-4, the Advanced Mixed Waste Treatment Project (AMWTP) has designated the following individuals as Visual Examination Experts (VEEs) to provide overall direction and implementation of the visual examination activities on a daily basis:

- Lawrence J. Walker
- Denny Gasper
- Mark Sorensen
- Ron Grise
- Louis "Mike" Brugger
- Dave Preston

The VEE selection was in accordance with AMWTP's qualification and training requirements specified in MP-RTQP-14.1, Preparation and Administration of Individual Training Plans, and MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP). If you have any questions or comments, then please contact me at 208-557-6383.

smp

Distribution

David H. Haar
Louis M. Brugger
George Byram
Steve Carpenter
Elvin Dumas
Ted Griffith
Jeremy Hampton
Jim Jackson
AMWTP Correspondence Control
Mike Parrish
Dave Preston
Wes Skaar
Charles Stepzinski
Gina Tedford
L. J. Walker

TABLE OF AUDITED DOCUMENTS

NUMBER	PROCEDURE NUMBER	REVISION NUMBER	PROCEDURE TITLE
1.	INST-CD&M-11.1.2	13	Facility Modification Proposal Preparation
2.	INST-CD&M-11.2.1	7	Software Version Control
3.	INST-CD&M-11.2.2	9	Software Inventory Classification
4.	INST-CD&M-11.2.3	5	System Data Change Request
5.	INST-CD&M-11.2.6	4	Temporary Software Override
6.	INST-CMNT-10.14.1	8	Testing In-Plant and Process Instrumentation
7.	INST-CMNT-10.5.1	11	Calibration and Control of Measuring and Test Equipment
8.	INST-FOI-17	25	Facility Visual Examination Operations
9.	INST-FOI-20	36	Supercompactor and Post-Compaction Operations
10.	INST-OI-09	49	Retrieval Inspection Station Operations
11.	INST-OI-11	47	Waste Container Handling
12.	INST-OI-12	49	Real-Time Radiography Operations (Drum)
13.	INST-OI-16	40	Drum Coring Operations
14.	INST-OI-34	27	Non-Facility Visual Examination Operations
15.	INST-OI-43	22	HGAS Sampling and Analysis Operations
16.	INST-OI-45	17	Drum Filter Installation
17.	INST-OI-50	14	WMF-615 Filter Insertion Operations
18.	INST-OI-73	13	Manual Drum Coring Operations
19.	INST-OI-75	11	Container-in-Container Sampling
20.	INST-OI-81	10	Real-Time Radiography Operations (for WIPP Certification of Boxes)
21.	LST-RTQP-03-IM	0	WIPP Training Requirements Implementation Matrix
22.	MP-CD&M-11.1	9	Change Control
23.	MP-CD&M-11.2	17	Software Quality Assurance
24.	MP-CMNT-10.14	6	In-Plant and Process Instrumentation Testing Program
25.	MP-CMNT-10.5	9	Measuring and Test Equipment Program
26.	MP-DOCS-18.1	12	Developing Written Work Instructions
27.	MP-DOCS-18.2	15	Records Management
28.	MP-DOCS-18.3	7	Developing Management Procedures
29.	MP-DOCS-18.4	37	Document Control
30.	MP-M&IA-17.1	11	Management Assessment
31.	MP-M&IA-17.2	10	Independent Assessment
32.	MP-M&IA-17.3	8	Quality Assurance Surveillance
33.	MP-PCMT-15.1	12	Acquisition of Material and Services
34.	MP-PCMT-15.21	7	Material Management
35.	MP-PRPL-22.1	25	Production Planning
36.	MP-Q&SI-5.1	9	Investigation and Root Cause Analysis
37.	MP-Q&SI-5.3	12	Corrective Action
38.	MP-Q&SI-5.4	21	Identification of Nonconforming Conditions
39.	MP-Q&SI-5.6	4	Graded Approach
40.	MP-Q&SI-5.8	8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
41.	MP-RTQP-14.16	6	Training Program Evaluation
42.	MP-RTQP-14.19	6	Training Records Administration
43.	MP-RTQP-14.4	18	Personnel Qualification and Certification
44.	MP-RTQP-14.6	7	Job Analysis
45.	MP-TRUW-8.1	22	Certification Plan for INL Transuranic Waste
46.	MP-TRUW-8.2	16	Quality Assurance Project Plan

NUMBER	PROCEDURE NUMBER	REVISION NUMBER	PROCEDURE TITLE
47.	MP-TRUW-8.5	28	TRU Waste Certification
48.	MP-TRUW-8.8	32	Level I Data Validation
49.	MP-TRUW-8.9	24	Level II Data Validation
50.	MP-TRUW-8.11	24	Data Reconciliation
51.	MP-TRUW-8.12	22	Waste Receipt and Shipping Inspection
52.	MP-TRUW-8.13	24	Collection, Review, and Management of Acceptable Knowledge Documentation
53.	MP-TRUW-8.14	12	Preparation of Waste Stream Profile Forms
54.	MP-TRUW-8.17	7	Co-Located Core Sampling Control Charts
55.	MP-TRUW-8.25	18	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis
56.	MP-TRUW-8.26	5	Reports to Management
57.	MP-TRUW-8.34	8	WIPP Sample Transfers

PERSONNEL CONTACTED DURING THE AUDIT

PERSONNEL CONTACTED DURING AUDIT A-13-01				
NAME	**ORG/TITLE**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Angel Aguinaga	ITG Solids Sampling SME		X	
Kevin Bake	ITG Systems Engineer	X	X	
D. Lee Beidelman	DOE ID Observer	X	X	
Mike Bece	Facility Operations Technician		X	
Scott Bjorn	ITG Operations Manager		X	
Mike Brugger	ITG VE Expert		X	
Dave Butler	ITG Training Specialist	X	X	X
George Byram	ITG SPM	X	X	X
Sean Caniff	ITG TRU Programs SPM		X	
Steve Carpenter	ITG AK Expert	X	X	X
Cassandra Carter	ITG Records Specialist		X	
George Fussel	ITG Operations Manager	X		
Nathaniel Garcia	ITG Warehouse Clerk		X	
Denny Gasper	ITG VE Operator	X	X	
Todd Goldberg	ITG Training Manager		X	X
Danny Green	ITG Operations SPM		X	
Ronald Grise	ITG VE Expert	X	X	
David Haar	ITG Waste Programs Manager	X		X
Rod Harrison	ITG Procurement Manager		X	X
Jared Hawley	ITG PAIT Software Engineering Manager	X	X	X
Jason Hayne	ITG RTR SME	X	X	X
Steve Holmes	NMED Observer	X	X	X
Jim Jackson	ITG IPP			X

PERSONNEL CONTACTED DURING AUDIT A-13-01				
NAME	**ORG/TITLE**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Pete Johansen	Idaho DEQ Observer	X	X	
Nancy Kirk	ITG AK Expert		X	
Jason Kettle	ITG Chemist		X	
Bruce LaRue	Idaho DEQ Observer	X	X	X
Denise Lee	ITG RTR ITR	X	X	
Ricardo Maestas	NMED Observer	X	X	X
Stormy McCurdy	ITG WCO		X	
J. Paul Minor	ITG QA Engineer		X	
Randy Morris	ITG AK Expert		X	
Angie Morse	ITG QA Specialist	X	X	X
William J. Muirhead	ITG PAIT Manager		X	X
Casey Nielson	ITG Supplier Chain Inspector		X	
Seth Oldham	ITG HSG Operator		X	
Sue Peterman	ITG TRU Programs Manager	X	X	X
Wendy Powell	ITG Document Services Supervisor	X	X	
Dave Preston	ITG TRU Programs SME	X	X	X
Camille Robison	ITG QA Specialist		X	
Cesar Rojas	ITG HSGS Chemist	X	X	
Stepheni Rudolph	ITG M&TE Custodian		X	
Lyle Ryman	ITG QA Specialist	X	X	X
Eric Schweinsberg	ITG TRU Programs SPM	X	X	X
Michelle Sharp	ITG QA Specialist	X	X	X
David Shell	Facility Operations Technician		X	
Jim Simonds	ITG Control & Logistics Manager			X
Mark Sorenson	ITG VE Expert			X
Matthew Storms	ITG Certification SME	X	X	

PERSONNEL CONTACTED DURING AUDIT A-13-01				
NAME	**ORG/TITLE**	**PREAUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Gina Tedford	ITG SPM Audit Lead	X	X	X
Tim Venneman	ITG AKE		X	
Connie Walker	NMED Observer	X	X	
L. J. Walker	ITG VE Expert			X
Sherrie Walker	ITG Document Control Supervisor	X	X	X
Jerry Wells	DOE-ID Project Manager	X		X
William Whitehead	ITG IT Specialist	X		

PERSONNEL CONTACTED DURING THE AUDIT BY SUBJECT AREA

Personnel Qualification and Training	Mike Brugger Sue Peterman Dave Butler Todd Goldberg
Control of Nonconforming Items	Angie Morse Camille Robison
Records	Cassandra Carter Sherrie Walker Wendy Powell
WIPP Waste Information System (WWIS Data Entry)	Matthew Storms Stormy McCurdy
Waste Certification/Project Level Data V&V	George Byram Gina Tedford Dave Preston
Solids Sampling and Analysis	Angel Aguinaga Dave Preston
Acceptable Knowledge	Steve Carpenter Tim Venneman Eric Schwiensberg Nancy Kirk Randy Morris James Seamans Gina Tedford
Headspace Gas Sampling and Analysis	Jason Kettel Cesar Rojas Seth Oldham
Real-Time Radiography	Denise Lee Sean Candiff Jason Hayne Danny Green George Byram
Visual Examination	Denny Gasper Ron Grise

ATTACHMENT 3

Objective Evidence is Provided in Boxes

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13.	INST-OI-16	40	Drum Coring Operations
14.	INST-OI-34	27	Non-Facility Visual Examination Operations
15.	INST-OI-43	22	HGAS Sampling and Analysis Operations
16.	INST-OI-45	17	Drum Filter Installation
17.	INST-OI-50	14	WMF-615 Filter Insertion Operations
18.	INST-OI-73	13	Manual Drum Coring Operations
19.	INST-OI-75	11	Container-in-Container Sampling
20.	INST-OI-81	10	Real-Time Radiography Operations (for WIPP Certification of Boxes)
21.	LST-RTQP-03-IM	0	WIPP Training Requirements Implementation Matrix
22.	MP-CD&M-11.1	9	Change Control
23.	MP-CD&M-11.2	17	Software Quality Assurance
24.	MP-CMNT-10.14	6	In-Plant and Process Instrumentation Testing Program
25.	MP-CMNT-10.5	9	Measuring and Test Equipment Program
26.	MP-DOCS-18.1	12	Developing Written Work Instructions
27.	MP-DOCS-18.2	15	Records Management
28.	MP-DOCS-18.3	7	Developing Management Procedures
29.	MP-DOCS-18.4	37	Document Control
30.	MP-M&IA-17.1	11	Management Assessment
31.	MP-M&IA-17.2	10	Independent Assessment
32.	MP-M&IA-17.3	8	Quality Assurance Surveillance
33.	MP-PCMT-15.1	12	Acquisition of Material and Services
34.	MP-PCMT-15.21	7	Material Management
35.	MP-PRPL-22.1	25	Production Planning
36.	MP-Q&SI-5.1	9	Investigation and Root Cause Analysis
37.	MP-Q&SI-5.3	12	Corrective Action
38.	MP-Q&SI-5.4	21	Identification of Nonconforming Conditions
39.	MP-Q&SI-5.6	4	Graded Approach
40.	MP-Q&SI-5.8	8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists
41.	MP-RTQP-14.16	6	Training Program Evaluation
42.	MP-RTQP-14.19	6	Training Records Administration
43.	MP-RTQP-14.4	18	Personnel Qualification and Certification
44.	MP-RTQP-14.6	7	Job Analysis
45.	MP-TRUW-8.1	22	Certification Plan for INL Transuranic Waste
46.	MP-TRUW-8.2	16	Quality Assurance Project Plan

NUMBER	PROCEDURE NUMBER	REVISION NUMBER	PROCEDURE TITLE
47.	MP-TRUW-8.5	28	TRU Waste Certification
48.	MP-TRUW-8.8	32	Level I Data Validation
49.	MP-TRUW-8.9	24	Level II Data Validation
50.	MP-TRUW-8.11	24	Data Reconciliation
51.	MP-TRUW-8.12	22	Waste Receipt and Shipping Inspection
52.	MP-TRUW-8.13	24	Collection, Review, and Management of Acceptable Knowledge Documentation
53.	MP-TRUW-8.14	12	Preparation of Waste Stream Profile Forms
54.	MP-TRUW-8.17	7	Co-Located Core Sampling Control Charts
55.	MP-TRUW-8.25	18	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis
56.	MP-TRUW-8.26	5	Reports to Management
57.	MP-TRUW-8.34	8	WIPP Sample Transfers

List of Processes and Equipment Evaluated

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
NEW PROCESSES OR EQUIPMENT				
NONE				
APPROVED PROCESSES OR EQUIPMENT				
The following processes and equipment were evaluated during CBFO Audit A-13-01				
Headspace Gas (HSG)				
9HG4	Procedure – INST-OI-43 Description – CTI Headspace Gas Sampling System – Unit 001	Solids (S3000) Debris (S5000)	YES	N/A
Solids Sampling				
9DC1	Drum Coring Procedures – INST-OI-16 and INST-OI-73 (*Manual Drum Coring Operation*) and INST-OI-75 Description – Drum Coring and Sample Collection System	Solids (S3000) Soils/Gravel (S4000)	YES	N/A
Nondestructive Examination (NDE)				
9RR1	Procedure – INST-OI-12 and INST-OI-81 Description – Real-Time Radiography System	Solids (S3000) Debris (S5000)	YES	YES
9RR2	Procedure – INST-OI-12 and INST-OI-81 Description – Real-Time Radiography System	Solids (S3000) Debris (S5000)	YES	YES
Visual Examination				
9VE2	Visual Examination Procedure – INST-OI-34 Description – Visual Examination (in lieu of RTR) (VEC)	Solids (S3000) Debris (S5000)	YES	YES

List of Processes and Equipment Evaluated

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
9VE3	Visual Examination Procedure – INST-OI-34 Description – Newly Generated Waste Visual Examination Closure (VNC)	Solids (S3000) Debris (S5000)	YES	YES
9VE5	Visual Examination Procedure – INST-FOI-17 Description –Visual Examination (in lieu of RTR) (VEC)	Debris (S5000)	YES	YES
9VE6	Visual Examination Procedure – INST-FOI-17 Description – Newly Generated Waste Visual Examination Closure (VNC)	Debris (S5000)	YES	YES
9VE7	Visual Examination Procedure – INST-FOI-17 Description – Box Line Visual Examination (VEB) – Box to drum repackaging	Debris (S5000)	YES	YES
9VE8	Visual Examination Procedure – INST-FOI-17 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Debris (S5000)	YES	YES
9VE10	Visual Examination Procedure – INST-OI-34 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Solids (S3000) Debris (S5000)	YES	YES
9VE11	Visual Examination Procedure – INST-FOI-22 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Solids (S3000)	YES	YES

List of Processes and Equipment Evaluated

WIPP #	Process/Equipment Description	Applicable to the Following Waste Streams/Groups of Waste Streams	Currently Approved by NMED	Currently Approved by EPA
DEACTIVATED PROCESSES OR EQUIPMENT				
Visual Examination				
9VE11	Visual Examination Procedure – INST-FOI-22 Description – Box Line Visual Examination (VEB) – Drum to new drum repackaging	Solids (S3000)	YES	YES

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Quality and Safety Improvement					
1	MP-Q&SI-5.1	Investigation and Root Cause Analysis	Rev. 8	Rev. 9	**Rev. 9 -** DCR-10706. Incorporated DOCS-BLUESHEET-05, DOCS-BLUESHEET-09 and ITG-BLUESHEET-244, Applied DOCS-BLUESHEET-08.
2	MP-Q&SI-5.3	Corrective Action	Rev. 10	Rev. 11	**Rev.11 -** DCR-10557. Incorporated DOCS-BLUESHEET-08 and ITG-BLUESHEET-244
3	MP-Q&SI-5.4	Identification of Nonconforming Conditions	Rev. 20	Rev. 21	**Rev. 21 -** DCR-10708. Incorporated ITG-BLUESHEET-244, and applied DOCS-BLUESHEET-08
4	MP-Q&SI-5.6	Graded Approach	Rev. 3	Rev. 4	**Rev. 4 -** DCR 10709. Incorporate DOCS-BLUESHEET-08 and ITG-BLUESHEET-244
5	MP-Q&SI-5.8	Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists	Rev. 7	Rev. 8	**Rev. 8 -** DCR-10710. Incorporated DOC-BLUESHEET-08 and ITG-BLUESHEET-244.
TRU Management					
6	MP-TRUW-8.1	Certification Plan for INL Transuranic Waste	Rev. 21	Rev. 22	**Rev. 22 -** DCR-11153. Annual Review. Changed document owner and Site QA Manager on the Document Approval Page, updated Section 5.4.1 and Figure 5.1 to reflect ITG organizational changes, and made small editorial changes. Updated to ITG-BLUESHEET-073.
7	MP-TRUW-8.2	Quality Assurance Project Plan	Rev. 15	Rev. 16	**Rev. 16 -** DCR-10657. Annual review. Added sentence on Page 128. Incorporated ITG BLUESHEET-073. Updated acronyms and references.
8	MP-TRUW-8.5	TRU Waste Certification	Rev. 25	Rev. 28	**Rev. 26 -** DCR-10680. Changes made to match updated WDS fields and to clarify ambiguities. Some changes related to SCR-4287. Reorganized reference section. Incorporated ITG Bluesheet 078. **Rev. 27 -** DCR-11010. Changed the title to Section 3.5 for clarity. Added new note 2 on page 3 for acknowledging SCR 4032 data roll-up capabilities for certifiable containers (note subsequently deleted due to QA comments during review process). **Rev. 28 -** DCR-11547. Added step for verification of manual ASY batch results (Change consistent with MP-TRUW-8.11).
9	MP-TRUW-8.8	Level I Data Validation	Rev. 31	Rev. 32	**Rev. 32 -** DCR-10658. Corrected wording in Notes in Sections 3.1 and 3.4. Incorporated ITG-BLUESHEET-078.
10	MP-TRUW-8.9	Level II Data Validation	Rev. 24	Rev. 24	No revision since Audit A-10-24

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
11	MP-TRUW-8.11	Data Reconciliation	Rev. 22	Rev. 24	**Rev. 23 -** DCR-11028. Incorporated SCR-4032 and MP-TRUW-8.5 changes. Incorporated ITG-Bluesheet-073. **Rev. 24 -** DCR-11546. Incorporated changes for termination of Settlement Agreement and Stipulated Final Order, No. HWB 04-07 (CO). Added guidance in Appendix A for manual ASY batch results (Change incorporated into MP-TRUW-8.5). Incorporated CBFO comments.
12	MP-TRUW-8.12	Waste Receipt and Shipping Inspection	Rev. 22	Rev. 22	No revision since Audit A-10-24
13	MP-TRUW-8.13	Collection, Review, and Management of Acceptable Knowledge Documentation	Rev. 23	Rev. 24	**Rev. 24 -** DCR-10458. Revised Step 3.5.2.4.2 to accommodate WIPP WAP changes. Incorporated ITG Bluesheet-073.
14	MP-TRUW-8.14	Preparation of Waste Stream Profile Forms	Rev. 12	Rev. 12	No revision since Audit A-10-24
15	MP-TRUW-8.17	Co-Located Core Sampling Control Charts	Rev. 7	Rev. 7	No revision since Audit A-10-24
16	MP-TRUW-8.25	Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis	Rev. 18	Rev. 18	No revision since Audit A-10-24
17	MP-TRUW-8.26	Reports to Management	Rev. 5	Rev. 5	No revision since Audit A-10-24
18	MP-TRUW-8.34	WIPP Sample Transfers	Rev. 6	Rev. 8	**Rev. 7 -** DCR-11030. Total rewrite to incorporate RPT-NFCS-25 requirements, remove Bill of Lading requirement, and revise roles. Incorporate ITG-Bluesheet-079. Periodic review. **Rev. 8 -** DCR-11190. Total rewrite of procedure to remove ACL Point-of-Contact and ACL references, clarify packaging of samples based on FGE value and provide additional packaging options, revise information required to be entered on COC comments block, and revise definitions as needed.
Conduct of Maintenance					
19	MP-CMNT-10.5	Measuring and Test Equipment Program	Rev. 9	Rev. 9	No revision since Audit A-10-24
20	INST-CMNT-10.5.1	Calibration and Control of Measuring and Test Equipment	Rev. 11	Rev. 11	No revision since Audit A-10-24
21	MP-CMNT-10.14	In-Plant and Process Instrumentation Testing Program	Rev. 5	Rev. 5	No revision since Audit A-10-24
22	INST-CMNT-10.14.1	Testing In-Plant and Process Instrumentation	Rev. 7	Rev. 7	No revision since Audit A-10-24

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
			Control of Design and Modification		
23	MP-CD&M-11.1	Change Control	Rev. 8	Rev. 9	**Rev. 9 -** DCR-11357. Updated to match new USQ process. Incorporated ITG-Bluesheet-154. Periodic Review.
24	INST-CD&M-11.1.2	Facility Modification Proposal Preparation	Rev. 11	Rev. 13	**Rev. 12 -** DCR-11147. Incorporated changes as required by CAR 69387. Clarified available options with Environmental checklists. Incorporated new USQ process implementation changes. **Rev. 13 -** DCR-11528. Incorporated DOE O 426.2 changes.
25	MP-CD&M-11.2	Software Quality Assurance	Rev. 16	Rev. 16	No revision since Audit A-10-24
26	INST-CD&M-11.2.1	Software Version Control	Rev. 7	Rev. 7	No revision since Audit A-10-24
27	INST-CD&M-11.2.2	Software Inventory Classification	Rev. 9	Rev. 9	No revision since Audit A-10-24
28	INST-CD&M-11.2.3	System Data Change Request	Rev. 5	Rev. 5	No revision since Audit A-10-24
			Training and Qualification		
29	MP-RTQP-14.4	Personnel Qualification and Certification	Rev. 17	Rev. 18	**Rev. 18 -** DCR-11543. Incorporated changes for process improvement for DOE Order 426.2 implementation.
30	MP-RTQP-14.6	Job Analysis	Rev. 6	Rev. 7	**Rev. 7 -** DCR-11539. Revised as part of ISMS update and for DOE O 426.2 implementation. Incorporated ITG-BLUESHEET-137 and DOCS-BLUESHEET-09.
31	MP-RTQP-14.16	Training Program Evaluation	Rev. 5	Rev. 6	**Rev. 6 -** DCR-11508. Incorporated DOE O 426.2 changes.
32	MP-RTQP-14.19	Training Records Administration	Rev. 5	Rev. 6	**Rev. 6 -** DCR-11503. Incorporated DOC O 426.2 and organization and ITP and location changes
33	MP-RTQP-14.20	Training Implementation Matrix	Rev. 8	Rev. 8	New procedure
			Management and Independent Assessments		
34	MP-M&IA-17.1	Management Assessment	Rev. 10	Rev. 11	**Rev. 11 -** DCR-10556. Revised to update information contained in Appendix C. Incorporate DOCS-BLUESHEET-08 and ITG-BLUESHEET-119.
35	MP-M&IA-17.2	Independent Assessment	Rev. 9	Rev. 9	No revision since Audit A-10-24
36	MP-M&IA-17.3	Quality Assurance Surveillance	Rev. 7	Rev. 7	No revision since Audit A-10-24
			Documents and Records		
37	MP-DOCS-18.1	Developing Written Work Instructions	Rev. 12	Rev. 12	No revision since Audit A-10-24
38	MP-DOCS-18.2	Records Management	Rev. 14	Rev. 15	**Rev. 15 -** DCR-11544. Updated to incorporate ACL record retention and disposition. Incorporated DOCS-BLUESHEET-05 and ITG-BLUESHEET-120.
39	MP-DOCS-18.3	Developing Management Procedures	Rev. 7	Rev. 7	No revision since Audit A-10-24

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
40	MP-DOCS-18.4	Document Control	Rev. 34	Rev. 37	**Rev. 35 -** DCR-10665. Rewrote document to incorporate process improvements for the review process; updated language consistent with DOE O 422.1; added language to ensure the roles and responsibilities contained in the procedures are current with the actual organization structure. Added changes for USQ process applicability review and appropriate changes to transition responsibility of required reviews to the document owner. Added PLN-ADMN-02 to Appendix C. **Rev. 36 -** DCR-11560. Added PD-ISM-01 to Appendix C. **Rev. 37 -** DCR-11581. Changed references to superseded documents STD-136 and STD-137 to MP-DOCS-18.8 and MP-DOCS-18.9, respectively; eliminated ACL from the FOI/OI/TOI as required reviewers.

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
Retrieval and Characterization					
41	INST-OI-09	Retrieval Enclosure Waste Container Extraction	Rev. 42	Rev. 49	**Rev. 43 -** DCR-10714. Incorporate FC-1 (DCR-10377) to make permanent. Incorporated ITG Bluesheet-019. Rewrite document to support retrieval process. **Rev. 44 -** DCR-11018. Clarify steps, remove steps and statements no longer needed, and address observations/comments from MSA (CAR68366). **Rev. 45 -** DCR-11051. Made corrections in various steps adding "PSM"; SS: Notify the PSM; for clarification and consistency with 100, 101. Various editorial corrections. **Rev. 46 -** DCR-11284. Added new Section 4.6 for creating and loading SDOPs and added historical IDC reference table in Appendix E. **Rev. 47 -** DCR-11416. Added steps for clarification. **Rev. 48 -** DCR-11471. Incorporated 2012 DSA changes. **Rev. 49 -** DCR-11558. Changed the document from Controlled Activity to General Use.
42	INST-OI-11	Waste Container Handling	Rev. 44	Rev. 47	**Rev. 45 -** DCR-10752. Incorporated SCR 4231 change and added definition. Incorporated ITG-Bluesheet-019 changes. **Rev. 45 FC-1 -** DCR-11000. Added new section 4.8 to allow operators to install plywood on the base of boxes entering the facility. **Rev. 46 -** DCR-10989. Incorporated FC-1 DCR-11000. Made numerous changes for consistency and clarity. Deleted steps that were redundant or unnecessary. **Rev. 47 -** DCR-11433. Incorporated 2012 DSA changes.
43	INST-OI-12	Real-Time Radiography Operations (Drum)	Rev. 47	Rev. 49	**Rev. 48 -** DCR-10810. Incorporated DCR-10990, and ITG-BLUESHEET-019 to provide cross-walk of titles from BBWI to ITG. Changes made for clarification regarding Form-1218, to clarify the requirements for prohibited liquids, and for an alternate means of LO/TO for energy isolation. **Rev. 48 FC-1 -** DCR-11441. Provided allowance for RITA not available **Rev. 49 -** DCR-11428. Implemented DSA changes and 48 FC-1 (DCR-11441).

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
44	INST-OI-14	Drum Assay Operations	Rev. 27	Rev. 31	**Rev. 28 -** DCR-10747. Incorporated FC-1 (DCR-10599), FC-2 (DCR-10602) and FC-3 (DCR-10660) to make permanent. **Rev. 29 -** DCR-11065. Make global change of any reference to "Cryolectric II" to "Cryolectric" to support FMP for detector replacement with new style Cryolectric cooler. **Rev. 30 -** DCR-11360. Revised entire document to correct roles, included routing tables to improve procedural flow, provided consistency with FOI-01, included instruction regarding processing of isolation containers. Periodic review. **Rev. 31 -** DCR-11475. Revised for 2012 DSA/TSR update.
45	INST-OI-16	Drum Coring Operations	Rev. 37	Rev. 40	**Rev. 38 -** DCR-10613. Incorporated FC-1 (DCR-10278) and incorporated ITG bluesheet-019. **Rev. 39 -** DCR-10912. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also revised to make it consistent with other DCSRS documents. **Rev. 39 FC-1 -** DCR-11088. Added steps to perform VE where required and clarification of NCS-exempt waste. **Rev. 40 -** DCR-11194. Incorporated FC-1 (DCR-11088). Revised steps to incorporate CBFO audit recommendations and deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted "bung type" so that any type filter may be installed.
46	INST-OI-34	Non-Facility Visual Examination Operations	Rev. 25	Rev. 27	**Rev. 26 -** DCR-10394. Incorporated ITG-Bluesheet-019 **Rev. 27 -** DCR-10539. Added prohibited/restricted items of concern for the LLW/MLLW program.
47	INST-OI-43	HGAS Sampling and Analysis Operations	Rev. 20	Rev. 22	**Rev. 21 -** DCR-10205. Changed procedure to "Controlled Activity." Incorporated ITG-Bluesheet-020. **Rev. 22 -** DCR-11545. Incorporated new P&L in Section 3.1. Production planning, SS and PSM notification for containers having >5% hyrdrogen content.
48	INST-OI-45	Drum Filter Installation	Rev. 16	Rev. 17	**Rev. 17 -** DCR-11215. Incorporated DSA changes and 16 FC-1 (DCR-10442).
49	INST-OI-50	WMF-615 Filter Insertion Operations	Rev. 13	Rev. 14	**Rev. 14 -** DCR-11434. Revised for DSA/TSR updates.

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
55	INST-OI-73	Manual Drum Coring Operations	Rev. 10	Rev. 13	**Rev. 12 -** DCR-10402. Incorporated FC-1 (DCR-10284) and incorporated ITG bluesheet-020. **Rev. 12 FC-1 -** DCR-10913. Entire document revised. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also changed to make it consistent with other DCSRS documents. **Rev. 12 FC-2 -** DCR-11089. Added steps to perform VE where required and clarification of NCS-exempt waste. DCR-11116. Allow use lid with any style filter installed. **Rev. 13 -** DCR-11195. Incorporated FC-1 (DCR-11089) and FC-2 (DCR-11116). Revised steps to incorporate CBFO audit recommendations and deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted "bung type" so that any type filter may be installed.
51	INST-OI-75	Container-in-Container Sampling	Rev. 8	Rev. 11	**Rev. 9 -** DCR-10614. Changes needed to handle vacuum bag. Incorporated ITG Bluesheet-020. Incorporated FC-1 (DCR-10279) and FC-2 (DCR-10390). **Rev. 10 -** DCR-10910. Entire document revised. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also revised to make it consistent with other DCSRS documents. **Rev. 10 FC-1 -** DCR-11087. Added steps to perform VE when required & clarification of NCS-exempt waste. **Rev. 10 FC-2 -** DCR-11113. Drum torque directions **Rev. 10 FC-3 -** DCR-11135. Form-1599, Block 9, instructions. **Rev. 11 -** DCR-11240. Incorporated FC-1 (DCR-11087), FC-2 (DCR-11113), & FC-3 (DCR-11135). Deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted "bung type" so that any type filter may be installed.
52	INST-OI-81	Real-Time Radiography Operations (for WIPP Certification of Boxes)	Rev. 8	Rev. 10	**Rev. 9 -** DCR-11144. Revised to incorporate ITG-Bluesheet-021, update document owner and equipment upgrades, including changing the II to FP. **Rev. 10 -** DCR-11431. Incorporated DSA changes.

Procedure Revision Matrix

No	Procedure Number	Procedure Title	Revision During Last Annual Audit	Revision During Current Annual Audit	Brief Description of Procedure Changes
			Treatment Facility		
53	INST-FOI-17	Facility Visual Examination Operations	Rev. 23	Rev. 25	**Rev. 24 -** DCR-10383. Added prohibited/restricted items of concern for the LLW/MLLW program. Incorporated ITG-Bluesheet-013. **Rev. 25 -** DCR-11020. Entire document rewrite to remove material that does not pertain or is not applicable to INST-FOI-17, remove screen shots, to allow better flow and performance of the document and in accordance with Conduct of Operations.
54	INST-FOI-20	Supercompactor and Post-Compaction Operations	Rev. 34	Rev. 36	**Rev. 35 -** DCR-10343. Added new sections for manual operations and to allow bagout of squeezants without performing criticality cleanup. Incorporated FC-1 (DCR-10272). Incorporated ITG-BLUESHEET-013, where applicable. **Rev. 36 -** DCR-11377 – Incorporated 2012 DSA/TSR changes.

Facility Modification Proposal Preparation

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11528.) 09/04/12

R. Warnecke
Engineering Manager

Date

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Appendix A – Revision Log A1

AMWTP OPERATING INSTRUCTIONS		
INST-CD&M-11.1.2, Rev. 13	Issued: 09/04/12	Effective: 09/04/12 @ 1700 Hrs

Facility Modification Proposal Preparation

1.0 PURPOSE/SCOPE

This instruction establishes the processes for the preparation and use of Form-1057, Facility Modification Proposal, and Form-1953, Facility Modification Proposal Revision Sheet.

Addition (new) or relocation of temporary structures, utilities, and services are within the scope of the *facility modification* (see def.) process.

The facility modification process shall only apply to those radiological instruments that are part of a permanently installed Class I, II, or III plant or facility *structures, systems, and/or components* (SSCs; see def.). The process shall not, for example, apply to portable, non-engineered equipment (e.g., "friskers," portable air monitors). The facility modification process also does not apply to adjustments to equipment or set points that are made in accordance with approved procedures.

Software changes, including software data changes, are performed in accordance with MP-CD&M-11.2, Software Quality Assurance, and/or INST-CD&M-11.2.5, Integrated Control System Software Modifications.

The change control process requires changes to the facility, processes, RPT-DSA-02, Documented Safety Analysis, RPT-TSR-03, Technical Safety Requirements, procedures, and regulations to be reviewed to determine whether the existing training and qualification programs are consistent with planned facility operations and/or process conditions.

(DOE O 426.2)

The facility modification proposal (FMP) process does not apply to transitory changes and conditions that occur during the field implementation of modifications, including any associated hazard analyses. Field implementation is governed by PD-CMNT-01, Nuclear Maintenance Management Program Description, and PD-COPS-9.18, Work Control.

The FMP process does not apply to changes affecting non-quality level SSCs as long as those changes do not have the potential to impact Class I, II, or III SSCs, plant processes, (including operations or maintenance procedures), and/or the *Authorization Basis* (see def.) In considering the above, the potential for impacts should be broadly considered (e.g., a non-quality level SSC that is to be modified such that during a seismic event, it could dislodge and strike a Class II system would be considered to have the potential to impact).

The FMP process does not apply to like-for-like equipment replacements as long as the replacement has been verified to conform to existing design criteria per INST-CD&M-11.1.3, Approved Equivalent Parts.

Although procedure changes are governed by MP-DOCS-18.4, Document Control, any procedure change that involves a change to design, including operating parameters (i.e., those involving waste retrieval, storage, handling, treatment, or shipping, including operation or maintenance of associated equipment), will also require an FMP to be processed in accordance with this procedure.

The FMP process directs uniform management of design process and engineering change control (see MP-CD&M-11.1, Change Control) to ensure safe, effective engineered products and to support *configuration management* (CM; see def.) of *technical baselines* (see def.). This instruction includes directions for the preparation, review, approval, implementation, revision, turnover, closeout, and cancellation of facility modifications.

2.0 ROLES AND RESPONSIBLITIES

Performer	Responsibilities
Originator (see def.)	• Originates FMP form (Form-1057) and process per procedure based on identified need and/or management direction • Assumes role as *designated lead/project lead* (DL/PL; see def.) or provides turnover to DL/PL, as directed by management.

Performer	Responsibilities
DL/PL	• Performs FMP process, applying due diligence in: o Performing screen to determine Authorization Basis impacts and facility change group (FCG) involvement o Identifying and addressing impacts • Presents FMP to FCG, as required o Resolves action items (AIs) identified by the FCG • Tracks identified impact and required actions to completion • Ensures FMP is coordinated with design and work control processes, as required • Ensures proper closure and record retention of Form-1057 • Verifies portable/government furnished equipment for code compliance • Initiates revisions to the FMP using Form-1953.
Environmental	• Performs environmental checklists (EC) per MP-EC&P-7.9, Environmental Checklist/National Environmental Policy Act Documentation Procedure • Records EC number, required actions, and TrackWise AI numbers (if any) on Form-1057 or Form-1953, as applicable.
FCG Chair	• Ensures the FCG process is followed, including: o Ensures a quorum is present at FCG meetings o Ensures any required actions are identified and addressed prior to authorization of FMP.
FCG Members	• Provides review and input to help ensure that Authorization Basis impacts are properly addressed.
FCG Recorder	• Schedules the FCG meetings and records the minutes, including any required actions • Provides copies of Form-1057 and meeting minutes to each attendee.

Performer	Responsibilities
Unreviewed Safety Question (USQ) Evaluator	• Performs USQ evaluations per MP-NSPC-3.2, Unreviewed Safety Question Process • Records USQ evaluation number(s) on Form-1057 and Form-1953.
Nuclear Facility Manager (NFM)	• Reviews and concurs with FMP determinations as defined in this procedure, and documents such on appropriate forms.
Nuclear Criticality Safety	• Reviews Forms-1057 and -1953 for Nuclear Criticality Safety impacts.
Engineering Manager	• Reviews and concurs with FMP determinations and revisions as defined in this procedure.
System Engineer (SE)/Cognizant System Engineer (CSE)	• Performs an independent review of all design input requirements for the requested modification.
Responsible Manager (Shift Supervisor [SS]/ Plant Shift Manager/ Production Manager)	• Reviews FMPs to ensure all prerequisites are complete prior to authorizing field implementation • Reviews completed FMP for completeness and accuracy and signs for acceptance of modification.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None

3.2 Prerequisites

None

4.0 INSTRUCTIONS

NOTE: *This procedure is written for use of a hard copy of Form-1057 and/or Form-1953. Portions or all of this procedure may be performed using an electronic change tracking software package such as Test Track Pro.*

4.1 General

4.1.1 Originator/DL: **IF** there is insufficient room in any section of Form-1057 or Form-1953
OR IF any other pertinent information is necessary,
THEN attach sheets with the required information or other documents (engineering design files [EDFs], Davis-Bacon Act Implementation Plans, ECs, etc.).

4.1.1.1 Number attachments numerically, starting with Attachment 1.

4.1.1.2 Mark each page of the attachment (in the upper right corner if possible) with the attachment number, the FMP number, and page x of y where x is the page number and y is the number of pages for that attachment.

4.1.1.3 Document all attachments in the Attachments block of Section 1, of Form-1057.

NOTE: *The FMP process from start to finish may span several months.*

4.1.2 Originator/DL: Submit to Engineering Document Control (EDC) the in-process Form-1057 and all attachments, when not being actively used.

4.1.2.1 Check out the FMP and attachments from EDC when needed, and then check back in.

4.2 FMP Origination and Screening

NOTE: *Sections 4.2 through 4.3 in this procedure may be performed concurrently or out of sequence as long as they are performed in a logical sequence and are complete prior to commencing Section 4.4.*

4.2.1 Originator: Obtain an FMP number from EDC.

4.2.1.1 After hours, obtain FMP number from the following file: After Hour Engineering Document Numbers.xls. (\\amws0025\Enterprise\Design Engineering).

4.2.2 Originator: Complete Section 1.1 of Form-1057.

4.2.3 Originator: Provide FMP potential impact information in Section 2 of Form-1057.

4.2.3.1 Provide sufficient detail for FCG review.

4.2.3.2 In Section 2.2 of Form-1057, document all assumptions and indicate how the assumptions will be dealt with as follows:

- The assumption will be accepted as is including any associated risks
- The assumption will be verified prior to or during implementation
- The assumption will be controlled through work performance.

4.2.3.2.1 Describe the methodologies for verifying and for controlling assumptions.

4.2.3.3 In Section 2.3 of Form-1057, describe the required status of plant or equipment.

4.2.3.3.1 For example, SHUTDOWN/SUSPENSION and whether the status is required before the modification begins or before the modification is tested.

4.2.3.4 In Section 2.4 of Form-1057, describe the expected and possible impacts to interfacing plants/systems caused by implementation of the FMP.

4.2.3.4.1 Ensure all requirements from permits, waste acceptance criteria, etc. are carried through to completion including during document/procedure modification.

4.2.3.5 **IF** the FMP involves construction, painting, or decorating activities with the potential to exceed a cost of $2,000, **THEN** mark the Yes box in Section 2.5 of Form-1057 **AND** submit a Davis-Bacon Committee Case Record in accordance with MP-CD&M-11.16, Davis-Bacon Act Implementation Plan.

4.2.4 Originator: Obtain management assignment of DL/PL that will lead effort to complete FMP and resolve identified impacts.

4.2.4.1 Identify assigned DL/PL in Section 1.2 of Form-1057
AND provide turnover of information and materials as appropriate.

4.2.5 Originator: Sign in Section 2.7 of Form-1057 for completion of Sections 1.1, 1.2, and 2.

4.2.6 DL/PL: Obtain advice from the responsible subject matter expert (SME) and answer all screening questions in Section 3.1 of Form-1057.

4.2.6.1 **IF** any question is answered YES,
THEN provide explanation in the comment section for each (i.e., criticality safety; modification will change fissile gram equivalent [FGE] values).

4.2.7 DL/PL: **IF** no FCG involvement is required due to all questions being answered NO,
THEN check the box in Section 3.2 of Form-1057.

4.2.8 DL/PL: **IF** FCG involvement is required due to one or more questions being answered YES,
THEN check the box in Section 3.3 of Form-1057.

4.2.9 DL/PL: Complete Section 3.4 of Form-1057.

4.2.9.1 Forward Form-1057 and any attachments to EDC for retention in accordance with MP-CD&M-11.9, Control of Engineering Documents/Records.

4.3 Determination of Design Input and Impacts

4.3.1 DL/PL: Complete Section 4 of Form-1057, identifying non-applicable sections as N/A.

NOTE: *Although design input may be solicited formally or informally, if FCG approval is required, it is highly recommended that a formal Design Input meeting is held with representatives from all groups represented in the FCG that may be affected by the change. This approach will allow group synergies to facilitate the evaluation of design alternatives to reach a design concept conclusion. The agreed upon design concept can then be used as the basis for design input determinations with less risk of later changes to the design concept.*

4.3.1.1 Ensure that all modifications will comply with the design requirements listed in RPT-CD&M-02, Technical Design Requirements, and that modifications to processes will comply with all permit (AMWTP HWMA/RCRA Permit, AMWTP HWMA/RCRA TSA Interim Status Document, Treatment Facility Permit to Construct Application, etc.) and waste acceptance criteria requirements.

4.3.1.1.1 Document any additional required design criteria, including applicable codes, standards, and other technical and functional requirements in Section 4.1 of Form-1057.

4.3.1.1.2 If necessary, capture design criteria in an attached or referenced document such as an EDF.

4.3.1.2 Document design input attachments (if any) in accordance with Step 4.1.1
AND sign as DL/PL in Section 4.1 of Form-1057.

4.3.1.3 SE/CSE/Designee: Perform an independent review of all design input requirements for the requested modification.

4.3.1.3.1 **WHEN** satisfied that all design input requirements are met,
THEN sign as independent reviewer in Section 4.1.1 of Form-1057.

4.3.1.4 SE/CSE/Designee: Ensure no design features that are credited in the Documented Safety Analysis (DSA) are adversely impacted by this change.

4.3.1.4.1 **WHEN** satisfied that no design feature credited in the DSA will be adversely impacted,
THEN sign in Section 4.1.2 of Form-1057.

NOTE: *Radiological Controls manager's signature may be delayed until design effort is sufficiently complete to support a review determination.*

4.3.1.5 Obtain input and signature from Radiological Controls manager (or designee) in Section 4.2 of Form-1057.

4.3.1.5.1 Ensure the data used to establish the information in Section 4.2 are from documented verified sources.

4.3.1.6 Identify in Section 4.3 of Form-1057 any instructions and/or documents that will require development or revision as a result of the facility modification being proposed.

4.3.1.6.1 Obtain input from responsible persons to complete Section 4.3.1 of Form-1057.

4.3.1.6.2 For any document that requires development or revision, ensure that applicable change control document (document change request, maintenance change request, etc.) is referenced when it becomes available.

4.3.1.6.3 Indicate whether or not the documentation change (if any) is required prior to implementation or prior to turnover to operations.

4.3.1.6.4 **IF** documentation change is **NOT** required prior to field implementation
OR NOT required prior to turnover,
THEN obtain concurrence from the NFM.

4.3.1.6.5 NFM: Initial for concurrence of **NOT** making changes prior to implementation or prior to turnover.

4.3.1.7 Identify in Section 4.4 of Form-1057 any drawings or other design documents that need to be developed or revised.

4.3.1.7.1 Obtain input from responsible persons to complete Section 4.4.1 of Form-1057.

4.3.1.8 Complete Section 4.5 of Form-1057 as follows:

4.3.1.8.1 Identify any required acceptance tests or inspections in Section 4.5.1 of Form-1057.

4.3.1.8.2 Cite references where applicable or indicate N/A.

4.3.1.8.3 **IF** a witness (Quality Assurance, Authority Having Jurisdiction, etc.) is required,
THEN list required witness(es)
OR enter "None."

4.3.1.8.4 Ensure any necessary testing requirements are incorporated into work planning documents.

4.3.1.8.5 Identify any required inspection documentation (such as Electrical Authority Having Jurisdiction evaluations of non-nationally recognized testing laboratory-listed equipment) to verify equipment, including portable/government-furnished equipment, meets all applicable codes.

4.3.1.9 Identify training requirements and methods necessary to support implementation of change in Section 4.6 of Form-1057.

4.3.1.9.1 Obtain input from Training Department and affected managers.

NOTE: *Action item numbers are not necessary prior to FCG but are to be completed prior to final authorization in Step 4.8.*

4.3.1.9.2 For any items in Section 4.6 of Form-1057 marked yes, identify an AI in TrackWise **AND** document the AI number.

4.4 Review

4.4.1 DL/PL: Ensure Sections 1 through 4 of Form-1057 are complete and adequate, and when satisfied, sign in Section 5 of Form-1057.

NOTE: *Telecom or e-mail approvals are acceptable and are documented on Form-1057.*

4.4.2 DL/PL: **IF** the FCG meeting required box is checked in Section 3.3 of Form-1057,
THEN GO TO Step 4.5.

4.4.3 DL/PL: Provide FMP to the following for FCG screening concurrence and review of Sections 1 through 4 of Form-1057:

4.4.3.1 SE/CSE: **WHEN** satisfied that Sections 1 through 4 of Form-1057 are complete and adequate,
THEN sign in Section 5 of Form-1057.

4.4.3.2 Nuclear Criticality Safety: **WHEN** satisfied that Sections 1 through 4 of Form-1057 are complete and adequate,
THEN sign in Section 5 of Form-1057.

4.4.3.3 NFM: **WHEN** satisfied that Sections 1 through 4 of Form-1057 are complete and adequate,
THEN perform the following:

4.4.3.3.1 Mark the "Initial to Proceed to FCG" block as N/A.

4.4.3.3.2 Sign in Section 5 of Form-1057.

4.4.3.4 Engineering Manager: **WHEN** satisfied that Sections 1 through 4 of Form-1057 are complete and adequate,
THEN perform the following:

4.4.3.4.1 Mark the "Initial to Proceed to FCG" block as N/A.

4.4.3.4.2 Sign in Section 5 of Form-1057.

4.4.4 DL/PL: **IF** reviewers in Steps 4.4.3.1 through 4.4.3.4 above concur that an FCG is **NOT** required,
THEN GO TO Step 4.6.

4.4.5 DL/PL: **IF** reviewers in Steps 4.4.3.1 through 4.4.3.4 above believe that an FCG review is required,
THEN correct Sections 3.1, 3.2, and 3.3 of Form-1057.

4.5 Facility Change Group Review

NOTE: *Telecom or e-mail approvals are acceptable and are documented on Form-1057.*

4.5.1 DL/PL: Provide FMP to the following for review of Sections 1 through 4 of Form-1057 for completeness and adequacy to proceed to FCG:

- SE/CSE
- NFM
- Engineering manager.

4.5.2 SE/CSE: Review Sections 1 through 4 of Form-1057
AND when satisfied, sign in Section 5.

4.5.3 NFM: Review FMP package for completeness and adequacy to proceed to FCG
AND, when satisfied, initial in Section 5 indicating approval to proceed to FCG.

4.5.4 Engineering Manager: Review FMP package for completeness and adequacy to proceed to FCG
AND, when satisfied, initial in Section 5 indicating approval to proceed to FCG.

NOTE: *The FCG chair is appointed by the plant manager*.

4.5.5 FCG Chair: Review FMP package for completeness and adequacy to proceed to FCG
AND, when satisfied, determine the desired attendees for the FCG as follows:

A. Required Members:

- Chair
- Nuclear Criticality Safety
- NFM or designee
- Engineering manager or designee

- Environmental
- Quality Assurance
- Representatives from those areas of Section 3 of Form-1057 which were marked "Yes."

B. Optional Members:

- Maintenance
- Nuclear Safety
- Radiological Controls
- Industrial Safety/Industrial Health
- TRU Programs
- Low-Level Waste/Mixed Low-Level Waste Programs
- Training
- Emergency Management
- Other (list).

4.5.5.1 Notify FCG recorder of desired makeup of the FCG.

4.5.6 FCG Recorder: Perform the following:

4.5.6.1 Schedule the FCG meeting for those attendees identified by the FCG chair.

4.5.6.2 Enter the FCG meeting number in Section 5 of Form-1057.

NOTE: *Each attendee at the FCG should have sufficient time to provide an adequate review of the completed FMP.*

4.5.6.3 Provide copies of completed Form-1057 to each invitee as identified by the FCG chair for review prior to the scheduled FCG meeting.

NOTE: *Minutes should note in particular any identified design criteria and actions required prior to FCG approval.*

4.5.6.4 Take minutes of FCG meeting, including recording any required actions.

NOTE: *If unable to attend, a substitute for the DL/PL may be specified by management.*

4.5.7 DL/PL: Present the FMP and any supporting documentation.

4.5.8 DL/PL: **IF** the FCG requires additional work of any sort before approval, **THEN** perform the following:

4.5.8.1 Complete the requirements as documented on the meeting minutes.

NOTE: *The FCG chair will determine if additional review is required by the FCG.*

4.5.8.2 Resubmit Form-1057 to the FCG, as required.

NOTE: *Telecom or e-mail approvals are acceptable and are documented on Form-1057.*

4.5.9 FCG Members: Approve, reject, or request changes to the FMP prior to approval.

4.5.9.1 **WHEN** satisfied that all concerns have been addressed, **THEN** sign in Section 5.

4.5.10 FCG Recorder: Provide copies of meeting minutes to each attendee.

4.6 Environmental Checklist

4.6.1 Environmental: If necessary, complete an EC (Form-1056,) for the FMP.

4.6.2 Complete Section 6 of Form-1057.

4.6.2.1 Enter Environmental Checklist # in Section 6 of Form-1057.

4.6.2.1.1 **IF** no checklist is required, **THEN** enter "None" in the Environmental Checklist # space.

4.6.2.2 Describe additional actions required for implementation of the FMP, if any.

4.6.2.3 For any items identified in Section 6 of Form-1057, identify an AI in TrackWise
AND document the AI number.

4.6.2.3.1 **IF** none,
THEN enter "None."

4.6.2.4 Sign in Section 6 of Form-1057.

4.7 USQ Applicability Review

4.7.1 Engineering Manager: Perform a USQ process applicability review.

4.7.1.1 **IF** the FMP involves a building or any SSCs within a building listed in LST-NSPC-03, Buildings Exempted from the USQ Process,
THEN perform the following steps:

4.7.1.1.1 Mark the check box in the USQ Applicability Review section on Form-1057 indicating that the FMP does **NOT** apply to the USQ process.

4.7.1.1.2 Sign and date the signature line.

4.7.1.2 **IF** the FMP does **NOT** involve a building or any SSCs within a building listed in LST-NSPC-03,
THEN perform the following:

4.7.1.2.1 Request that a USQ evaluator perform a USQ evaluation.

4.7.1.2.2 USQ Evaluator: Perform a USQ evaluation per MP-NSPC-3.2.

4.7.1.2.3 USQ Evaluator: Record the applicable USQ Categorical Exclusion Review number or USQ Determination number in Section 7 of Form-1057.

4.7.1.2.4 USQ Evaluator: Sign and date the signature line.

4.8 Final Authorization

NOTE: *For FMPs that did not require an FCG meeting, the Engineering manager signs for final authorization.*

4.8.1 FCG Chair/Engineering Manager: Review Sections 1 through 7 of Form-1057 for completeness and accuracy.

4.8.2 FCG Chair/Engineering Manager: **IF** a USQ does **NOT** exist **AND** all comments from FCG meeting (if any) are complete, **THEN** sign in Section 8 of Form-1057.

4.9 Revising an Authorized FMP

4.9.1 DL/PL: Ensure that all revisions to an authorized FMP, except for obvious typographical errors, follow this revision process.

4.9.2 DL/PL: Complete FMP Number and Revision Number blocks on Form-1953.

4.9.2.1 Use the next sequential number for revision number starting with 1.

4.9.2.2 Enter the revision number in the Revision Number block on page 1 of Form-1057.

4.9.3 DL/PL: Complete the Revision Description and Revision Justification blocks in Section 1 of Form-1953.

4.9.4 DL/PL: **IF** the original FMP did **NOT** require approval by the FCG, **THEN** perform the following:

4.9.4.1 Check the “FCG meeting required on original FMP?” “No” box in Section 1 of Form-1953.

4.9.4.2 Obtain input from the responsible SME and review the proposed revision relative to the criteria in Section 3 of Form-1057 to determine if the revision will require an FCG meeting.

4.9.4.3 **IF** any of the answers are now YES,
THEN perform the following:

NOTE: *A revision cannot drive an FMP to FCG if it did not go to FCG originally.*

4.9.4.3.1 Cancel the revision.

4.9.4.3.2 **IF** the change is necessary,
THEN cancel the original FMP in accordance with Section 4.11
AND initiate a new FMP with a new FMP number in accordance with this procedure.

4.9.4.4 Mark the FCG meeting number block in Section 5 of Form-1953 as N/A.

4.9.4.5 Sign the DL/PL block in Section 5 of Form-1953.

4.9.4.6 Provide Form-1953 to the following for screening concurrence and review:

4.9.4.6.1 SE/CSE: **WHEN** satisfied that Section 1 of Form-1953 is complete and adequate,
THEN sign in Section 5 of Form-1953.

4.9.4.6.2 Nuclear Criticality Safety: **WHEN** satisfied that Section 1 of Form-1953 is complete and adequate,
THEN sign in Section 5 of Form-1953.

4.9.4.6.3 NFM: **WHEN** satisfied that Section 1 of Form-1953 is complete and adequate,
THEN perform the following:

4.9.4.6.3.1 Mark the "Initial to Proceed to FCG" block as N/A.

4.9.4.6.3.2 Sign in Section 5 of Form-1953.

4.9.4.6.4 Engineering Manager: **WHEN** satisfied that Section 1 of Form-1953 is complete and adequate,
THEN perform the following:

4.9.4.6.4.1 Mark the "Initial to Proceed to FCG" block as N/A.

4.9.4.6.4.2 Sign in Section 5 of Form-1953.

4.9.4.7 DL/PL: **IF** all of the screening questions are still NO,
THEN GO TO Step 4.9.17.

4.9.4.8 DL/PL: **IF** reviewers in Steps 4.9.4.6.1 through 4.9.4.6.3 above believe that an FCG review is required,
THEN perform the following:

NOTE: *A revision cannot drive an FMP to FCG if it did not go to FCG originally.*

4.9.4.8.1 Cancel the revision.

4.9.4.8.2 **IF** the change is necessary,
THEN cancel the original FMP in accordance with Section 4.11
AND initiate a new FMP with a new FMP number in accordance with this procedure.

4.9.5 DL/PL: Check the "FCG meeting required on original FMP?" "Yes" box in Section 1 of Form-1953.

4.9.6 DL/PL: Sign the DL/PL block in Section 5 of Form-1953.

4.9.7 DL/PL: Provide Form-1953 to the following for review and adequacy to proceed to FCG:

- SE/CSE
- NFM
- Engineering manager.

4.9.8 SE/CSE: **WHEN** satisfied that Section 1 of Form-1953 is complete and adequate,
THEN sign in Section 5 of Form-1953.

4.9.9 NFM: Review FMP revision package for completeness and accuracy to proceed to FCG.

4.9.9.1 **WHEN** satisfied,
THEN initial in Section 5 of Form-1953 indicating approval to proceed to FCG.

4.9.10 Engineering Manager: Review FMP revision package for completeness and accuracy to proceed to FCG.

4.9.10.1 **WHEN** satisfied,
THEN initial in Section 5 of Form-1953 indicating approval to proceed to FCG.

4.9.11 FCG Chair: Determine makeup of FCG in accordance with Step 4.5.5.

4.9.12 FCG Recorder: Perform the following:

4.9.12.1 Schedule the FCG meeting for those attendees identified by the FCG chair.

4.9.12.2 Enter the FCG meeting number in Section 5 of Form-1953.

4.9.12.3 Provide copies of completed Form-1057 and Form-1953 to each invitee as identified by the FCG chair for review prior to the scheduled FCG meeting.

NOTE: *Minutes should note in particular any identified design criteria and action items.*

4.9.12.4 Take minutes of FCG meeting, including recording any required actions.

NOTE: *If unable to attend, a substitute for the DL/PL may be specified by management.*

4.9.13 DL/PL: Present the FMP revision and any supporting documentation.

4.9.14 DL/PL: **IF** the FCG requires additional work of any sort before approval, **THEN** perform the following:

4.9.14.1 Complete the requirements as documented on the meeting minutes.

NOTE: *The FCG chair will determine if additional review is required by the FCG.*

4.9.14.2 Resubmit Form-1953 to the FCG, as required.

4.9.15 FCG Members: Approve, reject, or request changes to the FMP prior to approval.

4.9.15.1 **WHEN** satisfied that all concerns have been addressed, **THEN** sign in Section 5 of Form-1953.

4.9.16 FCG Recorder: Provide copies of meeting minutes to each attendee.

4.9.17 Environmental: If necessary, complete an EC (Form-1056) for the FMP revision.

4.9.18 Complete Section 2 of Form-1953.

4.9.18.1 Enter the Environmental Checklist number in Section 2 of Form-1953.

4.9.18.1.1 **IF** no checklist is required, **THEN** enter "None" in the Environmental Checklist # space.

4.9.18.2 Describe additional actions required for implementation of the FMP, if any.

4.9.18.2.1 For any items identified in Section 2 of Form-1953, identify an AI in TrackWise **AND** document the AI number.

4.9.18.3 **IF** none,
THEN enter "None."

4.9.18.4 Sign in Section 2 of Form-1953.

4.9.19 Engineering Manager: Perform a USQ process applicability review.

4.9.19.1 **IF** the FMP involves a building or any SSCs within a building listed in LST-NSPC-03,
THEN perform the following steps:

4.9.19.1.1 Mark the check box in the USQ Applicability Review section on Form-1953 indicating that the FMP does not apply to the USQ process.

4.9.19.1.2 Sign and date the signature line.

4.9.19.2 **IF** the FMP does **NOT** involve a building or any SSCs within a building listed in LST-NSPC-03,
THEN perform the following:

4.9.19.2.1 Request that a USQ evaluator perform a USQ evaluation.

4.9.19.2.2 USQ Evaluator: Perform a USQ evaluation per MP-NSPC-3.2.

4.9.19.2.3 USQ Evaluator: Record the applicable USQ Categorical Exclusion Review number or USQ Determination number in Section 3 of Form-1953.

4.9.19.2.4 USQ Evaluator: Sign and date the signature line.

NOTE: *For FMP revisions that did not require an FCG meeting, the Engineering manager signs for revision approval.*

4.9.20 FCG Chair/Engineering Manager: **IF** USQ evaluation is negative
OR exempted from the USQ process
AND all comments from FCG are complete (if required),
THEN perform the following:

4.9.20.1 Check the approved or rejected box as appropriate.

4.9.20.2 Sign Section 4 of Form-1953.

4.9.21 DL/PL: Forward Form-1953, Form-1057, and any attachments to EDC for retention in accordance with MP-CD&M-11.9.

4.10 FMP Implementation – Field Implementation

4.10.1 Responsible Manager: Carry out all necessary actions to complete and implement the FMP, including addressing identified impacts.

4.10.1.1 Ensure that any specified prerequisite activities are completed prior to field implementation.

4.10.1.2 Ensure that any document changes identified in Section 4.3.1 on Form-1057 as "necessary prior to field implementation" are complete prior to field implementation.

4.10.1.3 Ensure that all documents required for work initiation identified in Section 4.4.1 of Form-1057 are complete and approved in accordance with applicable procedures prior to field implementation.

4.10.1.4 Ensure that any pre-modification training requirements identified in Section 4.6 of Form-1057 are completed prior to field implementation.

4.10.2 Responsible Manager: Ensure that implementing documents (e.g., work request/work order) are processed, in support of FMP implementation, in accordance with applicable procedures.

4.10.3 Responsible Manager: Sign in Section 9 of Form-1057 indicating all prerequisites, document and drawing changes, and identified training prior to field implementation are complete.

4.10.4 DL/PL: Ensure that Section 10 of Form-1057 is updated as actions are completed.

4.11 FMP Cancellation

NOTE: *The DL/PL may cancel the proposed change at any time prior to implementation (as directed by management).*

4.11.1 DL/PL: Obtain concurrence from the NFM (or designee) to cancel the FMP.

4.11.2 DL/PL: Complete the Cancellation portion of Section 10 of Form-1057.

4.11.3 NFM or designee: Sign Section 1 of Form-1057, indicating cancellation.

4.11.4 DL/PL: Return the cancelled FMP to EDC for retention in accordance with MP-CD&M-11.9.

4.12 FMP Completion

4.12.1 DL/PL: Mark the N/A block in the Cancellation portion of Section 10 of Form-1057.

4.12.2 DL/PL: **WHEN** change has been field implemented, all impacted areas have been appropriately addressed, and all associated document and drawing changes are complete,
THEN complete the Completion portion of Section 10 of Form-1057.

4.12.2.1 Ensure all requirements from permits, waste acceptance criteria, etc., are carried through to completion including during document/procedure modification.

4.12.3 Responsible Manager: Review the FMP in its entirety for completeness, accuracy, and the following:

- Instructions and documentation identified in Section 4.3 of Form-1057 have been completed/modified and implemented
- Drawings/datasheets and other design documents identified in Section 4.4 of Form-1057 have been completed/revised
- All required acceptance tests and/or inspections identified in Section 4.5 of Form-1057 have been completed satisfactorily
- All training required for operation with the modification as identified in Section 4.6 of Form-1057 has been completed satisfactorily.

4.12.4 NFM or designee: Review the FMP in its entirety for completeness and accuracy.

4.12.5 NFM or designee: Sign Section 1 of Form-1057, indicating completion.

4.12.6 DL/PL: Take the completed FMP to EDC for retention in accordance with MP-CD&M-11.9.

5.0 DEFINITIONS

Authorization Basis. The basis for safe operation of a Department of Energy (DOE) facility. The Authorization Basis is the total of those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operations. The Authorization Basis is defined in RPT-OPS-039, Authorization Agreement for the Advanced Mixed Waste Treatment Project, and by documents listed in the facility's DOE-approved Authorization Agreement, such as RPT-DSA-02 and RPT-TSR-03, environmental permits, and other facility specific commitments made in order to satisfy DOE orders, policies, or other regulatory commitments.

Configuration management. The process of (1) identifying and defining the baselines associated with a software product or application; (2) controlling the changes to baselines and release of baselines throughout the lifecycle; (3) recording and reporting the status of baselines and the proposed and actual changes to the baselines; and (4) verifying the correctness and completeness of a product baseline.

Designated lead/project lead. An individual assigned by management, whose responsibility is to ensure that all aspects of a change are properly completed and implemented.

Facility modification. Any permanent change or addition to SSCs, software, or operational processes that are part of the plant's current Authorization Basis or Design Basis. This includes any changes that may affect Industrial Safety or Radiological Controls, or changes to equipment configuration that may not be covered by the Authorization Basis.

Originator. Person who is proposing the change.

Structures, systems, and/or components. Structures are elements that provide support or enclosure, such as buildings, freestanding tanks, basins, dikes, and stacks. Systems are collections of components assembled to perform a function, such as piping, cable trays, conduit, or heating, ventilation, and air conditioning. Components are items of equipment, such as pumps, valves, relays, or elements of a larger array, such as computer software, lengths of pipe, elbows, or reducers.

Technical baseline. The documentation that defines the design, operations, and maintenance requirements or depicts the physical configuration of an SSC, such as the Documented Safety Analysis, Technical Safety Requirements, technical and functional requirements, specifications, and drawings. A technical baseline may have all, some, or more documentation than that identified in this definition.

6.0 REFERENCES

(1) DOE O 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities

(2) Form-1056, Environmental Checklist

(3) INST-CD&M-11.1.3, Approved Equivalent Parts

(4) INST-CD&M-11.2.5, Integrated Control System Software Modifications

(5) LST-NSPC-03, Buildings Exempted from the USQ Process

(6) MP-CD&M-11.1, Change Control

(7) MP-CD&M-11.2, Software Quality Assurance

(8) MP-CD&M-11.9, Control of Engineering Documents/Records

(9) MP-CD&M-11.16, Davis-Bacon Act Implementation Plan

(10) MP-DOCS-18.2, Records Management

(11) MP-DOCS-18.4, Document Control

(12) MP-EC&P-7.9, Environmental Checklist/National Environmental Policy Act Documentation Procedure

(13) MP-NSPC-3.2, Unreviewed Safety Question Process

(14) PD-CMNT-01, Nuclear Maintenance Management Program Description

(15) PD-COPS-9.18, Work Control

(16) RPT-CD&M-02, Technical Design Requirements

(17) RPT-DSA-02, Documented Safety Analysis

(18) RPT-OPS-039, Authorization Agreement for the Advanced Mixed Waste Treatment Project

(19) RPT-TSR-03, Technical Safety Requirements

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CD&M-11.1.2, Case File	Misc. Other Record/A16-1.2/Destroy 5 years after submittal or being superseded
Form-1057, Facility Modification Proposal	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after life of facility
Form-1953, Facility Modification Proposal Revision Sheet	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after life of facility

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Revision Log

Appendix A – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/2002	All	Initial issue. DCR-2002-1316
0 FC-1	9/16/2002	All	Minor change to Effective Date, DCR-2002-1502
1	11/18/2002	5, 6, 7, 8, 9, 10, 15 and 19	DCR-2002-1476
2	7/2/03	All	Re-issue, see DCR-2003-2107
3	11/11/03	All	Incorporate comments identified during a self-assessment, see DCR-2003-2465.
4	4/8/04	All	Correct discrepancies between this and other related procedures, see DCR-2004-2780.
5	6/1/06	All	See DCR No. 4896. Merge Facility Change Screen and Facility Modification Proposal processes and associated forms. Eliminate procedure INST-CD&M-11.1.1, and Form-1148. Complete rewrite of Section 4.0. Apply Blue Sheet changes.
6	10/08/07	2, 7, 8, and 10	DCR-6450. Add responsibility to DP/PL for portable equipment code compliance to satisfy CAR-28395. Add Training representative to the FCG quorum. Update records section.
7	01/07/09	Various	DCR-7327. Changed Note for Step 4.3.9 as part of USQ process implementation. Made editorial changes per MP-DOCS-18.1, Developing Written Work Instructions, including moving the revision log to an appendix.
8	03/24/09	Various	DCR-8112. Add a new Step 4.2.1.3.1 and incorporate BLUESHEET-03.
9	07/07/09	All	DCR-8425. Periodic review date due. Roll rev and periodic review date.

Revision Number	Date Approved	Pages Affected	Description of Revision
10	06/30/10	All	DCR-8973. Complete rewrite to revise existing FMPs and so that forms implemented by this document are consistent. Incorporated changes to ensure independent design input reviews are performed as required by CAR 51614. Provided guidance and a more direct interface to ensure Scope and Technical Requirements are recognized during review and validation of procedure revisions as required by CAR-48277.
11	01/13/11	Various	DCR-9575. Incorporated document to resolve CARs 54791 and 54318.
12	07/11/12	Various	DCR-11147. Incorporated changes as required by CAR 69387. Clarified available options with Environmental checklists. Incorporated new USQ process implementation changes.
13	09/04/12	Various	DCR-11528. Incorporated DOE O 426.2 changes.

Software Version Control

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file - DCR-6131) 07/25/07

John Muirhead Date

Plant Automation / Information Technology Manager

Next Periodic Review: 07/31/10

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/15/2002	All	Initial issue. DCR-2002-1331
1	3/28/2003	All	DCR-2164 change effective from "When DOE Approves Retrieval Operations" to 3/28/03.
2	7/11/2003	All	DCR-2349 change to provide consistency with recent updates to MP-CD&M-11.2 Rev.4
3	28/Apr/04	All	DCR 2424- Update records table per WIPP Audit Comments, Update to provide consistency with recent updates to MP-CD&M-11.2 Rev 5
4	5/Oct/04	6	DCR 3233 - Remove **http://orion/vminet.html** from Paragraph 1, Bullet 1 and Paragraph 2, Bullet 1 DOE ORR Observation
5A	3/21/05	All	Incorporate corrective actions from CBFO Audit A-05-08, see DCR-2005-4185.
5B	3/31/05	All	Incorporate CBFO comments from DRR 05-0850, see DCR-2005-4185-1.
6	5/31/06	All	DCR-4299. Incorporate Blue Sheet changes and minor editorial changes.
7	07/25/07	Various	DCR-6131. To add Software Engineers to System Engineers throughout document; clarification of various steps and performers; remove references to superseded documents; add missing definitions. Periodic review update.

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AMWTP OPERATING INSTRUCTIONS		
INST-CD&M-11.2.1, Rev. 7	Issued: 07/26/07	Effective: 07/27/07

Software Version Control

1.0 PURPOSE/SCOPE

This instruction describes the process to be used to accomplish software version control using the *PVCS* (see def.) system. This process is an adjunct to the System Change Request (SCR) process described in MP-CD&M-11.2, Software Quality Assurance. This procedure provides instructions for both Advanced Mixed Waste Treatment Project (AMWTP)-developed and *Vendor–developed software* (see def.).

This document provides step-by-step instructions for maintaining the software version control system. Although the directed steps must be performed as stated, signoff of step performance or having the instruction at hand as steps are performed is not required.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
System Engineer	• Provides guidance to software engineers as needed regarding the design operation of mechanical system affected by software changes.
System Manager	• Oversees IT network, ICS, or Data Management systems components
Software Engineer	• Maintains IT network, ICS, or Data Management systems components overseen by the System Manager(s).
Test Engineer	• Performs validation tests independent of code development or code changes. • Obtains testing certification in accordance with MP-Q&SI-5.8, Qualifying Test Engineers, Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists.
Software Administrator	• Controls electronic software program files such as SCRs and SDCRs.
Software Librarian	• Checks in the new vendor-supplied software into storage. • Keeps an inventory of software in storage. • Controls the check out of software in storage.

Performer	Responsibilities
Database Administrator	• Individual identified to perform installation of approved code to production.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None.

3.2 Prerequisites

None.

4.0 INSTRUCTIONS

4.1 AMWTP Developed *Class-I and II Software* (see def.)

4.1.1 *System Engineer* (see def.)/*Software Engineer* (see def.): Perform the following:

4.1.1.1 Check out the required software module from PVCS.

4.1.1.2 Update the SCR with the following information:

- Software module name
- Software module *version* (see def.) number

4.1.1.3 Complete software modifications and unit testing as necessary to meet SCR requirements.

NOTE: *PVCS automatically advances the version number each time software modules are checked in.*

4.1.1.4 Check in the software module to PVCS.

4.1.1.5 Update the SCR with the following information:

- Software module name
- Software module version number

4.1.1.6 Promote the SCR to testing.

4.1.1.7 **IF** notified by the *Test Engineer* (see def.) that testing has failed,
THEN repeat Steps 4.1.1.1 through 4.1.1.6 until testing is successful.

4.1.1.8 Test Engineer: Review the SCR regarding modules to be tested and perform the following:

4.1.1.8.1 Retrieve a read-only copy of the software module identified in the SCR and verify the versions match.

4.1.1.8.2 Record the copied software version(s) in the SCR.

4.1.1.8.3 Verify that software modules in the test setup, except for the versions under test, are the same version as those in production.

4.1.1.8.4 Complete testing in accordance with established procedures and instructions.

4.1.1.8.5 Update the SCR to reflect software testing has either passed or failed.

4.1.1.8.6 Complete the necessary SCR documentation and attach test documentation and any objective evidence to the SCR.

4.1.2 *Software Administrator* (see def.): When testing has been completed satisfactorily and approvals are complete, assign software to a *software build* (see def.).

4.1.2.1 Attach any supporting documentation for the approvals to the SCR.

4.1.3 System Engineer/Software Engineer/*Database Administrator* (see def.): Perform the following:

4.1.3.1 Obtain a copy of the software module associated with the build identified by a "build number" label.

4.1.3.2 Obtain a copy of all other software modules identified by the "Prod" label as required.

4.1.3.3 Produce a listing of all software modules that have been copied from PVCS.

4.1.3.4 Verify the correct file versions have been retrieved for the *software build/system download* (see def.).

4.1.3.5 Perform the software build/system download.

4.1.3.6 Verify the software build/system download was performed correctly.

4.1.3.7 Update the Production software build/system download log.

4.1.4 Software Administrator: Update the PVCS software label to reflect the software build/system download.

4.2 AMWTP Developed *Class-III Software* (see def.)

4.2.1 *System Engineer/Software Engineer*: Perform the following:

4.2.1.1 Check out the required software files from PVCS.

4.2.1.2 Update the SCR with the following information:

- Software file names
- Software file version numbers

4.2.1.3 Complete software modifications and testing as necessary to meet SCR requirements.

NOTE: *PVCS automatically advances the version number each time software modules are checked in.*

4.2.1.4 Check in the software files into PVCS.

4.2.1.5 Update the SCR with the following information:

- Software file name
- Software file version number

4.2.1.6 Promote the SCR to testing.

4.2.1.7 **IF** notified by the Test Engineer that testing has failed, **THEN** repeat Steps 4.2.1.2 through 4.2.1.6 until testing is successful.

4.2.1.8 Load the SCR to plant.

NOTE: *The Test Engineer performing Step 4.2.2 must be someone other than the SCR originator/implementer.*

4.2.2 Test Engineer: Review the SCR regarding online test instructions, and perform the test online in accordance with instructions in the SCR.

4.3 Vendor-Developed Software

4.3.1 System Engineer/Software Engineer: Initiate an SCR and applicable change control documentation in accordance with MP-CD&M-11.1, Change Control, for vendor software.

4.3.1.1 Procure Vendor software based on SCR and associated documentation.

4.3.2 Test Engineer: Perform any on-plant software verification and validation as required by the AMWTP software QA program before final software update to PVCS.

4.3.3 System Engineer/Software Engineer: Receive Vendor-supplied software and software verification and validation documentation in accordance with Vendor software QA program.

NOTE: *Software must be received by procurement contract personnel and logged against appropriate PO.*

4.3.3.1 Verify Vendor software documentation is complete.

4.3.4 *Software Librarian* (see def.): Check in the new Vendor-supplied software into storage.

4.3.5 System Engineer/Software Engineer: Check out the new Vendor-supplied software from the software librarian and install via work control process.

4.3.5.1 Promote the SCR to testing.

4.3.5.2 **IF** notified by the Test Engineer that the test has failed, **THEN** repeat Step 4.3.2 until test is successful.

4.3.6 Test Engineer: Review the SCR regarding modules to be tested and perform the following:

4.3.6.1 Retrieve a read-only copy of the software module identified in the SCR and verify the versions match.

4.3.6.2 Record the copied software version(s) in the SCR.

4.3.6.3 Verify that software modules in the test setup, except for the versions under test, are the same version as those in production.

4.3.6.4 Complete testing in accordance with established procedures and instructions.

4.3.6.5 Update the SCR to reflect software testing has either passed or failed.

4.3.6.6 Complete the necessary SCR documentation and attach test documentation and any objective evidence to the SCR.

4.3.6.7 Upon successful completion of testing, software is then checked back into the software librarian for storage.

4.3.7 Software Administrator: When testing has been completed satisfactorily and approvals are complete, assign software to a software build/system download.

4.3.7.1 Attach any supporting documentation for the approvals to the SCR.

4.3.7.2 Update the PVCS software label to reflect the software build/system download.

5.0 DEFINITIONS

Case File. A packet that contains information about each revision to a document with the information increasing as the document moves through the development process.

Class-I Software. Software equipment identified by the Documented Safety Analysis (DSA) as Safety Class or Safety Significant SSC. Class-I SSCs are those items whose failure present the highest potential safety consequence and project risk. Class-I SSCs are identified as Q-Listed SSCs, during construction/commissioning.
Class-II Software. Software equipment designated by the DSA as Other Items Important to Safety, by Statutory requirements, or functions to collect, reduce, manipulate or store data used in the characterization, certification, or transportation of waste by TRU programs, by WIPP requirements or certain Safety Equipment required by Permit, or where a failure could directly cause injury to personnel through a conventional or radiological means.

Class-III Software. All other process software equipment not considered Class-I or Class-II.

Database Administrator. The individual identified to perform installation of approved code to production.

PVCS. The Trade marked name of the software package used for the purposes of controlling versions of software applications at the AMWTP.

Software Administrator. The individual identified to act as the administrator for the version control and issues tracking software.

Software Build/System Download. The process of creating the application binaries for software which will be made available for release.

Software Engineer. The individual identified in the SCR as responsible for modifying the software.

Software Librarian. The individual identified to function as the gatekeeper of the software to insure current software versions are in place.

System Engineer. The individual identified in the SCR as responsible for modifying the software.

Test Engineer. The individual identified in the SCR as responsible for testing the software modification.

Vendor-Developed Software. Software developed by the Vendor using the Vendor's controls or BNFL's controls, as directed.

Version. A specific revision of a software module within a build/download.

6.0 REFERENCES

(1) MP-CD&M-11.2, Software Quality Assurance

(2) MP-CD&M-11.1, Change Control

(3) MP-DOCS-18.2, AMWTP Records Management

7.0 RECORDS

Records generated by this procedure shall be classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, AMWTP Records Management.

Record Description	Classification
INST-CD&M-11.2.1, *Case File* (see def.)	Non-permanent/Quality
Test Track Pro SCRs Electronic Forms	Non-permanent QA

8.0 EXHIBITS

None

9.0 APPENDICES

None

Software Inventory Classification

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-9691.) 02/24/11

John Muirhead
Plant Automation/IT Manager

Date

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11
Software Inventory Classification		

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AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

1.0 PURPOSE/SCOPE

This instruction provides the direction and responsibilities for maintaining the computer *software* (see def.) inventory classification *baseline* (see def.) that is important to the operation of the Advanced Mixed Waste Treatment Project (AMWTP).

The requirements of this instruction apply to computer systems/software intended for the purpose of the collection, reduction, manipulation and storage of data that supports the AMWTP. Software applications that have been identified by the Department of Energy (DOE) as Safety Design Codes, which include the DOE Safety Software Central Registry (also referred to as "analysis" or "tool box") codes (see LST-PAIT-02, DOE Safety Design and Safety Software Central Registry Codes), shall also be included. Software that supports safety significant systems and characterization of transuranic (TRU) waste is classified relative to its use in engineering, scientific, testing, data collection, design, analysis, and operations activities per MP-Q&SI-5.6, Graded Approach.

Software which is an integral part of measuring and test equipment (M&TE) is exempt from the controls of this procedure when the M&TE are verified periodically as part of an analytical method validation or instrument calibration program. *Exempt software* (see def.) from this instruction are applications that are considered to be "systems software" (e.g., operating systems, administrative and management systems, utilities, compilers, word processors, etc.). Although the directed steps must be performed as stated, signoff of step performance or having the procedure at hand as steps are performed is not required.

The Baseline Inventory and Software Classification (Appendix A) and the *Polytron Version Control System* (PVCS*;* see def.) collectively provide the information required by DOE-CBFO-94-1012, Quality Assurance Program Document (QAPD).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Information Technology (IT) System Manager	• Responsible for the operation and maintenance of computer system aspects as outlined in Appendix A, including computer hardware, operating system software, network servers, and data routing components. • Provides the information needed to maintain Appendix A. • Responsible for non-Waste Tracking System (WTS) software applications.
WTS Manager	• Responsible for the operation and maintenance of WTS computer applications aspects as outlined in Appendix A. • Provides the information needed to maintain Appendix A.
Integrated Control System (ICS) Manager	• Responsible for the operation and maintenance of ICS computer applications aspects as outlined in Appendix A. • Provides the information needed to maintain Appendix A.
System Engineer	• Determines the software classification (Appendix A) for each required software application. The classification criteria forms the basis for determining the applicable lifecycle documentation requirements based on the risk associated with the intended use of the software or computer system.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None

3.2 Prerequisites

None

4.0 INSTRUCTIONS

4.1 Performance Activities

NOTE 1: *The requirements for software management are based on a software life cycle model for implementing a systematic approach to software development, procurement, and maintenance (see MP-CD&M-11.2, Software Quality Assurance). Software development will proceed in a traceable, planned, and orderly manner. The number of life cycle phases and relative emphasis placed on each phase of software development will depend on the nature and complexity of the software (i.e., its classification). For example, documentation for* Class I Software *(see def.) shall include, as a minimum:*

- *User/system engineer requirements documentation*
- *Design and implementation documentation*
- *Verification and validation documentation*
- *Change documentation*
- *Problem reports*
- *Testing*
- *Installation and checkout*
- *Operations and maintenance*
- *Retirement.*

NOTE 2: *The* Baseline Inventory List *(see def.) and Software Classification List (Appendix A) form the basis for determining the applicable lifecycle documentation requirements based on the risk associated with the intended use of the software or computer system. While the system application code controlled at the AMWTP is included in Appendix A, versioning will be recorded and controlled through PVCS.*

NOTE 3: *The IT System Manager, the WTS Manager, the ICS Manager, and the System Engineer will perform activities in this instruction as applicable to their scope of work and/or as indicated in Appendix A. These performers will also provide information to maintain Appendix A, as necessary.*

4.1.1 Refer to Appendix A when acquiring, developing, and/or maintaining the applicable system's software.

4.1.2 As new information is received on software (i.e., version, new application, change in class, etc.), update Appendix A of this instruction and PVCS to reflect the change.

4.1.3 Maintain an inventory of all applicable software that identifies the software name, classification, exemption status, operating environment, and the person and organization responsible for the software. (This inventory is listed in Appendix A, Baseline Inventory and Software Classification.)

4.1.4 Do not include exempt software in this list, except software included in LST-PAIT-02.

4.1.5 Record and control versioning through PVCS.

5.0 DEFINITIONS

Baseline. A product (computer program, documentation, or both) that has been formally reviewed and approved for use. The product thereafter serves as the basis for further development and can be changed only through formal change control procedures.

Baseline Inventory List. A listing, developed per this instruction, that lists software by the Class I Software, *Class II Software* (see def.), or *Class III Software* (see def.) level and its user organizations.

Class I Software. Software equipment identified by RPT-DSA-02, Documented Safety Analysis (DSA), as Safety Class or Safety Significant systems, structures, and components (SSC). Class-I SSCs are those items whose failure present the highest potential safety consequence and project risk. Class-I SSCs are identified as Q-Listed SSCs during construction/commissioning.

Class II Software. Software equipment designated by the DSA as Other Items Important to Safety, by statutory requirements or functions to collect, reduce, manipulate, or store data used in the characterization, certification, or transportation of waste by TRU programs, Waste Isolation Pilot Plant (WIPP) requirements, or certain Safety Equipment required by Permit; or where a failure could directly cause injury to personnel through a conventional or radiological means.

Class III Software. All other process software equipment not considered Class I or Class II.

Exempt Software. Software that is considered to be "systems or business software," (e.g., operating systems, administrative and management systems, system utilities, compilers, assemblers, translators, interpreters, query languages, word processing programs, spreadsheets, database managers, and graphing programs) or other software that does not generate data that are used in the formulation of conclusions.

Polytron Version Control System. The trademarked name of the software package used for the purposes of controlling versions of software applications at the AMWTP.

Software. Computer programs, procedures, rules, and associated requirements, design, test and user documentation pertaining to the operation of a computer system.

6.0 REFERENCES

(1) DOE-CBFO-94-1012, Quality Assurance Program Document

(2) LST-PAIT-02, DOE Safety Design and Safety Software Central Registry Codes

(3) MP-CD&M-11.2, Software Quality Assurance

(4) MP-DOCS-18.2, Records Management

(5) MP-Q&SI-5.6, Graded Approach

(6) RPT-DSA-02, Documented Safety Analysis

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CD&M-11.2.2, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Baseline Inventory and Software Classification

Appendix B – Revision Log

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11
Software Inventory Classification		

Appendix A –
Baseline Inventory and Software Classification

Baseline Inventory and Software Classification									
	Software Name	**Inventory Control Responsibility**	**Configuration Responsibility**	**Class I**	**Class II**	**Class III**	**Business**	**Version**	**Operating Environment**
1.	**Fissile Tracking System (FTS)**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**						
	Altairis			X				Controlled through PVCS	Solaris 8
	FGE Mod Tool			X				Controlled through PVCS	Windows 2000
	FTS Barcode Utility			X				Controlled through PVCS	Windows 2000
	RADS Barcode Utility			X				Controlled through PVCS	Windows 2000
	Veritas Volume Manager Storage Administrator			X				Controlled through PVCS	Solaris 8
	Veritas Cluster Server Cluster Manager			X				Controlled through PVCS	Solaris 8
	Veritas Net Backup			X				Controlled through PVCS	Solaris 8
2.	**Drum Assay**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**						
	Genie 2000			X				Controlled through PVCS	Windows NT
	Genie 2000, MGA			X				Controlled through PVCS	Windows NT
	Genie 2000, MGAU			X				Controlled through PVCS	Windows NT
	Genie 2000, Quality Assurance			X				Controlled through PVCS	Windows NT
	Genie 2000, Gamma Analysis			X				Controlled through PVCS	Windows NT
	Canberra AMWTP Supervisor			X				Controlled through PVCS	Windows NT
	NDA 2000			X				Controlled through PVCS	Windows NT

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
3.	**Box Assay**	**Software Administrator/ Information Technology and Plant Automation**	**System Engineer/ Engineering Department/CSE**						
	RBAS.exe			X				Controlled through PVCS	Windows NT
	RBAS PLC			X				Controlled through PVCS	Windows NT
	Box Assay Driver			X				Controlled through PVCS	Windows NT
	RBAS.gsq			X				Controlled through PVCS	Windows NT
	RBAS.vnv			X				Controlled through PVCS	Windows NT
	RBAS.box			X				Controlled through PVCS	Windows NT
	Maestro 32			X				Controlled through PVCS	Windows NT
4.	**Waste Tracking System (WTS)**	**Software Administrator/ Information Technology and Plant Automation Department**	**WTS Manager/ Information Technology and Plant Automation Department/CSE**						
	Waste Tracking Application Code				X			Controlled through PVCS	Windows 2000 Server
5.	**Real-Time Radiography (RTR)**	**Software Administrator/ Information Technology and Plant Automation Department**	**WTS Manager/Information Technology and Plant Automation Department/CSE**						
	AMWTP Imaging Software				X			Controlled through PVCS	Windows NT
6.	**Head Space Gas/Drum Vent (Client and Server Software)**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	Saturn				X			Controlled through PVCS	Windows 2000 Pro

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
7.	**Head Space Gas (System 221)**	**Software Administrator/ Information Technology and Plant Automation Department**	**WTS Manager/ Information Technology and Plant Automation Department**						
	Head Space Gas Instrument				X			Controlled through PVCS	Windows 2000
	Head Space Gas Server				X			Controlled through PVCS	Windows 2000
	Head Space Gas Review Workstations				X			Controlled through PVCS	Windows 2000
	Agilent/CTI Macros				X			Controlled through PVCS	Windows 2000
	Enhanced ChemStation				X			Controlled through PVCS	Windows 2000
8.	**Gas Generation Testing (GGT)**	**Software Administrator/ Information Technology and Plant Automation Department**	**WTS Manager/ Information Technology and Plant Automation Department**						
	GGT Xcel				X			Controlled through PVCS.	Windows 2000 Pro
9.	**Core Sample (Server Software)**	**Software Administrator/ Information Technology and Plant Automation Department**	**ICS Manager/ Information Technology and Plant Automation Department**						
	DCSRS Controller				X			Controlled through PVCS	Windows 2000 Pro
10.	**Integrated Control System (ICS)**	**Software Administrator/ Information Technology and Plant Automation Department**	**ICS Manager/ Information Technology and Plant Automation Department**						
	Concept PLC Application					X		Controlled through PVCS	
	Factory Link Server / Client Application					X		Controlled through PVCS	Windows 2003

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
11.	**Secondary Waste Packet Assay Monitor (SWPAM)**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	PAM Application				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 3
	PAM Formula				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 3
	PAM GMX				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 3
	Maestro				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 3
12.	**Squeezants Container Assay Monitor (SCAM)**	**Software Administrator/ Information Technology and Plant Automation Department**	**IT System Manager/ Engineering Department**						
	PAM Application				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
	PAM Formula				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
	PAM GMX				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
	Maestro				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
13.	**Special Case Waste Packet Assay**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**						
	SCW.exe Application			X				Controlled through PVCS	Windows 2000 Pro, Service Pack 1

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
	SCW.exe Formula			X				Controlled through PVCS	Windows 2000 Pro, Service Pack 1
	SWC.gsq			X				Controlled through PVCS	Windows 2000 Pro, Service Pack 1
	SCW.glb			X				Controlled through PVCS	Windows 2000 Pro, Service Pack 1
	Maestro.exe			X				Controlled through PVCS	Windows 2000 Pro, Service Pack 1
14.	**Special Case Waste Packet Assay, Tru D Neutron Monitor**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**						
	PortablePackageMonitor			X				Controlled through PVCS	Windows NT 4.0, Service Pack 6
	PortablePackageMonitor.ini			X				Controlled through PVCS	Windows NT 4.0, Service Pack 6
15.	**RAWFS**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**	X				Controlled through PVCS	Solaris 8
16.	**RSS Primary Workstation**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	9205 EMS Application Layer				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
	9205 EMS Application LIS OME				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4

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Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
17.	**RSS Secondary Workstation**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	9205 EMS Application Layer				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
	9205 EMS Application LIS OME				X			Controlled through PVCS	Windows 2000 Pro, Service Pack 4
18.	**RSS Node Panels**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	Node Panel Software				X			Controlled through PVCS	Windows 3000 Pro, Service Pack 4
19.	**CIDAS**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**	X				Controlled through PVCS	N/A
20.	**NDA Review PCs**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**						
	Saturn				X			Controlled through PVCS	Windows 2000 Pro
	NDA 2000		**CSE**	X				Controlled through PVCS	Windows 2000 Pro
	Genie		**CSE**	X				Controlled through PVCS	Windows 2000 Pro
	AMWTP BDR				X			Controlled through PVCS	Windows 2000 Pro
	RBAS IPAN GEA			X				Controlled through PVCS	Windows 2000 Pro
	Special Case Waste Packet Assay Monitor			X				Controlled through PVCS	Windows 2000 Pro

AMWTP INSTRUCTION

INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
21.	**WWIS Data Conversion Application Software**	**Software Administrator/ Information Technology and Plant Automation Department**	**WTS Manager/ Information Technology and Plant Automation Department**		X			Controlled through PVCS	Windows 2000
22.	**Production Workstations (ICS/WTS)**	**Software Administrator/ Information Technology and Plant Automation Department**	**ICS Manager/ Information Technology and Plant Automation Department**		X			None	Windows 2000/XP
23.	**DCSRS Packet Assay Machine**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department**		X			Controlled through PVCS	Windows 2000 Pro, Service Pack 1
24.	**MACCS2***	**Nuclear Safety**	**Nuclear Safety**			X		Controlled through PVCS	Windows 2000/XP
25.	**SGRS and WAGS (CCP)**	**Software Administrator/ Information Technology and Plant Automation Department**	**System Engineer/ Engineering Department/CSE**						
	Genie 2000		**CSE**		X			Controlled through PVCS	Windows XP
	Genie MGA		**CSE**		X			Controlled through PVCS	Windows XP
	Genie MGAU		**CSE**		X			Controlled through PVCS	Windows XP
	Genie Quality Assurance		**CSE**		X			Controlled through PVCS	Windows XP
	Genie Gamma Analysis		**CSE**		X			Controlled through PVCS	Windows XP
	Genie Interactive Peak Fit		**CSE**		X			Controlled through PVCS	Windows XP
	NDA 2000		**CSE**		X			Controlled through PVCS	Windows XP

AMWTP INSTRUCTION

INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Baseline Inventory and Software Classification

	Software Name	Inventory Control Responsibility	Configuration Responsibility	Class I	Class II	Class III	Business	Version	Operating Environment
26	**IMBA***	**Jonathan Case**	**Jonathan Case**		**X**			Controlled through PVCS	Windows XP
27	**SKM Power Tools for Windows***	**Electrical Distribution System Engineer**	**Electrical Distribution System Engineer**		**X**			Controlled through PVCS	Windows XP
28	**Cero Elements/Pro (formally Pro/Engineer)***	**Ben Posegate**	**Ben Posegate**				**X**	Controlled through PVCS	Windows XP
29	**MCNP**	**Criticality Safety**	**Criticality Safety**			**X**		Controlled through PVCS	Windows XP

* Identified by DOE as either Safety Design and/or Safety Software Central Registry Codes (see LST-PAIT-02).

Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/30/2002	All	DCR-1452. Initial issue.
1	2/20/2003	All	DCR-2056. Changed title and add information for clarity
2	7/08/2004	Pages 5, 6, 7, 8-12	DCR-2420. New definition. 4.1.1 and 4.1.2 – updated Roles and Responsibilities for IT and DMS Manager. 4.2.2 - Clarified which software revision will be included in Baseline Inventory . Updated records section. Updated Appendix A.
3	3/31/05	All	DCR-3297. Incorporated self-assessment comments. Incorporated resolution to comments from CBFO DRR dated 2/8/05. Introduced use of PVCS electronic version control and implement corrective actions from CBFO Audit A-05-08. Incorporated DRR comments. from DCR-3297-2.
4	11/02/05	All	DCR-4548 - Reformat Revision Log and Roles and Responsibilities, updated References, minor editing, added HGAS Server/workstations to Appendix A, Item 7.
5	3/30/06	All	DCR-4921 Made Formatting Corrections to resolve CAR-21421.
6	07/26/07	Various, Appendix A	DCR-5821. Addition of RBAS IPAN GEN and Special Case Waste Packet Assay Monitor (SCW-PAM) software to Item 20 in Appendix A. Editorial changes throughout to reflect current document standards and formatting.
7	08/07/08	Various	DCR-7182. Periodic review. Added MACCS2 to Appendix A. Minor editorial changes throughout.
8	07/14/09	Various	DCR-8035. Revised document to meet current processes and to clarify organizational responsibilities, including changes to Appendix A. Made editorial changes in accordance with MP-DOCS-18.1.

AMWTP INSTRUCTION		
INST-CD&M-11.2.2, Rev. 9	Issued: 02/24/11	Effective: 02/25/11

Software Inventory Classification

Revision Number	Date Approved	Pages Affected	Description of Revision
9	02/24/11	Various	DCR-9691. Revised to add five new codes to Appendix A, to formalize the use of LST-PAIT-02, and to make certain minor editorial corrections.

System Data Change Request

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-7328.*) 08/13/08

Brian D. Zieroth
Plant Automation/IT Manager

Date

Next Periodic Review: 06/30/11

AMWTP INSTRUCTION		
INST-CD&M-11.2.3, Rev. 5	Issued: 08/13/08	Effective: 08/14/08
System Data Change Request		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	04/28/04	All	DCR-2420. Initial issue.
1A	3/21/05	All	Incorporate corrective actions from CBFO Audit A-05-08, see DCR-2005-4185.
1B	3/31/05	All	Incorporate comments from CBFO DRR 05-0850, see DCR-2005-4185-1.
2	04/05/05	TOC and Section 4.2	See DCR-4250. Correct inconsistency.
3	02/18/08	All	DCR-5863-1. Blue Sheet changes and corrected references, add system data change screening and definition for Cognizant System Engineer. Editorial changes per MP-DOCS-18.1.
4	05/23/08	Cover Page	DCR-7184. Minor change to advance the periodic review date only.
5	08/13/08	Various	DCR-7328. Management review to satisfy MAR# 37805.

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Appendix A SDCR Flow Chart A1

AMWTP INSTRUCTION		
INST-CD&M-11.2.3, Rev. 5	Issued: 08/13/08	Effective: 08/14/08

System Data Change Request

1.0 PURPOSE/SCOPE

This instruction establishes requirements for maintaining the computer code tables and applying data fixes for all *Class II* (see def.) and *Class III* (see def.) software that are important to the operation of the Advanced Mixed Waste Treatment Project (AMWTP). In addition, *Class I* (see def.) must use the formal System Change Request Procedure as identified in MP-CD&M-11.2, Software Quality Assurance, and will not be addressed in this procedure.

The requirements of this procedure apply to computer system/software intended for the purpose of the collection, reduction, manipulation and storage of data that supports the AMWTP.

All AMWTP Personnel and subcontractors who maintain or impact data that is used at AMWTP for waste characterization, certification, transportation or operations are subject to the requirements within this procedure.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Initiator	Initiates a new SDCR using the *change tracking system* (see def.).
System Administrator / Designee	• Responsible for the maintenance of the *System Data Change Request* (SDCR; see def.) system, updating the code tables, controlling code required for data fixes, and maintaining the change tracking system.
System Change Group(see def.)	• Responsible for evaluating new SDCRs to ensure they are properly classified and prioritized, and that the changes proposed within them will not have an adverse effect on safe, compliant operations.
System Manager	Responsible for reviewing and approving SDCR.
Software Engineer	• Responsible for the modification of data for approved SDCRs.
Quality Assurance Manager/Designee	Responsible for reviewing and approving SDCRs to ensure compliance with AMWTP Quality Program.
Unreviewed Safety Question (USQ) Evaluator	Completes the USQ process for the proposed changes and any additional changes made after the USQ process.

Performer	Responsibilities
TRU Programs Manager	Responsible for reviewing and approving SDCRs to ensure compliance with TRU Program Requirements.
Test Engineer	Performs validation test of the data changes to verify that the change complies with the SDCR and has been correctly implemented.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None

3.2 Prerequisites

None

4.0 INSTRUCTIONS

4.1 System Data Change Requests

SDCRs are intended to track changes to existing *baseline* (see def.) software code tables or the correction of existing data. New code tables or changes requiring procedure or form updates shall be implemented per MP-CD&M-11.2 and will not be addressed in this instruction.

4.1.1 Raising SDCRs

4.1.1.1 Initiator: Upon identification of a change as defined in this instruction, initiate a new SDCR using the change tracking system.

4.1.1.2 System Administrator/Designee: Review the SDCR and assign it to the System Change Group for approval.

NOTE 1: *SDCRs are not required to have a Software Change Screening (SCS; see def.) completed.*

NOTE 2: *SDCRs done on a Class II or III system require a review by a Cognizant System Engineer (CSE; see def.).*

4.1.2 Approving SDCRs

4.1.2.1 System Change Group: Review and approve the SDCR for compliance and assign it back to the System Administrator for promotion.

4.1.2.2 **IF** more information is required,
THEN assign the SDCR back to the initiator.

4.1.2.3 USQ Evaluator: Complete the USQ process for the proposed change.

4.1.2.3.1 Complete the USQ process for any additional changes made after the USQ process has been completed and prior to Building-to-Plant.

4.1.3 Implementing SDCRs

4.1.3.1 System Administrator/Designee: Ensure all required approvals for the SDCR are complete.

4.1.3.2 Data Fixes

4.1.3.2.1 System Administrator/Designee: Assign SDCR Data Fixes to a Software Engineer for implementation.

4.1.3.2.2 Software Engineer: Perform the following:

4.1.3.2.2.1 Update the SDCR Implementation

4.1.3.2.2.2 Validation Description fields

4.1.3.2.2.3 Implement the Data Fix

4.1.3.2.2.4 Assign the SDCR for validation

4.1.3.2.2.5 Provide the required code to the System Administrator/Designee for code control.

4.1.3.3 Code Table Updates

4.1.3.3.1 System Administrator/Designee: Update the SDCR Implementation and Validation Description fields.

4.1.3.3.2 System Administrator or Software Engineer: Implement Code Table Changes, and assign the SDCR for validation.

4.1.4 Validating SDCRs

4.1.4.1 Test Engineer: Validate the SDCR change in accordance with the Validation Description details provided by the Software Engineer.

4.1.4.2 Test Engineer: Update the Validation Description field to indicate testing details and test outcome (i.e., Test Passed, Test Failed).

4.1.4.3 Test Engineer: **IF** the validation passes, **THEN** assign the SDCR to the System Administrator/Designee for completion.

4.1.4.4 Test Engineer: **IF** the validation failed, **THEN** assign the SDCR back to the Software Engineer for correction.

4.1.5 Rejecting SDCRs

4.1.5.1 System Change Group: **IF** the SDCR is unacceptable, **THEN** update the SDCR to indicate rejection and assign it back to the System Administrator.

4.1.5.2 System Administrator/Designee: Using the change tracking system, notify previous approvers the SDCR is being rejected.

4.1.6 Closing SDCRs

4.1.6.1 System Administrator/Designee: Perform the following:

4.1.6.1.1 Enter code for Data Fixes into PVCS

4.1.6.1.2 Prepare code for the regularly scheduled patch

4.1.6.1.3 Update the SDCR Implementation field.

4.1.6.1.4 Close the SDCR.

5.0 DEFINITIONS

Baseline. A product (computer program, documentation or both) that has been formally reviewed and approved for use. The product thereafter serves as the basis for further development, and that can be changed only through formal change control procedures.

Case File. A packet that contains information about each revision to a document with the information increasing as the document moves through the development process.

Change Tracking System. An electronic commercial application (Test Track Pro™) used by the Information Technology development and maintenance groups to track and manage the System Data Change Request (SDCR) process, for maintenance changes.

Class I Software. Software equipment identified by the Documented Safety Analysis (DSA) as Safety Class or Safety Significant SSC. Class-I SSCs are those items whose failure present the highest potential safety consequence and project risk. Class-I SSCs are identified as Q-Listed SSCs, during construction/commissioning.

Class II Software. Software equipment designated by the DSA as Other Items Important to Safety, by Statutory requirements, or functions to collect, reduce, manipulate or store data used in the characterization, certification, or transportation of waste by TRU programs, by WIPP requirements or certain Safety Equipment required by Permit, or where a failure could directly cause injury to personnel through a conventional or radiological means.

Class III Software. All other process software equipment not considered Class I or Class II.

Cognizant System Engineer. A CSE is designated for each system. The CSE provides support to ensure continued operational readiness of the system, effective configuration management, and input to development and test procedures.

PVCS. The Trade marked name of the software package used for the purposes of controlling versions of software applications at the AMWTP.

Software. Computer programs, procedures, rules, and associated requirements, design, test and user documentation pertaining to the operation of a computer system.

System Data Change Request (SDCR). The mechanism used to track changes to existing characterization data or a change to baseline software code tables.

System Change Group. A team comprised of the Chairperson (applicable System Manager) and representatives from applicable organizations, based on the software classification, to review for impact to safety; WIPP requirements, and various permits required to operate the AMWTP.

6.0 REFERENCES

(1) MP-CD&M-11.2, Software Quality Assurance

(2) MP-COPS-9.2, Operations Organization Administration

(3) MP-DOCS-18.2, Records Management

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CD&M-11.2.3, Case File	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Test Track Pro SDCRs Electronic Forms	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

None

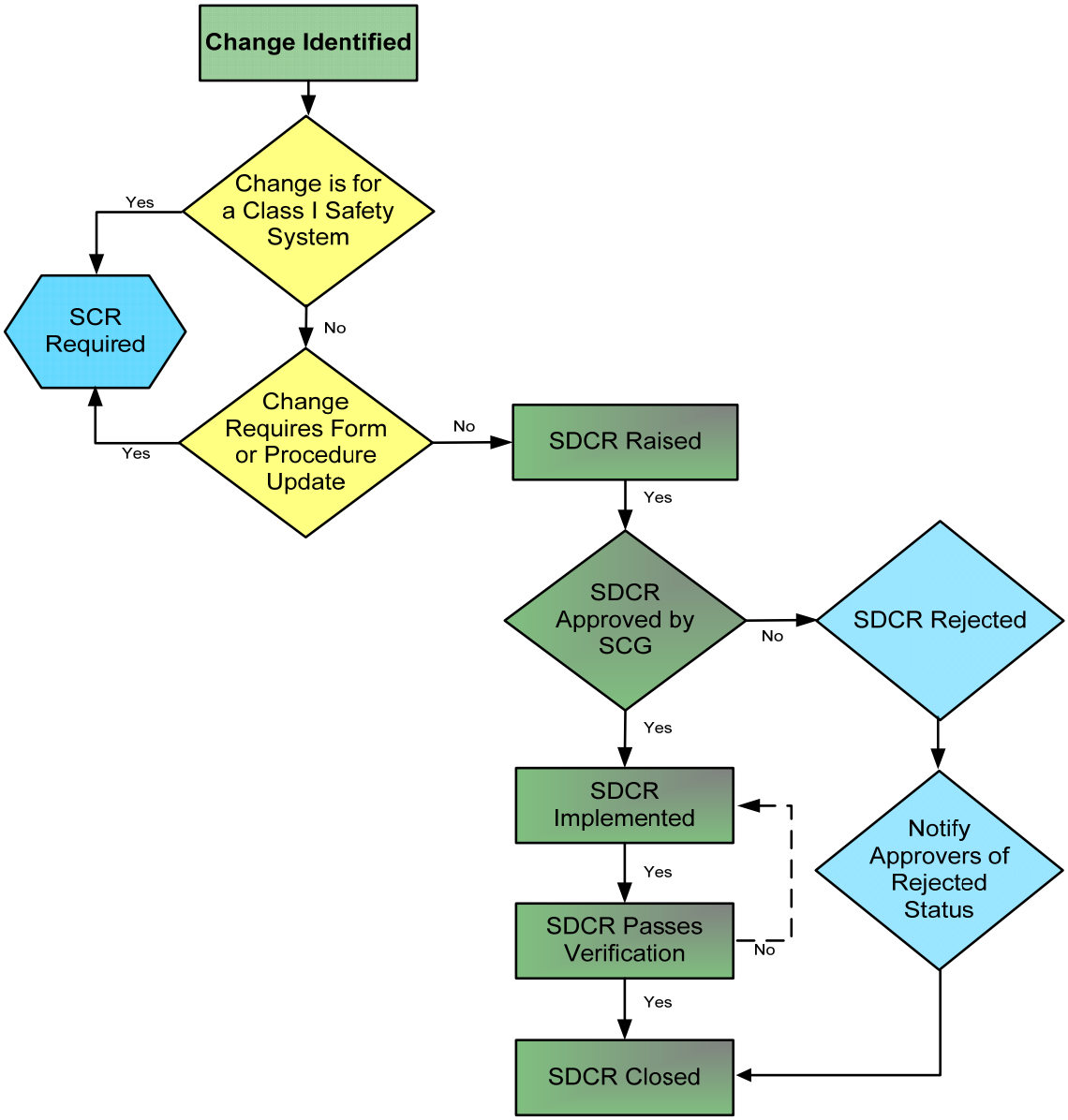
9.0 APPENDICES

Appendix A – SDCR Flow Chart

Appendix A

SDCR Flow Chart

NOTE: *The following is an example of the flow path for an SDCR generated for data changes to an existing system. Specific steps may vary depending upon the complexity of the changes, as specified within the body of this procedure.*



Temporary Software Override

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-9731.*) 01/17/11

John Muirhead
Plant Automation/IT Manager

Date

AMWTP INSTRUCTION		
INST-CD&M-11.2.6, Rev. 4	Issued: 01/17/11	Effective: 01/18/11 @ 1200 hrs
Temporary Software Override		

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Appendix A – PLC IP Addresses A1

Appendix B – Revision Log B1

AMWTP INSTRUCTION		
INST-CD&M-11.2.6, Rev. 4	Issued: 01/17/11	Effective: 01/18/11 @ 1200 hrs

Temporary Software Override

1.0 PURPOSE/SCOPE

The purpose of this instruction is to identify when and how *temporary* (see def.) *software* (see def.) overrides (TSOs) are performed. A software override is intended to allow operations to continue when a hardware or software breakdown condition cannot be corrected within a shift, due to the lack of replacement software, or to allow preventive maintenance and/or post maintenance testing to be performed without affecting other components and systems.

This procedure is applicable to only *Class-III software* (see def.) (see INST-CD&M-11.2.2, Software Inventory Classification). This instruction does not include "Temporary Changes," which are controlled in accordance with MP-CD&M-11.2, Software Quality Assurance.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
TSO Requester	• Initiates a TSO in TestTrack Pro.
Integrated Control System (ICS) Engineer	• Installs and removes TSO in accordance with TSO documentation • Evaluates and/or determines software modifications required to implement TSOs • Prepares documentation necessary to reproduce or accurately remove TSOs • Pursues a permanent resolution to software-related problems using the SCR process.
Operations Shift Supervisor (Ops SS)	• Evaluates potential hazards and special controls associated with TSO request • Ensures special controls and additional requirements are implemented • Directs installation and removal of TSO to ICS engineer • Performs daily review of active TSOs.
System Engineer (SE)	• Performs independent review of proposed software modifications and identifies risks and benefits associated with implementing the proposed modifications • Assists in the resolution of the problem(s) requiring a TSO.
Criticality Safety Staff	• Evaluates TSO request for criticality safety impacts.

Performer	Responsibilities
Qualified Unreviewed Safety Question (USQ) Evaluator	• Evaluates TSO request for Safety Basis impacts.
TSO Approver	• Evaluates TSO request • Approves TSO installation.
Plant Shift Manager	• Performs daily review of active TSOs • Authorizes continued operations of affected system(s) following the installation or removal of a TSO.
Nuclear Facility Manager (NFM)	• Approves extending a TSO beyond the 1 month expiration date • Ensures active pursuit of a resolution to the problem(s) requiring a TSO to be extended beyond one month • Ensures that TSOs extended beyond 1 month are properly tracked and removed as soon as possible • Fulfills the role of TSO approver or designates alternate TSO approvers.
Software Administrator	• Performs periodic review of TSO database to verify that TSOs are being properly documented and tracked • Performs weekly review of active TSOs to ensure that TSOs nearing expiration are removed or extended as appropriate • Performs notifications to affected users based on the results of TSO database reviews.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 TSOs are only allowed on Class III systems.

3.1.2 A TSO cannot be installed for more than one month without the approval of the NFM.

3.2 Prerequisites

3.2.1 Any TSO involving a *"Major Logic Change"* (see def.) has been tested on the *ICS simulator* (see def.) prior to loading the changes to the production network.

3.2.2 The special controls required to operate with the TSO affords equivalent safety/control as the original design.

4.0 INSTRUCTIONS

NOTE: *While the performance of the steps within this document involves the specified performer(s), the specified performer(s) may direct the completion of assigned steps via telecommunication when necessary. If any reviews or approvals are obtained via telecommunication, then the review/approval details, including the name of the reviewer/approver and date of the review/approval, is documented within the applicable TSO.*

4.1 Requesting a TSO

NOTE: *A TSO can be initiated by ANY authorized user of the TestTrack Pro TSO database.*

4.1.1 TSO Requester: From the TSO database in TestTrack Pro, select the "Add" button to start a new TSO.

4.1.2 TSO Requester: From the "Add TSO" screen, perform the following:

4.1.2.1 Give the new TSO a title by completing the "Title" field.

4.1.2.2 Select the applicable system number from the "System" drop down menu.

NOTE: *The TSO should be set to expire within 1 month's time*.

4.1.2.3 Select an expiration date for the TSO in the "Expiration Date" field.

4.1.2.4 Enter a problem description that states the reason(s) the TSO is needed in the "TSO Description" field.

4.1.2.5 Add any other known information to the TSO (affected documents, potential hazards, special controls, etc.).

4.1.2.6 **IF** the TSO is being requested by an ICS engineer,
THEN GO TO Section 4.2.

NOTE: *Selecting the "Save" button will automatically assign the new TSO to the ICS group for investigation.*

4.1.2.7 Review the TSO to ensure all required fields were correctly completed and select the "Save" button.

4.1.2.8 Inform a member of the ICS group and the on-duty Ops SS that a new TSO has been requested.

4.2 ICS Engineer Investigation

4.2.1 ICS Engineer: Evaluate the TSO and determine what, if any, temporary software changes are needed.

4.2.1.1 **IF** it is determined that a temporary software change is **NOT** an appropriate resolution to the specified problem,
THEN reject the TSO in accordance with Section 4.9.1.

4.2.2 ICS Engineer: Document the specific software changes that are needed in the "TSO Description" field.

4.2.2.1 **IF** the changes **CANNOT** be adequately represented by a description in the "TSO Description" field
THEN attach before and after screen shots to the TSO.

4.2.3 ICS Engineer: Select the appropriate software type from the "Software Type" drop down menu.

4.2.4 ICS Engineer: Indicate whether or not a System Change Request (SCR) is needed using the "SCR Required?" drop down menu:

4.2.4.1 **IF** it is determined that an SCR is needed,
THEN ensure an SCR is initiated
AND document the SCR number in the "SCR Number" field.

NOTE*:* *Temporary software overrides with a change type of "Toggle" will be toggled on and off to meet plant conditions. An example of a "Toggle" TSO would be a TSO used to simulate the status of a broken photo eye.*

4.2.5 ICS Engineer: Indicate the change type of the proposed software change using the "Change Type" drop down menu.

4.2.6 ICS Engineer: Indicate the severity of the proposed software change using the "Severity" drop down menu.

4.2.7 ICS Engineer: Determine any special conditions required for the installation and/or removal of the proposed software change **AND** document them in the "Special Controls/Additional Reqs" field.

4.2.8 ICS Engineer: Add any other known information to the TSO (affected documents, potential hazards, special controls, etc.).

4.2.9 ICS Engineer: Use the "ICS Investigate" button to document completion of the ICS engineer investigation and assign the TSO to the on-duty Ops SS for shift supervisor evaluation.

4.2.10 ICS Engineer: Review the TSO to ensure all required fields were correctly completed and select the "Save" button

4.2.11 ICS Engineer: Inform the Ops SS that the TSO is ready for shift supervisor evaluation.

4.3 Shift Supervisor Evaluation

4.3.1 Ops SS: Evaluate the TSO to ensure that there is a valid need for the proposed software change(s) and that the proposed software change(s) can be safely and compliantly implemented.

4.3.1.1 **IF** it is determined that there is **NOT** a valid need for the proposed temporary software change(s)
OR IF it is determined that the proposed software change(s) **CANNOT** be safely and compliantly implemented,
THEN reject the TSO in accordance with Section 4.9.1.

4.3.2 Ops SS: Contact a system engineer to obtain System Engineering concurrence with the proposed software change(s).

4.3.2.1 **IF** the system engineer does **NOT** concur with the proposed software change(s),
THEN reject the TSO in accordance with Section 4.9.1.

4.3.3 Ops SS: With the system engineer's guidance, perform the following:

4.3.3.1 Determine what, if any, hazards apply to the TSO
AND ensure they are documented in the "Potential Hazards w/TSO" field.

4.3.3.2 Establish any special controls or additional requirements for allowing operations to continue with the TSO in place
AND ensure they are documented in the "Special Controls/Additional Reqs" field.

4.3.3.3 Determine what, if any, documents will be affected by the TSO
AND ensure they are documented in the "Affected Documents" field.

4.3.4 Ops SS: Use the "SS Evaluate" button to document completion of the Shift Supervisor Evaluation
AND assign the TSO to Criticality Safety for criticality safety evaluation.

4.3.5 Ops SS: Review the TSO to ensure all required fields were correctly completed
AND select the "Save" button.

4.3.6 Ops SS: Inform Criticality Safety that the TSO is ready for criticality safety review.

4.4 Criticality Safety Evaluation

4.4.1 Criticality Safety: Complete review of TSO
AND inform the Ops SS of review results.

4.4.1.1 **IF** Criticality Safety does **NOT** concur with the TSO**,**
THEN reject the TSO in accordance with Section 4.9.1.

4.4.1.2 **IF** Criticality Safety concurs with the TSO,
THEN use the CS EVALUATE button to document completion of the criticality safety evaluation.

4.4.2 Criticality Safety: Review the TSO to ensure all required fields were correctly completed and select the "Save" button.

4.4.3 Ops SS: **IF** Criticality Safety has concurred with the TSO,
THEN ensure the TSO is assigned to a USQ evaluator for USQ evaluation.

4.5 USQ Evaluation

4.5.1 Qualified USQ Evaluator: Perform USQ evaluation in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.

4.5.1.1 TSO Requester: **IF** USQ evaluation reveals that an Unreviewed Safety Question exists (i.e., positive USQ determination),
THEN revise the change such that a USQ does not exist,
OR reject the TSO in accordance with Section 4.9.1.

4.5.2 Qualified USQ Evaluator: Document the USQ number in the "USQ Number" field.

4.5.3 Qualified USQ Evaluator: Use the "USQ Evaluate" button to document completion of the USQ Evaluation
AND assign the TSO to a TSO approver for final approval.

4.5.4 Qualified USQ Evaluator: **IF** the USQ evaluation was performed by the on-duty TSO approver,
THEN skip to Section 4.6.

4.5.5 Qualified USQ Evaluator: Review the TSO to ensure all required fields were correctly completed
AND select the "Save" button.

4.5.6 Qualified USQ Evaluator: Inform the TSO approver that the TSO is ready for approval.

4.6 Approval

NOTE: *The following steps are to be performed by either an NFM or, if applicable, a person designated by the NFM to fulfill the role of a TSO approver.*

4.6.1 TSO Approver: Evaluate the TSO to ensure that there is a valid need for the proposed software change(s) and that the proposed software change(s) can be safely and compliantly implemented.

4.6.2 TSO Approver: Ensure that the potential hazards are appropriately identified and that they will be adequately mitigated.

4.6.3 TSO Approver: Ensure that the special controls and additional requirements provide the necessary controls for installing the TSO, operating with the TSO in place, and removing the TSO.

4.6.4 TSO Approver: Ensure that the affected documents have been appropriately identified.

4.6.5 TSO Approver: Ensure that the USQ document applied to the TSO has been approved by a qualified USQ approver per the requirements of MP-NSPC-3.2.

4.6.6 TSO Approver: **IF** it is determined that the TSO request should **NOT** be approved,
THEN reject the TSO in accordance with Section 4.9.1.

4.6.7 TSO Approver: **IF** it is determined that the TSO request should be approved,
THEN use the "Approve TSO" button to document completion of the TSO Approval
AND assign the TSO to an ICS engineer for installation.

4.6.8 TSO Approver: Review the TSO to ensure all required fields were correctly completed
AND select the "Save" button.

4.6.9 TSO Approver: Inform the assigned ICS engineer and the on-duty Ops SS that the TSO request is approved.

4.7 Installation

4.7.1 Ops SS: Ensure that all potential hazards have been properly mitigated.

4.7.2 Ops SS: Ensure that all special controls and additional requirements are in place.

4.7.3 Ops SS: Ensure that any necessary document changes have been completed.

4.7.4 Ops SS: Ensure that the affected operators are notified.

4.7.5 Ops SS: Inform the assigned ICS engineer that all conditions have been met for the TSO to be installed.

4.7.6 ICS Engineer: **IF** a download is being performed to a programmable logic controller (PLC) via a TCP/IP connection,
THEN ensure that connection has been established to the correct internet protocol (IP) address or associated domain name. (Appendix A contains a list of PLC IP Addresses.)

4.7.7 ICS Engineer: Install the approved changes documented in the TSO.

NOTE: *While in use, TSOs with a change type of "Toggle" will be considered "Installed" regardless of the state the signal is in, and the toggling of the signal will be performed at the direction of the Operations Shift Supervisor.*

4.7.8 ICS Engineer: Verify that the change installation was successful.

4.7.9 ICS Engineer: Inform the Ops SS that the TSO is installed.

4.7.10 ICS Engineer: Within the TSO, document completion of the installation using the "Install" button.

4.7.11 ICS Engineer: Review the TSO to ensure all required fields were correctly completed
AND select the "Save" button.

4.7.12 Ops SS: Ensure that a functional test is performed to verify that the TSO works as intended.

4.7.13 Ops SS: Inform the plant shift manager that the TSO is installed and that the affected system(s) are ready for operation.

4.7.14 Plant Shift Manager: Verify that any conditions required for continued operation of the affected system(s) have been met.

4.7.15 Plant Shift Manager: Authorize continued operations of the affected system(s) with the TSO installed.

4.7.16 Plant Shift Manager: Ensure the NFM is informed that the TSO has been installed.

4.8 Removal

4.8.1 Plant Shift Manager: Authorize setting the conditions to remove the TSO.

4.8.2 Ops SS: Establish identified removal conditions, including any necessary document changes, if applicable.

4.8.3 Ops SS: Ensure that the affected operators are notified.

4.8.4 Ops SS: Inform the assigned ICS engineer that all conditions have been met for the TSO to be removed.

4.8.5 ICS Engineer: Review the TSO description and all attached screen shots to determine the exact changes implemented under the TSO.

4.8.6 ICS Engineer: **IF** the exact changes **CANNOT** be readily identified for removal,
THEN perform a full download of the baseline software in accordance with MP-CD&M-11.2.

4.8.6.1 **WHEN** loading baseline software,
THEN ensure all other TSOs currently in place for the affected system get reinstalled.

4.8.7 ICS Engineer: Remove all changes implemented under the TSO.

4.8.8 ICS Engineer: Verify that all applicable changes have been successfully removed.

4.8.9 ICS Engineer: Inform the Ops SS that the TSO has been removed.

4.8.10 ICS Engineer: Within the TSO, document completion of the removal using the “Remove” button.

4.8.11 ICS Engineer: Review the TSO to ensure all required fields were correctly completed
AND select the "Save" button.

4.8.12 Ops SS: Ensure that a functional test is performed to verify that the affected system(s) operate as expected.

4.8.13 Ops SS: Inform the plant shift manager that the TSO has been removed and that the affected system(s) are ready for operation.

4.8.14 Plant Shift Manager: Verify that any conditions required for continued operation of the affected system(s) have been met.

4.8.15 Plant Shift Manager: Authorize continued operations of the affected system(s) with the TSO removed.

4.8.16 Plant Shift Manager: Ensure the NFM is informed that the TSO has been removed.

4.9 Abnormal and Infrequent

4.9.1 Rejecting a TSO (prior to installation)

4.9.1.1 Select the TSO that is to be rejected.

4.9.1.2 In the left hand margin of the TSO screen, click on the word "Reject."

4.9.1.3 In the "Reject" screen, select the applicable reasoning for rejecting the TSO from the "Reasoning" drop-down menu.

4.9.1.4 Add any specific information regarding the rejection of the TSO in the "Notes" field.

4.9.1.5 Select the "Ok" button.

4.9.1.6 Ensure the changes to the TSO request have been saved.

4.9.1.7 Notify the TSO requester that the TSO has been rejected.

4.9.2 Extending the Duration of a TSO

4.9.2.1 Obtain NFM approval to extend the duration of the TSO for a specific amount of time, not to exceed 1 month.

4.9.2.2 On the TSO screen for the applicable TSO, increase the expiration date by the number of days specified by the NFM.

4.9.2.3 In the left hand margin of the TSO screen, click on the words "Extend Duration."

4.9.2.4 From the "Extend Duration" screen, enter the NFM approval details in the "Approval Details" field.

4.9.2.5 Select the applicable number of days the TSO is being extended from the "Number of Days Extended" drop-down menu.

4.9.2.6 Select the "Ok" button.

4.9.2.7 Save the changes to the TSO request.

4.9.2.8 NFM: Ensure that a resolution to the problem(s) requiring the TSO to be extended is being pursued.

4.9.2.9 NFM: Ensure that the TSO is properly tracked and that it is removed as soon as possible.

5.0 DEFINITIONS

Class-III software. Process software equipment that has NOT been identified as Safety class, safety significant, or otherwise import to safety by the Documented Safety Analysis (DSA), by statutory requirements, by Waste Isolation Pilot Plant requirements, or by permit requirements, and that could NOT cause direct injury to personnel through conventional or radiological means in the event of a failure.

ICS simulator. A mock-up representation of the Integrated Control System software and hardware utilized for development, testing, and training purposes.

Major logic change. Any logic change that cannot be readily identified or easily reproduced due to the complexity of its implementation, or any logic change that goes beyond the simulation and/or override of existing I/O and introduces system functionality that is outside the intent of the current system design.

Minor logic change. A logic change that is readily identifiable, easily reproduced, and that does NOT alter a system's functionality in a manner that deters from the intent of the current system design. The manual simulation and/or override of existing I/O (such as manually toggling the state of a broken photo-eye) is NOT considered to be altering the intent of the current design.

Software. Computer programs, operating systems, and user documentation pertaining to the operation of a computer system.

Temporary. A limited amount of time that is normally not more than 1 month.

6.0 REFERENCES

(1) RPT-DSA-02, Documented Safety Analysis

(2) INST-CD&M-11.2.1, Software Version Control

(3) INST-CD&M-11.2.2, Software Inventory Classification

(4) MP-CD&M-11.2, Software Quality Assurance

(5) MP-NSPC-3.2, Unreviewed Safety Question Process

(6) MP-DOC-18-2, Records Management

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CD&M-11.2.6, Case File	Facility Operating Record/ENV2-a-1/Destroy 5 years after life of facility

8.0 EXHIBITS

Exhibit 1 – Flow Chart

9.0 APPENDICES

Appendix A – PLC IP Addresses
Appendix B – Revision Log

Exhibit 1 – Flow Chart

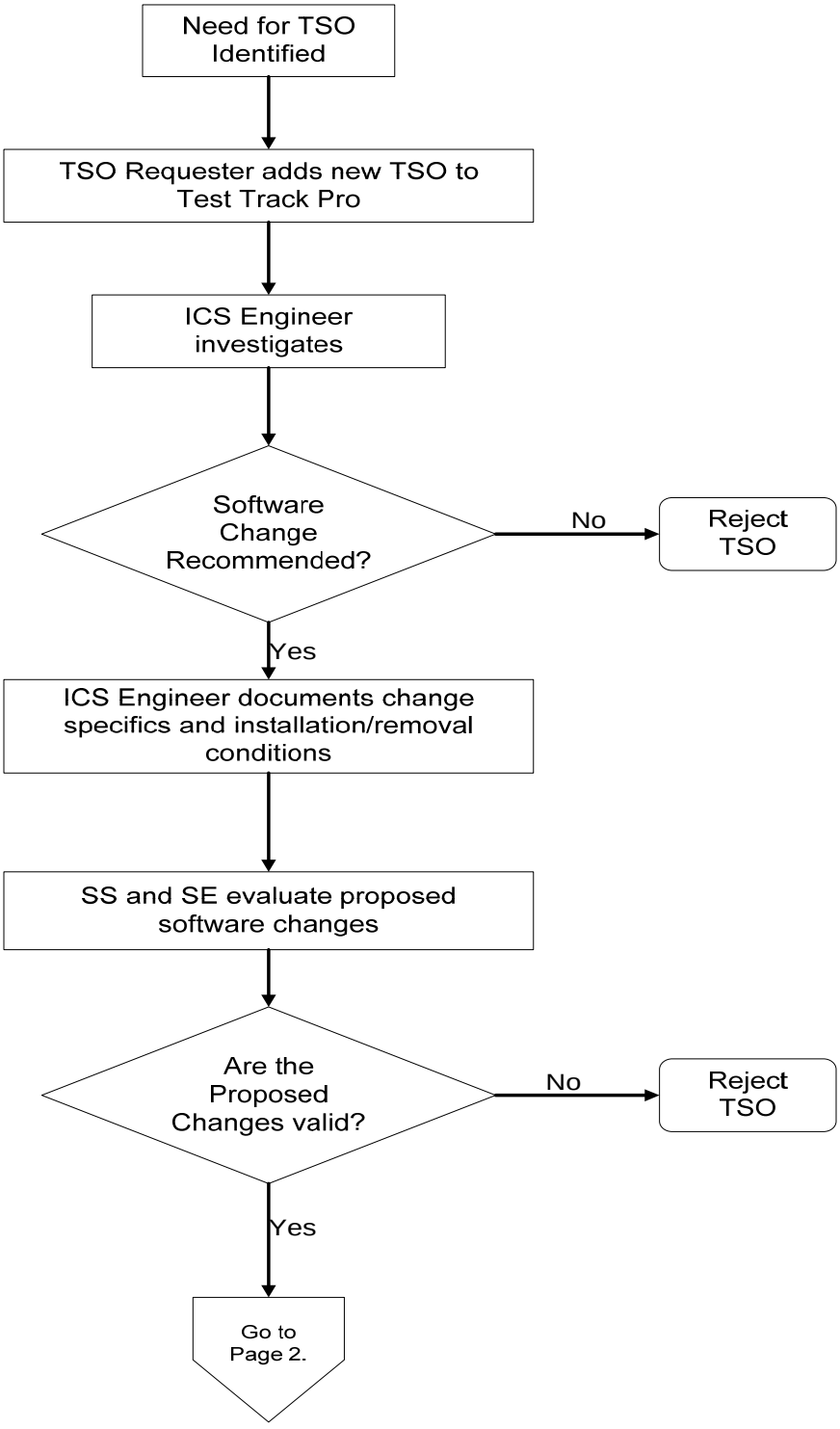


Exhibit 1 (cont.)

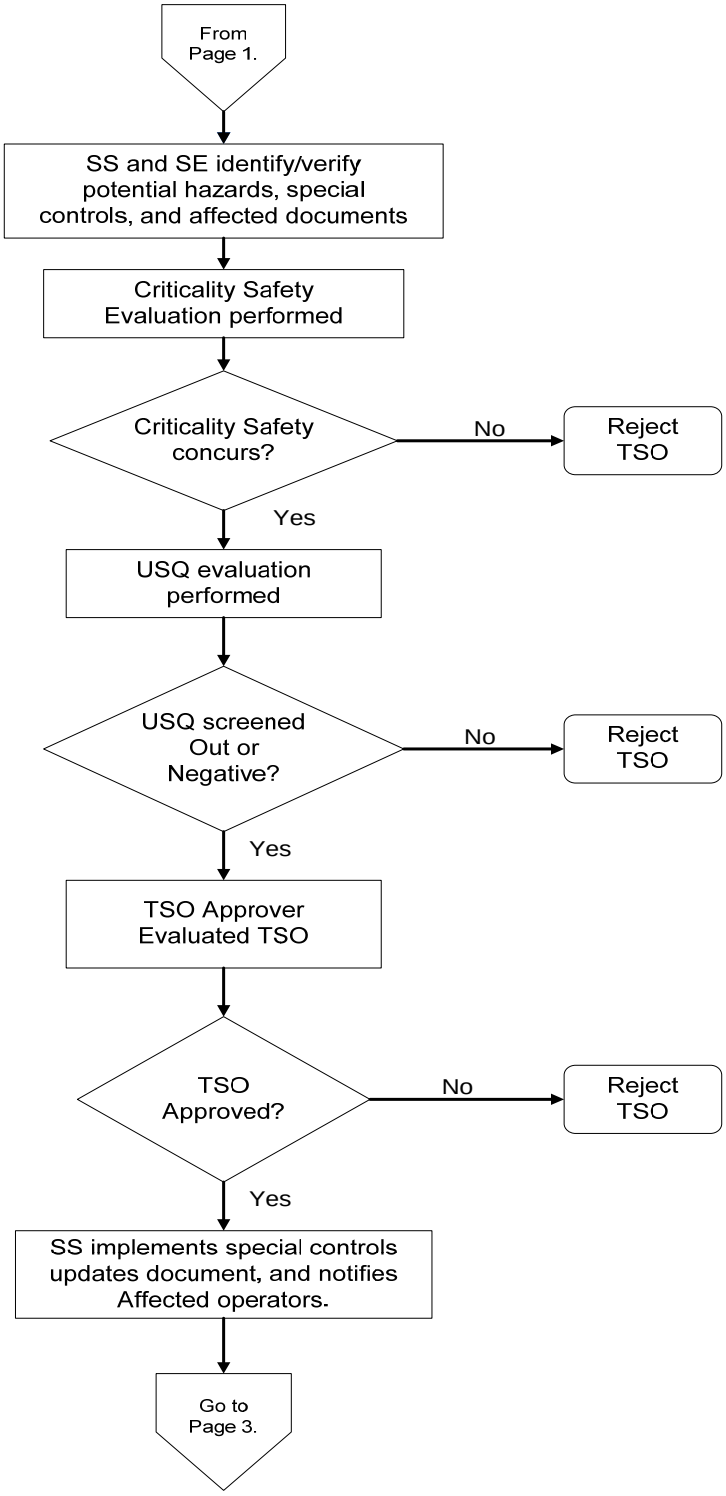
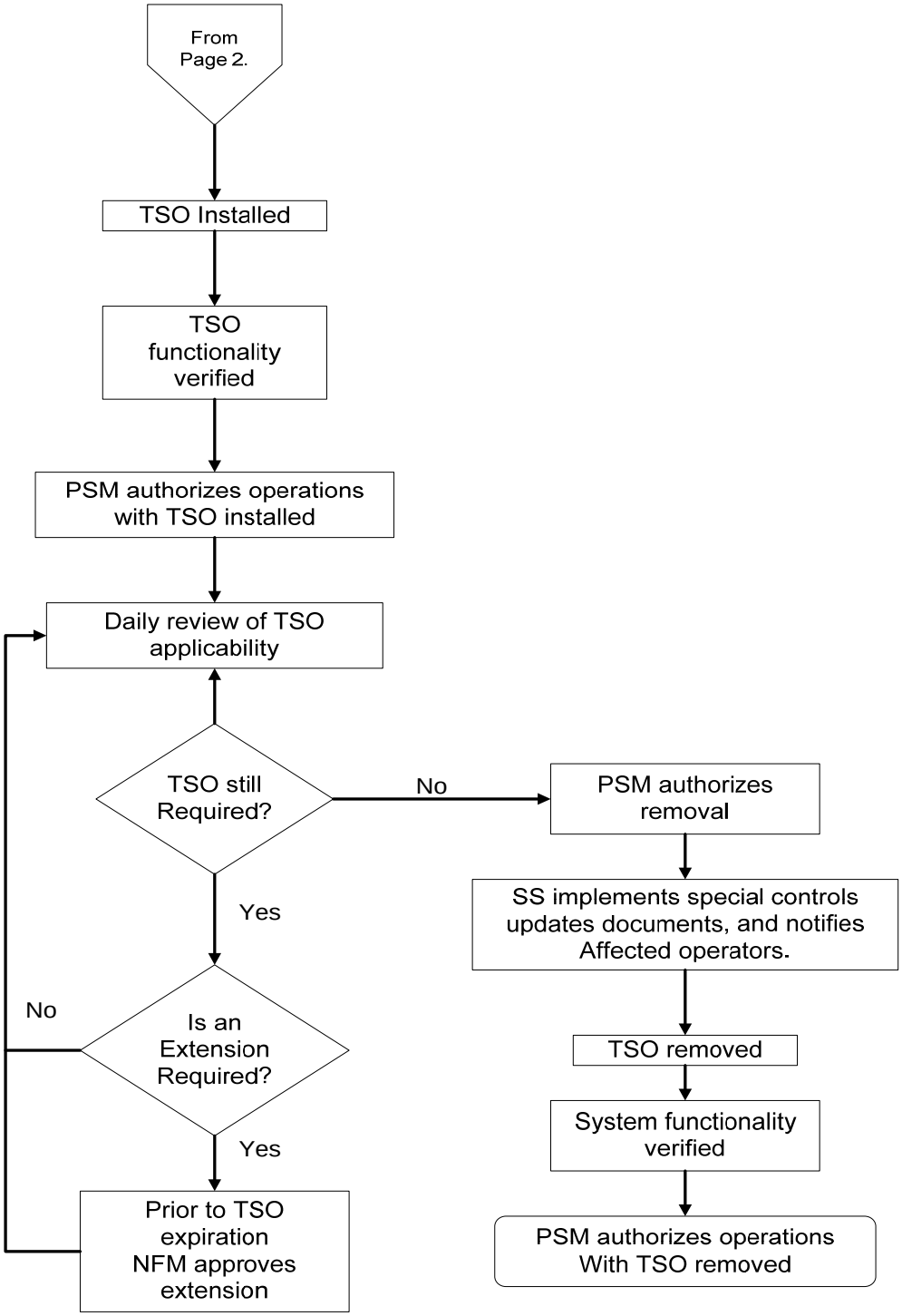


Exhibit 1 (cont.)



Appendix A – PLC IP Addresses

PLC IP Addresses		
System(s)	**DSN**	**Address**
214	PLC_214	10.1.4.90
220	DVS	10.1.4.69
225	PLC_225	10.1.4.96
310	PLC_310	10.1.4.74
320	PLC_320	10.1.4.70
330	PLC_330	10.1.4.71
335	PLC_335	10.1.4.75
340	PLC_340	10.1.4.72
345	PLC_345	10.1.4.76
350/352 = 350	PLC_350	10.1.4.73
370	PLC_370	10.1.4.78
390	PLC_390	10.1.4.77
410	PLC_410	10.1.4.79
412	PLC_412	10.1.4.80
420	PLC_420	10.1.4.81
422	PLC_422	10.1.4.82
423	PLC_423	10.1.4.83
440	PLC_440	10.1.4.84
600	PLC_600	10.1.4.91
710/720 = 700A	PLC_700A	10.1.4.92
730/740 = 700B	PLC_700B	10.1.4.93
750/760 = 700C	PLC_700C	10.1.4.94

Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	01/24/06	All	DCR 4671. Procedure number INST-CMNT-10.1.9 changed to INST-CD&M-11.2.6. Title was changed. Complete rewrite to broaden the scope of this procedure to include all Class III software and incorporate the use of the TestTrack Pro database for electronically tracking temporary software overrides (TSOs). Reformatted to MP-DOCS-18.3. Editorial corrections made per DOE Conduct of Operation and DOE Writer's Guide.
1	05/02/07	Various	DCR-5704. Periodic review. Changes as a result of audit findings. Complete document rewrite. Edit per MP-DOCS-18.1.
2	06/02/10	Various	DCR-9307. Incorporated DOCS-BLUESHEET-01. Advanced periodic review date.
3	07/21/10	Pg 6, 9 and Exhibit 1	DCR-9436. Incorporated DOCS-BLUESHEET-01.
4	01/17/11	Various	DCR-9731. CAR 54791. Incorporated requirement for Criticality Safety review of all TSOs.

Calibration and Control of Measuring and Test Equipment

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-9341.) 09/20/10

Rob Hamilton
Maintenance Manager

Date

AMWTP OPERATING INSTRUCTIONS		
INST-CMNT-10.5.1, Rev. 11	Issued: 09/29/10	Effective: 09/30/10

Calibration and Control of Measuring and Test Equipment

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AMWTP OPERATING INSTRUCTIONS		
INST-CMNT-10.5.1, Rev. 11	Issued: 09/29/10	Effective: 09/30/10

Calibration and Control of Measuring and Test Equipment

1.0 PURPOSE/SCOPE

This instruction describes the system for identifying, and maintaining *calibration* (see def.) data and records for *measuring and test equipment* (M&TE; see def.) within the Advanced Mixed Waste Treatment Project (AMWTP). Traceability to known standards and test equipment will provide the means of demonstrating to customers and regulators that any equipment either calibrated or functionally tested will perform to the required accuracy.

Radiological instrumentation is calibrated per MP-RS&C-6.2, Radiological Instrumentation.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Computerized Maintenance Management System (CMMS; see def.) Administrator	• Updates CMMS upon receipt of work order • Maintains Master Equipment List (MEL) for M&TE • Maintains material history of M&TE.
Maintenance Manager	• Directs all aspects of the Measuring and Test Equipment program • Implements the requirements of this instruction • Designates whether M&TE is calibrated by an *approved calibration facility* (ACF; see def.) or the Maintenance Department • Approves Form-1613, M&TE Evaluation.
Maintenance Supervisor/Crew Lead	• In absence of M&TE Custodian, controls access to M&TE not checked out for use.
Quality Assurance (QA) Manager or Designee	• Reviews M&TE evaluations • Concurs with impact of M&TE evaluations and decisions for generating or not generating nonconformance reports (NCRs).

Performer	Responsibilities
M&TE Custodian (MTEC) or Designee	• Initiates Form-1613 • Identifies which M&TE will have a *restricted use sticker* (see def.) • Controls M&TE storage area and issues M&TE.
M&TE User	• Checks out M&TE from the MTEC or designee • Stores checked out M&TE in a manner to prevent damage • Verifies prior to use, the current calibration of M&TE • Verifies M&TE is in proper working condition prior to each use • Reports *lost M&TE* (see def.)/damaged /contaminated M&TE to the MTEC • Verifies M&TE is used within the specified limitations • Documents usage of M&TE.
Responsible Manager (see def.)	• Ensures M&TE users are properly trained on the use of calibrated M&TE • Assesses the implications of measurements made with faulty/out-of-tolerance M&TE.
System Engineer	• Assists the responsible manager, as necessary, when assessing the implications of measurements made with faulty/out-of-tolerance M&TE • Assigns calibration frequency to M&TE based on manufacturer's recommendations, M&TE usage, and M&TE historical reliability.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None

3.2 Prerequisites

None

4.0 INSTRUCTIONS

4.1 Identification of Measuring and Test Equipment

4.1.1 MTEC: Contact the CMMS administrator to obtain an equipment ID number.

4.1.1.1 Submit Form-1132, New Plant Item Input Request, per MP-CMNT-10.19, Computerized Maintenance Management System.

4.1.1.2 CMMS Administrator: Update the CMMS, as necessary, upon receipt of Form-1132.

4.2 Calibration Frequency

4.2.1 System Engineer: Assign a calibration frequency based on manufacturer's recommendations, M&TE usage, and M&TE historical reliability.

4.2.1.1 Submit Form-1131, Maintenance Change Request, per MP-CMNT-10.19.

4.2.2 CMMS Administrator**:** Update the CMMS, as necessary, upon receipt of Form-1131.

4.3 Control of Measuring and Test Equipment

NOTE: *Unless indicated otherwise, the MTEC performs all the steps in Section 4.3.1.*

4.3.1 Calibration/Recalibration

NOTE: *For M&TE being recalibrated, CMMS will automatically generate a work order in advance of the due date.*

4.3.1.1 **IF** the M&TE has a current manufacturer's or vendor calibration certificate/report,
THEN GO TO Step 4.3.1.8.

4.3.1.2 **IF** the M&TE will be shipped off-site,
THEN generate a shipper.

4.3.1.2.1 **IF** the ACF does **NOT** have a shipper,
THEN use Form-1047, M&TE Shipper.

4.3.1.3 Complete an equipment inspection of M&TE
AND note any discrepancies on the shipper, as appropriate.

4.3.1.4 **IF** Form-1047 is used as the shipper,
THEN make a copy of the completed shipper
AND retain until work order completion.

4.3.1.5 **IF** the M&TE will be shipped off-site,
THEN perform **one** of the following:

4.3.1.5.1 Deliver the completed shipper and M&TE to the warehouse for shipment to the ACF.

OR

4.3.1.5.2 Arrange for delivery of the completed shipper and M&TE to the ACF.

4.3.1.6 **IF** the M&TE will stay on site,
THEN deliver the M&TE to the AMWTP Maintenance Department.

4.3.1.7 For existing M&TE, document on Form-1848, M&TE Checkout Log, the date the M&TE was sent to calibration.

4.3.1.8 Upon receipt of the M&TE and calibration certificate/report from the ACF, vendor/manufacturer, or AMWTP Maintenance Department, verify the calibration certificate/report contains the following information:

- Equipment ID number
- Item description
- Calibration date
- Identification of the calibration source(s)
- Calibration results
- Actions taken.

4.3.1.8.1 **IF** "as-found" checks are out-of-tolerance, **THEN GO TO** Section 4.4.

4.3.1.9 **IF** a calibration label is present,
THEN ensure that the calibration label is legible, is properly attached to the equipment, and contains the following information:

- Equipment ID number
- Name, initial or badge number of the individual attaching the sticker
- Calibration date
- Calibration due date.

4.3.1.10 **IF** the label is missing
OR has inadequate information,
THEN perform the following:

4.3.1.10.1 Ensure that tamper resistant seals are in place as required.

4.3.1.10.2 Create a calibration label containing all the information above and attach it to the M&TE.

4.3.1.11 Review calibration report/manufacturer data to determine if any restrictions are present with the use of the M&TE.

4.3.1.11.1 **IF** the M&TE does **NOT** have a restricted use sticker,
THEN apply one, as necessary, containing the following information:

- Device identification number
- A statement of the restrictions that apply
- Name, initial, or badge number of the individual attaching the sticker
- Date the sticker is attached
- Expiration date, if applicable.

4.3.1.12 Submit the completed work order, calibration certificate/report, and Form-1848 to the CMMS administrator.

4.3.1.13 CMMS Administrator: Update CMMS upon receipt of the completed work order.

4.3.1.13.1 Scan the work order, calibration certificate/report, and Form-1848
AND attach it to the work order in CMMS.

4.3.1.13.2 Attach the calibration certificate/report, to the M&TE asset in CMMS.

4.3.1.14 Generate a new Form-1848 for the M&TE Checkout Binder using the calibration certificate/report to obtain calibration dates.

4.3.2 Equipment Protection

4.3.2.1 MTEC: Protect equipment from damage when in storage and when transporting for use or calibration by boxing or by use of special mounting rigs (e.g., test gauges mounted in portable frames) as necessary.

4.3.2.2 MTEC/M&TE User: Store/transport M&TE such that temperature, humidity, lighting, vibration, dust control, cleanliness, electromagnetic interference, and any other factors will **NOT** affect the results of measurements.

4.3.2.3 M&TE User: Store, handle, and use all M&TE so that calibration is **NOT** adversely affected.

4.3.3 Issuing Measuring and Testing Equipment

NOTE: *The M&TE may only be utilized for the task that it was issued for (e.g., TRUPACT loading, supercompactor glovebox bolts).*

4.3.3.1 Check in and check out M&TE using Form-1848.

4.3.3.1.1 Each piece of M&TE will have a Form-1848 for each calibration cycle.

4.3.3.2 MTEC: **WHEN** M&TE is checked in and out,
THEN visually inspect tool/equipment to evaluate the condition for use or for repair if warranted.

4.3.3.2.1 **IF** M&TE requires repair
OR IF the condition is in question,
THEN segregate from other M&TE that is available for use.

4.3.3.3 M&TE User: Request M&TE to be checked out from the MTEC.

4.3.3.4 M&TE User: **IF** the M&TE will be used in a contaminated area,
THEN notify the MTEC.

4.3.3.5 M&TE User: Complete the following blocks of Form-1848:

- Reason/Comments (i.e., TRUPACT loading, super compactor glovebox bolts, etc.)
- WO # (if applicable) or area/OI # (i.e., WMF-618/ OI-20)
- Name (signature/S#).

4.3.3.6 MTEC: Once the information has been recorded, review the information to ensure accuracy.

4.3.3.7 MTEC: **IF** a Restricted Use Sticker is needed and **NOT** attached,
THEN attach a Restricted Use Sticker.

4.3.3.8 MTEC: Date and initial Form-1848 to issue M&TE.

4.3.3.9 M&TE User: **IF** the M&TE is needed to be used for another task than that listed on the Restricted Use Sticker,
OR IF the M&TE is to be used for something other than what it was checked out to perform,
THEN check the M&TE into the MTEC and have it re-issued for the new task.

NOTE: *Unless indicated otherwise, the M&TE user performs all the steps in Section 4.3.4.*

4.3.4 Measuring and Test Equipment Usage

4.3.4.1 Check for a Restricted Use Sticker.

4.3.4.2 Use in accordance with information on Restricted Use Sticker.

4.3.4.3 Check calibration label and verify M&TE is within its current calibration cycle.

4.3.4.3.1 **IF** the calibration label is illegible,
THEN return the M&TE to the MTEC for label replacement.

4.3.4.4 Ensure calibrated M&TE is sealed to deny access to adjustable devices.

4.3.4.5 **IF** an item of M&TE has exceeded its calibration interval; is suspected to be malfunctioning; has been modified, repaired, damaged, or has had components replaced; or its calibration seal has been compromised,
THEN perform the following:

4.3.4.5.1 Return M&TE to the MTEC.

4.3.4.5.2 MTEC: Distinctively mark and physically segregate from ready for issue M&TE
AND perform **one** of the following steps:

4.3.4.5.2.1 Send for calibration/repair per Section 4.8.

OR

4.3.4.5.2.2 **IF** M&TE is damaged beyond economical repair,
THEN perform evaluation per Section 4.4
AND retire M&TE per Step 4.3.1.

4.3.4.6 Enter the M&TE ID number and the calibration due date on the instruction, log, and/or work order being used.

4.3.4.7 **IF** the M&TE usage is **NOT** required to be recorded by an operating instruction, log, or a work order,
THEN document M&TE usage on Form-1625, M&TE Usage Report.

4.3.4.7.1 Once the task has been completed, forward Form(s)-1625 to the CMMS administrator.

4.3.4.7.2 CMMS Administrator: Attach an electronic copy of the Form(s)-1625 to M&TE asset in CMMS.

4.3.5 Measuring and Test Equipment Use in Contaminated Areas

4.3.5.1 MTEC: **IF** M&TE is going to be used in a contaminated area,
THEN obtain maintenance manager's approval prior to issuing M&TE.

4.3.5.2 M&TE User: Package equipment that is subject to radioactive contamination in a manner that minimizes the possibility of external or internal contamination (e.g., wrapping in clear plastic, taping, isolating).

4.3.5.3 M&TE User: **IF** M&TE is placed in contaminated storage, **THEN** notify the maintenance manager and MTEC.

4.3.6 Measuring and Test Equipment Storage

NOTE: *Returning click torque wrenches to minimum scale value helps to preserve the springs and ensures a longer product life cycle with high precision.*

4.3.6.1 MTEC: Keep M&TE **NOT** checked out for use locked and control access.

4.3.6.1.1 Maintenance Supervisor or Maintenance Crew Lead: In MTEC absence, control access to M&TE **NOT** checked out for use.

4.3.6.2 MTEC: Physically segregate and distinctively mark M&TE that is defective, out of calibration, or that requires investigation from ready for use M&TE, ensuring that only calibrated M&TE is available for issuance.

4.3.6.2.1 Place a Rejected Sticker on any equipment that fails to meet acceptance criteria or is suspected of being defective.

4.3.6.2.2 Ensure Rejected Sticker includes:

- Device identification number
- Reason for rejection
- Name, initial, or badge number of the individual attaching the sticker.

4.3.6.3 M&TE User: **WHEN** M&TE is checked out for long-term use,
THEN store M&TE in a manner that will prevent damage.

4.3.6.3.1 **WHEN** M&TE is **NOT** in use for periods longer than one shift,
THEN ensure that the M&TE is in a toolbox/locker/drawer.

4.3.6.3.2 Segregate M&TE in the toolbox/locker/drawer from non-M&TE tools/equipment.

4.3.6.3.3 Ensure the toolbox/locker/drawer is distinctively marked "For M&TE Only."

4.3.6.3.4 Store M&TE staged for use during a shift, but **NOT** actually in use, in its case (if available) at the station where the M&TE is to be used or in a toolbox/locker/drawer.

4.4 Measuring and Test Equipment Evaluations

4.4.1 MTEC: **IF** the M&TE as-found data is out of tolerance,
THEN identify all data recorded since the previous calibration by affected equipment through usage records and initiate a prompt evaluation.

4.4.1.1 Evaluate lost M&TE, M&TE that has become contaminated and cannot be free released, and damaged M&TE to determine if there was any indication to suspect that the integrity or calibration of the M&TE was compromised before the loss/contamination/damage.

4.4.1.2 **IF** the as-left data is in tolerance
AND the M&TE is **NOT** being retired,
THEN return the M&TE to service.

4.4.2 MTEC**:** Initiate Form-1613 to evaluate the M&TE condition (out of tolerance, damage, loss, contamination, etc.).

4.4.2.1 Obtain Evaluation Number from Engineering Document Control.

4.4.2.1.1 After hours, obtain the Evaluation Number from the following file: Enterprise\Design Engineering\After Hour Engineering Document Number.xls.

NOTE: *The "Original Cal Date" and "Cal Due Date" are used to establish the period of time under evaluation.*

4.4.2.2 Complete information in the following blocks:

- Evaluation Number
- Instrument Number
- Instrument Type
- Serial Number
- Original Cal Date
- Cal Due Date
- Condition (out of tolerance, damage, loss, contamination, etc.).

4.4.3 MTEC: Initiate a TrackWise action item for the tracking of Form-1613.

4.4.3.1 Identify the evaluation number on the action item.

4.4.3.2 Document action item number on Form-1613.

4.4.3.3 Give the action item a completion date of 30 days from initiation of the action item.

4.4.3.4 Assign action item to manager responsible for the equipment/process on which M&TE has been used.

4.4.4 MTEC: Forward evaluation package (Form-1613, Form-1848, calibration certificate/report, and CMMS usage report) to the responsible manager or system engineer for completion.

4.4.5 Responsible Manager or System Engineer: Perform the following steps:

4.4.5.1 Determine the equipment affected by the M&TE, using Form(s)-1625, Form-1848, CMMS usage report, operating instructions, operations logs, etc.

4.4.5.2 Consider the condition (out of tolerance, damage, contamination, etc.) reported, and evaluate the measurements/tests taken with the M&TE since its last calibration and document on Form-1613.

4.4.5.3 If necessary, contact the system engineer to assist in determining the validity of measurements/tests taken with the M&TE since its last calibration.

4.4.5.4 Assess the implications of measurements made with the M&TE.

4.4.5.4.1 Document evaluation/corrective actions to be taken on Form-1613.

4.4.5.4.2 **IF** the M&TE was used to calibrate Quality Level 1, 2, or 3 plant instrumentation **AND** the out-of-tolerance condition affected the instrument calibration in a manner that rendered the instrument having been used out of specification,
THEN generate a NCR, per MP-Q&SI-5.4, Identification of Nonconforming Conditions.

4.4.5.4.2.1 **IF** it is determined necessary, **THEN** generate a TrackWise NCR.

4.4.5.4.2.2 Document NCR number on Form-1613.

4.4.5.5 Sign “Submitted” block of Form-1613.

4.4.5.6 Forward the evaluation package to the MTEC.

4.4.6 MTEC: Forward the evaluation package to maintenance manager for approval.

4.4.7 Maintenance Manager: Review evaluation and recommended corrective actions documented on Form-1613.

4.4.7.1 **IF** evaluation and corrective actions are correct,
THEN sign Form-1613 indicating approval of evaluation and recommended corrective actions.

4.4.8 Maintenance Manager: Forward the evaluation package to the MTEC.

4.4.9 MTEC: Forward the evaluation package to the Quality Assurance manager for concurrence.

4.4.10 Quality Assurance Manager or Designee: Review evaluation and recommended corrective actions documented on Form-1613.

4.4.10.1 **IF** evaluation and recommended corrective actions are correct,
THEN sign Form-1613 indicating concurrence with the evaluation and recommended corrective actions.

4.4.11 Quality Assurance Manager or Designee: Forward the evaluation package to the MTEC.

4.4.12 MTEC: Return the evaluation package to the responsible manager.

4.4.13 Responsible Manager: Document evaluation results from Form-1613 on action item.

4.4.14 Responsible Manager: Forward the evaluation package to the MTEC.

4.4.15 MTEC: **IF** the M&TE needs to be retired,
THEN retire the M&TE (see Section 4.8).

4.4.16 MTEC: Forward a copy of the evaluation package to the CMMS administrator.

4.4.17 MTEC: Deliver the completed evaluation package to Engineering Document Control.

4.4.18 CMMS Administrator: Attach an electronic copy of the evaluation package to M&TE asset in CMMS.

4.5 Measuring and Test Equipment Availability

4.5.1 MTEC: Ensure sufficient M&TE of each type is always available.

4.5.1.1 Stagger the calibration expiration dates as necessary, by submitting necessary Form-1131 to ensure sufficient M&TE of a particular type is available for use at any time.

4.6 Exemptions

4.6.1 System Engineer: Approve and document all exemptions or deviations from periodic calibration via the Maintenance Change Request process per MP-CMNT-10.19.

4.7 Functional Checks

NOTE: *The following type of checks can be used, when applicable, to detect M&TE problems before and after an instrument is used in the field. These checks are not substitutes for* calibration checks *(see def.). Example: A work procedure may require that torque wrenches be tested before and after use utilizing a calibrated torque wrench tester.*

4.7.1 MTEC: **IF** operational tests, functional checks, or battery checks of M&TE are performed,
THEN clearly specify in the work order, operating instruction, or users manual the desired response or acceptance criteria.

NOTE: *Unless indicated otherwise, the MTEC performs all the steps in Section 4.8.*

4.8 Retiring M&TE

4.8.1 **IF** M&TE has been used since last calibration,
THEN send M&TE for calibration per Step 4.3.1.

4.8.1.1 **IF** M&TE is found to be out of tolerance,
THEN perform M&TE evaluation per Step 4.4.

4.8.2 Make note in Form-1848 that M&TE is going to be retired.

4.8.3 Generate a Form-1131 in accordance with MP-CMNT-10.19 to retire the M&TE.

4.8.4 Forward a copy of Form-1848, Form-1131, and calibration certificate/report (if necessary) to CMMS administrator.

4.8.5 CMMS Administrator: Attach an electronic copy of Form-1848 and Form-1131 to M&TE in CMMS.

NOTE: *Equipment taken out-of-service will not be deleted from CMMS.*

4.8.6 CMMS Administrator: Update CMMS to take M&TE out-of-service.

5.0 DEFINITIONS

Approved calibration facility. A manufacturer, vendor, or AMWTP-approved calibration lab that operates in accordance with the requirements of ANSI/NCSL-Z540-1 or other commensurate standard.

Calibration. The tests and adjustments to align an instrument in order to meet manufacturer's recommendations, statutory and/or regulatory requirements.

Calibration checks. The testing to verify the instrument is in calibration with a check standard that is periodically calibrated to NIST traceable standards. If the results are satisfactory then no adjustments are required and the calibration check meets the requirements of a periodic calibration and an updated calibration sticker will be affixed to the instrument.

Computerized Maintenance Management System. A commercial off-the-shelf client-server application, which provides a platform for users to prioritize tasks, assigns work based on the availability of necessary parts and labor, and analyzes equipment failures to implement appropriate preventive/predictive maintenance measures.

Lost M&TE. Any M&TE, which is missing, misplaced, or cannot be located between recalibrations after it has been used to perform M&TE functions at the AMWTP.

Measuring and test equipment. All devices or systems used to calibrate, certify, measure, gauge, troubleshoot, test, or inspect in order to control data or to acquire data to verify conformance to specified requirements. M&TE does not include in-plant and process instrumentation, radiation monitoring equipment, test equipment used for preliminary checks where data obtained is not used to determine acceptability or verify conformance

to established criteria, or rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy.

Responsible manager. Manager responsible for the equipment/process on which M&TE has been used.

Restricted use sticker. A sticker that identifies the specific tasks the M&TE has been designated to be used for (e.g., torque TRUPACT, calibration checks), limited use in specific areas/procedures, limitations and restrictions to operate the M&TE based on the calibration information (e.g., specific range, direction of movement [clockwise only], temperature band), internal radioactive contamination, and/or restricted use such as oil, oxygen, saltwater, or demineralized water systems.

6.0 REFERENCES

(1) MP-CMNT-10.19, Computerized Maintenance Management System

(2) MP-DOCS-18.2, Records Management

(3) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(4) MP-RS&C-6.2, Radiological Instrumentation

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CMNT-10.5.1, Case File	Both FOR/NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility
Calibration Certifications/Reports	Both FOR/NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1047, M&TE Shipper	Non-Record. (The form is a tool that can be discarded once the M&TE has been returned to AMWTP.)
Form-1131, Maintenance Change Request	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1132, New Plant Item Input Request	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1613, M&TE Evaluation	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1625, M&TE Usage Report	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1848, M&TE Checkout Log	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Revision Log

Appendix A – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	06/25/2002	All	Initial issue: DCR-2001-1070
1	9/09/2002		Re-issue: DCR-2002-1442
2	9/16/2002	4, 5, 6	Re-issue: DCR-2002-1474
2.1	1/15/03	All	Minor change, see DCR-2003-1914
3	4/24/2003	All	Incorporate changes identified during a self-assessment, see DCR-2003-2138.
4	1/12/05	All	Corrective actions incorporated to clarify actions and responsibilities for records management of Calibration Certificates/Reports. Reference CAR9438, CBFO Audit A-04-22, CBFO CAR 04-045. See DCR-2004-3279. Incorporate additional CBFO comments not previously identified, see DCR-2004-3279-1 and CBFO DRR 04-2289 comment #2 and additions for clarification, see DCR-2004-3279-2.
5	11/16/05	All	Address surveillance (QAS-05-07) comments, see DCR-2005-4128.
6	12/22/05	All	Minor change to correct typos, see DCR-4683.
7	2/14/06	All	Incorporate comments from the System Engineer and corrective action for CAR-12451, see DCR-4797.
8	3/30/06	All	DCR-4921. Made formatting corrections to resolve CAR-21421.
9	10/03/07	All	DCR-6286. Added detail on evaluating the validity of measurements/tests taken with faulty/out-of-tolerance/lost M&TE since its last calibration. (See CAR 27740) Entire document revised.

AMWTP OPERATING INSTRUCTIONS		
INST-CMNT-10.5.1, Rev. 11	Issued: 09/29/10	Effective: 09/30/10

Calibration and Control of Measuring and Test Equipment

Revision Number	Date Approved	Pages Affected	Description of Revision
10	03/19/08	All	DCR-6698. Complete rewrite to incorporate all requirements of DOE 433.1-1 and align with management procedure. Incorporated internal comments.
11	09/20/10	Various	DCR-9341. Clarified the use of the "shipper" throughout the document.

Testing In-Plant and Process Instrumentation

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11283.) 09/23/12

Rob Hamilton — Date

Maintenance Manager

AMWTP OPERATING INSTRUCTIONS		
INST-CMNT-10.14.1, Rev. 8	Issued: 09/24/12	Effective: 09/25/12

Testing In-Plant and Process Instrumentation

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AMWTP OPERATING INSTRUCTIONS		
INST-CMNT-10.14.1, Rev. 8	Issued: 09/24/12	Effective: 09/25/12

Testing In-Plant and Process Instrumentation

1.0 PURPOSE/SCOPE

This instruction describes the testing of *In-Plant and Process* (IP&P; see def.) instrumentation. The type of testing performed on each instrument varies depending on its use (see Appendix A).

This document provides step-by-step instructions. Although the steps must be performed as stated, signoff of step performance or having the instruction at hand as steps are performed is not required.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Maintenance Manager (MM)	• Manages all aspects of the *Calibration* (see def.) program. • Assesses issues concerning IP&P instruments that are either "past due for calibration" or are determined to be "out of calibration." • Evaluates instruments that fail a calibration, *calibration/functional check* (see def) for continued operation.
Computerized Maintenance Management System (CMMS) Administrator	• Generates reports as required by the Engineering and Maintenance managers to ensure reliability problems are addressed
Quality Assurance (QA) Manager	• Concurs with instrument calibration extensions.
Maintenance Supervisor (MS)	• Implements this procedure. • Informs the MM and Plant Shift Manager (PSM) when an IP&P instrument fails testing or is out of calibration.
Technicians	• Understands how to perform calibrations, calibration checks, and functional tests. • Performs IP&P instrument testing • Informs the MS immediately if an instrument fails its calibration, calibration check, or functional check.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

None

3.2 Prerequisites

None

4.0 INSTRUCTIONS

4.1 General Instructions

4.1.1 Technician(s): Inform the Maintenance Supervisor if a *calibration* (see def.)/test label is discovered missing from an IP&P instrument.

4.1.2 MS: Work with the *Computerized Maintenance Management System* (CMMS; see def.) Administrator to replace the label with the required information (as indicated in Step 4.2.2.4).

NOTE: *This is due to the need to exercise the system through a range of indication that may be outside the norm.*

4.1.3 Technician: Refer to PTW during a *Functional Chec*k (see def.) of IP&P instrumentation when the IP&P instrument remains connected to the parent system.

4.2 Calibration Check Instructions

4.2.1 Maintenance Supervisor

4.2.1.1 Obtain the work order of IP&P instrument(s) to be calibration checked from the CMMS Administrator.

4.2.1.2 Designate a technician to perform the *calibration check* (see def.).

4.2.1.3 Inform the Maintenance Manager (MM) and Plant Shift Manager when an instrument fails testing.

4.2.2 Technician

4.2.2.1 Obtain the work order and IP&P instrument calibration check checklist from the MS.

4.2.2.2 Locate the IP&P instrument and remove it from service in accordance with the proper work control documents.

4.2.2.3 Calibration check the IP&P instrument in accordance with the Operations and Maintenance (O&M) manual, manufacturers specifications, maintenance instructions and/or calibration check instruction.

4.2.2.3.1 **IF** the IP&P instrument is shown to out of the specified tolerance,
THEN inform the MS, and complete the calibration check.

4.2.2.3.2 Perform a complete calibration of the IP&P instrument when directed by the MS.

4.2.2.3.3 **IF** the IP&P instrument won't calibrate,
THEN immediately inform the MS.

4.2.2.4 After a satisfactory calibration check or recalibration, affix a new calibration/test label to the IP&P instrument that contains the following information:

- Equipment ID number
- Calibration date
- Calibration due date.

4.3 Functional Check Instructions

4.3.1 Maintenance Supervisor

4.3.1.1 Obtain the work order of IP&P instruments to be functionally checked from the CMMS Administrator.

4.3.1.2 Designate a technician(s) to perform the functional check(s).

4.3.2 Technician

4.3.2.1 Obtain the work order of IP&P instrument functional check list from the MS.

4.3.2.2 Locate the IP&P instrument and determine the method that will be used to perform the functional check.

4.3.2.3 Obtain the proper work control document(s) for the affected IP&P instrument.

4.3.2.4 Perform the functional check through the normal range of system operation.

4.3.2.4.1 Record the accuracy (±) of the IP&P instrument.

4.3.2.5 After a satisfactory functional check, affix a new calibration/test label to the IP&P instrument that contains the following information:

- Equipment ID number
- Test date
- Due date.

4.4 Faulty or Out-of-Tolerance IP&P Instruments

4.4.1 Maintenance Supervisor

4.4.1.1 **IF** an IP&P instrument is found not operating properly **OR IF** proper operation is in question, **THEN** raise a work order for the instrument to be repaired and subsequently tested.

4.4.1.1.1 Direct a functional check in accordance with Steps 4.3.2.2 through 4.3.2.5 as minimum.

4.4.1.1.2 **IF** the functional check was satisfactory **AND** the IP&P instrument is normally tested via a routinely scheduled calibration, **THEN** perform a calibration at the next scheduled due date.

4.4.1.1.3 **IF** the functional check indicates abnormal operation by the IP&P instrument, **THEN** notify the MM and Plant Shift Manager prior to continuing system operation.

4.4.2 Maintenance Manager

4.4.2.1 Confer with QA manager and discuss the necessity of generating a Nonconformance report, per MP-Q&SI-5.4, Identification of Nonconforming Conditions, for Class I and II instruments.

4.4.2.2 Document the evaluation on Form-1575, Evaluation of a Failed Calibration/Functional Check for all instruments which are faulty or out of tolerance.

4.4.2.3 Evaluate the actions necessary to continue operations and record the evaluation on Form-1575.

4.4.2.3.1 Obtain an evaluation number for Form-1575 from Engineering Document Control.

4.4.2.3.2 Forward the completed form to Engineering Document Control for file.

4.4.2.3.3 Forward a copy of the completed form to the Plant Shift Manager.

4.4.3 CMMS Administrator

4.4.3.1 Generate reports as required by the Engineering and Maintenance (E&M) managers to ensure reliability problems are addressed, as necessary.

4.5 Changes

4.5.1 All changes or deviations from the scheduled periodic testing will be approved and documented via the Maintenance Change Request process per MP-CMNT-10.19, Computerized Maintenance Management System.

4.5.1.1 QA Manager: Concurrence is required for any extension of the calibration due date for Class I or Class II equipment.

4.5.1.2 Indicate concurrence by signing Form-1131, Maintenance Change Request, in appropriate space.

5.0 DEFINITIONS

Calibration. The testing and adjustments necessary to align an IP&P instrument in order for the indication to meet manufacturer's recommendations, statutory or regulatory requirement, Operations limits or specifications or meet requirements determined by Engineering Judgment.

Calibration Check. A test to verify the IP&P instrument indication is in calibration with the *measuring and test equipment (*M&TE; see def.), which has been calibrated to National Institute of Standards and Technology (NIST) traceable standards.

Functional Check. A test using either another IP&P instrument or a portable measuring device (not required to be part of the AMWTP M&TE program), as the standard by which the instrument in question is checked. The IP&P instrument may remain connected to the parent system during the functional check.

In-Plant and Process Instrumentation. Installed instrumentation and process equipment (gauges, differential pressure cells, meters, load cells etc.) used to provide a measurable indication, with a specific degree of accuracy.

Computerized Maintenance Management System. A commercial off-the-shelf client-server application, which provides a platform for users to prioritize tasks, assign work based on the availability of necessary parts and labor, and analyze equipment failures to implement appropriate preventive/predictive maintenance measures.

Measuring and Test Equipment. All devices or systems used to calibrate, certify, measure, gauge, troubleshoot, test, or inspect in order to control data or to acquire data to verify conformance to specified requirements. M&TE does not include in-plant and process instrumentation, radiation monitoring equipment, industrial hygiene monitoring equipment, test equipment used for preliminary checks where data obtained is not used to determine acceptability or verify conformance to established criteria, or rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy.

6.0 REFERENCES

(1) PD-CMNT-01, Nuclear Maintenance Management Program Description

(2) MP-CMNT-10.14, In-Plant and Process Instrumentation Testing Program.

(3) MP-CMNT-10.19, Computerized Maintenance Management System

(4) MP-DOCS-18.2, Records Management

(5) MP-Q&SI-5.4, Identification of Nonconforming Conditions.

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-CMNT-10.14.1, Case File	Facility Operating Record/ENV2-a-1-a /Destroy 5 years after Life of Facility
Form-1131, Maintenance Change Request	Facility Operating Record/ENV2-a-1-a /Destroy 5 years after Life of Facility
Form-1575, Evaluation of a Failed Calibration/Functional Check	Facility Operating Record/ENV2-a-1-a /Destroy 5 years after Life of Facility

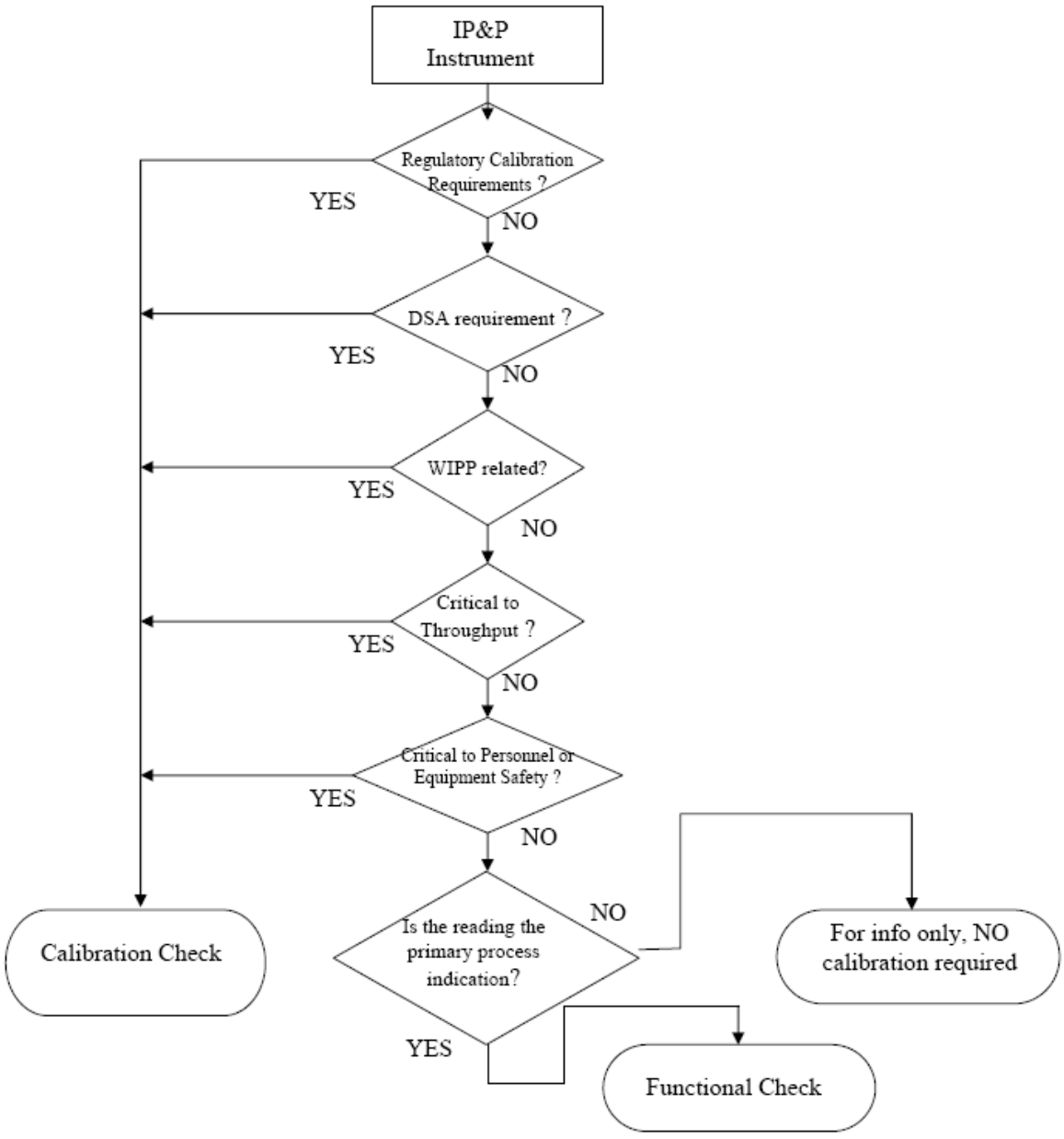
8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – IP&P Instrument Testing Decision Tree

Appendix A – IP&P Instrument Testing Decision Tree



Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/12/2002	All	Initial issue: DCR-2002-1445
1	4/24/2003	All	Incorporate changes identified during a self-assessment, see DCR-2003-2138.
2	6/9/03	All	Correct deficiencies identified during a self-assessment, see DCR-2003-2258
3	12/1/2003	8	Delete requirement for QA to Concur with all changes and deviations of Cal schedule. Add requirement for QA concurrence extending due dates beyond scheduled calibration dates. See DCR-2003-2459
4	5/13/04	All	Incorporate comments from a self-assessment, see DCR-2004-2957.
5	5/31/06	All	DCR-4299. Incorporate Blue Sheet changes and minor editorial changes.
6	06/19/07	Title Page	DCR-5933. Performed periodic review and results of periodic review minor editorial change were made.
7	04/28/10	Various	DCR-9288. Incorporate DOCS-BLUESHEET-01, and moved the revision log to last appendix per company template. Advanced periodic review date.
8	09/23/12	Various	DCR-11283. Incorporated ITG-BLUESHEET-244. Made changes throughout to incorporate changes from ISMS update and periodic review.

Facility Visual Examination Operations

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11020.*) 07/11/12

Jeremy Hampton
Treatment Manager

Date

Verification of Effective Revision): (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP FACILITY OPERATIONS INSTRUCTION		
INST-FOI-17, Rev. 25	Issued: 07/16/12	Effective: 07/17/12
Facility Visual Examination Operations		

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AMWTP FACILITY OPERATIONS INSTRUCTION		
INST-FOI-17, Rev. 25	Issued: 07/16/12	Effective: 07/17/12
Facility Visual Examination Operations		

1.0 PURPOSE/SCOPE

This instruction contains directions for performing *visual examination* (VE; see def.) in the Advanced Mixed Waste Treatment Facility (AMWTF), WMF-676, in accordance with the MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, MP-8.2, Quality Assurance Plan, applicable Hazardous Waste Management Act/Resource Conservation and Recovery Act (HWMA/RCRA) permit requirements, and CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

The purpose of VE is to verify the physical form of the waste, prevent the shipment of prohibited items to Waste Isolation Pilot Plant (WIPP), confirm that the waste matches the *waste matrix code* (WMC; see def.) assigned to a waste *container* (see def.), and confirm that the waste matches the *waste stream* (see def.) description. Visual examination is also used to characterize waste, as it is packaged at the Advanced Mixed Waste Treatment Project (AMWTP).

This instruction is used in conjunction with other approved work control documents in the Treatment Facility.

This instruction applies to all personnel performing required VE and as required by any approved methods of work or permits to work used in conjunction with this instruction.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operations Technician (OT)	• Performs tasks in support of the VE • Performs tasks associated with glovebox operations, waste packaging, and container/waste handling and movement • Performs limited radiological surveys.
Data Verifier	• 2nd OT who performs verification of all data generated.
Shift Supervisor (SS)	• Ensures that individual training and qualification is current for the individual performing VE in accordance with QP-VE-0001, Visual Examiner • Notifies on-call environmental support with information regarding prohibited items • Performs post-job reviews, as necessary.

Performer	Responsibilities
Visual Examination Expert (VEE)	• Supports VE as appropriate and maintains responsibility for the overall direction and implementation of the VE at the facility.
Visual Examination Operator (VEO) (displayed in *Waste Tracking System* (WTS; see def.) as Operator 1 and Operator 2)	• Performs characterization examinations in accordance with this instruction • Unless otherwise specified, performs the steps in this instruction • Performs limited radiological surveys.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Only Aquaset-II G, Micro-Cel E, and HG Absorb (HG Absorb for treatment of elemental mercury only) shall be used as the absorbent. Other absorbents shall be approved by Environmental through permit required processes prior to purchase and use. Other chemical absorbents to be added to transuranic (TRU) waste shall be approved by Criticality Safety.

(HWMA/RCRA Permit; RPT-NFCS-09)

3.1.2 Prohibited/nonconforming items as referenced in Exhibit 4, List of TRU Prohibited Items, shall **NOT** be shipped to WIPP.

(MP-TRUW-8.2; CCP-PO-003)

3.1.3 Nonconformance reports (NCRs) shall be issued to document the identification of prohibited/nonconforming items or conditions.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit)

3.1.4 Any condition that could be adverse to the quality of the data must be reported to the SS.

3.1.5 Various *item description codes* (IDCs; see def.) are incompatible with each other and should be segregated as directed by the SS (Appendix B, Waste Incompatibility by Item Description Code, provides a list of incompatible IDCs).

(MP-TRUW-8.1; MP-TRUW-8.2; HWMA/RCRA Permit)

3.1.6 Sealed containers that are greater than 4 liters are prohibited except for waste material Type II.2. packaged in a metal container. Containers that are greater than 4 liters in size shall be fitted with a WIPP-approved filter vent or vented greater than 0.3 in.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit) (IDAPA 58.01.05.008 [40 CFR 264.177])

3.1.7 Prohibited items are not packaged using this instruction.

3.1.8 The VE process must ensure that all waste items are clearly identified, *packaging materials* (see def.) are identified, and waste is categorized into the appropriate waste material parameters.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.1.9 Aerosol cans are allowed if they can be verified vented and empty by Real-Time Radiography (RTR) and/or VE. Aerosol cans that are not vented and empty are prohibited.

(HWMA/RCRA Permit; MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

3.1.10 The presence of radioactive pyrophorics in payload containers is restricted to ≤1 % by weight.

(MP-TRUW-8.1; CCP-PO-003)

3.1.11 Radioactive pyrophorics in concentrations greater than 1% by weight and all nonradioactive pyrophorics shall be stabilized prior to placement in the payload container.

(MP-TRUW-8.1; CCP-PO-003)

3.1.12 Chemical constituents in a payload container shall conform to the lists of allowable materials in Tables 4.3-1 through 4.3-8 of CCP CH-TRAMPAC.

(CCP-PO-003)

3.1.13 The total quantity of the trace chemicals/materials (less than 1 weight percent) for materials not listed in Tables 4.3-1 through 4.3-8 of the CCP CH-TRAMPAC shall be restricted to less than 5 weight percent.

(CCP-PO-003)

3.1.14 Waste packaged using this instruction must be packaged to less than 1% beryllium by weight.

3.1.15 Hazardous wastes not occurring as co-contaminants with TRU wastes (non-mixed hazardous wastes) are not acceptable at WIPP.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.1.16 The WTS record must be protected from damage or loss.

3.1.17 Two visual examiners who witnessed the packaging of the waste shall approve the data forms or packaging records attesting to the contents of the waste container.

(MP-TRUW-8.2)

3.2 Prerequisites

3.2.1 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

3.2.2 The correct version of this procedure is being used.

3.2.3 There are two qualified VEOs available.

3.2.4 Visual Examination operators performing examinations are qualified in accordance with QP-VE-0001, Visual Examiner.

3.2.5 A VEE is available for support of the VE activities.

4.0 INSTRUCTIONS

4.1 General Instructions

NOTE 1: *The steps in each section may be performed out of sequence, or performed concurrently with other steps in the procedure as required during the VE.*

NOTE 2: *Visual Examination is used to characterize newly generated waste (NGW) at the time of generation (such as* secondary waste *[see def.]) to identify its physical form and verify the absence of prohibited items.*

NOTE 3: *Data changes or rework and requisite approvals are made by the individual(s) who originally collected that data **OR** by an equally qualified individual(s) authorized to change or rework data.*

4.1.1 Ensure that all prerequisites have been met.

4.1.2 Handle secondary waste for criticality control purposes in accordance with Appendix A, Schematic of Criticality Control for Secondary Waste.

4.1.3 Report any condition to the SS that could be adverse to the quality of the data.

4.1.4 Ensure that both VEs approving the data forms or packaging records have witnessed the packaging of the waste.

4.1.5 During the examination, describe all the contents of the waste, clearly identifying all discernible waste items, packaging materials, estimated or measured weights, and waste material parameters to provide an inventory list in WTS (see Exhibit 1, Waste Material Parameter Description).

(MP-TRUW-8.1)

4.1.6 Refer to the following exhibits to determine weights, volumes, and other characterization items, as needed, to meet data quality objective requirements:

- Exhibit 2, Parameters and Weights of Commonly Identified Items
- Exhibit 5, Volume Conversions for Liquids in 55-gallon Drums
- Exhibit 6, Volumes of Cylinders
- Exhibit 7, Common Liquid Measurements and Conversions
- Exhibit 8, V^2 Nominal Density Guidance Table
- Exhibit 9, Volume Conversion Table, Cubic Inches to Pints
- Exhibit 10, Volume conversion for Partial 55-gal Drum (in pints)
- Exhibit 11, Visual Examination Equipment IDs
- Exhibit 12, Description of Liners.

4.1.7 Ensure prohibited and nonconforming items are segregated from the waste stream, as applicable.

4.1.8 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP acceptance requirements,
THEN STOP
AND notify the SS and VEE.

4.1.9 **GO TO** the appropriate section from the following table based on the task to be performed,
THEN RETURN to this step, if further activities will be performed:

Task	Section to Perform
Visual Examination of Newly Generated Waste Packages	4.2
Visual Examination of Newly Generated Waste Closure	4.3
Visual Examination and Repackaging of Boxline Legacy Waste	4.4
RTR/VE Update (Supplemental Analysis to RTR or VE Batch)	4.5
Repackaging Drums and Boxes	4.6
Post-Job Review	4.7
Abnormal and Infrequent Operations	4.8

4.2 Visual Examination of Newly Generated Waste Packages

NOTE: *A VEE may provide direction to assist in the VE. Any guidance or direction from the VEE related to the examination is entered in the "Visual Exam Comments" field.*

4.2.1 Ensure that a package ID number label is affixed to the outer packaging of the waste item.

4.2.2 Access the "VE Newly Generated Package" screen through the "Facility" menu.

4.2.3 Enter the package ID number in the "Package ID" field
AND press the tab key.

4.2.4 **IF** the correct procedure and/or revision are **NOT** displayed,
THEN perform the following:

4.2.4.1 Enter a comment in the "General" tab "Visual Exam Comment" field that the examination was performed to the current procedure and revision
AND provide the correct data.

4.2.4.1.1 Notify the SS that an update to the procedure and revision is required in WTS.

4.2.5 Select the "Destination" field and press the F9 key.

4.2.5.1 Select PSD as the destination container.

NOTE: *The following entry pertains to the destination container for the waste item. Source container information is contained in the "Source Container" tab.*

4.2.6 Select the "Container ID," field
AND enter the container ID.

4.2.7 Select the "Package Weight" field
AND enter the estimated weight for the waste package.

4.2.8 Select the "Equipment ID" field and press the F9 key.

4.2.8.1 Select "FAC-VNC."

NOTE: *Selection of "Other (describe)" in the "Waste Activity" field will create a pop-up field to the right of the entry.*

4.2.9 Select the "Waste Activity" field
AND select the appropriate activity.

4.2.9.1 **IF** the selection is "Other (describe)",
THEN enter a brief description in the "Describe" field.

4.2.10 Ensure that the name of "Operator 1" (the first VEO) is displayed.

4.2.11 Select the "Operator 2" field and press the F9 key.

4.2.11.1 Select the name of the second VEO.

4.2.12 Ensure the following data is entered or displayed, as applicable:

- Destination
- PSD Container ID
- Package Weight
- Equipment ID as "FAC-VNC"
- Waste activity
- Correct procedure and revision.

4.2.13 Select the "IDC" field and press the F9 key.

4.2.13.1 Select the appropriate IDC for the waste item, as listed in RPT-TRUW-05, Waste Matrix Code Reference Manual.

4.2.14 Select "Closure Method" field,
AND select the correct outer closure method from the pull down menu.

4.2.15 Select the "Source Container" tab.

4.2.15.1 **IF** there is a source container(s),
THEN perform the following:

4.2.15.1.1 Select "Yes" in the "Is there a source container?" field.

4.2.15.1.2 Manually enter the source container number(s), in the "Source Container Id" field.

4.2.15.1.3 Press the "Enter" key.

4.2.15.1.4 Observe that the correct location and IDC are displayed for the source container.

4.2.15.1.5 **IF** adding additional source container(s),
THEN REPEAT Steps 4.2.15.1.2 through 4.2.15.1.4.

4.2.15.2 **IF** the source of the waste was **NOT** a drum or box,
THEN perform the following:

4.2.15.2.1 Select "No" in the "Is there a source container" field.

4.2.15.2.2 Enter the source of the waste (i.e., sump cycle) in the "Visual Exam Comments" field on the "General" tab.

NOTE: *Waste not meeting any acceptance criterion or requirement for shipment to WIPP is prohibited.*

4.2.16 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP waste acceptance criteria,
THEN STOP
AND notify the SS and VEE.

4.2.16.1 **WHEN** waste acceptance criteria has been satisfied,
THEN proceed with examination.

4.2.17 Ensure the absence of prohibited items and conditions (as listed in Exhibit 4) prior to the waste being presented for examination.

4.2.17.1 **WHEN** this condition is met,
THEN proceed with completion of the WTS form.

(MP-TRUW-8.1; CCP-PO-003; HWMA/RCRA Permit)

4.2.18 Select the "Liquid" tab.

NOTE 1: *The selection of a "No" response in the "Liquids present" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to required default values.*

NOTE 2: *Containers with* liquids *(see def.) in excess of Treatment, Storage, and Disposal Facility-Waste Acceptance Criteria (TSDF-WAC) limits are prohibited from supercompaction.*

4.2.18.1 Select "No" in the "Liquids Present?" field.

4.2.19 Select the "Contents 1" tab.

NOTE 1: *The selection of "No" in response to the "Sharp Objects?" question will cause the "Are Sharp Objects Protected?" field to auto-populate a "Yes" response.*

NOTE 2: *In accordance with Exhibit 4, the "Sharp Objects?" field includes heavy items that are not blocked or braced.*

4.2.19.1 **IF** sharp objects are **NOT** present,
THEN select "No" in the "Sharp Objects?" field.

4.2.19.1.1 Ensure the "Are Sharp Objects Protected?" field populates "Yes."

4.2.19.2 **IF** sharp objects are present,
THEN select "Yes" in the "Sharp Objects?" field.

4.2.19.2.1 Select "No" in the "Are Sharp Objects Protected?" field.

4.2.19.3 Select "No" in the "Prohibited Compressed Gas Present?" field.

NOTE: *Mercury in a liquid form is prohibited from supercompaction. Elemental mercury is segregated and treated prior to packaging.*

4.2.19.4 Select "No" in the "Mercury Contaminated >1000 ppm" field.

4.2.19.5 Select "No" in the "Explosives Present?" field.

NOTE: *Polychlorinated biphenyls (PCBs) are not processed through the Supercompactor.*

4.2.19.6 **IF** PCB-contaminated waste is **NOT** present,
THEN select "No" in the "PCBs present?" field.

4.2.19.7 **IF** non-prohibited PCB-contaminated waste is present,
THEN perform the following:

4.2.19.7.1 Select "Yes (acceptable)" in the "PCBs present?" field.

4.2.19.7.2 Enter a description of the non-prohibited PCBs in the "Comment" field.

4.2.19.7.3 Enter the weight of the non-prohibited PCBs in the "PCB Mass" field.

4.2.19.8 Select "No" in the "Pyrophorics present?" field.

4.2.19.9 Select "No" in the "Corrosives, Igniteables, or Reactives present?" field.

4.2.20 Select the "Contents 2" tab.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any* liquid.

4.2.20.1 **IF** wet cell batteries are **NOT** present,
THEN select "No" in the "Wet Cell Batteries Present?" field.

4.2.20.2 **IF** WIPP-acceptable wet cell batteries are present,
THEN select "Yes" in the "Wet Cell Batteries Present?" field
AND enter the appropriate comment in the field to the right of the entry.

NOTE 1: *Entries of beryllium into WTS include the physical form (fines, metal pieces).*

(CCP-PO-003)

NOTE 2: *Beryllium is entered separately in the container inventory for reporting and tracking purposes, as applicable*.

4.2.20.3 **IF** beryllium contaminants are **NOT** present,
THEN select "No" in the "Beryllium Contaminants Present?" field.

4.2.20.4 **IF** beryllium contaminants are present,
THEN STOP work
AND notify the SS/VEE.

4.2.20.5 Select "No" in the "Hazardous-Only Waste Present?" field.

4.2.20.6 Select "No" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field.

4.2.20.7 Select "No" in the "Sealed containers over 4 liters?" field.

4.2.21 Select the "Waste Params" button.

4.2.21.1 Determine the waste parameter for the remaining waste by weight percent.

NOTE: *The "Total Percentage" for the waste parameter(s) entered equals 100%*.

4.2.21.2 Select the appropriate waste parameter by weight percent in the "Remaining Contents of Container" table (e.g., 100% cellulosics).

4.2.22 Determine the number of layers of confinement for the waste package.

NOTE: *The number of plastic bags for waste encompasses all the waste in the package, and are sealed closed to be counted as a layer of confinement*.

4.2.22.1 Enter the number of "Plastic bag(s) for waste" from the "Waste Items by Weight" table to document layers of confinement for the waste package.

4.2.23 **IF** adding additional waste items by weight or volume,
THEN select the waste from the appropriate quantity from the pick list, as applicable.

NOTE 1: *The notation of the items in the following step is not a WIPP requirement. The presence of any of these items is entered into the "Waste Material Items" table as waste items by weight or volume in the event that assay reveals the waste to be a candidate for* low-level waste *(LLW; see def.) treatment and/or disposal.*

NOTE 2: *Appendix C, List of LLW/MLLW Prohibited and Restricted Items (taken from LST-LLW-04), has additional prohibited and restricted items which may be visible.*

4.2.24 **IF** any of the following items are present in the waste,
THEN ensure the items are accounted for in the "Waste Material Items" table:

- Etiological agents (i.e., blood, medical waste)
- Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)
- Animal carcasses
- Asbestos
- Batteries (other than wet cell)
- Graphite
- Lab pack
- Lead (identify if elemental)
- Other.

4.2.24.1 See Appendix C for list of items, descriptions, and additional information/examples.

4.2.25 **IF** no additional waste items need to be added,
THEN select SAVE,
AND GO TO Step 4.2.27.

4.2.26 **IF** a waste item is **NOT** included in the "Waste Material Items" lists, **THEN** select the "Add material items" button in the "Remaining Contents of Container" block, as applicable.

4.2.26.1 Enter a brief description of the waste item in the "Description" field.

4.2.26.2 Select the "Item Type" field
AND select "Weight" or "Volume," as appropriate.

4.2.26.3 **IF** entering waste items by weight,
THEN enter the weight of the item.

4.2.26.4 **IF** entering item(s) by volume,
THEN obtain available reference data
AND enter the weight (per unit volume) from available reference data, or as provided by the VEE.

4.2.26.5 Select the "Quantity" field and enter the number of units.

NOTE: *The "Total Percentage" for each item entered equals 100%.*

4.2.26.6 Select the "Percentage" field opposite the correct "Parameter" field(s)
AND enter the appropriate waste parameter(s) by weight percent.

4.2.26.6.1 Select the next editable field to display the "Total Percentage."

4.2.26.7 Select the "SAVE" button.

4.2.26.8 **IF** entering additional items,
THEN select the "NEW ITEM" button,
AND REPEAT Steps 4.2.26.1 through 4.2.26.7 for each additional item, as necessary.

4.2.26.9 Select the "Exit" button.

4.2.26.10 Select the "Save" button.

4.2.27 Select the "General" tab.

NOTE: *A description of the waste that was selected in the "Remaining Contents of Container" table on the "Waste Params" tab is entered in the "Visual Exam Comment" field on the "General" tab.*

4.2.28 Enter a description of the waste, (e.g. remaining waste by weight percent), in the "Visual Exam Comment" field.

4.2.29 Enter any additional comments about the waste item in the "Visual Exam Comment" field, as applicable.

4.2.30 Operator 1: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.2.31 Operator 2: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.2.32 **IF** there are any discrepancies,
THEN contact the SS for guidance.

4.2.33 Operator 1 (data generator): E-sign & Save the WTS record for approval of the data.

4.2.34 Operator 2 (data verifier): E-sign & Save the WTS record for approval of the data.

4.2.35 Verify that the VE date populates after both operators E-sign the data.

4.2.36 **IF** the drum is full, or ready to be processed,
THEN GO TO Section 4.3.

4.3 Visual Examination of Newly Generated Waste Closure

NOTE 1: *This section is performed concurrently with INST-OI-24, Packaging Radioactive Waste, for the packaging of NGW items generated in support of characterization activities.*

NOTE 2: *WTS summarizes the data for individual packages that were already characterized in accordance with Section 4.2 of this instruction and assigns the individual packages to the drum.*

4.3.1 Access the "VE Newly Generated Closure" screen from the Facility menu, as applicable.

4.3.2 Select the "SAA/In Process Container ID" field.

4.3.3 Enter the container ID number and press the F8 key to populate the data on the screen.

4.3.4 **IF** the correct procedure and/or revis**on** are **NOT** displayed,
THEN perform the following:

4.3.4.1 Enter a comment in the "Visual Exam Comment" field on the "Closure" tab that the examination was performed to the current procedure and revision
AND provide the correct data.

4.3.4.2 Notify the SS that an update to the procedure and revision is required in WTS.

4.3.5 Select the "Equipment ID" and press the F9 key.

4.3.5.1 Select FAC-VNC.

4.3.6 Ensure the name of "Operator 1" (the first VEO) is displayed.

4.3.7 Select the "Operator 2" field and press the F9 key.

4.3.7.1 Select the name of the second VEO.

4.3.8 Select the "General" tab, as applicable.

NOTE: *A liner present response of "No" results in the corresponding liner fields not being required data entry fields.*

4.3.9 Select the "Rigid Liner Present?" field
AND select "No."

4.3.10 Select the "Layers of Confinement" field
AND enter the number of layers of confinement for the waste container.

(CCP-PO-003)

4.3.11 Select the "Fill Factor" field
AND enter the fill factor, using Exhibit 3, Fill Factor, as a guide.

(MP-TRUW-8.2)

4.3.12 Select the "Closure" tab.

4.3.12.1 Select "IDC Ok" field
AND select "Y" or "N," as applicable.

4.3.12.2 **IF** IDC is **NOT** correct,
THEN enter the recommended IDC in the "IDC Recommended" field.

4.3.12.3 Enter appropriate comments in the "IDC Change Reason" field.

4.3.13 Select the "Closure Method" field
AND select the correct outer layer closure method.

4.3.14 Select the "Waste Summary" tab
AND review the waste parameter data in the "Remaining Contents" table.

4.3.15 Select the "Closure" tab.

4.3.15.1 Select the "Visual Exam Comment" field
AND enter a complete description of the waste as remaining waste by weight percent.

4.3.16 Select the "Waste Params" button.

NOTE: *The "Total Percentage" for the Waste Parameter(s) selected equals 100% and will reflect the waste description provided in Step 4.3.15.1*.

4.3.16.1 Select the appropriate waste parameter(s) in the "Remaining Contents of Container" table (e.g., 100% cellulosics).

NOTE: *Additional waste items or packaging material data will not be added to the record UNLESS the material was added to the container at closure*.

4.3.16.2 **IF** entering additional waste items by weight or volume,
THEN select the waste from the appropriate pick list, as applicable.

4.3.16.3 **IF** entering packaging material,
THEN select the packaging from the appropriate pick list, as applicable.

4.3.16.4 Select the "Save" button to save the data.

4.3.17 Enter any additional comments about the VE, as applicable.

4.3.18 Operator 1: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.3.19 Operator 2: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.3.20 **IF** there are any discrepancies,
THEN contact the SS for guidance.

4.3.21 Operator 1 (data generator): E-sign & Save the WTS record for approval of the data.

(MP-TRUW-8.2)

4.3.22 Operator 2 (data verifier): E-sign & Save the WTS record for approval of the data.

4.3.23 Close the batch by performing the following:

4.3.23.1 Select the "BATCH" button on the Visual Examination screen.

4.3.23.2 Select the "CLOSE" button on the Batch Details screen.

4.3.23.3 E-sign and save the record.

4.4 Visual Examination and Repackaging of Boxline Legacy Waste

4.4.1 **IF** using the Integrated Control System (ICS) Mimic Screen,
THEN ensure container ID matches in WTS and ICS
AND verify port location is correct.

OR

4.4.2 Access the "VE Boxline" screen from the Facility menu
AND enter the Container ID and press F8, as applicable.

4.4.3 **IF** the correct procedure and/or revision are **NOT** displayed,
THEN perform the following:

4.4.3.1 Enter a comment in the "IDC Verification" tab "Visual Exam Comment" field that the examination was performed to the current procedure and revision and provide the correct data.

4.4.3.2 Notify the SS that an update to the procedure and/or revision is required in WTS.

4.4.4 Select the "Equipment" field and press F9.

4.4.4.1 Select "VE BiD RPCK."

4.4.5 Ensure the name of Operator 1 (data generator) is auto-populated.

4.4.6 Select the "Operator 2" field and press the F9 key.

4.4.6.1 Select the name of Operator 2 (data verifier).

4.4.7 Select the "General" tab.

4.4.7.1 Ensure Layers of Confinement as zero.

4.4.7.2 Ensure the Closure Method as "No Bags."

NOTE: *The source container is the container that the waste was generated from, such as the waste box. Identifying the source container is important to ensure the proper characterization of the waste and to maintain traceability.*

4.4.8 Select the "Source Container" tab.

4.4.8.1 **IF** there is a source container(s),
THEN perform the following:

4.4.8.1.1 Select "Yes" in the "Is there a source container?" field.

4.4.8.1.2 Manually enter the source container number in the "Source Container Id" field.

4.4.8.1.3 Press the "Enter" key.

4.4.8.1.4 Observe that the correct location and IDC are displayed for the source container.

4.4.8.1.5 **IF** adding additional source container(s),
THEN REPEAT Steps 4.4.8.1.2 through 4.4.8.1.4, as applicable.

4.4.8.1.6 **IF** no additional source containers are added,
THEN select the field of the previous source container entry.

4.4.8.2 **IF** the source of the waste was **NOT** a container,
THEN perform the following:

4.4.8.2.1 Select "No" in the "Is there a source container?" field.

4.4.8.2.2 Enter a comment in the "IDC Verification" tab "Visual Exam Comment" field detailing the source or origin of the waste.

NOTE: *Waste not meeting any acceptance criterion or requirement for shipment to WIPP is prohibited.*

4.4.9 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP acceptance requirements,
THEN STOP
AND notify the SS and VEE.

4.4.10 **WHEN** acceptance requirements have been satisfied,
THEN proceed with examination.

4.4.11 Ensure the absence of prohibited items and conditions (as listed in Exhibit 4) as the waste is presented for examination.

4.4.11.1 **WHEN** this condition is met**,**
THEN proceed with completion of the WTS form**.**

(MP-TRUW-8.1; CCP-PO-003; HWMA/RCRA Permit)

4.4.12 Select the "Liquid" tab.

NOTE 1: *The selection of a "No" response in the "Liquids Present?" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

NOTE 2: *Containers with liquids in excess of TSDF-WAC limits are prohibited from supercompaction.*

4.4.12.1 Select "No" in the "Liquids Present?" field.

4.4.13 Select the "Contents 1" tab.

NOTE 1: *The selection of "No" in response to the "Sharp Objects?" question will cause the "Are Sharp Objects Protected?" field to auto-populate a "Yes" response.*

NOTE 2: *In accordance with Exhibit 4, the "Sharp Objects?" subject field includes heavy items that are not blocked or braced.*

4.4.13.1 **IF** sharp objects are **NOT** present,
THEN select "No" in the "Sharp Objects?" field.

4.4.13.1.1 Ensure the "Are Sharp Objects Protected?" field populates "Yes."

4.4.13.2 **IF** sharp objects are present,
THEN select "Yes" in the "Sharp Objects?" field.

4.4.13.2.1 Select "No" in the "Are Sharp Objects Protected?" field.

4.4.13.3 Select "No" in the "Prohibited compressed gas present?" field.

NOTE: *Mercury in a liquid form is prohibited from supercompaction. Elemental mercury is segregated and treated prior to packaging.*

4.4.13.4 Select "No" in the "Mercury Contaminated >1000 PPM" field.

4.4.13.5 Select "No" in the "Explosives Present?" field.

NOTE: *Polychlorinated biphenyls are not processed through the Supercompactor.*

4.4.13.6 **IF** PCB-contaminated waste is **NOT** present,
THEN select "No" in the "PCBs present?" field.

4.4.13.6.1 **IF** PCB-contaminated waste is present,
THEN STOP work
AND notify the SS/VEE.

4.4.13.7 Select "No" in the "Pyrophorics present?" field.

4.4.13.8 Select "No" in the "Corrosives, Ignitables, or Reactives Present?" field.

4.4.14 Select the "Contents 2" tab.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any liquid.*

4.4.14.1 **IF** wet cell batteries are **NOT** present,
THEN select "No" in the "Wet Cell Batteries Present?" field.

4.4.14.2 **IF** WIPP-acceptable wet cell batteries are present,
THEN select "Yes" in the "Wet Cell Batteries Present?" field
AND enter the appropriate comment in the field to the right of the entry.

NOTE 1: *Entries of beryllium into WTS include the physical form (fines, metal pieces).*

(CCP-PO-003)

NOTE 2: *Beryllium is entered separately in the container inventory for reporting and tracking purposes, as applicable*.

4.4.14.3 **IF** beryllium contaminants are **NOT** present,
THEN select "No" in the "Beryllium Contaminants Present?" field.

4.4.14.4 **IF** beryllium contaminants are present,
THEN STOP work
AND notify the SS/VEE.

4.4.14.5 Select "No" in the "Hazardous-Only Waste Present?" field.

4.4.14.6 Select "No" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field.

4.4.14.7 Select "No" in the "Sealed containers over 4 liters?" field.

4.4.15 Select the "IDC Verification" tab.

4.4.15.1 **IF** IDC is correct,
THEN select "Yes" in the "Is IDC Correct?" field.

4.4.15.2 **IF** IDC is **NOT** correct,
THEN select "No" in the "Is IDC Correct?" field.

4.4.15.2.1 Enter "Recommended IDC" in the "Recommended IDC" field.

4.4.15.2.2 Enter comments in the "IDC Change Reason" field.

NOTE: *During examination, all the contents of the waste container, including all waste items, packaging materials, and waste material parameters are identified to provide an inventory list of the waste container contents.*

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

4.4.16 Enter a complete description of the waste as remaining waste by weight percent in the "Visual Exam Comment" field.

(MP-TRUW-8.1)

4.4.17 Select the "Waste Params" button.

NOTE: *The "Total Percentage" for the waste parameter(s) selected equals 100% .and will reflect the waste description provided in Step 4.4.16.*

4.4.17.1 Select the appropriate waste parameter(s) in the "Remaining Contents of Container" table (e.g., 100% cellulosics).

4.4.17.2 **IF** entering additional waste items by weight or volume,
THEN select the waste from the appropriate pick list, as applicable.

NOTE 1: *The notation of the items in the following step is not a WIPP requirement. The presence of any of these items is entered into the "Waste Material Items" table as waste items by weight or volume in the event that assay reveals the waste to be a candidate for LLW treatment and/or disposal.*

NOTE 2: *Appendix C for has additional prohibited and restricted items which may be visible.*

4.4.18 **IF** any of the following items are present in the waste,
THEN ensure the items are accounted for in the waste inventory, as applicable:

- Etiological agents (i.e., blood, medical waste)
- Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)
- Animal carcasses
- Asbestos
- Batteries (other than wet cell)
- Graphite
- Lab pack
- Lead (identify if elemental)
- Other.

4.4.18.1 See Appendix C for list of items, descriptions, and additional information/examples.

4.4.19 **IF** no additional waste items need to be added,
THEN select SAVE,
AND GO TO Step 4.4.22.

4.4.20 **IF** a waste item is **NOT** included in the "Waste Material Items" lists, **THEN** select the "Add material items" button in the "Remaining Contents of Container" block, as applicable.

4.4.20.1 Enter a brief description of the waste item in the "Description" field.

4.4.20.2 Select the "Item Type" field
AND select "Weight" or "Volume," as appropriate.

4.4.20.3 **IF** entering waste items by weight,
THEN enter the weight of the item.

4.4.20.4 **IF** entering item(s) by volume,
THEN obtain available reference data
AND enter the weight (per unit volume) from available reference data, or as provided by the VEE.

4.4.20.5 Select the "Quantity" field and enter the number of units.

NOTE: *The "Total Percentage" for each item entered equals 100%.*

4.4.20.6 Select the "Percentage" field opposite the correct "Parameter" field(s)
AND enter the appropriate waste parameter(s) by weight percent.

4.4.20.6.1 Select the next editable field to display the "Total Percentage."

4.4.20.7 Select the "SAVE" button.

4.4.20.8 **IF** entering additional items,
THEN select the "NEW ITEM" button
AND REPEAT Steps 4.4.20.1 through 4.4.20.7 for each additional item, as necessary.

4.4.20.9 Select the "EXIT" button.

4.4.20.10 Select the "SAVE" button.

4.4.21 Enter any additional comments about the VE in the "Visual Exam Comment" field, as applicable.

4.4.22 Select "General" tab.

4.4.22.1 Select the "Fill Factor" field and enter the fill factor, using Exhibit 3 as a guide.

4.4.23 Operator 1: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.4.24 Operator 2: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.4.25 Operator 1 (data generator): E-sign & Save the WTS record for approval of the data and drum loading.

4.4.26 Operator 2 (data verifier): E-sign & Save the WTS record for approval of the data and drum loading.

4.4.27 Ensure that the VE date and closure dates have populated.

4.5 RTR/VE Update (Supplemental Analysis to RTR or VE Batch)

NOTE 1: *Waste Tracking System will only allow the performance of an RTR/VE update (RVU) if the container has a gross weight OR a valid assay with an "analysis status" of "Pass," as indicated on the respective batch screen.*

NOTE 2: *The RVU is used to update the final waste container configuration after processing of the drum. The RVU generates an amended analysis that is linked to the original batch data report, RTR, or VE, as applicable, for the waste container.*

NOTE 3: *If available, the recording is reviewed for the packaging configuration of the waste container and the location and nature of the nonconformance.*

4.5.1 Access TrackWise to review the corrective actions for the waste container as documented in the NCR, as applicable.

4.5.2 Check that the container has a gross weight **OR** a valid assay with an "Analysis Stat" of "Pass," prior to performing an RVU.

4.5.3 Access "Visual Examination" from the "Facility menu" and select "RTR/VE Update."

4.5.4 Select "Container ID" field,
AND enter the container number
THEN press the F8 key to populate the data.

NOTE 1: *Waste Tracking System records for which no supplemental analysis has been performed will not display the "View/Update" and "New" pop-up selection options.*

NOTE 2: *The View/Update selection appears and applies when performing rework on an analysis that is currently associated with the container. The New Analysis is used when a new and separate analysis is desired on a container that has a pre-existing RVU analysis associated with the container.*

4.5.5 **IF** the pop-up screen requesting a response for "View/Update" or "New Analysis" appears,
THEN select the appropriate response to identify the RVU analysis type.

4.5.6 Select the "Equipment ID" field and press F9.

4.5.6.1 Select "VE NGW C FAC," as the Equipment ID.

NOTE 1: *The correct affected batch should be documented on the NCR, as applicable.*

NOTE 2: *The correct affected batch and affected analysis is normally the last valid VE, RTR or RVU event performed on the container prior to the RVU event.*

4.5.7 Select the correct affected batch and affected analysis identified, as applicable.

4.5.8 **IF** there is no affected batch or affected analysis listed,
THEN perform the following:

4.5.8.1 **STOP** work.

4.5.8.2 Notify the SS.

4.5.8.3 Proceed only when directed by the SS.

4.5.9 Observe the VE Weight from the affected analysis.

4.5.10 Ensure the “Operator 1” (data generator) name is displayed.

4.5.11 Select the “Operator 2”field and press the F9 key.

4.5.11.1 Select “the name of Operator 2 (data verifier).

4.5.12 **IF** performing RVU for adding a sling or catch pan,
THEN perform the following:

4.5.12.1 Select the “Waste Params” button.

4.5.12.2 Select the appropriate packaging material and enter the quantity, as applicable.

4.5.12.3 Update the waste container inventory and waste parameters for the processing of the waste container, as applicable.

4.5.12.4 Select the “SAVE” button.

4.5.13 Select the “IDC Verification” tab.

4.5.14 Select the “IDC Ok" field,
AND select “Yes” or “No,” as applicable.

NOTE: *The responsible manager entered on an NCR for an IDC, WMC, or approved waste stream number change is the Acceptable Knowledge (AK) manager. An AK evaluation is required for any suggested IDC, WMC, or approved waste stream changes*.

4.5.14.1 **IF** the selection is “No,”
THEN enter the “Recommended IDC” in the “IDC Recommended” field.

4.5.14.2 Enter appropriate comments in the “IDC Change Reason” field.

4.5.14.3 Select the “Comments” field
AND enter appropriate comments, as applicable.

4.5.14.4 Enter that the waste container was processed in accordance with the applicable NCR in the “Comments” field, as applicable.

4.5.15 Select the "Closure" tab.

4.5.15.1 Select the "Layers Of Confinement" field,
AND update the layers of confinement for the waste container, as applicable.

4.5.15.2 Select the "Closure Method" field,
AND enter the outer layer closure method(s).

4.5.15.3 Select the "New Steel Lid" field
AND enter "Yes" or "No" as appropriate.

4.5.15.4 Select the "Overpack Required" field
AND enter "Yes" or "No" as appropriate.

4.5.16 Operator 1: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.5.17 Respond to any incomplete fields as appropriate.

4.5.18 Operator 2: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.5.18.1 **IF** there are any discrepancies,
THEN contact the SS for guidance.

4.5.18.1.1 **WHEN** concurrence is achieved,
THEN proceed.

4.5.19 Operator 1 (data generator): E-sign & Save WTS for acceptance of the data and container loading.

NOTE: *A "Yes" response to the following query, will populate the closure date with the E-signature date. A "No" response will populate the closure date with the container original pack date.*

4.5.19.1 Observe the message box, "Was the container opened?"
AND select "Yes" or "No."

4.5.20 Operator 2 (data verifier): E-sign & Save WTS for acceptance of the data and container loading.

4.5.21 Ensure that the VE date and closure dates have populated after E-signing the record, as applicable.

4.5.22 Ensure the appropriate filter model(s) for the waste container are entered in the "Filters" screen
AND ensure the screen is updated, as applicable.

(CCP-PO-003)

4.5.23 Update the NCR, if applicable, to reflect the processing of the waste container.

4.6 Repackaging Drums and Boxes

NOTE: *This section may also be used for waste generated during cell entries.*

4.6.1 Access the "Facility," "Visual Examination," and "VE Boxline" screens, as applicable:

4.6.1.1 Select the "Container ID" field
AND enter the container number, as applicable.

4.6.1.1.1 Press F8 to auto-populate the data.

4.6.1.2 **IF** the correct procedure and/or revision are **NOT** displayed, **THEN** perform the following:

4.6.1.2.1 Enter a comment in the "IDC Verification" tab "Visual Exam Comment" field that the examination was performed to the current procedure and revision and provide the correct data.

4.6.1.2.2 Notify the SS that an update to the procedure and/or revision is required in WTS.

4.6.1.3 Select the "Equipment ID" field and press F9.

4.6.1.3.1 Select "VE BiD RPCK" **OR**
"VE DiD RPCK," as appropriate.

4.6.2 Ensure the name of Operator 1 (data generator) is auto-populated.

4.6.3 Select the "Operator 2" field and press F9.

4.6.3.1 Select the name of Operator 2 (data verifier).

4.6.4 Select the "General" tab.

4.6.4.1 Select the "Layers of Confinement" field
AND enter the number of layers of confinement.

4.6.4.2 Select the "Closure Method" field
AND select correct closure method.

4.6.4.3 Observe the "Rigid Liner Present?" field populates "No."

4.6.5 Select the "Source Container" tab.

NOTE: *The source container is the container that the waste was generated from, such as the waste box. Identifying the source container is important to ensure the proper characterization of the waste and to maintain traceability.*

4.6.5.1 **IF** there is a source container(s),
THEN perform the following:

4.6.5.1.1 Select "Yes" in the "Is there a source container?" field.

4.6.5.1.2 Manually enter the source container number(s), in the appropriate field.

4.6.5.1.3 Press the "Enter" key.

4.6.5.1.4 Observe that the correct location and IDC are displayed for the source container.

4.6.5.1.5 **IF** adding additional source container(s),
THEN REPEAT Steps 4.6.5.1.2 through 4.6.5.1.4, as applicable.

4.6.5.1.6 **IF** no additional source containers are added,
THEN select the field of the previous source container entry.

4.6.5.2 **IF** the source of the waste was **NOT** a container,
THEN select "No" in the "Is there a source container?" field
AND enter a comment in the "IDC Verification" tab "Visual Exam Comment" field detailing the source or origin of the waste.

NOTE: *Waste not meeting any acceptance criterion or requirement for shipment to WIPP is prohibited.*

4.6.5.3 **IF** at any point in time the waste presented for VE does **NOT** meet WIPP acceptance requirements,
THEN STOP
AND notify the SS and VEE.

4.6.5.4 **WHEN** acceptance requirements have been satisfied,
THEN proceed with examination.

4.6.6 Ensure the absence of prohibited items and conditions (as listed in Exhibit 4) as the waste is presented for examination.

4.6.6.1 **WHEN** this condition is met,
THEN proceed with completion of the WTS form.

(MP-TRUW-8.1; CCP-PO-003; HWMA/RCRA Permit)

4.6.7 Select the "Liquid" tab.

NOTE: *The selection of a "No" response in the "Liquids Present?" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

4.6.7.1 Select "No" in the "Liquids Present?" field.

4.6.8 Select the "Contents 1" tab.

NOTE 1: *The selection of "No" in response to the "Sharp Objects?" question will cause the "Are Sharp Objects Protected?" field to auto-populate a "Yes" response.*

NOTE 2: *In accordance with Exhibit 4, the "Sharp Objects?" subject field includes heavy items that are not blocked or braced.*

4.6.8.1 **IF** sharp objects are **NOT** present,
THEN select "No" in the "Sharp Objects?" field.

4.6.8.1.1 Ensure the "Are Sharp Objects Protected?" field populates "Yes."

4.6.8.2 **IF** sharp objects are present,
THEN select "Yes" in the "Sharp Objects?" field.

4.6.8.2.1 Select "No" in the "Are Sharp Objects Protected?" field.

4.6.8.3 Select "No" in the "Prohibited Compressed Gas Present?" field.

NOTE: *Mercury in a liquid form is prohibited from supercompaction. Elemental mercury is segregated and treated prior to packaging.*

4.6.8.4 Select "No" in the "Mercury Contaminated >1000 PPM" field.

4.6.8.5 Select "No" in the "Explosives Present?" field.

NOTE: *Polychlorinated biphenyls are not processed through the Supercompactor.*

4.6.8.6 **IF** PCB-contaminated waste is **NOT** present,
THEN select "No" in the "PCBs Present?" field.

4.6.8.7 **IF** PCB-contaminated waste is present,
THEN STOP work
AND notify the SS/VEE.

4.6.8.8 Select "No" in the "Pyrophorics Present?" field.

4.6.8.9 Select "No" in the "Corrosives, Ignitables, or Reactives Present?" field.

4.6.9 Select the "Contents 2" tab.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any liquid.*

4.6.9.1 **IF** wet cell batteries are **NOT** present,
THEN select "No" in the "Wet Cell Batteries Present?" field.

4.6.9.2 **IF** WIPP-acceptable wet cell batteries are present,
THEN select "Yes" in the "Wet Cell Batteries Present?" field
AND enter the appropriate comment in the field to the right of the entry.

NOTE 1: *Entries of beryllium into WTS include the physical form (fines, metal pieces).*

(CCP-PO-003)

NOTE 2: *Beryllium is entered separately in the container inventory for reporting and tracking purposes, as applicable*.

4.6.9.3 **IF** beryllium contaminants are **NOT** present,
THEN select "No" in the "Beryllium Contaminants Present?" field.

4.6.9.4 **IF** beryllium contaminants are present,
THEN STOP work
AND notify the SS/VEE.

4.6.9.5 Select "No" in the "Hazardous-Only Waste Present?" field.

4.6.9.6 Select "No" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field.

4.6.9.7 Select "No" in the "Sealed containers over 4 liters?" field.

4.6.10 Select the "IDC Verification" tab.

4.6.10.1 **IF** IDC is correct,
THEN select "Yes" in the "Is IDC Correct?" field.

4.6.10.2 **IF** IDC is **NOT** correct,
THEN select "No" in the "Is IDC Correct?" field.

4.6.10.2.1 Enter "Recommended IDC" in the "Recommended IDC" field.

4.6.10.2.2 Enter comments in the "IDC Change Reason" field.

NOTE: *During examination, all the contents of the waste container, including all waste items, packaging materials, and waste material parameters are identified to provide an inventory list of the waste container contents.*

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

4.6.11 Enter a complete description of the waste as remaining waste by weight percent in the "Visual Exam Comment" field.

(MP-TRUW-8.1)

4.6.12 Select the "Waste Params" button.

NOTE: *The "Total Percentage" for the Waste Parameter(s) selected equals 100% .and will reflect the waste description provided in Step 4.6.11*.

4.6.12.1 Select the appropriate waste parameter(s) in the "Remaining Contents of Container" table (e.g., 100% cellulosics).

4.6.12.2 **IF** entering additional waste items by weight or volume,
THEN select the waste from the appropriate pick list, as applicable.

NOTE 1: *The notation of the items in the following step is not a WIPP requirement. The presence of any of these items is entered into the "Waste Material Items" table as waste items by weight or volume in the event that assay reveals the waste to be a candidate for LLW treatment and/or disposal.*

NOTE 2: *Appendix C has additional prohibited and restricted items which may be visible.*

4.6.13 **IF** any of the following items are present in the waste,
THEN ensure the items are accounted for in the waste inventory, as applicable:

- Etiological agents (i.e., blood, medical waste)
- Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)
- Animal carcasses
- Asbestos
- Batteries (other than wet cell)
- Graphite
- Lab pack
- Lead (identify if elemental)
- Other.

4.6.13.1 See Appendix C for list of items, descriptions, and additional information/examples.

4.6.14 **IF** no additional waste items need to be added,
THEN select SAVE
AND GO TO Step 4.6.18.

4.6.15 **IF** a waste item is **NOT** included in the "Waste Material Items" lists, **THEN** select the "Add material items" button in the "Remaining Contents of Container" block, as applicable.

4.6.15.1 Enter a brief description of the waste item in the "Description" field.

4.6.15.2 Select the "Item Type" field
AND select "Weight," or "Volume," as appropriate.

4.6.15.3 **IF** entering waste items by weight,
THEN enter the weight of the item.

4.6.15.4 **IF** entering item(s) by volume,
THEN obtain available reference data
AND enter the weight (per unit volume) from available reference data, or as provided by the VEE.

4.6.15.5 Select the "Quantity" field and enter the number of units.

NOTE: *The "Total Percentage" for each item entered equals 100%*.

4.6.15.6 Select the "Percentage" field opposite the correct "Parameter" field(s)
AND enter the appropriate waste parameter(s) by weight percent.

4.6.15.6.1 Select the next editable field to display the "Total Percentage."

4.6.15.7 Select the "SAVE" button.

4.6.15.8 **IF** entering additional items,
THEN select the "NEW ITEM" button
AND REPEAT Steps 4.6.15.1 through 4.6.15.7 for each additional item, as necessary.

4.6.15.9 Select the "EXIT" button.

4.6.16 Select the SAVE button.

4.6.17 Enter any additional comments about the VE in the "Visual Exam Comment" field, as applicable.

4.6.18 Select "General" tab.

4.6.18.1 Select the "Fill Factor" field and enter the fill factor, using Exhibit 3 as a guide.

4.6.19 Operator 1: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.6.20 Operator 2: After witnessing the VE/Packaging event, review the data for completeness and accuracy.

4.6.21 Operator 1 (data generator): E-sign & Save the WTS record for approval of the data and drum loading.

4.6.22 Operator 2 (data verifier): E-sign & Save the WTS record for approval of the data and drum loading.

4.6.23 Verify that the VE date populates after both operators E-sign the data.

4.6.24 Close the batch by performing the following:

4.6.24.1 Select the "BATCH" button on the "Visual Examination" screen.

4.6.24.2 Select the "CLOSE" button on the "Batch Details" screen.

4.6.24.3 E-sign and save the record.

4.7 Post-Job Review

4.7.1 SS: Perform a post-job review in accordance with MP-COPS 9.17, if necessary.

4.8 Abnormal and Infrequent Operations

NOTE: *The following steps are performed when the catch pan and/or slings were added after a VE event, either prior to OR after assay.*

4.8.1 **IF** a catch pan or sling must be added to a damaged drum
AND the drum has a gross weight or has a valid assay,
THEN perform the following:

NOTE: *The RVU will add the weight of the catch pan or slings to the gross weight of the* puck *(see def.) as packaging.*

4.8.1.1 **GO TO** Section 4.5 and perform the applicable steps to add the catch pan and/or slings to the drum inventory as packaging material.

4.8.2 **IF** a catch pan must be added to a damaged drum
AND the drum does **NOT** have a gross weight or a valid assay (indicated by a "Pending Waste Calc" Analysis Status),
THEN perform the following:

4.8.2.1 Access the VE Boxline screen on WTS.

4.8.2.1.1 Enter the container ID and press F8.

4.8.2.1.2 Select the "Operator 2" field and press F9
AND select the name of Operator 2.

4.8.2.1.3 Verify all data previously entered is complete and correct.

4.8.2.1.4 Select the "Waste Params" button
AND enter the catch pan(s) in the "Packaging Materials, Material Item" block.

4.8.2.1.5 Select Save.

4.8.3 Enter a comment in the Visual Exam "Comment" field that a catch pan was added to the waste parameters.

4.8.4 Operator 1 (data generator): E-sign & Save the WTS record for approval of the data.

4.8.5 Operator 2 (data verifier): E-sign & Save the WTS record for approval of the data.

4.8.6 **IF** the drum is severely damaged and must be repackaged into a new drum,
THEN perform the following:

4.8.6.1 Close any open VE boxline (VEB) batches to ensure the repackaged drum is **NOT** placed in an existing open VE boxline batch or with any undamaged containers.

NOTE: *Visual Examination expert may support the VEO in creating a new VEB batch analysis in the new VEB batch from the original non-reported analysis of the repackaged container, as necessary. The new analysis from the repackaged container is accumulated with other repackaged containers to lessen impacts on the validation process.*

4.8.7 **GO TO** Section 4.6 to complete the task.

5.0 DEFINITIONS

Container. A unit for characterization subject to radiography or direct VE. Typically, this is also identified as the "outermost container" (e.g., 55-, 83-/85-, or 100-gallon drum) in the context of radiography or direct VE.

Criticality working requirement. Term used to designate requirements of the AMWTP Criticality Safety Evaluations.

Item description code. A three-character alphanumeric code that describes each waste form matrix.

Liquid, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing VE of the waste. This term can be implemented consistently during characterization regardless of waste type.

Low-level waste. (1) Radioactive waste that is not high-level waste, spent nuclear fuel, *transuranic waste* (see def.), byproduct material (as defined in section 11.e.[2] of the Atomic Energy Act of 1954, as amended), or naturally occurring radioactive material. (2) Waste that contains a radioactive contaminant and is not classified as high-level waste, TRU waste, spent nuclear fuel, or by-product material by DOE Order 435.1, Radioactive Waste Management.

Packaging material. Packaging material consists of the drum, 90-mil liner, and the two outermost layers of confinement that are used as liners for the waste container.

Puck. A compacted container of characterized waste. The pucks are loaded directly into the *puck drum* (see def.).

Puck drum. 100-gallon drum used as an overpack container for the compacted waste (pucks).

Secondary waste. Waste generated from normal operations and/or closure processes (e.g., personal protective equipment [PPE], floor sweepings, rags/wipes from routine maintenance or decontamination activities, and equipment).

Summary Category Group. Group that relates to the final physical form of the waste consisting of three broad categories: (1) *S3000 - Homogeneous solids* (see def.), (2) *S4000 - Soil/Gravel* (see def.), and (3) *S5000 – Debris* (see def.).

Summary Category S3000 – Homogeneous solids. Homogeneous solids are defined as solid materials, excluding soil, that do not meet the New Mexico Environmental Department criteria for classification as debris (20.4.1.800 NMAC (incorporating 40 CFR §268.2[g] and [h])). Included in the series of homogeneous solids are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this summary category group (SCG) based on the specific waste stream types and final waste form. This SCG is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 % by volume homogenous solids.

Summary Category S4000 – Soils/Gravel. This SCG includes S4000 waste streams that are at least 50 % t by volume soil/gravel. This SCG is expected to contain toxic metals.

Summary Category S5000 – Debris. This SCG includes heterogeneous waste that is at least 50 percent by volume materials that meet the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2 [g]). Debris means solid material exceeding a 2.36 in. (60 millimeter) particle size that is intended for disposal and that is:

- A manufactured object
- Plant or animal matter
- Natural geologic material.

An item smaller than 2.36 in. in size may be considered debris, if the debris is a manufactured object and if it is not in the category of S3000 or S4000 material.

Transuranic waste. Radioactive waste containing more than 100 nanoCuries (nCi) (3700 becquerels) of *transuranic isotope content* (see def.) per gram of waste, except for (1) high-level radioactive waste, (2) waste that the Secretary of Energy has determined, with the concurrence of the administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR 191, Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes, disposal regulations, or (3) waste that the Nuclear Regulatory Commision has approved for disposal on a case basis in accordance with 10 CFR 61, Licensing Requirements for Land Disposal of Radioactive Waste.

Unknown waste. Waste for which there is no information regarding the generation process, hazardous constituents present, or other information.

Visual examination. (1) A WIPP approved characterization process performed to visually examine the waste to ensure compliance with WIPP WAP, WIPP CH-WAC, and CCP CH-TRAMPAC. (2) Constitutes performing a physical examination of the contents to identify and verify physical form, and the presence or absence of prohibited items. (3) Requires either: (a) the presence and signature approval of two individuals qualified as VEOs, or (b) an audio/video record accompanying the signature of one such qualified individual and one other individual, a VEE available for support.

Visual examination of newly generated waste. Activity for characterizing NGW at the point of generation using VE. This examination requires two operations technicians qualified in VE, with a VEE available for support. This includes VE NGW closure.

Visual examination of non-boxline legacy waste contaiers. An activity performed to examine and characterize the contents of a waste container for the purpose of confirming or supplementing AK data. This examination requires the presence and disposition concurrence of two individuals qualified as VEOs, and may be recorded on audio/video media. Waste containers that (1) have no AK data to support the characterization of the waste, (2) are identified as an "*unknown waste* (see def.)," (3) have been examined by RTR (yielding incomplete, inconclusive, or suspect data), or (4) any other waste container determined to be suitable for VE, may be characterized using this method.

Waste characterization. The characterization methods include AK and may also include, as necessary, headspace-gas sampling and analysis, radiography, VE, and homogeneous waste sampling and analysis.

Waste matrix code. A system of categorizing wastes with similar physical and chemical properties.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents and that are generated from a single process or activity. (Hazardous Waste Facility Permit, Attachment C).

Waste Tracking System. System comprised of positioned and hand-held barcode readers and an interactive database designed to track waste items and containers with their associated characterization data from point of retrieval to dispatch to WIPP.

6.0 REFERENCES

(1) 10 CFR 61, Licensing Requirements for Land Disposal of Radioactive Waste

(2) 40 CFR 191, Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes

(3) 40 CFR 264.177, Special Requirements for Incompatible Wastes.

(4) 40 CFR 268, Land Disposal Restrictions

(5) AMWTP HWMA/RCRA Permit

(6) Atomic Energy Act of 1954

(7) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(8) DOE O 435.1, Radioactive Waste Management

(9) IDAPA 58.01.05.008, Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities

(10) Hazardous Waste Facility Permit, Attachment C

(11) INST-OI-24, Packaging Radioactive Waste

(12) INST-OI-34, Non-Facility Visual Examination Operations

(13) LST-LLW-04, LLW/MLLW Prohibited and Restricted Items List

(14) MP-COPS 9.17, Performing Pre-Job Briefings and Post-Job Reviews.

(15) MP-DOCS-18.2, Records Management

(16) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(17) MP-TRUW-8.2, Quality Assurance Project Plan

(18) RPT-NFCS-09, Criticality Safety Analysis Involving the Use of Liquid Sorbents and Immobilizing Agents

(19) RPT-TRUW-05, Waste Matrix Code Reference Manual

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-FOI-17 Case File	Non-permanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Data Management System (WTS) records	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project

8.0 EXHIBITS

Exhibit 1 – Waste Material Parameter Descriptions

Exhibit 2 – Parameters and Weights of Commonly Identified Items

Exhibit 3 – Fill Factor

Exhibit 4 – List of TRU Prohibited Items

Exhibit 5 – Volume Conversions for Liquids in 55-gallon Drums

Exhibit 6 – Volumes of Cylinders

Exhibit 7 – Common Liquid Measurements and Conversions

Exhibit 8 – V^2 Nominal Density Guidance Table

Exhibit 9 – Volume Conversion Table, Cubic Inches to Pints

Exhibit 10 – Volume conversion for Partial 55-gal Drum (in pints)

Exhibit 11 – Visual Examination Equipment IDs

Exhibit 12 – Description of Liners

Exhibit 1 – Waste Material Parameter Descriptions

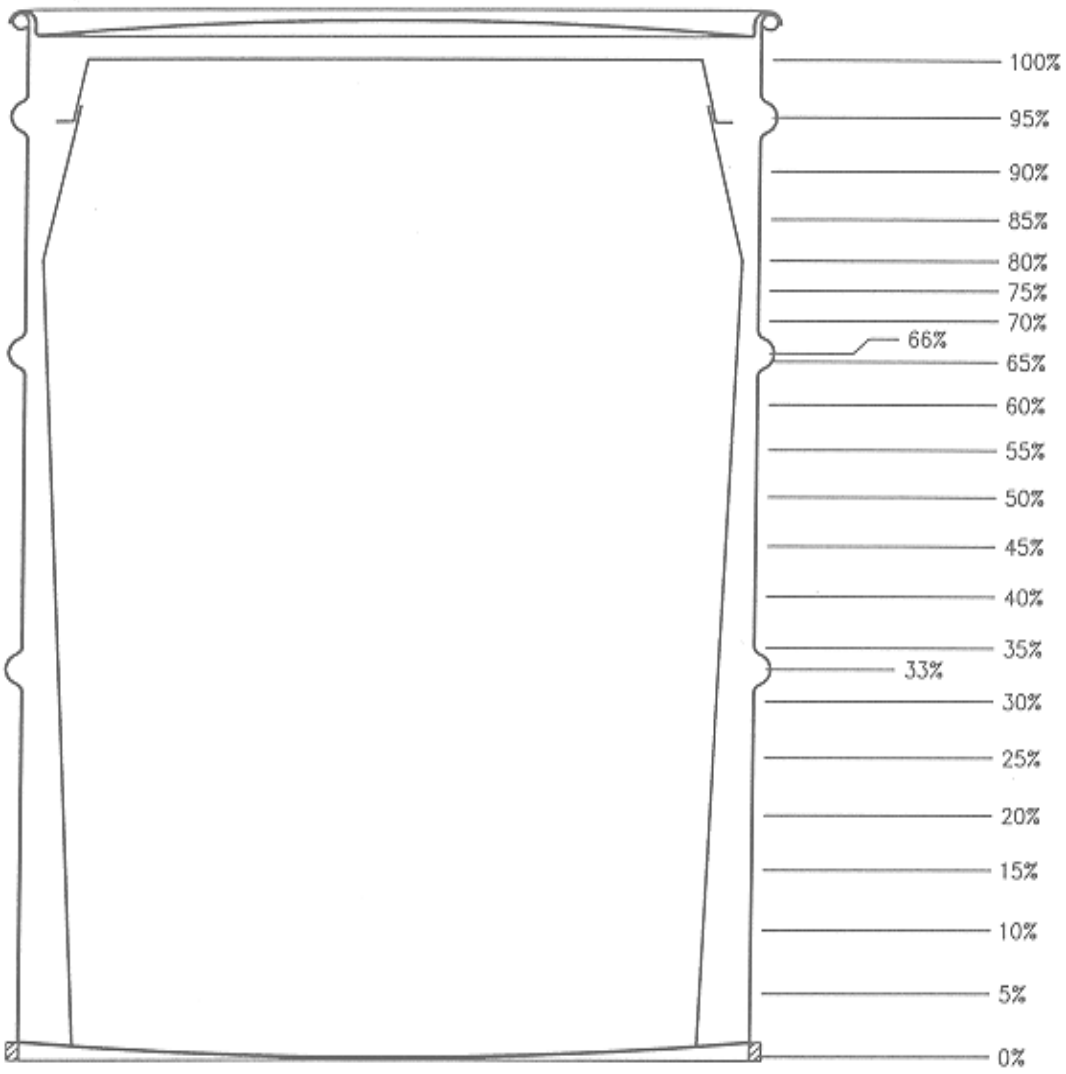
Waste Material Parameter	Help Description
Iron-based metals/alloys	Iron and steel alloys in the waste; does not include the waste container materials
Aluminum-based metals/alloys	Aluminum or aluminum-based alloys in the waste material
Other metals	All other metals found in the waste materials
Other inorganic materials	Nonmetallic inorganic waste, including concrete, glass, firebrick, ceramics, sand, and inorganic absorbents
Cellulosics	Materials generally derived from high polymer plant carbohydrates. Examples are paper, cardboard, wood, cloth, etc.
Rubber	Natural or man-made elastic latex materials. Examples are surgeons' gloves, leaded rubber gloves, etc.
Plastics (waste materials)	Generally man-made materials often derived from petroleum feedstock. Examples are polyethylene, polyvinyl chloride, etc.
Organic matrix	Cemented organic resins, solidified organic liquids, and sludge
Inorganic matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, inorganic particulate, etc.
Soil/gravel	Generally consists of naturally-occurring soil/gravel contaminated with inorganic waste materials
Steel (packaging materials)	208-L (55-gal.) drums
Plastics (packaging materials)	90-mil polyethylene drum liner and plastic bags

Exhibit 2 – Parameters and Weights of Commonly Identified Items (EXAMPLE)**

Item	Weight	Waste Material Parameter
55-gal drum (17C)	See WTS List of Container Weights	Steel (Packaging materials)
90 mil liner (Type I, II, III, IV)	See WTS List of Liner Weights	Plastic (Packaging materials)
O-ring plastic bag found in sludge, organic setups, etc.	4 lb	Plastic (Packaging materials)
Drum plastic bag	1 lb	Plastic (Packaging materials)
Plastic bag for waste	1/4 lb	Plastic (Waste materials)
Cardboard liner (graphite mold waste)	4 lb	Cellulosics
Fiber pack	6 lb	Cellulosics
Box fiberboard liner	15 lb	Cellulosics
Box plastic liner	5 lb	Plastic (Packaging materials)
Lead Brick 2 by 4 by 8 in.	25 lb	Other metals
Leaded Rubber Glove	5.5 lb	Rubber
Leaded Rubber Apron	5.25 lb	Rubber
Liquids (Water)	8 lb/gal (1 lb/pint)*	
Drum Lead-liner: (1/8 in. thick, 28 in. high, by 72 in. long) (0.4 lb/in.^{3})	100 lb	Other metals
Drum Lead-liner: (1/16 in. thick, 28-in. high by 72-in. long)	50 lb	Other metals
Vermiculite (95 gm/liter)	0.9 lb/gal (0.125 lb/pint)	Other inorganics
Oil-Dri (404 gm/liter)	3.36 lb/gal (0.42 lb/pint)	Other inorganics
Poly Bottles (1 gal)	1 lb	Plastics (Waste materials)
Metal Can	½ lb	Iron-based metals/alloys
Drum Stub bag	2 lb	Plastic Packaging (materials)
Cured Cement	9 lb/gal (1.125 lb/pint)	Other Inorganic Materials
Uncured Cement	24 lb/gal (3 lb/pint)	Other Inorganic Materials
Aquaset	9.6 lb/gal (1.21 lb/pint)	Other Inorganic Materials

* Waste Parameter depends on source of liquid organic or inorganic.
**This is not a complete list.

Exhibit 3 – Fill Factor



Percentage is to be based on all waste contents (including bags and absorbent) in the drum.

Exhibit 4 – List of TRU Prohibited Items

Prohibited Item	Comments
Liquids	Liquid waste is not acceptable at WIPP. Observable liquids containing PCBs are prohibited at WIPP. Liquid in the quantities delineated here is acceptable. Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE). Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited. Containers with Hazardous Waste Number U134 assigned shall have no observable liquid. Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
Compressed Gases	Typically, aerosol cans, gas bottles or cylinders that cannot be verified to be physically vented (e.g., a drilled hole, a removed relief valve).
Corrosives/Reactives/ Ignitables Present	Waste exhibiting the characteristic of ignitability, corrosivity or reactivity.
Explosives	Examples include ammunition, dynamite, black powder, detonators, nitroglycerine, urea nitrate, picric acid.
Wastes with PCBs not authorized under an EPA PCB waste disposal authorization	Light ballasts and transformers are potential sources of PCBs in much of the waste. PCB items commingled (in direct contact with, or displaying evidence of cross-contamination) with other observable liquids are prohibited.
Non-radionuclide Pyrophoric Materials	Example of Pyrophoric radionuclides are: metallic plutonium, americium. Examples of non-radionuclide pyrophoric materials or materials/waste that may cause a pyrophoric type event are: organic peroxides, sodium metal, and chlorates.
Sealed Containers greater than 4 liters	Lids that are screwed into place or taped should be considered sealed. Lids that do not form an “air tight” seal do not need to be considered as a sealed container
Non-Mixed Hazardous Waste	Hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes).
Waste incompatible with backfill, seal and panel closure material, shipping container materials or other wastes	Excessive rust, brittle materials, excessive corrosion, evidence of reaction in the waste are all potential sources for evidence that the waste is not compatible with backfill, packaging, or shipping container.
Sharp or heavy items not blocked or braced	Sharp items that have a reasonable potential to puncture the payload container shall be treated or protected prior to shipment. (The presence of a properly assembled rigid or fiberboard liner is considered as one method of providing protection. Padding, when applicable is also an acceptable method of providing protection.) Heavy items shall be blocked, braced, or suitably packaged to provide puncture protection for the payload containers packaging these objects.

(HWMA/RCRA Permit; MP-TRUW-8.2; CCP-PO-003)

Exhibit 5 – Volume Conversions for Liquids in 55-gallon Drums

Volume Conversions for Liquid			
Inches	Gallons	Pints	Pounds
1.0	1.5	12	12
1.5	2.25	18	18
2.0	3.0	24	24
2.5	3.75	30	30
3.0	4.50	36	36
3.5	5.25	42	42
4.0	6.0	48	48
4.5	6.75	54	54
5.0	7.5	60	60
5.5	8.25	66	66
6.0	9.0	72	72
6.5	9.75	78	78
7.0	10.5	84	84
7.5	11.25	90	90
8.0	12.0	96	96
8.5	12.75	102	102
9.0	13.5	108	108
9.5	14.25	114	114
10.0	15.0	120	120

Exhibit 6 – Volumes of Cylinders

Volumes of Cylinders (pints)												
Diameter (in.)												
Height (in.)	1	2	3	4	5	6	7	8	9	10	11	12
1	0.03	0.11	0.24	0.44	0.68	0.98	1.33	1.74	2.20	2.72	3.29	3.92
2	0.05	0.22	0.49	0.87	1.36	1.96	2.67	3.48	4.41	5.44	6.58	7.83
3	0.08	0.33	0.73	1.31	2.04	2.94	4.00	5.22	6.61	8.16	9.87	11.75
4	0.11	0.44	0.98	1.74	2.72	3.92	5.33	6.96	8.81	10.88	13.16	15.67
5	0.14	0.54	1.22	2.18	3.40	4.90	6.66	8.70	11.02	13.60	16.46	19.58
6	0.16	0.65	1.47	2.61	4.08	5.88	8.00	10.44	13.22	16.32	19.75	23.50
7	0.19	0.76	1.71	3.05	4.76	6.85	9.33	12.19	15.42	19.04	23.04	27.42
8	0.22	0.87	1.96	3.48	5.44	7.83	10.66	13.93	17.63	21.76	26.33	31.33
9	0.24	0.98	2.20	3.29	6.12	8.81	12.00	15.67	19.83	24.48	29.62	35.25
10	0.27	1.09	2.45	4.35	6.80	9.793	13.33	17.41	22.03	27.20	32.91	39.17
11	0.30	1.20	2.69	4.79	7.48	10.77	14.66	19.15	24.24	29.92	36.20	43.08
12	0.33	1.31	2.94	5.22	8.16	11.75	15.99	20.89	26.44	32.64	39.49	47.00
13	0.35	1.41	3.18	5.66	8.84	12.73	17.33	22.63	28.64	35.36	42.79	50.92
14	0.38	1.52	3.43	6.09	9.52	13.71	18.66	24.37	30.84	38.08	46.08	54.84
15	0.41	1.63	3.67	6.53	10.20	14.69	19.99	26.11	33.05	40.80	49.37	58.75

Exhibit 7 – Common Liquid Measurements and Conversions

Liquid Measurements	
1.	3 tsp = 1 tbsp
2.	4 tbsp = ¼ cup
3.	2 cups = 1 pint
4.	4 cups = 1 qt
5.	2 pints = 1 qt
6.	8 pints = 1 gal
7.	4 quarts = 1 gal
8.	Pints ×.0.473 = liters
9.	Milliliters × 1000 = liters
10.	1 pint = 1 lb

Conversions		
Unit	Conversions to Pints	Weight (lb)
1 teaspoon	0.01	0.01
1 tablespoon	0.03	0.03
1/4 cup	0.13	0.13
1/3 cup	0.17	0.17
1 cup	0.5	0.5
1 pint	1	1
1 quart	2	2
1 gal	8	8

Exhibit 8 – V^2 Nominal Density Guidance Table

Material	Density (kg/L)	References
Aluminum	3.0	1, 2
Cement	2.0	1
Cardboard (fiber board)	0.8	5
Copper	9.0	1, 2
Fiber board (insulating)	0.8	4
Fire Brick (90% aluminum oxide)	3.0	4
Glass	2.0	3
Glass, Bulk Density	2.0	3
Glass, Raschig Rings (0.06 kg/ring)	0.6	4
Graphite, Bulk Density	0.5	3
Gravel	2.0	3
Iron	7.5	2
Lead	11.0	1, 2
Plastic (e.g., 10 ml liner material)	0.9-1.0	Calculated
Plastic (e.g., 90 ml heavy rigid liner material)	0.9-1.0	Calculated
Rubber	0.9-2.0	2
Sand	2.0	3
Sludge	1.0-1.5	Common Knowledge
Soil	1.0-1.8	2
Stainless Steel	8.0	1
Steel	8.0	1, 2
Tantalum	17.0	2
Wood (fir, oak, pine, avg.)	1.0	3
Water	1.0	1.3

The actual density of specific metals or wood types may vary due to the type of wood or the composition of the metal alloy.
Water has a nominal density of 1kg/L
1 kilogram = 2.2 pounds

References

1. Shigley, J. E., Mechanical Engineering Design, 3rd ed. 636
2. Marks Standard Handbook for Mechanical Engineers, 8th ed. 6-60/61
3. Perry, John H., Chemical Engineers Handbook, 3rd ed. 1549-52
4. Harbison-Walker Refractories Co., Technical Bulletin 12, HU
5. Rocky Flats procedure, 4-I19-NDT-00569

Exhibit 9 – Volume Conversion Table, Cubic Inches to Pints

in^3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	.04	.07	.10	.14	.17	.21	.24	.28	.31	.35	.38	.42	.45	.49	.52	.55	.59	.62	.66	.69	.73	.76
2	.07	.14	.21	.28	.35	.42	.49	.55	.62	.69	.76	.83	.9	.97	1.04	1.12	1.18	1.25	1.32	1.41.395	1.45	1.52
3	.1	.17	.31	.42	.52	.62	73	.83	.94	1.04	1.14	1.25	1.35	1.45	1.56	1.66	1.77	1.87	1.97	2.08	2.18	2.29
4	.14	.28	.42	.55	.69	.83	.97	1.12	1.25	1.39	1.52	1.66	1.8	1.94	2.08	2.22	2.36	2.49	2.63	2.77	2.91	3.05
5	.17	.35	.52	.69	.87	1.04	1.21	1.39	1.56	1.73	1.9	2.08	2.25	2.42	2.6	2.77	2.94	3.12	3.29	3.46	3.64	3.81
6	.21	.42	.62	.83	1.04	1.25	1.45	1.66	1.87	2.08	2.29	2.49	2.7	2.9	3.12	3.32	3.53	3.74	3.95	4.16	4.36	4.57
7	.24	.49	.73	.97	1.21	1.45	1.7	1.94	2.19	2.42	2.67	2.91	3.15	3.39	3.64	3.88	4.12	4.36	4.61	4.85	5.09	5.33
8	.28	.55	.83	1.11	1.39	1.66	1.94	2.22	2.49	2.77	3.05	3.32	3.61	3.88	4.16	4.43	4.71	4.99	5.26	5.54	5.82	6.1
9	.31	.62	.94	1.25	1.56	1.87	2.18	2.49	2.81	3.12	3.43	3.74	4.05	4.36	4.68	4.99	5.3	5.61	5.92	6.23	6.66	6.86
10	.35	.69	1.04	1.39	1.73	2.08	2.42	2.77	3.12	3.46	3.81	4.16	4.5	4.85	5.19	5.54	5.89	6.23	6.58	6.92	7.27	7.62
11	.38	.76	1.14	1.52	1.9	2.29	2.67	3.05	3.43	3.81	4.19	4.57	4.95	5.33	5.71	6.1	6.48	6.86	7.24	7.62	8	8.38
12	.42	.83	1.25	1.66	2.08	2.49	2.91	3.32	3.74	4.16	4.57	4.99	5.4	5.82	6.23	6.65	7.06	7.48	7.98	8.31	8.73	9.14
13	.45	.9	1.35	1.8	2.25	2.7	3.15	3.61	4.05	4.5	4.95	5.4	5.85	6.3	6.75	7.2	7.65	8.1	8.55	9	9.45	9.9
14	.49	.97	1.45	1.94	2.42	2.9	3.39	3.88	4.36	4.85	5.33	5.82	6.3	6.79	7.27	7.76	8.24	8.72	9.21	9.7	10.18	10.67
15	.52	1.04	1.56	2.08	2.6	3.12	3.64	4.16	4.68	5.19	5.71	6.23	6.75	7.27	7.79	8.31	8.83	9.35	9.87	10.39	10.91	11.43
16	.55	1.12	1.66	2.22	2.77	3.32	3.88	4.43	4.99	5.54	6.1	6.65	7.2	7.76	8.31	8.87	9.42	9.97	10.53	11.08	11.64	12.19
17	.59	1.18	1.77	2.36	2.94	3.53	4.12	4.71	5.3	5.89	6.48	7.06	7.65	8.24	8.83	9.42	10	10.6	11.18	11.77	12.36	12.95
18	.62	1.25	1.87	2.49	3.12	3.74	4.36	4.99	5.61	6.23	6.86	7.48	8.1	8.72	9.35	9.97	10.6	11.22	11.84	12.47	13.09	13.71
19	.66	1.32	1.97	2.63	3.29	3.95	4.61	5.26	5.92	6.58	7.24	7.9	8.55	9.21	9.87	10.53	11.18	11.84	12.5	13.16	13.82	14.48
20	.69	1.39	2.08	2.77	3.46	4.16	4.85	5.54	6.23	6.92	7.62	8.31	9	9.7	10.39	11.08	11.77	12.47	13.16	13.85	14.55	15.24
21	.73	1.45	2.18	2.91	3.64	4.36	5.09	5.82	6.55	7.27	8	8.73	9.45	10.18	10.91	11.64	12.36	13.09	13.82	14.55	15.27	16
22	.76	1.52	2.29	3.05	3.81	4.57	5.33	6.1	6.86	7.62	8.38	9.14	9.9	10.67	11.43	12.19	12.95	13.71	14.48	15.24	16	16.76

Multiply the cross-section volume in the table by the height of the object to get the volume of the object in pints. The cross-section volume is based on a height of 1 inch.

Exhibit 10 – Volume Conversion for Partial 55-Gallon Drum (in pints)

Volume	1/8	1/4	1/3	½	2/3	3/4
1st chime	18	36	48	73	97	109
2nd chime	37	74	97	147	198	221
Full drum	55	110	145	220	295	330

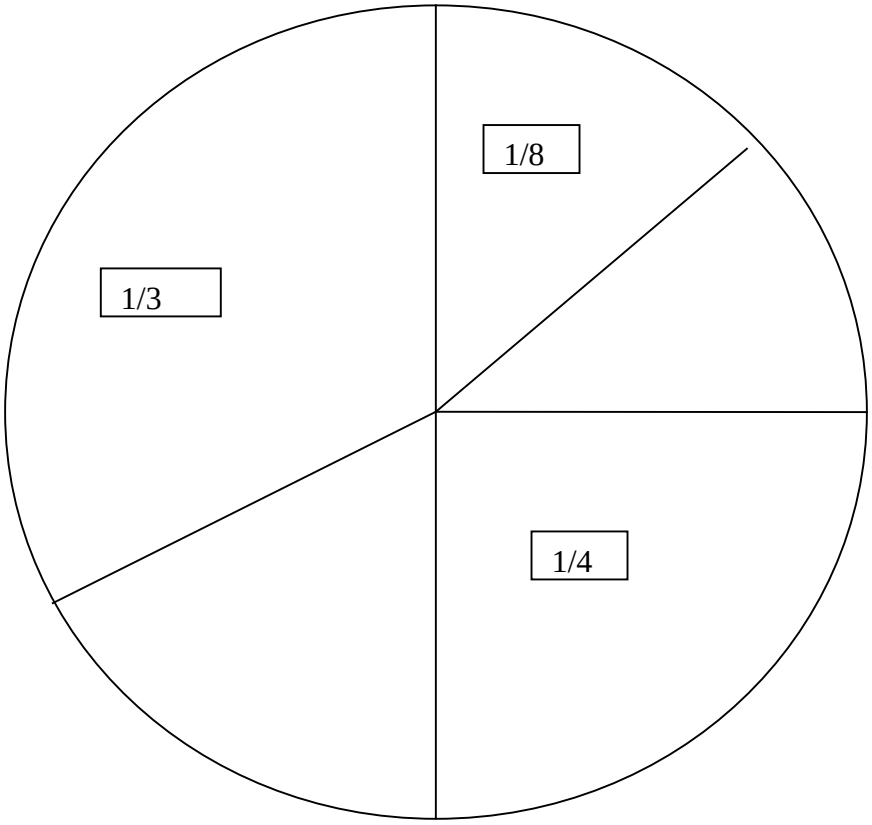


Exhibit 11 – Visual Examination Equipment IDs

WIPP #	Site Equipment #	Procedure Number Method Equipment Description	Components	Software
9VE2	Z-250-VEC	Procedure – INST-OI-34, Non-Facility Visual Examination Operations Method – BN-VE2 Description –Visual Examination of Legacy Waste Containers (VEC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE3	Z-250-VNC	Procedure – INST-OI-34 Method – BN-VE3 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE6	FAC - VNC	Procedure – INST-FOI-17 Method – BN-VE6 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE7	VE BID RPCK	Procedure – INST-FOI-17 Method – BN-VE7 Description – Visual Examination of Boxline Legacy Waste (VEB) – Box to a drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE8	VE DID RPCK	Procedure – INST-FOI-17 Method – BN-VE8 Description – Visual Examination of Legacy Waste (VEB) – Drum to a new drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)

Exhibit 12 – Description of Liners

Liner Type	Description
I	Straight wall liner with a rolled lip to the inside
II	Tapered shoulder liner with a slip fit cap, closure sealed with metal band
III	Tapered shoulder liner with a metal bolt closure ring
IV	Straight wall liner with a slip fit lid
Plastic	Plastic liner approximately 35 mil in thickness
Other	Any other type of liner type that is not identified above

9.0 APPENDICES

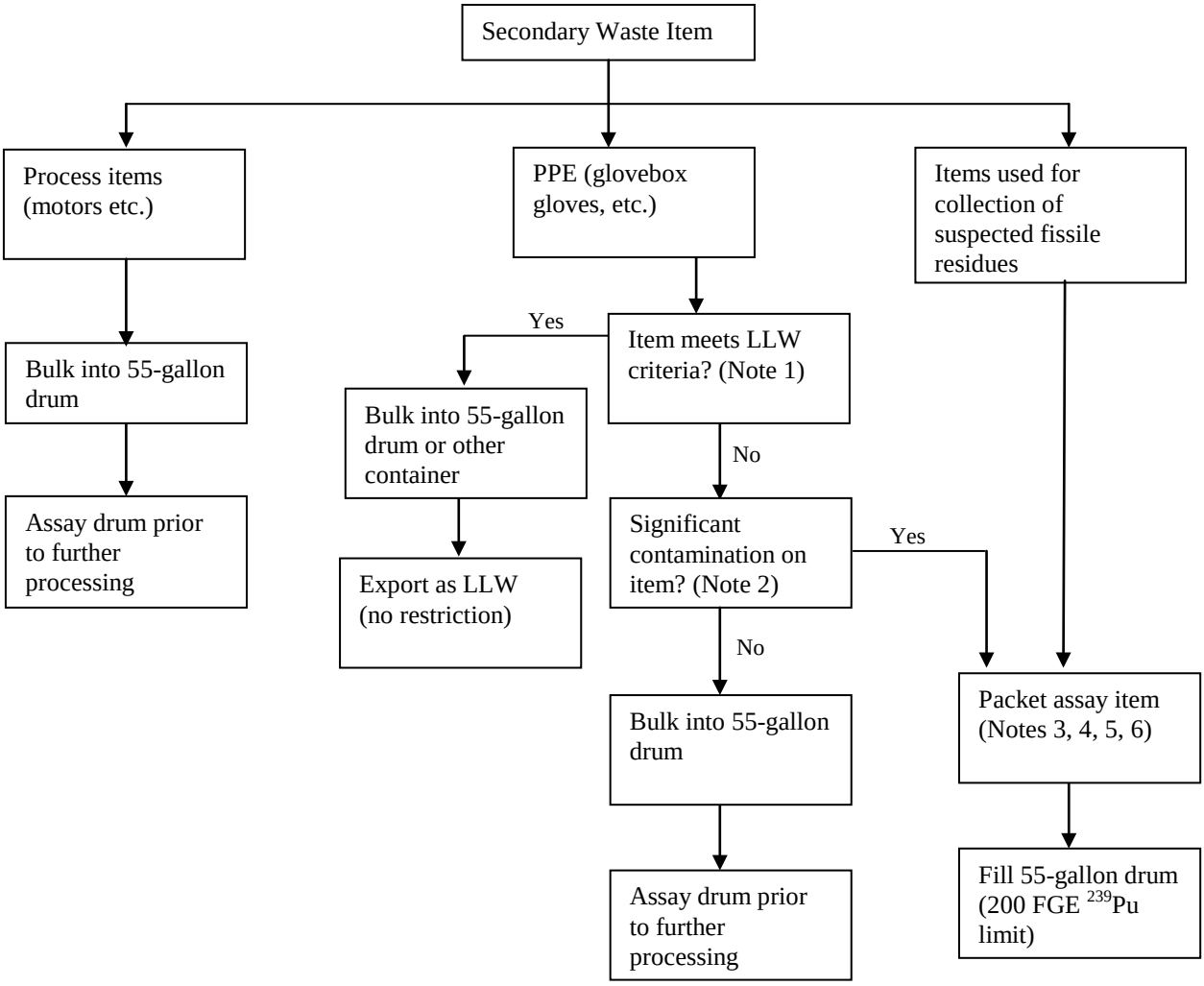
Appendix A – Schematic of Criticality Control for Secondary Waste

Appendix B – Waste Incompatibility by Item Description Code

Appendix C – List of LLW/MLLW Prohibited and Restricted Items (taken from LST-LLW-04)

Appendix D – Revision Log

Appendix A – Schematic of Criticality Control for Secondary Waste



Notes:

1. Via smearing, hand-held instruments or other methods.
2. Visible contamination.
3. Packet assay systems shall be performance verified not less than once per day when being used.
4. The total error associated with the packet assay result shall be doubled and added to the measured FGE ^{239} Pu.
5. The validity of the packet assay system calibration shall be periodically verified in accordance with the manufacturer's guidelines.
6. Metal items cannot be packet-assayed (the special case waste is the exception).

Appendix B – Waste Incompatibility by Item Description Code

Incompatible waste includes the following groups:

Waste Type	General Waste Description	
Acids	ID-150:	Laboratory Waste
	MD-805:	Asbestos Filters
	MD-813:	Glass Filters and Fiberglass
	MD-834:	High Level Acid
	RF-335:	Absolute 8 x 8 Filters (Treatment Only)
	RF-338:	Insulation and CWS Filter Media (Treatment Only)
	RF-241:	Americium Process Residue
Oxidizers	ID-005:	Evaporator Salts Retrieved RF
	AE-100:	General Plant Waste
	MD-805:	Asbestos Filters
	MD-811:	Evaporator and Dissolver Sludge
	MD-813:	Glass Filters and Fiberglass
	MD-834:	High Level Acid
	RF-005:	Evaporated Salts
	RF-241:	Americium Process Residue
	RF-430:	Resin, Ion Column-Unleached
	RF-745:	Pits 11 & 12 Evaporator Salts
	SD-703:	Inorganic Sludge
Caustics	MD-835:	High Level Caustic

Waste Type	General Waste Description
Halogenated Organics	RF-003: Organic Setups, Oil Solids RF-700: OASIS Waste RF-801: Solidified Organics BN-501: AMWTP PCB Soil BN-511: PCB Organic Homogeneous Solids [Treatment Only] BN-514: Absorbed Organic Squeezants [Treatment Only] BN-518: TRU Supercompactor Squeezants BN-526: Sample Returns BN-528: TRU PCB Liquids Generated During Retrieval BN-603: Absorbed Analytical Liquids BN-605: Absorbed Liquids TSCA/PCB [Treatment Only] RF-743: Pits 11 & 12 Organic Setups RF-746: Pits 11 & 12 Pad Oil Drums SD-704: Organic Sludge SD-705: Debris SD-706: Soil UN-00A: Undefined homogeneous solids
Unknowns	PC-000: "True" or post-RTR unknown
Pyrophoric Materials	RF-751: Roaster Oxide RF-999: Potential Roaster Oxide
Heterogeneous Debris	RF-998: Heterogeneous Debris
Heterogeneous Debris	IW-179: Early Waste Retrieval Heterogeneous Debris

(HWMA/RCRA Permit)

Separation or physical segregation requirements consist of the following:

1. Containers of acids with 5 gal or more of liquids must be separated or physically segregated from caustics, and containers of acids with any liquids must be separated or physically segregated from halogenated organics.

2. Containers of caustics with 5 gal or more of liquids must be separated or physically segregated from acids, and containers of caustics with any liquids must be separated or physically segregated from halogenated organics.
3. Containers of oxidizers with any liquids must be separated or physically segregated from halogenated organics.
4. Containers of halogenated organics with any liquids must be separated or physically segregated from acids or oxidizers, and caustics.
5. Containers with unknown waste must be separated by physical distance.

A container holding mixed waste that is incompatible with any waste or any material stored nearby shall be segregated (separated by berm, dike, or wall).

(HWMA/RCRA Permit)

Appendix C –
List of LLW/MLLW Prohibited and Restricted Items
(taken from LST-LLW-04)

Prohibited/Restricted Item	Additional Information/Examples
Prohibited/Restricted Item	**Additional Information/Examples**
Aerosol Cans	Description should specify evidence of puncture or venting and a volume estimate of liquid if present.
Animal Carcasses	Describe type and amount.
Asbestos	Items which may contain asbestos (floor tiles, insulation, etc.) Describe type and amount.
Batteries	Describe type such as D-Cell, C-Cell, Wet Cell (Lead-Acid), etc. and amount. If liquids are present, identify and quantify.
Beryllium*	Identify and describe. Provide form and amount by volume
Chelating agents*	Describe type such as EDTA and amount
Classified waste*	Describe type and amount
Compressed Gases	Describe type such as pressurized manifold component or other sealed vessel and amount. Includes pressurized gases and gas cylinders. Besides typical gas cylinder items to consider, include propane gas, butane gas, BIC lighter, etc. Includes fire extinguishers, describe size, content, and amount. Identify if vented.
Compressors/Refrigerator Systems	Identify and describe
D001-Ignitable, D002-Corrosive, D003--Reactive	Identify applicable code(s)
Etiological Agents*	Identify type and amountAlso includes other - biological, pathogenic, infectious materials
Explosives	Describe suspect items such as ammunition, dynamite, etc. and amount
Fire extinguishers	Describe size , content, and amount
Graphite	Form and amount by volume
Impenetrable Objects	Unable to completely identify and verify contents. Identify % by volume impenetrable.

Prohibited/Restricted Item	Additional Information/Examples
Lab Packs	Lab packs are small containers of chemicals placed into a larger container surrounded by absorbent. Describe if chemicals are present.
Lead	If present, is it elemental? Provide general dimensions, description, and quantity of lead
Liquids	Describe if liquid is free or containerized, viscosity description, and volume of liquid
Mercury	Describe (contained – thermometers, switches, uncontained, etc.) Provide volume, identify if it is elemental.
Particulates*	Describe type, amount, and if material is containerized
PCBs	Describe size and type of item such as ballast, capacitor, or transformer. Identify if solid or liquid. If liquid is present, provide a volume estimate of liquid
Pyrophoric waste*	Describe type such as metal hydrides, metal powders, etc and amount
Sharps	Describe type such as needles, razors, knives, heavy bulky metal, etc.
Sealed Sources	Identify and describe
Solid Uranium/Thorium*	Identify, describe, provide volume or mass.
Tanks/Vessels	Estimate volume capacity and percent full (of tank). If viscosity of liquid can be identified, provide viscosity description.
Valves	(attached or not attached to an object) If attached, describe the object.

*The presence of these items in the waste container may not be evident during RTR or VE. The presence or absence of these items in each container is determined by application of AK/process knowledge or other methods during waste verification.

Appendix D – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	3/30/04	All	DCR-2814, Initial issue.
1	8/16/04	All	DCR-3244.Change Effective Date from "Pending DOE Approval of Treatment Facility Operations Startup" to 8/16/04.
2	08/26/04	All	DCR-3169. Added Section 4.11, NCR handling into procedure. Editorial changes. Combined Miscertification VE and VE in lieu of RTR. Made changes to allow for integration of production and facility VE forms. Section 4.24: add: "leather palm-lined" Kevlar gloves…" Incorporate WIPP Comments. Minor editorial corrections.
3	12/20/04	All All All Various	DCR-3317. Incorporate WIPP Comments from Revision 2. Incorporate WIPP Comment Resolutions from Revision 3. Incorporate Internal Review comments from 3B. Incorporate Minor Comments from CBFO from 3C.
4	03/9/05	P14 and P17 P17	DCR-4189. Add NOTES to resolve CAR 12731 (CBFO Audit A-05-08) Incorporate WIPP comments from 4A.
5	03/31/05	Various	DCR-4239. Revise step 4.3.21 to correct Table numbers. Update Exhibit 5, 1st row, 2nd column, Add two new steps (4.3.28, 4.5.8, Revise step 4.6.45, Revise **NOTE** 1 on Page 40 of 70.
6	04/21/05	Various	DCR-4245. Delete duplicate precautions and limitations and add text to NOTES as appropriate.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	6/28/05	Various	DCR-4313. Incorporated changes in WTS and the use of new Equipment IDs. Incorporated Blue Sheet requirements for Contract Transition. Incorporate FC-1. Incorporate CBFO Comment Resolution
7 FC-1	9/1/05	Various	DCR-4622. Updated document to reflect changes made to RPT-TRUW-05
7 FC-2	TBD	Various	DCR-4582. Deletion of Appendix C and references to Appendix C. Add new references to DVD Recorder PRV-LX-1 and Sony Video Cassette Recorder Operating Instructions.
8	1/17/06	Various	DCR-4622. Incorporate FC-1 (DCR-4529) and FC-2 (DCR-4582). Incorporate WTS changes for handling of PCBS, clarification, including sequence of events into procedure. Update document to current formatting standards of MP-DOCS-18.1. Resolve review comments. Apply consistency with OI-34, as appropriate.
9	2/14/06	Various	DCR-4792. Add an off normal condition section to address the handling of damaged containers. Correct verbiage to allow the handing of drums with no liner.
10	3/30/06	All	DCR-4921. Made formatting corrections to resolve CAR-21421.
10FC-1	5/1/06	Pg. 9	DCR-5017. Drums come into Facility under disposition of Facility accept after RTR.
10FC-2	08/10/06	Various	DCR-5156. Container repackaging changes.
11	08/30/06	Various	DCR-5266. Correct header and incorporate FCs-1, -2. Edit to change ES&H to ESS&H.
11FC-1	9/13/06	Pg 33	DCR-5336. Correct Step 4.2.5.4.

AMWTP FACILITY OPERATIONS INSTRUCTION		
INST-FOI-17, Rev. 25	Issued: 07/16/12	Effective: 07/17/12
Facility Visual Examination Operations		

Revision Number	Date Approved	Pages Affected	Description of Revision
11FC-2	10/24/06	Pg 88	DCR-5494. Updated Exhibit 5, List of Prohibited items.
11FC-3	10/24/06	Pg 88	DCR-5502. Revised “compressed gasses” row.
12	12/11/06	Various	DCR-5377. Incorporate FC-1, 2, 3 Added steps for NTS WAC Criteria, Steps for ISMS implementation and update Exhibit 4 for consistency with RPT-TRUW-05.
13	01/23/07	All	DCR-5649. Document rewrite to reorganize approach to standards-based, requirements-based instruction. Incorporate changes to implement 311 permit modification requirements. (Exhibit 5 corrected to be Exhibit 4).
13FC-1	1/25/07	8	DCR 5709. Delete 3.2.5 and renumber 3.2.6 to 3.2.5.
13FC-2	1/29/07	35	DCR-5725. Delete STL/VEE. Change Ensure to Verify. Add step 4.6.19.1. If the disposition or Process code is not correct, **THEN** request the STL or VEE to correct the Task list accordingly.
14	07/02/07	Various	DCR-5755. Incorporate field changes.
14 FC-1	10/17/07	Various	DCR-6509. Update steps to reflect current process.
14 FC-2	12/19/07	Various	DCR-6657. Clarify requirements for remediation of liquids. WAP clarification. Deleting Note 2.
14 FC-3	1/3/08	Pg 61 Exhibit 4	DCR-6681. Clarified Exhibit 4 Liquids comments to be consistent with INST-OI-12.
15	04/08/08	Various	DCR-6564. Incorporated DCRs-6509, 6657, and 6681 to make field changes permanent. Replaced MP-TRUW-8.3 with CCP-PO-003.
15 FC-1	04/10/08	36	DCR-7003. Change to steps 4.6.1 through 4.6.4 for ICS Mimic Screen.

Revision Number	Date Approved	Pages Affected	Description of Revision
15 FC-2	06/05/08	Step 4.11.2.4	DCR-7219. Add "**AND** ensure all container barcode ID numbers are the same." CAR-38637.
15 FC 3	08/13/08	15, 49, 52, iv	DCR-7448. Implement WAP changes for Limited Visual Examination.
16	10/24/08	Various	DCR-7019. Complete document rewrite to update for scope of activity, Roles and Responsibilities, WTS instructions, references and streamline in accordance with VE Task Analysis, including removing Sec. 4.8, edited per MP-DOCS-18.1.
16 FC-1	11/12/08	30, 70	DCR-7739. Add new step to Sec. 4.7 (RTR/VE update), Note, and step in Sec. 4.2 to support WTS changes SCR # 3297.
16 FC-2	11/18/08	7, 58, 67, 69, 79	DCR-7785. Clarify steps for proper flow and WTS changes.
16 FC-3	11/25/08	5	DCR-7794. Delete Step 3.2.4.
16 FC-4	12/04/08	Various	DCR-7820. Correct steps for new General Waste Equipment ID. Add step to verify VE date clarify step for remediation for treating liquids.
16 FC-5	1/7/09	79, D4	DCR-7836. Change document to line up with WTS enhancements.
17	1/21/09	Various	DCR-7908. Incorporated DCRs-7785, 7794, 7820, and 7836 to make field changes permanent.
17 FC-1	2/05/09	B1	DCR-7996. Rolldown of requirements for chemical compatibility AI #38606.
17 FC-2	8/31/09	Pg 68	DCR-8545. Change "repack" to "RTR/VE update".
18	11/03/09	Various	DCR-8673. Incorporated FC DCRs 7996 and 8545. Added new note to Section 4.7, new Step 4.7.5 and moved Step 4.7.8 before existing Step 4.7.7. Made changes to Section 4.9.

AMWTP FACILITY OPERATIONS INSTRUCTION		
INST-FOI-17, Rev. 25	Issued: 07/16/12	Effective: 07/17/12
Facility Visual Examination Operations		

Revision Number	Date Approved	Pages Affected	Description of Revision
19	06/10/10	Various	DCR-9220. Made changes for establishing consistency and implementing current WIPP Permit modifications.
20	12/17/10	Various	DCR-9583. Incorporated the WIPP Renewal Request and Waste Acceptance Criteria changes.
21	02/03/11	Pg B1	DCR-9776. Added additional IDCs to Appendix B.
22	03/09/11	3.2.8	DCR-9956. Removed word "previously" as part of annual TSR update to SAC 5.2.7.
22 FC-1	03/17/11	Various	DCR-9981. Delete F8 function form certain sections.
22 FC-2	03/16/11	All	DCR-9989. Removed Controlled Activity designator.
23	08/29/11	Various	DCR-10094. Incorporate FC-1 and FC-2 (DCRs-9989, 9981). Deleted IDC RF-095 from Unknowns to provide consistency with RPT-ESH-014.
24	12/29/11	Various	DCR-10383. Added prohibited/restricted items of concern for the LLW/MLLW program. Incorporated ITG-Bluesheet-013.
25	07/11/12	Entire	DCR-11020. Entire document rewrite to remove material that does not pertain or is not applicable to INST-FOI-17, remove screen shots, to allow better flow and performance of the document and in accordance with Conduct of Operations.

Supercompactor and Post-Compaction Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11377.*) 08/12/12

Jeremy Hampton
Treatment Manager

Date

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-FOI-20, Rev. 36	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs

Supercompactor and Post-Compaction Operations

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AMWTP INSTRUCTION		
INST-FOI-20, Rev. 36	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs

Supercompactor and Post-Compaction Operations

1.0 PURPOSE/SCOPE

This document provides instruction for monitoring automated sequencing and manual and/or infrequent operations of the Supercompactor and post-compaction. Systems 410 In-feed Glovebox, 412 Supercompactor, 420 Puck Handling Glovebox, 423 Waste Drum In-feed, and 422 Product Drum Import and Export are covered in this procedure. Normal operations are controlled by the *Integrated Control System* (ICS; see def.).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operator/Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction and performs limited radiological surveys.
Shift Supervisor (SS)	• Performs visual inspections and *independent verifications* (see def.) • Ensures value discrepancies are logged in eSOMS, or equivalent, as an open item until the MCA is reset • Reviews, signs, and dates Form-1914, Squeezant Jar Tracking within Supercompactor Glovebox, as necessary • Checks puck placement against *plant optimization system* (POS; see def.) and ensures POS is running • Performs ICS trigger/release event and ensures puck is updated to correct product drum • Notifies Nuclear Criticality Safety when a *criticality working requirement* (CWR; see def.) or *nuclear material safety limit* (NMSL) noncompliance is discovered • Resets *mass controlled area* (MCA; see def.) inventory • Notifies Environmental • Generates *nonconformance reports* (NCRs) • Logs changes to MODE in SS log, or eSOMS equivalent • Update status boards with the OT.

Performer	Responsibilities
Plant Shift Manager (PSM)	• Identifies and enters barcode information • Ensure value discrepancy is logged in eSOMS, or equivalent, as an open item until the MCA is reset • Performs visual inspections and independent verifications • Reviews, signs, and dates Form-1914, as necessary • Checks puck placement against POS and ensures POS is running • Performs ICS trigger/release event and ensures puck is updated to correct product drum • Notifies Nuclear Criticality Safety when a CWR or NMSL NCR is discovered.
Visual Examiner (VE)	• Performs visual examinations on newly generated waste (NGW) packages • Assigns rigging materials to puck during the removal of damaged or oversized pucks from System 412 or 420.
Nuclear Criticality Safety	• Approves written recovery plan.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 The maximum daily throughput of the Supercompactor is 150 drums (8,250 gal) per day.

(HWMA/RCRA Permit)

3.1.2 The *MCA for the Supercompactor* (see def.) glovebox shall be controlled to 425 FGE.

(RPT-NFCS-03, CWR 7.3.2)

3.1.3 Alternative methods for hazardous energy control are used in this procedure for servicing tasks that are routine, repetitive, and integral to the use of the equipment for production in accordance with MP-COPS-9.20.

3.1.4 After light curtain is "broken" personnel shall verify that equipment inside the 410, 412, and 420 glovebox does not operate by ICS.

(ANSI B11.20-1991 [R1996])

3.1.5 The Supercompactor glovebox shall be inspected and, if necessary, cleaned (criticality cleanout) prior to exceeding the MCA mass limit.

(RPT-NFCS-03, CWR 7.3.5)

3.2 Prerequisites

3.2.1 The following RPT-TSR-03, Technical Safety Requirements (herein referred to as TSR), surveillance requirements have been verified to be within periodicity and are logged in eSOMS or equivalent (Supercompactor control room).

Surveillance Requirement	Performed Per	Periodicity
FTS operability SRs (SR 4.4.1 through SR 4.4.7)	INST-MI-1033, FTS Interlock/Alarm Functions Surveillance Checks	Annually
Criticality Incident Detection and Alarm System (CIDAS) preregulators (SR 4.5.1)	INST-MI-1018, CIDAS Surveillance Checks	Semi-Annually.
CIDAS operability check (SR 4.5.2)	INST-MI-1018	Annually
CIDAS power supply test (SR 4.5.3)	INST-MI-1018	Annually

(RPT-TSR-03, SRs 4.4.1 through 4.4.7 and SRs 4.5.1 through 4.5.3)

3.2.2 Before performing fissile material operations within the Supercompactor glovebox MCA or squeezant handling in the Supercompactor room, the CIDAS is in *OPERATION MODE* (see def.).

(RPT-TSR-03, LCO 3.5)

3.2.3 PDIT-410011, PDIT-410017, and PDIT-420004 indicate within -0.9 and -1.8 inches water gage.

3.2.4 Prior to performing Supercompactor operations, the glovebox fire suppression system is operational or compensatory measures, approved by the Advanced Mixed Waste Treatment Project (AMWTP) Fire Marshal, are in place.

3.2.5 The CWRs directly controlled by operators/supervisors are posted in the Supercompactor floor area and in control room.

(RPT-NFCS-03, CWR 7.3.10)

NOTE: *Minimum staffing levels are a safety significant function necessary to cease operations when no automatic function exists to place the operation in the safest condition/configuration.*

3.2.6 When fissile material operations are occurring in the Supercompactor glovebox MCA, at least one of the following individuals are in the Advanced Mixed Waste Treatment Facility (AMWTF):

- One qualified SS
- One qualified Supercompactor OT
- One qualified PSM.

(RPT-TSR-03, SAC 5.2.10)

3.2.7 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

4.1 Systems 410, 412, 420, 422, and 423 Operations

NOTE: *Sections 4.1.1 through 4.1.5 may be performed in parallel as necessary to process multiple drums.*

4.1.1 Virtual Product Drum Creation

NOTE 1: *Off-site waste has a purple background, No Source* Lower Limit of Detection *(LLD; see def.) has a green background, and over limit has a red background on the POS screens.*

NOTE 2: *Virtual product drums (VPDs) are ≤200 FGE and ≤995 lb.*

(RPT-NFCS-03, NMSL 7.2.2; RPT-NFCS-07, NMSL 7.1 #5)
(MP-TRUW-8.1; CCP-PO-003)

4.1.1.1 **WHEN** building and running a VPD,
THEN use **ONE** of the following:

- Transuranic (TRU) VPD—Central Conveyor System (CCS) drums add up to >100 nCi/g
- CCS/LLD VPD—Drums add up to >250 nCi/g and LLD drums have a source container
- LLD VPD—LLDs with or without a source container
- Mixed low-level waste (MLLW) VPD—All CCS drums with <100 nCi/g
- Direct feed (DF)-TRU VPD—Drums are either lined or unlined, are not mixed with CCS drums, >100 nCi/g
- DF-MLLW VPD—Drums are lined or unlined, <100 nCi/g, are not mixed with CCS drums
- DF/CCS VPD—Unlined DF and CCS drums >100 nCi/g.

NOTE: *Building of CCS/TRU VPD with a <LLD puck is the least desirable option when creating VPDs and should not be created unless it is necessary.*

4.1.1.1.1 **IF** building a CCS/TRU VPD with a <LLD puck is necessary,
THEN perform the following:

4.1.1.1.1.1 Navigate to the AMWTP "Container" screen in WTS **AND** check for the MD item description code (IDC) in the "Source Container" of the VE button for each drum in the VPD.

4.1.1.1.1.1.1 **IF** there are any container(s) with MD IDC in the VPD,
THEN ensure ^{238}Pu does not exceed 3g for the total VPD.

NOTE: *During VPD creation, >80 ^{239}Pu equivalent curies (PE-Ci) drums may be encountered. The following steps are acceptable for processing these drums through Supercompaction without generating an NCR prior to compaction.*

4.1.1.1.2 **IF** building a VPD that is >80PE-Ci,
THEN ensure it will be <150 PE-Ci when final product drum is created.

(RPT-DSA-02)

4.1.1.1.2.1 **IF** single drum (silver or DF) is >150 PE-Ci,
THEN contact the SS and do NOT place into VPD.

4.1.1.1.2.1.1 SS: Contact Nuclear Safety Lead.

4.1.1.1.2.1.2 SS: Initiate TYPE-3 Assay NCR for single drum >150 PE-Ci against drum.

(RPT-DSA-02)

4.1.2 General Operations of Systems 410, 412, and 420

NOTE 1: *The following steps may be performed in parallel as necessary to process multiple drums.*

NOTE 2: *Drums entering the Supercompactor are limited to ≤200 FGE.*

(RPT-NFCS-03, CWR 7.3.1)

4.1.2.1 Monitor, answer prompts, and perform the following as necessary:

4.1.2.1.1 Ensure drum barcode label and POS match for incoming drum into 410.

4.1.2.1.2 Check addition of container FGE in the *Waste Tracking System* (WTS; see def.)
AND log on Form-1608, FGE Values, or electronic equivalent.

(RPT-NFCS-07, CWR 7.2.1 #12; RPT-NFCS-03, CWR 7.3.2)

4.1.2.1.3 Check addition of container FGE in Fissile Tracking System (FTS)
AND log on Form-1608 or electronic equivalent.

(RPT-NFCS-07, CWR 7.2.1 #12; RPT- NFCS-03, CWR 7.3.2)

4.1.2.1.4 **IF** FTS and WTS values **DO NOT** match
AND discrepancy has **NOT** been accounted for,
THEN STOP WORK
AND notify SS or PSM.

4.1.2.1.4.1 SS or PSM: Ensure value discrepancy is logged in eSOMS, or equivalent, as an open item until the MCA is reset.

4.1.2.1.5 Ensure product drum label matches ICS location prior to opening bagless transfer port (BTP) door.

4.1.2.1.6 Ensure puck placement matches POS VPD.

4.1.2.1.7 Ensure Supercompactor Load Out form has auto-populated prior to release of product drum from the port.

4.1.3 Leaving the Control Room Unmanned

4.1.3.1 **WHEN** leaving the control room unmanned
AND the 412 system is **NOT** being operated from the floor,
THEN at a minimum perform the following:

4.1.3.1.1 Engage locks on mould or shut down compactor.

4.1.3.1.2 Turn off hydraulic pumps, as necessary.

4.1.4 General Operations of System 423

NOTE: *A minimum of three drums is maintained inside the Venturi at all times.*

WARNING

In automatic mode, the conveyors can move at any time in either forward or reverse direction, causing injury to personnel.

4.1.4.1 Stay clear of moving conveyors.

4.1.4.2 **IF** System 423 trailer needs to be unloaded,
THEN perform the following:

4.1.4.2.1 Place Clean Zone 1 Overhead Door (423MT101) in MAINTENANCE.

4.1.4.2.2 Monitor the unloading process.

4.1.4.2.3 **WHEN** drums are staged in clean room,
THEN perform the following:

4.1.4.2.3.1 **IF** barcode reader (BCR) did **NOT** read container ID,
THEN perform independent verification map update with container ID
AND status code 999.

(RPT-NFCS-03, CWR 7.3.3)

4.1.4.2.3.2 Evaluate IDCs against Appendix C, Waste Incompatibility.

4.1.4.2.3.2.1 **IF** incompatible waste is introduced into the process,
THEN perform criticality cleanout prior to introduction to Supercompactor MCA.

(HWMA/RCRA Permit)

4.1.4.2.3.3 Perform preliminary checks and promote, as necessary, in accordance with INST-FOI-27, FTS Operations.

4.1.4.2.4 Place Clean Zone 1 Overhead Door (423MT101) in AUTO.

4.1.4.3 Monitor automatic sequence of drum movement.

4.1.4.4 **IF** drum is destined for drum waste handling enclosure (DWHE),
THEN monitor and answer prompts as necessary for the following sequence:

4.1.4.4.1 Check addition of container FGE in FTS **AND** log on Form-1608 or electronic equivalent.

(RPT-NFCS-07, CWR 7.2.1 #12)

4.1.4.4.2 Check addition of container FGE in WTS **AND** log on Form-1608 or electronic equivalent.

(RPT-NFCS-07, CWR 7.2.1 #12)

4.1.4.4.3 **IF** FTS and WTS values **DO NOT** match **AND** discrepancy has **NOT** been accounted for,
THEN STOP WORK
AND notify SS or PSM.

4.1.4.4.3.1 SS or PSM: Ensure value discrepancy is logged in eSOMS, or equivalent, as an open item until the MCA is reset.

4.1.5 General Operations of System 422

WARNING

In automatic mode, the conveyors can move at any time in either forward or reverse direction, causing injury to personnel.

4.1.5.1 Stay clear of moving conveyors.

4.1.5.2 Monitor, answer prompts, and perform the following as necessary:

NOTE: *The following sub-steps may be performed in parallel as necessary to process multiple drums.*

4.1.5.2.1 Monitor product drum unloading.

4.1.5.2.2 Ensure plug has been removed **AND** prepare drum for docking to System 420 glovebox per Appendix F, Product Drum Preparation and Lidding Guide.

4.1.5.2.3 Record torque wrench calibration due dates in eSOMS, or equivalent, once per shift when in use.

4.1.5.2.4 Install lid on drum per Appendix F **AND** ensure the following:

- Drum lid torqued to 55–60 ft·lb
- Nut is tightened to unthreaded side of eyebolt
- Filter is torqued to 180 in. lb/15 ft·lb.

4.1.5.2.5 SS: **IF** drum is <100 nCi/g and contains a >100 nCi/g puck,
THEN generate a TYPE-1 NCR against drum,

4.1.5.2.5.1 Ensure drum has an NCR tag.

4.1.5.2.6 **IF** product drum is >80PE-Ci,
THEN contact the SS.

NOTE: *Initiation of TYPE-3 Assay NCR is required prior to product drum being moved out of WMF-676. The BN designator is not required (only the eight numeric container ID number is entered).*

4.1.5.2.6.1 SS: Initiate TYPE-3 Assay NCR for product drum >80 PE-Ci against the drum.

4.1.5.2.6.1.1 Ensure drum has an NCR tag applied.

4.1.5.2.7 Apply appropriate labels as shown in Appendix E, 100 Gallon Product Drum Labels.

(HWMA/RCRA Permit; MP-TRUW-8.1; CCP-PO-003)

4.1.5.2.8 Complete WTS Supercompactor load out form.

(MP-TRUW-8.1; CCP-PO-003)

4.1.5.2.9 Monitor further drum movements in System 422.

4.1.5.2.10 Load product drums in trailer, as necessary.

4.2 Criticality Cleanout and/or Squeezant Removal and Bag-Out

NOTE 1: *When squeezant removal or bag out is routine and not part of a criticality cleanout, Supercompactor operations may continue.*

NOTE 2: *All waste containers are maintained closed except when allowed material is being placed into them or being taken out of them.*

(RPT-NFCS-07, CWR 7.2.1 #7; HWMA/RCRA Permit)

NOTE 3: *The initial sparge cycle is 5 minutes. Additional sparge cycles of 1 minute are required between collection container filling events.*

NOTE 4: *Only opaque containers are used for liquid collection.*

(HWMA/RCRA Permit)

4.2.1 **IF** liquid is found in the sump,
THEN fill squeezant jar.

4.2.1.1 **IF** liquid has been added to squeezant jar,
THEN ensure Form-1914 has been generated
AND Columns 1 and 2 have been completed.

4.2.2 **IF** glovebox cleaning and bag-out is required,
THEN perform the following steps, as necessary:

NOTE: *The following steps may be performed in parallel as necessary to meet operational needs.*

4.2.2.1 Visually inspect/clean the following areas for debris:

- System 412 glovebox, from east edge of turntable to unload positions
- Lower mould (ram and mould)
- Puck recovery (trolley is rolled out for inspection underneath trolley)
- 420 glovebox (all pucks have been removed)
- Sump.

NOTE: *The maximum waste packet size the packet assay system in special case waste will assay is 11.8 in. in diameter by 13 in. high and no more than 50 lb.*

4.2.2.2 **WHEN** performing bag out,
THEN ensure the following steps are performed, as necessary:

4.2.2.2.1 VE: Perform VE on NGW package per INST-FOI-17, Facility Visual Examination Operations.

4.2.2.2.2 Handle spills per INST-OI-88, Spill/Leak Response and Cleanup.

(RPT-NFCS-07, CWR 7.2.5 # 22)

4.2.2.2.3 Double-bag all waste at the collection area.

4.2.2.2.4 Label squeezants jar(s) outermost bag with a "Packet" barcode label.

(HWMA/RCRA Permit)

4.2.2.2.4.1 Ensure only one sqeezant jar is included per "Packet" bag.

4.2.2.2.5 Label waste debris outermost bag with a "NGW Package" barcode label.

(HWMA/RCRA Permit)

4.2.2.2.6 **IF** squeezant jar(s) have been removed from the glovebox,
THEN ensure Columns 3 and 4 of Form-1914 have been completed for each jar.

(RPT-NFCS-03, CWR 7.3.7)

4.2.2.2.6.1 **IF** a discrepancy is found between Form-1914 and what was removed from the glovebox,
THEN STOP WORK
AND notify SS.

NOTE: *Squeezant packets can be placed in containers smaller than a 55-gal drum for transfer to a permitted storage drum (PSD) or processing. Temporary/interim storage of such transfer devices is not permitted.*

(RPT-NFCS-03, CWR 7.3.8)

4.2.2.3 Ensure containers that contain fissile materials associated with Supercompactor glovebox MCA are removed from the room
OR are sealed.

(RPT-NFCS-03, CWR 7.3.5.2)

4.2.2.4 **IF** bulk loading or placing individual packet(s)/NGW packages in a 55-gal drum within a criticality cleanout, **THEN** ensure the drum is prepared as follows:

4.2.2.4.1 Ensure the drum is a Skolnik or Myers steel 55-gal open-head drum marked DOT 7A TYPE A.

4.2.2.4.2 Ensure the drum is visually free of damage (e.g., holes, dents, rust).

4.2.2.4.3 Ensure the drum is empty and free of liquids prior to use.

4.2.2.4.4 Ensure the drum lid, gasket material, bung plug, drum ring, and drum bolt are in good condition and free of damage.

4.2.2.4.5 Ensure a NucFil-019SDS 3/4-in. bung filter and gasket are installed.

(HWMA/RCRA Permit)

4.2.2.5 **WHEN** bulk loading,
THEN place squeezants packets and NGW packages in separate drums.

(RPT-NFCS-03, CWR 7.3.6.1, 7.3.6.2, and 7.3.7; 1291-2004-001, CWR #3)

4.2.2.6 Ensure Form-1977, Drum Loaded from Supercompactor FGE Inventory Log (200 FGE Limit), is filled out.

4.2.2.6.1 Ensure a copy of Form-1914 for Squeezant Jars placed in PSD is attached to Form-1977.

NOTE: *Non-fissile items (e.g., gloves, packing material, tools) may remain in the Supercompactor glovebox after criticality cleanout.*

(RPT-NFCS-03, CWR 7.3.5.1)

4.2.3 OT and SS or PSM: **IF** performing a criticality cleanout
AND cleanout is complete,
THEN perform the following independent verifications:

4.2.3.1 Perform visual inspection of the Supercompactor glovebox areas identified in Step 4.2.2.1.

4.2.3.1.1 Ensure there are no pucks in the Supercompactor glovebox suite (including product drums).

(RPT-NFCS-03, CWR 7.3.5.5)

4.2.3.2 Ensure containers that contain fissile materials associated with Supercompactor glovebox MCA are removed from the room
OR are sealed.

(RPT-NFCS-03, CWR 7.3.5.2)

4.2.4 SS or PSM: Review, sign, and date Form-1914, as necessary.

4.2.5 **IF** squeezant jars are entered on Form-1914,
THEN query the packet ID in the AMWTP Container screen.

4.2.5.1 Enter the jar ID and sump cycle in the comments section.

4.2.5.2 Save the record.

4.2.5.3 **REPEAT** Step 4.2.5 as necessary for multiple containers.

4.2.6 Stop Sump Cycle.

4.2.7 **IF** squeezant jars are entered on Form-1914,
THEN enter Squeezant Jar barcode ID number(s) into the "Liquid Container" tab on the "Sump Management" screen of WTS.

4.2.8 Start new Sump Cycle.

NOTE: *The following steps satisfy the adequacy, independent verification, documentation, and resetting of the MCA for criticality working requirements associated with criticality cleanouts.*

(RPT-NFCS-03, CWR 7.3.5.3; RPT-NFCS-07, CWR 7.2.1 #14)

4.2.9 OT and SS or PSM: **IF** performing a criticality cleanout,
AND cleanout is complete,
THEN reset MCA inventory in WTS and FTS for the following amounts of debris left in the glovebox suite (including under System 410 rollers) to 8 FGE (roughly the size of a quart) or 25 FGE (roughly the size of a soccer ball):

(RPT-NFCS-03, CWR 7.3.3)

4.2.9.1 Select Criticality Zone conditions for WTS reset.

4.2.9.1.1 Select SC_IGB_2 for Boundary ID field.

4.2.9.1.2 Select Yes for Zone clean out has been completed field.

4.2.9.1.3 Select Update Zone.

4.2.9.1.4 Enter 8 or 25 (from above criteria) in New FGE Value field.

4.2.9.1.5 SS or PSM: **IF** concur with Area reset,
THEN enter user ID and e-signature personal identification number.

4.2.9.1.5.1 Ensure Comment field contains the following:

- Operator inputting new FGE value
- FGE value.

(RPT-NFCS-03, CWR 7.3.3 and 7.3.5.4)

4.2.9.1.6 SS or PSM: **IF** there is a discrepancy in area reset or FGE value,
THEN REPEAT Steps 4.2.9.1.1 through 4.2.9.1.5.1.

4.2.9.2 Reset FTS per INST-FOI-27.

(RPT-TSR-03, LCO 3.7; RPT-NFCS-03, CWR 7.3.5.4)

4.3 Manual and Infrequent Operations

NOTE 1: *Sections 4.3.1 through 4.3.6 may be performed as needed.*

NOTE 2: *Appendices in back for manual moves are Appendix A, Waste Tracking Maps; Appendix B, Tracking Status Codes; Appendix D, Handler Mast Positions.*

4.3.1 Remove Damaged or Oversized Puck from System 412 or 420

4.3.1.1 Abort 420 Master Scheduler
AND place system in MANUAL mode.

4.3.1.2 Create or modify VPD in POS assigning the damaged/oversized puck to the correct product drum, as necessary.

4.3.1.3 Sling puck in 412/420 glovebox.

4.3.1.4 Place puck in assigned product drum.

4.3.1.5 VE: Perform update assigning rigging materials to puck in accordance with INST-FOI-17.

4.3.1.6 Record puck number, product drum number, and rigging materials in eSOMS, or equivalent.

4.3.1.7 SS or PSM: Perform independent verification of map update placing puck in handler, if necessary.

4.3.1.8 Ensure VE update is complete.

4.3.1.9 SS or PSM: Check puck placement against POS
AND ensure POS is running.

4.3.1.10 SS or PSM: Perform ICS trigger/release event
AND ensure puck is updated to correct product drum.

4.3.2 FTS Interlock Fault

NOTE: *The drum grip fault (410-CY-030) is the actual FTS interlock.*

4.3.2.1 Notify the SS of the fault.

4.3.2.2 **IF** the barcode was **NOT** read by the FTS BCR,
THEN perform manual barcode entry on the FTS client in accordance with INST-FOI-27.

(RPT-TSR-03, LCO 3.7)

4.3.2.2.1 Clear drum handler fault
AND place system in auto.

4.3.2.2.2 Start sequence, as necessary.

4.3.2.3 **IF** the fault is due to a high FGE level in the MCA,
THEN STOP WORK
AND notify SS/PSM and Criticality Safety.

(RPT-NFCS-03, CWR 7.3.2, 7.3.9)

4.3.3 Manual WTS Barcode Entry

4.3.3.1 First Operator: Initiate and answer prompts indicated by ICS message.

4.3.3.2 Second Operator: Answer prompts indicated by ICS message.

(RPT-NFCS-03, CWR 7.3.3)

4.3.4 Recovery from Slipped Puck (Alarm AL-420-A715)

4.3.4.1 Notify SS.

4.3.4.2 **IF** the cause of alarm is due to debris blocking the photo eye,
THEN obtain SS guidance for path forward.

4.3.4.3 **IF** the cause of alarm is due to a slipped puck,
THEN perform the following:

4.3.4.3.1 Abort 420 Master Scheduler
AND place system in manual mode.

4.3.4.3.2 Reposition puck.

4.3.4.3.3 Re-pick puck in auto mode.

4.3.4.4 **IF** the alarm is caused by a slipped repositioned puck,
THEN GO TO Section 4.3.1 for slinging puck.

4.3.5 Tripped Impact Switches

CAUTION

Movement of the puck handler with the impact protection bypassed may damage equipment.

4.3.5.1 **WHEN** using pendant to move puck handler,
THEN ensure puck handler is in line of sight at all times.

NOTE: *This section is performed by at least two OTs: one in Electrical Room 222 and one in the Supercompactor floor area. Steps performed by the OT in the electrical room are identified as RM 222 and steps performed by the OT in the Supercompactor area are identified as OT. Steps that may be performed by either are not identified.*

4.3.5.2 Notify the SS.

4.3.5.3 RM 222: Obtain the key for the "Impact Protection Bypass Keylock" switch.

4.3.5.4 OT: Abort 420 Master Scheduler.

4.3.5.5 OT: Place system in manual mode.

4.3.5.6 RM 222: Insert the key and turn it to the ON position **AND** ensure the key remains on.

4.3.5.7 RM 222: Press and hold the IMPACT PROTECTION BYPASS HOLD-TO-RUN button.

4.3.5.8 OT: Ensure correct direction of movement.

4.3.5.9 OT: With System 420 Hold-to-Run pendent activated, raise puck handler to desired position.

4.3.5.10 OT: Deactivate System 420 Hold-to-Run pendent.

4.3.5.11 RM 222: Release the IMPACT PROTECTION BYPASS HOLD TO RUN button.

4.3.5.12 RM 222: Return the "Impact Protection Bypass Keylock" switch to the OFF position.

4.3.5.13 OT: Return system to normal configuration **AND** resume operations.

4.3.6 Introduction of Non-Fissile Maintenance Items or Tools into Supercompactor Glovebox

NOTE: *Only non-fissile maintenance items or tools may be transferred into the Supercompactor glovebox.*

(1291-2009-026)

4.3.6.1 **WHEN** using a 100-gal product drum to transfer non-fissile items into the 420 glovebox by way of 422,
THEN perform the following:

4.3.6.1.1 Place cargo net (sling) or appropriate rigging materials, with non-fissile items in drum at de-lidding station.

4.3.6.1.2 Tape ends of netting or rigging materials to inside of drum about level with top of inner supports of drum.

4.3.6.1.3 OT and SS or PSM: Perform independent verification of the following and log in eSOMS or equivalent:

- Drum number
- Drum contents (contains non-fissile items only)
- Persons involved in performing independent verification.

(RPT-NFCS-03, CWR 7.3.3)

4.3.6.1.4 Prep drum per Appendix F
AND ensure the taped ends do **NOT** interfere with inner lid resting on gasket.

4.3.6.1.5 Dock drum to either BTP 1 or BTP 2.

4.3.6.1.6 Open door.

4.3.6.1.7 Position puck handler over Park Place 6.

4.3.6.1.8 Using reach tools and post-compaction maintenance hoist, retrieve items from drum.

4.3.6.1.9 **WHEN** drum has been emptied of all items,
THEN use product drum for pucks.

4.3.6.2 **WHEN** using a 55-gal drum to transfer non-fissile items into the 410 glovebox by way of the 370,
OR bringing in an empty 55-gal drum for the removal of maintenance items/operations debris, and placing into the 410 glovebox by way of the 370,
THEN perform the following:

NOTE: *All movements in this section will be performed manually*.

4.3.6.2.1 Move 55-gal drum with equipment to turntable (IGB2).

NOTE: *The following steps are performed due to WTS and FTS being overridden during performance of these steps.*

4.3.6.2.2 OT and SS or PSM: Perform independent verification of the following and log in eSOMS or equivalent:

- Drum number
- Drum contents (contains non-fissile items only) or if empty
- Persons involved in performing independent verification.

(RPT-NFCS-03, CWR 7.3.3)

4.3.6.2.3 Ensure an active barcode label is affixed to drum.

4.3.6.2.3.1 Perform independent map update, if needed.

(RPT-NFCS-03, CWR 7.3.3)

4.3.6.2.4 SS/PSM: Place FTS in "Maintenance" mode per INST-FOI-27.

4.3.6.2.5 Move drum to Un-Load station (SUP3).

4.3.6.2.6 Unload maintenance item(s) and load maintenance item(s)/operational debris as required.

4.3.6.2.6.1 **IF** loading drum with maintenance items and maintenance item will be re-used,
THEN do **NOT** perform VE.

4.3.6.2.6.2 **IF** loading drum with maintenance items or operational debris that will **NOT** be re-used, **THEN** ensure VE is completed per INST-FOI-17.

4.3.6.2.7 Move drum to turntable (IGB2).

4.3.6.2.8 SS/PSM: Place FTS in "Operations" mode per INST-FOI-27.

4.3.6.2.9 Perform independent map update, if needed.

(RPT-NFCS-03, CWR 7.3.3)

4.3.6.2.9.1 **IF** drum is loaded with maintenance item
AND maintenance item will be re-used,
THEN do **NOT** lid the drum.

4.3.6.2.9.2 **IF** drum is loaded with maintenance items or operational debris that will **NOT** be re-used, **THEN** ensure the drum is turned over to a material transfer/assay operator for lidding and assay of the drum.

4.3.6.2.10 Coordinate with material transfer operator to move drum to 370.

4.3.6.2.10.1 SS: Ensure drum is turned over to a material transfer/assay operator for lidding and assay if needed.

4.3.7 Manual Operations

NOTE: *The WTS and FTS safety functions cannot be bypassed while in manual operations.*

4.3.7.1 Ensure the desired manual move(s) can be safely performed.

4.3.7.2 Ensure any devices or sequences that will be affected by the anticipated manual operation are stopped.

4.3.7.3 Place the desired device(s) or system(s) into manual mode.

4.3.7.4 Perform the necessary manual movement(s).

4.3.7.5 Ensure the waste tracking map accurately reflects the status of the affected system.

4.3.7.5.1 **IF** the waste tracking map does **NOT** adequately reflect the status of the affected system,
THEN notify the SS and perform tracking map update.

4.3.7.6 Ensure that the applicable device(s) or system(s) are returned to automatic mode.

4.3.7.7 If necessary, reset any faulted sequences in the master scheduler(s) using the STOP or ABORT buttons, as applicable.

4.3.7.8 Ensure the applicable master scheduler(s) is running.

4.3.7.9 If necessary, re-initiate any sequences that were interrupted prior to or during manual operations.

4.4 Abnormal Operations

NOTE: *Sections 4.4.1 through 4.4.4 may be performed as needed.*

4.4.1 Discovery of Noncompliance

4.4.1.1 **IF** a CWR noncompliance is discovered,
THEN cease all movements.

4.4.1.1.1 Notify SS or PSM.

4.4.1.1.2 SS or PSM: Notify Nuclear Criticality Safety by end of shift.

4.4.1.2 **IF** an NMSL noncompliance is discovered,
THEN cease all movements.

4.4.1.2.1 Notify SS or PSM.

4.4.1.2.2 SS or PSM: Suspend operations.

4.4.1.2.3 SS or PSM: Notify Nuclear Criticality Safety by end of shift.

4.4.1.2.4 Nuclear Criticality Safety: Approve written recovery plan.

(RPT-NFCS-03, CWR 7.3.9, 7.3.9.1, 7.3.9.2)

4.4.2 CIDAS Alarm

4.4.2.1 **IF** the CIDAS alarm speakers are emitting an audible "pipping" sound,
THEN take the following steps:

4.4.2.1.1 Place the CIDAS into *SUSPENSION MODE* (see def.).

(RPT-TSR-03, LCO 3.5)

4.4.2.1.2 Notify the SS.

4.4.2.1.3 Immediately cease all fissile material operations within the Supercompactor MCA and squeezant handling in the Supercompactor room.

(RPT-TSR-03, LCO 3.5)

4.4.2.1.4 OT and SS: Log the change to SUSPENSION MODE in the applicable operator log and the SS log, or eSOMS equivalent.

4.4.2.1.5 OT and SS: Update status boards.

(MP-COPS-9.7)

4.4.2.1.6 Place the system back into OPERATION MODE in accordance with INST-COPS-9.11.2, Resuming Operations after Suspension.

(RPT-TSR-03, LCO 3.5)

4.4.3 Shutdown That Will Exceed 14 Calendar Days

4.4.3.1 Perform **ONE** of the following within 14 days:

4.4.3.1.1 Perform a criticality cleanout per Section 4.2.

OR

4.4.3.1.2 SS: Notify Environmental of the shutdown so that a path forward to resuming normal operations will be determined.

(HWMA/RCRA Permit)

5.0 DEFINITIONS

Criticality working requirement. A criticality safety control derived from a criticality safety evaluation (CSE) that has been determined to ensure the prevention of accidental criticality. Compliance with CWRs ensures that operations are maintained at a level well below NMSL FGE (FGE ^{239}Pu). An isotopic mass of radionuclide normalized to ^{239}Pu calculated in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste.

Independent Verification. Person performing the independent verification will not be influenced by observation of or involvement in the activity that establishes the component position or status. For most operating activities, independence can best be achieved by separating the operation and the verification by time and distance.

Integrated control system. The ICS provides functional control for the systems located in the treatment facility. Additionally, the ICS interfaces for status with other systems such as instruments, compressed and breathing air, the Fire Damper Maintenance System, the WTS, and the POS.

Lower limit of detection drum. A drum containing no transuranic isotopes, or containing transuranic isotopes at or below the level of radioactivity, which, if present, will yield a measured value greater than the critical limit with a 95% probability. The critical limit is defined as that value which measurements of the background will exceed with a 5% probability.

Mass controlled area. One of five areas in the AMWTF where the total fissile mass of incoming containers is controlled. When the mass limit in an MCA is approached, the MCA is cleaned out, inspected, and the mass for the area reset.

MCA for the Supercompactor. The MCA originates at the FTS BCR between drum piercing and the Supercompactor trolley. Once a drum has traversed past the FTS BCR, the fissile material has entered the accountancy of the MCA. The MCA includes:

- The Supercompactor trolley

NOTE: *The room in which the Supercompactor glovebox suite resides is not part of the Supercompactor MCA. However, fissile materials removed from the Supercompactor glovebox suite are part of the MCA until sealed and/or removed from the area.*

- All Supercompactor gloveboxes (glovebox suite)
- Product drums connected to the Supercompactor glovebox suite

- Processed pucks residing in puck staging areas of glovebox suite
- Squeezants in the Supercompactor area (room) if associated with the current cycle (between criticality cleanouts) of the Supercompactor
- Drums, vacuums, and other receptacles containing fissile materials in the Supercompactor area (room) if associated with the current cycle (between criticality cleanouts) of the Supercompactor.

Nuclear material safety limit. A safety limit, derived from the CSE for the AMWTF, for ensuring criticality safety of fissile operations. Violating an NMSL is equivalent to a TSR violation.

OPERATION MODE. The facility, process, or equipment has met its applicable TSR(s).

PE-Ci. An equivalent radiotoxic hazard of a radionuclide normalized to ^{239}Pu.

Plant optimization system. Inside the facility, POS will optimize the processing of drums through the Supercompactor to produce puck drums that meet all criteria, (i.e., requirements derived from MP-TRUW-8.1, CCP-PO-003, CPP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), and the contract). POS will process the drums in a way that optimizes two chosen process parameters; other process parameters will be controlled but not optimized.

SUSPENSION MODE. The facility, process, or equipment has not met its applicable TSR(s), or as directed by procedures or management (e.g., as required for maintenance, testing, or periods of inactivity).

Waste Tracking System. An interactive, database-driven system that provides real time information on waste items and containers, including waste description, generation process, field observations and measurements, location, and destination. WTS is identified as equipment important to safety per AMWTP's DSA.

6.0 REFERENCES

(1) AMWTP HWMA/RCRA Permit

(2) AMWTP HWMA/RCRA TSA Interim Status Document

(3) 1291-2004-001, Criticality Safety Evaluation, SCW Refrigerator and Drum Limits

(4) 1291-2009-026, Criticality Safety Evaluation, Movement of Open Drums from Supercompactor to Systems 335 or 345 Lidding Systems

(5) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)

(6) ANSI B11.20-1991, Safety Requirements for Integrated Manufacturing Systems

(7) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods

(8) CCP-PO-003, CPP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(9) INST-COPS-9.11.2, Resuming Operations After Suspension

(10) INST-FOI-17, Facility Visual Examination Operations

(11) INST-FOI-27, FTS Operations

(12) INST-MI-1018, CIDAS Surveillance Checks

(13) INST-MI-1033, FTS Interlock/Alarm Functions Surveillance Checks

(14) INST-OI-88, Spill/Leak Response and Cleanup

(15) MP-COPS-9.7, Control of Equipment and Systems Status

(16) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(17) MP-DOCS-18.2, Records Management

(18) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(19) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(20) RPT-NFCS-03, Criticality Safety Evaluation for Supercompactor Operations

(21) RPT-NFCS-07, Criticality Safety Evaluation for the AMWTF

(22) RPT-DSA-02, Documented Safety Analysis

(23) RPT-TSR-03, Technical Safety Requirements

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-FOI-20, Case File	Non-permanent WIPP/ ENV1-J-1/Destroy 10 years after submittal
Form-1608, FGE Values	Facility Operating Record/ ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1914, Squeezant Jar Tracking within the Supercompactor Glovebox	Facility Operating Record/ ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1977, Drum Loaded From Supercompactor FGE Inventory Log (200 FGE Limit)	Facility Operating Record/ ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Waste Tracking Maps

Appendix B – Tracking Status Codes Table

Appendix C – Waste Incompatibility

Appendix D – Handler Mast Positions

Appendix E – 100 Gallon Product Drum Labels

Appendix F – Product drum Preparation and Lidding Guide

Appendix G – Revision Log

Appendix A – Waste Tracking Maps

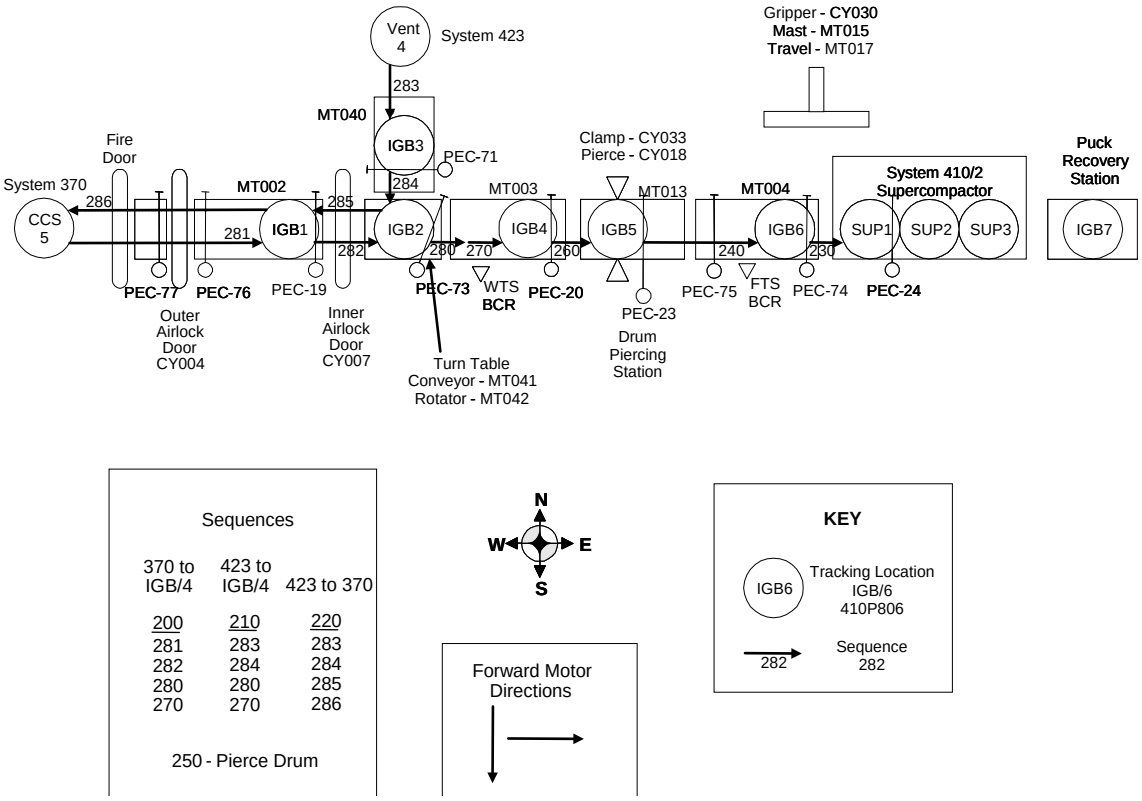

Figure A-1. Infeed glovebox waste tracking map.

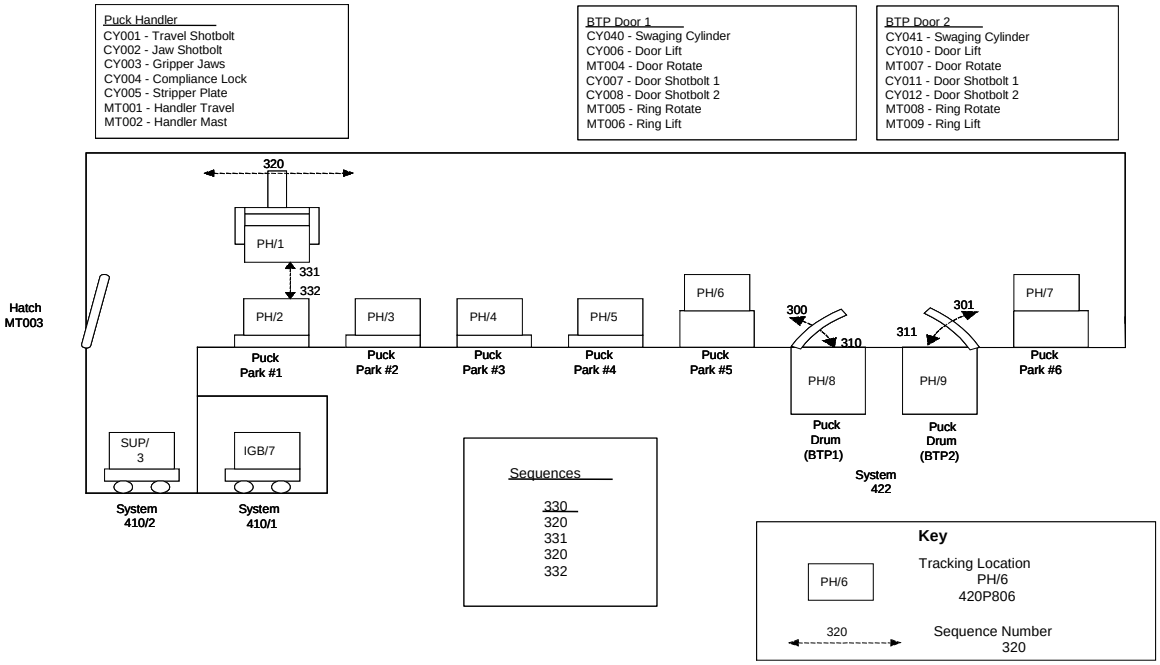

Figure A-2. Puck-handling glovebox waste tracking map.

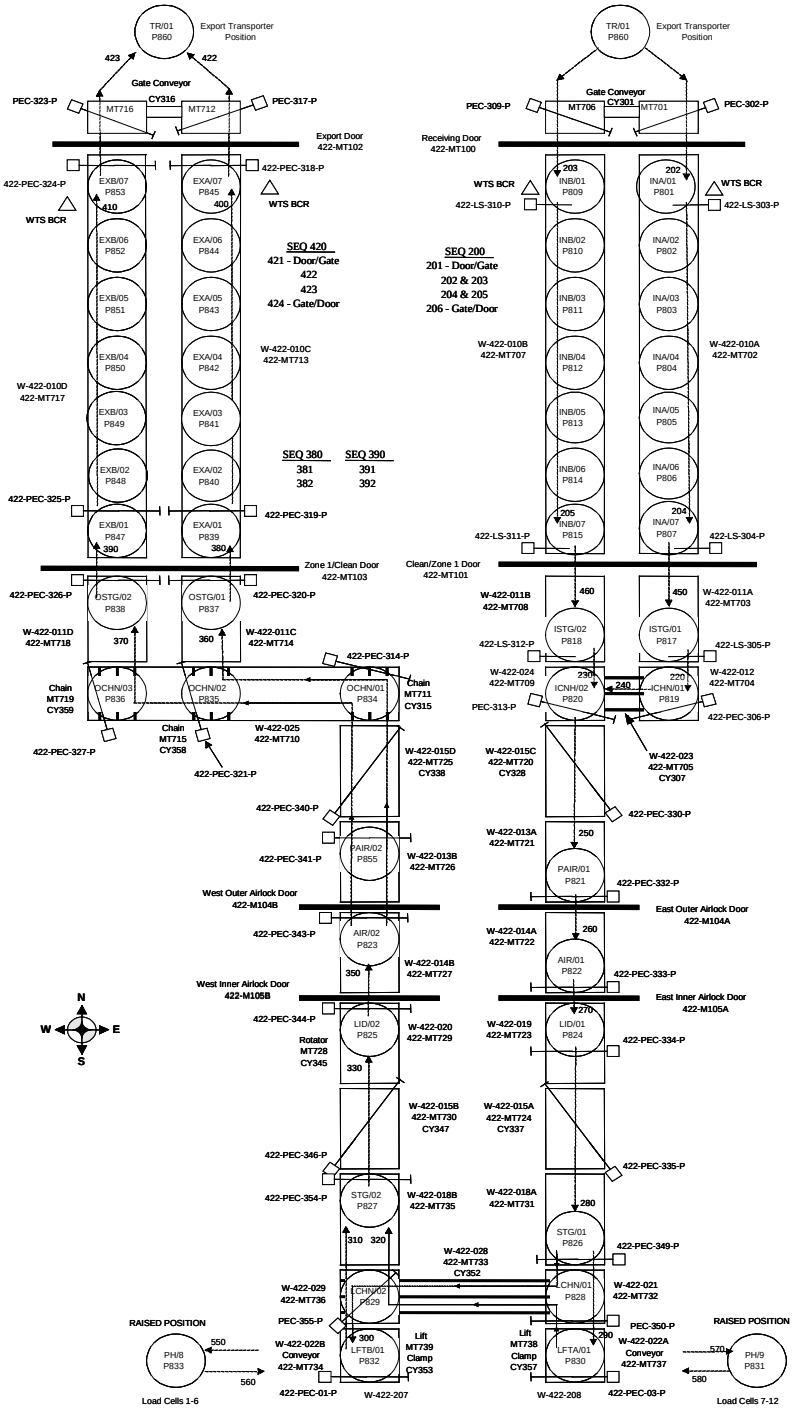

Figure A-3. Puck drum import/export system waste tracking map.

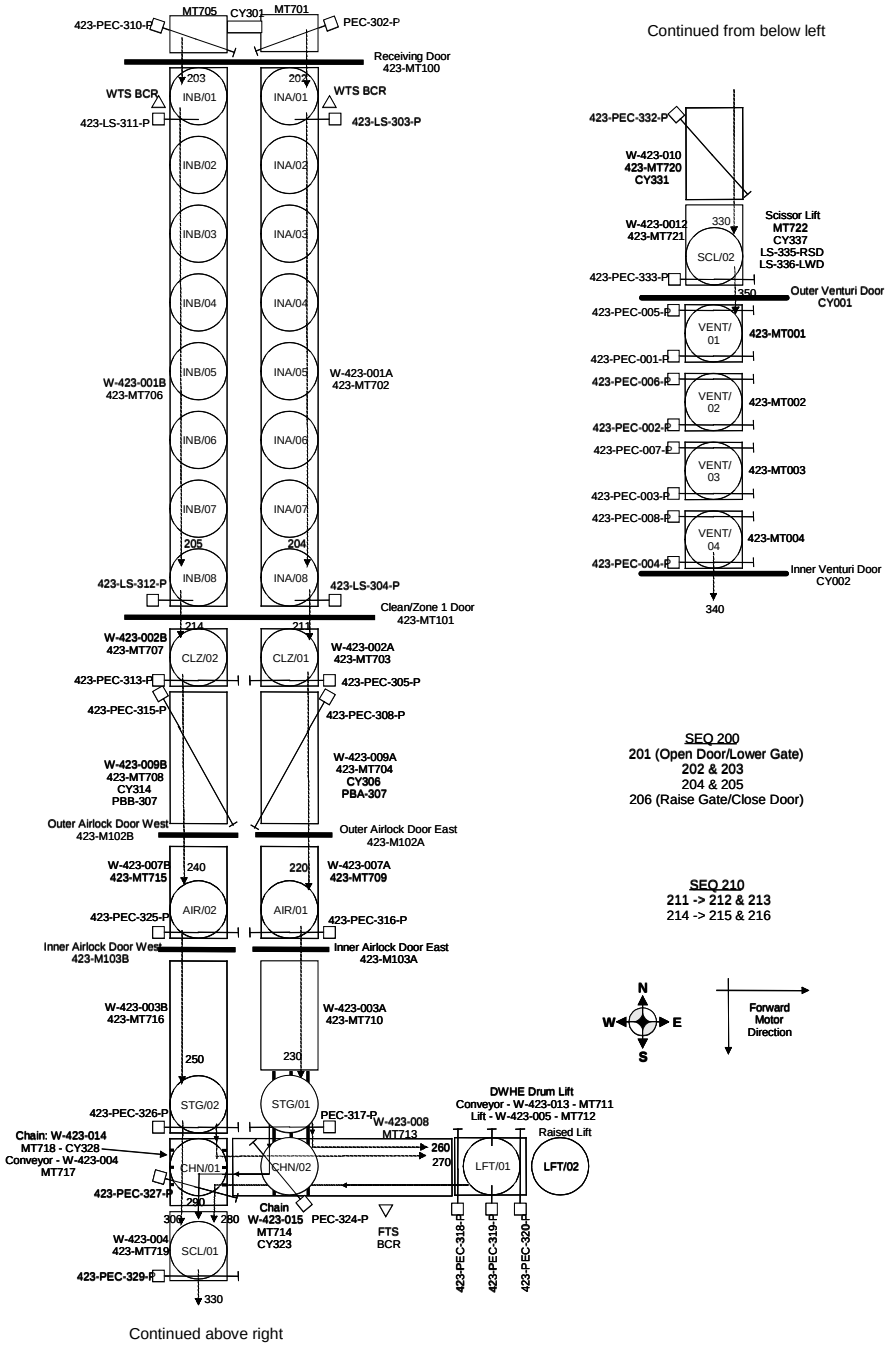

Figure A-4. Direct-feed waste infeed system waste tracking map.

Appendix B – Tracking Status Codes Table

Status Code	Description
0	Empty Location
50	Empty drum
75	Drum to be assayed
87	DF-MLLW (not pierced)
88	DF Drum Passed for Supercompaction (not pierced)
89	Drum Passed for Supercompaction (not pierced)
93	Drum for DWHE (up only)
110	Drum for Direct Shipment (Export)
160	Maintenance Item
411	Administrative Hold
501	LLD Drum
601	Reject Drum
800	Normal Puck
801	Recovered Puck
802	DF-MLLW Puck
820	Puck Drum (Lidded without Pucks)
821	Puck Drum (De-lidded without Pucks)
824	Puck Drum (De-lidded with Pucks)
825	Puck Drum (Lidded with Pucks)
826	DF-MLLW Puck Drum (De-lidded with pucks)
827	DF-MLLW Puck Drum (Lidded with pucks)
854	Feed Drum Supercompactor Pierced
866	Drum Overpacked
999	Container Status Unknown

Appendix C – Waste Incompatibility

Incompatible waste includes the following groups:

Waste Type	General Waste Description
Acids	ID-150: Laboratory Waste MD-805: Asbestos Filters MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-335: Absolute 8 x 8 Filters (Treatment Only) RF-338 Insulation and CWS Filter Media (Treatment Only) RF-241: Americium Process Residue
Oxidizers	ID-005: Evaporator Salts Retrieved RF AE-100: General Plant Waste MD-805: Asbestos Filters MD-811: Evaporator and Dissolver Sludge MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-005: Evaporated Salts RF-241: Americium Process Residue RF-430: Resin, Ion Column-Unleached RF-745: Pits 11 & 12 Evaporator Salts SD-703: Inorganic Sludge
Caustics	MD-835: High Level Caustic
Halogenated Organics	RF-003: Organic Setups, Oil Solids RF-700: OASIS Waste RF-801: Solidified Organics BN-501: AMWTP PCB Soil BN-511 PCB Organic Homogeneous Solids [Treatment Only] BN-514 Absorbed Organic Squeezants [Treatment Only] BN-518: TRU Supercompactor Squeezants BN-526: Sample Returns BN-528: TRU PCB Liquids Generated During Retrieval BN-603: Absorbed Analytical Liquids BN-605 Absorbed Liquids TSCA/PCB [Treatment Only] RF-743: Pits 11 & 12 Organic Setups

Waste Type	General Waste Description
	RF-746: Pits 11 & 12 Pad Oil Drums SD-704: Organic Sludge SD-705: Debris SD-706: Soil UN-00A: Undefined homogeneous solids
Unknowns	PC-000: "True" or post-RTR unknown RF-095: Sludge (Unknown)
Pyrophoric Materials	RF-751: Roaster Oxide RF-999: Potential Roaster Oxide
Heterogeneous Debris	RF-998: Heterogeneous Debris
Heterogeneous Debris	IW-179: Early Waste Retrieval Heterogeneous Debris

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

Separation or physical segregation requirements consist of the following:

1. Containers of acids with 5 gal or more of residual liquids must be separated or physically segregated from caustics, and containers of acids with any residual liquids must be separated or physically segregated from halogenated organics.
2. Containers of caustics with 5 gal or more of residual liquids must be separated or physically segregated from acids, and containers of caustics with any residual liquids must be separated or physically segregated from halogenated organics.
3. Containers of oxidizers with any residual liquids must be separated or physically segregated from halogenated organics.
4. Containers of halogenated organics with any residual liquids must be separated or physically segregated from acids, oxidizers, and caustics.
5. Containers with unknown waste must be separated by physical distance.

A container holding mixed waste that is incompatible with any waste or any material stored nearby shall be segregated (separated by berm, dike, or wall).

(HWMA/RCRA Permit)

Appendix D – Handler Mast Positions

Top	Description	PLC Status Flag	Encoder Position			Available at Horizontal Position								
			Pre	Pos	Post	S3	P1	P2	P3	P4	P5	B1	B2	P6
18	Fully Raised	S_420MT002_FULLY_RAISED	24.0	26.4	33.0	X	X	X	X	X	X	X	X	X
06	*Maintenance Position 1*	—	26.0	32.0	37.0	X	X	X	X	X	X	X	X	X
07	POS7	S_420MT002_POS7	36.0	43.0	48.0	X	X	X	X	X	X	X	X	X
20	*Maintenance Position 2*	—	36.7	43.7	49.0						X			X
14	*Maintenance Position 3*	—	45.0	52.3	56.0						X			X
15	*Maintenance Position 4*	—	65.6	72.6	78.0		X	X	X	X				
19	Above Protector Ring	—	70.6	77.6	85.1							X	X	
21	Above Protector Ring	—	70.6	77.6	82.6		X	X	X	X				
04	*Maintenance Position 5*	—	73.6	80.6	86.1	X								
02	POS2 (4" Above Protector Ring)	S_420MT002_POS2	76.0	82.0	87.0							X	X	
13	PP1 – PP4	—	78.5	85.4	87.0		X	X	X	X				
16	In Hatch	—	80.6	90.6	95.6	X								
17	Bottom of Drum at BTPs	—	110.55	120.5	121.2							X	X	
12	Fully Lowered at Removal	—	145.9	153.8	155.6	X								
Bottom														

NOTE: *The flags S_420MT002_BASKET, PICK_PUCK, PLACE_PUCK, RAISED_2INCH, STRPR_PLATE are defined in the programmable logic controller (PLC), but never get set when running. They appear to be carryovers from the original design/implementation for the handler MT002.*

Handler Mast Positions – Horizontal Travel

##	Description	PLC Status Flag	Encoder Position			
			Pre	Pos	Post	Tol
S3	Removal Station	S_420MT002_REMOVAL	0	7.75	16.0	1
P1	Puck Park 1	S_420MT002_PP1	27.5	34.7	39.0	1
P2	Puck Park 2	S_420MT002_PP2	51.0	58.1	63.0	1
P3	Puck Park 3	S_420MT002_PP3	75.0	82.1	87.0	1
P4	Puck Park 4	S_420MT002_PP4	98.5	105.7	111.0	1
P5	Puck Park 5	S_420MT002_PP5	123.5	130.8	136.0	1
B1	Bagless Transfer Port 1	S_420MT002_BTP1	149	156.15	162.0	1
B2	Bagless Transfer Port 2	S_420MT002_BTP2	188	195.3	201.0	1
P6	Puck Park 6	S_420MT002_PP6	214	222.0	224.0	1

Appendix E – 100 Gallon Product Drum Labels

Hazardous Waste: one on the opposite side of the bolt below the top chine.

Beryllium: two 180 degrees apart below the top chime with one directly across from bolt.

USA DOT 7A Type A: one next to or above serial number label.

Radiological Label: one on the opposite side of the bolt below top chine.

>700 LBS: three labels spaced evenly around drum, below lid.

SHENC: three Labels spaced evenly around drums, below lid. These product drums contain TRU and LLD pucks.

MLLW: three labels spaced evenly around drum, below lid. These product drums are <100 nCi/g.

LLD: three labels placed evenly around drum, below lid. These product drums contain LLD pucks only.

OFF SITE Waste: three labels placed evenly around drum, below lid.

Appendix F –
Product Drum Preparation and Lidding Guide

Drum Preparation:

- Drum integrity inspection
- All 8 barcode labels match
- Drum contains 4 spacer tubes
- NucFil-019SDS is installed in outer lid and is hand tightened
- Outer lid removed from drum
- Inner lid gasket installed
- Inner lid installed (excess oil removed)
- NucFil 036-R-DA inner lid filter installed (filter media covers lid hole)
- Radioactive magnet attached (below first rolling hoop).

Drum Lidding:

- Lid gasket properly fitted in lid groove
- Lid is positioned allowing gasket to seat around drum curl
- Ring is placed to encompass lid and drum with lugs downward
- Bolt is installed through the unthreaded lug, with locking nut between lugs
- Ring is torqued to 55–60 ft lb (ring ends are not touching, but no greater than approximately 1/2-inch gap)
- Lock nut is tightened against unthreaded lug
- Lid bung–hole filter is torqued to 180 in. lb/15 ft lb.

Appendix G – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	03/20/04	All	DCR-2817, Initial issue
1	04/12/04	1, 2, 8, 19–24, 26, 29, 30, 32, 36–39	DCR-2882. Change permit language before ORR and make other updates based on operations experience gained during mock hot operations
2	06/04/04	All	DCR- 2986. Revised to correct findings from MAR-4844. Move material from old Step 4.4.2 into Form-1545. Add new sections for response to abnormal situations.
3	06/10/04	Pg. 20	DCR-3090, Minor change to move Step 4.3.5 to 4.4.1.
4	06/20/04	Pgs. 20, 42	DCR-3101, Re-sequenced step into 4.8.2 and split it into two places to facilitate process flow.
5	06/16/04	Pg i	DCR-3119, Minor change to correct approval date in Revision Log.
6	06/30/04	Various	DCR-3154. Incorporated changes identified during corporate ORR
6FC-1	7/11/04	27	DCR-7/11/04-0700 [DCR-3181]. Delete note after 4.9.5.4.
7	08/11/04	Pgs. 3, 9, 14, 15, 23, 26, 27, 29	DCR-3185. Incorporate changes from FC-1 and AI-4746. Correct all references to appendices.
8	08/16/04	All	DCR-3244, Change effective date from “Pending DOE Approval of Treatment Facility Operations Startup” to 08/16/04.
9	09/29/04	Pgs 17, 22, 24, 31, and 32	DCR-3278, Resolve CBFO comments. Also renumber existing Step 4.4.8 to 4.4.7.3; remove container integrity check from 4.8.2.10; add new Step 4.8.2.12; and in 4.11.14 and 4.11.14.14 allow OT to use barcode utility.

Revision Number	Date Approved	Pages Affected	Description of Revision
9FC-1	10/22/04	7, 23, 24, E1	DCR-3379, Delete Step 4.5.5 and replace with attached steps. Delete Step 4.5.2.11. Add Appendix E.
9FC-2	10/22/04	19	DCR-3380, Add new step 4.5.5.4, "Select the Release Drum Button."
9FC-3	10/26/04	17, 22, 23	DCR-3385, Delete FC-1 and FC-2 and incorporate changes associated with WTS patch on 10/23/04.
9 FC-4	10/29/04	15, 19, 20	DCR-3401, Add note before 4.4 and delete 4.7.4 and 4.7.7. Add new 4.7.6.
10	12/01/04	All	DCR-3372. Update references and incorporate Field Changes 1 through 4, as applicable. Convert many prerequisites into steps and delete inapplicable prerequisites. Add new section 4.11 and add use of Form-1608 in Step 4.5.1. Add other operational enhancements. See DCR for a complete list of changes
11	1/27/05	Pgs 14, 18 and App. E	DCR-4`052. Add new Sections 4.5.1 and 4.7.9 for manual tracking. Delete 4.8.2.10.1.4. Add Appendix E for mast positions.
12	04/14/05	Pgs 6 – 14, 17, 23-28, 32-39, and App. A	DCR-4224. Delete all of Appendix A. Delete unnecessary precautions and limitations, and move some P&L statements to become notes, in accordance with CAR-8101. Move some requirements from Appendix A into Section 4.2. Incorporate field change and operator process improvement suggestions. Add manufacturer's recommendations for drum closure to Step 4.8.2.6
13	05/12/05	Pgs 3, 4, 7, 13, 14, 16, 22, 27, and B1	DCR-4285. Incorporated Field Changes 1, 2, and 3. Implement DOE/WIPP-02-3122, WIPP Waste Acceptance Criteria (WAC), Revision 3. Add new sections 4.4.6 and 4.4.7 to allow the compaction of LLD drums.
14	6/27/05	Pgs 14 & 23	DCR-4392. Addressed manufacturer's specifications and an operator aid for closing puck

Revision Number	Date Approved	Pages Affected	Description of Revision
			drums in 4.8.2.6.6. Incorporate 13 FC-1 (DCR-4315).
15	6/30/05	Pg 23	DCR 4402. Corrected outer lid bung-hole filter torque range in Step 4.8.2.7.
16	07/29/05	Various	DCR-4446 Added new verbiage to encompass damaged or Oversized Puck removal form glovebox and allow Supercompactor operations to continue during Squeezants removal.
16 FC-1	08/09/05	Pg 14	Incorporate Field Change-1 as described on DCR-4475.
17	10/31/05	All	DCR-4509 – Entire document rewrite to clarify barcode scans and status codes and process improvement for removal of a damaged oversized puck, also incorporating FC-1 from DCR-4475 and modifying FC-2 from DCR-4613, applying new template and minor editing.
18	02/14/06	Various	DCR-4714. Add new steps for manual placements and verification. Add reference #35 for Form-1689 to incorporate new sumps cycle. Incorporate Field Change DCR-4782.
18 FC-1	02/16/06	Pg 25	DCR-4828. Change Step 4.6.5.4.5.6 to read, "Repeat Steps 4.6.5.4.3 through 4.6.5.4.5.5 for multiple packets.
18 FC-2	02/19/06	Page 12, Pages 25, 27, and 29	DCR-4835. Deleted Step 4.2.8.1.1, requiring NCR when generating LLO drums and added Step 4.2.8.1.1, requiring check of physical barcode against WTS barcode. In Steps 4.6.5.4.5.3, 4.6.5.4.5.6, 4.6.6, and 4.7.1.5, change "packet" to "jars."
19	04/06/06	Various	DCR-4940. Added new Section 4.10.19 to incorporate ICS software modifications. Editorial changes made to meet requirements of MP-DOCS-18.1, Developing Written Work Instructions. Incorporated FC-1 (DCR-4828) and FC-2 (DCR-4835) changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
20	4/09/06	Various	DCR-5020. Add Requirement to Note on pg. 21. Clarify the different labels needed for a puck drum. Incorporate FC-1 (DCR-4962) and FC-3 (DCR-5004).
21	06/21/06	Various	DCR-5056. Incorporate changes for consistency to annual DSA update implementation.
22	12/19/06	Various	DCR-5457. Implement CSA requirements.
22FC-1	3/3/07	31 of 59	DCR-5807. DCR3/3/07-1500. Additional criticality cleanout requirements.
22FC-2	04/05/07	31 of 59	DCR-5871. Additional inspection requirement for criticality cleanout.
22FC-3	04/23/07	14 of 59	DCR-5905. Additional step for picking and placing pucks.
23	07/10/07	Various	DCR-5903. New section added to allow for bag out between crit cleanouts; steps added for process flow. FC-2 supercedes FC-1. Edit notes, warnings, cautions, steps, per MP-DOCS-18.1.
23 FC-1	07/13/07	10, 12, & 24	DCR-6228. Add option in POS set-up to allow blending of LLD and TRU pucks in puck drums and clarification of Section 4.2 processing.
23 FC-2	08/10/07	47	DCR-6302. Editorial change Section 4.1.1 to Section 4.9 in Step 4.12.10.4.
23 FC-3	11/14/07	29	DCR-6609. Allow for packets to be stored in 5-gal bucket in RCRA-approved rooms.
24	04/15/08	Various	DCR-6707. Incorporated DCRs-6228, -6302, -6609. Changes to clarify rolldown requirements, implement ISMS, ensure operators log into ICS correctly, allow operator to do necessary checks and to use manual mode, include independent verification, makes roles and responsibilities specific to procedure, ensure adequate inspection is performed, new section to update WTS Map, delete steps that are no longer necessary, update

Revision Number	Date Approved	Pages Affected	Description of Revision
			MP-TRUW-8.3 references, edit per MP-DOCS-18.1.
25	05/20/08	Various	DCR-7044. Steps added and revised to ensure that only approved filters are used, entered into WTS, and applied properly per the vendor.
25 FC-1	06/05/08	4.7.6.5.5.4 Pg 36, 37	DCR-7226. Add new step to ensure WTS entry and barcode label match CAR-38637.
25 FC-2	10/13/08	Various	DCR-7633. Add Form-1375. Removed CWR, renumbered steps in procedure.
25 FC-3	10/16/08	Pg. 6/3.1.25 Pg. 28/4.6.1 Pg. 33/4.7.1 Pg. 38/4.7.10 Pg. 39/4.7.13	DCR-7652. Changing from less than to less than or equal to.
25 FC-4	10/17/08	Pg. 31	DCR-7659. Added Step 4.6.4.
26	11/11/08	Various	DCR-7667. Incorporated DCRs-7226, 7633, 7652, and 7659; added DOCS-BLUESHEET-01 changes, add steps to track squeezant bottles using Form-1914, editing per MP-DOCS-18.1.
27	02/02/09	Various	DCR-7751. Changes to clarify steps regarding bagout, moved steps for better process flow, updated the IDCs in Appendix C, and edited per MP-DOCS-18.1.
27 FC-1	02/09/09	11, 17	DCR-8008. Correct LCO text in Steps 4.2.2.4.1 and 4.4.3.4.1.
28	09/23/09	Various	DCR-8511. Incorporate DCR-8008. Update TSR SAC references (AI# 46147). Incorporate changes relating to CAR#39218.
29	11/23/09	Various	DCR-8721. Incorporated 2009 DSA/TSR update.
29 FC-1	02/03/10	Page 34	DCR-9022. Delete Step 4.7.5.2

Revision Number	Date Approved	Pages Affected	Description of Revision
30	03/03/10	Various	DCR-8989. Incorporated DCR-9022. Added new torque value, changed sequence of steps, edited per MP-DOCS-18.1.
30 FC-1	05/10/10	3	DCR-9235. Added new step for alternative isolation device.
30 FC-2	05/13/10	24	DCR-9251. Deleted Step 4.5.3.8 for surveying inner lids.
31	10/20/10	3 and 24	DCR-9135. Incorporated changes from field change DCR-9235 and -9251.
31 FC-1	12/13/10	31 and 40	DCR-9726. Added bag out step for when liquids are not present and clarification to Step 4.6.3.
31 FC-2	02/03/11	C1	DCR-9850. Incorporated new IDC changes to support SDCR-2255.
32	02/15/11	Various	DCR-9622. Due to the rewrite of this procedure, FC-1 (DCR-9726) no longer applies. Incorporated FC-2 IDC changes per DCR-9850. Rewrite to update per the evolved process with WTS and ICS downloads, and added a new section for introduction of non-fissile maintenance items/tools into the Supercompactor glovebox.
33	02/28/11	Various	DCR-9922. Implement SAC and LCO wording changes from TSR annual update.
33 TFC-1	4/11/11	5	DCR-10033. Implement ^{238}Pu controls.
33 FC-1	05/11/11	5	DCR-10128. Made TFC-1 permanent (DCR-10033).
34	07/18/11	Various	DCR-10032. Incorporated FC-1 (DCR-10033). Changed to Controlled Activity (AI 60418). Added drum inspection criteria, removed reference to INST-OI-24, relocated steps to abnormal section, and simplified squeezant handling during crit cleanout.
34 FC-1	07/19/11	Page 21	DCR-10272. Provide means to move maintenance item into supercompactor glovebox.

AMWTP INSTRUCTION		
INST-FOI-20, Rev. 36	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs

Supercompactor and Post-Compaction Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
35	04/02/12	Various	DCR-10343. Added new sections for manual operations and to allow bagout of squeezants without performing criticality cleanup. Incorporated FC-1 (DCR-10272). Incorporated ITG-BLUESHEET-013, where applicable.
36	08/12/12	Various	DCR-11377 – Incorporated 2012 DSA/TSR changes.

Retrieval Inspection Station Operations

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11558.*) 08/30/12

Dave Wirkus
Retrieval Manager

Date

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-09, Rev. 49	Issued: 08/30/12	Effective: 08/30/12 @ 0800 hrs

Retrieval Inspection Station Operations

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AMWTP INSTRUCTION		
INST-OI-09, Rev. 49	Issued: 08/30/12	Effective: 08/30/12 @ 0800 hrs

Retrieval Inspection Station Operations

1.0 PURPOSE/SCOPE

This instruction provides for inspection station operations using the Waste Tracking System (WTS) for retrieval activities performed in the Retrieval Contamination Enclosure (RCE) control room and/or RCE export airlock, for creating and loading uncharacterized *six-drum overpacks* (SDOPs; see def.).

This instruction covers storage requirements for the RCE, RCE export airlock, and the Inner Contamination Enclosure (ICE). This instruction also covers waste container movement activities for the RCE export airlock.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Plant Shift Manager (PSM)	• Notifies the Idaho National Laboratory (INL) Fire Department of the location of potential pyrophoric materials.
Retrieval Manager	• Evaluates conditions and responds per MP-RS&C-6.12, Response to Abnormal Radiological Conditions, and INST-OI-88, Spill/Leak Response and Cleanup.
Shift Supervisor (SS)	• Confirms Resource Conservation Recovery Act (RCRA) and air permit levels • Makes notifications • Generates nonconformance reports (NCRs) • Performs post-job reviews • Evaluates conditions.
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction.

Performer	Responsibilities
Radiological Controls Shift Supervisor (RCSS)	• Evaluates survey results • Determines proper radiological personal protective equipment (PPE) for inside the export airlock • Ensures continuous air monitors (CAMs) continue to monitor during abnormal conditions.
Industrial Safety/Industrial Hygiene (IS/IH) or Designee	• Evaluates conditions • Monitors and evaluates surveys • Determines proper hazardous constituent mitigation PPE • Evaluates work area.
Inspection Station Operator (ISO)	• Performs data entry in WTS • Tracks RCRA and air permit limits.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

NOTE 1: *Resource Conservation Recovery Act regulatory limits are for activities for the intentional treatment of waste such as repackaging, liquid treatment, and physical sizing. Overpacking an original waste container does not constitute a RCRA treatment event.* Leaks/spills *(see defs.) managed under INST-OI-88 do not classify as a RCRA treatment event.*

NOTE 2: *The Environmental Air Permit regulatory limits are for activities where waste from a container is exposed to the environment. Examples of exposed waste include a breach in the original container, treating liquid waste, physical sizing of waste, etc. The Environmental Air Permit specifies the volume of waste that may be exposed, which is dependent upon the type of air filtration available.*

3.1.1 Combustible materials, including waste materials, are maintained a distance of not less than 10 ft away from the fueling area and not less than 10 ft from the wall where the diesel supply piping runs inside the building.

(RPT-ESH-01)

3.1.2 Decontamination agents or fixatives shall be limited to water, Soil Sement, ABC Asbestos Binding Compound, ReACT, Clorox wipes, Simple Green, Windex (or generic non-aerosol window cleaner).

(EDF-0496)

3.1.3 Any containers that have fixatives applied or fixed contamination to the outer surface shall be overpacked before leaving the RCE.

(MP-RS&C-6.14)

3.1.4 Waste container handling shall be performed in accordance with INST-OI-11, Waste Container Handling, outside of the RCE in the Transuranic Storage Area-Retrieval Enclosure (TSA-RE).

3.1.5 Waste container handling inside of the RCE/ICE shall be performed in accordance with hoisting and rigging activities as trained per MP-CMNT-10.8, Hoisting and Rigging.

3.1.6 Secondary containment (i.e., RCRA floor or spill pallet) shall be required if a container contains liquids, is bulged, or has questionable integrity.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.1.7 *Isolation containers* (see def.) shall comply with the following at all times:

- 3-ft spacing, in a planar array, is maintained between waste containers and segregated from any other waste type
- Only one isolation container has a collar removed at a time
- Isolation container is continuously attended during the time the collar is off
- Isolation container shall have an anti-stacking cone attached upon lidding
- If the individual waste item that is to be placed into an isolation container is too large to fit into an isolation container, the single oversized item shall be placed into an empty box.

3.1.7.1 Collar and/or anti-stacking cone removal activity shall not be performed (other than overpacking, replacement, and decontamination) UNLESS written approval is provided by Nuclear Criticality Safety (NCS) staff.

(RPT-NFCS-15, CWR 5, 6, 12, 13)

3.1.8 Any container identified to exceed 380 fissile gram equivalent (FGE) ^{239}Pu shall be promptly (within the same shift) placed into an isolation storage area. Nuclear Criticality Safety (NCS) shall be notified if the container cannot be transferred during the current shift.

(RPT-NFCS-15, CWR 9)

3.1.9 High efficiency particulate air (HEPA) vacuums used in retrieval operations shall be isolation containers, fitted with a collar, and upon lidding, an anti-stacking cone.

(RPT-NFCS-15, CWR 1, 4, 5, 11)

3.1.10 Containers identified as potential pyrophoric materials that have suspect integrity may be repaired but shall be overpacked before exiting the RCE.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.1.11 Environmental shall be notified of any spill.

(IDAPA 58.01.01)

3.1.12 Fueling of vehicles within the RCE/ICE, other than through the use of the RCE Diesel Fueling System, shall be done under specific controls identified by the Fire Marshal.

(RPT-ESH-01)

3.1.13 Refueling of vehicles and equipment within the TSA-RE shall be conducted in accordance with INST-OI-107, Refueling Equipment in the Retrieval Contamination Enclosure.

3.1.14 Each vehicle in the TSA-RE shall have a total fuel capacity less than or equal to 160 gallons.

(RPT-TSR-03, SAC 5.2.11)

3.1.15 *Free fossil fuel* (see def.) greater than 0 gallons up to 40 gallons, shall not be permitted in the TSA-RE unless approved by the fire marshal.

(RPT-ESH-01)

3.1.16 Free fossil fuel greater than 40 gallons shall not be allowed into the TSA-RE.

(RPT-TSR-03, SAC 5.2.11)

3.1.17 Newly generated radiological waste shall be packaged and, if necessary, overpacked per INST-OI-24, Packaging Radioactive Waste, (for radioactive waste and mixed waste) and INST-OI-98, Packaging Non-Radioactive Waste.

3.1.18 Bulged drum staging of no more than 100 drums is permitted and, while the drum vent system is operational, the maximum staging time before venting is limited to 120 days.

(RPT-ESH-049)

3.1.19 Each box shall be a minimum of 6 ft L by 3 ft 9 in. W by 2 ft D box in dimension, prior to interim storage.

(RPT-NFCS-15, CWR 4, 8)

3.1.20 Retrieved wastes pending transfer out of the TSA interim status (IS) units for *characterization* (see def.) are not required to be segregated or separated unless there are (1) known incompatibles, based on the information that exists on the container as retrieved, or (2) *commingled legacy repackaged waste* (see def.).

(HWMA/RCRA TSA IS Document, RPT-NFCS-15 CWR 6, 12, 13)

3.1.21 No item of moveable equipment that is used for handling polychlorinated biphenyls (PCBs) and PCB items in the RCE that comes in direct contact with PCBs shall be removed from the RCE unless it has been decontaminated per 40 Code of Federal Regulations (CFR) 761.79, Decontamination Standards and Procedures.

(40 CFR 761.65[c][4])

3.1.22 A photo ionization detector shall be required when waste handling activities occur in the export airlock.

(IH-EA-027; IH-EA-028)

3.1.23 Personnel shall maintain awareness so as to not place any portion of their head or torso over the top (lid) of any unvented drum, including empty unvented drums when practical.

(RPT-ESH-049; HA-N-072; HA-N-073)

3.1.24 Retrieved containers smaller than a nominal 55-gal drum, shall be overpacked using a nominal 55-gal drum or larger internal diameter container, prior to interim storage in the TSA-RE.

(HWMA/RCRA TSA IS Document, EDF-0084; RPT-NFCS-15, CWR 4, 7)

3.1.25 With the exception of SDOPS, overpacks shall contain only a single waste container.

(HWMA/RCRA TSA IS Document; EDF-0084; RPT-NFCS-15, CWR 4, 7) (1291-2011-020, CWR 2)

3.1.26 Limits for the retrieval of containers shall not exceed Environmental Permit daily limit requirement (no annual limits specified):

AIR:

RCE (2 HEPA filtration) air limits:

23 containers of 55-gal drum equivalents/day

ICE (3 HEPA filtration) air limits

108 containers of 55-gal drum equivalents/day

ENVIRONMENTAL:

RCRA packaging: 300 containers of 55-gal drum equivalents/day.

(WMF-636 PTC)

3.1.27 Waste containers may be placed in a planar array storage in the RCE once removed from the waste stack.

(RPT-NFCS-15, CWR 10)

3.2 Prerequisites

3.2.1 Form-1183, Retrieval Round Sheet, has been completed and is satisfactory prior to initiation of retrieval operations.

3.2.2 The WTS is available and operable.

3.2.3 The RCE exhaust ventilation is operating when operations are being performed in the RCE per INST-OI-30.

(WMF-636 PTC; EDF-0496)

3.2.4 Industrial Safety/Industrial Hygiene has been contacted prior to daily startup to coordinate thermographic imaging, as well as any required IH sampling (personnel or area).

3.2.5 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

4.1 General Instructions

4.1.1 SS: Ensure that all prerequisites are completed.

4.1.2 Perform any or all the following substeps, as required, during retrieval:

4.1.2.1 Ensure the barcode scanner is available and operable.

4.1.2.1.1 **IF** the barcode scanner is not operable
THEN document dual verification on Form-2093, RCE Control Room Operator Log, or eSOMS or equivalent.

4.1.2.2 **IF** creating a box and dimensions are not approximately (4 ft × 4 ft × 8 ft),
THEN obtain drum equivalent calculation from engineering support.

4.1.2.3 ISO: Review Forms-2058, Retrieval ICE Daily Air Permit Tracking Sheet, -2059, Retrieval RCE Daily Air Permit Tracking Sheet, and -2060, Retrieval ICE Legacy Container Daily Tracking Sheet, to ensure the daily air permit and RCRA limits have **NOT** been achieved.

4.1.2.4 **IF** daily limits have been exceeded,
THEN suspend operations
AND notify the SS.

4.1.2.4.1 SS: Confirm that air permit limits have been exceeded.

4.1.2.4.1.1 SS: **IF** daily limits have been exceeded,
THEN notify Environmental and the PSM.

(WMF-636 PTC)

4.1.2.5 Initiate Form-2058 or Form-2059, as applicable and update when notified of a *breached* (see def.) container.

4.1.2.6 **WHEN** contacted by the Control Room operator of a breached container,
THEN initiate Form-2059 and update as appropriate.

NOTE: *The cameras or a control room operator may be used to verify barcode number labeling when operators are placing barcodes on the containers.*

4.1.2.7 **WHEN** RCE operators are placing barcode labels on the containers in the field,
THEN document the barcode numbers on Form-2059.

4.1.2.8 **WHEN** ICE operators are placing barcode labels on the containers in the field,
THEN document the barcode numbers on Forms-2058 or -2060, as applicable.

4.1.2.9 **WHEN** containers meet debris feedstock requirements per RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), Appendix A,
THEN load the uncharacterized debris SDOP per Section 4.6.

NOTE: *Sections may be performed concurrently.*

4.1.3 **GO TO** the appropriate section from the following table according to task being performed,
THEN RETURN to this step, if further activities will be performed:

Task	Section
Container Creation	4.2
WTS Inspection Station for Legacy Non-Commingled Repackaged Waste	4.3
WTS Inspection Station for Legacy Commingled Repackaged Waste	4.4
WTS Inspection Station for Waste Container Overpacking	4.5
Uncharacterized Six-Drum Overpack Creation and Loading	4.6
RCE Export Airlock Activities	4.7
Storage Requirements for the Export Airlock, RCE and ICE	4.8
End of Shift Activities	4.9
Post-Job Review	4.10
Abnormal and Infrequent Operations	4.11

4.2 Container Creation

NOTE: *The ISO performs this section unless otherwise indicated.*

4.2.1 **IF NOT** already performed,
THEN log into WTS as the ISO.

4.2.2 Confirm the correct AMWTP barcode number for the target container to be created.

4.2.2.1 **IF** the container is an isolation or collection container,
THEN attach barcode label(s) to the container per Appendix A, Container Labeling Reference Table.

4.2.3 **IF** creating a *legacy source container* (see def.),
THEN perform the following:

4.2.3.1 Initiate Form-2060 for the legacy source container.

4.2.3.2 Attach (e.g., paper clip) the associated legacy source container barcode label to the back of Form-2060.

NOTE: *The preferred method for entering barcode numbers is the barcode scanner.*

4.2.4 Select the "AMWTP Container ID" field and enter the confirmed AMWTP barcode container ID.

NOTE: *The following container types may be selected for legacy source containers:*

- *Legacy (LC30)*
- *Legacy (LC55)*
- *Legacy (LC83)*
- *LCBOX.*

4.2.5 Select the "Container Type" field and enter the appropriate container type.

4.2.6 Select the "Waste Type" field and enter the waste type of the container.

4.2.7 Select "Location" field and enter container creation area, if necessary.

4.2.7.1 **IF** the container is an isolation/collection container,
THEN GO TO Step 4.2.10.

NOTE 1: *Labels on retrieved containers may not be legible or may be lost. Every attempt is made to locate the historical information of the container.*

NOTE 2: *Multiple containers may contain similar digits in the ID number; the correct ID is matched by comparing the Generator and other information such as, tamper-indicating device (TID), D Number, weight, and IDC from the WTS to the container.*

NOTE 3: *Rocky Flats Environmental Technology Site (RFETS) drums will typically have a traveler on the top, or side, of the container. The traveler label is a valuable piece of information to the operator for identifying the waste stream. If legible, it will have a block either checked, or circled; each block identifies an RF waste stream (e.g., 1st stage sludge, 2nd stage sludge, or 774 Grease Plant).*

4.2.8 ISO or OT: Retrieve as much information as possible from the waste container labeling; for example:

- Historical traveler
- IDC, content code, waste type
- D number – specific to RF generated drums, located below the locking ring and above the first rolling hoop
- Historical container number
- TID (seal) – Several different types of TIDs were used, and were identified as seal numbers (i.e., paper, dynotape, clips, metal strips which were welded across the locking ring) in the generator databases as well as on the drum labels
- Generator site (i.e., RF, MD) INL tracking number
- Generation date
- Container pack date
- Radioactive and hazardous constituents
- Any other available and pertinent information entered in the container comments field.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

4.2.9 Enter the available data in the "Historical ID" field, and press F9.

4.2.9.1 **IF** no Historical ID populates,
THEN enter all historical markings into the "Container Markings" tab.

4.2.9.2 **IF** an Historical IDC is available on the Historical Traveler or written on the drum,
THEN select the "AK/OP Recommended IDC" field located in the "Container Markings" tab, press F9, and select the corresponding IDC.

4.2.9.3 **IF** the Historical IDC is **NOT** legible, but the waste description is documented on the historical traveler,
THEN ensure the following:

- An RF generator is identified on the historical traveler
- The waste description matches an IDC identified on Appendix E, Historical IDC Reference Table.

NOTE: *Item description code RF-760 is OP recommended only when the container's contents are visible, the contents can be identified as debris, and the container's generator can be identified as Rocky Flats.*

4.2.9.3.1 **IF** a debris,
THEN select the "AK/OP Recommended IDC" field located in the "Container Markings" tab, press F9, and select the RF-760 IDC only when the container's contents are visible, the contents can be identified as debris, and the container's generator can be identified as Rocky Flats.

4.2.9.3.2 **IF** a sludge,
THEN select the "AK/OP Recommended IDC field located in the "Container Markings" tab, press F9, and select the corresponding IDC.

4.2.9.4 **IF** there are no container markings,
THEN enter "UN-000" for the IDC in the comments field of the "Container Marking" tab.

4.2.9.5 **IF** there is matching data in WTS that has **NOT** been assigned to another AMWTP container,
THEN ensure information retrieved from the container matches the information entered into WTS, and is consistent with the WTS response.

4.2.9.6 Ensure "Container Type" field matches the container being created.

4.2.9.7 **IF** entering partial historical information,
THEN perform the following:

4.2.9.7.1 Enter the % sign before and after the partial historical information entry.

4.2.9.7.2 Press F9 to display all of the potentially matching numbers.

4.2.9.7.2.1 **IF** any of the following situations occur:

- No historical information populates
- The message "Container not found" is displayed
- The container information is incomplete
- The container information is unreadable
- The container is **NOT** labeled,

THEN enter all of the available information into the "Container Markings" tab.

4.2.10 Select the "Retrieval Area" field and enter the retrieval area and cell.

4.2.11 Select "Container Weight" field and enter the weight.

4.2.11.1 **IF** creating an inner container,
THEN subtract empty overpack weight from scale weight.

4.2.11.2 **IF** weight is **NOT** available,
THEN enter default weight of 1 lb.

4.2.12 **IF** container is a box,
THEN select the "Box Dimensions" field and enter box dimensions.

4.2.13 **IF** container is a bulged drum,
THEN select "Yes" in the "Bulged/venting Required" drop-down pick list.

4.2.14 **IF** container is **NOT** a bulged drum,
THEN select "No" in the "Bulged/venting Required" drop-down pick list.

4.2.15 Enter the dose rates in the appropriate fields.

4.2.15.1 **IF** dose rates are **NOT** available,
THEN use the populated default values.

4.2.16 Locate the "Pu239 FGE" field in the "Historical ID" tab, if available,
AND ensure that the value is ≤200 FGE for drums
OR ≤325 FGE for boxes.

4.2.16.1 **IF** the historical FGE value is >200 FGE but ≤380 FGE for drums
OR >325 FGE but <380 FGE for boxes,
THEN affix "FGE>WAC" label to container(s).

(RPT-NFCS-01, CWR 7.3.2)

4.2.16.2 **IF** container is >380 FGE,
THEN perform the following:

4.2.16.2.1 Suspend operations.

4.2.16.2.2 Notify the SS.

4.2.16.2.3 SS: Notify PSM.

(RPT-NFCS-15, CWR 9)

NOTE: *The visual classification of 5 is used only for legacy repackaging.*

4.2.17 Select the "Visual Classification" tab and then enter the visual class of the container.

4.2.17.1 Ensure each field is filled out with the applicable information.

4.2.18 Use the "Container Markings" tab and associated fields to record information about the container (e.g., if the container is overpacked, note the overpack barcode number), if necessary.

NOTE: *If the container is an inner container that was previously overpacked in the RCE completion of Section 4.7 is not required.*

4.2.19 **IF** container is to be exported from the RCE export airlock,
THEN ensure that Section 4.7 is complete before e-signing the container record.

4.2.20 **IF** container is an inner container that was previously overpacked in the RCE,
THEN do **NOT** perform Section 4.7.

4.2.21 E-Sign the container record.

4.2.22 **IF** any container data is entered incorrectly,
THEN perform the following:

4.2.22.1 Contact the SS for correction assistance.

4.2.22.2 SS: **IF** the error **CANNOT** be corrected,
THEN enter an NCR per MP-Q&SI 5.4, Identification of Nonconforming Conditions.

4.2.23 **IF** the container is a drum that is a collection or isolation container,
THEN update the "Filter Main" screen with the installed vent filter by performing the following:

4.2.23.1 Select "General>Container screens> Container Filters."

4.2.23.2 Scan container ID into the Container ID box
AND press F8.

NOTE: *The NucFil019SDS filter is recorded in WTS as the NF19SD filter*.

4.2.23.3 Click on the NF19SD COMMON FILTER button.

4.2.23.4 Select the "insertion event" from the drop-down menu.

4.2.23.5 Select "insertion date box" and enter the date.

4.2.23.6 Press the E-SIGN & SAVE button.

4.2.23.7 **IF** a pop-up message appears (e.g., The date does not synchronize with the event, accept the date?), **THEN** select the appropriate response.

4.2.23.8 E-SIGN & SAVE.

4.3 WTS Inspection Station for Legacy Non-Commingled Repackaged Waste

NOTE: *No more than two containers can be in* waste exposed status *(see def.) at one time.*

4.3.1 **IF NOT** already performed, **THEN** log into WTS as the ISO.

NOTE: *One box is equal to approximately eighteen 55-gal equivalent drums (conservative) in volume for air permit tracking.*

4.3.2 Ensure that the legacy source container has been created per Section 4.2.

4.3.2.1 Ensure that an individual Form-2060 has been initiated to track each legacy source container and associated data.

4.3.2.2 Ensure that Form-2058 has been initiated to track all waste exposed events in the ICE, daily or per shift.

4.3.2.2.1 Ensure any non-completed waste exposed data from the previous shift is transferred to the current shift's Form-2058.

4.3.2.3 Notify the SS that waste exposed date/time section has been completed on Form-2058.

4.3.2.4 Notify the SS of the remaining drum equivalent for waste exposed.

4.3.3 Ensure the *collection containers* (see def.) meet the following criteria:

- Container(s) is created per Section 4.2
- Container(s) type is an approved collection container that is 55-gal or larger listed in Appendix A
- Container(s) type meets criticality working requirements.

(RPT-NFCS-15, CWR 4)

4.3.4 Ensure the following sections on Form-2060 have been completed for each collection container:

- Container ID
- IDC
- Dose Rate
- WEIGHT/LB
- Container Type
- Closure Date/Time
- Waste Commingled Identified as “No”
- Treatment “Yes” or “No”
- Comments (e.g., legacy source container ID [or material if not from a container {e.g., soil, plywood}]).

4.3.4.1 Enter applicable comments in the form accessed by the “AMWTP Container” screen > “Cntr Markings” button (e.g., legacy source container ID, date, dose rate).

4.3.4.2 **REPEAT** Steps 4.3.4 through 4.3.4.1 to complete each collection container record,
THEN GO TO Step 4.3.5.

NOTE: *The closure count represents the number of collection containers associated with the legacy source container.*

4.3.5 **WHEN** all collection containers have been created for the legacy source container**,**
THEN perform the following:

4.3.5.1 Complete the remaining sections of Form-2060.

4.3.5.2 Complete Form-2058 for the legacy source container.

4.3.5.3 Enter applicable comments in the "AMWTP General Container" screen > "Container Markings" tab (e.g., legacy source container ID, date, dose rate).

4.3.5.4 Destroy the legacy source container barcode in WTS.

4.3.5.4.1 Affix the legacy source container barcode to the back of Form-2060.

4.3.6 Notify SS of closure event.

4.4 WTS Inspection Station for Legacy Commingled Repackaged Waste

NOTE: *No more than two containers can be in waste exposed status at one time.*

4.4.1 **IF NOT** already performed,
THEN log into WTS as the ISO.

NOTE: *One box is equal to approximately eighteen 55-gal drum equivalents (conservative) in volume for air permit tracking.*

4.4.2 Ensure that the legacy source container has been created per Section 4.2.

4.4.2.1 Ensure that an individual Form-2060 has been initiated to track each legacy source container and associated data.

4.4.2.2 Ensure that Form-2058 has been initiated to track all waste exposed events in the ICE, daily or per shift.

4.4.2.2.1 Ensure any non-completed waste exposed data from the previous shift is transferred to the current shift's Form-2058.

4.4.2.3 Notify the SS that waste exposed date/time section has been completed on Form-2058.

4.4.2.4 Notify the SS of the remaining drum equivalents for waste exposed.

4.4.3 Ensure the isolation containers meet the following criteria:

- Container(s) is created per Section 4.2
- Container(s) type is an approved isolation container that is 55 gal or 83/85 gal
- Container(s) type meets criticality working requirements.

(RPT-NFCS-15, CWR 5, 12, 13)

4.4.4 **IF** an item is encountered that is too large to place into an isolation container,
THEN create an approved collection container per Section 4.2, referencing Appendix C, Container Type Reference Table.

(RPT-NFCS-15, CWR 5)

4.4.5 Ensure the following sections on Form-2060 have been completed for each container:

- Container ID
- IDC
- Dose Rate
- WEIGHT/LB
- Container Type
- Closure Date/Time
- Waste Commingled Identified as “Yes”
- Treatment “Yes” or “No”
- Comments (e.g., commingled legacy source container ID [or material if not from a container {e.g., soil, plywood}]).

4.4.5.1 Enter applicable comments in the form accessed by the “AMWTP Container” screen > “Cntr Markings” button (e.g., legacy source container ID, date, dose rate).

4.4.5.2 **REPEAT** Steps 4.4.5 through 4.4.5.1 to complete each container record,
THEN GO TO Step 4.4.6.

NOTE: *The closure count represents the number of isolation/collection containers associated with the legacy source container.*

4.4.6 **WHEN** all containers have been created for the legacy source container**,** **THEN** perform the following:

4.4.6.1 Complete the remaining sections of Form-2060.

4.4.6.2 Complete Form-2058 for the legacy source container.

4.4.6.3 Enter applicable comments in the form accessed by the "AMWTP Container" screen > "Cntr Markings" button (e.g., children container ID, date, dose rate).

4.4.6.4 Destroy the legacy source container barcode in WTS.

4.4.6.4.1 Affix the legacy source container barcode to the back of Form-2060.

4.4.7 Notify SS of closure event.

4.5 WTS Inspection Station for Waste Container Overpacking

4.5.1 **IF** the inner container has **NOT** been created in WTS,
THEN GO TO Section 4.2 to create the container
AND RETURN TO Step 4.5.2.

4.5.2 **IF** the container being overpacked is an isolation container,
THEN ensure the following:

- 3-ft spacing, in a planar array, is maintained between waste containers and segregated from any other waste type
- Only one isolation container has a collar removed at a time
- Isolation container is continuously attended during the time the collar is off
- The overpack isolation container shall have an anti-stacking cone attached upon lidding.

4.5.2.1 Ensure that collar and/or anti-stacking cone removal activities are **NOT** performed (other than overpacking, replacement, and decontamination) UNLESS written approval is provided by NCS staff.

(RPT-NFCS-15, CWR 5, 6, 12, 13)

4.5.3 Ensure that the correct inner container barcode label has been attached to the correct overpack lid.

4.5.4 Ensure that an inner barcode and container marking label are affixed to the top of the overpack lid (for drums) or to the middle of the side of the box 3 ft from the bottom.

4.5.5 Create empty overpack container by performing the following:

4.5.5.1 Create an empty overpack container by navigating to General>Container Screens>New Container, and selecting Empty Overpack from the menu.

4.5.5.2 Enter the AMWTP container barcode number into the "AMWTP Container ID" field.

4.5.5.3 Select the container type from the "Container Type" field.

4.5.5.3.1 **IF** container is a box,
THEN enter box dimensions, if necessary.

4.5.5.4 Select location from the "Location" field.

4.5.5.5 Enter comments regarding the overpacking event (i.e., inverted overpack, historical ID, inner barcode number) in the "Add Container Comment" field on the "Comments" tab.

4.5.5.6 E-sign and save.

4.5.6 Complete WTS overpacking process by performing the following:

4.5.6.1 Select the "General" tab,
THEN select "Overpack/Unpack" from the menu.

4.5.6.2 Select "Overpack" from the drop down menu for the operation field.

4.5.6.3 Select the appropriate reason from the "Overpack Reason" field by pressing F9.

4.5.6.3.1 **IF** "Other" is selected in the "Overpack Reason" menu into the "Reason Comments" field,
THEN enter explanation.

4.5.6.4 Using a barcode scanner, scan the overpack AMWTP barcode number into the "Parent ID" field.

4.5.6.4.1 Press TAB button.

4.5.6.5 Place cursor in the "Child Container" ID field.

NOTE: *The parent container will be required to be in the same WTS location that the overpack will be performed.*

4.5.6.6 Ensure the parent container is in the same WTS location that the overpack will be performed and click "Yes."

4.5.6.7 Using a barcode scanner, scan the Child Container ID(s) into the "Child Container ID" fields.

4.5.6.8 Click E-sign button;
THEN click the FILTER SCREEN" button.

NOTE: *The NucFil019SDS filter is recorded in WTS as the NF192D filter*.

4.5.6.9 Click on the NF19SD COMMON FILTER button.

4.5.6.10 Select the "insertion event" from the drop-down menu.

4.5.6.11 Select "insertion date box" and enter the date.

4.5.6.12 Press the E-SIGN & SAVE button
AND E-SIGN & SAVE.

NOTE: *Once E-SIGN & SAVE is complete for the filter screen, WTS will return to "Inspection Station" screen for a final E-SIGN & SAVE*.

4.5.6.13 E-sign and save.

4.5.7 **IF** an AMWTP container record data is entered incorrectly,
THEN perform the following:

4.5.7.1 Contact the SS for correction assistance.

4.5.7.2 SS**: IF** the error **CANNOT** be corrected,
THEN enter an NCR as trained per MP-Q&SI-5.4.

4.6 Uncharacterized Six-Drum Overpack Creation and Loading

NOTE: *Steps 4.6.5, 4.6.12, 4.6.13, 4.6.13.1, and 4.6.16, may be performed concurrently, out of sequence, or repeated during the WTS creation and labeling of the waste container, as applicable.*

4.6.1 Ensure containers loaded into uncharacterized SDOPs have been created in WTS in accordance with Section 4.2.

4.6.2 Ensure breached or leaking containers are repaired in accordance with INST-OI-84, Waste Container Repair and Overpack,
OR overpacked in accordance with Section 4.5 prior to loading into uncharacterized SDOP.

4.6.3 Ensure lid is removed from the SDOP.

4.6.4 Create empty overpack container by performing the following:

4.6.4.1 Create an empty overpack container by navigating to General > Container Screens > New Container, and selecting Empty Overpack from the menu.

4.6.4.2 Enter the AMWTP container barcode number into the "AMWTP Container ID" field.

4.6.4.3 Ensure in WTS that a unique AMWTP barcode has been assigned to the SDOP.

4.6.4.4 Select the container type from the "Container Type" field.

4.6.4.5 Enter box dimensions.

4.6.4.6 Select location from the "Location" field.

4.6.4.7 Enter comments regarding the overpacking event (e.g., historical ID, inner barcode number) in the "Add Container Comment" field on the "Comments" tab.

4.6.4.8 E-sign and save.

4.6.5 Add additional drum barcode label to lid of child container before loading.

NOTE: *The weight of the retrieved container overpack should not be included in the 450-lb limits for SDOP loading.*

4.6.6 Ensure that the gross weight of each retrieved container does **NOT** exceed 450 lb.

4.6.7 Ensure that all of the selected containers have a current IDC assignment listed as acceptable feedstock in RPT-TRUW-83, Appendix A.

(1291-2011-020, CWR #1)

4.6.8 Ensure that containers placed in the SDOP are 55 gal or larger.

(RPT-NFCS-15, CWR 7)

4.6.9 **IF** historical information indicates the container is > 380 FGE,
THEN handle the container in accordance with Step 4.2.16.2
AND DO NOT load the container into an SDOP.

(RPT-NFCS-15, CWR 9)

4.6.10 Perform SDOP data entry.

4.6.10.1 Log on to WTS.

4.6.10.2 Select the "General" tab
THEN select "Overpack/Unpack" from the menu.

4.6.10.3 Select "Overpack" from the drop down menu for the operation field.

4.6.10.4 Select the appropriate reason from the "Overpack Reason" field by pressing F9.

4.6.10.4.1 **IF** "Other" is selected in the "Overpack Reason" menu,
THEN enter explanation.

4.6.10.5 Ensure the barcode scanner is available and operable.

4.6.10.5.1 Second OT: **IF** the barcode scanner is **NOT** operable,
THEN dual verify that a unique AMWTP barcode has been assigned to the SDOP
AND document dual verification onForm-2093 or eSOMS equivalent.

4.6.10.6 Using a barcode scanner, scan the overpack AMWTP barcode number into the "Parent ID" field and press tab.

4.6.10.7 Place cursor in the "Child Container" ID field.

NOTE: *The parent container will be required to be in the same location that the overpack will be performed.*

4.6.10.8 Ensure the parent container is in the same location that the overpack will be performed and click "Yes."

4.6.10.9 Ensure the barcode scanner is available and operable.

4.6.10.9.1 Second OT: **IF** the barcode scanner is **NOT** operable,
THEN dual verify that the parent container is in the same location that the overpack will be performed
AND document dual verification on Form-2093 or eSOMS equivalent.

4.6.10.10 Using a barcode scanner, scan the Child Container ID(s) into the "Child Container ID" fields.

4.6.10.11 Click E-sign button
AND acknowledge pop-up to continue.

4.6.10.11.1 E-sign and save.

4.6.11 Ensure that data was entered correctly by verifying the "AMWTP Container Screen."

4.6.11.1 Verify in WTS that the correct inner containers have been assigned to the SDOP, and all containers have an inactive status.

4.6.11.2 Verify that the SDOP has been assigned an IDC of BN-541.

4.6.12 Affix a Container Marking label for each child container to the corresponding location on the long side of the SDOP.

4.6.13 Affix inner container barcode labels to both long sides of the SDOP above the Container Marking label.

4.6.13.1 Write BN-541 on all sides of the SDOP.

NOTE: *Nails and/or screws are not approved fastening methods for SDOP lids.*

4.6.14 Using proper lifting methods, load drums into the SDOP, as needed.

4.6.15 Install lid
AND seal with approved tape.

4.6.16 Label SDOP per Appendix A.

4.6.17 Contact RCT for SDOP survey.

4.6.18 Submit the radiological survey data to the SS.

4.6.19 SS: Ensure radiological survey data from radiological sticker or radiological surveys are entered into WTS.

4.7 RCE Export Airlock Activities

NOTE: *Both the ISO and the OT can perform this section.*

4.7.1 **IF** the container is an isolation container,
THEN ensure that an anti-stacking cone is placed on top of the lid and a drum collar is installed.

(RPT-NFCS-15, CWR 6)

4.7.2 **DO NOT** perform any collar removal activity other than overpacking, collar replacement, or decontamination, UNLESS approved by NCS staff.

(RPT-NFCS-15, CWR 12)

NOTE: *The barcode label is used to identify a container and its contents*.

(HWMA/RCRA TSA IS Document)

4.7.3 Ensure all barcode numbers match prior to affixing to container, if necessary.

4.7.4 Ensure container(s) is labeled in accordance with Appendix A and INST-RS&C-6.6.2, Radiological Labeling.

(RPT-NFCS-01, CWR 7.3.2; HWMA/RCRA Permit; 40 CFR 761)
(RPT-NFCS-15, CWR 9)

4.7.4.1 **IF** labeling newly-generated waste,
THEN label container in accordance with INST-OI-24.

4.7.5 Ensure PCB labels (see Exhibit 1, Label Examples) are affixed to container if identified in WTS as a PCB drum
OR with **ONE** of the following IDCs:

- RF-003/RF-743
- BN-501 (PCB soil)
- BN-511 (PCB sludge or solids)
- BN-523 (PCB debris).

NOTE: *Containers with unknown contents are labeled with the words "Hazardous Waste," a barcode label, and IDC UN-000. If no label is present, a barcode and hazardous waste label is affixed at a minimum.*

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

4.7.6 **IF** the historical IDC is available,
THEN write the historical IDC on sides of container (three locations around the circumference of the drum or one on each side of a box) (see Appendix E).

4.7.7 **IF** the historical information **CANNOT** be identified or created in WTS,
THEN mark IDC UN-000 on sides of container (three locations around the circumference of the drum or one on each side of a box).

4.7.8 **IF** the container is a drum,
THEN perform the following, if **NOT** already completed:

NOTE: *The Waldon drum handler is unable to grip some of the deformed/out-of-round drums due to its inability to maintain surface contact on the gripper arms.*

4.7.8.1 **IF** drums are deformed or out-of-round,
THEN use the Dent-o-meter to gauge the roundness of the drum.

(EDF-0075)

4.7.8.2 **IF** the gap between the side of the drum and the Dent-o-meter is 1/2 in. or more,
THEN place two "Parrot Beak Handler Only" labels, on opposing sides of container, between the center rolling hoop.

(EDF-0075)

4.7.9 **IF** the container being labeled is a box weighing 4,000 lbs or more,
THEN affix a "> 4,000 lb" label to each side of the box.

4.7.10 **IF** the container being labeled is a drum weighing 700 lbs or more,
THEN affix three ">700 lb" labels to the drum.

4.7.11 **IF** the container is a drum,
THEN write the weight on the lid of the drum.

4.7.12 **IF** the container is a box,
THEN write the weight on the sides of the box.

4.7.13 **IF** container is an isolation/collection container(s),
THEN select the AMWTP Container Screen and enter updated container information in the "Container Markings Comments" field.

4.7.13.1 ISO: Ensure the following:

- All barcodes placed on container have the same number on them
  AND they match the WTS entry
- Weight has been entered in the WTS Container Markings Tab in the "Container Markings Comments" field for each container being exported
- Radiological dose rates have been entered in the WTS Container Markings in the "Container Markings Comments" field for each container being exported.

4.7.14 Ensure the following:

- Container is torqued per Appendix B, Torque Value Reference Table, if applicable
- Form-1625, M&TE Usage Report, is completed, if applicable.

4.7.15 Ensure that containers that are found with a combined (gamma and neutron) total dose rate of 40 mrem or greater on contact have two elevated dose rate labels applied on opposite sides of the container before export from the RCE export airlock.

NOTE: *Individual containers that have an external radiation dose equivalent rate of >200 mrem/hr at the surface are segregated or overpacked.*

4.7.15.1 **IF** the combined (gamma and neutron) total dose rate of a container is >200 mrem/hr,
THEN suspend operations
AND notify the SS.

4.8 Storage Requirements for the RCE Export Airlock, RCE and ICE

NOTE: *This section applies to containers that have already been retrieved or repackaged.*

4.8.1 Store retrieved container in a received waste storage area, located on any portion of the asphalt pad, which has been cleared and designated for usage as a storage area.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

4.8.2 Ensure that waste containers are **NOT** placed off of the asphalt pad on the dirt **UNLESS** the container is a low-level waste container.

(HWMA/RCRA TSA IS Document)

4.8.3 Ensure IDC IW-179 is stored separate from all other IDCs.

(HWMA/RCRA TSA IS Document)

4.8.4 Ensure IDC RF-998 is stored separate from all other IDCs.

(HWMA/RCRA TSA IS Document)

NOTE: *IDC RF-999 and RF-751 may be stored together.*

4.8.5 Ensure that IDC RF-999 and RF-751 are stored separate from all other IDCs.

(HWMA/RCRA TSA IS Document)

NOTE: *Appendix D, Table of Incompatible IDCs, provides waste type and general description information.*

4.8.6 Provide segregation/separation of incompatible IDCs per the following table:

NOTE: *In the following table, "NO" applies to the restricted waste type.*

Waste Type Storage Restrictions	**Liquids Identified <5 Gallons**	**Liquids Identified ≥5 Gallons**
Acids	NO Halogenated Organics	NO Halogenated Organics NO Caustics
Oxidizers	NO Halogenated Organics	NO Halogenated Organics
Caustics	N/A	NO Acids
Halogenated Organics	NO Acids NO Oxidizers	NO Acids NO Oxidizer

(HWMA/RCRA TSA IS Document; HWMA/RCRA Permit)

4.8.7 Store all potential pyrophoric materials in a designated potential pyrophoric materials storage area, as designated by a nuclear facility manager per the following:

(HA-N-072; HA-N-073; HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

NOTE: *Fire retardant plywood is not considered a combustible material*.

- Farther than 3 ft away from a row of containers containing combustible material (e.g., a container made of plywood, cardboard, fiberglass reinforced plywood)
- Farther than 10 ft away from other combustible materials, such as operational supplies (this does not include non-fire retardant plywood when used as a spacer in the storage array).

(HA-N-072; HA-N-073; HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

4.8.7.1 SS: Notify the PSM prior to moving potential pyrophoric materials.

4.8.7.2 SS: Notify the PSM of the location of each row containing potential pyrophoric materials.

4.8.7.2.1 PSM: Notify the INL Fire Department of the location of each row containing potential pyrophoric materials.

(HA-N-072; HA-N-073; HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

NOTE: *Spill pallets are an acceptable means of segregation.*

4.8.8 Store bulged drums on spill pallets planar array no more than two containers wide and no more than 50 containers long.

4.9 End of Shift Activities

4.9.1 Ensure end of shift communication with the SS includes the following:

- RCRA Permit limit count for the day
- Air Permit limit count for the day
- Barcode numbers of containers that will remain "waste exposed" over night
- Bulged container count and oldest bulged container storage in TSA-RE.

4.9.2 Deliver Forms-1625, -2058, -2059, and -2060, -2093 to the SS.

4.10 Post-Job Review

4.10.1 SS: Perform a post-job review in accordance with MP-COPS-9.17.

4.11 Abnormal and Infrequent Operations

4.11.1 **GO TO** the appropriate section from the following table according to task being performed,
THEN RETURN to this step, if further activities will be performed:

Task	Section
Free Fossil Fuel Spill	4.11.2
Loss of WMF-636 Ventilation	4.11.3
Retrieval Contamination Enclosure Ventilation Loss	4.11.4
Continuous Air Monitor Alarm in the Affected Area	4.11.5
Loss of Commercial Power	4.11.6
Elevated Volatile Organic Compound Levels	4.11.7
Breached, Contaminated, or Spilled Waste Container	4.11.8
Moisture/Oil Residue on the Waste Drum	4.11.9
Bulging Waste Container	4.11.10
Elevated Thermographic Temperature	4.11.11

4.11.2 **Free Fossil Fuel Spill**

4.11.2.1 **IF** a spill of free fossil fuel is found to be present in the TSA-RE, including the RCE and ICE,
THEN respond per INST-OI-88.

4.11.3 **Loss of WMF-636 Ventilation**

4.11.3.1 Suspend WMF-636 operations.

4.11.3.2 Notify SS.

4.11.3.3 SS: Notify RCSS, IS/IH, PSM, and Environmental.

4.11.3.3.1 **IF** abnormal event occurs outside of support organization shift hours (4x10),
THEN notify Environmental at the start of the next business day OR via email.

(WMF-636 PTC)

4.11.3.4 Proceed at the direction of the SS.

4.11.4 **Retrieval Contamination Enclosure Ventilation Loss**

4.11.4.1 Suspend all retrieval activities.

4.11.4.2 Notify SS.

4.11.4.3 SS: Notify RCSS, IS/IH, PSM, and Environmental.

4.11.4.3.1 **IF** abnormal event occurs outside of support organization shift hours (4 × 10),
THEN notify Environmental at the start of next business day or via email.

(WMF-636 PTC)

4.11.4.4 RCSS: **IF** an airborne radioactivity area (ARA) was present **OR** there are unknown radiological conditions,
THEN ensure CAMs continue to monitor the vicinity of the RCE.

4.11.4.5 SS, IS/IH, and RCSS: Based on conditions present, evaluate for personnel evacuation.

4.11.4.5.1 SS: **IF** conditions warrant,
THEN evacuate personnel.

4.11.4.5.2 SS: Notify the PSM.

4.11.4.6 Attempt restart per INST-OI-30.

4.11.4.6.1 SS: **IF** RCE ventilation **CANNOT** be restarted,
THEN ensure TSA-RE ventilation is secured.

4.11.4.6.2 SS: Notify the PSM.

4.11.5 Continuous Air Monitor Alarm in the Affected Area

4.11.5.1 **IF** a CAM alarms in the TSA-RE
OR the RCE without RCE ventilation operating
OR any RCE airlock,
THEN perform the following:

4.11.5.1.1 All Personnel: Place equipment and processes in a stable configuration.

4.11.5.1.2 Personnel in Supplied Breathing Air (SBA): Stand by for instruction.

4.11.5.1.3 All Others: Exit the TSA-RE.

4.11.5.1.4 Guard or post the area to prevent re-entry.

4.11.5.1.5 Notify the SS.

4.11.5.1.6 SS: Notify the PSM and RCSS.

4.11.5.2 **IF** a CAM alarms in RCE with RCE ventilation operating,
THEN perform the following:

4.11.5.2.1 All Personnel in the RCE: Place equipment and processes in a stable configuration.

4.11.5.2.2 Personnel in SBA: Stand by for instruction.

4.11.5.2.3 All Others: Exit the RCE per RCT direction.

4.11.5.2.4 Guard or post the area to prevent re-entry.

4.11.5.2.5 Notify SS.

4.11.5.2.6 SS: Notify the PSM and RCSS.

4.11.6 **Loss of Commercial Power**

4.11.6.1 Place the equipment in a stable configuration **AND** suspend operations.

4.11.6.2 Personnel in SBA: Perform expedited egress per RCT direction.

4.11.6.3 Personnel in Powered Air Purifying Respirator (PAPR): Perform controlled egress per RCT direction.

4.11.6.4 ALL Personnel in TSA-RE: Evacuate TSA-RE **AND** stand by for radiological surveys.

4.11.6.5 Post guards to prevent entry into the TSA-RE.

4.11.6.6 Notify the SS.

4.11.6.7 SS: Notify RCSS, IS/IH, Environmental, and PSM.

4.11.6.8 Proceed at the direction of the SS.

4.11.7 **Elevated Volatile Organic Compound Levels**

4.11.7.1 **IF** volatile organic compound (VOC) levels are sustained in the breathing zone at 5 ppm, or greater, for 2 minutes, **THEN** perform the following:

4.11.7.1.1 Suspend operations.

4.11.7.1.2 Exit the RCE export airlock.

4.11.7.1.3 Notify the SS.

4.11.7.1.4 SS: Notify the RCSS, PSM, and IS/IH.

4.11.7.1.5 IS/IH: Perform further *characterization* (see def.) of the VOCs.

4.11.7.1.6 Proceed at the direction of IS/IH.

4.11.8 **Dropped, Mishandled, and/or Breached/Leaking/Spilled Waste Container**

4.11.8.1 Suspend all waste handling operations in the RCE export airlock.

4.11.8.2 Evacuate the RCE export airlock.

4.11.8.3 Notify the SS.

4.11.8.4 Post or guard to prevent entry into the RCE export airlock.

4.11.8.5 SS: Notify PSM, RCSS, IS/IH, and Retrieval manager.

4.11.8.6 RCSS, IS/IH, and Retrieval Manager: Evaluate conditions **AND** respond per MP-RS&C-6.12 and INST-OI-88, if necessary.

4.11.8.7 **IF** removal of containers is necessary to recover the container or any spillage,
THEN resume waste handling operations in the affected area to support recovery, as directed by the SS.

4.11.8.7.1 **IF** the spilled material is from a single container,
THEN package the spilled material and the waste container in an overpack container.

(RPT-NFCS-15, CWR 11)

4.11.8.7.2 **IF** the waste is commingled,
THEN package into an isolation container.

(RPT-NFCS-15, CWR 11)

4.11.8.7.3 **IF** cleanup from a spill/leak from a waste container **CANNOT** be completed by the end of shift,
THEN perform the following:

4.11.8.7.3.1 SS: Notify the PSM.

4.11.8.7.3.2 Treat the residual debris and materials as commingled waste, UNLESS approved otherwise by NCS staff.

(RPT-NFCS-15, CWR 11)

4.11.8.7.3.3 Notify Environmental and NCS staff.

4.11.8.8 **IF** container was dropped or mishandled,
THEN perform an evaluation of the dropped/mishandled container per the following:

- Does the container have significant surface defects, such as extensive corrosion, cracks, or bowing?
- Is there evidence that the container is or has been pressurized, bulged, or concave?
- Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, discoloration, or cracks?
- Is there evidence of loose closure hardware?
- Is the load bearing capacity suspect?

(HWMA/RCRA TSA IS Document; HWMA/RCRA Permit)

4.11.8.8.1 SS: **IF** any of the above-conditions are found, **THEN** ensure that the container is overpacked per Section 4.5, and repaired, processed, or labeled, as necessary, per INST-OI-84.

4.11.8.8.2 Recover the dropped/mishandled container at the direction of the SS.

4.11.8.9 SS: **IF** the waste container was breached/leaking/spilled, **THEN** notify the Environmental Compliance manager or the Environmental on-call person of the breach/leaking/spill.

4.11.9 **Moisture/Oil Residue on the Waste Drum**

4.11.9.1 Suspend retrieval operations in the immediate area.

4.11.9.2 Notify SS.

4.11.9.3 SS: Contact IS/IH, PSM, and the RCSS.

4.11.9.4 Follow IS/IH instructions with concurrence from the SS and RCSS.

4.11.10 **Bulging Waste Container**

4.11.10.1 Place equipment in a stable configuration.

4.11.10.2 Suspend all waste handling operations in the vicinity of the container.

4.11.10.3 Warn others in the area.

4.11.10.4 Evacuate personnel a minimum of 30-ft radius/boundary.

4.11.10.5 Notify the SS, RCSS, PSM, and IS/IH.

4.11.10.6 Attempt to determine the contents of the drum by means of the WTS barcode number (if available) and any other pertinent information (from labels, etc.) that can be used to plan remedial actions.

4.11.10.7 IS/IH: Perform thermographic screen of suspect drum.

4.11.10.7.1 **IF** thermographic temperature greater than 5ºF above ambient is discovered,
THEN GO TO Section 4.11.11.

4.11.10.8 RCT and IS/IH**:** With RCSS, IS/IH, and SS approval, characterize the drum for VOCs and contamination.

4.11.10.8.1 **IF** VOC levels are elevated
THEN GO TO Step 4.11.6.

4.11.10.9 SS, RCSS and IS/IH: Evaluate the results of surveys.

4.11.10.10 **WHEN** container is in accessible condition
AND/**OR** ready to move,
THEN ensure a lid restraint device is applied to container.

4.11.10.11 **IF** the drum is bulged such that it **CANNOT** be handled using a parrot beak attachment,
THEN move the drum using approved lid restraints and/or lifting device.

4.11.10.12 Segregate bulged waste container from other containers ensuring container is placed in secondary containment until container can be vented.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

4.11.10.13 SS: **IF** recovery **CANNOT** be completed by the end of shift,
THEN notify the PSM and Environmental.

4.11.11 **Elevated Thermographic Temperature**

4.11.11.1 **IF** temperatures are found to be between 5 and 20ºF above ambient conditions,
THEN perform the following:

4.11.11.1.1 Notify the SS.

4.11.11.1.2 SS: Notify IS/IH.

4.11.11.1.3 When appropriate, move drum with continuous thermographic imaging of the drum.

4.11.11.2 **IF** an increase in temperature is observed during movement,
THEN perform the following:

4.11.11.2.1 Place the container in a stable configuration and suspend operations.

4.11.11.2.2 Notify the SS.

4.11.11.2.3 SS: Notify IS/IH.

4.11.11.2.4 **IF** temperatures have not exceeded 20ºF above ambient conditions,
THEN continue monitoring during processing.

4.11.11.3 **IF** temperatures are greater than 20°F above ambient conditions,
THEN ensure the container is placed in a stable configuration
AND suspend operations.

4.11.11.3.1 Notify the SS
AND proceed as directed.

4.11.11.3.2 SS: Notify the PSM.

4.11.11.4 IS/IH: **IF** at any time containers have temperatures equal to or greater than 135°F and/or the rate of rise is equal to or greater than 15°F per minute,
THEN perform the following:

4.11.11.4.1 IS/IH Evacuate all personnel fromWMF-636.

4.11.11.4.2 Notify the SS.

4.11.11.4.3 SS: Notify the INL Fire Department, the fire marshal, and the PSM.

5.0 DEFINITIONS

Breached. Any physical degradation in the structural soundness of a container that could potentially lead to a *release* (see def.) of waste and/or contamination. A breach is a hole in the container that can lead to leaks, spills, or releases.

Characterization. A process of determining and documenting all pertinent constituents with their physical, radiological, and chemical characteristics, as well as the applicable HWMA/RCRA waste codes from 40 CFR 261, Identification and Listing of Hazardous Waste. The process of identifying waste composition and properties using acceptable knowledge, nondestructive examination, nondestructive assay, intrusive visual examination, and/or sampling and analysis, to comply with applicable storage, treatment, handling, transportation, and disposal requirements.

Collection container. A nominal 55-gal drum or container of any other size (e.g., a nominal waste box) provided that the footprint of the container is at least the same surface area as a nominal 55-gal drum.

Commingled waste. Uncontained debris/waste that has come into physical contact with uncontained debris originating from another ruptured/breached container. Commingled debris/waste may also include uncontained waste from a single ruptured waste stack container that has subsequently intermixed with soil that previously surrounded the ruptured waste stack container.

Free-fossil fuel. Diesel fuel or gasoline in portable storage or fuel transport containers (e.g., gas cans, drums, vessels) or spilled diesel fuel or gasoline from portable storage or fuel transport trailers. Fossil fuel in vehicle or equipment fuel tanks or in the RCE diesel fueling system is not free fossil fuel.

Isolation container. A 55-gal or 83/85 gal drum with a criticality collar attached and an anti-stacking cone when lidded.

Leak. Waste that has discharged, escaped, leached, etc. out of its container and remains on the container. For example, material from inside the container that has not left the container surface to contaminate any other surface.

Legacy noncommingled repackaged waste. Packaged waste originating from a singular source container in which the original configuration of the waste has been altered.

Legacy commingled repackaged waste. Repackaged waste originating from multiple sources in which the original configuration of the waste has been altered; escaped debris/waste that has come into physical contact with debris originating from another container.

Legacy source container. Waste container, located in the retrieval stack, in which the repackaged waste originates from.

Release. Any identifiable waste that has spilled, leaked, poured, emitted, emptied, discharged, injected, pumped, escaped, leached, dumped or disposed of into environment media and is not contained by permitted secondary containment, or other permitted engineering controls; for example airborne radiological contamination inside of a Type II module, or waste spilled onto the road between buildings.

Six-drum overpack. A constructed box containing no more than six drums (55 gallon or larger).

Spill. When RCE ventilation is running, a spill is waste, including packaged waste (e.g., polybags or bottles), that has discharged, escaped, emptied, leached, etc., out of its container in any quantity and has contacted other surfaces. Waste that is inside the ICE, when ICE is functioning as a containment, is not considered a spill. An as-found condition in the waste stack is also NOT considered a spill. When RCE ventilation is NOT running, a spill is defined and responded to per INST-OI-88.

Waste exposed status. For the purposes of WTS, RCRA and air permit limit tracking, term used in this instruction to identify when waste in the stack is exposed and ready to be repackaged inside the ICE.

6.0 REFERENCES

(1) 1291-2011-020**,** Criticality Safety Evaluation, Enhanced (Uncharacterized) SDOP Processing

(2) 40 CFR 261, Identification and Listing of Hazardous Waste

(3) 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and use Prohibition

(4) 40 CFR 761.65, Storage for Disposal

(5) 40 CFR 761.79, Decontamination Standards and Procedures

(6) AMWTP-5232-PTC-02, Application To Construct An Air Pollution Emitting Facility: The Transuranic Storage Area – Retrieval Enclosure

(7) AMWTP HWMA/RCRA Permit

(8) EDF-0075, Handling of Deformed Drums During Retrieval

(9) EDF-0084, Drum Integrity Evaluation Options Analysis

(10) EDF-0496, ALARA Job Review (AJR) - RCE/ICE Retrieval Operations

(11) HA-N-023, Hazard Assessment for INST-OI-09

(12) HA-N-072, Hazard Assessment for INST-OI-100

(13) HA-N-073, Hazard Assessment for INST-OI-101

(14) HWMA/RCRA TSA Interim Status Documents/Part A Permit

(15) IDAPA-58.01.01, Clean Air Act

(16) IH-EA-027, Retrieval Enclosure Waste Container Extraction Operations

(17) IH-EA-028, Inner Containment Enclosure Waste Container Extraction Operations

(18) INST-OI-11, Waste Container Handling

(19) INST-OI-24, Packaging Radioactive Waste

(20) INST-OI-30, WMF-636, RCE, and ICE Ventilation Operations

(21) INST-OI-84, Waste Container Repair and Overpack

(22) INST-OI-88, Spill/Leak Response and Cleanup

(23) INST-OI-98, Packaging Non-Radioactive Waste

(24) INST-OI-107, Refueling Equipment in the TSA-RE

(25) INST-RS&C-6.6.2, Radiological Labeling

(26) MP-CMNT-10.8, Hoisting and Rigging

(27) MP-COPS-9.17, Performing Pre-Job Briefs and Post-Job Reviews

(28) MP-DOCS-18.2, Records Management

(29) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(30) MP-RS&C-6.12, Response to Abnormal Radiological Conditions

(31) MP-RS&C-6.14, Control of Radioactive Contamination, Materials, and Equipment

(32) RPT-ESH-01, Non-Facility Operations Fire Hazards Analysis and Fire Safety Assessment

(33) RPT-ESH-049, Hydrogen Deflagration Mitigation Process

(34) RPT-NFCS-01, Criticality Safety Analysis for TRU Waste Storage (EDF-0034)

(35) RPT-NFCS-15, Criticality Safety Evaluation for TSA-RE Retrieval Operations

(36) RPT-TSR-03, Technical Safety Requirements

(37) RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

(38) Toxic Substance Control Act

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-09, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Form-1183, Retrieval Round Sheet	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1625, M&TE Usage Report	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-2058, Retrieval ICE Daily Air Permit Tracking Sheet	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-2059, Retrieval RCE Daily Air Permit Tracking Sheet	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-2060. Retrieval ICE Legacy Container Daily Tracking Sheet	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-2093, RCE Control Room Operator Log	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

Exhibit 1 – Label Examples

9.0 APPENDICES

Appendix A – Container Labeling Reference Table

Appendix B – Torque Value Reference Table

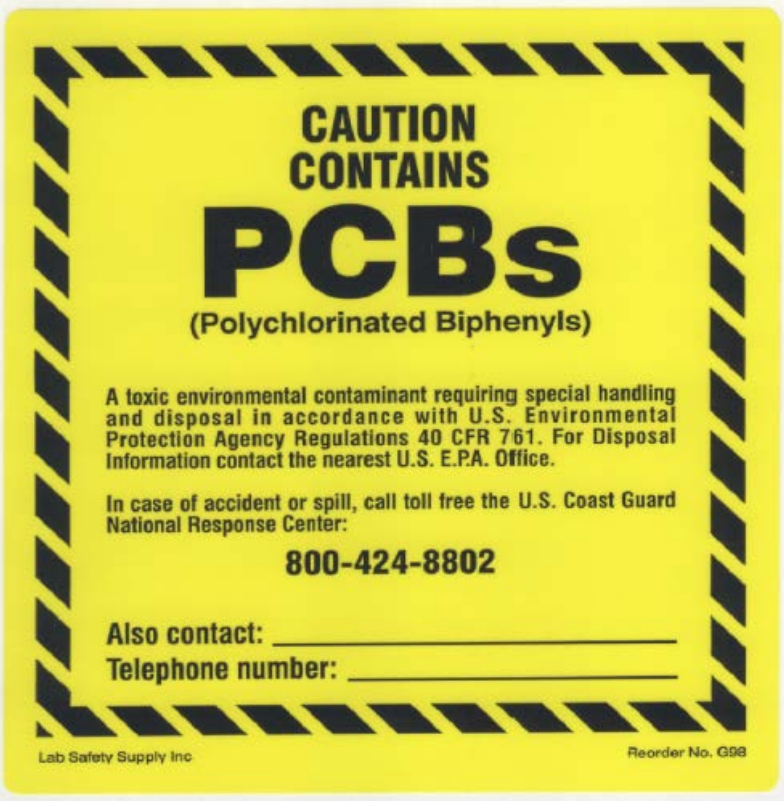
Appendix C – Container Type Reference Table

Appendix D – Table of Incompatible IDCs

Appendix E – Historical IDC Reference Table

Appendix F – Revision Log

Exhibit 1 – PCB Label Examples



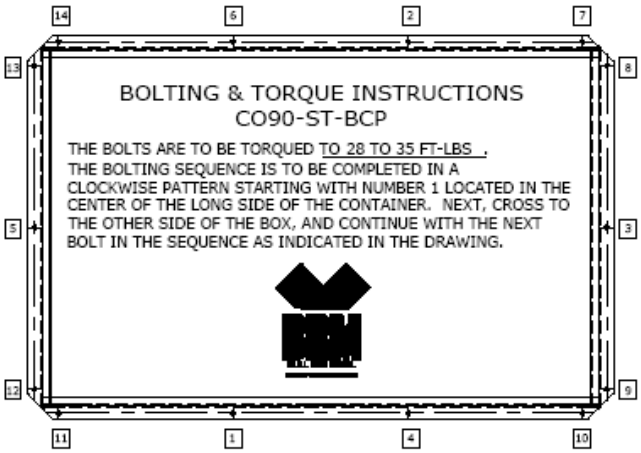
Appendix A – Container Labeling Reference Table

Type/Labels	55-Gal Drum	83-/85-Gal Drum	100-/110-Gal Drum	Cargos/Box
Barcode	Six labels (spaced evenly at approximately 60 degree intervals) below the bottom rolling hoop from top to bottom (i.e., vertically)	Six labels (spaced evenly at approximately 60 degree intervals) 6-10 in. above the bottom of drum from top to bottom (i.e., vertically)	Eight labels (spaced evenly at approximately 45 degree intervals) between first and second rolling hoop from top to bottom (i.e., vertically)	Two horizontal labels on long axis 4 in. above bottom edge of container, including skids Two vertical labels on short axis 2 ft up/1 ft in from left side
Radioactive Material	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label on side of the long axis
Hazardous Waste	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label on side of the long axis
PCB IDCs RF-003, RF-743, RF-746, BC-203, and BN-603	Two 6-in. PCB labels opposite each other	Two 6-in. PCB labels opposite each other	Two 6-in. PCB labels opposite each other	Four 6-in. PCB labels one on each side
Beryllium	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label between middle and top rolling hoop	One label on side of the long axis
>700 lb	Three labels placed on each drum approximately 120 degrees apart below the middle rolling hoop.	Three labels placed on each drum approximately 120 degrees apart below the middle rolling hoop	Three labels placed on each drum approximately 120 degrees apart below the middle rolling hoop	N/A
>4,000 lb	N/A	N/A	N/A	Four labels one on each side of the box

Type/Labels	55-Gal Drum	83-/85-Gal Drum	100-/110-Gal Drum	Cargos/Box
Incompatibles	Two labels underneath top rolling hoop	Two labels underneath top rolling hoop	Two labels underneath top rolling hoop	N/A
High Fissile Gram Equivalent (FGE) >380	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels in center one on each side of the long axis
Elevated Dose Rate	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels in center one on each side of the long axis
> WAC FGE >200 FGE <380 FGE (Drums) >325 FGE <380 FGE (boxes)	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels in center one on each side of the long axis
Offsite Waste	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels in center one on each side of the long axis
Potential pyrophoric materials	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Two labels 180 degrees between middle and top rolling hoop	Four labels one on each side

Appendix B –
Torque Value Reference Table

Container Type	Torque Value	Special Instructions
Cake Box (bottom opening)	40 – 50 ft-lb	Alternating torque sequence from side to side.
Cake Box (bottom top opening)	15 – 18 ft-lb	Alternating torque sequence from side to side.
83-/85-gal container (previously used)	40 ft-lb (+/-4 ft-lb)	Rubber mallet is used to ensure lid ring is seated during torque application. Lid ring ends do not touch. Jam nut is tightened on unthreaded lug of drum ring.
55-/83-/85-/110-gal container (new Skolnik)	60 ft-lb	Rubber mallet is used to ensure lid ring is seated during torque application. Lid ring ends do not touch. Jam nut is tightened on unthreaded lug of drum ring.
55-83-/85-/110-gal container (new Myers)	≥60 ft-lb <7/16-in.- gap on the lock ring	Rubber mallet is used to ensure lid ring is seated during torque application. Lid ring ends do not touch. Jam nut is tightened on unthreaded lug of drum ring.
BR-90 Bull Run Box	28 – 35 ft-lb	Please see Page B2 for instructions.
P-90 Box	20 ft-lb	Torque per manufacturer instructions
Filter NucFil-019SDS	15 ft-lb	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BOLTING & TORQUE INSTRUCTIONS
CO90-ST-BCP
THE BOLTS ARE TO BE TORQUED TO 28 TO 35 FT-LBS .
THE BOLTING SEQUENCE IS TO BE COMPLETED IN A CLOCKWISE PATTERN STARTING WITH NUMBER 1 LOCATED IN THE CENTER OF THE LONG SIDE OF THE CONTAINER. NEXT, CROSS TO THE OTHER SIDE OF THE BOX, AND CONTINUE WITH THE NEXT BOLT IN THE SEQUENCE AS INDICATED IN THE DRAWING.

Appendix C –
Container Type Reference Table

CONTAINER TYPE CODE	DESCRIPTION	HEIGHT	55-GAL DRUM EQUIVALENT	TARE WEIGHT (lb)	CATEGORY
425	drum, 55-gal (UN1A2/X/425/S), DOT/WIPP approved	34.4	1.00	59.000	DRUM
7A85	drum, 85-gal Open Head Drum, DOT-7A	37	1.75	80.000	DRUM
85	FOR NEW DRUM - 85	37	1.75	87.000	DRUM
010	Standard waste box	36.19	9.25	625.000	BOX
CBX	Cakebox	30	22.50	784.828	BOX
BR90	BR90, AMWTP Bull Run CO-90	47	12.50	703.000	BOX
SDOP	6-drum overpack	46.88	9.75	360.000	BOX
OCBX	Oversize cakebox	68	27.75	1125.000	BOX
110	110 gal (UN1A2/Y409/S)	41	2.00	100.000	DRUM
C	drum, 83 Gallon	39	1.75	83.000	DRUM
P-90	90 cu ft box (Premiere)	47	12.50	703.000	BOX

NOTE: *All containers smaller than a 55-gal drum will be overpacked into a 55-gal drum, or larger.*

(RPT-NFCS-15, CWR, 2, 4, 7)

Appendix D – Table of Incompatible IDCs

NOTE: *IDCs that are not listed in the following table are considered compatible with all waste, including waste that is included in this table, with the exception of potential pyrophoric materials.*

Waste Type	General Waste Description
Acids	ID-150: Laboratory Waste MD-805: Asbestos Filters MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-241: Americium Process Residue
Oxidizers	ID-005: Evaporator Salts Retrieved RF AE-100: General Plant Waste MD-805: Asbestos Filters MD-811: Evaporator and Dissolver Sludge MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-005: Evaporated Salts RF-241: Americium Process Residue RF-430: Resin, Ion Column-Unleached RF-745: Pits 11 & 12 Evaporator Salts SD-703: Inorganic Sludge
Caustics	MD-835: High Level Caustic

Waste Type	General Waste Description
Halogenated Organics	RF-003: Organic Setups, Oil Solids RF-700: OASIS Waste RF-801: Solidified Organics BN-501: AMWTP PCB Soil BN-518: TRU Supercompactor Squeezants BN-526: Sample Returns BN-528: TRU PCB Liquids Generated During Retrieval BN-603: Absorbed Analytical Liquids BN-605: Absorbed Liquids TSCA/PCB RF-743: Pits 11 & 12 Organic Setups RF-746: Pits 11 & 12 Pad Oil Drums SD-704: Organic Sludge SD-705: Debris SD-706: Soil UN-00A: Undefined homogeneous solids
Unknowns	PC-000: "True" or post-RTR unknown
Potential Pyrophoric Materials	RF-751: Roaster Oxide RF-999: Potential Roaster Oxide
Heterogeneous Debris	RF-998: Heterogeneous Debris
Heterogeneous Debris	IW-179: Early Waste Retrieval Heterogeneous Debris

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

Appendix E – Historical IDC Reference Table

Table 1. Retrieval Operations Recommended IDC Summary Category S3000 Sludge.

Historical Prefix	Historical IDC	Waste Form Description	IDC Assignment
741	**001, 01, 1**	**First Stage Sludge**	**RF-001**
742	**002, 02, 2**	**2nd Stage Sludge**	**RF-002**
743	**003, 03, 3**	**Organic Setups, Grease Plant**	**RF-003**
744	**004, 4**	**Special Set Ups**	**RF-004**
745	**005, 05, 5**	**Evaporator Salts**	**RF-005**
444		Roaster Oxide	RF-751
1544		Roaster Oxide	RF-751
362		Roaster Oxide	RF-751
83		Roaster Oxide	RF-751
883		Roaster Oxide	RF-751
865		Roaster Oxide	RF-751
		Dirt (Soil)	RF-090
995		Sewer Sludge (995 Sludge)	RF-095
		Filter Sludge	RF-290
		Graphite Heels	RF-311
		Insulation Heels	RF-361
		Oil-Dri	RF-375
		Sand, Slag, and Crucible Heels	RF-393
		Molten Salt – 30% Unpulverized	RF-409
		Molten Salt – 30% Pulverized	RF-410
		Electrorefining Salt	RF-411
		Gibson Salt	RF-412
		Direct Oxide Reduction Salt	RF-414
		Ash, Incinerator (Virgin)	RF-420
		Ash Heels	RF-421
		Soot	RF-422
		Unleached Ion Column Resin	RF-430
		Leached Resin	RF-431
		Resin, Leached and Cemented	RF-432
		Building 776 Process Sludge	RF-976
		Laundry Sludge	RF-978

Historical IDCs and Prefix in **BOLD** are the most likely S3000 containers that may be encountered.

Table 2. Retrieval Operations Recommended IDC Summary Category S5000 Debris.

Historical IDC	Description of Waste Form	IDC Assignment
300	**Graphite Molds**	**RF-300**
330	**Paper and Rags-Dry**	**RF-330**
336	**Paper and Rags-Moist**	**RF-336**
337	**Plastic, Teflon®, Washables, PVC**	**RF-337**
360	**Insulation**	**RF-360**
440	**Glass**	**RF-440**
480	**Scrap Metal (Non SS)**	**RF-480**
950	**LSA Metal, Glass, etc.**	**RF-950**
010	Paper & Rags	RF-010
020	Wood & Benelex	RF-020
030	Plastic	RF-030
040	Rubber	RF-040
050	Metal Scrap	RF-050
060	Glass	RF-060
070	Graphite	RF-070
301	Graphite Cores	RF-301
303	Scarfed Graphite Chunks	RF-303
310	Graphite Scarfings	RF-310
312	Coarse Graphite	RF-312
320	Heavy Non-special Source Metal	RF-320
321	Lead	RF-321
328	Ful-Flo® Incinerator Filters	RF-328
335	Absolute 8 × 8 Filters	RF-335
338	Insulation and Chemical Warfare Service (CWS) Filter Media	RF-338
339	Leaded Rubber Gloves and Aprons	RF-339
368	Magnesium Oxide Crucibles	RF-368
372	Grit	RF-372
376	Cemented Insulation & Filter Media	RF-376
377	Coarse Fire Brick	RF-377
391	Crucibles & Sand	RF-391
392	Sand, Slag, and Crucible	RF-392
416	Zinc Magnesium Alloy Metals	RF-416
441	Raschig Rings, Unleached	RF-441
442	Raschig Rings, Leached	RF-442
460	Washables, Rubber, Plastic	RF-460

Historical IDC	Description of Waste Form	IDC Assignment
463	Leaded Rubber Gloves and Aprons	RF-463
464	Benelex® and Plexiglas®	RF-464
481	Leached Metals (Non SS)	RF-481
488	Glovebox Parts w/Lead	RF-488
490	High efficiency particulate air (HEPA) Filters and CWS Filters	RF-490
491	Plenum Prefilters	RF-491
833	Plastics, TRU Mixed	RF-833
831	Dry Combustibles	RF-831
832	Wet Combustibles	RF-832
900	Low specific activity (LSA) Paper, Plastics, Etc.	RF-900
970	Wood	RF-970
760	**Pad 1 Cells 1 and 2 RF Debris**	**RF-760***
430	**Un-leached Resin**	**RF-430 (set aside)****
431	**Leached Resin**	**RF-431 (set aside)****

*The prefixes for debris waste (S5000) are variable. For debris, there could be a two or three digit IDC, or only a Waste Description. If container contents are visible, the contents are debris, and the generator is identified as Rocky Flats, then assign RF-760 from Pad 1, Cell 1, or Cell 2.

** The only exception is Resin IDC 430, 431 and 241 will be set aside until further notice.

Bolded IDCs are the most likely debris IDCs that may be encountered in Cell 1 and Cell 2.

Appendix F – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/16/02	All	Initial issue. DCR-1200 – Issued for formal validation during commissioning activities.
1	10/21/02	All	DCR-1477 – Changed language in Section 4.11 for consistency. Editorial changes throughout. Included requirements from ALARA Review, Changed CSA to CWR and provided definition.
2	11/07/02	All	DCR-1711 - Edited sections 4.7 through 4.14 to be consistent with OI-23 and incorporated additional actions for discovery of contaminated materials, Editorial changes.
3	12/12/02	All	DCR 1808, Incorporated changes in accordance with the RCRA Matrix, Removed Section 4.8.
4	1/8/03	Various	DCR-1873, Incorporated changes to reflect more accurate waste container extraction.
5	01/15/03	Page 18	DCR-1915, Minor change. Change step 4.5.14 to read: Check compressor discharge filters.
6	01/30/03	Various	DCR-1987, Minor change to ensure STL, RT, and IH are all included to be notified.
7	01/24/03	Various	DCR-2066, Included changes from RCRA Implementation Matrix
8	03/10/03	Various	DCR-2096, Included changes required from DOE pre-start findings IS. 1-2
9	3/17/03	Pages 5, 18, 12, 32, 35, & 36	DCR-2113, Included changes from HWMA/RCRA Implementation Matrix, ES&H review. Incorporated PPE and ISIH sampling requirements.
10	3/26/03	Various	DCR-2146 - Added CAM requirements from DOE Letter, Added PPE requirements from RPT-ESH-011.

AMWTP INSTRUCTION		
INST-OI-09, Rev. 49	Issued: 08/30/12	Effective: 08/30/12 @ 0800 hrs

Retrieval Inspection Station Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
11	03/27/03	All	DCR-2126, Minor change to amend date from DOE Approves Retrieval Operations Start-up to 03/28/03 and editorial update to Records Section.
12	06/26/03	Pg 18, 32, 33, & 35	DCR-2337, Minor Change to enhance procedure for ease of use and clarity.
13	7/8/03	Pg 25	DCR-2351, Minor Change to clarify breached container repair steps.
13 FC-1	7/13/03	Various	DCR-2368, Add steps for placing drums and boxes in designated storage locations.
14	7/17/03	Various	DCR-2365, Add steps for operating the Remote Drum Punch System, Added note at 4.7.1, Incorporated Field Change
14 FC-1	8/03/03	Sec 4.7.4.1, Pgs 29-25	DCR-2387, Change wording for clarification, and to allow some steps to be performed out of sequence to allow for the most productive sequence during Conveyor, Vacuuming, and Inspection Station Operations.
15	8/6/03	Pages 43-47	DCR-2389, Add Corrective Action as identified from ORPS Report # ID--BNFL-AMWTF-2003-0005, and Incorporate Field Change from Rev 14 FC-1.
15 FC-1	8/13/03	Various	DCR-2407, Correct steps regarding the maximum load for transport trailers.
16	11/11/03	Various	DCR-2484, Remove Rev 15 FC-1 and add Precaution for maximum trailer loading.
17	01/21/04	Various	DCR-2619. Add reference and revise information to implement the Transport Vehicle Crash Addendum (BNFL 5232-RPT-016). Section revised to meet action item identified in ORPS: 2003-0008, “Waste Drum Fire” C/A #4.
18	05/27/04	All	DCR-2960. Deleted Step 4.3.3. Minor formatting updates.

Revision Number	Date Approved	Pages Affected	Description of Revision
19	6/28/04	9, 13, 24	DCR-3134. Storage Permit requirement implementation.
19 FC-1	10/22/04	4.3.23, 4.8.1.13, 4.12.2	DCR-3375, Remove handling of incompatible waste references not applicable to this instruction
19 FC-2	10/23/04	4.8.1.8, 4.8.1.16.1/2	DCR-3376, Revised labeling steps to conform with steps outlined in INST-FOI-26, incorporate Form-1089 information.
19 FC-3	03/23/05	Pgs 13-16 and App A	DCR-4217, Changes to steps and Appendix A to reflect new NE-007 CWRs.
19 FC-4	04/05/05	4.8.2.11-13, 4.8.1.12-14	DCR-4253, Steps to clarify container markings and when a planar array is used.
20	04/13/05	All	DCR-4111, Complete re-write to incorporate FC-1 and 2, NE-007 rev 3 with clarification of ES&H, Crit, and DSA requirements, Operator validations, SME review, and Editorial to reflect requirements of MP-DOCS-18.1.Include updated DSA and TSR requirements, CBFO comment resolution; incorporate FC-4, FC-3 is already incorporated through rev 20A.
20 FC-1	05/11/05	37, 451	DCR-4305, Additional information for labeling 83/85 gallon drums.
21	06/30/05	All	DCR-4385, Incorporate FC-1, Update to new AMWTP, INL format, Remove Appendix A, Update to reflect using OI-11 for stacking and storing containers, Include beryllium labels, and Reorganize Section 4.3.
22	08/02/05	Pg 5 and 13,, Step 4.7.3.1	DCR-4412, Remove paragraph for > WAC that is covered in OI-11 and added verbiage to clarify use of pallets and spacers and when stacking drums three high in the TSA-RE.
22, FC-1	12/13/05	Pgs. 12. 27, 28, and 31	DCR-12/13/05-1424. Changes for flexibilities for retrieval operations.

Revision Number	Date Approved	Pages Affected	Description of Revision
22, FC-2	12/18/05	Pg. 12	DCR-12/18/05-1100. Change is for rolling stock flexibility during retrieval operations.
23	02/07/06	All	DCR-4641. Criticality Safety Implementation. Incorporate blue sheet changes and reformat per MP-DOCS-18.1.
24	04/27/06	Various	DCR-4946. Add notes and steps to implement new enhanced drum safety handling requirement, added from existing short term instruction, and for efficient operations.
24 FC-1	4/30/06	10/43	DCR-4987. To incorporate steps for safe installation of lid restraints on bulged drums.
25	06/20/06	Various	DCR-5057. Incorporated DCR-4987 Field Change 1. Incorporated resolution to CARs 22207 and 22404. Changes made to be consistent with annual DSA update.
25 FC-1	06/28/06	Pgs 33, 40, 46 & 50	DCR-5120. Incorporate EDF-0075 for handling deformed or out-of-round drums.
26	12/19/06	Various	DCR-5524. Incorporate DCR-5120, delete P&L-3.1.1.2 which conflicts with P&L 3.1.1.7, delete P&L 3.1.4.4 to charge equipment in the TSA-RE, edit per MP-DCOS-18.1.
26 FC-1	05/10/07	Various	DCR-5950. Changed to create simpler, more concise operating instructions by eliminating repeating steps.
26 FC-2	05/13/07	7, 3, 8	DCR-5951. Changed to read proper step.
26 FC-3	06/25/07	40, 41	Dcr-6145. CAR 25743, reference OI-24 for drum closure instructions.
26 FC-4	06/26/07	Various	DCR-6149. INST-CMNT-10.8.2 superseded by MP-CMNT-10.22
27	08/29/07	Various	DCR-6164. Incorporate DCRs-5950, 5951, 6145, and 6149 to make field changes permanent. Entire document rewrite. Steps added for clarification for handling breaches in sludge drums and for additional information.

Revision Number	Date Approved	Pages Affected	Description of Revision
27 FC-1	09/27/07	4.12.2.1.2	DCR-6473, change wording when a CAM alarms to evacuate both Pad 1 and Pad 2
27 FC-2	10/03/07	4.12.2.1.5	DCR-6485, New step to secure ventilation when a CAM alarms.
27 FC-3	10/09/07	4.12.5	DCR-6491, Add new section 4.11.5
27 FC-4	11/03/07	3.1.2.6, 4.3.16 and Notes	DCR-6550, Change radiological survey station to IS/IH, New step and new note and update step reference in previous note.
27 FC-5	11/05/07	4.12.2.1.2	DCR-6555, Replace FC-1 "Pad 1 and/or Pad 2 as directed . . ."
28	1/24/08	Section 4.6	DCR-6637, Incorporate field changes, correct step sequence. Minor editorial
28 FC-1	3/7/08	Pg 31, 36	DCR-6914. Revised box inspection criteria to delete references to Appendix A and to incorporate appropriate inspection criteria.
28 FC-2	3/8/08	Pg 23	DCR-6915. Changed Step 4.3.19.
29	04/10/08	Various	DCR-6841. Updated references per the CCP transition (changing MP-TRUW-8.3 to CCP-PO-03). Incorporated FC-1 (DCR-6914) and FC-2 (DCR-6915).
30	04/15/08	Various	DCR-7026. Revised HWMA/RCRA roll-downs, pre-job brief statement to include MP-COPS-9.14, deleted steps regarding VAC-U-MAX, clarified labeling.
30 FC-1	04/21/08	Various	DCR-7058. Addresses numerous requirements and procedure steps that could not be fully complied with.
31	05/06/08	Various	DCR-7069. Incorporate DCR-7058 to make field change permanent.
32	06/12/08	Various	DCR-7134. Revised roles and responsibilities to be specific to procedure, updated roles for operations restructuring and CWR roll-downs s to include citations, deleted wire brush from inspections, clarified which container is being created and ensured labeling on overpacked container. Incorporate reviewers' comments.

AMWTP INSTRUCTION		
INST-OI-09, Rev. 49	Issued: 08/30/12	Effective: 08/30/12 @ 0800 hrs

Retrieval Inspection Station Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
32 FC-1	06/24/08	Various	DCR-7248. Correct steps to allow container movement per INST-OI-11.
32 FC-2	06/24/08	Various	DCR-7280. Add note: Steps in this procedure may be performed out-of-sequence or concurrently to support operational needs as directed by STL. Change word “Leer” in this step to “level.” Add steps to read “Record historical IDC to side of container.”
32 FC-3	07/01/08	Pg 27/4.4	DCR-7302. Delete all of Sections 4.1 and 4.2.
32 FC-4	07/02/08	Pg 16 and 17, Sections 4.1 and 4.2	DCR-7298. Add Step 4.4.6: “If container is unknown, then weigh container and enter the weight into WTS.” Current Step 4.4.6 becomes 4.4.5.1.
33	07/15/08	Various	DCR-7315. Incorporate field changes for DCRs-7248, 7280, 7298, 7248. Apply Blue Sheet Changes (DCR-6811) for PSM/SS Ops Restructuring initiative.
34	10/02/08	Various	DCR-7379. Revisions to improve process flow, clarification, and to ensure container is inspected for structural soundness in response to CARs-39989 and -40603.
34 FC-1	11/09/08	Various	DCR-7720. Revised roles and responsibilities for OT and RT, 3.1.3.1, deleted modified Level C PPE including and added PPE per AMOW in 3.1.3.5, deleted uncharacterized from 3.1.5.3.
34 FC-2	01/16/09	Pg 36/4.4.18	DCR-7923. Change Form-1090 to Form-1625.
35	01/21/09	Various	DCR-7657. Incorporated DCR-7720 and DSA changes, re-formatted per MP-DOCS-18.4, edited per MP-DOCS-18.1. DCR-7923 was not incorporated as this section was deleted through DSA roundtable.
35 FC-1	04/09/09	Pg. 23/4.2.4 Pg. 29 and 30	DCR-8235. Delete Step 4.2.4, Pg 29 Step 4.2.22 and 4.2.23 Pg 30 Step 4.2.24 through 4.2.24.3.
36	07/14/09	Various	DCR-8302. Incorporated DCR-8235. Changes for logon clarification and to generate NCRs (CAR 44229), edited per MP-DOCS-18.1.

Revision Number	Date Approved	Pages Affected	Description of Revision
37	10/08/09	Various	DCR-8575. Action Item 46473. Implemented PCB marking requirements. Removed items/step pertaining to the TSA-RE conveyor. Made editorial changes/updates per MP-DOCS-18.1.
37 FC-1	12/02/09	Pg. 15 Sec. 4.0	DCR-8876. Added new Steps for RTs to perform LAWs and visual inspection.
38	03/10/10	Various	DCR-8970. Incorporated FC-1 (DCR-8876). CAR 48600. Clarified instructions for using a barcode scanner and what to do if a barcode scanner is unavailable. Added steps for using an extra barcode when creating a drum in a contamination area. Also, deleted some P&Ls that are no longer needed.
39	05/11/10	Pg. 37 Section 4.6	DCR-9256. Added section for container stabilization panel placement and securing.
39 FC-1	5/17/10	Pg 14 Section 4.0	DCR-9285. Clarification for RTs to perform (the initial) LAWs and visual inspection.
40	06/16/10		DCR-9367. Incorporate changes regarding containers with small breaches. Incorporate FC-1 to make permanent.
40 FC-1	07/01/10	Pg 37	DCR-9395. Added note to allow Steps 4.6.1.4 and 4.6.2.4 to be worked out of sequence.
41	11/18/10	Pg 37	DCR-9657. Incorporate FC-1 to make permanent.
42	08/17/11	Various	DCR-10219. Complete rewrite to reflect the WTS inspection station methods used in the creating and tracking retrieved waste containers in the TSA-RE.
42 FC-1	09/06/11	Various	DCR-10377. Changes made as a result of MSA findings, so that procedure can be performed correctly, and to identify additional container types used.
43	03/04/12	Various	DCR-10714. Incorporate FC-1 (DCR-10377) to make permanent. Incorporated ITG Bluesheet-019. Rewrite document to support retrieval process.

AMWTP INSTRUCTION		
INST-OI-09, Rev. 49	Issued: 08/30/12	Effective: 08/30/12 @ 0800 hrs

Retrieval Inspection Station Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
44	03/16/12	Various	DCR-11018. Clarify steps, remove steps and statements no longer needed, and address observations/comments from MSA (CAR68366).
45	03/19/12	Various	DCR-11051. Made corrections in various steps adding "PSM"; SS: Notify the PSM; for clarification and consistency with 100, 101. Various editorial corrections.
46	06/08/12	Various	DCR-11284. Added new Section 4.6 for creating and loading SDOPs and added historical IDC reference table in Appendix E.
47	07/18/12	Various	DCR-11416. Added steps for clarification.
48	08/06/12	Various	DCR-11471. Incorporated 2012 DSA changes.
49	08/30/12	All	DCR-11558. Changed the document from Controlled Activity to General Use.

Drum Coring Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11088.*) 06/07/12

Brian Warner
Characterization Lead

Date

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-16, Rev. 40	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs
Drum Coring Operations		

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Appendix A – Revision Log A1

AMWTP INSTRUCTION		
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Drum Coring Operations		

1.0 PURPOSE/SCOPE

This procedure provides detailed operating instructions for the Drum Core Sample Retrieval System (DCSRS).

The scope of this procedure includes the visual examination (VE) of waste and retrieval of core samples from drums of non-debris waste, the core drilling operation within the confines of a *Zone 3* (see def.) glovebox. The DCSRS consists of a core retrieval glovebox with associated drilling equipment, a core bit preparation glovebox, and a sample preparation glovebox where cored material will be processed for sampling.

Treatment of mixed waste through absorption, neutralization, and decanting is allowed in accordance with the Hazardous Waste Management Act /Resource Conservation Recovery Act (HWMA/RCRA) Permit, with the **exception** of polychlorinated biphenyl (PCB) liquids, but is **NOT** authorized within the scope of this document.

(HWMA/RCRA Permit; TSCA RBDA)

Wastes to be processed include: *inorganic homogeneous solids* (see def.), *organic homogeneous solids* (see def.), and soil/gravel. These wastes will be contained in 55-gal drums, 30-gal drums overpacked into 55-gal drums, and 55-gal drums overpacked into 83-/85-gal drums. The representative core that is retrieved will be used to provide a sample for external laboratory analyses. These analyses will provide data required to satisfy the characterization requirements of MP-TRUW-8.2, Quality Assurance Project Plan, and identify contaminated waste or other waste categories requiring treatment. A real-time radiography (RTR)/ VE update will be performed to document the final configuration of the container at closure.

Finally, this procedure provides direction for the Transportation Manager or designee to obtain authorization for shipment of samples to the Analytical Chemistry Laboratory (ACL).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Authorized Individual (Qualified Operations Technician [OT] or Characterization Shift Supervisor [SS] or Designee)	• Accepts and relinquishes chain of custody (CoC) (in the Waste Tracking System [WTS]) • Authorizes (SS or designee only) manual move for samples in WTS.

Performer	Responsibilities
OT	• Performs the steps in this instruction unless otherwise specified • Performs limited radiological surveys, as required.
Radiological Controls Technician (RCT)	• Provides support for operations including, but not limited to performing radiological surveys • Performs setup and posts areas.
SS	• Makes notifications to Waste Services and Environmental, Safety, and Health (ES&H) personnel • Suspends operations.
DCSRS Subject Matter Expert (SME)	• Provides TRU Programs oversight for coring and solids sampling operations • Performs steps in Section 4.24, Equipment Blank Requirements • Sets task list on container for treatment when required.
Transportation Manager or Designee	• Provides assay and coring data to the ACL as required • Obtains authorization from ACL to ship samples • Prepares samples for transfer • Transfers samples to the ACL.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Treatment of liquids associated with item description code (IDC) RF-003, Organic Setups/Oil Solids, is prohibited.

(TSCA RBDA)

3.1.2 Prior to acceptance of a drum into DCSRS, the fissile gram equivalent (FGE) content of the drums SHALL be verified via WTS to be ≤ 200 FGE (including 2 sigma uncertainty).

(RPT-NFCS-25, CWR 1)

3.1.3 FGE content of the drums SHALL be verified via Fissile Tracking System (FTS) to be ≤ 200 FGE (including 2 sigma uncertainty) prior to acceptance of the drum into the DCSRS glovebox.

(RPT-NFCS-25, CWR 2)

3.1.4 Only one *source drum* (see def.) containing ≤ 200 FGE (including 2 sigma uncertainty) SHALL be processed/opened at a time within the coring room. Dual verification that other drums in the coring room are closed SHALL be performed.

(RPT-NFCS-25, CWR 3)

3.1.5 After processing a drum and prior to the introduction of the next drum for processing, all waste including liquids/spills and any waste generated as a result of processing, not determined to be Nuclear Criticality Safety (NCS)-exempt, SHALL be removed from the glovebox and the vacuum cleaner by returning the waste to the drum being processed or packaged appropriately into a collection drum. Dual verification that all non-NCS-exempt waste has been removed SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 4)

3.1.6 Any waste <u>NOT</u> removed from the glovebox after a cleanout SHALL be determined to be NCS-exempt. Dual verification of the NCS-exempt determination SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 5)

3.1.7 Collection drums and NCS-exempt containers SHALL meet **ONE** of the following criteria:

3.1.7.1 Waste added to the collection drum SHALL be packet assayed prior to placing it into the drum to ensure that the FGE content of the drum remains ≤ 200 FGE (including a 2 sigma uncertainty). Dual verification that the addition of the waste to the drum does not increase the FGE content to >200 FGE (including a 2 sigma uncertainty) SHALL be performed prior to placing the debris in the drum.

OR

3.1.7.2 If waste added to the collection drum has an unknown FGE content, then the waste added to the collection drum SHALL be assigned the FGE content of the parent drum. The collection drum SHALL be controlled to ≤ 200 FGE using dual verification.

OR

3.1.7.3 Prior to placing NCS-exempt waste into collection drum or NCS-exempt container, dual verification of NCS-exempt determination SHALL be performed.

(RPT-NFCS-25, CWR 6)

3.1.8 The total volume of samples within the refrigerator shall be less than 15 liters. This shall be ensured by using physical restriction within it.

(RPT-NFCS-25, CWR 7)

3.1.9 Collection drums used for non-NCS-exempt waste SHALL be nominal 55-gallons or diametrically larger drums (i.e., has an internal diameter of ~57 cm [22.5 in.] or greater).

(RPT-NFCS-25, CWR 8)

3.1.10 Packet assay systems used for determining the quantity of fissile material within a package shall be performance checked (background and standardization) within the same shift in accordance with INST-OI-17, DCSRS Packet Assay System Operations.

3.1.11 Liquid waste is not acceptable at Waste Isolation Pilot Plant (WIPP). Liquid in the quantities delineated below is acceptable:

- *Observable liquid* (see def.) shall be no more that 1% by volume of the outermost container at the time of radiography or VE
- Internal containers with more than 60 milliliters or 3% by volume observable liquid, whichever is greater, is prohibited
- Containers with hazardous waste number U-134 assigned shall have no observable liquid
- Containers with PCB material shall have no liquid
- Overpacking the outermost container that was examined during radiography or VE or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

3.1.11.1 Liquids containing PCBs are prohibited at WIPP.

(MP-TRUW-8.1)

3.1.12 Throughput on the drum coring system is restricted to three (3) drums per day.

(RPT-ESH-071; MP-TRUW-8.2)

3.1.13 Sampling equipment shall be properly maintained to avoid contamination. Visual contamination on any equipment that has the potential to contaminate a waste core or waste sample shall be thoroughly cleaned upon its discovery.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.14 Cleaned sampling and coring equipment will be physically segregated from all equipment that has been used for a sampling event and has not been decontaminated.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.15 The cleaning and inspection of coring and sampling tools and glovebox support equipment shall be completed as required.

3.1.16 Sampling shall be conducted as soon as possible after core collection.

(MP-TRUW-8.2)

3.1.17 All samples collected for the AMWTP shall have CoC from the time of collection through receipt at the laboratory.

(MP-TRUW-8.2)

3.1.17.1 The CoC includes sample collection and shipping information. Information to be recorded includes, but is not limited to: date, time, sampler(s), location(s), unique sample identifier, analysis requested, shipping information, preservative(s), comment(s), and transfer signature(s).

(MP-TRUW-8.2)

3.1.17.2 The comments include any special instructions and safety information associated with the samples. Electronic CoC forms with electronic signatures are acceptable.

(MP-TRUW-8.2)

3.1.18 Substantial delays in excess of 60 minutes or more require that the core tube liner be capped and remain capped until sampling can take place.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.19 All samples collected shall be under physical custody. Physical custody is defined as a sample in the possession of an authorized individual, in that individuals view, in a sealed or locked container controlled by that individual, or in a secure controlled access location.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.20 Personnel must ensure that daily performance checks are current on the radiological monitoring instruments.

3.1.21 Personnel must perform self-monitoring using a radiological monitoring instrument each time the glovebox gloves are exited.

3.1.22 For the purpose of preventing cross contamination between core samples, no more than one core will be processed and sampled at any given time.

3.1.23 The glovebox will be inspected and cleaned, if necessary, after each coring and sampling event, and the cleaning results documented prior to processing any additional core samples.

3.1.24 Drill positioning operations conducted in SYSTEM MANUAL mode will only be performed with the concurrence and approval of the SS or DCSRS SME.

3.1.25 If more than one core is to be taken from a Parfait drum, a sleeve will be placed in the primary borehole prior to taking the co-located core. This will prevent sloughing of material in the primary borehole.

3.1.26 Personnel must minimize coring room differential pressure (D/P) alarm (PDAL029) actuation by ensuring air-lock vestibule door is not opened at the same time as the coring room door.

3.1.27 The glovebox dust vacuum may be used, as necessary, to perform cleanup activities at any time during the process except when coring drill motor or bit lift fixture is in operation.

3.1.28 A high standard of housekeeping should be maintained in the glovebox to minimize contamination levels and reduce the risk of injury.

(ALARA Job Review [current revision])

3.1.29 At least one continuous air monitor (CAM), or equivalent air sampling, should be operating in the relevant location (i.e., east wall for general room operations, adjacent to drum port for all drum-bagging operations).

(ALARA Job Review [current revision])

3.1.30 Local high-efficiency particulate air (HEPA) filtered extract is required for all drum-bagging operations. This should be provided with a nozzle to maximize capture of any activity released during these operations. The extract should be positioned close to the bagging area during operations.

(ALARA Job Review [current revision])

3.1.31 The sample refrigerator will be powered from Circuit Number 16 of BDP-232-003 to ensure backup power is available in case of a power outage.

3.1.32 Cancelled core samples that physically exist outside the glovebox will be handled as waste and packet assayed prior to placement in a waste container.

(RPT-NFCS-25, CWR 6)

3.1.33 Alternative methods for hazardous energy control are used in this procedure for servicing tasks that are routine, repetitive, and integral to the use of the equipment for production in accordance with MP-COPS-9.20, Hazardous Energy Control Processes.

3.1.33.1 Sampling gloveports (55–59) and Gloveports 3, 4, 8, and 9 are not in proximity to any hazardous energy and are excluded from the light curtain interlock system requirements.

3.1.33.2 Access to gloveports not protected by light curtain or safety gate interlock, other than those listed above, when specific mechanical hazards exists, will be covered per work control process; PD-COPS-9.18, Work Control, and INST-COPS-9.20.1, Lockout/Tagout.

3.1.34 Clean sampling and coring tools and sampling equipment shall be sealed inside clean protective wrapping and maintained in a clean storage area prior to use. Coring tools with torn protective wrapping shall not be used, and shall be returned to the warehouse. Items with defective packaging are documented on Form-1599, AMWTP Solid Waste Sampling Checklist, Blocks 7a through 7e.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.35 Expendable equipment (e.g., sampling tools) shall be visually inspected for cleanliness prior to use and properly discarded after each sample.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.36 Sample coring tools and sampling equipment are identified with unique equipment numbers to provide traceability to equipment cleaning batches.

3.1.37 Custody seals are affixed to each sample container upon removal from the sampling glovebox. The custody seals may be placed either on the individual bottles or on the package containing the sample containers. A CoC record is assigned to each sample or group of samples.

(MP-TRUW-8.2)

3.1.38 Drum and bag filters shall comply with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP-CH-TRAMPAC).

(CCP-PO-003)

3.1.39 A high standard of housekeeping should be maintained in the glovebox to minimize contamination levels and reduce the risk of injury.

(ALARA Job Review [current revision])

3.1.40 The samples must be preserved by cooling to 4°C.

3.1.40.1 The sample refrigerator temperature shall be maintained at 4ºC (2 to 6ºC acceptable) to promote usability.

3.1.40.1.1 The SS must be notified if the temperature variations exceed the limit.

(MP-TRUW-8.2)

3.1.41 Non-rotational coring tools shall be designed such that the tool's *kerf width* (see def.) is minimized.

3.1.42 Sampling tools with torn protective wrapping shall not be used.

(MP-TRUW-8.2)

3.1.43 Empty drums are to be verified as empty and be labeled as empty.

(HWMA/RCRA Permit)

3.2 Prerequisites

3.2.1 The current procedure and revision number have been verified.

3.2.2 The applicable work control documents per PD-COPS-9.18 have been reviewed prior to performing work in this procedure.

3.2.3 Coring fire protection is lined up for automatic initiation and FWR4-ISV-3403, FWR5-ISV-3403, and FW7-ISV-3401 are locked open.

3.2.4 Zone 2 and 3 ventilation systems are in operation per INST-OI-33, Characterization Facility HVAC Systems Operations, prior to starting drum coring operations.

3.2.5 Shunt Trip Breakers in Panel BDP-232-003 are in the ON position (these can be checked by energizing coring room cameras and VCR along with the CAM under the coring box).

3.2.6 If a container selected for solids sampling is to be rejected, a nonconformance report has been initiated per MP-Q&SI-5.4, Identification of Nonconforming Conditions, to disposition the waste stream lot assignment of the rejected container.

(MP-TRUW-8.2)

3.2.7 Personnel have ensured that the alternative isolation device (light curtain) functionality test has been performed and documented in the appropriate operating log.

3.2.8 Glovebox D/P (Zone 3) has been checked and is within the acceptable limits of -1.2 to -1.8 in. w.g. on Gauge PDIS-250-004 prior to performing any glovebox operation.

3.2.8.1 If necessary, the in-service HEPA filter inlet butterfly valve has been adjusted to achieve the desired glovebox D/P.

3.2.9 Coring room D/P (Zone 2) has been checked and is within acceptable limits of -0.4 to -0.7 in. w.g. on Gauge PDIS-232029 prior to performing any glovebox operation.

3.2.9.1 If Zone 2 D/P is not within range, personnel have contacted the SS.

3.2.10 Operators are trained and qualified to perform this procedure per MP-RTQP-14.4, Personnel Qualification and Certification, and QPSS0001, Solids Sampler.

3.2.11 Personnel performing visual examination activities are qualified in accordance with QPVE0001, Visual Examiner.

3.2.12 Inspection of the monorail hoist, rigging, and drum lift attachments has been completed by personnel who have completed AMWTP Training Course TL4111, and these components are in good working order.

3.2.12.1 Inspection has been done by personnel who have completed AMWTP Training Course 0AWT-4111, Incidental Hoisting and Rigging.

3.2.12.2 The inspection has been documented in the appropriate operating log, as applicable.

NOTE: *Information on Form-1599 is documented each day that the activity is performed.*

3.2.13 The daily glovebox inspection has been completed, and visible contamination on any equipment that has the potential to contaminate a waste core has been thoroughly cleaned upon its discovery.

3.2.13.1 Personnel have documented the results of the glovebox inspection on Form-1599, Block 1, 4a, and 4b, as applicable.

3.2.14 If the containment enclosure is to be used, it has been inspected in accordance with INST-RS&C-6.9.1, Soft-Sided Containments, and Form-1136, Radiological Safety Soft Sided Containment (SSC) Inspection, is attached to the tent.

3.2.14.1 The containment enclosure meets the following criteria:

NOTE: *This can be achieved with the ventilation extract running at 50 HZ.*

- The setting is 30 FPM at all openings and has been confirmed prior to any operation of the containment enclosure.

- Directional flow from the DCRS room into the containment enclosure.

3.2.15 Personnel have ensured that an adequate supply of the following consumable items is readily available, as applicable:

- New core cutting bits with internal components
- Core barrel
- Core liners
- Core liner caps
- Sample containers
- Weighing boats
- Disposable sampling tool(s)
- Bagout bags
- Disposable wipes
- Disposable gloves
- Drum transfer sleeve with HEPA filter
- Disposable transfer containers
- Push rods
- 2-in. tape
- Large rubber bands
- Filters
- Custody seals
- Steel band clamps
- Drum lids
- Glovebox gloves
- Vacuum bags
- Appropriately sized waste packaging bags
- Lid bags
- Box knives.

3.2.16 Personnel have ensured that tools necessary to perform the work are available, as follows:

- Core bit disassembly tools
- Ratchet and sockets
- Drum lid removal tools
- Calibrated torque wrenches
- Calibrated electronic balances
- Portable air mover with HEPA filtered exhaust
- Glovebox glove changing tools
- Bag knife
- Box knife
- Hammer
- Scoops.

3.2.17 Sample preparation glovebox has been configured as follows:

- An electronic balance
- National Institute of Standards and Technology (NIST)-certified calibration weights
- Grease pencil
- Bag knife and tubing cutter
- Tape measure or steel rule
- Bag and tape
- Sample support stand
- Forceps
- Hammer.

NOTE: *Steps 3.2.18 through 3.2.18.5.1 are only performed when there are samples in the refrigerator or if planning to place samples in the refrigerator this shift.*

3.2.18 The sample refrigerator temperature is maintained at 4ºC (2 to 6ºC acceptable) by performing the following once every shift:

3.2.18.1 The current refrigerator temperature has been logged on Form-1585, Refrigerator Temperature Logsheet, and/or Form-1602, Characterization Round Sheet, or eSOMS equivalent.

3.2.18.2 The “Up arrow” button by the temperature display has been pressed and the high range temperature reading since the previous shift logged on Form-1585 and/or Form-1602, or eSOMS equivalent.

3.2.18.3 The “Down arrow” button by the temperature display has been pressed and the low range temperature reading since the previous shift logged on Form-1585, and/or Form-1602, or eSOMS equivalent.

3.2.18.4 The upper and lower temperature range indications have been reset by pressing the “Up arrow” and “Down arrow” buttons simultaneously for 2 seconds, then releasing the buttons.

3.2.18.5 The SS has been notified if the temperature range from the previous shift is not within the 4ºC (2º to 6ºC acceptable) tolerances.

NOTE: *The nonconformance report (NCR) applies to the out-of-tolerance condition for the refrigerator and the sample quality that may be affected.*

3.2.18.5.1 An NCR has been initiated in accordance with MP-Q&SI-5.4.

NOTE: *Shielding may be used as approved by Nuclear Criticality Safety to shield the packet assay from radiation sources within the DCSRS area.*

3.2.19 If removing soft secondary waste from the glovebox, the DCSRS packet assay monitor has been energized, and performance checks (background and standardization) have been performed each shift, in accordance with INST-OI-17.

3.2.19.1 Personnel have ensured that shielding around or near the packet assay is in place while performing background and standardization checks, as applicable.

3.2.19.2 Form-1599, Block 2, has been completed.

NOTE: *The balances are check weighed at the beginning of the shift prior to use in measuring sample weights.*

3.2.20 The electronic balances in the sample preparation glovebox and on the bench top have been check weighed to ensure the following requirements are met:

- The electronic balances have current calibration stickers
- NIST-certified check weights are used and have current calibration labels
- The balances check weighed if they are moved or disturbed.

3.2.20.1 This measurement has been documented on Form-1215, Analytical Balance Calibration Check Sheet.

3.2.20.2 Results have been documented on Form-1599, Block 3.

3.2.21 The glovebox dust vacuum bag has been replaced after processing each drum.

(RPT-NFCS-25, CWR 4)

3.2.22 A pre-job briefing has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

NOTE 1: *Steps in this instruction may be performed concurrently or out of sequence with other steps with approval of the SS.*

NOTE 2: *Steps pertaining to entry of data into WTS must be performed in order as written.*

4.1 General

4.1.1 Ensure that all precautions and limitations have been reviewed, and all prerequisites and initial conditions have been met and documented if required.

4.1.2 Ensure all the required data fields are populated in WTS to meet the requirements of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, MP-TRUW-8.2, and CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

NOTE 1: *Closing the screen will close the batch and will not allow additional containers to be placed in the batch.*

NOTE 2: *Step 4.1.3 and substep are not performed when coring the first drum in the coring lot.*

4.1.3 Review the batch data to determine if a co-located core is required, as required.

4.1.3.1 **IF** a co-located core has been taken,
THEN ensure that the status is “Pass.”

4.1.3.2 **IF** viable subsamples have been taken for a co-located core with less than 50 percent recovery
THEN issue an NCR to document this condition, as applicable.

4.1.4 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step, if further activities will be performed.

Task	Section
System Startup	4.2
Coring Location and Sampling Requirements Assignment	4.3
Coring Bit Components and Sampling Materials Preparation, Staging, and Bag-in	4.4
Glovebox Bag-in/Sphincter Port Operations	4.5
Coring Bit Assembly	4.6
Waste Drum Transfer Operations	4.7
Waste Drum Import to the DCSRS Glovebox	4.8
Drum Coring Operations	4.9
Bit Disassembly and Core Retrieval	4.10
Sample Preparation Glovebox Operations	4.11
Sample Bagout, Handling, and Storage Requirements	4.12
Trip Blank Preparation	4.13
Chain of Custody	4.14
Chain of Custody Transfer	4.15
Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory	4.16
Samples and Chain of Custody Transfer to Transportation Manager	4.17
Waste Segregation Prior to Glovebox Cleanout	4.18
Drums Export from the Drum Core Sample Retrieval System	4.19
Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking	4.20
Soft Secondary Waste Bagout Operations	4.21
Drum Lids and Other Larger Items Bagout	4.22
Batch Data Report Generation	4.23
Equipment Blank Requirements	4.24

Task	Section
System Shutdown	4.25
Post-Job Review	4.26
Abnormal and Infrequent Operations	4.27

4.2 System Startup

4.2.1 **IF** required,
THEN perform the following steps:

4.2.1.1 Ensure that the Emergency Stop (E-stop) Button 214-ES-074 on Conveyor Panel CP-214-010 is pulled out.

4.2.1.2 Ensure that the breaker on the Positioning Systems Control Panel CP-250-804 is ON.

4.2.1.3 Ensure that the uninterruptible power supply system power switch on the Positioning Systems Control Panel CP-250-804 is ON.

4.2.1.4 Ensure that the E-Stop control on Safety Panel CP-250-803 is in the RUN position.

4.2.1.5 Ensure that the Curtain Control on Safety Panel CP-250-803 is in the UNLOCK position.

4.2.1.6 **IF NOT** already operational,
THEN energize the WTS computer terminal at the DCSRS control station.

4.2.1.7 Log on to WTS.

4.2.1.8 **IF NOT** already operational,
THEN energize the human-machine interface (HMI) computer terminal at the DCSRS control station by performing the following steps:

4.2.1.8.1 Power up the central processing unit and screen, as necessary.

4.2.1.8.2 Wait for the desktop screen.

4.2.1.8.3 Click on "Motion Desk."

4.2.1.8.3.1 Click right arrow at top of screen to start the program.

4.2.1.8.3.2 Close the screen.

4.2.1.8.4 Click on "Configuration Explorer."

4.2.1.8.4.1 Double click on Factory Link Servers.

4.2.1.8.4.2 Double click on BNFL DCSRS1.

4.2.1.8.4.3 Right click on DCSRS.

4.2.1.8.4.4 Select "Start" and minimize the screens (Configuration Explorer and Run Time).

4.2.1.8.5 Double click on "Client Builder."

4.2.1.9 Log-on to DCSRS HMI computer system.

4.2.1.10 Verify that the Fissile Tracking System (FTS) heartbeat indicating light (white flashing light on the bottom of the alarm box) is flashing.

4.2.1.11 Open the Service Air Isolation Valve 3/4 in. PA R011 V1 on the coring glovebox 90 degrees counter-clockwise.

4.2.1.12 Open the Air Isolation Valve MV-3 on the coring glovebox 90 degrees counter-clockwise.

4.2.1.13 Open the Air Isolation Valve MV-1 on the coring glovebox by turning the valve handle 90 degrees clockwise.

4.2.1.14 Open the Air Isolation Valve MV-2 on the coring glovebox by turning the valve handle 90 degrees clockwise.

NOTE: *The air supply identified in Step 4.2.1.15 is for the pneumatic draw bar system.*

4.2.1.15 Looking through the windows (or portholes), Pneumatic Panel CP-250-805, ensure the operating pressure on the Compressed Air Regulator Gauge FR 2 is approximately 100 psi.

NOTE: *The air supply identified in Step 4.2.1.16 is for the air purge system.*

4.2.1.16 Ensure the operating pressure on the Air Regulator Gauge FR 1 is approximately 30 psi.

NOTE: *The air supply identified in Step 4.2.1.17 is for the air assisted pilot valves on the solenoid.*

4.2.1.17 Ensure the operating pressure on the Air Regulator Gauge R3 is approximately 10 psi.

4.3 Coring Location and Sampling Requirements Assignment

NOTE 1: *Conveyor operations inside the coring room may be conducted using local conveyor controls independent of the* integrated control systems (ICS; see def.).

NOTE 2: *The drum will be automatically barcode scanned by the WTS prior to entry to the coring room. The WTS identifies the container for coring and/or VE, and verifies the content of the drum to be ≤ 200 FGE (including a 2 sigma uncertainty).*

(RPT-NFCS-25, CWR 1)

4.3.1 SS: Ensure that the container update has been performed in accordance with INST-FOI-27, FTS Operations, prior to proceeding.

NOTE: *Steps 4.3.2 through 4.3.6 are performed concurrently.*

4.3.2 Enter the "Drum Number," "Sample Origin," and "Sample Type" on Form-1599.

4.3.3 Physically verify that the barcode label on the drum matches that recorded in WTS.

4.3.4 Ensure that drums entering the coring room have been vented by observing the "Task List" screen, and visually verifying that the drum has a drum vent filter.

(RPT-TSR-03, SAC 5.2.7; HWMA/RCRA Permit)

4.3.5 Review for open NCRs in TrackWise.

4.3.5.1 Select Internet Explorer on the WTS production workstation home page.

4.3.5.2 From the "Production Workstation," select the "QA container NCR Quick Search" link.

NOTE: *Multiple containers may be entered in a single query; however, a "hard return" after each container number is necessary to complete the query*.

4.3.5.3 Enter the container identification number followed by a hard return and select "Submit Query."

4.3.5.4 **IF** an open NCR exists,
THEN proceed at the direction of the SS.

4.3.6 **IF** any of the following conditions are **NOT** met,
THEN notify the SS and wait for direction:

- The "Container" screen in WTS displays a value of 200 FGE or less

(RPT-NFCS-25, CWR 1)

- The task list indicates the assay has been completed and displays "QC COMPLETE"
- All drums have been examined via RTR and that "QC COMPLETE" is displayed on the task list
- The task list indicates the core task is required
- A filter vent is installed on the drum.

(RPT-TSR-03, SAC 5.2.7; HWMA/RCRA)

4.3.7 Access the WTS "Core Sampling" screen.

4.3.7.1 Enter the container ID number for the drum to be processed.

4.3.7.2 Press F8 to auto-populate screen.

NOTE: *The following pop-up message will only appear on the first core sampling event for a container.*

4.3.7.3 Observe the pop-up stating "What is the volume of the container to be core sampled?"

4.3.7.3.1 Select "55 gallon" or "30 gallon."

NOTE 1: *WTS will auto-populate the procedure and the revision number as "OI-73" with a Yes response to the following step, and will auto-populate the procedure and revision number as "OI-16" if a No Response is selected.*

NOTE 2: *The following pop-up message will only appear on the first core sampling event for a container.*

4.3.7.4 Respond to the question on the WTS pop-up screen, "Is this a manual coring process?" by clicking "NO."

4.3.7.5 **IF** the procedure and/or revision are **NOT** correct,
THEN notify the SS.

4.3.7.6 Review the "Core Sample" screen for sampling requirements.

NOTE: *A coring lot of less than five drums will require one or more drums to be sampled more than once.*

4.3.7.7 **IF** performing an **<u>additional</u>** primary/initial core sampling event on a drum,
THEN perform the following:

4.3.7.7.1 Click in the next available field in the "Core Sample ID" block.

4.3.7.7.2 **IF** the "Batch ID" field is not populated,
THEN perform the following:

4.3.7.7.2.1 Click in an open editable field on the "Core Sampling" screen.

4.3.7.7.2.2 Observe that the "Batch ID" field populates with a batch number.

4.3.7.7.3 Ensure the "Core Sample Type" field indicates "Initial Core Sample."

4.3.7.7.4 Observe that WTS has auto-populated the "Required Sector" and "Horizontal Position" fields.

(MP-TRUW-8.2)

4.3.7.7.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 28,750 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 28,750 mils.

4.3.7.7.5 E-sign and save.

4.3.7.7.6 Record the batch number on Form-1599.

4.3.7.7.7 **GO TO** Step 4.3.9.3.

4.3.7.8 **IF** performing a co-located coring sequence, **THEN GO TO** Step 4.3.10.

4.3.7.9 **IF** performing a resample coring sequence, **THEN GO TO** Step 4.3.11.

4.3.8 **IF** the following blocks do **NOT** display a "Y" on the "Core Sampling" screen:

- RTR Completed
- Vent Completed
- Assay Completed,

THEN perform the following:

4.3.8.1 Do **NOT** proceed with coring.

4.3.8.2 Notify the SS.

NOTE 1: *The performance of Steps 4.3.8.3 through 4.3.8.6 will save the randomly selected required sector and the horizontal position to the record for the container. If the screen is closed or the record is transferred to another operator, these randomly selected elements will not change.*

NOTE 2: *Personnel should not use "Core Sample ID" field for the open editable field.*

4.3.8.3 Place the cursor in an open editable field and press the space bar.

4.3.8.4 Observe that the "Batch ID" field is populated.

4.3.8.5 Record the batch number on Form-1599.

4.3.8.6 E-sign and save.

4.3.9 **IF** performing an initial coring sequence,
THEN perform the following steps:

4.3.9.1 Ensure the "Core Sample Type" field indicates "*Initial Core Sample*" (see def.).

NOTE: *The WTS uses a standard Oracle program for generating random numbers (dbms_random).*

4.3.9.2 Observe that WTS has auto-populated the "Required Sector" and "Horizontal Position" fields.

(MP-TRUW-8.2)

4.3.9.2.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 28,750 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 28,750 mils.

WARNING

The conveyor system may start at any time when Conveyor Control Panel CP 214 010 within the coring room is in the AUTO mode, resulting in personal injury. Personal injury may result if body parts are not kept clear of the roller conveyor system.

4.3.9.3 Keep body parts clear of the roller conveyor system.

4.3.9.4 Place the coring room conveyor in MANUAL mode.

NOTE: *The top of the drum will be radially segmented into six sections, with the most recently installed drum vent located in Position 1.*

4.3.9.5 Place the coring template on the drum lid with the most recently installed drum vent centered in Position 1, with Positions 2 through 6 located in a clockwise direction from Position 1.

4.3.9.6 Mark the WTS assigned coring location on the drum lid with a permanent marker based on information obtained in Step 4.3.9.2.

NOTE: *The marking of the drum in the following step will be used as a position indicator if the drum requires subsequent coring.*

4.3.9.7 Mark the center-point location of Position 1 on the side of the drum between the top and middle chine.

4.3.9.7.1 Label this mark #1.

NOTE: *Assistance from the assay control room operator may be required to lower the drum stops on the conveyor on the DCSRS area.*

4.3.9.8 Using local conveyor controls, move the drum from the inspection station/preparation conveyor to the staging conveyor off-loading point.

4.3.9.9 Place the coring room conveyor in AUTO mode, if necessary.

NOTE 1: *One* co-located core sample (see def.) *is required per sampling batch or once per week, whichever is more frequent. A co-located core is a second sample taken from the same parent drum at approximately the same location. It is essentially a field duplicate used to test sampling precision.*

NOTE 2: *A sampling batch is a suite of homogeneous solids and soil/gravel samples collected consecutively using the same sampling equipment with a specific time period. A sampling batch can be up to 20 core samples (excluding field quality control [QC] samples), all of which will be collected within 14 days of the first sample in the batch.*

(MP-TRUW-8.2)

NOTE 3: *A co-located core sample should be taken after the initial core sample of each batch.*

NOTE 4: *The co-located core should be taken as close as possible to the primary/*resample *(see def.) core with the best recovery.*

4.3.10 **IF** performing a co-located coring sequence,
THEN perform the following steps:

4.3.10.1 Record the batch number on Form-1599.

4.3.10.2 Click in the next available field under "Core Sample ID" on the "Core Sample" screen.

4.3.10.3 Select "Co-located/Field Duplicate" in the "Core Sample Type" field.

4.3.10.4 Calculate the horizontal position by adding /subtracting 4,000 mils to/from the initial/primary or resample horizontal position.

4.3.10.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 36,000 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 35,075 mils.

4.3.10.5 Enter the value into the "Horizontal Position" field in WTS and press tab.

4.3.10.6 Observe that WTS auto-populates the "Required Sector" field.

(MP-TRUW-8.2)

4.3.10.7 **GO TO** Step 4.3.12.

4.3.11 **IF** performing a resample coring sequence,
THEN perform the following steps:

4.3.11.1 Record the batch number on Form-1599.

4.3.11.2 Click in the next available field under "Core Sample ID" on the "Core Sample" screen.

4.3.11.3 Select "Resample" in the "Core Sample Type" field.

4.3.11.4 Observe that WTS auto-populates the "Required Sector" and "Horizontal Position" fields, taking into account the location of the primary borehole position and the 4,000-mil safety margin on either side of it.

4.3.11.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 36,000 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 35,075 mils.

(MP-TRUW-8.2)

4.3.12 Enter the "Actual Coring Sector" on the WTS "Core Sampling" screen.

4.3.12.1 **IF** the "Actual Coring Sector" is different than the "Required Sector,"
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

4.3.12.1.1 Enter a "Core Sector Comment" on the WTS screen detailing the reason for the change.

4.3.13 E-sign and save.

4.4 Coring Bit Components and Sampling Materials Preparation, Staging, and Bag-in

NOTE 1: *The steps in this section should be performed, as necessary, to obtain materials required for the evolution being performed.*

NOTE 2: *Core cutting bits, internal bit components, core tube liners, and sample containers will be purchased as "certified clean" per MP-TRUW-8.2. Sampling tools will be disposable, single use items. It will be necessary to take equipment blanks on disposable sampling tools (spatulas and weighing boats). All documentation certifying cleanliness is maintained as permanent records.*

NOTE 3: *The WTS is used to track equipment source (supplier) and Quality Assurance (QA) pre-cleaning records. This information will be used to associate the core with the sampling equipment and back to the sample results. The following information is entered into the WTS at the time the equipment is received from the supplier, in certified clean condition:*

- *The equipment blank analytical results are recorded and a unique equipment receipt batch number is created.*
- *A unique identifier is assigned to each piece of equipment that associates it with the pre-cleaned sample results.*
- *Equipment acceptance is verified based on analytical results.*

NOTE 4: *Internal core cutting bit components vary depending on bit type. Exhibits 2, Punch Coring Bit Diagram, 3, Parfait Coring Bit Diagram, 4, Concrete Coring Bit (w/A' Set 3 Cutter Diagram), and 5, Concrete Coring Bit (w/ SS Diamond) Diagram, provide details.*

NOTE 5: *The parfait-coring bit requires the use of a Teflon core-tube liner.*

4.4.1 Ensure that components and sampling tools that are bulk packaged are **NOT** handled with bare hands.

NOTE: *Push rods may be included under the core cutting bit ID number. The operator will know this if the push rod is not labeled separately on the core cutting bit package. In this case, the push rod will not be entered separately in WTS. Also, bulk push rods are entered into WTS as a separate entry under "Coring Equipment Used."*

4.4.2 Don a pair of surgical gloves and gather the following equipment:

- A packaged core-cutting bit and internal components
- A polycarbonate or Teflon core-tube liner with low-density polyethylene end caps
- Push rod, if applicable.

4.4.3 Record the core-tube liner QC batch number on the core tube liner using a grease pencil.

4.4.3.1 Do **NOT** remove the end caps from the core tube liner.

4.4.4 Stage all items listed in Step 4.4.2 for bag-in.

4.4.5 Stage for bag-in an adequate number of waste bags, Zip-Loc bags, tape, or other necessary supplies.

4.4.6 Access the WTS "Core Sampling" screen and enter the equipment serial numbers in the "Coring Equipment Used" pick lists as follows:

4.4.6.1 Select the core barrel ID number using the F9 function in an open field.

4.4.6.2 Select the core tube liner ID number using the F9 function in an open field.

4.4.6.3 Select the coring cutting bit ID number using the F9 function in an open field.

4.4.6.4 Select the push rod ID number using the F9 function in an open field, if applicable.

4.4.6.5 E-sign and save.

4.4.7 Determine the container type and the quantity of sample required based on the data obtained in Exhibit 1, Laboratory Required Sample Amounts and Container Sizes.

4.4.8 Obtain sample containers.

NOTE: *The container is labeled with only the appropriate sample type at this time. The label for the sample vial will be generated at the time the sample is taken and affixed to the sample vial.*

4.4.9 Label the sample containers with a grease pencil according to information obtained in Step 4.4.7 and stage the labeled sample containers for bag-in.

4.4.10 Stage for bag-in an adequate number of disposable sampling tools, wipes, weighing boats, end caps, and plastic bags.

4.5 Glovebox Bag-In/Sphincter Port Operations

NOTE: *The sphincter port and transfer container may be used to transfer supplies, as necessary, into the sample preparation glovebox. The drum docking port can also be used to transfer supplies, as necessary, into the glovebox system as addressed in Section 4.8.20.*

4.5.1 Perform bag-in or sphincter-port transfers of consumables, tools, and other supplies.

4.6 Coring Bit Assembly

4.6.1 Ensure that the proper core-barrel assembly is used for its proper application.

4.6.1.1 Ensure that core barrel assemblies are designated as follows:

NOTE: *The drill bit cement (DBC)/ drill bit cement surface set (DBCSS) barrels are not interchangeable with the* drill bit parfait (*DBP) barrel as configured. The internal thrust bearings have different length adjustments.*

- Drill bit soft (DBS)—Punch core barrel

- Drill bit cement 3 cutter (DBC3C)—Concrete core barrel for a Set 3 cutter diamond bit
- DBC, DBCSS—Concrete core barrel for surface set diamond bit
- DBP—Parfait core barrel for surface set diamond bit.

4.6.1.2 Ensure that the core-cutting bit and internal components are matched with the proper core barrel assembly as follows:

- Punch Bit Part Number 029-713-031 is used with the DBS core barrel
- A Set 3 Part Number 029-713-025 is used with the DBC3C core barrel

NOTE: *The DBC and DBCSS are the same core barrel with different designations*.

- Diamond SS Part Number 029-713-026 is used with the DBC or DBCSS core barrel
- Parfait Part Number 029-713-027 is used with the DBP core barrel.

4.6.2 Inspect reusable coring-bit barrel assemblies for cleanliness and/or damage.

4.6.2.1 Remove the outer barrel from the core-barrel head using the appropriate tools.

4.6.2.2 Ensure *visible cleanliness* (see def.) of all components.

4.6.2.3 Inspect the inner tube assembly for free movement, if applicable.

4.6.2.4 **IF** found to be damaged or malfunctioning,
THEN repair or replace it prior to use.

4.6.2.5 Reassemble the outer tube to the barrelhead assembly.

4.6.2.6 Document this inspection on Form-1599, Block 6.

(MP-TRUW-8.2)

4.6.3 **IF NOT** already in place,
THEN place the coring bit barrel in the uprighting fixture.

4.6.4 Retrieve the core cutting bit and internal components.

4.6.4.1 Visually inspect tools and components contained in protective packaging for integrity prior to removing the packaging.

4.6.4.1.1 **IF** the packaging is torn,
THEN do **NOT** use the tool or component and ensure that it is properly discarded.

4.6.4.1.2 **IF** the coring tool becomes visibly contaminated after the protective wrapping has been removed,
THEN do **NOT** use the tool or component and ensure that it is properly discarded.

4.6.4.1.3 Log any deficiencies on Form-1599, Blocks 7a through 7e.

WARNING

Improper use of cutting tools may result in personal injury.

NOTE: *The coring-bit barrel used for soft sludge is of a different configuration than the parfait or concrete bits. The soft sludge coring-bit barrel is recessed along its length. Parts are not interchangeable.*

4.6.5 Don required personal protective equipment (PPE) per approved work control in accordance with PD-COPS-9.18, Work Control.

4.6.6 Retrieve the core tube liner, remove one end cap, and place the end cap into a clean Zip-Loc bag.

4.6.7 Place the open end of the core tube liner into the core barrel.

4.6.8 Remove the second end cap, continue to push the core liner tube into position, and place the end cap in Zip-Loc bag.

4.6.9 Open the bag containing the cutting bit and internal components (using it as a cross contamination barrier) and perform the assembly of the internal bit components per Exhibits 2, 3, 4, or 5, respectively.

4.7 Waste Drum Transfer Operations

WARNING

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.7.1 Do **NOT** place body parts under suspended loads.

4.7.2 Using the monorail hoist, transfer the drum to the drum lift table, keeping body parts clear of the suspended load.

4.7.3 Verify heartbeat on the FTS local alarm box (indicated by a flashing white light on the bottom of the alarm box).

4.7.3.1 **IF** heartbeat **CANNOT** be verified,
THEN perform the following:

4.7.3.1.1 Stop the transfer of the drum to the DCSRS glovebox.

4.7.3.1.2 Contact the SS.

4.7.3.1.3 **GO TO** Section 4.27.15, No Heartbeat on Local FTS Control Box.

4.7.4 Using the FTS hand-held scanner, scan the barcode on the drum to be processed.

NOTE: *The white indicator light and the audible buzzer indicates that the FGE limit for the drum is ≤ 200 FGE.*

4.7.4.1 Observe that the white indicator light and the audible buzzer on the FTS alarm box actuates to confirm approval for drum coring
AND GO TO Section 4.8, Waste Drum Import to the DCSRS Glovebox.

(RPT-NFCS-25, CWR 2)

4.7.4.2 **IF** the FTS alarm actuates (indicated by flashing red light and alternating horn),
THEN perform the following:

4.7.4.2.1 Stop the transfer of the drum to the DCSRS glovebox.

4.7.4.2.2 Contact the SS.

4.7.4.3 **IF** the white indicator light and/or the audible buzzer does **NOT** actuate
AND no alarm is actuated,
THEN observe the alarm box to verify barcode entry.

4.7.4.3.1 **IF** the barcode is **NOT** displayed,
THEN GO TO Step 4.7.4 to scan the drum a second time.

4.7.4.3.1.1 **IF** the second scan fails,
THEN perform the following:

4.7.4.3.1.1.1 Stop the drum import process into the DCSRS glovebox.

4.7.4.3.1.1.2 Contact the SS and the FTS administrator.

4.7.4.3.2 **IF** the barcode is displayed,
THEN perform the following:

4.7.4.3.2.1 Do **NOT** import the drum to the DCSRS glovebox.

4.7.4.3.2.2 Contact the SS and the FTS administrator.

4.8 Waste Drum Import to the DCSRS Glovebox

4.8.1 As required, align the drum on the turntable based on the segment to be cored, as marked, per Step 4.3.9.6.

4.8.2 Secure the drum and turntable to the lift table by positioning and locking down the lower drum stabilizing clamps.

4.8.3 Using appropriate tools, remove the tamper-indicating device from the drum lid-locking ring, if necessary.

4.8.4 Place two rubber bands around the drum so that they are located between the bottom chine and the bottom lip.

4.8.5 Inspect the drum transfer sleeve for rips, tears, abraded areas, intact seams, and intact HEPA filter.

4.8.6 RCT: Setup and post the containment enclosure according to the anticipated or actual radiological conditions.

4.8.7 Don the appropriate PPE per approved work control per PD-COPS-9.18.

4.8.8 Move the drum and lift/turntable into the containment enclosure and secure the door.

WARNING

The potential for inadvertent release of radioactive contamination exists, because layers of confinement have been breached.

4.8.9 Use extreme care while removing the locking ring from drums that have all internal layers of confinement breached.

WARNING

Moving drums may present pinching and crushing hazards to personnel. Personal injury may result if body parts are not kept clear of moving objects.

4.8.10 Keep hands clear of pinch points and keep personnel out of movement path of waste containers.

NOTE: *An overpack with inner container is considered a single source drum.*

4.8.11 Ensure that only one source drum containing ≤ 200 FGE (including 2 sigma uncertainty) is processed/opened at a time within the coring room.

4.8.11.1 Perform dual verification that all other drums in the coring room are closed, and document this verification in the appropriate operating log.

(RPT-NFCS-25, CWR 3)

4.8.12 Remove the drum lid-locking ring and bolt from drum.

4.8.13 RCT: Perform a radiological survey of the drum lid-locking ring, the top outer lip of the drum, and periodic monitoring to ensure radiological conditions do **NOT** exceed radiological suspension limits.

4.8.14 Tape all sharp edges of the ring prior to packaging.

4.8.15 Package the drum lid-locking ring in accordance with INST-OI-24, Packaging Radioactive Waste, and the hazardous waste determination (HWD) for drum coring.

4.8.16 **IF** this drum has undergone any process that has breached the inner layers of confinement,
THEN GO TO Step 4.8.18.

4.8.17 **IF** this drum has **NOT** undergone any process that has breached the inner layers of confinement,
THEN perform the following:

4.8.17.1 Place and secure the drum transfer sleeve to the drum.

4.8.17.2 Remove the filter vent(s) using the appropriate tools.

4.8.17.2.1 RCT: Perform a radiological survey of the filter vent(s).

NOTE: *The filter(s) will be added to the waste inventory of the drum upon closure.*

4.8.17.2.2 Tape all sharp edges of filter(s), as applicable.

4.8.17.2.3 Stage the filter(s) for placement in the drum once the lid is removed.

NOTE: *The following step and substeps only apply to 55-gal drums overpacked in 83-gal drums since the lids have to be cut out of the 55-gal drum.*

4.8.17.3 **IF** processing an overpack with inner container in preparation for coring,
THEN perform the following:

4.8.17.3.1 Perform lower explosive limit (LEL)/lower flammable limit (LFL) monitoring at the vent hole of the container.

4.8.17.3.1.1 **IF** the LEL/LFL is greater than 25%,
THEN perform the following:

4.8.17.3.1.1.1 **STOP WORK**.

4.8.17.3.1.1.2 Notify the SS and Industrial Safety/Industrial Hygiene and wait for direction.

4.8.17.4 Loosen drum lid enough for the RCT to perform a preliminary radiological survey.

4.8.17.4.1 Remove lid at the direction of the RCT.

4.8.17.5 RCT: Perform a radiological survey of the exposed surfaces of the lid and periodic monitoring of other exposed surfaces to ensure radiological conditions do **NOT** exceed radiological suspension limits.

4.8.17.5.1 **IF** lid is to remain installed due to radiological conditions,
THEN GO TO Step 4.8.18.

4.8.17.6 **IF** it is planned to import an overpack drum with an inner drum to the glovebox,
THEN GO TO Step 4.8.17.8.

4.8.17.7 **IF** the liner is **NOT** vented,
THEN STOP WORK
AND contact SS.

4.8.17.7.1 Initiate an NCR for DAC (drum age criteria) implications in accordance with MP-Q&SI-5.4.

4.8.17.7.2 Proceed only when directed by SS.

NOTE: *Absorbent present on top of the inner drum is moved to facilitate placement of the tape patch.*

4.8.17.8 **IF** processing an overpack with an inner drum,
THEN place a tape patch over the vent hole on the inner drum, as applicable.

4.8.17.9 Tape sharp edges of the drum lid in accordance with the HWD for drum coring.

4.8.17.10 Package the drum lid in accordance with INST-OI-24 and the HWD for drum coring.

4.8.17.11 Place the filters on top of the inner packaging inside the drum.

4.8.17.12 **GO TO** Step 4.8.20.

4.8.18 Apply one wrap of 2-in. tape around the mating surface of the drum lid and drum.

4.8.19 Place and secure the drum transfer sleeve to the drum.

NOTE: *Personnel should be aware that materials may impede drum-docking operation and should take care to ensure this does not occur.*

4.8.20 Ensure the drum lid and/or liner lid is present prior to performing Step 4.8.21.

4.8.21 **IF** using the drum-docking port to transfer supplies into the glovebox, **THEN** place supplies on top of the drum.

4.8.22 Perform waste drum import to DCSRS glovebox.

WARNING

The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

4.8.23 Use care while positioning bag stub for removal.

4.8.24 Raise the drum and lift/turntable until it reaches the hard stop.

4.9 Drum Coring Operations

WARNING

Pinch hazards exist while lifting and moving equipment inside the glovebox.

4.9.1 Keep body parts free of moving equipment inside of the glovebox.

4.9.2 **IF** the drum was docked to the glovebox with the lid intact and taped, **THEN** remove the tape, drum lid, and any remaining filter vent(s) from the drum lid, using the appropriate tools, as applicable.

4.9.3 Document all filter(s) removed from the lid by model number in WTS on the "Container Filters" screen.

4.9.4 Complete Form-1599, Block 5a.

NOTE 1: *Step 4.9.5 and substeps are not performed on inner containers with rigid liners that have liner lids or that have spacers between the inner drum and rigid liner.*

NOTE 2: *Step 4.9.5 and substeps are not performed on 30-gal drums overpacked in 55-gal drums.*

4.9.5 **IF** processing an 83-/85-gal overpack with a 55-gal inner drum, **THEN** perform the following to prepare the inner drum for coring:

4.9.5.1 Remove the tape patch from the inner drum vent hole, as applicable.

4.9.5.2 Move any absorbent material present on top of the inner drum by bagging the absorbent and setting it aside.

4.9.5.3 Drill a hole approximately 1 in. in diameter in the inner drum lid to facilitate drum lid cutting.

4.9.5.4 Using an appropriate tool (e.g., a nibbler), cut out as much of the drum lid as possible.

4.9.5.5 Remove the cut out disc and set aside.

4.9.5.6 Back tape the cut on the inner drum lid.

4.9.5.7 **GO TO** Step 4.9.8.

NOTE: *Steps 4.9.6 through 4.9.7.2 only apply if the drum was not previously de-lidded per Section 4.8 of this instruction.*

4.9.6 Remove the waste drum lid and stage it in drum lid rack, using care **NOT** to rip or tear the drum sleeve while removing the lid, if applicable.

4.9.6.1 Remove spacers between drum lid and liner, if applicable.

4.9.7 **IF** the liner lid, when present, is **NOT** vented,
THEN STOP WORK
AND contact SS.

4.9.7.1 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.9.7.2 Proceed only as directed by SS.

4.9.8 Install and secure the upper drum stabilizing clamps.

4.9.9 Remove the rigid liner lid using the tools provided and store it out of the immediate work area, if applicable.

4.9.10 Remove packing material (e.g., vermiculite) and place it into a plastic bag and stage it away from the immediate work area, if applicable.

4.9.11 **IF** the inner container is a 30-gal drum,
THEN remove the lid of the inner drum at this time.

4.9.12 Cut the drum waste bag(s) away using a box knife, if applicable.

4.9.12.1 **IF NOT** already performed,
THEN stage this waste away from the immediate area.

4.9.13 **IF** a drum selected for solids sampling is to be rejected,
THEN initiate an NCR per MP-Q&SI-5.4, to disposition the waste stream lot assignment of the rejected drum.

(MP-TRUW-8.2)

4.9.14 **IF** liquids are present at the top of the waste,
THEN perform the following:

4.9.14.1 Quantify the liquids using the exhibits in INST-OI-34, Non-Facility Visual Examination Operations.

4.9.14.2 Log the volume on Form-1599, Comments Section.

NOTE: *An NCR will only be initiated if the nonconformance has not been previously indentified and documented.*

4.9.14.3 **IF** the liquid exceeds 1% by volume of the outermost container,
OR IF the liquids are associated with RF-003,
THEN initiate an NCR for prohibited liquids.

NOTE: *Liquids contained within the inner most layer of confinement are considered in the depth of waste calculations, as applicable.*

4.9.15 Calculate the depth of waste in the drum as follows:

4.9.15.1 Using a measuring device, measure the distance from the top lip of the drum to the waste, i.e., the 55-gal or 30-gal drum.

NOTE: *The 1-in. reference in the following step is allowing for the 3/4-in. bottom barrel lip plus 3/16-in. liner thickness for a 55-gal drum, or the 13/16-in. bottom barrel lip on a 30-gal drum.*

4.9.15.2 Using Form-1599 (Blocks 8a and 8b) and a calculator, add 1 in. to the distance measured,
THEN subtract total from 34.5 in. for a 55-gal drum
OR subtract total from 29 in. for a 30-gal drum.

4.9.15.3 Record the result on Form-1599, Block 8a and 8b.

4.9.15.4 Record the calculated depth of waste in WTS “Depth of Waste” field on the “Core Sampling” screen.

NOTE: *The port cover and dust vacuum are not required when performing operations that do not require purge air while punch or rotary coring.*

4.9.16 **IF** performing rotary coring,
THEN place the port cover over the bag-in port inside the coring glovebox.

4.9.16.1 Ensure that the glovebox dust vacuum hose is attached to the port cover, as required.

4.9.17 Position the uprighting fixture slide brackets for acceptance of the coring bit.

4.9.18 **IF** one is **NOT** already in place,
THEN place the coring bit assembly into the uprighting fixture slide brackets.

4.9.19 Position the uprighting fixture slide brackets at their lock locations and insert the slide bracket locking pins.

4.9.20 Ensure that the spindle end of the coring bit is locked into the top slide bracket.

WARNING

Personal injury may occur if personnel place hands and arms into the glovebox while machinery is running.

NOTE: *A light curtain on gloveboxes serves as a safety interlock to protect the operator from moving machinery.*

4.9.21 Ensure hands are out of the gloves and the light curtain has been reset prior to continuing operations.

4.9.21.1 Elevate the coring bit and uprighting fixture.

4.9.21.2 Place the uprighting fixture motor control switch into the neutral position.

4.9.22 Start the dust vacuum system, as required.

4.9.23 Observe that the "Recovery" screen is displayed on the HMI computer.

4.9.24 Clear condition by clicking "Continue in Auto."

4.9.25 Observe that the "System Startup" screen is displayed.

4.9.26 Select the "Control" icon at the bottom of the "System Startup" screen.

4.9.26.1 Click on "Manual" on the "Control Mode" screen.

4.9.26.2 Click on "Recipe."

4.9.26.2.1 Ensure the coring depth parameters are correct for the drum to be cored as follows:

- 55-gal depth—38,300 mils down
- 55-in 83-/85-gal depth—35,300 mils down
- 30-in 55-gal depth—37,500 mils down.

4.9.27 **IF** this is a primary/initial core sampling sequence,
THEN perform the following steps:

4.9.27.1 Select the "Control" icon at the bottom of the "System Startup" screen.

4.9.27.2 Click on "Auto" on the "Control Mode" screen.

4.9.27.3 On the "System Auto" screen, click on "Primary Core."

NOTE: *The "horizontal position" can be obtained from the "core sample" tab on the WTS "Core Sample" screen.*

4.9.27.3.1 Enter the "Horizontal Position" number provided by WTS in the "mils east" field under the PRIMARY CORE button.

4.9.27.3.2 Select the appropriate responses in the following fields:

- "Bit Type"
- "Drum Type"
- "Purge Enable."

4.9.28 **IF** this is a resample/co-located core sampling sequence, **THEN** perform the following steps:

4.9.28.1 Select the "Control" icon at the bottom of the "System Startup" screen.

4.9.28.2 Click on "Auto" on the "Control Mode" screen.

4.9.28.3 On the "System Auto" screen, click on "Resample/Co-located core."

NOTE: *The "horizontal position" can be obtained from the "core sample" tab on the WTS "Core Sample" screen.*

4.9.28.3.1 Enter the "Horizontal Position" number provided by WTS in the "mils east" field under the RESAMPLE CO-LOCATED CORE button.

4.9.28.3.2 Select the appropriate responses in the following fields:

- "Bit Type"
- "Drum Type"
- "Purge Enable."

4.9.29 Select "Execute" and observe that the following occurs:

A. The drill positioning system locates the drill head over the coring bit engages and removes it from the uprighting fixture.

B. The computer prompts the operator whether or **NOT** the coring bit has been picked up.

4.9.29.1 Click on "YES" or "NO."

4.9.29.1.1 **IF** the answer is YES,
THEN observe that the drill positioning system locates the coring bit over the horizontal position established in Step 4.9.27.3.1 or Step 4.9.28.3.1 and that the DCSRS control system powers up the drill and commences the drilling sequence
AND GO TO Step 4.9.29.2.

4.9.29.1.2 **IF** the answer is NO,
THEN select "Drill Stop."

4.9.29.1.2.1 Observe that the "Recovery" screen is activated.

4.9.29.1.2.1.1 Reset drill sequence.

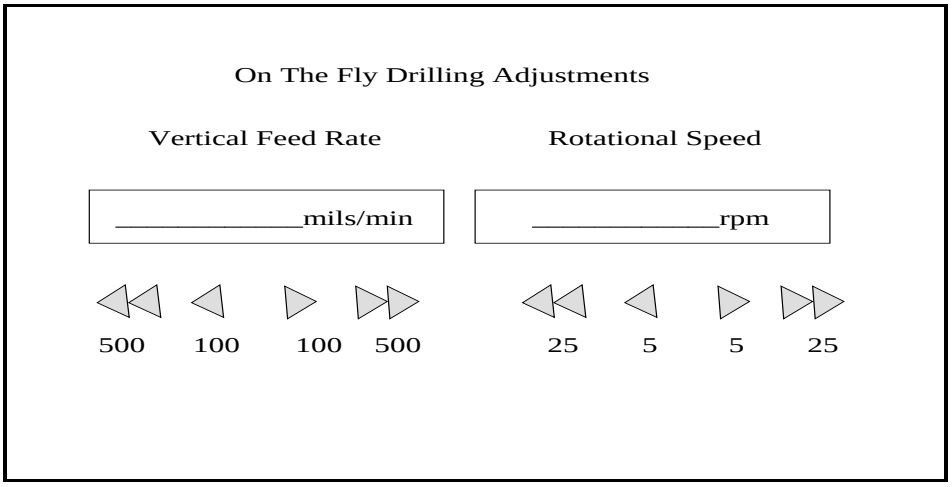
4.9.29.1.2.2 Observe that the drill motor returns to the home position and resets the drill bit into the uprighting fixture.

4.9.29.1.2.3 Ensure that the information on the "System Auto" screen is correct.

4.9.29.1.2.4 **RETURN TO** Step 4.9.29.

NOTE 1: *The drill bit does not rotate when using the punch bit.*

NOTE 2: *Drill speed and feed rate will be based on the matrix being cored.*



NOTE 3: *Shift on the fly drilling adjustments may be made at the OT's discretion. Vertical feed rate and rotational speed may be increased or decreased based on trend indicators (e.g., horizontal torque, vertical torque, and rotational torque). The "Trend" screen may be viewed at 8.15 any time, by using the mouse and clicking on "Trend."*

NOTE 4: *During the coring operation, the coring bit may be purged with air. This helps to cool the bit while coring monolithic matrices and aids in removal of cuttings from the borehole. Purge air passes through the bit on the outside of the core tube liner and exits through a small opening between the outer bit barrel and the inner liner shoe, thus minimizing contact with the sample material and minimizing loss of* volatile organic compounds *(VOCs; see def.) due to contact with the air.*

4.9.29.2 **WHEN** prompted by computer,
THEN check for liquids draining from the bit.

NOTE: *Liquids containing PCBs are prohibited at WIPP.*

(MP-TRUW-8.2)

4.9.29.3 **IF** liquids are draining from the bit,
THEN wait until all liquids have drained and click on "YES" to the prompt.

4.9.29.4 Click "Drill Stop" on the HMI computer terminal.

4.9.29.5 Using a certified clean push-rod tool, push the core sample that is in the bit shoe up into the core tube liner until it is above the core catcher.

4.9.29.6 Wipe down the bit.

4.9.29.7 Perform recovery from the tripped light curtain.

4.9.29.8 Turn off the glovebox dust vacuum system, as required.

4.10 Bit Disassembly and Core Retrieval

4.10.1 Lower the coring bit and uprighting fixture to the horizontal position.

4.10.1.1 Place the local motor control switch in the neutral position once the fixture is in place.

4.10.2 Remove the locking pins from the uprighting fixture slide brackets.

4.10.3 Move the assembly manually into the bit preparation glovebox.

4.10.4 Lock the drive head of the coring bit into the locking mechanism on the uprighting fixture.

4.10.5 Loosen the core cutting bit from the core barrel, using the appropriate tools.

4.10.6 Remove the core-cutting bit from the core tube barrel.

4.10.7 Remove the inner tube shoe, the core lifter, and basket, as applicable.

NOTE: *The time and date recorded in Step 4.10.8 marks the initiation of the core tube liner retrieval.*

4.10.8 Access the WTS computer terminal "Core Sampling" screen and record the date and time of core sample retrieval in the "Core Sample Dt & By" field.

4.10.8.1 Complete Form-1599, Block 9.

NOTE: *Any portion of the sample material that comes into contact with a non-certified tool is not used for sample material for waste characterization.*

4.10.9 Pull the core tube liner out of the core barrel approximately 2 in., using a pair of needle-nose pliers.

4.10.9.1 Keep the contact between the pliers and the core sample material to a minimum.

NOTE: *The lapsed time in which the core tube liner is uncapped should be kept to a minimum to avoid the loss of VOCs.*

4.10.10 Apply an end cap to the exposed core tube liner.

4.10.11 Continue to remove the core tube liner until it is completely free of the core barrel.

4.10.12 Cut the excess core tube liner away using an appropriate tool, leaving approximately 1/4 in. of headspace above the sample.

4.10.13 Place an end cap on the exposed end of the core tube liner and log the capping of the liner on Form-1599, Block 10.

4.10.14 Mark this end cap with a "T" using a grease pencil to designate the top of the core sample.

4.10.15 Measure the length of core recovered.

4.10.16 Enter the core length in WTS and press ENTER.

NOTE: *The percent recovery is calculated from the core drilling depth and the depth of waste measurement.*

4.10.17 Observe that the WTS calculates a percent recovery.

4.10.18 **IF** the recovery is greater than or equal to 50 percent,
THEN perform the following:

4.10.18.1 Provide a detailed physical description of the core sample in the "Core Physical Description" field.

4.10.18.1.1 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" comment field.

4.10.18.1.1.1 Complete Form-1599, Block 11a and 11b.

4.10.18.1.2 Document any inconsistencies in color, texture, or waste type between the cores, if applicable, in the "Core Sample Comment" field.

4.10.18.1.2.1 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.18.1.2.2 Complete Form-1599, Block 12a and 12b.

4.10.18.1.3 **GO TO** Step 4.10.29.

4.10.19 **IF** the recovery of the initial core sample is less than 50 percent,
THEN perform the following:

4.10.19.1 Provide a detailed description of the core in the "Core Physical Description" comment field.

4.10.19.2 Document in the "Core Sample Comment" field that the initial core sample failed due to an inadequate amount of sample material retrieval and that a resample core is being attempted.

4.10.19.3 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.19.3.1 Complete Form-1599, Block 11a and 11b.

4.10.20 Wipe down the core-tube liner to a visibly clean condition.

4.10.21 Pass the core-tube liner with core into the sample preparation glovebox.

4.10.22 Ensure that all information is recorded on the "Core Sampling" screen.

4.10.22.1 E-sign and save.

4.10.23 **IF** a resample core is being taken,
THEN obtain sampling requirements from the "Sample Amounts and Container Requirements for a Single Core Sample" table in Exhibit 1.

4.10.24 Obtain a resample core sample by repeating Steps 4.3.11, 4.3.12, and Sections 4.4, 4.5, 4.6 (if needed) and Sections 4.9 and 4.10 (as applicable).

4.10.25 **IF** the recovery is less than 50 percent on the resample core,
THEN perform the following:

(MP-TRUW-8.2)

4.10.25.1 Provide a detailed description of the core in the "Core Physical Description" comment field.

4.10.25.2 Document in the "Core Sample Comment" field that the resample core sample failed due to an inadequate amount of sample material retrieval and that the core with the best recovery (initial/resample) will be sampled.

(MP-TRUW-8.2)

4.10.25.3 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.25.3.1 Complete Form-1599, Block 11a and 11b.

4.10.25.4 Document any inconsistencies in color, texture, or waste type between the primary and resample core in the "Core Sample Comment" field, if applicable.

4.10.25.4.1 Complete Form-1599, Block 12a and 12b.

4.10.25.4.2 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.25.5 **GO TO** Step 4.10.29.

4.10.26 **IF** recovery of the co-located core sample is less than 50 percent, **THEN** perform the following:

4.10.26.1 Provide a detailed physical description of the core sample in the "Physical Description" field.

4.10.26.2 Document in the "Core Sample Comment" field that the co-located core sample failed due to an inadequate amount of sample material retrieval.

4.10.26.3 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.26.3.1 Complete Form-1599, Block 11a and 11b.

4.10.26.4 Document any inconsistencies in color, texture, or waste type between the primary, resample, and co-located core in the "Core Sample Comment" field.

4.10.26.4.1 Complete Form-1599, Block 12a and 12b.

4.10.26.4.2 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.27 **IF** the container and/or time limit have **NOT** been reached for the batch, **THEN** attempt to take a co-located core from the next container in the batch.

OR

4.10.28 **IF** the container and/or time limit have been reached for the batch/lot, **THEN** initiate an NCR per MP-Q&SI-5.4, documenting less than 50 percent recovery for the QC co-located core.

4.10.28.1 Sample the core in accordance with Section 4.11.

4.10.29 Ensure that all information is recorded on the "Core Sampling" screen.

NOTE: *If "Coring equipment used" is not entered in WTS, a message box will appear while attempting E-signature. This message will direct that "Coring Equipment must be entered." E-signature is denied until equipment is entered.*

4.10.29.1 E-sign and save.

4.10.30 Wipe down the core-tube liner to a visibly clean condition.

4.10.31 Pass the core-tube liner with core into the sample preparation glovebox.

NOTE: *Transfer of record ownership between qualified operators is allowed up to the point of initiating subsampling routine. This record turnover is captured in e-sign history in WTS. Once the subsampling routine is initiated, it has to be completed by the same operator. Custody will be maintained and properly relinquished.*

4.11 Sample Preparation Glovebox Operations

NOTE 1: *After the core has been extracted, a sample is collected from a random location over the length of the core. This sample, therefore, is extracted from a random location in both the horizontal and vertical planes. The selection of the sample is documented in WTS.*

(MP-TRUW-8.2; HWMA/RCRA Permit)

NOTE 2: *The WTS performs a random selection routine for a sub-sampling location of the cored material. A subsample is defined as the area along the core length where a sample will be taken for analysis.*

4.11.1 **IF** the percent recoveries for the "Primary/Initial" and "Resample" cores are both less than 50 percent,
THEN sample the core with the best recovery.

4.11.2 **IF** there is an insufficient amount of core sample to obtain the required subsamples in accordance with Exhibit 1,
THEN reject the container for solids sampling
AND initiate a non-conformance report per MP-Q&SI-5.4 to disposition the waste stream lot assignment of the rejected container.

(MP-TRUW-8.2)

4.11.3 Visually inspect sampling equipment contained in protective packaging for integrity prior to removing the packaging.

4.11.3.1 **IF** the packaging is torn,
THEN do **NOT** use the sampling equipment
AND ensure that it is properly discarded.

4.11.3.2 **IF** the sampling equipment becomes visibly contaminated after the protective wrapping has been removed,
THEN do **NOT** use the sampling equipment
AND ensure that it is properly discarded.

(HWMA/RCRA Permit; MP-TRUW-8.2)

4.11.3.3 Log any deficiencies on Form-1599, Block 7a through 7e, as applicable.

4.11.4 Tape a waste bag to the inside back wall of the glove box.

4.11.5 Place two disposable wipes on the glovebox floor to use as a clean working surface.

4.11.6 Obtain empty sample vials and supplies.

4.11.7 Place the empty sample containers and clean disposable sampling tools on the clean working surface.

4.11.8 Access the “Core Sampling” screen.

4.11.8.1 **IF** data is **NOT** already populated on the “Core Sampling” screen,
THEN enter the container ID number in the “Container ID” field, and press F8.

4.11.8.2 Select the "Sub Sample" tab.

NOTE: *The initial subsample location is required to be randomly selected. The WTS performs a random selection routine for this subsample location. All subsequent subsample locations are not required to be randomly selected.*

(MP-TRUW-8.2; HWMA/RCRA Permit)

4.11.8.3 Note required distance for the initial subsample location.

4.11.9 **IF** the core is a monolithic matrix,
THEN pulverize the core using the liner for containment by tapping it with a hammer, taking care to **NOT** breach the liner.

4.11.10 Using a china marker, mark off the portion of the liner containing core sample material in 1/2-in. increments and number the whole inch marks starting at the end marked with a "T."

4.11.11 Mark the subsample location on the core ensuring that the measurement is from the core end marked with a "T," using information gathered in Step 4.11.8.3.

4.11.12 Make a perpendicular cut through the tube roughly 1/4 in. above or below the required subsample location mark using a tubing cutter.

4.11.13 Cap the portion of the core tube segment to be sampled and stage it for sampling.

4.11.14 Cap the remaining portion of the core tube segment with a new cap and place it aside.

(MP-TRUW-8.2)

4.11.15 Wipe the tubing cutter to a visibly clean state.

4.11.16 Remove cap and the core material from the newly exposed surface on the core segment being sampled down to the required sample location using a disposable sampling spatula.

4.11.17 Scrape the material, if necessary, from the spatula into an appropriate waste container and dispose of spatula.

4.11.18 Place clean cap on the core-tube liner and place it aside.

NOTE: *The operator that is performing the subsampling evolutions in the DCSRS glovebox is allowed to relay information to a second operator for entry into WTS. Data is verified for accuracy through the use of "Repeat Back" prior to e-signature.*

4.11.19 Access the "Sub Sample" tab.

4.11.19.1 Click in the first/next blank "Sub Sample ID" field.

NOTE: *Non-halogenated volatile organic compound (NHVOC) is the sample requested for hydrazine and formaldehyde.*

4.11.19.2 Access the pulldown menu at the "Sample Requested" field and select analysis type.

NOTE 1: *The sample for VOCs is always taken first.*

NOTE 2: *Representativeness for VOC analysis is achieved by collecting unbiased samples.*

4.11.19.3 On the "Sampling Tools" subscreen, select "20 vial" from the pick list.

4.11.19.4 Select "Spatula" or "Spoon," as applicable, from pick list.

(MP-TRUW-8.2)

4.11.20 Obtain the sample vial for the first/next sample to be taken.

4.11.21 **IF NOT** already completed as part of prerequisites and initial conditions,
THEN check-weigh the electronic balance
AND record the information on Form-1215 in accordance with Step 3.2.20 of this instruction.

4.11.21.1 Complete Form-1599, Block 3.

4.11.22 Place the sample vial on the weighing pan of the analytical balance.

NOTE: *After pushing the RE-ZERO button on the balance, the balance should read 0.00.*

4.11.23 **WHEN** the weight reading is stable,
THEN push the RE-ZERO button on the balance.

4.11.24 Remove the vial from the balance.

4.11.25 Remove the lid from the weighed sample vial.

4.11.26 Uncap the core-liner tube and remove the core material below the subsample mark and place it in the vial using a clean sample spatula.

4.11.27 Wipe the top of the vial clean with a clean disposable wipe, if necessary.

4.11.28 Recap the vial.

4.11.29 Place the sample vial on the weighing pan of the analytical balance.

4.11.30 Wait for the balance to stabilize and observe the weight.

4.11.31 **REPEAT** Steps 4.11.24 through 4.11.30 until the laboratory required amount of sample is contained in the vial.

4.11.32 Remove the vial from the balance and re-zero the balance.

4.11.33 Place a clean end cap on to the remainder of the core-tube liner to be sampled.

4.11.34 Stage the sample vial for labeling and sample bagout.

4.11.35 Access the "Sub Sample" screen on the WTS computer terminal.

NOTE: *Information that is recorded on the "Sub Sample" screen is automatically stored by WTS into the Chain-of-Custody "Unattached Sub-Sample" screen.*

4.11.35.1 Record the date and time sample was taken.

4.11.35.2 Record the actual distance at which the sample was taken in the "Actual Distance" field.

4.11.35.3 **IF** the "Actual Distance" is different than the "Required Distance" for the initial subsample location only,
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

4.11.35.3.1 Enter an explanation in the "Distance from top Comment" field in WTS.

4.11.35.4 Record the weight for this sample to two decimal places.

4.11.35.5 Record the volume of sample container.

NOTE: *The NHVOC samples for hydrazine and formaldehyde are only taken on certain Savannah River Site waste streams. The Solid Sampling SME will provide direction on when it is necessary to obtain these samples.*

4.11.35.6 **IF** taking an NHVOC-hydrazine sample,
THEN enter "Hydrazine Sample" in the "Sub Sample Comment" field.

4.11.35.7 **IF** taking an NHVOC-formaldehyde sample,
THEN enter "Formaldehyde Sample" in the "Sub Sample Comment" field.

4.11.35.8 Ensure the "Custody Seal Attached" field is "No."

4.11.35.9 Ensure the "Preserved to 4 degrees C" field is "No."

4.11.35.10 E-sign and save.

4.11.36 Select the current sample being processed in the "Sub Sample ID" field.

NOTE 1: *Sample labels, generated by performance of Step 4.11.37, meet the requirements of AMWTP Data Management System Core Sampling User Requirements Specifications, No. 16784-02C.*

NOTE 2: *The following step and substeps may be performed at any time after the samples are taken, but prior to removal from the glovebox.*

4.11.37 Print two labels, one for the sample bottle and one for the sample transfer bag.

4.11.37.1 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the Dt & By field on the "Sub Sample" screen

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (i.e., primary or QC)

I. Sample description.

4.11.38 **REPEAT** Steps 4.11.19 through 4.11.37.1 for the remainder of the VOC samples.

4.11.38.1 Log the subsample label verification on Form-1599, Block 13a.

4.11.39 Access the "Core Sampling" screen.

4.11.39.1 Select the "Sub Sample" tab.

NOTE: *The sample taken for metals and* semi-volatile organic compounds *(SVOCs; see def.), if required will be contained in a single sample vial.*

4.11.39.2 Place the cursor in the next blank "Sample ID" field and click.

4.11.39.3 Access the pull down menu on the "Sample Requested" field and select analysis type.

4.11.39.4 On "Sampling Tools" subscreen, select "4 vial" from the pick list.

4.11.39.5 Select "Spatula" or "Spoon," as applicable, from pick list.

4.11.39.6 Select "Weigh Boat" from the pick list.

4.11.40 Obtain the sample vial for the sample to be taken.

4.11.41 Place the weighing boat on the weighing pan of the analytical balance.

NOTE: *After pushing the RE-ZERO button on the balance, the balance should read 0.00.*

4.11.42 **WHEN** the weight reading is stable,
THEN push the RE-ZERO button on the balance.

4.11.43 Remove the core material from the core tube liner and place it in the weighing boat using a clean sample spatula.

4.11.44 Wait for the balance to stabilize and observe the weight.

4.11.45 Ensure that the laboratory required amount of sample is contained in the weighing boat.

4.11.46 Transfer the contents of the weighing boat to the sample vial and cap it.

4.11.47 Place the used weighing boat into an appropriate waste container.

4.11.48 Stage the sample vial for labeling and sample bagout.

4.11.49 Place an end cap on to the remainder of the core tube liner.

NOTE: *Information that is recorded on the "Sub Sample" screen is automatically downloaded by WTS into the chain of custody "Unattached Sub Sample" screen.*

4.11.50 Access the "Sub Sample" screen.

4.11.50.1 Record the date and time the sample was taken.

4.11.50.2 Record the actual distance at which the sample was taken in the "Actual Distance" field.

4.11.50.3 Record the weight for this sample to two decimal places.

4.11.50.4 Record the volume of the sample container.

4.11.50.5 Ensure the "Custody Seal Attached" field is "No."

4.11.50.6 Ensure the "Preserved to 4 degrees C" field is "No."

4.11.50.7 E-sign and save.

NOTE: *The following step and substeps may be performed at any time after the samples are taken, but prior to removal from the glovebox.*

4.11.51 Select the current sample being processed in the "Sub Sample ID" field.

4.11.51.1 Print two labels, one for the sample bottle and one for the sample transfer bag.

4.11.51.2 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the Dt & By field on the "Sub Sample" screen

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (i.e., primary or QC)

I. Sample description.

4.11.51.3 Log the subsample label verification on Form-1599, Block 13b.

4.12 Sample Bagout, Handling, and Storage Requirements

4.12.1 Transfer one set of the previously generated sample labels into the sample preparation glovebox.

4.12.2 Apply the appropriate label to each sample vial.

4.12.3 Ensure all fields on the sample label are complete.

WARNING

Improper use of cutting tools can result in personal injury and/or inadvertent release of radioactive contamination.

4.12.4 Don proper PPE per approved work control in accordance with PD-COPS-9.18.

4.12.5 Perform sample bagout operations.

4.12.6 RCT: Perform radiological surveys of the package.

4.12.7 Apply the appropriate sample label to the sealed bag.

4.12.8 Place the sealed bag with label into a Zip-Lock bag, fold the bag over on itself, seal it, and affix a custody seal to the closure.

4.12.8.1 Ensure that the custody seal contains the sampler's signature and date.

4.12.9 **REPEAT** Steps 4.12.5 through 4.12.8.1 until all sample vials have been removed from the glovebox.

4.12.9.1 Log custody seal verification on Form-1599, Block 14.

4.12.10 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.12.11 Access WTS computer and click on the "Sub Sample" tab.

4.12.11.1 Click on the first/next sample number in the "Sub Sample Id" field.

4.12.11.2 In the "Custody Seal Attached" field, select "YES."

4.12.11.3 E-sign and save.

4.12.11.4 **REPEAT** Steps 4.12.11.1 through 4.12.11.3 for all remaining subsamples.

4.12.11.5 Log verification on Form-1599, Block 15.

4.12.12 Ensure the person transferring samples to the refrigerator is the same person in custody of the samples during the sampling.

4.12.13 Using WTS, move the samples to the coring room refrigerator by performing the following:

(HWMA/RCRA Permit)

4.12.13.1 Go to the "General" tab at the top of the screen and click on it.

4.12.13.2 Scroll to "Movement/Location," then to "Manual Move" screen and click on it.

4.12.13.3 Enter the sample container ID number in the "Operator Container ID" and "Supervisor Container ID" field.

4.12.13.4 Click on "Supervisor Verification."

4.12.13.5 Supervisor: E-sign and save.

4.12.13.6 Click on "Update Location" tab.

4.12.13.7 Select the "634-Characterization" from the "Building" drop down list.

4.12.13.8 Place the cursor in the "Section" block and press F9.

4.12.13.9 Select "Coring Area" from the list and click "OK."

4.12.13.10 With the cursor in the "Sub Section" block, press F9.

4.12.13.11 Select "Refrigerator" from the drop down list and click "OK."

4.12.13.12 Select "Moved Date/Time."

4.12.13.13 Click on "Initiate."

4.12.13.14 Click on the CLEAR button to clear data.

4.12.14 **REPEAT** Steps 4.12.13.3 through 4.12.13.14 for the remaining samples.

4.12.15 Close the "Manual Move" screen.

4.12.16 Place all sample packages from this event into one or two (if needed) large Zip-Lock bag and seal.

4.12.16.1 Record the parent drum number on the Ziploc bag(s).

(RPT-NFCS-25, CWR #6)

4.12.17 Ensure that refrigerated storage is maintained at 4ºC (2 to 6ºC acceptable) and remains locked when **NOT** attended.

(MP-TRUW-8.2)

4.12.18 Place samples into refrigerator.

4.12.19 Close and lock the door to the refrigerated storage area.

4.12.20 Access the WTS computer and click on the "Sub Sample" tab.

4.12.20.1 Click on the first/next sample number in the "Sub Sample ID" field.

4.12.20.2 In the "Preserved to 4 degrees C" field, select "YES."

4.12.20.3 E-sign and save.

4.12.20.4 **REPEAT** Steps 4.12.20.1 through 4.12.20.3 for all remaining subsamples.

4.12.20.5 Log verification on Form-1599, Block 16.

4.12.21 Select the "General" tab on the WTS computer.

4.12.21.1 Scroll to "Movement/Location," and then to "Container Location Screen Report" and click on it.

4.12.22 Click on the down arrow on the "Sub Section" field.

4.12.22.1 Select "Refrigerator" and click on it.

4.12.23 Click on "Locate."

4.12.24 Confirm that the samples for this event are located in the "Refrigerator."

4.13 Trip Blank Preparation

NOTE 1: *Three trip blanks are required as part of each sample shipping container. The first trip blank will be for purgeable VOCs. The remainder will be used as spares.*

NOTE 2: *Five trip blanks are needed as part of each sample shipping container when hydrazine and formaldehyde samples are taken.*

NOTE 3: *Trip blanks are analyzed by the laboratory to verify the integrity of the sample media through the absence of contaminants in the blanks.*

4.13.1 Access the "Core Sampling" screen.

4.13.2 Place the cursor in the "Container ID" field and press F9.

4.13.2.1 Select the container ID associated with samples and click on "OK."

4.13.2.2 Press F8 to upload the container data.

4.13.3 Select the "Sub Sample" tab.

4.13.4 Place the cursor in the last populated "Sub Sample Id" field.

4.13.4.1 Select the "Insert Record" symbol at the top of the screen.

4.13.4.2 Observe that a blank subsample ID field is created.

4.13.4.3 Place the cursor in this field and click on it.

4.13.5 Click on the down arrow for the "Sample Requested" field.

4.13.5.1 Select "Trip Blank."

4.13.6 Enter "Trip Blank" and the sequence number, e.g., 1-5, in the subsample comment field.

4.13.7 Enter "0" in the "Actual Distance" field.

4.13.8 Enter "Trip Blank" in the "Distance from top Comment" field.

4.13.9 Place the cursor in the "Sampling Tools" field and press F9.

4.13.9.1 Select the vial size used.

4.13.10 Place the cursor in an open "Sampling Tools" field and press F9.

4.13.10.1 Select "Spatula" from the pick list.

4.13.11 Obtain the organic free sand used for the trip blank media.

4.13.12 Obtain a clean 20-mL septum capped volatile organic analysis (VOA) vial.

4.13.13 Tare-weigh the vial.

4.13.13.1 Remove the cap and place it on a clean surface.

4.13.14 Using a certified clean spatula, add 2.5 to 3.0 grams of clean sand to the vial
OR
IF taking additional trip blanks to support Hydrazine and Formaldehyde analysis,
THEN ensure that 12.0 to 12.5 grams of sand is obtained for trip blanks 4 and 5.

4.13.14.1 Reweigh, as necessary, to obtain the required amount.

4.13.15 Enter the weight to two decimal places and the volume in the appropriate fields on the "Sub Sample" screen.

4.13.16 Record the date and time the sample is taken in the "Sub Sample Dt & By" field.

4.13.17 Recap the vial and reset the balance.

4.13.18 Select "NO" in the "Preserved to 4 degrees C" field.

4.13.19 E-sign and save.

4.13.20 Print the trip blank sample label and attach it to the vial.

4.13.20.1 Verify that the sample label contains complete information.

NOTE: *Sample containers are decontaminated at the lab using water-dampened towels that will smear any entries made with non-permanent ink.*

4.13.21 Sign and date the custody seal using only permanent black or blue ink.

4.13.22 Place a custody seal on the vial.

4.13.23 Do **NOT** cover the sample label with the custody seal.

4.13.24 Click on the down arrow for the "Custody Seal Attached" field and select "YES."

4.13.25 E-sign and save.

4.13.26 **REPEAT** Steps 4.13.4 through 4.13.25 for the remaining trip blanks.

4.13.27 Place the trip blanks into refrigerated storage.

4.13.27.1 Ensure the refrigerator door is locked.

4.13.28 Move the trip blank samples, using the WTS computer, to the coring room refrigerator by performing the following:

4.13.28.1 Go to the "General" tab at the top of the screen and click on it.

4.13.28.2 Scroll to "Movement/Location," then to "Manual Move" screen and click on it.

4.13.28.3 Enter the sample container ID number in the "Operator Container ID" field and press tab.

4.13.28.4 Enter the same container ID number in the "Supervisor Container ID" field.

4.13.28.5 Click on "Supervisor Verification."

4.13.28.6 SS/Designee: Perform the following:

4.13.28.6.1 E-sign and save.

4.13.28.6.2 Click on "Update Location" tab.

4.13.28.6.3 Select "634-Characterization" from the "Building" drop down list.

4.13.28.6.4 Place the cursor in the "Section" block and press F9.

4.13.28.6.5 Select "Coring Area" from the list and click "OK."

4.13.28.6.6 With the cursor in the "Sub Section" block, press F9.

4.13.28.6.7 Select "Refrigerator" from the list and click "OK."

4.13.28.6.8 Select "Moved Date/Time."

4.13.28.6.9 Click on "Initiate."

4.13.28.6.10 Click on "OK" to update location.

4.13.28.6.11 Click on the CLEAR button to clear data.

4.13.29 **REPEAT** Steps 4.13.28.3 through 4.13.28.6.11 for the remaining samples.

4.13.30 Complete Form-1599, Block 17.

4.13.31 Select the "General" tab on the WTS computer.

4.13.31.1 Scroll to "Movement/Location," and then to "Container Location Screen Report" and click on it.

4.13.32 Click on the down arrow on the "Sub Section" field.

4.13.32.1 Select "Refrigerator" and click on it.

4.13.33 Click on "Locate."

4.13.34 Confirm that the location is listed as "Refrigerator."

4.13.35 Access the "Sub Sample" tab.

4.13.35.1 Click on the first/next sample number in the "Sub Sample Id" field for the trip blank.

4.13.35.2 On the "Sub Sample" screen, click on the down arrow for "Preserved to 4 degrees C" and select "YES."

4.13.35.3 E-sign and save.

4.13.35.4 **REPEAT** Steps 4.13.35.1 through 4.13.35.3 for the remainder of the trip blank samples.

4.13.36 Notify Transportation personnel that samples have been placed into refrigerated storage and request shipment scheduling.

4.14 Chain of Custody

NOTE 1: *Required fields on the CoC include: signature of initiator, date and time, type and number of samples, sample matrix, preservatives, requested analyses, location of sample collection, waste container number final disposition (shipped to lab), sample relinquishment and receipt signatures, and documentation of discrepancies, breakage, or tampering.*

(MP-TRUW-8.2)

NOTE 2: *A CoC record is assigned to each sample or group of samples. A CoC is a method of maintaining documented custody of samples taken from the glovebox through placement into refrigerated storage and during transport to the laboratory for analysis.*

(HWMA/RCRA Permit; MP-TRUW-8.2)

4.14.1 Ensure that the CoC is created by the same operator that created and e-signed the subsample data.

4.14.2 Access the "Core Sampling" screen.

4.14.3 Enter the container ID in the "Container ID" field.

4.14.3.1 Press F8 to upload the container data.

4.14.4 Select the "Sub Sample" tab.

4.14.5 Click on "CoC."

NOTE: *The receiving laboratory requires initial/primary and co-located samples to be on separate CoCs.*

4.14.6 Click on "Create New CoC."

4.14.7 Enter the drum number(s) in the "Description" field on the "New CoC" pop-up screen, and click "OK."

4.14.8 Observe the "Chain of Custody" screen is activated.

4.14.9 View the "Unattached Samples" screen and select each unattached subsample to be attached to the chain of custody by setting the select field to "YES."

4.14.10 Verify all subsamples have been selected and click on the Right "(>)" arrow.

4.14.11 Observe that WTS moves all selected samples for this container to the "Attached Samples" screen.

4.14.12 Click on "Select All" on the "Attached Samples" side of the screen.

4.14.13 Enter sample discrepancies/comments, if necessary.

4.14.14 E-sign and save.

4.14.14.1 Observe that a pop-up window questions "Do you want to close CoC."

4.14.14.2 Select "save w/o closing."

4.14.14.3 E-sign and save.

4.15 Chain of Custody Transfer

NOTE 1: *The OT/authorized individual in custody of the samples may maintain custody for the duration of the current shift rotation.*

NOTE 2: *Personnel receiving custody of samples are required to inspect the samples for discrepancies, breakage, or tampering.*

4.15.1 OT/Authorized Individual in Custody of Samples: Relinquish custody to a qualified OT/authorized individual as follows:

4.15.1.1 Click on the AMWTP menu at the top of the screen.

4.15.1.2 Scroll to "Characterization" and then "Coring."

4.15.1.3 Scroll to "Chain of Custody" and select it.

4.15.1.4 Select "Search CoC" on the "Chain of Custody" screen.

4.15.1.5 Enter search criteria if desired (e.g., current custodian).

4.15.1.6 Click on "Search."

4.15.1.7 Locate the record associated with the samples and click on it.

4.15.1.8 Click on "Select."

4.15.1.9 Observe that the current custodian, company, and attached subsamples fields are accurate.

4.15.1.10 Place the cursor in the "Relinquished To" block and press F9.

4.15.1.10.1 Select the OT/authorized individual taking custody of the samples from the list.

4.15.1.10.2 OT/Authorized Individual Taking Custody: Inspect the samples for discrepancies, breakage, or tampering.

4.15.1.10.3 Enter sample discrepancies/comments, if necessary.

4.15.1.11 OT/Authorized Individual Relinquishing Custody: E-sign and save.

4.15.1.11.1 Observe the pop-up screen and select "Save w/o Closing."

4.15.1.12 OT/Authorized Individual Taking Custody: E-sign and save.

4.16 Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory

NOTE: *Authorization to ship samples is granted by the ACL **prior** to shipment. This is to ensure that the FGE limit for the ACL is not exceeded.*

4.16.1 Transportation Manager or Designee: Provide assay data sheets and coring screen shots to the ACL POC.

4.16.2 Transportation Manager or Designee: Obtain authorization from the ACL to ship samples.

4.17 Samples and Chain of Custody Transfer to Transportation Manager

NOTE: *Personnel receiving custody of samples are required to inspect the samples for discrepancies, breakage, or tampering.*

4.17.1 Click on the AMWTP menu at the top of the screen, scroll to "Characterization," then "Coring," then "Chain of Custody," and select it.

4.17.2 Select "Search CoC" on the "Chain of Custody" screen.

4.17.2.1 Enter search criteria if desired (e.g., current custodian).

4.17.2.2 Click on "Search."

4.17.2.3 Locate the record associated with the samples and click on it.

4.17.2.4 Click on "Select."

4.17.3 Ensure that the information on the CoC is correct.

NOTE: *The selection of "Print/send to lab" will close the CoC. No additional modifications will be allowed.*

4.17.4 Click on "Print/send to lab."

4.17.4.1 Observe the pop-up and select Yes or No as appropriate.

4.17.5 E-sign and save.

4.17.6 Observe the CoC is on the WTS computer screen.

4.17.7 Print the CoC.

4.17.8 Retrieve the samples to be shipped from refrigerated storage and retrieve the CoC.

4.17.9 Relinquish the samples from the current custodian to the shipper as follows:

4.17.9.1 Sign in the "Relinquished by" block and record the date and time.

4.17.9.2 Release the sample packages and the CoC to the Transportation personnel.

4.17.9.3 Transportation Personnel: Inspect the sample for discrepancies, breakage, or tampering.

4.17.9.3.1 Enter sample discrepancies/comments, if necessary.

4.17.9.3.2 Transportation Personnel: Sign in the "received by" block and record the date and time.

4.17.9.3.2.1 Record in the "Comments" section, "FGE value of the parent drum used for transfer to the lab.

(RPT-NFCS-25, CWR #6)

4.17.10 Transportation Personnel: Package the samples into the transport container and ship in them in accordance with MP-TRUW-8.34, WIPP Sample Transfers.

4.18 Waste Segregation Prior to Glovebox Cleanout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.18.1 **IF** prohibited liquids are discovered in an AMWTP legacy waste drum upon opening the drum (AMWTP WASTE ONLY),
THEN perform the following:

4.18.1.1 Return residual core material to the source drum.

(HWMA/RCRA Permit)

4.18.1.2 Package all secondary waste for bag-out from the glovebox.

(RPT-NFCS-25, CWR 4, 5, & 6)

4.18.1.3 DCSRS SME: Set task list for "WMF-628 treatment."

4.18.1.4 **GO TO** Step 4.19.

4.18.2 Return all remaining sample material back to the source drum.

NOTE: *The priority for waste material returned to the parent drum is as follows:*

- *Sample materials*
- *Original materials (e.g., plastic, absorbents)*
- *Secondary waste generated as a result of sampling operations.*

4.18.3 Return all original packaging material and secondary waste to the drum.

(RPT-NFCS-25, CWR 4; HWMA/RCRA Permit)

4.18.4 Remove the vacuum bag from the canister and place it in the drum being processed.

4.18.4.1 Inspect the vacuum canister and ensure that it's empty.

4.18.4.1.1 Perform dual verification that the canister is empty, and document in the appropriate operating log, as applicable.

4.18.4.2 Perform **ONE** of the following:

4.18.4.2.1 Leave vacuum canister disassembled.

OR

4.18.4.2.2 Install a new vacuum bag and reassemble the vacuum.

(RPT-NFCS-25, CWR 4)

CAUTION

The potential exists to contaminate a waste core if visible contamination on any equipment is not thoroughly cleaned prior to processing a new core sample.

4.18.5 Wipe down all coring tools and equipment to a visibly clean condition.

4.18.6 Return all three sections of the glovebox to a visibly clean condition.

4.18.7 Handle and package waste materials that **CANNOT** be returned to the drum as secondary waste per INST-OI-24 and in accordance with the Hazardous Waste Determination (HWD) for drum coring.

4.18.8 Segregate all metal waste that is **NOT** returned to the drum from other waste types and stage waste for bagout, as necessary

4.18.9 Ensure that any waste materials remaining in the glovebox meets NCS-exempt criteria.

4.18.9.1 Perform dual verification of the NCS-exempt determination, and document in the appropriate operating log, as applicable.

(RPT-NFCS-25, CWR 5)

4.18.10 Prepare waste for bagout, if necessary.

4.19 Drums Export From the Drum Core Sample Retrieval System

4.19.1 Remove the upper drum stabilizing clamps and stow them away from the drum transfer sleeve port.

4.19.2 Extend the portable work platforms.

4.19.3 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.19.4 Don the appropriate PPE per approved work control in accordance with PD-COPS-9.18.

4.19.5 Export drum.

4.19.6 RCT: Perform necessary radiological surveys to downgrade the radiological posting of the containment enclosure area.

4.19.7 Using a HEPA filtered vacuum, remove the trapped air from the drum transfer sleeve through the drum transfer sleeve HEPA filter.

NOTE: *Additional layers added in Step 4.19.8 will aid in cushioning the bag from the drum lid locking-ring.*

4.19.8 Place an additional layer of tape around the top lip of the drum over the drum transfer sleeve.

4.19.9 Ensure that the drum filter complies with the requirements identified in Section 3 of MP-TRUW-8.1, and CCP-PO-003.

(MP-TRUW-8.1, CCP-PO-003)

4.19.10 Perform a VE per requirements in INST-OI-34, while performing final closure of the drum.

WARNING

Improper technique or handling could cause a breach in the bag portion remaining outside the drum and result in inadvertent release of radioactive contamination. Spread of contamination may result if extreme care is not taken while replacing the locking ring and bolt assembly.

4.19.11 Use extreme care when replacing drum ring and bolt over the bag portion remaining outside of the drum.

4.19.12 **IF** unable to properly install a lid on the container
OR
IF the container has questionable structural integrity,
THEN notify the SS
AND overpack the container per INST-OI-84, Waste Container Repair and Overpack.

4.19.13 Place a drum lid with installed filter on the drum.

(HWMA/RCRA Permit)

4.19.13.1 Align the filter vent location with the Position 1 marking on the side of the drum.

4.19.13.2 Install the drum lid locking ring and bolt.

4.19.13.3 Torque the locking-ring bolt to 40 lb-ft.

4.19.13.4 Document the torque on Form-1625, M&TE Usage Report.

4.19.13.5 Torque the filter to 15 lb-ft.

4.19.13.6 Document the torque on Form-1625.

4.19.14 Document all filters installed on the "Container Filters" screen in WTS, as applicable.

4.19.14.1 Complete Form-1599, Block 5b.

4.19.15 RCT: Perform all required radiological surveys to release the drum from the coring room.

WARNING

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.19.16 Keep hands clear of pinch points and keep body parts clear of suspended load.

4.19.17 Transfer the waste drum from the lift table to the conveyor output queue.

4.20 Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking

NOTE 1: *Drum lids are secondary waste items and are managed in accordance with this section and in Section 4.22.*

NOTE 2: *Drums with volumes smaller than 55 gallons are placed into empty drum of minimum volume 55 gallons as soon as reasonably practical.*

4.20.1 Ensure that all fissile waste (non-NCS-exempt) is placed in a 55-gal drum or larger.

(RPT-NFCS-25, CWR 8)

4.20.2 **IF** the amount of waste in the satellite accumulation area (SAA) exceeds 55 gallons,
THEN place the excess waste in a second 55-gal drum
AND move the excess waste drum to an approved storage area within 3 days from when the excess occurred.

NOTE: *If the following step is applicable, the DCSRS is considered as an individual container and becomes part of the existing SAA.*

4.20.3 **IF** secondary waste remains in the DCSRS glovebox past the end of the generating shift,
THEN document the data for each individual package remaining in the glovebox in the SAA Logbook.

4.20.4 Ensure that each package of secondary waste is labeled with the following information, using a grease pencil or other suitable marking device:

- The words "Hazardous Waste"
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Package tracking number in the following format:
  (Month/Day/Year– sequential number of the package added to the SAA
  that day 01, 02, etc.).

4.20.5 **IF** waste is to remain in the DCSRS glovebox past the end of shift for the crew that generated the waste,
THEN document the data for each individual package remaining in the glovebox in the SAA logbook.

4.20.5.1 Ensure that each package of secondary waste is labeled with the following information using a permanent marker:

- The words "Hazardous Waste"
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Waste identification number in the following format (Month/Day/Year–sequential number of package generated on this day 01, 02, etc.).

4.20.5.2 Make the following entries on Form-1346, Satellite Accumulation Area (SAA) Inventory Log:

4.20.5.2.1 In the "Container or Tracking No." block, record in order the waste identification number(s) of each package.

4.20.5.2.2 Record a short description.

4.20.5.2.3 Record added and total volume.

4.20.5.2.4 Record the date added.

(MP-WM&M-13.2)

4.20.6 **IF** the SAA limit of 55 gallons, including the waste in the glovebox, is exceeded,
THEN perform the following:

4.20.6.1 Mark the SAA drum with the date that the excess occurred.

4.20.6.2 Move the SAA drum to an approved storage location within 3 days from when the excess occurred.

4.20.6.3 Immediately notify Waste Services personnel.

4.20.6.4 Notify the SS.

4.20.6.4.1 Place the drum in a safe configuration at the direction of the SS.

4.21 Soft Secondary Waste Bagout Operations

NOTE 1: *The bag out operation for drum lids and other metal items is covered in Section 4.22, Bag out of Drum Lids and Other Metal Items.*

NOTE 2: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

NOTE 3: *All non-metal secondary waste is packet assayed prior to placement in a collection container, unless determined to be NCS-exempt.*

4.21.1 RCT: Post the coring room according to the anticipated or actual radiological conditions.

4.21.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.21.3 Don the appropriate PPE per the AMOW for drum coring operations.

4.21.4 Perform secondary waste bagout operation as trained in accordance with T4140, Glovebox Operations Training, and QPSS0001, Solids Sampler Qualification Package.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.21.4.1 Use cutting tools properly.

4.21.4.2 Ensure size of waste package is limited to approximately 15 in. × 15 in. (not including closure) and 5.1 lb to prevent damage to the Lexan cover on the packet assay unit.

4.21.4.3 RCT: Perform radiological surveys of the package.

4.21.5 **REPEAT** Steps 4.21.4 and 4.21.4.3 until all applicable waste packages have been removed from the glovebox.

4.21.6 Perform a VE per requirements in INST-OI-34, as applicable.

4.21.7 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.21.8 Apply the appropriate labels to each of the packages in accordance with INST-OI-24.

CAUTION

Failure to properly use and position any approved shielding may result in invalid packet assay results.

4.21.9 Ensure that any shielding around or near the packet assay during background and standardization checks is in the same location and configuration, prior to performing packet assay on waste packages, as applicable.

OR

4.21.10 Re-perform background and standardization checks in accordance with INST-OI-17.

4.21.11 Perform a packet assay of each non-metal package removed from the glovebox per instructions contained in INST-OI-17, unless determined to be NCS-exempt.

(RPT-NFCS-25, CWR 6)

4.21.12 Enter packet assay results for all secondary waste packages in WTS, as applicable.

4.21.13 Prior to adding waste to a drum containing radiological waste, check that the lid on the drum has a vent filter.

(RPT-TSR-03, SAC 5.2.7)

4.21.13.1 **IF** vent filter is **NOT** present,
THEN STOP WORK
AND contact the SS for direction.

4.21.14 Perform the following prior to transferring waste to the SAA collection container:

4.21.14.1 **IF** waste has been packet assayed,
THEN enter the assay value +2 sigma on Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.21.14.1.1 Document dual verification that addition of the waste does **NOT** increase the FGE content to >200 FGE by signing Form-1375.

(RPT-NFCS-25, CWR 6)

4.21.14.2 **IF** waste has been determined to be NCS-exempt
THEN record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter “NA” in the fourth column
- Enter “0” in the fifth column

4.21.14.2.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.21.14.3 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.21.14.3.1 Document dual verification that addition of the waste does not increase the FGE content to >200 FGE by signing Form-1375.

4.21.14.4 Enter the information on Form-1346, if applicable.

4.21.14.5 Place waste package(s) in the collection container.

(RPT-NFCS-25, CWR 6)

4.21.15 Close and secure the collection container.

4.21.16 Perform dual verification that all waste has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.21.16.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.22 Drum Lids and Other Metal Items Bagout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.22.1 Inspect the bagout bag for rips, tears, abraded areas, intact seams, and an intact HEPA filter.

4.22.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.22.3 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.22.4 Don the appropriate PPE per the AMOW for drum coring operations.

4.22.5 Inspect drum lids for sharp edges and if detected, pad with plastic tape prior to bagout operations.

WARNING

Spread of contamination may result if extreme care is not used when docking a new bagout bag to the drum transfer sleeve-in port. The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

4.22.6 Use proper technique in bagout and bag change operations.

NOTE: *Package weight is limited to no more than 50 lb or 1/3 of body weight, whichever is less.*

4.22.7 Perform bagout of lids or other metal items.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.22.7.1 Ensure cutting tools are being used properly.

4.22.7.2 RCT: Perform necessary radiological surveys.

4.22.8 RCT: Perform a radiological survey of the lift table and containment enclosure to downgrade the radiological posting of the containment enclosure area.

4.22.9 Perform a VE per requirements in INST-OI-34, as applicable.

4.22.10 Obtain the appropriate waste package labels per INST-OI-24 and label the package appropriately.

4.22.11 Perform the following prior to transferring waste to a collection container:

4.22.11.1 **IF** waste has been determined to be NCS-exempt
THEN record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter "NA" in the fourth column
- Enter "0" in the fifth column

4.22.11.1.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.22.11.2 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.22.11.2.1 Document dual verification that addition of the waste does not increase the FGE content to >200 FGE by signing Form-1375.

4.22.11.3 Enter the information on Form-1346, if applicable.

4.22.11.4 Log the information on Form-1957, Waste Container Inventory Sheet, if applicable.

4.22.12 Place waste package(s) in the collection container.

4.22.13 Close and secure the waste container.

4.22.14 Perform dual verification that all waste debris has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.22.14.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.23 Batch Data Report Generation

4.23.1 **WHEN** completing documentation,
THEN ensure the following are performed:

A. All data is recorded legibly and accurately

B. All changes are lined out, initialed, dated, and justified (if necessary) by the person who originally collected the data. Original data shall **NOT** be obliterated

C. All data is transferred and reduced completely and accurately.

4.23.2 Close the batch by performing the following:

4.23.2.1 Access the "General" tab at the top of the screen and click on it.

4.23.2.2 Select "Batch."

4.23.2.3 Enter the Batch ID number and press F8 to auto-populate batch data.

4.23.2.4 Enter the following information into the comments field:

- WMF-634, Coring Room
- Waste Matrix Code.

4.23.2.5 Review the information for adequacy.

4.23.2.6 Select "Close" in the "Batch Details" field.

4.23.3 Access the "Data Review" tab at the top of the screen.

4.23.3.1 Select "Batch Report."

4.23.3.1.1 Place cursor in "Batch Type" field.

4.23.3.1.2 Press F9 and select batch type.

4.23.3.1.3 Ensure that all reports are selected.

4.23.3.1.4 Place cursor in "Batch ID" field and enter the batch ID number.

NOTE: *Requirements for Manual Batch Data Reports are outlined in MP-TRUW-8.8, Level 1 Data Validation.*

4.23.3.1.5 Ensure all fields are populated and correct.

4.23.3.1.5.1 Under section block, ensure that all fields are checked.

4.23.3.1.6 Print report.

4.23.3.1.7 Make copies of all field records, which include the following, and place them into the "Batch Data Report" folder.

- Analytical Balance Calibration Checksheet (Form-1215)
- Refrigerator Temperature Logsheet (Form-1585, or eSOMS equivalent) and/or Characterization Round Sheet (Form-1602)
- AMWTP Solid Waste Sampling Checklist Drum Coring Operations (Form-1599).

4.23.3.1.8 Transfer the completed Batch Data Report to the independent technical reviewer (ITR).

4.23.4 **IF** a Manual Batch Data Report is required,
THEN perform the following:

4.23.4.1 Prepare a data folder for collection of the data reports printed from the WTS.

4.23.4.2 Select the "Data Review Screen" icon at the top of the screen and click on it.

4.23.4.3 Select the "Batch Reports" option.

4.23.4.4 Enter "SSC" for the batch type.

4.23.4.5 Enter the "Batch ID" and click on "Report."

4.23.4.6 Select the following reports on the "Batch Data Report" screen:

- Batch Coversheet
- Analysis Report.

4.23.4.6.1 Select "Generate" to print the report.

4.23.4.7 Make copies of all field records, which include the following, and place them into the "Batch Data Report" folder:

- Analytical Balance Calibration Checksheet (Form-1215)
- Refrigerator Temperature Logsheet (Form-1585, or eSOMS equivalent) and/or Characterization Round Sheet (Form-1602, or eSOMS equivalent)
- AMWTP Solid Waste Sampling Checklist Drum Coring Operations (Form-1599).

4.23.4.8 Ensure each page is numbered sequentially.

4.23.4.9 Place the reports into the "Batch Data Report" folder.

4.23.4.10 Transfer the completed Batch Data Report to the ITR.

(MP-TRUW-8.2)

4.24 Equipment Blank Requirements

NOTE 1: *The DCSRS SME performs the steps in this section.*

NOTE 2: *Equipment blanks may be performed on a purchased batch basis for sampling equipment purchased sterile and sealed in protective packaging. Equipment blanks need not be performed for equipment purchased in sealed protective packaging accompanied by a certificate certifying cleanliness.*

(MP-TRUW-8.2)

4.24.1 Ensure disposable sampling equipment awaiting equipment blank results are **NOT** used until analytical results have been received from the laboratory and validated.

4.24.1.1 Until analytical results are received and validated, store disposable sampling equipment in a controlled area.

4.24.2 Maintain sample collection equipment in accordance with manufacturer's specifications.

4.24.2.1 Seal clean sampling tools in clean protective wrapping and store in a clean area.

(HWMA/RCRA Permit; MP-TRUW-8.2)

4.24.3 Upon receipt of a purchased batch of disposable sampling tools (spatulas, weighing pans, etc.), perform the following:

4.24.3.1 Verify that the QA acceptance tag with Purchase Order (PO) number is attached to the shipping carton.

4.24.3.2 Write the PO number on each shipping carton in permanent ink.

4.24.3.3 Open the shipping carton ensuring that the inner packaging is intact.

4.24.3.3.1 **IF** the inner packaging is breached and the integrity of the parts is in question,
THEN reject the package and send it back to the warehouse for return to the vendor.

CAUTION

Handling disposable sampling equipment with bare hands may result in contaminants from your skin being transferred to the components.

4.24.3.4 Don clean surgical gloves.

4.24.3.5 Select the tools or equipment to be used for equipment blank preparation and testing as applicable:

- Two spatulas or spoons per 100 count from each shipping carton
- Ten weighing pans per 500 count from each shipping carton.

4.24.3.6 Place the items into separate sterile sampling bags, based on lot number, and seal them.

4.24.3.7 Label each bag with the PO number, manufacturer's lot number, analysis requested, company name, and the name and phone number of the person that packaged the tools.

NOTE: *An outside vendor provides the support for cleanliness verification and the process is controlled by a statement of work and purchase requisition.*

4.24.3.8 Deliver or ship the packaged tools to the personnel preparing the equipment blanks with a letter requesting equipment blanks be prepared per the statement of work attached to the purchase requisition.

NOTE 1: *The analytical results for the equipment blanks are less than three times the Method Detection Limits for VOCs and SVOCs and less than three times the Program Required Detection Limits for metals.*

NOTE 2: *The equipment blank results are referenced to the purchased batch PO number and manufacturer's lot number*.

NOTE 3: *The laboratory equipment blank batch number is referenced to the PO number and manufacturer's lot number*.

4.24.3.9 **WHEN** laboratory results are received and approved by the AMWTP QA manager,
THEN perform the following:

4.24.3.9.1 Retrieve the shipping cartons labeled with the PO number/lot number associated with the laboratory report.

4.24.3.9.2 Write the laboratory equipment blank batch number (lab number) referenced in the laboratory report on each of the shipping cartons.

4.24.3.9.3 Place the materials in the common storage area.

NOTE: *These items are now available for use.*

4.24.3.9.4 Place a copy of the laboratory report into the binder labeled "Equipment Blank Documentation" located in the drum coring room.

4.25 System Shutdown

4.25.1 Turn power OFF to all audio and video recording equipment including the closed circuit television monitors.

4.25.2 Log off at each computer terminal at the DCSRS control station.

4.25.3 Close the Air Isolation Valve MV-1 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.25.4 Close the Air Isolation Valve MV-2 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.25.5 Close the Air Isolation Valve MV-3 on the coring glovebox by turning the valve handle 90 degrees clockwise.

4.25.6 Close the Service Air Isolation Valve 3/4 in. PA-R11-V1 on the coring glovebox 90 degrees clockwise.

4.25.7 Ensure that the local Conveyor Control Panel CP-214-010 is in AUTO.

4.26 Post-Job Review

4.26.1 Perform a post-job review in accordance with MP-COPS-9.17.

4.27 Abnormal and Infrequent Operations

4.27.1 **GO TO** the appropriate abnormal and infrequent operation section from the following table based on the desired task to be performed,
THEN RETURN TO this step, if further activities will be performed:

Task	Section
Changing a glovebox glove	4.27.2
Changing a bagout bag	4.27.3
Recovery from an emergency stop (E-stop) condition	4.27.4
Recovery from a tripped light curtain	4.27.5
Recovery from a drill motor over-torque condition	4.27.6
Recovery from a lodged coring drill bit	4.27.7
Dropped waste container	4.27.8
Breached container	4.27.9
Breached glovebox glove	4.27.10
Loss of Room Ventilation	4.27.11
Loss of glovebox ventilation (Zone 3)	4.27.12
Continuous air monitor alarm	4.27.13

Task	Section
Breached containment (drum transfer sleeve bag and bagout bags)	4.27.14
No heartbeat on local FTS control box	4.27.15
Alarm on local FTS control box	4.27.16
Preparation of rusted drums prior to waste drum import to DCSRS glovebox	4.27.17

4.27.2 Changing a Glovebox Glove

NOTE 1: *The glove support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The glove with glove support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place the glove with glove support ring will have expanded out, compressing the o-ring between the glove and inside diameter of the enclosure ring. The ridge or major diameter of the glove support ring will be seated in the groove on the inside diameter of the enclosure ring.*

NOTE 2: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar.*

NOTE 3: *New gloves that fail inspection criteria should not be used and should be discarded in the proper waste container.*

4.27.2.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

4.27.2.2 Inspect the glove to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.27.2.3 Remove the rubber o-ring from the glove support ring and place on a clean surface.

4.27.2.4 Place the bead of the glove into the narrow groove of the glove support ring.

4.27.2.5 Apply a light coating of vacuum grease to the o-ring.

4.27.2.6 Install the o-ring over the glove and onto the wide groove of the glove support ring.

4.27.2.6.1 Ensure that the glove is **NOT** wrinkled under the o-ring and glove bead is still in the narrow groove.

4.27.2.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.27.2.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

WARNING

Installation of glovebox gloves in any position except "thumbs up" may impede the operator from exiting the gloves in case of an emergency (e.g., fire or explosion).

NOTE: *The performance of Step 4.27.2.9 will result in a thumbs-up position of the glove when installed.*

4.27.2.9 Install the swaging collar over the glove and glove support ring.

4.27.2.9.1 Align the thumb of the glovebox glove with the notch in the swaging collar.

4.27.2.10 Engage the swaging collar to the bayonets on the ejection tool.

4.27.2.10.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.27.2.11 Ensure proper orientation of the glove thumb with the notch on the swaging collar.

4.27.2.12 Invert the glove into the inner housing.

4.27.2.13 Remove the plastic locking ring from the gloveport enclosure ring.

4.27.2.14 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10-o'clock position.

NOTE: *The notch and plunger on the ejection tool should be at a 12-o'clock position when the tool is properly installed on the enclosure ring.*

4.27.2.15 Rotate the ejection tool clockwise to the stop pin.

4.27.2.16 Apply light pull force on the glove and support ring to ensure proper alignment with the ejection tool and then release.

4.27.2.17 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.27.2.18 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.27.2.19 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.27.2.19.1 Remove the ejection tool from the enclosure ring.

4.27.2.20 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.27.2.20.1 Rotate the locking ring clockwise to the stop pin.

4.27.3 Changing a Bagout Bag

NOTE 1: *The bag support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The bag with bag support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place the bag with bag support ring will have expanded out, compressing the o-ring between the bag and inside diameter of the enclosure ring. The ridge or major diameter of the bag support ring will be seated in the groove on the inside diameter of the enclosure ring.*

NOTE 2: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar.*

NOTE 3: *New bagout bags that fail inspection criteria should not be used and should be discarded in the proper waste container.*

NOTE 4: *Bag support rings are fitted with two rubber o-rings which provide additional stability.*

4.27.3.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

4.27.3.2 Inspect the bag to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.27.3.3 Remove the rubber o-rings from the glove support ring and place on a clean surface.

4.27.3.4 Place the o-ring of the bag into the narrow groove of the bag support ring.

4.27.3.5 Apply a light coating of vacuum grease to the o-rings.

4.27.3.6 Install the o-rings over the bag and onto the wide grooves of the bag support ring.

4.27.3.6.1 Ensure that the bag is **NOT** wrinkled under the o-rings and bag o-ring is still in the narrow groove.

4.27.3.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.27.3.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

4.27.3.9 Reach through the ring to the bottom of the bag and grip it.

4.27.3.10 Pull the bag all the way back through the ring.

4.27.3.11 Smooth and straighten the bag.

4.27.3.12 Reach through the ring to the bottom of the bag again and grip it.

4.27.3.13 Pull the bag back on itself until it is approximately 1 in. from the bag support ring.

4.27.3.14 Flatten and smooth the bag and roll it up completely, toward the ring.

4.27.3.15 Place the bag inside the inner housing of the ejection tool, with the bag ring on the open end of the ejection tool.

4.27.3.16 Install the swaging collar over the support ring.

4.27.3.17 Engage the swaging collar to the bayonets on the ejection tool.

4.27.3.17.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.27.3.18 Remove the plastic locking ring from the gloveport enclosure ring.

4.27.3.19 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10-o'clock position.

4.27.3.20 Rotate the ejection tool clockwise to the stop pin so that the notch and plunger are at the 12-o'clock position, ensuring that the plunger is properly installed on the enclosure ring.

4.27.3.21 Apply light pull force on the bag and support ring to ensure proper alignment with the ejection tool and then release.

4.27.3.22 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.27.3.23 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.27.3.24 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.27.3.24.1 Remove the ejection tool from the enclosure ring.

4.27.3.25 **IF** the previous bag support ring and bag stub have **NOT** fully disengaged from the inside of the enclosure ring, **THEN** use light hand pressure to free them from the port to the inside of the glovebox.

4.27.3.26 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.27.3.26.1 Rotate the locking ring clockwise to the stop pin.

4.27.4 Recovery from an Emergency Stop (E-Stop) Condition

NOTE 1: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

NOTE 2: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.4.1 Go to Safety Panel CP-250-803 and observe that the E-Stop light indicator is illuminated.

4.27.4.1.1 **IF** the emergency condition has been eliminated,
THEN turn the key on the E-Stop Control at Safety Panel CP-250-803 to RESET and back to RUN.

4.27.4.2 Go to Electrical Distribution Panel BDP-232-003 and reset Shunt Trip Breakers.

4.27.4.3 Go to the HMI computer terminal at the DCSRS control station.

4.27.4.3.1 **IF** the system was in a core drilling sequence, **THEN** using the mouse, click on "Back-up and Re-execute" to restart the core drilling sequence.

OR

4.27.4.3.2 **IF** the system had **NOT** started the core drilling sequence,
THEN using the mouse, click on "Continue in Auto."

4.27.4.3.3 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

NOTE 1: *Performance of the following step acknowledges and clears the condition*.

NOTE 2: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen***.**

4.27.4.3.4 Using the mouse, clear the fault on the HMI computer terminal by double clicking on dark red highlighted warning on the "Alarm Message Bar."

4.27.4.3.5 Click on "Acknowledge All" on the pop-up screen.

4.27.4.3.6 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.5 Recovery from a Tripped Light Curtain

NOTE 1: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

NOTE 2: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.5.1 Go to Safety Panel CP-250-803 and observe that the curtain trip light indicator is illuminated.

4.27.5.2 Clear the condition by depressing the curtain RESET button with the curtain control key in the UNLOCK position.

4.27.5.3 Go to the HMI computer terminal at the DCSRS control station.

4.27.5.3.1 **IF** the system was in a core drilling sequence, **THEN** using the mouse, click on "Back-up and Re-execute" to restart the core drilling sequence.

OR

4.27.5.3.2 **IF** the system has started the core drilling sequence,
THEN using the mouse, click on "Continue in Auto."

4.27.5.3.3 Observe that the bright highlighted warning on the "Alarm Message Bar" is dark red.

4.27.5.3.4 Using the mouse, clear the fault on the HMI computer terminal by double clicking on dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.5.3.5 Click on "Acknowledge All' on the pop-up screen.

4.27.5.3.6 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.6 Recovery from a Drill Motor Over-torque Condition

NOTE 1: *The drill motor control system will make three attempts at completing the coring sequence if over-torque conditions are encountered.*

NOTE 2: *Upon the first over-torque fault condition, the drill motor control system will reduce the coring bit vertical feed rate by 25 percent and continue the coring sequence. Upon a second over-torque fault condition, the drill motor control system will reduce the coring bit vertical feed rate by 50 percent and continue the coring sequence. If a third over-torque fault condition occurs, the coring sequence will stop. The "Recovery" screen will automatically pop up on the HMI computer terminal after the third over-torque fault condition.*

4.27.6.1 Using the mouse, click on OK on the "Recovery" screen at the HMI computer terminal in the DCSRS control station and observe the following:

4.27.6.1.1 **IF** the drill bit becomes lodged in the drum during the auto recovery process,
THEN quickly select DRILL STOP
AND GO TO Section 4.27.7.

NOTE 1: *The drill performs continuous slow rotations.*

NOTE 2: *The drill and coring bit raises from the borehole and proceeds to vertical home.*

NOTE 3: *The HMI computer prompts the operator if liquid has been drained.*

4.27.6.1.2 Using the mouse, click on "Yes" when liquid has been drained.

4.27.6.1.3 Ensure the following occurs:

- The drill and coring bit proceeds to horizontal home
- The drill sets the coring bit into the uprighting fixture.

4.27.6.2 **GO TO** Section 4.10 for breakdown of coring bit and determination of core recovery.

4.27.7 Recovery from a Lodged Coring Drill Bit

4.27.7.1 Notify the SS of the situation.

WARNING

Personal injury may result if personnel select any option other than "Go to System Manual" on the "Recovery" screen while in SYSTEM MANUAL mode.

CAUTION

Severe equipment damage may result if personnel select any option other than "Go to System Manual" on the "Recovery" screen while in SYSTEM MANUAL mode.

4.27.7.2 Select "Go to System Manual" on the "Recovery" screen.

4.27.7.3 Perform slow rotational and vertical moves and/or purge, as required, to attempt to free the bit from the drum.

4.27.7.4 **IF** the coring bit fails to dislodge,
THEN notify the SS and/or the SME and wait for instructions.

4.27.7.5 **IF** the coring bit is freed from the drum,
THEN perform the following:

4.27.7.5.1 Raise the coring bit and motor to vertical home.

4.27.7.5.2 Allow the liquids in the coring bit to drain, if necessary.

4.27.7.5.3 Move the coring bit and motor to horizontal home.

4.27.7.5.4 Place the coring bit back into the uprighting fixture using manual commands.

4.27.7.5.5 Release the coring bit from the motor and reset to vertical and horizontal and rotational home.

4.27.7.5.6 Visually inspect the bit and motor for damage, and document this inspection using Form-1599 or in the appropriate operating log.

4.27.7.5.7 Report any discovered damage to the SS.

4.27.7.5.8 **GO TO** Section 4.10, Bit Disassembly and Core Retrieval, upon direction from the SS.

4.27.8 Dropped Waste Container

4.27.8.1 Suspend operations.

4.27.8.2 Warn others in the area.

4.27.8.3 Shut down transport equipment, if applicable.

4.27.8.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.8.5 Isolate the area to prevent others from entering.

4.27.8.6 Notify RCT and SS immediately.

4.27.8.7 Reference INST-OI-11, Waste Container Handling, for direction on handling dropped waste containers.

4.27.9 Breached Container

4.27.9.1 Suspend operations.

4.27.9.2 Warn others in the area.

4.27.9.3 **IF** core drilling operations are in progress,
THEN place coring equipment in a stable condition by depressing one of three E-Stops located on the coring glovebox or the DCSRS control station.

4.27.9.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.9.5 Isolate the area to prevent others from entering.

4.27.9.6 Notify RCT and SS immediately.

4.27.9.7 Reference INST-OI-11 for direction on handling breached waste containers.

4.27.10 Breached Glovebox Glove

NOTE: *Exiting the gloves greatly increases the potential for spread of contamination.*

4.27.10.1 **IF** you are working in the glovebox gloves at the time of discovery,
THEN perform the following:

4.27.10.1.1 Limit your movement.

4.27.10.1.2 Do **NOT** exit the gloves.

4.27.10.1.3 Call for the immediate assistance of a RCT.

4.27.10.1.4 Perform a controlled exit from the glovebox gloves under the direction of the RCT.

4.27.10.1.5 Notify the SS.

4.27.10.1.6 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.27.10.1.7 Change the glove.

4.27.10.1.8 RCT: Perform necessary surveys to verify new glove is radiologically clean.

4.27.10.2 **IF** you are **NOT** working in the glovebox gloves at the time of discovery,
THEN perform the following:

4.27.10.2.1 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.27.10.2.2 Notify RCT and SS.

4.27.10.2.3 Change the glove.

4.27.11 Loss of Room Ventilation (Zone 2)

4.27.11.1 Suspend operations.

4.27.11.2 Warn others in the immediate area.

NOTE: *Electrical power to the drill motors and lift fixture is automatically shut off upon loss of Zone 2 ventilation. The Zone 2 HVAC fault light will be illuminated on Safety Panel CP-250-803.*

4.27.11.3 Place equipment in a safe configuration.

4.27.11.4 Notify the SS immediately.

4.27.11.5 Restore Zone 2 ventilation per INST-OI-33 when directed by the SS.

4.27.11.6 Resume normal operations only when directed by the SS.

NOTE: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.11.7 Go to Safety Panel CP-250-803 and observe that the Curtain Trip light indicator is illuminated and the Zone 2 HVAC Fault light is off.

4.27.11.8 Clear the light curtain fault by depressing the curtain reset button with the curtain control key in the UNLOCK position.

NOTE: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

4.27.11.9 Go to the HMI computer terminal at the DCSRS control station.

4.27.11.9.1 **IF** the system was in a core drilling sequence, **THEN** using the mouse, click on "Back-up and Re-execute" to restart the core drilling sequence.

OR

4.27.11.9.2 **IF** the sequence had NOT started the core drilling sequence,
THEN using the mouse, click on "Continue in Auto."

4.27.11.9.3 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

4.27.11.9.4 Using the mouse, clear the fault on the HMI computer terminal by double clicking on the dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.11.9.5 Click on "Acknowledge All" on the pop-up screen.

4.27.11.9.6 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.12 Loss of Glovebox Ventilation (Zone 3)

4.27.12.1 Suspend operations.

4.27.12.2 Warn others in the immediate area.

4.27.12.3 Place equipment in a safe configuration.

NOTE 1: *Audible and visual alarms will activate when glovebox differential pressure meets out of tolerance limits.*

NOTE 2: *All electrical power supplied to the glovebox is automatically shut off upon loss of ventilation. The Zone 3 HVAC Fault indicator light on Safety Panel CP-250-803 will be illuminated. The dust vacuum fault light will also be illuminated if the vacuum is running.*

4.27.12.4 Evacuate the affected area and perform a self survey.

4.27.12.5 Isolate the area to prevent others from entering.

4.27.12.6 Notify the RCT and SS immediately.

4.27.12.7 Secure Zone 2 ventilation per INST-OI-33.

NOTE: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.12.8 **WHEN** directed by the SS,
THEN restore Zone 2 and Zone 3 ventilation per INST-OI-33.

4.27.12.9 Resume normal operations only when directed by the SS.

4.27.12.10 Go to the Electrical Distribution Panel BDP-232-003 and reset Shunt Trip Breakers.

4.27.12.11 Go to Safety Panel CP-250-803, and observe that the Zone 2 and Zone 3 HVAC fault light indicators are off.

4.27.12.12 Go to the HMI computer terminal at the DCSRS control station.

NOTE: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

4.27.12.12.1 **IF** the system was in a core drilling sequence,
THEN using the mouse, click on "Back-up and Re-execute" to restart the core drilling sequence.

OR

4.27.12.12.2 **IF** the sequence had NOT started the core drilling sequence,
THEN using the mouse, click on "Continue in Auto."

4.27.12.12.3 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

4.27.12.12.4 Using the mouse, clear the fault on the HMI computer terminal by double clicking on the dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.12.12.5 Click on "Acknowledge All" on the pop-up screen.

4.27.12.12.6 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.13 Continuous Air Monitor Alarm

4.27.13.1 Suspend operations.

4.27.13.2 Warn others in the affected area.

4.27.13.3 Place coring equipment in a stable condition by depressing one of three E-Stops located on the coring glovebox or at the DCSRS control station.

4.27.13.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.13.5 Isolate the area to prevent others from entering.

4.27.13.6 Notify the RCT and SS immediately.

4.27.13.7 Resume normal operations only when directed by the SS.

4.27.14 Breached Containment (Drum transfer sleeve bag and bagout bags)

4.27.14.1 Suspend operations.

4.27.14.2 **IF** the breach occurs while donned in the appropriate PPE for the operation,
THEN repair the breach at the direction of the RCT.

4.27.14.2.1 Notify the SS.

OR

4.27.14.3 **IF** breach occurs during normal operations where respiratory protection is **NOT** required
AND IF a core drilling operation is in progress,
THEN place coring equipment in a stable condition by depressing one of three E-Stops located on the coring glovebox or at the DCSRS control station.

4.27.14.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.14.5 Warn others in the immediate area.

4.27.14.6 Isolate the area to prevent others from entering.

4.27.14.7 Notify the RCT and SS immediately.

4.27.14.8 Repair the breach at the direction of the RCT.

4.27.14.9 Resume normal operations only when directed by the SS.

4.27.15 No Heartbeat on Local FTS Control Box

4.27.15.1 Contact the FTS administrator.

4.27.15.2 Stop the import of any drums to the DCSRS glovebox until the problem is corrected.

4.27.15.3 Resume normal operations only when directed by the SS.

4.27.16 Alarm on Local FTS Control Box

4.27.16.1 Contact the assay control room and determine the alarm condition indicated on the FTS workstation.

NOTE: *An incomplete record indicates the transfer of data is not complete for this drum.*

4.27.16.2 **IF** the alarm is an incomplete record,
THEN perform the following:

4.27.16.2.1 Set the drum with incomplete data aside.

4.27.16.2.2 Contact the FTS administrator.

4.27.16.2.3 Resume operations on the drum with incomplete data only when directed by the SS.

4.27.17 Preparation of Rusted Drums Prior to Waste Drum Import to DCSRS Glovebox

NOTE 1: *Surface rust poses a potential threat to the integrity of the tape seal used to attach the drum transfer sleeve to the drum.*

NOTE 2: *Operations and Radiological Safety personnel will make a determination whether conditions warrant the use of this section of this instruction.*

4.27.17.1 RCT: Set up the drum coring room and post the area according to anticipated or actual radiological conditions.

4.27.17.2 Don the appropriate PPE per approved work control in accordance with PD-COPS-9.18.

4.27.17.3 Place suitable material on the floor in the area approved for this work, if necessary.

NOTE: *This material will be used to catch loose debris that falls from the drum during the cleaning process.*

4.27.17.4 Move the drum to the approved work area in accordance with MP-CMNT-10.22, Production Lifting Activities.

NOTE: *The locking ringbolt may be extremely corroded. Normal means of loosening and removing the bolt may not be possible. In these cases, the bolt may be cut using an appropriate tool (i.e., porta-band, sawsall).*

4.27.17.5 Remove the locking ringbolt.

4.27.17.6 Remove the locking ring using the appropriate tools.

4.27.17.7 RCT: Perform required radiological surveys.

4.27.17.8 Apply localized ventilation using a HEPA-filtered exhaust vacuum under the area to be scraped and prepared, if necessary.

4.27.17.9 Remove as much of the loose surface rust, as possible, between the top lip and the top chine of the drum using an appropriate tool (i.e., wire brush, scraper, etc.).

4.27.17.10 Wipe this area with a damp wipe and dry using an additional clean wipe.

4.27.17.11 Tape the drum lid to the drum using suitable tape.

4.27.17.12 Tightly wrap cargo or duct tape over the prepared surface until a smooth surface is achieved.

4.27.17.13 Place a new lid-locking ring with bolt on the drum and secure in place, unless the drum is to be immediately docked to the DCSRS glovebox.

4.27.17.14 Apply shrink-wrap to the drum between the top and bottom chine, if necessary to protect the integrity of drum transfer sleeve.

4.27.17.15 Continue with normal operations.

5.0 DEFINITIONS

Co-located core sample. Duplicate sample taken from a second core placed at the same location within the drum and is collected to verify the precision of the coring and sampling procedures.

Criticality working requirement. Term used to designate requirements of the AMWTP Criticality Safety Analysis.

Fissile gram equivalent ^{239}Pu. Grams of fissile material normalized to ^{239}Pu, calculated in accordance with the MP-TRUW-8.1.

Integrated control system. The purpose of the ICS is to provide control, monitoring, and intercession of Advanced Mixed Waste Treatment Facility systems from one or more computer workstations. The ICS provides automatic running of the system, manual running of the system, individual device manipulation, remote and local monitoring, alarm functions, stop and abort functions, trouble-shooting/diagnostics, and immediate dynamic and historical information.

Initial/primary core sample. The first sample taken from any drum.

Inorganic homogeneous solids. Any homogenous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates.

Kerf width. One-half of the difference between the outer diameter of the tool and the inner diameter of the tool's inlet.

Liquids, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing visual examination of the waste. This term can be implemented consistently during characterization regardless of waste type.

NCS-exempt material (e.g., soil, waste, debris) that has **ONE** of the following characteristics

1. Contains a fissionable nuclide concentration not exceeding 0.072 FGE/L. This limit is equivalent to 15 FGE ^{239}PU within a nominal 55-gal volume.
2. Is an item considered to be solid, dense, and contains no voids or hidden recesses/crevices and only has fixed surface contamination (i.e., would require physical scraping or soaking in solvents to remove the contamination). The item must be orders of magnitude larger than the total volume of contamination present and the contamination volume must be less than the volume of a golf ball (as determined if it could all be removed).

Organic homogeneous solids. Any homogenous materials consisting of sludge or organic-based liquids that are solidified with cement, calcium silicate, or absorbed on solid material. Examples are cemented organic resins, organic liquids (solvents, oils, grease) absorbed on solid material.

Resample. A sample that is taken when the initial core sample does not meet the 50% core sample recovery requirements.

Semi-volatile organic compound. A general term for organic compounds that volatilize at a relatively slow rate at standard temperature and pressure (20°C @ 1 atm).

Source drum. The drum containing the original waste.

Visible cleanliness. No evidence of residue or staining on equipment or tools.

Volatile organic compound. A general term for organic compounds capable of a high degree of vaporization at standard temperature and pressure (20°C @ 1 atm).

Zone 3. Contained contaminated area, which is accessible only by personnel wearing the appropriate personal protective equipment.

6.0 REFERENCES

(1) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)

(2) ALARA Job Review (Current)

(3) AMWTP DMS Core Sampling User Requirements Specifications, No. 16784-02C

(4) AMWTP HWMA/RCRA Permit

(5) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods

(6) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(7) INST-COPS-9.20.1, Lockout/Tagout

(8) INST-FOI-27, FTS Operations

(9) INST-OI-11, Waste Container Handling

(10) INST-OI-17, DCSRS Packet Assay System Operations

(11) INST-OI-24, Packaging Radioactive Waste

(12) INST-OI-33, Characterization Facility HVAC Systems Operations

(13) INST-OI-34, Non-Facility Visual Examination Operations

(14) INST-RS&C-6.9.1, Soft-Sided Containment

(15) MP-CMNT-10.22, Production Lifting Activities

(16) MP-COPS, 9.17, Performing Pre-Job Briefings and Post Job Reviews

(17) MP-COPS-9.20, Hazardous Energy Control Processes

(18) MP-DOCS-18.2, Records Management

(19) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(20) MP-RS&C-6.9, Temporary Containments

(21) MP-RTQP-14.4, Personnel Qualification and Certification

(22) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(23) MP-TRUW-8.2, Quality Assurance Project Plan

(24) MP-TRUW-8.8, Level I Data Validation

(25) MP-TRUW-8.34, WIPP Sample Transfers

(26) MP-WM&M-13.2, Satellite Accumulation Areas

(27) PD-COPS-9.18, Work Control

(28) RPT-ESH-071, Category I and Category II Exemption for the AMWTP Characterization Facility

(29) RPT-NFCS-15, Criticality Safety Evaluation for TSA-RE Retrieval Operations

(30) RPT-NFCS-25, Criticality Safety Evaluation (CSE) Involving the Drum Core Sample Retrieval System

(31) RPT-TSR-03, Technical Safety Requirements

(32) Toxic Substance Control Act (TSCA) Risk-Based Disposal Approval Application for Management of Transuranic Polychlorinated Biphenyl (PCB) Remediation Waste at the Advanced Mixed Waste Treatment Project (AMWTP) Facility Letter

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-16, Case File	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1136, Radiological Safety Soft Sided Containment (SSC) Inspection	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1215, Analytical Balance Calibration Check Sheet	Nonpermanent WIPP/ENV1-J-1/Destroy 5 years after submittal
Form-1346, Satellite Accumulation Area (SAA) Inventory Log	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility

Record Description	Classification
Form-1375, Container Fissile Gram Inventory 200 FGE Limit (Drum) 325 FGE Limit (Box)	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1585, Refrigerator Temperature Logsheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1599, AMWTP Solid Sampling Checklist	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1602, Characterization Round Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1625, M&TE Usage Report	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1699, Drum Coring/VE Log, or eSOMS equivalent	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1789, Continuation Log, or eSOMS equivalent	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1957, Waste Container Inventory Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility

8.0 EXHIBITS

Exhibit 1 – Laboratory Required Sample Amounts and Container Sizes

Exhibit 2 – Punch Coring Bit Diagram

Exhibit 3 – Parfait Coring Bit Diagram

Exhibit 4 – Concrete Coring Bit (w/ A’ Set 3 Cutter) Diagram

Exhibit 5 – Concrete Coring Bit (w/ SS Diamond) Diagram

9.0 APPENDICES

Appendix A – Revision Log

Sample Amounts and Container Requirements for a Single Core Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	1	20-mL VOA vial	Purgeable VOC	Yes
2	2.5–3.0 grams	1	20-mL VOA vial	NHVOC	Yes
*3	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Hydazine	Yes
*4	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC- Formaldehyde	Yes
5	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either Purgeable VOC or NHVOC	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination Sample for Metals and SVOCs	Yes

* Only required for Savannah River (SRS) site generated waste streams.

Sample Amounts and Container Requirements for a Co-located Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	3	20-mL VOA vial	Purgeable VOC + QC	Yes
2	2.5–3.0 grams	3	20-mL VOA vial	NHVOC + QC	Yes
*3	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Hydazine	Yes
*4	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC- Formaldehyde	Yes
5	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either Purgeable VOC or NHVOC	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination Sample for Metals and SVOCs	Yes

* Only required for Savannah River (SRS) site generated waste streams.

Exhibit 1. Laboratory Required Sample Amounts and Container Sizes.

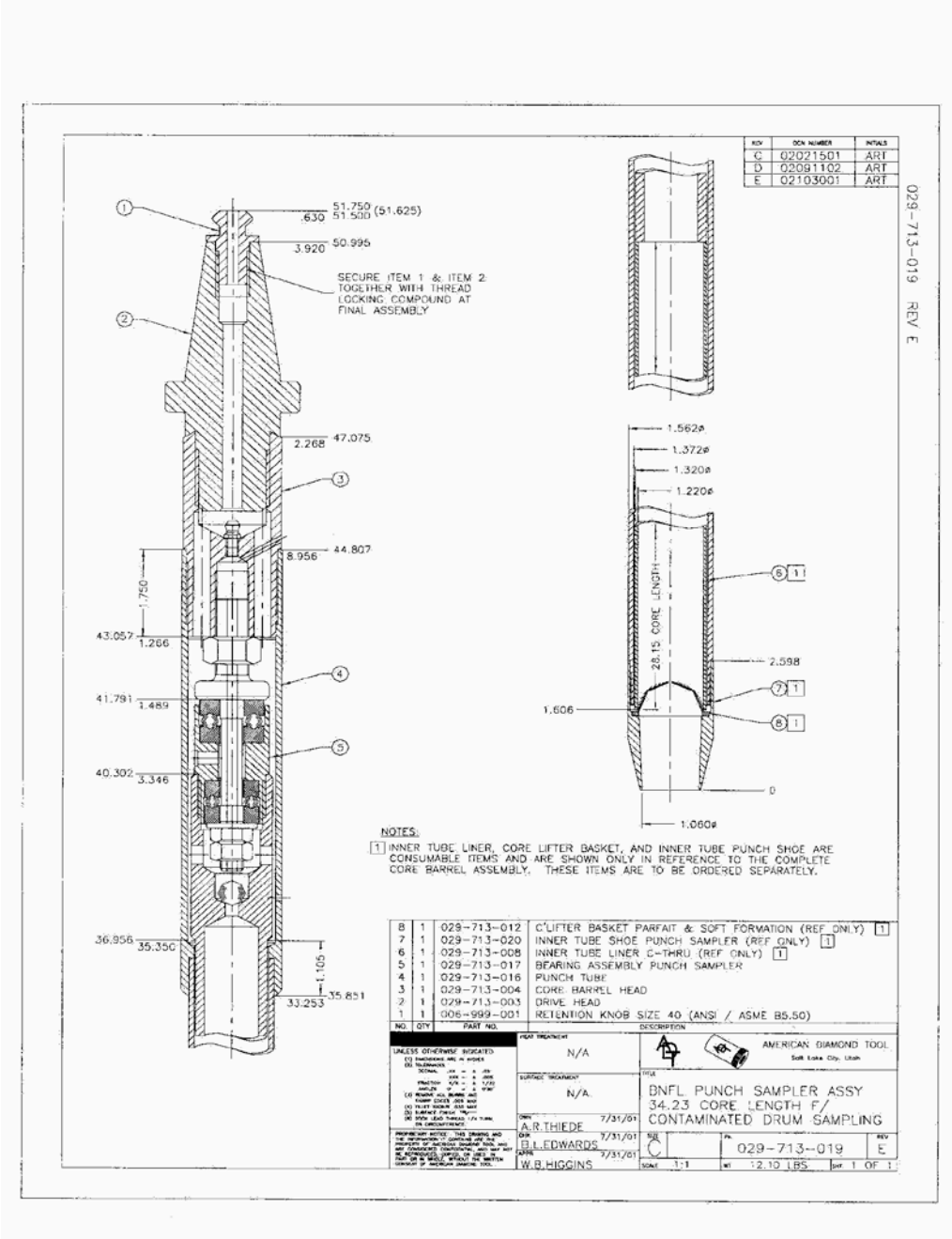


Exhibit 2. Punch Coring Bit Diagram.

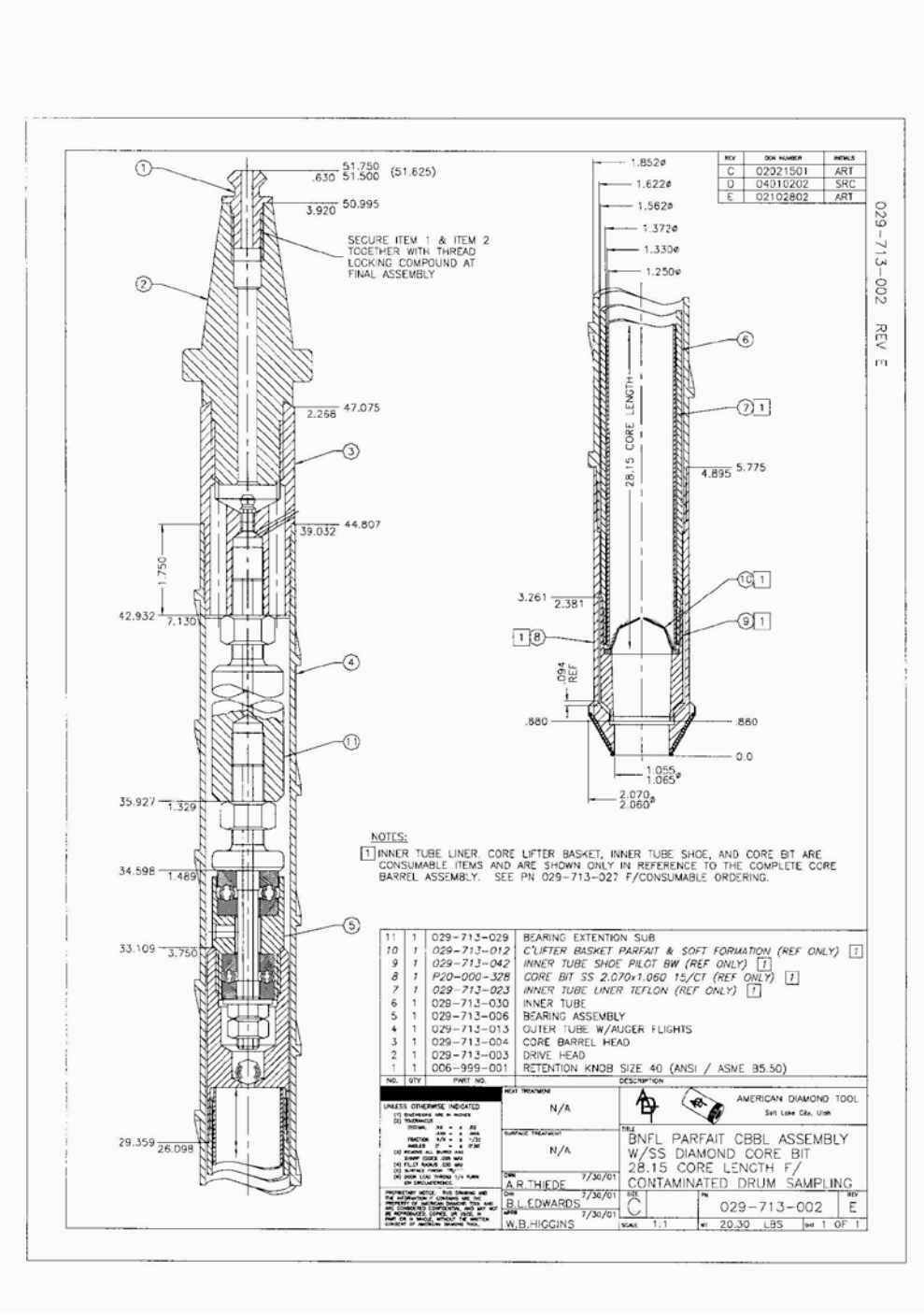


Exhibit 3. Parfait Coring Bit Diagram.

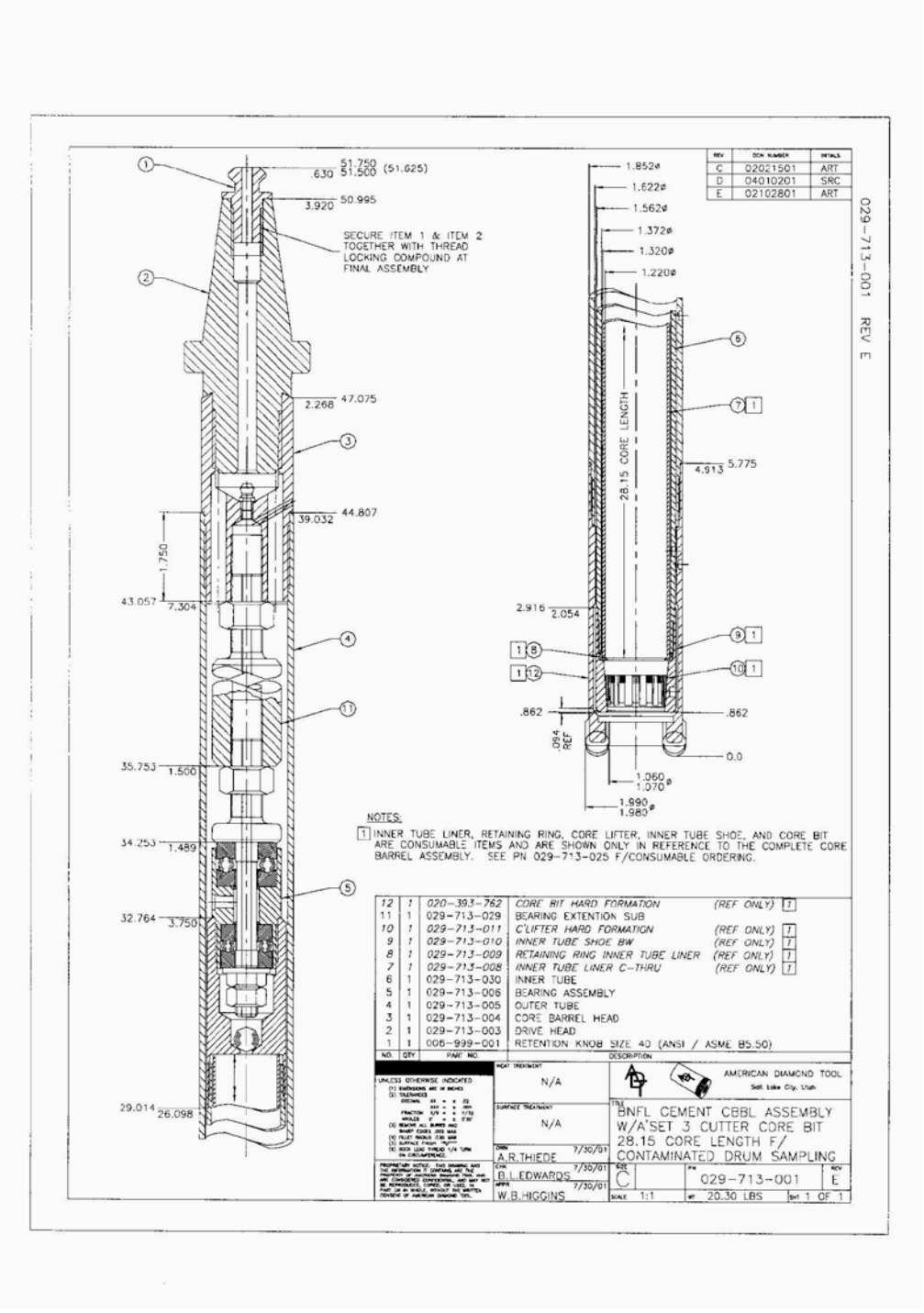


Exhibit 4. Concrete Coring Bit (w/ A' Set 3 Cutter) Diagram.

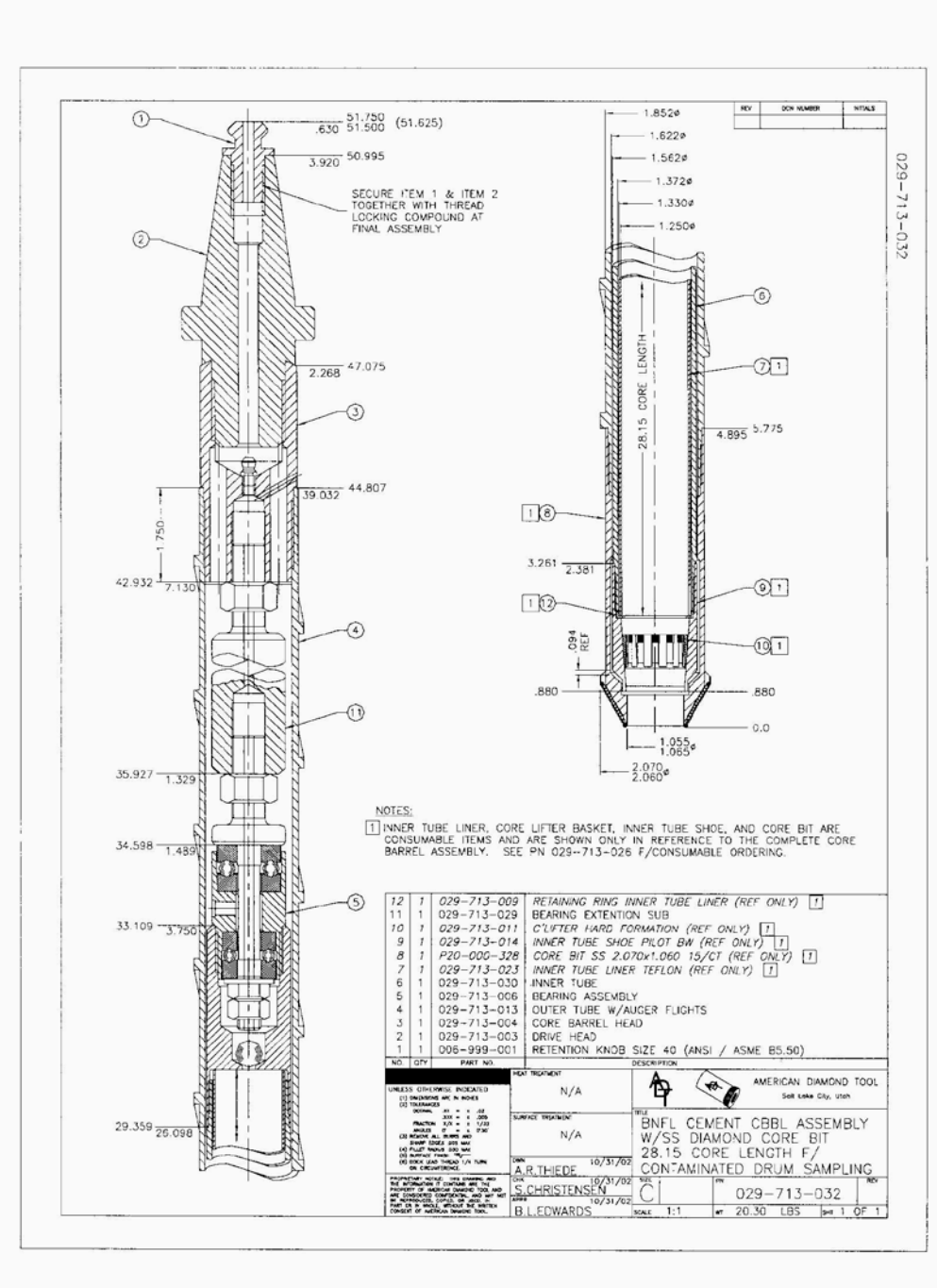


Exhibit 5. Concrete Coring Bit (w/ SS Diamond) Diagram.

Appendix A – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/17/02	All	Initial issue. DCR-1274 – Issued for formal validation during commissioning activities.
1	08/14/02	70	DCR—1369 – Minor change. Redundant Steps.
2	10/29/02	All	DCR-1672— Editorial changes throughout document. Added, changed, and removed Steps to reflect actual operations.
3	1/7/03	All	DCR-1868, Major rewrite to incorporate software changes and additional validations.
4	01/13/03	Page 49	DCR-1892, Minor change to switch order of Steps 4.15.17 and 4.15.18.
5	01/17/03	Various	DCR-1945 – Provide Steps to support use of a different balance for weighing samples and implement new form for fissile gram tracking.
6	02/01/03	Various	DCR-1969, Changes to address TrackWise™ deficiencies and LMSA review.
7	02/20/03	Various	DCR-2040, Incorporate necessary Steps to make the procedure both WIPP compliant and DMS release 2.3.
8	3/20/03	Pg 8	DCR-2131, Minor Change – Removed Note at the beginning of Section 4.1 which allowed Steps to be performed out of sequence.
9	03/27/03	All	DCR-2126, Minor change to amend date from DOE Approves Retrieval Operations Start-up to 03/28/03 and Editorial update to Records Section.
10	04/10/03	Various	DCR-2159, Changes to reflect Carlsbad Field Office, WIPP document review.
11	05/06/03	Various	DCR-2236, Changes to reflect Carlsbad Field Office, WIPP document review and additional validating.
11 FC-1	05/07/03	Pgs 12, 38-40	DCR-2253, Temporary Field Change, Delete Steps to process surrogate waste drum. Expires at the close of business 05/08/03.
12	05/08/03	Pgs 12, 38-40	DCR-2255, Minor change to remove temporary Field Change, Returning document to the same state as Rev 11.
12 FC-1	06/04/03	Pgs 41-44 and 72-73	DCR-2296, Corrected and resequenced steps addressing the tent area associated with Drum Coring.
13	07/08/03	Various	DCR-2273, Incorporation of Carlsbad Field Office, WIPP review comments, Incorporate Rev 12, FC-1.
13 FC-1	07/19/03	Various	DCR 2372, To facilitate drum lid removal for visual examination.

AMWTP INSTRUCTION		
INST-OI-16, Rev. 40	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Drum Coring Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
13 FC-2	07/26/03	Various	DCR 2380, Revised to correctly direct operators between miscertification visual exam and coring.
14	10/09/03	Various	DCR 2425, Response to CBFO comments and addition of WAP compliance to WTS coring screens.
15	07/06/04	All	DCR-2571. As a result of SCR 119 and SCR 96, Steps 4.26.5 through 4.26.8 and Steps 4.26.23 through 4.26.29 were no longer needed and were deleted from procedure. Operations personnel evaluated and eliminated redundant steps. New Steps 4.18 through 4.22 were added to provide direction on chain of custody activities.
16	08/12/04	Various	DCR-3214. Changes made to incorporate CBFO comments. Editorial changes.
17	10/14/04 01/10/05	Various Various	DCR-3259. Additional step added to Section 4.19 for clarification. Steps 4.3.3, 4.3.4, 4.3.7, 4.3.11 were updated per Criticality Safety's direction. Editorial changes. Software enhancement to allow "Resample" function as opposed to "failure co-located" core. Form-1599, AMWTP Solid Waste Sampling Checklist Drum Coring Operations, was created to verify and document required drum coring steps and is referenced throughout this procedure. Added new information to Section 4.10. Incorporated DRR and SME comments.
18	01/20/05	Page 25	DCR-4107. Note added above Step 4.4.14 for clarification. Minor change.
19	04/07/05	Page 79	DCR-4251. Added note before Step 4.23.11.
20	08/02/05	Various	DCR-4295. This DCR is driven primarily by CAR 14188. Changes made to eliminate redundancies between Form-1599 and WTS. Changed operational process for delidding drums. Document became corrupt. It had to be placed in new new template and was reformatted. Sidebars were lost in the transfer.
21	01/18/06	Various	DCR-4669. Changes made to resolve NCR-18804. Deleted unnecessary requirements per Criticality Safety's direction. Reformatted procedure to MP-DOCS-18.1.

AMWTP INSTRUCTION		
INST-OI-16, Rev. 40	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Drum Coring Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
22	01/30/06	Various	DCR-4750. Steps modified because document is too specific. Operations may also be performing a VE in lieu of RTR. VE task will be decided by the VEE or VE operator.
23	3/30/06	All	DCR-4921. Made formatting correction to resolve CAR-21421.
23 FC-1	6/12/06	Various	DCR-5089. Added authorized individual as sample custodian.
23 FC-2	7/11/06	Various	DCR-5137. Redefined DCH boundary.
24	12/20/06	Various	DCR-5592. Incorporated FC-1 and FC-2. Added information for ISMS implementation.
24 FC-1	1/10/07	39	DCR-5664. “If applicable” added to Steps 4.10.7 and 4.10.8
24 FC-2	1/18/07	11, 22, 39	DCR-5682. Added guidance for processing non-AMWTP drums. Added additional guidance for sampling co-located cores < 50% recovery. Corrected typo.
24 FC-3	06/25/07	Pg 77	DCR-6142. CAR No. 25743. Incorporate reference to INST-OI-24 for drum close instructions.
24 FC-4	06/26/07	112	DCR-6151. MP-CMNT-10.22 supersedes INST-CMNT-10.8.2.
25	07/05/07	Various	DCR-5703. Incorporated FC-1 (DCR-5664) and FC-2 (DCR-5682), FC-3 (DCR-6142), and FC-4 (DCR-6151). Revised and updated procedure to current/correct mode of operation. Made editorial changes per MP-DOCS-18.1, Developing Written Work Instructions.
26	07/16/07	Page 81	DCR-6230. Minor change. Correct form number.
26 FC-1	11/06/07	Various	DCR-6541. Direction for application of shielding. Negates packet assay of subsamples.
27	04/10/08	Various	DCR-6500. Incorporated FC-1 (DCR-6541). Procedure updated to transportation transition to CCP. No other changes made to this procedure. Being processes as GAP Review per MP-DOCS-18.4, Document Control.
27 FC-1	05/05/08	12, 103	DCR-7121. Remove number references to shunt trip breakers.

AMWTP INSTRUCTION		
INST-OI-16, Rev. 40	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Drum Coring Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
27 FC-2	05/06/08	Various	DCR-7126. Update procedure to line up with current revision of Form-1599.
27 FC-3	05/28/08	24	DCR-7023. Procedure change due to batch functionality change.
28	06/30/08	Various	DCR-7193. Incorporated FC-1 (DCR-7121), FC-2 (DCR-7126), and FC-3 (DCR-7023). Reformatted roles and responsibilities and updated rolldowns and records section. Made changes as part of Operations restructuring transition.
29	07/03/08	Page 50/4.12.3.3	DCR-7306. Incorporate minor change to correct typo, Step 4.12.3.3.
29 FC-1	7/29/08	23/4.3.10.6	DCR-7392. Enhance step for WTS functionary.
30	01/30/09	Various	DCR-7417. Made changes to implement the current DSA. Editorial changes made including updating document owner title, correcting references, and moving revision log to Appendix D per standard INST template and MP-DOCS-18.1. Periodic review advanced until August 31, 2009.
30 FC-1	04/06/09	Pg 48	DCR-8194. Procedure clarification from incorporation of SCR 3274.
31	08/22/09	Various	DCR-8556. Incorporate field change**;** and added DOCS-BLUESHEET-02 changes.
31 FC-1	09/03/09	16, 75, 77	DCR-8620. Appropriate method of determining FGE of metal waste.
32	03/24/10	Various	DCR-8716. Incorporated DCR- 8620. Step 3.2.4 added to incorporate comments from Hazard Assessment HA-N-044 and editing per MP-DOCS-18.1.
32 FC-1	05/10/10	Page 7	DCR-9211. Change made to resolve CAR 49662, incorporating alternate isolation device information.
33	05/20/10	Various	DCR-9227. Made changes to Sections 4.3, 4.4, 4.8, 4.10, and 4.18.

AMWTP INSTRUCTION		
INST-OI-16, Rev. 40	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Drum Coring Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
34	06/21/10	Various	DCR-9313. Made changes determined by WIPP permit.
35	12/07/10	Section 2.0	DCR-9595. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual.
36	03/17/11	Various	DCR 9714. Changes to incorporate Data Quality requirements, provide further direction and clarification, improve process flow, implement SCR 4090, and incorporate annual TSR update by removing the word "previously."
37	06/09/11	Various	DCR-10084. Made changes throughout the document in order to appropriately convert from General Use to Controlled Activity use-type. Removed some antiquated steps (e.g., VE section).
37 FC-1	08/16/11	Various	DCR-10278. Changes needed to support changes to trip blank volumes. Deleted steps that are duplicated and performed in other steps.
38	01/26/12	Various	DCR-10613. Incorporated FC-1 (DCR-10278) and incorporated ITG bluesheet-019.
39	03/28/12	Various	DCR-10912. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also revised to make it consistent with other DCSRS documents.
39 FC-1	04/02/12	Various	DCR-11088. Added steps to perform VE where required and clarification of NCS-exempt waste.
40	06/07/12	Various	DCR-11194. Incorporated FC-1 (DCR-11088). Revised steps to incorporate CBFO audit recommendations and deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted "bung type" so that any type filter may be installed.

Non-Facility Visual Examination Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10539.) 12/29/11

Chuck Stepzinski
Characterization & Storage Manager

Date

(Verification of Effective Revision): (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-34, Rev. 27	Issued: 12/29/11	Effective: 12/30/11

Non-Facility Visual Examination Operations

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AMWTP INSTRUCTION		
INST-OI-34, Rev. 27	Issued: 12/29/11	Effective: 12/30/11

Non-Facility Visual Examination Operations

1.0 PURPOSE/SCOPE

The purpose of this instruction is to provide directions for performing *visual examination* (VE; see def.) in accordance with the Waste Isolation Pilot Plant (WIPP), Waste Analysis Plan (WAP), applicable Resource Conservation and Recovery Act (RCRA) requirements, WIPP Contact-Handled Waste Acceptance Criteria (CH-WAC), and Contact-Handled TRUPACT-II Authorized Methods for Payload Control (CH-TRAMPAC).

The purpose of visual examination is to verify the physical form of the waste, prevent the shipment of prohibited items to WIPP, confirm that the waste matches the *waste matrix code* (WMC; see def.) assigned to a waste container, and confirm that the waste matches the *waste stream* (see def.) description. Visual examination is also used to characterize waste as it is packaged at the Advanced Mixed Waste Treatment Project (AMWTP).

This instruction is written to use in conjunction with other work control documents. Specifically, this instruction must be performed in conjunction with the appropriate building/equipment-specific procedure; INST-OI-16, Drum Coring Operations; INST-OI-73, Manual Drum Coring Operations; or INST-OI-75, Container-in-Container Sampling; for task performance in WMF-634; or INST-OI-68, Drum Treatment Facility Operations, for task performance in WMF-628.

This instruction applies to all personnel performing required VEs and as required by any approved methods of work (AMOW) or permits to work (PTW) used in conjunction with this instruction.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operations Technician (OT)	• Performs tasks in support of the VE • Performs tasks associated with glovebox operations, waste packaging, and container/waste handling and movement • Performs limited radiological surveys.
Shift Supervisor (SS)	• Ensures that individual training and qualification is current for the individual performing VE in accordance with QP-VE-0001, Visual Examiner.
Visual Examination Expert (VEE)	• Supports VE as appropriate and maintains responsibility for the overall direction and implementation of the VE at the facility.
Visual Examination Operator (VEO)	• Unless otherwise specified, performs characterization examinations in accordance with this instruction • If properly trained or qualified, may perform steps in this instruction normally performed by an OT.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Only Aquaset-II G, Micro-Cel E, Hg Absorb (Hg Absorb for treatment of elemental mercury only), or the original absorbent already in the drum (Oil-dri, vermiculite) shall be used as the absorbent. Other absorbents shall be approved by Environmental through permit required processes prior to purchase and use. Other chemical absorbents to be added to transuranic (TRU) waste shall be approved by Criticality Safety.

(HWMA/RCRA Permit; RPT-NFCS-05, CWR 7.3.12; RPT-NFCS-08, CWR 7.3.6 #2) (RPT-NFCS-09, 1291-2009-023; 1291-2009-025)

3.1.2 The discovery of a *criticality working requirement* (CWR; see def.) violation shall be promptly (by the end of the next shift) reported to Criticality Safety.

(RPT-NFCS-05, CWR 7.3.14)

3.1.3 Prohibited/nonconforming items as referenced in Exhibit 4, List of TRU Prohibited Items, shall **NOT** be shipped to WIPP.

(MP-TRUW-8.2; CCP-PO-003; MP-TRUW-8.1)

3.1.4 Nonconformance reports shall be issued to document the identification of prohibited/nonconforming items.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit)

3.1.5 Various *item description codes* (IDCs; see def.) are incompatible with each other and should be segregated as directed by the SS. See Exhibit 14, Waste Incompatibility by IDC, for a list of incompatible IDCs.

(MP-TRUW-8.1; MP-TRUW-8.2; HWMA/RCRA Permit)

3.1.6 Information entered into the operating record includes:

- The identification of the original waste container(s) and *waste characterization* (see def.) information (including all historical data from the drum and drum lid such as the control number, tamper indicating device (TID) number, dates, and weight, if available)
- IDCs/WMCs
- Approximate quantity of special case waste (SCW) removed from each waste container
- Applicable hazardous waste numbers (HWNs)
- Additional characterization or process knowledge obtained prior to treatment
- Targeted treatment process(es)
- Analytical results.

(HWMA/RCRA Permit)

3.1.7 Sealed containers that are greater than 4 liters are prohibited except for waste material TYPE II.2 packaged in a metal container. Containers that are greater than 4 liters in size shall be fitted with an approved filter vent.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit)
(IDAPA 58.01.05.008 [40 CFR 264.177])

3.1.8 During the treatment process, incompatible wastes or materials shall not be placed in the same container.

(HWMA/RCRA Permit; IDAPA 58.01.05.008 [40 CFR 264.177])

3.1.9 Treatment failures shall be reported within 14 days of discovery, in accordance with Permit conditions 1.M and 1.Y. The report shall include, at a minimum:

- The drum identification number
- The Environmental Protection Agency (EPA) HWN(s)
- Cause of failure (if known)
- Measures taken to prevent additional treatment failures. (Treatment failure examples: separation of *liquid* (see def.) from absorbent, use of incompatible absorbent with liquid or insufficient headspace to accommodate the required volume of appropriate absorbent.)

(HWMA/RCRA Permit)

3.1.10 Hazardous wastes not occurring as co-contaminants with TRU-wastes (non-mixed hazardous wastes) are not acceptable at WIPP.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.1.11 Prohibited items are not packaged in this instruction. Prohibited items are packaged in accordance with INST-OI-24, Packaging Radioactive Waste, for transfer to the facility or to the appropriate storage areas.

3.1.12 The VE process must ensure that all waste items are clearly identified, *packaging materials* (see def.) are identified, and waste is categorized into the appropriate waste material parameters.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.1.13 Any condition that could be adverse to the quality of the data must be reported to the SS.

3.2 Prerequisites

3.2.1 SS: Ensure that governing procedure or work control document is in use prior to initiating VE activities.

3.2.2 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

3.2.3 The correct revision of this procedure is being used.

3.2.4 Headspace gas sampling (HSGS) has been performed prior to receipt of the drum in DCSRS (if the drum is an unknown IDC).

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit)

3.2.5 There are two qualified visual examiners available to perform a real-time radiography (RTR)/VE update (RVU), VE of newly generated waste (NGW) packages and NGW VE closure, and VE of legacy waste containers, as necessary.

3.2.6 Personnel scheduled to perform VE are qualified in accordance with QP-VE-0001, Visual Examiner.

3.2.7 Personnel performing tasks in the glovebox have been trained in accordance with 0AWT4140, Glovebox.

3.2.8 The task list indicates that the assay has been completed and displays "QC Complete" for the waste container.

(RPT-NFCS-08, CWR 7.3.6 #1)

3.2.9 The VEE is available for support of the VE activities.

(MP-TRUW-8.2)

3.2.10 The containers have been previously vented prior to starting the examination.

(RPT-TSR-03, SAC 5.2.7)

3.2.11 Form-1900, AMWTP Offsite Waste Stream Profile, is available for use, as applicable.

4.0 INSTRUCTIONS

4.1 General Instructions

NOTE 1: *Sections 4.2 through 4.7 of this instruction may be performed independently as determined by the type of VE to be performed.*

NOTE 2: *The steps in each section may be performed out of sequence or performed concurrently with other steps in the procedure as required during the VE.*

NOTE 3: *VE is used to characterize NGW at the time of generation (such as* secondary waste *[see def.]), to identify its physical form and verify the absence of prohibited items.*

NOTE 4: *Waste that cannot be placed back into the original waste container after examination is packaged as NGW in accordance with INST-OI-24. VE is used to characterize NGW at the time of generation (such as secondary waste) to identify its physical form and verify the absence of prohibited items.*

NOTE 5: *VEOs who are not trained in accordance with 0AWT4140, Glovebox, may witness other personnel (e.g., OTs) performing tasks within the glovebox in support of the examination in order to enter or verify examination data in* Waste Tracking System *(WTS; see def.).*

NOTE 6: *A VEO who is trained in accordance with 0AWT4140, but not qualified as an operations technician may perform tasks using the glovebox under the guidance of a trained and qualified operations technician.*

4.1.1 SS**:** Ensure that all prerequisites have been met.

NOTE: *All personnel have the responsibility and authority to issue a stop-work order for any work activity if a health and safety situation exists that poses imminent danger to personnel, equipment, or the environment.*

4.1.2 **IF** performing VE of a *legacy* (see def.) container is part of the planned activity,
THEN prior to opening the container, if possible, obtain any historical data from the drum and drum lid such as:

- Control number
- TID number
- Dates and weight, if available.

4.1.3 **IF** at any point during the examination, the appearance of waste is observed to be in violation of an administrative control measure contained in this instruction or INST-OI-16, INST-OI-73, and INST-OI-75 for work within the DCSRS, or INST-OI-68 for work in WMF-628,
THEN STOP work
AND contact the SS for guidance.

4.1.4 Perform the following as necessary:

4.1.4.1 Log on to WTS.

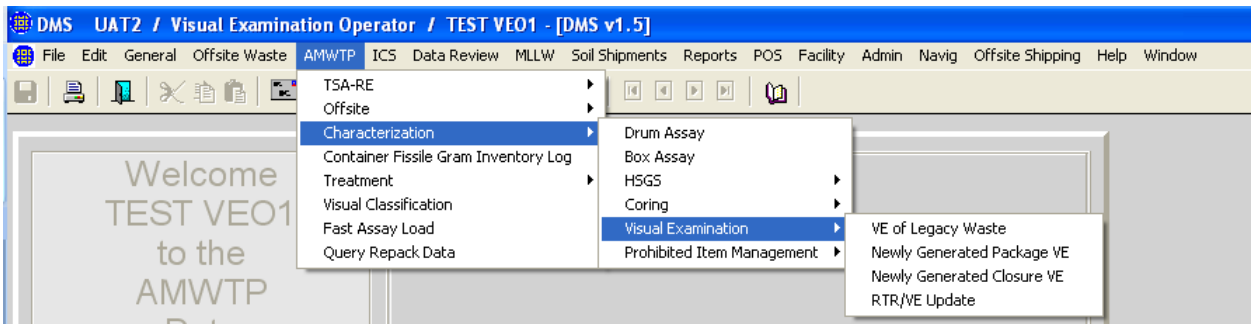


Figure 1. Characterization – VE – Path.

4.1.4.2 Access the appropriate screen through the AMWTP, Characterization sub-menu.

4.1.4.3 Enter the container number and press the F8 key to auto-populate the screen, if necessary.

4.1.4.4 Review the container data for accuracy vs. the physical container.

4.1.4.4.1 **IF** the container data is **NOT** correct, **THEN** contact the SS.

4.1.4.5 Verify the "Container Filters" screen has been updated, as applicable.

4.1.5 Report any condition to the SS that could be adverse to the quality of the data.

4.1.6 **GO TO** the appropriate section in the following table for the task to be performed.

Task	Section to Perform
Visual Examination Instruction	4.2
Visual Examination of Legacy Waste Containers	4.3
Visual Examination of Newly Generated Waste (see def.) Packages	4.4
Visual Examination of Newly Generated Waste Closure	4.5
RTR/VE Update (Supplemental Analysis to RTR or VE Batch)	4.6
Post Job Review	4.7

4.2 Visual Examination Instruction

NOTE 1: *This section is used in conjunction with the appropriate type of VE being performed.*

NOTE 2: *Many of the WTS entries are performed by selecting "Yes" or "No," and accompanied by a comment field to the right of the entry. Selections of "Yes" are accompanied by an appropriate comment describing the item(s). Additional space may be used in the "Visual Exam Comment" field on the IDC Verification tab. The exceptions to this rule are the responses to the Sharp Objects questions.*

4.2.1 **IF** conducting a VE of a legacy container,
THEN enter all discernable historical marking (e.g., labeling and tags) from the drum in the "Visual Exam Comment" field.

4.2.2 **WHEN** an audio/video (A/V) recording is used,
THEN identify a complete waste container inventory in WTS and on the A/V record.

4.2.3 During the examination, describe all the contents of the waste container clearly identifying all discernible waste items, *packaging materials*, and waste material parameters to provide an inventory list of the waste container contents.

NOTE: *The selection of "No" in the "Liner Present" field will render the remainder of the liner fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

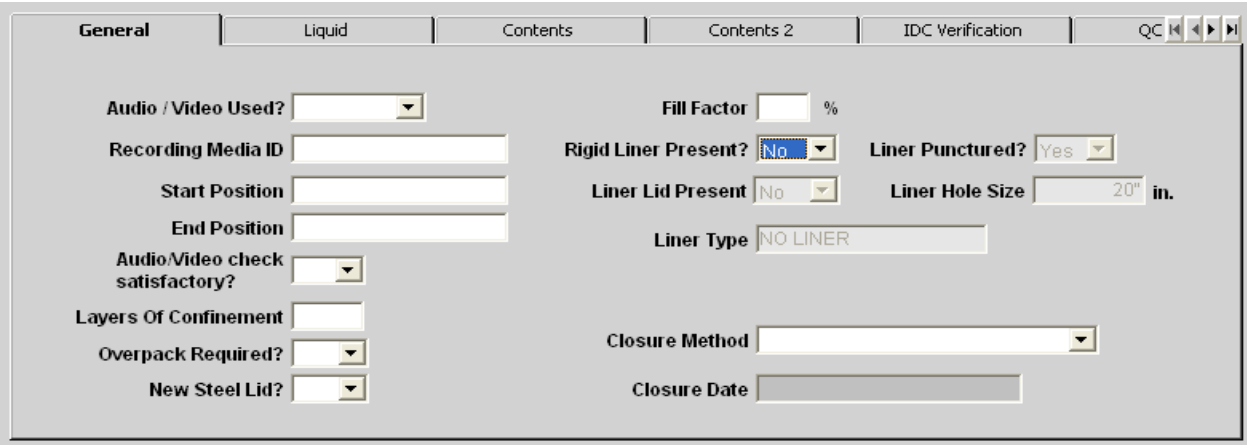


Figure 2. Characterization VE General Tab – Rigid Liner Present? "No."

4.2.4 Enter the absence or presence of a rigid liner, as applicable (see Figure 2).

4.2.4.1 **IF** the selection is "No,"
THEN observe the following fields are grayed-out (non-editable):

- Liner Lid Present – No
- Liner Puncture?
- Liner Hole Size – 20"
- Liner Type – No Liner.

4.2.4.2 **GO TO** Step 4.2.11.

NOTE 1: *The selection of "No" in response to the "Liner Lid Present" field will render the remainder of the liner fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

NOTE 2: *The liner vent hole must be a minimum of 20 in. to meet the requirement for "No Liner Lid Present."*

4.2.5 Enter the absence or presence of liner lid, as applicable (see Figure 3).

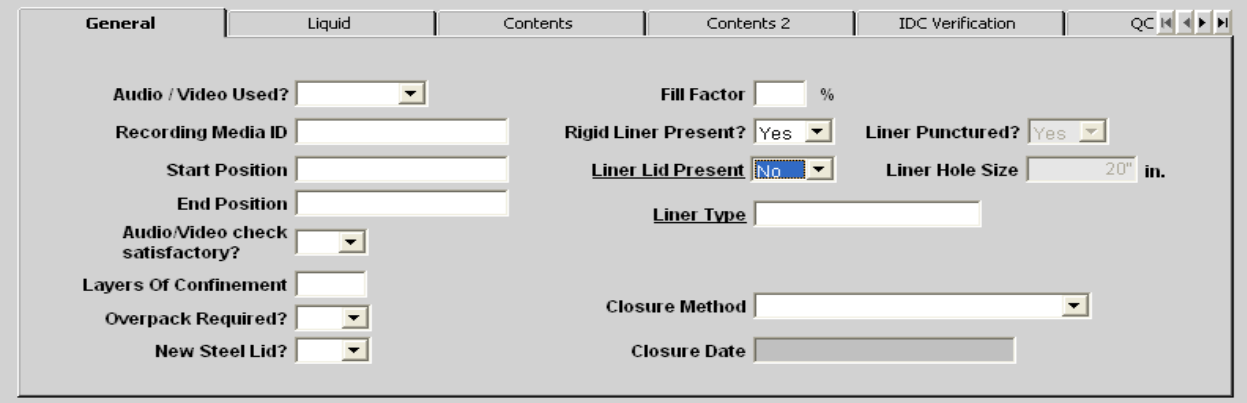


Figure 3. Characterization VE/General Tab – Liner Lid Present "No."

4.2.5.1 **IF** the selection is "No,"
THEN observe the following fields are grayed-out (non-editable):

- Liner Punctured – Yes
- Liner Hole – 20 inches.

NOTE 1: *The* vented liner *(see def.) is required to have a minimum 0.3-in. diameter opening for it to be considered vented.*

NOTE 2: *The proper venting of a liner by the insertion of an approved filter at HSGS or 615/Drum Vent System (DVS), assures the liner is vented with an opening of greater than 0.3 in. based on the design of the filter and drum punch. The RTR event or the VE event provides the verification that the liner is punctured.*

4.2.6 **IF** the liner is **NOT** vented,
THEN perform the following:

4.2.6.1 **STOP** work
AND notify SS.

4.2.6.2 **WHEN** allowed to proceed,
THEN enter "No" in the "Liner Punctured?" field (see Figure 3).

4.2.6.3 Initiate an NCR in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

4.2.6.4 SS: Notify on-call environmental support by phone and e-mail with the following information:

A. Container ID

B. NCR number, as applicable

C. Condition as "Unvented"

D. Disposition of container

E. Date of event.

4.2.7 **IF** the rigid liner lid is vented,
THEN remove the rigid liner lid, as applicable.

4.2.8 Enter the "liner punctured?" status, as applicable (see Figure 3).

4.2.9 Enter the "Liner Hole Size," as applicable (see Figure 3).

4.2.10 Select the appropriate liner type, as listed in Exhibit 12, Description of Liners, as applicable selecting the "Liner Type" field and pressing the F9 key and selecting the appropriate liner type.

4.2.11 Enter the "Fill Factor" percentage for the waste container, using Exhibit 3, Fill Factor, as a guide.

NOTE 1: *The closure method of "zipped and tied" has been approved for AMWTP by WIPP and is entered as "twisted and taped."*

NOTE 2: *Packaging materials (drum bags or O-Ring Bags) breached by the insertion of a filter vent, or that have been torn by rigid liner lid cutting and removal, are considered non-breached in those instances to account for the fact that the materials were breached during the drum vent/headspace gas activity or in preparation for examination.*

NOTE 3: *Packaging material consists of the drum, 90-mil liner, plywood spacers, and the outermost two layers of confinement that are used as packaging for the waste containers.*

4.2.12 Enter the outermost layer of confinement closure method for the waste in the "Closure Method" field (see Figure 3).

(CCP-PO-003)

4.2.13 Enter additional closure method(s), if different than the outermost layer, in the "Visual Exam Comment" field, located on the "IDC Verification" tab.

NOTE 1: *Sealed containers less than 4L are not reported as layers of confinement.*

NOTE 2: *Packaging materials are entered as packaging in the Waste Material Item screen or on the Add Material Item table.*

4.2.14 Determine the layers of confinement for the waste container, **AND** enter the data as the examination progresses (see Figure 3).

(CCP-PO-003)

NOTE: *The VEE may determine that a complete examination is not required if there is adequate acceptable knowledge (AK) for the waste, the waste has been previously examined via RTR or visual examination (valid exam), to facilitate removal of a prohibited item, and if further incursion into the waste will not yield additional characterization data or unloading the waste presents an unnecessary risk to operating or examination personnel. Any such examination authorized by a VEE will be accompanied by appropriate reasoning entered in "IDC Verification" tab "Visual Exam Comment" field as part of the record.*

4.2.15 **IF** a complete exam is **NOT** required,
THEN perform the following:

4.2.15.1 Enter the appropriate comments in the "IDC Verification" tab, "Visual Exam Comments" field.

4.2.15.2 Re-use the original drum, as applicable.

WARNING 1

Severe personal injury could occur when some incompatible wastes (as defined in Exhibit 14) are stored together.

WARNING 2

Some waste may be reactive, corrosive, or pyrophoric causing severe personal injury.

4.2.16 Verify that incompatible wastes (as defined in Exhibit 14) are **NOT** stored together.

(HWMA/RCRA Permit)

4.2.17 **IF** waste appears to be reactive, corrosive, pyrophoric,
OR is reacting with other materials,
THEN STOP work
AND perform the following:

4.2.17.1 Exit the glovebox/SSC, as applicable.

4.2.17.2 Warn others.

4.2.17.3 Isolate the area.

4.2.17.4 Notify the SS.

4.2.18 **WHEN** access to the WTS terminal is regained,
THEN enter the appropriate data.

NOTE: *The notation of the items in the following step is not a WIPP requirement. However, the presence of any of these, when applicable, is entered into the "Visual Exam Comment" field in the event that further assay reveals the waste to be a candidate for low level waste (LLW) treatment and/or disposal.*

4.2.19 **IF** any of the following items are present in the waste,
THEN enter the data in the "Visual Exam Comment" field:

- Etiological agents (i.e., blood, medical waste)
- Radioactive sealed sources (i.e., radiation instrument check sources, smoke detectors)
- Animal carcasses
- Asbestos
- Batteries (other than wet cell)
- Graphite
- Lab Pack
- Lead (identify if elemental)
- Other (see Appendix A, List of LLW/MLLW Prohibited Items and Restricted Items, for list of prohibited Items/restricted Items for LLW which may be visible, and identify if present)

4.2.19.1 See Appendix A for list of items, descriptions, and additional information/examples.

NOTE 1: *Liquid, permitted for treatment, will be treated using the appropriate operating procedure during repackaging, or the RVU, and changes entered at that time, as necessary.*

NOTE 2: *The container record will be updated for prohibited item removal or treatment after the completion of the examination.*

NOTE 3: *Prohibited items are not packaged using this instruction. Prohibited items are segregated, packaged, treated, or returned to the customer in accordance with INST-OI-24, INST-FOI-23, Special Case Waste Operations, or other approved procedures as applicable.*

4.2.20 **WHEN** a "Yes" response to a liquid or prohibited item question is selected,
THEN enter a brief description in the comment field to the right of the entry describing the liquid or condition.

4.2.20.1 Record any pertinent waste data (labels, stamps, etc.) on the A/V recording medium, as applicable,
AND enter data in the "Visual Exam Comment" field.

(MP-TRUW-8.2)

4.2.20.2 Inspect the waste for prohibited items as listed in Exhibit 4,
AND enter the absence or presence of these items as the examination progresses.

(MP-TRUW-8.1; CCP-PO-003)

4.2.21 Select the "Liquid" tab (see Figures 4 and 5).

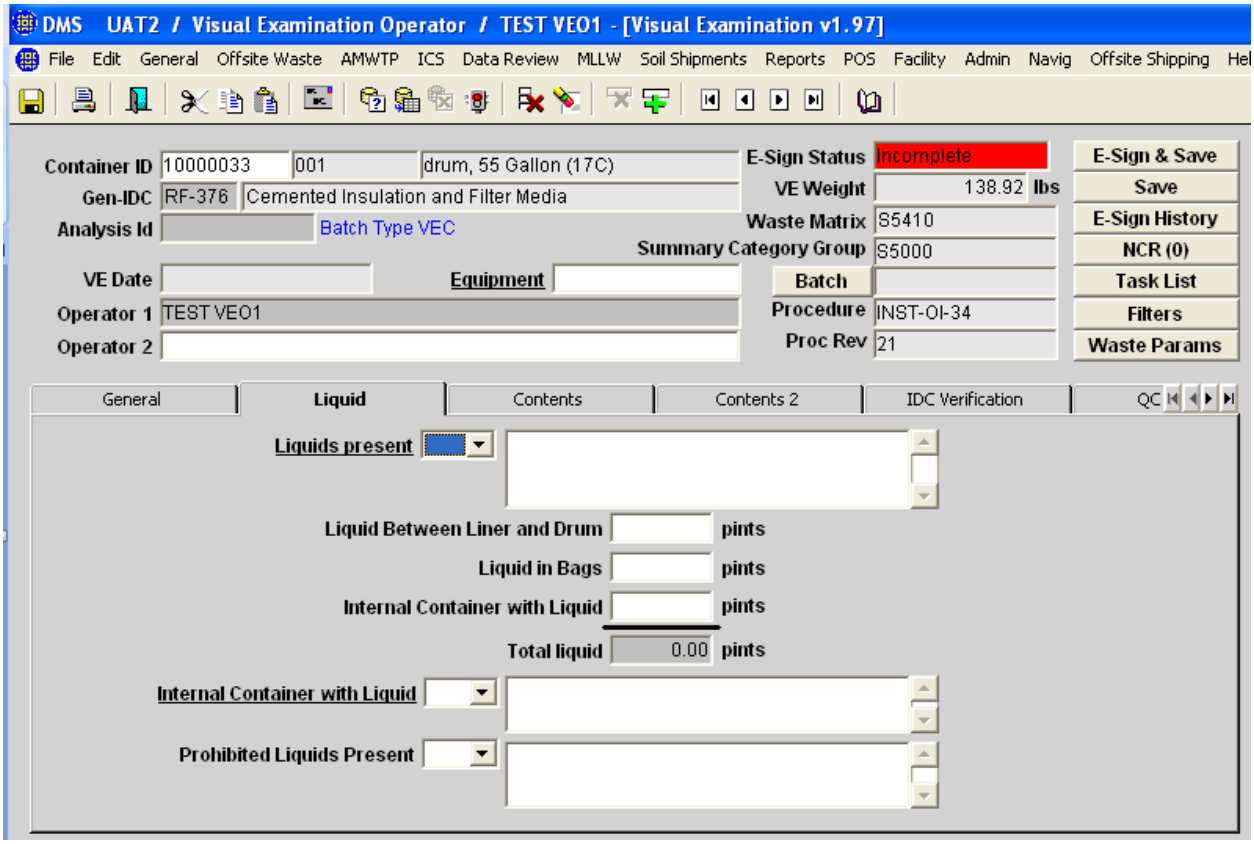


Figure 4. Characterization VE Liquids Tab.

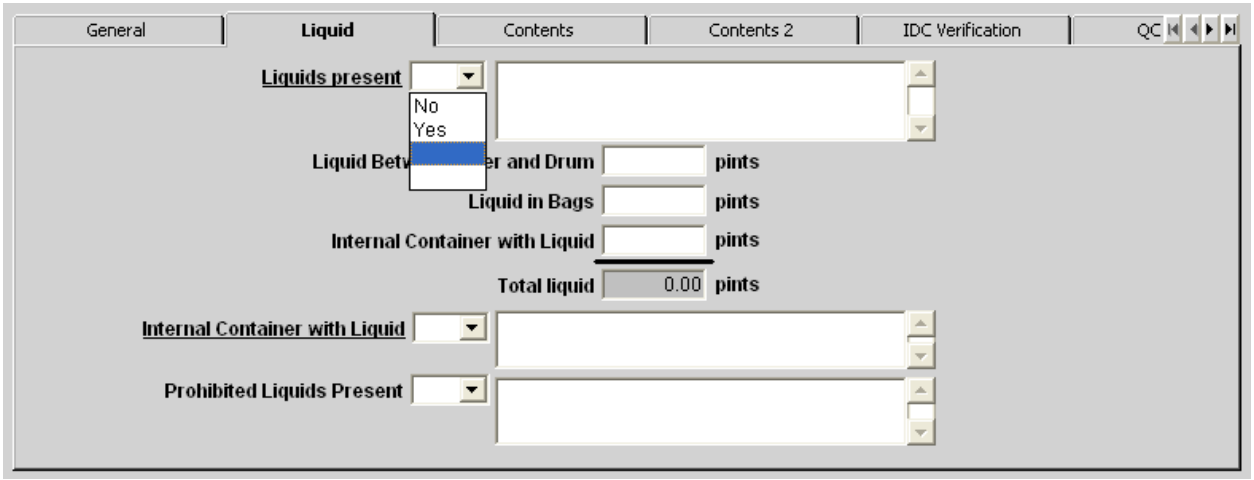


Figure 5. Characterization VE Liquids Present Response Selections.

NOTE 1: *Prohibited liquids (permitted for treatment) are treated using the applicable operating procedure (INST-OI-68 or INST-OI-75). Non-treatable liquids are segregated from the waste stream and removed from the glovebox in accordance with INST-OI-24.*

NOTE 2: *The selection of a "No" response in the "Liquids Present" field will render the remainder of the "Liquids" fields inactive. Under this condition, these fields will be set by WTS to standard default values.*

4.2.21.1 **IF** no liquids are present,
THEN select "No" in the Liquids present field (see Figure 6).

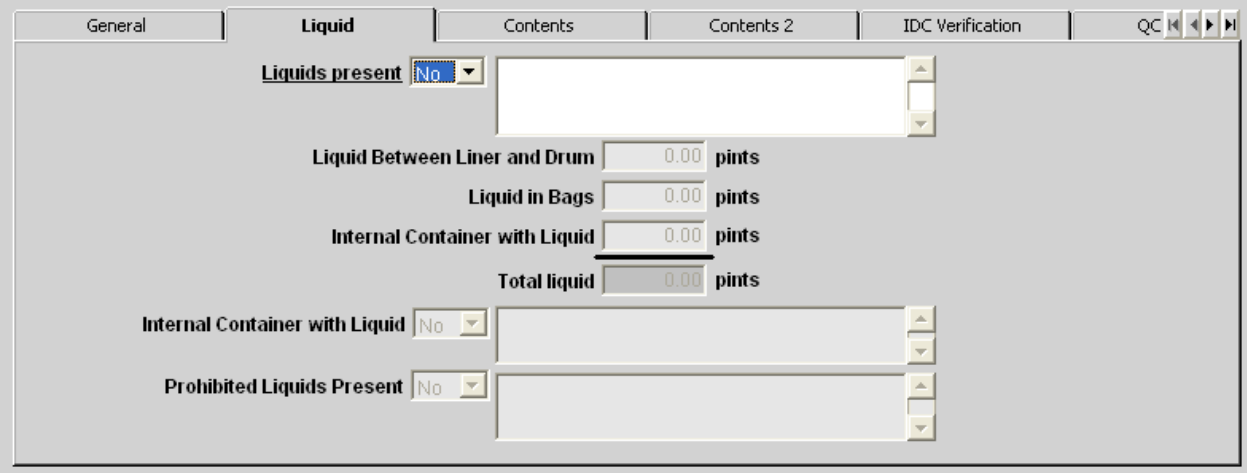


Figure 6. Characterization VE Liquids Present Response – "No."

4.2.21.2 **IF** the waste has been packaged with Oil Dri or another absorbent,
AND liquid is present in the waste,
THEN use the existing original absorbent to absorb the liquid.

(RPT-NFCS-08, CWR 7.3.6 #2; RPT-NFCS-09)

4.2.21.3 **IF** observable liquid can be quantified (see Figure 7), **THEN** perform the following:

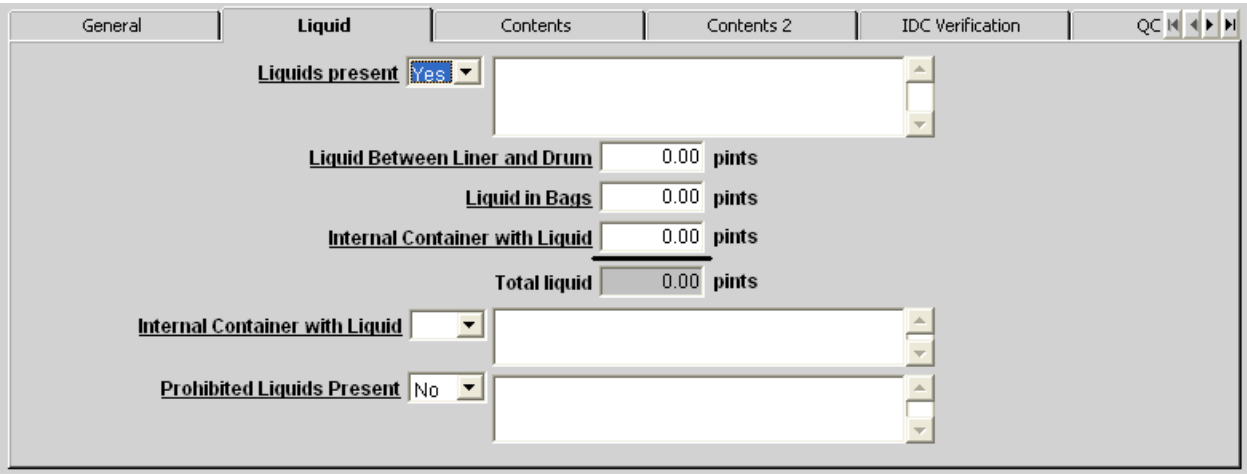


Figure 7. Characterization VE Liquids Present Response – "Yes."

4.2.21.3.1 Select "Yes" in the "Liquids Present" field.

4.2.21.3.2 Enter comment in the field to the right of the entry describing the liquid or condition.

4.2.21.3.3 Enter the volume of liquid in the appropriate field.

4.2.21.3.3.1 **IF** the liquid is present in an *internal container* (see def.), **THEN** select "Yes" in the "Internal Container w/Liquid" field,
AND enter an appropriate comment in the field to the right of the "Internal Container w/Liquid" field.

NOTE: *Observable liquid in the amount of 60 ml equals approximately 4 tbsp. or 1/4 cup in volume. The 3% measurement is based on that of a* small container *(see def.) (i.e., 2-liters), in which 3% would equal 60 ml. Consequently, an internal container larger than 2 liters, containing 3% liquid by volume would represent a prohibited volume. Data regarding liquid in prohibited volumes, within an internal container, are documented with statements such as "greater than 3% in a 2-liter container," "greater than 1/4 cup," etc.*

4.2.21.3.3.2 **IF** the volume of observable liquid in a small container exceeds 60 ml,
THEN select "Yes" in the "Prohibited Liquids Present" field,
AND enter an appropriate comment in the field to the right of the entry.

4.2.21.3.4 **IF** the volume of observable liquid in a small container is less than 60 ml (or 3% by volume),
THEN select "No" in the "Prohibited Liquids" field.

4.2.21.3.5 **IF** the volume of observable liquid in an internal container (greater than 2 liters) exceeds 60 ml by volume,
THEN select "Yes" in the "Prohibited Liquids Present" field,
AND enter an appropriate comment in the field to the right of the entry.

4.2.21.3.6 **IF** the volume of observable liquid in an internal container is less than 60 ml, **THEN** select "No" in the "Prohibited Liquids" field.

4.2.21.4 **IF** liquid-bearing, non-transparent internal containers **CANNOT** be opened and quantified (see Figure 7), **THEN** perform the following:

4.2.21.4.1 Select "Yes" in the "Liquids Present" field.

4.2.21.4.2 Enter volume of the container as the volume of liquid (in pints) in the "Internal Containers w/ Liquid" field.

4.2.21.4.3 Select "Yes" in the "Internal Containers w/Liquid" field.

4.2.21.4.4 Enter the volume of the container and any visual markings on the container in the field to the right of the "Internal Containers w/Liquid" field.

4.2.21.4.5 Select "Yes" in the "Prohibited Liquids Present" field.

4.2.21.4.6 Enter an appropriate comment in the field to the right of the entry.

4.2.21.5 **IF** liquid is **NOT** present in internal containers in a prohibited volume **AND** the Total Liquid is **NOT** highlighted red, **THEN** select "No" in the "Prohibited Liquids Present" field (see Figure 7).

4.2.21.6 **IF** liquid is prohibited, as defined in Exhibit 4, **THEN** perform the following:

4.2.21.6.1 Select "Yes" in the "Prohibited Liquids Present" field (see Figure 8).

4.2.21.6.2 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.2.21.6.3 Notify the SS.

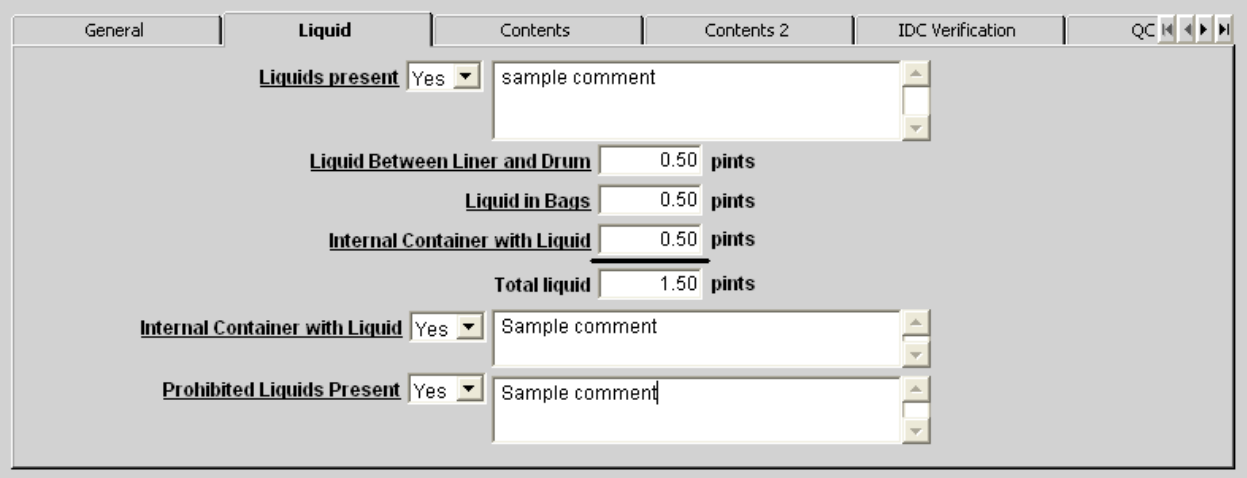


Figure 8. Characterization VE Liquids Tab – Example (Completed).

4.2.21.6.4 SS: Notify on-call environmental support by phone and e-mail with the following information:

A. Container that had prohibited item

B. NCR number, as applicable

C. Treatment or disposition of prohibited item

D. Container that prohibited item was segregated into, as applicable

E. Date of event.

(HWMA/RCRA Permit; DEQ ID #4890008952)

4.2.21.7 Segregate liquid for removal (or permitted treatment using the applicable operating procedure) as applicable.

4.2.21.8 **WHEN** liquid is identified (see Figure 9),
THEN enter the quantity, by unit volume, in the "Waste Material Items" tab, Waste Items by Volume" table.

4.2.21.8.1 Select the "SAVE" button to save data entered.

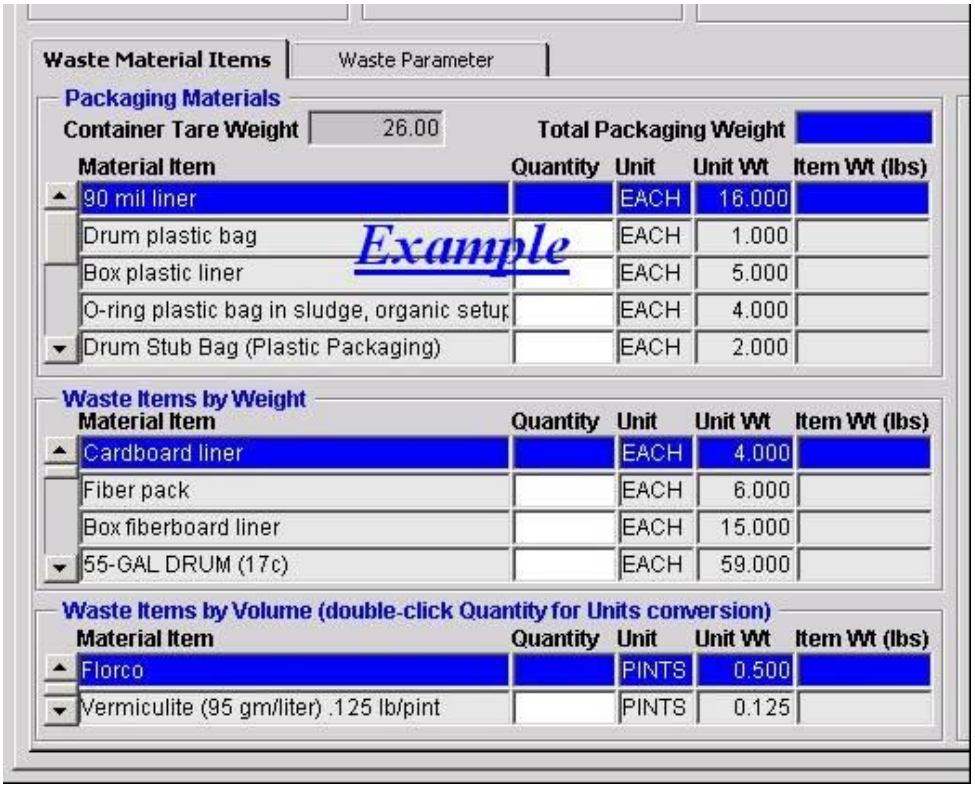


Figure 9. Characterization VE Waste Material Items Tab.

4.2.22 Select the "Contents" tab (see Figure 10).

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

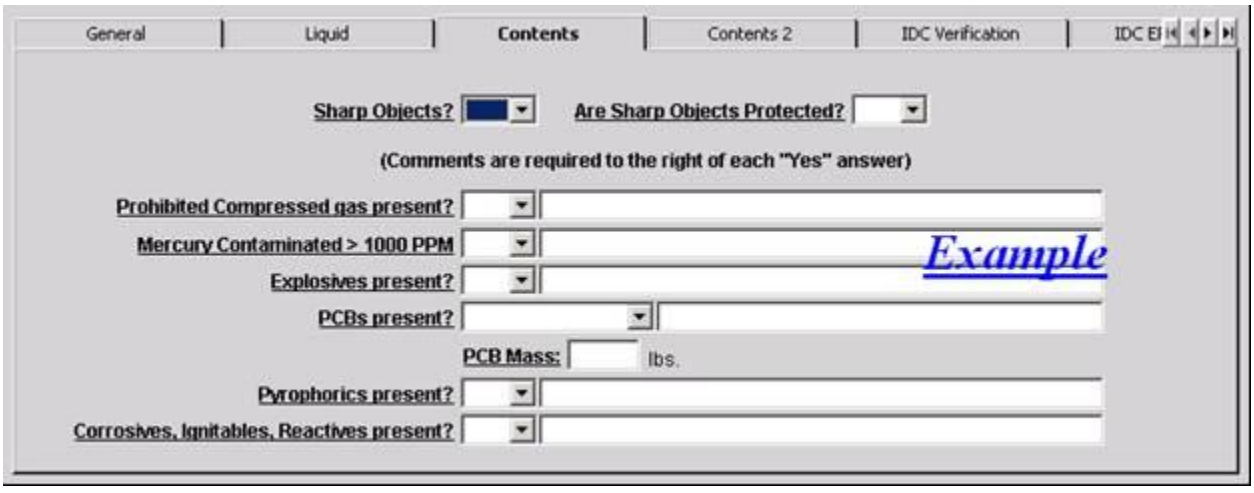


Figure 10. Characterization VE Contents Tab.

NOTE 1: *The selection of "No" in response to the "Sharp Objects?" question will cause the "Are Sharp Objects Protected?" field to auto-populate a "Yes" response.*

NOTE 2: *In accordance with Exhibit 4, the "Sharp Objects?" subject field includes heavy items that are not blocked or braced.*

4.2.23 **IF** sharp objects are not present (see Figure 11),
THEN select "No" in the "Sharp Objects?" field.

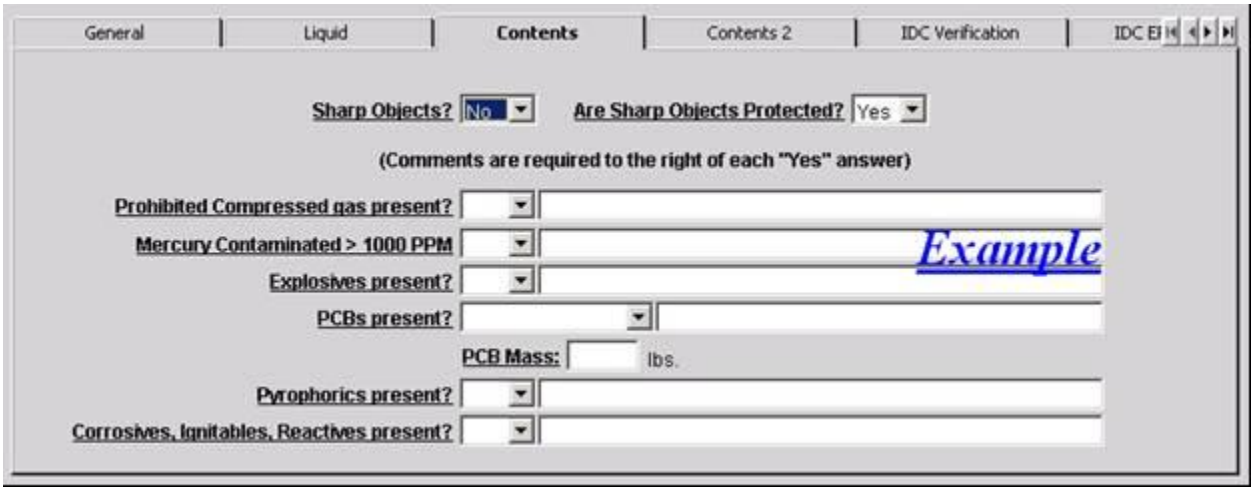


Figure 11. Characterization VE Contents Tab "Sharp Objects" Response "No."

4.2.24 **IF** sharp or non-braced objects that present a puncture hazard to the drum are present,
THEN select "Yes" in the "Sharp Objects?" field.

NOTE 1: *The rigid liner provides protection from sharp or non-braced objects.*

NOTE 2: *Sharp or non-braced objects that are not protected will be treated through payload overpack as implemented through the task list; therefore, NCRs are not required to ensure remediation.*

4.2.25 Enter "No" if sharp or heavy non-braced objects are protected.

4.2.26 **IF** prohibited compressed/pressurized gas containers are **NOT** present (e.g., unvented, pressurized gas containers, aerosol cans, and fire extinguishers),
THEN select "No" in the "Prohibited Compressed gas present?" field.

4.2.27 **IF** prohibited compressed/pressurized gas containers are present,
THEN select "Yes" in the "Prohibited Compressed gas present?" field,
AND enter the appropriate comment in the field to the right of the entry.

NOTE 1: *Mercury is not prohibited unless the criteria for prohibited liquids are exceeded.*

NOTE 2: *Mercury in a liquid form is prohibited from supercompaction.*

(HWMA/RCRA Permit)

4.2.28 **IF** mercury contaminated waste >1,000 ppm is not present,
THEN select "No" in the "Mercury Contaminated >1,000 ppm" field.

4.2.28.1 **IF** mercury contaminated waste >1,000 ppm is present,
THEN select "Yes" in the "Mercury Contaminated >1,000 ppm" field
AND enter the appropriate comment in the field to the right of the entry.

4.2.29 **IF** explosive waste/material is not present,
THEN select "No" in the "Explosives present?" field.

4.2.30 **IF** explosive waste/material is present,
THEN STOP work
AND perform the following:

4.2.30.1 Exit the glovebox/SSC, as applicable.

4.2.30.2 Warn others.

4.2.30.3 Isolate the area.

4.2.30.4 Notify the SS.

4.2.30.5 **WHEN** access to the WTS terminal is regained,
THEN select "Yes" in the "Explosives present?" field,
AND enter the appropriate comment in the field to the right of the entry.

NOTE: *Polychlorinated biphenyls (PCBs) are not processed through the Supercompactor.*

4.2.31 **IF** PCB-contaminated waste is not present (see Figure 12), **THEN** select "No" in the "PCBs present?" field.

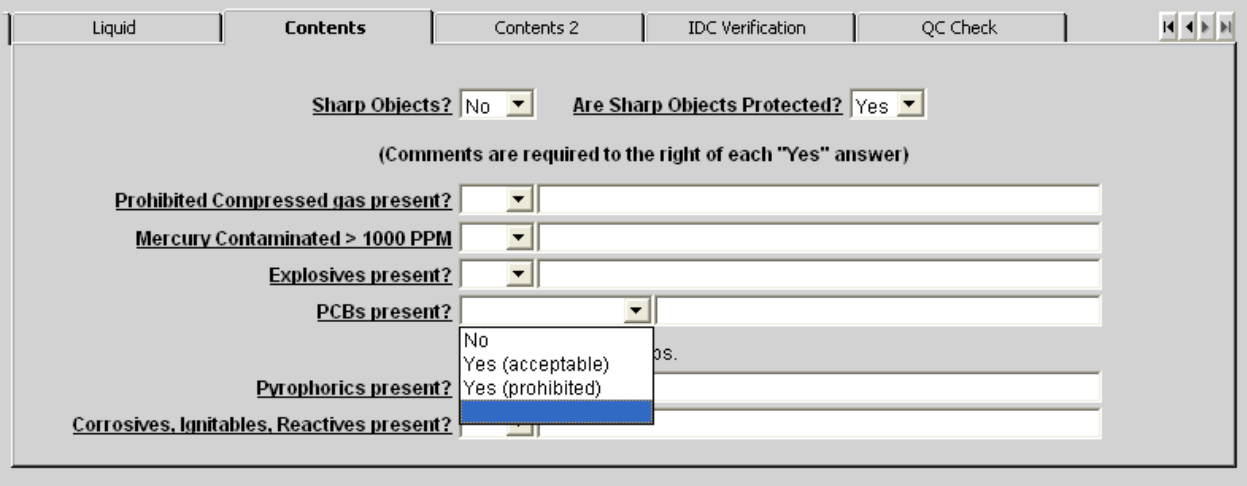


Figure 12. Characterization VE Contents Tab "PCBs Present?" Available Selections.

4.2.32 **IF** non-prohibited PCB-contaminated waste is present, in accordance with Exhibit 4 (see Figure 12), **THEN** perform the following:

4.2.32.1 Select "Yes (acceptable)."

4.2.32.2 Enter a description of the non-prohibited PCBs in the Comment field.

4.2.32.3 Enter the weight of the non-prohibited PCBs in the "PCB Mass" field.

4.2.32.4 Ensure the non-prohibited PCBs are included in the waste container inventory with a description, weight, and assignment to the applicable waste parameters.

4.2.32.5 **IF** the non-prohibited PCBs are present in a non-PCB-contaminated homogenous waste container, **THEN** segregate the PCBs for removal from the glovebox during repackaging, as directed by the SS.

NOTE: *In the event that PCB-contaminated liquid has cross contaminated other waste in the container, the PCB mass equals the total weight of the waste.*

4.2.33 **IF** WIPP-prohibited PCB-contaminated waste is present, in accordance with Exhibit 4 (see Figure 13),
THEN perform the following:

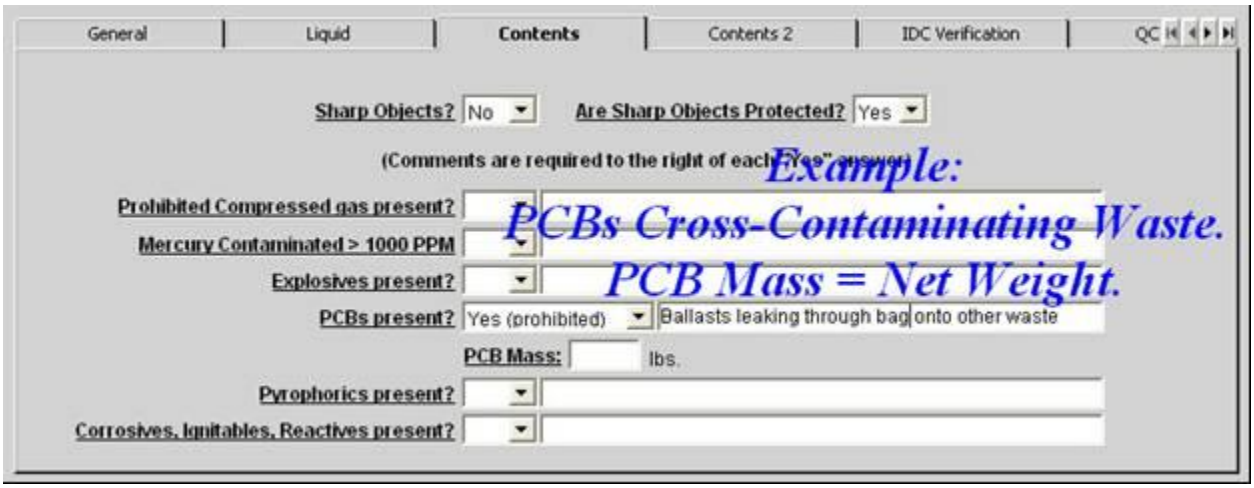


Figure 13. Characterization VE Contents Tab "PCBs present?" "Yes (prohibited)" Example.

4.2.33.1 Select "Yes (prohibited)."

4.2.33.2 Enter a description of prohibited PCBs in the "Comment" field.

4.2.33.3 Enter the weight of the prohibited PCBs in the "PCB Mass" field as follows:

4.2.33.3.1 **IF** waste is cross-contaminated with prohibited PCBs,
THEN enter the net weight of the container in the "PCB Mass" field.

4.2.33.3.2 **IF** prohibited PCB waste is contained within the original waste item packaging,
THEN enter the weight if the item in the "PCB Mass" field.

4.2.33.4 Ensure the prohibited PCBs are included in the waste container inventory with a description, weight, and assignment to the applicable waste parameters.

(MP-TRUW-8.1; CCP-PO-003)

4.2.33.5 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.2.34 **IF** pyrophoric waste is not present,
THEN select "No" in the "Pyrophorics present?" field.

4.2.34.1 **IF** pyrophoric waste is present,
THEN select "Yes" in the "Pyrophoric present?" field
AND enter the appropriate comment in the field to the right of the entry.

4.2.35 **IF** corrosive, ignitable or reactive waste is not present,
THEN select "No" in the "Corrosives, Ignitables or Reactives present?" field.

4.2.35.1 **IF** corrosive, ignitable or reactive waste/material is present,
THEN select "Yes" in the "Corrosives, Ignitables or Reactives present?" field
AND enter the appropriate comment in the field to the right of the entry.

4.2.36 Select the "Contents 2" tab.

4.2.37 **IF** wet cell batteries are not present (see Figure 14),
THEN select "No" in the "Wet Cell Batteries present?" field.

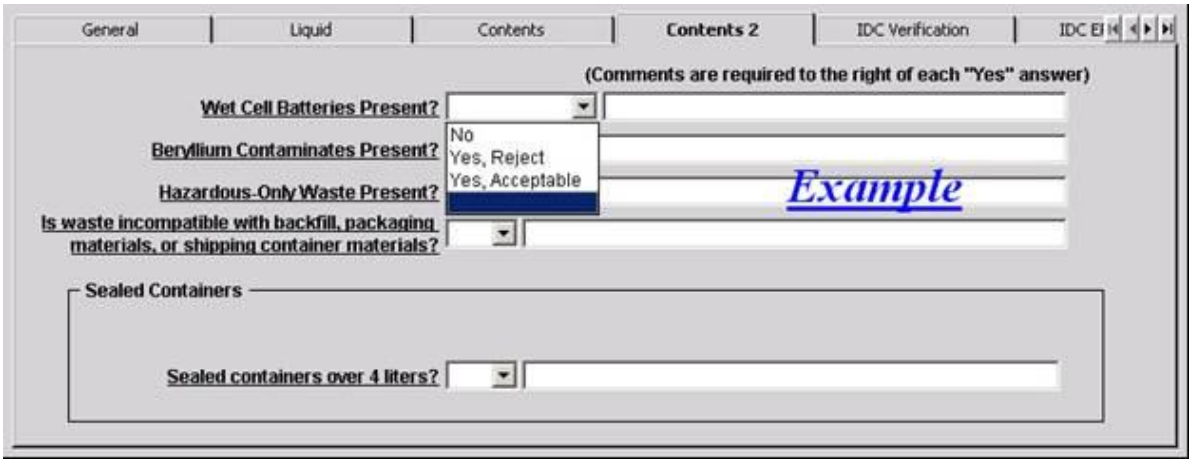


Figure 14. Characterization VE "Contents 2" Tab Wet Cell Battery Selections.

NOTE: *Wet cell batteries are WIPP acceptable ONLY if the battery can be demonstrated to be previously drained of any liquid.*

4.2.38 **IF** WIPP-acceptable wet cell batteries are present (see Figure 15),
THEN select "Yes, Acceptable" in the "Wet Cell Batteries Present?" field,
AND enter the appropriate comment in the field to the right of the entry.

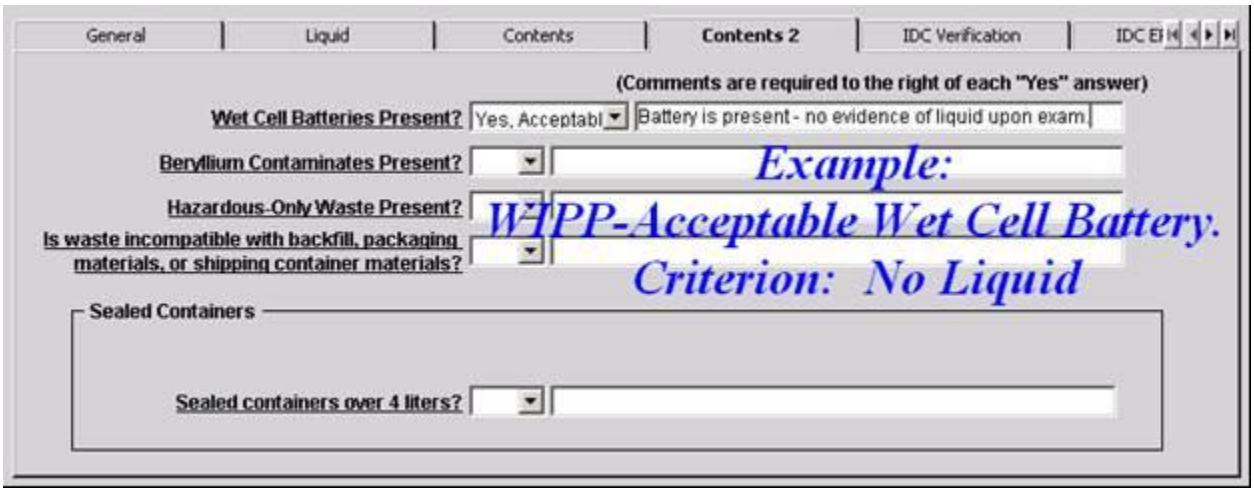


Figure 15. Characterization VE Contents 2 Tab – WIPP Acceptable Wet Cell Battery.

4.2.39 **IF** WIPP-prohibited wet cell batteries are present (see Figure 15),
THEN select "Yes, Reject" in the "Wet Cell Batteries present?" field,
AND enter the appropriate comment in the field to the right of the entry.

NOTE 1: *Entries of beryllium include the physical form (fines, metal pieces).*

(CCP-PO-003)

NOTE 2: *Beryllium is entered separately in the container inventory for reporting and tracking purposes, as applicable.*

4.2.40 **IF** beryllium contaminants are not present,
THEN select "No" in the "Beryllium Contaminates Present?" field.

4.2.40.1 **IF** beryllium contaminants are present,
THEN select "Yes" in the "Beryllium Contaminates Present?" field,
AND enter the appropriate comment in the field to the right of the entry.

4.2.41 **IF** hazardous-only waste is not present,
THEN select "No" in the "Hazardous-Only Waste Present?" field.

4.2.41.1 **IF** hazardous-only waste is present,
THEN select "Yes" in the "Hazardous-Only Waste Present?" field,
AND enter the appropriate comment in the field to the right of the entry.

4.2.42 **IF** waste (incompatible with backfill, packaging materials, or shipping container materials) is not present,
THEN select "No" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field.

4.2.42.1 **IF** waste (incompatible with backfill, packaging materials, or shipping container materials) is present,
THEN select "Yes" in the "Is waste incompatible with backfill, packaging materials, or shipping container materials?" field,
AND enter the appropriate comment in the field to the right of the entry.

NOTE: *The data in the "Impenetrable Dense Objects" field on the "Contents 2" tab, when used as a processing tool for manual size reduction is not a WIPP Data Quality Objective (DQO). When the data represents the inability, using RTR to verify the absence of prohibited items due to the density and shape of the object, the data represents a WIPP DQO.*

4.2.43 **IF** an open NCR exists for the container due to impenetrable dense objects,
THEN select the appropriate response based on the data contained in the NCR, as applicable.

4.2.44 **IF** an open NCR does **NOT** exist for the container due to impenetrable dense objects,
THEN select "No," as applicable.

4.2.45 **IF** sealed containers >4 liters are **NOT** present,
THEN select "No" in the "Sealed containers over 4 liters?" field.

4.2.46 **IF** sealed containers >4 liters are present,
THEN select "Yes" in the "Sealed containers over 4 liters?" field,
AND enter the appropriate comment in the field to the right of the entry.

4.2.46.1 **IF** performing VE of legacy waste,
THEN add an additional layer in the "Layers of Confinement" field located on the "General" tab.

4.2.47 **IF** any prohibited/non-conforming items are detected,
THEN perform the following:

4.2.47.1 Enter a comment about the prohibited/nonconforming item in the "Visual Exam Comment" field.

4.2.47.2 Notify the SS about the prohibited/nonconforming item.

4.2.47.3 Segregate the prohibited/nonconforming item for removal and processing in accordance with INST-OI-24, as applicable.

4.2.47.4 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.2.47.5 Notify the SS.

4.2.47.6 SS: Notify on-call environmental support by phone and e-mail with the following information:

A. Container that had prohibited item

B. NCR number, as applicable

C. Treatment or disposition of prohibited item

D. Container that prohibited item was segregated into, as applicable

E. Date of event.

(HWMA/RCRA Permit)

4.2.48 Select the "Waste Params" button and perform the following, as appropriate (see Figure 16):

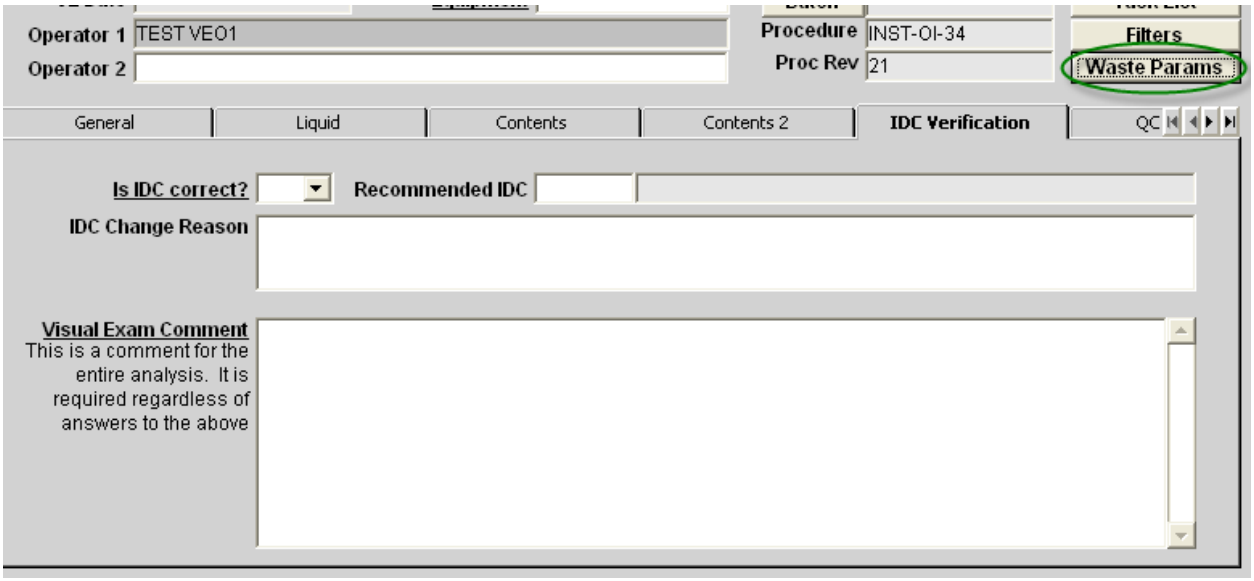


Figure 16. Characterization VE IDC Verification Tab and Waste Params Selection.

NOTE: *Selecting items and entering quantities from the "Waste Material Items" tab will result in the correct waste material parameter being displayed in the "Waste Parameter" tab but will not change the gross weight of the container.*

4.2.48.1 **IF** entering items as packaging materials from the original container configuration (see Figure 17),
THEN select the items (remaining as packaging) from the "Packaging Materials" list and enter the quantity.

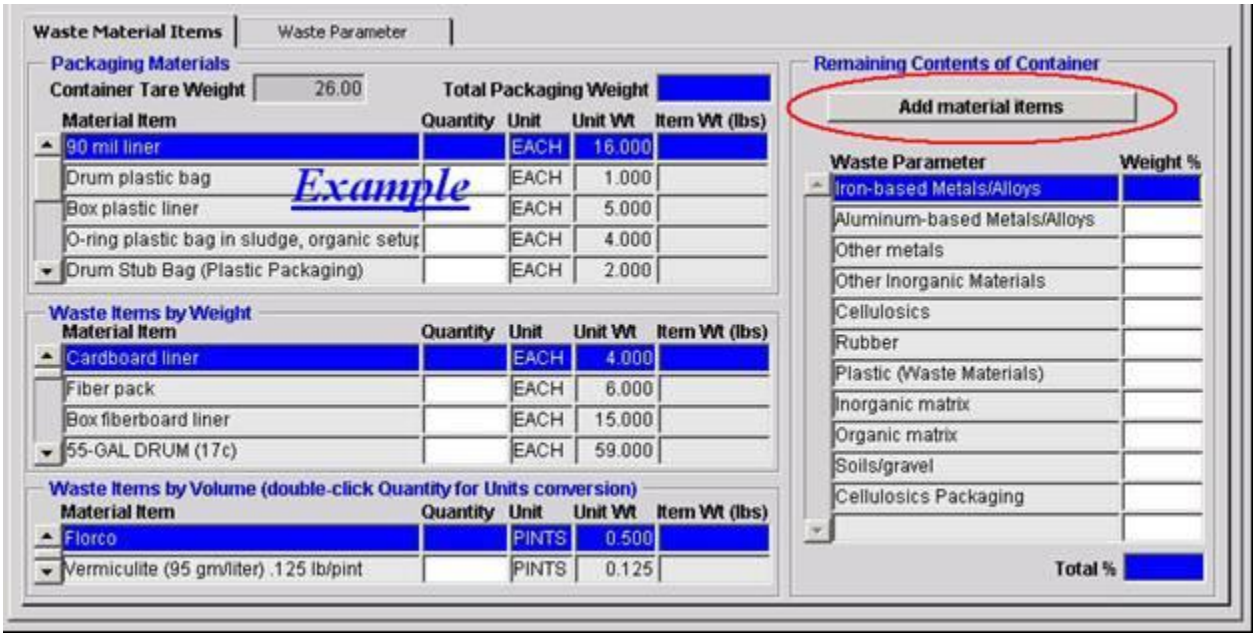


Figure 17. Characterization VE Params Selection, Waste Materials Screen, Waste Material Items Tab.

4.2.48.2 **IF** entering waste items by weight from the original container contents (see Figure 17),
THEN select the items from the "Waste Items by Weight" list and enter the quantity.

4.2.48.3 **IF** entering items by volume from the original container contents (see Figure 17),
THEN select the items from the "Waste Items by Volume" list and enter the quantity.

4.2.48.4 **IF** a waste item is **NOT** included in the "Waste Material Items" lists (see Figure 18),
THEN select the "Add Material Items" button in the "Remaining Contents of Container" block.

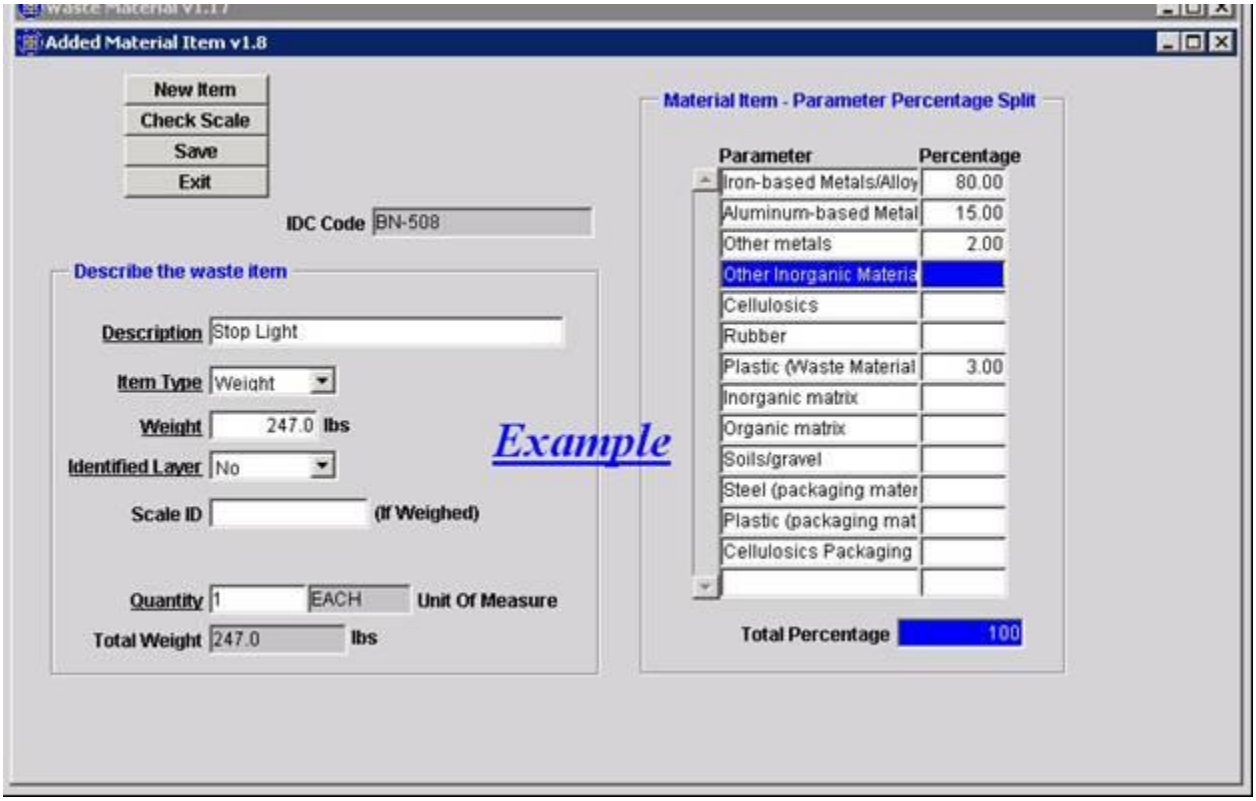


Figure 18. Characterization VE Waste Params Tab Add Material Items.

4.2.48.4.1 Select the "New Item" button.

4.2.48.4.2 Place the cursor in the "Description" field and enter a brief description of the waste item.

4.2.48.4.3 Select the "Item Type" field, and select "Weight" or "Volume," as appropriate.

4.2.48.4.4 Enter the following data, as appropriate, using **ONE** of the following methods:

4.2.48.4.4.1 **IF** entering waste items by weight,
THEN perform the following:

4.2.48.4.4.1.1 Enter the weight of the item.

4.2.48.4.4.1.2 **IF** weighed on a certified scale,
THEN perform the following:

4.2.48.4.4.1.2.1 Select the "Scale ID" field.

4.2.48.4.4.1.2.2 Press the F9 key.

4.2.48.4.4.1.2.3 Select the correct scale.

4.2.48.4.4.1.3 Select the "Quantity" field and enter the number of like items.

4.2.48.4.4.2 **IF** entering item(s) by volume,
THEN obtain available reference data,
AND perform the following:

4.2.48.4.4.2.1 Enter the weight (per unit volume) from available reference data, as provided by the VEE.

4.2.48.4.4.2.2 Select the "Quantity" field and enter the number of units.

4.2.48.4.5 Select the "Percentage" field opposite the correct "Parameter" field(s) and enter the appropriate waste parameter(s) by weight percent.

NOTE: *The "Total Percentage" for each item entered must equal 100%.*

4.2.48.4.6 Select the next editable field to display the "Total Percentage."

4.2.48.4.7 Select the "Save" button.

4.2.48.4.8 **IF** entering additional items,
THEN repeat Steps 4.2.48.4 through 4.2.48.4.7 for each additional item, as necessary.

4.2.48.4.9 Select the "Save" button.

4.2.48.4.10 Enter additional items, and select the "Save" button for each additional item, as necessary.

4.2.48.4.11 Select the "Exit" button**.**

4.2.49 Enter the remaining waste in the appropriate waste parameter by weight percent on the Remaining Contents of Container table.

4.2.49.1 Select Save.

NOTE: *The "Visual Exam Comment" field may be in the "General" or "IDC Verification" tab.*

4.2.50 Enter a description of the waste that was entered in the waste parameter tab, "Remaining Contents of Container" table, in the "Visual Exam Comment" field (see Figure 19).

4.2.51 Verify that the physical form of the waste is consistent with the IDC, WMC, *Summary Category Group* (SCG; see def.), and waste stream description displayed.

NOTE: *The responsible manager entered on an NCR for an IDC, WMC, or approved waste stream number change is the AK manager. An AK evaluation is required for any suggested IDC, WMC, or approved waste stream changes.*

4.2.52 **IF** the IDC, WMC, summary category and waste stream description is **NOT** correct in accordance with RPT-TRUW-05, Waste Matrix Code Reference Manual, or RPT-TRUW-12, AMWTP Waste Stream Designations, and/or Form-1900 (for offsite waste),
THEN contact the SS for evaluation and guidance in performing the following:

4.2.52.1 Enter the suggested IDC.

4.2.52.2 Enter the reason for the suggested change.

4.2.52.3 Enter any applicable comments in the "Visual Exam Comment" field.

4.2.52.4 Ensure the assignment of the NCR is to the AK manager.

4.2.53 Verify that the original waste is placed back into the source container.

4.2.53.1 **IF** insufficient space exists for all of the original waste in the source container,
THEN verify that any remaining waste is prepared in accordance with INST-OI-24 for removal.

4.2.54 Enter any of the following comments about the VE in the "Visual Exam Comment" field as applicable:

A. Non-conformances

B. Abnormal conditions

C. Processing information

D. Guidance from VEE or SS

E. Reconciliation issues

F. Equipment issues

G. Any information that could affect data quality

H. Historical data from the drum and drum lid such as:

1. Control number
2. TID number
3. Dates and weight, if available.

4.2.55 Verify that all waste is examined and data entered/recorded with the description, weight, and the assignment to the appropriate waste parameters.

(HWMA/RCRA Permit)

4.2.56 Verify that the physical form of the waste is consistent with the IDC, WMC, SCG, and waste stream description displayed in WTS, as applicable.

4.3 Visual Examination of Legacy Waste Containers

NOTE 1: *A VEE will provide direction to assist in the VE. Any guidance or direction from the VEE related to the drum examination must be documented in the "Visual Exam Comment" field, and on the A/V record, as applicable.*

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE 2: *The VEs concur with the assignment of the characterization data as evidenced by electronic signature on the record.*

NOTE 3: *VE of legacy waste containers is used to record the initial configuration of the waste package for use in confirming or supplementing AK data for characterization of the waste.*

4.3.1 Review the available AK for the waste with the VEE, including any applicable AK resolutions.

4.3.2 Access the of Legacy Waste screen (see Figure 20).

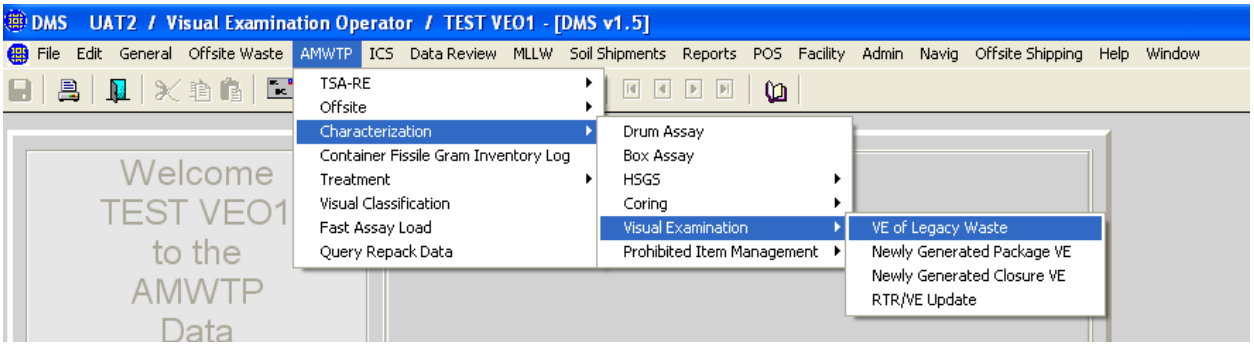


Figure 20. Characterization VE Path.

4.3.3 Enter the container ID number in the Container ID field **AND** press F8 to populate the data fields (see Figure 21).

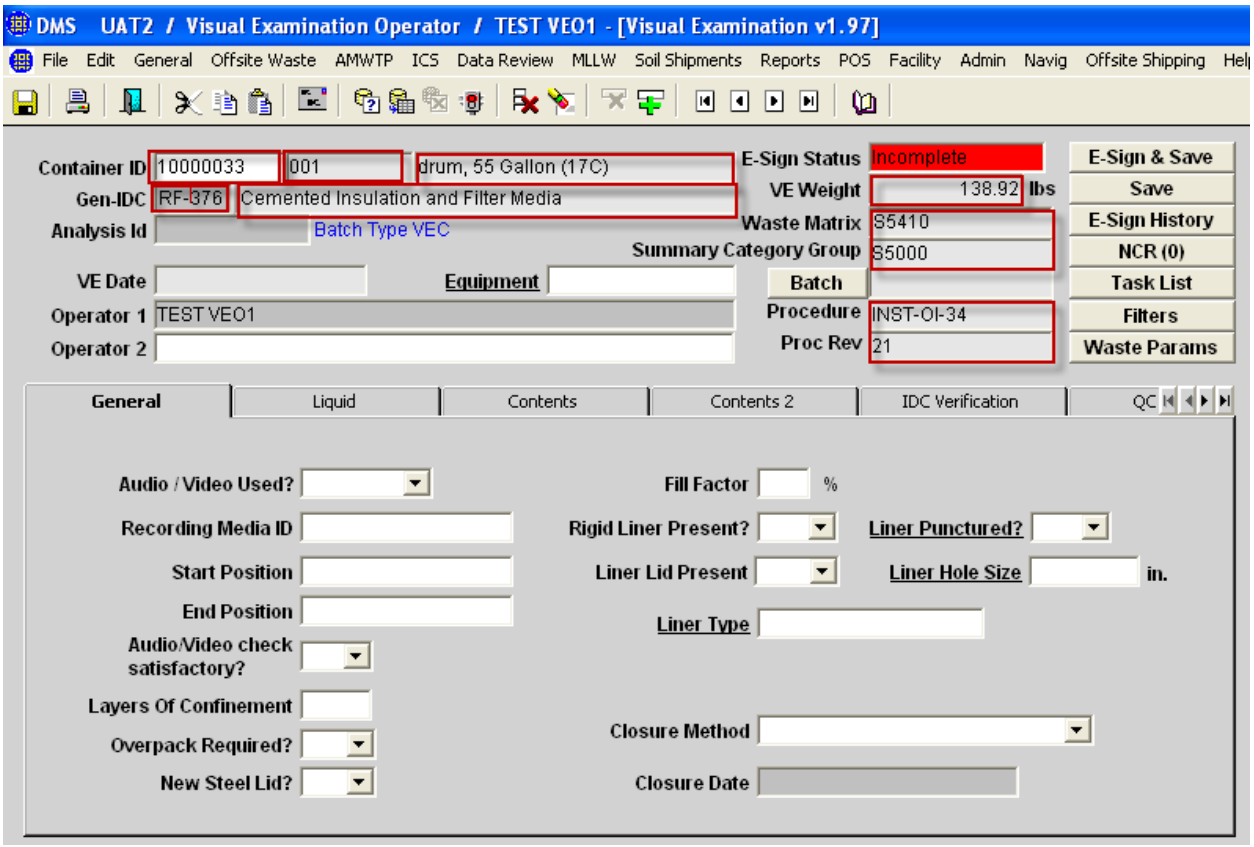


Figure 21. Characterization VE of Legacy Waste Main Screen.

4.3.4 Verify the WMC displayed is consistent with RPT-TRUW-05, and RPT-TRUW-12 (see Figure 22) and/or Form-1900 (for offsite waste).

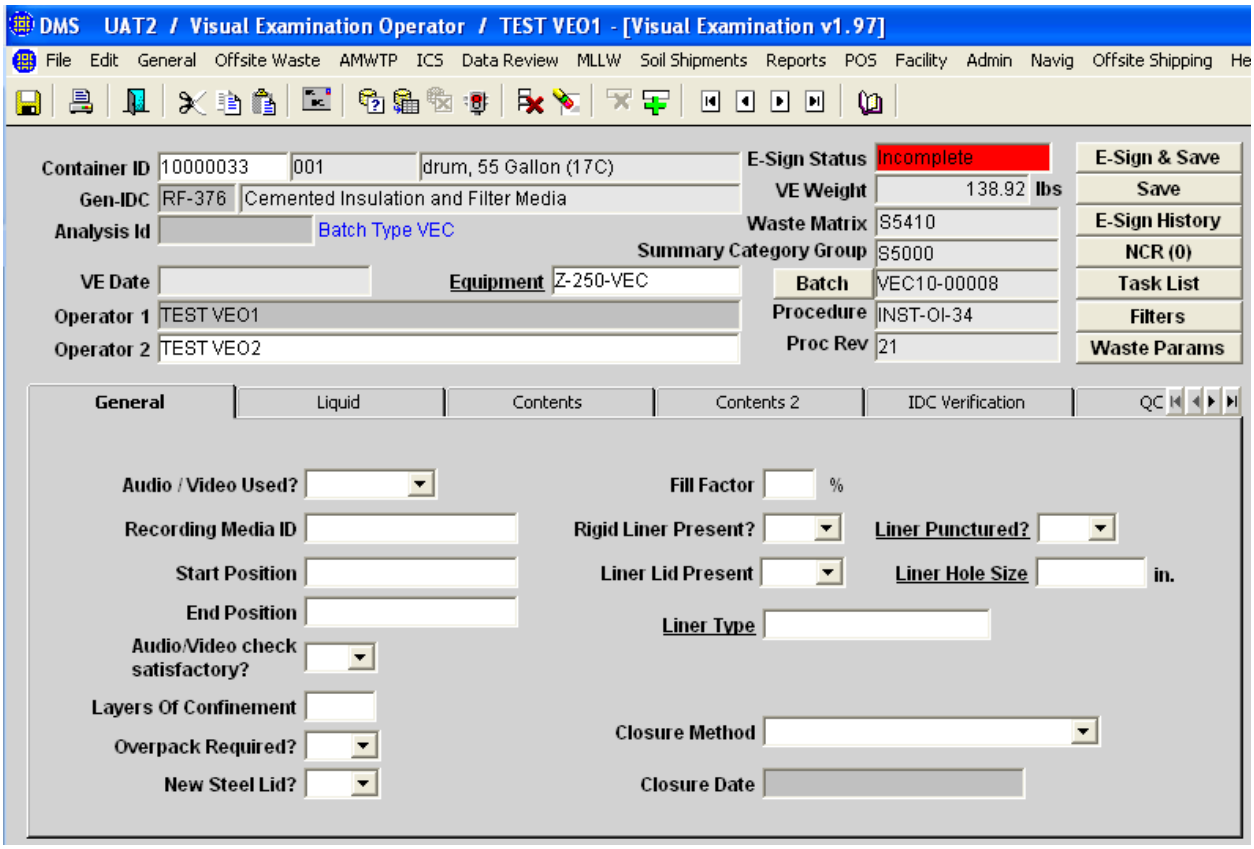


Figure 22. Characterization VE of Legacy Waste Screen Initial Completion – Example.

4.3.4.1 **IF** the WMC displayed is **NOT** consistent with RPT-TRUW-05 and RPT-TRUW-12, and/or Form-1900 (for offsite waste),
THEN enter the inconsistency in the "Visual Exam Comment" field,
AND proceed with the examination.

4.3.5 Select the Equipment ID field and press the F9 key**.**

4.3.5.1 Select "Z-250-VEC."

4.3.6 Observe that the batch number automatically populates the "Batch" field.

4.3.7 **WHEN** WTS displays "Do you need to change the Procedure for this analysis?",
THEN select "Yes" or "No," as appropriate.

4.3.7.1 **IF** the correct response is "Yes,"
THEN enter the correct procedure and revision in the "IDC Verification" tab "Visual Exam Comment" field.

4.3.8 Ensure that the name of the VE performing this examination is displayed.

4.3.9 Enter the function and name of the individual verifying the record as follows:

4.3.9.1 Select the "Operator 2" field.

4.3.9.2 Press the F9 key.

4.3.9.3 Select name of the verifier.

NOTE: *The selection of "NO" in "Audio/Video Used?" field will render the remainder of the A/V fields inactive when the "Verify" field displays a VEO role.*

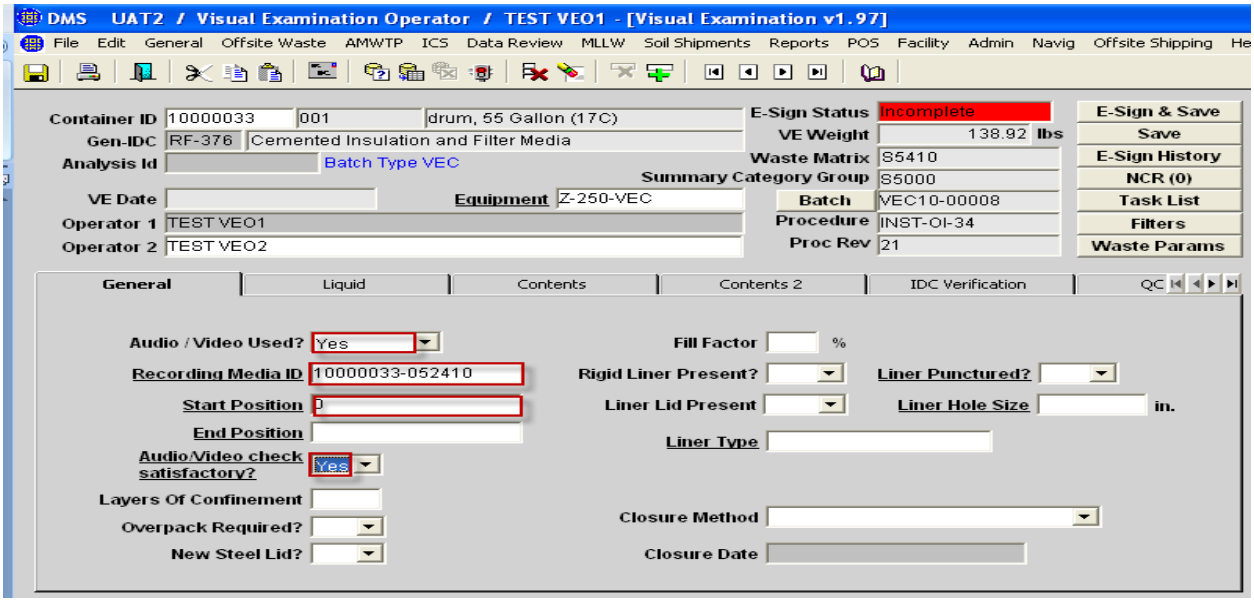


Figure 23. Characterization VE of Legacy Waste General Tab – Color indicates initial A/V fields to complete.

4.3.10 Select "Yes" or "No," as applicable, in the "Audio/Video Used?" field (see Figure 23).

4.3.10.1 **IF** A/V equipment is **NOT** used,
THEN GO TO Step 4.3.12.

4.3.11 Operate A/V equipment (when used).

4.3.11.1 Ensure VE recorded on audio/video media meets the following requirements:

- The audio/video media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail, and contain an inventory of waste items in sufficient detail that another trained visual examiner can identify the associated waste material parameters.
- The audio portion of the recording media shall capture the waste container identification number.
- The personnel loading the waste container shall be identified on the audio/video media or on packaging records traceable to the loading of the waste container.
- The date of loading of the waste container will be recorded on the audio/video media or on packaging records traceable to the loading of the waste container.

(MP-TRUW-8.2)

4.3.11.2 Obtain a new recording medium.

4.3.11.3 Label the A/V recording medium with the batch number and waste container number.

4.3.11.4 Enter the A/V recording medium number (container number-mmddyy) in the "Recording Median ID" field (see Figure 23).

4.3.11.5 Enter the start position in the "Start Position" field (normally "0") (see Figure 23).

4.3.11.6 Perform an A/V test before beginning the examination by performing the following:

4.3.11.6.1 Start the recording function on the A/V recorder to test audio and video input to the unit.

4.3.11.6.2 Test all of the A/V channels that will be used.

4.3.11.6.3 Announce the test label number on the A/V recording.

4.3.11.6.4 Stop the recording and rewind to the "Start" position.

4.3.11.6.5 Replay the recording to determine that both the audio and video were properly recorded during the test.

4.3.11.7 **IF** the A/V test is **NOT** satisfactory,
THEN enter "No" in the "Audio/Video check satisfactory" field,
AND contact the SS for guidance.

4.3.11.8 **WHEN** the A/V test has been satisfactorily completed,
THEN perform the following:

4.3.11.8.1 Ensure the A/V test is included on the recording as part of the Visual Examination Record.

4.3.11.8.2 Select "Yes" in the "Audio/Video check satisfactory" field (see Figure 23).

4.3.11.9 Forward the recording medium past the conclusion of the A/V test.

4.3.11.10 Begin the A/V recording of the VE.

(HWMA/RCRA Permit)

4.3.11.11 Record the names of the VE(s) performing the examination and the VEE on the A/V record.

4.3.11.12 Record the container ID number and the batch number on the A/V record.

4.3.11.13 Record that the A/V test was satisfactory on the A/V recording, and in WTS.

4.3.11.14 Enter the filter data is captured as follows:

A. Filters removed during the course of examination are included in the videos and audio record

B. The filter data is entered in the "Visual Exam Comment" field

C. The Filter "Container Filters" screen is updated.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

4.3.12 **GO TO** Section 4.2 and perform the examination, as applicable to VE of legacy waste containers**;**
THEN RETURN TO Step 4.3.13.

4.3.13 Verify the data and drum loading are correct.

4.3.14 Summarize the WTS data on the A/V record (when used).

4.3.15 Stop the A/V recording
AND enter the stop position, as applicable (see Figure 23).

4.3.16 **IF** there are any discrepancies,
THEN contact the SS before proceeding.

4.3.17 Enter overpack required, as applicable.

4.3.18 Enter that a new steel lid was applied to drum, as applicable.

4.3.19 Install the drum lid.

4.3.19.1 Ensure the "Container Filters" screen is updated.

NOTE: *WTS will not allow e-signature approval of the data without all of the required data fields being completed.*

4.3.20 1st Operator (data generator): E-sign the WTS record for approval of the data and drum loading.

4.3.21 2nd Operator (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.3.22 **IF** a prohibited item is a treatable liquid,
THEN GO TO the applicable operating instruction for treating liquid;
THEN RETURN TO Step 4.3.23.

4.3.23 **GO TO** Section 4.6 and update the container record for treated, added, or removed items, as applicable;
THEN RETURN TO Step 4.3.24.

4.3.24 Close the batch by performing the following:

4.3.24.1 Select the "Batch" button on the "Visual Examination" screen (see Figure 23).

4.3.24.2 Select the "Close" button on the "Batch Details" screen.

4.3.24.3 E-sign and save the record.

4.3.25 Copy the recording medium to A/V tape, as applicable.

4.3.26 Remove the A/V recording for transmittal to Level 1 Validation personnel, as applicable.

4.3.27 Verify the task list for each container is updated, complete, and correct.

4.3.28 **IF** the disposition or the process code is **NOT** correct,
THEN request the SS or VEE to correct the task list accordingly.

4.3.29 **IF** there are PCBs in the drum,
THEN perform the following:

4.3.29.1 Label the drum for PCBs.

4.3.29.2 Contact the SS.

4.3.29.3 SS/VEE: Set the Process Code to DS.

4.4 Visual Examination of Newly Generated Waste Packages

NOTE 1: *The packages of waste are placed in the satellite accumulation area (SAA) or permitted storage drum (PSD) where waste is being accumulated. When the waste container is full or ready to be processed, then the drum inventory data is summarized to the SAA or PSD drum during NGW VE closure.*

(HWMA/RCRA Permit)

NOTE 2: *Prohibited and nonconforming items (other than treatable liquid as indicated) are segregated from the waste stream for storage as NGW, and are placed in containers designated for the collection of prohibited items.*

(HWMA/RCRA Permit)

NOTE 3: *A VEE may provide direction to assist in the VE. Any guidance or direction from the VEE related to the drum examination must be documented in the "Visual Exam Comment" field.*

(MP-TRUW-8.1; MP-TRUW-8.2)

4.4.1 Verify the NGW is compatible with the waste in the SAA drum or PSD in accordance with Exhibit 14.

(HWMA/RCRA Permit)

4.4.2 Verify that a package ID number label is affixed to the outer packaging of the waste item.

4.4.3 Access the AMWTP, Characterization, Visual Examination, "Newly Generated Package VE" screens (see Figure 24).

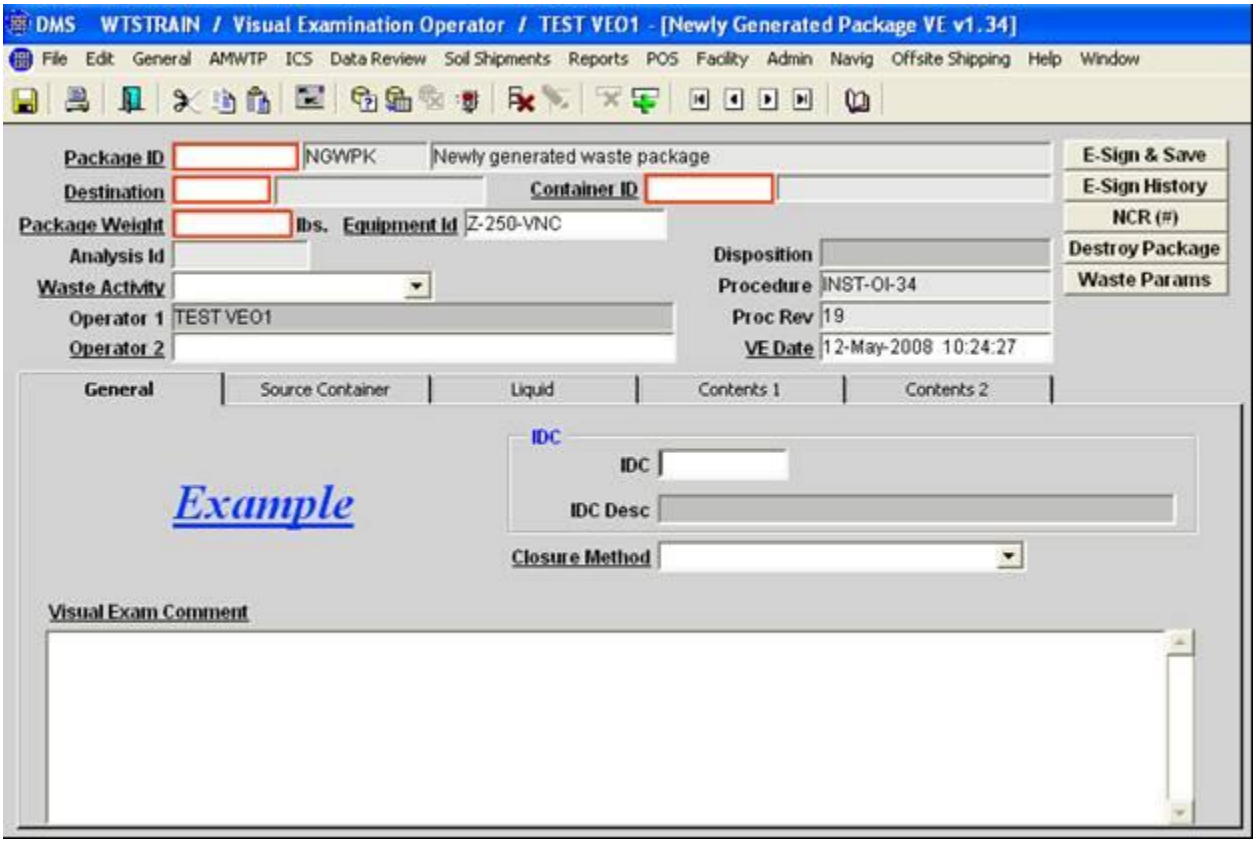


Figure 24. Characterization VE NGW Package General Tab.

4.4.4 Enter the package ID number in the "Package ID" field and press the Tab key.

4.4.5 Select the "Destination" field and press the F9 key.

4.4.5.1 Select the appropriate entry.

NOTE: *The following entry pertains to the destination container for the waste item. Source container information is contained in the Source Container tab.*

4.4.6 Select the destination "Container ID" field and press the F9 key.

4.4.6.1 Select the appropriate destination container.

4.4.7 Select the "Package Weight" field
AND enter the weight.

NOTE: *Selection of "Other (describe)" in the "Waste Activity" field will create a pop-up field to the right of the entry.*

4.4.8 Select the "Waste Activity" field
AND select the appropriate activity.

4.4.8.1 **IF** the appropriate selection is "Other (describe),
THEN enter a brief description in the newly created "Describe" field.

4.4.9 Ensure that the name of "Operator 1" (the first VE is displayed) (see Figure 24).

4.4.10 Select the "Operator 2" field and press the F9 key.

4.4.10.1 Select the name of the second VE.

4.4.11 Select the "Equipment ID" and press the F9 key.

4.4.11.1 Select "Z-250-VNC" as the equipment ID.

4.4.12 Select the "IDC" field and press the F9 key.

4.4.12.1 Select the appropriate IDC for the waste item.

4.4.13 Ensure the following data is entered or displayed, as applicable (see Figure 25):

- Package ID number
- Destination
- Container ID number (destination)
- Package Weight
- Equipment ID as "Z-250-VNC"
- Waste activity
- Correct procedure and revision.

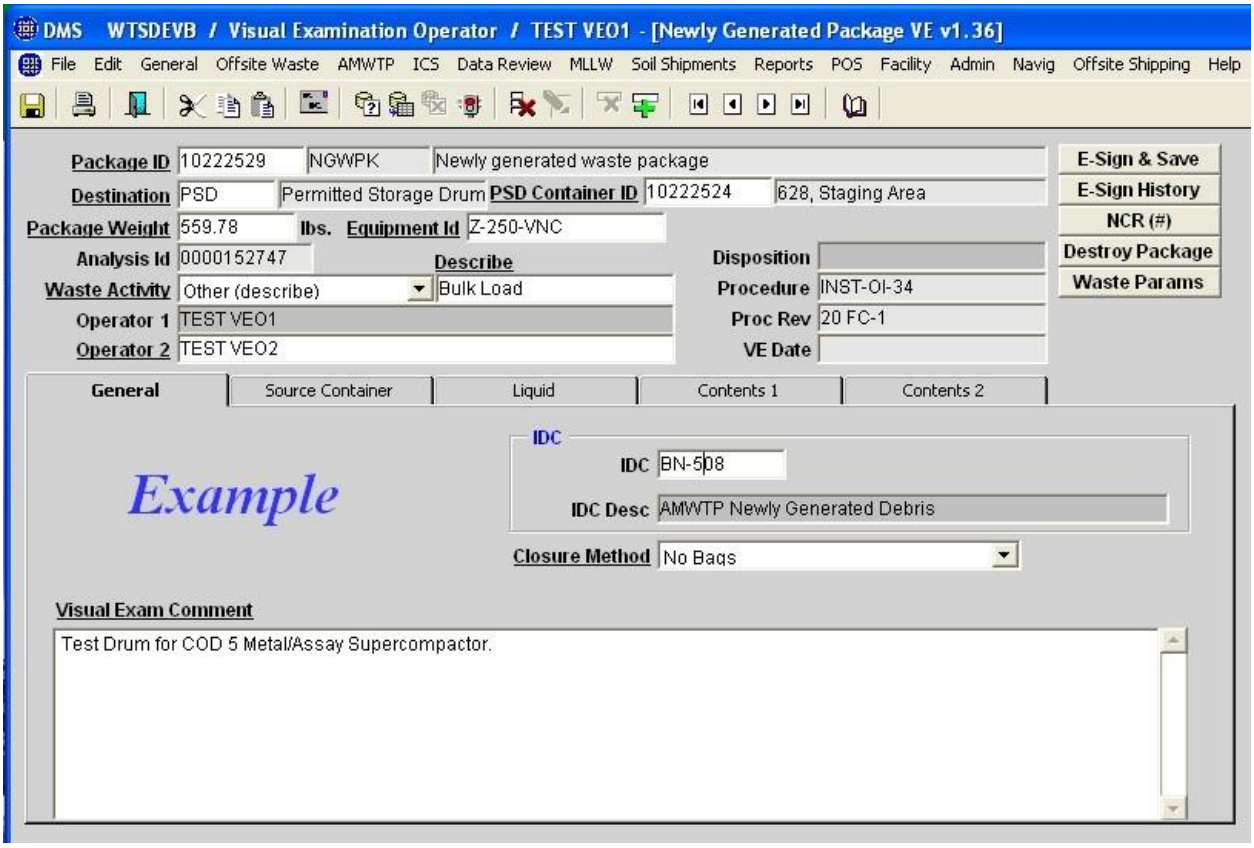


Figure 25. Characterization VE NGW Package Screen – Example.

NOTE: *The "Source Squeezants" button is not used in this procedure.*

4.4.14 Select the "Source Container" tab, and select a response, "Yes" or "No" (see Figure 26) as applicable in the "Is there a source container?" field observing the following guideline:

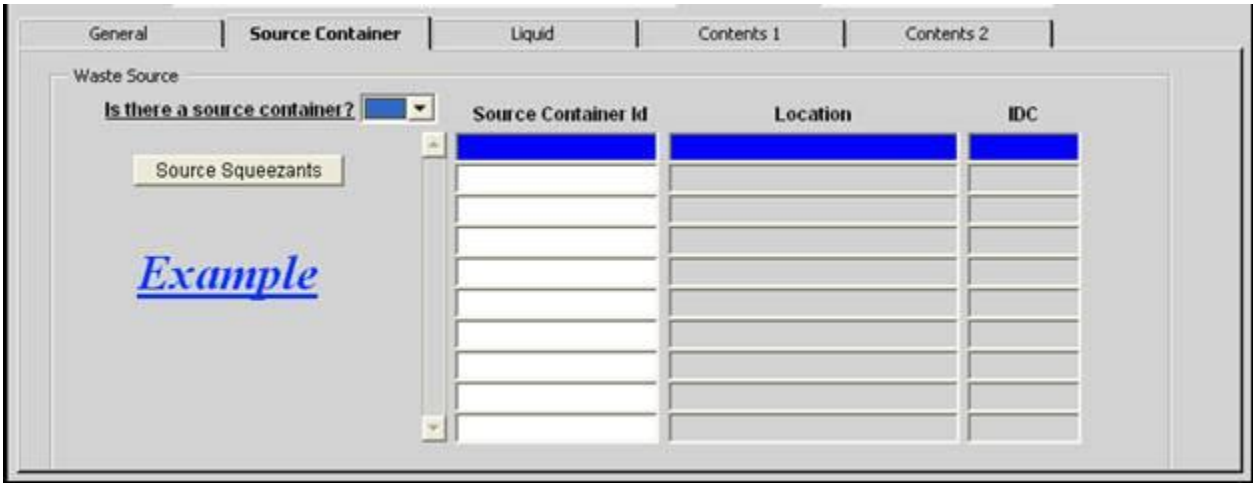


Figure 26. Characterization VE NGW Pkg., Source Container Tab.

NOTE: *The "Visual Exam Comment" field may be in the "General" or "IDC Verification" tab.*

4.4.14.1 **IF** the source of the waste was **NOT** a drum or box, **THEN** perform the following:

4.4.14.1.1 Select "No" in the "Source Container" field.

4.4.14.1.2 Enter the source of the waste in "General" tab "Visual Exam Comment" field.

4.4.14.2 **IF** the source of the waste was a drum or box, **THEN** select the first available field in the "Source container Id" block and perform **ONE** of the following:

4.4.14.2.1 Press the F9 key and select the correct container ID number.

OR

4.4.14.2.2 Enter the container ID number and press the Enter key.

4.4.14.3 Observe that the correct location and IDC are displayed for the container.

4.4.15 **GO TO** Section 4.2 and perform the applicable steps of the examination, entering the data in the appropriate tabs and fields in the "Newly Generated Package" screen,
THEN RETURN TO Step 4.4.16.

4.4.16 Select the "General" Tab "Closure Method" field and the correct outer closure method for the waste item (see Figure 26).

4.4.17 Enter any additional comments about the waste item in the "Visual Exam Comment" field.

4.4.18 Review the data for completeness and accuracy.

4.4.19 **IF** there are any discrepancies,
THEN contact the SS for guidance.

4.4.20 1st Operator (data generator): E-sign the WTS record for approval of the data and drum loading.

4.4.21 2nd Operator (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.4.22 Verify the VE date populates after both operators E-sign the data.

4.4.23 **IF** the drum is full or ready to be processed,
THEN GO TO Section 4.5.

4.5 Visual Examination of Newly Generated Waste Closure

NOTE 1: *This section is performed concurrently with INST-OI-24 for the packaging of NGW.*

NOTE 2: *WTS summarizes the data for individual packages that were already characterized per Section 4.4 of this instruction and assigns the individual packages to the drum.*

4.5.1 Access the AMWTP, Characterization, Newly Generated Closure VE screen from the WTS menu (see Figure 27).

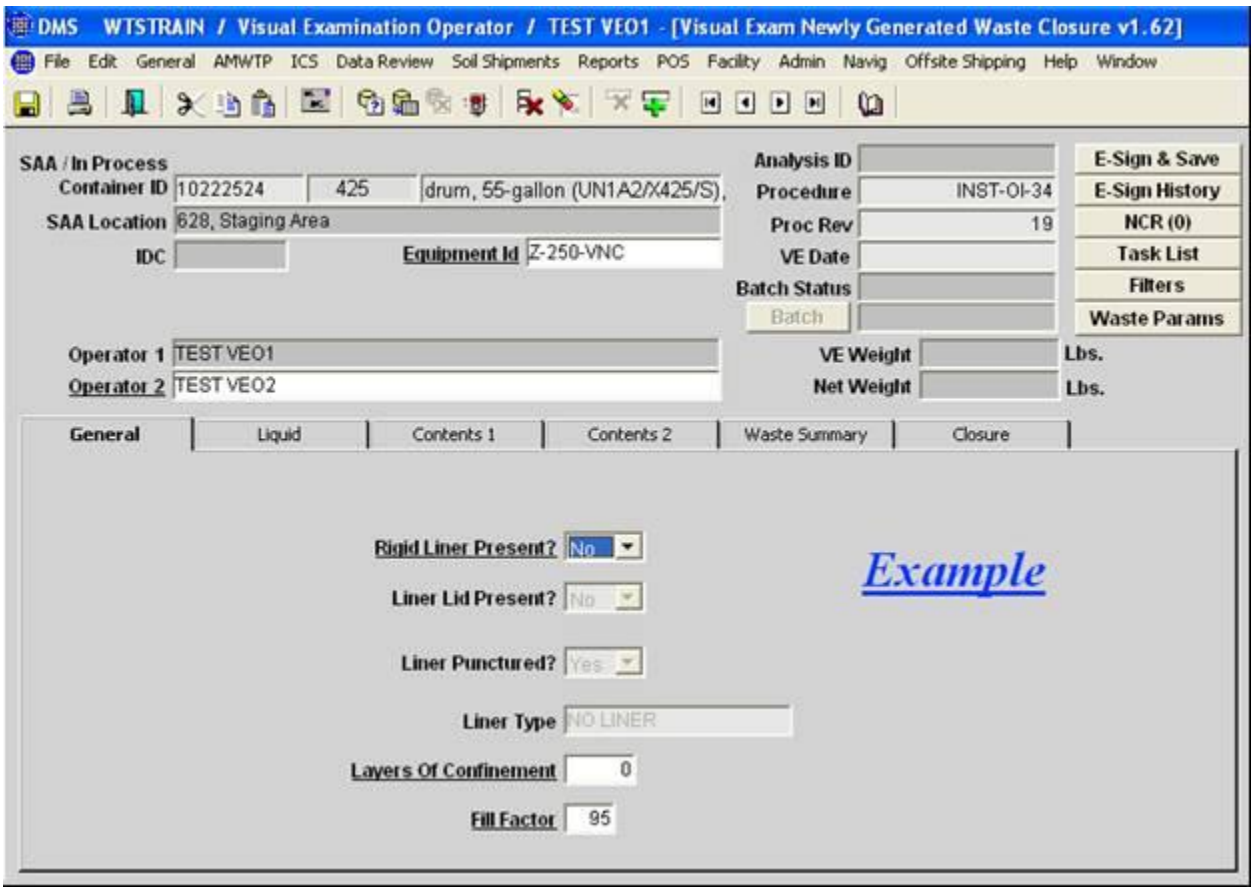


Figure 27. Characterization Newly Generated Closure VE, General Tab.

4.5.2 Select the "SAA/In Process Container ID" field
AND perform **ONE** of the following tasks:

4.5.2.1 Press the F9 key and select the appropriate container number.

OR

4.5.2.2 Enter the container ID number in the field.

4.5.3 Press F8 to populate the data on the screen.

4.5.4 Verify that the correct procedure and revision are displayed.

4.5.4.1 **IF** the correct procedure and revision are **NOT** displayed, **THEN** perform the following:

4.5.4.1.1 Enter a comment in the "General" tab "Visual Exam Comment Field" that the examination was performed to the current procedure and revision
AND provide the correct data.

4.5.4.1.2 Contact the SS to update the procedure and revision in WTS.

4.5.5 Select the "Equipment ID" and press the F9 key.

4.5.5.1 Select "Z-250-VNC."

4.5.6 Ensure that the name of "Operator 1" (the first VE is displayed).

4.5.7 Select the "Operator 2" field and press the F9 key.

4.5.7.1 Select the name of the second VE.

4.5.8 Select the "General" tab, as applicable.

NOTE: *A "Rigid Liner Present" response of "No" results in the corresponding liner fields not being required data entry fields*.

4.5.9 Select the "Rigid Liner Present?" field and enter the appropriate response "Yes" or "No" as follows:

4.5.9.1 **IF** the response to the "Rigid Liner Present" question is "No,"
THEN select "No" and **GO TO** Step 4.5.10.

4.5.9.2 **IF** the response to "Rigid Liner Present" is "Yes,"
THEN perform the following:

NOTE: *The liner has a minimum 0.3-in. diameter opening for it to be considered vented.*

4.5.9.2.1 Verify the liner is vented to greater than 0.3 inches in diameter.

4.5.9.2.2 Select "Yes" in "Liner Punctured" field.

4.5.9.2.3 Select the appropriate response for Liner Lid Present.

4.5.9.2.4 Select the appropriate liner type, as listed in Exhibit 12, as applicable, by placing the cursor in the "Liner Type" field, pressing the F9 key, and selecting the appropriate liner type.

4.5.10 Select the "Layers of Confinement" field and enter the number of layers of confinement for the waste container.

(CCP-PO-003)

4.5.11 Select the "Fill factor" field and enter the percent–full value of the container in accordance with Exhibit 3, Fill Factor.

4.5.12 Ensure all displayed information for the container is complete.

4.5.13 Select the "Closure" tab.

4.5.14 Select the "IDC OK' field and select "Yes" or "No," as applicable.

4.5.14.1 **IF** the IDC is **NOT** correct,
THEN select "No" in the "IDC OK" field.

4.5.14.2 Enter the "recommended IDC" in the IDC Recommended field.

4.5.14.3 Enter comments in the "IDC Change Reason" field.

4.5.15 Select the "Closure Method" field and select the correct outer layer closure method.

4.5.16 Select the "Waste Summary" tab and review the waste parameter data in the "Remaining Contents" table.

4.5.17 Enter the remaining waste in the appropriate waste parameter by weight percent on the "Remaining Contents of Container" table.

4.5.17.1 Select Save.

4.5.18 Enter a description of the waste that was entered in the "Waste Parameter" tab under the "Visual Exam Comment" field.

4.5.19 Verify the container is closed in accordance with INST-OI-24.

4.5.20 Verify the appropriate filter model(s) are entered for the waste container in the "Container Filters" screen and that the screen is updated.

4.5.21 Enter any comments about the VE.

NOTE: *Non-prohibited PCBs will display a process code of DS for direct ship.*

4.5.22 Review the data and container loading for completeness and accuracy.

4.5.23 **IF** there are any discrepancies,
THEN contact the SS for guidance.

4.5.24 1st Operator (data generator): E-sign the WTS record for approval of the data and drum loading.

4.5.25 2nd Operator (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.5.26 Verify that the task list for the waste container indicates the correct disposition and process code to ensure proper processing of the waste container.

4.5.27 **IF** the disposition or the process code is **NOT** correct,
THEN contact the SS or VEE for further guidance.

4.5.28 Close the batch.

4.6 RTR/VE Update (Supplemental Analysis to RTR or VE Batch)

NOTE 1: *The RVU can be used to update the final waste container configuration after processing of the drum such as coring, VE of Legacy Waste, liquid absorption operations, and removal of prohibited items. The RVU generates an amended analysis that is linked to the original* VE batch data report *(see def.) RTR or VE, as applicable, for the waste container. This amended VE analysis is a supplement to the original batch data report for the waste container and is validated as part of the original batch.*

NOTE 2: *If available, the recording is reviewed for the packaging configuration of the waste container and the location and nature of a nonconformance.*

4.6.1 Access TrackWise to review the corrective actions for the waste container as documented in the NCR, as applicable.

4.6.1.1 Review open NCRs in TrackWise by performing the following:

4.6.1.1.1 Conduct an NCR Quick Search from the production work station by selecting the quality assurance (QA) container quick search link.

NOTE: *Multiple containers may be entered in a single query; however, a "hard return" after each container number is necessary to complete the query.*

4.6.1.1.2 Enter the container identification number followed by a "Hard Return" and select "Submit Query" and view the results on the screen.

4.6.1.1.3 **IF** an open NCR exists,
THEN proceed at the direction of the SS.

4.6.2 Review the A/V record (and/or RTR WTS records) for the container, as applicable.

4.6.3 Verify the packaging configuration of the waste container to determine where to process the waste container, as applicable.

4.6.4 Access the task list to verify the container disposition, as applicable.

4.6.5 Access the AMWTP, Characterization, Visual Examination, "RTR/VE Update" menu item (see Figure 28).

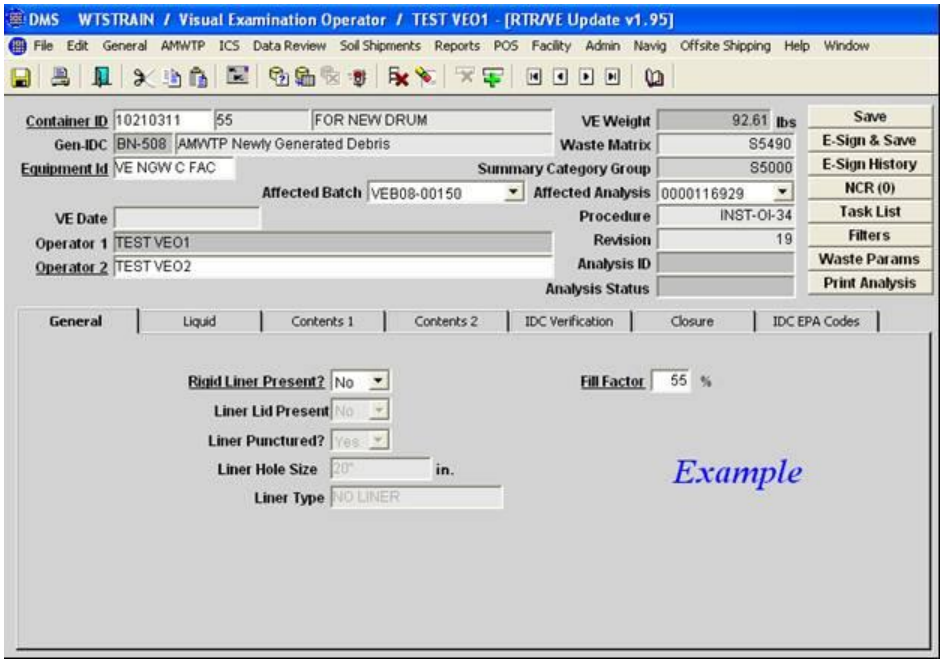


Figure 28. Characterization RVU Screen – Example.

4.6.6 Enter the waste container number for update, and press F8 to populate the data.

NOTE 1: *WTS records for which no supplemental analysis has been performed will not display the "View/Update" and "New" pop-up selection options.*

NOTE 2: *The View/Update selection allows the VE to rework the analysis and saves as the same analysis. In the new analysis mode, the RVU is saved as a new analysis. The "New" selection creates a new supplemental analysis to the record.*

4.6.7 Select "View/Update" or "New Analysis" to identify the RVU analysis type, as appropriate.

4.6.8 Select the "Equipment ID" field and press the F9 key.

4.6.8.1 Select "VE NGW C FAC."

NOTE 1: *The correct affected batch should be documented on an NCR, as applicable.*

NOTE 2: *The correct affected batch and affected analysis is normally the last valid VE, RTR, or RVU performed on the container prior to the RVU.*

4.6.9 Select the correct affected batch and affected analysis identified, as applicable.

NOTE: *The RTR/VE update screen is not used if there is no analysis to update, as listed in the record.*

4.6.10 **IF** there is no affected batch or affected analysis listed,
THEN STOP work
AND contact the SS.

4.6.10.1 Proceed only when directed by the SS.

4.6.11 Observe the gross weight from the affected analysis.

4.6.12 Ensure the name of the "Operator 1" (first VE) is correct.

4.6.13 Select the name of "Operator 2" (second VE).

4.6.14 Select "Yes" or "No" in the "Rigid Liner Present?" field, as appropriate.

4.6.15 **IF** the selection is "No,"
THEN observe the following fields are grayed-out (non-editable):

- "Liner Lid Present"
- "Liner Punctured?"
- "Liner Hole Size"
- "Liner Type."

NOTE 1: *A selection of "No" in the Liner Lid Present" field will result in the "Liner Punctured?" field displaying a default value of "Yes" and the "Liner Hole Size" field displaying a default value of "20."*

NOTE 2: *The liner vent hole must be a minimum of 20 inches to meet the requirement for "No Liner Lid Present."*

4.6.16 Select "Yes" or "No" in the "Liner Lid Present" field, as appropriate.

4.6.17 **IF** the liner is **NOT** punctured,
THEN perform the following:

4.6.17.1 Enter "No" in the "Liner Punctured?" field.

4.6.17.2 **STOP** work
AND notify the SS.

4.6.17.3 Proceed as directed by SS.

4.6.18 **IF** the rigid liner lid is punctured,
THEN select "Yes" in the "Liner Punctured?" field, as appropriate.

NOTE: *The insertion of an approved filter at DVS or venting of the liner at (615/DVF) assures the liner is vented with an opening of greater than 0.3 inches based on the design of the filter and drum punch.*

4.6.19 Verify the size of the liner puncture(s) is greater than 0.3 in., as applicable.

4.6.20 Enter the liner hole size in the "Liner Hole Size" field, as appropriate.

4.6.21 Select the appropriate liner type, as listed in Exhibit 12, as applicable, by placing the cursor in the "Liner Type" field and then pressing the F9 key and selecting the appropriate liner type.

4.6.22 Remove the rigid liner lid, if applicable, using the tools provided.

4.6.23 **IF** performing an RVU to remove a prohibited or suspect item or items, **THEN** perform the following:

4.6.23.1 Open the waste packaging to access the item(s).

4.6.23.2 Locate and segregate the item(s) for removal and/or processing, as applicable.

4.6.24 Update the RTR/VE record for the removal or processing of the prohibited or suspect item(s), as applicable.

4.6.24.1 Enter the appropriate negative weight reassignment(s) for the waste removed by performing the following (see Figure 29):

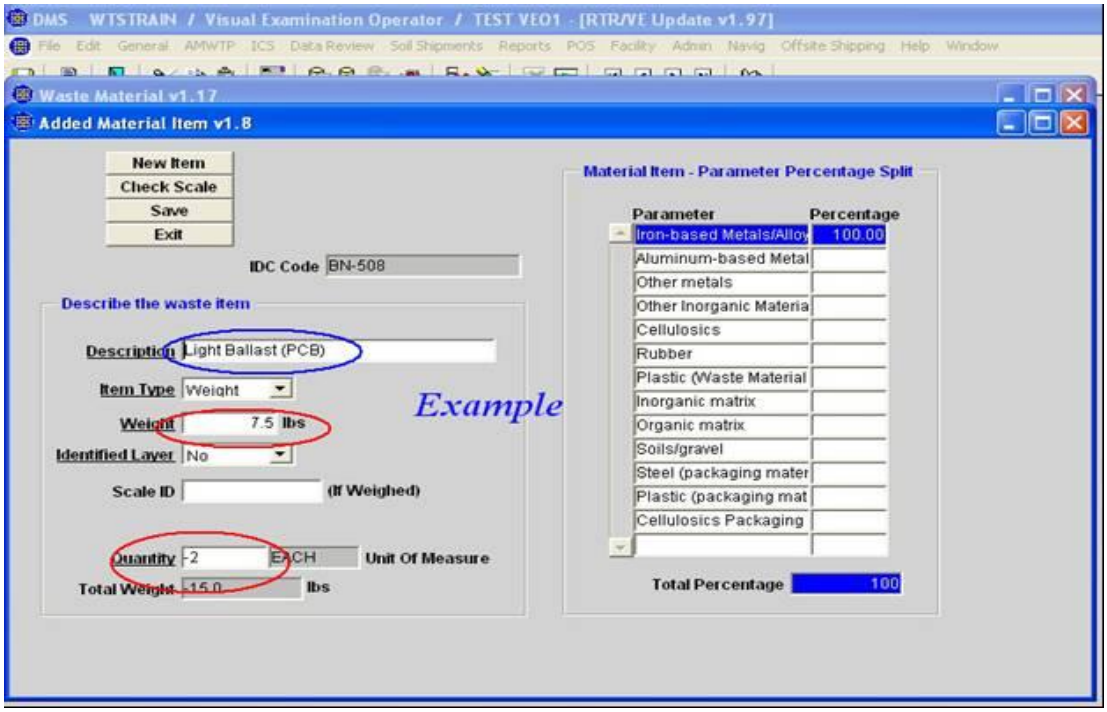


Figure 29. Characterization RVU – Negative Weight Reassignment.

4.6.24.1.1 Select the "Add/Remove Material Items" button in the "Remaining Contents of Container" block.

4.6.24.1.2 Select the "New Item" button.

4.6.24.1.3 Place the cursor in the "Description" field and enter a brief description of the waste item.

4.6.24.1.4 Select the "Item Type" field and select "Weight" or "Volume" as appropriate.

4.6.24.1.5 **IF** entering waste items by weight, **THEN** perform the following:

4.6.24.1.5.1 Enter the weight of the item.

4.6.24.1.5.2 **IF** weighed on a certified scale, **THEN** select the "Scale ID" field, press the F9 key, **AND** select the correct scale.

4.6.24.1.5.3 Select the "Quantity" field and enter the negative quantity.

4.6.24.1.6 **IF** entering item(s) by volume, **THEN** perform the following:

4.6.24.1.6.1 Obtain available reference data.

4.6.24.1.6.2 Enter the weight (per unit volume) from available reference data, or as provided by the VEE.

4.6.24.1.6.3 Select the "Quantity" field and enter the negative number of units.

4.6.24.1.7 Select the "Percentage" field opposite the correct "Parameter" field(s) and enter the appropriate waste parameter(s) by weight percent.

4.6.24.1.8 Enter additional items for removal, as necessary.

4.6.24.1.9 Select the "Save" button.

4.6.24.1.10 Select the "Exit" button.

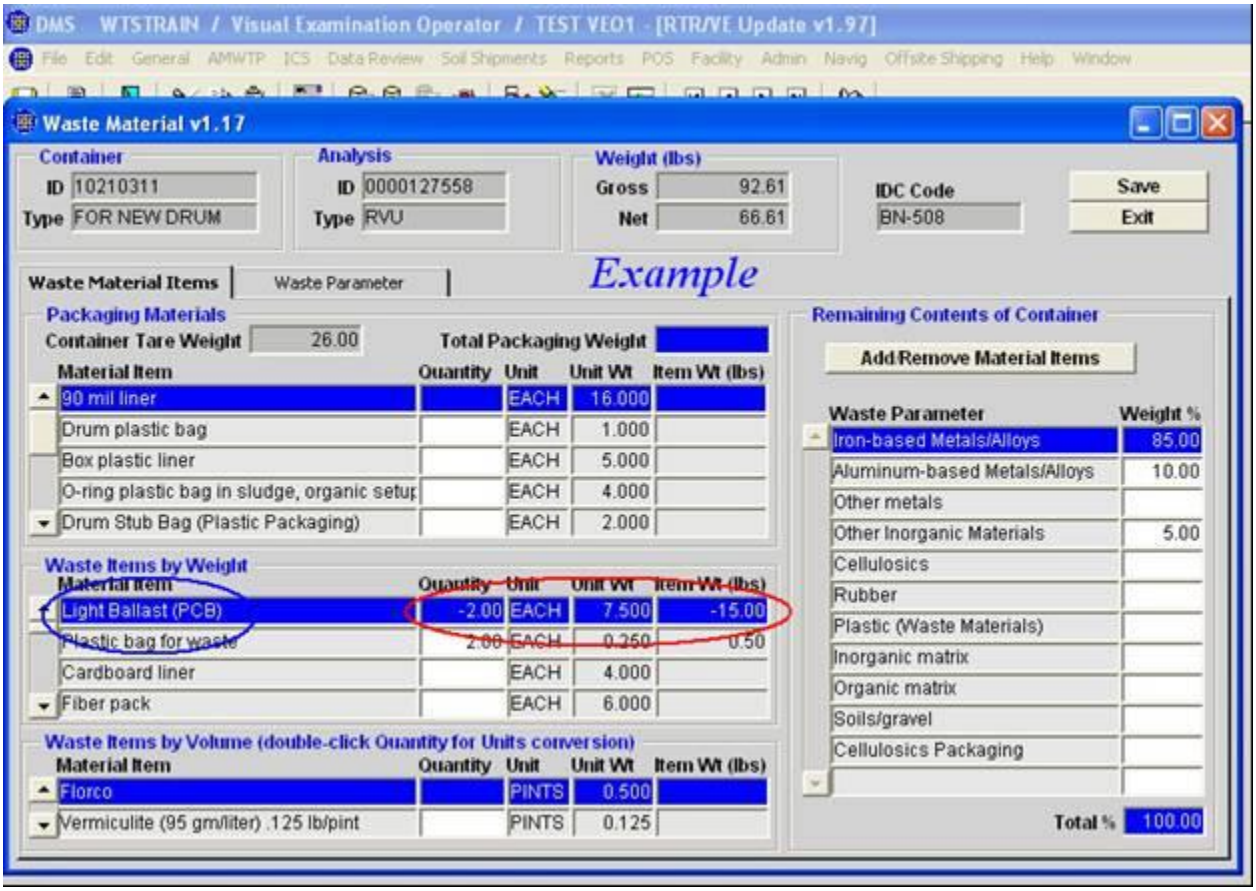


Figure 30. Characterization RVU – Negative Weight Reassignment – 2.

4.6.24.2 Observe that the reassignment has populated the appropriate fields in the "Packaging Materials" tables, as appropriate (see Figure 30).

4.6.24.3 Ensure all assigned entries are correct.

NOTE: *Selecting the "Save" button will adjust the Gross, Net, and VE Weight of the container.*

4.6.24.4 Select the "Save" button.

4.6.24.5 **WHEN** absorbing liquids,
THEN perform the following:

4.6.24.5.1 Enter the addition of approved absorbents.

4.6.24.5.2 Enter the amount of absorbed liquid as inorganic or organic matrix, as applicable.

4.6.24.5.3 **IF** all liquid is not absorbed,
THEN ensure that the amount of liquid remaining is entered/displayed.

4.6.25 Repackage compliant waste back into the original container, as applicable.

4.6.26 Enter the fill factor for the drum in accordance with Exhibit 3.

(MP-TRUW-8.2)

4.6.27 Update the waste container inventory and waste parameters for the processing of the waste container, as applicable.

4.6.28 Enter beryllium and PCBs in the container inventory separately for reporting and tracking purposes, as applicable.

4.6.29 **GO TO** Section 4.2 and perform the applicable steps of the examination **AND** enter the necessary data in the appropriate tabs and fields on the WTS RTR/VE update screens;
THEN RETURN TO Step 4.6.30.

NOTE: *Sealed containers less than 4L are not reported as layers of confinement.*

4.6.30 Update the layers of confinement for the waste container to reflect the final configuration of the waste container.

NOTE: *The closure methods of "twisted and tied" and "zipped and tied" have been approved for AMWTP by WIPP and are entered as "twisted and taped."*

4.6.31 Enter the outer layer closure method(s).

4.6.32 **IF** the package closure method is different than the outer layer,
THEN enter the data in the "Visual Exam Comment" field.

4.6.33 Verify that the IDC, WMC, summary category, and waste stream description of the source container is consistent with RPT-TRUW-05 and RPT-TRUW-12, and/or Form-1900 (for offsite waste).

NOTE: *The responsible manager entered on an NCR for an IDC, WMC, or approved waste stream number change is the AK manager. An AK evaluation is required for any suggested IDC, WMC, or approved waste stream changes.*

4.6.34 **IF** the IDC, WMC, summary category, and waste stream description is **NOT** correct,
THEN contact the SS for evaluation and guidance in performing the following:

4.6.34.1 Enter the suggested IDC, which will update the WMC accordingly.

4.6.34.2 Enter the reason for the suggested change.

4.6.34.3 Enter any applicable comments in the "Visual Exam Comment" field.

4.6.34.4 **IF** the suggested IDC change alters the WMC or the waste stream number,
THEN initiate an NCR, in accordance with MP-Q&SI-5.4,
AND enter a comment in the "Visual Exam Comment" field.

4.6.34.5 **IF** the change in the IDC or WMC alters the approved waste stream number,
THEN ensure that the NCR is updated to reflect the change,
AND enter a comment in the "Visual Exam Comment" field.

4.6.34.6 Ensure the assignment of the NCR is to the AK manager.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.6.35 Ensure the appropriate filter model(s) are entered for the waste container in the "Container Filters" screen and that the screen is updated.

4.6.36 Enter that a new steel lid was applied, as applicable.

NOTE: *When a new overpack container is required, the container is first created in WTS using the instructions in INST-OI-24. However, WTS is NOT used to update the Overpack container once the damaged drum is placed inside.*

4.6.37 **IF** a sling is required to place the drum in an Overpack container **AND** the sling will become part of the waste package, **THEN** perform the following:

4.6.37.1 Select the "Waste Params" button.

4.6.37.2 Select the "Add/Remove Material Items" button in the Remaining Contents of Container block.

4.6.37.3 Select the "New Item" button.

4.6.37.4 Observe the "Describe the waste item" block.

4.6.37.5 Enter the "Description" (nylon sling or D-ring drum sling), as appropriate.

4.6.37.6 Select the "Item Type" and press the F9 key.

4.6.37.7 Select "Packaging."

4.6.37.8 Enter the "Weight" as appropriate.

4.6.37.9 Enter the "Quantity" as "1."

4.6.37.10 **GO TO** the "Material Item – Parameter Percentage Split" block.

4.6.37.11 Enter the percentage of each represented Waste Parameter in the "Percentage" field opposite each "Parameter."

4.6.37.12 Verify that the "Total Percentage" equals "100."

4.6.37.13 Ensure that all entered data in the screen is correct.

4.6.37.14 Select "Save."

4.6.37.15 Return to the "IDC Verification" tab and enter the appropriate data in the "Comment" field.

4.6.38 Select the "Overpack Required" field and select "Yes" or "No," as applicable.

4.6.39 Enter that the waste container was processed in accordance with the applicable NCR in the Comments field of the RVU record, as applicable.

NOTE: *Processing information pertaining to the RCRA/WAP consists of the following:*

- *Treating (absorbing) non-prohibited liquid within allowances*
- *Removal of prohibited items observed during the course of an examination*
- *Introduction or removal of any waste item that may alter the HWNs*
- *Any actions that result in the change of the previously assigned IDCs or WMC or approved waste stream and the corresponding NCR number.*

4.6.40 Enter any comments about the "Visual Exam Comment" field (such as nonconformances, abnormal conditions, processing information, guidance from the SS or VEE).

4.6.41 Review the data and container loading for completeness and accuracy.

4.6.42 **IF** there are any discrepancies,
THEN contact the SS for guidance.

NOTE: *A Yes response to the following query will populate the closure date with the e-signature date. A No response will populate the closure date with the containers original pack date.*

4.6.42.1 Observe the message box "Was the container opened?" **AND** select Yes or No.

4.6.43 1st Operator (data generator): E-sign the WTS record for approval of the data and drum loading.

4.6.44 2nd Operator (data verifier): E-sign the WTS record for approval of the data and drum loading.

4.6.45 Verify that the task list for the container has updated to document the completion of the RVU and the container disposition has updated correctly.

4.6.46 **IF** the task list has **NOT** updated for the reprocessing of the container, **THEN** contact the SS to update the task list accordingly.

4.6.47 Update the NCR, if applicable, to reflect the processing of the waste container.

4.7 Post Job Review

4.7.1 Perform a post-job review in accordance with MP-COPS-9.17, if necessary.

5.0 DEFINITIONS

Container. A unit for characterization subject to radiography or direct visual examination. Typically, this is also identified as the "outermost container" (e.g., 55-, 83/85-, or 100-gallon drum) in the context of radiography or direct visual examination.

Container, internal. Any container within the outermost container being examined using radiography or direct visual examination. Drum liners, liner bags, plastic bags used for contamination control, capillary-type labware (e.g. pipette) and debris not designed to hold liquid at the time of original waste packaging are not internal containers.

Container, small. An internal container being examined using radiography or direct visual examination less than or equal to 2-liters

Item description code. A three-character alphanumeric code that describes each waste form matrix.

Liquid, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing visual examination of the waste. This term can be implemented consistently during characterization regardless of waste type.

Packaging material. Packaging material consists of the drum, 90-mil liner, and the two outermost layers of confinement that are used as liners for the waste container. Additional materials (e.g., plywood spacers) may be considered as packaging materials on a case-by-case basis.

Secondary waste. Waste generated from normal operations and/or closure processes (e.g., personal protective equipment, floor sweepings, rags/wipes from routine maintenance or decontamination activities, and equipment).

Summary category group. Grouping that relates to the final physical form of the waste consisting of three broad categories: (1) S3000 – *Homogeneous Solids* (see def.), (2) S4000 – *Soil/Gravel* (see def.), and (3) *S5000 – Debris Waste* (see def.).

Summary Category S3000 – Homogeneous Solids. Homogeneous solids are defined as solid materials, excluding soil, that do not meet the NMED criteria for classification as debris (20.4.1.800 NMAC (incorporating 40 CFR §268.2[g] and [h]). Included in the series of homogenous solids are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this SCG based on the specific waste stream types and final waste form. This SCG is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume homogenous solids.

Summary Category S4000 – Soils/Gravel. This SCG includes S4000 waste streams that are at least 50 percent by volume soil/gravel. This SCG is expected to contain toxic metals.

Summary Category S5000 – Debris Wastes. This SCG includes heterogeneous waste that is at least 50 percent by volume materials that meet the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2 [g]). Debris means solid material exceeding a 2.36 inch (in.) (60 millimeter) particle size that is intended for disposal and that is:

- a manufactured object, or
- plant or animal matter, or
- natural geologic material.

An item smaller than 2.36 inches in size may be considered debris, if the debris is a manufactured object and if it is not in the category of S3000 or S4000 material.

Unknown waste. Waste for which there is no information regarding the generation process, hazardous constituents present, or other information.

VE batch data report. Includes all data pertaining to a group of no more than 20 waste containers. Each VE type has its own batch type and, therefore, its own batch data report.

Vented liner. A liner that is punctured with a minimum 0.3-inch diameter opening in it.

(MP-TRUW-8.2; CCP-PO-003)

Visual examination. (1) A WIPP approved characterization process performed to visually examine the waste to verify compliance with WIPP WAP, WIPP CH-WAC, and CH-TRAMPAC. (2) Constitutes performing a physical examination of the contents to identify and verify physical form and the presence or absence of prohibited items. (3) Requires either: (a) the presence and signature approval of two Operations Technicians qualified in Visual Examination, or (b) an Audio/Video record accompanying the signature of one such qualified individual and one other individual, and a VEE available for support.

Visual examination of newly generated waste. Activity for characterizing NGW at the point of generation using VE. This examination requires two operations technicians qualified in visual examination, with a VEE available for support. This includes visual examination NGW closure.

Visual examination of legacy waste containers. An activity performed to examine and characterize the contents of a waste container for the purpose of confirming or supplementing AK data. This examination requires the presence and disposition concurrence of two individuals qualified as visual examiners, and is recorded on audio/video media. Waste containers that (1) have no AK data to support the characterization of the waste, (2) are identified as an *unknown waste* (see def.), (3) have been examined by RTR (yielding incomplete, inconclusive, or suspect data), or (4) any other waste container determined to be suitable for visual examination, may be characterized using this method.

Waste characterization. The characterization techniques include AK and may also include, as necessary, headspace-gas sampling and analysis, radiography, visual examination, and homogeneous waste sampling and analysis.

Waste matrix code. A system of categorizing wastes with similar physical and chemical properties.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents and that are generated from a single process or activity (Hazardous Waste Facility Permit, Attachment C).

Waste Tracking System. System comprised of positioned and hand-held barcode readers and an interactive database designed to track waste items and containers with their associated characterization data from point of retrieval to dispatch to WIPP.

6.0 REFERENCES

(1) 1291-2009-023, Criticality Safety Evaluation, Evaluate the use of Aquaset II

(2) 1291-2009-025, Criticality Safety Evaluation, Microcel-E as an Approved Absorbent

(3) Aquaset IIG as an AbsorbentAMWTP HWMA/RCRA Permit

(4) AMWTP HWMA/RCRA TSA Interim Status Document

(5) CCP-PO-003, CPP Contract-Handled Transuranic Waste Authorized Methods for Payload Control (CCP-CH-TRAMPAC)

(6) Form-1900, AMWTP Offsite Waste Stream Profile

(7) INST-FOI-23, Special Case Waste Operations

(8) INST-OI-16, Drum Coring Operations

(9) INST-OI-24, Packaging Radioactive Waste

(10) INST-OI-68, Drum Treatment Facility Operations

(11) INST-OI-73, Manual Drum Coring Operations

(12) INST-OI-75, Container-in-Container Sampling

(13) LST-LLW-04, LLW/MLLW Prohibited and Restricted Items List

(14) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(15) MP-DOCS-18.2, Records Management

(16) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(17) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(18) MP-TRUW-8.2, Quality Assurance Project Plan

(19) RPT-NFCS-05, Criticality Safety Evaluation for Drum Contents Handling at the AMWTP

(20) RPT-NFCS-08, Criticality Safety Evaluation for AMWTP Retrieval Operations

(21) RPT-NFCS-09, Criticality Safety Analysis Involving the Use of Liquid Sorbents and Immobilizing Agents

(22) RPT-TRUW-05, Waste Matrix Code Reference Manual

(23) RPT-TRUW-12, AMWTP Waste Stream Designations

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-34, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal or transfer to CBFO
Copy of electronic Batch Data Report	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project
Data Management System (WTS) records	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project
Visual Examination A/V Record	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project

8.0 EXHIBITS

Exhibit 1 – Waste Material Parameter Descriptions

Exhibit 2 – Parameters and Weights of Commonly Identified Items

Exhibit 3 – Fill Factor

Exhibit 4 – List of TRU Prohibited Items

Exhibit 5 – Volume Conversions for Liquids in 55-gallon Drums

Exhibit 6 – Volumes of Cylinders

Exhibit 7 – Common Liquid Measurements and Conversions

Exhibit 8 – V2 Nominal Density Guidance Table

Exhibit 9 – Volume Conversion Table, Cubic Inches to Pints

Exhibit 10 – Volume Conversion for Partial 55-Gallon Drum (in pints)

Exhibit 11 – Visual Examination Equipment IDs

Exhibit 12 – Description of Liners

Exhibit 13 – Schematic of Criticality Control for Secondary Waste

Exhibit 14 – Waste Incompatibility by IDC

Exhibit 1. Waste Material Parameter Descriptions

Waste Material Parameter	Help Description
Iron-based metals/alloys	Iron and steel alloys in the waste; does not include the waste container materials
Aluminum-based metals/alloys	Aluminum or aluminum-based alloys in the waste material
Other metals	All other metals found in the waste materials
Other inorganic materials	Nonmetallic inorganic waste, including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents
Cellulosics	Materials generally derived from high polymer plant carbohydrates Examples are paper, cardboard, wood, cloth, etc.
Rubber	Natural or man-made elastic latex materials. Examples are surgeons' gloves, leaded rubber gloves, etc.
Plastics (waste materials)	Generally man-made materials often derived from petroleum feedstock. Examples are polyethylene, polyvinyl chloride, etc
Organic matrix	Cemented organic resins, solidified organic liquids, and sludge
Inorganic matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, inorganic particulate, etc.
Soil/gravel	Generally consists of naturally-occurring soil/gravel contaminated with inorganic waste materials
Steel (packaging materials)	208-L (55-gal.) drums
Plastics (packaging materials)	90-mil polyethylene drum liner and plastic bags

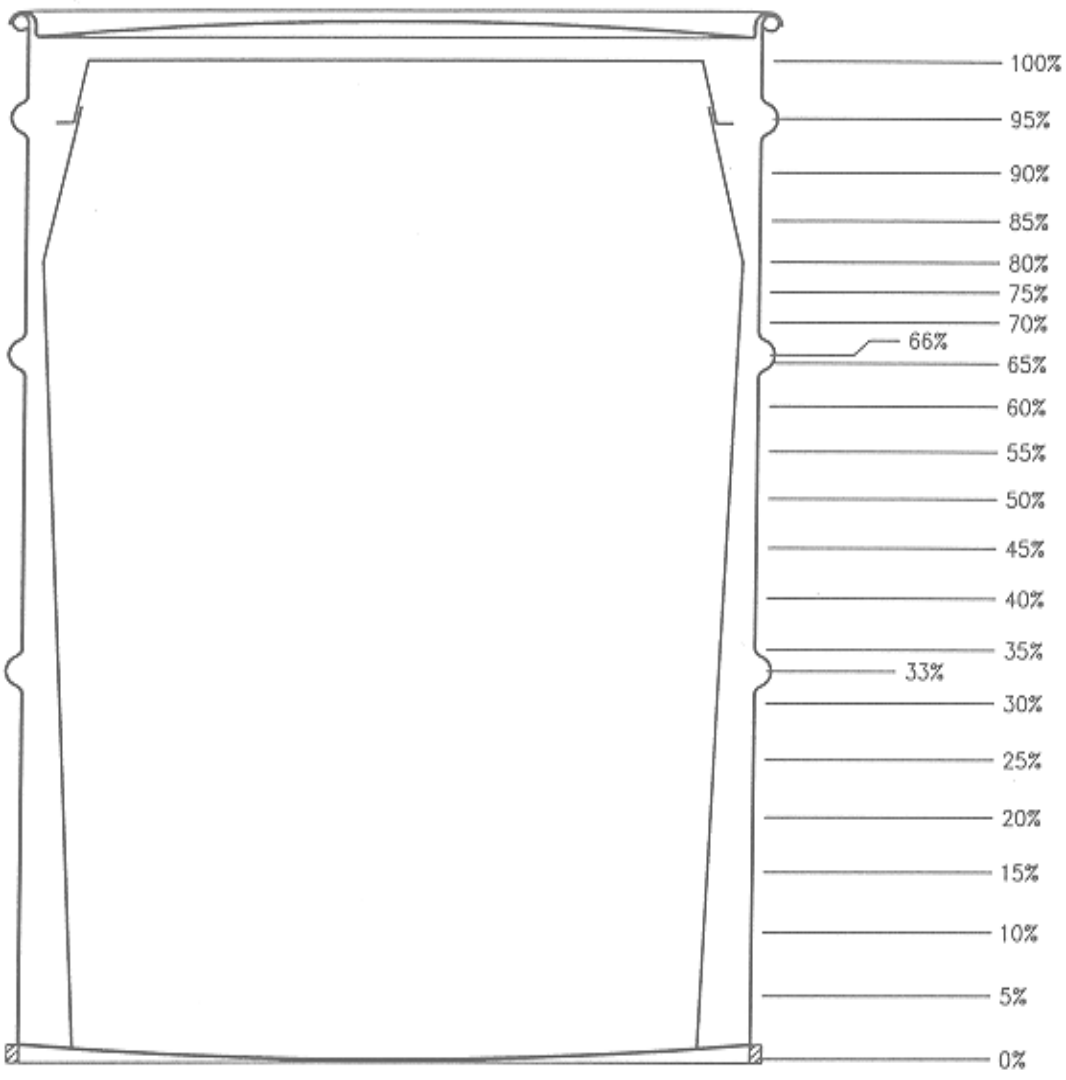
Exhibit 2. Parameters and Weights of Commonly Identified Items

Item**	Weight	Waste Material Parameter
55-gal drum (17C)	See WTS List of Container Weights	Steel (packaging materials)
90 mil liner (Type I, II, III, IV)	See WTS List of Liner Weights	Plastic (packaging materials)
O-ring plastic bag found in sludge, organic setups, etc.	4 lb	Plastic (packaging materials)
Drum plastic bag	1 lb	Plastic (packaging materials)
Plastic bag for waste	1/4 lb	Plastic (waste materials)
Cardboard liner (graphite mold waste)	4 lb	Cellulosics
Fiber pack	6 lb	Cellulosics
Box fiberboard liner	15 lb	Cellulosics
Box plastic liner	5 lb	Plastic (packaging materials)
Lead brick 2 by 4 by 8 in.	25 lb	Other metals
Leaded rubber glove	5.5 lb	Rubber
Leaded rubber apron	5.25 lb	Rubber
Liquids (water)	8 lb/gal (1 lb/pint)*	
Drum lead-liner: (1/8 in. thick, 28 in. high, by 72 in. long) (0.4 lb/in.^{3})	100 lb	Other metals
Drum lead-liner: (1/16 in. thick, 28-in. high by 72-in. long)	50 lb	Other metals
Vermiculite (95 gm/liter)	0.9 lb/gal (0.125 lb/pint)	Other inorganics
Oil-Dri (404 gm/liter)	3.36 lb/gal (0.42 lb/pint)	Other inorganics
Poly bottles (1 gal)	1 lb	Plastics (waste materials)
Metal can	½ lb	Iron-based metals/alloys
Drum stub bag	2 lb	Plastic (packaging materials)
Cured cement	9 lb/gal (1.125 lb/pint)	Other inorganic materials
Uncured cement	24 lb/gal (3 lb/pint)	Other inorganic materials
Aquaset	9.6 lb/gal (1.21 lb/pint)	Other inorganic materials

* Waste Parameter depends on source of liquid organic or inorganic.
**This is not a complete list.

EXAMPLE

Exhibit 3. Fill Factor



Percentage is to be based on all waste contents (including bags and absorbent) in the drum.

Exhibit 4. List of TRU Prohibited Items

Prohibited Item	Comments
Liquids	Liquid waste is not acceptable at WIPP. Observable liquids containing PCBs are prohibited at WIPP. Liquid in the quantities delineated here is acceptable. Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of radiography or visual examination (VE). Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited. Containers with Hazardous Waste Number U134 assigned shall have no observable liquid. Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
Compressed Gases	Typically, aerosol cans, gas bottles or cylinders that cannot be verified to be physically vented (e.g., a drilled hole, a removed relief valve).
Corrosives/Reactives/ Ignitables Present	Waste possessing the characteristic of ignitability, corrosivity or reactivity.
Explosives	Examples include ammunition, dynamite, black powder, detonators, nitroglycerine, urea nitrate, picric acid.
Wastes with PCBs not authorized under an EPA PCB waste disposal authorization	Light ballasts and transformers are potential sources of PCBs in much of the waste. PCB items commingled (in direct contact with or displaying evidence of cross-contamination) with other observable liquids are prohibited.
Non-radionuclide Pyrophoric Materials	Examples of non-radionuclide pyrophoric materials or materials/waste that may cause a pyrophoric event are: sodium metal, elemental potassium, organic peroxides, and chlorates. Examples of pyrophoric radionuclides are: metallic plutonium, americium.) No pyrophoric materials or pyrophoric radionuclides exceeding one percent of the waste weight have been identified in any of the AK documentation, content code evaluations, or sampling programs.
Sealed Containers greater than 4 liters	Lids that are screwed into place or taped should be considered sealed. Lids that do not form an “air tight” seal do not need to be considered as a sealed container.
Non-Mixed Hazardous Waste	Hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes).
Waste incompatible with backfill, seal and panel closure material, shipping container materials or other wastes	Excessive rust, brittle materials, excessive corrosion, evidence of reaction in the waste are all potential sources for evidence that the waste is not compatible with backfill, packaging, or shipping container.
Sharp or heavy items not blocked or braced	Sharp items that have a reasonable potential to puncture the payload container shall be treated or protected prior to shipment. (The presence of a properly assembled rigid or fiberboard liner is considered as one method of providing protection. Padding, when applicable is also an acceptable method of providing protection.) Heavy items shall be blocked, braced, or suitably packaged to provide puncture protection for the payload containers packaging these objects. A blocking and bracing plan is required prior to packaging for waste items that are heavy enough (greater than or equal to 200 lb) to shift position and cause damage to either the liner or the drum/box itself.

(MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003; HWMA/RCRA Permit)

Exhibit 5. Volume Conversions for Liquids in 55-gallon Drums

Volume Conversions for Liquid			
Inches	Gallons	Pints	Pounds
1.0	1.5	12	12
1.5	2.25	18	18
2.0	3.0	24	24
2.5	3.75	30	30
3.0	4.50	36	36
3.5	5.25	42	42
4.0	6.0	48	48
4.5	6.75	54	54
5.0	7.5	60	60
5.5	8.25	66	66
6.0	9.0	72	72
6.5	9.75	78	78
7.0	10.5	84	84
7.5	11.25	90	90
8.0	12.0	96	96
8.5	12.75	102	102
9.0	13.5	108	108
9.5	14.25	114	114
10.0	15.0	120	120

Exhibit 6. Volumes of Cylinders

Volumes of Cylinders (pints)												
Diameter (in.)												
Height (in.)	1	2	3	4	5	6	7	8	9	10	11	12
1	0.03	0.11	0.24	0.44	0.68	0.98	1.33	1.74	2.20	2.72	3.29	3.92
2	1.05	0.22	0.49	0.87	1.36	1.96	2.67	3.48	4.41	5.44	6.58	7.83
3	0.08	0.33	0.73	1.31	2.04	2.94	4.00	5.22	6.61	8.16	9.87	11.75
4	0.11	0.44	0.98	1.74	2.72	3.92	5.33	6.96	8.81	10.88	13.16	15.67
5	0.14	0.54	1.22	2.18	3.40	4.90	6.66	8.70	11.02	13.60	16.46	19.58
6	0.16	0.65	1.47	2.61	4.08	5.88	8.00	10.44	13.22	16.32	19.75	23.50
7	0.19	0.76	1.71	3.05	4.76	6.85	9.33	12.19	15.42	19.04	23.04	27.42
8	0.22	0.87	1.96	3.48	5.44	7.83	10.66	13.93	17.63	21.76	26.33	31.33
9	0.24	0.98	2.20	3.29	6.12	8.81	12.00	15.67	19.83	24.48	29.62	35.25
10	0.27	1.09	2.45	4.35	6.80	9.793	13.33	17.41	22.03	27.20	32.91	39.17
11	0.30	1.20	2.69	4.79	7.48	10.77	14.66	19.15	24.24	29.92	36.20	43.08
12	0.33	1.31	2.94	5.22	8.16	11.75	15.99	20.89	26.44	21.64	39.49	47.00
13	0.35	1.41	3.18	5.66	8.84	12.73	17.33	22.63	28.64	35.36	42.79	50.92
14	0.38	1.52	3.43	6.09	9.52	13.71	18.66	24.37	30.84	38.08	46.08	54.84
15	0.41	1.63	3.67	6.53	10.20	14.69	19.99	26.11	33.05	40.80	49.37	58.75

Exhibit 7. Common Liquid Measurements and Conversions

Liquid Measurements	
1.	3 tsp = 1 tbsp
2.	4 tbsp = ¼ cup
3.	2 cups = 1 pint
4.	4 cups = 1 qt
5.	2 pints = 1 qt
6.	8 pints = 1 gal
7.	4 quarts = 1 gal
8.	Pints ×.0.473 = liters
9.	Milliliters × 1000 = liters
10.	1 pint = 1 lb

Conversions		
Unit	Conversions to Pints	Weight (lb)
1 teaspoon	0.01	0.01
1 tablespoon	0.03	0.03
1/4 cup	0.13	0.13
1/3 cup	0.17	0.17
1 cup	0.5	0.5
1 pint	1	1
1 quart	2	2
1 gal	8	8

Exhibit 8. V2 Nominal Density Guidance Table

Material	Density (kg/L)	References
Aluminum	3.0	1, 2
Cement	2.0	1
Cardboard (fiber board)	0.8	5
Copper	9.0	1, 2
Fiber board (insulating)	0.8	4
Fire Brick (90% aluminum oxide)	3.0	4
Glass	2.0	3
Glass, Bulk Density	2.0	3
Glass, Raschig Rings (0.06 kg/ring)	0.6	4
Graphite, Bulk Density	0.5	3
Gravel	2.0	3
Iron	7.5	2
Lead	11.0	1, 2
Plastic (e.g., 10 ml liner material)	0.9-1.0	Calculated
Plastic (e.g., 90 ml heavy rigid liner material)	0.9-1.0	Calculated
Rubber	0.9-2.0	2
Sand	2.0	3
Sludge	1.0-1.5	Common Knowledge
Soil	1.0-1.8	2
Stainless Steel	8.0	1
Steel	8.0	1, 2
Tantalum	17.0	2
Wood (fir, oak, pine, avg.)	1.0	3
Water	1.0	1.3

The actual density of specific metals or wood types may vary due to the type of wood or the composition of the metal alloy.
Water has a nominal density of 1 kg/L
1 kilograms = 2.2 pounds

References

1. Shigley, J. E., Mechanical Engineering Design, 3rd ed. 636
2. Marks Standard Handbook for Mechanical Engineers, 8th ed. 6-60/61
3. Perry, John H., Chemical Engineers Handbook, 3rd ed. 1549-52
4. Harbison-Walker Refractories Co., Technical Bulletin 12, HU
5. Rocky Flats procedure, 4-I19-NDT-00569

Exhibit 9. Volume Conversion Table, Cubic Inches to Pints

in^3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	.04	.07	.10	.14	.17	.21	.24	.28	.31	.35	.38	.42	.45	.49	.52	.55	.59	.62	.66	.69	.73	.76
2	.07	.14	.21	.28	.35	.42	.49	.55	.62	.69	.76	.83	.9	.97	1.04	1.12	1.18	1.25	1.32	1.41.395	1.45	1.52
3	.1	.17	.31	.42	.52	.62	73	.83	.94	1.04	1.14	1.25	1.35	1.45	1.56	1.66	1.77	1.87	1.97	2.08	2.18	2.29
4	.14	.28	.42	.55	.69	.83	.97	1.12	1.25	1.39	1.52	1.66	1.8	1.94	2.08	2.22	2.36	2.49	2.63	2.77	2.91	3.05
5	.17	.35	.52	.69	.87	1.04	1.21	1.39	1.56	1.73	1.9	2.08	2.25	2.42	2.6	2.77	2.94	3.12	3.29	3.46	3.64	3.81
6	.21	.42	.62	.83	1.04	1.25	1.45	1.66	1.87	2.08	2.29	2.49	2.7	2.9	3.12	3.32	3.53	3.74	3.95	4.16	4.36	4.57
7	.24	.49	.73	.97	1.21	1.45	1.7	1.94	2.19	2.42	2.67	2.91	3.15	3.39	3.64	3.88	4.12	4.36	4.61	4.85	5.09	5.33
8	.28	.55	.83	1.11	1.39	1.66	1.94	2.22	2.49	2.77	3.05	3.32	3.61	3.88	4.16	4.43	4.71	4.99	5.26	5.54	5.82	6.1
9	.31	.62	.94	1.25	1.56	1.87	2.18	2.49	2.81	3.12	3.43	3.74	4.05	4.36	4.68	4.99	5.3	5.61	5.92	6.23	6.66	6.86
10	.35	.69	1.04	1.39	1.73	2.08	2.42	2.77	3.12	3.46	3.81	4.16	4.5	4.85	5.19	5.54	5.89	6.23	6.58	6.92	7.27	7.62
11	.38	.76	1.14	1.52	1.9	2.29	2.67	3.05	3.43	3.81	4.19	4.57	4.95	5.33	5.71	6.1	6.48	6.86	7.24	7.62	8	8.38
12	.42	.83	1.25	1.66	2.08	2.49	2.91	3.32	3.74	4.16	4.57	4.99	5.4	5.82	6.23	6.65	7.06	7.48	7.98	8.31	8.73	9.14
13	.45	.9	1.35	1.8	2.25	2.7	3.15	3.61	4.05	4.5	4.95	5.4	5.85	6.3	6.75	7.2	7.65	8.1	8.55	9	9.45	9.9
14	.49	.97	1.45	1.94	2.42	2.9	3.39	3.88	4.36	4.85	5.33	5.82	6.3	6.79	7.27	7.76	8.24	8.72	9.21	9.7	10.18	10.67
15	.52	1.04	1.56	2.08	2.6	3.12	3.64	4.16	4.68	5.19	5.71	6.23	6.75	7.27	7.79	8.31	8.83	9.35	9.87	10.39	10.91	11.43
16	.55	1.12	1.66	2.22	2.77	3.32	3.88	4.43	4.99	5.54	6.1	6.65	7.2	7.76	8.31	8.87	9.42	9.97	10.53	11.08	11.64	12.19
17	.59	1.18	1.77	2.36	2.94	3.53	4.12	4.71	5.3	5.89	6.48	7.06	7.65	8.24	8.83	9.42	10	10.6	11.18	11.77	12.36	12.95
18	.62	1.25	1.87	2.49	3.12	3.74	4.36	4.99	5.61	6.23	6.86	7.48	8.1	8.72	9.35	9.97	10.6	11.22	11.84	12.47	13.09	13.71
19	.66	1.32	1.97	2.63	3.29	3.95	4.61	5.26	5.92	6.58	7.24	7.9	8.55	9.21	9.87	10.53	11.18	11.84	12.5	13.16	13.82	14.48
20	.69	1.39	2.08	2.77	3.46	4.16	4.85	5.54	6.23	6.92	7.62	8.31	9	9.7	10.39	11.08	11.77	12.47	13.16	13.85	14.55	15.24
21	.73	1.45	2.18	2.91	3.64	4.36	5.09	5.82	6.55	7.27	8	8.73	9.45	10.18	10.91	11.64	12.36	13.09	13.82	14.55	15.27	16
22	.76	1.52	2.29	3.05	3.81	4.57	5.33	6.1	6.86	7.62	8.38	9.14	9.9	10.67	11.43	12.19	12.95	13.71	14.48	15.24	16	16.76

Multiply the cross-section volume in the table by the height of the object to get the volume of the object in pints. The cross-section volume is based on a height of 1 inch.

Exhibit 10. Volume Conversion for Partial 55-gallon Drum (in pints)

Volume	1/8	1/4	1/3	1/2	2/3	3/4
1st chime	18	36	48	73	97	109
2nd chime	37	74	97	147	198	221
Full drum	55	110	145	220	295	330

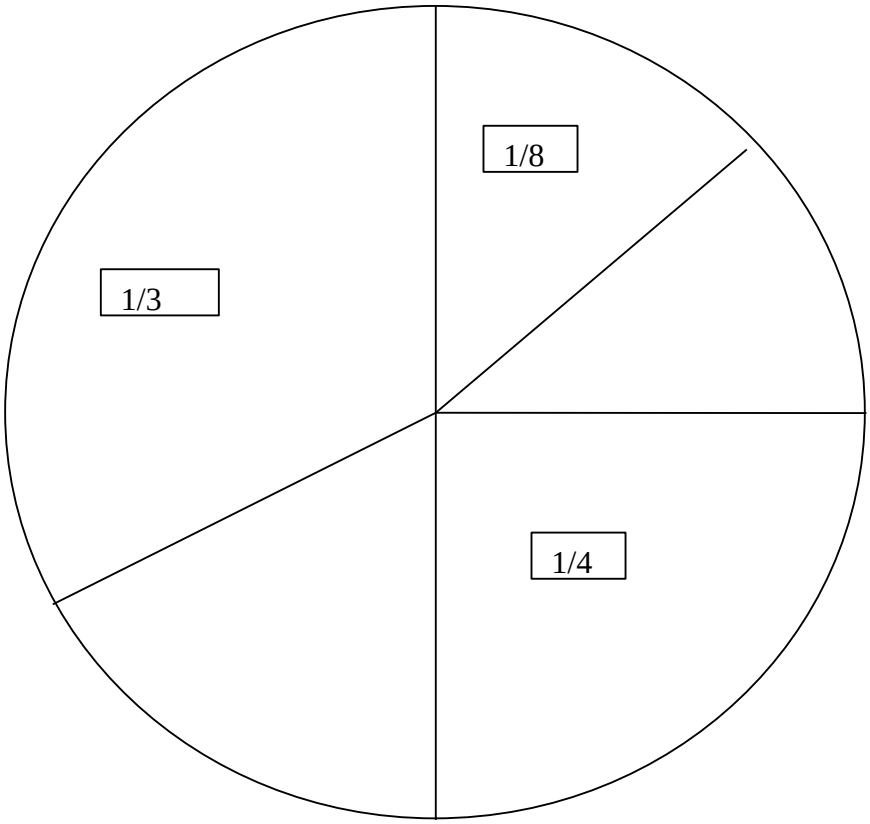


Exhibit 11. Visual Examination Equipment IDs

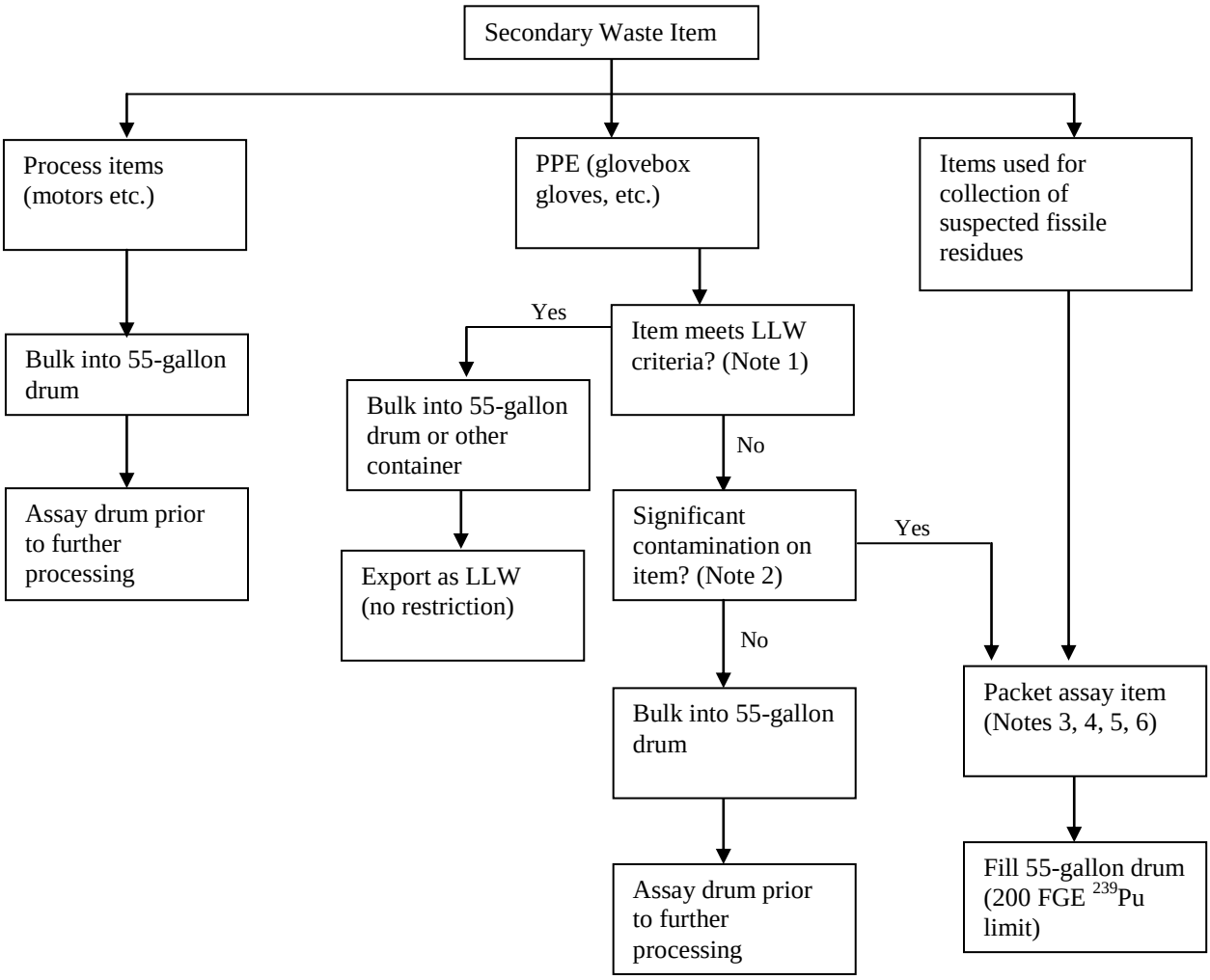
WIPP #	Site Equipment #	Procedure Number Method Equipment Description	Components	Software
9VE2	Z-250-VEC	Procedure – INST-OI-34, Method – BN-VE2 Description –Visual Examination of Legacy Waste Containers (VEC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE3	Z-250-VNC	Procedure – INST-OI-34, Method – BN-VE3 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-OI-34).	Waste Tracking System (WTS)
9VE5	FAC – VEC	Procedure – INST-FOI-17, Method – BN-VE5 Description –Visual Examination of Non-Boxline Legacy Waste Containers (VEC)	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE6	FAC – VNC	Procedure – INST-FOI-17, Method – BN-VE6 Description – Newly Generated Waste Visual Examination Closure (VNC)	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE7	VE BID RPCK	Procedure – INST-FOI-17, Method – BN-VE7 Description – Visual Examination of Boxline Legacy Waste Containers (VEB) – Box to a drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)
9VE8	VE DID RPCK	Procedure – INST-FOI-17, Method – BN-VE8 Description – Visual Examination of Boxline Legacy Waste Containers (VEB) – Drum to a new drum repackaging	N/A. (Method described in procedure INST-FOI-17).	Waste Tracking System (WTS)

WIPP #	Site Equipment #	Procedure Number Method Equipment Description	Components	Software
9VE10	DID RPCK	Procedure – INST-OI-34, Method – BN-VE10 Description – Visual Examination of Legacy Waste (VEB) – Drum to a new drum repackaging	N/A. (Method described in procedure INST- OI-34).	Waste Tracking System (WTS)

Exhibit 12. Description of Liners

Liner Type	Description
I	Straight wall liner with a rolled lip to the inside
II	Tapered shoulder liner with a slip fit cap, closure sealed with metal band
III	Tapered shoulder liner with a metal bolt closure ring
IV	Straight wall liner with a slip fit lid
Plastic	Plastic liner approximately 35 mil in thickness
Other	Any other type of liner type that is not identified above

Exhibit 13. Schematic of Criticality Control for Secondary Waste



Notes:

1. Via smearing, hand-held instruments or other methods.
2. Visible contamination.
3. Packet assay systems shall be performance verified not less than once per day when being used.
4. The total error associated with the packet assay result shall be doubled and added to the measured FGE ^{239}Pu.
5. The validity of the packet assay system calibration shall be periodically verified in accordance with the manufacturer's guidelines.
6. Metal items cannot be packet-assayed (the special case waste is the exception).

Exhibit 14. Waste Incompatibility by IDC

Incompatible waste includes the following groups:

Waste Type	General Waste Description
Acids	ID-150: Laboratory Waste MD-805: Asbestos Filters MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-335: Absolute 8 x 8 Filters (Treatment Only) RF-338 Insulation and CWS Filter Media (Treatment Only) RF-241: Americium Process Residue
Oxidizers	ID-005: Evaporator Salts Retrieved RF AE-100: General Plant Waste MD-805: Asbestos Filters MD-811: Evaporator and Dissolver Sludge MD-813: Glass Filters and Fiberglass MD-834: High Level Acid RF-005: Evaporated Salts RF-241: Americium Process Residue RF-430: Resin, Ion Column-Unleached RF-745: Pits 11 & 12 Evaporator Salts SD-703: Inorganic Sludge
Caustics	MD-835: High Level Caustic

Waste Type	General Waste Description
Halogenated Organics	RF-003: Organic Setups, Oil Solids RF-700: OASIS Waste RF-801: Solidified Organics BN-501: AMWTP PCB Soil BN-511 PCB Organic Homogeneous Solids [Treatment Only] BN-514 Absorbed Organic Squeezants [Treatment Only] BN-518: TRU Supercompactor Squeezants BN-526: Sample Returns BN-528: TRU PCB Liquids Generated During Retrieval BN-603: Absorbed Analytical Liquids BN-605 Absorbed Liquids TSCA/PCB [Treatment Only] RF-743: Pits 11 & 12 Organic Setups RF-746: Pits 11 & 12 Pad Oil Drums SD-704: Organic Sludge SD-705: Debris SD-706: Soil UN-00A: Undefined homogeneous solids
Unknowns	PC-000: "True" or post-RTR unknown
Pyrophoric Materials	RF-751: Roaster Oxide RF-999: Potential Roaster Oxide
Heterogeneous Debris	RF-998: Heterogeneous Debris
Heterogeneous Debris	IW-179: Early Waste Retrieval Heterogeneous Debris

(HWMA/RCRA Permit; TSA IS Document)

Separation or physical segregation requirements consist of the following:

1. Containers of acids with 5 gallons or more of observable liquids must be separated or physically segregated from caustics, and containers of acids with any observable liquids must be separated or physically segregated from halogenated organics.

2. Containers of caustics with 5 gallons or more of observable liquids must be separated or physically segregated from acids, and containers of caustics with any observable liquids must be separated or physically segregated from halogenated organics.

3. Containers of oxidizers with any observable liquids must be separated or physically segregated from halogenated organics.

4. Containers of halogenated organics with any observable liquids must be separated or physically segregated from acids, oxidizers, and caustics.

5. Containers with unknown waste must be separated by physical distance.

A container holding MW that is incompatible with any waste or any material stored nearby shall be segregated (separated by berm, dike, or wall).

(HWMA/RCRA Permit)

9.0 APPENDICES

Appendix A – List of LLW/MLLW Prohibited Items and Restricted Items

Appendix B – Revision Log

Appendix A –
List of LLW/MLLW Prohibited Items and Restricted Items
(taken from LST-LLW-04)

Prohibited/Restricted Item	Additional Information/Examples
Prohibited/Restricted Item	**Additional Information/Examples**
Aerosol Cans	Description should specify evidence of puncture or venting and a volume estimate of liquid if present.
Animal Carcasses	Describe type and amount.
Asbestos	Items which may contain asbestos (floor tiles, insulation, etc.) Describe type and amount.
Batteries	Describe type such as D-Cell, C-Cell, Wet Cell (Lead-Acid), etc. and amount. If liquids are present, identify and quantify.
Beryllium*	Identify and describe. Provide form and amount by volume
Chelating agents*	Describe type such as EDTA and amount
Classified waste*	Describe type and amount
Compressed Gases	Describe type such as pressurized manifold component or other sealed vessel and amount. Includes pressurized gases and gas cylinders. Besides typical gas cylinder items to consider, include propane gas, butane gas, BIC lighter, etc. Includes fire extinguishers, describe size, content, and amount. Identify if vented.
Compressors/Refrigerator Systems	Identify and describe
D001-Ignitable, D002-Corrosive, D003--Reactive	Identify applicable code(s)
Etiological Agents*	Identify type and amountAlso includes other - biological, pathogenic, infectious materials
Explosives	Describe suspect items such as ammunition, dynamite, etc. and amount
Fire extinguishers	Describe size , content, and amount
Graphite	Form and amount by volume
Impenetrable Objects	Unable to completely identify and verify contents. Identify % by volume impenetrable.

Prohibited/Restricted Item	Additional Information/Examples
Lab Packs	Lab packs are small containers of chemicals placed into a larger container surrounded by absorbent. Describe if chemicals are present.
Lead	If present, is it elemental? Provide general dimensions, description, and quantity of lead
Liquids	Describe if liquid is free or containerized, viscosity description, and volume of liquid
Mercury	Describe (contained – thermometers, switches, uncontained, etc.) Provide volume, identify if it is elemental.
Particulates*	Describe type, amount, and if material is containerized
PCBs	Describe size and type of item such as ballast, capacitor, or transformer. Identify if solid or liquid. If liquid is present, provide a volume estimate of liquid
Pyrophoric waste*	Describe type such as metal hydrides, metal powders, etc and amount
Sharps	Describe type such as needles, razors, knives, heavy bulky metal, etc.
Sealed Sources	Identify and describe
Solid Uranium/Thorium*	Identify, describe, provide volume or mass.
Tanks / Vessels	Estimate volume capacity and percent full (of tank). If viscosity of liquid can be identified, provide viscosity description.
Valves	(attached or not attached to an object) If attached, describe the object.

*The presence of these items in the waste container may not be evident during RTR or VE. The presence or absence of these items in each container is determined by application of AK/PK or other methods during waste verification.

Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	10/09/02	All	Initial issue. DCR-1515-Issued for Formal validation during commissioning activities.
1	03/10/03	All	DCR-2031, Major revision to remove packaging of newly generated waste and to incorporate MP-TRUW-8.19, RTR/VE Drum Selection requirements.
2	03/27/03	All	DCR-2126, Minor change, to amend date Form DOE Approves Retrieval Operations Start-up to 03/28/03 and Editorial update to Records Section.
3	05/01/03	All	DCR-2213, Major rewrite to more accurately reflect actual VE Operations.
4	05/07/03	Various	DCR-2245, Changed to match software changes (i.e., screen names, step sequences).
5	7/09/03	All	DCR-2327, Changed to include characterization of Debris Waste
6	8/13/03	Pages 16, 17 & 24	DCR-403; Replacing name of VCR and video recording equipment to allow for use of new digital audiovisual equipment.
FC-1	08/24/03	Pages 29 & 30	DCR-8/24/03-1420, Eliminate steps 4.6.16 – 4.6.18 and change verbiage of 4.6.19.2.
7	06/23/04	Various	DCR-2443, Incorporate Field Change 1, CRIT comments, WIPP comments, and minor editorial, Match software changes.
8	07/15/04	ALL	DCR-3170. Remove Closure VE. Add RTR/VE Update. Incorporate Crit Analysis for 635 Tent and Coring Glovebox for Debris VE. Incorporate VE (in lieu of RTR). Minor editorial changes. Section 4.3.5: Change to "…leather or leather palm lined Kevlar gloves." Complete rewrite of procedure.
9	08/09/04	Various	DCR-3224. Incorporate WIPP comments from Rev. 8.

AMWTP INSTRUCTION		
INST-OI-34, Rev. 27	Issued: 12/29/11	Effective: 12/30/11

Non-Facility Visual Examination Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
10	01/06/05	Various	DCR-3371. Incorporate CH-TRAMPAC and CH-WAC. Minor editorial changes. Rewrite document in response to comments from CBFO and consistency to FOI-17. Incorporate WIPP comments from Rev. 10B submittal (12/16/04).
11	03/17/05	Various	DCR-4115. Incorporate Field Changes DCR-4114 (FC-1), DCR-4136 (FC-2), and DCR-4151 (FC-3). Incorporated numerous changes to document per Environmental manager's direction based on DEQ letter of 1/27/05. Incorporate WIPP Comments from Rev 11A.
12	10/11/05	Various	DCR-4422-1. Incorporate changes in WTS and the use of new Equipment IDs. Incorporate company name changes as identified in DCR-4299. Incorporate FC-1, DCR-4438. FC-1, DCR-4626.
13	1/17/06	Various	DCR-4637. Incorporate changes necessary for proper sequencing of events, WTS changes for handling PCBs. Implement MP-DOCS-18.1 formatting standards. Incorporate FC-1, FC-2 on DCR-4529, DCR-4582, of FOI-17, as appropriate, for consistency to INST-FOI-17. Resolve review comments. Apply consistency with FOI-17, as appropriate.
14	2/14/06	Various	DCR-4798. Remove all references to RPT-TRUW-12. Add clarification to step if liner is not present.
15	03/30/31	All	DCR-4921. Made formatting correction to resolve CAR-21421.
15-FC-1	04/01/06	Pages 15, 16	DCR-4930.Clarification of qualifications. Deleted Step 3.2.5.
15-FC-2	10/19/06	Figure 5	DCR-5493. Updated Figure 5, List of Prohibited Items.
15-FC-3	10/24/06	Figure 5	DCR-5504. Changed Figure 5 "Compressed Gases"

AMWTP INSTRUCTION		
INST-OI-34, Rev. 27	Issued: 12/29/11	Effective: 12/30/11

Non-Facility Visual Examination Operations

Revision Number	Date Approved	Pages Affected	Description of Revision
16	12/11/06	Various	DCR-5454. Incorporate Field changes (FC-1, 2, 3). Add steps for NTS WAC criteria, Steps for ISMS implementation and revise Figure 4.
17	01/23/07	All	DCR-5621. Rewrite procedure to reorganize approach to standards-based, requirements based instruction. Incorporate 311 Permit changes. Change title to Non-Facility Visual Examination Operations.
17 FC-1	01/25/07	3	DCR-5708. Added S4000 (see def.) to include S4000 in scope of work.
18	07/12/07	Various	DCR-5754. Incorporate field change. Changed to General Use. Editorial changes per conduct of operations and some VE additions in Section 2.
18 FC-1	09/10/07	2	DCR-6392. Revise Step 3.1.2 for areas of use.
18 FC-2	12/19/07	Various	DCR-6658. WAP clarification. Clarify the requirements for remediation of liquids.
19	04/08/08	Various	DCR-6551. Make changes to roll-down requirements due to CCP transition. Incorporate field changes.
19 FC-1	08/13/08	12, 17	DCR-7449. Implemented WAP change to limited VE exam.
19 FC-2	09/24/08	23	DCR-7567. Deleted Step 4.2.27 to accommodate WTS SCR 3401.
20	10/08/08	All	DCR-7092. Updated scope of activity, Roles and Responsibilities, and WTS instructions. Updated Exhibit 4, List of Prohibited Items. Reference update. Streamline in accordance with VE task analysis. Editorial changes. Applied blue sheet changes—changed STL to SS and SM to PSM.
20 FC-1	11/12/08	27, 60	DCR-7740. Add new step in Section 4.6 (RTR/VE update) add NOTE and step in 4.2 to support WTS changes SCR #3297.
20 FC-2	12/03/08	Various	DCR-7821. Update steps with correct new gen. Waste Equipment IDs.

AMWTP INSTRUCTION		
INST-OI-34, Rev. 27	Issued: 12/29/11	Effective: 12/30/11
Non-Facility Visual Examination Operations		

Revision Number	Date Approved	Pages Affected	Description of Revision
20 FC-3	01/07/09	P 63	DCR-7885. Add a note and step to support WTS changes SCR 3457.
21	01/21/09	Various	DCR-7873. Incorporated FC-1 (DCR-7740) and FC-2 (DCR-7821) and DSA implementation changes.
22	06/23/10	Various	DCR-9221. Made changes for establishing consistency and implementing current WIPP Permit modifications.
23	12/17/10	Various	DCR-9584. Incorporated the WIPP Renewal Request and Waste Acceptance Criteria changes.
23 FC-1	01/26/11	Various	DCR-9717. Add Form-1900, AMWTP Offsite Waste Stream Profile, as information resource.
24	02/03/11	Pg 86	DCR-9773. Added additional IDCs to Exhibit 14.
24 FC-1	03/16/11	Various	DCR-9979. Changes needed for WTS functionality.
25	08/29/11	Various	DCR-10073. Incorporated field change 1 (DCR-9979) and deleted IDC RF-095 to provide consistency with RPT-ESH-014.
26	11/05/11	Various	DCR-10394. Incorporated ITG-Bluesheet-019
27	12/29/11	Various	DCR-10539. Added prohibited/restricted items of concern for the LLW/MLLW program.

HGAS Sampling and Analysis Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11545.*) 09/17/12

Brian Warner — Date

Chracterization Lead

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-43, Rev. 22	Issued: 09/17/12	Effective: 09/18/12
HGAS Sampling and Analysis Operations		

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AMWTP INSTRUCTION		
INST-OI-43, Rev. 22	Issued: 09/17/12	Effective: 09/18/12
HGAS Sampling and Analysis Operations		

1.0 PURPOSE/SCOPE

This procedure provides instructions for *headspace* (see def.) gas sampling and analysis (HSGS&A) and operation data review of *transuranic* (TRU) *waste* (see def.) and TRU mixed waste containers at the Advanced Mixed Waste Treatment Project (AMWTP) using an automated manifold system with *gas chromatography/mass spectrometry* (GC/MS; see def.) and gas chromatography/thermal conductivity detector (GC/TCD) methods. This instruction outlines steps followed to generate the data associated with the *Method Detection Limit* (MDL; see def.) and the *Method Performance Samples* (MPS; see def.) reports. The HSGS&A method described in this instruction complies with MP-TRUW-8.2, Quality Assurance Project Plan, requirements.

This procedure applies to all AMWTP personnel who operate the sample manifold HSGS&A equipment. Support activities include verifying acceptability of TRU waste containers, prerequisite activities, movement of containers to the sampling area, and the handling of secondary waste and contamination control. System startup, *calibration* (see def.) checks, daily checks, waste container headspace gas sampling, and analysis of *samples* (see def.) and *standards* (see def.) are covered in this procedure.

This procedure provides instructions for the manual gas sampling of vented containers in the AMWTP. The prefilter sample is taken by penetrating the carbon composite filter with a side-port needle attached to a probe gun and collecting the sample from beneath the drum lid. Alternatively the sample may be collected using a sampling port device mounted in a drum lid or as part of a filter.This procedure is applicable for the sampling and analysis of *Performance Demonstration Program* (PDP; see def.) samples in accordance with Performance Demonstration Program Plan for Analysis of Simulated Headspace Gases, DOE/CBFO-90-1076.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operations Technician (OT)	Unless otherwise specified, performs the steps in this instruction and performs limited radiological surveys.
Radiological Controls Technician	Evaluates radiological survey results.
Headspace Gas (HSG) Chemist	Responsible for the performance of GC/MS maintenance, data *validation (see def.),* and batch data report generation as outlined in this procedure.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Waste containers are only sampled after a minimum of specific *drum age criteria* (DAC; see def.) has been attained. The DAC varies based on waste type and packaging configuration. Scenario 1 waste will not be sampled under this procedure. DAC determinations will be performed by using a completed Form-1449, Sample Batch Drum Age Criteria Data Sheet, to assist in the actual DAC determination.

(MP-TRUW-8.2)

3.1.2 Waste containers with unvented rigid containers greater than 4 liters shall be subject to innermost layer of containment sampling or shall be vented prior to initiating drum age and equilibrium criteria.

(MP-TRUW-8.2)

3.1.3 Cross-contamination can occur whenever high-concentration and low concentration samples are analyzed sequentially. Cross contamination is controlled by the following clean/purge/verify/evacuation process:

- Purging with ultra high purity (UHP; see def.) nitrogen
- Pumping down the sample manifold to less than 100 mtorr
- Maintaining the temperature of the sample manifold at greater than 25°C.

(MP-TRUW-8.2)

3.1.4 Gas *calibration standards* (see def.) are purchased from approved vendors, certified by the manufacturer, and are traceable to a nationally recognized standard (such as National Institute of Standards and Technology [NIST]).

3.1.5 A Quantitative Certificate of Analysis for all commercial standards will be provided by the manufacturer. This quantitative certification is based on quantitation using a separately prepared reference batch of the same formulation. Standards will be replaced prior to the standard warranty expiration date. Expired standards will be segregated and labeled as inactive until they can be disposed of properly.

3.1.6 Commercial stock gases shall not be used beyond the manufacturer's specified shelf life.

(MP-TRUW-8.2)

3.1.7 Material Safety Data Sheets (MSDSs) are required for all standards, both liquids and compressed gasses, and shall be followed when handling these substances.

3.1.8 Samples, reagents, and calibration standards used in this instruction may be flammable and/or hazardous. Exercise caution and consult the applicable MSDS while conducting venting and sampling operations.

3.1.9 Gloves are required to be worn when coming into contact with hardware potentially contaminated with waste (containers).

3.1.10 Safety glasses need to be worn while connecting bottles and regulators.

3.1.11 Containers to be sampled need to have been staged for a minimum of 72 hours at 18°C or higher to meet container equilibrium requirements.

3.1.12 Containers that are HSG sampled must meet the equilibrium time and DAC.

(MP-TRUW-8.2)

3.1.13 Precautions and limitations for performing manual drum gas sampling include the following:

3.1.13.1 Personnel must stand clear of forklifts operating in the area while supplying and removing drums for sampling.

3.1.13.2 All drum vent filters that have been sampled through will be covered with duct tape, or equivalent, and a Radiological (Rad) Safety-approved label applied.

3.1.13.3 Operators must monitor and clean, as necessary, any water behind the HGAS system caused by condensation from the coolers.

3.1.13.4 The electrical power cords should never be unplugged while any part of the system is under load. A planned shutdown must be completed first.

3.1.13.5 Liquid standards are kept in glass vials and contain concentrated *volatile organic compounds* (VOCs; see def.). If a vial is broken or spilled, the area must be cleared of all personnel and the shift supervisor (SS) must be contacted immediately.

3.1.13.6 Safety glasses must be worn when changing out gas bottles.

3.1.14 The SS and HSG chemist must be contacted any time an abnormal event is observed with an HGAS system.

3.1.15 Type 1 *Nonconformance* (see def.) reports (NCRs) shall be issued to report adverse conditions that require technical and *Quality Assurance* (QA; see def.) evaluation for disposition (i.e., equipment problems or QC failures which can potentially impact safe operations or characterization data quality, etc.) Type 3 NCRs shall be issued to document the identification of container headspace sample and analysis events, which do not meet the Data Quality Objectives or *QA Objectives* (QAOs; see def.) of headspace gas characterization.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.1.16 Expired liquids and gases (open or unopened) must be segregated and not used.

3.1.17 Production Planning, SS, and PSM shall be notified of containers that have >5% Hydrogen content.

3.2 Prerequisites

3.2.1 It has been documented on Form-1595, HGAS Daily Checks, that all of the following are available for use or on Waste Tracking System (WTS) HGAS Daily Checks Screen.

- Side port needles with Luer-lock hubs
- Disposable syringe filters
- Septa for routine leak check
- 25 µL and 10 µL (optional) syringes for the preparation of gaseous VOC standards

- Micro vials for liquid VOC standards
- Latex or nitrile gloves
- Computer with Agilent Technologies ChemStation software, G1701DA, and reprocessing software, G1710DA, with Consonant Technologies, Inc. modifications for data collection and stand alone data processing
- Humidified nitrogen used as a cleaning and compression gas made using ASTM Type I or Type II water in conjunction with a humidifier attachment and a nitrogen source that produces nitrogen with <1 ppmv total VOCs
- Compressed nitrogen containing <1 ppmv total VOCs at a pressure of ≈ 80 pounds per square inch (psi) to be used as the carrier, reference, and make-up gas for the GC/TCD
- UHP helium containing <1 ppmv total VOCs to be used as the carrier gas for the GC/MS
- Custom liquid standards.

  The full VOC standard that contains the *analytes* (see def.) at the mole fractions listed in Table 5. As certified standards they are stored according to manufacturer instructions that require the liquid standards be stored under refrigeration at <-10°C when not in use. A temperature data log will be generated approximately weekly.

- Custom gaseous standards.

  An *on-line control sample* (OCS; see def.) containing at least six (6) of the program-specific target compounds prepared from standards that are not associated with the calibration standards. Suggested compounds and concentrations are listed in Table 6.

  hydrogen (H_2) and methane (CH_4) standards in nitrogen at the following concentrations:

  Level 1 = 0.075 % by volume

  Level 2 = 0.5 % by volume

  Level 3 = 1.0 % by volume

  Level 4 = 3.0 % by volume.

An internal standard gas mixture containing approximately 50-100 ppmv of two internal standards (fluorobenzene and chlorobenzene-d5) in nitrogen. The mixture also includes Bromofluorobenzene (BFB) at a concentration to deliver 5-50 ng to the GC/MS.

3.2.2 All "in use" commercial stock gases and liquid standards have not exceeded the manufacturer's specified shelf life, and have been recorded on Form-1595 or on WTS HGAS Daily Checks Screen.

3.2.3 The helium, nitrogen, OCS, and internal standard/BFB gas-cylinder bottle valves are open and regulated to the following suggested pressures or pressure ranges (or as specified by the responsible HSG chemist):

- UHP helium 100 psi (90-110)
- UHP nitrogen 80 psi (75-85)
- OCS 5 - 10 psi
- Internal standard/BFB 2 - 5 psi.

3.2.4 An adequate supply of the following compressed gases are available, and are recorded on Form-1595 or on WTS HGAS Daily Checks Screen.

- UHP helium greater than 300 psi–bottle pressure
- UHP nitrogen greater than 300 psi–bottle pressure.

NOTE: *During normal operation, the right humidification chamber (when viewed from the back) will be empty and the water will be in the left chamber. Water supply is replenished when the water level in the left chamber drops below the top edge of the plastic mounting block, if applicable.*

3.2.5 Humidifier contains ASTM Type I or II water, and the water level has been checked and recorded on Form-1595 or on WTS HGAS Daily Checks Screen, if applicable (Once Section 4.0 has been entered, instructions for replenishing the humidifier water may be found in Section 4.7.13 if water level adjustment is necessary.).

3.2.6 The MPS Samples demonstration (MPD) and MDLs have been verified current (i.e., < 6 months old), in accordance with Section 4.3, by checking the date on the printout of the "MDL/MPS Calculations" spreadsheet posted on HGAS system, and recorded on Form-1595 or on WTS HGAS Daily Checks Screen.

3.2.7 Makeup air damper has been adjusted to minimize HGAS enclosure air-conditioning temperature, while ensuring that temperature is maintained above 50ºF and recorded on Form 1595 or on WTS HGAS Daily Checks Screen.

3.2.8 All measuring and test equipment (M&TE) is current and recorded on Form-1595 or on WTS HGAS Daily Checks Screen.

3.2.9 The freezer temperature is < -10ºC.

3.2.10 The freezer's data logger has been downloaded within the last week.

3.2.10.1 Chemist has been contacted, if necessary.

3.2.11 A pre-job brief has been performed per MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

4.1 General Instructions

NOTE: *The term "drum" is indicative of all types of TRU waste containers.*

4.1.1 **GO TO** the appropriate procedure section from the following table according to the task to be performed,
THEN RETURN to this step, if further activities will be performed:

Task	Section to Perform
System, method, and instrument tune file setup	4.2.1
Initial calibration	4.2.2
MDL and MPS	4.3
Daily operations	4.4
Performing direct sampling operation	4.5
Post job review	4.6
Infrequent or abnormal conditions and recovery	4.7
Data processing review	4.8

4.2 Calibration and Standardization

4.2.1 System, Method, and Instrument Tune File Setup

NOTE 1: *This section should be performed ONLY upon initial system set up following any significant maintenance of the analytical system, or at the discretion of the HSG chemist.*

NOTE 2: *Portions of this section may be referenced elsewhere and can be performed by the OT or HSG chemist.*

4.2.1.1 System Setup

4.2.1.1.1 In the MSTop window, select the "Sequence" pull-down menu and select the "HGAS Setup" item.

NOTE: *The instrument ID should use the following format: Z-221-001-X (e.g., Z-221-001-A for instrument number 1).*

4.2.1.1.2 Fill in all dialog boxes with the pertinent information such as instrument ID, site and building identifiers, standard information, and OCS concentrations.

4.2.1.2 Method Setup

NOTE: *The method names are "hard coded" into the custom macros. Any deviation from these exact names will cause the custom macros to fail.*

4.2.1.2.1 Ensure that the automated Chem Station software analytical/data processing methods are named appropriately.

- The BFB tuning method must be named "TUNE.M."
- The *real-time equipment blank* (RTEB; see def.) method must be named "CLEAN.M."

- The VOC analytical method must be named "VOCGAS.M."
- The standby method must be named "BAKE.M."

4.2.1.2.2 Ensure that the TUNE.M and VOCGAS.M analytical methods used to collect these analyses are correctly configured for data analysis.

4.2.1.2.2.1 Refer to vendor-supplied HGAS III GCMS User Manual Addendum for configuration instructions.

4.2.1.2.3 Ensure that the OCS compounds are expressed in the methods compound database as TL, as found on Page 2 of the database.

4.2.1.2.3.1 Refer to vendor-supplied HGAS III GCMS User Manual Addendum for configuration instructions.

4.2.1.2.4 Ensure that the correct internal standard concentrations are expressed as obtained from the certificates of analysis for the IS/BFB standard and multiplied by the ratio of the IS/BFB loop to sample loop (i.e., a factor of 2.5).

4.2.1.2.5 Ensure that the correct MDL values obtained from the HGAS Calculations Excel Spreadsheet are expressed.

4.2.1.2.6 Ensure that the global MDL is deselected.

4.2.1.2.7 Ensure that the TL compounds have the correct concentrations of the OCS compounds expressed.

4.2.1.2.8 Ensure that the method is set to include non-target peaks in the report, referencing the NIST02.L spectral library throughout.

4.2.1.2.9 Ensure that Levels 1, 2, 3, 4, 5, and CC exist in the compound database.

4.2.1.2.10 Ensure all method files and folders are **NOT** in the read-only mode.

4.2.1.3 BFB Auto Tune

NOTE: *The perfluorotributylamine (PFTBA) tuning of the Mass Spec is an automated tune performed by the Chem Station Software. PFTBA is automatically injected into the Mass Spec Detector (MSD) from a standard bulb and is pressure-regulated. The software automatically tunes the MSD per PFTBA criteria. The target masses are centered and tuned automatically for optimized performance of the MSD.*

4.2.1.3.1 Create an instrument tune and ensure that the correct method file for instrument control is according to the GC/MS system operating conditions given in Table 13.

4.2.1.4 Performance Testing

4.2.1.4.1 Ensure that Section 3.2 has been performed.

4.2.1.4.2 **IF** method file has **NOT** already been loaded (TUNE.M),
THEN load the appropriate method file.

4.2.1.4.2.1 In Instrument Control window, select the “Method” pull-down menu and select the “Load Method” item.

4.2.1.4.2.2 Select “TUNE.M” from the list.

4.2.1.4.3 Change to the Manual Tune view.

4.2.1.4.3.1 In Instrument Control window, select the “View” pull-down menu and select the “Manual Tune” item.

4.2.1.4.4 **IF** it has **NOT** already been loaded (BFB.U), **THEN** load the appropriate tune file.

4.2.1.4.4.1 In the Manual Tune window, select the "File" pull-down menu and select the "Load Tune Values…" item.

4.2.1.4.4.2 Change other targets as needed to achieve acceptable tune.

4.2.1.4.4.3 Select "BFB.U" from the list and click the OK button.

4.2.1.4.5 Verify the proper tune settings.

4.2.1.4.5.1 In the Manual Tune window, select the "Tune" pull-down menu and select the "Set Tune Targets…" item.

4.2.1.4.5.2 View the tune targets to become familiarized with the normal range of values.

4.2.1.4.5.3 In the Manual Tune window, select the "Tune" pull-down menu and select the "Set Tune Limits…" item.

4.2.1.4.5.4 Change the "69 Abund. Target Counts (1E5-2E6)" values ranging from 100,000 to 200,000 based on instrument performance.

4.2.1.4.5.5 Change other targets as needed to achieve acceptable tune.

4.2.1.4.6 Check instrument sensitivity using an MS internal PFTBA mass calibration standard using the BFB Autotune routine in the ChemStation software.

4.2.1.4.6.1 In Manual Tune window, select the "Tune" pull-down menu item and select the "BFB Tune" item.

4.2.1.4.6.2 Allow the autotune routine to complete.

4.2.1.4.6.3 Select the "File" pull-down menu and select the "Save Tune Values…" item to save the new tune values.

4.2.1.4.6.4 Select "BFB.U" and click the OPEN button to complete the save.

4.2.1.4.6.5 In Manual Tune, select the "View" pull-down menu and select the "Instrument Control" item.

NOTE: *An alternate method of BFB analysis may be accomplished by importing and launching a sequence that contains an initial BFB line as described in Sections 4.2.3.3 through 4.2.3.8.4.*

4.2.1.4.7 Analyze BFB.

4.2.1.4.7.1 Click the green arrow in the Instrument Control window.

4.2.1.4.7.2 Enter operator initials and data file name formatted as <eight characters or less name>.d.

4.2.1.4.7.3 Verify the "Vial Number" is non-zero and the Misc. info and sample name fields are blank.

4.2.1.4.7.4 Note the data path for later evaluation of the analysis.

4.2.1.4.7.5 Click the START RUN button.

4.2.1.4.7.6 Open Analysis.exe by clicking on the desktop icon.

NOTE: *The analysis will start when the GC/MS and the HGAS manifold are both ready*.

4.2.1.4.7.7 Type "bf" in the "Manual Control" entry field, and click the gray area to the left of the software switch labeled "Manual/DDE."

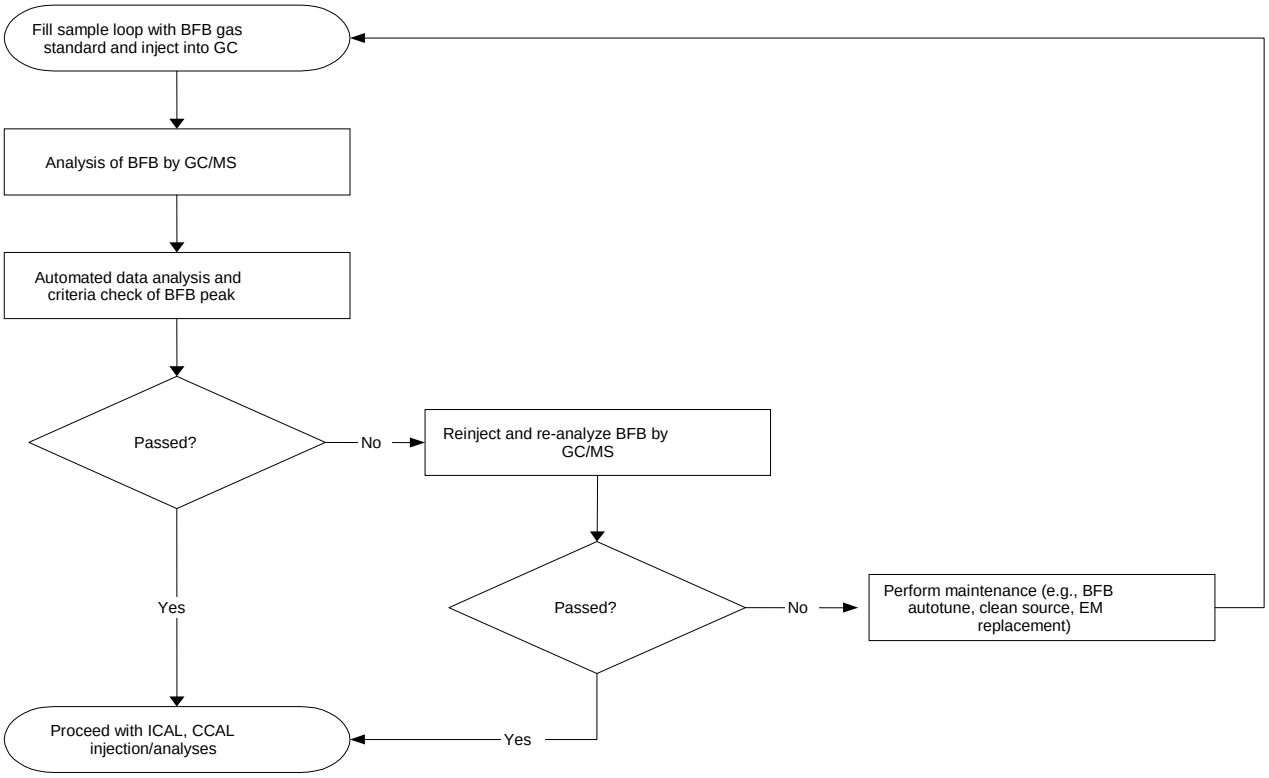

Figure 1. Flow of BFB Analysis and Evaluation.

4.2.1.4.8 Evaluate the BFB analysis.

4.2.1.4.8.1 Open the Enhanced Data Analysis desktop icon.

4.2.1.4.8.2 Load the BFB data file from Step 4.2.1.4.7.4 by selecting the "File" pull-down menu item and selecting the "Load Data File…" item.

4.2.1.4.8.3 Select the correct data file and click OK.

4.2.1.4.8.3.1 **IF** pop-up dialog box asks "DataFile last quantitated using C:\HPCHEM\1\METHODS\TUNE.M Load?"
THEN click YES.

4.2.1.4.8.3.2 Click NO when next dialog box asks "Save Current Method: <methodname>.M.

4.2.1.4.8.3.3 **IF** no pop-up dialog box appears,
THEN Verify the correct method (TUNE.M) is loaded.

4.2.1.4.8.4 Select the "Method" pull-down menu and select the "Run Method…" item.

4.2.1.4.8.5 Watch the bottom left of the window (light gray bar).

NOTE: *If the BFB passed the criteria in Table 4, "BFB Tune Passed!" will appear for several seconds; otherwise, "BFB Tune Failed!" will appear for several seconds.*

4.2.1.4.8.6 **IF** the tune passes,
THEN manually verify Apex (Apex or 3-point Apex) of BFB peak passed BFB QC requirements,
THEN GO TO Section 4.2.2.

4.2.1.4.8.7 **IF** the tune fails,
THEN GO TO Step 4.2.1.4.3 and verify/adjust the tune targets and limits to meet the BFB ion ratio criteria in Table 4, repeating as necessary to obtain a successful tune.

4.2.2 Initial Calibration

NOTE 1: *Unless specifi*ed otherwise, *HSG chemist or OT performs this section.*

NOTE 2: Initial calibration (see def.) *is required if one of the following applies:*

- *The instrument is being calibrated for the first time*
- *The continuing calibrations fail the criteria (after corrective action has been attempted)*
- *A major change has been made to the analytical system, as outlined in Appendix F, (HGAS) Agilent/Manifold) Baseline Matrix.*

4.2.2.1 Prepare the instrument for initial calibration.

4.2.2.1.1 Ensure that Section 3.2.2 has been performed.

NOTE: *After leak check and cleaning in Step 4.2.2.1.2 is complete, status indicators for Bottles 1 – 12 will turn yellow and "System idle" will be displayed in the status window.*

4.2.2.1.2 Perform leak check and cleaning on the sampling manifold and bottles, while monitoring for leak rates > 0.072 torr/min.

4.2.2.1.2.1 Open the HGAS.vi desktop icon.

4.2.2.1.2.2 Click on NEW BATCH.

4.2.2.1.2.3 **IF** the NEW BATCH button is **NOT** available,
THEN call a HSG chemist for assistance.

4.2.2.1.2.4 Click YES to close the previous batch.

4.2.2.1.2.5 Click on ICAL.

4.2.2.1.2.6 Complete the "Batch_Start.vi" dialog box.

4.2.2.1.2.7 Click START/RESUME.

4.2.2.2 Load the Initial Calibration Standards.

4.2.2.2.1 Open the HGAS.vi desktop icon.

4.2.2.2.2 Click the NEW SAMPLE button.

NOTE: *System may retain the operator's initials from first sampling event.*

4.2.2.2.3 Enter the operator's initials in the System Operator field.

4.2.2.2.4 Ensure that the sample ID field contains "icICAL#"; where # is a one digit number corresponding to the initial calibration level (1 through 5).

4.2.2.2.5 Click OK.

4.2.2.2.6 Click the START RESUME button.

NOTE: *Steps 4.2.2.2.7 through 4.2.2.2.9 may be performed while leak check is being conducted.*

4.2.2.2.7 Attach the standard purge assembly to the appropriate H_2/CH_4 standard cylinder according to Table 1.

4.2.2.2.8 Ensure the gas cylinder valve is open and regulated to approximately 5 psig.

4.2.2.2.9 Bleed the purge assembly to ensure no room air remains in the purge assembly.

4.2.2.2.10 Follow the system prompts to perform a leak check on the probe assembly.

4.2.2.2.10.1 **IF** a leak is detected,
THEN perform the following:

4.2.2.2.10.1.1 Investigate the source of the leak.

4.2.2.2.10.1.2 Repair or reassemble the sampling assembly.

4.2.2.2.10.1.3 Repeat the test until the assembly passes the test.

4.2.2.2.11 After the leak check passes and HGAS.vi enables the probe for sampling, insert the sampling probe needle into the correct standard purge assembly.

4.2.2.2.12 Press the PROBE TRIGGER button.

4.2.2.2.13 Do **NOT** remove probe-sampling needle from the purge assembly until prompted.

4.2.2.2.13.1 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN abort the collection sequence by clicking ABORT/RESET
AND RETURN TO Step 4.2.2.2.2.

4.2.2.2.14 At the "Sample pressure > ambient. Probe enabled for venting to ambient pressure." prompt (when the green LED illuminates), remove the probe from the purge assembly and press the PROBE TRIGGER button again to vent excess H_2/CH_4.

4.2.2.2.15 **WHEN** the green LED illuminates again, **THEN** use a syringe to inject the liquid VOC standard through the septum on the back of the bottle identified as "current bottle" on the HGAS.vi screen.

4.2.2.2.15.1 Select the appropriate standard levels such that the criteria in Table 9 are met (Table 1 contains suggested values).

4.2.2.2.16 Press the PROBE TRIGGER button after the injection is made.

4.2.2.2.17 Press the PROBE TRIGGER button once again after sample compression to exit the sampling sequence.

4.2.2.2.18 **REPEAT** Steps 4.2.2.2.2 through 4.2.2.2.17 until all five-calibration levels are loaded.

4.2.3 Analyze the Initial Calibration by performing the following:

NOTE: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.2.3.1 In HGAS.vi, open Manual Screen **AND** bleed IS/BFB for approximately 4 minutes.

4.2.3.2 Exit HGAS.vi.

4.2.3.3 Open the "HGASdata" folder desktop icon.

4.2.3.4 Open sequence.log and perform the following:

4.2.3.4.1 Confirm that there are no logging errors.

4.2.3.4.2 Ensure that the BFB sequence line was spawned.

4.2.3.4.3 **IF** any changes are made to the sequence.log file, **THEN** save the file.

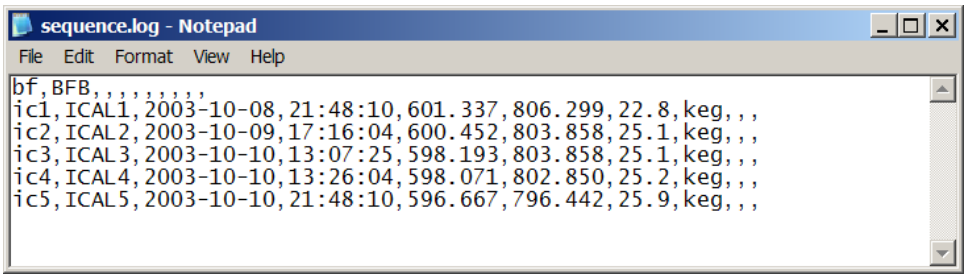

Figure 2. Example of ICAL sequence.log File.

4.2.3.5 Close the sequence.log.

4.2.3.6 Ensure the Agilent Chemstation MS System software is running.

4.2.3.7 In the MSTop window, select the "Sequence" pull-down menu and select the "Import Sequence" item, which will create an automatically generated sequence [batchnumber][alpha] (where [batchnumber] is the batch number that was automatically generated by the HGAS III software and [alpha] is a sequentially-assigned alphabetic character).

4.2.3.7.1 In the "Input" pop-up dialog box, enter the operator's initials and click OK.

4.2.3.7.2 In the next pop-up dialog box "Specify Sequence Type" select "initial calibration" and click OK.

4.2.3.7.2.1 In the following pop up dialog boxes, ensure that the standard information and the site and sample delivery group (SDG) information are correct.

4.2.3.8 In the MSTop window, select the "Sequence" pull-down menu and select the "Run …" item.

4.2.3.8.1 In the "Start Sequence" pop-up dialog box, click "Full Method."

4.2.3.8.1.1 Verify that "Overwrite Existing Data Files" is unchecked.

4.2.3.8.1.2 Enter the operator's initials in the "Operator Name" field.

4.2.3.8.2 Click RUN SEQUENCE.

4.2.3.8.3 Confirm that the correct initials appear in the pop-up dialog box.

4.2.3.8.4 In the next pop-up dialog box, accept the SDG number to initiate the automated BFB analysis.

4.2.3.8.5 **IF** prompted to overwrite solvent delay, **THEN** select "No."

4.2.4 BFB Evaluation

NOTE 1: *Unless specified otherwise, HSG chemist or OT performs this section.*

NOTE 2: *If the BFB passes the ion ratio criteria, the system will continue with the next analysis.*

NOTE 3: *When the BFB analysis is complete, the software will automatically evaluate the BFB spectra for the abundance criteria listed in Table 4.*

4.2.4.1 **IF** the BFB passes the ion ratio criteria, **THEN GO TO** Section 4.2.5.

4.2.4.2 **IF** no passing BFB scan or average of scans is found, **THEN** contact the SS and HSG chemist.

4.2.5 Verify Automated BFB Spectrum Evaluation.

NOTE: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.2.5.1 Open "Enhanced Data Analysis" by clicking on the desktop icon.

4.2.5.2 Load the BFB data file by selecting the "File" pull down menu, item "Load Data File..."

4.2.5.3 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\TUNE.M load?"
THEN click YES.

4.2.5.3.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?"
THEN click NO, unless unsaved changes to the previous method have been made.

4.2.5.4 Minimize "Enhanced Data Analysis."

4.2.5.5 Open batch folder by clicking on "Shortcut to batch" desktop icon.

4.2.5.6 Open the [batchnumber][alpha].ini file created when the sequence was imported.

4.2.5.7 Note the "GoodScan" and "BackgroundScan" numbers from the file.

4.2.5.8 Close the .ini file and the batch folder.

4.2.5.9 Maximize "Enhanced Data Analysis."

4.2.5.10 Select the scan corresponding to "GoodScan" noted in Section 4.2.5.7.

4.2.5.11 Select the scan corresponding to "BackgroundScan" noted in Section 4.2.5.7.

4.2.5.11.1 Select scans in the order given (GoodScan first, then BackgroundScan).

4.2.5.12 Select the "Tuner" pull-down menu, item "Subtract."

4.2.5.13 Select the "Tuner" pull down menu, item "Evaluate BFB to Screen" or if printer is available, "Evaluate BFB to Printer."

4.2.5.14 **IF** scan subtractions meets BFB criteria,
THEN, manually verify the Apex (Apex or 3-point Apex) of the BFB Peak subtracted by the same background scan passes.

4.2.5.15 Close "Enhanced Data Analysis."

4.2.5.16 **WHEN** prompted to exit,
THEN select "Yes."

4.2.5.17 **IF** manual *verification* (see def.) does **NOT** yield a valid BFB spectrum
AND the BFB tune does **NOT** pass,
THEN contact the SS and HSG chemist.

4.2.5.18 **IF** performing Shift One,
THEN GO TO Step 4.4.6.3.

4.2.5.19 **IF** performing Shift Two,
THEN GO TO Step 4.4.8.8.

NOTE: *Analysis of the initial calibration is initiated at this point in the sequence and runs automatically to completion. Figure 3 diagrams the flow of the initial or* continuing calibration *(see def.) analysis and verification.*

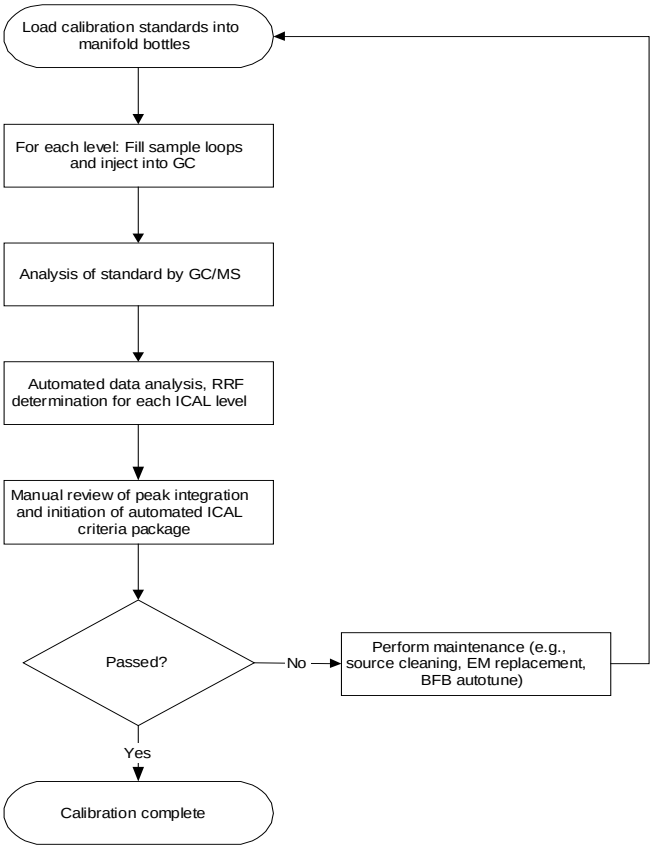

Figure 3. Flow of Calibration Analysis and Verification.

4.2.6 HSG Chemist: Evaluate the initial calibration using Section 4.8.

4.3 MDL and MPS

4.3.1 Determine Method Detection Limits

NOTE 1: *Initially, a minimum of seven samples spiked at a level of three to five times the estimated MDLs must be used to establish the MDLs for VOCs and H_2 and CH_4. Four samples spiked at three to five times the estimated MDLs must be analyzed every six months to verify the initial MDL study.*

NOTE 2: *Personnel may reference Appendix F to determine the necessity of an MDL.*

NOTE 3: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.3.1.1 Ensure that Section 3.2 has been performed.

4.3.1.2 Perform an ICAL, if needed.

4.3.1.3 Initialize a drum batch as described in Section 4.4.1.6.

4.3.1.4 Load and analyze Shift Zero as described in Section 4.4.3.

4.3.1.5 Load and analyze Shift One as described in Section 4.4.4 through 4.4.6.4.

4.3.1.6 Load Shift two QC samples as described in Section 4.4.7.1.

4.3.1.7 Load a Level 1 or Level 2 Calibration Standard seven times as described in Steps 4.2.2.2.2 through 4.2.2.2.18.

4.3.1.7.1 Enter “icMDL#” as the sample ID, where # is a one-digit serial number.

NOTE: *MPS samples can be loaded after the MDL samples following the same procedure described above, EXCEPT entering "icMPS#" in the sample ID field, and loading a Level 3 calibration standard seven times. (e.g., Shift Two would consist of BFB, CCAL2, LCS2, icMDL1 –icMDL7, icMPS1 – icMPS7).*

4.3.1.8 Analyze Shift Two (BFB, CCAL, OCS, and MDL Samples, [and optional MPS samples]) as described in Section 4.4.8.

NOTE: *The MDL samples may be used as MPSs. If the MDL samples do not meet the MPS criteria in Table 3, then personnel perform the MPS steps as described in Section 4.3.2.*

4.3.1.9 HSG Chemist: Process the MDLs using Section 4.8.

4.3.2 Determine Method Performance Samples

NOTE 1: *Initially, method performance samples (MPSs) are determined using a minimum of seven calibration standards above the* program required quantitation limits *(PRQLs; see def.). A minimum of four calibration standards above PRQL are used every six months for ongoing MPS determination. MPS samples can be loaded after the MDL samples following the procedure described in Section 4.3.1 above,* ***EXCEPT*** *entering "icMPS#" where # is a one-digit serial number in the sample ID field, and loading a Level 3 calibration standard seven times.*

NOTE 2: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.3.2.1 **IF** needed,
THEN perform an ICAL.

4.3.2.2 After the ICAL is completed, initialize a drum batch as described in Section 4.4.1.6.

4.3.2.3 Load and analyze Shift Zero as described in Section 4.4.3.

4.3.2.4 Load and analyze Shift One as described in Section 4.4.4 through 4.4.6.4.

4.3.2.5 Load shift two QC samples as described in Section 4.4.7.1.

4.3.2.6 Load a Level 3 Calibration Standard seven times as described in Steps 4.2.2.2.2 through 4.2.2.2.18.

4.3.2.6.1 Enter "icMPS#" as the sample ID, where # is a one-digit serial number.

4.3.2.7 Analyze Shift Two (BFB, CCAL2, LCS2, and icMPS1 - icMPS7) samples as described in Section 4.4.8.

4.3.2.8 HSG Chemist: Process the MPSs using Section 4.8.

4.4 Daily Operations

NOTE 1: *The* quality *(see def.) checks in this section are performed before every shift of sampling activities.*

NOTE 2: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.4.1 Daily Checks

4.4.1.1 Ensure Section 3.2 has been performed.

4.4.1.1.1 Obtain the WTS temperature graph for WMF 634 or download the Dickson Temperature Data Logger.

4.4.1.1.2 Verify that the drums have achieved thermal equilibration at >18°C for the 72-hour period prior to sampling using WTS Headspace Gas Reports and building temperature data, and record on Form 1595 or WTS HGAS Daily Checks Screen.

4.4.1.1.3 **IF** the temperature falls below 18°C, **THEN** allow the drums to equilibrate for 72 hours.

4.4.1.2 Ensure that all manual valves and switches are in proper configuration, and record on Form-1595 or on WTS HGAS Daily Checks Screen, as follows:

- Nitrogen Humidifier Valve open
- OCS Valve closed
- HGAS Sampler Switch in run mode.

4.4.1.3 Ensure that the following equipment and supplies are present and operational to perform headspace gas sampling:

- Personal protective equipment (PPE)
- Sampling probe with syringe filters and a side port needle.

WARNING

Needles are a contamination hazard. Not using appropriate gloves during headspace gas sampling may result in personal injury and contamination.

4.4.1.4 Use care to prevent placing the tip of the needle in an area where solid material or particulate matter might fill or clog the needle.

4.4.1.5 Gas Sampling Seal Assembly

4.4.1.5.1 **IF** samples are to be stored in the sample bottles for long periods of time,
THEN reset the bottle temperature to > 40°C until analysis is about to begin.

4.4.1.5.2 **WHEN** ready to begin analysis,
THEN reset the temperature to 40°C and allow the bottles to equilibrate for 15 minutes before initiating the analytical sequence.

4.4.1.5.3 Verify that ambient temperature and pressure measuring device calibration tags are within their expiration/calibration dates.

4.4.1.6 Instrument preparation

NOTE: *An instrument leak check and cleaning of the sampling manifold and bottles will be performed.*

4.4.1.6.1 Open the HGAS.vi desktop icon.

4.4.1.6.2 **IF** 29 sample bottles are clean and ready **AND** batch number is appropriate, **THEN GO TO** Section 4.4.2.

4.4.1.6.3 Click on NEW BATCH.

4.4.1.6.3.1 **IF** the NEW BATCH button is **NOT** available, **THEN** contact a HSG chemist for assistance.

4.4.1.6.4 **IF** the system asks if you want to end the current batch and start a new one, **THEN** click YES.

4.4.1.6.5 Click on DRUM.

4.4.1.6.6 Enter operator initials.

4.4.1.6.7 Click OK.

NOTE 1: *Although leaks of <0.72 torr/10 min. will pass the leak check criteria, any bottle with a leak rate >0.10 torr/10 minutes should be inspected and repaired if necessary before sample collection begins.*

NOTE 2: *When leak check and cleaning of sampling manifold is complete, the status indicator for all bottles will be yellow, the system status window will display "System idle" and the shift indicator will change to "0."*

4.4.1.6.8 Click START/RESUME to initiate sample bottle cleaning and leak check.

4.4.2 Preparing Drums for HGAS Sampling

NOTE: *Section 4.4.2 may be performed concurrently with Sections 4.4.3 through Section 4.5.*

4.4.2.1 **IF** performing PDP sampling, **THEN GO TO** Section 4.4.3.

NOTE: *Form-1449 may be generated manually and/or electronically.*

4.4.2.2 OT: Complete Form-1449 for waste containers sampled in the batch by accessing the WTS Headspace Gas Data Reports, WTS Supercompactor Load Out screen for 100-gal product drums, or Central Characterization Project-supplied information, as applicable.

4.4.2.3 Record batch number on Form-1449.

4.4.2.4 Record drum number on Form-1449.

NOTE: *Appendix E, DAC Tables, provides information on DAC requirements*.

4.4.2.5 Verify DAC has been met according to the QAPjP by utilizing data gathered on Form-1449 to assist in proper determination of the DAC, using the following steps:

NOTE 1: *Scenario 1 is not an option since the HGAS units cannot filter and sample drums at the time of venting.*

NOTE 2: *Scenario 2 is for 55-gal drums that have met the criteria for Scenario 1 and then are vented, but not sampled at the time of venting.*

NOTE 3: *Scenario 3 is for drums that have been packaged in a vented condition. Scenario 3 is also the default for drums whose packaged configuration is not documented and for drums that cannot be sampled under Scenario 1 or Scenario 2.*

4.4.2.5.1 Determine the appropriate scenario.

4.4.2.5.2 Record the Scenario on Form-1449.

NOTE: *Step 4.4.2.5.3 determines which tables to use within Appendix E.*

4.4.2.5.3 Determine the proper waste summary category S5000 or S3000/S4000 and record on Form-1449.

NOTE: *For Scenario 2 drums, the closure date is the pack date. For Scenario 3 drums, the closure date is the date of the invasive event (coring, visual examination, or liquid absorption). For Scenario 3, 100-gal product drums generated in WMF-676, the closure date and the pack date are the LID/02 event date.*

4.4.2.5.4 Record closure date on Form-1449.

4.4.2.5.4.1 **IF** closure date is unavailable, **THEN** use a legacy date of 06/01/02.

4.4.2.5.4.2 **IF** this is a 100-gal puck drum, **THEN** record the LID/02 event date from the WTS Headspace Gas Data Report as the closure date.

4.4.2.5.5 Record vent date on Form-1449.

4.4.2.5.5.1 **IF** vent date is unavailable, **THEN** use a legacy date of 01/01/03.

4.4.2.5.5.2 **IF** this is a 100-gal puck drum, **THEN** record the LID/02 event date from the WTS Headspace Gas Data Report as the vent date.

4.4.2.5.6 Record the Sample Date on Form-1449.

4.4.2.5.7 Determine the proper table to use in Appendix E based on the sampling scenario and summary category group
AND record the sampling scenario and summary category group on Form-1449.

4.4.2.5.8 Document the filter information on Form-1449.

NOTE: *Packaging Configuration does not apply for Scenario 2.*

4.4.2.5.9 **IF** using Scenario 2,
THEN enter "N/A" for liner bags, inner bags, and packing configuration group number.

NOTE: *The packaging configuration group for 100-gal product drums is 7. There are 0 inner bags and 0 liner bags. The packaging configuration group for all other Scenario 3 drums will be determined based upon the Real Time Radiography Visual Exam Update (RVU) information.*

4.4.2.5.10 **IF** using Scenario 3,
THEN record the number of inner bags, liner bags, and packaging configuration group number on Form-1449.

NOTE 1: *N/A will be used for containers without lids and 0.3 inch will be used for hole size for containers with liner lids. If the lid was roto-zipped, then N/A is entered for the hole size.*

NOTE 2: *A liner lid hole size of >20 inches is considered to have no liner lid.*

4.4.2.5.11 Document the container lid configuration on Form-1449.

4.4.2.5.12 Using the appropriate table from Appendix E, determine the required DAC
AND document on Form-1449.

4.4.2.5.13 Document Drum Age on Form-1449.

4.4.2.5.14 Initial the DAC Verified column on Form-1449 for each acceptable DAC.

4.4.3 Shift Zero

NOTE: *In Shift Zero, the manifold cleanliness check method CLEAN.M is recalibrated in preparation for standard and drum sampling.*

4.4.3.1 Load the Manifold Cleaning Standard by performing the following:

NOTE: *HGAS.vi displays shift and current bottle. If a drum batch was selected when initiating a new batch, shift will be zero and current bottle will be 1. If an ICAL batch was selected when initiating a new batch, the shift indicator will be hidden and the current bottle will be 1.*

4.4.3.1.1 **IF NOT** already open,
THEN open HGAS.vi.

4.4.3.1.2 Click the NEW SAMPLE button.

4.4.3.1.3 Enter the operator's initials in the "System Operator" field.

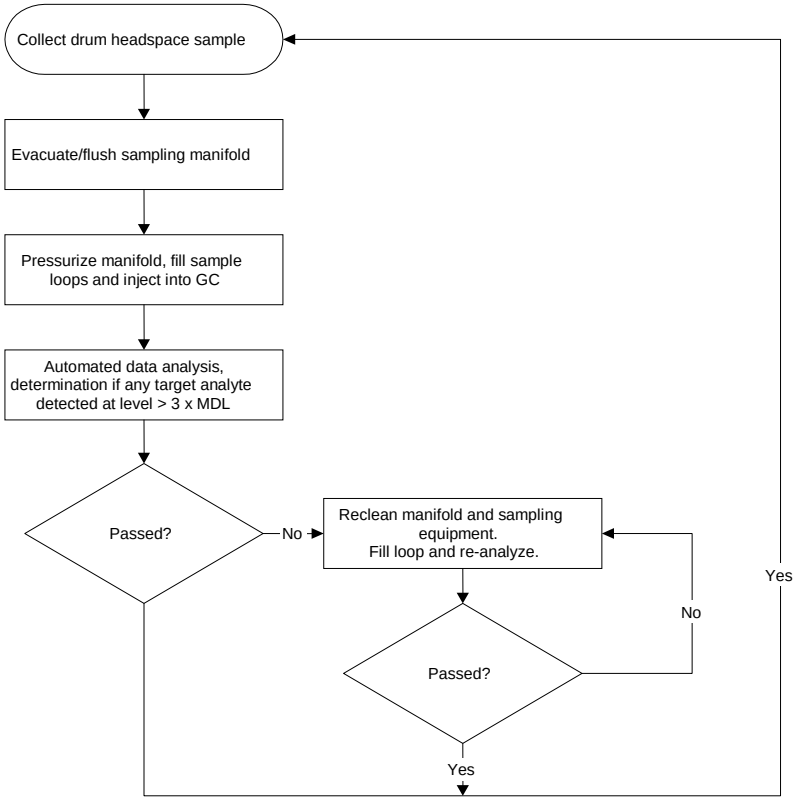

Figure 4. Verification of Manifold Cleanliness between Sample Collections.

4.4.3.1.4 Ensure that "icCLEAN" appears in the Sample ID field.

4.4.3.1.5 Click OK.

4.4.3.1.6 Click the START/RESUME button.

4.4.3.1.7 Follow the system prompts to perform a leak check of the probe assembly.

4.4.3.1.8 **IF** a leak is detected,
THEN perform the following:

4.4.3.1.8.1 Investigate the source of the leak.

4.4.3.1.8.2 Repair or reassemble the sampling assembly.

4.4.3.1.8.3 Check clear fault and follow system prompts to repeat the test until the assembly passes the test.

NOTE: *After the leak check passes, the system will prompt the operator that the leak check passed.*

4.4.3.1.9 **WHEN** the green LED illuminates and the prompt appears in the status box,
THEN insert the sampling probe needle into the nitrogen purge assembly
AND press the PROBE TRIGGER trigger button.

4.4.3.1.9.1 Do **NOT** remove probe-sampling needle from the purge assembly until prompted.

4.4.3.1.9.2 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN abort the collection sequence by clicking ABORT/RESET
AND RETURN TO Step 4.4.3.1.2.

4.4.3.1.10 **WHEN** the green LED illuminates again and the prompt appears in the status box,
THEN withdraw the sampling probe needle from the purge assembly
AND press the PROBE TRIGGER button again to vent excess nitrogen pressure.

4.4.3.1.11 **WHEN** the green LED illuminates again,
THEN inject 1.0 µL of the liquid VOC standard into bottle one through the septum on the back of the bottle using a syringe.

4.4.3.1.12 Press the PROBE TRIGGER button after the injection.

4.4.3.1.13 **WHEN** the green LED illuminates again after sample compression,
THEN press the PROBE TRIGGER button to exit the sampling sequence; the status window should display the "System idle" message.

4.4.3.2 Analyze the Manifold Cleaning Standard by performing the following:

4.4.3.2.1 Exit HGAS.vi.

4.4.3.2.2 Open the shortcut to HGAS data.

4.4.3.2.3 Open the sequence.log and perform the following:

4.4.3.2.3.1 Confirm that there are no logging errors.

4.4.3.2.3.2 Confirm that no BFB sequence line was spawned.

4.4.3.2.3.2.1 **IF** a BFB sequence line was spawned,
THEN delete the BFB sequence line.

4.4.3.2.3.3 **IF** changes are made to the sequence.log file,
THEN save the file.

4.4.3.2.3.4 Close the sequence.log file.

4.4.3.2.3.5 Close the folder.

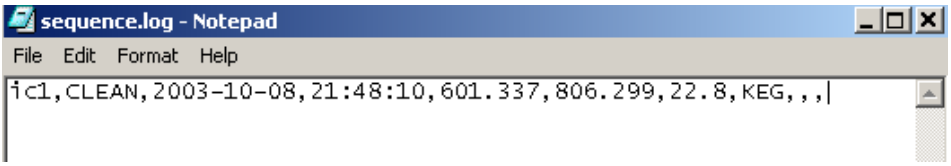

Figure 5. Example of Shift Zero sequence.log File.

NOTE: *Only one copy of MS System software may be open at one time.*

4.4.3.2.4 **IF NOT** already running,
THEN open the Agilent Chemstation MS System software.

4.4.3.2.5 In the MSTop window, select the "Sequence" pull-down menu and select the "Import Sequence" item to automatically generate a sequence.

4.4.3.2.5.1 Enter the operator's initials in the "Input" pop-up dialog box
AND click OK.

4.4.3.2.5.2 In the "Specify Sequence Type" pop-up dialog box, select "initial calibration"
AND click OK.

4.4.3.2.5.3 Enter/ensure correct information in the "CHECK STANDARD LOT NUMBERS!" dialog box
(i.e., that standards lot references match standards used).

4.4.3.2.5.4 Click ENTER.

4.4.3.2.5.5 Enter/ensure correct information in the "VERIFY STANDARD EXPIRATION DATES" dialog box.

4.4.3.2.5.6 Click ENTER.

4.4.3.2.5.7 Enter/ensure correct information in the "SDG Header" dialog box.

4.4.3.2.5.8 Click ENTER.

4.4.3.2.6 In the MSTop window, select the "Sequence" pull-down menu and select "Run…"

4.4.3.2.6.1 In the "Start Sequence" pop-up dialog box, click FULL METHOD.

4.4.3.2.6.2 Ensure that "Overwrite Existing Data Files" is unchecked.

4.4.3.2.6.3 Enter the operator's initials in the "Operator Name" field.

4.4.3.2.6.4 Click RUN SEQUENCE.

4.4.3.2.6.5 Confirm that the correct initials appear in the pop-up dialog box.

4.4.3.2.6.6 Click OK.

4.4.3.2.6.7 In the next pop-up dialog box, accept the SDG number.

4.4.3.2.6.8 Click OK.

NOTE 1: *When the GC/MS is ready, the manifold cleaning standard will be introduced onto the column and analyzed. The acquisition conditions for the manifold cleaning standard and RTEB analyses are listed in Table 12.*

NOTE 2: *After the manifold cleaning standard has been delivered to the GC, Analysis.vi will automatically clean Bottle 1.*

4.4.3.2.7 Evaluate the manifold cleaning standard using *Quantitation Editor* (QEdit; see def.).

4.4.3.2.7.1 Open "Enhanced Data Analysis."

4.4.3.2.7.2 Load the correct data file by selecting the "File" pull down menu, item "Load Data File..."

4.4.3.2.7.3 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\CLEAN.M load?"
THEN click YES.

4.4.3.2.7.3.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?"
THEN click NO, unless unsaved changes to the previous method have been made.

4.4.3.2.7.4 Select the "View" pull-down menu and select the "QEdit Quant Result" item.

4.4.3.2.7.5 Perform QEdit and exit the "Quick QEdit" routine by clicking on the EXIT button.

4.4.3.2.7.6 Save changes when prompted.

4.4.3.2.8 **IF** problems, such as poor responses or missing peaks, are encountered,
THEN GO TO Section 4.7.5 to reanalyze the manifold cleaning standard.

4.4.3.2.9 Update CLEAN.M Calibration.

4.4.3.2.9.1 Select the "Calibrate" pull-down menu and select the "Update…" item.

4.4.3.2.9.2 Select "Update One Level" in the "Select Update Option" dialog box.

4.4.3.2.9.3 Click OK.

4.4.3.2.9.4 **WHEN** asked to "requantitate now,"
THEN select "No."

4.4.3.2.9.5 In the "Update Calibration" dialog box, perform the following:

4.4.3.2.9.5.1 Select "Recalibrate using Calib Level ID 1."

4.4.3.2.9.5.2 Select "Replace responses."

4.4.3.2.9.5.3 Ensure "update retention times" is "No update" and "replace qualifier ion relative responses" is **NOT** selected.

4.4.3.2.9.5.4 Click on DO UPDATE and exit Edit Compounds.

4.4.3.2.9.6 Select the "Method" pull-down menu and select the "Save Method …" item.

4.4.3.2.9.7 Ensure CLEAN.M is displayed in the "Save Method as" dialog box.

4.4.3.2.9.7.1 **IF** CLEAN.M is **NOT** displayed, **THEN** contact HSG chemist.

4.4.3.2.9.8 Click OK in the "Save method as …" pop-up dialog box.

4.4.3.2.10 Exit "Enhanced Data Analysis."

4.4.3.2.11 Maximize the Analysis.vi window and confirm the bottle indicator for Bottle 1 is yellow, indicating that Bottle 1 has been cleaned.

4.4.3.2.12 Exit Analysis.vi.

4.4.4 Load Shift One

NOTE 1: *In Shift One a BFB, CCAL, OCS,* equipment blank *(EB; see def.), and* field blank *(FB; see def.) are performed in preparation for headspace gas sampling.*

NOTE 2: *Sampling of containers must be completed within 12 hours of Shift One BFB to ensure that the RTEB is analyzed within the required 12-hour window.*

4.4.4.1 Load the Continuing Calibration Standard by performing the following:

4.4.4.1.1 Open HGAS.vi.

4.4.4.1.2 Click the NEW SAMPLE button.

4.4.4.1.3 Enter the operator's initials in the System Operator field.

4.4.4.1.4 **IF** Shift One,
THEN confirm that "icCCAL1" appears in the sample ID field.

4.4.4.1.5 **IF** Shift Two,
THEN confirm that "icCCAL2" appears in the sample ID field.

4.4.4.1.6 Click OK.

4.4.4.1.7 Click the START/RESUME button.

4.4.4.1.8 Follow the system prompts to perform a leak check on the probe assembly.

4.4.4.1.9 **IF** a leak is detected,
THEN perform the following:

4.4.4.1.9.1 Contact HSG chemist and the SS to investigate the source of the leak.

4.4.4.1.9.2 Repair or reassemble the sampling assembly.

4.4.4.1.9.3 Clear the fault in HGAS.vi.

4.4.4.1.9.4 Repeat the test until the assembly passes the test.

4.4.4.1.10 Attach the standard purge assembly to the appropriate H_2/CH_4 standard cylinder.

4.4.4.1.11 Open the gas cylinder valve and regulate to approximately 5 psig.

4.4.4.1.12 Bleed the purge assembly to ensure no room air remains in the purge assembly.

4.4.4.1.13 **WHEN** the green LED illuminates and the "Probe enabled for sampling" prompt appears in the status box,
THEN insert the sampling probe needle into the purge assembly for the Level 3 H_2/CH_4 standard, allowing the septum to be pushed towards the hub of the needle
AND press the PROBE TRIGGER button.

4.4.4.1.13.1 Do **NOT** remove probe-sampling needle from the purge assembly until prompted.

4.4.4.1.13.2 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN abort the collection sequence by clicking ABORT/RESET and returning to Step 4.4.4.1.2.

4.4.4.1.14 **WHEN** the green LED illuminates again and the prompt appears in the status box,
THEN withdraw the sampling probe needle from the purge assembly and press the PROBE TRIGGER button again to vent excess H_2/CH_4 pressure.

4.4.4.1.15 **WHEN** the green LED illuminates again, **THEN** inject 6.0 µL of the liquid VOC standard into the correct bottle through the septum on the back of the bottle using a syringe.

4.4.4.1.16 Press the PROBE TRIGGER button after the injection.

4.4.4.1.17 **WHEN** the green LED illuminates again after sample compression, **THEN** press the PROBE TRIGGER button to exit the sampling sequence.

4.4.4.2 Load the On-Line Control Sample

4.4.4.2.1 Click the NEW SAMPLE button.

4.4.4.2.2 Enter the operator's initials in the System Operator field.

4.4.4.2.3 **IF** Shift One, **THEN** confirm that "icLCS1" appears in the sample ID field.

4.4.4.2.4 **IF** Shift Two, **THEN** confirm that "icLCS2" appears in the sample ID field.

4.4.4.2.5 Click OK.

4.4.4.2.6 Click the START/RESUME button.

4.4.4.2.7 Follow the system prompts to perform a leak check on the probe assembly.

4.4.4.2.8 Open the OCS shut-off valve and bleed the OCS purge assembly to ensure no room air remains in the purge assembly.

4.4.4.2.9 **WHEN** the green LED illuminates and the prompt appears in the status box,
THEN insert the sampling probe needle into the OCS purge assembly, allowing the septum to be pushed towards the hub of the needle
AND press the PROBE TRIGGER button.

NOTE: *The clean-up light illuminates as soon as sample collection begins, indicating a RTEB is required.*

4.4.4.2.10 Do **NOT** remove probe-sampling needle from the purge assembly until prompted.

4.4.4.2.11 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN perform the following:

4.4.4.2.11.1 Abort the collection sequence by clicking ABORT/RESET.

4.4.4.2.11.2 **IF** ABORT/RESET was clicked after clean-up light illuminated,
THEN notify the SS
AND contact an HSG chemist for instructions for initiating an RTEB manually.

4.4.4.2.11.3 **GO TO** Step 4.4.4.2.1.

4.4.4.2.12 **WHEN** the green LED illuminates again and the prompt appears in the status box,
THEN withdraw the sampling probe needle from the purge assembly
AND press the PROBE TRIGGER button again to vent excess OCS pressure.

NOTE: *This trigger press initiates a manifold cleaning and RTEB analysis.*

4.4.4.2.13 **WHEN** the green LED illuminates again after sample compression,
THEN press the PROBE TRIGGER button to exit the sampling sequence.

NOTE: *Sampling of containers must be completed within 12 hours of Shift One BFB to ensure that the RTEB is analyzed within the required 12-hour window.*

4.4.4.3 Analyze the RTEB by performing the following:

4.4.4.3.1 Minimize HGAS.vi.

4.4.4.3.2 Restore the Agilent "Instrument Control" window.

4.4.4.3.3 Load the CLEAN.M method while the manifold is purging and evacuating.

4.4.4.3.3.1 Select the "Method" pull-down menu and select the "Load…" item.

4.4.4.3.3.2 Select the CLEAN.M method.

4.4.4.3.4 Click on the green arrow.

4.4.4.3.5 Delete all information in the sample name and miscellaneous information fields.

4.4.4.3.6 Ensure the vial number is one**.**

4.4.4.3.7 Enter the operator's initials in the "Operator Name" field.

4.4.4.3.8 **IF** analyzing the RTEB after loading the Shift One OCS (LCS1),
THEN enter CL1-_.D (where _ = alpha data file flag for that instrument) in "Data File Name" field (Example: CL1-F.D).

4.4.4.3.9 **IF** analyzing the RTEB after the Shift Two OCS (LCS2),
THEN enter c:\HPCHEM\1\DATA\[batch_number][alpha]\CL2-?.D (where? = alpha data file flag for that instrument) in the "Data File Name" field. (Example: c:\HPCHEM\1\DATA\HS104_00001A\CL2-F.D)

4.4.4.3.10 **IF** analyzing the RTEB after any subsequent drum sample,
THEN enter CL[n] -?.D (where? = alpha data file flag for that instrument) in "Data File Name" field, where [n] is increased incrementally by one for subsequent drum samples.
(Example: CL3-F.D through CL22-F.D)

4.4.4.3.11 Click START RUN and verify that the GC/MS goes into the pre-run mode.

4.4.4.3.12 Restore the HGAS.vi window.

4.4.4.3.13 **WHEN** prompted,
THEN insert the sampling probe into the nitrogen purge assembly
AND press the probe trigger.

4.4.4.3.14 **WHEN** the green LED illuminates again,
THEN remove the sampling probe from the nitrogen purge assembly
AND press the probe trigger.

NOTE 1: *When the GC is ready, the RTEB will be introduced into the sample loop and subsequently delivered onto the column.*

NOTE 2: *While GC/MS is analyzing the RTEB, the operator can initiate a leak check prior to manifold cleanliness verification and next sample collection.*

4.4.4.3.15 **IF** OCS 1 was just collected,
THEN perform Steps 4.4.4.5.1 through 4.4.4.5.7 while the GC/MS is analyzing.

4.4.4.3.16 **IF** OCS 2 or a drum sample was just collected,
THEN perform Steps 4.4.7.2.1 through 4.4.7.2.8 while the GC/MS is analyzing.

4.4.4.4 Evaluate the RTEB by performing the following:

4.4.4.4.1 Open "Enhanced Data Analysis" by clicking on the desktop icon.

4.4.4.4.2 Load the RTEB data file by selecting "Load Data File…" from the "File" pull-down menu.

4.4.4.4.3 Ensure that "CLEAN.M" is loaded.

4.4.4.4.4 Select "Calculate" from the "Quantitate" menu.

4.4.4.4.5 Select "QEdit Quant Result" from the "View" menu.

4.4.4.4.6 Perform QEdit, checking the analysis for complete peak integration, detection of all target compounds and correct retention times.

4.4.4.4.6.1 Exit the "Quick QEdit" routine by clicking on the EXIT button.

4.4.4.4.6.2 Save changes when prompted.

4.4.4.4.7 Select the "Clean Check" from the "HGAS" menu.

4.4.4.4.8 **IF** Clean Check passes (no target compounds found greater than 3 x MDL, no message is displayed, and the clean-up light on HGAS.vi goes out),
THEN continue sample collection, if desired.

4.4.4.4.8.1 **IF** the Shift One OCS was just run, **THEN GO TO** Step 4.4.4.5.8.

4.4.4.4.8.2 **IF** the Shift Two OCS was just run, **THEN GO TO** the notes before Step 4.4.7.2.9.

4.4.4.4.9 Close Enhanced Data Analysis.

4.4.4.4.10 **IF** Clean Check fails and an error message is displayed,
THEN perform Steps 4.4.4.4.6 and 4.4.4.4.7, again.

NOTE: *If Clean Check fails once more then HGAS.vi will automatically re-clean the manifold.*

4.4.4.4.11 **IF** Clean Check fails once more and HGAS.vi automatically initiates another clean,
THEN RETURN TO Section 4.4.4.3.

4.4.4.5 Load the EB by performing the following:

4.4.4.5.1 Click the NEW SAMPLE button in HGAS.vi.

4.4.4.5.2 Enter the operator's initials in the System Operator field.

4.4.4.5.3 Ensure that "icEB" appears in the Sample ID field.

NOTE: *The current bottle number will be changed to a random bottle number between 4 and 29 for the EB.*

4.4.4.5.4 Click OK.

4.4.4.5.5 Click the START/RESUME button.

4.4.4.5.6 Follow the system prompts to perform a leak check on the probe assembly.

4.4.4.5.7 **IF** a leak is detected,
THEN perform the following:

4.4.4.5.7.1 Investigate the source of the leak.

4.4.4.5.7.2 Repair or reassemble the sampling assembly.

4.4.4.5.7.3 Repeat the test until the assembly passes the test.

NOTE 1: *RTEB is required to pass before the next step can be performed, per Section 4.4.4.4.*

NOTE 2: *After both the leak check and the RTEB pass, the green LED illuminates and the "Probe enabled for sampling" prompt appears in the status box.*

4.4.4.5.8 Insert the sampling probe needle into the nitrogen purge assembly
AND press the PROBE TRIGGER button.

4.4.4.5.9 Do **NOT** remove probe-sampling needle from the purge assembly until prompted.

4.4.4.5.9.1 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN abort the collection sequence by clicking ABORT/RESET and returning to Step 4.4.4.5.1.

4.4.4.5.10 **WHEN** the green LED illuminates again and the "Sample pressure> ambient. Probe enabled for venting to ambient pressure." prompt appears in the status box,
THEN withdraw the sampling probe needle from the purge assembly
AND press the PROBE TRIGGER button again to vent excess nitrogen pressure.

4.4.4.5.11 **WHEN** the green LED illuminates again after sample compression,
THEN press the PROBE TRIGGER button to exit the sampling sequence.

4.4.4.6 Load the FB by performing the following:

4.4.4.6.1 Click the NEW SAMPLE button.

4.4.4.6.2 Enter the operator's initials in the System Operator field.

4.4.4.6.3 Ensure that "drFB" appears in the Sample ID field.

4.4.4.6.4 Click OK.

4.4.4.6.5 Click the START RESUME button.

4.4.4.6.6 Follow the system prompts to perform a leak check on the probe assembly.

4.4.4.6.7 **IF** a leak is detected,
THEN perform the following:

4.4.4.6.7.1 Investigate the source of the leak.

4.4.4.6.7.2 Repair or reassemble the sampling assembly.

4.4.4.6.7.3 Repeat the test until the assembly passes the test.

4.4.4.6.8 **WHEN** the green LED illuminates and the "Probe enabled for sampling" prompt appears in the status box,
THEN slide the septum towards the base of the needle to open the side port
AND press the PROBE TRIGGER button to sample ambient air.

4.4.4.6.9 **WHEN** the green LED illuminates again,
THEN press the PROBE TRIGGER to continue.

4.4.4.6.10 **WHEN** the green LED illuminates again after sample compression,
THEN press the PROBE TRIGGER button to exit the sampling sequence.

NOTE: *Shift One sample collection is complete. HGAS.vi will not allow further sample collection until Shift One has been delivered for analysis.*

4.4.5 In HGAS.vi, open Manual Screen
AND bleed BFB/IS for approximately 4 minutes.

4.4.6 Initiate Shift One Analysis

4.4.6.1 Start Analysis Sequence

4.4.6.1.1 Exit HGAS.vi.

4.4.6.1.2 Open the HGASdata folder desktop icon.

4.4.6.1.3 Open sequence.log and perform the following:

4.4.6.1.3.1 Confirm that there are no logging errors.

4.4.6.1.3.2 Confirm that the BFB sequence line was spawned.

4.4.6.1.4 **IF** changes are made to the sequence.log file, **THEN** save the file.

4.4.6.1.5 Close the sequence.log file.

4.4.6.1.6 Close the folder.

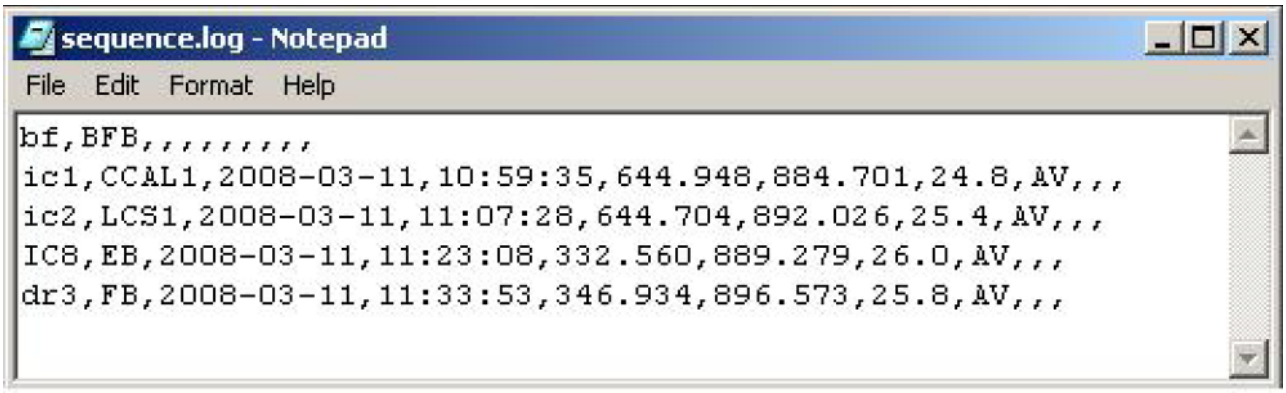

Figure 6. Example of Shift One sequence.log File.

4.4.6.1.7 **IF NOT** already running, **THEN** open the Agilent ChemStation MS System software.

4.4.6.1.8 In the MSTop window, select "Import Sequence" from the "Sequence" menu to automatically generate a sequence.

4.4.6.1.8.1 In the "Input" pop-up dialog box, enter the operator's initials and click OK.

4.4.6.1.8.2 In the next pop-up dialog box "Specify Sequence Type," select "Drum Analysis" and click OK.

4.4.6.1.8.3 Enter/ensure correct information in the "CHECK STANDARD LOT NUMBERS!" dialog box (i.e., that standards lot reference match standards used).

4.4.6.1.8.4 Click ENTER.

4.4.6.1.8.5 Enter/ensure correct information in the "SDG Header/STANDARD INFORMATION" dialog box.

4.4.6.1.8.6 Click ENTER.

4.4.6.1.9 In the MSTop window, select the "Sequence" pull-down menu and select "Run…."

4.4.6.1.9.1 In the "Start Sequence" pop-up dialog box, click FULL METHOD.

4.4.6.1.9.1.1 Verify that "Overwrite Existing Data Files" is unchecked and enter the operator's initials in the "Operator Name" field.

4.4.6.1.9.2 Click RUN SEQUENCE.

4.4.6.1.9.3 Confirm that the correct initials appear in the pop-up dialog box.

4.4.6.1.9.4 In the next pop-up dialog box, accept the SDG number.

4.4.6.2 Analyze and Evaluate the BFB Standard

NOTE: *When the GC is ready, ≈ 50 ng of BFB standard will be introduced into the sampling loop and subsequently delivered onto the column using a gaseous standard containing BFB.*

4.4.6.2.1 Evaluate the BFB in accordance with Section 4.2.4.

4.4.6.3 Analyze and evaluate the Continuing Calibration Standard by performing the following:

NOTE 1: *Analysis of the continuing calibration standard is initiated at this point in the sequence and runs automatically to completion. The figure below diagrams the flow of the continuing calibration analysis and verification.*

NOTE 2: *After the CCAL is injected and analyzed, the sequence will pause to allow the analyst to ensure that the standard passed the applicable QAOs.*

4.4.6.3.1 Open "Enhanced Data Analysis."

4.4.6.3.2 Evaluate the standard.

4.4.6.3.2.1 Load the CCAL data file by selecting the "File" pull down menu, item "Load Data File …"

4.4.6.3.2.2 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\VOCGAS.M load?"
THEN click YES.

4.4.6.3.2.2.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?"
THEN click NO, unless unsaved changes to the previous method have been made.

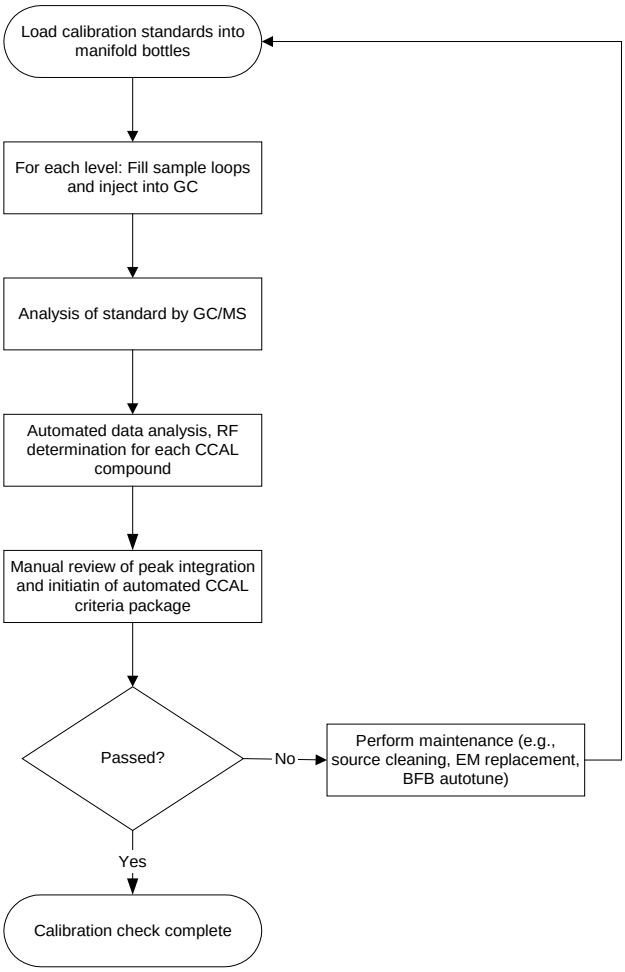

Figure 7. Flow of CCAL Analysis and Evaluation.

4.4.6.3.2.3 Select the "View" pull-down menu and select the "QEdit Quant Result" item.

4.4.6.3.2.4 Perform QEdit, checking peak integration, detection of all target compounds and retention times.

4.4.6.3.2.5 Exit the "Quick QEdit" routine by clicking on the EXIT button.

4.4.6.3.2.5.1 Save changes when prompted.

4.4.6.3.2.6 **IF** compounds are consistently missed,
THEN use QEdit to review the ID file.

4.4.6.3.3 Import the results into the data store by selecting "VOC Capture" from the "HGAS" menu.

NOTE: *The system will display an alert box reporting how many control flags were found in the CCAL. No control flags mean the CCAL passed the QAOs.*

4.4.6.3.4 Click OK.

4.4.6.3.5 Verify that the CCAL passes the QAOs by selecting "Evaluate Data File as Continuing Cal to Screen" from the "HGAS" menu.

4.4.6.3.5.1 Verify all VOCs, hydrogen, and methane have a %D <30%.

4.4.6.3.6 **IF** the CCAL failed due to low IS areas,
THEN notify the SS and HSG chemist,
THEN re-analyze after bleeding the IS lines as described in Section 4.7.4.

4.4.6.3.7 **IF** the CCAL fails with IS areas within acceptable limits,
OR fails on re-analysis after bleeding the IS,
THEN notify the SS and HSG chemist
AND follow the procedure described in Sections 4.7.6 or 4.7.7, as directed.

4.4.6.3.8 **IF** the CCAL fails again,
THEN notify SS and HSG chemist.

4.4.6.4 Analyze and Evaluate Shift One QC Samples by performing the following:

4.4.6.4.1 In the MSTop window, select "Resume After Pause…" from the "Sequence" menu.

4.4.6.4.2 Ensure that the dialog box "Overwrite Existing Data Files" is **NOT** checked.

4.4.6.4.3 Enter the operator's initials.

4.4.6.4.4 Click on the RUN SEQUENCE button to initiate the automated analysis sequence for the QC samples.

4.4.6.4.4.1 Confirm that the correct initials appear in the pop-up dialog box.

4.4.6.4.4.2 Click OK.

4.4.6.4.4.3 In the next pop-up dialog box, accept the SDG number.

4.4.6.4.4.4 Click OK.

NOTE: *After all the samples in Shift One have been delivered to the GC, Analysis.vi will automatically clean the bottles used for Shift One.*

4.4.6.4.5 Evaluate the OCS, EB and FB by performing QEdit, checking peak integration, detection of all target compounds and retention times.

4.4.6.4.5.1 Exit the "Quick QEdit" routine by clicking on the EXIT button.

4.4.6.4.5.2 Save changes when prompted.

4.4.6.4.6 Select "VOC Capture" from the "HGAS" menu on the "Data Analysis" screen for the OCS, EB and FB.

NOTE: *OCS % Recoveries must be within acceptance criteria (See Table 14). If they are not, the OCS fails and an alert box will report the number of control flags found.*

4.4.6.4.7 **IF** the OCS fails,
THEN contact the SS and HSG chemist.

4.4.6.4.8 Exit "Enhanced Data Analysis."

4.4.6.4.9 Maximize the Analysis.vi window and ensure the indicators for the bottles used are yellow, indicating that Shift One bottles have been cleaned.

4.4.6.4.10 Exit Analysis.vi.

4.4.7 Load Shift Two

NOTE: *Shift Two includes a BFB, CCAL, OCS, drum sampling, and a drum duplicate sample. At least one duplicate drum sample is included in every batch. The duplicate sample is identified in the sample ID field as specified in the procedure.*

4.4.7.1 Collecting Shift Two QC Samples

4.4.7.1.1 Load the second shift continuing calibration standard (CCAL2) using the process described in Section 4.4.4.1, ensuring the sample ID is "icCCAL2,"
AND RETURN TO Step 4.4.7.1.2.

4.4.7.1.2 Load the OCS duplicate using the process described in Section 4.4.4.2 through Section 4.4.4.4, ensuring the OCS sample ID is "icLCS2."

4.4.7.2 Collecting Drum Samples

NOTE: *The NEW SAMPLE button is not available if the clean-up light is illuminated and the RTEB has not yet been delivered. As soon as the NEW SAMPLE button becomes available, the sample collection sequence for the next sample may be begun.*

4.4.7.2.1 Click the NEW SAMPLE button.

4.4.7.2.2 Enter the operator's initials in the System Operator field.

4.4.7.2.3 Ensure that "dr" appears in the Sample ID field.

4.4.7.2.4 Enter the container ID from the drum label after the "dr."

4.4.7.2.5 Click OK.

4.4.7.2.6 Click the START/RESUME button.

4.4.7.2.7 Follow the system prompts to perform a leak check on the probe assembly.

4.4.7.2.8 **IF** a leak is detected,
THEN perform the following:

4.4.7.2.8.1 Investigate the source of the leak.

4.4.7.2.8.2 Repair or reassemble the sampling assembly.

4.4.7.2.8.3 Repeat the test until the assembly passes the test.

NOTE 1: *The RTEB is required to pass before the next step can be performed, per Section 4.4.4.4.*

NOTE 2: *After both the leak check and the RTEB pass, the green LED illuminates and the "Probe enabled for sampling" prompt appears in the status box.*

4.4.7.2.9 **IF** drums are to be sampled,
THEN GO TO Section 4.5 and sample drum.

4.4.7.3 Analyze the RTEB by performing the following:

4.4.7.3.1 Minimize HGAS.vi.

4.4.7.3.2 Restore the Agilent "Instrument Control" window.

4.4.7.3.3 Ensure the CLEAN.M method is loaded while the manifold is purging and evacuating.

4.4.7.3.3.1 Select the “Method” pull-down menu and select the “Load …” item.

4.4.7.3.3.2 Select the CLEAN.M method.

4.4.7.3.4 Click on the green arrow.

4.4.7.3.5 Delete all information in the sample name and miscellaneous information fields.

4.4.7.3.6 Ensure the vial number is one.

4.4.7.3.7 Enter the operator’s initials in the “Operator Name” field.

4.4.7.3.8 Enter CL[n] -?.D (where ? = alpha data file flag for that instrument).D in “Data File Name” field, where [n] is increased incrementally by one for subsequent drum samples (example: CL3-F.D through CL22-F.D).

4.4.7.3.9 Click START RUN and verify that the GC/MS goes into the pre-run mode.

4.4.7.3.10 Restore the HGAS.vi window.

4.4.7.3.11 **WHEN** prompted,
THEN insert the sampling probe into the nitrogen purge assembly
AND press the probe trigger.

4.4.7.3.12 **WHEN** the green LED illuminates again,
THEN remove the sampling probe from the nitrogen purge assembly
AND press the probe trigger.

NOTE 1: *When the GC is ready, the RTEB will be introduced into the sample loop and subsequently delivered onto the column.*

NOTE 2: *While GC/MS is analyzing the RTEB, the operator can initiate a leak check prior to manifold cleanliness verification and next sample collection.*

4.4.7.3.13 **IF** no additional drums are to be sampled, **THEN** ensure a drum duplicate has been sampled.

4.4.7.3.13.1 **IF** a duplicate sample has **NOT** been obtained, **THEN GO TO** Step 4.4.7.3.14 to sample a duplicate.

4.4.7.3.13.2 **IF** a duplicate has been obtained, **THEN GO TO** Section 4.4.7.4.

4.4.7.3.14 Click the NEW SAMPLE button.

4.4.7.3.15 Enter the operator's initials in the System Operator field.

4.4.7.3.16 Ensure that "dr" appears in the Sample ID field.

4.4.7.3.17 Enter the container ID from the drum label after the "dr."

NOTE: *Sample/sample* duplicates *(see def.) are collected sequentially.*

4.4.7.3.18 **IF** this is a duplicate sample, **THEN** enter the drum ID followed by a space and "DUP."

4.4.7.3.19 Click OK.

4.4.7.3.20 Click the START/RESUME button.

4.4.7.3.21 Follow the system prompts to perform a leak check on the probe assembly.

4.4.7.3.22 **IF** a leak is detected,
THEN perform the following:

4.4.7.3.22.1 Investigate the source of the leak.

4.4.7.3.22.2 Repair or reassemble the sampling assembly.

4.4.7.3.22.3 Repeat the test until the assembly passes the test.

4.4.7.4 Evaluate the RTEB by performing the following:

4.4.7.4.1 Open “Enhanced Data Analysis” by clicking on the desktop icon.

4.4.7.4.2 Load the RTEB data file by selecting “Load Data File…” from the “File” pull-down menu.

4.4.7.4.3 Ensure that “CLEAN.M” is loaded.

4.4.7.4.4 Select “Calculate” from the “Quantitate” menu.

4.4.7.4.5 Select “QEdit Quant Result” from the “View” menu.

4.4.7.4.6 Perform QEdit, checking the analysis for complete peak integration, detection of all target compounds and correct retention times.

4.4.7.4.6.1 Exit the “Quick QEdit” routine by clicking on the EXIT button.

4.4.7.4.6.2 Save changes when prompted.

4.4.7.4.7 Select the “Clean Check” from the “HGAS” menu.

4.4.7.4.8 **IF** Clean Check passes (no target compounds found greater than 3 x MDL, no message is displayed, and the clean-up light on HGAS.vi goes out),
THEN close Enhanced Data Analysis
AND GO TO Step 4.5 to continue.

OR

4.4.7.4.9 **IF** no more drums are to be sampled,
THEN GO TO Step 4.4.8.

4.4.7.4.10 **IF** Clean Check fails and an error message is displayed,
THEN REPEAT Steps 4.4.7.4.6 and 4.4.7.4.7.

NOTE: *If Clean Check fails once more then HGAS.vi will automatically re-clean the manifold.*

4.4.7.4.11 **IF** Clean Check fails once more and HGAS.vi automatically initiates another clean,
THEN GO TO Section 4.4.7.3.

4.4.8 Analyze the Headspace Gas Samples by performing the following:

4.4.8.1 In HGAS.vi open the manual screen and bleed BFB/IS for approximately 4 minutes.

4.4.8.1.1 Exit HGAS.vi.

NOTE: *Steps 4.4.8.2 through 4.4.8.5 may be performed concurrently with Step 4.4.8.1.*

4.4.8.2 Open the HGASdata folder desktop icon.

4.4.8.3 Open sequence.log and perform the following:

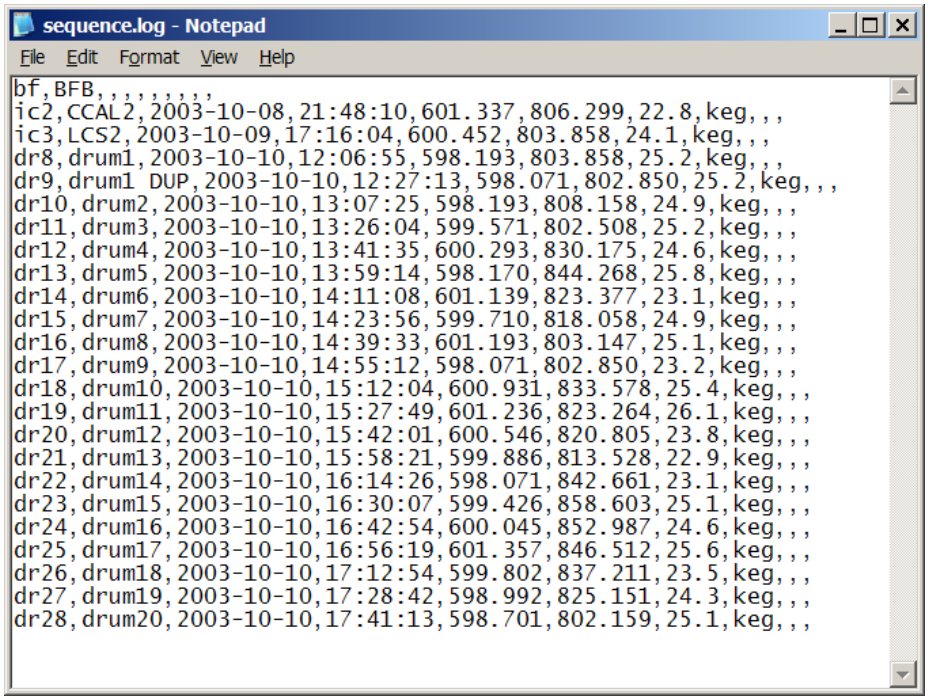

Figure 8. Example of Shift Two sequence.log File.

4.4.8.3.1 Confirm that there are no logging errors.

4.4.8.3.2 Confirm that the BFB sequence line was spawned.

4.4.8.3.3 **IF** changes are made to the sequence.log file, **THEN** save the file.

4.4.8.3.4 Exit sequence.log and close folder.

4.4.8.4 Wait until Agilent ChemStation Instrument Control is idle.

4.4.8.5 In the MSTop window, select “Append Sequence …” from the “Sequence” menu.

NOTE: *This will append shift two samples to the automatically generated sequence that was created in Shift One.*

4.4.8.6 In the MSTop window, select "Start the Second Shift …" from the "Sequence" menu.

4.4.8.6.1 In the "Sample Log Table" pop-up dialog box, highlight the new BFB line just added (last line) and click OK.

4.4.8.6.2 Answer "Yes" to the next pop-up dialog box "The sequence pointers will be reset to line [n]. Pressing NO starts at line 1."

4.4.8.6.3 In the "Start Sequence" pop-up dialog box, click FULL METHOD.

4.4.8.6.4 Verify that "Overwrite Existing Data Files" is unchecked.

4.4.8.6.5 Enter the operator's initials in the "Operator Name" field.

4.4.8.6.6 Click RUN SEQUENCE.

4.4.8.6.7 Confirm that the correct initials appear in the pop up dialog box.

4.4.8.6.8 Click OK.

4.4.8.6.9 In the next pop-up dialog box, accept the SDG number.

NOTE: *When the GC is ready, Shift Two analysis will commence beginning with BFB.*

4.4.8.6.10 Click OK.

4.4.8.7 Evaluate the BFB in accordance with Section 4.2.4.

NOTE: *When the BFB has passed, analysis of the continuing calibration standard is automatically initiated and completed.*

4.4.8.8 Evaluate the CCAL by performing Section 4.4.6.3.

4.4.8.9 In the MSTop window, select "Resume After Pause" from the "Sequence" menu.

4.4.8.9.1 Confirm that the dialog box "Overwrite Existing Data Files" is **NOT** checked.

4.4.8.9.2 Enter the operator's initials.

4.4.8.9.3 Click on the RUN SEQUENCE button to initiate the automated analysis sequence for the QC samples.

4.4.8.9.4 Confirm that the correct initials appear in the pop-up dialog box.

4.4.8.9.5 In the next pop-up dialog box, accept the SDG number.

NOTE 1: *The sequence will continue to run until completion.*

NOTE 2: *When the GC is ready, Shift Two analysis will continue with the OCS duplicate.*

4.4.9 End of Batch Activities

4.4.9.1 Confirm all samples delivered successfully to GC/MS in Analysis.vi.

4.4.9.2 Exit Analysis.vi.

4.4.9.3 Initiate a new drum batch as described in Section 4.4.1.6.

4.4.9.4 Launch the data transfer application by double clicking the desktop icon.

4.4.9.5 Click YES in the dialog box when asked "Are you sure you want to transfer files now?"

4.4.9.6 **WHEN** file transfer is complete,
THEN open HGAS.vi.

4.5 Performing Direct Sampling Operation

NOTE: *Unless specified otherwise, HSG chemist or OT performs this section.*

4.5.1 **IF** performing PDP samples,
THEN GO TO Step 4.5.9.

NOTE: *Section 4.7.14 may be performed at anytime during this process.*

4.5.2 **WHEN** the drum does **NOT** have a sampleable filter and filter replacement is desired,
THEN GO TO Section 4.7.14 to replace the filter.

4.5.3 Ensure the drum age criteria have been met for the drum to be sampled.

(MP-TRUW-8.2)

NOTE: *Failure to complete action in Steps 4.5.4, 4.5.5, and 4.5.6 will result in the collection of an invalid sample.*

(MP-TRUW-8.2)

4.5.4 **IF** any drum contains more than one filter,
THEN ensure that a vent cover is placed over all filters **NOT** being sampled through.

(MP-TRUW-8.2)

4.5.5 **IF** drum does **NOT** contain a direct sampling port
AND IF sampling through the filter,
THEN place dental dam material and an O-ring over the filter to provide a seal for the sampling needle.

(MP-TRUW-8.2)

4.5.6 **IF** sampling through sampling port of a filter,
THEN ensure the filter media of the filter is blocked.

4.5.7 To ensure the sample collected is representative prior to sample collection, VERIFY vent covers or dental dam material and O-ring are in place
AND E-sign or initial Form-1449 for filters blocked for sampling.

4.5.8 Ensure presence of new filter between probe gun and needle.

CAUTION

If the probe is not supported during sampling activities, the needle may become kinked or otherwise damaged.

4.5.9 Insert needle on probe through the filter or direct sampling port of drum or purge assembly of SUMMA canister to be sampled.

NOTE: *The needle should be inserted its full length until the SEPTA on its shank acts as an end stop, or until the needle comes up against an end stop. This will ensure the side port is sampling below the Sampling Port Device body.*

4.5.10 **WHEN** the probe is enabled for sampling,
THEN press the probe trigger.

4.5.11 **IF** the sample does **NOT** draw from the drum to the manifold (e.g., due to a plugged needle),
THEN perform the following:

4.5.11.1 Withdraw the sampling probe.

4.5.11.2 Survey the needle and drum filter or sampling port top for contamination.

4.5.11.3 Remove plugged needle and replace with new needle.

4.5.11.4 Click the ABORT/RESET button to end the collection process **AND** call the HSG chemist.

4.5.11.5 Restart the collection process at Step 4.4.7.3.14.

4.5.12 **WHEN** the green LED illuminates after sample collection,
THEN press the probe sample trigger to advance the sampling sequence to the sample compression step.

4.5.12.1 **IF** needle is inadvertently withdrawn before the collection is complete,
THEN survey the needle and drum filter or sampling port top for contamination
AND abort the collection sequence by clicking ABORT/RESET and call the HSG chemist for instructions for initiating an RTEB manually.

4.5.13 **IF** performing PDP samples,
THEN GO TO Step 4.5.16.

NOTE: *The clean-up light illuminates as soon as sample collection begins, indicating an RTEB is required.*

4.5.14 Remove the needle/filter subassembly from the sampling probe.

4.5.15 Survey the needle, drum filter or sampling port top and O-ring for contamination.

NOTE: *Process materials are mixed waste when discarded and include sample needles, dental dams, sample probe filters and any item that does not meet release criteria as* conditional industrial waste *(see def.). Process materials can be staged at local HGAS stations during sample runs.*

4.5.16 **WHEN** the sampling runs are complete,
OR WHEN the OT leaves the area,
THEN ensure that all staged process materials determined to be mixed waste are promptly placed in the DVS/HGAS permitted storage drum when discarded.

4.5.16.1 Prior to adding waste to a DVS/HGAS-permitted storage drum containing radiological waste, check that the lid on the permitted storage drum has a vent filter.

4.5.16.1.1 **IF** vent filter is **NOT** present,
THEN STOP WORK
AND contact the SS for direction.

(RPT-TSR-03, SAC 5.2.7)

4.5.17 **IF** performing PDP samples,
THEN GO TO Step 4.5.22.

4.5.18 **IF** the O-ring is suspect,
THEN request a survey of the O-ring by the radiological controls technician before proceeding with the next drum.

4.5.19 **IF** sampling is done through the drum filter,
THEN cover the sampled filter with a piece of duct tape or equivalent and apply an approved Rad Safety label.

4.5.20 Reassemble the needle/filter subassembly with a new filter.

4.5.21 Replace it on the sampling probe.

4.5.22 **WHEN** the green LED illuminates again after sample compression,
THEN press the probe sample trigger to exit the sampling sequence.

4.5.23 **IF** sampling is done through the sampling port,
THEN ensure the setscrew is installed in the sampling port.

4.5.24 Enter the data from Form-1449 into WTS "Filter Update" screen.

4.5.25 **RETURN TO** Section 4.4.7.3.

4.6 Post-Job Review

4.6.1 Perform a post-job review per MP-COPS-9.17.

4.7 Infrequent or Abnormal Conditions and Recovery

NOTE: *All maintenance activities performed will be documented in the narrative log, or work order, as applicable.*

4.7.1 **GO TO** the appropriate procedure section from the following table according to the task to be performed,
THEN RETURN to this step, if further activities will be performed:

Task	Section to Perform
Reoccurrinig BFB failure	4.7.2
Re-analysis of BFB	4.7.3
Bleed IS and repeat CCAL	4.7.4
Repeat Shift Zero	4.7.5
Re-clean Bottle 1	4.7.6
Re-clean Bottle 2	4.7.7
Run real time EB	4.7.8
HGAS unit power-loss recovery	4.7.9
Complete instrument shutdown	4.7.10
HGAS troubleshooting	4.7.11
HGAS maintenance	4.7.12
Humidifer water replenishment	4.7.13
Drum filter changeout	4.7.14

4.7.2 Reoccurring BFB Failures

4.7.2.1 Perform maintenance activities that include but are **NOT** limited to the following:

4.7.2.1.1 Confirm that the BFB cylinder is **NOT** empty.

4.7.2.1.2 Confirm that complete filling of sample loops with BFB standard.

4.7.2.1.3 Check equipment for leaks.

4.7.2.1.4 Perform a new hardware tune using PFTBA.

4.7.2.1.5 Clean or replace the MS source.

4.7.2.1.6 Replace the electron multiplier.

4.7.3 Re-analysis of BFB

4.7.3.1 In the MSTop Window, select "sequence."

4.7.3.2 Select "Edit Sample Log Table."

4.7.3.3 Highlight the last line containing the CCAL sample,
AND click CUT.

NOTE: *Upon completion of the following step, any subsequent BFB loaded will increment by 100 (e.g., 206BF-?.D).*

4.7.3.4 Highlight the last BFB line
AND change the file name from 00xBF-?.D to 10xBF-?.D.
where ? = instrument identifier (e.g., "F" for HGAS-001)

4.7.3.5 In the MS Top, select "SEQUENCE,"
THEN select SAVE.

4.7.3.6 **WHEN** system queried "Sequence XXXX.s exists, do you want to overwrite?"
THEN click YES.

4.7.3.7 **IF** recovering from a Shift Two BFB failure,
THEN open the "BATCH" folder on the desktop.

4.7.3.8 Open the current batch number ini file.

4.7.3.8.1 Find the line which reads "SHIFT=2,"
AND change to read "SHIFT = 1."

4.7.3.8.2 Save the file.

4.7.3.8.3 **WHEN** asked "File exists. Do you want to replace?"
THEN click YES.

4.7.3.8.4 Close the ini file and "BATCH" folder.

4.7.3.9 In the MS top Window, select "SEQUENCE,"
THEN select "POSITION AND RUN."

4.7.3.10 **WHEN** the sample log table opens up,
THEN highlight the last line containing the BFB sample.

4.7.3.11 Click RUN SEQUENCE.

4.7.3.12 **WHEN** a message "shift pointers…start at line 1" appears, **THEN** click YES.

4.7.3.13 **WHEN** queried, enter operator's initials, **THEN** click START SEQUENCE.

4.7.3.14 **WHEN** queried to confirm initials and to confirm batch number, **THEN** click OK to each query.

4.7.4 Bleed IS and Repeat CCAL

NOTE: *To repeat CCAL only without the IS bleed, Steps 4.7.4.1 through 4.7.4.4 are optional.*

4.7.4.1 Close Analysis.vi.

4.7.4.2 Open HGAS.vi.

4.7.4.3 Open the manual screen, and bleed BFB/IS for approximately 4 minutes.

4.7.4.4 Close HGAS.vi.

4.7.4.5 Select the Agilent Chemstation MSTop window.

4.7.4.6 In the MSTop window, select the "Sequence" pull-down menu and select the "Edit Sample Log Table" item.

4.7.4.7 Select the CCAL line in the sequence (last line).

4.7.4.8 For Shift One, change "ic1CCAL1" to "du,CCAL1."

4.7.4.9 For Shift Two, change "ic2CCAL2" to "du,CCAL2."

4.7.4.10 Change the data file name (e.g., for shift one change 002CC-H.D to 102CC-H.D).

4.7.4.11 In the MSTop window, select the "Sequence" pull-down menu and select the "Save" item.

4.7.4.12 Click OK.

4.7.4.13 In the MSTop window, select the "Sequence" pull-down menu and select the "Position and Run…" item.

4.7.4.13.1 In the "Sample Log Table" pop-up dialog box, highlight the modified line and click OK.

4.7.4.13.2 Answer yes to the next pop-up dialog box "The sequence pointers will be reset to line [n]. Pressing NO starts at line 1."

4.7.4.13.3 In the "Start Sequence" pop-up dialog box, click FULL METHOD.

4.7.4.13.4 Verify that "Overwrite Existing Data Files" is **NOT** checked.

4.7.4.13.5 Enter the operator's initials in the "Operator Name" field.

4.7.4.13.6 Click RUN SEQUENCE.

4.7.4.13.7 Confirm that the correct initials appear in the pop-up dialog box.

4.7.4.13.8 In the next pop-up dialog box, accept the SDG number.

4.7.5 Repeat Shift Zero

NOTE: *This section allows the operator to reload and analyze the manifold cleaning standard as described in Section 4.4.3.*

4.7.5.1 Close Analysis.vi.

4.7.5.2 Open HGAS.vi.

4.7.5.3 Click the RECOVER button.

4.7.5.4 Click the REPEAT SHIFT ZERO button.

4.7.5.5 **GO TO** Section 4.4.3.

4.7.6 Re-clean Bottle 1

NOTE: *This section allows the operator to reload a Shift One continuing calibration (CCAL1) sample in Bottle 1.*

4.7.6.1 Close Analysis.vi.

4.7.6.2 Open HGAS.vi.

4.7.6.3 Click the RECOVER button.

4.7.6.4 Click the RE-CLEAN BOTTLE 1 button for Shift One "icCCAL1."

4.7.6.5 Verify the Bottle 1 indicator has turned yellow, and the prompt is "System Idle,"
THEN re-load icCCAL1 by performing Section 4.4.4.1.

4.7.6.6 Close HGAS.vi.

4.7.6.7 Open "sequence.log" in the "HGASdata" folder.

4.7.6.8 Note the specific information for the reloaded "icCCAL1."

- Time
- Ambient temperature
- Sample pressure
- Compression pressure.

4.7.6.9 Select the Agilent Chemstation "MSTop" window.

4.7.6.10 From the menu, select "Sequence" and
AND select "Edit sample log table."

4.7.6.11 Select the CCAL line in the sequence (last line).

4.7.6.12 Modify the information for this sample with the pertinent information noted in Step 4.7.6.8 from the re-loaded CCAL.

4.7.6.13 Change the data file name. (e.g., change 002CC-H.D to 102CC-H.D).

4.7.6.14 Save the sequence.

4.7.6.14.1 In “MSTOP sequence” pull-down menu, select “Save” sequence.

4.7.6.14.2 In “Save” pop-up menu, select OK.

4.7.6.15 In the MSTop window, select the “Sequence” pull-down menu and select the “Position and Run…” item.

4.7.6.15.1 In the “Sample Log Table” pop-up dialog box, highlight the modified line and click OK.

4.7.6.15.2 Answer yes to the next pop-up dialog box “The sequence pointers will be reset to line [n]. Pressing NO starts at line 1.”

4.7.6.15.3 4In the “Start Sequence” pop-up dialog box, click FULL METHOD.

4.7.6.15.4 Verify that “Overwrite Existing Data Files” is **NOT** checked.

4.7.6.15.5 Enter the operator’s initials in the “Operator Name” field.

4.7.6.15.6 Click RUN SEQUENCE.

4.7.6.15.7 Confirm that the correct initials appear in the pop-up dialog box.

4.7.6.15.8 In the next pop-up dialog box, accept the SDG number.

4.7.7 Re-clean Bottle 2

4.7.7.1 Close Analysis.vi.

4.7.7.2 Open HGAS.vi.

4.7.7.3 Click the RECOVER button.

4.7.7.4 Click the RE-CLEAN BOTTLE 2 for Shift Two “icCCAL2.”

4.7.7.5 After the Bottle 2 indicator has turned yellow, and the prompt is "System Idle," re-load icCCAL2.

4.7.7.6 Close HGAS.vi.

4.7.7.7 Open "sequence.log" in the "HGASdata" folder.

4.7.7.8 Note the specific information for the reloaded "icCCAL2."

- Time
- Ambient temperature
- Sample pressure
- Compression pressure.

4.7.7.9 Select the Agilent Chemstation "MSTop" window.

4.7.7.10 From the menu, select "Sequence" and then select "Edit sample log table."

4.7.7.11 Select the CCAL line in the sequence (last line).

4.7.7.12 Modify the information for this sample with the pertinent information noted in Step 4.7.7.8 from the re-loaded CCAL.

4.7.7.13 Modify the data file name by placing a '1' at the beginning, (e.g., 1XXCC-#F, where F, G or I indicate the GHAS unit being used.

4.7.7.14 Save the sequence.

4.7.7.15 In the MSTop window, select the "Sequence" pull-down menu and select the "Position and Run…" item.

4.7.7.15.1 In the "Sample Log Table" pop-up dialog box, highlight the modified line and click OK.

4.7.7.15.2 Answer yes to the next pop-up dialog box "The sequence pointers will be reset to line [n]. Pressing NO starts at line 1."

4.7.7.15.3 In the "Start Sequence" pop-up dialog box, click FULL METHOD.

4.7.7.15.4 Verify that "Overwrite Existing Data Files" is **NOT** checked.

4.7.7.15.5 Enter the operator's initials in the "Operator Name" field.

4.7.7.15.6 Click RUN SEQUENCE.

4.7.7.15.7 Confirm that the correct initials appear in the pop-up dialog box.

4.7.7.15.8 In the next pop-up dialog box, accept the SDG number.

4.7.8 Run Real Time EB

4.7.8.1 Open HGAS.vi.

4.7.8.2 Click the RECOVER button.

4.7.8.3 Click the RUN REAL-TIME EB.

4.7.8.4 **GO TO** Steps 4.4.4.3.2 through 4.4.4.4.11.

4.7.9 HGAS Unit Power-Loss Recovery

4.7.9.1 Verify the HGAS system and all of its components are powered-down.

4.7.9.2 Ensure that the power switches on the GC, the MS, and the HGAS manifold are in the off position.

4.7.9.3 **IF** the process gases have been disconnected from the HGAS unit,
THEN connect the color-coded gas quick-connect lines according to the HGAS III Operation and Maintenance Manual.

4.7.9.4 Ensure the following process gas valves are on and regulated to the following pressures:

- UHP helium 100 psi (90-110)
- UHP nitrogen 80 psi (75-85)
- OCS 5 - 10 psi
- Internal standard/BFB 2 - 5 psi.

4.7.9.5 Confirm that the Nitrogen regulator on the back of the HGAS Manifold is set to ≈ 5 psig.

4.7.9.6 Ensure electric power is supplied to all power cords by closing all supply circuit breakers.

4.7.9.7 Turn on the GC, the MS, the ion gauge controller and the HGAS manifold.

4.7.9.8 Follow the instructions on the MSD status window on the front of the MS.

4.7.9.9 Power-on the computer.

4.7.9.10 Allow the unit to operate for 24 hours before using for analysis **OR** as instructed by an HSG chemist.

4.7.10 Complete Instrument Shutdown

NOTE 1: *This section only applies to system shutdown for maintenance, movement, and storage purposes when required. It is not to be performed daily or every shift.*

NOTE 2: *Except in an emergency situation, the GC/MS should be shut down following the procedures established by Agilent. Operators should familiarize themselves with and refer to the Agilent Operators manual and On-line Help for complete instruction on shut down. An overview of the Agilent shut down procedures is discussed in this section.*

4.7.10.1 Turn Off the Agilent GC/MS.

4.7.10.1.1 Maximize to the Agilent ChemStation instrument control screen.

4.7.10.1.2 Select “Diagnostics/Vacuum Control” from the “View” menu.

4.7.10.1.3 Wait for Diagnostics/Vacuum Control view to load.

4.7.10.1.4 Select “Vent” from the “Vacuum” menu.

4.7.10.1.5 Select OK when prompted that “The MS Transfer Line Heater will be turned off and the GC Oven set to ambient temperature.

4.7.10.1.5.1 Select OK to continue.

NOTE: *A vent pop up dialog box with an estimate of vent time appears. Venting takes about 30 minutes. When vent cycle is complete, another dialog box prompts “Vent cycle complete.”*

4.7.10.1.6 Click OK and exit the Agilent ChemStation software.

4.7.10.1.7 Power-off the MS and GC main power switches.

4.7.10.1.8 If applicable, turn off the process gas lines at their sources and bleed off residual pressure.

4.7.10.2 Turn Off the HGAS Manifold.

4.7.10.2.1 Exit the HGAS software.

4.7.10.2.2 Power-off the power switch on the back of the manifold off.

4.7.11 **HGAS Troubleshooting**

NOTE 1: *HSG chemists are qualified to perform troubleshooting activities on HGAS systems. Troubleshooting activities may include, but are not limited to, modifying sequence files and tables, setting or resetting HGAS system parameters, utilizing system software and routines to clean or re-clean HGAS bottles, cycling power on HGAS systems, and optimizing MS tuning parameters.*

NOTE 2: *HSG chemists may employ assistance from OTs to perform activities in this section.*

4.7.11.1 Interview the operator to gather information about the abnormal condition.

4.7.11.2 Perform troubleshooting to determine the cause of the abnormal condition.

4.7.11.3 **IF** an abonormal condition is due to a software/firmware malfunction,
THEN adjust software/firmware parameters as necessary to resolve the abnormal condition.

4.7.11.4 **IF** an abnormal condition is due to a hardware malfunction,
THEN GO TO Section 4.7.12.

4.7.11.5 Maintain record keeping through Form-1701, Head Space Gas Sample (HGAS) Log, or eSOMS equivalent.

4.7.12 HGAS Maintenance

NOTE 1: *HSG chemists are qualified to perform maintenance and repair activities on HGAS systems. Maintenance activities include, but are not limited to, rough pump replacement, rough pump oil replacement, clippard and bellows valve replacements, MS source repair/replacement, and HGAS sample probe repair.*

NOTE 2: *HSG chemists will not perform any activity under this procedure that involves potential contact with energized components greater than 50 volts.*

NOTE 3: *HSG chemists may employ assistance from OTs to perform activities in this section.*

4.7.12.1 Obtain work control documentation to repair the HGAS system.

4.7.12.2 Maintain record keeping through use of Form-1701, or eSOMS equivalent.

4.7.13 Humidfier Water Replenishment

4.7.13.1 Shut off the nitrogen supply to the HGAS manifold using the local shut-off valve.

4.7.13.2 Bleed humidification chamber pressure to ambient by disconnecting the "nitrogen in" quick-connect on the fixed gas panel on the outside of the environmental enclosure and pressing the valve stem with the flat side of a screwdriver.

4.7.13.3 Remove the cap and fill the right (when viewed from the back) humidification chamber to the fill line with ASTM Type I or Type II water.

NOTE: *Over-tightening can cause damage to the cap, leading to failure.*

4.7.13.4 Replace the humidification chamber cap, being careful to hand-tighten only.

4.7.13.5 Replace the "nitrogen in" quick-connect line and restore nitrogen flow.

4.7.14 Drum Filter Changeout

4.7.14.1 Ensure that the HGAS batch for the associated drum has been closed, if applicable.

4.7.14.2 Ensure that the area is properly posted per the AMOW.

4.7.14.3 Ensure that an Alpha CAM is in operation in the vicinity of the filter replacement, per INST-RS&C-6.22.1, Radiological Surveys.

4.7.14.4 Remove the current filter, wearing appropriate PPE and using downdraft HEPA filter vacuum.

4.7.14.5 Dispose of the used filter if applicable, as directed by the radiological controls technican/SS in accordance with the approved Hazardous Waste Determination.

4.7.14.6 Install a WIPP-approved replacement filter, wearing appropriate PPE.

4.7.14.7 Perform a survey of the drum per radiological procedures.

4.7.14.8 **IF** contamination is found,
THEN perform the following:

4.7.14.8.1 Notify the radiological controls technican and the SS.

4.7.14.8.2 Radiological Controls Technician: Evaluate the radiological survey results.

4.7.14.8.3 **IF** contamination survey results are in excess of acceptable limits,
THEN GO TO INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination.

4.7.14.8.4 Characterize the radiological and IH conditions, using the appropriate work controls.

4.7.14.8.5 Decontaminate per the radiological controls technician's instructions.

4.7.14.9 **IF** no contamination is found,
OR WHEN decontamination, containing or affixing is complete per INST-RS&C-6.22.2,
THEN torque the filter to 15 ft-lbs.

4.7.14.10 Update the old and new filter details on the Filter Event Screen in WTS.

4.8 Data Processing/Review

NOTE: *This section provides a reference for raw data processing to be performed in an appropriate order at any time on a stand alone data review PC or the production computer only while not analyzing drum sample, or while the analysis sample is in the same shift as the data processing sample.*

4.8.1 Ensure that all raw data are evaluated using the following steps:

4.8.1.1 Check the analyses for the drum and QC data using QEdit in the Agilent ChemStation MS System Software:

- Complete peak integration (especially the ketones, and alcohols)
- Detection of compounds.

4.8.1.2 **IF** compounds are consistently missed,
THEN use QEdit to review the ID file.

4.8.2 Check retention time (RT) and spectrum of each compound for proper identification (especially isomers or compounds that share common ions).

4.8.3 Evaluate *tentatively identified compounds* (TICs; see def.) using the following criteria:

4.8.3.1 Report compounds with areas greater than or equal to 10% of corresponding internal standard.

4.8.3.2 Search NIST MS Library for TICs, and report all identified TICs from the reference library regardless of their presence or absence in 40 CFR 261, Appendix VIII.

4.8.3.3 Check spectrum of each compound for proper identification.

4.8.4 Processing ICALs

NOTE: *The chemist and the ITR should verify that the initial calibration transferred to the data processing computer is valid and that it meets QAOs.*

4.8.4.1 Process the BFB associated with the initial calibration.

4.8.4.1.1 Open "Enhanced Data Analysis" by clicking on the desktop icon.

4.8.4.1.2 Initiate processing of the correct data set by performing the following:

4.8.4.1.2.1 Select the "HGAS" pull down menu, item "Reprocess old Data…."

4.8.4.1.2.2 Input the correct batch identifier in the format HS[system ID]YY_#####[alpha].

4.8.4.1.2.3 Click the OK button.

4.8.4.1.3 Load the BFB data file by selecting the "File" pull down menu, item "Load Data File..."

4.8.4.1.4 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\TUNE.M load?" **THEN** click YES.

4.8.4.1.4.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?" **THEN** click NO, unless unsaved changes to the previous method have been made.

4.8.4.1.5 Minimize "Enhanced Data Analysis."

4.8.4.1.6 Open batch folder by clicking on SHORTCUT TO BATCH desktop icon.

4.8.4.1.7 Open the [batch_number] [alpha].ini file created when the sequence was imported.

4.8.4.1.8 Record the "GoodScan" and "BackgroundScan" numbers from the file.

4.8.4.1.9 Close the .ini file and the batch folder.

4.8.4.1.10 Maximize "Enhanced Data Analysis."

4.8.4.1.11 Select the scan corresponding to "GoodScan."

4.8.4.1.12 Select the scan corresponding to "BackgroundScan."

NOTE: *Some trial and error may be required to load scans in proper order. Process cannot proceed until scans are loaded properly.*

4.8.4.1.12.1 Select scans in the order given (GoodScan first, then BackgroundScan).

4.8.4.1.13 Select the "Tuner" pulldown menu, item "Subtract."

4.8.4.1.14 Select the "Tuner" pulldown menu, item "Evaluate BFB to Printer."

4.8.4.1.15 Manually evaluate the BFB Apex with the background subtracted.

4.8.4.1.16 Verify that the Apex (Apex or 3-point Apex) scan passes.

4.8.4.2 Evaluate the Initial Calibration

4.8.4.2.1 Confirm that the initial calibration analyses were performed within 12 hours of the BFB injection.

4.8.4.2.1.1 **IF** this was **NOT** the case, **THEN** repeat the initial calibration.

4.8.4.2.1.2 Open "Enhanced Data Analysis."

4.8.4.3 Calibrate the method using ICAL Level 3.

4.8.4.3.1 Load the Level 3 data file by selecting the "File" pull down menu, item "Load Data File…"

4.8.4.3.2 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\TUNE.M load?" **THEN** click YES.

4.8.4.3.2.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?" **THEN** click NO, unless unsaved changes to the previous method have been made.

4.8.4.3.3 Select the "View" pull-down menu and select the "QEdit Quant Result" item.

4.8.4.3.4 Perform QEdit and exit the "Quick QEdit" routine by clicking on the EXIT button.

4.8.4.3.5 Check the analysis for the following.

- Complete peak integration (especially the ketones and alcohols)
- Detection of all target compounds
- RT and spectrum of each compound for proper identification (especially isomers or compounds that share common ions).

4.8.4.3.5.1 **IF** compounds are consistently missed,
THEN use QEdit to review the ID file.

4.8.4.4 Select the "Calibrate" pull-down menu and select the "Update…" item.

4.8.4.5 Select "Update One Level" in the "Select Update Option" dialog box.

4.8.4.6 **WHEN** asked if you want to requantitate now,
THEN select "No."

4.8.4.7 In the "update Calibration" dialog box, perform the following:

4.8.4.7.1 Select "Recalibrate using Calib Level ID 3."

4.8.4.7.2 Replace responses.

4.8.4.7.3 Replace retention times.

4.8.4.7.4 Replace qualifier ion relative responses.

4.8.4.7.5 Click on DO UPDATE.

4.8.4.8 Edit compounds screen pop up and exit by clicking EXIT.

4.8.4.9 Select "Update One Level" in the "Select Update Option" dialog box.

4.8.4.10 **WHEN** asked if you want to requantitate now,
THEN select "No."

4.8.4.11 Select the "Calibrate" pull-down menu and select the "Update…" item.

4.8.4.12 In the "update Calibration" dialog box, select the following:

- Recalibrate using Calib Level ID CC.
- Replace responses.
- Do not replace retention times.
- Do not replace qualifier ion relative responses.

4.8.4.13 Click on DO UPDATE.

4.8.4.14 **WHEN** the "Edit Compounds" screen pops up,
THEN click EXIT.

4.8.4.15 **WHEN** the "Update Reference Spectra" dialog box pops up,
THEN click YES.

4.8.4.16 For each level, calibrate the method using ICAL Levels 1, 2, 4 and 5.

4.8.4.16.1 Load the Level [n] data file by selecting the "File" pull down menu, item "Load Data File..."

4.8.4.16.2 **IF** a dialog box may pop up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\VOCGAS.M load?"
THEN click YES.

4.8.4.16.2.1 **WHEN** another dialog box pops up asking "Save Current Method: <METHODNAME>.M?"
THEN click NO, unless unsaved changes have been made to the previous method have been made.

4.8.4.16.3 Select the "View" pull-down menu and select the "QEdit Quant Result" item.

4.8.4.16.4 Perform QEdit and exit the "Quick QEdit" routine by clicking on the EXIT button.

4.8.4.16.4.1 Check the analysis for complete peak integration, detection of all target compounds, and retention time.

4.8.4.16.4.2 Save changes when prompted.

4.8.4.16.5 Select the "Calibrate" pull-down menu and select the "Update…" item.

4.8.4.16.6 Select "Update One Level" in the "Select Update Option" dialog box.

4.8.4.16.7 **WHEN** asked if you want to requantitate now, **THEN** select no when asked if you want to requantitate now.

4.8.4.16.8 In the "Update Calibration" dialog box, select "Recalibrate using Calib Level ID [n].

4.8.4.16.8.1 Replace responses and do **NOT** update retention times or replace qualifier ion relative responses.

4.8.4.16.8.2 Click on DO UPDATE.

4.8.4.16.9 Edit Compounds screen pop up and exit by clicking EXIT for Levels 1, 2 and 4; leave open after Level 5.

4.8.4.17 **REPEAT** Section 4.8.4.16 for all remaining levels.

NOTE: *% RSD is calculated using Equation 2 in Appendix B, Calibration and Quality Control (QC) Equations. The standard deviation(s) are calculated using Equation 3 in Appendix B. The software automatically computes the percent relative standard deviation (%RSD) for the compounds listed in Table 2. The software also automatically calculates the coefficient of determination (r^2) for H_2 and CH_4. The %RSD for each analyte must be less than 35, and the r^2 for H_2 and CH_4 must be greater than 0.990 (see Table 9).*

4.8.4.18 Review the compound database to ensure that the %RSD and r^2 requirement for each compound is met.

4.8.4.19 Select the "Method" pull-down menu and select the "Save Method…" item.

4.8.4.20 Import the results for each level into the data store for automation.

4.8.4.21 For each level, process the data sequentially for Level 1 through Level 5 and perform the following:

4.8.4.21.1 Load the appropriate data file by selecting the "File" pull down menu, item "Load Data File..."

4.8.4.21.2 **IF** a dialog box pops up asking "DataFile last Quantitated using C:\HPCHEM\1\METHODS\VOCGAS.M load?" **THEN** click YES.

4.8.4.21.2.1 **WHEN** another log box pops up asking "Save Current Method: <METHODNAME>.M?" **THEN** click NO, unless unsaved changes to the previous method have been made.

4.8.4.21.3 Recalculate the data file by selecting the "Quantitate" pull down menu, item "Calculate."

4.8.4.21.4 Select the "View" pull-down menu and select the "QEdit Quant Result" item.

4.8.4.21.5 Perform QEdit and exit the "Quick QEdit" routine by clicking on the EXIT button.

4.8.4.21.5.1 Check the analysis for complete peak integration, detection of all target compounds and retention time.

4.8.4.21.5.2 Save changes when prompted.

4.8.4.21.6 Import the results into the data store by selecting the "HGAS" pull-down menu, item "VOC Capture."

4.8.4.21.7 **REPEAT** Section 4.8.4.21, for all remaining levels.

4.8.4.22 Select the "Method" pulldown menu and select the "Save Method…" item.

4.8.4.23 View initial calibration response factors by selecting the "HGAS" pulldown menu, item "Response Factors to Printer."

4.8.4.24 Save this report to compare to the Form 6A that will be generated later.

4.8.4.25 **IF** response and RT criteria do **NOT** meet the acceptance criteria (internal standards responses are not within 50% and 200% of the internal standard response for the mid-point of the five-point initial calibration or internal standard RTs have shifted by more than 0.5 minute from the RT of the same calibration level),
THEN generate an NCR.

4.8.4.26 **IF** any %RSD is greater than or equal to 35 or r^2 is less than 0.990 for H_2 and CH_4,
THEN perform instrument maintenance before performing another initial calibration.

4.8.4.27 Assemble an ICAL folder for data validation.

4.8.5 Processing Method Detection Limit Samples and Method Performance Samples

4.8.5.1 Process MDL and MPS batch in the same manner as a normal drum batch followingMP-TRUW-8.8, Level 1 Data Validation, Appendix B, Instructions for HGAS, Preparing a Batch Data Report.

4.8.5.2 Calculate the method detection limits.

NOTE: *All MDLs are required to be > zero. If any MDL is calculated to be exactly zero, 0.01 for H_2/CH_4 and 1.0 for VOCs will be used.*

4.8.5.2.1 Open the HGAS calc MDL workbook.

4.8.5.2.2 Open the Form 1A spreadsheet generated for the first MDL sample (for example, c:\vocdata\[batch_number][alpha]\form1A#.xl).

4.8.5.2.3 Select the entire spreadsheet by clicking on the square to the left of “A” and above “1” in the uppermost left corner of the spreadsheet.

4.8.5.2.4 Copy the spreadsheet to the clipboard by pressing [Ctrl][C].

4.8.5.2.5 Switch to the HGAS calc MDL workbook.

4.8.5.2.6 Select the MDL1 spreadsheet by clicking the appropriate tab along the bottom of the workbook.

4.8.5.2.7 Select the entire spreadsheet by clicking on the square to the left of “A” and above “1” in the uppermost left corner of the spreadsheet.

4.8.5.2.8 Paste the clipboard contents to the MDL1 Spreadsheet by pressing [Ctrl][V].

4.8.5.2.9 **REPEAT** Steps 4.8.5.2.2 through 4.8.5.2.8 above, incrementing from MDL 2 through MDL 7 Form 1As and workbook tabs.

4.8.5.3 Calculate the method performance samples and verify the method performance samples meet QAOs.

4.8.5.3.1 Open the Form 1A excel spreadsheet generated for the first MPS sample (c:\vocdata\ [batch_number] [alpha]\form1A#.xls).

4.8.5.3.2 Select the entire spreadsheet by clicking on the square to the left of "A" and above "1" in the uppermost left corner of the spreadsheet.

4.8.5.3.3 Copy the spreadsheet to the clipboard by pressing [Ctrl][C].

4.8.5.3.4 Switch to the HGAS calc MDL workbook.

4.8.5.3.5 Select the MPS1 spreadsheet by clicking the appropriate tab along the bottom of the workbook.

4.8.5.3.6 Select the entire spreadsheet by clicking on the square to the left of "A" and above "1" in the uppermost left corner of the spreadsheet.

4.8.5.3.7 Paste the clipboard contents to the MPS1 Spreadsheet by pressing [Ctrl][V].

4.8.5.3.8 **REPEAT** Steps 4.8.5.2.2 through 4.8.5.2.8 above, incrementing from MPS 2 through MPS 7 Form 1As and workbook tabs.

4.8.5.4 Review the MDL and MPS results by clicking on the appropriate tabs in the workbook, ensuring the MDLs and MPSs meet the MP-TRUW-8.2, QAPjP criteria.

4.8.5.5 Save the HGAS calc MDL workbook with a unique name (using the MDL date in the file name is helpful).

4.8.5.6 Print the MDL and MPS spreadsheet pages and file appropriately.

4.8.6 Update the MDLs in the Agilent method and on the forms templates.

4.8.6.1 Open "Enhanced Data Analysis."

4.8.6.2 Load the VOCGAS.M method.

4.8.6.2.1 Select the "Method" pull-down menu and select the "Load…" item.

4.8.6.2.2 Select the VOCGAS.M method.

4.8.6.3 Select the "HGAS" pull down menu, item "Update MDLs."

4.8.6.4 **WHEN** an "Input" dialog box pops up asking "MDL for Hydrogen?"
THEN perform the following:

4.8.6.4.1 Enter correct value.

4.8.6.4.2 Click OK.

4.8.6.5 **WHEN** one "Input" dialog box will appear for each compound,
THEN for each compound:

4.8.6.5.1 Enter correct value.

4.8.6.5.2 Click OK.

4.8.6.6 After the last compound has been entered, select the "Method" pull-down menu and select the "Save Method…" item.

4.8.6.6.1 Click OK in the "Save method as…" pop-up dialog box.

4.8.6.7 Select the "HGAS" pulldown menu, item "Update Form1A/1ADP" to insert new MDL values in the Form 1A templates.

4.8.6.8 Select the "HGAS" pulldown menu, item "Update Form3A/3ADP" to insert new MDL values in the Form 3A templates.

4.8.6.9 Select the "HGAS" pulldown menu, item "Update Form3B/C" to insert new MDL values in the Form 3B and 3C templates.

5.0 DEFINITIONS

Accuracy. The degree of agreement between a measured value and an accepted reference or the true value. Accuracy is determined as the percent recovery (%R).

Analyte. The element, ion, or compound an analysis seeks to determine.

Analytical batch. An analytical batch is a suite of samples of a similar matrix (i.e., gas or solid) processed as a unit, using the same analytical method, within a specific time period; can be up to 20 samples (excluding laboratory QC samples). For integrated headspace-gas sampling/analytical systems, samples will be collected within a 12-hour period using the same integrated sampling/analysis system.

4-bromofluorobenzene. GC/MS tuning performance check compound.

Calibration. The comparison of measuring and test equipment or a measurement standard of unknown *accuracy* (see def.) to a measurement standard of known accuracy in order to detect, correlate, report, or eliminate, by adjustment, any variation in the accuracy of the instrument being compared. The term calibration is also used to refer to the standardization process used with analytical instrumentation whereby an analytical curve is established relating instrument response (signal) to analyte amount or concentration.

Calibration standards. A series of known-concentration standard solutions and/or gases used to establish instrument response during calibration.

Completeness. Laboratory completeness is expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data usability criteria QAOs and acceptance criteria specified in Table 2 and Table 14 and meet MDL, calibration *representativeness (see def.),* and comparability criteria within this section. Results are acceptable if a minimum of 90 percent completeness is achieved. This is performed at Project Level.

Conditional industrial waste. Waste that requires a waste stream-specific documented determination due to a higher probability of containing constituents restricted from disposal (i.e., hazardous constituents, PCBs and/or radiological contamination).

Continuing calibration. A calibration standard Level 3 is analyzed every 12 hours of operation. Using the RRFs from the initial calibration, the *percent difference* (%D; see def.) is calculated for all the components in the standard mix. The %D for each compound must be less than or equal to 30%.

Drum Age Criteria. The minimum time required for VOCs in a drum to reach 90 percent of the equilibrium steady-state concentration within the different layers of confinement.

Duplicates. Two separate, independent samples collected from the same source, as close as possible to the same place and time, stored in separate containers, and analyzed independently; used to document the *precision* (see def.) of the sampling and analysis process. Duplicate results are acceptable if the relative percent difference (RPD) is less than or equal to (≤) 25% for each tested compound found in concentrations greater than the PRQL in both duplicates.

Equipment blank. A sample collected to assess cleanliness of sampling equipment and to assess possible contamination in the batch cleaning method. This sample is collected through the sampling probe using a purge assembly with nitrogen (or zero air). EB results determined by GC/MS are acceptable if the concentration of each volatile organic compound (VOC) analyte and H_2 and CH_4 is less than or equal to three times the MDL listed in Table 2. If the EBs fail, the contamination is in the equipment manifold. The equipment manifold will be re-cleaned and EB rerun.

Field blank. A sample collected to evaluate background levels of MP-TRUW-8.2, WIPP WAP *target analytes* (see def.) to assess impacts of ambient contamination, if any, on the sample results. FBs are samples of room air collected in the sampling area in the immediate vicinity of the waste container to be sampled using the sampling probe. FB results determined by GC/TCD-GC/MS are acceptable if the concentration of each VOC analyte is less than or equal to three times the MDL listed in Table 2. However, should the OB show results greater than 1 x MDL, data will be flagged with a B. A separate FB is collected and analyzed prior to first use and once per *sampling batch (see def.)*.

Gas chromatograph/mass spectrometer. Instrumentation used to detect and measure VOCs in waste drum samples.

Headspace. For any volume contained by a drum, 55-gal poly bag, or innermost layer of confinement, the total contained volume minus the volume occupied by the waste material. “Headspace” is also used to refer to the gases contained in this volume.

Initial calibration. Analysis of analytical standards at different specified concentrations, used to define the quantitative response, linearity or dynamic range of the instrument to target analytes.

Method detection limit. The minimum concentration of a substance that can be measured and reported for a given method with 99% confidence that the analyte concentration is greater than zero.

Method performance samples. Four to seven samples spiked with all target analytes at approximately the middle of the calibration range. MPSs are used to assess the precision and accuracy of the analytical technique.

Nonconformance. This is a deficiency in meeting program requirements that renders the quality of an item, process, data, or service unacceptable or indeterminate. Nonconforming program data only apply to final reported data that do not meet QAO.

On-line control sample. This is used to assess the accuracy with which the sampling/analysis system collects and analyzes the samples. The OCS serves as the field reference standard and laboratory control standard for the integrated sampling and analysis system. The OCS contains a minimum of six of the analytes listed in Table 2 at concentrations within a range of 10 to 100 ppmv and greater than the MDL for each compound plus hydrogen and methane within a range of 0.10 to 1.0 % V/V. The OCSs have a known valid relationship to a nationally recognized standard (e.g., National Institute of Standards and Technology [NIST]). The OCSs are collected prior to first use and at a frequency of one per sampling batch. The OCS results are acceptable if the accuracy for each tested compound has a recovery of 70 to 130 percent. The OCSs are not used beyond the manufacturer's specified shelf life.

On-line control sample duplicate. Used to assess the precision with which the sampling/analysis system collects and analyzes the samples. The OCS dups are used in addition to laboratory duplicates to ensure that batch precision QAOs have been met. The OCS dup serves as the field reference standard and LCS for the integrated sampling and analysis system. The OCS dup contains a minimum of six of the analytes listed in Table 2 at concentrations within a range of 10 to 100 ppmv and greater than the MDL for each compound plus hydrogen and methane within a range of 0.10 to 1.0 % V/V. The OCS dups have a known valid relationship to a nationally recognized standard (e.g., National Institute of Standards and Technology [NIST]). The OCS dups are collected prior to first use and at a frequency of one per sampling batch. Results from measurements for precision on the OCS and OCS dup must be compared to the criteria listed in Table 2 for the selected OCS compounds. The OCS dups are not used beyond the manufacturer's specified shelf life.

Percent difference. The absolute difference between an initial measurement and a subsequent one, expressed as a percentage of the initial measurement.

Performance Demonstration Progam. Blind audit samples in a gas matrix for analysis of VOCs that are used as an independent means of assessing compliance with the WIPP QAOs.

Precision. A measure of mutual agreement among individual measurements of the same property made under prescribed similar conditions, often expressed as a percent relative standard deviation (%RSD) or RPD. Precision shall be assessed by analyzing duplicates and replicate analyses of online Control Samples and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table 2. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Program Required Quantitation Limit. Minimum level of analyte quantitation acceptable under the MP-TRUW-8.2, AMWTP QAPjP. Laboratories must demonstrate the capability to quantitate analytes above the PRQLs given in Table 2. Laboratories shall set the concentration of at least one calibration standard below the PRQL.

Quantitation Editor. Agilent Chemstation software utility for detailed peak integration and spectral review.

Quality. The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs and expectations of the user.

Quality Assurance. All those planned and systematic actions necessary to provide adequate confidence that a facility, structure, system, or component will perform satisfactorily and safely in service.

Quality Assurance Objectives. The characteristics of data that are associated with their ability to satisfy a given purpose or objective. The characteristics of major importance are accuracy, precision, *completeness* (see def.), representativeness, and comparability.

Quality control. The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer.

Real-time equipment blank. Used to assess the cleanliness of the manifold and sampling probe between drum sampling events. Real-time equipment results determined by GC/TCD-GC/MS are acceptable if the concentration of each VOC analyte is less than or equal to three times the MDL determined in Section 4.3. The RTEB is collected and analyzed between drum sampling events, and after each OCS sampling event.

Representativeness.Representativeness for VOC analysis shall be achieved by collecting sufficient numbers of samples using clean sampling equipment that does not introduce sample bias.

Sample. A portion of material to be analyzed that is identified by a unique sample number. A sample is a subset of a population (e.g., wastes, environmental media, materials, cores) whose properties are used to gain information about the population.

Sampling batch. A suite of samples of similar matrix (i.e., headspace gas) collected consecutively using the same sampling equipment within a specified time period; can be up to 20 samples (excluding *quality control* (see def.) samples), all of which must be collected within 12 hours of the first sample in the batch.

Standard. A mixture of known analyte concentration used to establish or check instrument calibration and method performance.

Target analytes. Those compounds or elements for which analysis is required by MP-TRUW-8.2, and listed in Table 2.

Tentatively identified compounds. Non-target compounds identified by GC/MS mass spectral library searches that exhibit relative peak areas ≥ 10% of the nearest internal standard area.

Transuranic waste. Waste contaminated with alpha-emitting radionuclides that have atomic numbers greater than 92 and half-lives greater than 20 years in concentrations greater than 100 nCi/g of waste.

Ultra high purity. Gas certified by the manufacturer to contain less than 1 ppm (parts per million) total VOCs.

Validation. An activity that demonstrates, or confirms, that a process, item, data set, or service satisfies the requirements defined by the user. Validation is documented by signature release.

Verification. The act of authenticating that a process, item, data set, or service is, in fact, that which is claimed. Data verification is the process used to confirm that all review and validation procedures have been completed.

Volatile organic compound. Organic compounds with boiling points below 200°C that range from insoluble to soluble in water including those VOCs listed in Table B3-2 of MP-TRUW-8.2 and any additional compounds tentatively identified by the VOC analytical procedures used to satisfy program requirements.

6.0 REFERENCES

(1) 40 CFR 261, Appendix VIII, Hazardous Constituents

(2) AMWTP HWMA/RCRA Storage Permit

(3) Consonant Technology Inc. HGAS III GC/MS User Manual Addendum

(4) Consonant Technology Inc. HGAS III Operation and Maintenance Manual

(5) Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using SUMMA Passivated Canister Sampling and Gas Chromatographic Analysis, Compendium-Method TO-14, EPA, 1988

(6) IDAPA 58.01.05, Rules and Standards for Hazardous Waste

(7) INST-RS&C-6.22.1, Radiological Surveys

(8) INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination

(9) MP-DOCS-18.2, Records Management

(10) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(11) MP-TRUW-8.1, Certification Plan for INEEL Contact-Handled Transuranic Waste

(12) MP-TRUW-8.2, Quality Assurance Project Plan

(13) MP-TRUW-8.8, Level I Data Validation

(14) National Institute of Standards and Technology (NIST) Mass Spectral Library of Organic Compounds

(15) R-DEQ/ID, Idaho Department of Environmental Quality, AMWTP HWMA/RCRA Storage Permit INL

(16) RPT-TSR-03, Technical Safety Requirements

(17) United States Nuclear Regulatory Commission, TRUPACT-II Authorized

(18) Volatile Compounds by Gas Chromatography/Mass Spectroscopy (GC/MS), Modified EPA- SW-846, Method 8260

(19) Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit, New Mexico Environmental Department, NM4890139088-TSDF

(20) WIPP Quality Assurance Program Document, DOE/CBFO 94-1012

(21) Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, DOE/WIPP 02-3122

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-43, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal
GC/MS System Raw Data	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Performance Demonstration Program (PDP) Report form	Nonpermanent WIPP/ENV1-J-1/ Destroy 75 years after submittal
Form-1449, Sample Batch Drum Age Criteria Data Sheet	Lifetime WIP/ENV1-J-1/Turnover to CBFO at end of project/project
Form-1595, HGAS Daily Checks	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Form-1701, Head Space Gas Sample (HGAS) Log, or eSOMS equivalent	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Tables

Appendix B – Calibration and Quality Control Equations

Appendix C – HGAS System Description

Appendix D – HGAS Sample Spreadsheet for Concentration Calculations

Appendix E – DAC Tables

Appendix F – HGAS (Agilent/Manifold) Baseline Matrix

Appendix G – Revision Log

Appendix A – Tables

Table 1. Standards/Gases for Initial Calibration Levels.

Initial Calibration Level	Standard/Gas	Amount VOC Injected
1	0.075 vol % H_2/CH_4	1.0 µL (icICAL1)
2	0.50 vol % H_2/CH_4	2.5 µL (icICAL2)
3	1.0 vol % H_2/CH_4	6.0 µL (icICAL3)
4	3.0 vol % H_2/CH_4	10.0 µL (icICAL4)
5	Nitrogen from purge assembly	20.0 µL (icICAL5)

Table 2. Gas VOCs Target Analyte List and QAOs.

Compound [g]	CAS No.	Precision[a] (%RSD or RPD)	Accuracy[a] (%R)	MDL[b] (ng)	PRQL[b] (ppmv)	Complete-ness (%)
Benzene	71-43-2	≤ 25	70-130	10	10	90
Bromoform	75-25-2	≤ 25	70-130	10	10	90
Carbon Disulfide[e, f]	75-15-0	≤25	70-130	10	10	90
Carbon tetrachloride	56-23-5	≤ 25	70-130	10	10	90
Chlorobenzene	108-90-7	< 25	70-130	10	10	90
Chloroform	67-66-3	< 25	70-130	10	10	90
Chloromethane[f]	74-87-3	≤25	70-130	10	10	90
Cyclohexane[d]	110-82-7	≤ 25	70-130	10	10	90
1,1-Dichloroethane	75-34-3	≤ 25	70-130	10	10	90
1,2-Dichloroethane	107-06-2	≤ 25	70-130	10	10	90
1,1-Dichloroethylene	75-35-4	≤ 25	70-130	10	10	90
cis-1,2-Dichloroethene[d]	156-59-2	≤ 25	70-130	10	10	90
trans-1,2-Dichloroethene	156-60-5	≤ 25	70-130	10	10	90
Ethyl benzene	100-41-4	≤ 25	70-130	10	10	90
Ethyl ether	60-29-7	≤ 25	70-130	10	10	90
Methylene chloride	75-09-2	≤ 25	70-130	10	10	90
1,1,2,2- Tetrachloroethane	79-34-5	≤ 25	70-130	10	10	90
Tetrachloroethene	127-18-4	≤ 25	70-130	10	10	90
Toluene	108-88-3	≤ 25	70-130	10	10	90
1,1,1-Trichloroethane	71-55-6	≤ 25	70-130	10	10	90
Trichloroethene	79-01-6	≤ 25	70-130	10	10	90
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	≤ 25	70-130	10	10	90
1,2,4- Trimethylbenzene[d]	95-63-6	≤ 25	70-130	10	10	90
1,3,5- Trimethylbenzene[d]	108-67-8	≤ 25	70-130	10	10	90
m-Xylene[c]	108-38-3	≤ 25	70-130	10	10	90
o-Xylene	95-47-6	≤ 25	70-130	10	10	90
p-Xylene[c]	106-42-3	≤ 25	70-130	10	10	90
Acetone	67-64-1	≤ 25	70-130	150	100	90
Butanol	71-36-3	≤ 25	70-130	150	100	90
Methanol	67-56-1	≤ 25	70-130	150	100	90
Methyl ethyl ketone	78-93-3	≤ 25	70-130	150	100	90
Methyl isobutyl ketone	108-10-1	≤ 25	70-130	150	100	90

a. Criteria apply to concentrations above PRQL.
b. Values based on delivering 10 mL to the analytical system.
c. These xylene isomers cannot be resolved by the analytical methods employed in this program.
d. Compound not subject to criteria in Attachment C, "Waste Analysis Plan," to the WIPP Hazardous Waste Facility Permit (NM4890139088). Included to meet criteria in Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (DOE/WIPP-02-3122).
e. Rocky Flats Environmental Technology Site (RFETS) only
f. Carbon Disulfide and Chloromethane are compounds that have been added to the target list based on AK for certain waste streams.TBD = To be determined based on site-specific MDL studies; initially QAOs of benzene will be assumed.
g. The Environmental Compliance and Retulatory Affairs Manager must be notified if analytes are added to this list to meet IDAPA 58.01.05, Rules and Standards for Hazardous Waste.

NA = Not applicable

Table 3. Summary of Laboratory QC Samples and Frequencies for Gas VOC.

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet method QAOs (see Table 2)	Repeat until acceptable
Duplicates	One (1) per *analytical batch* (see def.) for GC/MS	RPD ≤ 25[b]	Nonconformance if RPD > 25
Blanks	Daily prior to sample analysis for GC/MS.	Analyte amounts $\leq$3 X MDL for GC/MS	Flag data if analyte amounts >3XMDLs for GC/MS.
On-Line Control Samples	Two (2) per analytical batch for GC/MS	70-130 %R for OCS analysis RPD ≤ 25 for selected OCS compounds when OCS/OCS dup are used to determine precision	Nonconformance if %R < 70 or > 130 for OCS analysis Nonconformance if RPD > 25 for selected OCS compounds when OCS/OCS dup are used to determine precision.
Blind audit samples	Samples and frequency controlled by the Gas PDP Plan	Specified in the Gas PDP Plan	Specified in the Gas PDP Plan

a. Corrective action per Section C3-13 of MP-TRUW-8.2, AMWTP QAPjP, when final reported QC samples do not meet the acceptance criteria.

b. Applies only to concentrations greater than the PRQL listed on Table 2.

Nonconformances are documented in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

%R = Percent Recovery

MDL = Method Detection Limit

QAO = Quality Assurance Objective

PDP = Performance Demonstration Program

PRQL = Program Required Quantitation Limit

RPD = Relative Percent Difference

Table 4. 4-Bromofluorobenzene (BFB) Key Ions and Abundance Criteria.

Mass (amu)	Ion Abundance Criteria (as determined by peak areas)
50	15% to 40% of m/z 95
75	30% to 60% of m/z 95
95	Base peak, 100% relative abundance
96	5% to 9% of m/z 95
173	Less than 2% of m/z 174
174	Greater than 50% of m/z 95
175	5% to 9% of m/z 174
176	Greater than 95% but less than 101% of m/z
177	5% to 9% of m/z 176

Table 5. Target Mole Fractions in Custom Liquid Full VOC Standard.

Compound Name	**Wt/Wt %**
Benzene	1.2043
Bromoform	3.9061
Chlorobenzene	1.7446
Chloroform	1.8450
Cyclohexane	1.2969
1,1-Dichloroethane	1.5285
1,2-Dichloroethane	1.5285
1,1-Dichloroethylene	1.4976
cis-1,2-Dichloroethene	1.4976
Ethylbenzene	1.6365
Ethyl Ether	1.1425
Methylene chloride	1.3123
1,1,2,2-Tetrachloroethane	2.5938
Tetrachloroethene	2.5629
Toluene	1.4204
1,1,1-Trichloroethane	2.0534
Trichloroethene	2.0225
1,1,2-Trichloro-1,2,2-Trifluoroethane	2.8871
1,2,4-Trimethylbenzene	1.8527
1,3,5-Trimethylbenzene	1.8527
m-Xylene	1.6365
o-Xylene	1.6365
p-Xylene	1.6365
Carbon Tetrachloride	2.3776
trans-1,2-Dichloroethene	1.4967
Carbon Disulfide	1.1754
Chloromethane	0.7795
Acetone	8.9547
Butanol	11.4249
Methanol	4.9405
Methyl ethyl Ketone	11.1162
Total =	100%

Table 6. Suggested OCS Compounds.

Compound Name	Concentration in Gas Standard (ppmv)
Benzene	10-100
Chloroform	10-100
Toluene	10-100
1,2–Dichloroethane	10-100
Methylene chloride	10-100
Carbon tetrachloride	10-100

Table 7. Typical Initial Calibration Composition.

Initial Calibration Level	Concentration in Gas Standard (ppmv)
Level 1	0.075 ppmv H_2/CH_4 & 1.0 µL of the liquid VOC standard (icCAL1)
Level 2	0.5 ppmv H_2/CH_4 & 2.5 µL of the liquid VOC standard (icCAL2)
Level 3	1.0 ppmv H_2/CH_4 & 6.0 µL of the liquid VOC standard (icCAL3)
Level 4	3.0 ppmv H_2/CH_4 & 10.0 µL of the liquid VOC standard (icCAL4)
Level 5	Use nitrogen delivered through the purge assembly and 20.0 µL of the liquid VOC standard (icCAL5)

Table 8. Recommended GC/MS-GC/TCD System Operating Conditions*.

Condition	Recommended Operating Parameters
Electron energy	70 volts (nominal)
Mass range	31 to 300 amu
Scan time	5.2 scans per second or enough to give 5 scans/peak
GC/MS transfer line temperature	270 ºC
Column type (VOC)	RTX-VMS, 30-m × 0.32-mm I.D., 1.8- m film thickness
Column type (H_2 & CH_4)	RT- Msieve 5A, 30m × 0.53mm I.D., PLOT
Maximum oven temperature	260 °C
Initial oven temperature	60 ºC
Initial oven holding time	1.0 minutes
Oven temperature program	30ºC/min to 120°C, 45ºC/min to 210ºCC
Final oven temperature	210ºC
Final oven holding time	0 minutes
TCD Temperature	250ºC
Carrier gas (VOC)	Helium @ 4 mL/min for 1 minute, then 60mL/min^2 to 3 mL/min
Carrier gas (H_2 & CH_4)	Nitrogen @ ≈12 mL/min
TCD Reference gas	Nitrogen @ ≈20 mL/min
TCD Make up gas	off

* GC conditions are suggested, and can be modified by the analyst in conjunction with a HSG chemist to enhance the analysis or reduce run times.

Table 9. Summary of GC/MS-GC/TCD Calibration Requirements for Gas VOCs[a].

Technique	Procedure	Frequency of Procedure	Acceptance Criteria
GC/MS	BFB Tune	Every 12 hours	Abundance criteria for all key ions are met (see Table 4)
GC/MS	5-pt initial calibration	Initially, and as needed	% RSD of RRF for each analyte < 35 and Level 1 below PRQL
GC/MS	Continuing calibration	Every 12 hours	% D for all compounds ≤ 30 of initial calibration
GC/TCD	4-pt initial calibration	Initially, and as needed	An $r^2 > 0.990$.
GC/TCD	Continuing calibration	Every 12 hours	% Recovery of 70 to 130 % of the initial calibration

a. Not applicable to compounds included only for Waste Acceptance Criteria. See Table 2.

%D = Percent difference

%RSD = Percent relative standard deviation

BFB = 4-Bromofluorbenzene

r^2 = coefficient of determination

RRF = relative response factors

Table 10. Characteristic Ions for VOCs.

Volatile Organic Compound	Primary Ion (amu)	Secondary Ion(s) (amu)
Acetone	58	43
Benzene	78	52, 71
Bromoform	173	171, 175, 252
Butanol	55	31, 56
Carbon Disulfide	76	78
Carbon tetrachloride	117	119, 121
Chlorobenzene	0112	114, 77
Chloroform	83	85, 47
Chloromethane	50	52, 47
Cyclohexane[a]	56	-
1,1-Dichloroethane	63	65, 83
1,2-Dichloroethane	62	64, 98
1,1-Dichloroethylene	96	61, 98
cis-1,2-Dichloroethylene	96	61, 98
trans-1,2-Dichloroethylene	96	61, 98
Ethyl benzene	106	91
Ethyl ether	31	59
Methanol	31	-
Methyl ethyl ketone	72	43, 72
Methyl isobutyl ketone	43	57, 58, 100
Methylene chloride	84	49, 51, 86
1,1,2,2-Tetrachlorothane	83	85, 131, 133
Tetrachloroethylene	164	129, 131, 166
Toluene	92	91, 65
1,1,1-Trichloroethane	97	99, 117
Trichloroethylene	130	95, 97, 132
1,1,2-Trichloro-1,2,2-trifluoroethane	101	155, 85
1,2,4-Trimethylbenzene	105	120
1,3,5-Trimethylbenzene	105	120
m-Xylene	106	91
o-Xylene	106	91
p-Xylene	106	91
Chlorobenzene-ds (IS)	117	82, 119
Fluorobenzene (IS)	96	77

(a) = Analysts are required to determine the most appropriate secondary ions for these compounds.

(IS) = Internal Standard.

Table 11. Volatile Organic Internal Standards with Corresponding Analytes.

Fluorobenzene	**Chlorobenzene-D5**
Acetone	Bromoform
Benzene	Chlorobenzene
Butanol	Ethylbenzene
Carbon disulfide	Methyl isobutyl ketone
Carbon tetrachloride	1,1,2,2-Tetrachloroethane
Chloroform	Tetrachloroethylene
Chloromethane	Toluene
Cyclohexane	1,2,4-Trimethylbenzene
1,1-Dichloroethane	1,3,5-Trimethylbenzene
1,2-Dichloroethane	m-Xylene
cis-1,2-Dichloroethylene	o-Xylene
trans-1,2-Dichlethylene	p-Xylene
1,1-Dichloroethylene	
Ethyl ether	
Methanol	
Methylene chloride	
Methyl ethyl ketone	
1,1,1–Trichloroethane	
Trichloroethylene	
1,1,2-Trichloro-1,2,2-trifluoroethane	

Table 12. Recommended GC/MS System Operating Conditions for Manifold Cleaning Standard and Real-Time Equipment Blank.

Operation	Recommended Condition(s) *
Electron energy	70 volts (nominal) Mass
Range	31 to 300 amu
Scan Time	5.20 scans per second or enough to give 5 scans/peak
Transfer line temperatures	270 °C
Column type	30-m × 0.32-mm I.D. 1.8-µm stationary film thickness Restek Rtx-VMS or equivalent
Maximum oven temperature	260 °C
Initial oven temperature	100 °C
Initial oven hold time	0.75 minutes
Oven temperature program	30 °C/min to 120 °C, hold 0 minutes, 45°C/min to 195 °C, hold 0 minutes
Final oven temperature	195 °C
Final oven hold time	0 minutes
Carrier gas (VOC)	Helium @ 4 mL/min for 1 minute, then 60mL/min^2 to 3 mL/min

* GC conditions are suggested, and can be modified by the analyst in conjunction with a HSG chemist to enhance the analysis, or reduce run times.

Table 13. Recommended GC/MS System Operating Conditions for BFB Tune.

Operation	Recommended Condition(s)*
Electron energy	70 volts (nominal) Mass
Range	35 to 300 amu
Scan Time	5.27 scans per second or enough to give 5 scans/peak
Transfer line temperatures	270 °C
Column type	30-m × 0.32-mm I.D. 1.8-µm stationary film thickness Restek Rtx-VMS or equivalent
Maximum oven temperature	260 °C
Initial oven temperature	80 °C
Initial oven hold time	0 minutes
Oven temperature program	50 °C/min to 230 °C
Final oven temperature	230 °C
Final oven hold time	0 minutes
Carrier gas (VOC)	Helium @ 4 mL/min

* GC conditions are suggested, and can be modified by the analyst in conjunction with a HSG chemist to enhance the analysis or reduce run times.

Table 14. Acceptance Criteria.

QC Sample	Acceptance Criteria	Corrective Action
On-line Blanks	VOC amounts ≤ 3 × MDLs in Table 2	Nonconformance if any VOC amount > 3 × MDLs in Table 2
Equipment Blanks	VOC amounts ≤ 3 × MDLs in Table 2	Nonconformance if analyte amount > 3 × MDLs in Table 2
Duplicates	RPD ≤ 25	Nonconformance if RPD > 25
On-Line Control Samples and Duplicates	70 to 130 %R for OCS analysis RPD ≤ 25 for selected OCS compounds when OCS/OCS dup are used to determine precision.	Nonconformance if %R > 130% or < 70% Nonconformance if RPD > 25

Corrective action is only required if the final report QC sample results do not meet the acceptance criteria. Nonconformances are documented in accordance with site specific nonconformance item reporting and control procedures.

%R = Percent recovery

MDL = Method detection limit

RPD = Relative percent difference

Table 15. Required Samples to be Collected.

All Batches	Collection Frequency	Required Analysis
Samples	One from each container - ≈ 500 mL/drum	VOC and H_2/CH_4
On-line Blanks (FB)	One per sampling batch	VOCs
OCS/OCS dup (LCS1/LCS2)	One per sampling batch	VOCs
Duplicate Samples	One per sampling batch	VOC and H_2/CH_4
Equipment Blanks (EB)	One per sampling/manifold cleaning batch (serves as batch cleaning verification sample)	VOC and H_2/CH_4
Real-time Equipment Blanks	One per OCS and one per drum sampled	VOC and H_2/CH_4

Table 16. Data Reporting Flags.

Data Flag	Indicator
B[1]	Analyte detected in blank
E	Analyte exceeds calibration curve (Organics/Headspace gases)
J	Analyte less than PRQL, but greater than or equal to MDL)
U	Analyte was not detected and value is reported as the MDL (IDL for Metals)
D	Analyte was quantified from a secondary dilution, or reduced sample aliquot (Organics/Headspace gases)
Z[2]	One or more QC samples do not meet acceptance criteria

1 Use B flag if on line blank analyte > MDL and ≤ 3 × MDL

2 Use Z flag if on-line blank analyte > 3 × MDL or if the OCS analyses do not pass accuracy/precision criteria.

Appendix B – Calibration and Quality Control (QC) Equations

7.1.1.1 Determining Relative Response Factor (RRF)

$$RRF = \frac{A_x C_{is}}{A_{is} C_x} \quad (1)$$

Where:

Ax = area of the characteristic ion for the compound being measured

Ais = area of the characteristic ion for the specific internal standard

Cis = amount of the specific internal standard (ng)

Cx = amount of the compound being measured (ng)

7.1.1.2 Determining Percent Relative Standard Deviation (%RSD)

$$\%RSD = \frac{s}{x} * 100 \quad (2)$$

Where:

s = standard deviation of RRF for a compound

x = mean of five initial RRFs for a compound (average RRF)

7.1.1.3 Determining Standard Deviation

$$s = \sqrt{\sum_{i=1}^{n} \frac{(y_i - \bar{y})^2}{n-1}} \quad (3)$$

Where:

yi = measured value of the ith replicated sample analysis measurement

n = number of replicate analyses

y = average measured value

7.1.1.4 Determining percent difference (%D)

$$\%D = \frac{RRF_i - RRF_c}{RRF_i} * 100 \quad (4)$$

Where:

RRFi =average RRF or average RRF from initial calibration (area/ng)

RRFc = RRF or RRF from current midpoint standard (area/ng)

7.1.1.5 Determining Method Detection Level (MDL)

$$MDL = t_{(n-1,1-\alpha=.99)} * s \quad (5)$$

Where:

t = t-distribution value appropriate to a 99 percent confidence level

n -1 = degrees of freedom

n = number of observations

s = standard deviation of replicate measurements

7.1.1.6 Determining Percent Recovery (%R)

$$\%R = \frac{C_m}{C_{srm}} * 100 \quad (6)$$

Where:

Cm =measured concentration value obtained by analyzing the sample

Csrm =“true” or certified concentration of the analyte in the sample

7.1.1.7 Determining Relative Percent Difference (RPD)

$$RPD = \frac{C_1 - C_2}{\frac{C_1 + C_2}{2}} * 100 \quad (7)$$

Where:

C1, C2 = Two values obtained by analyzing the duplicate samples, C1 is the larger of the two observed values

7.1.1.8 Determining Concentration (CVOC)

$$C_{VOC} = \frac{A_s * C_{is} * V * D}{A_{is} * RRF} \quad (8)$$

Where:

As = Area (or height) of the peak for the analyte in the sample

is = Area (or height) of the peak for the internal standard

is = Concentration of the internal standard in the sample loop in ppmv

D = Dilution factor, if the sample or extract was diluted prior to analysis. If no dilution was made D=1. The dilution factor is always dimensionless.

V = Volume of the extract injected (µL). The normal injection volume for samples and calibration standards must be the same. For headspace gas analysis, V is not applicable and set at 1.

RRF = Relative response factor from the initial calibration.

7.1.1.9 Determining Mean Response Factor (RF)

RF = As / Cs (9)

Where:

As = Peak area of the analyte

Cs = Concentration of the analyte, in %V

7.1.1.10 Determining Concentration of the Analyte in Sample (CH_2CH_4)

$$C_{H2CH4} = m * A_u * D \quad (10)$$

Where:

CH_2CH_4 = Concentration of the analyte in sample

m = Slope of calibration curve generated by software

Au = Peak area of the analyte in sample

D = Dilution factor, if the sample or extract was diluted prior to analysis. If no dilution was made D=1. The dilution factor is always dimensionless.

Appendix C – HGAS System Description

The manifold consists of an array of 29 500-mL silco steel® passivated stainless steel sample bottles mounted to a common, silco steel® passivated stainless steel, manifold using VCR® fittings. The volume of this common manifold is calculated by applying the ideal gas law PV=nRT) using a 500 mL sample bottle as the reference volume. The bottles are mounted to the manifold using "normally closed" valves to prevent the intrusion of ambient air into the system. The manifold is also helium leak checked to 1.5×10^{-7} cc/s upon first assembly, and after any disassembly thereafter. This record is recorded and maintained in the instrument logbook. This manifold is equipped with a capacitance manometer and a Convectron vacuum gauge to measure required sample pressures (and atmospheric pressure) and vacuums, respectively. These gauges are pneumatically connected to the manifold and can measure absolute pressure from <0.05 mm Hg to 1200 mm Hg. The Convectron gauge resolution is better than 0.01 mm Hg at 0.05 mm Hg. Both the capacitance manometer and the Convectron are calibrated using a NIST traceable standard and have an operating range from approximately 15 °C to 40°C). A dry vacuum pump, capable of reducing the manifold pressure to 0.05 mm Hg, is used. A Type K thermocouple is used to measure the ambient temperature in the sampling area. This temperature probe is calibrated using a NIST traceable standard.

Humidified nitrogen is used to pressurize sample bottles and purge sampling lines through a stainless steel regulator that does not allow introduction of manifold gas into the sampling lines. A sampling head assembly is used to obtain gas samples from the waste container headspace. The sampling head assembly is comprised of 1) a side port needle for piercing the carbon composite filter, 2) a disposable filter, 3) an isolation valve mounted in a pistol grip, and 4) a heated transfer line to form an airtight connection from the assembly to the array of sample bottles. The assembly is designed to provide maximum distance to reach the waste containers and yet minimum distance to minimize dead volume in the manifold. This same assembly is used to obtain QC samples from compressed gas cylinders when a purge assembly is attached to the gas cylinder. The purge assembly is a flow regulator to regulate the flow of standards into the manifold. This purge assembly provides for reference gas sampling through an elastomer membrane. The sampling manifold is connected to the analytical instrument (a gas chromatograph [GC] thermal conductivity detector [TCD] and GC mass spectrometer [MS]) via a transfer line. An embedded controller (microcomputer) is used to control all valves and log sampling data. The embedded controller orchestrates all manifold controls for sampling and analysis.

The analytical process is based on the introduction of samples onto a capillary column for VOC analysis and onto a PLOT column for H_2/CH_4 with separate 100 µL fixed-volume injection loops. Internal standards are introduced into the GC/MS system via a 250 µL fixed volume sample loop. Samples are injected from a 100 µL fixed volume sample loop. The internal standards and sample are injected simultaneously (separate loops are plumbed in series). H_2 and CH_4 are calibrated using an external standard technique.

An MS is used for detection of the VOCs listed in, and H_2 and CH_4 are detected using a GC/TCD.

The program-required quantitation limits (PRQLs) specified in Table 2 are based on a 10-mL sample aliquot. It has been demonstrated that the required PRQLs can be met with a 0.10-mL sample loop. Therefore, this procedure is based on injection of 0.10 mL into the injection port of the GC/TCD-GC/MS.

AMWTP INSTRUCTION		
INST-OI-43, Rev. 22	Issued: 09/17/12	Effective: 09/18/12
HGAS Sampling and Analysis Operations		

The graphical user interface for control of elements of the automated manifold is shown in Figure 1. A block diagram showing principal components of the intergrated sampling/analysis system is shown in Figure 2.

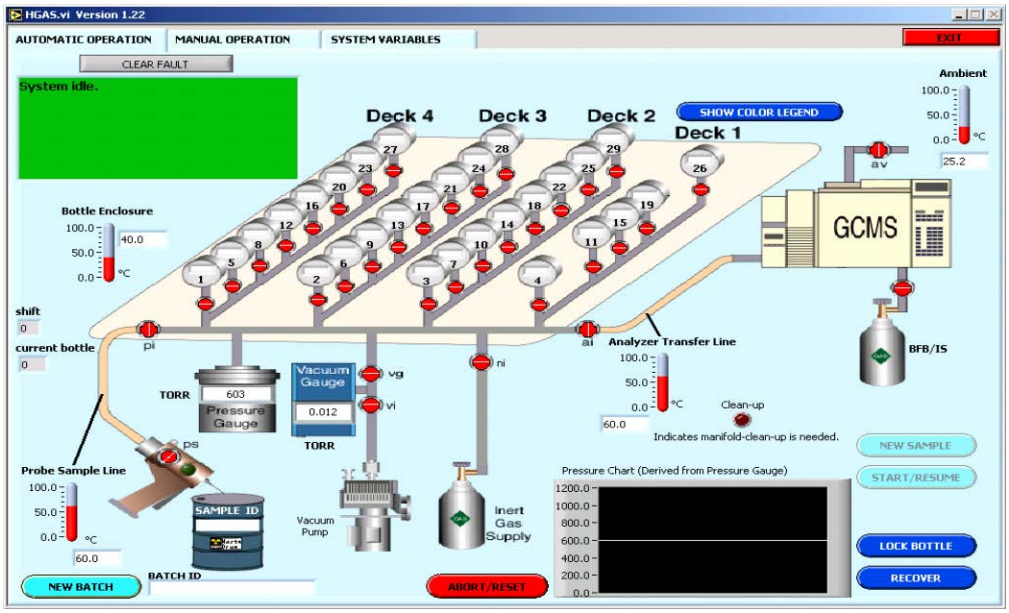

Figure 1. Control Panel of Automated Manifold Depicting Component Layout.

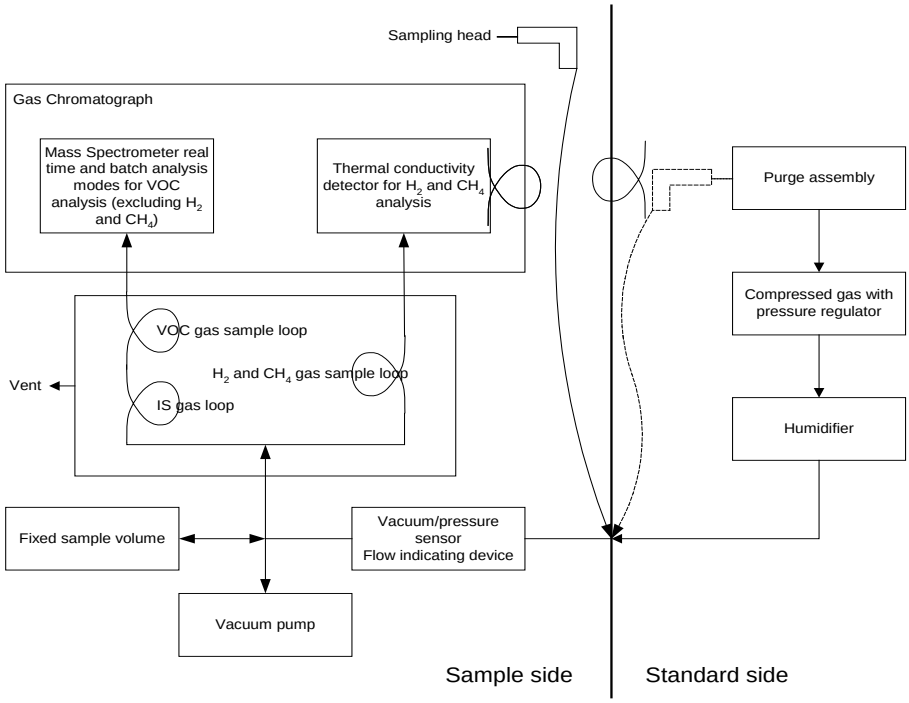

Figure 2. Block Diagram of Integrated Sampling/Analysis System.

Appendix D – HGAS Sample Spreadsheet for Concentration Calculations

Name	Target mgs compound	wt/wt %	Actual wt/wt % for Compound from Cert. of Composition	A2 Ratio	Bulb Vol(mls)	Gas Bulb Molar Volume (ambient)	Target Conc. ppmv	Target moles analyte	Bulb Inj Vol(uls)	Density (g/ml)
HGAS Calcs Rev. 1										
Benzene	0.0117	1.2043	1.200	1.02	500.00	1.498E-02	10.00	1.498E-07	0.013	0.8765
Bromoform	0.0379	3.9061	4.000	1.05	500.00	1.498E-02	10.00	1.498E-07	0.013	2.8899
Chlorobenzene	0.0169	1.7446	1.700	1.00	500.00	1.498E-02	10.00	1.498E-07	0.015	1.1058
Chloroform	0.0179	1.8450	1.800	1.00	500.00	1.498E-02	10.00	1.498E-07	0.012	1.484
Cyclohexane	0.0126	1.2969	1.300	1.03	500.00	1.498E-02	10.00	1.498E-07	0.016	0.7785
1,1-Dichloroethane	0.0148	1.5285	1.500	1.00	500.00	1.498E-02	10.00	1.498E-07	0.013	1.1757
1,2-Dichloroethane	0.0148	1.5285	1.500	1.00	500.00	1.498E-02	10.00	1.498E-07	0.012	1.2351
1,1-Dichloroethylene	0.0145	1.4976	1.500	1.03	500.00	1.498E-02	10.00	1.498E-07	0.012	1.218
cis-1,2-Dichloroethene	0.0145	1.4976	1.500	1.03	500.00	1.498E-02	10.00	1.498E-07	0.011	1.2837
Ethylbenzene	0.0159	1.6365	1.600	1.00	500.00	1.498E-02	10.00	1.498E-07	0.018	0.867
Ethyl Ether	0.0111	1.1425	1.100	0.99	500.00	1.498E-02	10.00	1.498E-07	0.016	0.7138
Methylene chloride	0.0127	1.3123	1.300	1.01	500.00	1.498E-02	10.00	1.498E-07	0.010	1.3348
1,1,2,2-Tetrachloroethane	0.0252	2.5938	2.600	1.03	500.00	1.498E-02	10.00	1.498E-07	0.016	1.5953
Tetrachloroethene	0.0249	2.5629	2.600	1.04	500.00	1.498E-02	10.00	1.498E-07	0.016	1.5866
Toluene	0.0138	1.4204	1.400	1.01	500.00	1.498E-02	10.00	1.498E-07	0.016	0.8669
1,1,1-Trichloroethane	0.0199	2.0534	2.000	1.00	500.00	1.498E-02	10.00	1.498E-07	0.015	1.339
Trichloroethene	0.0196	2.0225	2.000	1.01	500.00	1.498E-02	10.00	1.498E-07	0.013	1.4642
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0280	2.8871	3.000	1.06	500.00	1.498E-02	10.00	1.498E-07	0.018	1.5635
1,2,4-Trimethylbenzene	0.0180	1.8527	1.800	0.99	500.00	1.498E-02	10.00	1.498E-07	0.021	0.8758
1,3,5-Trimethylbenzene	0.0180	1.8527	1.800	0.99	500.00	1.498E-02	10.00	1.498E-07	0.021	0.8652
m-Xylene	0.0159	1.6365	1.600	1.00	500.00	1.498E-02	10.00	1.498E-07	0.018	0.8642
o-Xylene	0.0159	1.6365	1.600	1.00	500.00	1.498E-02	10.00	1.498E-07	0.018	0.8802
p-Xylene	0.0159	1.6365	1.600	1.00	500.00	1.498E-02	10.00	1.498E-07	0.018	0.8611
Carbon Tetrachloride	0.0231	2.3776	2.400	1.03	500.00	1.498E-02	10.00	1.498E-07	0.015	1.589
trans-1,2-Dichloroethene	0.0145	1.4967	1.500	1.03	500.00	1.498E-02	10.00	1.498E-07	0.012	1.2565
Carbon Disulfide	0.0114	1.1754	1.200	1.04	500.00	1.498E-02	10.00	1.498E-07	0.009	1.2632
Chloromethane	0.0076	0.7795	0.800	1.05	500.00	1.498E-02	10.00	1.498E-07	0.008	0.9159
Acetone	0.0869	8.9547	9.000	10.29	500.00	1.498E-02	100.00	1.498E-06	0.110	0.7899
Butanol	0.1108	11.4249	11.100	9.94	500.00	1.498E-02	100.00	1.498E-06	0.137	0.8098
Methanol	0.0479	4.9405	5.000	10.36	500.00	1.498E-02	100.00	1.498E-06	0.061	0.7914
Methyl ethyl Ketone	0.1078	11.1162	11.100	10.22	500.00	1.498E-02	100.00	1.498E-06	0.134	0.8054
Methyl isobutyl ketone	0.1498	15.4391	15.500	10.27	500.00	1.498E-02	100.00	1.498E-06	0.187	0.801
Column Heading Totals	0.9700	100	99.600				770.00	1.153E-05	1.022	

Ambient Pressure (Torr)	585.00	Calc. Density =	0.9487	Act. Inj. Vol. (uls) =	1.00	
Correction Factor/Pressure	1.30	Act. Density =	0.9710			
Bottle Temperature (Celcius)	40.00	Corr. Factor =	1.02			
Bottle Temperature (Kelvin)	313.00					
Correction Factor/Temp	1.15					
Molar Gas Volume (mls)	33385.57					

HGAS Sample Spreadsheet for Concentration Calculations (continued)

Name	mls/Moles	[Expected] PPMV	[Actual] ppmv	Mole Ratio	total mls	volume fraction	# of moles	GC INJ VOL(mls)	Moles On Col	ng on column
HGAS Calcs Rev. 1										
Benzene	88.99	9.77	9.97	1	88.99	0.013035111	1.465E-07	0.1	2.995E-11	2.336
Bromoform	87.55	9.77	10.24	1	87.55	0.012823594	1.465E-07	0.1	2.995E-11	7.578
Chlorobenzene	102.19	9.77	9.75	1	102.19	0.014968349	1.465E-07	0.1	2.995E-11	3.385
Chloroform	80.53	9.77	9.76	1	80.53	0.01179522	1.465E-07	0.1	2.995E-11	3.579
Cyclohexane	107.90	9.77	10.03	1	107.90	0.015804935	1.465E-07	0.1	2.995E-11	2.516
1,1-Dichloroethane	84.21	9.77	9.82	1	84.21	0.012334192	1.465E-07	0.1	2.995E-11	2.965
1,2-Dichloroethane	80.16	9.77	9.82	1	80.16	0.011741001	1.465E-07	0.1	2.995E-11	2.965
1,1-Dichloroethylene	79.64	9.77	10.02	1	79.64	0.011665315	1.465E-07	0.1	2.995E-11	2.905
cis-1,2-Dichloroethene	75.56	9.77	10.02	1	75.56	0.011068282	1.465E-07	0.1	2.995E-11	2.905
Ethylbenzene	122.26	9.77	9.78	1	122.26	0.017908483	1.465E-07	0.1	2.995E-11	3.175
Ethyl Ether	103.67	9.77	9.63	1	103.67	0.015185434	1.465E-07	0.1	2.995E-11	2.217
Methylene chloride	63.68	9.77	9.91	1	63.68	0.009327704	1.465E-07	0.1	2.995E-11	2.546
1,1,2,2-Tetrachloroethane	105.31	9.77	10.03	1	105.31	0.015425489	1.465E-07	0.1	2.995E-11	5.032
Tetrachloroethene	104.63	9.77	10.15	1	104.63	0.01532543	1.465E-07	0.1	2.995E-11	4.972
Toluene	106.13	9.77	9.86	1	106.13	0.015545005	1.465E-07	0.1	2.995E-11	2.756
1,1,1-Trichloroethane	99.33	9.77	9.74	1	99.33	0.014549334	1.465E-07	0.1	2.995E-11	3.984
Trichloroethene	89.47	9.77	9.89	1	89.47	0.013105178	1.465E-07	0.1	2.995E-11	3.924
1,1,2-Trichloro-1,2,2-Trifluoroethane	119.60	9.77	10.39	1	119.60	0.01751926	1.465E-07	0.1	2.995E-11	5.601
1,2,4-Trimethylbenzene	137.02	9.77	9.72	1	137.02	0.020070045	1.465E-07	0.1	2.995E-11	3.594
1,3,5-Trimethylbenzene	138.70	9.77	9.72	1	138.70	0.020315933	1.465E-07	0.1	2.995E-11	3.594
m-Xylene	122.66	9.77	9.78	1	122.66	0.017966507	1.465E-07	0.1	2.995E-11	3.175
o-Xylene	120.43	9.77	9.78	1	120.43	0.017639917	1.465E-07	0.1	2.995E-11	3.175
p-Xylene	123.10	9.77	9.78	1	123.10	0.018031187	1.465E-07	0.1	2.995E-11	3.175
Carbon Tetrachloride	96.92	9.77	10.10	1	96.92	0.014196094	1.465E-07	0.1	2.995E-11	4.613
trans-1,2-Dichloroethene	77.15	9.77	10.02	1	77.15	0.011300888	1.465E-07	0.1	2.995E-11	2.904
Carbon Disulfide	60.27	9.77	10.21	1	60.27	0.008827866	1.465E-07	0.1	2.995E-11	2.280
Chloromethane	55.13	9.77	10.27	1	55.13	0.008074755	1.465E-07	0.1	2.995E-11	1.512
Acetone	73.43	97.73	100.53	10	734.27	0.107554334	1.465E-06	0.1	2.995E-10	17.373
Butanol	91.38	97.73	97.18	10	913.81	0.133852345	1.465E-06	0.1	2.995E-10	22.165
Methanol	40.43	97.73	101.23	10	404.35	0.05922785	1.465E-06	0.1	2.995E-10	9.585
Methyl ethyl Ketone	89.40	97.73	99.88	10	893.97	0.130946203	1.465E-06	0.1	2.995E-10	21.566
Methyl isobutyl ketone	124.84	97.73	100.42	10	1248.44	0.18286876	1.465E-06	0.1	2.995E-10	29.953
Column Heading Totals				77	6826.97	1	1.128E-05			
							Total # of moles injected	7.531E-02		

Appendix E – DAC Tables

TABLE C1-5

HEADSPACE GAS DRUM AGE CRITERIA SAMPLING SCENARIOS

Scenario	Description
1	A. Unvented 55-gallon drums without rigid poly liners are sampled through the drum lid at the time of venting. B1. Unvented 55-gallondrums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. B2. Vented 55-gallon drums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. C. Unvented 55-gallondrums with vented rigid poly liners are sampled through the drum lid at the time of venting.
2	55-gallon drums that have met the criteria for Scenario 1 and then are vented, but not sampled at the time of venting. [a]
3	Containers (i.e., 55-gallon drums, 85-gallon drums, 100-gallon drums, SWBs, TDOPs, and pipe components) that are initially packaged in a vented condition and sampled in the container headspace and containers that are not sampled under Scenario 1 or 2.

[a] Containers that have not met the Scenario 1 DAC at the time of venting must be categorized under Scenario 3. This requires the additional information required of each container in Scenario 3 (i.e., determination of packaging configuration), and such containers can only be sampled after meeting the appropriate Scenario 3 DAC.

TABLE C1-6

SCENARIO 1 DRUM AGE CRITERIA (IN DAYS) MATRIX

Summary Category Group	DAC (days)
S5000	53
NOTE: *Containers that are sampled using the Scenario 1 DAC do not require information on the packaging configuration because the Scenario 1 DAC are based on a bounding packaging configuration. In addition, information on the rigid liner vent hole presence and diameter do not apply to containers that are sampled using the Scenario 1 DAC because they are unvented prior to sampling.*	

TABLE C1-7

SCENARIO 2 DRUM AGE CRITERIA (IN DAYS) MATRIX.

	Summary Category Group S5000			
Filter H_2 Diffusivity [a]	**Rigid Liner Vent Hole Diameter (in) [b]**			
(mol/s/mod fraction)	0.30	0.375	0.75	1.0
1.9×10^{-6}	29	22	13	12
3.7×10^{-6}	25	20	12	11
3.7×10^{-5}	7	6	6	4

[a] The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with a 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9 × 10-6 filter H2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

[b] The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3d[1]), repackaging (Attachment C, Section C-3d[1]), and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

NOTE: *Containers that are sampled using the Scenario 2 DAC do not require information on the packaging configuration because the Scenario 2 DAC is based on a bounding packaging configuration.*

TABLE C1-8

SCENARIO 3 PACKAGING CONFIGURATION GROUPS

Packaging Configuration Group	**Covered S5000 Packaging Configuration Groups**
Packaging Configuration Group 1, 55-gal. drums [a]	• No layers of confinement, filtered inner lid [b] • No inner bags, no liner bags (bounding case)
Packaging Configuration Group 2, 55-gal. drums [a]	• 1 inner bag • 1 filtered inner bag • 1 liner bag • 1 filtered liner bag • 1 inner bag, 1 liner bag • 1 filtered inner bag, 1 filtered liner bag • 2 inner bags • 2 filtered inner bags • 2 inner bags, 1 liner bag • 2 filtered inner bags, 1 filtered liner bag • 3 inner bags • 3 filtered inner bags • 3 filtered inner bags, 1 filtered liner bag • 3 inner bags, 1 liner bag (bounding case)
Packaging Configuration Group 3, 55-gal. drums [a]	• 2 liner bags • 2 filtered liner bags • 1 inner bag, 2 liner bags • 1 filtered inner bag, 2 filtered liner bags • 2 inner bags, 2 liner bags • 2 filtered inner bags, 2 filtered liner bags • 3 filtered inner bags, 2 filtered liner bags • 4 inner bags • 3 inner bags, 2 liner bags • 4 inner bags, 2 liner bags (bounding case)
Packaging Configuration Group 4, pipe components	• No layers of confinement inside a pipe component • 1 filtered inner bag, 1 filtered metal can inside a pipe component • 2 inner bags inside a pipe component • 2 filtered inner bags inside a pipe component • 2 filtered inner bags, 1 filtered metal can inside a pipe component • 2 inner bags, 1 filtered metal can inside a pipe component (bounding case)
Packaging Configuration Group 5, Standard Waste Box or Ten-Drum Overpack [a]	• No layers of confinement • 1 SWB liner bag (bounding case)

Packaging Configuration Group	Covered S5000 Packaging Configuration Groups
Packaging Configuration Group 6, Standard Waste Box or Ten-Drum Overpack [a]	• Any combination of inner and/or liner bags that is less than or equal to 6 • 5 inner bags, 1 SWB liner bag (bounding case)
Packaging Configuration Group 7, 85-gallon drums and 100-gallon drums[a]	• No inner bags, no liner bags, no rigid liner, filtered inner lid (bounding case)[b] • No inner bags, no liner bags, no rigid liner
Packaging Configuration Group 8, 85-gallon drums and 100-gallon drums[a]	• 4 inner bags and 2 liner bags, no rigid liner, filtered inner lid (bounding case)[b]

[a] If a specific Packaging Configuration Groups cannot be determined based on the data collected during packaging and/or repackaging, a conservative default Packaging Configuration Group of 3 for 55-gallon drums, 6 for SWBs and TDOPs, and 8 for 85-gallon and 100-gallon drums must be assigned provided the drums do not contain pipe component packaging. If pipe components are present as packaging in the drums, the pipe components must be sampled following the requirements for Packaging Configuration Group 4.

[b] A "filtered inner lid" is the inner lid on a double lid drum that contains a filter.

Definitions:

Liner Bags. One or more optional plastic bags that are used to control radiological contamination. Liner bags for drums have a thickness of approximately 11 mils. Liner bags are typically similar in size to the container. SWB liner bags have a thickness of approximately 14 mils. TDOPs use SWB liner bags.

Inner Bags. One or more optional plastic bags that are used to control radiological contamination. Inner bags have a thickness of approximately 5 mils and are typically smaller than liner bags.

TABLE C1-9

SCENARIO 3 DRUM AGE CRITERIA (in days) MATRIX FOR S5000 WASTE

BY PACKAGING CONFIGURATION GROUP

Packaging Configuration Group 1

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	131	95	37	24	4	4
3.7×10^{-6}	111	85	36	24	4	4
3.7×10^{-5}	28	28	23	19	4	4

Packaging Configuration Group 2

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	175	138	75	60	30	11
3.7×10^{-6}	152	126	73	59	30	11
3.7×10^{-5}	58	57	52	47	28	8

Packaging Configuration Group 3

Filter H_2 Diffusivity [a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	199	161	96	80	46	16
3.7×10^{-6}	175	148	93	79	46	16
3.7×10^{-5}	72	72	67	62	42	10

Packaging Configuration Group 4	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Headspace Sample Taken Inside Pipe Component**
$> 1.9 \times 10^{-6}$	152

Packaging Configuration Group 5	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	15
3.33×10^{-5} (TDOP)	15

Packaging Configuration Group 6	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	56
3.33×10^{-5} (TDOP)	56

Packaging Configuration Group 7[d]			
Filter H_2 Diffusivity[a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol fraction)[a]**		
	7.4×10^{-6}	**1.85×10^{-5}**	**9.25×10^{-5} [e]**
3.7×10^{-6}	13	7	2
7.4×10^{-6}	10	6	2
1.85×10^{-5}	6	4	2

Packaging Configuration Group 8	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol/fraction)**
	7.4×10^{-6}
3.7×10^{-6}	21

a. The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9×10^{-6} filter H_2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3(d)1), repackaging (Attachment C, Section C-3(d)1), and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in..

c. The filter H_2 diffusivity for SWBs or TDOPS is the sum of the diffusivities for all of the filters on the container because SWBs and TDOPs have more than 1 filter.

d. Headspace sample taken between inner and outer drums lids. If headspace sample is taken inside the filtered inner drum lid prior to placement of the outer drum lid, then a DAC value of 2 days may be used. Footnote e is also applicable. Packaging Configuration Group 7 DAC values apply to drums with up to two lids.

e. While a DAC value of 2 days may be determined, containers must comply with the equilibrium requirements specified in Section C1-1a (i.e., 72 hours at 180C or higher). The equilibrium requirement for headspace gas sampling shall be met separately

TABLE C1-10

SCENARIO 3 DRUM AGE CRITERIA (in days) MATRIX FOR S3000 AND S4000 WASTE BY PACKAGING CONFIGURATION GROUP

Packaging Configuration Group 1

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	131	95	37	24	4	4
3.7×10^{-6}	111	85	36	24	4	4
3.7×10^{-5}	28	28	23	19	4	4

Packaging Configuration Group 2

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	213	175	108	92	56	18
3.7×10^{-6}	188	161	105	90	56	17
3.7×10^{-5}	80	80	75	71	49	10

Packaging Configuration Group 3

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	283	243	171	154	107	34
3.7×10^{-6}	253	225	166	151	106	31
3.7×10^{-5}	121	121	115	110	84	13

Packaging Configuration Group 4	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Headspace Sample Taken Inside Pipe Component**
$> 1.9 \times 10^{-6}$	152

Packaging Configuration Group 5	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	15
3.33×10^{-5} (TDOP)	15

Packaging Configuration Group 6	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	56
3.33×10^{-5} (TDOP)	56

Packaging Configuration Group 7[d]			
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol fraction)[a]**		
	7.4×10^{-6}	**1.85×10^{-5}**	**9.25×10^{-5} [e]**
3.7×10^{-6}	13	7	2
7.4×10^{-6}	10	6	2
1.85×10^{-5}	6	4	2

Packaging Configuration Group 8	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol/fraction)**
	7.4×10^{-6}
3.7×10^{-6}	21

a. The documented filter H2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with a 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9×10^{-6} filter H_2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3(d)1), repackaging (Attachment C, Section C-3(d)1), and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

c. The filter H_2 diffusivity for SWBs or TDOPS is the sum of the diffusivities for all of the filters on the container because SWBs and TDOPs have more than 1 filter.

d. Headspace sample taken between inner and outer drums lids. If headspace sample is taken inside the filtered inner drum lid prior to placement of the outer drum lid, then a DAC value of 2 days may be used. Footnote e is also applicable. Packaging Configuration Group 7 DAC values apply to drums with up to two lids.

e. While a DAC value of 2 days may be determined, containers must comply with the equilibrium requirements specified in Section C1-1a (i.e., 72 hours at 180C or higher). The equilibrium requirement for headspace gas sampling shall be met separately.

Appendix F – HGAS (Agilent/Manifold) Baseline Matrix

Recalibration of the instrument must take place when the performance changes to the point that the continuing calibration acceptance criteria cannot be achieved. In addition, significant maintenance activities or hardware changes may also require recalibration. The matrix below provides general guidance on the sorts of procedures that may or may not require recalibration.

Description of Maintenance Activity	ICAL?	MDL?
Changing, replacing, or reversing the column[a]	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
Changing the entrance lens, draw out lens, or repeller	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
Cleaning the MS source	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
Changing the electron multiplier, ion source chamber, or injector port	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
Changing the BFB/IS Gas Cylinder[b]	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
Changing: septa; compressed gas cylinders; syringes; moisture, hydrocarbon, or oxygen traps; column fittings; inlets; or filaments. Other procedures include breaking off or changing a guard column or cleaning the inlet.	Only if system cannot meet acceptance criteria	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c]
GC Optimization of Parameters (flow, oven ramp, etc.)[a]	Y	MDL Required if IS Recovery vs. IS from previous acceptable ICAL is < 50 or > 200%[c] **OR** RRT change is > 0.06 RRT of previous acceptable ICAL[d]

a. Changing or replacing the column or GC optimization will also require that the retention time windows be redetermined.
b. HGAS systems require recalibration after changing the internal standard cylinder. The concentrations must be updated within the Agilent® Chemstation® software for proper reporting.
c. Comparing IS recoveries maybe performed by generating a continuing calibration report prior to recalibration of the system.
d. RRT = Relative retention time = RT of Analyte / RT of nearest IS.

Appendix G – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	02/12/04	All	DCR-2638. Initial issue.
1	03/26/04	Various	DCR-2729. Changes made to add references to Form-1520, for clarity, and to implement WIPP/WAPP requirements.
2	07/14/04	Various	DCR-3131. Revised to incorporate changes to the NCR process, adding the new Characterization NCR process.
3	11/29/04	All Step 4.12.6.13	DCR-3235. Modified for software changes. Minor editorial changes. Incorporation of corrective actions addressing CBFO Audit A-04-22. Create Form-1595, "HGAS Daily Checks," to support procedure. Delete Step 4.10.5, "Establish RBA, as required, for sampling." Added Step 4.9.4 to incorporate CAR-9432 (CBFO CAR04-039) corrective action Incorporate WIPP Comments Incorporate Field Change-1: Change wording to read: "Modify the Data File name by placing a "1" at the beginning of the existing number sequence. (i.e., 1xxcc-#F (where F, G, or I indicates the HGAS unit being used.) Change existing Step 4.12.6.14.4 to read: Verify that "Overwrite Existing Data Files" is not checked. Incorporate the WIPP CH-WAC and CH-TRAMPAC requirements. Incorporate Changes from Performance Review Team Evaluation.
4	12/02/04	54	DCR-4043. Minor changes to Step 4.7.1.7.1 and note before Step 4.7.1.8 to correct typos.
5	01/18/05	Pages 59 and 60	DCR-4094. Minor changes to Step 4.8.1.6.2 and Step 4.8.2.1 Note to correct missing section callouts.

Revision Number	Date Approved	Pages Affected	Description of Revision
6	02/08/05	Various	DCR-4120. Revised to make procedure less restrictive and comply with planned operations. Attachment 1-DAC Table was corrected and changed to Appendix E. Resolve WIPP Comments from 6A.
7	03/03/05	Various	DCR-4158. Incorporate FC-1 and FC-2.
8	04/04/05	P101, 129, Appendix F, Appendix G	DCR-4207. Added text/steps, as appropriate, regarding Satellite Review, add Appendix F, and Appendix G.
9	5/17/05	4.8.10	DCR-4275. Added new section governing filter replacement in 100-gallon puck drums following HGAS. Replaced BNFL with AMWTP logo.
10	06/21/05	Various	DCR-4369. Added hydrogen and methane analysis (without VOC analysis).
11	07/26/05	Various	DCR-4433. Incorporate FC-1 from DCR-4421. Change to reflect MP-TRUW-8.3 regarding flammable VOC verbiage
12	09/13/05	Various	DCR-4452. Revised various steps to give operators adequate information. Implemented corrective actions from CAR 17407 and NCRs 17523/17524. Implemented instructions for batch data accessibility utilizing HGAS-SERVER/Workstation model.
FC-3	10/19/05	Appendix A – A-2	DCR-4634. Add to Carbon Disulfide and Chloromethane table: Less than or equal to (use sign) 25%; 70-130; 10; 10 and add Footnote “I” to Carbon Disulfide. Change Footnote “f” to read: Carbon Disulfide and Chloromethane are compounds that have been added.
FC-4	2/16/06	Section 4.8.2.2	DCR-4831. Revise this section as a CAR corrective action.
FC-5	2/23/06	Various	DCR-4840. Step 4.8.2.5.14; delete the word “actual”, Add Step 4.4.2.10 “Verify that the freezer temperature is <-10º C, add Step 4.4.2.11 “On each Monday, ensure that the freezer’s data logger has been downloaded. Contact chemist if necessary.
13	04/26/06	All	DCR-4910 – Incorporate FCs 1-5.

Revision Number	Date Approved	Pages Affected	Description of Revision
14	06/02/06	Various	Add note and steps to allow generation of electronic Form-1449, for sampling CCP drums, to change nomenclature for process waste containers to meet new requirements for permitted storage drum.
14 FC-1	03/16/07	Various	DCR-5831. Delete text referring to the Waste Tracking System from Steps 4.3.11 and 4.3.12. Break out action steps in Note 2 preceeding Step 4.8.44 into Steps 4.8.4.3.15 and 4.8.4.3.16. Revise Step 4.9.1 to read "Ensure the drum age criteria have been met for the drum to be sampled." Swap Steps 4.9.20 and 4.9.21.
			DCR-6306. Add Step 4.13.14 "Contact the STL and HGAS chemist anytime an abnormal event is observed with an HGAS system." Add Section 4.11.17, HGAS Trouble Shooting. Add Section 4.11.18, HGAS Maintenance.
15	04/23/08	Various	DCR-5787. Incorporated DCRs-5831 and -6306 to make field changes permanent and delete references to MP-TRUW-8.3.
15 FC-1	05/14/08	Various	DCR-7155. Added steps, notes, a reference, and a record to allow sampling and analysis of Performance Demonstration Program samples.
16	01/27/09	Various	DCR-7099. Incorporated DSA implementation changes. Rolled DCR-7155 into the procedure. Incorporated DOCS-BLUESHEET-01 and 03. Updated document template/format, including adding the post performance section.
17	02/04/09	78/4.5.7	DCR-7979. Minor change to spell out the acronym IAW and correct the cross-reference.
17	05/05/09	87	DCR-8315. Temporary Field Change – expired 05/15/09. To allow removal of filters from oil drums and in stall drum plugs.
17	11/19/09	86, 87	DCR-8850. Temporary Field Change – expired 12/03/09. To ship oil drums offsite.
17	02/17/10	Various	DCR-9068. Temporary Field Change – expired 03/01/10. To ship oil drums offsite.

Revision Number	Date Approved	Pages Affected	Description of Revision
17	02/18/10	Various	DCR-9077. Temporary Field Change – expired 03/01/10. To ship MLLW drums.
18	04/06/10	Various	DCR-8961. Document rewrite. Applied DOCS-BLUESHEET-02, removed Appendices F and G, combined Data Review and Data Processing into one section, removed Forms Generation from procedure, added steps for more effective waste management practices, updated template, and edited per MP-DOCS-18.1.
18 FC-1	4/20/10	Various	DCR-9194. Restored missing Steps 4.4.3.2.9.5 and 4.4.3.2.9.5.1.
19	10/20/10	Various	DCR-9481. Incorporated DCR-9194 to make field change permanent.
20	12/10/10	Various Tables	DCR 9647. Incorporated the WIPP Permit Renewal.
21	06/05/12	All	DCR-10205. Changed procedure to "Controlled Activity." Incorporated ITG-Bluesheet-020.
22	9/17/12	New P&L 3.17	DCR-11545. Incorporated new P&L in Section 3.1. Production planning, SS and PSM notification for containers having >5% hyrdrogen content.

Drum Filter Installation

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11215.*) 08/08/12

Brian Warner — Date

Characterization Lead

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

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Appendix A – Revision Log A1

AMWTP OPERATING INSTRUCTION		
INST-OI-45, Rev. 17	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
Drum Filter Installation		

1.0 PURPOSE/SCOPE

This document provides instruction for the installation only of high efficiency particulate air (HEPA) filters into transuranic waste drums within the Drum Vent System (DVS), at the Advanced Mixed Waste Treatment Project (AMWTP), located at the Idaho National Laboratory (INL).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Industrial Safety/Industrial Hygiene (IS/IH)	• Provides technical expertise and oversight • IH performs IH surveys.
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction and performs limited radiological surveys.
Radiological Technician (RT)	• Provides support for operations to include, but not be limited to, performing radiological surveys • Ensures that the radiological shift team lead (RSTL) and IS/IH representatives are notified in the event of a contaminated drum
Shift Supervisor (SS)	• Ensures that the RSTL and IS/IH representatives are notified in the event of a contaminated drum • Performs post-job reviews.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Mechanical lifting devices must be used as much as possible. Manhandling of containers/equipment shall be minimized.

3.1.2 Personnel must use proper lifting practices. Personnel are restricted to lifting a maximum of 50 lb, or one-third of their body weight, whichever is less.

3.1.3 Manual operation of the DVS outside the scope of this procedure is not allowed unless specifically called for in an approved test or authorized work procedure.

3.1.4 All waste container handling must be done in accordance with INST-OI-11, Waste Container Handling.

3.1.5 Payload containers that have been stored in an unvented condition (i.e., no filter and/or unpunctured liner) must be vented and aspirated.

(MP-TRUW-8.1)

3.1.6 Drum venting or opening a drum without a vent shall be performed in a safety-significant barrier and personnel shall only be present outside the safety-significant barrier of the drum venting enclosure during drum venting operations or while opening a drum without a vent.

(RPT-TSR-03, SAC 5.2.7)

3.1.7 The equipment used in this procedure has an alternative isolation device for routine operational activities or minor servicing as defined in 29 CFR 1910.147, The Control of Hazardous Energy (Lockout-Tagout), and ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods. The specific isolation device and its application are detailed in the risk assessment which is incorporated into the hazard assessment for this operating instruction.

3.1.8 All secondary waste must be packaged in accordance with INST-OI-24, Packaging Radioactive Waste, and the applicable HWD (070505-02).

3.2 Prerequisites

3.2.1 WMF-634 ventilation is operating per INST-OI-33, Characterization Facilities HVAC System Operations.

3.2.2 Bucket 1A on MCC-232-002 is closed or in the ON position.

3.2.3 Bucket 1B on MCC-232-002 is closed or in the ON position.

3.2.4 Bucket 2EL on MCC-232-002 is closed or in the ON position.

3.2.5 Breakers 1 and 3 on BDP-232-003 are in the ON position.

3.2.6 Local disconnect switch DS-220-002 is closed or in the ON position.

3.2.7 The DVS fire protection system is lined up for automatic initiation and FWR6-ISV-3403 is locked open.

3.2.8 The DVS ventilation is running by visual inspection of shaft rotation.

3.2.9 The "E-stop" button, the two pull cords, and the 24-VDC power supply are reset as indicated by a green light on the control panel.

3.2.10 There is greater than 0.1 in. H_2O vacuum on the enclosure as indicated on the drum cabinet magnehelic gauges with the survey door and the main cabinet doors closed.

3.2.11 Nitrogen gas pressure is greater than 300-psi bottle pressure, and line pressure is approximately 80 psi.

3.2.12 All drums must be previously vented prior to installing the NucFil 036-R-DA filter.

3.2.13 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

4.1 General

4.1.1 **IF** at any time during performance of this procedure the Waste Tracking System (WTS) is unavailable,
THEN document filter data on Form-1603, Filter Insertion Record.

4.1.1.1 **WHEN** WTS becomes available,
THEN transfer data documented on Form-1603 to the applicable container(s) in WTS.

4.1.2 **IF** access to the area under the DVS platform is needed,
THEN wear a hardhat and safety glasses.

4.1.3 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step until all appropriate operations have been performed.

Task	Section
DVS Server Operator Control Console Startup	4.2
Filter Insertion	4.3
End of Shift Activities	4.4
Abnormal and Infrequent Operations	4.5
Restraining Strap Removal for Venting Bulged Containers	4.5.1
Recovery from an "E-Stop" Condition	4.5.2
Dropped Waste Container	4.5.3
Contaminated Drum	4.5.4
Breached DVS Enclosure Glove	4.5.5
Breached Containment (Including Drums)	4.5.6
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4.2 DVS Server Operator Control Console Startup

4.2.1 Ensure that the DVS server operator control console is turned on.

4.2.2 **IF** needed,
THEN log on to the DVS server operator control console with the applicable "User ID" and "Password."

4.2.3 Ensure that the DVS has been initialized by checking that the following are active on the DVS server operator control console task bar:

- Configuration Explorer
- Factory Link Run-Time (Report Viewer)
- Factory Link OLE 2.0
- Barcode ID.

4.2.4 **IF** any of the listed items are **NOT** active on the DVS server operator control console task bar,
THEN perform the following:

4.2.4.1 Double click on the "Configuration Explorer" icon.

4.2.4.2 Double click on "Factory Link Servers."

4.2.4.3 Double click on "My Factory Link Server."

4.2.4.4 Right click on "BNFL."

4.2.4.4.1 Highlight "Start/Stop" with the mouse.

4.2.4.4.2 Highlight "Start" with the mouse and click (this starts the application).

4.2.4.4.3 Minimize the screen.

4.2.4.4.4 Check that the barcode reader screen is active.

4.2.5 Double click on the "BNFL" icon.

NOTE: *A "Welcome to DVS" message will appear on the "Client Builder" window.*

4.2.6 Click on the "Login/Start" button.

4.2.6.1 Enter "user name" and "password."

4.2.6.2 Click "OK" and a "Batch Initialization" screen will appear.

4.2.7 Check the HEPA train magnehelics by performing the following:

4.2.7.1 Place the Manual/Auto switch in Manual.

4.2.7.2 Select "Cab Door Open."

NOTE: *The button will turn green while the door is opening.*

4.2.7.3 **WHEN** the cabinet door is fully open,
AND the position indicator has turned green,
THEN verify that the 1st stage HEPA magnehelic (Gauge PDI-220-003) reads between 1.0 and 2.75 in. of water and the 2nd stage HEPA magnehelic (Gauge PDI-220-004) reads between 0.6 and 2.35 in. of water and the combined total is less than 3.35 in. of water.

4.2.7.3.1 **IF** either magnehelic or the combined total is out of the specified range,
THEN suspend operations,
AND notify the SS.

4.2.7.4 Select "Cab Door Close."

NOTE: *The button will turn green while the door is closing.*

4.2.7.5 **WHEN** the cabinet door has fully closed
AND the position indicator has turned green,
THEN place the Manual/Auto switch in Auto.

4.2.8 Click on the "Install Filters Only" button.

4.2.8.1 Press the "CONTROL" key and the "F6" key simultaneously to return the DVS operator control console to the operating screen, if necessary.

4.3 Filter Insertion

NOTE 1: *This section requires a drum to be present in the cabinet, but does not result in a sample being drawn from the drum.*

NOTE 2: *Throughput on the DVS is restricted to a running total of 560 drums per calendar week.*

(CAT 1 and CAT 2 Air Exemption for WMF-634)

4.3.1 **IF** the drums to be vented are bulged and have restraining straps,
THEN GO TO Section 4.5.1 to remove the restraining straps.

WARNING

Pyrophoric material may cause a violent exothermic reaction when exposed to air.

4.3.2 Ensure characterization (i.e., Assay and RTR are QC complete) has confirmed the absence of potential pyrophoric (roaster oxide) material before venting a drum that is included on list "Potential Roaster Oxide Containers – DO NOT VENT."

(HWMA/RCRA Permit)

4.3.3 **IF** an error condition pop-up should occur,
THEN investigate the fault and fix, if possible,
AND THEN click "continue" to proceed.

4.3.4 Ensure that a barcode number appears at the top left corner of the DVS server operator control console screen.

4.3.4.1 **IF** the drum barcode number is **NOT** scanned automatically during transfer to the drum cabinet causing a "barcode reader error" message to appear,
THEN manually enter the barcode number by performing the following:

4.3.4.1.1 Highlight the field.

4.3.4.1.2 Enter the barcode number.

4.3.4.1.3 Press the "Enter" key.

4.3.4.1.4 Press "Accept."

4.3.4.1.5 Press "Yes."

NOTE: *If the survey door does not open or close, the factory link tag "BCS_READ_ERROR" did not get set to 0.*

4.3.5 Ensure that the survey door opens.

4.3.5.1 **IF** the door does **NOT** open,
THEN press the "Change Barcode" button on the Diagnostics/Comm Page
AND THEN perform Step 4.3.4.1.

NOTE: *If there is excessive corrosion which if removed would possibly cause the integrity of the drum lid to be in question, an evaluation may be required to replace the lid prior to installing a NucFil 036-R-DA filter.*

4.3.6 **WHEN** the survey access opens,
THEN inspect the drum lid for dents, imperfections, or existing filters that are found to interfere with the seal housing.

4.3.6.1 **IF** any dents, imperfections, or existing filters are found to interfere with the seal housing,
THEN select "Back out Drum" or "Return to ICS."

4.3.6.1.1 As necessary, reposition the drum, ensuring that the lid area is clean where the seal housing will mate with the drum lid.

4.3.6.1.2 **IF** able to clear the seal area,
THEN select "Bring in Drum."

4.3.6.1.3 **IF** unable to clear the seal area,
THEN select "Return to ICS."

4.3.6.2 **IF** the drum lid seal area is clear,
THEN select "Lid OK."

4.3.6.3 **IF** the survey door does **NOT** close,
THEN press the "Change Barcode" button on the Diagnostics/Comm Page and manually enter the barcode number by performing the following:

4.3.6.3.1 Highlight the field.

4.3.6.3.2 Enter the barcode number.

4.3.6.3.3 Press the "Enter" key.

4.3.6.3.4 Press "Accept."

4.3.6.3.5 Press "Yes."

4.3.7 Ensure that the drum is lifted until the lid of the drum is in contact with the seal housing by the operator control console indicating "Drum Seal Achieved."

4.3.8 Select appropriate filter or step drill per the SS.

WARNING

Filters and filings are sharp objects and potentially contaminated in the glove box.

4.3.9 Ensure cut-resistant gloves and radiological personal protective equipment (PPE) are worn when coming into contact with, or handling, potentially contaminated hardware inside the glove box.

4.3.10 Insert the filter or step drill into the collet via the enclosure gloveports.

4.3.10.1 Press the "Close" button inside the enclosure.

CAUTION

Failure to remove hands from the enclosure will result in interrupting the light curtain and stopping powerhead movement.

4.3.11 Remove hands from the enclosure.

4.3.11.1 Survey hands.

4.3.12 Ensure that the cabinet and survey doors are closed.

(RTP-TSR-03, SAC 5.2.7)

4.3.13 Click on the appropriate button on the DVS server operator control console screen that corresponds with the filter or step drill that was inserted into the collet in Step 4.3.10 to start the sequence.

4.3.14 Visually check that the power head lowers.

4.3.14.1 **IF** a mismatch occurs between the filter model inserted in the collet and the filter insertion program selected, causing the powerhead to raise back to its home position,
THEN correct the mismatch and resume normal operation.

4.3.15 Ensure that the following sequence occurs:

NOTE: *The power head will drill through the drum lid in multiple periods of drilling. The drill sequence will continue to spin but will intermittently stop its downward motion allowing the drill to cool.*

4.3.15.1 **IF** an *impenetrable object* (see def.)/stripped-out filter fault occurs,
THEN GO TO Section 4.5.9.

NOTE: *The power head will seat the filter to the drum lid. A successful cycle will result in the black arrow lining up with the black square on the proxy switch support.*

4.3.15.2 **WHEN** survey door is open,
THEN perform a direct scan survey of the filter insertion area.

4.3.15.2.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

NOTE: *Approved methods of removing drill filings include tape press or HEPA vacuum.*

4.3.16 Wearing appropriate PPE, remove drill filings using approved method.

NOTE: *If the DVS step drill was used to install a NucFil 036-R-DA filter manually, the drum will lower in the DVS cabinet with a 1-in. hole drilled in the drum lid.*

4.3.16.1 **IF** the DVS step drill was used,
THEN perform the following:

4.3.16.1.1 Ensure the hole is 1 in. or greater, using a ruler and/or go/no-go gauge.

4.3.16.1.2 **IF** the hole is smaller than 1 in.,
THEN perform the following:

4.3.16.1.2.1 Notify the SS.

4.3.16.1.2.2 Initiate an NCR in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions,
AND record the size of the hole on the NCR.

4.3.16.1.3 Manually install a NucFil 036-R-DA filter over the hole.

4.3.16.1.3.1 **IF** the first filter does **NOT** adhere,
THEN apply a second filter.

4.3.16.1.3.2 **IF** the second filter does **NOT** adhere,
THEN notify the SS.

4.3.17 Perform a swipe survey of the drum through the survey access door per radiological procedures.

4.3.17.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.3.17.2 **IF** contamination is **NOT** found,
AND IF a tape press was used to remove the drill filings,
THEN remove the tape press from the drum lid
AND place it in a bag labeled in accordance with radiological procedures.

4.3.17.2.1 Survey hands.

4.3.18 **WHEN** the survey is complete and meets the requirements of INST-RS&C-6.22.1, Radiological Surveys,
THEN perform the following:

4.3.18.1 Ensure the filter is tight and the O-ring gasket is compressed.

4.3.18.2 Survey hands and equipment used to tighten filter.

4.3.19 Enter filter data into WTS “Container Filters” screen.

4.3.20 **IF** more drums are to be vented,
THEN press “Continue”
AND repeat Steps 4.3.1 through 4.3.19.

4.3.21 **IF** no more drums are to be vented,
THEN press “Continue”
AND GO TO Step 4.3.22.

NOTE 1: *Initialization screen can be accessed on the DVS operator control screen by pressing the "Control" key and the "F1" key simultaneously.*

NOTE 2: *To prevent another drum from entering into the chamber, Step 4.3.22 has to be completed before the discharged drum reaches Integrated Control System (ICS) conveyor.*

4.3.22 **GO TO** "Batch Initialization" screen on operator control console
AND click "Install Filters Only" button (it will turn red).

4.4 End of Shift Activities

4.4.1 Notify the SS of pending shutdown.

4.4.2 Visually verify that the power head is in the "HOME" position.

4.4.3 **GO TO** the Manual/Auto switch,
AND place it in Manual.

4.4.3.1 Select "Cab Door Closed."

4.4.4 Ensure that the cabinet access and survey doors are closed.

4.4.5 Double click "Log Off" on the DVS server operator control console.

4.4.6 **WHEN** "You are leaving NucFil Project, please confirm your action" appears,
THEN select "OK."

4.4.7 Press the green reset button.

4.5 Abnormal and Infrequent Operations

4.5.1 Restraining Strap Removal for Venting Bulged Containers

4.5.1.1 Inform the ICS operator that bulged drums will be loaded onto the input queue conveyor and that
Switch 214-AC-MT001-PLG will be turned off.

WARNING

Roller conveyors can start at any time presenting pinch point and entrapment hazards to personnel.

4.5.1.2 **WHEN** turning off the conveyor switch and removing the straps,
THEN remain within arm's reach or line of sight of the conveyor switch.

4.5.1.3 Load the drums to the input queue,
AND turn off Switch 214-AC-MT001-PLG to remove the restraining straps.

4.5.1.4 Remove lid restraining straps from the drum(s).

4.5.1.5 **WHEN** the restraining straps are removed,
THEN perform the following:

4.5.1.5.1 Turn on Switch 214-AC-MT001-PLG.

4.5.1.5.2 Return control of the input queue to the ICS operator.

4.5.1.6 **IF** performing filter insertion,
THEN RETURN to Step 4.3.2.

4.5.2 Recovery from an E-Stop Condition

NOTE 1: *The recovery screen will automatically display on the DVS server operator control console computer terminal after a fault condition.*

NOTE 2: *The fault condition will also be observed on the DVS server operator control console computer terminal at the top of the screen, highlighted in bright red.*

4.5.2.1 **IF** the emergency condition has been eliminated,
THEN reset the "E-Stop" and the 24-VDC power supply.

4.5.2.2 **GO TO** the DVS server operator control console **AND** check the status of the system.

4.5.2.3 Perform **ONE** of the following:

4.5.2.3.1 **IF** the system was in a filter insertion sequence, **THEN** install a stub filter per the applicable steps of Section 4.5.9.

4.5.2.3.2 **IF** the system had **NOT** started the filter insertion sequence, **THEN** click on "Continue."

4.5.3 Dropped Waste Container

NOTE: *Container may be moved when removal of container is necessary to recover the container or any spillage.*

4.5.3.1 Suspend all waste handling operations in the vicinity of the dropped container until the container has been recovered.

(RPT-NFCS-08, CWR 7.3.2, #3)

4.5.3.2 Place DVS in a stable condition.

4.5.3.3 Shut down transport equipment, if applicable.

4.5.3.4 Respond per INST-OI-11.

4.5.4 Contaminated Drum

4.5.4.1 Leave survey probe in DVS chamber, if applicable.

4.5.4.2 Perform self frisk with an alternate instrument.

4.5.4.3 Click on "Contaminated."

4.5.4.4 Notify SS and RT.

4.5.4.5 SS and RT: Ensure that the RSTL and IS/IH representatives are notified.

4.5.4.6 **IF** closure of survey door is unobstructed, **THEN** click on "Survey Door Closed."

4.5.4.7 Ensure the Manual/Auto switch is placed in Manual.

4.5.4.8 RT: Perform decontamination in accordance with INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination.

4.5.4.8.1 Cycle the survey door, as necessary, to support the decontamination process.

4.5.4.8.2 **WHEN** the drum is radiologically clean, **THEN** click on "Continue."

4.5.4.8.3 Ensure the Manual/Auto switch is placed in Auto.

4.5.4.8.4 Return to section previously performed.

4.5.5 Breached DVS Enclosure Glove

WARNING

Exiting the gloves greatly increases the potential for spread of contamination.

4.5.5.1 **IF** you are working in the enclosure gloves at the time of discovery of the breached glove,
THEN limit your movement.

4.5.5.1.1 Call for the immediate assistance of an RT.

4.5.5.1.2 Perform a controlled exit from the enclosure gloves under the direction of the RT.

4.5.5.1.3 Place a piece of tape over the gloveport to prevent any coworker from using it.

4.5.5.1.4 Contact the SS and RT.

4.5.5.1.4.1 SS: Evaluate further actions in accordance with MP-COPS-9.7.

4.5.5.1.5 Change gloves per Section 4.5.17.

4.5.5.2 **IF** you are **NOT** working in the enclosure gloves at the time of discovery of the breached glove,
THEN perform the following:

4.5.5.2.1 Place a piece of tape over the gloveport to prevent any coworker from using it.

4.5.5.2.2 Contact the SS and RT.

4.5.5.2.2.1 SS: Evaluate further actions in accordance with MP-COPS-9.7.

4.5.5.2.3 Change gloves per Section 4.5.17.

4.5.6 Breached Containment (including drums)

4.5.6.1 Suspend operations.

4.5.6.2 Place DVS in a stable condition.

4.5.6.3 Respond per INST-OI-11.

4.5.7 Loss of Characterization Facility EF-232-001 Extraction Fan

NOTE: *The EF-232-001 extraction fan is interlocked with the Drum Vent/Headspace Gas Sampling System. The fan has to be running for the process to be operational.*

4.5.7.1 Suspend operations.

4.5.7.2 Notify the RT/IH/SS.

4.5.7.3 **WHEN** WMF-634 building ventilation is restored,
THEN resume normal operations by performing the following:

4.5.7.3.1 Clear the error message at the DVS server operator control console computer terminal.

4.5.7.3.2 Depress the green reset button.

4.5.8 Continuous Air Monitor Alarm

4.5.8.1 Suspend operations.

4.5.8.2 Place DVS in a stable condition.

4.5.8.3 Respond in accordance with MP-RS&C-6.12, Response to Abnormal Radiological Conditions.

4.5.9 Impenetrable Object/Stripped Out Filter

4.5.9.1 Press "Abort" to lower the drum and open the survey door.

4.5.9.2 Visually inspect the filter and/or drum lid.

4.5.9.3 Perform a direct scan survey of the filter insertion area.

4.5.9.3.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.9.4 Wearing appropriate PPE, remove drill filings using approved method.

4.5.9.5 Perform a swipe survey of the drum through the survey access door per radiological procedures.

4.5.9.5.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.9.5.2 **IF** contamination is **NOT** found,
AND a tape press was used to remove the drill filings,
THEN remove the tape press from the drum lid
AND place it in a bag labeled in accordance with radiological procedures.

4.5.9.6 **IF** using NucFil 036-R-DA,
THEN perform the following:

4.5.9.6.1 Ensure the hole is 1 in. or greater, using a ruler and/or go/no-go gauge.

4.5.9.6.2 **IF** the hole is smaller than 1 in.,
THEN perform the following:

4.5.9.6.2.1 Notify the SS.

4.5.9.6.2.2 Initiate an NCR in accordance with MP-Q&SI-5.4
AND record the size of the hole on the NCR.

4.5.9.6.3 Manually install a NucFil 036-R-DA filter over the hole.

4.5.9.6.3.1 **IF** the first filter does **NOT** adhere,
THEN apply a second filter.

4.5.9.6.3.2 **IF** the second filter does **NOT** adhere,
THEN notify the SS.

4.5.9.6.4 Enter filter data into WTS "Container Filters" screen.

NOTE 1: *The operator may attempt to install another filter by choosing "Repeat Process" or "Back Out Drum" in the following steps.*

NOTE 2: *The operator may process another drum automatically into DVS by choosing "Return to ICS."*

4.5.9.6.5 Select **ONE** of the following options:

4.5.9.6.5.1 Press "Continue."

4.5.9.6.5.2 Press "Return to ICS."

OR

4.5.9.6.5.3 Press "Continue."

4.5.9.6.5.4 Press "Repeat Process."

4.5.9.6.5.5 **GO TO** Step 4.3.6 and attempt to install another filter.

OR

4.5.9.6.5.6 Press "Continue."

4.5.9.6.5.7 Press "Back Out Drum."

4.5.9.6.5.8 **WHEN** the drum has stopped on the outer conveyor,
THEN GO TO Step 4.3.6.1.1.

4.5.9.7 **IF** using a threaded filter,
AND IF feasible,
THEN perform the following:

4.5.9.7.1 Manually seat the filter.

4.5.9.7.1.1 Ensure the filter is tight and the O-ring gasket is compressed.

4.5.9.7.2 Survey hands and equipment used to tighten filter.

4.5.9.7.3 Enter filter data into WTS "Container Filters" screen.

4.5.9.7.4 **GO TO** Step 4.5.9.8.5.

4.5.9.8 **IF** the filter can **NOT** be manually seated,
THEN notify the SS and RT before proceeding with filter removal/containment and disposal.

4.5.9.8.1 RT: Ensure the RSTL is notified.

4.5.9.8.2 RT: Perform or direct surveys, as necessary, to characterize the status of the drum, lid, filter, and DVS enclosure.

4.5.9.8.2.1 Obtain pre-job, in-process, and post-job surveys per INST-RS&C-6.22.1.

4.5.9.8.3 Per supervision and RT's guidance, remove the filter and install a stub filter of the appropriate diameter.

4.5.9.8.4 Enter filter data into WTS "Container Filters" screen.

NOTE 1: *The operator may attempt to install another filter by choosing "Repeat Process" or "Back Out Drum" in the following steps.*

NOTE 2: *The operator may process another drum automatically into DVS by choosing "Return to ICS."*

4.5.9.8.5 Select **ONE** of the following options:

4.5.9.8.5.1 Press "Continue."

4.5.9.8.5.2 Press "Return to ICS."

OR

4.5.9.8.5.3 Press "Continue."

4.5.9.8.5.4 Press "Repeat Process."

4.5.9.8.5.5 **GO TO** Step 4.3.6 and attempt to install another filter.

OR

4.5.9.8.5.6 Press "Continue."

4.5.9.8.5.7 Press "Back Out Drum."

4.5.9.8.5.8 **WHEN** the drum has stopped on the outer conveyor,
THEN GO TO Step 4.3.6.1.1.

4.5.10 WMF-634 Fire Alarm/Loss of Commercial Power

4.5.10.1 Place DVS in a stable condition.

4.5.10.2 Evacuate WMF-634.

4.5.10.3 Notify the RT/SS.

4.5.10.4 **WHEN** WMF-634 building ventilation is restored,
THEN resume normal operations by performing the following:

4.5.10.4.1 Clear the error message at the DVS server operator control console computer terminal.

4.5.10.4.2 Depress the green reset button.

4.5.11 Deflagration with Sustained or Lasting Flames

NOTE 1: *AMWTP personnel are not authorized to attempt extinguishing fires involving radiological or other hazardous materials.*

NOTE 2: *A deflagration with sustained or lasting flames is indicated by the observation of flames coming from the drum, drum contents, or the deflagration chamber and continuing to burn after the initial deflagration (i.e., momentary flames from the burn-off of flammable gas).*

4.5.11.1 Press the E-Stop button.

4.5.11.2 Immediately evacuate WMF-634.

4.5.11.3 Notify the INL Fire Department at 777.

4.5.11.4 Notify the RT/SS and IS/IH.

4.5.11.5 Complete the accountability for WMF-634.

4.5.11.6 **WHEN** directed by the SS,
THEN resume normal operations by performing the following:

4.5.11.6.1 Clear the error message at the DVS server operator control console computer terminal.

4.5.11.6.2 Depress the green reset button.

4.5.12 Deflagration with No Evidence of Sustained or Lasting Flames

NOTE 1: *AMWTP personnel are not authorized to attempt extinguishing fires involving radiological or other hazardous materials.*

NOTE 2: *Anticipated conditions produced from deflagration of a drum during drum venting operations (i.e., momentary flames from the burn-off of flammable gas) do not meet the criteria requiring emergency declaration, nor require activation of the AMWTP Emergency Control Center. This event does require implementation of MP-EP&C-12.4, Event Classification/Emergency Action Levels.*

(MP-EP&C-12.4)

NOTE 3: *A deflagration with no evidence of sustained or lasting flames is indicated by momentary flames from the burn-off of flammable gas.*

4.5.12.1 Suspend DVS operations.

4.5.12.2 Notify the SS/PSM.

4.5.12.3 RT and IS/IH under the Supervision of the PSM or Designee: Characterize the condition of the drum and the deflagration chamber.

4.5.12.4 Ensure characterization includes the use of a tamper indicating device to determine when the drum has returned to ambient temperature.

4.5.12.5 Control access to the affected area as directed by an RT and IH.

4.5.12.6 **WHEN** directed by the SS,
THEN resume normal operations by clearing the error message at the DVS server operator control console computer terminal.

4.5.13 Drilling Drums for Primary or Secondary Filter Insertion

4.5.13.1 **GO TO** Section 4.3,
AND follow Section 4.3 through Step 4.3.5.1 to import the drum into the DVS cabinet,
THEN RETURN TO Step 4.5.13.2.

4.5.13.2 Ensure the system is in the filter insertion mode.

4.5.13.3 Insert the special tool, the modified short standard filter with drill bit tip for primary venting or the 3/8-in. drill manufactured to fit the power head collet and the length of a short standard filter for secondary venting, into the collet via the enclosure glove ports
AND press the close pushbutton inside the enclosure.

4.5.13.4 Ensure that the cabinet and survey doors are closed.

(RPT-TSR-03, SAC 5.2.7)

4.5.13.5 Click on the appropriate button on the DVS server operator control console screen and select “short standard.”

4.5.13.6 Once the special tool is seated, observe the drum lowering and the survey door opening.

4.5.13.7 Perform a direct scan survey of the filter insertion area.

4.5.13.7.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.13.8 Wearing appropriate PPE, remove drill filings using approved method.

4.5.13.9 Perform a swipe survey of the drum through the survey access door per radiological procedures.

4.5.13.9.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.13.9.2 **IF** contamination is **NOT** found,
AND IF a tape press was used to remove the drill filings,
THEN remove the tape press from the drum lid **AND** place it in a bag labeled in accordance with radiological procedures.

4.5.13.10 Perform **ONE** of the following using the tools provided:

4.5.13.10.1 Remove the special tool and install the stub filter for primary venting.

OR

4.5.13.10.2 Tap and install the carbon filter for secondary venting.

4.5.13.11 **IF** secondary venting was performed,
THEN perform the following:

4.5.13.11.1 Survey the tap and tap handle.

4.5.13.11.1.1 Handle material as appropriate per radiological safety procedures.

4.5.13.12 Place the special tool in a bag, tape the bag shut, and transfer back to the enclosure.

4.5.13.13 Press the button for the applicable filter installed into the drum.

4.5.13.14 Ensure that the filter model is correct in the pop-up window and then press “Close.”

4.5.13.15 Complete Steps 4.3.19 and 4.3.20 to export the drum.

4.5.14 Pressing the Abort/Reset Buttons

NOTE: *There are many dialog pop-up prompts that have an abort option as well as the green reset button on the operating panel. Upon clicking the abort button, any sequences that were running will stop, the drum will lower, and the survey door will open.*

4.5.14.1 **IF** a filter is lying on the top of the drum,
THEN retrieve the filter and set it aside.

4.5.14.2 **IF** a drilling process was in operation,
THEN perform the following:

4.5.14.2.1 Perform a direct scan survey of the filter insertion area.

4.5.14.2.1.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.14.2.2 Wearing appropriate PPE, remove drill filings using approved method.

4.5.14.2.3 Perform a swipe survey of the drum through the survey access door per radiological procedures.

4.5.14.2.3.1 **IF** contamination is found,
THEN GO TO Section 4.5.4.

4.5.14.2.3.2 **IF** contamination is **NOT** found,
AND IF a tape press was used to remove the drill filings,
THEN remove the tape press from the drum lid
AND place it in a bag labeled in accordance with radiological procedures.

4.5.14.2.4 Click Continue.

4.5.14.3 Select **ONE** of the following options:

4.5.14.3.1 **IF** it is desired to rotate the drum,
THEN select "Realign Drum" and perform the following:

4.5.14.3.1.1 Select "Back Out Drum" to export the drum to the stub conveyor.

4.5.14.3.1.2 Reposition the drum as necessary.

4.5.14.3.1.3 Select "Bring In Drum" to import the drum into the DVS cabinet.

4.5.14.3.1.4 **RETURN TO** Step 4.3.5.

4.5.14.3.2 **IF** it is desired to repeat the filter installation process,
THEN select "Repeat Process"
AND RETURN TO Step 4.3.7.

4.5.14.3.3 **IF** it is desired to export the current drum,
THEN select "Return Drum to Main Conveyor"
AND RETURN TO Step 4.3.1.

4.5.15 Manual Operation of Doors and Conveyors

NOTE 1: *There are instances when the operator may want to manually import or export a drum, as well as manually operating hardware to recover from unexpected occurrences.*

NOTE 2: *The doors and conveyors can only be run manually when the system is in manual. Interlocks will prevent the doors from opening when the drum is raised. Interlocks will prevent the conveyors from moving a drum into a closed door or continue to move the drum into the chamber after the photoelectric cell has been broken.*

NOTE 3: *The manual control pop-up window can also be opened by clicking on the diagnostics pull down menu and selecting "Doors and Conveyors."*

4.5.15.1 Switch system into MANUAL mode and the manual control pop-up window will open.

NOTE: *The following indicator lights will appear after clicking the button to run the conveyors in forward, reverse, or to stop:*

- *While the command is being sent, the button will turn green.*
- *When the conveyor is actually moving, the indicator light will turn green.*
- *If the conveyors are stopped, the indicator light will turn red.*

4.5.15.2 Click on the appropriate button to run the conveyors in forward, reverse, or to stop.

NOTE: *While the command is being sent to open or close the doors, the button will be green. When the door reaches an opened or closed state, the indicator light will turn green.*

4.5.15.3 Click the appropriate button to open or close the doors.

4.5.16 Manual Operation of Valves

NOTE 1: *There are instances when the operator may want to manually open and close valves to conduct maintenance activities as well as recovering from unexpected occurrences.*

NOTE 2: *The valves can only be manipulated manually when the system is in manual, a GCMS machine has not been selected, and the* headspace *(see def.) gas sample routines are not running.*

4.5.16.1 Switch system into MANUAL mode.

4.5.16.2 Open the manual control valves pop-up window by clicking on the diagnostics pull down menu and selecting "Valves."

NOTE: *If the valve is open, the OPEN button will be green. If the valve is closed, the CLOSED button will be red.*

4.5.16.3 Click the appropriate button to open or close valves.

4.5.17 Damaged or Expired Glove Change Out

4.5.17.1 **WHEN** evolution is to be performed,
THEN contact the SS.

4.5.17.2 Contact radiological safety for coverage.

4.5.17.3 **IF** damaged glove change out is required;
THEN use a double set of PPE (e.g., double gloves/double sleevettes).

4.5.17.4 **IF** expired glove change out is required,
THEN use a single set of PPE (e.g., single gloves/single sleevettes).

4.5.17.4.1 Obtain new gloves from warehouse (preferably 30-mil ambidextrous).

4.5.17.5 Ensure no drum is present in DVS chamber during glove change out evolution.

4.5.17.6 Perform survey on exposed glove surface, glove ring, and adjacent glove box surfaces.

4.5.17.6.1 **IF NO** contamination is found,
THEN continue with glove removal.

4.5.17.6.2 **IF** contamination is found.
THEN consult with radiological safety before continuing.

4.5.17.7 Remove expired/damaged glove by squeezing air out of glove and taping off as close to port ring as possible.

4.5.17.8 Loosen port ring/metal clamp and remove.

4.5.17.9 Remove rubber band from port ring.

4.5.17.10 Remove glove and place in radiological disposal bag.

4.5.17.10.1 Dispose of gloves as secondary waste per INST-OI-24, and the applicable HWD (070505-02).

4.5.17.11 Perform contamination survey inside of glovebox.

4.5.17.11.1 **IF NO** contamination is found, **THEN** continue.

4.5.17.11.2 **IF** contamination is found, **THEN** consult radiological safety before continuing.

4.5.17.12 Place open end of the new glove over the port with the thumb pointed upward.

4.5.17.13 Place rubber band on the outside of the glove over the port ring.

4.5.17.14 Place port ring/metal clamp over the rubber band and tighten.

4.5.17.15 Initial and date glove with a permanent marker next to the port ring/metal clamp and push the glove into the glove chamber.

4.6 Post-Job Review

4.6.1 SS or designee: Perform a post-job review in accordance with MP-COPS-9.17.

5.0 DEFINITIONS

Headspace. For any volume contained by a drum, 55-gallon poly bag, or innermost layer of confinement, the total contained volume minus the volume occupied by the waste material. “Headspace” is also used to refer to the gases contained in this volume.

Impenetrable object. An impenetrable object is a drum vent system software trip that stops a filter insertion process when the filter insertion power head load cell reaches 300-lb force. It is possible that the filter may still be inserted the remainder of the distance necessary for proper seating by manual means.

6.0 REFERENCES

(1) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout-Tagout)

(2) AMWTP HWMA/RCRA Permit

(3) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods CAT 1 and CAT 2 Air Exemption for WMF-634

(4) INST-OI-11, Waste Container Handling

(5) INST-OI-24, Packaging Radioactive Waste

(6) INST-OI-33, Characterization Facility HVAC System Operations

(7) INST-RS&C-6.22.1, Radiological Surveys

(8) INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination

(9) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(10) MP-DOCS-18.2, Records Management

(11) MP-EP&C-12.4, Event Classification/Emergency Action Levels

(12) MP-RS&C-6.12, Response to Abnormal Radiological Conditions

(13) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(14) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(15) RPT-NFCS-08, Criticality Analysis for AMWTP Retrieval Operations (NE-007)

(16) RPT-TSR-03, Technical Safety Requirements

(17) United States Nuclear Regulatory Commission, TRUPACT-II Authorized Methods for Payload Control (TRAMPAC)

(18) WIPP Contact-Handled TRU Waste Acceptance Criteria (WAC) for the WIPP, DOE/WIPP 02-3122 (WIPP WAC)

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-45, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Form-1603, Filter Insertion Record	Both Facility Operating Record/Nonpermanent WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

None

9.0 APPENDIXES

Appendix A – Revision Log

Appendix A – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	03/24/04	All	DCR-2757, Initial issue.
1	07/21/04	Page 18 Section 6 4.6, NOTE 2 Page 6	DCR-3141. Add steps to Section 4.7.3 for clarification. Modify Exhibit Change Note 2 to read: "Throughput on the DVS is restricted to a running total of 560 drums per calendar week." Delete 'Long standard filter' paragraph at bottom of Page 6 Incorporate FC-1, FC-2, FC-3, FC-4. Section 4.6.11.2: Changed THEN statement to read: "THEN proceed to Section 4.8.9." Section 4.8.9.2 Change last THEN statement to read: "**THEN**, wearing appropriate PPE, manually install the filter, if able, **OR** Remove the filter and install a Stub filter of the appropriate diameter."
2	10/14/04	Various	DCR-3362. Deleted note above Step 4.6.9. Revised Step 4.6.9. Made some editorial changes.
3	11/04/04	Various	DCR-3388. Revised Standard Filter section under Section 4.1, Step 4.6.11.1, and Exhibit 6.1 to include information on long standard filters (as a result of Waste Stream 835, long standard filters are being used).
3FC-1	11/19/04	13, 18, 26	DCR-4027. Delete 4.6.2 and 4.6.16. Change 4.6.17 to read, "Enter data on AMWTP Form-1603, Filter Insertion Record, and into WTS "Filter Update" screen. Delete Form-1449 and Form-1600 from the Records Section.

Revision Number	Date Approved	Pages Affected	Description of Revision
3FC-2	11/27/04	17, 22, 23	DCR-4031. Delete 4.8.9.3 and 4.8.9.5. Change 4.6.12.2 to read "section 4.8.9 rather than 4.8.9.1.
4	12/2/04	Various	DCR-4040. Incorporate 3 FC-1 and 3 FC-2. Add new section, "Drilling Drums for Primary or Secondary Filter Insertion." Incorporate other procedure steps necessitated by SCR-1386.
5	1/26/05	26	DCR-4104. Revise Step 4.8.13.11; add two new steps: 4.8.13.12, "Verify the filter model is correct in the pop-up window and press "Close"; renumber Step 4.8.13.13: "Complete Steps 4.6.15 and 4.6.16 to export drum." Revise Exhibit to include Direct Sample Filter; Add heading and paragraph for Direct Sample Filters to Page 6. Also Revise Standard Filter paragraph to read five cycles. Page 15: Revise first step of sequence.
5 FC-1	2-10-05	17	Add new Step 4.8.9.4 to read: Enter data to Form-1603, Filter Insertion Record, and into WTS filter.
5 FC-2	11/4/05	10.15	Changed visual verification of drum/seal contact and clarified direction for glove changeout.
6	12/01/05	All	DCR-4230. Incorporated FC-1 (DCR-4146) and FC-2 (DCR-4230-1). Added information to clarify what constitutes an impenetrable object. Restructured sections to provide ease of work flow. Added steps to provide appropriate steps to prevent personnel contamination. Incorporated FMP-329 information. Updated procedure to MP-DOCS-18.1 format.
6 FC-1	12/31/05	15	DCR-4716. Correct flow of procedure for recovery from Impenetrable Object.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	12/16/06	Various	DCR-5013. Incorporate FC-1 and steps for clarification, to allow for smoother flow of the insertion process, provide direction for drums with lid restraints, remove unnecessary steps, allow for multiple options.
8	04/02/07	Step 4.4.3, 4.6.1, 4.6.9.7.4, 4.6.10.1	DCR-5816. Incorporate changes to resolve CBFO comments. Formatting and editorial changes for consistency to MP-DOCS-18.1, 18.4.
9	08/27/07	Various	DCR-6231. Add section to perform IDC 003 filtering process.
9 FC-1	04/04/08	Pg 6	DCR-6987. Change the 1st stage HEPA magnehelic gauge to show PDI-220-003.
9 FC-2	4/25/08	10, 17, 30	DCR-7090. Add UT9413 as approved filter per FMP-0635; and clarify instruction for NF036 filter.
9 FC-3	5/14/08	Pg 30	DCR-7158. Add UT9412 as approved filter per FMP-0385.
10	10/02/08	Various	DCR-7535. Incorporated FCs 1, 2, 3; replaced NF-036 with NucFil 036-R-DA. Incorporated DCR-6811 Blue Sheet changes for Ops Restructuring (STL/SS; SM/PSM, etc.); editorial/formatting changes incorporated for consistency with MP-DOCS-18.1 and -18.4
11	01/15/09	Pg 2	DCR-7848. Changes made to implement the current DSA.
11 FC-1	09/16/09	Pgs 2 & 8	DCR-8660. Restrictions for drum from cargo containers.
12	11/24/09	Pgs 1-4, 7, 8, 10	DCR-8570. Incorporated DCR-8660 Rev. 11 FC-1. Implemented new hazardous assessment findings. Incorporated Blue Sheet 02 changes; made editorial changes for consistency with MP-DOCS-18.1. Periodic review.

AMWTP OPERATING INSTRUCTION		
INST-OI-45, Rev. 17	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
Drum Filter Installation		

Revision Number	Date Approved	Pages Affected	Description of Revision
12 FC-1	05/10/10	Pg 2	DCR-9212. Added Step 3.1.7 to resolve CAR 49662, incorporating alternative isolation device information to procedure.
13	10/18/10	Pg 2	DCR-9500. Incorporated DCR-9212 to make field change permanent.
14	03/01/11	3.1.6	DCR 9836. Annual TSR update, remove word "previously."
15	05/12/11	Pg 30	DCR-9982. Revised to add instruction for changing out gloves and to redesignate as Controlled Activity."
16	09/14/11	Page 7	DCR-10331. DCR-10331. Changed step 4.3.2 per CAR 63176, added roll down references for Hazard Assessment implementing steps.
16 FC-1	09/17/11	Page 2	DCR-10442. Deleted Step 3.2.6 and removed DS-220-001 in step 3.2.7.
17	08/08/12	Pages 10 and 24	DCR-11215. Incorporated DSA changes and 16 FC-1 (DCR-10442).

WMF-615 Filter Insertion Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11434.*) 08/11/12

Brian Warner
Characterization Lead

Date

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-50, Rev. 14	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
WMF-615 Filter Insertion Operations		

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Appendix A – Revision Log A1

AMWTP INSTRUCTION		
INST-OI-50, Rev. 14	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
WMF-615 Filter Insertion Operations		

1.0 PURPOSE/SCOPE

This procedure provides instructions for the remote venting and installation of filters in waste drums using the Drum Vent Facility (DVF), WMF-615.

This procedure applies to Advanced Mixed Waste Treatment Project (AMWTP) personnel qualified to operate this system.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction • Performs limited radiological surveys.
Radiological Technician (RT)	• Performs and evaluates radiological surveys • Performs characterization and decontamination.
Industrial Safety/Industrial Hygiene (IS/IH)	• Performs characterization for hazards other than radiological.
Shift Supervisor (SS)	• Ensures that the radiological shift team leader (RSTL) and IS/IH representatives are notified in the event of a contaminated drum • Performs post-job reviews • Initiates nonconformance reports (NCRs).
Authorized Employee (AE)	• Performs an LO/TO per INST-COPS-9.20.1, Lockout/Tagout

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Only waste drums having contact radiation levels of 200 mR/hr or less may have filters inserted. SS and RSTL approvals must be obtained for examining, storing, or inserting filters in waste drums that exceed this level.

3.1.2 Drums are handled, moved, and stored per INST-OI-11, Waste Container Handling.

3.1.3 To avoid sprains and strains, proper techniques and/or mechanical aids are used when manually positioning drums or *filter insertion machine* (FIM; see def.) table.

3.1.4 Throughput on the DVF is restricted to a total of 100 drums per day.

(AJD-255-2004, Category 1, Level 1 Exemption from a Permit to Construct)

3.1.5 Conveyors and doors present pinch points and entrapment hazards to personnel. Personnel must stay clear of conveyors and motor-driven doors during operations and use the emergency cords and/or safety mats to shut down the conveyor in case of an emergency.

(HA-N-046)

3.1.6 The use of hand tools requires that safety glasses and leather gloves be used per MP-ISIH-2.30, Hand and Power Tools. Safety glasses do not need to be worn when operating via gloves in survey station.

(HA-N-046)

3.1.7 When venting drums, at least one of the following individuals must be present and capable of ceasing drum venting operations before a person enters the silo or area where venting is being performed.

- One qualified SS
- One qualified operator.

(RPT-TSR-03, SAC 5.2.10)

3.1.8 The equipment used in this procedure has an alternative isolation device for control of hazardous energy during routine operational activities or minor servicing as defined in 29 Code of Federal Regulations (CFR) 1910.147, The Control of Hazardous Energy (Lockout/Tagout), and American National Standards Institute (ANSI) Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods. The specific isolation device and its application are detailed in the risk assessment, which is incorporated into the hazard assessment for this operating instruction.

3.2 Prerequisites

3.2.1 WMF-615 sweep and exhaust fans are available.

3.2.2 WMF-635 ventilation is running or IS/IH and Radiological Safety approval to continue filter insertion venting operations has been obtained.

(HA-N-046)

3.2.3 The following equipment, parts, and supplies are readily available, as applicable:

A. Gloves (rubber, leather)

B. Sleevettes and cotton liners

C. Filters

D. Tools necessary to tighten filter

E. Radio

F. Barcode scanner

G. Currently calibrated radiological instrumentation

- One contamination swipe counter
- One alpha survey instrument
- Silo continuous air monitor (CAM)
- Survey station CAM.

3.2.4 The following instruments have a current calibration sticker:

- DVE-PDT-1501 (on stack)
- DVE-PDT-1502 (across DVE-HEPA-1501)
- DVE-PDI-1501 (silo pressure)
- DVE-PDI-1505 (sweep filter DVE-HEPA-1506).

3.2.5 DVE-HEPA-1501 has a current in-place leak test label.

(HA-N-046)

3.2.6 The DVF silo access door is shut with bolts tightened.

(RPT-TSR-03, SAC 5.2.7)

3.2.7 Filters have been through the go/no-go gauges prior to loading in the hopper.

3.2.8 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

4.1 General

4.1.1 **IF** required to leave the control room during filter insertion operations, **THEN** log out of the Integrated Control System (ICS) workstation.

(RPT-TSR-03, SAC 5.2.10)

NOTE: *Performer may go to Section 4.9 at anytime in this procedure to respond to abnormal events.*

4.1.2 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step until all appropriate operations have been performed.

Task	Section to Perform
Drum Vent Facility Startup	4.2
Loading Drums on the Conveyor	4.3
Punch and Filter Insertion Operations	4.4
Survey Station Activities	4.5
Unloading Drums from the Conveyor	4.6
End-of-shift Activities/Drum Vent Facility Shutdown	4.7
Post-Job Review	4.8
Abnormal and Infrequent Operations	4.9

4.2 Drum Vent Facility Startup

4.2.1 **IF** returning to this Section from a silo entry,
THEN perform applicable steps **ONLY** to restart DVF.

4.2.2 Ensure adequate filters are in the HOPPER, as applicable.

4.2.2.1 **IF** an entry into the silo is needed to load filters into the hopper,
THEN GO TO Section 4.9.13.

4.2.3 Ensure the conveyors are clear and the emergency stops are **NOT** tripped.

NOTE: *Emergency stops that will shut the FIM down are identified with a large red knob, which is activated by pushing the knob in. There are emergency stops at the following locations:*

- *Behind the FIM*
- *The top side left side of the personnel access door entering the containment silo*
- *The left side of the containment silo window at the operator station*
- *On the silo side of the survey station platform.*

4.2.4 Ensure the 480-V power is turned ON with the main disconnect switch (located on FIM control panel DVC-CP-1502).

4.2.4.1 Press the reset button FIM-CK-1501 (located on the control panel).

4.2.5 Ensure the ICS workstation is turned ON.

4.2.6 Log into Windows.

4.2.7 Select DVF icon on desktop to launch the DVF Client Application.

4.2.8 **WHEN** the DVF Client Application has been loaded,
THEN log in to the DVF Client Application.

4.2.9 Ensure the safety mats have been reset.

4.2.10 Push the green reset button DVC-CK-1501 (located on panel DVC-CP-1503).

4.2.11 Ensure that the tracking map is correct.

4.2.11.1 **IF** it becomes necessary to make changes to the tracking map,
GO TO Section 4.9.3 to perform a tracking map update;
THEN RETURN TO Step 4.2.12.

4.2.12 Ensure all device faults have been cleared.

4.2.12.1 **IF** the EXHAUST FAN is faulted
AND the fault will **NOT** clear,
THEN press START button DVE-CK-1501
AND attempt to reset the fault again.

4.2.13 Ensure that the system has been placed into auto mode and that the Master Scheduler is RUNNING.

4.2.14 Select sequence 500 FIM STARTUP.

4.2.14.1 Ensure the HYDRAULIC PUMP is RUNNING.

4.2.14.2 Ensure that the FIM Z-Axis is AT FULLY RAISED.

4.2.14.3 Ensure that the proper drum size is selected using the drum selection prompt.

4.2.14.4 Ensure that the proper filter insertion method is selected using the filter insertion method prompt.

4.2.14.5 Push the manual Sweep Fan DVE-CK-1502 START button **AND** ensure sweep fan is running.

4.2.14.5.1 Acknowledge the Sweep Fan Confirmation Prompt.

4.2.14.6 Ensure the stack EXAUST FAN has been started.

4.2.14.7 **IF** stack airflow is less than 800 cfm for 30 seconds,
THEN contact SS.

4.2.14.8 **IF** the “Way Lube Operation” prompt appears,
THEN select YES to operate the way lube,
OR select NO to proceed without operating the way lube.

NOTE: *In accordance with BNFL-5232-RPT-OPS-025, Glove Inspection and Change Frequencies for AMWTP Glovebox Gloves, the glove port gloves in use at DVF may be in use for no longer than 18 months.*

4.2.15 Inspect the glove port gloves.

4.2.15.1 **IF** the gloves do **NOT** pass the inspection, **THEN** replace the gloves in accordance with Section 4.9.15 or 4.9.16.

(HA-N-046)

4.2.16 Complete applicable sections of Form-1600, WMF-615 Filter Insertion Operations Checklist.

4.2.16.1 **IF** the amber conveyor warning lights are **NOT** flashing, **THEN** obtain concurrence from the plant shift manager (PSM), the SS, and the system engineer to continue operations.

4.3 Loading Drums on the Conveyor

4.3.1 Ensure leather gloves are worn for waste drum handling.

(HA-N-046)

NOTE: *In case of an emergency, the emergency cords located along the inlet and outlet conveyors are used to stop the conveyors.*

4.3.2 Ensure Door 1 CVS-DOR-1501 is in the OPEN position.

4.3.3 Ensure the system is in auto mode and that the Master Scheduler is RUNNING.

4.3.4 Ensure the disable switch CVS-VSW-1509 on the inlet conveyor is in the disable position and the green conveyor indicating light is illuminated.

WARNING

Pyrophoric material may cause a violent exothermic reaction when exposed to air.

NOTE: *Drums retrieved from cargo containers are not allowed to be vented at this time due to the potential for these drums to contain pyrophoric material.*

4.3.5 Ensure characterization (i.e., assay and real-time radiography are quality control complete) has confirmed the absence of potential pyrophoric (roaster oxide) material before loading a drum that is included on list "Potential Roaster Oxide Containers – **DO NOT VENT.**"

(HWMA/RCRA Permit; HA-N-046)

WARNING

Conveyors and doors can operate at any time presenting pinch point and entrapment hazards to personnel.

4.3.6 Ensure personnel stay clear of conveyors and motor-driven doors.

4.3.7 Wipe the punching area of the drum lids to provide a clean surface for the filter to adhere to, as necessary.

4.3.8 Load drums on the conveyor so they will be punched in a clean flat area approximately 4 to 6 in. away from the drum edge.

4.3.9 **IF** the candidate drum is a Central Characterization Project item description code (IDC),
THEN verify by visual inspection that the candidate drum is linked to the correct historical data by comparing tamper-indicating device, D-number, and/or historical ID, as applicable, between the actual drum and the historical data display in Waste Tracking System (WTS).

4.3.9.1 **IF** the correct link is confirmed,
THEN load the drum to vent.

4.3.9.2 **IF** the correct link is **NOT** confirmed,
THEN notify the SS.

4.3.9.3 SS: **IF** unable to correct link,
THEN initiate a NCR in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

4.3.9.3.1 Record all historical information from the container on the NCR.

4.3.9.3.2 Assign the NCR to the acceptable knowledge expert.

WARNING

Eye damage may result from using a barcode reader.

4.3.10 Avoid looking directly at the scanning beam of the barcode reader.

4.3.11 Send and receive drums to WMF-615.

4.3.12 Load up to four 83-gal or five 55-gal drums on the LOADING CONVEYOR.

4.3.13 Turn DISABLE switch CVS-VSW-1509 on the inlet conveyor to ENABLE, to advance the drums.

4.3.14 Return ENABLE switch to DISABLE to load next set of drums.

4.3.15 **REPEAT** Steps 4.3.4 through 4.3.14, as necessary, to fill input conveyors and the ZONE CONVEYOR.

4.3.16 **IF** the drums to be vented are bulged
AND have restraining straps,
THEN GO TO Section 4.9.14.

4.3.17 **IF** it becomes necessary to make changes to the waste tracking map,
THEN perform a tracking map update per Section 4.9.3.

4.4 Punch and Filter Insertion Operations

NOTE: *Sections 4.4 and 4.5 may be performed concurrently.*

4.4.1 Ensure no personnel are in the silo.

(RPT-TSR-03, SAC 5.2.7; HA-N-046)

4.4.2 Ensure the system is in auto mode and that the Master Scheduler is RUNNING.

4.4.3 Ensure that the proper drum size is selected.

4.4.4 Ensure that the FIM equipment is properly configured for the selected drum size.

4.4.5 Ensure that the proper filter insertion method is selected.

NOTE: *Sequence 240 for receiving a drum into the silo can be initiated using the RECEIVE DRUM INTO SILO button or by selecting the sequence from the Master Scheduler.*

4.4.6 Initiate Sequence 240 to import a drum into the silo.

4.4.7 Ensure a drum is imported into the silo and that the silo inlet and outlet doors are closed**.**

(RPT-TSR-03, SAC 5.2.7)

NOTE: *Sequence 510 for punching a drum can be initiated using the START FIM CYCLE button or by selecting the sequence from the Master Scheduler.*

4.4.8 Initiate Sequence 510 to begin the drum punch sequence.

4.4.9 Ensure that the drum is successfully punched.

NOTE: *If the filter insertion method is set to automatic, Sequence 520 will automatically initiate to insert a filter once Sequence 510 completes.*

4.4.10 **IF** a filter is to be inserted by the FIM,
THEN ensure that Sequence 520 is initiated and that a filter is successfully inserted.

4.4.11 Ensure the Z-Axis is in the fully raised position.

4.4.12 Ensure no drum is at the survey station.

NOTE: *Sequence 300 for discharging a drum from the silo can be initiated using the DISCHARGE DRUM FROM SILO button or by selecting the sequence from the Master Scheduler.*

4.4.13 Initiate Sequence 300 to discharge the drum from the silo.

4.4.14 Ensure that the drum is exported from the silo and that the silo outlet door is closed.

NOTE: *The drum number may be determined by visually observing the number through the silo window.*

4.4.15 **IF** filter was installed,
THEN record applicable information into WTS "Container Filters" screen or Form-1603, Filter Insertion Record.

4.4.16 **REPEAT** Steps 4.4.1 through 4.4.15 to insert filters in the remaining drums, as needed.

4.5 Survey Station Activities

NOTE: *Radiological personal protective equipment of gloves/sleevettes, as a minimum, is required for glovebox work. Leather gloves are worn over glovebox gloves for handling filters and tools.*

(HA-N-046)

4.5.1 Perform a swipe contamination survey of the top of the drum per radiological procedures.

NOTE: *Direct scan survey is solely used to identify gross contamination.*

4.5.2 Perform a direct scan survey of the swipe prior to removal from transfer tray.

4.5.2.1 **IF** contamination is found,
THEN close the transfer tray,
AND GO TO Section 4.9.

4.5.3 **IF** a filter was installed by the FIM,
THEN perform the following:

4.5.3.1 **IF** the filter washer is loose,
THEN tighten the filter until the washer does **NOT** rotate freely.

4.5.3.2 **IF** the filter is missing or was improperly installed,
THEN perform the following:

4.5.3.2.1 Remove the filter, if necessary.

4.5.3.2.2 **IF** a normal size filter can be installed,
THEN perform the following:

4.5.3.2.2.1 Tap the hole with a 7/16-in. tap.

4.5.3.2.2.2 Install the normal size filter.

4.5.3.2.3 **IF** a normal size filter **CANNOT** be successfully installed,
THEN perform the following:

4.5.3.2.3.1 Tap the hole with a 1/2-in. tap.

4.5.3.2.3.2 Install an oversized filter.

4.5.3.2.4 **IF** an oversized filter **CANNOT** be successfully installed,
THEN perform the following:

4.5.3.2.4.1 Clean the area around the punched hole.

4.5.3.2.4.2 Install a NucFil 036 filter over the punched hole.

4.5.4 **IF** the drum was punched without a filter installation,
THEN perform the following:

4.5.4.1 **IF** the container has a shower cap,
THEN perform the following:

4.5.4.1.1 Smooth out the plastic.

4.5.4.1.2 Install a NucFil 036 filter over the hole punched in the shower cap.

4.5.4.2 **IF** the container does **NOT** have a shower cap, **THEN** perform the following:

4.5.4.2.1 Clean the area around the punched hole.

4.5.4.2.2 Install a NucFil 036 filter over the punched hole.

4.5.5 Record survey results on Form-1129, Radiological Survey Report and Map.

4.5.6 **IF** a filter was installed or replaced, **THEN** record filter information into WTS "Container Filters" screen or Form-1603.

4.5.7 Coordinate with the DVF operator to discharge the drum from the survey station.

4.5.8 **REPEAT** Section 4.5 for remaining drums.

4.6 Unloading Drums from the Conveyor

4.6.1 Ensure leather gloves are worn for waste drum handling.

4.6.2 Ensure the system is in auto mode, and that the Master Scheduler is RUNNING.

4.6.3 **IF** it becomes necessary to make changes to the waste tracking map, **GO TO** Section 4.9.3 to perform a tracking map update; **THEN RETURN TO** Step 4.6.4.

4.6.4 **IF** it becomes necessary to perform manual moves, **GO TO** Section 4.9.2 for manual operations; **THEN RETURN TO** Step 4.6.5.

4.6.5 If necessary, initiate Sequence 330 to advance drums from the grouping conveyor to the output conveyor(s).

4.6.6 Ensure drums have advanced to the unloading conveyor.

4.6.7 Turn the enable/disable switch on the conveyor to be unloaded to the DISABLE position.

NOTE: *If the enable/disable switch is in the DISABLE position for 30 seconds and the photo eyes on the unloading conveyor are not blocked, the tracking map will automatically be updated to show the removal of the drums from the unloading conveyor.*

4.6.8 Ensure all drums have been removed from the unloading conveyor.

4.6.9 Ensure that the tracking map is updated to show the removal of the drums.

4.6.10 Turn the enabled/disabled switch back to the ENABLED position.

4.7 End-of-Shift Activities/Drum Vent Facility Shutdown

4.7.1 Ensure the system is in auto mode and that the Master Scheduler is RUNNING.

4.7.2 Ensure the drum has been discharged from the silo and survey station.

4.7.3 Initiate Sequence 330, as needed, to advance drums from the grouping conveyor to the output conveyor(s).

4.7.4 Initiate Sequence 530 FIM SHUTDOWN and perform the following:

4.7.4.1 Ensure the Z-Axis is at the fully raised position.

4.7.4.2 Ensure the hydraulic pump is stopped.

4.7.4.3 Ensure that at least 10 minutes has elapsed since the last drum was punched,
THEN ensure that the EXHAUST FAN is stopped.

4.7.4.4 Push the manual Sweep Fan DVE-CK-1502 STOP button **AND** ensure that the sweep fan stops.

4.7.4.4.1 Acknowledge the “Sweep Fan Stopped” prompt.

4.7.5 Abort the Master Scheduler.

4.7.6 Log out of the ICS workstation.

4.7.7 **IF NOT** already completed,
THEN enter data from Form-1603 into WTS “Container Filters” screen.

4.7.8 **IF** being relieved,
THEN STOP
AND perform watch turnover.

4.7.9 Ensure the cleanliness of the general area of WMF-615 is maintained.

4.7.10 Ensure radiological and hazardous mixed low-level waste has been disposed of in accordance with INST-OI-24, Packaging Radioactive Waste, and the applicable hazardous waste determination (HWD).

4.8 Post-Job Review

4.8.1 SS: Perform a post-job review in accordance with MP-COPS-9.17.

4.9 Abnormal and Infrequent Operations

4.9.1 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step until all appropriate operations have been performed:

Task	Section
Manual Operation of DVF Equipment	4.9.2
Tracking Map Update	4.9.3
Loss of Power to DVF	4.9.4
CAM Failure	4.9.5
CAM Alarm	4.9.6
Loss of Stack Exhaust Fan	4.9.7
Improper Alignment of Filter Feed Table	4.9.8
Contaminated Drum	4.9.9
Dropped Drum	4.9.10
Breached Drum	4.9.11
Recovery from an E-Stop Condition	4.9.12
Entering and Exiting the Containment Silo	4.9.13
Restraining Strap Removal for Venting Bulged Containers	4.9.14
Breached DVF Survey Station Glove	4.9.15
Damaged or Expired DVF Survey Station Glove Change-Out	4.9.16

4.9.2 Manual Operation of DVF Equipment

4.9.2.1 Ensure the desired manual move(s) can be safely performed.

4.9.2.2 Select the appropriate screen from the following list:

- 225/M/3/001: Drum Loading and Drum
- 225/M/3/002: Filter Insertion Machine and Survey Station
- 225/M/4/001: Filter Insertion Machine
- 225/M/3/003: Drum Export and Unloading.

4.9.2.3 Ensure any devices or sequences that will be affected by the anticipated manual operation are stopped.

4.9.2.4 Place the desired device(s) or system(s) into manual mode.

4.9.2.5 Ensure that the silo inlet and outlet doors are closed**.**

(RPT-TSR-03, SAC 5.2.7)

4.9.2.6 Perform the necessary manual operations.

4.9.2.7 Ensure the tracking map is correct.

4.9.2.7.1 **IF** it becomes necessary to make changes to the waste tracking map,
THEN perform a tracking map update per Section 4.9.3.

4.9.2.8 Ensure the applicable device(s) or system(s) are returned to auto mode.

4.9.2.9 If necessary, reset any faulted sequences in the Master Scheduler(s) using the STOP or ABORT buttons, as applicable.

4.9.2.10 Ensure the Master Scheduler is RUNNING.

4.9.2.11 If necessary, re-initiate any sequences that were interrupted prior to or during manual operations.

4.9.3 Tracking Map Update

NOTE: *This section updates drum position and status within the programmable logic controller only and is not used for WTS waste tracking*.

4.9.3.1 Ensure system is in update mode.

4.9.3.2 Open the tracking map.

4.9.3.3 Double-click on the desired tracking location.

4.9.3.4 Select the appropriate status for the selected location.

4.9.3.5 **IF** other drums need updating,
THEN REPEAT Steps 4.9.3.3 and 4.9.3.4.

4.9.3.6 Save updates.

4.9.3.7 Return system to auto mode, as necessary.

4.9.4 Loss of Power to DVF

4.9.4.1 **IF** electrical power is lost at the DVF,
THEN perform the following:

4.9.4.1.1 Suspend operations.

4.9.4.1.2 Evacuate WMF-615.

4.9.4.1.3 Notify the SS.

(HA-N-046)

4.9.5 CAM Failure

4.9.5.1 **IF** a CAM fails,
THEN perform the following:

4.9.5.1.1 Suspend operations.

4.9.5.1.2 Notify the SS, RT, and RSTL.

(HA-N-046)

4.9.6 CAM Alarm

4.9.6.1 **IF** a CAM alarms,
THEN perform the following:

4.9.6.1.1 Suspend operations
AND leave the affected area.

4.9.6.1.2 Warn others of the alarm condition.

4.9.6.1.3 Notify the SS, RT, and RSTL.

4.9.6.1.4 Control access to the affected area as directed by the RT.

(HA-N-046)

4.9.7 Loss of Stack Exhaust Fan

4.9.7.1 **IF** a loss of stack fan ventilation in WMF-615 occurs,
THEN perform the following for the appropriate cause of alarm:

4.9.7.1.1 **IF** the alarm is due to low flow and the drum has been punched,
THEN allow FIM to insert filter and complete the cycle, as applicable.

4.9.7.1.2 **IF** a drum has **NOT** yet been punched,
THEN STOP FIM operation by depressing the EMEGENCY STOP button.

4.9.7.1.3 Attempt restart of stack fan DVE-EF-1501 and Sweep Fan DVE-EF-1502.

4.9.7.1.4 **IF** the fan(s) does **NOT** restart,
THEN contact the SS.

(HA-N-046)

4.9.7.1.5 **IF** the fan(s) does restart,
THEN recover from the E-Stop in accordance with Section 4.9.12.

NOTE: *New filters may be added concurrently with this section.*

4.9.8 Improper Alignment of Filter Feed Table

NOTE: *Filter feed table alignment does not require operation of the FIM during the alignment process*.

4.9.8.1 **IF** the filter feed table requires alignment,
THEN notify the SS.

4.9.8.2 Ensure the Z-Axis is positioned high enough that the filter tap is above the filter cross-feed arm.

4.9.8.3 Ensure the X-Axis is in the right position.

4.9.8.4 Ensure the filter cross-feed arm is extended.

4.9.8.5 **GO TO** Section 4.9.13 to enter the silo
AND perform Steps 4.9.13.1 through 4.9.13.19,
THEN RETURN TO Step 4.9.8.6.

4.9.8.6 Manually position FIM table using mechanical aids.

4.9.8.7 **GO TO** Section 4.9.13
AND perform Steps 4.9.13.20 through 4.9.13.26.

4.9.9 Contaminated Drum

4.9.9.1 Notify RT, SS, RSTL, and IS/IH.

4.9.9.2 RT: Perform characterization and decontamination per AMWTP work control process and procedures.

4.9.9.2.1 Evaluate the radiological survey results.

4.9.9.2.1.1 **IF** contamination survey results are in excess of acceptable limits,
THEN GO TO
INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination.

4.9.9.3 IS/IH: Characterize for hazards other than radiological.

(HA-N-046)

4.9.10 Dropped Drum

4.9.10.1 Notify SS.

4.9.10.2 Suspend operations.

4.9.10.3 Place FIM system in a stable condition by depressing the E-Stop at the FIM control station.

4.9.10.4 Shut down transport equipment, if applicable.

4.9.10.5 Respond per INST-OI-11.

(HA-N-046)

4.9.11 Breached Drum

4.9.11.1 Notify SS, RT, RSTL, and IS/IH.

4.9.11.2 Suspend operations.

4.9.11.3 Place FIM system in a stable condition by depressing the E-Stop at the FIM control station.

4.9.11.4 Respond per INST-OI-11.

(HA-N-046)

4.9.12 Recovery from an E-Stop Condition

4.9.12.1 Reset the E-Stop.

4.9.12.2 Push Reset FIM-CK-1501.

4.9.12.3 Push Reset DVC-CK-1501.

4.9.12.4 Ensure all device faults are cleared.

4.9.12.5 Ensure all devices are placed in the correct position and/or status for resuming automatic operations.

(HA-N-046)

4.9.12.5.1 **IF** it becomes necessary to perform manual moves,
GO TO Section 4.9.2 for manual operations;
THEN RETURN TO Step 4.9.12.7.

4.9.12.6 Ensure tracking map is updated correctly.

4.9.12.6.1 **IF** it becomes necessary to make changes to the waste tracking map,
GO TO Section 4.9.3 to perform a tracking map update;
THEN RETURN TO Step 4.9.12.7.

4.9.12.7 Ensure the system is in auto mode and that the Master Scheduler is RUNNING.

4.9.13 Entering and Exiting the Containment Silo

4.9.13.1 **WHEN** venting drums,
THEN ensure that at least **ONE** of the following individuals are present and capable of ceasing drum venting operations before a person enters the silo or area where venting is being performed:

- One qualified SS
- One qualified operator.

(RPT-TSR-03, SAC 5.2.10)

4.9.13.2 Ensure no drums are in the DVF silo.

4.9.13.3 **WHEN** required by the AE,
THEN perform manual moves in accordance with Section 4.9.2, as required, to verify system operability before performance of a lockout/tagout (LO/TO).

4.9.13.4 Ensure that the containment silo sweep and stack exhaust fan have been operating for at least 10 minutes since the last filter installation.

4.9.13.5 Ensure the FIM equipment is placed in a safe configuration.

4.9.13.6 Ensure the hydraulic pump is stopped.

4.9.13.7 Ensure the sweep fan is OFF.

4.9.13.8 Ensure the stack exhaust fan is stopped.

4.9.13.9 Turn off the 480-V disconnect N-DSWM-1504.

4.9.13.10 AE: Perform an LO/TO per INST-COPS-9.20.1.

(HA-N-046)

4.9.13.11 **WHEN** required by the AE,
THEN perform manual moves in accordance with Section 4.9.2, as required, to verify system non-operability after performance of LO/TO.

4.9.13.12 Log out of the ICS workstation.

4.9.13.13 Open the containment silo door.

4.9.13.14 RT: Perform radiological surveys of the silo prior to personnel entry.

4.9.13.15 IS/IH: Perform beryllium survey of the silo prior to silo entry, per MP-ISIH-2.7, Chronic Beryllium Disease Prevention Program.

(ISIH-EA-007)

4.9.13.16 **IF** the FIM filter table is to be adjusted,
THEN ensure mechanical aids for manually positioning the FIM table are available.

4.9.13.17 Ensure personnel are wearing hard hats and leather gloves and are aware of the tripping and pinch hazards and head bumps in the containment silo.

4.9.13.18 **IF** required to stand on the conveyor,
THEN install the conveyor platform and steps.

4.9.13.19 Perform activities to maintain filter feed system, as needed.

4.9.13.20 **IF** the conveyor platform and steps are installed,
THEN remove the conveyor platform and steps.

4.9.13.21 **WHEN** exiting the silo,
THEN perform personal survey per RT direction.

4.9.13.22 Ensure all personnel have exited the containment silo.

(RPT-TSR-03, SAC 5.2.7)

4.9.13.23 Close the containment silo.

4.9.13.24 Ensure leather gloves are worn;
THEN install and tighten all door retaining bolts.

(RPT-TSR-03, SAC 5.2.7)

4.9.13.25 Re-hang chain and warning posting on silo entry door.

4.9.13.26 Remove the LO/TO.

4.9.14 Restraining Strap Removal for Venting Bulged Containers

4.9.14.1 **WHEN** all the bulged drums reach the ZONE CONVEYOR
THEN stand on conveyer safety mats
AND check to see if safety mats indicate tripped.

4.9.14.2 While standing on the safety mats, remove lid restraining straps from the drum(s).

4.9.14.3 Reset safety mats.

(HA-N-046)

4.9.14.4 **WHEN** the restraining straps are removed,
AND safety mats reset,
THEN RETURN TO Step 4.3.17.

4.9.15 Breached DVF Survey Station Glove

4.9.15.1 **IF** performing work in the survey station gloves at the time of discovery of the breached glove,
THEN limit movement.

4.9.15.1.1 Call for the immediate assistance of an RT.

4.9.15.1.2 Perform a controlled exit from the survey station gloves under the direction of the RT.

4.9.15.1.3 Place a piece of tape over the glove port to prevent any coworker from using it.

4.9.15.1.4 Contact the SS.

4.9.15.1.5 SS: Evaluate further actions in accordance with MP-COPS-9.7, Control of Equipment and Systems Status.

4.9.15.1.6 Change gloves per Section 4.9.16.

4.9.15.2 **IF NOT** performing work in the survey station gloves at the time of discovery of the breached glove,
THEN perform the following:

4.9.15.2.1 Place a piece of tape over the glove port to prevent any coworker from using it.

4.9.15.2.2 Contact the SS and RT.

4.9.15.2.3 SS: Evaluate further actions in accordance with MP-COPS-9.7.

4.9.15.2.4 Change gloves per Section 4.9.16.

4.9.16 Damaged or Expired DVF Survey Station Glove Change-Out

4.9.16.1 Contact Radiological Safety for coverage.

4.9.16.2 Use a single set of PPE (e.g., single glove/single sleevettes).

4.9.16.3 Obtain new gloves, preferably 15-mil ambidextrous.

4.9.16.4 Ensure no drum is present in survey station enclosure during glove change-out evolution.

4.9.16.5 Perform an LO/TO per INST-COPS-9.20.1.

(HA-N-046)

4.9.16.6 **IF** required to stand on the conveyor,
THEN install the conveyor platform and steps.

4.9.16.7 Perform survey on exposed glove surface, glove ring, and adjacent survey station surfaces.

4.9.16.8 **IF** contamination is **NOT** found,
THEN continue with glove removal.

4.9.16.9 **IF** contamination is found,
THEN consult with Radiological Safety before continuing.

4.9.16.10 Squeeze air out of glove.

4.9.16.11 Tape glove as close to port ring as possible.

4.9.16.12 Loosen port ring/metal clamp and remove.

4.9.16.13 Remove rubber band from port ring.

4.9.16.14 Remove glove and place in radiological disposal bag.

4.9.16.15 Perform contamination survey of the survey station glove port area.

4.9.16.16 **IF** contamination is found,
THEN consult Radiological Safety before continuing.

4.9.16.17 Place open end of the new glove over the port with the thumb pointed upward.

4.9.16.18 Place rubber band on the outside of the glove over the port ring.

4.9.16.19 Place port ring/metal clamp over the rubber band and tighten.

4.9.16.20 Initial and date glove with a permanent marker next to the port ring/metal clamp.

4.9.16.21 **IF** the conveyor platform and steps are installed,
THEN remove the conveyor platform and steps.

4.9.16.22 Ensure all personnel have exited the survey station enclosure.

4.9.16.23 Remove LO/TO in accordance with INST-COPS-9.20.1.

4.9.16.24 Dispose of waste as secondary waste per INST-OI-24 and the applicable HWD.

5.0 DEFINITIONS

Filter insertion machine. All components necessary to punch and insert filters in waste drums. Includes the hydraulic system, drum filter bin, and control systems.

6.0 REFERENCES

(1) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)

(2) AMWTP HWMA/RCRA Permit

(3) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods

(4) BNFL-5232-RPT-OPS-025, Glove Inspection and Change Frequencies for AMWTP Glovebox Gloves

(5) Dobson, Alan, AMWTP, to Edgerton, Brian, DOE-ID, December 1, 2004, Transmittal of a Permit to Construct Exemption for the Drum Vent Facility (WMF-615), AJD-255-2004

(6) HA-N-046, Hazardous Assessment for INST-OI-50

(7) INST-COPS-9.20.1, Lockout/Tagout

(8) INST-OI-11, Waste Container Handling

(9) INST-OI-24, Packaging Radioactive Waste

(10) INST-RS&C-6.22.2, Decontamination, Containing or Affixing of Contamination

(11) ISIH-EA-007, Monitoring and Sampling During Planned Breach Operations and Maintenance Activity

(12) MP-COPS-9.7, Control of Equipment and Systems Status

(13) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(14) MP-DOCS-18.2, Records Management

(15) MP-ISIH-2.7, Chronic Beryllium Disease Prevention Program

(16) MP-ISIH-2.30, Hand and Power Tools

(17) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(18) RPT-TSR-03, Technical Safety Requirements

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-50, Case File	Both FOR/NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1129, Radiological Survey Report and Map	Facility Operating Record/ENV2-a-1a/ Destroy 5 years after Life of Facility
Form-1600, WMF-615 Filter Insertion Operations Checklist	Facility Operating Record/ENV2-a-1a/ Destroy 5 years after Life of Facility
Form-1603, Filter Insertion Record	Both FOR/NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility

8.0 EXHIBITS

None

9.0 APPENDICES

Appendix A – Revision Log

Appendix A – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	10/20/04	All	Initial issue. DCR-3326.
1	10/27/04	Various	DCR-3387. Incorporate training and additional validation comments.
2	11/04/04	Various	DCR-3407. Add and revise steps throughout to clarify procedure to facilitate System Operations. Minor editorial changes to update to formatting standard.
3	12/01/04	Various	DCR-4029. Add and revise steps to clarify handling of stripped filters.
4	09/12/06	Various	DCR-4677. Format to new template per MP-DOCS-18.1, minor editing, modify procedure to include venting and simplification of steps. .
4 FC-1	12/07/06	Pg 2	DCR-5634. Add verbiage to Step 3.1.10 to clarify “area” see CAR-24574.
4 FC-2	02/16/06	Pgs 9 and 20	DCR-5777. Add Step 4.18.4 to allow manually punching a drum and 4.4.6 add “or 4.8.14 as needed”
4-FC-3	03/25/07	Pgs 9, 14, 15, 20	DCR-5839. Delete FC-2 and give direction on what to do if the FIM stops while punching.
4-FC-4	06/29/07	6	DCR-6193. Delete Step 4.2.11.2.1 and renumber steps.
5	09/10/07	Various	DCR-5717. Incorporate FC-1, FC-2, FC-3, and FC-4. Add pre-job brief step and job-debriefing section. Update Roles and Responsibilities, Definitions, and References. Edit Caution per MP-DOCS-18.1.

Revision Number	Date Approved	Pages Affected	Description of Revision
6	10/11/07	New Step 4.3	DCR-6443. Add new step to incorporate TID QC check into drum venting activities.
7	05/15/08	3.1.4 & 4.9.13.2	DCR-7162. Minor change to correct Document ID of MP-COPS-9.18.3 to INST-COPS-9.18.3 throughout.
7 FC-1	08/27/08	Pgs 21, 22 and 23	DCR-7494. To allow manual insertion of NucFil 036 filters in all 55/85 gal. Drums.
7 FC-2	10/23/08	Pgs 22, 21	DCR-7639. To modify procedure to allow discharge of the drum from the silo in manual mode of FIM.
8	01/27/09	Various	DCR-7854. DSA Implementation. Made minor editorial changes per MP-DOCS-18.1. Incorporated DOCS-BLUESHEET-01 changes.
9	10/06/09	Various	DCR-8515. Changes for new software ICS SCR# 547 FMP #0898, edited per MP-DOCS-18.1, incorporated DOCS-BLUESHEET-02.
10	11/18/09	Page 2	DCR-8765. Added Step 3.1.7 to implement 2009 DSA/TSR update.
11	07/28/10	Pgs 2, 4, and 5	DCR-9319. To change the order of steps for proper sequencing which requires that the computer be online.
11 FC-1	01/19/11	Page 6	DCR-9825. Changed the minimum and maximum stack flow rates.
12	3/4/11	Pg 3 and 6	DCR-9745. Added new Step 3.2.10.1 and changed “HOMED” to “AT FULLY RAISED” in Step 4.2.15.2.
12 FC-1	04/13/11	Pg 3	DCR-10062. Changed glove inspection and frequencies in Step 3.2.10.1 from 12 to 18 months.
13	09/14/11	Various	DCR-10170. CAR 63176, AI 54815. This DCR supersedes the changes made by FC-1, DCR-10062. Added steps to prevent venting roaster oxide containers. Added section for responding to a breached DVF survey station glove and for damaged or expired DVF survey station glove change-out.

AMWTP INSTRUCTION		
INST-OI-50, Rev. 14	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
WMF-615 Filter Insertion Operations		

Revision Number	Date Approved	Pages Affected	Description of Revision
14	08/11/12	Various	DCR-11434. Revised for DSA/TSR updates.

Manual Drum Coring Operations

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11195.*) 06/07/12

Brian Warner — Date

Characterization Lead

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP INSTRUCTION		
INST-OI-73, Rev. 13	Issued: 06/07/12	Effective: 06/07/12 @ 1100 Hrs

Manual Drum Coring Operations

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AMWTP INSTRUCTION		
INST-OI-73, Rev. 13	Issued: 06/07/12	Effective: 06/07/12 @ 1100 Hrs

Manual Drum Coring Operations

1.0 PURPOSE/SCOPE

This document provides detailed operating instructions for manual core sampling within the confines of the Drum Core Sample Retrieval System (DCSRS). This instruction will be used for containers that exhibit lower fill factors and waste that is less densely packed than typical sludge and soil/gravel wastes. These wastes are not amenable to normal automated coring processes described in INST-OI-16, Drum Coring Operations. Therefore, non-rotational coring tools will be used in lieu of a rotational coring tool per MP-TRUW-8.2, Quality Assurance Project Plan.

This instruction will only be used to obtain core samples from drums of non-debris waste. The manual core drilling operation is performed within the confines of a *Zone 3* (see def.) glovebox. The DCSRS consists of a core retrieval glovebox with associated drilling equipment, a core bit preparation glovebox, and a sample preparation glovebox where cored material will be processed for sampling. The core sample will be taken by manually driving a certified-clean core tube liner into the waste at the Waste Tracking System (WTS) randomly established coring location.

Many of the automated processes used for routine automated coring operations implemented by INST-OI-16 will be used. All data will be recorded in the WTS. The Drill Positioning System and Human/Machine Interface (HMI) computer, along with a blank core barrel fitted with a low energy laser pointer, will be used to locate randomly selected coring locations established by WTS.

Treatment of mixed waste through absorption, neutralization, and decanting is allowed in accordance with the Hazardous Waste Management Act /Resource Conservation Recovery Act (HWMA/RCRA) Permit, with the **exception** of polychlorinated biphenyl (PCB) liquids, but is NOT authorized within the scope of this document.

(HWMA/RCRA Permit, TSCA RBDA)

Wastes to be processed include: *inorganic homogeneous solids* (see def.), *organic homogeneous solids* (see def.), and soil/gravel. These wastes will be contained in 55-gal drums. The representative core that is retrieved will be used to provide a sample for external laboratory analyses. These analyses will provide data required to satisfy the characterization requirements of MP-TRUW-8.2 and identify contaminated waste or other waste categories requiring treatment. A real-time radiography (RTR)/visual examination (VE) update will be performed to document the final configuration of the container at closure.

Finally, this procedure provides direction for the transportation manager or designee to obtain authorization for shipment of samples to the Analytical Chemistry Laboratory (ACL).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Authorized Individual (Qualified Operations Technician [OT] or Characterization Shift Supervisor [SS] or Designee)	• Accepts and relinquishes chain of custody (CoC) (in the WTS) • Authorizes (SS or designee only) manual move for samples in WTS.
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction • Performs limited radiological surveys, as required.
Radiological Controls Technician (RCT)	• Provides support for operations including, but not limited to performing radiological surveys • Sets up and posts the containment enclosure area.
Shift Supervisor	• Contacts Waste Services • Makes necessary notifications to Waste Services and Environmental, Safety, and Health (ES&H) • Performs supervisor role in WTS • Suspends operations.
Transportation Personnel	• Inspects samples for discrepancies, breakage, or tampering • Signs the CoC for receipt of the samples • Packages samples into the transport containers for shipping.
DCSRS Subject Matter Expert (SME)	• Provides TRU Programs oversight for coring and solids sampling operations • Performs steps in Section 4.24, Equipment Blank Requirements • Sets task list on container for treatment when required.
Transportation Manager or Designee	• Provides assay and coring data to the ACL as required • Obtains authorization from ACL to ship samples • Prepares samples for transfer • Transfers samples to the ACL.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Treatment of liquids associated with item description code (IDC) RF-003, Organic Setups/Oil Solids, is prohibited.

(TSCA RBDA)

3.1.2 Prior to acceptance of a drum into DCSRS, the FGE content of the drums SHALL be verified via WTS to be ≤ 200 FGE (including 2 sigma uncertainty).

(RPT-NFCS-25, CWR 1)

3.1.3 FGE content of the drums SHALL be verified via Fissile Tracking System (FTS) to be ≤ 200 FGE (including 2 sigma uncertainty) prior to acceptance of the drum into the DCSRS glovebox.

(RPT-NFCS-25, CWR 2)

3.1.4 Only one *source drum* (see def.) containing ≤ 200 FGE (including 2 sigma uncertainty) SHALL be processed/opened at a time within the coring room. Dual verification that other drums in the coring room are closed SHALL be performed.

(RPT-NFCS-25, CWR 3)

3.1.5 After processing a drum and prior to the introduction of the next drum for processing, all waste including liquids/spills and any waste generated as a result of processing, not determined to be Nuclear Criticality Safety (*NCS)-exempt* (see def.) SHALL be removed from the glovebox and the vacuum cleaner by returning the waste to the drum being processed or packaged appropriately into a collection drum. Dual verification that all non-NCS-exempt waste has been removed SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 4)

3.1.6 Any waste <u>NOT</u> removed from the glovebox after a cleanout SHALL be determined to be NCS-exempt. Dual verification of the NCS-exempt determination SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 5)

3.1.7 Collection drums and NCS-exempt containers SHALL meet **ONE** of the following criteria:

3.1.7.1 Waste added to the collection drum SHALL be packet assayed prior to placing it into the drum to ensure that the FGE content of the drum remains ≤ 200 FGE (including a 2 sigma uncertainty). Dual verification that the addition of the waste to the drum does not increase the FGE content to >200 FGE (including a 2 sigma uncertainty) SHALL be performed prior to placing the debris in the drum.

OR

3.1.7.2 If waste added to the collection drum has an unknown FGE content, then the waste added to the collection drum SHALL be assigned the FGE content of the parent drum. The collection drum SHALL be controlled to ≤ 200 FGE using dual verification.

OR

3.1.7.3 Prior to placing NCS-exempt waste into collection drum or NCS-exempt container, dual verification of NCS-exempt determination SHALL be performed.

(RPT-NFCS-25, CWR 6)

3.1.8 The total volume of samples within the refrigerator shall be less than 15 liters. This shall be ensured by using physical restriction within it.

(RPT-NFCS-25, CWR 7)

3.1.9 Collection drums used for non-NCS-exempt waste SHALL be nominal 55-gallons or diametrically larger drums (i.e., has an internal diameter of ~57 cm [22.5 in.] or greater).

(RPT-NFCS-25, CWR 8)

3.1.10 Packet assay systems used for determining the quantity of fissile material within a package shall be performance checked (background and standardization) within the same shift in accordance with INST-OI-17, DCSRS Packet Assay System Operations.

3.1.11 Liquid waste is not acceptable at the Waste Isolation Pilot Plant (WIPP). Liquid in the quantities delineated below is acceptable:

- *Observable liquid* (see def.) shall be no more that 1% by volume of the outermost container at the time of radiography or VE.
- Internal containers with more than 60 milliliters or 3% by volume observable liquid; whichever is greater, is prohibited.
- Containers with hazardous waste number U-134 assigned shall have no observable liquid.
- Containers with PCB material shall have no liquid.
- Overpacking the outermost container that was examined during radiography or VE or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

(CCP-PO-003; MP-TRUW-8.1; MP-TRUW-8.2)

3.1.11.1 Liquids containing PCBs are prohibited at WIPP.

(MP-TRUW-8.1)

3.1.12 Throughput on the drum coring system is restricted to three (3) drums per day.

(RPT-ESH-071; MP-TRUW-8.2)

3.1.13 Sampling equipment shall be properly maintained to avoid contamination. Visual contamination on any equipment that has the potential to contaminate a waste core or waste sample shall be thoroughly cleaned upon its discovery.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.14 Cleaned sampling and coring equipment will be physically segregated from all equipment that has been used for a sampling event and has not been decontaminated.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.15 The cleaning and inspection of coring and sampling tools and glovebox support equipment are completed as required.

3.1.16 Sampling shall be conducted as soon as possible after core collection.

(MP-TRUW-8.2)

3.1.17 All samples collected for the AMWTP have CoC from the time of collection through receipt at the laboratory.

(MP-TRUW-8.2)

3.1.17.1 The CoC includes sample collection and shipping information. Information to be recorded includes, but is not limited to: date, time, sampler(s), location(s), unique sample identifier, analysis requested, shipping information, preservative(s), comment(s), and transfer signature(s).

(MP-TRUW-8.2)

3.1.17.2 The comments include any special instructions and safety information associated with the samples. Electronic CoC forms with electronic signatures are acceptable.

(MP-TRUW-8.2)

3.1.18 Substantial delays in excess of 60 minutes or more requires that the core tube liner be capped and remain capped until sampling can take place.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.19 All samples collected are under physical custody. Physical custody is defined as a sample in the possession of an authorized individual, in that individuals view, in a sealed or locked container controlled by that individual, or in a secure controlled access location.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.20 Personnel must ensure that daily performance checks are current on radiological monitoring instruments.

3.1.21 Personnel must perform self-monitoring using a radiological monitoring instrument each time the glovebox gloves are exited.

3.1.22 For the purpose of preventing cross contamination between core samples, no more than one core shall be processed and sampled at any given time.

3.1.23 The glovebox will be inspected and cleaned, if necessary, after each coring and sampling event, and the cleaning results documented prior to processing any additional core samples.

3.1.24 Drill positioning operations conducted in SYSTEM MANUAL mode will only be performed with the concurrence and approval of the SS or DCSRS SME.

3.1.25 Personnel must minimize coring room differential pressure (D/P) alarm (PDAL029) actuation by ensuring air-lock vestibule door is not opened at the same time as the coring room door.

3.1.26 The glovebox dust vacuum may be used, as necessary, to perform cleanup activities at any time during the process except when coring drill motor or bit lift fixture is in operation.

3.1.27 A high standard of housekeeping should be maintained in the glovebox to minimize contamination levels and reduce the risk of injury.

(ALARA Job Review [current revision])

3.1.28 At least one continuous air monitor (CAM), or equivalent air sampling, should be operating in the relevant location (i.e., east wall for general room operations, adjacent to drum port for all drum-bagging operations).

(ALARA Job Review [current revision])

3.1.29 Local high-efficiency particulate air (HEPA) filtered extract is required for all drum-bagging operations. This should be provided with a nozzle to maximize capture of any activity released during these operations. The extract should be positioned close to the bagging area during operations.

(ALARA Job Review [current revision])

3.1.30 The sample refrigerator will be powered from Circuit Number 16 of BDP-232-003 to ensure backup power is available in case of a power outage.

3.1.31 Cancelled core samples that physically exist outside the glovebox will be handled as waste and packet assayed prior to placement in a waste container.

(RPT-NFCS-25, CWR 6)

3.1.32 Alternative methods for hazardous energy control are used in this procedure for servicing tasks that are routine, repetitive, and integral to the use of the equipment for production in accordance with MP-COPS-9.20, Hazardous Energy Control Processes.

3.1.32.1 Sampling gloveports (55–59) and Gloveports 3, 4, 8, and 9 are not in proximity to any hazardous energy and are excluded from the light curtain interlock system requirements.

3.1.32.2 Access to gloveports not protected by light curtain or safety gate interlock, other than those listed above, when specific mechanical hazards exists, will be covered per work control process; PD-COPS-9.18, Work Control, and INST-COPS-9.20.1, Lockout/Tagout.

3.1.33 Clean sampling and coring tools and sampling equipment shall be sealed inside clean protective wrapping and maintained in a clean storage area prior to use. Coring tools with torn protective wrapping shall not be used, and shall be returned to the warehouse. Items with defective packaging are documented on Form-1599, AMWTP Solid Waste Sampling Checklist, Blocks 7a through 7e.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.34 Expendable equipment (e.g., sampling tools) shall be visually inspected for cleanliness prior to use and properly discarded after each sample.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.35 Sample coring tools and sampling equipment are identified with unique equipment numbers to provide traceability to equipment cleaning batches.

3.1.36 Custody seals are affixed to each sample container upon removal from the sampling glovebox. The custody seals may be placed either on the individual bottles or on the package containing the sample containers. A CoC record is assigned to each sample or group of samples.

(MP-TRUW-8.2)

3.1.37 Drum and bag filters shall comply with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP-CH-TRAMPAC).

(CCP-PO-003)

3.1.38 A high standard of housekeeping should be maintained in the glovebox to minimize contamination levels and reduce the risk of injury.

(ALARA Job Review [current revision])

3.1.39 The samples must be preserved by cooling to 4°C.

3.1.39.1 The sample refrigerator temperature shall be maintained at 4ºC (2 to 6ºC acceptable) to promote usability.

3.1.39.1.1 The SS must be notified if the temperature variations exceed the limit.

(MP-TRUW-8.2)

3.1.40 Non-rotational coring tools shall be designed such that the tool's *kerf width* (see def.) is minimized.

3.1.41 Sampling tools with torn protective wrapping shall not be used.

(MP-TRUW-8.2)

3.1.42 Empty drums are to be verified as empty and be labeled as empty.

(HWMA/RCRA Permit)

3.2 Prerequisites

3.2.1 The current procedure and revision number have been verified.

3.2.2 The applicable work control documents per PD-COPS-9.18 have been reviewed prior to commencing this instruction.

3.2.3 Coring fire protection is lined up for automatic initiation and FWR4-ISV-3403, FWR5-ISV-3403, and FW7-ISV-3401 are locked open.

3.2.4 Zone 2 and 3 ventilation systems are in operation per INST-OI-33, Characterization Facility HVAC Systems Operations, prior to starting drum coring operations.

3.2.5 Shunt Trip Breakers in Panel BDP-232-003 are in the ON position (these can be checked by energizing coring room cameras and videocassette recorder along with the CAM under the coring box).

3.2.6 If a container selected for solids sampling is to be rejected, a nonconformance report has been initiated per MP-Q&SI-5.4, Identification of Nonconforming Conditions, to disposition the waste stream lot assignment of the rejected container.

(MP-TRUW-8.2)

3.2.7 Personnel have ensured that the alternative isolation device (light curtain) functionality test has been performed and documented in the appropriate operating log.

3.2.8 Glovebox D/P (Zone 3) has been checked and is within the acceptable limits of -1.2 to -1.8 in. w.g. on Gauge PDIS-250-004 prior to performing any glovebox operation.

3.2.8.1 If necessary, the in-service HEPA filter inlet butterfly valve has been adjusted to achieve the desired glovebox D/P.

3.2.9 Coring room D/P (Zone 2) has been checked and is within acceptable limits of -0.4 to -0.7 in. w.g. on Gauge PDIS-232029 prior to performing any glovebox operation.

3.2.9.1 If Zone 2 D/P is not within range, personnel have contacted the SS.

3.2.10 Operators are trained and qualified to perform this procedure per MP-RTQP-14.4, Personnel Qualification and Certification, and QPSS0001, Solids Sampler.

3.2.11 Personnel performing visual examination activities are qualified in accordance with QPVE0001, Visual Examiner.

3.2.12 Inspection of the monorail hoist, rigging, and drum lift attachments has been completed by personnel who have completed AMWTP Training Course TL4111, and these components are in good working order.

3.2.12.1 Inspection has been done by personnel who have completed AMWTP Training Course 0AWT-4111, Incidental Hoisting and Rigging.

3.2.12.2 The inspection has been documented in the appropriate operating log, as applicable.

NOTE: *Information on Form-1599 is documented each day that the activity is performed.*

3.2.13 The daily glovebox inspection has been completed. Visible contamination on any equipment that has the potential to contaminate a waste core has been thoroughly cleaned upon its discovery.

3.2.13.1 Personnel have documented the results of the glovebox inspection on Form-1599, Blocks 1, 4a, and 4b, as applicable.

3.2.14 The containment enclosure has been inspected, if necessary, in accordance with INST-RS&C-6.9.1, Soft-Sided Containments, and Form-1136, Radiological Safety Soft Sided Containment (SSC) Inspection, is attached to the tent.

3.2.14.1 The containment enclosure meets the following criteria:

NOTE: *This can be achieved with the ventilation extract running at 50 Hz.*

- The setting is 30 FPM at all openings and has been confirmed prior to any operation of the containment enclosure.
- Directional flow from the DCRS room into the containment enclosure.

3.2.15 Coring glovebox has been configured as follows:

A. The drill motor is in the PARK position and tools for drum lid removal are available.

B. The video recording equipment, scoop and plastic bags, foxtail brush, tape measure, and pH paper, are at the workstation.

3.2.16 Core bit preparation glovebox has been configured as follows:

- One coring barrel minus the cutting bit ends and internal bit end assemblies
- A core bit translation/elevation assembly
- Hand tools and leather gloves
- Leather gloves
- Bag knife
- Tubing cutter

- Long nosed pliers
- Stainless steel wire brush
- 2-in. plastic tape and wipes
- Wipes.

3.2.16.1 Previously used core bit barrels are *visibly clean* (see def.).

3.2.17 Sample preparation glovebox has been configured as follows:

- An electronic balance
- National Institute of Standards and Technology (NIST)-certified calibration weights
- Grease pencil
- Bag knife and tubing cutter
- Tape measure or steel rule
- Bag and tape
- Sample support stand
- Forceps
- Hammer.

NOTE: *The balances are check weighed at the beginning of the shift prior to use in measuring sample weights.*

3.2.18 The electronic balances in the sample preparation glovebox and on the bench top have been check weighed to ensure the following requirements are met:

- The electronic balances have current calibration stickers
- NIST-certified check weights are used
- NIST-certified check weight have current calibration labels
- The balances check weighed if they are moved or disturbed

3.2.18.1 This measurement has been documented on Form-1215, Analytical Balance Calibration Check Sheet, or in WTS on the Analytical Balance Calibration Checklist.

3.2.18.2 Results have been documented on Form-1599, Block 3.

3.2.19 The glovebox dust vacuum bag has been replaced after processing each drum.

(RPT-NFCS-25, CWR 4)

3.2.20 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

4.0 INSTRUCTIONS

NOTE 1: *Steps in this instruction may be performed concurrently or out of sequence with other steps with approval of the SS.*

NOTE 2: *Steps pertaining to entry of data into WTS must be performed in order as written.*

4.1 General

4.1.1 Ensure that all precautions and limitations have been reviewed, and all prerequisites and initial conditions have been met and documented if required.

4.1.2 Ensure all the required data fields are populated in WTS to meet the requirements of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, MP-TRUW-8.2, and CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC).

NOTE: *Steps 4.1.3 through 4.1.3.5.1 are only performed when there are samples in the refrigerator, or if planning to place samples in the refrigerator this shift.*

4.1.3 Maintain the sample refrigerator temperature at 4ºC (2 to 6ºC acceptable) by performing the following once every shift:

4.1.3.1 Log the current refrigerator temperature on Form-1585, Refrigerator Temperature Logsheet, and/or Form-1602, Characterization Round Sheet, or eSOMS equivalent.

4.1.3.2 Press the “Up arrow” button by the temperature display and log the high range temperature reading since the previous shift on Form-1585 and/or Form-1602, or eSOMS equivalent.

4.1.3.3 Press the "Down arrow" button by the temperature display and log the low range temperature reading since the previous shift on Form-1585 and/or Form-1602, or eSOMS equivalent.

4.1.3.4 Reset the upper and lower temperature range indications by pressing the "Up arrow" and "Down arrow" buttons simultaneously for 2 seconds then releasing the buttons.

4.1.3.5 **IF** the temperature range from the previous shift is **NOT** within the 4ºC (2 to 6ºC acceptable) tolerances,
THEN notify the SS.

NOTE: *The nonconformance report (NCR) applies to the out-of-tolerance condition for the refrigerator and the sample quality may be affected.*

4.1.3.5.1 Initiate an NCR in accordance with MP-Q&SI-5.4.

NOTE: *Shielding may be used as approved by Nuclear Criticality Safety, to shield the packet assay from radiation sources within the DCSRS area.*

4.1.4 **IF** removing soft secondary waste from the glovebox,
THEN ensure the DCSRS packet assay monitor has been energized, and performance checks (background and standardization) have been performed each shift, in accordance with INST-OI-17.

4.1.4.1 Ensure that shielding around or near the packet assay is in place while performing background and standardization checks, as applicable.

4.1.4.2 Complete Form-1599, Block 2.

4.1.5 Obtain an adequate supply of consumable items and tools as indicated in Appendix A, Necessary Consumable Items and Tools.

WARNING

Improper use of cutting tools can result in personal injury and/or inadvertent release of radioactive contamination.

4.1.6 Use cutting tools properly and for the tasks they were designed for at all times.

NOTE 1: *Using the CLOSE button (located in the "Batch Details" screen) to close the screen will close the batch and will not allow personnel to proceed with operation.*

NOTE 2: *Step 4.1.7 and substeps are not performed when coring the first drum in the coring lot.*

4.1.7 Review the batch data to determine if a co-located core is required, as applicable.

4.1.7.1 **IF** co-located core has been taken,
THEN ensure the status is "Pass."

4.1.7.2 **IF** viable subsamples have been taken for a co-located core with less than 50% recovery,
THEN issue an NCR to document this condition, as applicable.

4.1.8 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step, if further activities will be performed.

Task	Section
System Startup	4.2
Coring Location and Sampling Requirements Assignment	4.3
Coring Components and Sampling Materials Preparation, Staging, and Bag-in	4.4
Glovebox Bag-in/Sphincter Port Operations	4.5
Core Barrel Preparation	4.6
Waste Drum Transfer Operations	4.7

Task	Section
Waste Drum Import to the DCSRS Glovebox	4.8
Manual Drum Coring Operations	4.9
Core Tube Liner Preparation and Percent Recovery	4.10
Sample Preparation Glovebox Operations	4.11
Sample Bagout, Handling, and Storage Requirements	4.12
Trip Blank Preparation	4.13
Chain-of-Custody	4.14
Chain-of-Custody Transfer	4.15
Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory	4.16
Samples and Chain-of-Custody Transfer to Transportation Manager	4.17
Waste Segregation Prior to Glovebox Cleanout	4.18
Drums Export from the DCSRS	4.19
Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking	4.20
Soft Secondary Waste Bagout Operations	4.21
Drum Lids and Other Larger Items Bagout	4.22
Batch Data Report Generation	4.23
Equipment Blank Requirements	4.24
System Shutdown	4.25
Post-Job Review	4.26
Abnormal and Infrequent Operations	4.27

4.2 System Startup

4.2.1 **IF** required,
THEN perform the following steps:

4.2.1.1 Ensure that the Emergency Stop (E-stop) Button 214-ES-074 on Conveyor Panel CP-214-010 is pulled out.

4.2.1.2 Ensure that the breaker on the Positioning Systems Control Panel CP-250-804 is ON.

4.2.1.3 Ensure that the uninterruptible power supply system power switch on the Positioning Systems Control Panel CP-250-804 is ON.

4.2.1.4 Ensure that the E-Stop control on Safety Panel CP-250-803 is in the RUN position.

4.2.1.5 Ensure that the Curtain Control on Safety Panel CP-250-803 is in the UNLOCK position.

4.2.1.6 **IF NOT** already operational,
THEN energize the WTS computer terminal at the DCSRS control station.

4.2.1.7 Log on to WTS.

4.2.1.8 **IF NOT** already operational,
THEN energize the human-machine interface (HMI) computer terminal at the DCSRS control station by performing the following steps:

4.2.1.8.1 Power up the central processing unit and screen, as necessary.

4.2.1.8.2 Wait for the desktop screen.

4.2.1.8.3 Click on “Motion Desk.”

4.2.1.8.3.1 Click right arrow at top of screen to start the program.

4.2.1.8.3.2 Close the screen.

4.2.1.8.4 Click on "Configuration Explorer."

4.2.1.8.4.1 Double click on "Factory Link Servers."

4.2.1.8.4.2 Double click on BNFL DCSRS1.

4.2.1.8.4.3 Right click on DCSRS.

4.2.1.8.4.4 Select "Start" and minimize the "Configuration Explorer" and "Run Time" screens.

4.2.1.8.5 Double click on "Client Builder."

4.2.1.9 Log on to DCSRS HMI computer system.

4.2.1.10 Verify that the Fissile Tracking System (FTS) heartbeat indicating light (white flashing light on the bottom of the alarm box) is flashing.

4.2.1.11 Open the Service Air Isolation Valve 3/4-in. PA-R011-V1 on the coring glovebox 90 degrees counter-clockwise to open.

4.2.1.12 Open the Air Isolation Valve MV-3 on the coring glovebox 90 degrees counter-clockwise to open.

4.2.1.13 Open the Air Isolation Valve MV-1 on the coring glovebox by turning the valve handle 90 degrees clockwise.

4.2.1.14 Open the Air Isolation Valve MV-2 on the coring glovebox by turning the valve handle 90 degrees clockwise.

NOTE: *The air supply identified in Step 4.2.1.15 is for the pneumatic draw bar system.*

4.2.1.15 Looking through the windows (or portholes) of Pneumatic Panel CP-250-805, ensure the operating pressure on the Compressed Air Regulator Gauge FR 2 is approximately 100 psi.

NOTE: *The air supply identified in Step 4.2.1.16 is for the air purge system.*

4.2.1.16 Ensure the operating pressure on the Air Regulator Gauge FR 1 is approximately 30 psi.

NOTE: *The air supply identified in Step 4.2.1.17 is for the air assisted pilot valves on the solenoid.*

4.2.1.17 Ensure the operating pressure on the Air Regulator Gauge R3 is approximately 10 psi.

4.3 Coring Location and Sampling Requirements Assignment

NOTE 1: *Conveyor operations inside the coring room may be conducted using local conveyor controls independent of the* Integrated Control System *(ICS; see def.).*

NOTE 2: *The drum will be automatically barcode scanned by the WTS prior to entry to the coring room. The WTS identifies the container for coring and or VE, and verifies the content of the drum to be ≤ 200 FGE (including a 2 sigma uncertainty).*

(RPT-NFCS-25, CWR 1)

4.3.1 SS: Ensure that the container update has been performed in accordance with INST-FOI-27, FTS Operations, prior to proceeding.

NOTE: *Steps 4.3.2 through 4.3.5.4 are performed concurrently.*

4.3.2 Enter the "Drum Number," "Sample Origin," and "Sample Type" on Form-1599.

4.3.3 Physically verify that the barcode label on the drum matches that recorded in WTS.

4.3.4 Ensure that drums entering the coring room have been vented by observing the "Task List" screen, and by visually verifying that the drum has a drum vent filter.

(RPT-TSR-03, SAC 5.2.7; HWMA/RCRA Permit)

4.3.5 Review for open NCRs in TrackWise.

4.3.5.1 Select Internet Explorer on the WTS production workstation home page.

4.3.5.2 From the "Production Workstation," select the "QA Container NCR Quick Search" link.

NOTE: *Multiple containers may be entered in a single query; however, a "Hard Return" after each container number is necessary to complete the query.*

4.3.5.3 Enter the container identification number followed by a hard return and select "Submit Query."

4.3.5.4 **IF** an open NCR exists,
THEN proceed at the direction of the SS.

4.3.6 **IF** any of the following conditions are **NOT** met,
THEN notify SS and wait for direction.

- The "Container" screen in WTS displays a *value* of 200 FGE or less

(RPT-NFCS-25, CWR 1)

- The task list indicates the assay has been completed, and displays "QC COMPLETE"
- All drums have been examined via RTR and the "QC COMPLETE" is displayed on the task list
- The task list indicates the core task is required
- A filter vent is installed on the drum.

(RPT-TSR-03, SAC 5.2.7; HWMA/RCRA Permit)

4.3.7 Access the WTS "Core Sampling" screen.

4.3.7.1 Enter the container ID number for the drum to be processed.

4.3.7.2 Press F8 to auto-populate screen.

NOTE: The following pop-up message will only appear on the first core sampling event for a container.

4.3.7.3 Observe the pop-up stating, "What is the volume of the container to be core sampled?"

4.3.7.3.1 Select "55 gallon" or "30 gallon."

NOTE 1: *WTS will auto-populate the procedure and the revision number as "OI-73" with a YES response to the following step, and will auto populate the procedure and revision number as "OI-16" if a NO response is selected.*

NOTE 2: *The following pop-up message will only appear on the first core sampling event for a container.*

4.3.7.4 Respond to question on pop-up screen "Is this a manual coring process?" by clicking on YES.

4.3.7.5 **IF** the procedure and/or revision are **NOT** correct,
THEN notify the SS.

4.3.7.6 Review the "Core Sampling" screen for sampling requirements.

NOTE: *A coring lot of less than five drums will require one or more drums to be sampled more than once.*

4.3.8 **IF** performing an **<u>additional</u>** primary/initial core sampling event on a drum,
THEN perform the following:

4.3.8.1 Click in the next available field in the "Core Sample ID" block.

4.3.8.2 **IF** the "Batch ID" field is not populated,
THEN perform the following:

4.3.8.2.1 Click in an open editable field on the "Core Sampling" screen.

4.3.8.2.2 Observe that the "Batch ID" field populates with a batch number.

4.3.8.3 Ensure the "Core Sample Type" field indicates "Initial Core Sample."

4.3.8.4 Observe that WTS has auto-populated the "Required Sector" and "Horizontal Position" fields.

(MP-TRUW-8.2)

4.3.8.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 28,750 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 28,750 mils.

4.3.8.5 E-sign and save.

4.3.8.6 Record the batch number on Form-1599.

4.3.8.7 **GO TO** Step 4.3.17.

4.3.9 **IF** performing a co-located coring sequence,
THEN GO TO Step 4.3.24.

4.3.10 **IF** performing a resample coring sequence,
THEN GO TO Step 4.3.25.

4.3.11 **IF** the following blocks do **NOT** display a "Y" on the "Core Sampling" screen:

- RTR Completed
- VENT Completed
- Assay Completed,

THEN perform the following:

4.3.11.1 Do **NOT** proceed with coring.

4.3.11.2 Notify the SS.

NOTE: *The performance of Steps 4.3.12 through 4.3.15 will save the randomly selected required sector and the horizontal position to the record for the container. If the screen is closed or the record is transferred to another operator, these randomly selected elements will not change.*

4.3.12 Place the cursor in an open editable field and press the space bar.

4.3.13 Observe that the "Batch ID" field is populated.

4.3.14 Record the "Batch Number" on Form-1599.

4.3.15 E-sign and save.

4.3.16 **IF** performing an initial manual coring sequence,
THEN perform the following steps:

4.3.16.1 Ensure the Core Sample Type field indicates "Initial Core Sample."

NOTE: *The WTS uses a standard Oracle program for generating random numbers (dbms_random).*

4.3.16.2 Observe that WTS has auto-populated the "Required sector" and "horizontal position" fields.

4.3.16.3 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 28,750 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 28,750 mils.

(MP-TRUW-8.2)

WARNING

The conveyor system may start at any time when Conveyor Control Panel CP-214-010 within the coring room is in the AUTO mode. Personal injury may result if body parts are not kept clear of the roller conveyor system.

4.3.17 Keep body parts clear of the roller conveyor system.

4.3.18 Place the coring room conveyor in MANUAL mode.

NOTE: *The top of the drum will be radially segmented into six sections, with the most recently installed drum vent located in Position 1.*

4.3.19 Place the coring template on the drum lid with the drum vent centered in Position 1, with Positions 2 through 6 located in a clockwise direction from Position 1.

4.3.20 Mark the WTS-assigned coring location on the drum lid with a permanent marker based on information obtained in Step 4.3.16.2.

NOTE: *The marking of the drum in the following step will be used as a position indicator if the drum requires subsequent coring.*

4.3.21 Mark the center-point location of Position 1 on the side of the drum between the top and middle chine.

4.3.21.1 Label this mark #1.

NOTE: *Assistance from the assay control room operator may be required to lower the drum stops on the conveyer in the DCSRS area.*

4.3.22 Using local conveyor controls, move the drum from the inspection station/preparation conveyor to the staging conveyor off-loading point.

4.3.23 Place the coring room conveyor in AUTO mode, if necessary.

NOTE 1: *One* co-located core sample *(see def.) is required per sampling batch or once per week, whichever is more frequent. A co-located core is a second sample taken from the same parent drum at approximately the same location. It is essentially a field duplicate used to test sampling precision.*

NOTE 2: *A sampling batch is a suite of homogeneous solids and soil/gravel samples collected consecutively using the same sampling equipment with a specific time period. A sampling batch can be up to 20 core samples (excluding field quality control [QC] samples), all of which are required to be collected within 14 days of the first sample in the batch.*

(MP-TRUW-8.2)

NOTE 3: *The co-located core should be taken as close as possible to the primary/*resample *(see def.) core with the best recovery.*

4.3.24 **IF** performing a manual co-located coring sequence,
THEN perform the following steps:

4.3.24.1 Record the batch number on Form-1599.

4.3.24.2 Click in the next available field under “Core Sample ID” on the “Core Sampling” screen.

4.3.24.3 Select “Co-located/Field Duplicate” in the “Core Sample Type” field.

4.3.24.4 Calculate the “Horizontal Position” by adding/subtracting 4,000 mils to/from the initial/primary or resample horizontal position.

4.3.24.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 36,000 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 35,075 mils.

4.3.24.5 Enter the value into the "horizontal position" field in WTS and press tab.

4.3.24.6 Observe that WTS auto-populates the "Required sector" field.

(MP-TRUW-8.2)

4.3.24.7 **GO TO** Step 4.3.26.

4.3.25 **IF** performing a manual resample coring sequence,
THEN perform the following steps:

4.3.25.1 Record the batch number on Form-1599.

4.3.25.2 Click in the next available field under "Core Sample ID" on the "Core Sampling" screen.

4.3.25.3 Select "Resample" in the "Core Sample Type" field.

4.3.25.4 Observe that WTS auto-populates the "Required sector" and the "horizontal position" fields, taking into account the location of the primary bore hole position and the 4,000-mil safety margin on either side of it.

4.3.25.4.1 Check that the horizontal position is as follows:

- 55-gal drum—greater than or equal to 21,500 and less than or equal to 36,000 mils

OR

- 30-gal drum—greater than or equal to 21,700 and less than or equal to 35,075 mils.

(MP-TRUW-8.2)

4.3.26 Enter the "Actual Coring Sector" on the WTS "Core Sampling" screen.

4.3.26.1 **IF** the "Actual Coring Sector" is different than the "Required sector,"
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

4.3.26.1.1 Enter a "Core Sector Comment" on the WTS screen detailing the reason for the change.

4.3.27 E-sign and save.

4.4 Coring Components and Sampling Materials Preparation, Staging, and Bag-in

NOTE 1: *The steps in this section should be performed, as necessary, to obtain materials required for the evolution being performed.*

NOTE 2: *Core tube liners and sample containers will be purchased as "Certified Clean" per MP-TRUW-8.2. Sampling tools will be disposable, single-use items. It will be necessary to take equipment blanks on disposable sampling tools (spatulas, and weighing boats). All documentation certifying cleanliness are maintained as permanent records.*

NOTE 3: *The WTS is used to track equipment source (supplier) and quality assurance (QA) pre-cleaning records. This information will be used to associate the core with the sampling equipment and back to the sample results. The following information is entered into the WTS at the time the equipment is received from the supplier, in certified-clean condition:*

- *The equipment blank analytical results are recorded and a unique equipment receipt batch number is created.*
- *A unique identifier is assigned to each piece of equipment that associates it with the pre-cleaned sample results.*
- *Equipment acceptance is verified based on analytical results.*

NOTE 4: *Core cutting bits and internal bit components will not be used for manual sampling.*

4.4.1 Ensure that components and sampling tools that are bulk packaged are **NOT** handled with bare hands.

4.4.2 Don a pair of surgical gloves and gather the following equipment:

- Polycarbonate or Teflon core tube liners with low-density polyethylene end caps
- Sample spatulas, sample spoons, and weigh pans
- Spare liner end caps sealed in plastic Ziploc bags.

4.4.3 Record the core tube liner QC batch number on the core tube liner using a grease pencil.

4.4.3.1 Do **NOT** remove the end caps from the core tube liner.

4.4.3.2 Inspect sample containers and sampling tool packaging for integrity.

4.4.3.2.1 **IF** container or tool packaging integrity is in question (breached, torn, cap missing, etc.), **THEN** reject the item for use.

4.4.4 Stage all items listed in Step 4.4.2 for bag-in.

4.4.5 Stage for bag-in an adequate number of waste bags, Ziploc bags, tape, or other necessary supplies.

4.4.6 Access the WTS "Core Sampling" screen and select the equipment serial numbers in the "Coring Equipment Used" pick lists as follows:

4.4.6.1 Select the liner ID number using the F9 function in an open field.

4.4.6.2 Select "No Barrel" using the F9 function in an open field.

4.4.6.3 Select "No Bit" using the F9 function in an open field.

4.4.6.4 Select "No Pushrod" using the F9 function in an open field.

4.4.6.5 E-sign and save.

4.4.7 Determine the container type and the quantity of sample required, based on the data obtained in Exhibit 1, Laboratory Required Sample Amounts and Container Sizes.

4.4.8 Obtain sample containers.

NOTE: *The container is labeled with only the appropriate sample type at this time. The label for the sample vial will be generated at the time the sample is taken and affixed to the sample vial.*

4.4.9 Label the sample containers with a grease pencil according to information obtained in Step 4.4.7
AND stage the labeled sample containers for bag-in.

4.4.10 Stage for bag-in an adequate number of disposable sampling tools, wipes, weighing boats, end caps, and plastic bags.

4.5 Glovebox Bag-In/Sphincter Port Operations

NOTE: *The sphincter port and transfer container may be used to transfer supplies, as necessary, into the sample preparation glovebox. The drum docking port can also be used to transfer supplies, as necessary, into the glovebox system as addressed in Section 4.8.21.*

4.5.1 Perform bag-in or sphincter-port transfers of consumables, tools, and other supplies.

4.6 Core Barrel Preparation

NOTE: *During manual coring operations, the drill positioning system and core barrel with fitted laser pointer will only be used to locate the WTS randomly assigned coring location.*

4.6.1 Obtain a blank core barrel designated with a drill bit soft (DBS) marking (see Exhibit 2, Punch Barrel Assembly [DBS]).

(MP-TRUW-8.2)

4.6.2 **IF NOT** already in place,
THEN place the core barrel in the uprighting fixture.

4.6.3 Document "NA" in Block 6 of Form-1599.

4.6.3.1 Make a comment on Block 6 of Form-1599 that manual coring is being performed and that the core barrel will **NOT** be used to take the sample.

WARNING

Low energy lasers can cause damage to the human eye.

4.6.4 Do **NOT** look directly into the laser beam.

4.6.5 Install the laser pointer with spacer into the open end of the core barrel.

4.7 Waste Drum Transfer Operations

WARNING

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.7.1 Do **NOT** access under suspended loads.

4.7.2 Using the monorail hoist, transfer the drum to the drum lift table.

4.7.3 Verify heartbeat on the FTS local alarm box; indicated by a flashing white light on the bottom of the alarm box.

4.7.3.1 **IF** no heartbeat can be verified,
THEN perform the following:

4.7.3.1.1 Stop the transfer of the drum to the DCSRS glovebox.

4.7.3.1.2 Contact the SS.

4.7.3.1.3 **GO TO** Section 4.27.13, No Heartbeat on Local FTS Control Box.

4.7.4 Using the FTS hand-held scanner, scan the barcode on the drum to be processed.

NOTE: *The white indicator light and the audible buzzer indicates that the FGE limit for the drum is ≤ 200 FGE.*

4.7.4.1 Observe that the white indicator light and the audible buzzer on the FTS alarm box actuates to confirm approval for drum coring
AND GO TO Section 4.8, Waste Drum Import to the DCSRS glovebox.

(RPT-NFCS-25, CWR 2)

4.7.4.2 **IF** the FTS alarm actuates, indicated by flashing red light and alternating horn,
THEN perform the following:

4.7.4.2.1 Stop the transfer of the drum to the DCSRS glovebox.

4.7.4.2.2 Contact the SS.

4.7.4.3 **IF** the white indicator light and/or the audible buzzer does **NOT** actuate and no alarm is actuated,
THEN observe the alarm box to verify barcode entry.

4.7.4.3.1 **IF** the barcode is **NOT** displayed,
THEN GO TO Step 4.7.4 to scan the drum a second time.

4.7.4.3.1.1 **IF** the second scan fails,
THEN perform the following:

4.7.4.3.1.1.1 Stop the drum import process into the DCSRS glovebox.

4.7.4.3.1.1.2 Contact the SS and the FTS administrator.

4.7.4.3.2 **IF** the barcode is displayed,
THEN perform the following:

4.7.4.3.2.1 Do **NOT** import the drum to the DCSRS glovebox.

4.7.4.3.2.2 Contact the SS and the FTS Administrator.

4.8 Waste Drum Import to the DCSRS Glovebox

4.8.1 As required, align the drum on the turntable based on the segment to be cored, as marked, per Step 4.3.20.

4.8.2 Secure the drum and turntable to the lift table by positioning and locking down the lower drum stabilizing clamps.

4.8.3 Using appropriate tools, remove the tamper-indicating device from the drum lid-locking ring, if necessary.

4.8.4 Place two rubber bands around the drum so that they are located between the bottom chine and the bottom lip.

4.8.5 Inspect the drum transfer sleeve for rips, tears, abraded areas, intact seams, and intact HEPA filter.

4.8.6 RCT: Set up and post the containment enclosure, according to the anticipated or actual radiological conditions.

4.8.7 Don the appropriate PPE per approved work control per PD-COPS-9.18.

4.8.8 Move the drum and lift/turntable into the containment enclosure and secure the door.

WARNING

The potential for inadvertent release of radioactive contamination exists since layers of confinement have been breached.

4.8.9 Use extreme care while removing the locking ring from drums that have all internal layers of confinement breached.

WARNING

Moving drums may present pinching and crushing hazards to personnel. Personal injury may result if body parts are not kept clear of moving objects.

4.8.10 Keep hands clear of pinch points and keep personnel out of the movement path of waste containers

NOTE: *An overpack with inner container is considered a single source drum.*

4.8.11 Ensure that only one source drum containing ≤ 200 FGE (including 2 sigma uncertainty) is processed/opened at a time within the coring room.

4.8.11.1 Perform dual verification that all other drums in the coring room are closed, and document this verification in the appropriate operating log.

(RPT-NFCS-25, CWR 3)

4.8.12 Remove the drum lid-locking ring and bolt from drum.

4.8.13 RCT: Perform a radiological survey of the drum lid-locking ring, the top outer lip of the drum, and periodic monitoring to verify radiological conditions do **NOT** exceed area postings.

4.8.14 Tape all sharp edges of the ring prior to packaging.

4.8.15 Package the drum lid-locking ring in accordance with INST-OI-24, Packaging Radioactive Waste, and the hazardous waste determination (HWD) for drum coring.

4.8.16 **IF** this drum has undergone any process that has breached the inner layers of confinement,
THEN GO TO Step 4.8.18.

4.8.17 **IF** this drum has **NOT** undergone any process that has breached the inner layers of confinement,
THEN proceed as follows:

4.8.17.1 Place and secure the drum transfer sleeve to the drum.

4.8.17.2 Remove the filter vent(s) using the appropriate tools.

4.8.17.2.1 RCT: Perform a radiological survey of the filter vent(s).

NOTE: *The filter(s) will be added to the waste inventory of the drum upon closure.*

4.8.17.2.2 Tape all sharp edges of filter(s).

4.8.17.2.3 Stage the filter(s) for placement in the drum once the lid is removed.

NOTE: *The following step and substeps only apply to 55-gal drums overpacked in 83-gal drums since the lids have to be cut out of the 55-gal drum.*

4.8.17.3 **IF** processing an overpack with inner container in preparation for coring,
THEN perform the following:

4.8.17.3.1 Perform lower explosive limit (LEL)/lower flammable limit (LFL) monitoring at the vent hole of the container.

4.8.17.3.1.1 **IF** the LEL/LFL is greater than 25%,
THEN perform the following:

4.8.17.3.1.1.1 **STOP WORK**.

4.8.17.3.1.1.2 Notify the SS and Industrial Safety/Industrial Hygiene and wait for direction.

4.8.17.4 Loosen the lid enough for the RCT to perform a preliminary survey.

4.8.17.4.1 Remove lid at the direction of the RCT.

4.8.17.5 RCT: Perform a radiological survey of the exposed surfaces of the lid, and periodic monitoring of other exposed surfaces to verify radiological conditions do **NOT** exceed area postings.

4.8.17.5.1 **IF** lid is to remain installed due to radiological conditions,
THEN GO TO Step 4.8.18.

4.8.17.6 **IF** it is planned to import an overpack drum with an inner drum to the glovebox,
THEN GO TO Step 4.8.17.8.

4.8.17.7 **IF** the liner is **NOT** vented,
THEN STOP WORK
AND contact SS.

4.8.17.7.1 Initiate an NCR for derived air concentration implications in accordance with MP-Q&SI-5.4.

4.8.17.7.2 Proceed only when directed by SS.

NOTE: *Absorbent present on top of the inner drum is moved to facilitate placement of the tape patch.*

4.8.17.8 **IF** processing an overpack with an inner drum,
THEN place a tape patch over the vent hole on the inner drum, as applicable.

4.8.17.9 Tape sharp edges of the drum lid.

4.8.17.10 Package the drum lid in accordance with INST-OI-24.

4.8.17.11 Place the filters on top of the inner packaging inside the drum.

4.8.17.12 **GO TO** Step 4.8.20.

4.8.18 Apply one wrap of 2-in. tape around the mating surface of the drum lid and drum.

4.8.19 Place and secure the drum transfer sleeve to the drum.

4.8.20 Ensure the drum lid and/or liner lid is present prior to performing Step 4.8.21.

NOTE: *Personnel should be aware that materials may impede drum-docking operation and should take care to ensure this does not occur.*

4.8.21 **IF** using the drum-docking port to transfer supplies into the glovebox, **THEN** place supplies on top of the drum.

WARNING

The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

NOTE: *The final lift position is established such that the distance between the top of the lift table and the bottom of the glovebox is approximately 36 in. This is automatically controlled by means of a hard stop on the lift.*

4.8.22 Use care when repositioning the bag stub to avoid possible spread of radioactive contamination.

4.8.23 Perform waste drum import to DCSRS glovebox.

4.9 Manual Drum Coring Operations

WARNING

Pinch hazards exist while lifting and moving equipment inside the glovebox.

4.9.1 Keep hands clear of pinch points.

4.9.2 **IF** the drum was docked to the glovebox with the lid intact and taped, **THEN** remove the tape, drum lid, and any remaining filter vent(s) from the drum lid, using the appropriate tools, as applicable.

4.9.3 Document all filter(s) removed from the lid by model number in WTS on the “Container Filters” screen.

4.9.4 Complete Form-1599, Block 5a.

NOTE 1: *Step 4.9.5 and substeps are not performed on inner containers with rigid liners that have liner lids or that have spacers between the inner drum and rigid liner.*

NOTE 2: *Step 4.9.5 and substeps are not performed on 30-gal drums overpacked in 55-gal drums.*

4.9.5 **IF** processing an 83-/85-gal overpack with a 55-gal inner drum,
THEN perform the following to prepare the inner drum for coring:

4.9.5.1 Remove the tape patch from the inner drum vent hole, as applicable.

4.9.5.2 Move any absorbent material present on top of the inner drum by bagging the absorbent and setting it aside.

4.9.5.3 Drill a hole approximately 1 inch in diameter in the inner drum lid to facilitate drum lid cutting.

4.9.5.4 Using an appropriate tool (e.g., a nibbler), cut out as much of the drum lid as possible.

4.9.5.5 Remove the cut out disc and set aside.

4.9.5.6 Back tape the cut on the inner drum lid.

4.9.5.7 **GO TO** Step 4.9.8.

NOTE: *Steps 4.9.6 through 4.9.7.2 only apply if the drum was not previously delidded per Section 4.8 of this instruction.*

4.9.6 Remove the waste drum lid and stage it in drum lid rack, using care not to rip or tear the drum sleeve while removing the lid, if applicable.

4.9.6.1 Remove spacers between drum lid and liner, if applicable.

4.9.7 **IF** the liner, when present, is **NOT** vented,
THEN STOP WORK
AND contact SS.

4.9.7.1 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.9.7.2 Proceed only as directed by SS.

4.9.8 Install and secure the upper drum stabilizing clamps, if applicable.

4.9.9 Remove the rigid liner lid using the tools provided and store it out of the immediate work area, if applicable.

4.9.10 Remove packing material (e.g., vermiculite) and place it into a plastic bag and stage it away from the immediate work area, if applicable.

4.9.11 **IF** the inner container is a 30-gal drum,
THEN remove the lid of the inner drum at this time.

4.9.12 Cut the drum waste bag(s) away using a box knife.

4.9.12.1 **IF NOT** already performed,,
THEN stage this waste away from the immediate area.

4.9.13 **IF** the drum contains a pan liner bag (Accelerated Retrieval Project [ARP] drums),
THEN carefully lift the excess bag and fold it over the top of the drum and secure as necessary.

4.9.14 **IF** a drum selected for solids sampling is to be rejected,
THEN initiate an NCR per MP-Q&SI-5.4, to disposition the waste stream lot assignment of the rejected drum.

(MP-TRUW-8.2)

4.9.15 **IF** liquids are present at the top of the waste,
THEN perform the following:

4.9.15.1 Quantify the liquids using the exhibits in INST-OI-34, Non-Facility Visual Examination Operations.

4.9.15.2 Log the volume on Form-1599, “Comments” Section.

NOTE: *An NCR will only be initiated if the nonconformance has not been previously indentified and documented.*

4.9.15.3 **IF** liquid exceeds 1% by volume of the outermost container,
OR IF the liquids are associated with RF-003,
THEN initiate an NCR for prohibited liquids.

NOTE: *Liquids contained within the inner most layer of confinement are considered in depth-of-waste calculations, as applicable.*

4.9.16 Calculate the depth of waste in the drum as follows:

4.9.16.1 Using a measuring device, measure the distance from the top lip of the drum to the waste, i.e., the 55-gal or 30-gal drum.

NOTE: *The 1-in. reference in the following step is allowing for the 3/4-in. bottom barrel lip plus 3/16-in. liner thickness for a 55-gal drum, or the 13/16-in. bottom barrel lip on a 30-gal drum.*

4.9.16.2 Using Form-1599 (Blocks 8a and 8b) and a calculator, add 1 in. to the distance measured;
THEN subtract total from 34.5 in. for a 55-gal drum
OR subtract total from 29 in. for a 30-gal drum.

4.9.16.3 Record on Form-1599, Blocks 8a and 8b.

4.9.16.4 Record the calculated depth of waste in WTS "Depth of Waste" field on the "Core Sampling" screen.

NOTE: *The dust vacuum and port cover are not required when performing manual coring operations.*

4.9.17 Position the uprighting fixture slide brackets for acceptance of the coring bit, as necessary.

4.9.18 **IF** one is **NOT** already in place,
THEN place the coring bit assembly into the uprighting fixture slide brackets.

4.9.19 Position the uprighting fixture slide brackets at their lock locations and insert the slide bracket locking pins.

4.9.20 Ensure that the spindle end of the coring bit is locked into the top slide bracket.

WARNING

Personal injury may occur if personnel place hands and arms into the glovebox while machinery is running.

NOTE: *A light curtain on gloveboxes serves as a safety interlock to protect the operator from moving machinery.*

4.9.21 Perform recovery from the tripped light curtain.

4.9.22 Elevate the coring bit and uprighting fixture.

4.9.22.1 Place the uprighting fixture motor control switch into the neutral position.

4.9.23 Observe that the "Recovery" screen is displayed on the HMI computer.

4.9.24 Clear condition by clicking "Continue in Auto."

4.9.25 Observe that the "System Startup" screen is displayed.

4.9.26 **IF** this is a primary/initial manual core sampling sequence, **THEN** perform the following steps:

4.9.26.1 Select the CONTROL icon at the bottom of the "System Startup" screen on the HMI computer.

4.9.26.2 Click on "Auto" on the "Control Mode" screen.

4.9.26.3 On the "System Auto" screen, click on "Primary Core."

NOTE: *The "Horizontal Position" can be obtained from the "Core Sampling" tab on the WTS core sample screen.*

4.9.26.3.1 Obtain the "Horizontal Position" number from the WTS "Core Sampling" screen.

4.9.26.3.2 Enter the "Horizontal Position" number provided by WTS in the "mils east" field under the PRIMARY CORE button.

NOTE: *"Bit Type" is a required entry field on the HMI computer even though the bit is not being used to obtain the core sample.*

4.9.26.3.3 Click on the following, if necessary:

- "Bit Type"
- "Drum Type."

4.9.27 **IF** this is a resample/co-located manual core sampling sequence, **THEN** perform the following steps:

4.9.27.1 Select the CONTROL icon at the bottom of the "System Startup" screen on the HMI computer.

4.9.27.2 Click on "Auto" on the "Control Mode" screen.

4.9.27.3 On the "System Auto" screen, click on "Resample/Co-Located Core."

NOTE: *The "Horizontal Position" can be obtained from the "Core Sample" tab on the WTS core sample screen.*

4.9.27.3.1 Obtain the "Horizontal Position" number from the WTS "Core Sample" screen.

4.9.27.3.2 Enter the "Horizontal Position" number provided by WTS in the "mils east" field under the RESAMPLE/CO-LOCATED CORE button.

NOTE: *"Bit Type" is a required entry field on the HMI computer even though the bit is not being used to obtain the core sample.*

4.9.27.3.3 Click on the following, if necessary:

- "Bit Type"
- "Drum Type."

4.9.28 Select "Execute" and observe that the following occurs:

- The drill positioning system locates the drill head over the coring barrel, engages and removes it from the uprighting fixture.
- The computer prompts the operator whether or not the coring bit has been picked up.

4.9.28.1 Click on YES or NO.

4.9.28.1.1 **IF** the answer is NO,
THEN select "Drill Stop."

4.9.28.1.1.1 Observe that the "Recovery" screen is activated.

4.9.28.1.1.1.1 Reset drill sequence.

4.9.28.1.1.2 Observe that the drill motor returns to the home position and resets the drill bit into the uprighting fixture.

4.9.28.1.1.3 Verify the information on the "System Auto" screen is correct.

4.9.28.1.1.4 **RETURN TO** Step 4.9.28.

4.9.28.1.2 **IF** the answer is YES
THEN observe that the drill positioning system locates the coring barrel over the horizontal position established in Step 4.9.26.3.2 or Step 4.9.27.3.2.

4.9.28.1.2.1 Click on "Drill Stop."

4.9.28.1.2.2 Energize the laser pointer.

WARNING

Personal injury may result if body parts are not kept clear of suspended loads.

4.9.29 Do **NOT** place any body part beneath a suspended load.

4.9.30 Mark the sampling location indicated by the laser pointer with a certified clean sampling tool.

4.9.31 De-energize the laser pointer.

4.9.32 Perform a recovery from the tripped light curtain.

4.9.33 Go to the HMI computer and confirm that the recovery screen is displayed.

4.9.33.1 Click on “Reset Drill Sequence” and observe the following:

A. The drill motor and core barrel return to the home park position.

B. The drill motor replaces the core barrel into the uprighting fixture.

4.9.33.1.1 Lower the uprighting fixture to the horizontal position.

4.9.33.1.1.1 Place the local motor control switch into the neutral position.

4.9.33.1.1.2 Remove the locking pins from the uprighting fixture slide brackets.

4.9.33.1.1.3 Move the assembly manually into the bit preparation glovebox, if necessary.

4.9.34 Obtain a certified-clean core tube liner with end caps.

4.9.34.1 Carefully remove the end caps and place them in a clean bag.

CAUTION

Touching the inside of the core tube liner or end caps will compromise the integrity of the sample by introducing cross contaminants to the sample matrix.

4.9.35 Exercise caution not to touch the inside of the core tube liner or end caps with contaminated gloves.

4.9.36 Insert the core tube liner into the waste matrix at the position marked with the clean sampling tool.

4.9.37 Drive the core tube liner downward, keeping it as plumb as possible.

4.9.37.1 Use a clean hammer, if necessary, to aid in gently driving the liner to its furthest extent downward.

4.9.37.2 Place a clean end cap on the top of the core tube liner.

4.9.38 Carefully remove the core tube liner with core from the drum.

NOTE: *The time and date recorded in Step 4.9.39 marks the completion of the core tube liner retrieval from the drum.*

4.9.39 Access the WTS computer terminal "Core Sampling" screen and record the date and time of core sample retrieval in the "Core Sample Dt & By" field.

4.9.39.1 Complete Form-1599, Block 9.

NOTE 1: *The lapsed time in which the core tube liner is uncapped should be kept to a minimum to avoid the loss of volatile organics.*

NOTE 2: *If a substantial delay of 60 minutes or more is expected, the core tube liner is required to be capped and remain capped until sampling can take place.*

(HWMA/RCRA Permit; MP-TRUW-8.2)

4.9.40 Apply an end cap to the exposed end of the core tube liner.

4.9.41 Wipe the core tube liner down with a clean wipe.

4.10 Core Tube Liner Preparation and Percent Recovery

4.10.1 Cut the excess core tube liner away using an appropriate tool, leaving approximately 1/4 in. of headspace above the sample.

4.10.2 Place an end cap on the exposed end of the core tube liner and log the capping of the liner on Form-1599, Block 10.

4.10.3 Mark this end cap with a "T" using a grease pencil to designate the top of the core sample.

4.10.4 Measure the length of core recovered.

4.10.5 Enter the core length in WTS and press ENTER.

NOTE: *The percent recovery is calculated from the length of core recovered and the depth of waste measurement.*

4.10.6 Observe that the WTS calculates a percent recovery.

4.10.7 **IF** the recovery is greater than or equal to 50%,
THEN perform the following:

4.10.7.1 Provide a detailed physical description of the core sample in the "Core Physical Description" field.

4.10.7.1.1 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" comment field.

4.10.7.1.1.1 Complete Form-1599, Blocks 11a and 11b.

4.10.7.1.2 Document any inconsistencies in color, texture, or waste type between the cores, if applicable, in the "Core Sample Comment" field.

4.10.7.1.2.1 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.7.1.2.2 Complete Form-1599, Blocks 12a and 12b.

4.10.7.1.3 **GO TO** Step 4.10.16.

4.10.8 **IF** the recovery of the *initial core sample* (see def.) is less than 50%,
THEN perform the following:

4.10.8.1 Provide a detailed description of the core in the "Core Physical Description" comment field.

4.10.8.2 Document "NA" in Blocks 12a and 12b of Form-1599, along with "Date," "Time," and "Performed By."

4.10.8.3 Document in the "Core Sample Comment" field that the initial core sample failed due to an inadequate amount of sample material retrieval and that a resample core is being attempted.

4.10.8.4 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.8.4.1 Complete Form-1599, Blocks 11a and 11b.

4.10.9 Wipe down the core-tube liner to a visibly clean condition.

4.10.10 Pass the core-tube liner with core into the sample preparation glovebox.

4.10.11 Ensure that all information is recorded on the "Core Sampling" screen.

NOTE: *If "Coring Equipment Used" is not entered in WTS, a message box will appear while attempting E-signature. This message will direct that "Coring Equipment must be entered." E-signature is denied until equipment is entered.*

4.10.11.1 E-sign and save.

4.10.12 **IF** a resample core is being taken,
THEN obtain sampling requirements from the "Sample Amounts and Container Requirements for a Single Core Sample" table in Exhibit 1.

4.10.13 Obtain a resample core sample.

4.10.13.1 **IF** performing a manual resample coring sequence,
THEN perform the following steps:

4.10.13.1.1 Click in the next available field under "Core Sample ID" on the "Core Sampling" screen.

4.10.13.1.2 Select "Resample" in the "Core Sample Type" field.

4.10.13.1.3 Observe that WTS auto-populates the "Required sector" and the "horizontal position" fields, taking into account the location of the primary bore hole position and the 4,000-mil safety margin on either side of it.

(MP-TRUW-8.2)

4.10.13.2 Enter the "Actual Coring Sector" on the WTS "Core Sample" screen.

4.10.13.2.1 **IF** the "Actual Coring Sector" is different than the "Required sector,"
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

4.10.13.2.2 Enter a "Core Sector Comment" on the WTS screen detailing the reason for the change.

4.10.13.2.3 As applicable, repeat the following sections:

- Section 4.4, Coring Components and Sampling Materials Preparation, Staging, and Bag-in
- Section 4.5, Glovebox Bag-in/Sphincter Port Operations.

4.10.13.3 Document "NA" in Block 6 of Form-1599.

4.10.13.3.1 Make a comment on Block 6 of Form-1599 that manual coring is being performed and that the core barrel will not be used to take the sample.

4.10.13.4 As applicable, repeat the following sections:

- Section 4.9, Manual Drum Coring Operations
- Section 4.10, Core Tube Liner Preparation and Percent Recovery.

4.10.14 **IF** the recovery is less than 50% on the resample core,
THEN perform the following:

(MP-TRUW-8.2)

4.10.14.1 Provide a detailed description of the core in the "Core Physical Description" comment field.

4.10.14.2 Document in the "Core Sample Comment" field that the resample core sample failed due to an inadequate amount of sample material retrieval and that the core with the best recovery (initial/resample) will be sampled.

(MP-TRUW-8.2)

4.10.14.3 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.14.3.1 Complete Form-1599, Blocks 11a and 11b.

4.10.14.4 Document any inconsistencies in color, texture, or waste type between the primary and resample core in the "Core Sample Comment" field, if applicable.

4.10.14.4.1 Complete Form-1599, Blocks 12a and 12b.

4.10.14.4.2 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.14.5 **GO TO** Step 4.10.16.

4.10.15 **IF** recovery of the co-located core sample is less than 50%, **THEN** perform the following:

4.10.15.1 Provide a detailed physical description of the core sample in the "Physical Description" field.

4.10.15.2 Document in the "Core Sample Comment" field that the co-located core sample failed due to an inadequate amount of sample material retrieval.

4.10.15.3 Verify and record minimal waste disturbance by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the "Core Physical Description" field.

4.10.15.3.1 Complete Form-1599, Blocks 11a and 11b.

4.10.15.4 Document any inconsistencies in color, texture, or waste type between the primary, resample, and co-located core in the "Core Sample Comment" field.

4.10.15.4.1 Complete Form-1599, Blocks 12a and 12b.

4.10.15.4.2 **IF** inconsistencies are identified, **THEN** contact the SS and SME for guidance.

4.10.15.5 **IF** the container and/or time limit have **NOT** been reached for the batch,
THEN attempt to take a co-located core from the next container in the batch.

4.10.15.6 **IF** the container and/or time limit have been reached for the batch/lot,
THEN initiate a nonconformance report per MP-Q&SI-5.4 documenting less than 50% recovery for the QC co-located core
AND sample the core in accordance with Section 4.11.

4.10.16 Ensure that all information is recorded on the "Core Sampling" screen.

4.10.16.1 E-sign and save.

4.10.17 Wipe down the core-tube liner to a visibly clean condition.

4.10.18 Pass the core-tube liner with core into the sample preparation glovebox.

NOTE: *Transfer of record ownership between qualified operators is allowed up to the point of initiating subsampling routine. This record turnover is captured in e-sign history in WTS. Once the subsampling routine is initiated, it has to be completed by the same operator. Custody is maintained and properly relinquished.*

4.11 Sample Preparation Glovebox Operations

NOTE 1: *After the core has been extracted, a sample is collected from a random location over the length of the core. This sample, therefore, is extracted from a random location in both the horizontal and vertical planes. The selection of the sample is documented in WTS.*

(MP-TRUW-8.2; HWMA/RCRA Permit)

NOTE 2: *The WTS performs a random selection routine for a subsampling location of the cored material. A sub-sample is defined as the area along the core length where a sample will be taken for analysis.*

4.11.1 **IF** the percent recoveries for the "Primary/Initial" and "Resample" cores are both less than 50%,
THEN sample the core with the best recovery.

4.11.2 **IF** there is an insufficient amount of core sample to obtain the required sub-samples in accordance with Exhibit 1,
THEN reject the container for solids sampling
AND initiate a non-conformance report per MP-Q&SI-5.4 to disposition the waste stream lot assignment of the rejected container.

(MP-TRUW-8.2)

4.11.3 Visually inspect sampling equipment contained in protective packaging for integrity prior to removing the packaging.

4.11.3.1 Record satisfactory packaging integrity on Form-1599, as applicable.

4.11.3.2 **IF** the packaging is torn,
THEN do **NOT** use the sampling equipment
AND ensure that it is properly discarded.

4.11.3.2.1 Complete Form-1599, Blocks 7a through 7e.

4.11.3.3 **IF** the sampling equipment becomes visibly contaminated after the protective wrapping has been removed,
THEN do **NOT** use the sampling equipment
AND ensure that it is properly discarded.

4.11.3.4 Notify the SS and SME of any deficiencies recorded.

4.11.4 Tape a waste bag to the inside back wall of the glove box.

4.11.5 Place two disposable wipes on the glovebox floor to use as a clean working surface.

4.11.6 Obtain empty sample vials and supplies.

4.11.7 Place the empty sample containers and clean disposable sampling tools on the clean working surface.

4.11.8 Access the “Core Sampling” screen.

4.11.8.1 **IF** data is **NOT** already populated on the “Core Sampling” screen,
THEN enter the container ID number in the “Container ID” field and press F8.

4.11.8.2 Select the “Sub Sample” tab.

NOTE: *The initial subsample location is required to be randomly selected. The WTS performs a random selection routine for this subsample location. All subsequent subsample locations are not required to be randomly selected.*

(MP-TRUW-8.2; HWMA/RCRA Permit)

4.11.8.3 Note required distance for the initial subsample location.

4.11.9 Using a china marker, mark off the portion of the liner, containing core sample material, in 1/2-in. increments and number the whole inch marks starting at the end marked with a "T."

4.11.10 Mark the subsample location on the core ensuring that the measurement is from the core end marked with a "T," using information gathered in Step 4.11.8.3.

4.11.11 **IF** the required distance for the initial subsample location is zero inches, **THEN GO TO** Step 4.11.19.

4.11.12 Make a perpendicular cut through the tube roughly 1/4 in. above or below the required subsample location mark, using a tubing cutter.

4.11.13 Cap the portion of the core tube segment to be sampled and stage it for sampling.

4.11.14 Cap the remaining portion of the core tube segment with a new cap and place it aside.

(MP-TRUW-8.2)

4.11.15 Wipe the tubing cutter to a visibly clean state.

4.11.16 Remove cap and the core material from the newly exposed surface on the core segment being sampled down to the required sample location using a disposable sampling spatula.

4.11.17 Scrape the material, if necessary, from the spatula into an appropriate waste container and dispose of spatula.

4.11.18 Place clean cap on the core-tube liner and place it aside.

NOTE: *The operator that is performing the subsampling evolutions in the DCSRS glovebox is allowed to relay information to a second operator for entry into WTS. Data is verified for accuracy through the use of "Repeat Back" prior to e-signature.*

4.11.19 Access the "Sub Sample" tab.

4.11.19.1 Click in the first/next blank "Sub-Sample ID" field.

NOTE: *Non-halogenated volatile organic compound (NHVOC) is the sample requested for hydrazine and formaldehyde.*

4.11.19.2 Access the pull-down menu at the "Sample Requested" field and select "Analysis Type."

NOTE 1: *The sample for volatile organics is always taken first.*

NOTE 2: *Representativeness for* volatile organic compound (VOC; see def.) *analysis is achieved by collecting unbiased samples.*

4.11.19.3 On the "Sampling Tools" subscreen, select "20 vial" from the pick list.

4.11.19.4 Select "Spatula" or "Spoon," as applicable, from pick list.

(MP-TRUW-8.2)

4.11.20 Obtain the sample vial for the first/next sample to be taken.

4.11.21 Place the sample vial on the weighing pan of the analytical balance.

NOTE: *After pushing the RE-ZERO button on the balance, the balance should read 0.00.*

4.11.22 **WHEN** the weight reading is stable,
THEN push the RE-ZERO button on the balance.

4.11.23 Remove the vial from the balance.

4.11.24 Remove the lid from the weighed sample vial.

4.11.25 Uncap the core-liner tube and remove the core material below the subsample mark and place it in the vial using a clean sample spatula.

4.11.26 Wipe the top of the vial clean with a clean disposable wipe, if necessary.

4.11.27 Recap the vial.

4.11.28 Place the sample vial on the weighing pan of the analytical balance.

4.11.29 Wait for the balance to stabilize and observe the weight.

4.11.30 **REPEAT** Steps 4.11.23 through 4.11.29 until the laboratory-required amount of sample is contained in the vial.

4.11.31 Remove the vial from the balance and re-zero the balance.

4.11.32 Place a clean end cap on to the remainder of the core-tube liner to be sampled.

4.11.33 Stage the sample vial for labeling and sample bag-out.

4.11.34 Access the "Sub Sample" screen, on the WTS computer terminal.

NOTE: *Information that is recorded on the "Sub Sample" screen is automatically stored by WTS into the chain-of-custody "Unattached Sub Sample" screen.*

4.11.34.1 Record the date and time sample was taken.

4.11.34.2 Record the actual distance at which the sample was taken in the "Actual Distance" field.

4.11.34.3 **IF** the "Actual Distance" is different than the "Required Distance" for the initial subsample location only,
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

4.11.34.3.1 Enter an explanation in the "Distance from Top" comment field in WTS.

4.11.34.4 Record the weight for this sample to two decimal places.

4.11.34.5 Record the volume of sample container.

NOTE: *The NHVOC samples for hydrazine and formaldehyde are only taken on certain Savannah River Site waste streams. The solid sampling SME will provide direction on when it is necessary to obtain these samples.*

4.11.34.6 **IF** taking an NHVOC-hydrazine sample,
THEN enter "Hydrazine Sample" in the "Sub Sample Comment" field.

4.11.34.7 **IF** taking an NHVOC-formaldehyde sample,
THEN enter "Formaldehyde Sample" in the "Sub Sample Comment" field.

4.11.34.8 Ensure the "Custody Seal Attached" field is "No."

4.11.34.9 Ensure the "Preserved to 4 degrees C" field is "No."

4.11.34.10 E-sign and save.

4.11.35 Select the current sample being processed in the "Sub Sample ID" field.

NOTE 1: *Sample labels, generated by performance of Step 4.11.36, meet the requirements of AMWTP DMS Core Sampling User Requirements Specifications, No. 16784-02C.*

NOTE 2: *The following step and substeps may be performed at any time after the samples are taken, but prior to removal from the glovebox.*

4.11.36 Print two labels, one for the sample bottle and one for the sample transfer bag.

4.11.36.1 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the "Dt & By" field on the "Sub Sample" screen

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (i.e., primary or QC)

I. Sample description.

4.11.37 **REPEAT** Steps 4.11.19 through 4.11.36.1 for the remainder of the VOC samples.

4.11.37.1 Log the subsample label verification on Form-1599, Block 13a, upon completion of the VOC samples.

4.11.38 Access the "Core Sampling" screen.

4.11.38.1 Select the "Sub Sample" tab.

NOTE: *The sample taken for metals and* semi-volatile organic compounds *(SVOCs; see def.), if required will be contained in a single sample vial.*

4.11.38.2 Place the cursor in the next blank "Sample ID" field and click.

4.11.38.3 Access the pull-down menu on the "Sample Requested" field and select "Analysis Type."

4.11.38.4 On "Sampling Tools" subscreen, select "4vial" from the pick list.

4.11.38.5 Select the "Spatula" or "Spoon," as applicable, from pick list.

4.11.38.6 Select "Weigh Boat" from the pick list.

4.11.39 Obtain the sample vial for the sample to be taken.

4.11.40 Place the weighing boat on the weighing pan of the analytical balance.

NOTE: *After pushing the RE-ZERO button on the balance, the balance should read 0.00.*

4.11.41 **WHEN** the weight reading is stable,
THEN push the RE-ZERO button on the balance.

4.11.42 Remove the core material from the core tube liner and place it in the weighing boat using a clean sample spatula.

4.11.43 Wait for the balance to stabilize and observe the weight.

4.11.44 Ensure that the laboratory-required amount of sample is contained in the weighing boat.

4.11.45 Transfer the contents of the weighing boat to the sample vial and cap it.

4.11.46 Place the used weighing boat into an appropriate waste container.

4.11.47 Stage the sample vial for labeling and sample bagout.

4.11.48 Place an end cap on to the remainder of the core tube liner.

NOTE: *Information that is recorded on the "Sub Sample" screen is automatically downloaded by WTS into the CoC "Unattached Sub Sample" screen.*

4.11.49 Access the "Sub Sample" screen.

4.11.49.1 Record the date and time the sample was taken.

4.11.49.2 Record the actual distance at which the sample was taken in the "Actual Distance" field.

4.11.49.3 Record the weight for this sample to two decimal places.

4.11.49.4 Record the volume of the sample container.

4.11.49.5 Ensure the "Custody Seal Attached" field is "No."

4.11.49.6 Ensure the "Preserved to 4 degrees C" field is "No."

4.11.49.7 E-sign and save.

NOTE: *The following step and substeps may be performed at any time after the samples are taken, but prior to removal from the glovebox.*

4.11.50 Select the current sample being processed in the "Sub Sample ID" field.

4.11.50.1 Print two labels, one for the sample bottle, and one for the sample transfer bag.

4.11.50.2 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the "Dt & By" field on the "Sub Sample" screen

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (i.e., primary or QC)

I. Sample description.

4.11.50.3 Log the subsample label verification on Form-1599, Block 13b.

4.12 Sample Bagout, Handling, and Storage Requirements

4.12.1 Transfer one set of the previously generated sample labels into the sample preparation glovebox.

4.12.2 Apply the appropriate label to each sample vial.

4.12.3 Ensure all fields on the sample label are complete.

4.12.4 Perform sample bagout operations.

4.12.5 RCT: Perform radiological surveys of the package.

4.12.6 Apply the appropriate sample label to the sealed bag.

4.12.7 Place the sealed bag with label into a Ziploc bag, fold the bag over on itself, seal it, and affix a custody seal to the closure.

4.12.7.1 Ensure that the custody seal contains the following information:

- Sampler's signature
- Date.

4.12.8 **REPEAT** Steps 4.12.4 through 4.12.7.1 until all sample vials have been removed from the glovebox.

4.12.9 Log custody seal verification on Form-1599, Block 14.

4.12.10 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.12.11 Access WTS computer and click on the "Sub Sample" tab.

4.12.11.1 Click on the first/next sample number in the "Sub Sample" field.

4.12.11.2 In the "Custody Seal Attached" field, select "YES" for all samples.

4.12.11.3 E-sign and save.

4.12.11.4 Repeat Steps 4.12.11.1 through 4.12.11.3 for the remaining subsamples.

4.12.11.5 Log verification on Form-1599, Block 15.

4.12.12 Ensure the person transferring samples to the refrigerator is the same person in custody of the samples during the sampling.

4.12.13 Using WTS, move the samples to the coring room refrigerator by performing the following:

(HWMA/RCRA Permit)

4.12.13.1 Go to the "General" tab at the top of the screen and click on it.

4.12.13.2 Scroll to "Movement/Location," then to "Manual Move" screen and click on it.

4.12.13.3 Enter the sample container ID number in the "Operator and Supervisor Container ID" field.

4.12.13.4 Click on "Supervisor Verification."

4.12.13.5 Supervisor/Designee: Perform the following:

4.12.13.5.1 E-sign and save.

4.12.13.5.2 Click on "Update Location" tab.

4.12.13.5.3 Select the "Building 634-Characterization" from the "Building" drop down list.

4.12.13.5.4 Place the cursor in the "Section" block and press F9.

4.12.13.5.5 Select "Coring Area" from the list and click "OK."

4.12.13.5.6 With the cursor in the "Sub Section" block, press F9.

4.12.13.5.7 Select "Refrigerator" from the drop down list and click "OK."

4.12.13.5.8 Select "Moved Date and Time."

4.12.13.5.9 Click on "Initiate."

4.12.13.5.10 Click on the CLEAR button to clear data.

4.12.14 **REPEAT** Steps 4.12.13.3 through 4.12.13.5.10 for the remaining samples.

4.12.15 Close the "Manual Move" screen.

4.12.16 Place all sample packages from this event into one or two (if needed) large Ziploc bag and seal.

4.12.16.1 Record the parent drum number on the Ziploc bag(s).

(RPT-NFCS-25, CWR #6)

4.12.17 Ensure that refrigerated storage is maintained at 4ºC (2 to 6ºC acceptable) and remains locked when **NOT** attended.

(MP-TRUW-8.2)

4.12.18 Place samples into refrigerator.

4.12.19 Close and lock the door to the refrigerated storage area.

4.12.20 Access the WTS computer and click on the "Sub Sample" tab.

4.12.20.1 Click on the first/next sample number in the "Sub Sample" field.

4.12.20.2 In the "Preserved to 4 degrees C" field, select "YES."

4.12.20.3 E-sign and save.

4.12.20.4 Repeat Steps 4.12.20.1 through 4.12.20.3 for the remainder of the subsamples.

4.12.20.5 Log verification on Form-1599, Block 16.

4.12.21 Select the "General" tab on the WTS computer.

4.12.21.1 Scroll to "Movement/Location," and then to "Container Location Screen Report" and click on it.

4.12.22 Click on the down arrow on the "Subsection" field.

4.12.22.1 Select "Refrigerator" and click on it.

4.12.23 Click on "Locate."

4.12.24 Confirm that the samples for this event are located in the "Refrigerator."

4.13 Trip Blank Preparation

NOTE 1: *Three trip blanks are required as part of each sample shipping container. The first trip blank will be for purgeable volatile organic compounds (PVOCs). The remainder will be used as spares.*

NOTE 2: *Five trip blanks are necessary as part of each sample shipping container when hydrazine and formaldehyde samples are taken.*

NOTE 3: *Trip blanks are analyzed by the laboratory to verify the integrity of the sample media through the absence of contaminants in the blanks.*

4.13.1 Access the "Core Sampling" screen.

4.13.2 Place the cursor in the "Container ID" field and press F9.

4.13.2.1 Select the container ID associated with samples and click on "OK."

4.13.2.2 Press F8 to upload the container data.

4.13.3 Select the "Sub Sample" tab.

4.13.4 Place the cursor in the last populated "sample ID" field.

4.13.4.1 Select the "Insert Record" symbol at the top of the screen.

4.13.4.2 Observe that a blank subsample ID field is created.

4.13.4.3 Place the cursor in this field and click on it.

4.13.5 Click on the down arrow for the "Sample Requested" field.

4.13.5.1 Select "Trip Blank."

4.13.6 Enter "0" in the "Actual Distance" field.

4.13.7 Enter "Trip Blank" in the "Distance from the top comment" field.

4.13.8 Place the cursor in the "Sampling Equipment" field and press F9.

4.13.8.1 Select the "Vial Size Used."

NOTE: *Performance checks on electronic balances are required each shift prior to use in measuring sample weights.*

4.13.9 Place the cursor in an open "Sampling Equipment" field and press F9.

4.13.9.1 Select "Spatula" from pick list.

4.13.10 Obtain the organic free sand used for the trip blank media.

4.13.11 Obtain a clean 20-mL septum capped volatile organic analysis (VOA) vial.

4.13.12 Tare-weigh the vial.

4.13.12.1 Remove the cap and place it on a clean surface.

4.13.13 Using a certified-clean spatula, add 2.5 to 3.0 grams of clean sand to the vial
OR
IF taking additional trip blanks to support Hydrazine and Formaldehyde analysis,
THEN ensure that 12.0 to 12.5 grams of sand is obtained for Trip Blanks 4 and 5.

4.13.13.1 Reweigh as necessary to obtain the required amount.

4.13.14 Enter the weight to two decimal places and the volume in the appropriate fields on the "Sub Sample" screen.

4.13.15 Record the date and time the sample is taken in the "Sub Sample Dt & By" field.

4.13.15.1 Enter "Trip Blank" and the sequence number, e.g., 1-5, in the "Subsample Comment" field.

4.13.16 Recap the vial, and reset the balance.

4.13.17 Select "NO" in the "Preserved to 4 degrees C" field.

4.13.18 E-sign and save.

4.13.19 Print the trip blank sample label and attach it to the vial.

4.13.19.1 Verify that the sample label contains complete information.

NOTE: *Sample containers are decontaminated at the lab using water-dampened towels that will smear any entries made with non-permanent ink.*

4.13.20 Sign and date the custody seal using only permanent black or blue ink.

4.13.21 Place a custody seal on the vial.

4.13.21.1 Do **NOT** cover the sample label with the custody seal.

4.13.22 Click on the down arrow for the "Custody Seal Attached" field and select "YES."

4.13.23 E-sign and save.

4.13.24 **REPEAT** Steps 4.13.4 through 4.13.23 for the remaining trip blanks.

4.13.25 Place trip blanks into refrigerated storage.

4.13.25.1 Ensure the refrigerator door is locked.

4.13.25.2 Complete Form-1599, Block 17.

4.13.26 Move the trip blank samples, using the WTS computer, to the coring room refrigerator by performing the following:

4.13.26.1 Go to the "General" tab at the top of the screen and click on it.

4.13.26.2 Scroll to "Movement/Location," then to "Manual Move" screen and click on it.

4.13.26.3 Enter the sample container ID number in the "Operator Container ID" field and press Tab.

4.13.26.4 Enter the same container ID number in the "Supervisor Container ID" field.

4.13.26.5 Click on "Supervisor Verification."

4.13.26.6 SS/Designee: Perform the following:

4.13.26.6.1 E-sign and save.

4.13.26.6.2 Click on "Update Location" tab.

4.13.26.6.3 Select "634-Characterization" from the "Building" drop down list.

4.13.26.6.4 Place the cursor in the "Section" block and press F9.

4.13.26.6.5 Select "Coring Area" from the list and click "OK."

4.13.26.6.6 With the cursor in the "Subsection" block, press F9.

4.13.26.6.7 Select "Refrigerator" from the list and click "OK."

4.13.26.6.8 Select "Moved Date and Time."

4.13.26.6.9 Click on "Initiate."

4.13.26.6.10 Click on "OK" to update location.

4.13.26.6.11 Click on the CLEAR button to clear data.

4.13.27 **REPEAT** Steps 4.13.26.3 through 4.13.26.6.11 for the remaining samples.

4.13.28 Select the "General" tab on the WTS computer.

4.13.28.1 Scroll to "Movement/Location," and then to "Container Location Screen Report" and click on it.

4.13.29 Click on the down arrow on the "Subsection" field.

4.13.29.1 Select "Refrigerator" and click on it.

4.13.30 Click on "Locate."

4.13.31 Confirm that the location is listed as "Refrigerator."

4.13.32 Access the "Sub Sample" tab.

4.13.32.1 Click on the first/next sample number in the "Sub Sample" field for the trip blank.

4.13.32.2 On the subsample screen, click on the down arrow for "Preserved to 4 degrees C" and select "YES."

4.13.32.3 E-sign and save.

4.13.32.4 Repeat Steps 4.13.32.1 through 4.13.32.3 for the remainder of the trip blank samples.

4.13.33 Notify Transportation personnel that samples have been placed into refrigerated storage and request shipment scheduling.

4.14 Chain-of-Custody

NOTE 1: *Required fields on the CoC include: signature of initiator, date and time, type and number of samples, sample matrix, preservatives, requested analyses, location of sample collection, waste container number final disposition (shipped to lab), sample relinquishment and receipt signatures, and documentation of discrepancies, breakage, or tampering.*

(MP-TRUW-8.2)

NOTE 2: *A CoC record is assigned to each sample or group of samples. A CoC is a method of maintaining documented custody of samples taken from the glovebox through placement into refrigerated storage, and during transport to the laboratory for analysis.*

(HWMA/RCRA Permit)

4.14.1 Ensure that the CoC is created by the same operator that created and e-signed the subsample data.

4.14.2 Access the "Core Sampling" screen.

4.14.3 Enter the container ID in the "Container ID" field.

4.14.3.1 Press F8 to upload the container data.

4.14.4 Select the "Sub Sample" tab.

4.14.5 Click on "CoC."

NOTE: *The receiving laboratory requires initial/primary and co-located samples to be on separate CoCs.*

4.14.6 Click on "Create New CoC."

4.14.7 Enter the drum number(s) in the "Description" field on the "New CoC" pop-up screen and click "OK."

4.14.8 Observe the "Chain of Custody" screen is activated.

4.14.9 View the "Unattached Sub Samples" screen and select each unattached subsample to be attached to the CoC by setting the select field to YES.

4.14.10 Verify all subsamples have been selected and click on the Right "(>)" arrow.

4.14.11 Observe that WTS moves all selected samples for this container to the "Attached Sub Samples" screen.

4.14.12 Click on "Select All" on the "Attached Sub Samples" side of the screen.

4.14.13 Enter sample discrepancies/comments, if necessary.

4.14.14 E-sign and save.

4.14.14.1 Observe that a pop-up window questions "Do you want to close CoC?"

4.14.14.2 Select "save w/o closing."

4.14.14.3 E-sign and save.

4.15 Chain-of-Custody Transfer

NOTE: *The OT/authorized individual in custody of the samples may maintain custody for the duration of the current shift rotation.*

4.15.1 OT or Authorized Individual in Custody of Samples: Relinquish custody to a qualified OT/authorized individual as follows:

4.15.1.1 Click on the AMWTP menu at the top of the screen.

4.15.1.2 Scroll to "Characterization" and then "Coring."

4.15.1.3 Scroll to "Chain of Custody" and select it.

4.15.1.4 Select "Search CoC" on the "Chain of Custody" screen.

4.15.1.5 Enter search criteria if desired (e.g., current custodian).

4.15.1.6 Click on "Search."

4.15.1.7 Locate the record associated with the samples and click on it.

4.15.1.8 Click on "Select."

4.15.1.9 Observe that the current custodian, company, and attached subsamples fields are accurate.

4.15.1.10 Place the cursor in the "Relinquished To" block and press F9.

4.15.1.10.1 Select the OT/authorized individual taking custody of the samples from the list.

4.15.1.10.2 OT/Authorized Individual Taking Custody: Inspect the samples for discrepancies, breakage, or tampering.

4.15.1.10.3 Enter sample discrepancies/comments, if necessary.

4.15.1.11 OT/Authorized Individual Relinquishing Custody: E-sign and save.

4.15.1.11.1 Observe the pop-up screen and select "Save w/o Closing."

4.15.1.12 OT/Authorized Individual Taking Custody: E-sign and save.

4.15.1.12.1 Observe the pop-up screen and select "Save w/o Closing."

4.16 Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory

NOTE: *Authorization to ship samples is granted by the ACL **prior** to shipment. This is to ensure that the FGE limit for the ACL is not exceeded.*

4.16.1 Transportation Manager or Designee: Provide assay data sheets and coring screen shots to the ACL POC.

4.16.2 Transportation Manager or Designee: Obtain authorization from the ACL to ship samples.

4.17 Samples and Chain-of-Custody Transfer to Transportation Manager

4.17.1 Click on the AMWTP menu at the top of the screen, scroll to "Characterization," then "Coring," then "Chain of Custody" and select it.

4.17.2 Select "Search CoC" on the "Chain of Custody" screen.

4.17.2.1 Enter search criteria if desired (e.g., current custodian).

4.17.2.2 Click on "Search."

4.17.2.3 Locate the record associated with the samples and click on it.

4.17.2.4 Click on "Select."

4.17.3 Ensure that the information on the CoC is correct.

NOTE: *The selection of "Print/send to lab" will close the CoC. No additional modifications will be allowed.*

4.17.4 Click on "Print/send to lab."

4.17.5 E-sign and save.

4.17.6 Observe the CoC is on the WTS computer screen.

4.17.7 Print the CoC.

4.17.8 Retrieve the samples to be shipped from refrigerated storage and retrieve the CoC.

4.17.9 Relinquish the samples from the refrigerated storage area to the shipper as follows:

4.17.9.1 Sign in the "Relinquished by" block and record the date and time.

4.17.9.2 Release the sample packages and the CoC to the Transportation personnel.

NOTE: *Personnel receiving custody of samples are required to inspect the samples for discrepancies, breakage, or tampering.*

4.17.9.3 Transportation Personnel: Inspect the sample for discrepancies, breakage, or tampering.

4.17.9.3.1 Enter sample discrepancies/comments, if necessary.

4.17.9.3.2 Transportation Personnel: Sign in the "received by" block and record the date and time.

4.17.9.3.2.1 Record in the "Comments" section, "FGE value of the parent drum used for transfer to the lab."

(RPT-NFCS-25, CWR #6)

4.17.10 Transportation Personnel: Package the samples into the transport container and ship them in accordance with MP-TRUW-8.34, WIPP Sample Shipments.

4.18 Waste Segregation Prior to Glovebox Cleanout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.18.1 **IF** prohibited liquids are discovered in an AMWTP legacy waste drum upon opening the drum (AMWTP WASTE ONLY),
THEN perform the following:

4.18.1.1 Return residual core material to the source drum.

(HWMA/RCRA Permit)

4.18.1.2 Package all secondary waste for bag-out from the glovebox.

(RPT-NFCS-25, CWR 4, 5, & 6)

4.18.1.3 DCSRS SME: Set task list for "WMF-628 treatment."

4.18.1.4 **GO TO** Step 4.19.

4.18.2 Return all remaining sample material back to the source drum.

NOTE: *The priority for waste material returned to the parent drum is as follows:*

- *Sample materials*
- *Original materials (e.g., plastic, absorbents)*
- *Secondary waste generated as a result of sampling operations.*

4.18.3 Return all original packaging material and secondary waste to the drum.

(RPT-NFCS-25, CWR 4; HWMA/RCRA Permit)

4.18.4 Remove the vacuum bag from the canister and place it in the drum being processed.

4.18.4.1 Inspect the vacuum canister and ensure that it's empty.

4.18.4.1.1 Perform dual verification that the canister is empty, and document in the appropriate operating log, as applicable.

4.18.4.2 Perform **ONE** of the following:

4.18.4.2.1 Leave vacuum canister disassembled.

OR

4.18.4.2.2 Install a new vacuum bag and reassemble the vacuum.

(RPT-NFCS-25, CWR 4)

4.18.5 Wipe down all coring tools and equipment to a visibly clean condition.

4.18.6 Return all three sections of the glovebox to a visibly clean condition.

4.18.7 Handle and package waste materials that **CANNOT** be returned to the drum as secondary waste per INST-OI-24 and in accordance with the Hazardous Waste Determination (HWD) for drum coring.

4.18.8 Segregate all metal waste that is **NOT** returned to the drum from other waste types and stage waste for bagout, as necessary

4.18.9 Ensure that any waste materials remaining in the glovebox meets NCS-exempt criteria.

4.18.9.1 Perform dual verification of the NCS-exempt determination, and document in the appropriate operating log, as applicable.

(RPT-NFCS-25, CWR 5)

4.18.10 Prepare waste for bagout, if necessary.

4.19 Drums Export from the Drum Core Sample Retrieval System

4.19.1 Remove the upper drum stabilizing clamps and stow them away from the drum transfer sleeve port.

4.19.2 Extend the portable work platforms.

4.19.3 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.19.4 Don the appropriate PPE per approved work control in accordance with PD-COPS-9.18.

4.19.5 Export drum.

4.19.6 RCT: Perform necessary radiological surveys to downgrade the radiological posting of the containment enclosure area.

4.19.7 Using a HEPA filtered vacuum, remove the trapped air from the drum transfer sleeve through the drum transfer sleeve HEPA filter.

NOTE: *Additional layers added in Step 4.19.8 will aid in cushioning the bag from the drum lid locking-ring.*

4.19.8 Place an additional layer of tape around the top lip of the drum over the drum transfer sleeve.

4.19.9 Ensure that the drum filter complies with the requirements identified in Section 3 of MP-TRUW-8.1, and CCP-PO-003.

(MP-TRUW-8.1, CCP-PO-003)

4.19.10 Perform a VE per requirements in INST-OI-34, while performing final closure of the drum.

WARNING

Improper technique or handling could cause a breach in the bag portion remaining outside the drum and result in inadvertent release of radioactive contamination. Spread of contamination may result if extreme care is not taken while replacing the locking ring and bolt assembly.

4.19.11 Use extreme care when replacing drum ring and bolt over the bag portion remaining outside of the drum.

4.19.12 **IF** unable to properly install a lid on the container
OR
IF the container has questionable structural integrity,
THEN notify the SS
AND overpack the container per INST-OI-84, Waste Container Repair and Overpack.

4.19.13 Place a drum lid with installed filter on the drum.

(HWMA/RCRA Permit)

4.19.13.1 Align the filter vent location with the Position 1 marking on the side of the drum.

4.19.13.2 Install the drum lid locking ring and bolt.

4.19.13.3 Torque the locking-ring bolt to 40 lb-ft.

4.19.13.4 Document the torque on Form-1625, M&TE Usage Report.

4.19.13.5 Torque the filter to 15 lb-ft.

4.19.13.6 Document the torque on Form-1625.

4.19.14 Document all filters installed on the "Container Filters" screen in WTS, as applicable.

4.19.14.1 Complete Form-1599, Block 5b.

4.19.15 RCT: Perform all required radiological surveys to release the drum from the coring room.

WARNING

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.19.16 Keep hands clear of pinch points and keep body parts clear of suspended load.

4.19.17 Transfer the waste drum from the lift table to the conveyor output queue.

4.20 Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking

NOTE 1: *Drum lids are secondary waste items and are managed in accordance with this section and in Section 4.22.*

NOTE 2: *Drums with volumes smaller than 55 gallons are placed into empty drum of minimum volume 55 gallons as soon as reasonably practical.*

4.20.1 Ensure that all fissile waste (non-NCS-exempt) is placed in a 55-gal drum or larger.

(RPT-NFCS-25, CWR 8)

4.20.2 **IF** the amount of waste in the satellite accumulation area (SAA) exceeds 55 gallons,
THEN place the excess waste in a second 55-gal drum
AND move the excess waste drum to an approved storage area within 3 days from when the excess occurred.

NOTE: *If the following step is applicable, the DCSRS is considered as an individual container and becomes part of the existing SAA.*

4.20.3 **IF** secondary waste remains in the DCSRS glovebox past the end of the generating shift,
THEN document the data for each individual package remaining in the glovebox in the SAA Logbook.

4.20.4 Ensure that each package of secondary waste is labeled with the following information, using a grease pencil or other suitable marking device:

- The words "Hazardous Waste"
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Package tracking number in the following format:
  (Month/Day/Year– sequential number of the package added to the SAA
  that day 01, 02, etc.).

4.20.5 **IF** waste is to remain in the DCSRS glovebox past the end of shift for the crew that generated the waste,
THEN document the data for each individual package remaining in the glovebox in the SAA logbook.

4.20.5.1 Ensure that each package of secondary waste is labeled with the following information using a permanent marker:

- The words "Hazardous Waste"
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Waste identification number in the following format (Month/Day/Year–sequential number of package generated on this day 01, 02, etc.).

4.20.5.2 Make the following entries on Form-1346, Satellite Accumulation Area (SAA) Inventory Log:

4.20.5.2.1 In the "Container or Tracking No." block, record in order the waste identification number(s) of each package.

4.20.5.2.2 Record a short description.

4.20.5.2.3 Record added and total volume.

4.20.5.2.4 Record the date added.

(MP-WM&M-13.2)

4.20.6 **IF** the SAA limit of 55 gallons, including the waste in the glovebox, is exceeded,
THEN perform the following:

4.20.6.1 Mark the SAA drum with the date that the excess occurred.

4.20.6.2 Move the SAA drum to an approved storage location within 3 days from when the excess occurred.

4.20.6.3 Immediately notify Waste Services personnel.

4.20.6.4 Notify the SS.

4.20.6.4.1 Place the drum in a safe configuration at the direction of the SS.

4.21 Soft Secondary Waste Bagout Operations

NOTE 1: *The bag out operation for drum lids and other metal items is covered in Section 4.22, Bag out of Drum Lids and Other Metal Items.*

NOTE 2: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

NOTE 3: *All non-metal secondary waste is packet assayed prior to placement in a collection container, unless determined to be NCS-exempt.*

4.21.1 RCT: Post the coring room according to the anticipated or actual radiological conditions.

4.21.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.21.3 Don the appropriate PPE per the AMOW for drum coring operations.

4.21.4 Perform secondary waste bagout operation as trained in accordance with T4140, Glovebox Operations Training, and QPSS0001, Solids Sampler Qualification Package.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.21.4.1 Use cutting tools properly.

4.21.4.2 Ensure size of waste package is limited to approximately 15 in. × 15 in. (not including closure) and 5.1 lb to prevent damage to the Lexan cover on the packet assay unit.

4.21.4.3 RCT: Perform radiological surveys of the package.

4.21.5 **REPEAT** Steps 4.21.4 and 4.21.4.3 until all applicable waste packages have been removed from the glovebox.

4.21.6 Perform a VE per requirements in INST-OI-34, as applicable.

4.21.7 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.21.8 Apply the appropriate labels to each of the packages in accordance with INST-OI-24.

CAUTION

Failure to properly use and position any approved shielding may result in invalid packet assay results.

4.21.9 Ensure that any shielding around or near the packet assay during background and standardization checks is in the same location and configuration, prior to performing packet assay on waste packages, as applicable.

OR

4.21.10 Re-perform background and standardization checks in accordance with INST-OI-17.

4.21.11 Perform a packet assay of each non-metal package removed from the glovebox per instructions contained in INST-OI-17, unless determined to be NCS-exempt.

(RPT-NFCS-25, CWR 6)

4.21.12 Enter packet assay results for all secondary waste packages in WTS, as applicable.

4.21.13 Prior to adding waste to a drum containing radiological waste, check that the lid on the drum has a vent filter.

(RPT-TSR-03, SAC 5.2.7)

4.21.13.1 **IF** vent filter is **NOT** present,
THEN STOP WORK
AND contact the SS for direction.

4.21.14 Perform the following prior to transferring waste to the SAA collection container:

4.21.14.1 **IF** waste has been packet assayed,
THEN enter the assay value +2 sigma on Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.21.14.1.1 Document dual verification that addition of the waste does **NOT** increase the FGE content to >200 FGE by signing Form-1375.

(RPT-NFCS-25, CWR 6)

4.21.14.2 **IF** waste has been determined to be NCS-exempt
THEN record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter “NA” in the fourth column
- Enter “0” in the fifth column

4.21.14.2.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.21.14.3 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.21.14.3.1 Document dual verification that addition of the waste does not increase the FGE content to >200 FGE by signing Form-1375.

4.21.14.4 Enter the information on Form-1346, if applicable.

4.21.14.5 Place waste package(s) in the collection container.

(RPT-NFCS-25, CWR 6)

4.21.15 Close and secure the collection container.

4.21.16 Perform dual verification that all waste has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.21.16.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.22 Drum Lids and Other Metal Items Bagout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.22.1 Inspect the bagout bag for rips, tears, abraded areas, intact seams, and an intact HEPA filter.

4.22.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.22.3 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.22.4 Don the appropriate PPE per the AMOW for drum coring operations.

4.22.5 Inspect drum lids for sharp edges and if detected, pad with plastic tape prior to bagout operations.

WARNING

Spread of contamination may result if extreme care is not used when docking a new bagout bag to the drum transfer sleeve-in port. The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

4.22.6 Use proper technique in bagout and bag change operations.

NOTE: *Package weight is limited to no more than 50 lb or 1/3 of body weight, whichever is less.*

4.22.7 Perform bagout of lids or other metal items.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.22.7.1 Ensure cutting tools are being used properly.

4.22.7.2 RCT: Perform necessary radiological surveys.

4.22.8 RCT: Perform a radiological survey of the lift table and containment enclosure to downgrade the radiological posting of the containment enclosure area.

4.22.9 Perform a VE per requirements in INST-OI-34, as applicable.

4.22.10 Obtain the appropriate waste package labels per INST-OI-24 and label the package appropriately.

4.22.11 Perform the following prior to transferring waste to a collection container:

4.22.11.1 **IF** waste has been determined to be NCS-exempt
THEN record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter "NA" in the fourth column
- Enter "0" in the fifth column

4.22.11.1.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.22.11.2 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.22.11.2.1 Document dual verification that addition of the waste does not increase the FGE content to >200 FGE by signing Form-1375.

4.22.11.3 Enter the information on Form-1346, if applicable.

4.22.11.4 Log the information on Form-1957, Waste Container Inventory Sheet, if applicable.

4.22.12 Place waste package(s) in the collection container.

4.22.13 Close and secure the waste container.

4.22.14 Perform dual verification that all waste debris has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.22.14.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.23 Batch Data Report Generation

4.23.1 **WHEN** completing documentation,
THEN ensure the following are performed:

A. All data is recorded legibly and accurately.

B. All changes are lined out, initialed, dated, and justified (if necessary) by the person who originally collected the data. Original data shall not be obliterated.

C. All data is transferred and reduced completely and accurately.

4.23.2 Close the batch by performing the following:

4.23.2.1 Access the "General" tab at the top of the screen and click on it.

4.23.2.2 Select "Batch."

4.23.2.3 Enter the batch ID number and press F8 to auto-populate batch data.

4.23.2.4 Enter the following information into the comments field:

- WMF-634, Coring Room
- Waste Matrix Code.

4.23.2.5 Review the information for adequacy.

4.23.2.6 Select "Close" in the "Batch Details" field.

4.23.3 Access the "Data Review" tab at the top of the screen.

4.23.3.1 Select "Batch Report."

4.23.3.1.1 Place cursor in batch type field.

4.23.3.1.2 Press F9 and select batch type.

4.23.3.1.3 Ensure that all reports are selected.

4.23.3.1.4 Place cursor in batch ID field and enter the batch ID number.

NOTE: *Requirements for Manual Batch Data Reports are outlined in MP-TRUW-8.8, Level 1 Data Validation.*

4.23.3.1.5 Ensure all fields are populated and correct.

4.23.3.1.5.1 Under section block, ensure that all fields are checked.

4.23.3.1.6 Print report.

4.23.3.1.7 Make copies of all field records, which include the following, and place them into the "Batch Data Report" folder:

- Form-1215
- Form-1585, or eSOMS equivalent and/or Form-1602, or eSOMS equivalent
- Form-1599.

4.23.3.1.8 Transfer the completed Batch Data Report to the independent technical reviewer (ITR).

4.23.4 **IF** a Manual Batch Data Report is required,
THEN perform the following:

4.23.4.1 Prepare a data folder for collection of the data reports printed from the WTS.

4.23.4.2 Select the "Data Review" screen icon at the top of the screen and click on it.

4.23.4.3 Select the "Batch Reports" option.

4.23.4.4 Enter "SSC" for the batch type.

4.23.4.5 Enter the "Batch ID" and click on "Report."

4.23.4.6 Select the following reports on the "Batch Data Report" screen:

- Batch Coversheet
- Analysis Report.

4.23.4.6.1 Select "Generate" to print the report.

4.23.4.7 Make copies of all field records, which include the following, and place them into the "Batch Data Report" folder:

- Form-1215
- Form-1585, or eSOMS equivalent, and/or Form-1602, or eSOMS equivalent
- Form-1599.

4.23.4.8 Ensure each page is numbered sequentially.

4.23.4.9 Place the reports into the "Batch Data Report" folder.

4.23.4.10 Transfer the completed Batch Data Report to the ITR.

(MP-TRUW-8.2)

4.24 Equipment Blank Requirements

NOTE 1: *The DCSRS SME performs the steps in this section.*

NOTE 2: *Equipment blanks may be performed on a purchased batch basis for sampling equipment purchased sterile and sealed in protective packaging. Equipment blanks need not be performed for equipment purchased in sealed protective packaging accompanied by a certificate certifying cleanliness.*

(MP-TRUW-8.2)

4.24.1 Ensure disposable sampling equipment, awaiting equipment blank results, are **NOT** used until analytical results have been received from the laboratory and validated.

4.24.1.1 Until analytical results are received and validated, store disposable sampling equipment in a controlled area.

4.24.2 Maintain sample collection equipment in accordance with manufacturer's specifications.

4.24.2.1 Seal clean sampling tools in clean protective wrapping and store in a clean area.

(MP-TRUW-8.2)

4.24.3 Upon receipt of a purchased batch of disposable sampling tools (spatulas, weighing pans, etc.), perform the following:

4.24.3.1 Verify that the QA acceptance tag with purchase order (PO) number is attached to the shipping carton.

4.24.3.2 Write the PO number on each shipping carton in permanent ink.

4.24.3.3 Open the shipping carton ensuring that the inner packaging is intact.

4.24.3.3.1 **IF** the inner packaging is breached and the integrity of the parts is in question, **THEN** reject the package and send it back to the warehouse for return to the vendor.

CAUTION

Handling disposable sampling equipment with bare hands may result in contaminants from your skin being transferred to the components.

4.24.3.4 Don clean surgical gloves.

4.24.3.5 Select the tools or equipment to be used for equipment blank preparation and testing, as applicable:

- Two spatulas or spoons per 100-count from each shipping carton
- Ten weighing pans per 500-count from each shipping carton.

4.24.3.6 Place the items into separate sterile sampling bags, based on lot number, and seal them.

4.24.3.7 Label each bag with the PO number, manufacturer's lot number, analysis requested, company name, and the name and phone number of the person that packaged the tools.

NOTE: *An outside vendor provides the support for cleanliness verification and the process is controlled by a statement of work and purchase requisition, as required by MP-TRUW-8.2.*

4.24.3.8 Deliver or ship the packaged tools to the personnel preparing the equipment blanks with a letter requesting equipment blanks be prepared per the statement of work attached to the purchase requisition.

NOTE 1: *The analytical results for the equipment blanks are less than three times the method detection limits for VOCs and SVOCs and less than three times the program-required detection limits for metals.*

NOTE 2: *The equipment blank results are referenced to the purchased batch PO number and manufacturer's lot number.*

NOTE 3: *The laboratory equipment blank batch number is referenced to the PO number and manufacturer's lot number.*

4.24.3.9 **WHEN** laboratory results are received and approved by the AMWTP QA Manager,
THEN perform the following:

4.24.3.9.1 Retrieve the shipping cartons labeled with the PO number/lot number associated with the laboratory report.

4.24.3.9.2 Write the laboratory equipment blank batch number (lab number) referenced in the laboratory report on each of the shipping cartons.

4.24.3.9.3 Place the materials in the common storage area.

NOTE: *These items are now available for use.*

4.24.3.9.4 Place a copy of the laboratory report into the binder labeled "Equipment Blank Documentation" located in the drum coring room.

4.25 System Shutdown

4.25.1 Turn power OFF to all audio and video recording equipment including the closed-circuit television monitors.

4.25.2 Log off at each computer terminal at the DCSRS control station.

4.25.3 Close the Air Isolation Valve MV-1 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.25.4 Close the Air Isolation Valve MV-2 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.25.5 Close the Air Isolation Valve MV-3 on the coring glovebox by turning the valve handle 90 degrees clockwise.

4.25.6 Close the Service Air Isolation Valve ¾" PA-R11-V1 on the coring glovebox 90 degrees clockwise.

4.25.7 Ensure that the local Conveyor Control Panel CP-214-010 is in AUTO.

4.26 Post-Job Review

4.26.1 SS: Perform a post-job review in accordance with MP-COPS-9.17.

4.27 Abnormal and Infrequent Operations

4.27.1 **GO TO** the appropriate abnormal and infrequent operation section from the following table based on the desired task to be performed,
THEN RETURN TO this step, if further activities will be performed:

Task	Section
Changing a glovebox glove	4.27.2
Changing a bagout bag	4.27.3
Recovery from an emergency stop (E-stop) condition	4.27.4
Recovery from a tripped light curtain	4.27.5
Dropped waste container	4.27.6
Breached container	4.27.7
Breached glovebox glove	4.27.8
Loss of room ventilation	4.27.9
Loss of glovebox ventilation (Zone 3)	4.27.10
Continuous air monitor alarm	4.27.11
Breached containment (drum transfer sleeve bag and bagout bags)	4.27.12
No heartbeat on local FTS control box	4.27.13
Alarm on local FTS control box	4.27.14
Preparation of rusted drums prior to waste drum import to DCSRS glovebox	4.27.15

4.27.2 Changing a Glovebox Glove

NOTE 1: *The glove support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The glove with glove support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place the glove with glove support ring will have expanded out, compressing the o-ring between the glove and inside diameter of the enclosure ring. The ridge or major diameter of the glove support ring will be seated in the groove on the inside diameter of the enclosure ring.*

NOTE 2: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar.*

NOTE 3: *New gloves that fail inspection criteria should not be used and should be discarded in the proper waste container.*

4.27.2.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

4.27.2.2 Inspect the glove to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.27.2.3 Remove the rubber o-ring from the glove support ring and place on a clean surface.

4.27.2.4 Place the bead of the glove into the narrow groove of the glove support ring.

4.27.2.5 Apply a light coating of vacuum grease to the o-ring.

4.27.2.6 Install the o-ring over the glove in onto the wide groove of the glove support ring.

4.27.2.6.1 Ensure that the glove is **NOT** wrinkled under the o-ring and glove bead is still in the narrow groove.

4.27.2.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.27.2.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

WARNING

Installation of glovebox gloves in any position except "Thumbs Up" may impede the operator from exiting the gloves in case of an emergency (e.g., fire or explosion).

NOTE: *The performance of Step 4.27.2.9 will result in a "Thumbs-Up" position of the glove when installed.*

4.27.2.9 Install the swaging collar over the glove and glove support ring.

4.27.2.9.1 Align the thumb of the glovebox glove with the notch in the swaging collar.

4.27.2.10 Engage the swaging collar to the bayonets on the ejection tool.

4.27.2.10.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.27.2.11 Ensure proper orientation of the glove thumb with the notch on the swaging collar.

4.27.2.12 Invert the glove into the inner housing.

4.27.2.13 Remove the plastic locking ring from the gloveport enclosure ring.

4.27.2.14 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10-o'clock position.

NOTE: *The notch and plunger on the ejection tool should be at a 12-o'clock position when the tool is properly installed on the enclosure ring.*

4.27.2.15 Rotate the ejection tool clockwise to the stop pin.

4.27.2.16 Apply light pull force on the glove and support ring to ensure proper alignment with the ejection tool and then release.

4.27.2.17 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.27.2.18 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.27.2.19 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.27.2.19.1 Remove the ejection tool from the enclosure ring.

4.27.2.20 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.27.2.20.1 Rotate the locking ring clockwise to the stop pin.

4.27.3 Changing a Bagout Bag

NOTE 1: *The bag support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The bag with bag support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place the bag with bag support ring will have expanded out, compressing the o-ring between the bag and inside diameter of the enclosure ring. The ridge or major diameter of the bag support ring will be seated in the groove on the inside diameter of the enclosure ring.*

NOTE 2: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar.*

NOTE 3: *New bagout bags that fail inspection criteria should not be used and should be discarded in the proper waste container.*

NOTE 4: *Bag support rings are fitted with two rubber o-rings which provide additional stability.*

4.27.3.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

4.27.3.2 Inspect the bag to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.27.3.3 Remove the rubber o-rings from the glove support ring and place on a clean surface.

4.27.3.4 Place the o-ring of the bag into the narrow groove of the bag support ring.

4.27.3.5 Apply a light coating of vacuum grease to the o-rings.

4.27.3.6 Install the o-rings over the bag and onto the wide grooves of the bag support ring.

4.27.3.6.1 Ensure that the bag is **NOT** wrinkled under the o-rings and bag o-ring is still in the narrow groove.

4.27.3.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.27.3.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

4.27.3.9 Reach through the ring to the bottom of the bag and grip it.

4.27.3.10 Pull the bag all the way back through the ring.

4.27.3.11 Smooth and straighten the bag.

4.27.3.12 Reach through the ring to the bottom of the bag again, and grip it.

4.27.3.13 Pull the bag back on itself until it is approximately 1 in. from the bag support ring.

4.27.3.14 Flatten and smooth the bag and roll it up completely, toward the ring.

4.27.3.15 Place the bag inside the inner housing of the ejection tool, with the bag ring on the open end of the ejection tool.

4.27.3.16 Install the swaging collar over the support ring.

4.27.3.17 Engage the swaging collar to the bayonets on the ejection tool.

4.27.3.17.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.27.3.18 Remove the plastic locking ring from the gloveport enclosure ring.

4.27.3.19 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10-o’clock position.

4.27.3.20 Rotate the ejection tool clockwise to the stop pin so that the notch and plunger are at the 12-o'clock position, ensuring that the plunger is properly installed on the enclosure ring.

4.27.3.21 Apply light pull force on the bag and support ring to ensure proper alignment with the ejection tool and then release.

4.27.3.22 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.27.3.23 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.27.3.24 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.27.3.24.1 Remove the ejection tool from the enclosure ring.

4.27.3.25 **IF** the previous bag support ring and bag stub have **NOT** fully disengaged from the inside of the enclosure ring, **THEN** use light hand pressure to free them from the port to the inside of the glovebox.

4.27.3.26 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.27.3.26.1 Rotate the locking ring clockwise to the stop pin.

4.27.4 Recovery from an Emergency Stop (E-Stop) Condition

NOTE 1: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

NOTE 2: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.4.1 Go to Safety Panel CP-250-803 and observe that the E-Stop light indicator is illuminated.

4.27.4.1.1 **IF** the emergency condition has been eliminated,
THEN turn the key on the E-Stop Control at Safety Panel CP-250-803 to RESET
AND back to RUN.

4.27.4.2 Go to Electrical Distribution Panel BDP-232-003 and reset Shunt Trip Breakers.

4.27.4.3 Go to the HMI computer terminal at the DCSRS control station.

4.27.4.3.1 Click on "Continue in Auto" using the mouse.

4.27.4.3.2 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

NOTE 1: *Performance of the following step acknowledges and clears the condition.*

NOTE 2: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.4.3.3 Using the mouse, clear the fault on the HMI computer terminal by double clicking on dark red highlighted warning on the "Alarm Message Bar."

4.27.4.3.4 Click on "Acknowledge All" on the pop-up screen.

4.27.4.3.5 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.5 Recovery from a Tripped Light Curtain

NOTE 1: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

NOTE 2: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar," highlighted in bright red.*

4.27.5.1 Go to Safety Panel CP-250-803 and observe that the Curtain Trip light indicator is illuminated.

4.27.5.2 Clear the condition by depressing the CURTAIN RESET button with the Curtain Control key in the UNLOCK position.

4.27.5.3 Go to the HMI computer terminal at the DCSRS control station.

4.27.5.3.1 Click on "Continue in Auto."

4.27.5.3.2 Observe that the bright highlighted warning on the "Alarm Message Bar" is dark red.

4.27.5.3.3 Clear the fault on the HMI computer terminal by double clicking on dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.5.3.4 Click on "Acknowledge All" on the pop-up screen.

4.27.5.3.5 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.5.3.6 Core retrieval, upon direction from the SS.

4.27.6 Dropped Waste Container

4.27.6.1 Suspend operations.

4.27.6.2 Warn others in the area.

4.27.6.3 Shut down transport equipment, if applicable.

4.27.6.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.6.5 Isolate the area to prevent others from entering.

4.27.6.6 Notify RCT and SS immediately.

4.27.6.7 Reference INST-OI-11, Waste Container Handling, for direction on handling dropped waste containers.

4.27.7 Breached Container

4.27.7.1 Suspend operations.

4.27.7.2 Warn others in the area.

4.27.7.3 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.7.4 Isolate the area to prevent others from entering.

4.27.7.5 Notify RCT and SS immediately.

4.27.7.6 Reference INST-OI-11 for direction on handling breached waste containers.

4.27.8 Breached Glovebox Glove

WARNING

Exiting the gloves greatly increases the potential for spread of contamination.

4.27.8.1 **IF** working in the glovebox gloves at the time of discovery, **THEN** perform the following:

4.27.8.1.1 Limit movement.

4.27.8.1.2 Do **NOT** exit the gloves.

4.27.8.1.3 Call for the immediate assistance of a RCT.

4.27.8.1.4 Perform a controlled exit from the glovebox gloves under the direction of the RCT.

4.27.8.1.5 Notify the SS.

4.27.8.1.6 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.27.8.1.7 Change the glove.

4.27.8.1.8 RCT: Perform necessary surveys to verify new glove is radiologically clean.

4.27.8.2 **IF NOT** working in the glovebox gloves at the time of discovery,
THEN perform the following:

4.27.8.2.1 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.27.8.2.2 Notify RCT and SS.

4.27.8.2.3 Change the glove.

4.27.9 Loss of Room Ventilation (Zone 2)

4.27.9.1 Suspend operations.

4.27.9.2 Warn others in the immediate area.

4.27.9.3 Place equipment in a safe configuration.

NOTE: *Electrical power to the drill motors and lift fixture is automatically shut off upon loss of Zone 2 ventilation. The Zone 2 HVAC fault light will be illuminated on Safety Panel CP-250-803*.

4.27.9.4 Notify the SS immediately.

4.27.9.5 Restore Zone 2 ventilation per INST-OI-33 when directed by the SS.

4.27.9.6 Resume normal operations only when directed by the SS.

4.27.9.7 Go to Safety Panel CP-250-803 and observe that the Curtain Trip light indicator is illuminated, and the Zone 2 HVAC Fault light is off.

NOTE: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red*.

4.27.9.8 Clear the light curtain fault by depressing the CURTAIN RESET button with the Curtain Control key in the UNLOCK position.

NOTE: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

4.27.9.9 Go to the HMI computer terminal at the DCSRS control station.

4.27.9.9.1 Click on "Continue in Auto" using the mouse.

4.27.9.9.2 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

4.27.9.9.3 Using the mouse, clear the fault on the HMI computer terminal by double clicking on the dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.9.9.4 Click on "Acknowledge All" on the pop-up screen.

4.27.9.9.5 Observe that the alarm message(s) are removed from the "Alarm Message Bar."

4.27.10 Loss of Glovebox Ventilation (Zone 3)

4.27.10.1 Suspend operations.

4.27.10.2 Warn others in the immediate area.

4.27.10.3 Place equipment in a safe configuration.

NOTE 1: *Audible and visual alarms will activate when glovebox differential pressure meets out of tolerance limits.*

NOTE 2: *All electrical power supplied to the glovebox is automatically shut off upon loss of ventilation. The Zone 3 HVAC Fault indicator light on Safety Panel CP-250-803 will be illuminated. The Dust Vacuum Fault light will also be illuminated if the vacuum is running.*

NOTE 3: *The fault condition will also be observed on the HMI computer terminal on the "Alarm Message Bar" highlighted in bright red.*

4.27.10.4 Evacuate the affected area and perform a self survey.

4.27.10.5 Isolate the area to prevent others from entering.

4.27.10.6 Notify the RCT and SS immediately.

4.27.10.7 Secure Zone 2 ventilation per INST-OI-33.

4.27.10.8 **WHEN** directed by the SS,
THEN restore Zone 2 and Zone 3 ventilation per INST-OI-33.

4.27.10.9 Resume normal operations only when directed by the SS.

4.27.10.10 Go to the Electrical Distribution Panel BDP-232-003 and reset Shunt Trip Breakers.

4.27.10.11 Go to Safety Panel CP-250-803, and observe that the Zone 2 and Zone 3 HVAC fault light indicators are off.

4.27.10.12 Go to the HMI computer terminal at the DCSRS control station.

NOTE: *The "Recovery" screen will automatically pop up on the HMI computer terminal after a fault condition.*

4.27.10.12.1 Click on "Continue in Auto" using the mouse.

4.27.10.12.2 Observe that the bright red highlighted warning on the "Alarm Message Bar" is dark red.

4.27.10.12.3 Using the mouse, clear the fault on the HMI computer terminal by double clicking on the dark red highlighted warning on the "Alarm Message Bar."

NOTE: *Double clicking on the "Alarm Message Bar" will bring up a pop-up screen.*

4.27.10.12.4 Click on "Acknowledge All" on the pop-up screen.

4.27.10.12.5 Observe that the alarm message(s) are removed from the "Alarm Message" bar.

4.27.11 Continuous Air Monitor Alarm

4.27.11.1 Suspend operations.

4.27.11.2 Warn others in the affected area.

4.27.11.3 Place coring equipment in a stable condition by depressing one of three E-Stops located on the coring glovebox or at the DCSRS control station.

4.27.11.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.27.11.5 Isolate the area to prevent others from entering.

4.27.11.6 Notify the RCT and SS immediately.

4.27.11.7 Resume normal operations only when directed by the SS.

4.27.12 Breached Containment (Drum Transfer Sleeve Bag and Bagout Bags)

4.27.12.1 Suspend operations.

4.27.12.2 **IF** the breach occurs while donned in the appropriate PPE for the operation,
THEN repair the breach at the direction of the RCT and notify the SS.

4.27.12.3 **IF** breach occurs during normal operations where respiratory protection is **NOT** required
AND IF a core drilling operation is in progress,
THEN place coring equipment in a stable condition by depressing one of three E-Stops located on the coring glovebox or at the DCSRS control station.

4.27.12.4 Evacuate the affected area and stand by for RCT to perform personnel survey.

4.27.12.5 Warn others in the immediate area.

4.27.12.6 Isolate the area to prevent others from entering.

4.27.12.7 Notify the RCT and SS immediately.

4.27.12.8 Repair the breach at the direction of the RCT.

4.27.12.9 Resume normal operations only when directed by the SS.

4.27.13 No Heartbeat on Local FTS Control Box

4.27.13.1 Contact the FTS administrator.

4.27.13.2 Stop the import of any drums to the DCSRS glovebox until the problem is corrected.

4.27.13.3 Resume normal operations only when directed by the SS.

4.27.14 Alarm on Local FTS Control Box

4.27.14.1 Contact the assay control room and determine the alarm condition indicated on the FTS workstation.

NOTE: *An incomplete record indicates the transfer of data is not complete for this drum.*

4.27.14.2 **IF** the alarm is an incomplete record,
THEN perform the following:

4.27.14.2.1 Set the drum with incomplete data aside.

4.27.14.2.2 Contact the FTS administrator.

4.27.14.2.3 Resume operations on the drum with incomplete data only when directed by the SS.

4.27.15 Preparation of Rusted Drums Prior to Waste Drum Import to DCSRS Glovebox

NOTE 1: *Surface rust poses a potential threat to the integrity of the tape seal used to attach the drum transfer sleeve to the drum.*

NOTE 2: *Operations and Radiological Safety personnel make a determination whether conditions warrant the use of this section of this instruction.*

4.27.15.1 RCT: Set up the drum coring room and post the area according to anticipated or actual radiological conditions.

4.27.15.2 Don the appropriate PPE per approved work control per PD-COPS-9.18.

4.27.15.3 Place suitable material on the floor in the area approved for this work, if necessary.

NOTE: *This material will be used to catch loose debris that falls from the drum during the cleaning process.*

4.27.15.4 Move the drum to the approved work area in accordance with INST-CMNT-10.8.2, Production Lifting Activities.

NOTE: *The locking ringbolt may be extremely corroded. Normal means of loosening and removing the bolt may not be possible. In these cases, the bolt may be cut using an appropriate tool (example, porta-band, saws all, etc.).*

4.27.15.5 Remove the locking ringbolt.

4.27.15.6 Remove the locking ring using the appropriate tools.

4.27.15.7 RCT: Perform required radiological surveys.

4.27.15.8 Apply localized ventilation using a HEPA-filtered exhaust vacuum under the area to be scraped and prepared, if necessary.

4.27.15.9 Remove as much of the loose surface rust, as possible, between the top lip and the top chine of the drum using an appropriate tool (i.e., wire brush, scraper, etc.).

4.27.15.10 Wipe this area with a damp wipe and dry using an additional clean wipe.

4.27.15.11 Tape the drum lid to the drum using suitable tape.

4.27.15.12 Tightly wrap cargo or duct tape over the prepared surface until a smooth surface is achieved.

4.27.15.13 Place a new lid-locking ring with bolt on the drum and secure in place, unless the drum is to be immediately docked to the DCSRS glovebox.

4.27.15.14 Apply shrink-wrap to the drum between the top and bottom chine, if necessary, to protect the integrity of drum transfer sleeve.

4.27.15.15 Continue with normal operations.

5.0 DEFINITIONS

Co-located core sample. Duplicate sample taken from a second core placed at the same location within the drum and is collected to verify the precision of the coring and sampling procedures.

Criticality working requirement. Term used to designate requirements of the AMWTP Criticality Safety Analysis.

Fissile gram equivalent ^{239}Pu (^{239}Pu FGE). Grams of fissile material normalized to ^{239}Pu, calculated in accordance with the MP-TRUW-8.1.

Integrated Control System. The purpose of the ICS is to provide control, monitoring, and intercession of AMWTF systems from one or more computer workstations. The ICS provides automatic running of the system, manual running of the system, individual device manipulation, remote and local monitoring, alarm functions, stop and abort functions, trouble-shooting/diagnostics, immediate dynamic and historical information.

Initial/primary core sample. The first sample taken from any drum.

Inorganic homogeneous solids. Any homogenous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates.

Kerf width. One-half of the difference between the outer diameter of the tool and the inner diameter of the tool's inlet.

Liquids, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing visual examination of the waste. This term can be implemented consistently during characterization regardless of waste type.

NCS-exempt. Material (e.g., soil, waste, debris) that has **ONE** of the following characteristics

1. Contains a fissionable nuclide concentration not exceeding 0.072 FGE/L. This limit is equivalent to 15 FGE ^{239}PU within a nominal 55-gal volume.

2. Is an item considered to be solid, dense, and contains no voids or hidden recesses/crevices and only has fixed surface contamination (i.e., would require physical scraping or soaking in solvents to remove the contamination). The item must be orders of magnitude larger than the total volume of contamination present and the contamination volume must be less than the volume of a golf ball (as determined if it could all be removed).

Organic homogeneous solids. Any homogenous materials consisting of sludge or organic-based liquids that are solidified with cement, calcium silicate, or absorbed on solid material. Examples are cemented organic resins, organic liquids (solvents, oils, grease) absorbed on solid material.

Resample. A sample that is taken when the initial core sample does not meet the 50% core sample recovery requirements.

Semi-volatile organic compound. A general term for organic compounds that volatilize at a relatively slow rate at standard temperature and pressure (20°C @ 1 atm).

Source drum. The drum containing the original waste.

Visibly clean. No evidence of residue or staining on equipment or tools.

Volatile organic compound. A general term for organic compounds capable of a high degree of vaporization at standard temperature and pressure (20°C @ 1 atm).

Zone 3. Contained contaminated area, which is accessible only by personnel wearing the appropriate personal protective equipment.

6.0 REFERENCES

(1) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)

(2) ALARA Job Review (current revision)

(3) AMWTP DMS Core Sampling User Requirements Specifications, No. 16784-02C

(4) AMWTP HWMA/RCRA Permit

(5) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods

(6) CAT 1 and CAT 2 Air Exemptions for WMF-634

(7) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(8) INST-CMNT-10.8.2, Production Lifting Activities

(9) INST-COPS-9.20.1, Lockout/Tagout

(10) INST-FOI-27, FTS Operations

(11) INST-OI-11, Waste Container Handling

(12) INST-OI-16, Drum Coring Operations

(13) INST-OI-17, DCSRS Packet Assay Systems Operations

(14) INST-OI-24, Packaging Radioactive Waste

(15) INST-OI-33, Characterization Facility HVAC Systems Operations

(16) INST-OI-34, Non-Facility Visual Examination Operations

(17) INST-RS&C-6.9.1, Soft-Sided Containments

(18) MP-COPS-9.17, Performing Per-Job Briefings and Post-Job Reviews

(19) MP-DOCS-18.2, Records Management

(20) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(21) MP-RTQP-14.4, Personnel Qualification and Certification

(22) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(23) MP-TRUW-8.2, Quality Assurance Project Plan

(24) MP-TRUW-8.8, Level I Data Validation

(25) MP-TRUW-8.34, WIPP Sample Transfers

(26) MP-WM&M-13.2, Satellite Accumulation Areas

(27) PD-COPS-9.18, Work Control

(28) RPT-ESH-071, Category I and Category II Exemption for the AMWTP Characterization Facility

(29) RPT-NFCS-15, Criticality Safety Evaluation for TSA-RE Retrieval Operations

(30) RPT-NFCS-25, Criticality Safety Evaluation (CSE) Involving the Drum Core Sample Retrieval System

(31) RPT-TSR-03, Technical Safety Requirements

(32) TSCA RBDA, EPA Approval of TSCA RBDA for the Absorption of PCB-Contaminated Liquids

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-73, Case File	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1136, Radiological Safety Soft Sided Containment (SSC) Inspection	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1215, Analytical Balance Calibration Check Sheet	Nonpermanent WIPP/ENV1-J-1/Destroy 5 years after submittal
Form-1346, Satellite Accumulation Area (SAA) Inventory Logsheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1375, Container Fissile Gram Inventory Log 200 FGE Limit (Drum) 325 FGE Limit (Box)	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1585, Refrigerator Temperature Logsheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1599, AMWTP Solid Sampling Checklist	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1602, Characterization Round Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1625, M&TE Usage Report	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1699, Drum Coring/VE Log, or eSOMS equivalent	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1789, Continuation Log, or eSOMS equivalent	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1957, Waste Container Inventory Log Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility

8.0 EXHIBITS

Exhibit 1. Laboratory Required Sample Amounts and Container Sizes

Exhibit 2. Punch Barrel Assembly (DBS)

Sample Amounts and Container Requirements for a Single Core Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	1	20-mL VOA vial	Purgeable VOC	Yes
2	2.5–3.0 grams	1	20-mL VOA vial	NHVOC	Yes
3	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either Purgeable VOC or NHVOC	Yes
*4	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Hydazine	Yes
*5	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Formaldehyde	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination Sample for Metals and SVOCs	Yes

* Only required for Savannah River Site generated waste streams.

Sample Amounts and Container Requirements for a Co-located Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	3	20-mL VOA vial	Purgeable VOC + QC	Yes
2	2.5–3.0 grams	3	20-mL VOA vial	NHVOC + QC	Yes
3	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either Purgeable VOC or NHVOC	Yes
*4	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Hydazine	Yes
*5	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Formaldehyde	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination Sample for Metals and SVOCs	Yes

* Only required for Savannah River Site generated waste streams.

Exhibit 1. Laboratory Required Sample Amounts and Container Sizes.

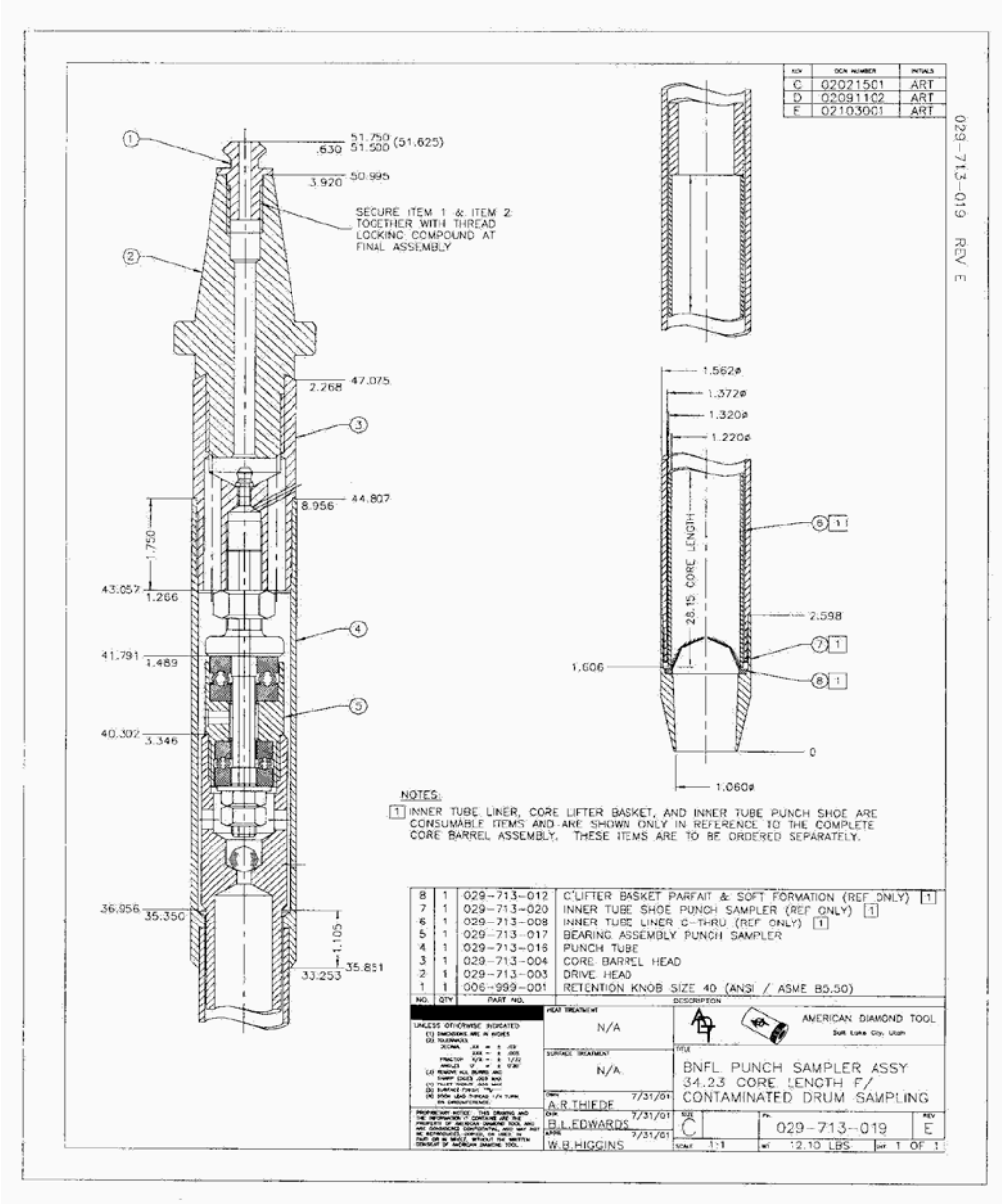

Exhibit 2. Punch Barrel Assembly (DBS).

9.0 APPENDICES

Appendix A – Necessary Consumable Items and Tools

Appendix B – Revision Log

Appendix A – Necessary Consumable Items and Tools

Consumable Items

Core barrel	2-in. tape
Core liners	1.5-in. double-sided tape
Core liner caps	Appropriately sized waste packaging bags
Sample containers	
Weighing boats	Large rubber bands
Disposable sampling tool	Custody seals
Bagout bags	Steel band clamps
Drum transfer sleeve with HEPA filter	Glovebox gloves
	Vacuum bags
Disposable wipes	Drum lids
Disposable gloves	Filters
Disposable transfer containers	Lid bags
Box knives	Blank VHS or mini-DV tapes.

Tools

The following tools necessary to perform the work are available:

- Core bit disassembly tools
- Ratchet and sockets
- Drum lid removal tools
- Calibrated torque wrenches
- Calibrated electronic balances
- Scoops
- Portable air mover with HEPA filtered exhaust
- Glovebox glove changing tools
- Bag knife
- Box knife
- Hammer.

Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	03/28/07	All	DCR-5761. Initial issue. Created operating instructions for manual coring operations. Incorporated DOE comments. Incorporated CBFO comments. Incorporated comments per 03/27/07 CBFO conference call.
0 FC-1	06/27/07	15, 81, 82,105	DCR-6022. Addition of Form-1602 for documenting temperature checks.
1	07/18/07	All	DCR-6216. Incorporated DCR-6022 (FC-1), changed procedure to General Use, and revised Job Debrief section.
2	04/07/08	Various	DCR-6606. Procedure updated to transportation transition to CCP. No other changes made to this procedure. Being processed as GAP Review per MP-DOCS-18.4, Document Control.
3	07/24/08	Various	DCR-7089. Updated for current operational flow and consistency and to bring into line with Form-1599. Updated roles and responsibilities and rolldown requirements. Applied DOCS-BLUESHEET-01 changes.
3 FC-1	07/29/08	22/4.3.14	DCR-7400. Enhance step for WTS functionality.
4	01/28/09	Various	DCR-7418. Incorporated FC-1 (DCR-7400). Added steps to implement current DSA and eliminated steps dealing with the treatment of liquids. Editorial changes made including updating document owner title, correcting references, and moving revision log to Appendix D per standard INST template and MP-DOCS-18.1.
4 FC-1	03/26/09	44	DCR-8195. Procedure clarification from incorporation of DCR-3274.

Revision Number	Date Approved	Pages Affected	Description of Revision
5	08/22/09	Various	DCR-8557. Incorporate field change and added DOCS-BLUESHEET-02 changes.
5 FC-1	09/03/09	16, 73, 75, A2	DCR-8626. Appropriate method for determining FGE on metal waste.
6	03/24/10	Various	DCR-8715. Added FC-1 DCR-8626. Incorporated hazard assessment HA-N-043 changes in Section 3.2, made editorial changes to bring in line with INST-OI-16, and added changes per roundtable.
6 FC-1	05/10/10	Page 10	DCR-9213. Change made to resolve CAR 49662, incorporating alternate isolation device information
7	06/30/10	Various	DCR-9229. Incorporated DCR-9213. Changes to incorporate WIPP Permit modification.
8	12/07/10	Section 2.0	DCR-9699. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual.
9	03/14/11	Various	DCR 9839. Annual TSR update, remove word “previously.” Made changes needed for SRS offsite shipment.
10	07/25/11	Various	DCR-10109. Made changes throughout the document in order to appropriately convert from General Use to Controlled Activity use-type. Removed some antiquated steps (e.g., VE section).
10 FC-1	08/16/11	Pgs 14, 63, & B2	DCR-10284. Change needed for new laboratory requirements for trip blanks.
11	01/26/12	Various	DCR-10402. Incorporated FC-1 (DCR-10284) and incorporated ITG bluesheet-020**.**

Revision Number	Date Approved	Pages Affected	Description of Revision
12	03/28/12	Various	DCR-10913. Entire document revised. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also changed to make it consistent with other DCSRS documents.
12 FC-1	04/02/12	Various	DCR-11089. Added steps to perform VE where required and clarification of NCS-exempt waste.
12 FC-2	04/08/12	Pg 75	DCR-11116. Allow use lid with any style filter installed.
13	06/07/12	Various	DCR-11195. Incorporated FC-1 (DCR-11089) and FC-2 (DCR-11116). Revised steps to incorporate CBFO audit recommendations and deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted “bung type” so that any type filter may be installed.

Container-in-Container Sampling

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11240.*) 06/07/12

Brian Warner — Date

Characterization Lead

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed.)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

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Appendix A – Small Container Sampling Required Items List A1

Appendix B – Revision Log B1

AMWTP INSTRUCTION		
INST-OI-75, Rev. 11	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Container-in-Container Sampling

1.0 PURPOSE/SCOPE

This document provides detailed instructions for performing container-in-container activities of transuranic (TRU) homogeneous or soil/gravel (S3000 or S4000) waste streams using a container grab sampling method at the Advanced Mixed Waste Treatment Project (AMWTP). The homogeneous solids (or soil/gravel) waste streams that are amenable to a grab method sampling technique are contained in other than a monolithic form. This includes S3000 and S4000 waste packaged in metal or plastic containers, and in plastic bags. Samples are analyzed for total metals, *volatile organic compounds* (VOCs; see def.) and *semi-volatile organic compounds* (SVOCs; see def.).

The scope includes the selection, acquisition, preparation, removal, and control of the sample using an approved chain-of-custody (CoC) form, and related activities performed within the confines of a *Zone 3* (see def.) glovebox or enclosure. Wastes to be sampled, processed, or examined include *inorganic homogeneous solids* (see def.), *organic homogeneous solids* (see def.), and soil/gravel.

Treatment of S3000 and S4000 mixed waste through absorption, neutralization, and decanting is allowed in accordance with the Hazardous Waste Management Act/Resource Conservation Recovery Act (HWMA/RCRA) Permit, with the **exception** of polychlorinated biphenyl (PCB) liquids, and is authorized within the scope of this document.

(HWMA/RCRA Permit; TSCA RBDA)

Additionally, this procedure provides a means to perform visual examination (VE) using the Drum Core Sample Retrieval System (DCSRS) glovebox independent of sampling activities.

Finally, this procedure provides direction for the Transportation Manager or designee to obtain authorization for shipment of samples to the Analytical Chemistry Laboratory (ACL).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Authorized Individual (Qualified Operations Technician [OT] or Characterization Shift Supervisor [SS] or Designee)	• Accepts and relinquishes chain of custody (in the Waste Tracking System [WTS]) • Authorizes (SS or designee only) manual moves for samples in WTS.

Performer	Responsibilities
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction • Performs limited radiological surveys, as required.
Radiological Control Technician (RCT)	• Provides support for operations including, but not limited to, performing radiological surveys • Sets up and posts the containment enclosure • Ensures that the containment enclosure has been inspected and that Form-1136, Radiological Safety Soft-Sided Containment (SSC) Inspection, is attached to the tent prior to docking operations • Sets up and posts radiological conditions in coring room or areas approved for work.
Visual Examination Operator (VEO)	• Performs tasks and WTS data entry associated with examination and real-time radiography (RTR)/visual examination updates (RVUs) in accordance with INST-OI-34, Non-Facility Visual Examination Operations.
SS	• Verifies that the container update has been performed • Makes notifications to Environmental, Safety, and Health (ES&H), Acceptable Knowledge (AK) manager, and criticality safety officer or criticality safety engineer • Performs supervisory role in WTS • Suspends operations • Performs pre-job briefings and post-job reviews.
Transportation Personnel	• Inspects samples for discrepancies and signs and records date and time received shipment • Signs the CoC • Packages the samples into transport containers and ships in accordance with MP-TRUW-8.34, WIPP Sample Shipments.
DCSRS Subject Matter Expert (SME)	• Provides TRU Programs oversight for coring and solids sampling operations • Performs steps in Section 4.16, Equipment Blank Requirements • Sets task list on container for treatment when required.

Performer	Responsibilities
Transportation Manager or Designee	• Provides assay and coring data to the ACL as required • Obtains authorization from ACL to ship samples • Prepares samples for transfer • Transfers samples to the ACL.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 Treatment of liquids associated with item description code (IDC) RF-003, Organic Setups/Oil Solids, is prohibited.

(TSCA RBDA)

3.1.2 Prior to acceptance of a drum into DCSRS, the fissile gram equivalent (FGE) content of the drums SHALL be verified via WTS to be ≤ 200 FGE (including 2 sigma uncertainty).

(RPT-NFCS-25, CWR 1)

3.1.3 Verification that the FGE content of the drums SHALL be verified via the Fissile Tracking System (FTS) to be ≤ 200 FGE (including 2 sigma uncertainty) prior to acceptance of the drum into the DCSRS glovebox.

(RPT-NFCS-25, CWR 2)

3.1.4 Only one *source drum* (see def.) containing ≤ 200 FGE (including 2 sigma uncertainty) SHALL be processed/opened at a time within the coring room. Dual verification that other drums in the coring room are closed SHALL be performed.

(RPT-NFCS-25, CWR 3)

3.1.5 After processing a drum and prior to the introduction of the next drum for processing, all waste including liquids/spills and any waste generated as a result of processing, not determined to be Nuclear Criticality Safety *(NCS)-exempt* (see def.), SHALL be removed from the glovebox and the vacuum cleaner by returning the waste to the drum being processed or packaged appropriately into a collection drum. Dual verification that all non-NCS-exempt waste has been removed SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 4)

3.1.6 Any waste NOT removed from the glovebox after a cleanout SHALL be determined to be NCS-exempt. Dual verification of the NCS-exempt determination SHALL be performed prior to processing waste from another drum in the glovebox.

(RPT-NFCS-25, CWR 5)

3.1.7 Collection drums SHALL meet **ONE** of the following criteria:

3.1.7.1 Waste added to the collection drum SHALL be packet assayed prior to placing it into the drum to ensure that the FGE content of the drum remains ≤ 200 FGE (including a 2 sigma uncertainty). Dual verification that the addition of the waste to the drum does not increase the FGE content to >200 FGE (including a 2 sigma uncertainty) SHALL be performed prior to placing the debris in the drum.

OR

3.1.7.2 If waste added to the collection drum has an unknown FGE content, then the waste added to the collection drum SHALL be assigned the FGE content of the parent drum. The collection drum SHALL be controlled to ≤ 200 FGE using dual verification.

OR

3.1.7.3 Prior to placing NCS-exempt waste into collection drum or NCS-exempt container, dual verification of NCS-exempt determination SHALL be performed.

(RPT-NFCS-25, CWR 6)

3.1.8 The total volume of samples within the refrigerator shall be less than 15 liters. This shall be ensured by using physical restrictions within it.

(RPT-NFCS-25, CWR 7)

3.1.9 Collection drums used for non-NCS-exempt waste SHALL be nominal 55-gal or diametrically larger drums (i.e., has an internal diameter of ~57 cm [22.5 in.] or greater).

(RPT-NFCS-25, CWR 8)

3.1.10 Personnel must ensure that daily performance checks are current on radiological monitoring instruments.

3.1.11 Packet assay systems used for determining the quantity of fissile material within a package shall be performance checked (background and standardization) within the same shift in accordance with INST-OI-17, DCSRS Packet Assay System Operations.

3.1.12 Liquid waste is not acceptable at the Waste Isolation Pilot Plant (WIPP). Liquid in the quantities delineated below is acceptable:

- *Observable liquid* (see def.) shall be no more that 1% by volume of the outermost container at the time of radiography or VE.
- Internal containers with more than 60 milliliters or 3% by volume observable liquid; whichever is greater, is prohibited.
- Containers with hazardous waste number U-134 assigned shall have no observable liquid.
- Containers with PCB material shall have no liquid.
- Overpacking the outermost container that was examined during radiography or VE or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

(CCP-PO-003; MP-TRUW-8.1; MP-TRUW-8.2)

3.1.12.1 Liquids containing PCBs are prohibited at WIPP.

(MP-TRUW-8.1)

3.1.13 Throughput on the drum coring system is restricted to 3 drums per day.

(RPT-ESH-071; MP-TRUW-8.2)

3.1.14 Sampling equipment shall be properly maintained to avoid contamination. Visual contamination on any equipment that has the potential to contaminate a waste core or waste sample shall be thoroughly cleaned upon its discovery.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.15 Cleaned sampling and coring equipment will be physically segregated from all equipment that has been used for a sampling event and has not been decontaminated.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.16 The cleaning and inspection of sampling tools and glovebox support equipment shall be completed as required.

3.1.17 Sampling shall be conducted as soon as possible after core collection.

(MP-TRUW-8.2)

3.1.18 All samples collected for the AMWTP have CoC from the time of collection through receipt at the laboratory.

(**MP-TRUW-8.2)**

3.1.18.1 The CoC includes sample collection and shipping information. Information to be recorded includes, but is not limited to: date, time, sampler(s), location(s), unique sample identifier, analysis requested, shipping information, preservative(s), comment(s), and transfer signature(s).

(MP-TRUW-8.2)

3.1.18.2 The comments include any special instructions and safety information associated with the samples. Electronic CoC forms with electronic signatures are acceptable.

(MP-TRUW-8.2)

3.1.19 Substantial delays in excess of 60 minutes or more requires that the core tube liner be capped and remain capped until sampling can take place.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.20 All samples collected are under physical custody. Physical custody is defined as a sample in the possession of an authorized individual, in that individuals view, in a sealed or locked container controlled by that individual, or in a secure controlled access location.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.21 Personnel must perform self-monitoring using a radiological monitoring instrument each time the glovebox gloves are exited.

3.1.22 For the purpose of preventing cross contamination between core samples, no more than one core shall be processed and sampled at any given time.

3.1.23 Personnel must minimize coring room differential pressure (D/P) alarm (PDAL029) actuation by ensuring air-lock vestibule door is not opened at the same time as the coring room door.

3.1.24 A high standard of housekeeping should be maintained in the glovebox to minimize contamination levels and reduce the risk of injury.

(ALARA Job Review [current revision])

3.1.25 At least one continuous air monitor (CAM), or equivalent air sampling, should be operating in the relevant location (i.e., east wall for general room operations, adjacent to drum port for all drum-bagging operations).

(ALARA Job Review [current revision])

3.1.26 Local high-efficiency particulate air (HEPA) filtered extract is required for all drum-bagging operations. This should be provided with a nozzle to maximize capture of any activity released during these operations. The extract should be positioned close to the bagging area during operations.

(ALARA Job Review [current revision])

3.1.27 The sample refrigerator will be powered from Circuit Number 16 of BDP-232-003 to ensure backup power is available in case of a power outage.

3.1.28 Cancelled core samples that physically exist outside the glovebox will be handled as waste and packet assayed prior to placement in a waste container.

(RPT-NFCS-25, CWR 6)

3.1.29 Alternative methods for hazardous energy control are used in this procedure for servicing tasks that are routine, repetitive, and integral to the use of the equipment for production in accordance with MP-COPS-9.20, Hazardous Energy Control Processes.

3.1.29.1 Sampling gloveports (55–59) and Gloveports 3, 4, 8, and 9 are not in proximity to any hazardous energy and are excluded from the light curtain interlock system requirements.

3.1.29.2 Access to gloveports not protected by light curtain or safety gate interlock, other than those listed above, when specific mechanical hazards exists, will be covered per work control process; PD-COPS-9.18, Work Control, and INST-COPS-9.20.1, Lockout/Tagout.

3.1.30 Clean sampling and coring tools and sampling equipment shall be sealed inside clean protective wrapping and maintained in a clean storage area prior to use. Coring tools with torn protective wrapping shall not be used, and shall be returned to the warehouse. Items with defective packaging are documented on Form-1599, AMWTP Solid Waste Sampling Checklist, Blocks 7a through 7e.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.31 Expendable equipment (e.g., sampling tools) shall be visually inspected for cleanliness prior to use and properly discarded after each sample.

(HWMA/RCRA Permit; MP-TRUW-8.2)

3.1.32 Sample coring tools and sampling equipment are identified with unique equipment numbers to provide traceability to equipment cleaning batches.

3.1.33 Custody seals are affixed to each sample container upon removal from the sampling glovebox. The custody seals may be placed either on the individual bottles or on the package containing the sample containers. A CoC record is assigned to each sample or group of samples.

(MP-TRUW-8.2)

3.1.34 Drum and bag filters shall comply with CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP-CH-TRAMPAC).

(CCP-PO-003)

3.1.35 The samples must be preserved by cooling to 4°C.

3.1.35.1 The sample refrigerator temperature shall be maintained at 4ºC (2 to 6ºC acceptable) to promote usability.

3.1.35.1.1 The SS must be notified if the temperature variations exceed the limit.

(MP-TRUW-8.2)

3.1.36 Sampling tools with torn protective wrapping shall not be used.

(MP-TRUW-8.2)

3.1.37 Empty drums are to be verified as empty and be labeled as empty.

(HWMA/RCRA Permit)

3.1.38 Residual samples (generated before lab analysis) must be returned to the original drum.

(HWMA/RCRA Permit)

3.1.39 Treatment of mixed waste through absorption is permitted in the DCSRS glovebox.

(HWMA/RCRA Permit)

3.1.39.1 Treatment by decanting and/or neutralization is authorized in the DCSRS glovebox.

3.1.39.2 Treatment by absorption of polychlorinated biphenyl liquids (e.g., Item Description Code [IDC] RF-003, Organic Setups/Oil Solids) is prohibited in the WMF-634 DCSRS glovebox.

(TSCA RBDA)

3.2 Prerequisites

3.2.1 The current revision of this procedure is being used.

3.2.2 The applicable work documents per PD-COPS-9.18 are reviewed prior to initiating work.

3.2.3 Coring fire protection is lined up for automatic initiation and FWR4-ISV-3403, FWR5-ISV-3403, and FW7-ISV-3401 are locked open.

3.2.4 Personnel performing sampling activities are qualified in accordance with QPSS001, Solids Sampling.

3.2.5 Personnel performing VE activities are qualified in accordance with QPVE0001, Visual Examiner.

3.2.6 Personnel performing inspections and waste drum transfer activities to and from the conveyor, using the monorail hoist have successfully completed course 0AWT-4111, Incidental Hoisting and Rigging.

3.2.7 Personnel have ensured that the alternative isolation device (light curtain) functionality test has been performed and documented in the appropriate operating log.

3.2.8 A pre-job brief has been performed in accordance with MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

3.2.9 The glovebox dust vacuum bag has been replaced after processing each drum.

(RPT-NFCS-25, CWR 4)

4.0 INSTRUCTIONS

NOTE 1: *Sections of this instruction are written to allow for the steps to be performed out of sequence or performed concurrently with other steps in the procedure, with the approval of the SS.*

NOTE 2: *Steps pertaining to entry of data into WTS must be performed in order as written.*

NOTE 3: *Form-1599, AMWTP Solid Sampling Checklist, is not completed if performing VE only.*

4.1 General

4.1.1 Ensure that all precautions and limitations have been reviewed and prerequisites have been met and documented in the appropriate operating log, as required.

NOTE: *Steps 4.1.2 through 4.1.5.3.1 may not be performed out of sequence.*

4.1.2 Verify that Zone 2 and 3 ventilation systems are in operation.

4.1.3 Ensure that all required data fields are populated in WTS as the sampling evolution proceeds.

NOTE: *The sample refrigerator is powered from Circuit Number 16 of BDP-232-003 to ensure backup power is available in case of a power outage.*

4.1.4 Ensure that shunt trip breakers in Panel BDP-232-003 are in the ON position.

NOTE: *To avoid the spread of contamination, personnel perform self monitoring using a radiological monitoring instrument each time a glovebox glove is exited.*

4.1.5 **IF** glovebox work is part of the planned activities,
THEN perform the following:

4.1.5.1 Each time a glovebox glove is exited, perform self monitoring using a radiological monitoring instrument.

4.1.5.2 Ensure that the Zone 3 Glovebox ΔP is verified as being within the acceptable limits of -1.2 to -1.8 in. w.g. on Gauge PDIS-250-004 prior to initiating any glovebox operation.

NOTE: *Only two of the filter inlet butterfly valves may be open at any one time.*

4.1.5.2.1 **IF** the glovebox ΔP is **NOT** within limits, **THEN** adjust the in-service high efficiency particulate air (HEPA) filter inlet butterfly valve until the desired glovebox ΔP is achieved.

4.1.5.2.2 **IF** the required ΔP **CANNOT** be achieved, **THEN** contact the SS.

4.1.5.3 Ensure that the coring room Zone 2 ΔP is verified as being within the acceptable limits of -0.4 to -0.7 in. w.g. on Gauge PDIS-232029 prior to performing any glovebox operation.

4.1.5.3.1 **IF** Zone 2 ΔP is **NOT** within range, **THEN** contact the SS.

4.1.5.4 **IF** planning to remove secondary waste from the glovebox, **THEN** perform the following:

NOTE: *Shielding may be used as approved by NCS to shield the packet assay from radiation sources within the DCSRS area*.

4.1.5.4.1 **WHEN** approved shielding is used, **THEN** ensure that the shielding around or near the packet assay monitor is in place while performing background and standardization checks, as appropriate.

4.1.5.4.2 Energize the DCSRS packet assay monitor, if necessary,
AND conduct performance checks (background and standardization) each shift during use in accordance with INST-OI-17.

4.1.5.4.3 Document the results on Form-1599, Block 2.

NOTE: *Information on Form-1599 is documented each day that the activity is performed.*

4.1.5.5 Perform the daily glovebox and glove inspection.

4.1.5.5.1 Ensure that any visible contamination on any equipment that has the potential to contaminate sample has been thoroughly cleaned upon its discovery.

4.1.5.5.2 Document the results of the glovebox inspection on Form-1599, Block 1, as applicable.

4.1.5.5.3 Inspect the pendant-controlled winch and snare attachment, ensuring all components are in good working order.

4.1.5.5.4 Document the inspection in the appropriate operating log.

4.1.5.6 **IF** the glovebox contains residual waste materials that are **NOT** NCS-exempt,
THEN perform waste segregation and bagout using the following sections, as applicable:

- Section 4.10, Waste Segregation Prior to Glovebox Cleanout
- Section 4.13, Soft Secondary Waste Bagout Operations
- Section 4.14, Drum Lids and Other Metal Items Bagout

AND THEN RETURN to Step 4.1.5.7.

(RPT-NFCS-25, CWR 4)

4.1.5.7 Document the inspection and cleaning of sampling and glovebox support equipment on Form-1599, Blocks 4a and 4b, as applicable.

CAUTION

Failure to maintain the sample refrigerator temperature within 4ºC (2 to 6ºC acceptable) may cause the entire sample collection to be rejected.

4.1.6 **IF** the sample refrigerator currently contains samples
OR sample removal from the glovebox is part of the planned activities for the shift,
THEN verify that the sample refrigerator is operating within parameters by performing the following:

NOTE: *Steps 4.1.6.1 through 4.1.6.7 are to be performed prior to initiating sampling activities AND once per shift when there are samples in the refrigerator.*

4.1.6.1 Ensure that the temperature indicator displays 4ºC (2 to 6ºC acceptable).

(MP-TRUW-8.2)

4.1.6.2 Document the current refrigerator temperature on Form-1585, Refrigerator Temperature Logsheet, or on Form-1602, Characterization Round Sheet.

4.1.6.3 Press the up arrow (↑) button by the temperature display and log the high range temperature reading since the previous shift on Form-1585 or Form-1602.

4.1.6.4 Press the down arrow (↓) button by the temperature display and log the low range temperature reading since the previous shift on Form-1585 or Form-1602.

4.1.6.5 Reset the upper and lower temperature range indications by pressing the up arrow (↑) and down arrow (↓) buttons simultaneously for 2 seconds, then releasing the buttons.

4.1.6.6 **IF** the temperature range since the previous shift has **NOT** remained within the 4ºC (2 to 6ºC acceptable) tolerances, **THEN** notify the SS.

4.1.6.6.1 Initiate a nonconformance report (NCR) in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

(MP-TRUW-8.2)

4.1.6.7 **IF** the sample refrigerator is **NOT** operational,
OR the LED display does **NOT** indicate a temperature of 4°C (2 to 6ºC acceptable),
THEN STOP WORK
AND notify the SS.

(MP-TRUW-8.2)

4.1.7 **IF** weighing samples is part of the planned work activity,
THEN perform the electronic balance checks.

NOTE: *The electronic balances are to be performance-checked within the same shift and prior to being used for measuring sample weights.*

4.1.7.1 Inspect the electronic balance in the sample preparation glovebox and the bench top,
AND conduct a performance check weigh event to ensure the following:

1. The electronic balance has a current calibration sticker.
2. The platen/balance assembly is visibly clean and free of debris and obstruction.
3. The balance is resting stable on the lower surface.
4. The balance is level.
5. National Institute of Standards and Technology (NIST) certified check weights are used for this performance check.

6. NIST certified check weights have current calibration labels.

4.1.7.1.1 **IF** the balance is moved or disturbed,
THEN repeat this performance check prior to further sample weight measurements.

4.1.7.2 Document the results on Form-1215, Analytical Balance Calibration Check Sheet.

4.1.7.3 Document the results in the "Comment" section on Form-1599, Block 3.

4.1.7.4 **IF** the balance is out of tolerance (greater than ± 0.01 grams),
OR fails for any other reason,
THEN STOP WORK
AND notify the SS for direction.

4.1.8 **IF** waste drum transfer operations are part of the planned work activities, **THEN** perform the following, as applicable:

4.1.8.1 SS: Ensure that the container update has been performed in accordance with INST-FOI-27, FTS Operations, prior to proceeding.

4.1.8.2 **IF NOT** already operational,
THEN energize the WTS computer terminal at the DCSRS Control Station.

4.1.8.3 Log on to WTS.

4.1.8.4 Communicate with the assay control room operator that the coring room is ready to receive drums, as applicable.

NOTE 1: *Conveyor operations inside the coring room may be conducted using local conveyor controls independent of the* integrated control systems *(ICS; see def.).*

NOTE 2: *The drum will automatically be barcode-scanned by the WTS prior to entry to the coring room. The WTS identifies the container for sampling, VE, or both.*

NOTE 3: *Assistance from the assay control room operator may be required to lower the drum stops on the conveyor in the DCSRS area.*

4.1.8.5 **WHEN** transferring drums into the coring room,
THEN ensure the conveyor is operating in the AUTO mode.

4.1.8.6 **IF** the following conditions are **NOT** met,
THEN notify SS
AND wait for direction:

- The "Container" screen displays a valid assay of 200 FGE or less.

(RPT-NFCS-25, CWR 1)

- The task list indicates the assay has been completed, and displays "QC Complete."

(RPT-NFCS-25, CWR 1)

- All drums have been examined via RTR and "QC Complete" is displayed on the task list.
- The task list indicates the core or VE task is required.
- A filter vent is installed on the drum

(RPT-TSR-03, SAC 5.2.7; HWMA/RCRA)

4.1.8.7 Review for open NCRs in TrackWise by performing the following:

4.1.8.7.1 Conduct an NCR Quick Search from the Production Work Station by selecting the quality assurance (QA) container quick search link.

NOTE: *Multiple containers may be entered in a single query; however, a "hard return" after each container number is necessary to complete the query.*

4.1.8.7.2 Enter the container identification (ID) number followed by a hard return, select "Submit Query" and view the results on the screen.

4.1.8.7.3 **IF** an open NCR exists,
THEN proceed at the direction of the SS.

4.1.8.8 Inspect the monorail hoist, rigging, pendant controls and wiring, and drum lift attachments ensuring all components are in good working order.

4.1.8.8.1 Document the inspection in the appropriate operating log.

4.1.8.9 Verify heartbeat on the FTS local alarm box (indicated by a flashing white light on the bottom of the alarm box).

4.1.8.9.1 **IF** a heartbeat **CANNOT** be verified,
THEN perform the following:

4.1.8.9.1.1 Stop any transfer or import activity of the drum to the DCSRS glovebox.

4.1.8.9.1.2 Contact the SS.

4.1.8.9.1.3 **GO TO** Section 4.19.11, No Heartbeat on Local FTS Control Box.

WARNING 1

The conveyor system may start at any time when Conveyor Control Panel CP-214-010 within the coring room is in the AUTO mode. Personal injury may result if body parts are not kept clear of the roller conveyor system.

WARNING 2

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.1.8.10 Keep all body parts clear of the roller conveyor system and suspended loads.

4.1.8.11 Ensure that the Emergency Stop (E-stop) Button 214-ES-074 on Conveyor Panel CP-214-010 is in the OFF position (pulled out).

4.1.8.12 Place the conveyor in the MANUAL mode and move the drum to the Output Queue of the DCSRS conveyor.

4.1.8.13 Ensure that the containment enclosure is in the expanded configuration.

4.1.8.14 **IF NOT** already in operation,
THEN start the container enclosure ventilation.

NOTE: *The air movement minimum (30 CFM at all openings) can be achieved with the ventilation extract running at 50 Hz.*

4.1.8.15 Ensure that the containment enclosure ventilation system is operating at 50 Hz prior to drum import activities.

4.1.8.16 RCT: Ensure that the containment enclosure has been inspected in accordance with INST-RS&C-6.9.1, Soft-Sided Containments, and Form-1136 is attached to the tent prior to initiating docking operations.

4.1.8.17 Ensure the drum lift table is in position to accept the drum.

4.1.8.18 Use the monorail hoist to transfer the drum to the drum lift table.

NOTE: *Drum export activities are performed in Section 4.11*.

4.1.8.19 Using the FTS hand-held scanner, scan the barcode on the drum to be processed.

NOTE: *The white indicator light and the audible buzzer indicates that the FGE limit for the drum is ≤ 200 FGE.*

4.1.8.19.1 Observe that the white indicator light and the audible buzzer on the FTS alarm box actuates to confirm approval for drum coring.

(RPT-NFCS-25, CWR 2)

4.1.8.19.2 **IF** the FTS alarm actuates (indicated by flashing red light and alternating horn), **THEN** perform the following:

4.1.8.19.2.1 **STOP** the transfer of the drum to the DCSRS glovebox.

4.1.8.19.2.2 Contact the SS.

4.1.8.19.3 **IF** the white indicator light and/or the audible buzzer does **NOT** actuate and no alarm is actuated,
THEN observe the alarm box to verify barcode entry.

4.1.8.19.3.1 **IF** the barcode is **NOT** displayed,
THEN RETURN TO Step 4.1.8.19 to scan the drum a second time.

4.1.8.19.3.2 **IF** the second scan fails,
THEN STOP the drum import process into the DCSRS glovebox
AND contact the SS and the FTS administrator.

4.1.8.19.3.3 **IF** the barcode is displayed,
THEN do **NOT** import the drum to the DCSRS glovebox
AND contact the SS and the FTS administrator.

4.1.8.20 Ensure that only one source drum containing ≤ 200 FGE (including 2 sigma uncertainty) is processed/opened at a time within the drum coring room.

4.1.8.20.1 Perform dual verification that all other drums in the coring room are closed,
AND document this verification in the appropriate operating log.

(RPT-NFCS-25, CWR 3)

4.1.8.21 Access the WTS "Container Sampling" screen by performing the following, as necessary:

4.1.8.21.1 Select "AMWTP" from the menu.

4.1.8.21.2 Select "Characterization" from the pull-down menu.

4.1.8.21.3 Select "Coring."

4.1.8.21.4 Select "Small Container Sampling."

NOTE: *A WTS flag will warn the user if a problem exists with the container data, or if the container is not suitable for sampling by displaying ONE of the following messages*:

- *"The selected container is not ready for coring process. Invalid Container."*
- *"Task list for coring is not set for this container. Please select another container."*

4.1.8.22 Enter the container ID in the "Container Id" field **AND** press the F8 key.

4.1.8.23 **IF** the barcode label on the drum does **NOT** match that displayed in WTS,
THEN STOP WORK
AND notify the SS.

4.1.8.24 Verify the current procedure and revision number are displayed in WTS.

NOTE: *The performance of the following step requires a document manager role in WTS.*

4.1.8.24.1 **IF** the procedure and revision number are **NOT** correct,
THEN request that the SS update the procedure revision in WTS.

4.1.8.24.1.1 **BEFORE** proceeding with the next step,
THEN ensure that the previous step is completed.

4.1.8.24.1.2 Close the "Grab Sample" screen **AND RETURN TO** Step 4.1.8.21.

4.1.8.25 **IF** the following boxes in the "Container" header (located in the upper right-hand corner) do **NOT** display a "Y":

A. "RTR Completed"

B. "VENT Completed"

C. "Assay Completed,"

THEN STOP WORK
AND notify the SS.

4.1.8.25.1 **WHEN** directed by the SS,
THEN proceed.

4.1.9 Secure the drum and turntable to the lift table by positioning and locking down the lower drum stabilizing clamps.

4.1.10 Using appropriate tools, remove the tamper-indicating device (TID) from the drum lid-locking ring, if necessary.

4.1.10.1 Document the TID number in the appropriate operating log, as applicable.

4.1.11 Place two rubber bands around the drum so that they are located between the bottom chime and the bottom lip.

4.1.12 Inspect the drum transfer sleeve for rips, tears, abraded areas, intact seams, and intact HEPA filter.

4.1.13 RCT: Set up and post the containment enclosure, according to the anticipated or actual radiological conditions.

4.1.14 Don appropriate personal protective equipment (PPE) per the Approved Method of Work (AMOW) for drum coring operations.

WARNING

Moving drums present crushing and pinching hazards to personnel. Personal injury may result if body parts are not kept clear of moving objects.

4.1.15 Use care to keep all body parts clear of moving objects.

4.1.16 Move the drum and lift/turntable into the containment enclosure to the HARD STOP position.

4.1.17 Attach the lift/turntable to the HARD STOP.

4.1.18 Secure the containment enclosure door.

WARNING

Breached layers of confinement increase the potential for release of radioactive contamination when removing the locking ring and drum lid.

4.1.19 Use care when removing locking ring from container with no layers of confinement.

4.1.20 Remove the drum lid-locking ring and bolt from drum.

4.1.21 RCT: Perform a radiological survey of the drum lid-locking ring, the top outer lip of the drum.

4.1.21.1 Perform periodic monitoring to verify radiological conditions do not exceed area postings.

4.1.22 Tape all sharp edges of the ring prior to packaging.

4.1.23 Package the drum lid-locking ring in accordance with INST-OI-24, Packaging Radioactive Waste.

4.1.24 **IF** this drum has undergone any process that has breached the inner layers of confinement,
OR has **NO** layers of confinement,
THEN perform the following:

4.1.24.1 Apply one wrap of 2-in. tape around the mating surface of the drum lid and drum.

4.1.24.2 Place and secure the drum transfer sleeve to the drum.

4.1.24.3 **GO TO** Step 4.1.26.

4.1.25 **IF** this drum has **NOT** undergone any process that has breached all layers of confinement,
THEN proceed as follows:

4.1.25.1 Place and secure the drum transfer sleeve to the drum.

4.1.25.2 Remove the filter vent(s) using the appropriate tools.

4.1.25.2.1 RCT: Perform a radiological survey of the filter vent(s).

NOTE: *The filter(s) will be added to the waste inventory of the drum upon closure.*

4.1.25.2.2 Tape all sharp edges of filter(s).

4.1.25.2.3 Stage the filter(s) for placement in the drum once the lid is removed.

4.1.25.3 Loosen the lid enough for the RCT to perform a preliminary survey.

4.1.25.4 RCT: Perform a radiological survey of the exposed surfaces of the lid and periodic monitoring of other exposed surfaces to verify radiological conditions do **NOT** exceed area postings.

4.1.25.4.1 **IF** lid is to remain installed due to radiological conditions,
THEN RETURN TO Step 4.1.24.1.

4.1.25.5 Remove the lid, taping the sharp edges of the drum lid, as applicable.

4.1.25.6 Package the drum lid in accordance with INST-OI-24.

4.1.25.7 Place the filters on top of the inner packaging inside the drum.

4.1.25.8 Document all filter(s) removed from the lid by model number in WTS on the “Container Filters” screen.

4.1.25.9 Complete Form-1599, Block 5a, as applicable.

4.1.26 Obtain an adequate supply of sample preparation glovebox equipment, consumable items, and tools as indicated in Appendix A, Small Container Sampling Required Items List.

4.1.27 **IF** the drum is being imported in support of VE operations, **THEN GO TO** Step 4.1.31.

4.1.28 Determine the sample type, vial size, and the quantity of sample required, based on the data contained in Exhibit 1, Laboratory Required Sample Quantities and Vial Sizes.

4.1.29 Obtain empty sample vials and sampling tools.

NOTE: *The sample vial is labeled with only the appropriate sample type at this time. The label for the sample vial will be generated at the time the sample is taken and affixed to the sample vial.*

4.1.30 Label the sample vials with a grease pencil according to information contained in Exhibit 1 and stage for bag-in.

CAUTION

Materials placed on top of the drum prior to docking may impede the drum docking process.

4.1.31 Ensure docking surfaces are free of debris.

4.1.32 **IF** using the drum docking port to transfer supplies into the glovebox, **THEN** place supplies on top of the drum.

4.1.33 Perform waste drum import to DCSRS glovebox, as trained in accordance with T4140, Glovebox Operations Training, and QPSS0001, Solid Sampler.

WARNING 1

The potential for personal injury and spread of contamination exists when docking a new drum transfer sleeve to the bag-in port.

WARNING 2

The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

4.1.34 Use care when docking and undocking drums.

4.1.35 **IF** a container selected for solids sampling is rejected,
THEN initiate an NCR in accordance with MP-Q&SI-5.4 to disposition the waste stream lot assignment of the rejected container to comply with MP-TRUW-8.2.

4.1.36 **IF** the sampling event is canceled for any reason,
THEN GO TO Section 4.19.14.

4.1.37 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step, as necessary:

Task	Section to Perform
Small Container Sampling	4.2
Visual Examination and Treatment of Liquids	4.3
Sample Bagout, Handling, and Storage Requirements	4.4
Trip Blank Preparation	4.5
Chain of Custody	4.6
Chain of Custody Transfer	4.7
Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory	4.8
Samples and Chain of Custody Transfer to Transportation Manager	4.9

Task	Section to Perform
Waste Segregation Prior to Glovebox Cleanout	4.10
Drums Export from the DCSRS	4.11
Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking	4.12
Soft Secondary Waste Bagout Operations	4.13
Drum Lids and Other Metal Items Bagout	4.14
Batch Data Report Generation	4.15
Equipment Blank Requirements	4.16
System Shutdown	4.17
Post-Job Review	4.18
Abnormal and Infrequent Operations	4.19

4.2 Small Container Sampling

4.2.1 Initial Activities

4.2.1.1 Place the containment enclosure back to the collapsed configuration
AND move the platforms back against the glovebox.

WARNING

Pinch hazards exist while lifting and moving containers and equipment inside the glovebox.

4.2.1.2 Use care while lifting and moving containers and equipment inside the glovebox.

NOTE: *Steps 4.2.1.3 through 4.2.1.8.2 only apply if the drum was not previously de-lidded per Section 4.1.25 of this instruction.*

4.2.1.3 Remove the tape used to secure the drum lid and the filter vent(s) from the drum lid, using the appropriate tools, if applicable.

4.2.1.4 Document all filter(s) removed from the lid by model number in WTS on the "Container Filter" screen, as applicable.

4.2.1.5 Document filter removal on Form-1599, Block 5a, as applicable.

4.2.1.6 Remove the waste drum lid and stage it in drum lid rack, using care not to rip or tear the drum sleeve while removing the lid, if applicable.

4.2.1.7 Remove spacers between drum lid and liner, if applicable.

4.2.1.8 **IF** the liner is **NOT** vented,
THEN STOP WORK
AND contact SS.

4.2.1.8.1 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.2.1.8.2 Proceed only as directed by the SS.

4.2.1.9 Remove the rigid liner lid using the tools provided and store it out of the immediate work area, if applicable.

4.2.1.10 Remove packing material (e.g., vermiculite) and place it into a plastic bag and stage it away from the immediate work area, if applicable.

NOTE: *Treatment of liquids is performed, as necessary, after removal of all samples from the glovebox.*

4.2.1.11 **IF** liquids are discovered upon opening the outer packaging, **THEN** after sampling is completed, perform permitted treatment in accordance with Section 4.3.

4.2.1.12 **IF NOT** already performed,
THEN cut the drum waste bag(s) away using a box knife, if applicable, and stage this waste away from the immediate area.

4.2.2 Preparation for Sampling

NOTE 1: *The OT that is performing the subsampling evolutions in the DCSRS glovebox is allowed to relay information to a second OT for entry into WTS. Data is verified through the use of "repeat-back" prior to e-signature.*

NOTE 2: *Placing the cursor in any editable field will cause the batch field to auto-populate with the batch number.*

4.2.2.1 Select an open editable field and verify that the batch number auto-populated the "Batch" field.

4.2.2.2 Review the screen for the "Samples Required."

4.2.2.3 Place cursor in the first/next available "Event Id" field.

OR

4.2.2.4 **IF** there is no blank "Event Id" field available,
THEN perform the following:

4.2.2.4.1 Place the cursor in the last "Event Id" field.

4.2.2.4.2 Select "Insert Record" from the menu at the top of the screen.

4.2.2.4.3 Click in the newly created "Event Id" field.

4.2.2.5 Select the sample type by clicking on the down-arrow and clicking on "*Initial Grab Sample*" (see def.) or "*Field Duplicate*" (see def.), as applicable, for the samples to be taken.

4.2.2.6 Document the following information on Form-1599.

- Drum Number
- Batch Number
- Sample Origin: Container Grab
- Sample Type: Initial or Field Duplicate.

4.2.2.7 To prevent cross-contamination of samples, ensure sampling equipment packaging with questionable integrity is **NOT** used.

4.2.2.7.1 Discard sampling equipment after use and segregate used sample equipment from new sample equipment.

4.2.2.8 Visually inspect **ALL** pre-packaged, certified clean tooling and equipment to be used in this evolution for the following:

- Items are sealed in protective packaging and integrity is visibly verified and maintained until use.
- Equipment is certified clean, as evidenced by an analytical data package or a Certificate of Analysis for each piece of sampling equipment to be used.
- Outer packaging (e.g., shipping carton) is marked with a lot number.

4.2.2.8.1 **IF** any of the sampling equipment or tooling packaging is torn (inside/outside the glovebox) **OR** is suspected of being contaminated (inside the glovebox) prior to use,
THEN segregate and replace the suspect equipment prior to initiating the sampling event.

4.2.2.8.2 Complete Form-1599, Block 7a through 7e, as applicable.

4.2.2.9 Stage an adequate number of disposable sampling tools, wipes, weighing boats, gridded sampling pans, and plastic bags for bag-in.

4.2.2.10 Stage for bag-in an adequate number of waste bags, Zip-Loc bags, tape, or other necessary supplies.

4.2.2.11 Perform bag-in or sphincter-port transfers, as necessary.

4.2.2.12 Place two disposable wipes on the glovebox floor to use as a clean working surface.

4.2.2.13 Place the empty sample vials and clean disposable sampling tools on the clean working surface.

4.2.2.14 Move the grid pan to a location for acceptance of sample matrix when removed from the drum.

CAUTION

Touching the inside of the grid pan with any object that is not certified clean will cross-contaminate the pan.

4.2.2.15 Do **NOT** touch the inside of the grid pan while removing it from protective packaging.

4.2.2.16 Divide the grid pan into four sections by performing the following:

4.2.2.16.1 Using a grease pencil, mark the 12 o'clock, 3 o'clock, 6 o'clock, and 9 o'clock positions on the top lip of the pan, centered on each side.

4.2.3 Sampling Instructions

NOTE 1: *This section is a stand-alone section that is performed after the inner containers are placed into the containment glovebox and may be performed independently of or in conjunction with other instruction sections.*

NOTE 2: *A sampling batch may be up to 20 containers sampled (excluding field duplicate samples), all of which will be collected within 14 days of the first sample in the batch.*

NOTE 3: *A field duplicate sample is required once per sampling batch OR every 7 days, whichever is more frequent. A field duplicate is a second sample taken from the same container at approximately the same location, and is used to test sampling precision. A sampling batch is a suite of homogeneous solids and soil/gravel samples collected consecutively using the same sampling equipment with a specific time period.*

NOTE 4: *The transfer of record ownership between qualified OTs is allowed up to the point of initiating sampling routine. This record turnover is captured in E-sign history in WTS. Once the sampling routine is initiated, it has to be completed by the same OT, thus custody is maintained.*

NOTE 5: *To allow for source container configuration variances in packaging, and to ensure the most effective randomization, each solidified waste item (i.e., cemented puck) is identified individually as a separate container.*

- *Waste bags containing multiple pucks are laid out on the floor of the glovebox*
- *Sequential numbers are written on the outer bag at the location of each puck.*

4.2.3.1 Using appropriate equipment and tools as necessary (e.g., hoist and snare assembly), remove and sequentially number each package as it is removed from the source drum, beginning with the Number 1.

4.2.3.2 **IF** liquids are discovered upon opening the waste bags enclosing the inner container,
THEN after sampling is completed, perform permitted treatment in accordance with Section 4.3.

4.2.3.3 Enter the total number of packages in the drum in the "No. of Packages in Container" field and press enter.

NOTE: *After the number of packages is entered, WTS will display the sequential number of the package to be sampled in the "Random Package Selected for Sample" field.*

4.2.3.4 Observe the "Random Package Selected for Sample" field, **AND** separate the corresponding item/package to be sampled.

OR

4.2.3.5 Cut open the waste bag at the location of the identified item/package.

4.2.3.5.1 **IF** the item/package is "puck,"
THEN perform the following:

4.2.3.5.1.1 Place a clean glove (i.e., Silvershield) over the glovebox glove.

4.2.3.5.1.2 Remove the puck to be sampled **AND** place it in the grid pan.

NOTE: *This time will be entered into WTS in Step 4.2.3.15.2.*

4.2.3.5.1.3 Note the time the puck was placed in the pan.

4.2.3.6 Enter the Waste Matrix Code for the source container in the "Matrix Physical Desc." field, using RPT-TRUW-05, Waste Matrix Code Reference Manual, as reference data.

4.2.3.7 E-sign and save.

4.2.3.8 Perform the following, as applicable:

4.2.3.8.1 **IF** collecting an initial grab sample, **THEN** observe the "Grab Sample" tab is displayed.

4.2.3.8.2 **IF** collecting a field duplicate sample, **THEN GO TO** Step 4.2.3.23.

4.2.3.9 Observe the "Randomly Selected Quadrant" field is populated.

4.2.3.10 Select the first/next available blank "Sample Id" field.

NOTE: *Non-halogenated volatile organic compound (NHVOC) is the "Sample requested" used for formaldehyde and hydrazine.*

4.2.3.11 Select the "Sample Requested" by clicking on the down-arrow and selecting the appropriate sample.

NOTE: *After populating the "Sample Tool Type" or "Part #" field, double-clicking in either the Tool Type or Part # field will provide the operator with a view of the Lot, Part, PO, and Lab ID numbers, as applicable for the part type selected.*

4.2.3.12 Press the F9 key on the "Sampling Tools Type" field **AND** select "20 vial" or "4 vial" from the pick list, as applicable.

4.2.3.12.1 Go to the next available "Type" field.

4.2.3.12.2 Press the F9 key and select "SPAT" or "TSPOON," as applicable, from the pick list.

4.2.3.12.3 Go to the next available "Type" field.

4.2.3.12.4 Press the F9 key and select "LPAN" or "SPAN," as applicable.

4.2.3.12.5 Go to the next available "Type" field.

4.2.3.12.6 Press the F9 key and select "Chisel" from pick list, if applicable.

NOTE 1: *Samples that need to be collected from large pieces of homogeneous solids may require the use of certified-clean disposable chisels and tongs to obtain representative samples and to size-reduce the pieces for placement into the sample vials*.

NOTE 2: *When a mixture of large pieces and fines is encountered in a sample quadrant of the pan, the mixture collected in sample vials is in proportion to the number of pieces/fines proportion in the pan quadrant*.

NOTE 3: *Information that is recorded on the "Grab Sample" screen is automatically stored by WTS into the CoC "Unattached Sample" table*.

4.2.3.13 **IF** the sample material is to be left unattended, or sampling is delayed for more than 60 minutes,
THEN ensure that the sample material is in the original container with a closed lid or in the grid pan and covered with plastic/polyvinyl chloride (PVC) film,
OR placed in a suitable (big enough to hold pan and contents) bag with zip closure.

4.2.3.14 Remove any packaging from the selected container, as applicable.

4.2.3.15 Open the container, if applicable, and observe the physical appearance of the contents.

4.2.3.15.1 Go to the "Package Sampled" tab and select the "Event Dt & By" field.

4.2.3.15.2 Enter the current or previously noted time to mark the sampling start time, as applicable.

4.2.3.15.3 Complete Form-1599, Block 9.

4.2.3.15.4 Go to the "Package Sampled" tab and amend the "Matrix Physical Desc." field (on the "Package Sampled" tab) by adding a physical description of the sample material (color, texture, etc.) following the Waste Matrix Code.

4.2.3.15.5 E-sign and save.

4.2.3.15.6 Return to the "Grab Sample" tab.

4.2.3.16 **IF NOT** already completed,
THEN place the contents of the entire container, if possible, into the sample pan
AND perform **ONE** of the following:

4.2.3.16.1 Gently distribute the sample material as evenly as possible in the pan using a clean, disposable tool such as a scoop or a spatula.

OR

4.2.3.16.2 Size reduce the sample material using a chisel (certified clean) and hammer, as necessary, to obtain an amount representative of sample matrix and adequate for the samples required.

4.2.3.17 **IF** liquids are discovered upon opening the container,
THEN after sampling is completed, perform permitted treatment in accordance with Section 4.3.

NOTE: *The quadrant grid is identified as beginning with the Number 1 at the top right position and continuing clockwise with 2 in the bottom right, 3 in the bottom left, and 4 in the top left position.*

4.2.3.18 Identify the "Randomly Selected Quadrant" displayed in WTS for sampling and select the corresponding quadrant in the sample pan.

4.2.3.19 Enter the actual quadrant sampled in the "Quadrant Sampled" field.

4.2.3.19.1 **IF** there is insufficient sample material in the randomly selected quadrant,
THEN move to the next adjacent quadrant in a clockwise rotation and proceed with sampling activities.

4.2.3.19.2 Enter the actual quadrant sampled in the "Quadrant Sampled" field
AND enter a comment in the "Quadrant Comment" field, providing the reason for the quadrant change, as applicable.

4.2.3.20 Document any inconsistency in color, texture, or waste type between the initial and field duplicate samples on Form-1599, Block 12, as applicable.

4.2.3.20.1 Document "NA" on Form-1599, Block 12, for the initial sample.

NOTE 1: *The sample for VOCs is always taken first.*

NOTE 2: *Representativeness for VOC analysis is achieved by collecting unbiased samples.*

4.2.3.21 Collect the required samples and amounts (VOCs first) in accordance with Exhibit 1 as follows:

4.2.3.21.1 Place the sample vial to be used on the balance.

4.2.3.21.2 **WHEN** the weight reading is stable,
THEN push the RE-ZERO button on the balance.

NOTE: *The balance should now read 0.00.*

4.2.3.21.3 Place the vial in a readily accessible area.

4.2.3.21.4 Remove the vial cap
AND place on the balance pan.

4.2.3.21.5 Place the required sample material into the vial, wiping the top as necessary.

4.2.3.21.6 Weigh the sample to determine the sample weight.

4.2.3.21.6.1 Add sample material until the required amount is obtained in accordance with Exhibit 1.

4.2.3.21.6.2 Replace cap on the vial.

4.2.3.21.7 **WHEN** the required amount of sample material is obtained,
THEN select the "Grab Sample" tab.

4.2.3.21.7.1 Enter the weight in grams, to two decimals.

4.2.3.21.7.2 Enter the sample vial volume.

NOTE: *The NHVOC samples for hydrazine and formaldehyde are only taken on certain Savannah River Site Waste streams. The Solid Sampling subject matter expert will provide direction on when it is necessary to obtain these samples*.

4.2.3.21.7.3 **IF** taking an NHVOC-Hydrazine sample,
THEN enter "Hydrazine Sample" in the "Grab Sample Comment" field.

4.2.3.21.7.4 **IF** taking an NHVOC-Formaldehyde sample,
THEN enter "Formaldehyde Sample" in the "Grab Sample Comment" field.

4.2.3.21.8 Select the "Sample Dt & By" field and enter the date and time the sample was taken.

4.2.3.21.9 Ensure that "No" in the "Custody Seal Attached" field is selected.

4.2.3.21.10 Ensure that "No" in the "Preserved to 4 degrees C" field is selected.

4.2.3.21.11 Ensure all required data entry fields are complete.

4.2.3.21.12 Enter E-signature and save.

4.2.3.21.13 Select the "Grab Sample" tab, if necessary.

4.2.3.21.14 Select the current sample being processed in the "Sample Id" field.

NOTE: *Two printed sample labels are required. One is affixed to the sample vial and one is affixed to the sample transfer bag.*

4.2.3.21.15 Select "Print Sample Labels."

4.2.3.21.15.1 Ensure "Zebra Label" is highlighted.

4.2.3.21.15.2 Select "Print."

4.2.3.21.16 Ensure the following information is present on the labels:

- Sample ID number
- Date the sample is taken
- Time as indicated in the "Sample Dt & By" field on the "Grab Sample" tab
- Sampler's organization (e.g., AMWTP)
- Sampler's name

- Sampler's initials
- Requested analysis
- Quality Control (QC) designation (initial grab or field duplicate)
- Sample description.

4.2.3.22 **REPEAT** the steps identified in A and B below, as necessary, for the remainder of the purgeable volatile organic compounds (PVOC) and NHVOC samples being collected
AND RETURN TO Step 4.2.3.22.1.

A. Steps 4.2.3.10 through 4.2.3.12.6 for the tool type (per sample vial).

B. Steps 4.2.3.19 through 4.2.3.21.16 (per sample vial), as necessary, to complete the sampling event.

4.2.3.22.1 Log the sample label verification on Form-1599, Block 13a, after completion of NHVOC, PVOC, and spares sampling.

4.2.3.23 **IF** field duplicate samples are being collected,
THEN perform the following:

4.2.3.23.1 Go to the "Package Sampled" tab and select the "First/Next Available Event Id."

4.2.3.23.2 Select the Sample Type as "Field Duplicate."

4.2.3.23.3 Enter the Waste Matrix Code and physical description in the "Matrix Physical Desc." Field.

4.2.3.23.4 Select the "Event Dt & By" field.

4.2.3.23.5 Enter the same time and date that was recorded for the initial sample.

4.2.3.23.6 E-sign and save.

4.2.3.23.7 Select the "Grab Sample" tab.

NOTE: *The randomly selected quadrant will not populate when performing field duplicate sampling activities.*

4.2.3.23.8 **REPEAT** the steps identified in A and B below, as necessary, for the field duplicate VOC samples being collected
AND RETURN TO Step 4.2.3.23.8.1.

A. Steps 4.2.3.10 through 4.2.3.12.6 for the tool type (per sample vial used).

B. Steps 4.2.3.19 through 4.2.3.21.16 (per sample vial) as necessary to complete the VOC sampling.

4.2.3.23.8.1 Log the sample label verification on Form-1599, Block 13a, after completion of NHVOC, PVOC, and spares sampling.

NOTE: *The samples taken for metals and SVOCs (initial and field duplicate), if required, will be contained in a single sample vial.*

4.2.3.24 Access the "Package Sampled" tab.

4.2.3.24.1 Select the "Grab Sample" tab.

4.2.3.24.2 Select the next blank "Sample Id" field.

4.2.3.24.3 Select the pull down menu in the "Sample Requested" field and select "SVOC, METALS."

NOTE: *After populating the "Sample Tool Type" or "Part #" field, double-clicking in either the Tool Type or Part # field, will provide the operator with a view of the Lot, Part, PO, and Lab ID numbers, as applicable for the part type selected.*

4.2.3.24.4 Press the F9 key on the "Sampling Tools Type" field and select "4 vial" from the pick list.

4.2.3.24.4.1 Go to the next available "Type" field.

4.2.3.24.4.2 Press the F9 key and select "SPAT" or "TSPOON," as applicable, from the pick list.

4.2.3.24.4.3 Go to the next available "Type" field.

4.2.3.24.4.4 Press the F9 key and select "WBOAT," from the pick list.

4.2.3.24.5 Go to the next available "Type" field.

4.2.3.24.6 Press the F9 key and select "L" pan or "S" pan from pick list.

4.2.3.24.7 Go to the next available "Type" field.

4.2.3.24.8 Press the F9 key and select "Chisel" from pick list, if applicable.

4.2.3.24.9 Obtain the sample vial for the sample to be taken.

4.2.3.24.10 Place the weighing boat on the analytical balance.

4.2.3.24.11 **WHEN** the weight reading is stable,
THEN push the re-zero button on the balance.

NOTE: *The balance should now read 0.00.*

4.2.3.24.12 Place sample material in the weighing boat using a clean spatula.

4.2.3.24.13 Wait for the balance to stabilize and observe the weight.

4.2.3.24.14 Ensure that the laboratory required amount of sample is contained in the weighing boat.

4.2.3.24.15 Access the "Grab Sample" tab.

NOTE: *Information that is recorded on the "Grab Sample" tab is automatically downloaded by WTS into the CoC "Unattached Sample" screen.*

4.2.3.24.16 Enter the date and time the sample was taken in Sample "Dt &By" field.

4.2.3.24.17 Enter the actual quadrant sampled in the "Quadrant Sampled" field.

4.2.3.24.18 Enter the weight for this sample to two decimal places.

4.2.3.24.19 Enter the volume of the sample vial.

4.2.3.24.20 Transfer the contents of the weighing boat to the sample vial and cap it.

4.2.3.24.21 Re-zero the balance.

4.2.3.24.22 Place the used weighing boat into an appropriate waste container.

4.2.3.24.23 Stage the sample vial for labeling and sample bagout.

4.2.3.24.23.1 **IF** all sampling has been completed,
THEN complete Form-1599, Block 10.

4.2.3.24.24 Select "NO" in the "Custody Seal Attached" field.

4.2.3.24.25 Select "NO" in the "Preserved to 4 degrees C" field.

4.2.3.24.26 E-sign and save.

4.2.3.24.27 Select "Grab Sample" tab.

4.2.3.24.28 Select the current sample being processed in the "Sample Id" field.

NOTE: *Two printed sample labels are required. One is affixed to the sample vial, and one is affixed to the sample transfer bag.*

4.2.3.24.29 Select "Print Sample Label."

4.2.3.24.30 Ensure "Zebra Label" is highlighted.

4.2.3.24.31 Select "Print."

4.2.3.24.32 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the "Sample Dt & By" field on the "Grab Sample" tab

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (initial grab or field duplicate)

I. Sample description.

4.2.3.24.33 Log the sample label verification on Form-1599, Block 13b.

NOTE: *A source drum containing four or less inner packages will require one or more packages to be sampled more than once*.

4.2.3.25 **IF** there are four or less inner packages in the source drum, **THEN** perform the following:

4.2.3.25.1 Return any excess material in the sample pan to an appropriate container.

4.2.3.25.2 Close the container.

4.2.3.25.3 Label this container with the representative inner package number.

NOTE: *A single drum waste stream requires that six sets of samples be taken, including five initial and one field duplicate from the contents of this single drum*.

4.2.3.26 **IF** additional initial samples are required from this drum, **THEN REPEAT** Section 4.2.2, beginning with Step 4.2.2.3 **AND REPEAT** Section 4.2.3 starting with Step 4.2.3.3 to obtain the required samples.

(MP-TRUW-8.2)

4.2.3.27 Restore glovebox to a visibly clean condition.

4.2.3.28 Export the drum in accordance with Section 4.11, as necessary.

4.3 Visual Examination and Treatment of Liquids

WARNING

Pinch hazards exist while lifting and moving equipment inside the glovebox.

4.3.1 Use care while lifting and moving equipment inside the glovebox to avoid pinch hazards.

4.3.2 Remove the tape used to secure the drum lid and the Headspace Gas Sample filter from the drum lid, if applicable.

NOTE: *A VE record will be generated or updated for existing or updated conditions, or the treatment of the liquids and the addition of the appropriate absorbent, in accordance with the applicable sections of INST-OI-34.*

4.3.3 **IF** performing a VE for purposes other than the treatment of liquids,
THEN generate or update the VE or RVU record(s), as appropriate, in accordance with INST-OI-34
AND RETURN TO Step 4.1.37.

4.3.3.1 Update any related NCRs, as appropriate.

WARNING

Some waste may be reactive or corrosive, and may cause severe personal injury.

NOTE 1: *Treatment of liquids associated with IDCs BC-203 and RF-003 is prohibited.*

(HWMA/RCRA Permit)

NOTE 2: *Addition of appropriate absorbent to drum with insufficient headspace (less than 5%) to accommodate the required volume of absorbent is not authorized.*

(HWMA/RCRA Permit)

NOTE 3: *Aquaset IIG or Micro-Cel E (for organic liquids) are the only currently approved absorbents suitable for use. Other absorbents are approved by Environmental through permit-required processes and by Criticality Safety prior to purchase and use.*

(RPT-NFCS-09; HWMA/RCRA Permit)

NOTE 4: *The amount of Aquaset IIG absorbent needed can generally be calculated by allowing for 9.6 pounds (8 pints) of absorbent for every gallon (8 pints) of liquid.*

(HWMA/RCRA Permit)

NOTE 5: *The amount of Micro-Cel E absorbent needed can generally be calculated by allowing 1 pound (8 pints) of absorbent for every gallon (8 pints) of liquid.*

4.3.4 Ensure that incompatible wastes (as defined in Appendix A and Appendix B of INST-OI-24) are **NOT** mixed or stored together.

(HWMA/RCRA Permit)

4.3.5 Segregate incompatible IDCs as directed by the SS.

(HWMA/RCRA Permit)

4.3.6 **IF** waste appears to be reactive,
OR is reacting with other materials,
THEN STOP operations
AND perform the following:

4.3.6.1 Exit the glovebox, as applicable.

4.3.6.2 Warn others.

4.3.6.3 Notify the SS.

4.3.7 Test the compatibility of the liquid with the appropriate absorbent being used, as applicable.

(HWMA/RCRA Permit)

4.3.8 Notify SS of any incompatibilities or discrepancies.

4.3.8.1 SS: Notify ES&H of any incompatibilities or discrepancies.

(HWMA/RCRA Permit)

NOTE: *When an NCR has been initiated for prohibited liquids, the original NCR is updated to reflect treatment success or failure.*

4.3.9 **IF** there is insufficient headspace in the drum to perform absorption, **THEN** initiate or update an NCR in accordance with MP-Q&SI-5.4 **AND** ensure that the NCR documents that this container requires processing by a different treatment method (e.g., decanting).

NOTE: *Aquaset IIG will absorb organic liquids to 5% by volume in a mixed organic aqueous liquid.*

4.3.10 Determine the amount of appropriate absorbent needed based on **ONE** of the following:

- The amount of liquid present as documented in the RTR or VE analysis
- Visual verification.

(HWMA/RCRA Permit)

4.3.11 Determine if the liquid is aqueous or organic as defined in the AK or using the following guidance:

NOTE: *The words "associated with" in the following two steps is defined as liquids that are in direct contact with the waste.*

4.3.11.1 **IF** the liquid is associated with an aqueous or organic waste sludge, as defined in RPT-TRUW-05,
THEN treat with Aquaset IIG.

4.3.11.2 **IF** the liquid is associated with an organic waste matrix,
THEN treat with Micro-Cel E and/or the excess of the absorbent from the drum.

4.3.12 Apply the appropriate absorbent to the drum until all liquid has been absorbed.

4.3.13 Visually re-inspect for liquid.

4.3.14 **IF** liquid remains,
THEN REPEAT Steps 4.3.12 through 4.3.13 until all liquid is absorbed.

NOTE: *The VE record will be updated for the treatment of the liquids and the addition of the appropriate absorbent, in accordance with the applicable sections of INST-OI-34.*

4.3.15 VEO: Update the VE or RVU record for the treatment of liquids and addition of absorbent with INST-OI-34.

4.3.15.1 Update the NCR for the treatment of liquids.

NOTE: *Treatment failure examples are the separation of liquid from absorbent, the use of incompatible absorbent with liquid, or insufficient headspace to accommodate the required volume of appropriate absorbent.*

(HWMA/RCRA Permit)

4.3.16 **IF** there are any treatment failures,
THEN perform the following:

4.3.16.1 Notify the SS.

4.3.16.2 Update an NCR in accordance with MP-Q&SI-5.4 to reflect treatment failure.

4.3.16.3 SS: Notify ES&H and the AK manager of treatment failure with the appropriate NCR number.

(HWMA/RCRA Permit)

4.3.17 **IF** this container has **NOT** been selected for sampling,
THEN GO TO Section 4.10, Waste Segregation Prior to Glovebox Cleanout.

4.4 Sample Bagout, Handling, and Storage Requirements

4.4.1 Transfer one set of the previously generated sample labels into the sample preparation glovebox.

4.4.2 Apply the appropriate label to each sample vial.

4.4.3 Ensure all fields on the sample label are complete.

4.4.4 Perform sample bagout operations.

WARNING

Improper use of cutting tools can result in personal injury and/or inadvertent release of radioactive contamination.

4.4.5 Ensure proper technique in use of cutting tools is being used.

4.4.6 RCT: Perform radiological surveys of the package.

4.4.7 Apply the appropriate sample label to the sealed bag.

4.4.8 Place the sealed bag with label into a Zip-Lock bag, fold the bag over on itself, seal it, and affix a custody seal to the closure.

4.4.8.1 Ensure that the custody seal contains the following information:

- Sampler's signature
- Date.

4.4.8.2 **REPEAT** Steps 4.4.4 through 4.4.8.1 until all sample vials have been removed from the glovebox.

4.4.8.3 Log custody seal verification on Form-1599, Block 14.

(HWMA/RCRA Permit; MP-TRUW-8.2)

4.4.9 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.4.10 Access WTS computer "Small Container Sampling" screen and select the "Grab Sample" tab.

4.4.10.1 Select the first/next sample number in the "Grab sample Id" field.

4.4.10.2 In the "Custody Seal Attached" field, select "YES."

4.4.10.3 E-sign and save.

4.4.10.4 **REPEAT** Steps 4.4.10.1 through 4.4.10.3 for the remainder of the samples.

4.4.10.5 Log verification on Form-1599, Block 15.

NOTE: *The person transferring samples to the refrigerator is the same person in custody of the samples during the sampling.*

4.4.11 Move the samples to the coring room refrigerator by performing the following:

4.4.11.1 Select the "General" menu at the top of the screen.

4.4.11.2 Select "Movement/Location."

4.4.11.3 Select the "Manual Move" screen.

4.4.11.4 Enter the sample vial ID number in the "Operator Container ID" and "Supervisor Container ID" fields.

4.4.11.5 Select "Supervisor Verification."

4.4.11.6 Supervisor or Designee: Perform the following:

4.4.11.6.1 E-sign and save.

4.4.11.6.2 Select the "Update Location" tab.

4.4.11.6.3 Select the "Building 634-Characterization" from the "Building" drop down list.

4.4.11.6.4 Select the "Section" Block **AND** press F9.

4.4.11.6.5 Select "Coring Area" from the list **AND** select "OK."

4.4.11.6.6 Select the "Sub Section" block **AND** press F9.

4.4.11.6.7 Select "Refrigerator" from the drop down list **AND** click "OK."

4.4.11.6.8 Select "Initiate."

4.4.11.6.9 Select the CLEAR button to clear data.

4.4.12 **REPEAT** Steps 4.4.11.4 through 4.4.11.6.9 for the remaining samples.

4.4.13 Close the "Manual Move" screen.

4.4.14 Place all sample packages from this event into one or two (if needed) large Zip-Lock bag and seal.

4.4.14.1 Record the parent drum number on the Ziploc bag(s).

(RPT-NFCS-25, CWR #6)

NOTE: *The refrigerator remains locked when not in use or unattended. The key is maintained in separate and controlled locked storage.*

4.4.15 Verify that refrigerated storage is maintained at 4°C (2 to 6ºC acceptable).

(MP-TRUW-8.2)

4.4.16 Place samples into refrigerator.

4.4.17 Close and lock the door to the refrigerated storage area.

4.4.18 Select the "Grab-Sample" tab.

4.4.19 Select the first/next sample number in the "Sample Id" field.

4.4.20 Select "YES" in the "Sample Preserved to 4 degrees C" field.

4.4.21 E-sign and save.

4.4.22 **REPEAT** Steps 4.4.19 through 4.4.21 for the remainder of the samples associated with this evolution.

4.4.23 Document verification on Form-1599, Block 16.

4.4.24 Select the "General" menu on the WTS computer.

4.4.24.1 Select "Movement/Location."

4.4.24.2 Select "Container Location Screen Report."

4.4.25 Select the down arrow (↓) on the "Subsection" field.

4.4.25.1 Select "Refrigerator."

4.4.26 Select "Locate."

4.4.27 Confirm that the samples for this event are displayed in the "Refrigerator."

4.5 Trip Blank Preparation

NOTE 1: *Three trip blanks are required as part of each sample shipping container. The first trip blank will be for PVOCs. The remainder will be labeled and used as spares.*

NOTE 2: *Five trip blanks are required as part of the sample shipping container when hydrazine and formaldehyde samples are taken***.**

NOTE 3: *Trip blanks are analyzed by the laboratory to verify the integrity of the sample media through the absence of contaminants in the blanks.*

4.5.1 Access the "Small Container Sampling" screen.

4.5.2 Enter the container number in the "Container Id" field **AND** press the F8 key.

4.5.3 Acknowledge the message pop-up and select "OK," as applicable.

4.5.4 Select the "Grab Sample" tab.

4.5.5 Select the last populated "Sample Id" field.

4.5.6 Select the insert record symbol at the top of the screen.

4.5.7 Observe that a blank "Sample Id" field is created.

4.5.8 Select the newly created blank field.

4.5.9 Select the down arrow (↓) for the "Sample Requested" field.

4.5.10 Select "Trip Blank."

4.5.11 Enter "Trip Blank" and the sequence number (e.g., 1-5) in the "Grab Sample Comment" field.

4.5.12 Ensure "Quadrant Sample" field is populated with a zero.

4.5.13 Select the "Sampling Tools" table "Type" field and press F9.

4.5.14 Select "20 vial."

4.5.15 Select the next available blank sample tools type field and press the F9 key.

4.5.16 Select "Spatula."

NOTE: *Performance checks on electronic balances are required each shift prior to use in measuring sample weights.*

4.5.17 **IF NOT** already completed as part of system startup,
THEN check weigh the electronic balance in accordance with Step 4.1.7.

4.5.18 Obtain the organic-free sand used for the trip blank media.

4.5.19 Obtain a clean 20-mL septum capped volatile organic analysis (VOA) vial.

4.5.20 Tare-weigh the vial.

4.5.20.1 Remove the cap and place it on a clean surface.

4.5.21 Perform **ONE** of the following:

4.5.21.1 Using a certified clean spatula, add 2.5 to 3.0 grams of clean sand to the vial.

4.5.21.1.1 Reweigh, as necessary, to obtain the required amount.

OR

4.5.21.2 **IF** taking additional trip blanks to support hydrazine and formaldehyde analysis,
THEN ensure that 12 to 12.5 grams of sand is obtained for trip blanks 4 and 5.

4.5.21.2.1 Reweigh, as necessary, to obtain the required amount.

4.5.22 Enter the weight to two decimal places and the volume in the appropriate fields on the "Grab Sample" tab.

4.5.23 Enter the date and time the sample is taken in the sample "Dt&By" field.

4.5.24 Recap the vial and reset the balance.

4.5.25 E-sign and save.

4.5.26 Select "Print Sample Label."

4.5.27 Ensure the "Zebra Label" is highlighted.

4.5.28 Select "Print."

4.5.29 Ensure the following information is present on the labels:

A. Sample ID number

B. Date the sample is taken

C. Time as indicated in the Dt & By field on the "Sub Sample" screen

D. Sampler's organization (e.g., AMWTP)

E. Sampler's name

F. Sampler's initials

G. Requested analysis

H. QC designation (i.e., primary or QC)

I. Sample description.

4.5.30 Print the trip blank sample label and attach it to the vial.

4.5.30.1 Ensure that the sample label contains complete information.

NOTE: *Sample vials are decontaminated at the lab using water-dampened towels that will smear any entries made with non-permanent ink.*

4.5.31 Sign and date the custody seal, using only permanent black or blue ink.

4.5.32 Ensure that the Custody Seal does **NOT** cover the vial label when the seal is affixed to the vial.

4.5.33 **WHEN** the Custody Seal is correctly affixed to the vial,
THEN select "YES" in the "Custody Seal Attached" field.

4.5.34 E-sign and save.

4.5.35 **REPEAT** Steps 4.5.5 through 4.5.34 for the remaining trip blanks.

4.5.35.1 Place the trip blanks into refrigerated storage.

4.5.35.1.1 Ensure the refrigerator door is locked.

4.5.36 Perform the following in WTS to move the trip blank samples to the refrigerator:

4.5.36.1 Select the "General" menu at the top of the screen.

4.5.36.2 Select "Movement/Location."

4.5.36.3 Select "Manual Move" screen.

4.5.36.4 Enter the sample vial ID number in the "Operator Container ID" field
AND press tab.

4.5.36.5 Enter the same vial ID number in the "Supervisor Container ID" field.

4.5.36.6 Click on "Supervisor Verification."

4.5.36.7 Supervisor or Designee: Perform the following:

4.5.36.7.1 E-sign and save.

4.5.36.7.2 Click on "Update Location" tab.

4.5.36.7.3 Select "634-Characterization" from the "Building" drop down list.

4.5.36.7.4 Select the "Section" block and press F9.

4.5.36.7.5 Select "Coring Area" from the list and click "OK."

4.5.36.7.6 Select the "Sub Section" block and press F9.

4.5.36.7.7 Select "Refrigerator" from the list and click "OK."

4.5.36.7.8 Select "Initiate."

4.5.36.7.9 Select "OK" to update location.

4.5.36.7.10 Select the CLEAR button to clear data.

4.5.37 **REPEAT** Steps 4.5.36.4 through 4.5.36.7.10 for the remaining samples.

4.5.38 Complete Block 17 on Form-1599.

4.5.39 Select the "General" menu on WTS.

4.5.39.1 Select "Movement/Location."

4.5.39.2 Select "Container Location Screen Report."

4.5.40 Select "Refrigerator" in the "Sub Section" field.

4.5.41 Select "Locate."

4.5.42 Confirm that the location is listed as "Refrigerator."

4.5.43 Select "Yes" in the "Preserved to 4 degrees C" field for all trip blanks.

4.5.44 E-sign and save.

4.5.45 Notify Transportation personnel that samples have been placed into refrigerated storage and request shipment scheduling.

4.6 Chain of Custody

NOTE 1: *Required fields on the CoC include*:

- *Signature of initiator*
- *Date and time*
- *Type and number of samples*
- *Sample matrix, preservatives*
- *Requested analyses*
- *Location of sample collection*
- *Waste container number*
- *Sample relinquishment and receipt signatures*
- *Documentation of discrepancies, breakage, or tampering*
- *Sample ID numbers*
- *Date and time of sample transfer.*

(MP-TRUW-8.2; HWMA/RCRA Permit)

NOTE 2: *A CoC record is assigned to each sample or group of samples. A CoC is a method of maintaining documented custody of samples taken from the glovebox through placement into refrigerated storage and during transport to the laboratory for analysis.*

(HWMA/RCRA Permit; MP-TRUW-8.2)

NOTE 3: *The receiving laboratory requires initial/primary and co-located/field duplicate samples to be on separate CoCs.*

4.6.1 Ensure that the CoC is created by the same individual that created and e-signed the subsample data.

4.6.2 Access the “Small Container Sampling” screen.

4.6.2.1 Enter the container number in the “Container Id” field and press F8 to upload the container data.

4.6.2.2 Select the “Grab Sample” tab.

4.6.2.3 Select the COC button.

4.6.2.4 Select the CREATE NEW COC button.

4.6.2.5 Enter the drum number(s) in the "Description" field on the "New CoC" pop-up screen and select OK.

4.6.2.6 Observe the "Chain of Custody" screen is activated.

4.6.2.7 View the "Unattached Samples" table and select each unattached sample to be attached to the CoC by setting the "Select" field to "YES."

4.6.2.8 Verify all samples have been selected and select on the "Right (>)" arrow.

4.6.2.9 Observe that WTS moves all selected samples for this container to the "Attached Subsamples" table.

4.6.2.9.1 Click on "Select All" on the "Attached Subsamples" side of the screen.

4.6.2.10 Enter sample discrepancies/comments, if necessary.

4.6.2.11 E-sign and save.

4.6.2.11.1 Observe the pop-up window question "Do you want to close CoC" appears.

4.6.2.11.2 Select "Save w/o Closing."

4.6.2.11.3 E-sign and save.

4.7 Chain of Custody Transfer

NOTE 1: *The OT/authorized individual in custody of the samples may maintain custody for the duration of the current shift rotation.*

NOTE 2: *Personnel receiving custody of samples are required to inspect the samples for discrepancies, breakage, or tampering.*

4.7.1 OT/Authorized Individual in Custody of Samples: Relinquish custody to a qualified OT/authorized individual as follows:

4.7.1.1 Select the AMWTP menu at the top of the screen.

4.7.1.2 Select “Characterization.”

4.7.1.3 Select “Coring.”

4.7.1.4 Select “Chain of Custody.”

4.7.1.5 Select “Search CoC” on the “Chain of Custody” screen.

4.7.1.6 Enter search criteria if desired (e.g., current custodian).

4.7.1.7 Select “Search.”

4.7.1.8 Locate and select the record associated with the samples.

4.7.1.9 Click on “Select.”

4.7.1.10 Observe that the current custodian, company, and “Attached Samples” fields are accurate.

4.7.1.11 Select the “Relinquished To” field and press F9.

4.7.1.11.1 Select the OT/Authorized Individual accepting custody of the samples from the list.

4.7.1.11.2 OT/Authorized Individual Accepting Custody: Inspect the samples for discrepancies, breakage, or tampering.

4.7.1.11.3 Enter sample discrepancies/comments, if necessary, in the “Sample Discrepancies/Comments” field.

4.7.1.12 OT/Authorized Individual Relinquishing Custody: E-sign and save.

4.7.1.12.1 Observe the pop-up screen and select “OK.”

4.7.1.13 OT/Authorized Individual Accepting Custody: Observe the pop-up screen and select “OK.”

4.7.1.13.1 E-sign and save.

4.8 Obtaining Authorization for Shipment of Samples to the Analytical Chemistry Laboratory

NOTE: *Authorization to ship samples is granted by the ACL **prior** to shipment. This is to ensure that the FGE limit for the ACL is not exceeded.*

4.8.1 Transportation Manager or Designee: Provide assay data sheets and coring screen shots to the ACL POC.

4.8.2 Transportation Manager or Designee: Obtain authorization from the ACL to ship samples.

4.9 Samples and Chain-of-Custody Transfer to Transportation Manager

4.9.1 Select the AMWTP, Characterization, Coring, and Chain of Custody menu at the top of the screen and scroll to "Characterization," then "Coring," then select "Chain of Custody."

4.9.2 Select "Search CoC" on the "Chain of Custody" screen.

4.9.2.1 Enter search criteria if desired (e.g., current custodian).

4.9.2.2 Select "Search."

4.9.2.3 Locate and select the record associated with the samples.

4.9.2.4 Click on "Select All."

4.9.3 Ensure that the information on the CoC is correct.

NOTE: *The selection of "Print/send to lab" will close the CoC. No additional modifications will be allowed.*

4.9.4 Select on "Print/send to lab."

4.9.4.1 Select "YES."

4.9.4.2 E-sign and save.

4.9.4.3 Observe the CoC appears on the WTS computer screen.

4.9.5 Print the CoC.

4.9.6 Retrieve the samples to be shipped from refrigerated storage and retrieve the CoC.

4.9.7 Relinquish the samples from the refrigerated storage area to the shipper as follows:

4.9.7.1 Sign in the "Relinquished by" block and record the date and time.

4.9.7.2 Release the sample packages and the CoC to the Transportation personnel.

4.9.7.3 Transportation Personnel: Inspect the sample for discrepancies, breakage, or tampering.

4.9.7.3.1 Enter sample discrepancies/comments, if necessary.

4.9.7.3.2 Transportation Personnel: Sign in the "Received By" block and record the date and time.

4.9.7.3.2.1 Record in the "Comments" section that the "FGE value of the parent drum used for transfer to the lab."

(RPT-NFCS-25, CWR #6)

4.9.8 Transportation Personnel: Package the samples into the transport container and ship in accordance with MP-TRUW-8.34.

4.10 Waste Segregation Prior to Glovebox Cleanout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.10.1 **IF** liquids were discovered upon opening the container
AND after sampling is complete,
THEN perform permitted treatment per Section 4.3.

4.10.2 Return all remaining sample material back to the source drum.

NOTE: *The priority for waste material returned to the parent drum is as follows:*

- *Sample materials*
- *Original materials (e.g., plastic, absorbents)*
- *Secondary waste generated as a result of sampling operations.*

4.10.3 Return all original packaging material and secondary waste to the drum.

(RPT-NFCS-25, CWR 4; HWMA/RCRA Permit)

4.10.4 Remove the vacuum bag from the canister and place it in the drum being processed.

4.10.4.1 Inspect the vacuum canister and ensure that it's empty.

4.10.4.1.1 Perform dual verification that the canister is empty, and document in the appropriate operating log, as applicable.

4.10.4.2 Perform **ONE** of the following:

4.10.4.2.1 Leave vacuum canister disassembled.

OR

4.10.4.2.2 Install a new vacuum bag and reassemble the vacuum.

(RPT-NFCS-25, CWR 4)

4.10.5 Wipe down all coring tools and equipment to a visibly clean condition.

4.10.6 Return all three sections of the glovebox to a visibly clean condition.

4.10.7 Handle and package waste materials that **CANNOT** be returned to the drum as secondary waste per INST-OI-24 and in accordance with the Hazardous Waste Determination (HWD) for drum coring.

4.10.8 Segregate all metal waste that is **NOT** returned to the drum from other waste types and stage waste for bagout, as necessary

4.10.9 Ensure that any waste materials remaining in the glovebox meets NCS-exempt criteria.

4.10.9.1 Perform dual verification of the NCS-exempt determination, **AND** document in the appropriate operating log, as applicable.

(RPT-NFCS-25, CWR 5)

4.10.10 Prepare waste for bagout, if necessary.

4.11 Drum Export from the Drum Core Sample Retrieval System

4.11.1 Don the appropriate PPE per the AMOW for drum coring operations.

4.11.2 Remove the upper drum stabilizing clamps and stow them away from the drum transfer sleeve port.

4.11.3 Extend the portable work platforms.

4.11.4 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.11.5 Export the drum.

WARNING 1

If extreme care is not taken when rotating the drum, the transfer sleeve seals may breach and spread contamination.

WARNING 2

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.11.6 Use extreme care in rotating the drum.

4.11.7 Ensure that proper technique in use of cutting tools is being used.

4.11.8 RCT: Perform necessary radiological surveys to downgrade the radiological posting of the containment enclosure area.

4.11.9 Using a HEPA-filtered vacuum, remove the trapped air from the drum transfer sleeve through the drum transfer sleeve HEPA filter.

NOTE: *Additional layers added in performing Step 4.11.10 will aid in cushioning the bag from the drum lid locking-ring.*

4.11.10 Place an additional layer of tape around the top lip of the drum over the drum transfer sleeve.

4.11.11 Ensure that the drum filter complies with the requirements identified in Section 3.0 of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and CCP-PO-003.

(CCP-PO-003; MP-TRUW-8.1)

4.11.12 Perform a VE per requirements in INST-OI-34, while performing final closure of the drum.

4.11.13 Update any related NCRs, as appropriate.

WARNING

Spread of contamination may result if extreme care is not taken while replacing the locking ring and bolt assembly. Improper technique or handling could cause a breach in the bag portion remaining outside the drum and result in inadvertent release of radioactive contamination.

4.11.14 Use extreme care while replacing locking ring and bolt assembly, ensuring proper technique and handling is being used.

4.11.15 Install filter vent and torque to 15 lb-ft.

4.11.15.1 Document the torque on Form-1625, M&TE Usage Report.

4.11.16 Place a drum lid with installed filter on the drum.

(HWMA/RCRA Permit)

4.11.16.1 Install the drum lid locking ring and bolt.

4.11.16.2 Torque the locking-ring bolt to 40 lb-ft.

4.11.16.3 Document the torque on Form-1625.

4.11.16.4 **IF** unable to properly install a lid on the container
OR
IF the container has questionable structural integrity,
THEN notify the SS
AND overpack the container per INST-OI-84, Waste Container Repair and Overpack.

4.11.17 Document all filters installed on the "Filter" screen in WTS.

4.11.17.1 Complete Form-1599, Block 5b, as applicable.

4.11.18 RCT: Perform all required radiological surveys to release the drum from the coring room.

WARNING

Pinch hazards exist while using hoisting, rigging, and drum stabilizing devices. Personal injury may result if body parts are not kept clear of suspended loads.

4.11.19 Use care to keep body parts clear of suspended loads.

4.11.20 Transfer the waste drum from the lift table to the conveyor output queue.

4.12 Glovebox/Satellite Accumulation Area Secondary Waste Percent of Utilization Tracking

NOTE 1: *Drum lids are secondary waste items and are managed in accordance with this section (Section 4.12) and in Section 4.14.*

NOTE 2: *Drums with volumes smaller than 55 gallons are placed into empty drum of minimum volume 55 gallons as soon as reasonably practical.*

4.12.1 Ensure that all fissile waste (non-NCS-exempt) is placed in a 55-gal drum or larger.

(RPT-NFCS-25, CWR 8)

4.12.2 **IF** the amount of waste in the satellite accumulation area (SAA) exceeds 55 gallons,
THEN place the excess waste in a second 55-gal drum
AND move the excess waste drum to an approved storage area within 3 days from when the excess occurred.

NOTE: *If the following step is applicable, the DCSRS is considered as an individual container and becomes part of the existing SAA.*

4.12.3 **IF** secondary waste remains in the DCSRS glovebox past the end of the generating shift,
THEN document the data for each individual package remaining in the glovebox in the SAA Logbook.

4.12.4 Ensure that each package of secondary waste is labeled with the following information, using a grease pencil or other suitable marking device:

- The words “Hazardous Waste”
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Package tracking number in the following format:
(Month/Day/Year– sequential number of the package added to the SAA that day 01, 02, etc.).

4.12.5 **IF** waste is to remain in the DCSRS glovebox past the end of shift for the crew that generated the waste,
THEN document the data for each individual package remaining in the glovebox in the SAA logbook.

4.12.5.1 Ensure that each package of secondary waste is labeled with the following information using a permanent marker:

- The words “Hazardous Waste”
- Information used for waste tracking (e.g., parent drum number or IDC and package contents, as necessary)
- Waste identification number in the following format (Month/Day/Year–sequential number of package generated on this day 01, 02, etc.).

4.12.5.2 Make the following entries on Form-1346, Satellite Accumulation Area (SAA) Inventory Log:

4.12.5.2.1 In the "Container or Tracking No." block, record in order the waste identification number(s) of each package.

4.12.5.2.2 Record a short description.

4.12.5.2.3 Record added and total volume.

4.12.5.2.4 Record the date added.

(MP-WM&M-13.2)

4.12.6 **IF** the SAA limit of 55 gallons, including the waste in the glovebox, is exceeded,
THEN perform the following:

4.12.6.1 Mark the SAA drum with the date that the excess occurred.

4.12.6.2 Move the SAA drum to an approved storage location within 3 days from when the excess occurred.

4.12.6.3 Immediately notify Waste Services personnel.

4.12.6.4 Notify the SS.

4.12.6.4.1 Place the drum in a safe configuration at the direction of the SS.

4.13 Soft Secondary Waste Bagout Operations

NOTE 1: *The bag out operation for drum lids and other metal items is covered in Section 4.14, Bag out of Drum Lids and Other Metal Items.*

NOTE 2: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

NOTE 3: *All non-metal secondary waste is packet assayed prior to placement in a collection container, unless determined to be NCS-exempt.*

4.13.1 RCT: Post the coring room according to the anticipated or actual radiological conditions.

4.13.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.13.3 Don the appropriate PPE per the AMOW for drum coring operations.

4.13.4 Perform secondary waste bagout operation as trained in accordance with T4140, Glovebox Operations Training, and QPSS0001, Solids Sampler Qualification Package.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.13.4.1 Use cutting tools properly.

4.13.4.2 Ensure size of waste package is limited to approximately 15 in. × 15 in. (not including closure) and 5.1 lb to prevent damage to the Lexan cover on the packet assay unit.

4.13.4.3 RCT: Perform radiological surveys of the package.

4.13.5 **REPEAT** Steps 4.13.4 and 4.13.4.3 until all applicable waste packages have been removed from the glovebox.

4.13.6 Perform a VE per requirements in INST-OI-34, as applicable.

4.13.7 RCT: Perform all required radiological surveys to downgrade the radiological posting of the coring room.

4.13.8 Apply the appropriate labels to each of the packages in accordance with INST-OI-24.

CAUTION

Failure to properly use and position any approved shielding may result in invalid packet assay results.

4.13.9 Ensure that any shielding around or near the packet assay during background and standardization checks is in the same location and configuration, prior to performing packet assay on waste packages, as applicable.

OR

4.13.10 Re-perform background and standardization checks in accordance with INST-OI-17.

4.13.11 Perform a packet assay of each non-metal package removed from the glovebox per instructions contained in INST-OI-17, unless determined to be NCS-exempt.

(RPT-NFCS-25, CWR 6)

4.13.12 Enter packet assay results for all secondary waste packages in WTS, as applicable.

4.13.13 Prior to adding waste to a drum containing radiological waste, check that the lid on the drum has a vent filter.

(RPT-TSR-03, SAC 5.2.7)

4.13.13.1 **IF** vent filter is **NOT** present,
THEN STOP WORK
AND contact the SS for direction.

4.13.14 Perform the following prior to transferring waste to the SAA collection container:

4.13.14.1 **IF** waste has been packet assayed,
THEN enter the assay value +2 sigma on Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.13.14.1.1 Document dual verification that addition of the waste does **NOT** increase the FGE content to >200 FGE by signing Form-1375.

(RPT-NFCS-25, CWR 6)

4.13.14.2 **IF** waste has been determined to be NCS-exempt
THEN record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter "NA" in the fourth column
- Enter "0" in the fifth column

4.13.14.2.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.13.14.3 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.13.14.3.1 Document dual verification that addition of the waste does not increase the FGE content to >200 FGE by signing Form-1375.

4.13.14.4 Enter the information on Form-1346, if applicable.

4.13.14.5 Place waste package(s) in the collection container.

(RPT-NFCS-25, CWR 6)

4.13.15 Close and secure the collection container.

4.13.16 Perform dual verification that all waste has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.13.16.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.14 Drum Lids and Other Metal Items Bagout

NOTE: *This section is performed concurrently with INST-OI-34 to perform VE of newly-generated secondary waste, as applicable.*

4.14.1 Inspect the bagout bag for rips, tears, abraded areas, intact seams, and an intact HEPA filter.

4.14.2 Handle and package the waste in accordance with INST-OI-24 and the applicable HWD.

4.14.3 RCT: Set up and post the containment enclosure area, according to the anticipated or actual radiological conditions.

4.14.4 Don the appropriate PPE per the AMOW for drum coring operations.

4.14.5 Inspect drum lids for sharp edges and if detected, pad with plastic tape prior to bagout operations.

WARNING

Spread of contamination may result if extreme care is not used when docking a new bagout bag to the drum transfer sleeve-in port. The potential exists for high-level radioactive contamination to be present under the bag stub when it is positioned for removal.

4.14.6 Use proper technique in bagout and bag change operations.

NOTE: *Package weight is limited to no more than 50 lb or 1/3 of body weight, whichever is less.*

4.14.7 Perform bagout of lids or other metal items.

WARNING

Improper use of cutting tools may result in personal injury and/or inadvertent release of radioactive contamination.

4.14.7.1 Ensure cutting tools are being used properly.

4.14.7.2 RCT: Perform necessary radiological surveys.

4.14.8 RCT: Perform a radiological survey of the lift table and containment enclosure to downgrade the radiological posting of the containment enclosure area.

4.14.9 Perform a VE per requirements in INST-OI-34, as applicable.

4.14.10 Obtain the appropriate waste package labels per INST-OI-24 and label the package appropriately.

4.14.11 Perform the following prior to transferring waste to a collection container:

4.14.11.1 **IF** waste has been determined to be NCS-exempt **THEN** record the following on Form-1375:

- Enter in the third column the Package No. and write NCS-exempt under the number
- Enter "NA" in the fourth column
- Enter "0" in the fifth column

4.14.11.1.1 Document dual verification that the waste is NCS-exempt by signing Form-1375.

4.14.11.2 **IF** waste has an unknown FGE
THEN enter the FGE limit of the parent drum to Form-1375 in the fourth column
AND ensure that the FGE balance (Form-1375 in the seventh column) will **NOT** exceed 200 FGE.

4.14.11.2.1 Document dual verification that addition of the waste does not increase the FGE content to > 200 FGE by signing Form-1375.

4.14.11.3 Enter the information on Form-1346, if applicable.

4.14.11.4 Log the information on Form-1957, Waste Container Inventory Sheet, if applicable.

4.14.12 Place waste package(s) in the collection container.

4.14.13 Close and secure the waste container.

4.14.14 Perform dual verification that all waste debris has been removed from the glovebox or that it has been determined to be NCS-exempt.

4.14.14.1 Document verification in the appropriate operating log.

(RPT-NFCS-25, CWR 4 & 5)

4.15 Batch Data Report Generation

4.15.1 **WHEN** completing documentation,
THEN ensure the following are performed:

A. All data is recorded legibly and accurately.

B. All changes are lined out, initialed, dated, and justified (if necessary) by the person who originally collected the data. Original data shall not be obliterated.

C. All data is transferred and reduced completely and accurately.

4.15.2 Close the batch by performing the following:

4.15.2.1 Access the “General” menu at the top of the screen.

4.15.2.2 Select “Batch.”

4.15.2.3 Enter the batch ID number and press F8 to auto-populate the batch data.

4.15.2.4 Select "Batch Comments" tab.

4.15.2.5 Enter the following information into the "Batch Comments" field:

- WMF-634, Coring Room
- Waste Matrix Code.

4.15.2.6 Review the information for adequacy.

4.15.2.7 Select "Close" in the "Batch Details" screen.

4.15.2.8 E-sign and save.

4.15.3 Access the "Data Review" tab at the top of the screen.

4.15.3.1 Select "Batch Reports."

4.15.3.1.1 Place cursor in "Batch Type" field.

4.15.3.1.2 Press F9 and select "Batch Type."

4.15.3.1.3 Ensure that all reports are selected.

4.15.3.1.4 Place cursor in "Batch ID" field and enter the batch ID number.

4.15.3.1.5 Ensure all fields are populated and correct.

4.15.3.1.5.1 Under the "Sections" table, ensure that all fields are checked.

4.15.3.1.6 Select "Printer."

4.15.3.1.7 Print report.

4.15.3.1.8 Make copies of all field records, which shall include the following, and place them into the "Batch Data Report" folder:

- Form-1215

- Form-1585 and/or Form-1602
- Form-1599.

4.15.3.1.9 Transfer the completed Batch Data Report to the independent technical reviewer.

NOTE: *Requirements for Manual Batch Data Reports are outlined in MP-TRUW-8.8, Level 1 Data Validation.*

4.15.4 **IF** a Manual Batch Data Report is required,
THEN perform the following:

4.15.4.1 Prepare a data folder for collection of the data reports printed from the WTS.

4.15.4.2 Select the "Data Review" screen icon at the top of the screen and click on it.

4.15.4.3 Select the "Batch Reports" option.

4.15.4.4 Enter "SSG" for the batch type.

4.15.4.5 Enter the "Batch ID" and select "All Selections."

4.15.4.6 Select the following reports on the "Batch Data Report" screen:

- Batch Coversheet
- Analysis Report.

4.15.4.6.1 Select "View Report" or "Print Report," as needed.

4.15.4.6.1.1 **IF** a printed report is required,
THEN ensure that a printer has been selected.

4.15.4.7 Make copies of all field records, which shall include the following, and place them into the "Batch Data Report" folder:

- Form-1215
- Form-1585 and/or Form-1602
- Form-1599.

4.15.4.8 Ensure each page is numbered sequentially.

4.15.4.9 Place the reports into the "Batch Data Report" folder.

4.15.4.10 Transfer the completed Batch Data Report to the independent technical reviewer.

(MP-TRUW-8.2)

4.16 Equipment Blank Requirements

NOTE 1: *Equipment blanks may be performed on a purchased-batch basis for sampling equipment purchased sterile and sealed in protective packaging. Equipment blanks need not be performed for equipment purchased in sealed protective packaging accompanied by a certificate certifying cleanliness.*

(MP-TRUW-8.2)

NOTE 2: *The DCSRS SME performs the steps in this section.*

4.16.1 Ensure disposable sampling equipment awaiting equipment blank results are **NOT** used until analytical results have been received from the laboratory and validated.

4.16.1.1 Until analytical results are received and validated, store disposable sampling equipment in a controlled area.

4.16.2 Maintain sample collection equipment in accordance with manufacturer's specifications.

4.16.2.1 Seal clean sampling tools in clean protective wrapping and store in a clean area.

(MP-TRUW-8.2)

4.16.3 Upon receipt of a purchased batch of disposable sampling tools (spatulas, weighing pans, etc.), perform the following:

4.16.3.1 Verify that the QA acceptance tag with purchase order (PO) number is attached to the shipping carton.

4.16.3.2 Write the PO number on each shipping carton in permanent ink.

4.16.3.3 Open the shipping carton ensuring that the inner packaging is intact.

4.16.3.3.1 **IF** the inner packaging is breached and the integrity of the parts is in question, **THEN** perform the following:

4.16.3.3.1.1 Initiate an NCR documenting the reason for rejection.

4.16.3.3.1.2 Place a red NCR tag on the rejected package(s).

4.16.3.3.1.3 Reject the package and send it back to the warehouse for return to the vendor.

CAUTION

Handling disposable sampling equipment with bare hands may result in contaminants from your skin being transferred to the components.

4.16.3.4 Don clean surgical gloves.

4.16.3.5 Select the tools or equipment to be used for equipment blank preparation and testing as follows:

4.16.3.5.1 Randomly select two spatulas or spoons per 100 count and/or 10 weighing pans per 500 count from each shipping carton.

4.16.3.5.2 Select one complete assembly of consumable coring bit parts per manufacturer’s lot.

4.16.3.6 Place the items (except the consumable coring bit parts) into separate sterile sampling bags, based on lot number, and seal them.

4.16.3.7 Label each bag as follows:

- PO number
- Manufacturer's lot number
- Analysis requested
- Company name
- Name and phone number of the person that packaged the tools.

NOTE: *An outside vendor provides the support for cleanliness verification and the process is controlled by a statement of work and purchase requisition.*

4.16.3.8 Deliver or ship the packaged tools to the personnel preparing the equipment blanks with a letter requesting equipment blanks be prepared per the statement of work attached to the purchase requisition.

4.16.3.8.1 Personnel Preparing Equipment Blanks: Ship or transfer blanks under CoC.

NOTE 1: *The analytical results for the equipment blanks are less than three times the method detection limits for VOCs and SVOCs and less than three times the program-required detection limits for metals.*

NOTE 2: *Laboratory results are documented on receiving inspection reports.*

NOTE 3: *The equipment blank results are referenced to the purchased batch PO number and manufacturer's lot number.*

NOTE 4: *The laboratory equipment blank batch number is referenced to the PO number and manufacturer's lot number.*

4.16.3.9 **WHEN** laboratory results are received and approved, **THEN** perform the following:

4.16.3.9.1 Retrieve the shipping cartons labeled with the PO number/lot number associated with the laboratory report.

4.16.3.9.2 Write the laboratory equipment blank batch number (lab number) referenced in the laboratory report on each of the shipping cartons.

4.16.3.9.3 Place the materials in the common storage area.

4.16.3.9.4 Place a copy of the laboratory report into the binder labeled "Equipment Blank Documentation," located in the drum coring room.

4.17 System Shutdown

4.17.1 Turn power OFF to all audio and video recording equipment including the closed-circuit television monitors.

4.17.2 Log off at each computer terminal at the DCSRS Control Station.

4.17.3 Close the Air Isolation Valve MV-1 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.17.4 Close the Air Isolation Valve MV-2 on the coring glovebox by turning the valve handle 90 degrees counter-clockwise.

4.17.5 Close the Air Isolation Valve MV-3 on the coring glovebox by turning the valve handle 90 degrees clockwise.

4.17.6 Close the Service Air Isolation Valve ¾" PA-R11-V1 on the coring glovebox 90 degrees clockwise.

4.17.7 Ensure that the local Conveyor Control Panel CP-214-010 is in AUTO.

4.18 Post-Job Review

4.18.1 SS: Perform a post-job review in accordance with MP-COPS-9.17.

4.19 Abnormal and Infrequent Operations

4.19.1 **GO TO** the appropriate abnormal and infrequent operation section from the following table based on the desired task to be performed,
THEN RETURN TO this step, if further activities will be performed:

Task	Section
Changing a glovebox glove	4.19.2
Changing a bagout bag	4.19.3
Dropped waste container	4.19.4
Breached container	4.19.5
Breached glovebox glove	4.19.6
Loss of room ventilation	4.19.7
Loss of glovebox ventilation (Zone 3)	4.19.8
Continuous air monitor alarm	4.19.9
Breached containment (drum transfer sleeve bag and bagout bags)	4.19.10
No heartbeat on local FTS control box	4.19.11
Alarm on local FTS control box	4.19.12
Preparation of rusted drums prior to waste drum import to DCSRS glovebox	4.19.13
Cancellation of a sampling operation	4.19.14
Responding to a spill	4.19.15

4.19.2 Changing a Glovebox Glove

NOTE: *The glove support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The glove with glove support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place, the glove with glove support ring will have expanded out, compressing the o-ring between the glove and inside diameter of the enclosure ring. The ridge or major diameter of the glove support ring will be seated in the groove on the inside diameter of the enclosure ring.*

4.19.2.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

NOTE: *New gloves that fail inspection criteria should not be used and should be discarded in the proper waste container*.

4.19.2.2 Inspect the glove to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.19.2.3 Remove the rubber o-ring from the glove support ring and place on a clean surface.

4.19.2.4 Place the bead of the glove into the narrow groove of the glove support ring.

4.19.2.5 Apply a light coating of vacuum grease to the o-ring.

4.19.2.6 Install the o-ring over the glove and onto the wide groove of the glove support ring.

4.19.2.6.1 Ensure that the glove is **NOT** wrinkled under the o-ring and glove bead is still in the narrow groove.

4.19.2.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.19.2.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

WARNING

Installation of glovebox gloves in any position except "thumbs up" may impede the operator from exiting the gloves in case of an emergency (e.g., fire or explosion).

4.19.2.9 Ensure gloves are installed in a thumb-up position.

NOTE: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar*.

4.19.2.10 Install the swaging collar over the glove and glove support ring.

4.19.2.10.1 Align the thumb of the glovebox glove with the notch in the swaging collar.

4.19.2.11 Engage the swaging collar to the bayonets on the ejection tool.

4.19.2.11.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.19.2.12 Ensure proper orientation of the glove thumb with the notch on the swaging collar.

4.19.2.13 Invert the glove into the inner housing.

4.19.2.14 Remove the plastic locking ring from the gloveport enclosure ring.

4.19.2.15 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10 o'clock position.

NOTE: *The notch and plunger on the ejection tool should be at a 12 o'clock position when the tool is properly installed on the enclosure ring*.

4.19.2.16 Rotate the ejection tool clockwise to the stop pin.

4.19.2.17 Apply light pull force on the glove and support ring to ensure proper alignment with the ejection tool and then release.

4.19.2.18 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.19.2.19 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.19.2.20 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.19.2.20.1 Remove the ejection tool from the enclosure ring.

4.19.2.21 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.19.2.21.1 Rotate the locking ring clockwise to the stop pin.

4.19.3 Changing a Bagout Bag

NOTE 1: *The bag support ring has a larger outside diameter than the inside diameter of the gloveport enclosure ring. The bag with bag support ring will be uniformly and temporarily compressed to the proper diameter as it is being pushed through the swaging collar. Once in place, the bag with bag support ring will have expanded out, compressing the o-ring between the bag and inside diameter of the enclosure ring. The ridge or major diameter of the bag support ring will be seated in the groove on the inside diameter of the enclosure ring.*

NOTE 2: *Bag support rings are fitted with two rubber o-rings which provide additional stability.*

4.19.3.1 Ensure Radiological Safety personnel have been notified and are present for the performance of the steps in this section.

NOTE: *New bagout bags that fail inspection criteria are not to be used.*

4.19.3.2 Inspect the bag to be installed for any sign of damage (e.g., abrasion, cracks, or separation of rubber layers).

4.19.3.3 Remove the rubber o-rings from the glove support ring and place on a clean surface.

4.19.3.4 Place the o-ring of the bag into the narrow groove of the bag support ring.

4.19.3.5 Apply a light coating of vacuum grease to the o-rings.

4.19.3.6 Install the o-rings over the bag and onto the wide grooves of the bag support ring.

4.19.3.6.1 Ensure that the bag is **NOT** wrinkled under the o-rings and the bag o-ring is still in the narrow groove.

4.19.3.7 Retract the inner housing of the ejection tool by turning the hand wheel counter-clockwise.

4.19.3.8 Retract the plunger and remove the swaging collar from the ejection tool by rotating it in either direction until it releases from the bayonets.

4.19.3.9 Reach through the ring to the bottom of the bag and grip it.

4.19.3.10 Pull the bag all the way back through the ring.

4.19.3.11 Smooth and straighten the bag.

4.19.3.12 Reach through the ring to the bottom of the bag again, and grip it.

4.19.3.13 Pull the bag back on itself until it is approximately 1 in. from the bag support ring.

4.19.3.14 Flatten and smooth the bag and roll it up completely, toward the ring.

4.19.3.15 Place the bag inside the inner housing of the ejection tool, with the bag ring on the open end of the ejection tool.

NOTE: *A very light coating of vacuum grease should be applied periodically to the inside surface of the swaging collar.*

4.19.3.16 Install the swaging collar over the support ring.

4.19.3.17 Engage the swaging collar to the bayonets on the ejection tool.

4.19.3.17.1 Rotate the swaging collar until the plunger locks into the notch on the swaging collar.

4.19.3.18 Remove the plastic locking ring from the gloveport enclosure ring.

4.19.3.19 Orient the bayonet that is in line with the swaging collar plunger with the bayonet opening in the enclosure ring at approximately a 10 o'clock position.

NOTE: *The notch and plunger on the ejection tool should be at a 12 o'clock position when the tool is properly installed on the enclosure ring.*

4.19.3.20 Rotate the ejection tool clockwise to the stop pin.

4.19.3.21 Apply light pull force on the bag and support ring to ensure proper alignment with the ejection tool and then release.

4.19.3.22 Turn the hand wheel of the ejection tool clockwise until it bottoms on the outer tool housing.

4.19.3.23 Retract the inner housing of the ejection tool by turning the hand wheel fully counter-clockwise.

4.19.3.24 Orient the bayonets of the ejection tool with the bayonet openings on the enclosure ring.

4.19.3.24.1 Remove the ejection tool from the enclosure ring.

4.19.3.25 **IF** the previous bag support ring and bag stub have **NOT** fully disengaged from the inside of the enclosure ring, **THEN** use light hand pressure to free the bag support ring and bag stub from the port to the inside of the glovebox.

4.19.3.26 Orient the bayonets of the locking ring with the bayonet openings of the enclosure ring.

4.19.3.27 Rotate the locking ring clockwise to the stop pin.

4.19.4 Dropped Waste Container

4.19.4.1 Suspend operations.

4.19.4.2 Warn others in the area.

4.19.4.3 Shut down transport equipment, if applicable.

4.19.4.4 Evacuate the affected area and standby for RCT to perform personnel survey.

4.19.4.5 Isolate the area to prevent others from entering.

4.19.4.6 Notify RCT and SS immediately.

4.19.4.7 Reference INST-OI-11, Waste Container Handling, for direction on handling dropped waste containers.

4.19.5 Breached Container

4.19.5.1 Suspend operations.

4.19.5.2 Warn others in the area.

4.19.5.3 Evacuate the affected area and standby for RCT to perform personnel survey.

4.19.5.4 Isolate the area to prevent others from entering.

4.19.5.5 Notify RCT and SS immediately.

4.19.5.6 Reference INST-OI-11 for direction on handling breached waste containers.

4.19.6 Breached Glovebox Glove

WARNING

Exiting the gloves greatly increases the potential for spread of contamination.

4.19.6.1 **IF** working in the glovebox gloves at the time of discovery,
THEN perform the following:

4.19.6.1.1 Limit movement
AND do **NOT** exit the gloves.

4.19.6.1.2 Call for the immediate assistance of a RCT.

4.19.6.1.3 Perform a controlled exit from the glovebox gloves under the direction of the RCT.

4.19.6.1.4 Notify the SS.

4.19.6.1.5 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.19.6.1.6 Change the glove.

4.19.6.1.7 RCT: Perform necessary surveys to verify new glove is radiologically clean.

4.19.6.2 **IF NOT** working in the glovebox gloves at the time of discovery,
THEN perform the following:

4.19.6.2.1 Place a piece of tape over the glove-port to prevent any coworker from using it.

4.19.6.2.2 Notify RCT and SS.

4.19.6.2.3 Change the glove.

4.19.7 Loss of Room Ventilation (Zone 2)

4.19.7.1 Suspend operations.

4.19.7.2 Warn others in the immediate area.

NOTE: *Electrical power to the drill motors and lift fixture is automatically shut off upon loss of Zone 2 ventilation. The Zone 2 heating, ventilating, and air conditioning (HVAC) fault light will be illuminated on Safety Panel CP-250-803.*

4.19.7.3 Place equipment in a safe configuration.

4.19.7.4 Evacuate the affected area and standby for RT to perform personnel survey.

4.19.7.5 Isolate the area to prevent others from entering.

4.19.7.6 Notify the RCT and SS immediately.

4.19.7.7 **WHEN** directed by the SS,
THEN restore Zone 2 ventilation per INST-OI-33, Characterization Facility HVAC Systems Operations.

4.19.7.8 **WHEN** directed by the SS,
THEN resume normal operations.

NOTE: *The fault condition will also be observed on the Human/Machine Interface computer terminal on the "Alarm Message Bar," highlighted in bright red.*

4.19.7.9 **GO TO** Safety Panel CP-250-803 and observe that the curtain trip light indicator is illuminated, and the Zone 2 HVAC fault light is off.

4.19.7.10 Clear the Light Curtain fault by depressing the CURTAIN RESET button with the curtain control key in the UNLOCK position.

4.19.8 Loss of Glovebox Ventilation (Zone 3)

4.19.8.1 Suspend operations.

4.19.8.2 Warn others in the immediate area.

4.19.8.3 Place equipment in a safe configuration.

NOTE 1: *Audible and visual alarms will activate when glovebox differential pressure meets out of tolerance limits.*

NOTE 2: *All electrical power supplied to the glovebox is automatically shut off upon loss of ventilation. The Zone 3 HVAC fault indicator light on Safety Panel CP-250-803 will be illuminated. The dust vacuum fault light will also be illuminated if the vacuum is running.*

4.19.8.4 Isolate the area to prevent others from entering.

4.19.8.5 Notify the RCT and SS immediately.

4.19.8.6 Secure Zone 2 ventilation per INST-OI-33.

4.19.8.7 **WHEN** directed by the SS,
THEN restore Zone 2 and Zone 3 ventilation per INST-OI-33.

4.19.8.8 **WHEN** directed by SS,
THEN resume normal operations.

4.19.8.9 **GO TO** the Electrical Distribution Panel BDP-232-003
AND reset shunt trip breakers.

4.19.8.10 **GO TO** Safety Panel CP-250-803
AND observe that the Zone 2 and Zone 3 HVAC fault light indicators are off.

4.19.9 Continuous Air Monitor (CAM) Alarm

4.19.9.1 Suspend operations.

4.19.9.2 Warn others in the affected area.

4.19.9.3 Evacuate the affected area
AND standby for RCT to perform personnel survey.

4.19.9.4 Isolate the area to prevent others from entering.

4.19.9.5 Notify the RCT and SS immediately.

4.19.9.6 **WHEN** directed by the SS,
THEN resume normal operations.

4.19.10 Breached Containment (Drum Transfer Sleeve Bag and Bagout Bags)

4.19.10.1 Suspend operations.

4.19.10.2 **IF** the breach occurs while donned in the appropriate PPE for the operation,
THEN repair the breach at the direction of the RCT
AND notify the SS.

4.19.10.3 Evacuate the affected area and standby for RCT to perform personnel survey.

4.19.10.4 Warn others in the immediate area.

4.19.10.5 Isolate the area to prevent others from entering.

4.19.10.6 Notify the RCT and SS immediately.

4.19.10.7 Repair the breach at the direction of the RCT.

4.19.10.8 **WHEN** directed by SS,
THEN resume normal operations.

4.19.11 No Heartbeat on Local FTS Control Box

4.19.11.1 Contact the FTS administrator.

4.19.11.2 Stop the import of any drums to the DCSRS glovebox until the problem is corrected.

4.19.11.3 **WHEN** directed by SS,
THEN resume normal operations.

4.19.12 Alarm on Local FTS Control Box

4.19.12.1 Contact the assay control room and determine the alarm condition indicated on the FTS workstation.

NOTE: *An incomplete record indicates the transfer of data is not complete for this drum.*

4.19.12.2 **IF** the alarm is an incomplete record,
THEN perform the following:

4.19.12.2.1 Set the drum with incomplete data aside.

4.19.12.2.2 Contact the FTS administrator.

4.19.12.2.3 **WHEN** directed by SS,
THEN resume operations on the drum with incomplete data.

4.19.13 Preparation of Rusted Drums Prior to Waste Drum Import to DCSRS Glovebox

NOTE 1: *Surface rust poses a potential threat to the integrity of the tape seal used to attach the drum transfer sleeve to the drum.*

NOTE 2: *Operations and Radiological Safety personnel determines whether conditions warrant the use of this section of this instruction.*

4.19.13.1 RCT: Set up and post area according to anticipated or actual radiological conditions.

4.19.13.2 Don the appropriate PPE per approved work control per PD-COPS-9.18.

4.19.13.3 Place suitable material on the floor in the area approved for this work, if necessary.

4.19.13.4 Move the drum to the approved work area in accordance with MP-CMNT-10.22, Production Lifting Activities.

NOTE: *The locking ringbolt may be extremely corroded. Normal means of loosening and removing the bolt may not be possible. In these cases, the bolt may be cut using an appropriate tool (example porta-band, sawsall, etc.).*

4.19.13.5 Remove the locking ring bolt.

4.19.13.6 Remove the locking ring using the appropriate tools.

4.19.13.7 RCT: Perform required radiological surveys.

4.19.13.8 Apply localized ventilation using a HEPA-filtered exhaust vacuum under the area to be scraped and prepared, if necessary.

4.19.13.9 Remove as much of the loose surface rust as possible between the top lip and the top chime of the drum using an appropriate tool (e.g., wire brush, scraper).

4.19.13.10 Wipe this area with a damp wipe and dry using an additional clean wipe.

4.19.13.11 Tape the drum lid to the drum using suitable tape.

4.19.13.12 Tightly wrap cargo or duct tape over the prepared surface until a smooth surface is achieved.

4.19.13.13 Place a new lid-locking ring with bolt on the drum and secure in place, unless the drum is to be immediately docked to the DCSRS glovebox.

4.19.13.14 Apply shrink-wrap to the drum between the top and bottom chime, if necessary to protect the integrity of drum transfer sleeve.

4.19.13.15 Continue with normal operations.

4.19.14 Cancellation of a Sampling Operation

4.19.14.1 **IF** canceling a grab sample operation,
THEN select "YES" in the "Cancel Package Sample" field
AND enter the reason in the "Cancel Reason" field.

4.19.14.2 **IF** canceling a Field Duplicate Grab Sample operation,
THEN select "YES" in the "Cancel Grab Sample" field
AND enter the reason in the "Cancel Reason" field.

4.19.14.3 E-sign and save.

4.19.14.4 Repeat the required sampling steps to recover, beginning in the appropriate screen and tab, and selecting "Event Id," or "Sample Id," as applicable, for the type of sample being collected in accordance with the proper section being performed.

4.19.15 Responding to a Spill

NOTE: *Spillages involving fissile material within the DCSRS area are cleaned up prior to the next shift unless otherwise approved by a criticality safety officer or criticality safety engineer.*

(RPT-NFCS-25, CWR 4; HWMA/RCRA Permit)

4.19.15.1 Notify the SS.

4.19.15.2 Implement INST-OI-88, Spill/Leak Response and Cleanup, as directed by the SS.

NOTE: *The designated on-call environmental person is notified before the start of the next shift.*

4.19.15.3 SS: Notify (prior to the end of the present shift) the designated on-call ES&H representative.

4.19.15.4 SS: **IF** the spill **CANNOT** be mitigated prior to the end of the shift,
THEN notify the Criticality Safety Officer or Criticality Safety engineer of the situation
AND proceed as determined necessary.

(HWMA/RCRA Permit)

4.19.15.5 Proceed as directed by the SS.

5.0 DEFINITIONS

Criticality working requirement. Term used to designate requirements of the AMWTP Criticality Safety Analysis.

Field duplicate. Duplicate sample taken from a second core placed at the same location within the drum and is collected to verify the precision of the coring and sampling procedures.

Fissile gram equivalent ^{239}Pu. Grams of fissile material normalized to ^{239}Pu.

Initial grab sample. The first sample taken from any drum.

Inorganic homogeneous solids. Any homogenous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates.

Integrated control system. The purpose of the ICS is to provide control, monitoring, and intercession of Advanced Mixed Waste Treatment Facility systems from one or more computer workstations. The ICS provides automatic running of the system, manual running of the system, individual device manipulation, remote and local monitoring, alarm functions, stop and abort functions, trouble-shooting/diagnostics, immediate dynamic and historical information.

Liquids, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing VE of the waste. This term can be implemented consistently during characterization regardless of waste type.

NCS-exempt material (e.g., soil, waste, debris) that has **ONE** of the following characteristics

1. Contains a fissionable nuclide concentration not exceeding 0.072 FGE/L. This limit is equivalent to 15 FGE ^{239}PU within a nominal 55-gal volume.

2. Is an item considered to be solid, dense, and contains no voids or hidden recesses/crevices and only has fixed surface contamination (i.e., would require physical scraping or soaking in solvents to remove the contamination). The item must be orders of magnitude larger than the total volume of contamination present and the contamination volume must be less than the volume of a golf ball (as determined if it could all be removed).

Organic homogeneous solids. Any homogenous materials consisting of sludge or organic-based liquids that are solidified with cement, calcium silicate, or absorbed on solid material. Examples are cemented organic resins, organic liquids (solvents, oils, grease) absorbed on solid material.

Semi-volatile organic compound. A general term for organic compounds that volatilize at a relatively slow rate at standard temperature and pressure (20°C @ 1 atm).

Source drum. The drum containing the original waste.

Volatile organic compound. A general term for organic compounds capable of a high degree of vaporization at standard temperature and pressure (20°C@ 1 atm).

Zone 3. Contained contaminated area which is accessible only by personnel wearing the appropriate PPE.

6.0 REFERENCES

(1) 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout)

(2) AMWTP HWMA/RCRA Permit

(3) ANSI Z244.1, Control of Hazardous Energy Lockout/Tagout and Alternative Methods

(4) CAT 1 and CAT 2 Air Exemptions for WMF-634

(5) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(6) Form-1136, Radiological Safety Soft-Sided Containment (SSC) Inspection

(7) INST-COPS-9.20.1, Lockout/Tagout

(8) INST-FOI-27, FTS Operations

(9) INST-OI-11, Waste Container Handling

(10) INST-OI-17, DCSRS Packet Assay System Operations

(11) INST-OI-24, Packaging Radioactive Waste

(12) INST-OI-33, Characterization Facility HVAC Systems Operations

(13) INST-OI-34, Non-Facility Visual Examination Operations

(14) INST-OI-84, Waste Container Repair and Overpack

(15) INST-OI-88, Spill/Leak Response and Cleanup

(16) INST-RS&C-6.9.1, Soft-Sided Containments

(17) MP-CMNT-10.22, Production Lifting Activities

(18) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(19) MP-COPS-9.20, Hazardous Energy Control Processes

(20) MP-DOCS-18.2, Records Management

(21) MP-NFCS-4.1, Criticality Safety Postings

(22) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(23) MP-RS&C-6.9, Temporary Containments

(24) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(25) MP-TRUW-8.2, Quality Assurance Project Plan

(26) MP-TRUW-8.8, Level I Data Validation

(27) MP-TRUW-8.34, WIPP Sample Shipments

(28) MP-WM&M-13.2, Satellite Accumulation Areas

(29) PD-COPS-9.18, Work Control

(30) RPT-ESH-071, Category I and Category II Exemption for the AMWTP Characterization Facility

(31) RPT-NFCS-09, Criticality Safety Analysis Involving the Use of Liquid Sorbents and Immobilizing Agents

(32) RPT-NFCS-15, Criticality Safety Evaluation for TSA-RE Retrieval Operations

(33) RPT-NFCS-25, Criticality Safety Evaluation (CSE) Involving the Drum Core Sample Retrieval System

(34) RPT-TRUW-05, Waste Matrix Code Reference Manual

(35) RPT-TSR-03, Technical Safety Requirements

(36) TSCA RBDA, EPA Approval of TSCA RBDA for the Absorption of PCB-Contaminated Liquids

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-75, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 5 years after submittal
Form-1215, Analytical Balance Calibration Check Sheet	Nonpermanent WIPP/ENV1-J-1/Destroy 5 years after submittal
Form-1346, Satellite Accumulation Area (SAA) Inventory Logsheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1375, Container Fissile Gram Inventory Log 200 FGE Limit (Drum) 325 FGE Limit (Box)	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1585, Refrigerator Temperature Logsheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1599, AMWTP Solid Sampling Checklist	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1602, Characterization Round Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1699, Drum Coring/VE Log, or eSOMS equivalent	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility
Form-1957, Waste Container Inventory Sheet	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after life of facility

8.0 EXHIBITS

Sample Amounts and Container Requirements for a Single Core Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	1	20-mL VOA vial	Purgeable VOC	Yes
2	2.5–3.0 grams	1	20-mL VOA vial	NHVOC	Yes
*3	12-12.5 grams	1	20-mL VOA vial or 125-mL jar	NHVOC-Hydazine	Yes
*4	12-12.5 grams	1	20-mL VOA vial or 125-mL jar	NHVOC-Formaldehyde	Yes
5	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either purgeable VOC or NHVOC	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination sample for metals and SVOCs	Yes

* Only required for Savannah River (SRS) site generated waste streams.

Sample Amounts and Container Requirements for a Co-located Sample Field Duplicate Sample.

Item	Quantity of Material	Number of Containers	Type of Container	Analysis to be Performed	Cooling Required
1	2.5–3.0 grams	3	20-mL VOA vial	Purgeable VOC + QC	Yes
2	2.5–3.0 grams	3	20-mL VOA vial	NHVOC + QC	Yes
*3	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Hydazine	Yes
*4	12-12.5 grams	1	20-mL VOA vial **or** 125-mL jar	NHVOC-Formaldehyde	Yes
5	2.5–3.0 grams	2	20-mL VOA vial	Spare sample for either purgeable VOC or NHVOC	Yes
6	30–40 grams	1	125-mL jar w/ Teflon-lined screw-on cap	Combination sample for metals and SVOCs	Yes

* Only required for Savannah River (SRS) site generated waste streams.

Exhibit 1. Laboratory Required Sample Amounts and Container Sizes.

9.0 APPENDICES

Appendix A – Small Container Sampling Required Items List

Appendix B – Revision Log

Appendix A – Small Container Sampling Required Items List

Sample Preparation Glovebox Equipment	Consumables	Tools
• Electronic balance • NIST-certified calibration weights • Grease pencil • Bag knife • Tubing cutter • Tape measure or steel rule • Vinyl tape • Sample support stand • Forceps • Hammer	• Sample vials • Weighing boats • Disposable sampling tools • Drum transfer sleeve with HEPA filter • Bagout bags • Disposable wipes • Disposable gloves • Disposable transfer containers • Box knives • 2-in. tape • 1.5 in. double sided tape • Appropriately sized waste packaging bags • Large rubber bands • Custody seals • Steel band clamps • Glovebox gloves • Drum lids • Vacuum bags • Filters • Lid bags • Blank VHS or mini-DV tapes	• Ratchet and sockets • Drum lid removal tools • Calibrated torque wrenches • Calibrated electronic balances • Chisel, tools • Scoops • Portable air mover with HEPA filtered exhaust • Glovebox glove changing tools • Bag knife • Box knife • Hammer • Wrenches

Appendix B – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	03/03/08	All	DCR-5890-1. Initial issue.
1	05/21/08	Various	DCR-7107. Changes made for consistency with support tasks and required for WTS code operation. Corrected panel identification shunt trip breaker IDs. Rearranged Section 4.1 to match process flow. Corrected Section 4.2 for selection of tools and process flow. Streamlined roles and responsibilities and P&Ls. Added treatment of liquids to Section 4.3. Editorial changes made and rolldowns updated. Corrected step references.
1 FC-1	06/19/08	Page 46/4.2.3.24.23.1	DCR-7263. Add step "IF all sampling has been completed, THEN complete Form-1599, Block 10", to formally document sample duration time.
2	01/21/09	Various	DCR-7852. Incorporated FC-1 (DCR-7263). Incorporated changes related to implementation of newly approved DSA/TSR documents (deleted P&L #3.1.18). Made minor editorial changes for consistency with MP-DOCS-18.1 requirements.
2 FC-1	5/12/09	21, 47, 64	DCR-8339. Changes required to support multiple sampling of a single drum.
2 FC-2	8/13/09	16, 70, 73, B1	DCR-8627. Update method.
3	12/21/09	Various	DCR-8672. Items added to Incorporate Hazardous Assessment HA-N-045. Made minor editorial changes for consistency with MP-DOCS-18.1 requirements. Incorporated DOCS-Bluesheet-02 changes.
3 FC-1	05/10/10	Pg 7	DCR-9228. Change made to resolve CAR 49662, incorporating alternate isolation device information**.**

Revision Number	Date Approved	Pages Affected	Description of Revision
4	06/23/10	Various	DCR-9231. Incorporated DCR-9228, changes to incorporate operational requirements and WIPP Permit modifications.
4 FC-1	09/10/10	Various	DCR-9511. Corrects deficiencies for data entry.
5	10/11/10	Various	DCR-9552. Incorporated DCR-9511, operational requirements and changes to clarify procedure.
6	12/07/10	Section 2.0	DCR-9700. Added Qualified Operations Technician or Characterization Shift Supervisor to Section 2.0 under Authorized Individual
7	02/24/11	Various	DCR-9856. Changes to include VE in operations, allow OTs to skip steps relating to sampling, and add requirement for additional samples taken.
8	07/20/11	Various	DCR-10201. Changed use type to "Controlled Activity" and corrected title for INST-OI-24.
8 FC-1	08/16/11	Pgs 53, 54, 55, 56, & B2	DCR-10279. Changes to required trip blank volumes, deleted duplicated steps, and moved steps to proper location in document.
8 FC-2	09/06/11	Pg 64	DCR-10390. Insert substep to allow OT to overpack a drum if needed.
9	TBD	Pg 12, 62, 63, & B2	DCR-10614. Changes needed to handle vacuum bag. Incorporated ITG Bluesheet-020. Incorporated FC-1 (DCR-10279) and FC-2 (DCR-10390).
10	03/28/12	Various	DCR-10910. Entire document revised. Revised procedure to resolve CAR 68018 and to meet requirements of RPT-NFCS-25 and 29 CFR 1910.147 and operational requirements. Also revised to make it consistent with other DCSRS documents.
10 FC-1	04/02/12	Various	DCR-11087. Added steps to perform VE when required & clarification of NCS-exempt waste.
10 FC-2	04/05/12	Page 66	DCR-11113. Drum torque directions.
10 FC-3	04/12/12/	36, 40, 44, B2	DCR-11135. Form-1599, Block 9, instructions.

AMWTP INSTRUCTION		
INST-OI-75, Rev. 11	Issued: 06/07/12	Effective: 06/07/12 @ 1200 Hrs

Container-in-Container Sampling

Revision Number	Date Approved	Pages Affected	Description of Revision
11	06/07/12	Various	DCR-11240. Incorporated FC-1 (DCR-11087), FC-2 (DCR-11113), & FC-3 (DCR-11135). Deleted some steps related to samples being packet assayed since samples are no longer being packet assayed. Deleted "bung type" so that any type filter may be installed.

Real-Time Radiography Operations (for WIPP Certification of Boxes)

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11431.*) 08/06/12

Brian Warner
Characterization Lead

Date

AMWTP INSTRUCTION		
INST-OI-81, Rev. 10	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs
Real-Time Radiography Operations (for WIPP Certification of Boxes)		

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AMWTP INSTRUCTION		
INST-OI-81, Rev. 10	Issued: 08/23/12	Effective: 08/23/12 @ 0900 Hrs

Real-Time Radiography Operations (for WIPP Certification of Boxes)

1.0 PURPOSE/SCOPE

The Advanced Mixed Waste Treatment Project (AMWTP) Real-Time Radiography (RTR) system is a nondestructive examination technique used to verify the physical form of the waste and the absence of liquids and containerized gases within the contents of radioactive and mixed waste containers. In addition to identifying the contents of containers, the RTR system also provides digital data-recording capabilities. Examination of containers verifies the specific waste matrix code (WMC) and *waste stream* (see def.) description, identifies prohibited items, and estimates each waste material parameter weight as required for disposal at the Waste Isolation Pilot Plant (WIPP). In the case of unlabeled containers, RTR is used to correlate the contents of the container with known waste types and, if possible, assign an item description code (IDC).

This document applies to the operation of the RTR and operating software.

(HWMA/RCRA Permit; MP-TRUW-8.1; MP TRUW-8.2; CCP-PO-003)

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Operations Technician (OT)	• Unless otherwise specified, performs the steps in this instruction.
Shift Supervisor (SS)	• Logs status changes • Updates the applicable status boards • Performs post-job reviews • Makes necessary notifications.
System Engineer (SE)	• Evaluates conditions and advises SS.

3.0 PRECAUTIONS AND LIMITATIONS/PREREQUISITES

3.1 Precautions and Limitations

3.1.1 The RTR door interlock systems, audible and visual warning signals, minimum 20-second delay function, emergency shutdown switches, and shielding shall be *operable* (see def.) when the associated RTR x-ray unit is capable of generating x-rays.

(ANSI-N43.3)

3.1.2 To avoid personnel exposure, personnel must ensure that the shielded enclosure is clear of personnel before initiating x-rays.

3.1.2.1 When personnel are using the mirror mounted inside the shielded enclosure, they must ensure the hidden area located underneath the camera is unoccupied.

3.1.3 To avoid personnel exposure to x-rays and personnel injury, emergency stops to shut off x-ray generation and equipment movement are located on the operator control console (red mushroom pushbutton), and within the RTR enclosure (pull cords).

3.1.4 The personnel access door can be opened from inside the RTR enclosure to allow personnel egress during an emergency. If x-rays are being generated, opening the personnel door will stop generation of x-rays.

3.1.5 The cart enable/disable key must be switched to DISABLE, the key removed, and maintained under operator control when loading, unloading, and rotating the cart or installing/removing the drum manipulator and when entered the enclosure.

3.1.6 The maximum capacity for the x-ray cart is 10,000 lb.

3.1.7 Before leaving the RTR control console unattended, the x-ray controller must be placed in STAND BY mode and the key must be removed and maintained under operator control or stored in the master key locker.

3.1.8 The x-ray controller may be turned off at any time; however, if time permits, maintaining the key switch in STANDBY after periods of continuous operation will help ensure adequate cool down before switching off.

3.1.9 To ensure waste boxes are not frozen, waste boxes must be preheated for a minimum of 72 hours at 18°C or higher during cold weather. Preheating is required October through April. The SS will determine if preheating is required outside the October through April window. After 72-hour initial preheat and if the box has not been removed from WMF-634, the temperature may fall below 18°C (in WMF-634) as long as it does not fall below 1°C for any period of time.

(HWMA/RCRA Permit)

3.1.10 For safety, personnel must stay clear of the moving cart and moving doors.

3.1.11 When entering the shielded enclosure following the conclusion of x-ray generation, a qualified radiological controls technician (RCT) shall use a suitable, operable, calibrated survey instrument to verify that the source is in its fully shielded condition or that the x-ray tube has been de-energized. The qualified RCT shall document this survey in accordance with MP-RS&C-6.22, Radiological Survey Program.

3.1.12 The x-ray enclosure interior is a very high radiation area when the x-ray generator is on. Personnel are not allowed inside the enclosure while x-rays are being produced.

3.1.13 The RTR is an x-ray-generating device. Direct exposure to the x-ray beam may result in serious injury or death. Personnel must avoid exposure by observing all warning devices and personnel barriers.

3.1.14 Alternative methods for hazardous energy control are used in this procedure for servicing tasks that are routine, repetitive, and integral to the use of the equipment for production in accordance with MP-COPS-9.20, Hazardous Energy Control Processes.

3.1.15 Waste containers containing explosives must have a nonconformance report (NCR) generated in accordance with MP-QS&I-5.4, Identification of Nonconforming Conditions, and will be identified for return shipment to the waste-generating Department of Energy (DOE) contractor following appropriate shipping procedures and regulations.

(HWMA/RCRA Permit)

3.2 Prerequisites

3.2.1 Personnel operating the RTR are properly qualified in accordance with MP-RTQP-14.4, Personnel Qualification and Certification, by completing the qualification checklist for an RTR operator (QPOT03A).

(HWMA/RCRA Permit; MP-TRUW-8.1)

3.2.2 The following forms are available:

- Applicable operator log
- Form-1578, Imaging Quality Indicator Verification Form for RTR
- Form-1218, Daily RTR Safety Checks.

3.2.3 Operations Technician has obtained the following items (keys are in the master key locker):

- Operator control console power key
- E-Stop reset key
- X-ray control console key
- Cart enable/disable key
- Recording media (DVD if needed)
- Image Quality Indicator (IQI) test pattern.

(HWMA/RCRA Permit; MP-TRUW-8.1)

3.2.4 Waste Tracking System (WTS) is available.

3.2.5 A pre-job brief has been performed per MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews, as directed by the SS prior to performing work in this procedure.

3.2.6 The following required safety checks have been verified (and logged on the applicable operator log) to be within periodicity
OR the system is being operated to perform the safety checks or other activities to restore the system to operability.

Safety Check	Performed Per	Periodicity
RTR door interlocks, warning signals, delay function, and emergency switches	INST-MI-1002, RTR 6-Month Safety Check for RTR System Z-213-101 and Z-213-106	Semiannually or following configuration changes or modifications
RTR shielding survey	Form-1377, WMF-634 RTR Shielding Radiation Survey	Semiannually or following configuration changes or modifications

(ANSI-N43.3)

4.0 INSTRUCTIONS

4.1 General Instructions

NOTE: *Entering the shielded enclosure may be performed at any time throughout this procedure as necessary to perform routine inspections and escort personnel for inspections or training.*

4.1.1 **IF** entry into the shielded enclosure is necessary at any point during the performance of this procedure,
THEN GO TO Section 4.3
AND RETURN TO the point of departure in the previous section when complete.

4.1.2 **IF** an abnormal or infrequent event is encountered at any point while working this procedure,
THEN GO TO Section 4.13
AND RETURN TO the point of departure in the previous section when complete.

4.1.3 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step if further activities will be performed:

Task	Section
System Startup	4.2
Entry into Shielded Enclosure	4.3
Beginning of Shift Activities	4.4
Warm up	4.5
Imaging System Check	4.6
Operation of RTR System	4.7
Moving Boxes into and out of the Enclosure	4.8
Real-Time Radiography Examination Guidelines	4.9
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4.2 System Startup

4.2.1 Ensure x-ray cooler is ON.

4.2.2 Insert the cart enable/disable key and turn to ENABLE.

NOTE: *Applicable steps may be performed to shutdown and restart computers because of minor computer malfunctions on the barcode scanner, RTR, and WTS systems.*

4.2.3 Ensure the electrical power strip is turned on.

4.2.4 Ensure the RTR computer systems are on.

4.2.5 Ensure all RTR system monitors are on.

4.2.6 Perform Windows login, as necessary.

4.2.7 Ensure the closed-circuit television (CCTV) monitor is turned on.

NOTE: *The power-on lamp will be illuminated after an approximate 15-second delay.*

4.2.8 Ensure the operator control console power key is inserted into the POWER key switch.

4.2.8.1 Turn the key to the RESET position
AND release.

4.2.9 Ensure the E-Stop reset key is inserted into the "E-Stop Reset" switch.

4.2.10 Double click on barcode icon, if necessary.

4.2.11 Double click Vi3 icon, if necessary.

NOTE: *Before the control system can be operated, the system is in the* HOME position *(see def.). The HOME position is selected by pressing the AUTO OUT pushbutton. The AUTO OUT lamp will flash while the x-ray tube head and Flat Panel Digital Radiography Imaging System (FP) manipulator are returning to the HOME positions.*

4.2.12 Press the AUTO OUT button to home the system, as applicable.

4.2.13 Insert x-ray controller key into key switch on x-ray control console and turn key to STAND BY position.

4.2.14 Ensure the x-ray shutters are closed.

4.2.15 **IF** this is a full system startup,
THEN enter the time of the system power up in the applicable operator log.

NOTE: *The WTS will not permit logon if Form-1268, Production Systems Access Request, is not current.*

4.2.16 Log in to the WTS RTR operation navigation screen, if necessary.

4.3 Entry into Shielded Enclosure

NOTE: *The only activities authorized to be performed using this section are entry into the shielded enclosure to perform routine inspections or escorting personnel into the shielded enclosure for inspections and/or training.*

4.3.1 Ensure radiation survey of enclosure has been completed by a qualified RCT prior to entry into shielded enclosure.

4.3.2 **IF** system startup is required,
THEN GO TO Section 4.2.

4.3.3 Ensure cart movement has been disabled prior to enclosure entry.

4.3.3.1 Insert the cart enable/disable key
AND turn it to the ENABLE position, if necessary.

NOTE: *The following step is performed to verify the cart and other equipment are capable of moving as a pre-check to satisfy using an alternate method to hazardous energy control.*

4.3.3.2 Press the AUTO IN button and allow the cart to enter the enclosure and the bi-parting door to close, if necessary.

4.3.3.3 Home the RTR system by pressing the AUTO OUT pushbutton.

4.3.3.4 Set cart enable/disable key to DISABLE to disable cart movement.

4.3.3.5 Remove the cart enable/disable key
AND maintain under operator control.

4.3.3.6 Verify that the RTR cart is nonoperational after key removal by attempting to move cart from RTR Control Room with key removed.

4.3.3.7 Ensure that the drum manipulator is removed, if necessary.

NOTE: *The only personnel authorized to enter the shielded enclosure under this alternate method to hazardous energy control are the OT in control of cart enable/disable and x-ray keys and any personnel being escorted by OT in control of cart enable/disable and x-ray keys.*

4.3.3.8 **IF** performing shielded enclosure inspection for any reason other than the daily inspection and completion of Form-1218,
THEN GO TO Step 4.3.3.12.

4.3.3.9 **IF** performing shielded enclosure inspection for daily inspection and completion of Form-1218.
THEN perform the following:

NOTE: *Remaining steps in this section may be performed concurrently.*

4.3.3.9.1 Inspect the shielded enclosure vault as follows:

- General cleanliness
- Foreign objects or signs of tampering with equipment
- Oil on the floor
- Drive screws on both the x-ray tube head and (FP) manipulators free of obstructions.

NOTE: *An IQI is required at system startup prior to examining boxes and at least once every 24 hours during continuous operations.*

4.3.3.10 **IF** an IQI image verification is required,
THEN mount the IQI test pattern on the cart, if necessary.

NOTE: *It is management's expectation that Form-1218 is not completed until the SS has reviewed it and signed on the appropriate line.*

4.3.3.11 Ensure that Form-1218 has been completed for the applicable RTR unit for the current day.

(ANSI-N43.3)

4.3.3.11.1 **IF** any item in Section I or II is unsatisfactory, **THEN** immediately take the following steps:

4.3.3.11.1.1 Stop production operations with the RTR system **AND** generate an NCR on the system.

4.3.3.11.1.2 Notify the SS.

4.3.3.11.1.3 **GO TO** Section 4.13.14.

(ANSI-N43.3)

4.3.3.12 Enter the shielded enclosure to perform inspection/training as necessary.

4.4 Beginning of Shift Activities

4.4.1 **IF** Form-1218 has **NOT** been completed for the current da**y,** **THEN GO TO** Section 4.3 to complete Form-1218 **AND RETURN TO** Step 4.4.2 when complete.

(ANSI-N43.3)

NOTE: *The WTS will not permit logon if the Form-1268 is not current.*

4.4.2 Log in to the WTS, RTR operation navigation screen, as necessary.

4.4.3 Double click the barcode reader icon, if necessary.

NOTE: *An IQI is required at system startup prior to examining waste and at least once every 24 hours during continuous operations.*

4.4.4 **IF** IQI has been completed for the current day, as evidenced on Form-1578,
THEN verify it is complete and compliant by viewing the recording and listening to the audio.

4.4.4.1 **IF** IQI is found to **NOT** be complete and compliant,
THEN notify SS.

NOTE: *The cart will have to be out in order to mount the IQI test pattern.*

4.4.5 **IF** the IQI image verification is required,
THEN mount the IQI test pattern on the cart.

4.5 Warm-up

4.5.1 Ensure Sections 4.2 through 4.4 are completed prior to RTR system operations.

NOTE: *In the event that an extended manual warm-up is necessary, personnel should consult with the SS and RTR SE for guidance. The GE Inspection Technologies Isovolt operating instructions are available for a more detailed description of operation.*

4.5.2 Ensure the x-ray shutters are closed.

WARNING

When the x-ray generator is on, personnel in the enclosure could suffer fatal injuries.

NOTE 1: *The DOOR CLOSE button light on the operator control panel will be illuminated when the bi-parting door is closed.*

NOTE 2: *The hidden area located underneath the camera can be checked using the mirror mounted inside the shielded enclosure.*

4.5.2.1 Ensure that the enclosure is unoccupied
AND both the personnel access door and the bi-parting doors are closed.

4.5.3 **GO TO** the appropriate procedure section from the following table based on the desired warm-up activities to be performed,
THEN RETURN TO this step, if further warm-up activities will be performed:

Task	Section
Start of shift OR after daily safety checks completion	4.5.4
RTR has been in continuous operation for less than 2 hours and prompts for warm-up when entering a high kV value, **OR** has been idle for 2-3 hours	4.5.5
RTR System has been idle for 3–4 hours	4.5.6
RTR System has been idle for >4 hours	4.5.7
Warm-up is complete	4.5.8

NOTE: *The controller will display "Tube To Be Warmed-Up" and display options for: NO (F1), 1..2 Days (F4), 2..14 Days (F5), >14 Days (F6), and RTC auto (F7).*

4.5.4 **IF** at the start of shift
OR AFTER daily safety checks completion,
THEN cycle the key position from the ON/STANDBY position to OFF and back to ON.

NOTE: *After performing the following step, a screen prompting to "Enter Test Voltage" will appear.*

4.5.4.1 Press F6 to select >14 Days.

4.5.4.2 Type 420 kV
AND press ENTER.

4.5.4.3 Press the X-RAY ON button to begin the warm-up.

NOTE: *The controller will display "Tube To Be Warmed-Up" and display options for: NO (F1), 1..2 Days (F4), 2..14 Days (F5), >14 Days (F6), and RTC auto (F7).*

4.5.5 **IF** the RTR system has been in continuous operations for less than 2 hours and prompts for warm-up when entering a high kV value
OR the RTR system has had continuous idle time for 2-3 hours,
THEN cycle the key position from the ON/STANDBY position to OFF and back to ON.

NOTE: *After performing the following step, a screen prompting to "Enter Test Voltage" will appear.*

4.5.5.1 Press F4 to select 1..2 Days.

4.5.5.2 Type 420 kV
AND press ENTER.

4.5.5.3 Press the X-RAY ON button to begin the warm-up.

NOTE: *The controller will display "Tube To Be Warmed-Up" and display options for: NO (F1), 1..2 Days (F4), 2..14 Days (F5), >14 Days (F6), and RTC auto (F7).*

4.5.6 **IF** the RTR system has been idle for 3–4 hours,
THEN cycle the key position from the ON/STANDBY position to OFF and back to ON.

NOTE: *After performing the following step, a screen prompting to "Enter Test Voltage" will appear.*

4.5.6.1 Press F5 to select 2..14 Days.

4.5.6.2 Type 420 kV
AND press ENTER.

4.5.6.3 Press the X-RAY ON button to begin the warm-up.

NOTE: *The controller will prompt for a warm up and give options for: NO (F1), 1..2 Days (F4), 2..14 Days (F5), >14 Days (F6), and RTC auto (F7).*

4.5.7 **IF** the RTR system has had continuous idle time for more than 4 hours,
THEN cycle the key position from the ON/STANDBY position to OFF and back to ON.

NOTE: *After performing the following step, a screen prompting to "Enter Test Voltage" will appear.*

4.5.7.1 Press F6 to select >14 Days.

4.5.7.2 Type 420 kV
AND press ENTER.

4.5.7.3 Press the X-RAY ON button to begin the warm-up.

4.5.8 **WHEN** the appropriate warm-up is complete,
THEN perform the following:

4.5.8.1 Follow prompts on the x-ray controller
AND turn the x-ray control console key to the STAND BY position.

4.5.8.2 **IF** leaving the RTR control room,
THEN perform the following:

4.5.8.2.1 Remove the x-ray control console key.

4.5.8.2.2 Maintain the x-ray control console key either under the operator control or store it in the master key locker.

4.5.8.3 **IF** warm-up was performed,
THEN record the following in the applicable operator log:

- Elapsed warm-up time
- Warm-up completion time
- Any pertinent comments.

4.6 Imaging System Check

4.6.1 Ensure a disk ID file has been created in the RTR Imaging Transfer Application (RITA) for the current RTR batch, by double clicking RITA icon.

4.6.1.1 **IF** a disk has **NOT** been created,
THEN follow Appendix B, Creating or Transferring Data to the RITA Archival System
AND THEN RETURN TO Step 4.6.2.

4.6.2 Verify the precision of *radiography* (see def.) prior to use by adjusting the image enough to demonstrate compliance with the quality assurance objectives (QAOs) through viewing an image test pattern.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.6.3 Perform an imaging system check daily, prior to use
AND record on applicable operator log, and Form-1578.

(HWMA/RCRA Permit; MP-TRUW-8.2)

NOTE 1: *There are a number of controls that will affect the quality of the recorded image (including IQI placement, zoom functions, Automatic Defect Enhancement (ADE) filter, window leveling, x-ray focal spot), all of which can be adjusted by the OT. The intent of the IQI evaluation is to demonstrate the imaging system capability to achieve a specified resolution. During RTR imaging of waste containers, the OT has the latitude to adjust these same parameters, as needed, to obtain the best image possible.*

NOTE 2: *It is management's expectation that Form-1218 is not completed until the SS has reviewed it and signed on the appropriate line.*

4.6.4 Ensure that Form-1218 has been completed for the current day for the applicable RTR unit.

(ANSI-43.3)

4.6.4.1 **IF** any item in Section I or II is unsatisfactory,
THEN take the following steps:

4.6.4.1.1 Stop production operations with the RTR system
AND generate an NCR on the system.

(ANSI-N43.3)

4.6.4.1.2 Notify the SS.

4.6.4.1.3 **GO TO** Section 4.13.14.

4.6.5 Place the cursor in the first edit box located on the screen of the barcode reader window.

4.6.6 **IF** an IQI is required,
THEN enter the IQI number using the following format: mmddyyXXXWWWQ; where mm is the month, dd is the day, yy is the year, XXX stands for IQI, WWW for the RTR System 101 (Z-213-101) or 106 (Z-213-106), and Q stands for the shift (D for day shift or N for night shift).

4.6.6.1 Set or advance to the next entry location by manually performing the following:

4.6.6.1.1 Press the "Shift" and ":" keys simultaneously to set the entry.

4.6.6.1.2 Press the "Shift" and ">" keys simultaneously to advance to the next entry location.

4.6.7 Select the CONFIRM button to finalize the entry.

4.6.8 Ensure that the x-ray system has been warmed up and the x-ray controller is ready for operation.

NOTE: *The IQI will be recorded on the same recording media as for the current RTR batch.*

4.6.9 Select "Start New Cycle" to retrieve barcode data from the barcode window, if necessary.

4.6.10 Select the IQI number to be recorded.

4.6.11 **IF** recording confirmation prompt displays correct ID for recording, **THEN** click OK.

4.6.11.1 **IF** recording confirmation prompt displays incorrect ID, **THEN RETURN TO** Step 4.6.9.

4.6.12 Adjust the voltage to approximately 100 kV and the current to approximately 2.0 mA, if necessary.

4.6.13 Ensure that the x-ray control console is in the ON position.

4.6.14 Press the green X-RAY ON button.

4.6.14.1 **IF** an x-ray system error message occurs during two consecutive starts/restarts,
THEN immediately notify SS/SE for instruction prior to any additional attempts to generate x-rays.

4.6.15 Open the x-ray shutters, as required.

4.6.16 Position the cart, x-ray tube-head, and FP to center the IQI test pattern.

4.6.17 Adjust the zoom functions, ADE filter, window leveling, kV, and mA, as needed, for image resolution and clarity to obtain a good image of the IQI.

4.6.18 Select red RECORD button on Debut Professional program.

4.6.19 Record verbal comments by speaking into the microphone.

4.6.20 Start IQI recording by stating the operator identification (ID), IQI number, and lines of resolution obtained.

4.6.20.1 To ensure that an acceptable recording has been done, stop x-ray generation prior to viewing the recording.

4.6.20.2 Verify the acceptable recording of the IQI and the audio/video recording.

4.6.20.2.1 **IF** the audio/video recording was **NOT** acceptable,
THEN contact the SS.

4.6.21 Record IQI results and the number corresponding to the crosshatched pattern visible in both the horizontal and vertical directions on the applicable operator log (see Exhibit 1, RTR Image Test Quality Grid, for RTR image test grid figure) and Form-1578.

4.6.22 Record RTR settings (voltage, current) on Form-1578.

NOTE: *Verification of the resolution is with visual confirmation by the OT. The recorded image may not represent the actual image due to degradation from the recording.*

4.6.23 **IF** the resolution is less than 16 lines/inch,
THEN contact the SS
AND troubleshoot.

4.6.24 Press the red X-RAY OFF button on the x-ray controller unit panel, if applicable,
AND turn the x-ray control console key to the STAND BY position.

4.6.25 **IF** leaving the RTR control room,
THEN perform the following steps:

4.6.25.1 Remove the X-ray control console key.

4.6.25.2 Maintain the x-ray control console key either under the operator control or store it in the master key locker.

4.7 Operation of RTR System

4.7.1 Ensure that no NCRs exist against the RTR system.

4.7.2 Check initial conditions as follows:

4.7.2.1 Ensure Sections 4.2 through 4.6 are completed prior to RTR system operations.

NOTE 1: *The RTR system cannot detect frozen liquids, and therefore, frozen waste boxes cannot be examined. To ensure that a waste box is not frozen, the waste is preheated for a minimum of 72 hours at 18ºC or higher during cold weather. Preheating is required from October through April. The SS will determine if preheating is required outside the October through April window.*

(HWMA/RCRA Permit)

NOTE 2: *After the box has met the 72-hour preheat requirement and if the box has not been moved out of WMF-634, the temperature may fall below 18°C (inside WMF-634) for any period of time, as long as it does not fall below 1°C.*

4.7.2.2 **IF** preheating is required,
THEN ensure the waste package has been preheated for a minimum of 72 hours at 18ºC or higher, per WTS.

4.8 Moving Boxes into and out of the Enclosure

NOTE 1: *Steps in this section may be completed out of sequence, concurrently, or as needed.*

NOTE 2: *Handrails may be removed as necessary to facilitate removal of the drum manipulators and loading a box.*

4.8.1 Home the RTR system by pressing the AUTO OUT pushbutton, if needed.

4.8.2 Set the enable/disable key to DISABLE, to disable cart movement if needed.

4.8.3 Remove the enable/disable key, if needed,
AND maintain under operator control.

4.8.4 Verify, by visual inspection, that a candidate box is linked to the correct historical data by comparing the following:

- Historical ID
- Tamper-indicating device
- Generator
- Other historical data, as available, between the box and the historical data displayed in WTS.

4.8.5 **IF** the correct link is confirmed,
THEN load the box on the RTR.

4.8.6 **IF** the correct link is **NOT** confirmed,
THEN notify the SS or acceptable knowledge expert (AKE).

4.8.6.1 **IF** SS or AKE were unable to correct the link,
THEN record all historical information from the container in the WTS container marking screen, which is accessible from the RTR screen or the AMWTP container screen.

WARNING

Failure to ensure that no portion of the box extends past the cart could result in a container breach causing possible inhalation hazard to personnel.

CAUTION 1

Failure to ensure that no portion of the box extends past the cart could result in the container being breached or equipment damage.

CAUTION 2

Failure to disconnect the electrical cable at the rear of the cart will result in damage to the connector and cable.

NOTE: *Handrails may be removed as necessary to facilitate removal of the drum manipulators and loading a box.*

4.8.7 Load a box onto the cart, as applicable, ensuring no portion of the box extends past the cart.

4.8.8 Ensure the box on the RTR cart has been received to the equipment using WTS.

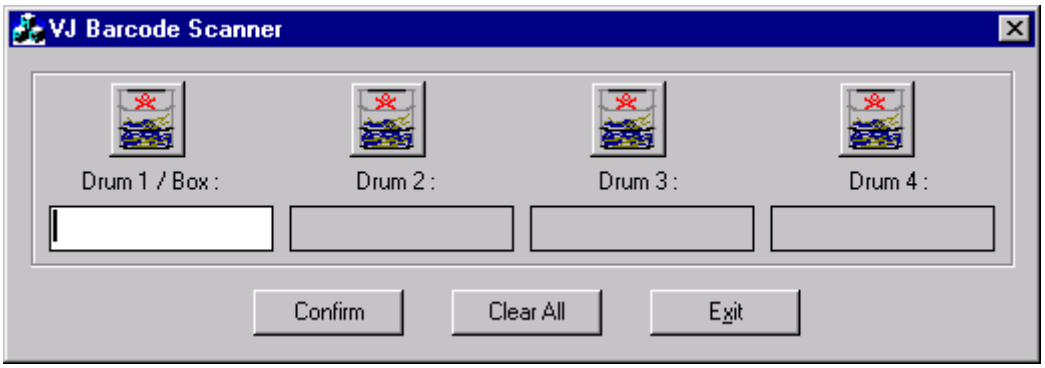
4.8.9 Perform a barcode cycle, as necessary, by performing the following:

4.8.9.1 Ensure the Windows login is complete.

4.8.9.2 Double click the barcode reader icon, if necessary.

4.8.9.3 **IF** previous barcodes are present,
THEN select CLEAR ALL button.

4.8.9.4 Place the cursor in the first edit box located on the screen of the barcode reader window, if necessary.



WARNING

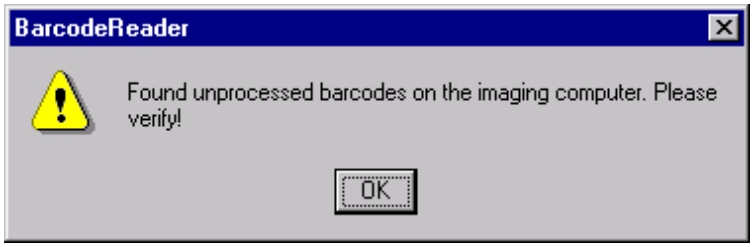
Eye injury may occur if personnel look directly into the barcode scanner beam.

4.8.9.5 Scan the barcode of the box into drum No. 1/box
AND visually confirm the correct barcode has populated, taking care to **NOT** look directly into the barcode reader.

4.8.9.6 **IF** the barcode does **NOT** scan,
THEN perform Section 4.13.13
AND RETURN TO Step 4.8.9.7.

NOTE 1: *If the system finds unused barcodes from previous scans either in a previous session or the CONFIRM button was selected prior to the CLEAR ALL button, the software will display a warning message stating that it found unused bar codes.*

NOTE 2: *The unused barcodes will be displayed in sequence. However the cursor will move to the first edit box so that the operator can overwrite the older text. The CLEAR ALL button is used to clear the text in the edit boxes. The cursor is displayed in the first edit box.*



NOTE 3: *Selecting the CONFIRM button will communicate the scanned barcodes to the RTR (imaging) computer*.

4.8.9.7 Select the CONFIRM button.

4.8.10 Insert the cart enable/disable key
AND turn it to the ENABLE position.

4.8.11 Home the RTR cart system by pressing the AUTO OUT pushbutton, if necessary.

4.8.12 Press the AUTO IN button and allow the cart to enter the enclosure and the bi-parting door to close.

4.8.13 Ensure that x-ray system has been warmed up
AND the x-ray controller is ready for operation.

4.8.14 In the Vi3 program, Select “Start New Cycle” to retrieve barcode data from the barcode window, if necessary.

4.8.15 **IF** the barcode data has already been retrieved for the cycle of the box being examined,
THEN select "Select Next Drum/Box," if necessary.

4.8.16 Select the barcode number of the box to be examined and confirm that Recording Confirmation prompt displays correct information
AND click OK.

4.8.16.1 **IF** Recording Confirmation prompt displays incorrect information,
THEN RETURN TO Step 4.8.14.

4.8.17 Ensure a disk ID file has been created in RITA for the current RTR batch, by double clicking RITA icon.

4.8.17.1 **IF** a disk has **NOT** been created,
THEN follow Appendix B
AND THEN RETURN TO Step 4.8.18.

NOTE: *It is management's expectation that Form-1218 is not completed until the SS has reviewed it and signed on the appropriate line.*

4.8.18 Ensure that Form-1218 has been completed for the current day for the applicable RTR unit.

(ANSI-N43.3)

WARNING

When the x-ray generator is on, personnel in the enclosure could suffer fatal injuries.

NOTE: *The hidden area located underneath the camera can be checked using the mirror mounted inside the shielded enclosure.*

4.8.19 Ensure that the enclosure is unoccupied
AND both the personnel access door and the bi-parting doors are closed.

4.8.20 Insert x-ray control console key into x-ray control console
AND turn it to the ON position.

4.8.21 Set the x-ray controller to 100 kV and 2 mA.

4.8.21.1 Open X-ray shutters, as necessary.

4.8.22 Press the green X-RAY ON button.

4.8.23 Adjust kV and mA as appropriate.

NOTE: *At any time, the control room operator can select "Single" mode to enable the x-ray head and FP to be raised or lowered independent of each other, up to a maximum of 5 inches. This will produce an oblique image.*

4.8.24 Ensure that the DUAL position is selected to provide synchronized movement of the x-ray head and FP.

4.8.25 Select red RECORD button on Debut Professional program.

4.9 Real-Time Radiography Examination

NOTE 1: *A complete scan of the waste box is required. A complete box scan is defined as across the entire top, through the center of the waste from top to the bottom, going from side to side in overlapping layers, across the entire bottom, and up the side of the container. 100% of each container must be scanned to meet the radiography quality assurance objective for completeness. All the data must be collected and evaluated to complete the WTS and have a complete scan.*

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE 2: *The replicate scan will be conducted by an RTR qualified operator who was not involved in the original scan of the waste container and documented in WTS.*

NOTE 3: *Sections 4.9 and 4.10, and steps within these sections, may be performed concurrently, out of sequence, or repeated during the examination of the waste container, as applicable. All the required data will be captured in WTS and on the audio/visual record. WTS will not save the record if any of the required data is not populated in WTS.*

4.9.1 Perform replicate scan on one waste box per day or once per testing batch, whichever is less frequent under uniform conditions and procedures.

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE: *The independent observation is conducted by a qualified RTR OT who was not involved in the original scan of the waste container and documented in WTS.*

4.9.2 Perform an independent observation on one waste box (which must **NOT** be the same box that was used for the replicate scan) once per day or once per testing batch, whichever is less frequent under uniform conditions and procedures.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.9.3 **Adjust Image Enhancement System**

4.9.3.1 Ensure that the X-RAY/FP MANIPULATOR VERTICAL SPEED CONTROL is adjusted for speeds that are appropriate for the waste container to be examined.

4.9.3.2 Increase or decrease the x-ray kV and/or mA as needed.

4.9.3.3 Adjust the zoom functions, as required, to characterize small objects.

NOTE: *The RTR examination is recorded in both the WTS and in the audio/video record. All characterization activities are required to be announced in the audio/video record.*

(HWMA/RCRA Permit)

4.9.3.4 Shake boxes along the horizontal axis to detect the presence of liquids.

NOTE: *X-ray generation is stopped prior to switching the focus (filament) between broad and fine.*

4.9.3.5 Use the Broad or Fine focus (filament), as appropriate, for boxes containing high density material.

NOTE: *Two measuring annotations are available, the linear measurement and the protractor tool to help assist the operator with waste characterization.*

4.9.3.6 **IF** the image is difficult to see,
THEN perform the following:

4.9.3.6.1 Switch the x-ray filters to 0, 1, 2, or 3, as necessary.

4.9.3.6.2 Mask exposed portions of the image with the x-ray shutters.

4.9.3.6.3 Adjust window leveling as needed to achieve desired penetration and image quality.

NOTE: *The ADE filter is meant to be a tool to help the operator discern details in objects, and guide the operator to areas for further examination under the primary window leveling tool. While the filter is active the operator will notice a delay and choppiness for objects in motion.*

4.9.3.6.4 Apply ADE filter as needed.

4.10 RTR Examination and WTS Data Entry

NOTE 1: *Nonconformance reports are not required to be generated as part of a replicate or operator independent observation examination.*

NOTE 2: *An audio/video recording of the radiography examination and a validated radiography data form in the WTS will be obtained for each container. The contents of the waste container are described in sufficient detail on the audio/video record to provide an adequate inventory of the waste container contents in the audio/video record narrative.*

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE 3: *The RTR examination is recorded in both the WTS and in the audio/video record.*

(HWMA/RCRA Permit)

4.10.1 Enter as an introduction for the examination of the waste container the following:

- Operator ID
- Container ID
- IDC
- WMC
- Waste stream description as defined in RPT-TRUW-05, Waste Matrix Code Reference Manual, in the audio/video record
- Waste **NOT** covered in RPT-TRUW-05 or other approved applicable acceptable knowledge (AK) documents and report.

(HWMA/RCRA Permit)

4.10.2 Verify the correct container number.

NOTE: *Step 4.10.3 may be performed by either typing in the box number and using F8 to query the information or selecting the appropriate box number from the list of values and clicking the mouse in the "Recording ID" field.*

4.10.3 Enter the container ID number in WTS
AND query the container information.

4.10.4 Verify the container data and analysis information have auto-populated in the container information section of the WTS RTR record (i.e., batch number, container type, RTR date).

4.10.5 **IF** any of the required fields are **NOT** populated,
THEN contact the SS for guidance.

4.10.6 Verify the "Equipment" field for the processing area for WTS has auto-populated.

4.10.7 Verify the current procedure and revision number.

4.10.8 **IF** the revision number of the procedure is incorrect in WTS,
THEN enter the procedure number and current revision used to conduct the examination in the "Result Comment" field in WTS.

4.10.9 Ensure the Recording ID is correct.

4.10.10 Enter the identification in the format: WXXXyy-nnnnn; where W stands for RTR system one (Z-213-101) or two (Z-213-106), XXX stands for RTR, yy is the year, and nnnnn is the disk number,
AND enter the side as A or B.

NOTE: *The QAO for precision at RTR is verified upon satisfactory completion of an IQI test at least once every 24 hours or upon system start-up as specified in Section 4.6, by verifying that the audio/video record of the IQI has been recorded, and by answering "Yes" to the question: "Is the Imaging Quality Indicator Satisfactory? "*

4.10.11 Enter Y/N in WTS to the question "Is the Imaging Quality Indicator Satisfactory?"

(MP-TRUW-8.1; MP-TRUW-8.2)

4.10.12 Ensure the replicate is completed on one box per day or once per testing batch, whichever is least frequent, as documented on applicable operator log, and in WTS.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.10.12.1 **IF** Debut Professional program "File Already Exists Replace Existing File?" pops up,
THEN answer NO.

4.10.13 Ensure a qualified RTR OT that was **NOT** involved in the original scan of the waste container performs the replicate scan.

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE: *The independent observation is performed by viewing the recording from a waste container (not the replicate), and documenting the results on a radiography analysis sheet in WTS. The independent observation is performed without reference to the original radiography analysis sheet in WTS.*

4.10.14 Ensure the independent observation analysis is completed on one box per day (not the replicate) or once per testing batch, whichever is least frequent, as documented on applicable operator log and in WTS.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.10.15 Ensure a qualified RTR OT that was **NOT** involved in the original scan of the waste container performs the independent observation analysis.

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE: *The purpose of checking the visual class inspection form is to assist the RTR OT in looking for pinhole(s) and/or weakness in the container wall.*

4.10.16 **IF** the "Visual Classification" inspection form is available in WTS,
THEN review the form to see the container classification
AND look for pinhole(s) and/or weakness in the container wall.

4.10.16.1 **IF** pinholes and/or weaknesses are found,
THEN perform the following:

4.10.16.1.1 Notify the SS.

4.10.16.1.2 Document the finding in WTS.

4.10.16.1.3 Handle the container as directed by the SS.

4.10.17 Estimate and enter the fill factor for the waste container (in percent) in WTS.

NOTE: *The "twisted and tied" or "zipped and tied" closure methods are entered as "twisted and taped."*

4.10.18 Enter the closure method(s) for the waste container and inner packages in WTS.

NOTE: *Sealed containers >4 liters are considered a layer of confinement.*

4.10.19 Determine the layers of confinement for the waste container **AND** enter in WTS.

4.10.20 Enter the presence of liquids by selecting YES in WTS.

(HWMA/RCRA Permit)

4.10.21 Enter the volume and location of liquids in WTS.

(HWMA/RCRA Permit)

NOTE 1: Observable liquids *(see def.) in association with an identified polychlorinated biphenyl (PCB) item or PCB waste are considered PCB-contaminated liquids and will have a disposition of treatment or special-case waste.*

(HWMA/RCRA Permit)

NOTE 2: *"Internal container" means container inside the outermost container examined during radiography or visual examination. Drum liners, liner bags, plastic bags used for contamination control, capillary-type lab ware, and debris not designed to hold liquid at the time of original waste packaging are not internal containers.*

4.10.22 **IF** observable liquid is prohibited as defined in Exhibit 4, List of Prohibited Items
OR is equal to or greater that 4.4 pints,
THEN record the presence of prohibited liquids in WTS by selecting YES.

(HWMA/RCRA Permit; MP-TRUW-8.1; MP-TRUW-8.2)
(CCP-PO-003)

4.10.23 **IF** observable liquid is noted
AND the total liquid is **NOT** prohibited,
THEN enter NO for prohibited liquids.

NOTE: *Item 10 of Exhibit 6, Common Liquid Measurements and Conversions, provides a conversion for milliliters (ml) to pints.*

4.10.24 **WHEN** internal containers with observable liquid, are present,
THEN enter YES for internal containers with liquid.

4.10.25 **IF** prohibited liquids are identified,
THEN initiate an NCR in accordance with MP-Q&SI-5.4.

(HWMA/RCRA Permit)

4.10.25.1 Select the NCR RTR Characterization for Liquids and the applicable "Liquids Identified" category as observed in the RTR examination.

4.10.26 Document the absence or presence of sharp or non-braced objects that could be a puncture hazard to the waste container in WTS.

NOTE 1: *Sharp or non-braced objects that are not protected will be NCR'd appropriately to ensure remediation.*

NOTE 2: *Although cardboard liners do offer protection for sharp objects, as determined by the RTR operator, they are not considered as "liners" for headspace gas drum age criteria and are considered as cellulosic waste.*

4.10.27 Document in WTS if sharp or non-braced objects are protected.

4.10.28 Document the absence or presence of PCBs in WTS by performing the following:

(HWMA/RCRA Permit)

4.10.28.1 **IF** PCBs are **NOT** present,
THEN document NO for PCBs present in WTS.

(40 CFR 761)

NOTE: *"Yes Acceptable" PCBs are given a process code of Direct Ship as PCBs are not approved for super compaction.*

4.10.28.2 **IF** PCBs present are "Yes - Acceptable" to document non-prohibited PCBs,
THEN perform the following:

4.10.28.2.1 Document a description of non-prohibited PCBs in the "PCB Comment" field.

4.10.28.2.2 Document the weight of non-prohibited PCBs in the "PCB Weight" field.

4.10.28.2.3 Ensure the non-prohibited PCBs are included in the waste container inventory with a description, item weight, and assignment to the applicable waste parameters field.

4.10.28.3 **IF** prohibited PCBs present are "Yes - Prohibited,"
THEN perform the following:

4.10.28.3.1 Document a description of prohibited PCBs in the PCB comment field.

4.10.28.3.2 Document the net weight of the box in the PCB weight field.

4.10.28.3.3 Ensure the prohibited PCBs are included in the waste container inventory with a description, item weight, and assignment to the applicable waste parameters.

4.10.28.3.4 Initiate an NCR in accordance with MP-Q&SI-5.4.

(MP-TRUW-8.1)

4.10.28.4 Answer the following container questions on the WTS CONTENTS BOX tab in WTS, as applicable.

- HEPA Filters?
- Graphite?
- Metal Debris?
- Paper/Rags?
- Plastics/PVC/Rubber?
- Electrical Conduits or Wiring?
- Scaffolding Poles or Planks?
- Heavy, Dense Objects?
- Steel/Metal Rods or Bars?
- Bulky, Shreddable Objects?
- Concrete/Bricks/Solids?

4.10.28.5 **IF** Heavy Dense Objects or Concrete/Bricks/Solids are YES,
THEN include an approximate dimension in the description.

NOTE: *Mercury is not prohibited unless the criteria for prohibited observable liquid are exceeded.*

4.10.29 Document in WTS the absence or presence of the following:

A. Mercury

B. Lead, and in what physical form

C. Wet cell batteries.

(HWMA/RCRA Permit)

NOTE 1: *Lead content needs to be identified and listed as a hazardous material in the data package prepared for each WIPP-certifiable container (i.e., leaded rubber gloves, lead aprons, and lead bricks).*

NOTE 2: *When examining containers whose contents prevent full examination of a waste item (e.g., check weights or calorimeter cans) or of the remaining contents (e.g., an aggregate of bulk-loaded dense sludge), AK information that may have determined a visual examination would not provide additional relevant information for the referred to container.*

(MP-TRUW-8.1; MP-TRUW-8.2)

NOTE 3: *Lead shielding cannot be used to shield an item or waste container to meet external surface dose rates.*

NOTE 4: *When examining containers whose contents prevent full examination, such as multiple dense sludge containers or over-packed into a box, an NCR will be written that box contents could not be confirmed*.

4.10.29.1 **IF** container is lead-lined
OR IF lead tape, impenetrable objects, and/or shielded objects are present that prevent full examination,
THEN initiate RTR NCR in accordance with MP-Q&SI-5.4.

4.10.29.2 **IF** any of the items listed in Step 4.10.29 are detected,
THEN enter a comment in the appropriate comment field in WTS.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.10.30 Document in WTS the presence of prohibited items in the waste, if any, using Exhibit 4.

(MP-TRUW-8.1; MP-TRUW-8.2)

4.10.31 **IF** any prohibited items are present, in accordance with Exhibit 4, **THEN** perform the following:

4.10.31.1 Initiate an NCR in accordance with MP-Q&SI-5.4.

4.10.32 Examine the waste and enter data into WTS with the description, weight and the assignment to the appropriate waste parameters by performing the following:

4.10.32.1 Select item(s) from look-up table, where appropriate, and enter quantity.

4.10.32.2 **IF** item is **NOT** shown on look-up table, **THEN** perform **ONE** of the following to add the waste item(s) to the container inventory:

4.10.32.2.1 **IF** entering item(s) by weight, **THEN** perform the following:

4.10.32.2.1.1 Enter a description.

4.10.32.2.1.2 Enter item type as weight.

4.10.32.2.1.3 Enter weight.

4.10.32.2.1.4 Enter quantity.

4.10.32.2.1.5 Assign the appropriate waste parameter(s) by percentage weight.

4.10.32.2.2 **IF** entering item(s) by volume, **THEN** obtain reference data **AND** perform the following:

4.10.32.2.2.1 Enter description.

4.10.32.2.2.2 Enter item type as volume.

4.10.32.2.2.3 Enter weight per unit volume from reference data.

4.10.32.2.2.4 Enter quantity.

4.10.32.2.2.5 Assign the appropriate waste parameter(s) by percentage weight.

4.10.32.2.3 **IF** entering item(s) as packaging materials, **THEN** perform the following:

4.10.32.2.3.1 Enter description.

4.10.32.2.3.2 Enter item type as packaging.

4.10.32.2.3.3 Enter weight.

4.10.32.2.3.4 Enter quantity.

4.10.32.2.3.5 Assign the appropriate waste parameter(s) by percentage weight.

4.10.32.3 After completing the RTR examination of the first side of the box, pause the audio/video recording.

4.10.32.3.1 Press the red X-RAY OFF button on the x-ray controller unit panel
AND turn the x-ray controller key to the STAND BY position.

4.10.32.3.1.1 **IF** leaving the RTR control room,
THEN remove the x-ray key
AND maintain it under operator control
OR store it in the master key locker.

4.10.32.3.2 Press the AUTO OUT button to home the system.

NOTE: *If cart is disabled with x-ray head in low position, not homed, system will not home when turned back on without manually manipulating up on joystick.*

4.10.32.3.3 Ensure cart is in the HOME position before disabling it.

4.10.32.3.4 Set the enable/disable key to DISABLE to disable cart movement
AND remove the key.

4.10.32.3.5 Rotate the box 180 degrees
AND place the box back on the cart.

4.10.32.3.6 Insert the cart enable/disable key
AND turn it to the ENABLE position.

4.10.32.3.6.1 **IF** the system is **NOT** in the HOME position (indicated by the AUTO OUT button illuminated), **THEN** push the AUTO OUT button.

4.10.32.3.6.2 Press the AUTO IN button and allow the cart to enter the enclosure and the bi-parting doors to close.

4.10.32.3.7 Insert x-ray controller key into key switch on x-ray control console
AND turn it to the ON position.

4.10.32.3.8 Set the kV to 100 and the mA to 2.

4.10.32.3.9 Press the green X-RAY ON button.

NOTE: *Steps in Section 4.9 and 4.10 may be repeated or performed out of sequence during the examination of the waste container.*

4.10.32.3.10 Continue examination of container per Sections 4.9 and 4.10.

NOTE: *The weight assigned to the remaining waste is assigned by subtracting the packaging, and item(s) entered by weight/volume, from the gross weight and then distributing this remaining unassigned weight to the appropriate waste parameters by the designated percentage weight assigned for the remaining waste. Remaining waste = Gross – (Packaging + Items by Weight + Items converted from volume to weight).*

4.10.32.4 Assign the remaining waste to the appropriate waste parameter by weight percent on the remaining contents of container table.

4.10.32.4.1 In the "Result Comment" field, enter a description of the waste that was entered under the "Remaining Contents of Container Table."

NOTE: *Following RTR, boxes with the 000 IDC are typically assigned the code UN-00A for* undefined homogenous solids (S3000; see def.), *UN-00B for* undefined debris (S5000; see def.), *or UN-00C for* undefined soil/gravel (S4000; see def.).

(HWMA/RCRA Permit)

4.10.33 Verify that the physical form of the waste is consistent with the IDC, WMC, summary category and waste stream description (as defined in RPT-TRUW-05, or for waste **NOT** covered in RPT TRUW-05, other approved applicable AK documents and reports) for the waste container and recorded correctly in WTS.

(HWMA/RCRA Permit)

4.10.33.1 **IF** the IDC is verified **AND** the historical ID found in WTS does **NOT** match the information on the container, as found in Step 4.8.4,
THEN initiate a Type 3 NCR in accordance with MP-Q&SI-5.4.

NOTE: *Answering the question "Is IDC Correct?" allows information required by Steps 4.10.35 and 4.10.36 to be entered.*

4.10.34 **IF** the IDC, WMC, summary category or waste stream description can **NOT** be verified,
THEN perform the following:

4.10.34.1 Place a UN-000 code for undetermined waste, UN-00A for undefined homogenous solids (S3000), UN-00B for undefined debris (S5000), or UN-00C for undefined soil/gravel (S4000), in the "Recommended Gen-IDC" field.

(HWMA/RCRA Permit)

4.10.34.2 Enter the change reason comment of undefined IDC.

(HWMA/RCRA Permit)

4.10.34.2.1 Describe the waste in sufficient detail to allow the AKE to evaluate a recommended IDC determination in the "Result Comment" field or using the "Container Markings" screen button at the bottom of the RTR screen.

4.10.34.3 Record any historical information from the container on the "Container" screen in the "Add New Container Comment" field or in the "Container Markings" button at the bottom of the general section of the RTR screen.

4.10.35 **IF** the IDC is **NOT** correct,
THEN perform the following:

(HWMA/RCRA Permit)

4.10.35.1 Enter recommended IDC,
AND assign the containers to AK review.

4.10.35.2 Enter change reason (example: % volume of contents).

4.10.35.3 Enter any applicable comments.

4.10.35.3.1 Describe the waste in sufficient detail to allow the AKE to evaluate a recommended IDC determination in the "Add New Container Comment" field or using the "Container Markings" screen button at the bottom of the general section of the RTR screen.

4.10.35.4 Record any historical information from the container on the "Container" screen in the "Add new Container Comment" field or using the Container Markings screen button at the bottom of the general section of the RTR screen.

4.10.36 At the completion of the scan, summarize the examination by stating the operator ID, container ID, whether the IDC, WMC, and waste stream description are consistent with the AK.

(HWMA/RCRA Permit)

4.10.37 **STOP** or pause the recording as necessary.

4.10.38 **WHEN** the container on the cart has been examined,
THEN turn off x-rays by depressing the red X-RAY OFF pushbutton located on the x-ray control unit.

4.10.39 Perform an audio/visual check of the recorded image to verify that the recording device is working properly.

(HWMA/RCRA Permit)

4.10.39.1 Enter Y/N in WTS to the question "Is the Audio/Visual Check Satisfactory?"

NOTE: *The RTR recording will be reviewed against the data reported on the RTR container data in the WTS.*

4.10.40 Perform the following to sign the RTR record:

(HWMA/RCRA Permit)

4.10.40.1 Verify that the data in WTS is correct
AND that the audio/visual recording, match and are correct.

4.10.40.2 E-sign and save RTR record.

NOTE 1: *After the burning DVD from hard drive process has started, WINDOWS may be minimized and operations continued.*

NOTE 2: *Typical burning of files associated with current batch is done one file at a time; multiple files can be burned at the same time.*

NOTE 3: *All containers burned to DVD have an audio/video check performed.*

4.10.41 Transfer recording files to RITA Archival System using the guidance provided in Appendix B.

4.10.42 Burn file of box to DVD using the guidance provided in Appendix A, Burning DVD from Hard Drive, or at the SS discretion.

4.10.42.1 **AFTER** "Burning DVD from Hard Drive" has started,
THEN minimize the "Nero Essentials" window
AND continue operations.

4.10.42.2 Upon completion of the burning process, check the audio and visual recording on the DVD, prior to burning the next container.

4.10.43 Turn the x-ray control console key to the STAND BY position.

4.10.43.1 **IF** leaving the RTR control room,
THEN remove the key
AND maintain it under operator control,
OR store it in the master key locker.

4.10.44 Press the AUTO OUT button and allow the system to home.

4.10.45 Set the enable/disable key to DISABLE to disable cart movement **AND** remove the key.

4.10.46 Unload the box from the cart.

NOTE: *For WTS batch, an automatic closure will occur after 20 boxes (22 examinations including the replicate and independent observation) are processed. WTS batch data reports contain the required contents identified by Table C3-11 of MP-TRUW-8.2, Quality Assurance Project Plan).*

4.10.47 Label the container for PCBs, as applicable, in accordance with INST-OI-24, Packaging Radioactive Waste.

(40 CFR 761)

4.10.48 **RETURN TO** Section 4.7 to examine additional waste containers.

4.11 Total System Shutdown

4.11.1 Close the x-ray shutters by pressing the X-RAY SHUTTERS switches.

NOTE 1: *The x-ray shutter indicator lights may be used to verify shutters are closed.*

NOTE 2: *The remaining activities may be performed during x-ray tube cool down.*

4.11.2 Ensure the x-ray control console key is in the STAND BY position.

4.11.3 Log off of WTS.

4.11.4 Press the AUTO OUT button to home the system.

NOTE: *To remove residual heat from the x-ray tube, the x-ray system oil cooler is to remain ON for a minimum of 5 minutes prior to performing Step 4.11.5.*

4.11.5 Turn x-ray oil cooler to OFF.

4.11.6 Exit the applicable programs.

4.11.7 Acknowledge any pop-ups, as applicable.

4.11.8 Turn the enable/disable key to DISABLE to disable cart movement **AND** remove the key, if necessary.

4.11.9 Log out of Windows
AND turn OFF the RTR computers as follows:

4.11.9.1 Select "Turn off Computer" from the START button menu on the computer.

4.11.9.2 Click on the TURN OFF button on the SHUTDOWN COMPUTER window.

4.11.10 Turn OFF the x-ray image monitor by depressing the POWER button.

4.11.11 Switch the x-ray control console key to the OFF position
AND remove the key.

4.11.12 Switch the operator control console key to the OFF position
AND remove the key.

4.11.13 Switch the E-Stop key to the OFF position
AND remove the key.

4.11.13.1 Turn OFF the RTR CCTV monitor

4.11.14 Ensure that all shutdown information has been recorded on the applicable operator log.

4.11.15 Return the operator control console power, E-stop reset, x-ray control console, and cart enable/disable keys to the master key locker.

4.12 Post-Job Review

4.12.1 SS or designee: Perform a post-job review in accordance with MP-COPS-9.17.

4.13 Abnormal and Infrequent Operations

WARNING

Abnormalities with the x-ray equipment could cause radiological exposure and injury/death.

CAUTION

Abnormalities with the x-ray equipment could cause damage to equipment.

NOTE: *Applicable steps may be performed when needed.*

4.13.1 **IF** any abnormalities that could cause damage to equipment, personnel, or the environment are encountered with the x-ray equipment,
THEN perform the following:

4.13.1.1 Push the red EMERGENCY STOP button.

4.13.1.2 Ensure that no personnel are in the area.

4.13.1.3 Inform the SS or designated alternate.

4.13.1.3.1 **IF** abnormality is related to a safety component,
THEN immediately stop production operation with the RTR system
AND generate an NCR against the system.

(ANSI-N43.3)

4.13.1.3.1.1 Notify the SS.

4.13.1.3.1.2 **GO TO** Step 4.13.14.

4.13.1.3.2 **IF** operation has been terminated due to activation of the EMERGENCY STOP button, **THEN** obtain both Radiological Controls manager and plant shift manager (PSM) approval prior to resuming operation.

4.13.1.4 Log all abnormal conditions and malfunctions on the applicable operator log, ensuring that the log entries include the operational conditions prior to the abnormality.

4.13.2 **IF** other abnormal or infrequent operations need to be performed, **THEN GO TO** the applicable section from the following table **AND RETURN TO** this step if further activities will be performed:

Task	Section to be Performed
X-rays Fail to De-Energize	4.13.3
Constant Air Monitor Alarm in Affected Area	4.13.4
X-ray Head Fails to Energize	4.13.5
Equipment or Computer Malfunction	4.13.6
Unplanned Shutdown	4.13.7
Loss of Commercial Power	4.13.8
Breached Waste Container	4.13.9
Fire Involving the Characterization Facility	4.13.10
Motion Fault	4.13.11
Manual Extended Warm-Up	4.13.12
Entering Barcodes Manually	4.13.13
Follow-Up Steps When Stopping Production Operations with the RTR System	4.13.14
Performing Functional Verification/Post-Maintenance Testing for Mechanical Motion Only	4.13.15

4.13.3 **X-rays Fail to De-Energize**

4.13.3.1 **IF** x-rays fail to de-energize when the red OFF button is pushed as indicated by the following indications:

- Voltage and amperage meters do **NOT** drop to zero when x-ray control unit key is removed
- Images still visible when X-RAY OFF button is depressed
- Radiation field (higher than expected from box) at the entry door,

THEN complete the following steps:

4.13.3.1.1 Push the red EMERGENCY STOP button.

4.13.3.1.2 Turn the x-ray controller key to the STAND BY position.

4.13.3.1.3 Notify the SS or designated alternate.

4.13.3.1.4 Obtain permission from Radiological Controls manager and PSM before restarting the RTR.

4.13.4 **Constant Air Monitor Alarm**

4.13.4.1 **IF** the x-ray head is operating,
THEN perform the following steps:

4.13.4.1.1 De-energize the x-ray head by pushing the red X-RAY OFF button.

4.13.4.1.2 Turn the x-ray controller key to STAND BY **AND** remove the key.

4.13.4.1.3 Notify coworkers
AND leave the affected area immediately.

4.13.4.1.4 Inform the RCT, the SS, or the designated alternate.

4.13.5 **X-ray Head Fails to Energize**

4.13.5.1 Turn the x-ray controller key to STAND BY **AND** remove the key.

4.13.5.2 Ensure all interlocks are satisfied.

4.13.5.3 Reinsert the x-ray controller key **AND** turn to ON position.

4.13.5.4 Attempt to generate x-rays.

4.13.5.4.1 **IF** the x-ray unit still fails to energize, **THEN** perform the following steps:

4.13.5.4.1.1 Turn the x-ray controller key to the STAND BY position.

4.13.5.4.1.2 Turn the control console power key to the OFF position.

4.13.5.4.1.3 Notify the SS or the designated alternate.

4.13.6 **Equipment or Computer Malfunction**

4.13.6.1 Push the X-RAY OFF button.

NOTE: *Applicable steps may be performed to shutdown and restart computers because of minor computer malfunctions on the VJ barcode program, RTR, and WTS systems*.

4.13.6.2 Shut down the system per Section 4.11, Total System Shutdown.

4.13.6.3 Restart the system per Section 4.2, System Startup.

4.13.6.4 **IF** the malfunction continues,
THEN place the system in a safe condition
AND inform the SS or designated alternate.

4.13.6.4.1 Log the malfunction in the applicable operator log.

4.13.7 **Unplanned Shutdown**

4.13.7.1 **IF** the x-ray unit shuts down inadvertently
AND auto warm-up is **NOT** being performed,
THEN perform the following steps:

4.13.7.1.1 Contact the SS.

4.13.7.1.2 Consult with the RTR SE for guidance.

4.13.7.1.3 **IF** the unplanned shutdown **CANNOT** be corrected,
THEN perform the following steps:

4.13.7.1.3.1 Turn the x-ray controller key to the STAND BY position.

4.13.7.1.3.2 Notify the SS or designated alternate.

4.13.7.1.4 Record the shutdown ion the applicable operator log.

4.13.7.1.4.1 Include information on RTR operating status prior to the shutdown.

4.13.7.1.4.2 Inform the SS or designated alternate.

4.13.8 **Loss of Power**

4.13.8.1 **IF** commercial power is lost to the RTR x-ray unit,
THEN perform the following steps:

4.13.8.1.1 Turn the x-ray controller key to the STAND BY position.

4.13.8.1.2 Turn the control console power key to the OFF position.

4.13.8.1.3 Inform the SS or designated alternate.

4.13.8.1.4 Log the conditions on applicable operator log.

4.13.9 **Breached Waste Container**

4.13.9.1 Stop x-rays.

4.13.9.2 Turn x-ray controller key to STAND BY
AND remove.

4.13.9.3 Respond per INST-OI-11, Waste Container Handling.

4.13.9.4 Notify the SS.

4.13.10 **Fire Involving the Characterization Facility**

4.13.10.1 Stop x-rays.

4.13.10.2 Turn x-ray controller key to STAND BY
AND remove.

4.13.10.3 Evacuate
AND inform the SS or designated alternate.

4.13.10.3.1 While exiting, pull the manual fire alarm.

4.13.11 **Motion Fault**

4.13.11.1 Stop x-rays.

4.13.11.2 Turn the x-ray controller key to STAND BY
AND remove key.

4.13.11.3 Place the operator control console key in the OFF position.

4.13.11.4 After 60 seconds, activate reset keys located on the operator control console.

4.13.11.5 Press the AUTO HOME button.

4.13.12 **Manual Extended Warm-up**

4.13.12.1 Observe, during the warm-up time, the actual value of the current (mA) on the liquid crystal display (LCD) of the control module.

NOTE: *Considerable fluctuations of this value of the current on the LCD of the control mean that the tube is not running smoothly.*

4.13.12.2 **IF** the tube is **NOT** running smoothly,
THEN lower the tube voltage to the point where the actual value display no longer shows fluctuation beyond the normal operating value.

4.13.12.2.1 **IF** this condition is met,
THEN GO TO Step 4.13.12.3.

4.13.12.2.2 **IF** the tube continues to fluctuate beyond the normal operating value,
THEN turn off x-ray control console
AND contact the SS.

4.13.12.3 **IF** the x-ray tube has been left idle for greater than 8 weeks, or as directed by the SS or designated alternate,
THEN notify SS.

4.13.12.4 SS: Notify the RTR SE to evaluate the situation prior to switching to the manual warm-up mode.

4.13.12.4.1 SE: Evaluate the need to implement a semi-automatic extended warm-up through the setup menu OR to switch to the manual warm-up mode
AND advise SS.

4.13.12.5 **IF** directed by the SS,
THEN perform the following:

4.13.12.5.1 Start warm-up at up to 210 kV.

4.13.12.5.2 Increase the voltage up to 315 kV in 10 kV increments every 15 minutes.

4.13.12.5.3 Increase the voltage above 315 kV in 10 kV increments every 20 minutes, up to 420 kV.

4.13.13 **Entering Barcodes Manually**

WARNING

Eye injury may occur if personnel look directly into the barcode scanner beam.

4.13.13.1 Avoid looking directly into the barcode scanner beam.

4.13.13.2 Click on "Clear All" to clear all entries displayed for the four barcodes,
OR press the "Shift" and "<" keys simultaneously to clear the displayed entry.

4.13.13.3 Enter the barcode using the keyboard.

4.13.13.4 Press the "Shift" and ":" keys simultaneously to set the entry.

4.13.13.5 Press the "Shift" and ">" keys simultaneously to advance to the next entry location.

4.13.13.6 **REPEAT** Steps 4.13.13.3 through 4.13.13.5 until all barcodes have been entered.

4.13.13.7 **WHEN** all the barcodes have been entered,
THEN click on CONFIRM to set the entries.

4.13.14 **Follow-Up Steps When Stopping Production Operations with the RTR System**

4.13.14.1 Turn the x-ray controller key to STAND BY
AND remove the key.

4.13.14.2 OT and SS: Log the status change and NCR number in the applicable operator log and the SS log.

4.13.14.2.1 Ensure documentation is accurate and sufficient to ensure compliance with the requirements of operational limits.

4.13.14.2.1.1 Include, as a minimum, entry conditions and actions that are taken in response to operational limits requirements.

4.13.14.3 OT and SS: Update the applicable status boards.

(MP-COPS-9.7)

4.13.14.4 **WHEN** the condition for stopping production operations has been corrected,
AND the associated NCRs have been closed,
THEN return the RTR system to production operations.

4.13.15 **Performing Functional Verification/Post-Maintenance Testing for Mechanical Motion Only**

4.13.15.1 Ensure that x-rays are **NOT** generated at any time during the performance of this section.

4.13.15.2 Ensure Section 4.2 has been completed.

4.13.15.3 **IF** entry into shielded enclosure is necessary for inspection, **THEN** perform necessary steps in Section 4.2
AND RETURN TO Step 4.13.15.4, when complete.

4.13.15.4 Insert the cart enable/disable key
AND turn it to the ENABLE position.

4.13.15.5 Perform manipulations of equipment as necessary to satisfy functional verification/post-maintenance testing.

5.0 DEFINITIONS

Home position. When the cart is completely outside of the enclosure and the x-ray manipulator and II manipulator are fully lowered.

Liquids, observable (or liquid). Liquid that can be seen by a trained radiography operator or by a trained individual performing visual examination or the waste. This term can be implemented consistently during characterization regardless of waste type.

Operable. A system, subsystem, train, component, or device shall be operable when it is capable of performing its specified safety function(s) and all the required instrumentation, controls, normal or alternate electrical power, cooling and seal water, lubrication, and other auxiliary equipment for the system, subsystem, train, component, or device to perform its specified safety function are capable of performing their related support function(s).

Radiography. A nondestructive testing method that uses x-rays to inspect and determine the physical form of waste.

Summary Category S3000—Homogeneous Solids. Homogeneous solids, or solid process residues, are defined as solid materials, excluding soil, that do not meet the NMED criteria for classification as debris (20.4.1.800 NMAC, Adoption of 40 CFR 268, (incorporating 40 CFR §268.2[g] and [h]). Included in the series of solid process residues are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this summary category group based on the specific waste stream types and final waste form. This summary category group is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume solid process residues.

Summary Category S4000—Soils/Gravel. This summary category group includes S4000 waste streams that are at least 50% by volume soil/gravel. This summary category group is expected to contain toxic metals. Soils/gravel are further categorized by the amount of debris included in the matrix.

Summary Category S5000—Debris Wastes. This summary category group includes heterogeneous waste that is at least 50% by volume materials that meet the criteria specified in 20.4.1.800 NMAC (incorporating 40 CFR §268.2 [g]). Debris means solid material exceeding a 2.36 inch (60 millimeter) particle size that is intended for disposal (particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material) and is:

- A manufactured object
- Plant or animal matter
- Natural geologic material.

Waste stream. Waste materials that have common physical form that contain similar hazardous constituents and that are generated from a single process or activity.

6.0 REFERENCES

(1) 20.4.1.800 NMAC, Adoption of 40 CFR Part 268

(2) 40 CFR 268.2, Land Disposal Restrictions, Definitions Applicable in this Part

(3) 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Subpart D Storage and Disposal

(4) ANSI-N43.3, General Radiation Safety Standard for Installations Using Non-Medical X-ray and Sealed Gamma Ray Sources, Energies up to 10 MeV

(5) AMWTP HWMA/RCRA Permit

(6) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(7) Form-1268, Production Systems Access Request

(8) GE Inspection Technologies Isovolt operating instructions

(9) INST-MI-1002, RTR 6-Month Safety Checks for RTR System Z-213-101 and Z-213-106

(10) INST-OI-11, Waste Container Handling

(11) INST-OI-24, Packaging Radioactive Waste

(12) MP-COPS-9.7, Control of Equipment and Systems Status

(13) MP-COPS-9.17, Performing Pre-Job Briefings and Post-Job Reviews

(14) MP-COPS-9.20, Hazardous Energy Control Processes

(15) MP-DOCS-18.2, Records Management

(16) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(17) MP-RS&C-6.22, Radiological Survey Program

(18) MP-RTQP-14.4, Personnel Qualification and Certification

(19) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(20) MP-TRUW-8.2, Quality Assurance Project Plan

(21) RPT-TRUW-05, Waste Matrix Code Reference Manual

7.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
INST-OI-81, Case File	Non-permanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Form-1218, Daily RTR Safety Checks	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Form-1374, RTR Log (or eSOMS equivalent) (Applicable Operator Log)	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Form-1377, WMF-634 RTR Shielding Radiation Survey	Facility Operating Record/ENV2-a-1-a / Destroy 5 years after Life of Facility
Form-1578, Imaging Quality Indicator Verification Form for RTR	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Recording Media Log	Nonpermanent WIPP/ENV1-J-1/Destroy 75 years after submittal
Recording media	Non-permanent WIPP/ENV1-J-1/Destroy75 years after submittal

8.0 EXHIBITS

Exhibit 1 – RTR Image Test Quality Grid

Exhibit 2 – Waste Material Parameter Descriptions

Exhibit 3 – Parameters and Weights of Commonly Identified Items

Exhibit 4 – List of Prohibited Items

Exhibit 5 – Volumes of Cylinders

Exhibit 6 – Common Liquid Measurements and Conversions

Exhibit 7 – V^2 Nominal Density Guidance Table

Exhibit 8 – Volume Conversion Table, Cubic Inches to Pints

Exhibit 9 – Categorizing Box Contents During RTR Examination

Exhibit 1 – RTR Image Test Quality Grid

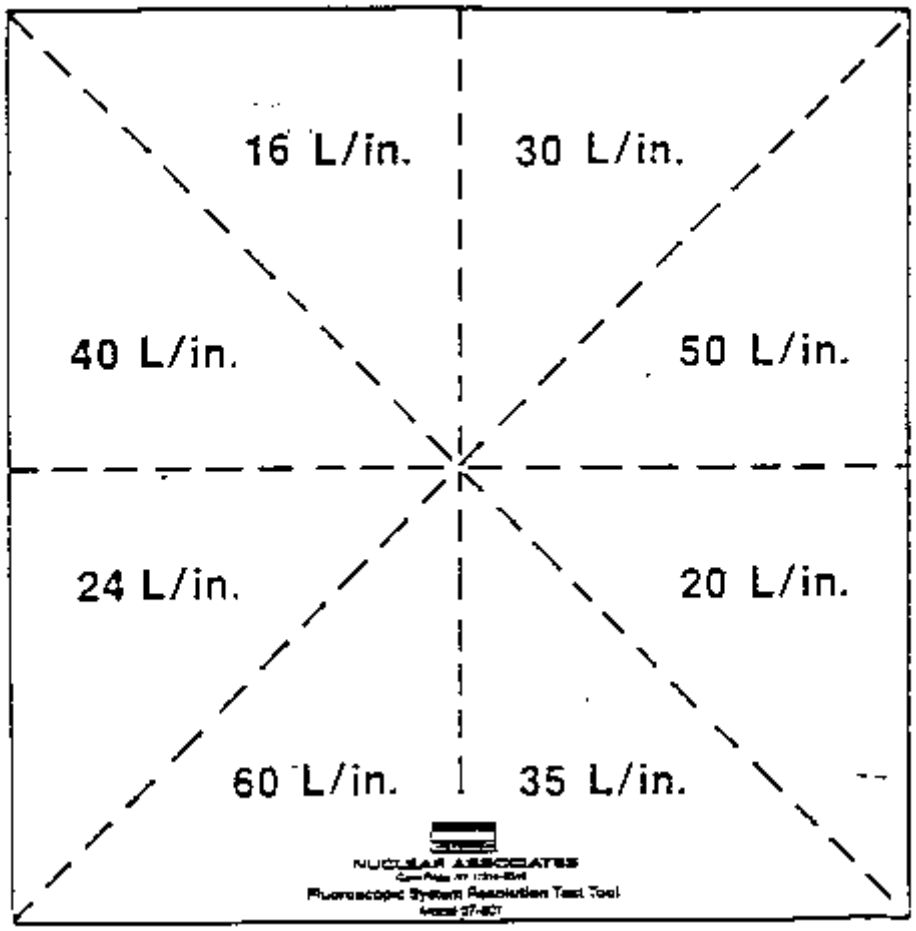


Exhibit 2 – Waste Material Parameter Descriptions

Waste Material Parameter	Help Description
Iron-based metals/alloys	Iron and steel alloys in the waste; does not include the waste container materials
Aluminum-based metals/alloys	Aluminum or aluminum-based alloys in the waste material
Other metals	All other metals found in the waste materials
Other inorganic materials	Nonmetallic inorganic waste, including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents
Cellulosics	Materials generally derived from high polymer plant carbohydrates. Examples are paper, cardboard, wood, cloth, etc.
Rubber	Natural or man-made elastic latex materials. Examples are surgeons' gloves, leaded rubber gloves, etc.
Plastics (waste materials)	Generally man-made materials often derived from petroleum feedstock. Examples are polyethylene, polyvinyl chloride, etc.
Organic matrix	Cemented organic resins, solidified organic liquids, and sludge
Inorganic matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents. Examples are wastewater treatment sludge, cemented aqueous liquids, inorganic particulate, etc.
Soil/gravel	Generally consists of naturally-occurring soil/gravel contaminated with inorganic waste materials
Steel (packaging materials)	208-L (55-gal.) drums
Plastics (packaging materials)	90-mil polyethylene drum line and plastic bags

Exhibit 3 – Parameters and Weights of Commonly Identified Items

Item	Weight	Waste Material Parameter
55-gal drum (17 C)	See WTS List of Container Weights	Steel (packaging materials)
90 mil liner (Type I, II, III, IV)	See WTS List of Liner Weights	Plastic (packaging materials)
O-ring plastic bag found in sludge, organic setups, etc.	4 lb	Plastic (packaging materials)
Drum plastic bag	1 lb	Plastic (packaging materials)
Plastic bag for waste	1/4 lb	Plastic (waste materials)
Cardboard liner (graphite mold waste)	4 lb	Cellulosics
Fiber pack	6 lb	Cellulosics
Box fiberboard liner	15 lb	Cellulosics
Box plastic liner	5 lb	Plastic (packaging materials)
Lead Brick 2 by 4 by 8 in.	25 lb	Other metals
Leaded Rubber Glove	5.5 lb	Rubber
Leaded Rubber Apron	5.25 lb	Rubber
Liquids (Water)	8 lb/gal + (1 lb/pint)*	
Drum Lead-liner: (1/8 in. thick, 28 in. high, by 72 in. long) (0.4 lb/in.^{3})	100 lb	Other metals
Drum Lead-liner: (1/16 in. thick, 28 in. high by 72 in. long)	50 lb	Other metals
Vermiculite (95 gm/liter)	0.9 lb/gal (0.125 lb/pint)	Other Inorganics
Oil-Dri (404 gm/liter)	3.36 lb/gal (0.42 lb/pint)	Other Inorganics
Poly Bottles (1 gal)	1 lb	Plastics (waste materials)
Metal Can	1/2 lb	Iron-based metals/alloys
Drum Stub bag	2 lb	Plastic Packaging (materials)
Cured Cement	9 lb/gal (1.125 lb/pint)	Other Inorganic Materials
Uncured Cement	24 lb/gal (3 lb/pint)	Other Inorganic Materials
Aquaset	9.6 lb/gal (1.21 lb/pint)	Other Inorganic Materials

* Waste Parameter depends on source of liquid organic or inorganic.

Exhibit 4 – List of Prohibited Items

Prohibited Item	Comments
Liquids	Liquid Waste is not acceptable at WIPP. Observable liquid containing PCBs is prohibited at WIPP. Liquid in the quantities delineated below is acceptable: • Observable liquid shall be less than 1% by volume of the outermost container at the time of radiography or visual examination. • Internal containers with more than 60 milliliters or 3% by volume observable liquid, whichever is greater, are prohibited. • Containers with Hazardous Waste Number U134 assigned shall have no observable liquid. • Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.
Compressed gases	Typically, aerosol cans, gas bottles, or cylinders that cannot be verified to be physically vented (e.g., a drilled hole, a removed relief valve).
Corrosives/reactives/ ignitables present	Waste exhibiting the characteristic of ignitability, corrosivity, or reactivity.
Explosives	Examples include ammunition, dynamite, black powder, detonators, nitroglycerine, urea nitrate, and picric acid.
Wastes with PCBs not authorized under an EPA PCB waste disposal authorization	Light ballasts **AND** transformers are potential sources of PCBs in much of the waste. PCB items commingled (in direct contact with or displaying evidence of cross contamination) with residual liquids are prohibited.
Non-radionuclide pyrophorics	Examples of pyrophoric radionuclides are: metallic plutonium, americium. Examples of non-radionuclide pyrophorics or materials/waste that may cause a pyrophoric type event are: organic peroxides, sodium metal, and chlorates.
Sealed containers greater than 4 liters	Containers >4 liters are considered sealed unless the container cannot be airtight (example: fiber-packs).
Non-mixed hazardous waste	Hazardous wastes not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous wastes).
Waste incompatible with backfill, seal and panel closure material, shipping container materials or other wastes	Excessive rust, brittle materials, excessive corrosion, evidence of reaction in the waste are all potential sources for evidence that the waste is not compatible with backfill, packaging, or shipping container. Compatible waste meets the TRUCON requirement.
Sharp or heavy items not blocked or braced	Sharp items that have a reasonable potential to puncture the payload container shall be treated or protected prior to shipment. (The presence of a properly assembled rigid or fiberboard liner is considered as one method of providing protection. Padding, when applicable, is also an acceptable method of providing protection.) Heavy items shall be blocked, braced, or suitably packaged to provide puncture protection for the payload containers packaging these objects.

(HWMA/RCRA Permit; MP-TRUW-8.1; MP-TRUW-8.2; CCP-PO-003)

Exhibit 5 – Volumes of Cylinders

Volumes of Cylinders (pints)												
Diameter (in.)												
Height (in.)	1	2	3	4	5	6	7	8	9	10	11	12
1	0.03	0.11	0.24	0.44	0.68	0.98	1.33	1.74	2.20	2.72	3.29	3.92
2	0.05	0.22	0.49	0.87	1.36	1.96	2.67	3.48	4.41	5.44	6.58	7.83
3	0.08	0.33	0.73	1.31	2.04	2.94	4.00	5.22	6.61	8.16	9.87	11.75
4	0.11	0.44	0.98	1.74	2.72	3.92	5.33	6.96	8.81	10.88	13.16	15.67
5	0.14	0.54	1.22	2.18	3.40	4.90	6.66	8.70	11.02	13.60	16.46	19.58
6	0.16	0.65	1.47	2.61	4.08	5.88	8.00	10.44	13.22	16.32	19.75	23.50
7	0.19	0.76	1.71	3.05	4.76	6.85	9.33	12.19	15.42	19.04	23.04	27.42
8	0.22	0.87	1.96	3.48	5.44	7.83	10.66	13.93	17.63	21.76	26.33	31.33
9	0.24	0.98	2.20	3.29	6.12	8.81	12.00	15.67	19.83	24.48	29.62	35.25
10	0.27	1.09	2.45	4.35	6.80	9.793	13.33	17.41	22.03	27.20	32.91	39.17
11	0.30	1.20	2.69	4.79	7.48	10.77	14.66	19.15	24.24	29.92	36.20	43.08
12	0.33	1.31	2.94	5.22	8.16	11.75	15.99	20.89	26.44	32.64	39.49	47.00
13	0.35	1.41	3.18	5.66	8.84	12.73	17.33	22.63	28.64	35.36	42.79	50.92
14	0.38	1.52	3.43	6.09	9.52	13.71	18.66	24.37	30.84	38.08	46.08	54.84
15	0.41	1.63	3.67	6.53	10.20	14.69	19.99	26.11	33.05	40.80	49.37	58.75

Exhibit 6 – Common Liquid Measurements and Conversions

Liquid Measurements	
1.	3 tsp = 1 tbsp
2.	4 tbsp = 1/4 cup
3.	2 cups = 1 pint
4.	4 cups = 1 qt
5.	2 pints = 1 qt
6.	8 pints = 1 gal
7.	4 quarts = 1 gal
8.	Pints × 0.473 = liters
9.	Millilitres × 1000 = liters
10.	60 ml = .127 pints
11.	1 pint = 1 lb

Conversions		
Unit	Conversions to Pints	Weight (lb)
1 teaspoon	0.01	0.01
1 tablespoon	0.03	0.03
1/4 cup	0.13	0.13
1/3 cup	0.17	0.17
1 cup	0.5	0.5
1 pint	1	1
1 quart	2	2
1 gal	8	8

Exhibit 7 – V^2 Nominal Density Guidance Table

Material	Density (kg/L)	References
Aluminum	3.0	1, 2
Cement	2.0	1
Cardboard (fiber board)	0.8	5
Copper	9.0	1, 2
Fiber board (insulating)	0.8	4
Fire Brick (90% aluminum oxide)	3.0	4
Glass	2.0	3
Glass, Bulk Density	2.0	3
Glass, Raschig Rings (0.06 kg/ring)	0.6	4
Graphite, Bulk Density	0.5	3
Gravel	2.0	3
Iron	7.5	2
Lead	11.0	1, 2
Plastic (e.g., 10 ml liner material)	0.9–1.0	Calculated
Plastic (e.g., 90 ml heavy rigid liner material)	0.9–1.0	Calculated
Rubber	0.9–2.0	2
Sand	2.0	3
Sludge	1.0–1.5	Common Knowledge
Soil	1.0–1.8	2
Stainless Steel	8.0	1
Steel	8.0	1, 2
Tantalum	17.0	2
Wood (fir, oak, pine, avg.)	1.0	3
Water	1.0	1.3

The actual density of specific metals or wood types may vary due to the type of wood or the composition of the metal alloy.
Water has a nominal density of 1 kg/L
1 kilogram = 2.2 pounds

References

1. Shigley, J. E., Mechanical Engineering Design, 3rd ed. 636
2. Marks Standard Handbook for Mechanical Engineers, 8th ed. 6-60/61
3. Perry, John H., Chemical Engineers Handbook, 3rd ed. 1549-52
4. Harbison-Walker Refractories Co., Technical Bulletin 12, HU
5. Rocky Flats procedure, 4-I19-NDT-00569

Exhibit 8 – Volume Conversion Table, Cubic Inches to Pints

in^3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	.04	.07	.10	.14	.17	.21	.24	.28	.31	.35	.38	.42	.45	.49	.52	.55	.59	.62	.66	.69	.73	.76
2	.07	.14	.21	.28	.35	.42	.49	.55	.62	.69	.76	.83	.9	.97	1.04	1.12	1.18	1.25	1.32	1.41.395	1.45	1.52
3	.1	.17	.31	.42	.52	.62	73	.83	.94	1.04	1.14	1.25	1.35	1.45	1.56	1.66	1.77	1.87	1.97	2.08	2.18	2.29
4	.14	.28	.42	.55	.69	.83	.97	1.12	1.25	1.39	1.52	1.66	1.8	1.94	2.08	2.22	2.36	2.49	2.63	2.77	2.91	3.05
5	.17	.35	.52	.69	.87	1.04	1.21	1.39	1.56	1.73	1.9	2.08	2.25	2.42	2.6	2.77	2.94	3.12	3.29	3.46	3.64	3.81
6	.21	.42	.62	.83	1.04	1.25	1.45	1.66	1.87	2.08	2.29	2.49	2.7	2.9	3.12	3.32	3.53	3.74	3.95	4.16	4.36	4.57
7	.24	.49	.73	.97	1.21	1.45	1.7	1.94	2.19	2.42	2.67	2.91	3.15	3.39	3.64	3.88	4.12	4.36	4.61	4.85	5.09	5.33
8	.28	.55	.83	1.11	1.39	1.66	1.94	2.22	2.49	2.77	3.05	3.32	3.61	3.88	4.16	4.43	4.71	4.99	5.26	5.54	5.82	6.1
9	.31	.62	.94	1.25	1.56	1.87	2.18	2.49	2.81	3.12	3.43	3.74	4.05	4.36	4.68	4.99	5.3	5.61	5.92	6.23	6.66	6.86
10	.35	.69	1.04	1.39	1.73	2.08	2.42	2.77	3.12	3.46	3.81	4.16	4.5	4.85	5.19	5.54	5.89	6.23	6.58	6.92	7.27	7.62
11	.38	.76	1.14	1.52	1.9	2.29	2.67	3.05	3.43	3.81	4.19	4.57	4.95	5.33	5.71	6.1	6.48	6.86	7.24	7.62	8	8.38
12	.42	.83	1.25	1.66	2.08	2.49	2.91	3.32	3.74	4.16	4.57	4.99	5.4	5.82	6.23	6.65	7.06	7.48	7.98	8.31	8.73	9.14
13	.45	.9	1.35	1.8	2.25	2.7	3.15	3.61	4.05	4.5	4.95	5.4	5.85	6.3	6.75	7.2	7.65	8.1	8.55	9	9.45	9.9
14	.49	.97	1.45	1.94	2.42	2.9	3.39	3.88	4.36	4.85	5.33	5.82	6.3	6.79	7.27	7.76	8.24	8.72	9.21	9.7	10.18	10.67
15	.52	1.04	1.56	2.08	2.6	3.12	3.64	4.16	4.68	5.19	5.71	6.23	6.75	7.27	7.79	8.31	8.83	9.35	9.87	10.39	10.91	11.43
16	.55	1.12	1.66	2.22	2.77	3.32	3.88	4.43	4.99	5.54	6.1	6.65	7.2	7.76	8.31	8.87	9.42	9.97	10.53	11.08	11.64	12.19
17	.59	1.18	1.77	2.36	2.94	3.53	4.12	4.71	5.3	5.89	6.48	7.06	7.65	8.24	8.83	9.42	10	10.6	11.18	11.77	12.36	12.95
18	.62	1.25	1.87	2.49	3.12	3.74	4.36	4.99	5.61	6.23	6.86	7.48	8.1	8.72	9.35	9.97	10.6	11.22	11.84	12.47	13.09	13.71
19	.66	1.32	1.97	2.63	3.29	3.95	4.61	5.26	5.92	6.58	7.24	7.9	8.55	9.21	9.87	10.53	11.18	11.84	12.5	13.16	13.82	14.48
20	.69	1.39	2.08	2.77	3.46	4.16	4.85	5.54	6.23	6.92	7.62	8.31	9	9.7	10.39	11.08	11.77	12.47	13.16	13.85	14.55	15.24
21	.73	1.45	2.18	2.91	3.64	4.36	5.09	5.82	6.55	7.27	8	8.73	9.45	10.18	10.91	11.64	12.36	13.09	13.82	14.55	15.27	16
22	.76	1.52	2.29	3.05	3.81	4.57	5.33	6.1	6.86	7.62	8.38	9.14	9.9	10.67	11.43	12.19	12.95	13.71	14.48	15.24	16	16.76

A. Multiply the cross-section volume in the table by the height of the object to get the volume of the object in pints. The cross-section volume is based on a height of 1 inch.

Exhibit 9 – Categorizing Box Contents During RTR Examination

CATEGORY	Packaging Material	Layer of Confinement	Waste Material
ITEM			
Plastic Drum Bag	*	X	
90-mil Liner	X		
Small Plastic Bag Containing Waste	*	X	
Poly Bottle <4 liters			X
Fiber Pack			X
Volrath Can <4 liters			X
Metal Can <4 liters			X
Empty Plastic Bag			X
Ice Cream Carton			X
Sealed containers >4 liters		X	

* Only plastic bags (PVC or poly) in the outer two layers are considered plastic packaging materials, the others are considered plastic waste.

9.0 APPENDICES

Appendix A – Burning DVD from Hard Drive

Appendix B – Creating or Transferring Data to the RITA Archival System

Appendix C - Revision Log

Appendix A – Burning DVD from Hard Drive

NOTE: *This appendix is used to provide information for burning data from the hard drive onto a DVD.*

1. Start by clicking the "Nero Essentials" icon on the desktop.

2. Highlight the data DVD button by double clicking it. (This program will burn the DVD from the hard drive.)

   NOTE: *The Nero essentials will open and have a button on the right hand side of the window titled ADD.*

3. After selecting the ADD button, a folder window will open with the recorded data.

4. File the applicable file or folder.

5. Highlight the box(es) and IQI, if needed, to be burned to the DVD **AND** click the ADD button.

6. Ensure there is enough memory on the DVD for selected file. If not, insert a new DVD.

7. After all items to be burned to DVD have been added, close the folder containing all the data.

8. Hit the NEXT button.

9. Name the disc with the batch number being burned to the DVD, if necessary.

10. Ensure that "Verify data on disc after burning" and "Multi-session" boxes are checked.

11. Select the burn button. If DVD does not have enough space for selected file, then insert new DVD and continue.

12. After the burn is complete, select "OK" to "Data Verification Completed Successfully."

13. Select NEXT.

14. Exit "Nero Essentials."

15. Re-insert disc and wait for “My Disc” window to open.
16. Select previously burned file and check the audio/video record for completeness.
17. Exit “My Disc” folder.
18. Create a folder with the batch number as the folder name, if necessary.
19. Move previously burned file(s) to batch folder.

Appendix B – Creating or Transferring Data to the RITA Archival System

1. Double click RITA icon, if necessary.

2. If needing to create a disk, click CREATE.

   2.1 Select the type of disk to be created and select CREATE.

   NOTE 1: *After confirming, a window will pop up informing if you are successful or if there is a problem with the creation of the disc.*

   NOTE 2: *After clicking CANCEL, the program will return you to the first screen of RITA.*

   2.2 If information is correct, click CONFIRM.

   2.3 If information is incorrect, click CANCEL.

   2.4 Click OK to acknowledge creation of the disk ID.

3. If needing to transfer data, click TRANSFER

   NOTE: *While data is transferring, the RITA window can be minimized***.**

   3.1 Select disk ID to be transferred and select TRANSFER

   3.2 Input batch ID if disk is associated with a batch, and N/A if it is not.

   3.3 Click TRANSFER.

   3.4 If transfer is unsatisfactory, contact SS/subject matter expert/SE.

   3.5 If transfer is complete and satisfactory, click OK.

Appendix C – Revision Log

Revision Number	Date Approved	Pages Affected	Description of Revision
0	04/08/08	All	DCR-6867. Initial issue.
1	08/11/08	All	DCR-7359. Incorporated DOCS-BLUESHEET-01 changes, revised Section 2.0 to be specific to procedure, revised Sections 4.2, 4.4, 4.6, 4.7, 4.8 per upgrades to procedure, deleted Section 4.13, revised Section 7.0, updated roll-downs, replaced the magneto optical disc with recording media, added updates for the IQI, added Appendix A, made editorial changes per MP-DOCS-18.1.
2	01/29/09	Various	DCR-7644. Incorporated DSA changes and edited per MP-DOCS-18.1 and reformatted per MP-DOCS-18.4.
2 FC-1	03/19/09	7 and 41	DCR-8178. Clarification and match software terminology.
3	04/27/09	Various	DCR-8267. Incorporated changes for consistency with INST-OI-12 and to improve flow. Incorporate FC-1 (DCR-8178) to make FC permanent. Made editorial changes for consistency within document and per MP-DOCS-18.1. Incorporated DOCS-Bluesheet-02 changes (eSOMS equivalent). (Revision considered a rewrite due to number of rev bars.)
4	11/18/09	Various	DCR-8729. Incorporated 2009 DSA/TSR update.

Revision Number	Date Approved	Pages Affected	Description of Revision
5	02/22/10	Various	DCR-9007. Changes to clarify IQI requirements.
5 FC-1	04/28/10	B1	DCR-9208. Changed RTR ratings for RTRs 101 and 106.
5 FC-2	05/10/10	Pg 5	DCR-9249. Change made to resolve CAR 49662, incorporating alternative isolation device information.
5 FC-3	06/19/10	Pgs 12, 13, and 14 B1	DCR-9376. Change made to warm-up steps and RTR 106 kV settings.
6	06/24/10	Various	DCR-9138. Incorporated DCRs-9208 -9249, and -9376 (EXCEPT for the RTR kV changes), and WIPP Permit modifications.
6 FC-1	08/02/10	Various	DCR-9454. Allow de-rate of maximum power by System Engineer and Document owner.
6 FC-2	09/30/10	Various	DCR-9568. Provides formal direction to operators.
7	12/15/10	Various	DCR-9497. Incorporated FC-1 (DCR-9454) and FC-2 (DCR-9568). Incorporate the new WIPP Hazardous Waste Permit language changes. Also corrected inconsistencies in FCs compared to OI-12 FCs.
8	06/21/11	Various	DCR-10139. Changed to Controlled Activity. Updated steps and notes to match operational changes. Added clarification to reduce NCRs and to minimize rework. Resolves CAR 54805.
9	07/03/12	Various	DCR-11144. Revised to incorporate ITG-Bluesheet-021, update document owner and equipment upgrades, including changing the II to FP.
10	08/06/12	Various	DCR-11431. Incorporated DSA changes.

WIPP Training Requirements Implementation Matrix

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-9632.*) 12/17/10

T. F. Fallon
Quality Assurance and Training Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	12/17/10	All	DCR-9632. Initial issue.

1.0 PURPOSE/SCOPE

The purpose of this matrix is to identify how all the training requirements for the Waste Isolation Pilot Plant (WIPP) permit listed in either MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, or MP-TRUW-8.2, Quality Assurance Project Plan, are implemented at the Advanced Mixed Waste Treatment Project (AMWTP). This matrix will be reviewed and updated, as necessary, any time either source document is revised.

2.0 IMPLEMENTATION MATRIX

Procedure Section	Extract of Requirement	AMWTP Implementation
MP-TRUW-8.1, Certification Plan for INL Transuranic Waste		
5.5	Personnel performing waste characterization and certification activities affecting quality are qualified and trained to ensure that suitable proficiency is achieved and maintained in the performance of their assigned tasks.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification Training requirements specified for waste characterization can be found throughout this document. Training requirements for certification are specified in qualification checklist QCWC01A.
5.5.1	The appropriate managers, with support of the training organization, determine job positions and qualification standards for each job category relevant to the AMWTP. Task responsibilities for personnel are analyzed in accordance with MP-RTQP-14.6, Job Analysis. Education, experience, and training prerequisites commensurate with minimum requirements are included in the qualification packages in accordance with MP-RTQP-14.4.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.6, Job Analysis
5.5.2	Managers ensure that AMWTP personnel receive indoctrination and training on the scope, purpose, and objectives of the WIPP Program and the specific Quality Assurance Objectives (QAOs) of the tasks being performed.	0AWT3105, TRU Programs and WIPP Waste Analysis Plan (WAP) Overview
5.5.2	Personnel performing activities affecting quality are trained according to their respective training plans to ensure they achieve and maintain proficiency prior to performing any tasks subject to these Quality Assurance Plan (QAP) requirements.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification

Procedure Section	Extract of Requirement	AMWTP Implementation
5.5.2	Personnel receive training, including on-the job training and hands-on training, as needed, to achieve initial proficiency and continuing training requisite with their activities and level of responsibility to maintain proficiency; and adapt to changes in technology, methods, job responsibilities and authority, and Quality Assurance (QA) implementing procedures in accordance with MP-RTQP-14.1, and MP-RTQP-14.4.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification Course 0AWT2201, Quality Assurance
5.5.2	Training is designed, developed, conducted, and evaluated in accordance with approved AMWTP training procedures. Training programs may include classroom instruction, practical hands-on experience, supervised on-the-job training, self-paced individual study, and written, oral, or practical demonstration of worker competence.	MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.11, Delivery of Training MP-14.16, Evaluation of Training
5.5.2	The period of effectiveness for qualification associated with special processes, operations that require special skills, and the requalification criteria are specified or referenced in MP-RTQP-14.4 or supporting training program plans.	MP-RTQP-14.4, Personnel Qualification and Certification
5.5.2	Nondestructive examination (NDE) and nondestructive assay (NDA) are considered to be characterization processes; therefore, personnel performing NDE are qualified to a program based on the American Society of Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A, June 1980 Edition. Later editions of SNT-TC-1A may be used as long as the minimum requirements of the June 1980 edition are met. Personnel performing NDA are qualified to the American Society for Testing and Materials (ASTM) C1490, Standard Guide for Selection, Training, and Qualification of Nondestructive Assay Personnel. Training is subject to ongoing review to determine instruction and training program effectiveness and shall be upgraded whenever improvements or enhancements are identified.	ASTM C1490 are implemented in the following NDA qualification packages: • QPOT3B, Drum Assay • QPOT3D, Box Assay • FQP-OT-9B, Facility Drum Assay. SNT-TC-1A is implemented through the following NDE qualification package(s): • QPOT3A, Real-Time Radiography.
5.5.2	Personnel performing TRU Program activities affecting quality receive indoctrination in the following: • General criteria, the QAP, and applicable codes, regulations, and standards • Specific criteria, including the Quality Assurance Project Plan (QAPjP), Certification Plan, Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC), and any implementing procedures, as applicable.	0AWT3105, TRU Programs and WIPP-WAP Overview Position specific qualification packages and checklists listed in the applicable sections below.

Procedure Section	Extract of Requirement	AMWTP Implementation
5.5.2	Auditable records documenting the required training and qualifications are maintained as QA records and controlled in accordance with MP-RTQP-14.19, Training Records Administration.	MP-RTQP-14.19, Training Records Administration
5.14	Personnel performing validation at the AMWTP are trained to the existing industry standardized training requirements (e.g., ASTM C1490).	QPITR3A, Level I Validation
Nondestructive Assay and Nondestructive Examination		
A.4.1	Only appropriately trained and qualified personnel are allowed to perform radioassay and data validation/review. Standardized Training requirements for radioassay personnel are based upon existing industry standardized training requirements (e.g., ASTM C1490, Reference A8) and meet the specifications in the Quality Assurance Program Document (QAPD). Requalification of radioassay personnel shall be based upon evidence of continued satisfactory performance and must be performed at least every 2 years.	MP-RTQP-14.4, Personnel Qualification and Certification QPOT3B, Drum Assay QPOT3D, Box Assay FQP-OT-9B, Facility Drum Assay QCASYITR, Nondestructive Assay Independent Technical Reviewer QCNDAETR, Nondestructive Assay Expert Technical Reviewer/Independent Technical Reviewer QCSPM01A, Site Project Manager Designee
A.4.1	Personnel receive training requisite with their activities and level of responsibility in accordance with MP-RTQP-14.4, Personnel Qualification and Certification. The period of effectiveness for qualification and the requalification criteria are also specified.	MP-RTQP-14.4 is implemented through the assay qualification packages and checklists listed above.
A.6.5	These controls apply to all aspects of the data generation process, including: • Procurement of analytical instruments • Calibration and operation of assay equipment according to industry standards • Preparation and use of standardized instrument and data review procedures • Training of equipment operators and technical/data review personnel to the QAPD, as specified in Section A.4.1.	See previous entry for Section A.4.1.

Procedure Section	Extract of Requirement	AMWTP Implementation
Real-Time Radiography Operations		
F.2	Only trained and qualified radiography operators shall be allowed to operate radiography equipment.	QPOT3A, Real Time Radiography Operations
F2	Standardized training and qualification requirements for radiography operators are based upon existing industry standard training requirements as detailed in the radiography qualification package and comply with the training and qualification requirements in MP-RTQP-14.4.	QPOT3A, Real Time Radiography Operations
F.2	The AMWTP has developed a training program that provides radiography operators with both formal and on-the-job training (OJT).	QPOT3A, Real Time Radiography Operations
F.2	Radiography operators are instructed in:	
	• Specific waste generating practices	QPOT3A, Section 3.4
	• Typical packaging configurations	QPOT3A, Section 3.4
	• Associated waste material parameters expected to be found in each waste matrix code at the site.	QPOT3A, Section 3.3 (required reading of MP-TRUW-05, Waste Matrix Code Reference Manual, and MP-TRUW-12, AMWTP Waste Stream Designations)
F.2	The Real-Time Radiography (RTR) OJT and apprenticeship is conducted by an experienced, qualified radiography operator prior to qualification of the training candidate.	AMWTP does not have an apprenticeship program; instead, minimum time performing duties under an OJT instructor are included in QPOT3A, Section 4.
F.2	Radiography operators are trained on the types of waste that are generated, stored, or characterized at the AMWTP. The RTR training program contains:	QPOT3A, Sections 3.4, 4.4 and 4.5
	• Project requirements	QPOT3A, Section 3.
	• State and Federal regulations	QPOT3A, Section 3.
	• Basic principles of radiography	0AWT4302, RTR Theory and Equipment and QPOT3A, Section 3.4
	• Radiographic image quality	
	• Radiographic scanning techniques	QPOT3A, Sections 4.4 and 4.5
	• Application techniques	QPOT3A, Section 4.3, 4.4, and 4.5
	• Radiography of waste forms	QPOT3A, Sections 4.4 and 4.5
	• Standards, codes, and procedures for radiography	QPOT3A, Section 3.2
	• Site-specific instruction.	QPOT3A, Section 3 and 4

Procedure Section	Extract of Requirement	AMWTP Implementation
F.2	The RTR training program also contains OJT which addresses:	
	• System operation	0AWT4302, RTR Theory and Equipment
	• Identification of packaging configurations	QPOT3A, Section 3.4.
	• Identification of waste material parameters	QPOT3A, Section 3.4.
	• Weight and volume estimation	QPOT3A, Sections 3.4 and 4.3
	• Identification of prohibited items.	QPOT3A, Section 3.4
F.2	Requalification of operators are based on evidence of continued satisfactory performance (primarily audio/video recording reviews), and shall be done at least every 2 years. Unsatisfactory performance will result in disqualification. Unsatisfactory performance is defined as the misidentification of a prohibited item in a training drum or a score of less than 80% on the comprehensive exam.	MP-RTQP-14.4 QPOT3A, Requalification, Section 1.0 QPOT3A, Requalification, Section 6.0
F.2	Successfully pass a comprehensive exam based upon training enabling objectives. The comprehensive exam will address all of the radiography operations, documentation, characterization, and procedural elements stipulated in the Waste Acceptance Criteria (WAC).	QPOT3A, Examination
F.2	A practical capability demonstration shall be performed in the presence of an appointed site radiography subject matter expert. The person will be an experienced radiography operator who is also qualified as an OJT trainer.	QPOT3A, Section 4
F.2	A training drum with internal containers of various sizes is scanned semiannually by each operator.	Admin Form AFRTRDRU and AFRTRSWB

Procedure Section	Extract of Requirement	AMWTP Implementation
F.2	Radiography test drums contain items common to the waste streams to be generated and stored at the AMWTP. The test drums are divided into layers with varying packing densities or different drums may be used to represent different situations that may occur during radiography examination at the site. Test drums shall be representative of the waste matrix codes for which Waste Stream Profile Form (WSPF) approval is sought. Test drums shall be examined and successfully identified prior to waste stream shipment. The following is a list of required elements of a radiography test drum: • A punctured aerosol can • Pigtails on poly liners (horsetail bag) • Pair of coveralls • Empty bottle • Irregular shaped pieces of wood • Empty one-gallon paint can • Full container • Aerosol can with fluid • One-gallon bottle with three tablespoons of fluid • One-gallon bottle with one cup of fluid (upside down) • Leaded glove or leaded apron • Wrench. These items shall be successfully identified by the operator as part of the qualification process.	QPOT3A Admin Form AFRTRDRU and AFRTRSWB
F.4	Only appropriately trained and qualified personnel shall be allowed to perform data validation/review.	QPITR3A, Level I Validation ITR QCSPM01A, Site Project Manager Designee
Visual Examination		
G.2	Standardized training for visual examination (VE) has been developed to include both formal classroom training and OJT.	QPVE0001, Visual Examiner 0AWT3141, VE Indoctrination 0AWT3142, Visual Examination 0AWT3143, Waste Tracking System and Data Quality Objectives
G.2	Personnel performing VE are instructed in the specific waste generating processes.	QPVE0001, Section 4.1

Procedure Section	Extract of Requirement	AMWTP Implementation
G.2	Personnel performing VE are instructed in typical packaging configurations.	QPVE0001, Section 4.1
G.2	Personnel performing VE are instructed in and the waste material parameters expected to be found in each waste matrix code at the site.	QPVE0001, Section 4.1
G.2	The OJT and apprenticeship is conducted by an operator experienced and qualified in VE prior to qualification of the candidate.	QPVE0001, Section 4.0 AMWTP does not have a formal apprenticeship program; instead, requirements to perform VE on different waste streams at AMWTP under an OJT instructor are included in QPVE0001, Section 4.
G.2	The training shall be site-specific to include the various waste configurations at the site.	QPVE0001, Visual Examiner
G.2	Training and qualification requirements for VE are detailed in the VE qualification package in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
G.2	Visual examination operators need only be trained to the physical forms and packaging configurations used on the waste stream that they are examining and packaging.	QPVE0001, Visual Examiner
G.2	Visual examination personnel are requalified once every 2 years.	QPVE0001, Visual Examiner
G.2	Training shall address the following requirements:	
	• Project requirements	QPVE0001, Section 4.1
	• State and Federal regulations	QPVE0001, Section 3
	• Application techniques	QPVE0001, Section 4
	• Site-specific instruction.	QPVE0001, Sections 3 and 4
G.2	Training shall also include OJT that addresses:	
	• Identification of packaging configurations	QPVE0001, Section 4.1
	• Identification of waste material parameters	QPVE0001, Section 4.1
	• Weight and volume estimation	QPVE0001, Section 4.1
	• Identification of prohibited items.	QPVE0001, Section 4.1

Procedure Section	Extract of Requirement	AMWTP Implementation
Visual Examination Expert		
G.2	The Visual Examination Expert (VEE) receives training in the same elements as the visual examination personnel with both formal training and on-the-job training.	QCVEE001, Visual Examination Expert Qualification QCVEELEA, Visual Examination Expert Lead Qualification Package
G.2	Qualification of a VEE is based on familiarity with waste generating processes, familiarity with the types of waste being characterized, and meeting the training requirements discussed above.	QCVEE001, Visual Examination Expert Qualification QCVEELEA, Visual Examination Expert Lead Qualification Package
G.2	Consistent with other VE personnel, the VEE is requalified once every 2 years. Specific qualification and training requirements for the VEE are listed in the qualification checklist in accordance with MP-RTQP-14.4.	QCVEE001, Visual Examination Expert Qualification QCVEELEA, Visual Examination Expert Lead Qualification Package
G.4	Only appropriately trained and qualified personnel are allowed to perform data validation/review.	QCSPM01A, Site Project Manager Designee

Procedure Section	Extract of Requirement	AMWTP Implementation
MP-TRUW-8.2, Quality Assurance Project Plan		
B-0	The TRU Programs Manager's responsibilities include ensuring that adequate technical and QA training are provided for personnel performing WIPP activities.	MP-RTQP-14.4, Personnel Qualification and Certification 0AWT2201, Quality Assurance
Real-Time Radiography Operations		
C.1.3	Operator training and experience are the most important considerations for ensuring implementation of quality controls (QCs) in regard to the operation of the RTR system and for interpretation and disposition of radiography results. Only trained personnel are allowed to operate RTR equipment.	QPOT3A, Real Time Radiography Operations
C1-3	Standardized training requirements for RTR operators are based upon existing industry standard training requirements as detailed in the RTR qualification package in accordance with MP-RTQP-14.4.	QPOT3A, Real Time Radiography Operations
C1-3	The AMWTP has developed a training program that provides RTR operators with both formal and OJT.	QPOT3A, Real Time Radiography Operations
C1-3	Radiography operators are instructed in: • Specific waste generating practices • Typical packaging configurations • Associated waste material parameters expected to be found in each waste matrix code at the site.	QPOT3A, Section 3.
C1-3	The OJT and apprenticeship is conducted by an experienced, qualified RTR operator prior to qualification of the training candidate.	AMWTP does not have an apprenticeship program; instead, minimum time performing duties under an OJT instructor are included in QPOT3A, Section 4.
C1-3	Radiography operators are trained on the types of waste that are generated, stored, and characterized at the AMWTP.	QPOT3A, Sections 3.4, 4.4, and 4.5
C1-3	All of the radiography QC requirements specified in the WIPP-WAP are incorporated into the AMWTP training program and RTR operations to ensure data quality and comparability.	MP-RTQP-14.4, Personnel Qualification and Certification QPOT3A, Real Time Radiography Operations
C1-3	One or more training containers with items (including prohibited items) common to the waste streams to be characterized and internal containers of various sizes are scanned semiannually by each operator.	QPOT3A, Section 4.2 Admin Forms AFRTRDRU and AFRTR SWB

Procedure Section	Extract of Requirement	AMWTP Implementation
Visual Examination		
C1-4	Standardized training for VE has been developed.	QPVE0001, Visual Examiner
C1-4	Personnel performing VE are instructed in:	
	• Specific waste generating processes	0AWT3141, VE Indoctrination
	• Typical packaging configurations	QPVE0001, Section 4.1
	• Waste material parameters expected to be found in each waste matrix code at the AMWTP.	QPVE0001, Section 4.1
	The training is site specific to include the various waste configurations at the AMWTP.	QPVE0001, Sections 4.1, 4.2, and 4.4
C1-4	Training will include the following regardless of Summary Category Group:	
	• Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste	QPVE0001, Section 4.1
	• Identifying when VE cannot be used to meet the Data Quality Objectives (DQOs).	QPVE0001, Section 4.1
C1-4	VE personnel are requalified once every 2 years in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
Visual Examination Expert		
C1-4	The VEE will be familiar with:	
	• Waste generating processes that have taken place at the AMWTP	0AWT3141, VE Indoctrination 0AWT3142 Visual Examination
	• All types of waste being characterized at the AMWTP.	
C1-4	VEEs selected will meet the qualification and training requirements specified in MP-RTQP-14.4.	QPVE0001, Visual Examiner

Procedure Section	Extract of Requirement	AMWTP Implementation
Other Requirements		
C-2	Program procedures shall address the following minimum elements: • Develop training specific to waste characterization and certification procedures.	MP-RTQP-14.4, Personnel Qualification and Certification
C3-4a	Accuracy is obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100% of the items required to meet the DQOs for radiography specified in Section C-4a(1) in a training container during their initial qualifications and subsequent requalification.	QPOT3A, Real Time Radiography Operations
C3-4a	The comparability of RTR data from different operators is enhanced by using standardized RTR procedures and operator qualification. Operator training requirements are detailed in the RTR qualification package in accordance with outlined in Section B1-3b , MP-RTQP-14.4, and this implementation matrix.	QPOT3A, Real Time Radiography Operations
C3-4b	Accuracy is maintained by requiring operators to pass a comprehensive examination and demonstrate satisfactory performance in the presence of the VEE during their initial qualification and subsequent requalification. VE operators shall be requalified every 2 years.	QPVE0001, Visual Examiner
C3-4b	The comparability of VE data from different operators is enhanced by using standardized VE procedures and operator qualification. Operator training requirements are detailed in the VE qualification package in accordance with MP-RTQP-14.4.	QPVE0001, Visual Examiner
C3-9	Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the acceptable knowledge (AK) process.	QCAKE01A, Acceptable Knowledge Expert
C3-10a(1)	One hundred percent of the Batch Data Reports receive an Independent Technical Review (ITR). This review is performed by a trained and qualified individual who was not involved in the generation or recording of the data under review.	QPITR3A, Level I Validation

Procedure Section	Extract of Requirement	AMWTP Implementation
C3-14	Before performing activities that affect QAPjP quality, all personnel receive indoctrination into the applicable scope, purpose, and objectives of the QAPjP and the specific QAOs of the assigned task. Personnel assigned to perform activities for the QAPjP have the education, experience, and training applicable to the functions associated with the work. Evidence of personnel proficiency and demonstration of competence in the task(s) assigned is demonstrated and documented. All personnel designated to work on specific aspects of the QAPjP maintain qualification (that is, training and certification) throughout the duration of the work. Qualification requirements for personnel are documented in Individual Training Plans or qualification packages. Job performance is evaluated and documented at periodic intervals to ensure personnel maintain proficiency and record additions to training, as necessary per MP-RTQP-14.4.	0AWT3105, TRU Programs and WIPP-WAP Overview MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.1, Preparation and Administration of Training Plans
C3-14a	Personnel involved in QAPjP activities receive continuing training to ensure job proficiency is maintained. Training includes both education in principles and enhancement of skills. Training records that specify the scope of the training, the date of completion, and documentation of job proficiency are maintained as QA Records. Maintenance of training records is addressed in MP-RTQP-14.19, Training Records Administration.	MP-RTQP-14.4, Personnel Qualification and Certification MP-RTQP-14.19, Training Records Administration.
C3-14	Analytical laboratory line management ensures analytical personnel are qualified to perform the analytical method(s) for which they are responsible. The minimum qualifications for certain specified positions for the WIPP-WAP are summarized in Table C3-10. Analytical laboratory personnel are trained and qualified in accordance with CCP-QP-002, CCP Training and Qualification Plan.	CCP-QP-002, CCP Training and Qualification Plan.
C3-14	An evaluation of personnel qualifications includes comparing and evaluating the requirements specified in the job/position description and the skills, training, and experience included in the person's current resume. This evaluation, done in accordance with MP-RTQP-14.1 and MP-RTQP-14.4, is also performed for personnel who change positions because of a transfer or promotion as well as personnel assigned to short-term or temporary work assignments that may affect the quality of the WIPP-WAP.	MP-RTQP-14.1, Preparation and Administration of Training Plans MP-RTQP-14.4, Personnel Qualification and Certification

Procedure Section	Extract of Requirement	AMWTP Implementation
Table C3-10	Minimum Training and Qualification	The requirements listed in this table are included in the applicable Employee Position Descriptions (Form-1018), Individual Training Plans (Form-1020), or qualification packages or checklists.
C4-3a	To ensure compliance with the requirements for compiling assembling, evaluating, assessing, and resolving discrepancies associated with AK, AMWTP AK personnel shall be trained in accordance with MP-RTQP-14.4. The training requirements shall include the following subjects: • WIPP-WAP in Permit Attachment C and the WIPP Hazardous Waste Permit TSDF-WAC specified in the QAPjP • State and Federal Resource Conservation and Recovery Act (RCRA) regulations associated with solid and hazardous waste characterization • Discrepancy resolution and reporting processes • Site-specific procedures associated with waste characterization using AK.	QCAKE01A, Acceptable Knowledge Expert
C4-3g	QA AK audit checklists include the elements listed below for review during the periodic audit, and the AMWTP provides information as requested by QA to satisfy the AK audit/surveillance requirements: • Personnel training and qualifications are documented.	MP-RTQP-14.19, Training Records Administration

3.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
LST-RTQP-03, WIPP Training Requirements	Misc. Other Records/A16-1.2/Destroy 5 years after submittal or being superseded.

Change Control

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11357.) 07/12/12

Ron Todd
Engineering Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-CD&M-11.1, Rev. 9	Issued: 07/24/12	Effective: 07/25/12
Change Control		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/02	All	DCR-2002-1316. Initial issue.
0	9/16/02	All	DCR-2002-1502. Minor change to effective date.
1	11/18/2002	6&9	DCR-2002-1476
2	7/02/03	All	DCR-2003-2107. Incorporate changes associated with Software Change Control.
3	4/8/04	All	DCR-2004-2780. Correct discrepancies between this and other related procedures.
4	7/06/04	All	Corrective action to AI-3566 and ORPS ID BNFL-AMWTP-2003-008.
5	4/11/05	All	DCR-2004-3221. Incorporate comments identified during a management assessment.
6	5/01/06	1	DCR-4897. Added additional information in Purpose/Scope.
7	05/31/06	ALL	DCR-5003. Rewrite document, including changes related to overall process re-engineering, related to various TrackWise items. Various editorial changes and formatting changes for clarification/grammatical consistency and to meet requirements of MP-DOCS-18.3.
8	07/02/09	All	DCR-7676. Updated periodic review date, incorporated BLUESHEET-03; added information related to structures acquired from other DOE contractors (step 3.1.9 and new appendix: AMWTP Structures Acquired from Other DOE Contractors), and made misc. editorial and formatting changes, as required by MP-DOCS-18.3.
9	07/12/12	Various	DCR-11357. Updated to match new USQ process. Incorporated ITG-Bluesheet-154. Periodic Review.

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Appendix A – AMWTP Structures Acquired from other DOE Contractors A1

AMWTP MANAGEMENT PROCEDURE		
MP-CD&M-11.1, Rev. 9	Issued: 07/24/12	Effective: 07/25/12

Change Control

1.0 PURPOSE/SCOPE

This procedure establishes methods for the control of physical modifications at the Advanced Mixed Waste Treatment Project (AMWTP). It is essential that all changes to the facility, regardless of their significance or complexity, be controlled to assure facility configuration is properly managed and regulatory authorization is maintained. Also, each intended change must be evaluated for its impact on the facility *Authorization Basis* (see def.), safety, and the environment. All changes must be reviewed and approved by the Site Project Manager or designee to ensure that Waste Isolation Pilot Plant (WIPP) *data quality objectives* (see def.) or other WIPP quality-affecting changes are properly evaluated and/or implemented.

This procedure only provides an overview of the different aspects of engineering change control that are implemented through other procedures.

Addition (new) or relocation of temporary structures, utilities, and services are within the scope of the *facility modification* (see def.) process.

The facility modification process shall only apply to those radiological instruments that are part of a permanently installed Class I, II, or III plant or facility *structure, system, or component* (SSC; see def.). The process shall not, for example, apply to portable, non-engineered equipment (e.g., "friskers," portable air monitors). The facility modification process also does not apply to adjustments to equipment or setpoints that are made in accordance with approved procedures.

Adherence to this procedure and its supporting instructions will establish consistency for physical configuration, Authorization Basis, and facility documentation; and maintain this consistency throughout the operational life of the AMWTP, particularly as changes are being made to it.

This procedure is not intended to be performed as a step-by-step document.

2.0 ROLES AND RESPONSIBILITIES

None.

3.0 PROCEDURE

3.1 General

3.1.1 A change may be initiated as a result of the disposition of a non-conformance report (NCR), in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

3.1.1.1 An NCR is initiated to document *non-maintenance-related failure* (see def.) of a component or equipment as a result of manufacturers' defect, premature failure, structural failure or the failure to perform as designed.

3.1.2 A change may also be initiated based on the desire and need to improve the AMWTP equipment and processes.

3.1.3 An applicability review will be performed for each change to determine whether an Unreviewed Safety Question (USQ) is required. If required, the change will be evaluated as described in MP-NSPC-3.2, Unreviewed Safety Question Process, and as directed by the various change control implementing procedures.

3.1.4 Any change that receives a positive USQ determination (i.e., a USQ exists) may not be implemented. Either a change to the documented Safety Analysis (DSA) will be required or the change will have to be revised such that a USQ does not exist.

3.1.5 No change may be started unless it has the appropriate written authorization.

3.1.6 All physical changes, regardless of the scope of the change, must have the work performed in accordance with the Work Control process (i.e., PD-COPS-9.18, Work Control), which includes a Hazard Assessment, per INST-COPS-9.18.4, Hazard Assessment.

3.1.7 Documents and/or drawings that require changes as a result of a modification shall be controlled using the applicable procedure (i.e., MP-DOCS-18.4, Document Control, MP-CD&M-11.3, Design Control, MP-CD&M-11.5, Drawing Control, and/or MP-CD&M-11.7, Documenting Engineering Specifications).

3.1.8 All design changes and design analyses shall be controlled in accordance with MP-CD&M-11.3.

3.1.9 When researching proposed plant modifications, the engineer shall consider information on structures acquired from other DOE contractors as described in Appendix A, AMWTP Structures Acquired from Other DOE Contractors.

3.2 Temporary Physical Changes

3.2.1 Temporary physical changes of Class-III equipment allow operations to continue, due to a breakdown condition, until repair parts are available to perform corrective maintenance or will allow preventive maintenance and/or post maintenance testing to be performed without affecting other components and systems, in accordance with INST-CMNT-11.1.4, Temporary Physical Changes.

3.3 Software Change Control

3.3.1 Changes to software shall be systematically proposed, evaluated, documented, and approved to ensure the impact and rationale for making the change is carefully assessed prior to updating the production *baseline* (see def.), in accordance with MP-CD&M-11.2, Software Quality Assurance.

3.3.2 Those software changes that are evaluated to have a potential impact on the facility Authorization Basis shall have a facility modification proposal (FMP) form prepared per INST-CD&M-11.1.2, Facility Modification Proposal Preparation, and shall be reviewed for approval by the *Facility Change Group* (FCG; see def.).

3.4 Temporary Software Overrides

3.4.1 Temporary Software (Class-III) Overrides are intended to allow operations to continue, which cannot be corrected within a shift, due to the lack of replacement software, or will allow preventive maintenance and/or post maintenance testing to be performed without affecting other components and systems, in accordance with INST-CD&M-11.2.6, Temporary Software Overrides.

3.5 Tests and Investigations

3.5.1 Tests and *investigations* (see def.) (e.g., controlled *experiments* [see def.]) are developed, reviewed and approved in accordance with MP-CD&M-11.8, Equipment and Process Tests and Investigations.

3.5.2 The purpose of tests and investigations is to conduct controlled evaluations of plant equipment or processes (i.e., to evaluate potential changes or alternatives prior to making a permanent change decision).

3.5.3 Work plans or other documents used to conduct tests or investigations will specify all appropriate conditions and limitations necessary for safe performance and always restore the plant/equipment to original (design basis) configuration upon completion.

3.6 Unreviewed Safety Question Review

3.6.1 An applicability review will be performed for each change to determine whether a USQ is required. If required, the change will be evaluated as described in MP-NSPC-3.2 and as directed by the various change control implementing procedures.

3.7 Facility Modification Proposal Request

3.7.1 INST-CD&M-11.1.2 includes directions for the preparation, review, revision, approval, implementation, closeout, and cancellation of facility modifications. The FMP change process begins with a proposed modification to existing plant, process, or documentation including *design criteria* (see def.).

3.7.1.1 The FCG reviews and approves modifications that have the potential to impact the facility Authorization Basis.

3.7.1.2 The involvement of the FCG is determined by the results of a screening to evaluate the potential for impact to the facility Authorization Basis.

3.7.1.3 The role and make-up of the FCG is further defined in INST-CD&M-11.1.2.

3.7.1.4 Field implementation of physical modifications to SSCs must be performed in accordance with PD-CMNT-01, Nuclear Maintenance Management Program Description, and PD-COPS-9.18.

3.7.2 Temporary Modifications

3.7.2.1 The process described above in Step 3.7.1 is applied to *temporary modifications* (see def.) as well as to permanent modifications.

3.7.2.2 In the case of temporary modifications, at the time of preparing a facility modification proposal, a forecast must be made of the date when the plant will be returned to normal, i.e., modification removed.

3.7.2.3 The FMP cannot be considered complete until the configuration has been returned to its original condition. Temporary modifications are typically limited to 6 months, unless otherwise extended by the FCG chairman.

3.7.3 Urgent Modifications

3.7.3.1 Modifications required in the interests of safety during backshift hours should be done under FMP control; however, the plant shift manager has the responsibility of inserting or removing the safety hazard/concern until FMP approval is obtained.

3.7.3.2 If a modification is required in the interest of safety during a backshift, the FMP shall be presented to the FCG within 2 working days for review.

3.7.3.3 Where a modification is needed urgently to prevent an impending incident, the Nuclear Facility Manager (NFM) or designee is authorized to consider and, if appropriate, approve the change immediately.

3.8 Developing Technical Specifications

3.8.1 Technical specifications are developed, modified, reviewed and approved in accordance with MP-CD&M-11.7.

3.8.2 Technical specifications (and associated documents such as Design Proposal Drawings) are typically used to communicate technical requirements associated with design efforts that have been sub-contracted.

3.8.3 Where used, technical specifications will typically be referenced in a contract Statement of Work and made part of an issued contract and, as such, they will be subject to contract change control requirements.

3.8.4 General technical specifications associated with plant *configuration management* (see def.) and design standards may also be developed.

4.0 DEFINITIONS

Authorization Basis. The basis for safe operation of a DOE facility. The Authorization Basis is the total of those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operations. The Authorization Basis is defined by the documents listed in the facility's DOE-approved Authorization Agreement, such as the facility's Documented Safety Analysis, Technical Safety Requirements, environmental permits, and other facility specific commitments made in order to satisfy DOE orders, policies, or other regulatory commitments.

Baseline. A product (computer program, documentation or both) that has been formally reviewed and approved for use. The product thereafter serves as the basis for further development and can be changed only through formal change control procedures.

Configuration management. The process of (1) identifying and defining the baselines associated with a software product or application; (2) controlling the changes to baselines and release of baselines throughout the lifecycle; (3) recording and reporting the status of baselines and the proposed and actual changes to the baselines; and (4) verifying the correctness and completeness of a product baseline.

Data quality objectives. The acceptance criteria for the WIPP waste characterization and certification data.

Design criteria. The documented project or contractual requirements that establish the basis for the design inputs, the information that defines the basic elements to which the design must be applied, and the codes, standards and regulatory requirements, and other requirements for those elements of design that delineates the compliance criteria.

Experiment. See Investigation.

Facility modification. Any change or addition to SSCs, software, or operational processes that are part of the plant's current Authorization Basis or Design Basis. Facility modification includes temporary changes or investigations/experiments and any changes that may affect Industrial Safety, Radiological Controls, or changes to equipment configuration that may not be covered by the Authorization Basis.

Facility change group. A team, comprised of the chairperson (plant manager or designee) and representatives from Environmental, Safety & Health (ES&H); Radiological Controls; Quality Assurance; Operations; TRU Programs; Nuclear Safety; Criticality Safety; Engineering; and Maintenance organizations, is responsible for the review and authorization of designated facility modifications, primarily those that have the potential to impact the facility Authorization Basis.

Investigation. A formally developed and approved tool used to perform temporary manipulations of SSCs or operations processes for the purpose of evaluating possible changes and alternatives as part of a decision-making process, or as otherwise approved by the System Engineering manager and NFM when an investigation will impact his facilities' SSCs.

Non-maintenance related failure. The failure of a component due to a manufacturers defect, structural failure or the failure to perform as designed when installed.

Process equipment. Equipment used specifically for the AMWTP throughput (i.e., for waste handling, treatment and disposition).

Structures, systems, and/or components. Structures are elements that provide support or enclose such as building, freestanding tanks, basis, dikes, and stacks. Systems are collection of components assembled to perform a function, such as piping, cable trays, conduit, or Heating, Ventilating and Air Conditioning. Components are items of equipment, such as pumps, valves, relays, or elements of a larger array, such as computer software, lengths of pipe, elbows, or reducers.

Temporary modification. Change to SSCs that will remain in place for a maximum of 6 months, or as determined by the FCG chairperson, then returned to original configuration. A temporary modification that cannot be removed by its scheduled date is resubmitted to the approving authority (FCG Chairperson or NFM) for reconsideration.

5.0 REFERENCES

(1) INST-CD&M-11.1.2, Facility Modification Proposal Preparation

(2) INST-CD&M-11.2.6, Temporary Software Override

(3) INST-CMNT-11.1.4, Temporary Physical Changes

(4) INST-COPS-9.18.4, Hazard Assessment

(5) MP-CD&M-11.2, Software Quality Assurance

(6) MP-CD&M-11.3, Design Control

(7) MP-CD&M-11.5, Drawing Control

(8) MP-CD&M-11.7, Documenting Engineering Specifications

(9) MP-CD&M-11.8, Equipment and Process Tests/Investigations

(10) MP-DOCS-18.2, Records Management

(11) MP-DOCS-18.4, Document Control

(12) MP-NSPC-3.2, Unreviewed Safety Question Process

(13) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(14) PD-CMNT-01, Nuclear Maintenance Management Program Description

(15) PD-COPS-9.18, Work Control

6.0 RECORDS

Records generated by this procedure shall be classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-CD&M-11.1, Change Control, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – AMWTP Structures acquired from other DOE Contractors

Appendix A – AMWTP Structures Acquired from other DOE Contractors

AMWTP structures acquired from other DOE contractors include the following:

WMF-602	WMF-627	WMF-636	TR-14
WMF-610	WMF-628	WMF-652	
WMF-611	WMF-629	WMF-660	
WMF-613	WMF-630	WMF-669	
WMF-614	WMF-631	WMF-670	
WMF-615	WMF-632	WMF-703	
WMF-617	WMF-633	WMF-722	
WMF-618	WMF-634	WMF-734	
WMF-624	WMF-635	WMF-735	

Documentation for these structures, as well as systems and components contained within, may be contained in AMWTP Electronic Document Management System (EDMS), RWMC EDMS, or both. The engineer is responsible for fully researching documentation on both EDMS systems to ensure the configuration of the systems being modified, added, or removed is fully understood.

AMWTP has added/removed equipment from some of the above structures. The following provides a tabulation of these modifications. This list is for information only and not intended to be a comprehensive listing of all additions/removals:

- Support systems were modified by AMWTP to facilitate installation of a Central Characterization Project (CCP)-provided assay and RTR system in WMF-610.
- Stack monitoring equipment was removed on the East side of WMF-615.
- WMF-617 (previously an electrical maintenance shop) has been converted to a break/lunch room.
- A building extension was added to WMF-618.
- Soft sided containments have been added to WMF-628 and WMF-635.
- RTR, assay, drum coring, drum venting, material movement and support systems associated with this equipment have been added to WMF-634.

AMWTP modifications to acquired structures are fully documented in AMWTP EDMS.

Software Quality Assurance

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11586.*) 09/13/12

Jared Hawley
Software Engineering Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/15/2002	All	Initial issue. DCR-2002-1331
1	02/05/2003	2, 7, 13, 14, 15, 23, 24, 25, 31, and 52-55	DCR-1975, Add Appendices I, J, and K, added statements to insure independent validation of code development and changes, added additional WIPP QAPD requirements, and minor editorial changes (aligning responsibilities to roles identified in section 4.1).
2	2/24/2003	All	Re-issue, see DCR-2003-2064
3	6/25/03	All	Address deficiencies identified during a self-assessment, see DCR-2003-2107. Incorporate changes in SQA procedures to accommodate production needs and for clarity.
4	7/9/03	All	Resolve review comments of Rev. 3 by CBFO; see DCR-2107-1.
5	28/Apr804	All	DCR-2363 Minor editorial changes. Added new section 4.5.1 Development of Test Plans, new section 4.5.6 Test reports. Added new Appendix J. Software Test Report Guidelines Streamlined Electronic Tracking process
6	5/25/04	1, 43	Add permit drivers for flow-up to RCRA IM; see DCR-3017
7	9/23/04	All	Incorporate comments from CBFO letter # 04-1682, and #04-1987, see DCR-2004-3241 and DCR-2004-3241-1.
8A	3/21/05	All	Incorporate corrective actions from CBFO Audit A-05-08, see DCR-2005-4185.
8B	3/31/05	All	Incorporate comments from CBFO letter 05-0856, see DCR-2005-4185-1.
9	08/25/05	Various	DCR-4515. Clarify use of guidelines and eliminate conflicts.

Revision Number	Date Approved	Pages Affected	Description of Revision
10	5/25/06	Global	DCR-4834. Major re-write to improve readability and process flow. Provide resolution to CAR # 10593 and NCR 11954. Implement corrective actions to resolve CBFO CAR 06-018 (AMWTP CAR 21748) Refer ICS SCRs to CD&M-11.2.5 Added SCR Flow Path to appendixes. Removed unused appendixes. Update document to current revision of MP-DOCS-18.4.
11	8/23/06	Page 28 3.10.5.1.1	DCR-5258. Incorporate language from CBFO QAPD that had been deleted in revision 10.
12	02/08/07	All	DCR-5359. Incorporate changes for resolution of comments from QA Assessment IA-06-06.
13	12/10/07	Various	DCR-6451. Added changes removed from MP-Q&SI-5.8.
14	08/06/08	Various	DCR-7374. Incorporated changes as requested in MAR 36524.
15	05/05/09	Various	DCR-7970. Changes made to resolve AI-43356 and CAR-42436, and CAR 43277. Editorial changes made per MP-DOCS-18.3, Developing Management Procedures. Changes made to “Operation Shift Manager” to “Plant Shift Manager” per DOCS-BLUESHEET-01. Cancel Form-1236 per DCR-8298 and change title to Form-1941 per DCR-8280.
16	04/21/11	Various	DCR-9934. Changes made to resolve AI-59403 associated with CAR-56882.
17	09/13/12	Various	DCR-11586. Changes made at the request of Waste Programs Manager to enable software development and testing activities to be performed prior to or in conjunction with SCR reviews and approvals. Incorporated BLUESHEET-DOCS-08 and ITG-BLUESHEET-154.

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Appendix A – System Change Request Flow Path A1

AMWTP MANAGEMENT PROCEDURE		
MP-CD&M-11.2, Rev. 17	Issued: 09/13/12	Effective: 09/14/12
Software Quality Assurance		

1.0 PURPOSE/SCOPE

This procedure establishes requirements for purchasing, developing, testing, and controlling computer *software* (see def.) that is important to waste characterization and certification activities for the Advanced Mixed Waste Treatment Project (AMWTP). These requirements apply specifically to software systems intended for the purpose of the collection, reduction, production, manipulation and storage of data that supports the transuranic (TRU) waste program characterization, transportation and certification processes.

This procedure applies to *Class I* (see def.) and *Class II* (see def.) software, and is applied to *Class III* (see def.) software using a graded approach. Changes to existing Class III Integrated Control System (ICS) software will be controlled in accordance with INST-CD&M-11.2.5, Integrated Control System Software Modifications. *System Data Change Requests* (SDCRs; see def.) will be performed in accordance with INST-CD&M-11.2.3, System Data Change Requests.

This procedure is not applicable to “systems software” (e.g., operating systems, administrative and management systems, system utilities, compilers, assemblers, translators, interpreters, query languages, word processing programs, spreadsheets, database managers, and graphing programs) or other software that does not generate data that are used in the formulation of conclusions.

Firmware or automated *process control equipment* (see def.) that is not changed outside the user variable parameters allowed by the vendor are exempt from this procedure and may be tested and/or calibrated as hardware in accordance with the applicable project level procedures (i.e., proportional derivative controls, embedded firmware, operating systems, etc.) Also, software which is an integral part of measuring and test equipment (M&TE) is exempt from the controls of this procedure when the M&TE are verified periodically as part of MP-CMNT-10.5 Measuring and Test Equipment Program.

All AMWTP personnel and subcontractors who develop, acquire, maintain, install, or use computer software that is used at the AMWTP for waste characterization, certification, transportation, or operations shall be subject to the requirements within this procedure.

(DOE-CBFO-94-1012)

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Independent Technical Reviewer	• Reviews the technical adequacy of a document or design.
Nuclear Facility Manager or Designee	• Reviews a new *system change request* (SCR; see def.) and associated *software change screening* (SCS; see def.) for criticality and nuclear safety affects on operations.
Operations	• Ensures that the change proposed will NOT have an adverse effect on operation • Identifies procedure and/or process impact affected by the change • Performs analysis for recommended change.
Quality Assurance (QA)	• Reviews of Class I and II software development verification and validation documents, SCRs, SDCRs and applicable forms to ensure QA Program, Carlsbad Field Office (CBFO) Quality Assurance Program Description (QAPD) or other CBFO requirements have been met • With system manager, approves temporary changes requiring extensions.
SCR Field Group (see def.)	• Performs initial review of an SCR to ensure adequate information is provided and that it represents a valid change.
SCR Initiator	• Initiates a system change request using the Test Track Pro software.
Software Administrator or Designee	• Controls electronic software program files such as SCRs and SDCRs • Controls *baseline* (see def.) version of software applications through the use of *Polytron Version Control System* (PVCS; see def.).
Software Admin Reviewer	• Ensures correct documentation is being processed throughout the development and modification of software • Acts as the gatekeeper of build authorizations and interfaces with Information Technology (IT), Operations, TRU Programs, and QA.
Software Developer	• Designs and develops software and associated documentation based on established user requirements.
Software Engineer	• Maintains IT network, ICS, or Data Management System components overseen by the System Manager(s) or Designee • Conducts and documents the SCS for new SCRs.

Performer	Responsibilities
Software Impact Analyst	• Analyzes a software change for impacts to existing systems and/or processes.
Subject Matter Expert (SME)	• Provides technical direction based on experience or knowledge in a specified field.
System Change Group (see def.)	• Evaluates new SCRs to ensure that the change will not have an adverse effect on safe, compliant operations • Approves new SCRs for work • Re-evaluate SCRs greater than 12 months old to determine if the SCRs status, approvals, and/or priority are still valid.
System Engineer	• Provides guidance to software engineers as needed regarding the design and operation of mechanical systems affected by software changes.
Cognizant System Engineer	• Reviews of Class I or II SCRs and associated SCSs for safety and operability affects on assigned systems • Provides technical input into the design, operation, maintenance, and testing of assigned system(s) as needed.
System Manager or Designee	• Oversees the software development processes • Makes work assignments • Ensures that the priority and software class assigned to a new SCR are appropriate • Reviews a new SCR and associated SCS for criticality and nuclear safety affects on operations • Ensures SCRs aging over 12 months are re-evaluated to determine if the SCR's status, approvals, and/or priority are still valid • Review SCRs that have been incrementally developed for rejection • Approves software change and testing documentation • Works with software developer to determine design and user requirements • Develops criteria to determine when software can be retired from use and the methods to prevent the use of software that is no longer controlled • Schedules periodic reviews of software code to assure the *secure code* (see def.) is properly identified.
Software Test Engineer	• Performs validation tests independent of code development or code changes • Obtains testing qualification in accordance with this document.

Performer	Responsibilities
Software Group Lead	• Ensures each software test engineer qualification has not expired prior to assignments • Assigns SCRs to software test engineers • Works with software test engineer to determine testing criteria.
Test Case Preparer	• Prepares test case(s) based on established software requirements • Resolves any review comments, document resolution of comments, and sign and date the cover page of the test case.
TRU Programs	• Ensures that the change proposed will NOT have an adverse effect on Waste Isolation Pilot Plant (WIPP) data and/or WIPP requirements • Identifies procedure and/or process impact affected by the change • Performs analysis for recommended change.
User	• Uses software system and/or the system data.
USQ Evaluator	• Evaluates software changes using the *Unreviewed Safety Question* (USQ; see def.) process in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process.

3.0 PROCEDURE

3.1 Software Test Engineer Qualification

3.1.1 General

3.1.1.1 Software Test Engineers: Be appropriately trained and qualified as being capable of evaluating applicable tests and results within the scope of their qualification.

3.1.2 Qualifying Software Test Engineers

3.1.2.1 Software Test Engineer: Be capable of performing and evaluating engineering tests within their work scope.

3.1.2.2 Software Test Engineer: Qualifications are based on their education, experience, training, and demonstrated competence within the scope of their qualification.

3.1.2.3 Software Test Engineers: Have sufficient knowledge of assigned systems and related AMWTP procedures, instructions, and requirements.

3.1.2.4 System Manager or Designee: Evaluate the capability of software test engineer candidates based on their experience, education, indoctrination, training, test results (if used), or demonstrated abilities, and any previous qualifications.

3.1.2.5 Qualified System/Software Engineers: Perform duties as a software test engineer provided they meet the requirements of this procedure.

3.1.3 Completing, Approving, and Maintaining Software Test Engineer Record of Qualification

NOTE 1: QCSWTST, *Test Engineer Record of Qualification,* will be *approved prior to any candidate's commencement of actual testing activities (test performance, data collection, and results evaluation, etc.).*

NOTE 2: *System manager or designee may revoke QCSWTST based on performance or at his/her discretion.*

3.1.3.1 Software Group Lead: Initiate and complete QCSWTST, to document the qualifications and capabilities of the candidate software test engineers.

3.1.3.1.1 Ensure the specific qualification scope of the candidate software test engineer is clearly documented on QCSWTST.

3.1.3.2 Software Test Engineer: Sign QCSWTST documenting concurrence with qualification scope.

3.1.3.3 System Manager or Designee: Sign QCSWTST where indicated.

3.1.3.4 System Manager or Designee: Transmit a copy of the software test engineer's qualification to the Training Department.

3.1.3.5 The completed QCSWTST will be maintained by the Training Department.

3.1.4 Requalification of Software Test Engineers

3.1.4.1 Software Group Lead: Ensure that each software test engineer's qualification has not expired and initiate a timely requalification using QCSWTST.

3.1.4.2 Software Group Lead: Transmit copies of the software test engineers requalification to the Training Department.

3.1.4.3 Training Department: Maintain requalification documentation.

3.1.5 Qualification Review of Software Test Engineers Experiencing Interrupted Service

3.1.5.1 If a software test engineer job duties have been interrupted for a period of 6 months or longer, the software test engineer's qualifications shall be reviewed.

3.1.5.2 System Manager or Designee: May revoke/suspend a qualification based upon review of current qualification or qualification requirements.

3.1.5.2.1 Ensure revoking or suspension of software test engineer's qualifications is stated on the software test engineer's QCSWTST.

3.1.5.2.2 Transmit QCSWTST to the Training Department to update the qualifications.

3.1.6 Employment Termination and Revoking a Software Test Engineer's Qualification

3.1.6.1 System Manager or Designee: Revoke qualifications when a software test engineer's employment is terminated.

3.1.6.2 Reinstate qualifications if a software test engineer returns to employment within 6 months.

3.1.6.3 Transmit a copy of software test engineer's revocation or reinstatement to the Training Department.

NOTE 1: *This document provides instructions for maintaining the Software Quality Assurance process. Although the directed steps must be performed as stated, signoff of step performance or having the procedure at hand as steps are performed is not required.*

NOTE 2: *Portions or all of this procedure may be performed using an electronic change tracking* software package *(see def.).*

NOTE 3: Software life cycle *(see def.) phases include activities from the identification of user requirements through the retirement of baseline software.*

3.2 System Change Requests

NOTE 1: *The development, modification, installation, or retirement of controlled software will be tracked with the tracking software "Test Track Pro" in the form of an SCR or a SDCR.*

NOTE 2: *The reinstallation of controlled software will be tracked using an SCR in accordance with Section 3.7.*

NOTE 3: *The following process does not include specific step-by-step instructions for how to use Test Track Pro.*

3.2.1 SCR Initiator: Initiate a new SCR as follows:

3.2.1.1 Input basic information and problem description as required by Test Track Pro software.

3.2.1.2 If a temporary solution has already been developed, then document the temporary solution information within the SCR.

3.2.1.3 If the SCR is being initiated as part of or as the result of a physical change to the plant, then add the associated *facility modification proposal* (FMP; see def.) number to the SCR.

3.2.2 SCR Field Group: Review the SCR as follows:

3.2.2.1 Ensure the information within the SCR is accurate, complete, and clearly written.

3.2.2.2 Ensure that the change being proposed within the SCR is valid and that it represents the most appropriate means of accomplishing the desired outcome.

3.2.2.3 If it is determined that the SCR is NOT valid, then submit the SCR to the Software Administrator, or designee, with a recommendation for rejection and exit this procedure.

3.2.2.4 Determine which forms, hardware, and/or software will be affected by the change and document the affected items within the SCR.

3.2.2.5 Determine if document changes and/or additional training will be required as a result of the change and document that information within the SCR.

3.2.2.6 If document changes are required, then ensure the changes are initiated in accordance with MP-DOCS-18.4, Document Control.

NOTE 1: *At the direction of the System Manager or designee software change* prototypes *(see def) may be developed and tested prior to or in conjunction with SCR reviews and approvals. Such prototypes are created at-risk and must be verified against the approved SCR prior to final installation. Any changes resulting from the review and approval processes must likewise be incorporated into prototypes and tested accordingly prior to final installation.*

NOTE 2: *Software changes must be sufficiently described within the SCR before a valid SCS and USQ review can be performed. Additional changes made subsequent to the SCS, and/or USQ review, that alter the overall scope or intent of the original change description will require the SCS and USQ review to be re-performed.*

3.2.3 System Manager or Designee: If a software change prototype is to be developed and/or tested prior to or in conjunction with SCR approvals, then document prototype approval to work within the SCR.

3.2.4 Software Engineer: If the proposed software change is **NOT** already associated with an FMP due to related hardware changes, then evaluate FMP applicability by performing a SCS per Form-1685, Software Change Screening, and attach an electronic copy of the screening to the SCR.

3.2.5 Software Engineer: If the software change screening results require an FMP, then initiate an FMP in accordance with INST-CD&M-11.1.2, Facility Modification Proposal Preparation, and document the FMP number within the SCR.

NOTE: *If the USQ evaluation reveals that an USQ exists (i.e., positive USQ determination), Department of Energy (DOE) must approve an amendment to the Safety Basis in accordance with MP-NSPC-3.2, or the change must be revised such that a USQ does not exist, prior to implementing this change.*

3.2.6 USQ Evaluator: Perform a USQ evaluation in accordance with MP-NSPC-3.2.

NOTE: *Test Track Pro automatically sends out notifications for SCRs that are older than 12 months.*

3.2.7 System Change Group: For previously evaluated SCRs that are older than 12 months, members of the System Change Group shall re-evaluate the SCR(s) to determine if the current status, approvals, and/or priority are still valid.

3.2.7.1 If SCR is determined to be no longer valid, then document in Test Track Pro and proceed to Step 3.2.10.

3.2.7.2 If SCR is determined still valid, then document in Test Track Pro and continue process.

3.2.8 System Change Group: For changes affecting Class I or Class II systems, evaluate the SCR as follows:

3.2.8.1 Operations: Ensure that the change proposed will NOT have an adverse effect on operations.

3.2.8.2 Cognizant System Engineer: Ensure that the change proposed will not have an adverse affect on the system's ability to safely perform its intended function(s).

3.2.8.2.1 Review the associated SCS, if applicable.

3.2.8.3 TRU Programs: Ensure that the change proposed will **NOT** have an adverse effect on WIPP data and/or WIPP requirements.

3.2.8.4 Quality Assurance: Ensure that the change proposed will NOT have an adverse effect on quality affecting activities or WIPP data quality objectives and that it complies with established procedures.

3.2.8.5 Nuclear Facility Manager or Designee: Ensure that the change proposed by the SCR will not have an adverse affect on safe, compliant operations, with specific emphases on criticality and nuclear safety effects.

3.2.8.5.1 Review the associated SCS, if applicable.

3.2.8.5.2 For Class 1 systems, review Form-1342, Authorization to Work on a Safety Significant (Class-1) SSC.

3.2.8.6 System Manager or Designee: Ensure that the priority assigned to the SCR is appropriate based on the need for the change and the availability of resources.

3.2.8.7 System Manager or Designee: Ensure that the software class assigned to the SCR is appropriate based on which systems and/or software will be affected.

3.2.8.8 System Manager or Designee: Ensure that the change proposed by the SCR will not have an adverse effect on safe, compliant operations, with specific emphases on criticality and nuclear safety effects.

3.2.8.8.1 Review the associated SCS, if applicable.

3.2.9 System Change Group: For changes affecting Class III systems, evaluate the SCR as follows:

3.2.9.1 Nuclear Facility Manager or Designee: Ensure that the change proposed by the SCR will not have an adverse effect on safe, compliant operations.

3.2.9.1.1 Review the associated SCS, if applicable.

3.2.9.2 System Manager or Designee: Ensure that the priority and software class are correct.

3.2.9.3 System Manager or Designee: Ensure that the change proposed by the SCR will not have an adverse effect on safe, compliant operations.

3.2.9.3.1 Review the associated SCS, if applicable.

3.2.10 System Change Group: If it is determined that the proposed change cannot be completed, then submit the SCR to the software administrator or designee with a recommendation for rejection and exit this procedure.

3.2.11 System Change Group: Approve the SCR.

3.2.12 System Manager or Designee: Review and resolve any system change group comments.

3.2.13 System Manager or Designee: Approve the SCR.

3.3 Software Development

NOTE 1: *Software development shall proceed and be controlled in a traceable, planned, and orderly manner.*

NOTE 2: *The use of a* traceability matrix *(see def.) is a best management practice in which each uniquely identified requirement is linked to design element(s), which are in turn linked to Test Case steps. This creates a simple means of proving that each requirement is implemented and proven to be operational in the final product. In situations where a separate user requirements specifications (URS) and software design descriptions (SDD) are not prepared for a software change, similar information providing this capability should be included in the applicable SCR.*

NOTE 3: *When incremental software development is unavoidable, a review of the complete function will be done by the System manager or designee prior to proceeding and the training required for each increment will be completed.*

NOTE 4: *At the direction of the System Manager or designee, software change prototypes may be developed prior to or in conjunction with SCR reviews and approvals. Such prototypes are created at-risk and must be verified against the approved SCR prior to final installation. Any changes resulting from the review and approval processes must likewise be incorporated into the prototypes.*

3.3.1 System Manager or Designee: Assign software engineer(s) to perform software development.

3.3.2 Software Developer: If a new software project is to be developed, then prepare a software quality plan utilizing Form-1172, Software Quality Plan.

3.3.2.1 Attach Form-1172 to the SCR.

NOTE: *Depending on the complexity of the software change, software requirements can be documented directly within the applicable SCR or through the use of URS, SDD, and/or other engineering approved requirements documents.*

3.3.3 System Manager or Designee: Work with the assigned software engineers to determine the appropriate level of requirements documentation to be completed based on the following:

3.3.3.1 If the software change affects the existing design requirements of a safety-significant system, then an engineering approved requirements document shall be used, and the approved change shall be posted to the affected existing design requirements for subsequent update.

3.3.3.2 If the software change does NOT affect the existing design requirements of a safety-significant system, then the software requirements may be documented either within an engineering approved requirements document, or within the applicable SCR, based on the details and complexity of the software change.

3.3.4 Software Developer: Work with the SCR initiator and/or user as needed to define the software requirements.

3.3.4.1 Software requirements shall, as applicable, address the following:

- Functionality — the functions the software performs.
- Performance — time-related issues of software operation such as speed, recovery time, and response time.
- Constraints — limits imposed on implementation activities; any elements that will restrict design options.
- Attributes — non-time-related issues of software operation such as portability, acceptance criteria, access control, and maintainability.
- External interfaces — interactions with people, hardware and other software.

3.3.5 Software Developer: Document the software requirements in an engineering approved requirements document or directly within the SCR, as appropriate.

3.3.5.1 If a new URS is to be used, then develop the URS in accordance with Section 3.11.1, and reference the URS within the SCR.

3.3.5.1.1 Document the URS on Form-1732, User Requirement Specification.

3.3.6 Software Developer: Develop and document the software design based on established software requirements.

3.3.6.1 If a new SDD is to be used, then prepare the SDD in accordance with Section 3.11.2 and reference the SDD within the SCR.

3.3.6.1.1 Document the SDD on Form-1731, Software Design Description.

3.3.7 Software Developer: Ensure that any forms, hardware, and/or software that will be affected by the change have been identified within the SCR.

3.3.8 Software Developer: Ensure that any document changes and/or additional training that will be required as a result of the change have been identified within the SCR.

3.3.9 Software Developer/Software Administrator or Designee: If document changes are required, then ensure the changes are initiated in accordance with MP-DOCS-18.4.

3.3.10 Software Developer: If changes are being made to existing baseline software (as opposed to newly developed software), then obtain the necessary software modules in accordance with INST-CD&M-11.2.1, Software Version Control.

3.3.10.1 Update SCR with the name and version number of the software obtained.

3.3.11 Software Developer: Develop software based on software design requirements.

NOTE 1: *Any changes made to the software design requirements during the development process will be subject to the same level of review as the original design requirements.*

NOTE 2: *Changes to the overall scope or intent of software design requirements made subsequent to the USQ review and SCS will require that a new USQ review and SCS be performed.*

3.3.12 Software Developer: If necessary, update software design requirements to reflect changes identified during development/modification.

3.3.12.1 Ensure any changes to the design requirements of a safety-significant system are posted to the affected existing design requirements for subsequent update.

3.3.13 Software Developer: Document the software development/modification details within the SCR.

3.3.14 Software Developer: Perform preliminary checks to ensure that programming *errors* (see def.) are identified and corrected and that the software change adequately meets the user requirements.

3.3.15 Software Developer: Ensure any newly developed software modules are placed under *configuration management* (see def.) control in accordance with Section 3.6.

3.3.15.1 Update the SCR with the name and version number of the software modules placed under configuration management control.

3.3.16 Software Developer: If any changes were made to existing software modules, then ensure the software baseline is updated in accordance with INST-CD&M-11.2.1.

3.3.16.1 Update the SCR with the name and version number of the software modules that were updated in the software baseline.

3.3.17 Software Developer: If development was completed as a prototype prior to or in conjunction with SCR approvals, perform the following:

3.3.17.1 When SCR approvals are complete, verify that the changes developed under the prototype remain consistent with the final scope of the approved SCR

3.3.17.1.1 If the prototype changes are found to be inconsistent with the scope of the approved SCR, then perform additional development in accordance with section 3.3 or revise the approved scope in accordance with section 3.2 as required to resolve the inconsistencies.

3.3.18 Software Developer: Ensure the SCR is assigned to an independent, technically competent Software Engineer to perform an *impact analysis* (see def.).

3.3.19 Software Impact Analyst: Perform an impact analysis of software changes as follows :

3.3.19.1 Use Form-1941, Software Change Impact Analysis, on Class I and Class II systems **ONLY**.

3.3.19.2 An impact analysis on Class III systems will be performed in accordance with INST-CD&M-11.2.5.

3.3.19.3 Review the software change for unintended effects.

3.3.19.4 Review the software change for effects to previously completed software that would require the performance of *regression testing* (see def.).

3.3.19.5 Review the software change for effects to criticality controls that would require the performance of online testing.

3.3.19.6 Document the results within the SCR.

3.4 Software Testing

NOTE 1: *For general guidance regarding the software testing process, refer to OPSTG-0001, Testing Guidelines for Advanced Mixed Waste Treatment Project.*

NOTE 2: *Depending on the complexity of the software change, testing criteria can be documented directly within the applicable SCR or through the use of Test Case documents.*

NOTE 3: *Changes that require ICS testing will be tested on the ICS/Waste Tracking System (WTS) test bed in accordance with INST-CD&M-11.2.5, in addition to any testing performed within this procedure.*

NOTE 4: *Software test engineers will have a qualification as a tester in accordance with this document.*

NOTE 5: User acceptance testing *(UAT; see def.) on class III systems will be performed per INST-CD&M-11.2.5.*

NOTE 6: *At the direction of the System Manager or designee, software change prototypes may be tested prior to or in conjunction with SCR reviews and approvals. Such prototypes are created at-risk and must be verified against the approved SCR prior to final installation. Any changes resulting from the review and approval processes must likewise be incorporated into the prototypes and tested accordingly.*

3.4.1 Software Engineer: Ensure UAT is performed on all software changes, unless UAT exception is granted by the system manager or designee.

3.4.2 If the associated SCR has not been granted exception from the UAT, then ensure user acceptance testing is performed prior to the *release* (see def.) of the affected software.

3.4.2.1 Document the user acceptance testing details within the SCR.

3.4.3 Software Group Lead or Designee: Assign a software test engineer(s) who is independent of the software development to perform testing of the software.

3.4.4 Software Group Lead or Designee: Work with the assigned software test engineer(s) to determine appropriate testing requirements, based on the details and complexity of the software change.

3.4.4.1 Determine specific test steps or test case to be used.

3.4.4.1.1 If it is necessary to create a new test case, then develop the test case in accordance with Section 3.11.3 and reference the test case within the SCR.

NOTE: *Test steps are included for both positive and negative outcomes.*

3.4.4.1.2 Indicate in each test step the action to be taken AND the expected result that will indicate success.

3.4.4.2 All testing identified in the impact analysis including regression testing must be performed in addition to any testing recommended by the Software Group Lead.

NOTE: *Test reports are generally created when test cases have been prepared separately from the information contained in an SCR.*

3.4.4.3 Determine whether any test reports will be generated.

3.4.4.3.1 If it is necessary to generate a test report, then prepare the test report in accordance with Section 3.11.4 and attach the test report to the SCR.

3.4.4.4 Determine whether online testing will be performed.

3.4.4.4.1 Ensure software changes with the potential to affect criticality controls have a component of online testing.

3.4.4.4.2 Ensure procured software is online tested to verify the functional capability of the software and the acceptability of the supplier's supporting documentation.

3.4.5 Software Test Engineer(s): Perform testing of software as follows:

3.4.5.1 Obtain a copy of the applicable software module(s) in accordance with INST-CD&M-11.2.1.

3.4.5.1.1 Update the SCR with the name and version number of the software obtained for testing.

3.4.5.2 Perform testing in accordance with established testing criteria.

NOTE 1: *Test steps or sequences may be redline-changed by the software test engineer during testing to allow continuance of the test. These changes will be clearly identified as part of the test record.*

NOTE 2: *Any change made to the testing criteria during the testing process will be subject to the same level of review as the original testing criteria.*

3.4.5.3 If necessary, update testing criteria to reflect changes identified during testing.

3.4.5.4 Verify the results of all test steps.

3.4.5.5 Ensure the following test information is documented within the applicable SCR and/or test case:

- Computer program tested
- Computer hardware used
- Test equipment and calibrations, where applicable
- Date of test

- Tester or data recorder
- Simulation models used, where applicable
- Test problems
- Results and acceptability
- Action taken in connection with any deviations noted
- Persons evaluating the test results.

NOTE: *A test is not complete until all failed steps have either passed or been identified for further work in another test case or SCR.*

3.4.5.6 If procured software fails testing, then document the failure within the SCR and notify the software supplier of the failure.

3.4.5.7 If internally developed software fails testing, then document the failure within the SCR and assign the SCR to the software developer for further development in accordance with Section 3.3.

3.4.5.7.1 Re-perform testing once the additional development is completed.

3.4.5.8 If testing was completed as a prototype prior to or in conjunction with SCR approvals, then perform the following:

3.4.5.8.1 When SCR approvals are complete, verify that the changes tested under the prototype remain consistent with the final scope of the approved SCR.

3.4.5.8.1.1 If the prototype changes are found to be inconsistent with the scope of the approved SCR, then assign the SCR to the software developer for resolution in accordance with Section 3.3.

3.4.5.8.1.2 If additional development is required, then re-perform testing once the additional development is completed.

3.4.5.9 If the software passes testing, then assign the SCR to the software administrator or designee to obtain reviews and approval to load to plant.

3.4.5.10 Once all necessary approvals have been obtained and the software has been loaded to plant (as specified in Section 3.5) perform online testing, as required.

3.4.5.11 Document the online testing results within the SCR, as applicable.

NOTE: *Class III software that is required to maintain operations and does not affect data quality or safe operations may be modified online (i.e., without removing the software) in accordance with INST-CD&M-11.2.5.*

3.4.5.12 If online testing of procured software fails, then perform the following:

3.4.5.12.1 Remove the affected software modules from plant.

3.4.5.12.2 Notify the software supplier of the failure.

3.4.5.13 If online testing of internally developed software fails, then document the failure within the SCR and perform the following:

3.4.5.13.1 Remove the affected software modules from plant and demote them back to development.

3.4.5.13.2 Assign the SCR to the software developer for further development in accordance with Section 3.3.

3.4.5.13.2.1 Re-perform testing once the additional development is complete.

3.4.5.14 If online testing passes, assign the SCR to the software administrator or designee for final closure.

3.4.5.15 If a test report was used, attach the completed report to the SCR.

3.5 Software Installation

NOTE: *All software modules loaded to a production system shall be from an approved and controlled baseline source (e.g., PVCS).*

3.5.1 Software Administrator or Designee: Verify that all testing is completed and that all testing documentation has been included in, referenced in, or attached to the SCR.

3.5.2 Software Administrator or Designee: Send a notice or assign the SCR to the System manager or designee and QA (Class I or II systems only) for review and approval.

3.5.3 Quality Assurance: If the SCR applies to a Class I or Class II system, then review, and approve the SCR.

3.5.3.1 Review the SCR documentation for completion of verification and validation activities.

3.5.4 System Manager or Designee: Review and approve the SCR.

3.5.4.1 Review the impact analysis associated with the SCR as part of the SCR review and approval (internally developed software only).

3.5.5 System Manager or Designee: Assign the SCR to the software admin reviewer or designee for review.

3.5.6 Software Admin Reviewer or Designee: Perform review as follows:

3.5.6.1 Verify all necessary design, development, and testing documentation is complete.

3.5.6.2 Verify all necessary reviews and approvals have been performed.

3.5.6.3 If documentation updates and/or training is required, then ensure these activities are performed prior to or in conjunction with the software installation.

3.5.6.4 Update SCR accordingly.

3.5.7 Software Admin Reviewer or Designee: Assign the SCR to the System manager or designee for approval to load to plant (approval to build).

3.5.8 System Manager or Designee: Review and approve the SCR to load to plant.

3.5.9 System Manager or Designee: Ensure that the SCR build is listed on the Plan of the Day (POD) and that the Plant Shift Manager is notified of the build.

3.5.10 Software Engineer: Obtain a copy of the applicable software module(s) in accordance with INST-CD&M-11.2.1.

3.5.11 Software Engineer: Load the approved software module(s) to plant.

3.5.12 Software Engineer: Document installation details within the SCR.

3.5.13 Software Engineer: If online testing is to be performed, assign the SCR to the software test engineer(s) for online testing.

3.5.14 Software Admin Reviewer/Software Administrator or Designee: Once installation and, if applicable, online testing has been completed, perform the following:

3.5.14.1 Verify that required document changes and training have been completed.

3.5.14.2 Ensure that any supporting documentation has been attached to the SCR and/or submitted to document control, as applicable.

3.5.14.3 Close the SCR.

3.5.14.4 If applicable, notify the FMP coordinator that the SCR is complete.

3.6 Software Configuration Management

NOTE 1: *Software shall be placed under configuration management control as each new configuration item is approved in accordance with this section. Once software has been placed under configuration management control the software's version will be maintained in accordance with INST-CD&M-11.2.1.*

NOTE 2: *Dynamic and/or equipment-specific software parameters important to the operation of production systems that are changed as a part of the normal operating process (i.e., headspace gas sampling (HGAS) instrument-specific parameters) will be backed up on a scheduled basis, as designated on Form-1743, Data Backup Request, by the IT Department. Re-installation of these parameters will be performed on an as-needed basis under the guidance of a representative from the IT department.*

3.6.1 Software Administrator or Designee: Ensure that any proposed software change/addition has been appropriately evaluated, documented, and approved through the SCR process in accordance with Section 3.2.

3.6.2 Software Administrator or Designee: Ensure software has been developed or procured in accordance with Section 3.3 or Section 3.8, as applicable.

3.6.3 Software Administrator or Designee: If the affected software has already been placed under configuration management control (e.g., already controlled through PVCS), then the software version shall be updated in accordance with INST-CD&M-11.2.1, and the remaining steps in this section do not apply.

3.6.4 Software Administrator or Designee: Ensure the following information is documented within the applicable SCR(s):

- Name and version number of software
- Source code files and date of creation
- Number of diskettes or CDs in the baseline series, if applicable
- References or attachments for all supporting documentation.

3.6.5 Software Administrator or Designee: Submit software code and supporting documentation to the software library and/or the PVCS.

3.6.6 Software Administrator or Designee: Review all SCRs and supporting documentation associated with the software code being placed under configuration management control.

3.6.6.1 Verify that the software code has been approved through the SCR process.

3.6.6.2 Verify that all documentation is complete and accurate.

3.6.7 Software Administrator or Designee: Ensure that the affected software's name, version, and date of creation are entered into PVCS.

3.6.8 Software Administrator or Designee: Document the completion of the configuration management control update in the SCR.

3.6.9 Software Administrator or Designee/System Manager or Designee: Ensure that the *Baseline Inventory and Software Classification List* (see def.) is updated in accordance with INST-CD&M-11.2.2, Software Inventory Classification, as necessary.

3.7 Software Release Control

NOTE 1: *All software modules loaded to a production system shall be from an approved and controlled baseline source (e.g., PVCS).*

NOTE 2: *This section describes the steps needed to distribute controlled copies of approved software for re-installation onto the production environment. Newly developed or modified software will be installed in accordance with Section 3.5.*

NOTE 3: *Dynamic and/or equipment- specific software parameters important to the operation of production systems that are changed as a part of the normal operating process (i.e., HGAS instrument specific parameters) will be backed up on a scheduled basis, as designated on Form-1743, by the IT Department. Reinstallation of these parameters will be performed on an as-needed basis under the guidance of a representative from the IT Department.*

NOTE 4: *For specific steps regarding the reinstallation and checkout of HGAS software, the user may refer to the following controlled documents:*

- *For installation of the Agilent ChemStation software, the user may refer to software source and configuration file 221-0003, MSD ChemStation Software Installation Manual.*
- *For general configuration of the HGAS software suite refer to Operation and Maintenance document 221-0002, HGAS III Operation and Maintenance Manual.*
- *For guidance on the software configuration and operational testing instructions specific to each HGAS system refer to INST-OI-43, HGAS Sampling and Analysis Operations.*

3.7.1 System Engineer/Software Engineer: Identify the current version for the desired software module(s) AND verify that they have been approved for use.

3.7.2 System Engineer/Software Engineer: Initiate a SCR to document the reinstallation and checkout of approved software onto the production environment.

3.7.2.1 Specify the name(s) and version number(s) for the software module(s) to be used.

3.7.2.2 Describe the reasoning for reinstalling the applicable software module(s).

3.7.3 System Manager or Designee: Review the new SCR for accuracy and validity.

3.7.4 System Manager or Designee: Approve the new SCR and assign it to the System Engineer/Software Engineer for installation.

3.7.5 System Manager or Designee: Ensure that the SCR is listed on the POD and that the Plant Shift Manager is notified of the installation.

3.7.6 System Engineer/Software Engineer: Obtain a copy of the desired software modules directly from PVCS or from the software administrator or designee, as appropriate.

3.7.7 System Engineer/Software Engineer: Install the approved software onto the production environment.

3.7.8 System Engineer/Software Engineer: Document installation details within the SCR.

3.7.8.1 Specify the name(s) and version number(s) of the software module(s) used.

3.7.9 System Engineer/Software Engineer: Perform functional testing as needed to verify successful installation.

3.7.10 Quality Assurance: If the SCR applies to a Class I or Class II system, review the SCR and approve for final closure.

3.7.11 System Manager or Designee: Review the SCR and approve for final closure.

3.7.12 Software Administrator or Designee: Verify that the SCR is complete and that all necessary approvals have been received for final closure.

3.7.13 Software Administrator or Designee: Close the SCR.

3.8 Software Procurement

3.8.1 Software Engineer: Ensure a SCR is initiated and approved for work in accordance with Section 3.2.

3.8.2 Software Engineer: Prepare a Form-1172.

3.8.3 Software Engineer: Procure software per MP-PCMT-15.1, Acquisition of Material and Services.

3.8.3.1 Specify all applicable quality assurance requirements for contracted software development and software services.

3.8.3.2 Identify all documentation, plans, and procedures to be supplied by the vendor.

3.8.4 Software Engineer: Apply quality assurance requirements using the graded approach and the applicable Form-1172.

3.8.4.1 Include provisions for the supplier to report software errors and failures.

3.8.5 Software Engineer: Evaluate the software documentation to determine whether the software was developed and approved in a manner equivalent to the requirements imposed by this procedure.

3.8.5.1 If the documentation associated with newly developed software is determined to be inadequate, then follow procurement procedures for the further evaluation of submitted documents.

3.8.5.2 If the documentation associated with previously developed software is determined to be inadequate, then further evaluate the adequacy of the software in accordance with Section 3.9.

3.8.6 Software Engineer: Upon software acceptance, place procured software and vendor-supplied documentation under configuration control in accordance with Section 3.6.

3.8.7 Quality Assurance: For Class I and Class II software, review applicable software verification and validation documents.

3.8.8 Software Engineer: Ensure that software testing is performed in accordance with Section 3.4.

3.8.9 Software Engineer: Install software in accordance with Section 3.5.

3.8.10 Software Engineer: Perform user acceptance test to verify the functional capability of the software and the acceptability of the supplier's supporting documentation.

3.8.11 System Manager or Designee: Release procured software for use.

3.9 Evaluation of Software Developed Under Other QA Programs

NOTE 1: *Software developed under QA programs not consistent with the requirements of this procedure shall be evaluated in accordance with this section to determine its adequacy to perform its intended function.*

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NOTE 2: *This procedure is limited to the evaluation and qualification of existing, legacy or commercial-off-the-shelf software that is used to support database development and maintenance and does not include the evaluation and qualification of assay data transferred to the system from measurement systems.*

3.9.1 Software Engineer: Evaluate the *primitive baseline* (see def.) documentation to determine the adequacy of the existing software requirements, design, test and user documentation to support operation and maintenance.

3.9.2 Software Engineer: Document the adequacy of the user requirements, and the design, test, and user documentation, by completing the Form-1173, Software Evaluation Report.

3.9.3 System Manager or Designee: Approve the Software Evaluation Report and forward to QA.

3.9.4 Quality Assurance: Review Software Evaluation Report to ensure that existing documentation supports specifications and requirements, implemented design, and test results validating the requirement.

3.9.5 Software Engineer: If further testing is needed to confirm *software validation* (see def.), then ensure test requirements are identified on Form-1173.

3.9.6 Software Engineer: Ensure the software is placed under configuration control in accordance with Section 3.6, prior to use.

3.10 Software Retirement

NOTE: *Any software that is no longer proactively required meets the criteria for retirement and will be identified to the system manager/or designee for approval to be retired. The retirement will be managed by the SCR process.*

3.10.1 System Manager or Designee: Develop criteria to determine when software can be retired from use and the methods to prevent the use of software that is no longer controlled.

3.10.2 Software Engineer: Document the retirement of a superseded software version as an SCR and submit it per Section 3.2.

3.10.3 Software Engineer: After receiving approval of the SCR, remove retired software from production, archive the software version, and terminate support.

3.11 Development of Supporting Documentation

3.11.1 User Requirements Specifications

3.11.1.1 When performing review of supporting documentation, document any review comments on Form-1003, Review Comment and Resolutions Form.

3.11.1.2 System Engineer/User/Initiator: Develop URS in conjunction with a Software Engineer.

3.11.1.2.1 Software Engineer/User/Initiator: Develop a URS using Form-1732.

3.11.1.2.2 Software Engineer: Work with URS Initiator to develop and review the URS to ensure it accurately defines requirements.

NOTE: *Users may be represented from multiple functional organizations.*

3.11.1.3 User or SME: Approve the URS.

3.11.1.4 Quality Assurance: For Class I and Class II software, review and approve the URS.

3.11.1.5 System Manager or Designee: Review and approve the URS.

3.11.1.5.1 When complete, attach the URS with any accompanying documentation leading to completion to the SCR and release for use..

3.11.2 Software Design Descriptions

NOTE: *A traceability matrix is created in conjunction with the SDD, and may be included as an appendix, and updated to include the design implementation identifier for each identified requirement. The SDD and traceability matrix are submitted jointly for approval.*

3.11.2.1 Software Engineer: Prepare a SDD using Form-1731.

3.11.2.2 System Manager or Designee: Assign independent technical reviewer(s), and ensure that a software design review is performed, the results documented, and the design approved.

3.11.2.3 Independent Technical Reviewer: Perform technical review, and evaluate the technical adequacy of the design approach.

3.11.2.4 Independent Technical Reviewer: Determine internal completeness, consistency, clarity and correctness of the software design, code verification, and traceability to software requirements specified in the SCR, URS, and/or Design Document.

3.11.2.5 Software Engineer: Resolve any review comments, and document the resolution of comments.

3.11.2.6 Quality Assurance: For Class I and Class II software, review and approve the SDD.

3.11.2.7 System Manager or Designee: Review and approve the SDD.

3.11.2.7.1 When complete, attach the SDD to the SCR and release for use.

3.11.3 Test Cases

NOTE 1: *Test cases may be developed by the initiator of the change, a SME, or a software test engineer, but the test case preparer must be independent of the software development.*

NOTE 2: *A test amendment may be prepared in lieu of a revised test case if the test objectives and evaluation methods remain the same as stated in the original test case.*

3.11.3.1 Test Case Preparer: Prepare test case(s) based on established software requirements.

NOTE: *Test steps are included for both positive and negative outcomes.*

3.11.3.1.1 Indicate in each test step the action to be taken, and the expected result that will indicate success.

3.11.3.2 Software Test Engineer: Work with the test case preparer to develop and review the test case to ensure it accurately defines testing requirements.

3.11.3.3 System Manager or Designee: Assign independent, qualified individual to perform review of test case(s).

3.11.3.4 Independent Technical Reviewer: Review test case(s) for completeness, consistency, clarity and correctness.

3.11.3.4.1 When reviewing test case(s), verify that:

- The inputs are clearly identified.
- The instructions are clear and sufficient to accomplish the purpose of the tests.
- The acceptance criteria are reasonable, sufficient and adequately described to accomplish the purpose of the tests.

3.11.3.5 Test Case Preparer: Resolve any review comments, document resolution of comments, and sign and date the cover page of the test case.

3.11.3.6 Independent Technical Reviewer: Sign and date the cover page of the test case when comments are resolved.

3.11.3.7 Quality Assurance: For Class I and Class II software, review the test case and sign and date the cover page to indicate approval.

3.11.3.8 System Manager or Designee: Review the test case and sign and date the cover page to indicate approval.

3.11.3.8.1 When complete, attach the test case to the SCR and release it for use.

3.11.4 Test Reports

NOTE: *Where Test Reports are not required, the Software Engineer documents the testing, and outcome of the testing, directly on the SCR.*

3.11.4.1 Software Test Engineer: Prepare test report in accordance with applicable SCR and/or test case requirements.

3.11.4.1.1 Ensure the test report contains the following information:

- Sufficient documentation to demonstrate that the reported results adequately addresses the specified test acceptance criteria
- Reference to the applicable SCR and/or test case(s) and any changes in evaluation methods, inputs, or test sequence
- Finalized traceability matrix
- Hardware used and its configuration at the time of the test
- Conclusions and recommendations concerning acceptance and utilization of the software.

3.11.4.2 System Manager or Designee: Assign independent, qualified individual to perform review of test report(s).

3.11.4.3 Independent Technical Reviewer: Review test report for completeness, consistency, clarity and correctness.

3.11.4.3.1 When reviewing test report(s), verify that:

- The report defines the applicable test criteria.
- The reported results are adequately supported by test output.
- The reported results adequately address the specified acceptance criteria.
- Any test failures have been adequately resolved, retested and documented.

3.11.4.4 Software Test Engineer: Resolve any review comments, document resolution of comments, and sign and date the cover page of the test report.

3.11.4.5 Independent Technical Reviewer: Sign and date the cover page of the Test Report when comments are resolved.

3.11.4.6 Quality Assurance: For Class I and Class II software, review the test report and sign and date the cover page to indicate approval.

3.11.4.7 System Manager or Designee: Review the test report and sign and date the cover page to indicate approval.

3.11.4.7.1 When complete, attach the test report to the SCR and release it for use.

3.11.5 Software User Documentation

3.11.5.1 Software Engineer: Develop software user documentation such that any qualified user (i.e., anyone having adequate technical background) could install and run the software, as well as properly respond to errors.

3.11.5.1.1 Ensure user documentation includes the following:

- Software name and version identifier
- Description of the user's interaction with the software
- An explanation of the mathematical models and derivation of the numerical methods used in the software design (physical and mathematical assumptions on which the software is based shall be included, along with an explanation of the capabilities and limitations inherent in the software)
- Description of any required training necessary to use the software
- Input and output specifications
- Input and output formats
- Description of software and hardware limitation
- Description of user messages initiated as a result of improper input and how the user can respond
- Information for obtaining user and maintenance support.

3.11.5.2 System Manager or Designee: Review and approve the software user documentation.

3.11.5.2.1 When complete, release the software user documentation to system users prior to implementation and archiving of the software change.

3.12 Abnormal and Infrequent

3.12.1 Emergency Changes

NOTE 1: *Changes that will affect WIPP data quality objectives must be approved by the CBFO before implementation.*

NOTE 2: *The USQ review must still be applied to changes processed under the production emergency provisions.*

NOTE 3: *If USQ evaluation reveals that a USQ exists (i.e., positive USQ determination), then DOE must approve an amendment to the safety basis in accordance with MP-NSPC-3.2, or the change must be revised such that a USQ does not exist, prior to implementing this change.*

NOTE 4: *In emergency software change situations, with the approval of the System manager or designee, a change to the system may be made. Class I and II systems will also require approval from the QA manager or designee. Emergency software change situation that occurs during a backshift or on a weekend emergencies may be approved for work via telecom or email. Software code may be retrieved from the* Version Control System *(see def.) by the System manager or software engineer but may not be checked into the baseline code until completion of the SCR Process. Software changes shall be tested by an independent software test engineer.*

3.12.1.1 Ensure the following criteria is addressed to determine if conditions meet the designation as an “emergency change”:

- Change is needed to support safe restoration of operations

- Change is needed to support restoration of WIPP data quality
- Mission critical items upon which reliance is needed to restore operational conditions to meet nuclear or technical safety operations.

3.12.2 Temporary Changes

NOTE 1: *Temporary changes, as discussed below, apply to Class I and Class II systems only. Temporary changes to Class III systems are referred to as "Temporary Software Overrides" and are performed in accordance with INST-CD&M-11.2.6, Temporary Software Override.*

NOTE 2: *Temporary changes may be used to support plant operations when temporary solutions are required due to failed equipment. Temporary changes are defined as changes planned to be in place for less than 30 calendar days.*

3.12.2.1 Review extensions every 30-calendar days and ensure they do not exceed 120 calendar days. Temporary changes are presented and tracked the same as a permanent change.

3.12.2.1.1 System Manager or Designee and Quality Assurance Manager or Designee: Approve changes requiring an extension.

4.0 DEFINITIONS

Baseline. A product (computer program, documentation or both) that has been formally reviewed and approved for use. The product thereafter serves as the basis for further development and can be changed only through formal change control procedures.

Baseline inventory and classification list. A listing, developed per INST-CD&M-11.2.2, that lists software by the Class I, Class II, or Class III level and its user organizations.

Case file. A packet that contains information about each revision to a document with the information increasing as the document moves through the development process.

Change tracking system. An electronic commercial application (Test Track Pro) used by the Information Technology development and maintenance groups to track and manage the SCR process.

Class I software. Software equipment identified by the Documented Safety Analysis (DSA) as Safety Class or Safety significant SSC. Class-I SSCs are those items whose failure present the highest potential safety consequence and project risk. Class-I SSCs are identified as Q-Listed SSCs, during construction/commissioning.

Class II software. Software equipment designated by the DSA as Other Items Important to Safety, by Statutory requirements, or functions to collect, reduce, manipulate or store data used in the characterization, certification, or transportation of waste by TRU programs, by WIPP requirements or certain Safety Equipment required by Permit, or where a failure could directly cause injury to personnel through a conventional or radiological means.

Class III software. All other process software equipment not considered Class-I or Class-II.

Configuration management. The process of 1) identifying and defining the baselines associated with a software product or application; 2) controlling the changes to baselines and release of baselines throughout the lifecycle; 3) recording and reporting the status of baselines and the proposed and actual changes to the baselines; and 4) verifying the correctness and completeness of a product baseline.

Error. A difference between an observed or measured value or condition and the true, specified or theoretically correct value or condition; also, an incorrect step, process or data definition, or incorrect result.

Facility modification. Any change or addition to structures, systems, components (SSCs), software or operational processes that are part of the plant's current authorization basis or design basis. This includes temporary changes or investigations/experiments. This also includes any changes that may affect Industrial Safety, Radiological Safety or changes to equipment configuration that may not be covered by the Authorization Basis.

Facility modification proposal. A document, produced in accordance with INST-CD&M-11.1.2, used to screen changes, (including design changes) solicit inputs, identify impacts, and obtain approval for change implementation.

Impact analysis. An independent analysis performed on all software changes that is used to identify any unintended effects. The analysis will also evaluate whether a change has the potential to affect previously completed software or criticality controls. This analysis will be performed by an individual independent of the software development, but with sufficient knowledge to perform the change themselves.

Process control equipment. The equipment used specifically for AMWTP throughput.

Prototype. A development version of a software module to allow users of the software to evaluate developers' proposals for the design of the eventual product by actually trying them out, rather than having to interpret and evaluate the design based on descriptions.

Primitive baseline. A baseline that consists of the source code, if available, executable code, data libraries, command and input files, and existing requirements, design, test and user documentation.

Polytron Version Control System. The trademark name of the software package used for controlling versions of software applications at the AMWTP.

Regression testing. Selective retesting of a system or component to verify that modifications have not caused unintended effects and that the system or component still complies with its specified requirements.

Release. A configuration management action allowing a particular version of software to be available for test or operation.

Secure code. Software code identified as impacting criticality controls.

Software. Computer programs, procedures, rules, and associated requirements, design, test and user documentation pertaining to the operation of a computer system.

Software change screening. A document used to evaluate software changes and determine if the change needs to be further evaluated as an FMP.

Software life cycle. The period of time that starts when a software product is conceived and ends when the software product is no longer available for use.

Software package. The baseline information contained on a system change request may also include; user requirement specification, software design description, software test case, test reports, and design document.

Software validation. The test and evaluation of completed software to ensure compliance with software requirements.

System change group. The group responsible for evaluating new SCRs to ensure they are properly classified and prioritized, and that the changes proposed within them will not have an adverse effect on safe, compliant operations. For changes to Class I or Class II software, this group is comprised of, at a minimum, the System manager (or designee), the Nuclear Facility Manager (or designee), the cognizant system engineer and representatives from Quality Assurance, TRU Programs, and Operations. For Class III software this group consists of the system manager (or designee) and the Nuclear Facility Manager (or designee). The system change group will interact through the *change tracking system* (see def.), as well as meetings, on an as-needed basis.

System change request. An electronic form used to track and manage software changes. See change tracking system.

System change request field group. The group responsible for performing the initial review of an SCR that ensures adequate information is provided and to determine the appropriate level of supporting documentation. This group may include system administrators, network administrators, software engineers, and/or system managers. The SCR field group will interact through the change tracking system, as well as meetings, on an as-needed basis.

System data change request. The mechanism used to track changes to existing characterization data or a change to baseline software code tables.

Traceability matrix. A documented matrix used in the software development cycle that identifies the approved requirements baseline, the design implementation identifier, the test case used to validate the design implementation, and the results of validation.

Unreviewed safety question. A situation where (1) The probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased; (2) The possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; (3) A margin of safety could be reduced; or (4) The documented safety analysis may not be bounding or may be otherwise inadequate.

User acceptance testing. Testing performed for the purpose of obtaining user concurrence that a change has been implemented correctly and that the user requirements have been met.

Version control system. A commercial off-the-shelf client-server application, which provides a platform for the configuration management of software.

5.0 REFERENCES

(1) 221-0003, MSD ChemStation Software Installation Manual

(2) 221-0002, HGAS III Operation and Maintenance Manual

(3) DOE-CBFO-94-1012, Quality Assurance Program Document (QAPD)

(4) INST-CD&M-11.1.2, Facility Modification Proposal Preparation

(5) INST-CD&M-11.2.1, Software Version Control

(6) INST-CD&M-11.2.2, Software Inventory Classification

(7) INST-CD&M-11.2.3, System Data Change Request

(8) INST-CD&M-11.2.5, Integrated Control System Software Modifications

(9) INST-CD&M-11.2.6, Temporary Software Override

(10) INST-OI-43, HGAS Sampling and Analysis Operations

(11) MP-CMNT-10.5, Measuring and Test Equipment Program

(12) MP-DOCS-18.2, Records Management

(13) MP-DOCS-18.4, Document Control

(14) MP-NSPC-3.2, Unreviewed Safety Question Process

(15) MP-PCMT-15.1, Acquisition of Material and Services

(16) OPSTG-0001, Testing Guidelines for Advanced Mixed Waste Treatment Project

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-CD&M-11.2, *Case File* (see def.)	Non-Permanent WIPP/ENV1-J-1/ Destroy 10 years after submittal
The following items will be electronically stored as a Quality Assurance record in the TestTrackPro database and will include objective evidence of disposition, implementation and verification of software changes which may consist of one or more of the following: • Completed Form-1003, Review Comment and Resolution Form • Completed Form-1172, Software Quality Plan • Completed Form-1173, Software Evaluation Report • Completed Form-1685, Software Change Screening • Completed Form-1731, Software Design Description • Completed Form-1732, User Requirements Specification • Completed Software Test Case • Completed Test Report • Form-1743, Data Backup Request • Form-1941 Software Change Impact Analysis	Non-Permanent WIPP/ENV1-J-1/Destroy 10 years after submittal.
QCSWTST, Test Engineer Record of Certification	Non-Permanent WIPP/ENV1-J-1 Maintained by Training Department

7.0 EXHIBITS

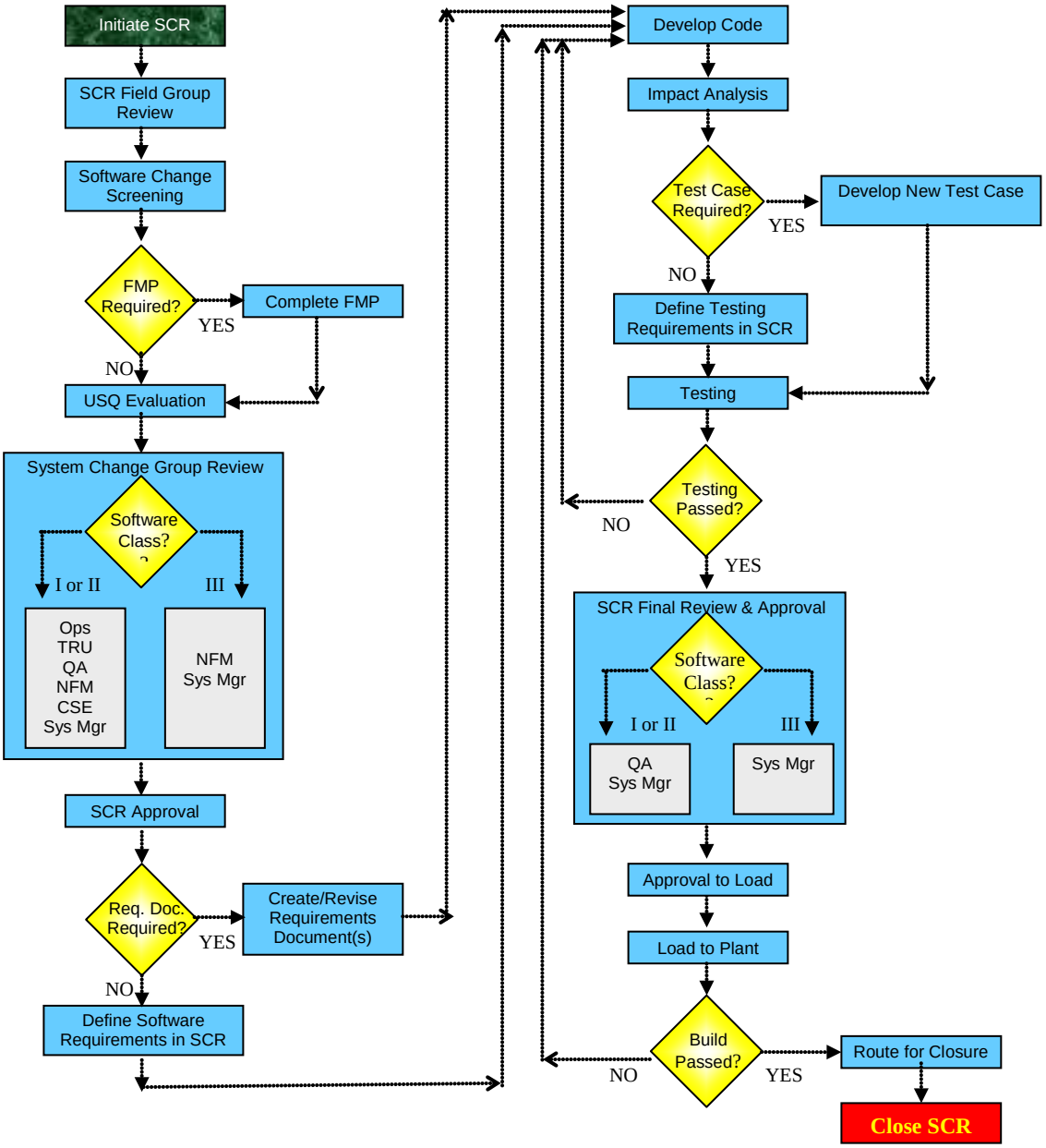
None

8.0 APPENDICES

Appendix A – System Change Request Flow Path

Appendix A -
System Change Request Flow Path

The following is an example of the flow path for an SCR generated for maintenance changes to an existing system. Specific steps may vary depending upon the complexity of the change, as specified within the body of this procedure.



Measuring and Test Equipment Program

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-9340.*) 09/13/10

Rob Hamilton
Maintenance Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-CMNT-10.5, Rev. 9	Issued: 10/04/10	Effective: 10/05/10
Measuring and Test Equipment Program		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	06/25/2002	All	Initial issue: DCR-2001-1069
1	09/12/2002		Re-issue, See DCR-2002-1442
2	9/16/2002	5, 6	Re-issue, see DCR-2002-1472
3	11/04/2002	All	Re-issue, see DCR-2002-1551
3.1	12/16/02	All	Minor change to the list of references. See DCR-2002-1835
3.2	1/15/03	All	Minor change, see DCR-2003-1914
4	3/03/03	All	Address lost M&TE, see DCR-2003-2078
5	5/12/03	All	Minor change to clarify what M&TE information may be in MMS, see DCR-2003-2252.
6	11/16/05	All	Address surveillance (QAS-05-07) comments, see DCR-2005-4128.
7	2/14/06	All	Editorial changes to conform with changes to INST-CMNT-10.5.1, see DCR-4797.
8	03/19/08	All	DCR-6469. Entire document revised. Changed to incorporate all requirements of DOE-433.1-1 and align with instructions.
9	09/13/10	Various	DCR-9340. Made various changes for clarity and consistency.

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AMWTP MANAGEMENT PROCEDURE		
MP-CMNT-10.5, Rev. 9	Issued: 10/04/10	Effective: 10/05/10
Measuring and Test Equipment Program		

1.0 PURPOSE/SCOPE

Operators depend upon installed facility instrumentation for accurate indications, process control actions, and trip functions to operate the facility safely and reliably. The accuracy of the installed instrumentation is established and maintained through the *measuring and test equipment* (M&TE; see def.) control and *calibration* (see def.) program. This procedure for control and calibration of measuring and test equipment ensures the accurate performance of Advanced Mixed Waste Treatment Project (AMWTP) instrumentation and equipment for testing, calibration, and repairs. The control and calibration requirements for M&TE also apply to subcontractor groups that are engaged in maintenance activities.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Maintenance Manager	• Directs all aspects of the Measuring and Test Equipment Program • Authorizes storage areas for M&TE.
Responsible Manager	• Directs the equipment/process on which M&TE has been used • Assesses the implications of measurements made with faulty/out-of-tolerance M&TE.
System Engineer/Subject Matter Expert (SME)	• Assists the responsible manager, as necessary, when assessing the implications of measurements made with faulty/out-of-service M&TE.
M&TE Custodian (MTEC)	• Reviews calibration data ensuring appropriate calibration stickers are attached • Removes M&TE from service prior to the expiration of calibration • Informs the maintenance manager when M&TE is found, or suspected, to be out of tolerance, defective, or otherwise unreliable • Maintains security of M&TE storage area • Initiates a TrackWise action item designating the responsible manager to assess the implications of measurements made with faulty/out-of-tolerance M&TE.

3.0 PROCEDURE

3.1 Identification of Measuring and Test Equipment

3.1.1 Each piece of M&TE shall be assigned a unique identification number that is permanently marked on or attached to it, which will assist in identifying, tracing, and positively controlling M&TE.

3.1.1.1 All equipment not designated for in-house calibration shall be registered with the *approved calibration facility* (ACF; see def.).

3.1.1.2 The ACF shall retain a register of M&TE and records of all calibrations and shall issue a calibration certificate or report to the AMWTP.

NOTE 1: *The* Computerized Maintenance Management System *(CMMS; see def.) contains a database of all M&TE.*

NOTE 2: *The M&TE list includes the following:*

- *Generic description, trade, or marketing name*
- *Manufacturer, model, and serial number*
- *Unique identification number*
- *Calibration frequency*
- *Calibration date*
- *Calibration due date.*

3.1.2 The CMMS database shall be regularly updated and is the master M&TE list.

3.1.2.1 A calibration sticker shall be attached to each M&TE device and indicate:

- Equipment ID number
- Name, initial, or badge number of the individual attaching the sticker
- Calibration date
- Calibration due date.

3.1.2.2 The calibration sticker shall be removed and replaced with a new sticker each time the equipment is calibrated.

3.1.3 A *restricted use sticker* (see def.) shall be placed on any equipment requiring special restrictions or precautions in its use.

3.1.3.1 This sticker shall include the following:

- Device identification number
- A statement of the restrictions that apply
- Name, initial, or badge number of the individual attaching the sticker
- Date the sticker is attached
- Expiration date, if applicable.

3.1.3.2 This sticker may be in addition to or part of a calibration sticker.

3.1.4 A rejected sticker shall be placed on any equipment that fails to meet acceptance criteria or is suspected of being defective.

3.1.4.1 This sticker shall include the following:

- Device identification number
- Reason for rejection
- Name, initial, or badge number of the individual attaching the sticker.

3.2 Records

3.2.1 A maintenance history file shall be kept in CMMS for all M&TE.

NOTE: *The maintenance history file includes*

- *Manufacturer's data (including model serial numbers)*
- *Equipment identification number*
- *Calibration frequency and tolerance*
- *History of calibration, repairs, and other appropriate data*
- *Calibration nonconformance evaluations documented on Form-1613, M&TE Evaluation*
- *Usage records (Form-1625, M&TE Usage Report, and Form-1848, M&TE Checkout Log).*

3.2.2 Records for lost, destroyed, unavailable, or removed-from-use M&TE shall be maintained in the history file.

3.3 Calibration

3.3.1 Equipment for Troubleshooting Use Only

3.3.1.1 All M&TE at the AMWTP is calibrated.

3.3.1.1.1 Equipment that is used only for troubleshooting does not need to be controlled as M&TE and does not need to be calibrated.

3.3.2 Calibration Standards

3.3.2.1 Only *calibration standards* (see def.) traceable to National Institute of Standards and Technology (NIST) or other nationally recognized standards organizations shall be used for calibration of M&TE.

3.3.2.2 The M&TE shall be calibrated using reference standards (secondary or working) whose calibration has a known valid relationship to nationally recognized standards or accepted values of natural physical constants.

3.3.2.2.1 If national standards do not exist, the basis for calibration shall be documented.

3.3.2.2.2 The reference standard used shall have accuracy at least four times greater than the device under test.

3.3.2.2.3 If the accuracy ratio cannot be met, analysis of the errors shall be estimated to provide a valid uncertainty of the calibration process.

3.3.2.3 If repair or calibration of a standard is necessary, the recalibration must be traceable to NIST or to the standard of record for the M&TE.

3.3.2.4 Calibration standards maintained at the facility shall be kept in designated storage locations.

3.3.2.5 If calibration standards are issued for field use, the maintenance manager or MTEC shall authorize and minimize the period of issuance.

3.3.2.5.1 Issuance of laboratory standards for field use is discouraged.

3.3.2.6 Standards shall be calibrated on a frequency consistent with vendor recommendations and facility experience.

3.3.2.7 Calibration records for standards shall be consistent with those of all other M&TE.

3.3.3 Calibration Procedures/Calibrating Measuring and Test Equipment On-Site

NOTE: *The M&TE may be calibrated on-site.*

3.3.3.1 Calibration of equipment will be performed by qualified technicians using approved procedures. These procedures will contain the following:

- Precautions or limitations
- Calibration standards to be used and their accuracy
- Data sheets for as-found and as-left data
- Acceptance criteria for each scale, expressed as a range and in the units that are being measured (e.g., represent 9.75 volts as 9.726 – 9.774 volts rather than as 9.75 volts ± 0.25 percent). (Acceptance criteria will be rounded up on the "–" side and down on the "+" side to be within the range of accuracy of the instrument being read.)
- Identity of the equipment to be calibrated
- Step-by-step instructions regarding sequence, methods, data sheet completion details, etc. (including as-found and as left conditions)
- Special instructions, such as environmental conditions, when appropriate.

3.3.3.2 The M&TE calibration data sheets shall include provisions for recording as-found data before any adjustments or repairs are made.

3.3.3.3 Completed data sheets shall be reviewed before release of the equipment to service to verify that acceptance criteria are satisfied.

3.3.3.4 When M&TE is found to be out of calibration, an M&TE evaluation shall be performed in accordance with Section 3.5.

3.3.3.5 Completed data sheets shall be filed with the maintenance history.

3.3.4 Calibrating Measuring and Test Equipment Off-Site

NOTE: *The M&TE may be calibrated by an ACF.*

3.3.4.1 When generating purchase orders or calibration requests to these organizations, the following shall be considered:

- Tolerance requirements
- Calibration test data requirements
- Any special environmental, handling, and shipping requirements
- Calibration data to be supplied with the calibrated equipment
- Point-of-contact information to off-site organization to allow notification of out of tolerance M&TE
- Requirement to provide immediate notification if the as-found data for an M&TE device does not meet specified acceptance criteria. (This notification is necessary to ensure that the evaluation required by Step 3.5 is initiated as soon as possible.)

3.3.4.2 Upon return of the M&TE, the MTEC will ensure that the calibration data submitted is reviewed and an appropriate calibration sticker is attached.

3.3.5 Calibration Frequency

3.3.5.1 Frequency of calibration shall be determined based on the manufacturers' recommendations, M&TE usage, and M&TE historical reliability.

3.3.5.2 Consideration shall be given to the amount and type of M&TE available for use compared to that needed to support periods of peak activity such as outages.

3.3.6 Measuring and Test Equipment Calibration Schedule

3.3.6.1 Calibration dates for similar M&TE should be staggered to ensure availability for day-to-day and peak needs.

3.3.7 Measuring and Test Equipment Repairs/Out of Calibration

3.3.7.1 Measuring and test equipment found to exceed required calibration tolerance or that has been subjected to possible damage shall be identified as rejected.

3.3.7.1.1 When repairs are required to M&TE, they shall be recalibrated to the original requirements before being returned to normal service.

3.3.7.1.2 When calibration/certification is performed, the as-found condition and/or minor adjustments to the M&TE shall be noted as part of the equipment history information.

3.3.7.2 When M&TE is suspected or actually found to be inoperable, unreliable, defective, or out of calibration, it shall immediately be taken out of service.

3.3.7.3 If the M&TE is found to be out of calibration, then all data recorded since the previous calibration by affected equipment shall be identified through usage records and a prompt evaluation shall be performed to determine the need for corrective action.

3.3.7.3.1 Lost M&TE and/or M&TE that has become contaminated and cannot be free-released and/or damaged M&TE will require an evaluation to determine if there was any indication to suspect that the integrity or calibration of the M&TE was compromised before the loss/contamination/damage.

3.3.7.4 The appropriate owner/operator of the affected equipment shall evaluate the validity of all applications and data derived since the previous calibration, determine their disposition, and establish the nature and timing of corrective actions, if necessary.

3.3.8 Functional Checks

NOTE: *The checks identified in Step 3.3.8.1 can be used, when applicable, to detect M&TE problems before and after an instrument is used in the field. They are not substitutes for* calibration checks *(see def.).*

3.3.8.1 If operational tests, functional checks, or battery checks of M&TE are performed, the desired response or acceptance criteria shall be clearly specified in instructions, user manuals, or indicated on the equipment.

3.4 Control

NOTE: *The control process used for M&TE is the CMMS. This program provides a recall program containing a total inventory listing. The CMMS automatically generates a work order prior to the calibration due date.*

3.4.1 Accountability and Traceability

3.4.1.1 The M&TE shall be traceable from the field application to working standards, secondary standards, primary standards, and NIST or other nationally recognized standards.

3.4.1.1.1 All calibration data shall have both forward and reverse traceability between the specific item and NIST.

3.4.2 Packaging

3.4.2.1 The M&TE integrity shall be maintained during handling and shipping.

3.4.2.1.1 The M&TE devices that are relatively easy to damage during transport and handling shall be provided more protection by being boxed or by being mounted in special rigs (e.g., test gauges mounted in portable frames).

3.4.2.2 Packaging for shipment to the standards laboratory shall not conceal or destroy existing conditions of equipment.

3.4.2.3 Packaging after calibration and certification shall be in a manner that does not jeopardize equipment.

3.4.3 Storage

3.4.3.1 The M&TE storage areas shall be authorized by the maintenance manager.

3.4.3.2 All equipment shall be stored in a manner that assures integrity is maintained and unintended contamination is minimized.

3.4.3.2.1 The M&TE storage areas shall provide sufficient separation of the ready-to-use equipment (calibrated and restricted use) from other equipment (rejected/expired) to preclude inadvertent use.

3.4.3.3 Storage areas shall be controlled to ensure that M&TE will not be adversely affected by environmental factors, such as, temperature, humidity, vibration, radio frequency interference, electromagnetic interference, and fumes.

3.4.3.4 Security of the M&TE storage area shall be maintained by the MTEC.

3.4.3.4.1 In the absence of the MTEC, the storage area shall be locked with access controlled by the responsible department manager and/or supervisor.

3.4.3.5 Instruments used on systems that contain oil, brackish water, etc., shall be cleaned thoroughly after each use.

3.4.3.6 Proper facilities are needed to help ensure equipment is protected from damage in storage, is properly maintained, and is readily retrievable.

3.4.4 Marking Restricted Use Measuring and Test Equipment

NOTE: *The following are examples of information that would be reflected on a restricted use sticker*:

- *Specific tasks the M&TE has been designated to be used for (e.g., torque Transuranic Package Transporter [TRUPACT], calibration checks)*
- *Limitations and restrictions to operate the M&TE based on the calibration information (e.g., specific range, direction of movement [clockwise only], temperature band)*
- *Internal radioactive contamination*
- *Limited use in specific areas/procedures*
- *Limited or restricted use such as oil, oxygen, saltwater, or demineralized water systems.*

3.4.4.1 The M&TE devices that have special uses, limitations, or restrictions shall be clearly labeled with a restricted use sticker.

3.4.5 Accountability and Traceability Records

3.4.5.1 Controlled M&TE storage areas shall be established to help ensure that only authorized persons are allowed access to M&TE.

NOTE 1: *Traceability of M&TE is accomplished by identifying the following:*

- *Measuring and test equipment user*
- *When the equipment was used*
- *What instrument or equipment it was used on and for what purpose (typically by referencing work order or procedure number)*
- *What ranges were used and/or what values were read.*

NOTE 2: *Traceability of M&TE supports a timely evaluation of instruments, systems, and other equipment associated with deficient M&TE.*

NOTE 3: *Maintenance history that can be readily sorted by specific M&TE used to perform maintenance (CMMS) also provides traceability.*

NOTE 4: *Computerized Maintenance Management System automatically generates a work order prior to the calibration due date.*

3.4.5.2 The MTEC shall contact the affected user to facilitate removal of M&TE from service.

3.4.6 Minimizing Contamination of Measuring and Test Equipment

3.4.6.1 Every effort shall be made to minimize contaminating calibrated M&TE.

3.4.6.1.1 Equipment subject to radioactive contamination shall be packaged/wrapped and used in a manner that minimizes the possibility of external and internal contamination.

3.4.6.1.2 Calibrated M&TE that becomes contaminated shall be removed from the calibration program or will be segregated from non-contaminated M&TE.

3.4.6.1.3 Segregated M&TE shall be stored in accordance with Section 3.4.3.

3.5 Evaluation

3.5.1 Evaluations of Use of Out-of-Tolerance or Defective Measuring and Test Equipment

3.5.1.1 When M&TE is found (or suspected) to be out of tolerance, defective, or otherwise unreliable, the MTEC shall inform the maintenance manager.

3.5.1.2 The MTEC shall generate a TrackWise action item designating the responsible manager.

3.5.1.3 The responsible manager shall evaluate the instruments and equipment that a particular device has measured or tested since the M&TE was last calibrated to determine whether recalibration or rework is needed.

3.5.1.4 The responsible manager may enlist the support of applicable SMEs and/or system engineers to aid in this determination.

3.5.1.5 A nonconformance report (NCR) may be generated as a result of the implementation of Form-1613 in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, and using INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment.

3.5.2 Periodic Reviews of M&TE Program

3.5.2.1 An annual review shall be performed to check for overall compliance with M&TE program requirements. The AMWTP Management Assessment Program will be the mechanism for the identification and tracking of the review activities.

3.5.2.1.1 During the review, reviewers shall check for the following:

- Proper implementation of the requirements of this document
- Proper use and storage of the M&TE.

4.0 DEFINITIONS

Approved calibration facility. A manufacturer, vendor, or AMWTP approved calibration lab that operates in accordance with the requirements of ANSI/NCSL-Z540-1, or other commensurate standard.

Calibration. The calibration check and adjustments when necessary to align an instrument in order to meet manufacturer's recommendations, statutory and/or regulatory requirements.

Calibration check. The testing in a documented measurement assurance process to verify the instrument is in calibration with a check standard that is periodically calibrated to NIST traceable standards. If the results are satisfactory, then no adjustments are required and the calibration check meets the requirements of a periodic calibration and an updated calibration sticker will be affixed to the instrument.

Calibration standard. A specific subset of M&TE that is used for performing calibrations of other M&TE.

Computerized Maintenance Management System. A commercial-off-the-shelf client-server application, which provides a platform for users to prioritize tasks, assign work based on the availability of necessary parts and labor, and analyze equipment failures to implement appropriate preventive/predictive maintenance measures.

Measuring and test equipment. All tools, gauges, instruments, devices or systems used to inspect, test, calibrate, measure, or troubleshoot to control or acquire data requirements. M&TE does not include permanently installed facility process or control instrumentation, radiation monitoring equipment, test equipment used for preliminary checks where data obtained will not be used to determine acceptability or verify conformance to established criteria, or rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy.

Restricted use sticker. A sticker that identifies the specific tasks the M&TE has been designated to be used for (e.g., torque TRUPACT, calibration checks), limited use in specific areas/procedures, limitations, and restrictions to operate the M&TE based on the calibration information (e.g., specific range, direction of movement [clockwise only], temperature band), internal radioactive contamination, and/or restricted use (such as, oil, oxygen, saltwater, or demineralized water systems).

5.0 REFERENCES

(1) DOE O 4330.4B, Maintenance Management Program

(2) Form-1613, M&TE Evaluation

(3) Form-1625, M&TE Usage Report

(4) Form-1848, M&TE Checkout Log

(5) MP-DOCS-18.2, Records Management

(6) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(7) INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-CMNT-10.5, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal.

7.0 EXHIBITS

None

8.0 APPENDICES

None

In-Plant and Process Instrumentation Testing Program

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11282.) 08/23/12

Rob Hamilton
Maintenance Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/12/2002	All	Initial issue: DCR-2001-1445
0.1	12/16/02	All	Minor change to the list of references, see DCR-2002-1835
1	6/9/03	All	Correct deficiencies identified during a self-assessment, see DCR-2003-2258
2	10/09/03	8	Add accuracy criteria. See DCR-2003-2431
3	5/13/04	All	Incorporate comments from a self-assessment, see DCR-2004-2957.
4	5/25/06	All	DCR-4299. Incorporated Blue Sheet and made minor editorial changes.
5	06/19/07	Various	DCR-5933. Advanced periodic review and minor editorial changes.
6	08/23/12	Various	DCR-11282. Incorporated ITG Bluesheet-203. Revised steps so that they are all written as actions, rather than a mixture of actions and requirements.

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AMWTP MANAGEMENT PROCEDURE		
MP-CMNT-10.14, Rev. 6	Issued: 08/28/12	Effective: 08/29/12

In-Plant and Process Instrumentation Testing Program

1.0 PURPOSE/SCOPE

The purpose of this procedure is to identify the testing program for *in-plant and process (IP&P) instrumentation* (see def.). The testing may be performed in-house by Advanced Mixed Waste Treatment Project (AMWTP) technicians or at an *approved calibration facility* (*ACF;* see def.). The *measurement and test equipment (M&TE;* see def.) used by AMWTP technicians will be calibrated in accordance with INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment, to known standards, which will provide the means of demonstrating to Department of Energy (DOE) and regulators that IP&P instrumentation will perform to the required accuracy.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Maintenance Manager	• Oversees all aspects of the *calibration* (see def.) program • Assesses issues concerning IP&P instruments that are either past due for calibration or are determined to be out of calibration • Ensures instruments that fail a calibration, *calibration/functional check* (see def), will be evaluated for continued operation.
Quality Assurance (QA) Manager	• Concurs with instrument calibration issues.
Computerized Maintenance Management System (CMMS*;* see def.) Administrator	• Issues scheduled preventive maintenance from the CMMS to the responsible party • Updates the CMMS upon completion of the maintenance.
Maintenance Supervisor	• Implements this procedure • Informs the maintenance manager and plant shift manager (PSM) when an IP&P instrument fails testing or is out of calibration.
System Engineer	• Periodically evaluates the testing frequencies for the effectiveness in maintaining the accuracy of the IP&P instrumentation.

Performer	Responsibilities
Technicians	• Understands how to perform calibrations, calibration checks, and functional tests • Performs IP&P instrument testing in accordance with INST-CMNT-10.14.1, Testing In-Plant and Process Instrumentation • Informs the maintenance supervisor immediately if an instrument fails its calibration, calibration check, or functional check.

3.0 PROCEDURE

3.1 Training

3.1.1 Maintenance Manager: Ensure technicians are properly trained in the use of calibrated M&TE.

3.2 Types of Tests

3.2.1 Calibration Check

3.2.1.1 Technicians: Perform calibration check on IP&P instrumentation that perform critical functions and affect quality or is governed by statutory regulations.

NOTE: *Special calibrations of IP&P instruments can be performed by an ACF when determined necessary by the maintenance manager*.

3.2.1.2 Have IP&P instruments with unsatisfactory calibration check results calibrated.

3.2.2 Functional Checks

NOTE: *A calibration check may be performed when directed by the maintenance manager.*

3.2.2.1 Technicians: Perform functional checks on IP&P instruments that do not perform a critical function but are used as the primary indication of the process condition.

NOTE: *This functional check does not reset the clock for the normally schedule calibration check.*

3.2.2.2 If necessary, perform functional checks as a temporary calibration check for an IP&P instrument that is due for a calibration check, but because of problems with the M&TE that is normally used, the calibration check cannot be performed as scheduled.

3.2.2.2.1 Perform a complete calibration check as soon as the appropriate M&TE becomes available.

3.2.3 No Calibration Required

NOTE: *IP&P instruments that are used for information only and the indicated reading is not the primary indication for process conditions will not be required to be calibration checked or functionally checked.*

3.2.3.1 When these types of IP&P instruments (see note above) are repaired or replaced, perform a functional check initially to ensure proper operation.

3.3 Determination of Testing Periodicity

3.3.1 System Engineer: Base the periodicity at which IP&P instrumentation are tested on statutory requirements, Operations and Maintenance (O&M) manual recommendations, safety significance of the indication, the severity of the environment in which it is used, and/or engineering judgment.

3.3.2 Perform calibrations annually on IP&P instrumentation without adequate technical information that requires calibrations until evaluated by the system engineer.

3.4 Determination of Required Accuracy

3.4.1 System Engineer: Base the accuracy to which IP&P instrumentation is tested on statutory requirements, WIPP requirements, O&M manual recommendations, safety significance of the indication, the severity of the environment in which it is used, and/or engineering judgment.

3.4.1.1 If adequate technical information is not available for a calibrated IP&P instrument, ensure an accuracy of ± 2% of full scale at each calibration point.

3.5 Testing Evaluation

3.5.1 System Engineer: Periodically evaluate the testing frequencies for the effectiveness in maintaining the accuracy of the IP&P instrumentation.

3.5.2 Maintenance Manager: Review the system engineer's evaluation and adjust the testing frequencies accordingly.

3.5.3 When an instrument fails a calibration, calibration check, or functional check, evaluate the compensatory measure(s) needed to continue operations with the deficient instrument.

3.5.3.1 Record this evaluation on Form-1575, Evaluation of a Failed Calibration/Functional Check.

3.5.3.2 For Class I & II instruments, confer with QA manager and discuss the necessity of generating a nonconformance report, per MP-Q&SI-5.4, Identification of Nonconforming Conditions.

4.0 DEFINITIONS

Approved calibration facility. A calibration facility that operates in accordance with accepted industry consensus standards such as ANSI/NCSL-Z-540 or ISO 17025, and utilizes standards traceable to the National Institute of Standards and Technology (NIST).

Calibration. The testing and adjustments necessary to align an IP&P instrument in order for the indication to meet manufacturer's recommendations, statutory or regulatory requirement, operations limits or specifications, or meet requirements determined by engineering judgment.

Calibration check. A test to verify the IP&P instrument indication is in calibration with the M&TE, which has been calibrated to NIST traceable standards.

Functional check. A test using either another IP&P instrument or a portable measuring device (not required to be part of the AMWTP M&TE program), as the standard by which the instrument in question is checked. The IP&P instrument may remain connected to the parent system during the functional check.

In-plant and process instrumentation: Installed instrumentation and process equipment (gauges, differential pressure cells, meters, load cells etc.) used to provide a measurable indication, used with a specific degree of accuracy.

Computerized Maintenance Management System. A commercial-off-the-shelf client-server application, which provides a platform for users to prioritize tasks, assign work based on the availability of necessary parts and labor, and analyze equipment failures to implement appropriate preventive/predictive maintenance measures.

Measuring and test equipment. All devices or systems used to calibrate, certify, measure, gauge, troubleshoot, test, or inspect in order to control data or to acquire data to verify conformance to specified requirements. M&TE does not include IP&P instrumentation, radiation monitoring equipment, industrial hygiene monitoring equipment, test equipment used for preliminary checks where data obtained is not used to determine acceptability or verify conformance to established criteria, or rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy.

5.0 REFERENCES

(1) HWMA/RCRA Storage Permit

(2) HWMA/RCRA TSA-IS Document

(3) INST-CMNT-10.5.1, Calibration and Control of Measurement Measuring and Test Equipment

(4) INST-CMNT-10.14.1, Testing In-Plant and Process Instrumentation

(5) LST-CMNT-01-IM, Conduct of Maintenance Requirements Implementation Matrix

(6) MP-DOCS-18.2, Records Management

(7) MP-Q&SI-5.4, Identification of Nonconforming Conditions.

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-CMNT-10.14, Case File	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility
Form-1575, Evaluation of a Failed Calibration/Functional Check	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after Life of Facility

7.0 EXHIBITS

None

8.0 APPENDICES

None

Developing Written Work Instructions

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-9782.*) 01/13/11

Gail L. Brown
Document & Record Services Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	12/4/2001	All	Initial issue. DCR-2001-1066
1	12/18/03	Pages 6, 7, 9, 10, & 13	DCR-1964, Changes to resolve comment resolution from WIPP review
2	6/23/2003	Pages 1 & 5	DCR-2292, Change to incorporate recommendations form CBFO resulting from the WIPP Program Evaluation to 1) indicate that this document rolls down implements requirements from the DOE CBFO QADP (CBRO-94-1012) as required by MP-DOCS-18.3 and 2) that work instructions are to be reviewed and approved in accordance with MP-DOCS-18.4
3	5/4/04	Pg 5/ Step 4.1.1	DCR-2933, To close AI-4483
4	10/18/2005	All	DCR-4610. Minor changes to apply Blue Sheet (DCR-4299) changes. Re-order sections for greater ease of use.
5	3/30/06	10	DCR 4920. Minor change to correct typographical error on numbering sequence for References and Records Sections.
6	09/14/2006	Page 1, 2, & 27	DCR-5326. Minor change to clarify what documents this procedure applies.
7	12/15/06	Section 1, Step 3.3.13, Throughout	DCR-5527. Clarified instructions for numbering pages to close AI 24077. Added instructions and definitions for General Use and Controlled Activity instructions. Make clarifications/format corrections throughout.
8	05/01/08	Entire	DCR-6992. Clarifications regarding use of P&Ls, Revision Log, Roles and Responsibilities, Notes, action words, and sign-offs as a result of FMEA recommendations per AI 36798 and needed changes identified during periodic review.

Revision Number	Date Approved	Pages Affected	Description of Revision
9	10/16/08	Various	DCR-7653. Move Revision Log to be Section 8.0 and revise affected steps to provide for this change.
10	10/23/08	Various	DCR-7655. Moved Revision Log of Instructions to be last Appendix of the Appendices, revised affected steps to provide for this change, moved Section 3.3.10 to 3.3.11, and updated references.
11	10/15/09	Cover Page/ Appendix A 3.3.5.1	DCR-8665. Revised to remove periodic review date from cover page and example cover page. Clarified that Roles & Responsibilities are to be specific to procedure.
12	01/13/11	Various	DCR-9782. Revise to require incorporation of hazard assessment results into INSTs, update cover page examples, refine definitions for controlled activity and general use, and add that P&Ls/ Pre-Reqs, and steps must within the control of the performer to implement.

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Appendix A – Work Instruction Cover Sheet Format A1

Appendix B – List of Action Verbs B1

AMWTP MANAGEMENT PROCEDURE		
MP-DOC-18.1, Rev. 12	Issued: 01/13/11	Effective: 01/14/11
Developing Written Work Instructions		

1.0 PURPOSE/SCOPE

Implementation of requirements described in reference (1) dictates the development of implementing procedures or other appropriate documentation for use during operation of the Advanced Mixed Waste Treatment Project (AMWTP). This procedure provides a standardized process for the development of accurate, complete, and usable *work instructions* (INSTs; see def.). This document, in whole, implements the specific requirements of Department of Energy (DOE)/Carlsbad Field Office (CBFO)-94-1012, Quality Assurance Program Document (QAPD), and DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities.

Work instructions provide specific direction for performing hands-on technical *tasks* (see def.). They detail how to accomplish the various technical tasks necessary including operating, testing, and maintaining equipment and operating systems. Work Instructions describe the processes to be followed to ensure that various task functions are effectively integrated and all applicable requirements are appropriately implemented. Additionally, work instructions, when implemented correctly, minimize the potential safety risk to personnel, the public, and the facility as well as protect the environment.

This procedure assists writers, reviewers, administrators, subject matter experts, support personnel, and users involved in developing and writing technical instructions that assist production, operation of equipment and facilities, and maintenance activities. The standards in this procedure apply to all new instructions developed for use by the AMWTP, and all pre-existing instructions as they are revised, unless otherwise directed by the document owner. Work instructions include but are not limited to:

- Operating instructional procedures
- Emergency instructional procedures
- Surveillance and test instructional procedures
- Maintenance instructions designated as INSTs (but does not include INST-MI maintained in Engineering Document Control)
- Analytical instructional procedures.

Work instructions can be either *general use* (see def.) or *controlled activity* (see def.) documents. The controlled activity classification will appear on the cover and every page of an applicable work instruction.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Technical Writers	Apply standards described in this procedure when developing or revising instructions to ensure task functions are effectively integrated and all applicable requirements are appropriately implemented.
Reviewers	
Subject Matter Experts	
Document Owners or delegates	

3.0 PROCEDURE

3.1 General Instructions

Work instructions apply to activities that require specific direction for operating and maintaining systems and equipment to ensure the facility is maintained within its design basis and to support safe and reliable operation of the facility while ensuring environmental, safety, health, and quality compliance. Whereas, a management procedure is a document that establishes the methods for implementing and integrating requirements.

3.1.1 All new and revised work instructions shall be reviewed and approved in accordance with the requirements of MP-DOCS-18.4, Document Control, with the exception of maintenance instructions (MIs) and method statements, which are developed and approved in accordance with MP-CMNT-10.1, Maintenance Management.

3.1.2 All work instructions should provide administrative and technical direction to conduct the intent of the procedure effectively.

3.1.3 All work instructions will have at least an initial Activity Hazard Assessment (AHA) performed per INST-COPS-9.18.4, Hazard Assessment, and the resulting hazards and mitigations incorporated into appropriate steps.

3.1.3.1 Changes to conditions related to a procedure activity will require a new AHA to be performed and the new or changed hazards and mitigations incorporated into the instruction.

3.1.4 The extent of detail in work instructions should depend on the complexity of the task, the experience and training of the user(s), the frequency of performance, and the significance of the consequences of error.

3.1.5 Work instruction preparation, *verificatio*n (see def.), and validation should receive high-level attention of management personnel.

3.2 Work Instruction Requirements

3.2.1 The scope and applicability of individual instructions should be readily apparent.

3.2.2 Development of operations Instructions must use objective performance standards and avoid subjective instruction that would lead to broad interpretation or inconsistent performance.

3.2.3 Instructions should incorporate appropriate information from applicable source documents, such as the facility design documents, safety analysis documents, and vendor technical manuals.

3.2.4 Prerequisites and initial conditions should be detailed. Careful consideration should be given to the location of this information within the instruction in order to help ensure that the intent of the instruction is understood.

3.2.5 Any equipment, tools, or testing equipment should be verified operable, calibrated, or inspected and in good condition where possible, before implementing any test procedure, to ensure that they function as expected during the test. These verifications should be identified in the prerequisite section.

3.2.6 *Hold points* (see def.) or steps requiring *independent verification* (see def.), *dual verification* (see def.), and/or approval must be clearly delineated.

3.2.7 Define any unusual or unfamiliar terms that are used in an instruction.

3.2.8 Instructions should be easily understood and actions should be clearly stated.

3.2.9 Instructions should contain only one action per step.

3.2.10 Instructions should contain sufficient but not excessive detail.

3.2.11 The skill level, experience, and training of the users shall be considered when developing work instructions.

3.2.12 Warnings, notes, and cautions should appear on the same page as the step to which they apply.

3.2.13 Instructions should be technically and administratively accurate (i.e., the instructions and information should be correct; referenced documents should be correctly identified; and necessary instructions should be present to guide the user when transferring between procedures).

3.2.14 Individual sign-offs shall be provided for selected critical steps. One sign-off should not be applied to more than one action.

3.2.15 Limits and/or tolerances for operating parameters shall be specified and shall be consistent with the readable accuracy of instrumentation.

3.2.16 Users should not be required to perform mental arithmetic to determine if a specified parameter is acceptable.

3.2.17 *Acceptance criteria* (see def.) for surveillance or test procedures shall be easily discerned, including tolerances and units. If calculations are needed to compare data to acceptance criteria, the calculations shall be clearly explained.

3.2.18 Sequence of procedural steps shall conform to the normal or expected operational sequence.

3.2.19 Work instructions should be developed with consideration for the human-factor aspects of their intended use. References to components should exactly match drawing and label-plate identifiers, units should be the same as those marked on applicable instrumentation, and charts and graphs should be easily read and interpreted. Important factors (such as operating limits, warning, cautions, etc.) should be highlighted.

3.2.20 Portions or steps of other procedures or instructions that are used or referred to when performing an instruction should be specifically identified within the instructions to alleviate confusion when transferring between instructions.

3.2.21 Component or system shutdown and restoration requirements following shutdown, surveillance, or test activity should be specific and controlled by the instruction.

3.3 Work Instruction Format

The format of each instruction to be prepared in accordance with this procedure is described below. An electronic template available from Document Services may be used to ensure consistency with these format requirements.

Layout of individual pages of work instructions shall be consistent with the layout used in this document. Specifically, headers and footers, page numbering, and page margins shall appear as they are formatted in this document.

Forms generated as part of the instruction are controlled as individual controlled documents and are not included as a part of a work instruction but shall be referenced in the procedure only.

When appropriate, a copy of a form may be included in a work instruction as an exhibit when clarification or identification is required for use of the procedure.

3.3.1 Cover Sheet

3.3.1.1 The cover sheet provides a means for the user to verify that the procedure is appropriate for the task at hand and that the procedure is approved.

3.3.1.2 Specifically, it provides a simple descriptive title that identifies the system, equipment, process, or activity described in the procedure.

3.3.1.3 The cover sheet shall be the first page of the work instruction.

NOTE: *Periodic review dates are tracked in EDMS per MP-DOCS-18.4. As instructions are revised, the periodic review date will be removed from the coversheet.*

(DOE O 5480.19)

3.3.1.4 Cover sheets shall be formatted as shown in Appendix A, Work Instruction Cover Sheet Format.

3.3.1.4.1 If the instruction is a controlled activity procedure, it will be so stated on the cover page.

3.3.2 Table of Contents

3.3.2.1 A table of contents will be included with each instruction. The table of contents assists users in locating the portions of the procedure needed for a specific operation and is useful for locating appendices.

3.3.2.2 The table of contents shall list the procedure section and subsection headings and the titles of appendices exactly as they appear in the procedure.

3.3.2.3 The table of contents shall identify at the right margin, the number of the page on which the heading or title first appears.

3.3.2.4 The table of contents page shall be a separate page and shall immediately follow the cover sheet.

3.3.3 Purpose/Scope

3.3.3.1 The purpose and scope of the instruction including the applicability of the instruction shall be identified in the first section of the instruction and shall appear on the first page immediately following the Table of Contents.

3.3.3.2 The purpose and scope should be as specific as necessary and provide sufficient detail so that anyone using it may understand the purpose and applicability of the instruction.

3.3.3.3 The purpose and scope shall be major Section 1.0.

3.3.4 Roles and Responsibilities

3.3.4.1 The roles and responsibilities shall summarize responsibilities of all individuals (by job title) who perform actions within the instruction.

3.3.4.2 Roles and responsibilities shall be listed in table format.

3.3.4.3 The roles and responsibilities shall be major Section 2.0.

3.3.5 Precautions and Limitations (P&Ls)/Prerequisites

Subsections to the Precautions and Limitations/Prerequisites section should include the following items. When any of these items are not required or are inappropriate to the instruction, they may be omitted.

3.3.5.1 The P&L section delineates precautions that affect the entire procedure or that occur at more than one point in the procedure.

3.3.5.1.1 Write P&L to inform users of hazardous conditions including their potential effects.

3.3.5.1.2 Precautions should alert procedure users to actions and conditions that represent potential hazards to personnel or possible damage to equipment or they shall establish abnormal conditions.

3.3.5.1.3 Limitations define boundaries that are not to be exceeded.

3.3.5.1.4 Do not present user actions in the precautions and limitations section.

3.3.5.1.5 P&Ls must be under the control of the Operator to implement.

3.3.5.1.6 Avoid generic P&Ls that are part of a job description, cited on an approved signed approved method of work (AMOW), or inherent in the task.

3.3.5.1.7 Identify the hazardous conditions that exist during the entire procedure or occur at more than one point in the procedure.

3.3.5.1.8 Actions required by the user to mitigate the consequences of hazards shall be listed in the body of the instruction immediately preceding the step in which the hazard is presented.

3.3.5.2 The prerequisites section identifies actions that must be completed by the user and requirements that must be met and/or signed off before the user continues with the procedure.

3.3.5.2.1 The following items should be considered when determining prerequisite actions:

- Planning and coordination
- Performance documents
- Special tools, equipment, parts, and supplies
- Field preparations
- *Approvals* (see def.) and *notifications* (see def.)
- Within the control of the operator to implement.

3.3.5.3 The P&L/Prerequisite section shall be major Section 3.0.

3.3.6 Instructions

3.3.6.1 The instruction section identifies, using sub-sections, the step-by-step sequence of activities to be performed including acceptance criteria (where applicable), and the assigned responsibility for accomplishing activities.

3.3.6.2 The instruction section shall be specific in context and shall include appropriate reporting requirements if required for assuring that important activities have been satisfactorily accomplished.

3.3.6.3 Subsections to the instructions section should include the following items. When any of these items are not required or are inappropriate to the instruction, they may be omitted.

3.3.6.3.1 Performance activities contain the action steps that prescribe the principal tasks and subtasks of the procedure and shall be organized in the order that they will be performed.

3.3.6.3.2 Divide performance sections into subsections that logically group related activities.

3.3.6.3.3 Use headings for each subsection that reflect the activity rather than a generic title (for example, “Removing the Actuator,” rather than “Actuator”).

3.3.6.3.4 Write the specific action steps within the performance sections in accordance with the requirements of Section 3.4 of this procedure.

3.3.6.3.5 Cautions and Warnings shall be formatted as shown in the example in Section 3.6 of this procedure.

3.3.6.3.6 Post-performance activities stipulates actions required to close out the activity including testing, restoration, and compiling results.

3.3.6.4 The instruction section shall be major Section 4.0.

3.3.7 Definitions

3.3.7.1 The definition section shall define words and phrases having a special meaning or application within the instruction.

3.3.7.2 The first reference of a word that is listed in the definition section of an instruction shall be italicized with “(see def.)” after the word.

3.3.7.3 Definitions shall be listed in the same format as in this procedure.

3.3.7.4 The definition section shall be major Section 5.0.

3.3.8 References

3.3.8.1 This reference section shall identify only documents or procedures that interface with and are discussed within the instruction.

3.3.8.2 All references shall list the document number and complete title. The revision level shall appear with the reference only if a specific revision level must be followed.

3.3.8.3 References shall be listed in the same format as in this procedure.

3.3.8.4 The references section shall be major Section 6.0.

3.3.9 Records

3.3.9.1 Identify the specific documents that shall be generated by implementation or execution of the work instruction.

3.3.9.2 Records identified shall be listed, in table format, along with a categorization and disposition statement.

3.3.9.3 The records section shall be major Section 7.0.

3.3.10 Exhibits

3.3.10.1 This section lists exhibits that are included with the instruction. Exhibits may include representations of forms, maps, information tags, etc., and should appear at any point in an instruction. This section should be only a list, by title, of the aggregate exhibits used in the procedure.

3.3.10.2 The list of exhibits shall be listed in the same format as in this procedure.

3.3.10.3 The exhibits section shall be major Section 8.0.

3.3.10.4 If there are no exhibits associated with the procedure this section shall list “None.”

3.3.11 Revision Log

3.3.11.1 The revision log identifies the most current revision to the instruction including the effective date of approval of the revision.

3.3.11.2 A revision log shall be included with each instruction.

3.3.11.3 The revision log shall be the last Appendix in Section 9.0, Appendices.

3.3.11.4 The revision log should provide a summary of changes made for each revision with enough detail for a user to have a general understanding of the changes made.

3.3.12 Appendices

Appendix supplementary material is placed at the end of a procedure, and includes information more conveniently located after the main body of a procedure including forms, tables, figures, and graphs.

3.3.12.1 Lists the appendices applicable to the instruction.

3.3.12.2 Provide an appendix when the material and function of the procedure requires it.

3.3.12.3 Identify appendices with capital letters (Appendix A, Appendix B, etc.).

3.3.12.4 Number the pages of an appendix with the letter identifying the appendix, the page number within the appendix, and the total number of pages within the appendix (for example, “A1 of A6”) to ensure that all pages are available if the appendix is detached from the main body of the procedure.

3.3.12.5 Appendices shall be referenced within the text of the procedure.

3.3.12.6 Avoid using vendor information as appendices if possible. Integrate approved vendor information into the instruction, rather than referencing the information.

3.3.12.7 The appendices section shall be major Section 9.0.

3.4 Writing Action Steps

The basic element of an action step is an imperative sentence–a command to perform a specific action. An action step answers the question "what is to be done?" Additional elements, such as cautions and condition statements, add precision and detail to instructions.

NOTE: *Horizontal bars shown preceding and following examples throughout this procedure are not to be used in work instructions to highlight notes and other items. The use of horizontal bars is used only in this procedure to distinguish between the procedural text and examples of proper formatting*

3.4.1 Basic Action Steps

3.4.1.1 The steps need to appear in the order in which they are to be accomplished unless other options are clearly specified.

3.4.1.2 Start the basic action step with a singular present tense *action verb* (see def.) such as start, stop, open, close, etc. (refer to Appendix B).

3.4.1.3 Follow the verb with the direct object unless it is a conditional action step.

3.4.1.4 Describe the direct object of the verb.

3.4.1.5 Steps must be within the control and ability of the designated performer to implement.

3.4.1.6 Identify equipment precisely as it is in the facility.

3.4.1.6.1 If the equipment is not labeled within the facility, use equipment nomenclature precisely as it appears on the latest revision to the applicable engineering drawing or specifications.

3.4.1.6.2 Avoid using acronyms and abbreviations when writing action steps, particularly for short, simple words and terms.

3.4.1.6.3 If an acronym or abbreviation is used, it must:

- Be easily understood by the users
- Have a standardized and unique meaning for the users
- Be listed in the approved acronyms and abbreviations list found on the AMWTP internal web page.

3.4.1.6.3.1 Provide corrections to the approved acronyms and abbreviations list to the Document Services Manager.

3.4.1.7 Complete the basic action step with supportive information about the action verb and the direct object. Supportive information includes further description of the object and the recipient of the object.

3.4.1.8 Select the simplest most direct terminology to convey the correct meaning.

3.4.1.9 Avoid ambiguous words like almost, near, approximately, etc.

3.4.1.10 Avoid using the action word “verify” unless the method used for verification is included.

3.4.1.11 Use consistent and correct terminology, grammar, and punctuation.

3.4.1.12 Do not use the words shall, must, or will (or similar words) in steps unless such language is required by other contractual requirements.

3.4.1.13 Organize steps in order of performance unless otherwise stated, and place any necessary preparatory steps directly before the step that requires the preparatory action.

3.4.1.14 Ensure any step started is completed on the same page.

3.4.1.15 Avoid unnecessary information in action steps.

3.4.1.16 Use emphasis techniques (for example, **bold**, *italics*, or underlining) to highlight important information, with the following constraints: (a) do not use all capital letters for blocks of text, (b) do not capitalize the first letter of any words unless they are formal, proper nouns in accordance with standard American English usage or they are the first word of a sentence, and (c) avoid the overuse of multiple emphasis techniques.

3.4.1.17 Specify numbers in the procedures at the same precision that can be read from the instruments.

3.4.1.18 Avoid requiring users to make conversions from one unit of measure to another whenever possible. Provide an aid for the user if conversions are essential. Do not require mental calculations.

3.4.2 Action Step Performer Designation

3.4.2.1 If several people with different job titles or functions perform actions, each person must be identified by either job title or function in the step he or she must perform. If each performer completes several steps in a series, these steps should be written as sub-steps below the parent step that directs who is to perform them.

3.4.2.2 If someone other than the primary procedure user is responsible for performing an action step, identify the person to perform the task directly above the affected action step. See Example 3-1 that follows.

Example 3-1: Identification of a performer of action step

4.2.7.9 **Mechanic:** Torque bolts with torque wrench set at 90 foot-pounds.

4.2.7.10 **QA Inspector:** Ensure that head bolts are torqued to 90 foot-pounds.

3.4.2.3 If there are many performers or frequent changes between performers, designating the performer responsible for each step will improve clarity.

3.4.3 Conditional Action Steps

3.4.3.1 Conditional action steps are used when a decision is based upon the occurrence of a condition or a combination of conditions. The use of conditional action steps is extremely important in technical procedures as they structure the decisions required by the user. Conditional action steps use the following logic terminology:

A. **IF** or **WHEN** to present the condition to the user

B. **THEN** to present the action

C. **OR** or **AND** to define more complex conditions or actions

D. **NOT** to negate the condition.

3.4.3.2 Do not use words, such as *except*, *unless*, *but*, *only*, *before*, or *while* to present conditional information.

3.4.3.3 Use **WHEN** to present a condition or event that is expected to occur.

3.4.3.4 Use **IF** to present a condition that is possible but not expected.

3.4.3.5 Emphasize conditional *logic terms* (see def.) by both capitalizing and bold highlighting them.

3.4.3.6 Describe the condition first, then the action to be taken if the condition applies.

3.4.3.7 Avoid using both **AND** and **OR** in the same conditional statement, since the resulting logic can be ambiguous and hard to follow.

3.4.4 Non-Sequential Action Steps

3.4.4.1 Instruction users should normally perform action steps in the order presented unless specifically directed otherwise by either the instruction or management.

3.4.4.2 When it is not necessary to perform steps sequentially, then sequence the action steps according to usability criteria, such as according to equipment or control board layout, to reduce opportunities for error.

3.4.4.3 If a series of action steps may be performed non-sequentially, state this as a note prior to the first step.

3.4.4.4 Only where inadvertently skipping an action poses severe safety or health consequences, consider providing a check off on an appropriate form for each of the actions in order to reduce the possibility of skipping one or more of the actions.

3.4.5 Action Steps Containing Verifications, Notifications, and Data Recording

These three types of steps have many similarities, but each serves a unique purpose. AMWTP uses forms that correspond with procedures for sign-off purposes. Incorporate sign-offs per Section 3.9.

3.4.5.1 Verification action steps provide assurance that a specific activity has occurred or that a stated condition exists. In this step, manipulation by the user may be required. These steps usually start with “Verify,” “Check,” or “Ensure.”

3.4.5.1.1 If the condition to be verified or checked is not found, appropriate actions to be taken will be provided.

3.4.5.1.2 “Verify” is used to determine if a parameter has assumed a specific value or to see if a specific action has been carried out and shall include the method for performing the verification.

3.4.5.1.3 “Check” calls for a comparison with stated requirements.

3.4.5.1.4 "Ensure" could require additional action by the user to reach a specific value or to complete an action.

3.4.5.2 Notification action steps require reporting when given criteria are met and will include the method for making the notification.

3.4.5.3 *Data recording* (see def.) action steps direct the user to record desired data and will include the method for recording. Data entry will be typed in boldface print and upper case letters immediately before the step that must be completed. See Example 3-2 that follows.

Example 3-2: Identification of data entry

DATA ENTRY

4.1.20 Record the time that the container was closed on Form-9876.

3.4.5.3.1 Data recording action steps specify required independent or dual verification and inspection action steps (the number of independent/dual verification and inspection action steps increase as the consequences of performance error increase).

3.4.5.3.2 They include directions for notifying other personnel as discrete action steps. Actions requiring notifications of others often include:

- System alignments to be performed.
- Systems to be removed from or returned to service.
- Alarms that may annunciate during the procedure.
- Equipment actuations that are expected to occur during performance of the procedure.

- Actions with electrical or mechanical interlocks involved (e.g., interlocks to be honored or overridden).
- The effects of precautions and limitations on the operating conditions, noting which equipment will be inoperative and which lights, alarms, or annunciators will react.
- Changes or special conditions established by the procedure that could affect or appear to affect other equipment or systems. For example, performing the procedure could involve mechanical or electrical bypass (lifted leads, inhibits, jumpers, and fuse removals) or other functional restrictions.

3.5 Hold Points

Hold points identify action steps requiring an inspection of the actions performed. Inspections of the results of an action step before initiating successive action steps are normally designated as hold points.

3.5.1 Hold points may involve quality assurance, radiological controls, engineering, or other technical disciplines.

3.5.2 Hold points are to be identified by a descriptive phrase that indicates the type of hold that is involved. It will be typed in boldface print and upper case letters immediately before the step that must be completed before proceeding. See Example 3-3 that follows.

Example 3-3: Identification of a Hold Point

RADIOLOGICAL HOLD

4.1.19 Perform radiological survey of valve internals.

3.6 Warnings and Cautions

Warnings and cautions attract attention to information that is essential to safe performance; they usually consist of the conditions, design limitations, practices, and procedures to be complied with to avoid loss of life, personal injury, health hazards, or damage to equipment.

3.6.1 Review potential hazards with facility technical specialists to determine warnings or cautions that need to be included.

3.6.2 Determine applicable steps of the instruction where the addition of information is necessary.

3.6.3 Review each action step and list the potential hazards in warning or caution format as shown in Example 3-4.

3.6.3.1 Warning alert users to conditions, practices, or procedures that must be observed to avoid potential hazards involving personnel, the public or the environment.

3.6.3.2 Cautions alert users to conditions, practices, or procedures that must be observed to avoid potential hazards involving products, equipment, and conditions adversely affecting site operations.

3.6.4 Position warnings and cautions so they are complete on one page and appear immediately before and on the same page as the action step(s) to which they apply.

3.6.5 Place warnings ahead of cautions whenever more than one type is used at the same point in a procedure.

3.6.6 Do not include action steps in warnings and cautions.

3.6.7 Write warnings and cautions as short, concise statements rather than as commands to distinguish them from action steps (for example, “Touching this wire will electrocute you.”). Do not embed an action step in a warning format (for example, do not rewrite the instruction “Shut the valve,” as “The valve should be shut”).

3.6.8 Ensure that cautions and warnings provide (a) a description of the hazardous condition, (b) the consequences of failing to heed the warning or caution, and (c) critical time considerations when time considerations are appropriate for the caution or warning.

3.6.9 Present the text of warnings and cautions using appropriate techniques to ensure visual identification. (Do not use all capital letters to distinguish warnings and cautions because they are hard for users to read.)

3.6.10 Include only one topic in each warning or caution.

3.6.11 If the danger is present during the entire procedure, place the warning or caution in the P&L section.

3.6.11.1 Repeat the information in P&L section as separate cautions or warnings within the body of the procedure as it applies to individual action steps using the format shown in Example 3-4 that follows.

Example 3-4: Identification of a Caution or Warning within the body of the instruction

CAUTION 1

Operating the generator at speeds less than 700 rpm may cause damage to the exciter.

CAUTION 2

In the event of a power failure, emergency equipment will start and overload the diesel if the diesel is isolated on the emergency bus during testing.

3.6.11.2 Avoid overusing warnings and cautions.

3.6.11.3 Number each warning or caution when more than one exists.

3.6.11.4 Include a step immediately after the warning or caution, yet before the step that presents the hazard, describing the actions to mitigate the consequences of the hazard. See Example 3-5 that follows.

Example 3-5: Identification of a hazard mitigation action following a warning or caution

WARNING

The actuator head assembly is spring-loaded and may eject the pivot assembly during disassembly.

4.5.8 Point the actuator and pit port(s) away from you and other workers during removal of the actuator head assembly.

4.5.9 Remove the actuator head assembly using special tool ST-4.

3.7 Notes

Notes call attention to important supplemental information and are used to assist the user in making decisions or improving task performance. The information can be a reminder of preparatory information needed to perform the activities of a procedure or action step.

3.7.1 Use notes to present information that assists the user in making decisions or improving task performance.

3.7.2 Excessive use of notes presents potential confusion to an instruction user and should be discouraged. Whenever possible, notes should be converted to action steps.

3.7.3 Notes repeated throughout an instruction should be converted to a general instruction or a P&L as appropriate.

3.7.4 Position notes so they are complete on one page and appear immediately before and on the same page as the action step(s) to which they apply.

3.7.5 Place warnings and cautions ahead of notes whenever more than one type is used at the same point in a procedure.

3.7.6 Do not include action steps in notes. Embedded actions will be removed from the note and written as action steps.

3.7.7 Avoid using the words *shall*, *must*, or *will* (or similar words) in notes, since these words represent requirements and implied actions.

3.7.8 The format for placing notes into instructions is shown in Example 3-6.

Example 3-6: Identification of a Note

NOTE: *A timed duration starts when fluid collection begins in Step 4.3.2 below.*

4.3.2 Collect fluid from the end of the hose (at the floor drain) into a graduated cylinder.

3.7.9 Write notes as short, concise statements rather than as commands to distinguish them from action steps (for example, "The following action step starts a timed duration.").

3.7.10 Use *italics* emphasis technique to distinguish notes from cautions or warnings.

3.7.11 Include only one topic in each note.

3.8 Requirements Identification

Some steps in instructions shall be identified as required to implement requirements from an external source, which could include, but is not limited to:

- RCRA Permit
- Quality Assurance Plan
- WIPP Requirements
- Documented Safety Analysis
- DOE Orders
- Contractual Requirements.

3.8.1 Identify *requirement rolldowns* (see def.) by placing the reference to the *source requirement* (see def.) in parentheses and bold letters, directly below the step to which it applies and right margin justified. See Example 3-7 that follows.

3.8.2 If a requirement rolldown applies to a step with sub-steps collectively, the roll-down reference should follow all sub-steps.

Example 3-7: Identification of a Rolldown Requirement

4.5.6 Perform an inspection of WMF-634 to detect leaking containers and deterioration of containers and the containment system caused by corrosion and other factors.

(HWMA/RCRA Permit)

3.9 Sign Offs

3.9.1 Sign offs are denoted within an instruction as shown in Example 3-8 below.

3.9.2 All sign offs are recorded on the appropriate form(s) for the instruction being worked.

Example 3-8: Identification of a sign-off by initials

SIGN OFF

4.3.21 Verify ISV Pump A discharge valve (ISV-A-D2) CLOSED. _____

3.9.2.1 If the action step is to be signed off by someone other than the principal user, or an independent witness or other second sign off is needed, place the title or function of the responsible person next to the SIGN OFF designator and in parentheses as shown in Example 3-9.

Example 3-9: Independent verification or second sign off of same action step showing sign off by initials.

SIGN OFF (Operations Technician)

SIGN OFF (Independent Verification)

4.2.2 Verify safety system pneumatic valve (ISV-P-2) CLOSED.

3.9.3 Do not combine two closely related actions each requiring a sign off into a single action step. Make two separate actions steps with individual sign offs.

3.9.4 In some instances, performing an action sign off depends on a condition or combination of conditions. Refer to Section 3.4.3.

4.0 DEFINITIONS

Acceptance Criteria. Criteria that provide a basis for determining whether an activity has succeeded or failed. Acceptance criteria may be qualitative or quantitative.

Action Verb. The part of speech used to indicate an action or state of being.

Approvals. Approvals are permission (OKs) from the responsible person(s) that an action or activity may take place. Approvals are usually obtained in written form, by signature or initials.

Content. Subjects, topics, and technical information contained in a procedure.

Continuous Action Steps. Action steps that apply for a period of time while the procedure is being executed.

Controlled Activity. Procedures that have been determined to require additional rigor during performance due to the complexity of the activity, the skills and training of the performers, the potential for errors during the performance of the procedure, and/or the potential significance of performing the procedure incorrectly. These procedures contain critical steps that if not performed as defined could result in significant impact(s) to the safety of workers, public, project or environment. The PORC is responsible for identifying these procedures using a graded approach and considering the factors discussed here.

Data Point. A discrete item of information. A data point is often quantitative but may be qualitative as well.

Data Recording. Writing down *data points* (see def.) to obtain a written record of particular conditions at a given time. Data may be recorded for QA purposes or for use in further calculations or verifications.

Dual Verification. Dual means that the person performing the verification will observe performance of the activity per MP-COPS-9.33, Conduct of Operations Performing Independent Verifications.

General Use. Procedures that have been determined, using a graded approach, to require a more moderate degree of rigor than controlled activity procedures, based on the complexity of the task, the potential for errors, and the potential significance of performing the procedure incorrectly. Activities that can be completed using the skills and training of the performer, or for which the performer may only need the procedure as a reference are typical candidates for classification as general use procedures.

Hold Point. An identified point in a procedure or instruction where users are required to wait until certain conditions exist or specific approvals or notifications have been made before continuing on in the procedure.

Independent Verification. Independent means that the person performing the verification will not be influenced by observation of, or involvement in, the activity that establishes the component position or status. For most operating activities, independence can best be achieved by separating the operation and the verification by time and distance. These verifications are performed per MP-COPS-9.33.

Logic Term. One of the six words used in conditional action steps to structure the condition and relate it to the action: IF, WHEN, THEN, AND, OR, and NOT.

Notification. Notifications inform the appropriate personnel that an action or activity is about to occur or has already occurred.

Requirement Rolldown . A requirement that originates from a higher tier document such as DOE Orders, federal requirements, etc. that is implemented by a lower tier procedure or instruction.

Source Requirements. Requirements implemented by the procedure.

Task. A well-defined unit of work having an identifiable beginning and end which is a measurable component of the duties and responsibilities of a specific job.

Verification. Verification involves action steps that direct users to verify if a parameter has assumed a specified value or to see if a specific action has been carried out, and, if it has not, to take actions to make it so. Verification checks for conformance with the criteria; it does not alter the status of equipment or the position of the component.

Work Instruction. Detailed written procedures that prescribe a process (a sequence of actions) to be performed to achieve a defined outcome. Work instructions may include Operational, Maintenance, Radiological, Quality, and Emergency as well as other functional area technical instructions and procedures.

5.0 REFERENCES

(1) DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities

(2) DOE/CBFO-92-1012, Quality Assurance Program Document (QAPD)

(3) HWMA/RCRA Permit

(4) INST-COPS-9.18.4, Hazard Assessment

(5) MP-CMNT-10.1, Maintenance Management

(6) MP-COPS-9.14, Operations Procedures

(7) MP-COPS-9.33, Conduct of Operations Performing Independent Verifications

(8) MP-DOCS-18.2, Records Management

(9) MP-DOCS-18.4, Document Control

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-DOCS-18.1, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Work Instruction Cover Sheet Format

Appendix B – List of Action Verbs

Appendix A –
Work Instruction Cover Sheet Format

INST-XX-XX, Rev. XA

Title of Procedure

(General Use)

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-XXXX.)	TBD
Replace with Name	Date
Replace with Title	

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

AMWTP Advanced Mixed Waste Treatment Project

INST-TOI-XX, Rev. XA
Expiration Date: TBD

Title of Procedure

(Controlled Activity)

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-XXXX.*) — TBD
Replace with Name — Date
Replace with Title

Verification of Effective Revision: (After verifying current revision, replace cover page on working copy if more space is needed)

Initials	Date	Initials	Date	Initials	Date	Initials	Date

Appendix B – List of Action Verbs

The following list of verbs is not intended to be comprehensive. Verbs are selected from this list where possible so that words have a meaning common to all performers. Avoid using terms that do not provide specific instructions unless they are followed by specifying information. For example, "increase" used without qualification is almost meaningless, but "increase flow to maintain level above the inlet standpipe" provides the necessary information. Many of these verbs have similar meanings. Once a verb has been selected for a related series of action steps, it should be used consistently.

VERB	**DEFINITION (as used in Action Steps)**
Actuate	Place into a specific state of functional performance.
Add	Increase the size or quantity.
Adjust	Make an incremental change or series of changes to arrive at a desired condition.
Align	Arrange equipment into a specific configuration to permit a specific operation.
Allow	Permit the completion of a specific action.
Announce	To make known publicly.
Assemble	Put together what is required to provide an operational or functional capability.
Attach	To fasten one thing to another.
Balance	Adjust several parameters at the same time at certain points in a system to specified values.
Barricade	To shut in or keep out with an obstruction.
Begin	Start an action or activity.
Bleed	Remove fluid from a piece of equipment at a restricted flow rate.
Block	Inhibit a capability of a specific system or piece of equipment.
Bolt	To attach or fasten with bolts.

Bypass	To circumvent a safety circuit (unless a single device provides for bypassing, such as a bypass switch, identify specific actions to bypass).
Calculate	To determine by computation (computation method should also be identified).
Change	To make different in some particular.
Charge	To load or fill (specific actions to charge should be included).
Check	Perform a comparison with stated requirements. No manipulation of equipment by the checker is involved.
Circle	To draw a circle around.
Clean	To rid of dirt, impurities, or extraneous matter.
Clear	To move people and/or objects away from.
Close	Manipulate a device to allow the flow of electricity or to prevent the flow of fluids, other materials, or light.
Collect	Cause the assembly of something in a fixed location or container.
Compare	Determine the relationship of the characteristics or values of different items, parameters, or conditions.
Complete	Fulfill or accomplish an instruction totally.
Consult	To ask for advice, to take counsel; to refer to.
Connect	Join, fasten, or fit to permit a desired capability
Continue	Maintain or resume the performance of an activity or condition.
Cool	Lower the temperature of equipment or an environment
Coordinate	Arrange for activity involving other personnel.
Correct	Alter to reestablish a desired activity or condition.
Count	To add together.
Cover	Protect or shelter equipment.

Cycle	Cause repetition of an action or activity.
Declare	To make known formally.
Decrease	Produce a smaller value.
Deenergize	Remove the supply of electrical power to equipment.
Depress	Manipulate to effect a specific position of a device.
Depressurize	To release gas or fluid pressure from.
Determine	To find out; to ascertain.
Discharge	To give outlet or vent to a fluid or other contents.
Disconnect	Separate or detach.
Discontinue	To cease to operate, administer, use, produce, or take.
Dispose	Remove from a specific location.
Don	To put on an article of wear.
Drain	Remove liquid from an enclosure or part of an enclosure, usually to empty.
Draw	To bring, take or pull out, as from a receptacle.
Energize	Provide equipment with electrical power.
Ensure	Confirm that an activity or condition has occurred in conformance with specified requirements (by action if necessary).
Enter	To make report of, set foot in.
Equalize	To make equal or uniform.
Establish	Bring about. Take necessary actions to cause a specified set of conditions to exist.
Estimate	Approximate the size, extent, or nature of a variable.
Evacuate	Vacate.

Evaluate	To assess; to determine the importance, size, or nature of; to appraise; to give a value to based on collected data.
Exit	To leave or withdraw.
Expedite	To accelerate the process or progress of.
Fill	Add fluid to a system or equipment to a prescribed point.
Filter	Pass fluid through a sized medium to stop the passage of unwanted material in the effluent.
Flush	Remove or clean with a washing action of a liquid.
Follow	Comply with an instruction.
Go	To Depart from a position in a procedure and resume at a different location in the procedure or in a different procedure.
Ground	Provide an electrical path to a system at zero potential.
Guide	To manage or direct movement of.
Hold	Maintain a position for equipment, a place in a procedure, or an act of retention.
Identify	Determine or make known the parameter value or condition as related to a procedure.
Implement	To carry out; to accomplish.
Increase	Produce a larger value.
Indicate	Make known an activity, parameter value, or condition.
Inflate	To blow full with air or gas.
Inform	To communicate knowledge.
Initiate	To begin a process, usually involving several action steps or actions.
Inject	To introduce a new element; to drive a fluid.
Insert	Place or position into; move control rods into the reactor core.

Inspect	To examine; to perform a critical visual observation or check for specific conditions; to test the condition of.
Install	Fix or fit into equipment or a system.
Instruct	Direct or command.
Interchange	To substitute two items, one for another.
Investigate	To search or inquire into.
Isolate	To shut off or remove from service.
Jumper	To make a connection between two circuit points not normally connected.
Label	To mark or identify.
Latch	To close or fasten.
Lift	Elevate to a higher level or remove, as in removing electrical leads or restrictions.
Limit	Restrict or impose bounds.
Locate	Determine or establish place or position.
Lock	Securely fasten, to prevent capability to function.
Log	To enter into a record of operations or progress.
Lower	Cause to move down or decrease position or value.
Lubricate	To apply a lubricant to.
Maintain	To hold or keep in any particular state or condition, especially in a state of efficiency or validity.
Minimize	To reduce to the smallest amount or degree.
Mix	Intermingle ingredients uniformly.
Monitor	Observe an activity, parameter value, or condition (usually on a continuous basis) to meet an instruction requirement.

Notify	Contact, advise, or communicate to make someone aware of an impending or completed activity, parameter value, or condition.
Observe	To watch carefully.
Obtain	To get or attain.
Open	Manipulate a device to prevent the flow of electricity or to allow the flow of fluids, other materials, or light.
Operate	Cause equipment or system to perform designed functions.
Pass	To go by; move by.
Perform	Carry out specified actions or action steps.
Place	To put or set in a desired location or position.
Plot	To represent graphically.
Plug	To connect or become connected, as in electrical plug; to stop or insert something.
Press	To act upon through thrusting force exerted in contact; to push.
Pressurize	To apply pressure within by filling with gas or liquid.
Prevent	To keep from happening.
Proceed	To go on in an orderly, regulated way.
Pull	To exert force upon so as to cause or tend to cause motion toward the force.
Purge	To make free of unwanted substance such as an impurity or foreign material.
Push	To press against.
Pump	Move a fluid in a piping system by the use of suction, pressure, or both.
Rack in	Insert a circuit breaker into its operating position.
Rack out	Withdraw a circuit breaker into its nonoperating position.

Raise	Cause to move up, or increase position or value.
Read	Obtain information visually.
Recirculate	Cause repetitive motion of a fluid in a system.
Reduce	Decrease a variable to meet a procedure requirement.
Refer to	Use specified information that is in another location or procedure.
Release	To set free from restraint or confinement.
Remove	To take off, move away, or eliminate.
Repair	To restore to a sound state.
Repeat	Do again.
Replace	Install an equivalent part or component.
Request	Ask.
Reset	Reestablish a piece of equipment, part, or component to a previous condition, parameter value, instrument set point, or mechanical position.
Resume	To begin again after cessation or interruption.
Return to	To go back to a previous action step in the procedure in effect.
Review	Examine with deliberation for confirmation or compliance to an instruction.
Rotate	Cause to turn on an axis.
Sample	Take a representative portion for the purpose of examination.
Secure	Fasten or make safe.
Select	To take by preference of fitness from a number or group; to pick out; to choose.
Send	Dispatch.
Separate	Move apart or detach.

Set	Adjust equipment to a specified value.
Shake	To agitate.
Shut down	Remove from operational status.
Silence	To stop from making noise.
Sound	To order, signal, or indicate by a sound.
Stabilize	To become stable, firm, steady.
Start	Originate the motion or function of an electrical or mechanical device.
Station	To assign a person to stand and remain at a certain place.
Stop	To halt movement or progress; to hold back; to halt.
Store	To place in reserve, to hold for later use.
Stroke	Operate a valve over its full travel. The travel time may be measured.
Subtract	To perform a subtraction.
Tag	Identify with a prescribed label.
Throttle	Adjust a valve to an intermediate position to obtain a desired parameter value.
Torque	To cause to twist or turn, as about an axis.
Transfer	To cause to pass from one to another.
Transport	To transfer or convey from one place to anther.
Trip	To manually activate a semiautomatic feature; to cause to fail or stop.
Turn	Adjust with a force on an actuator that positions form a circular movement.
Unlock	To unfasten the lock of.
Unplug	To remove from a socket or receptacle.
Update	To revise to include latest information or data.

Use	To avail oneself of; to employ; to utilize.
Vent	Release a gas or liquid confined under pressure.
Verify	Confirm, substantiate, and ensure that a specific activity has occurred or that a stated condition exists.
Walk	To move along on foot.
Weigh	To measure the heaviness of as by a scale.
Withdraw	To remove.
Work	To perform a task.

Records Management

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11544.)
Angie Morse
Quality Engineer

09/12/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/1/02	All	Initial issue. DCR-1089.
1	01/09/03	All	DCR-1676. Reflects process and editorial changes as a result of TrackWise™ Action Item #1549 & 1550.
2	02/21/03	8, 10, 17	DCR 2030. To incorporate text changes and references per CBFO document review. Update all CBFO QAPD references.
3	04/09/2003	All	DCR-2174. Process changes were required due to record keeping deficiencies identified during a WIPP Transportation Audit; the changes clarify record management requirements to ensure full compliance with CBFO 94 1012 *Quality Assurance Program Document*.
4	10/22/04	All	DCR-2861. Update definitions, storage requirements, and editorial corrections (i.e., formatting and style corrections).
5	2/13/06	All	DCR-4307. Reformat to MP format, total re-write of procedure for better flow of process and requirements identification.
6	06/28/06	Various	DCR-5095. Adequately and appropriately clarify WAP reference requirements within procedure. Editorial/formatting change for consistency to MP-DOCS-18.4, Form-1728, MP-DOCS-18.3.
7	08/23/2006	Pg. 9/Pg. 11	DCR-5257. Minor change to correct reference and fix grammar that had been changed in error during previous revision.
8	11/7/06	Various	DCR-5312. Revisions to incorporate 311 permit modification requirement changes, to update rolldown requirements, to incorporate changes to DOE/CBFO-94-1012, and to include some editorial/formatting changes.

AMWTP MANAGEMENT PROCEDURE		
MP-DOCS-18.2, Rev. 15	Issued: 09/12/12	Effective: 09/13/12
Records Management		

Revision Number	Date Approved	Pages Affected	Description of Revision
9	6/28/07	Throughout	DCR-5867-2. Reorganized procedure to better portray process flow and improvements. Enhanced Vital Records and Special Processed/Electronic Records to implement DOE order requirements. Restructured and combined appendix tables to better capture designations and dispositions and removed references to SCI due to no longer using for long term storage.
10	7/9/07	Various	DCR-6205. Minor change to correct headers and erroneous Appendix C citation.
11	01/02/08	Various	DCR-6441. Revised and consolidated record types and implemented the WIPP HWFP modification. Clarified instructions for validating QA records. Also added examples of page numbering.
12	06/02/08	Various	DCR-7132. Revised roles and responsibilities for Records Custodian to strengthen the direction they are given and reorganized Section 3.3 to better capture process flow.
13	11/25/08	Appendix B	DCR-7650. Revised to differentiate Non-Permanent WIPP, Facility Operating Records, and those that fall into both categories. Various clarifications throughout.
14	09/13/11	Various	DCR-10355. Revised to incorporate Form-2034; to capture new record types; to create new record categorizations and disposition types for ACL Lab records; and various editorial changes as documented on the DCR.
15	09/12/12	Various	DCR-11544. Updated to incorporate ACL record retention and disposition. Incorporated DOCS-BLUESHEET-05 and ITG-BLUESHEET-120.

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AMWTP MANAGEMENT PROCEDURE		
MP-DOCS-18.2, Rev. 15	Issued: 09/12/12	Effective: 09/13/12
Records Management		

1.0 PURPOSE/SCOPE

This procedure establishes the responsibilities, requirements, and processes for managing and storing records and Quality Assurance (*QA) records* (see def.) generated at the Advanced Mixed Waste Treatment Project (AMWTP). This procedure applies to all AMWTP personnel who engage in the record management process.

In addition to specific requirements cited, this entire document implements requirements from the QAPP-01, AMWTP Quality Assurance Program Plan; NQA-1 1989, ASME Nuclear Standards Quality Assurance Requirements for Nuclear Facility Applications; U.S. Department of Energy (DOE) Order 243.1, Records Management Program; 36 CFR 1228, Disposition of Federal Records; and 10 CFR 71.1, Communications and Records.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Records Officer (RO) and/or *Records Management Center* (RMC*;* see def.) Specialists	• Develops, coordinates, and directs the AMWTP records management program and procedures in accordance with applicable laws, regulations, and policies. **(DOE/CBFO-94-1012)** • Provides expertise and consulting services to organizational *Record Custodian* (see def.). • Maintain and coordinate activities within AMWTP RMC.
Managers	• Ensures that records management requirements/processes are implemented by their respective organizations. **(DOE/CBFO-94-1012)** • Appoints Records Custodians. • Performs *validation* (see def.) of QA records or assigns employee (designee) to perform validations. **(DOE/CBFO-94-1012)**

Performer	Responsibilities
Record Custodian (RC)	• Receives, stores, indexes, and/or submits records. Serves as the resource person for the respective organization. • Consults with the RO when record requirements are unclear. • Establishes and maintains controls for temporary storage in *Satellite File Location (SFLs;* see def.). • Implements records management requirements and processes. • Submits completed records to the AMWTP RMC.
Quality Assurance (QA)Department	• Performs independent annual assessment to ensure adequacy of process and implementation.
Employees	• Provides reasonable protection for *in-process records* (see def.). • Submits completed records to their organizational RC. • Validates records as assigned by management.

3.0 PROCEDURE

3.1 Records Management Program

3.1.1 RO: Establish a records management program that contains, at a minimum:

A. Procedures for the receipt and inspection of incoming records

B. Verification that QA records received are in agreement with the transmittal document

C. Instructions for legibility of records

D. Completed verifications via transmittal, receipt log entry, or equivalent process

E. Maintenance and processing of records at the RMCs

F. Method for submittal of completed records to the storage facility without unnecessary delay.

(DOE/CBFO-94-1012)

3.2 Appointing Records Custodians

3.2.1 Managers: Appoint RC(s) to coordinate and manage organizational records.

3.2.2 Send written notification (e-mail is sufficient) to the RO when an RC for a specific organization has been appointed.

(DOE/CBFO-94-1012)

3.2.3 RC: Complete required custodian training 0AWT1089 as requested by the RO.

3.2.4 RCs: Obtain assistance from the RO with implementation of record management requirements.

(DOE/CBFO-94-1012)

3.2.5 RO: Update approved list of RCs.

3.2.5.1 Ensure list is available on the approved AMWTP home page (EDMS Records search page).

3.2.5.2 Coordinate with the training organization to ensure that all appointed RCs have been trained.

(QAPP-01)

3.3 General Requirements

3.3.1 RO/RCs: Organize and implement a system of controls for receipt and storage, which include, as a minimum:

A. Maintenance of in-process records at the SFL or with the record generators out in the field

B. Provisions to permit a current and accurate assessment of the status of QA records

C. Method(s) for identifying the records that have been received.

(DOE/CBFO-94-1012)

3.4 Records Storage

NOTE 1: *Records may be stored using an electronic format as long as the documents are readily available to obtain a printed hard copy.*

(AMWTP HWMA/RCRA Permit)

NOTE 2: *Documents that will become records are identified in the Records section of implementing procedures. Personnel may refer to Appendix A, Examples of Typical QA Records, and Appendix B, Record Categories, Classification, Disposition, and Retention Matrix (including whether a record is WIPP related).*

3.4.1 All Employees: Provide reasonable protection for in-process records (such as for processing, review, or use) intended to become QA records from damage or loss until the records are submitted to the RC (including documents generated during field operations).

(DOE/CBFO-94-1012)

3.4.1.1 In-process records may be filed in metal cabinets under the following conditions:

- The record has not been validated as a QA record.
- The record can be *easily duplicated* (see def.) if damaged or lost.
- The record is stored in a metal cabinet located inside a building equipped with a fire sprinkler system.

3.4.2 Store QA records separately from non-QA records.

(DOE/CBFO-94-1012)

3.4.2.1 Submit all records to an RC when completed or no longer needed.

NOTE: *Due to sensitivity of the records, Security, Finance & Accounting and Human Resources are exempt from the 18 months requirement.*

3.4.3 Managers: When a record is being stored in an electronic system (i.e., Maximo, Costpoint, Trackwise, eSOMS, Adept, WTS, etc.) and is not scheduled to be submitted to Records Management, complete Form-2034, Electronic System Record Storage, Record Identification Form, and submit to Records Management.

3.4.4 RCs: If a record is needed for current business or regulatory purposes, temporarily store in SFLs until no longer needed, up to a maximum of 18 months.

(DOE/CBFO-94-1012)

3.4.4.1 Store inactive or completed QA records in a 1-hour fire rated container bearing a UL label (or equivalent) certifying one-hour fire protection.

(DOE/CBFO-94-1012)

3.4.5 RMC Specialists/RCs: Establish and maintain controlled access to storage cabinets to prevent loss, damage, or unauthorized removal of records.

(DOE/CBFO-94-1012)

3.4.5.1 Post the list of authorized personnel who are permitted access to records.

3.4.5.2 Escort personnel whose names do not appear on the access authorization list while they are accessing and reviewing records.

NOTE: *Retrieving a record for a limited amount of time (e.g., to make a copy) does not require check-in/check-out if the record is immediately returned.*

3.4.5.3 Establish a check-in/check-out system for traceability of records removed from cabinets.

3.4.5.4 Establish an index of completed SFL stored records.

3.4.6 RCs: On a routine basis, submit *inactive records* (see def.) or completed records to an RMC per Sections 3.5 and 3.6.

3.5 Record Validation and Verification

NOTE 1: *Appendix A provides a listing of those types of records that are generally considered as QA records and should be used as a guide in making the determination.*

NOTE 2: *Transuranic Waste Characterization required program QA Records are listed in Appendix B.*

NOTE 3: *Individual records are considered validated if stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated. If the nature of the record (such as magnetic tape, etc.) precludes stamping, initialing, or signing, other means of validation by knowledgeable personnel is allowed.*

(DOE/CBFO-94-1012)

NOTE 4: *Appendix A contains QA Record and examples.*

3.5.1 All Employees: Before submitting any record to a RC, determine whether the record is a QA record.

3.5.1.1 If the record is a QA record, make sure it is validated before it is submitted to the RC.

3.5.1.2 Manager or Assigned Validator: Validate QA records in accordance with the instructions on Form-1044, Record Transmittal and sign the form.

(DOE/CBFO-94-1012)

3.6 Indexing and Submittal

3.6.1 RCs: Remove all staples, paper clips, binder clips, file tabs, and sticky notes.

3.6.2 Separate records using colored paper or equivalent process when submitting more than one record and complete Page 2 of Form-1044.

NOTE: *If records are submitted in a scanned PDF format, the PDF software page numbering is sufficient.*

3.6.3 Number all pages of the record if submitted in hard copy form (e.g., 1 of 6 or 1/6).

3.6.4 Using Appendix B, categorize records as Waste Isolation Pilot Plant (WIPP), Facility Operating Records (FOR), *Vital Records* (see def.), or Miscellaneous Other Records, and record on the Form-1044.

3.6.4.1 Classify WIPP QA Records as *Lifetime* (see def.) or *Nonpermanent* (see def.).

(DOE/CBFO-94-1012)

3.6.5 Enter information onto Form-1044.

3.6.6 Ensure the record is complete (i.e., all attachments, enclosures, and pages are included).

NOTE: *Rather than using e-mail, scanned electronic records may be placed in \\Amws0025\enterprise\Records Check-in followed up by a notification to the Records Management e-mail address.*

3.6.7 Transmit hardcopy or scanned electronic records (preferred), and completed Form-1044, to the RMC.

3.6.8 RMC Specialist: Verify receipt of the record and ensure the record identified matches the provided description.

(DOE/CBFO-94-1012)

3.6.9 Enter records received on Form-1044 into the *approved records management system* (see def.).

(DOE/CBFO-94-1012)

3.6.10 When processing the records, verify the correct categorization, classification, and disposition code are used on the Form-1044.

3.6.10.1 Ensure categorization, classification, and disposition is appropriately entered on the index and into the approved records management system.

(DOE/CBFO-94-1012)

3.6.11 Sign in the applicable area on Form-1044.

3.6.12 Store completed records in RMC or transfer to long term storage, per Section 3.8 as appropriate.

3.7 Record Corrections/Changes

NOTE 1: *This section applies to all in-process, inactive, and submitted records.*

NOTE 2: *Superseded records are considered corrections and are handled accordingly.*

3.7.1 All Employees: If correction or change to a record is required, ensure the correction(s) and/or change(s) are completed in the following manner:

3.7.1.1 Use black or blue ink only and refrain from using highlighters when handwriting on records.

3.7.1.2 Place a single line through the incorrect information, ensuring the prior entry remains legible and initial and date.

3.7.1.3 If entire page is superseded, draw line from corner to corner and place new page behind.

(DOE/CBFO-94-1012)

NOTE: *The Training Department may use correspondence to indicate duplication of record.*

3.7.1.4 Stamp newly generated record "Duplicate Original" if the original record is lost or destroyed.

(DOE/CBFO-94-1012)

3.7.1.5 Do not correct records with correction fluids or tapes.

(DOE/CBFO-94-1012)

3.7.2 If supplemental information needs to be appended to an existing record, retrieve record per Section 3.11 (if necessary) and add to original record.

3.7.2.1 Update any applicable indexes or record tracking systems.

3.8 Long Term QA Record Storage

NOTE: *This entire section is applicable ONLY to RMC Specialists.*

3.8.1 Storage Facility

NOTE 1: *The AMWTP approved long term storage facility is the Idaho National Laboratory (INL) Records Storage Facility (IRSF), which houses records for the entire INL.*

NOTE 2: *The IRSF has been reviewed and approved by competent personnel in the field of Fire Protection and Quality Assurance to verify adequacy of protection of contents in order to meet National Archives and Records Administration (NARA; see def.) and NQA-1 requirements.*

(DOE/CBFO-94-1012; DOE O 243.1)

3.8.1.1 When long term storage is necessary, store and maintain AMWTP QA records at the IRSF records storage facility.

(DOE/CBFO-94-1012)

3.8.1.2 If the storage requirements above or in Section 3.4 cannot be met, then ensure duplicate records are created for *dual record storage* (see def.).

3.8.1.2.1 Dual store lifetime and nonpermanent WIPP records.

3.8.1.2.2 Store each record (the original and copy) at separate facilities that are sufficiently remote from each other to eliminate the chance of exposure to a simultaneous hazard.

3.8.1.2.3 When one of the separate storage methods is a scanned image, ensure the scanned image file is saved to a server that is backed up.

(DOE/CBFO-94-1012)

3.8.2 Box Accountability During Transit to Long-Term Storage

(DOE/CBFO-94-1012)

3.8.2.1 RMC Specialists: Generate a list of boxes ready for long term storage and forward list to IRSF point-of-contact.

3.8.2.2 Delivery Personnel: Confirm possession of the boxes listed, by signature and date on the list, prior to leaving the RMC.

3.8.2.3 RMC Specialists: Instruct IRSF personnel to confirm receipt of boxes delivered and return confirmation of receipt by e-mail to the RMC.

3.8.2.4 When confirmation is received, then transmit electronic index(s) for the box shipment to IRSF for the storage facility's use in box inventory and tracking.

3.9 Vital Records

NOTE: *PLN-PAIT-003, Disaster Recovery Plan, describes and outlines the AMWTP disaster recovery plan for business continuity which includes recovery of the electronic systems used for storing vital records.*

3.9.1 All Employees: Ensure that vital records (as identified in Appendix B) are compiled, maintained, updated, protected, and retrievable.

(DOE O 243.2)

3.10 Special Processed/Electronic Records

3.10.1 All Employees: Do not use electronic systems that are not regularly backed up and controlled (e.g., instant messaging) for conducting official business.

(DOE O 243.1)

3.10.2 Submit special processed records to the RMC to ensure adequate protection of special processed records to preclude damage from moisture, temperature, rodent infestation, excessive light, electromagnetic fields, or stacking, as appropriate for the type of record being stored. Special processed records include:

- Radiographs
- Photographs and negatives
- Microfilm
- Magnetic media.

(DOE/CBFO-94-1012)

3.10.3 RMC Specialists: Store and control records requiring special processing and control, such as software and related documentation or information on high-density media or optical disks, or hardware and software required to maintain and access records in fire rated cabinets in the RMC to ensure that the records are useable.

(DOE/CBFO-94-1012)

3.11 Records Retrieval

NOTE 1: *The approved records management system will provide for the accurate and efficient electronic retrieval of records without undue delay upon request.*

NOTE 2: *Retrieval of records generated prior to 2005, such as correspondence, transmittals, drawings, reports, calculations, etc., will require additional retrieval time.*

3.11.1 RCs: If an archived record needs to be retrieved, submit Form-1799, Records Request Form, or equivalent e-mail, to Records Management providing as much detail as possible to enable an adequate search.

3.11.2 RMC: Request the record from storage documenting Box #, date, time, on Form-1799/equivalent.

3.11.3 RC: Sign for the record, providing paper trail of chain of custody.

3.11.4 RMC: Hold Form-1799/equivalent until records are returned to the RMC.

(DOE/CBFO-94-1012)

NOTE: *Employee emergency/weekend access for retrieval of records from IRSF may be obtained by making prior arrangements with the RO or designee.*

3.11.5 RMC Specialists: Coordinate with the long term storage facility for retrieval of requested record.

3.11.5.1 If a copy is requested, provide a copy marked "information only" and return original to storage.

3.11.5.2 If the original is requested, check the record out to the requester.

3.11.5.3 RCs: When the record is no longer needed, return to the RMC to be placed back into storage.

3.12 Records Destruction

3.12.1 In cases of conflicting requirements concerning records retention or destruction, use the most stringent requirement to determine the final disposition.

(DOE/CBFO-94-1012)

3.12.2 RMC Specialists: Destroy QA Records ONLY IF the following conditions are met:

- The appropriately assigned NARA authorized disposition specifies destruction as depicted in Appendix B
- Regulatory requirements are satisfied
- Operational status permits the disposal of such records
- The related contractual requirements have been satisfied.

(DOE/CBFO-94-1012)

3.13 Records Management Evaluation

3.13.1 QA Department: Evaluate the records system at least annually to ensure that it is effective.

3.13.2 Document the evaluation ensuring the following as a minimum:

A. Indexed records are available and are in their proper location with the files

B. Control system is adequate

C. Storage areas are in good condition

D. Records and documents are not deteriorating due to improper storage practices or rough handling.

(DOE/CBFO-94-1012)

4.0 DEFINITIONS

Approved records management system. A networked, records database and indexing system that allows users to meet Department of Energy's (DOE) inventory requirements including record retention times, location of records and the ability to retrieve records.

Disposition authority. A standardized alphanumeric code assigned by the Idaho Department of Energy utilizing the National Archives and Records Administration. The code indicates the final actions to be taken by the Records Management Center regarding the filing, transferring, and storage of completed records.

Dual record storage. The act of storing duplicate copies of a record in separate facilities or containers that are located sufficiently remote from one another to eliminate the chance of exposure to a simultaneous hazard. Dual record storage is required when a single record storage facility is not available.

Easily duplicated. Ability to promptly recreate incomplete, damaged, or lost record.

Electronic record storage system. Any electronic system or database identified as storing completed records on a long-term basis.

Inactive record. Record that is no longer necessary to conduct the current business of an office and can be archived.

In-process record. Record that is incomplete, in use, and necessary to conduct current business and not validated as a QA record. Validated QA records received at the RMC are considered in-process until they are fully processed for long term storage.

Lifetime QA record. Quality records which would be of significant value in demonstrating capability for safe operation; maintaining, reworking, repairing, replacing, or modifying an item; determining the cause of an accident or malfunction of an item; provide required baseline data for in-service inspection. Subject to being turned over to CBFO at the project's end.

(DOE/CBFO-94-1012)

National Archives and Records Administration. An independent agency that establishes policies and procedures for managing records of the federal government and exercises final authority for approving the disposition of government records.

Nonpermanent QA record. Records that do not meet the requirements for Lifetime QA records, but provide objective evidence that the QA Program has been properly executed. Nonpermanent records have a value for a specific, limited time and as authorized by the National Archives and Records Administration disposition code, can be destroyed after that time. These records could be turned over to CBFO at project's end, or could be turned over to local DOE office.

QA record. A completed record or any authenticated portion of a record that provides objective evidence for the quality of items or activities. A QA record is a subset of records that require special controls. They may be original or reproducible copies, unless otherwise required, and shall be legible, accurate, and completed appropriate to the work accomplished. WIPP QA records are either classified as Lifetime or Nonpermanent (described separately within this section) and require validation.

(CBFO-94-1012)

Record custodian. Persons assigned to accept, accumulate, maintain, control, and temporarily store records for a given organization or functional area. Act as liaisons between the organization and the RMCs and are responsible for submitting completed and inactive records to an RMC.

Records Management Center. A central location for the coordination of AMWTP records and records processing activities. The site RMC is located in WMF-678, the EDF/Training RMC is located in EDF Room 116.

Satellite File Location. Designated area in the field or organizational locations where in-process records are accumulated, maintained, controlled, and temporarily stored by designated RCs until transferred to an RMC.

Validate/Validation/Validated QA Record. A certification as to the content of the record by those individuals with knowledge of the related facts, whether by direct personal knowledge or through the direct reports of others. Validation should not be confused with any subsequent reviews of the contents or an administrative check for completeness. Validated QA records are documents otherwise qualifying as records that have been stamped, initialed, or signed and dated by authorized personnel, or otherwise validated. Handwritten signatures are not required if the document is clearly identified as a statement by the reporting individual or organization.

Vital Records. Emergency operating records and legal and financial rights records required during and after an emergency or as part of the recovery from a disaster.

5.0 REFERENCES

(1) 10 CFR 71.1, Communications and Records

(2) 36 CFR 1228, Disposition of Federal Records

(3) DOE/CBFO-94-1012, Quality Assurance Program Document

(4) DOE Order 243.1, Records Management Program

(5) DOE Order 243.2, Vital Records

(6) AMWTP HWMA/RCRA Permit

(7) NQA-1 1989, ASME Nuclear Standards Quality Assurance Requirements for Nuclear Facility Applications

(8) PLN-PAIT-003, Disaster Recovery Plan

(9) QAPP-01, AMWTP Quality Assurance Program Plan

(10) Waste Isolation Pilot Plant Hazardous Waste Facility Permit, Waste Analysis Plan, Attachment B, NM4890139088-TSDF, New Mexico Environment Department, Santa Fe, New Mexico.

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-DOCS-18.2, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Form-1044, Record Transmittal	Same as record(s) being transmitted
Form-1799, Records Request Form	Destroy when records are returned to the RMC.
Form-2034, Electronic System Record Storage Record Identification Form	Dependent on the system and records being stored within the system.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Examples of Typical QA Records

Appendix B – Record Categories, Classification, Disposition, and Retention Matrix

Appendix A -
Examples of Typical QA Records

Designating every document as a *QA record* (see def.) hinders storage and retrieval of useful information. To provide an effective QA Records Management Program, all departments shall review those documents generated and determine which documents furnish evidence of "quality" activities. Disposition of these records shall be in accordance with Appendix B. Examples of QA records could include, but are not limited to, the following:

Administrative Records

- Records that document organizational structures or charters in order to show sufficient evidence that level of responsibility and authority has been established and documented.
- Acting manager notifications.

Quality Assurance

- Quality Assurance plans, procedures, manual, controlled documents
- Audit plans and reports
- Supplier evaluations
- Corrective Action Reports - Non-conformance, cause analysis, corrective action plans, deficiency reports
- Surveillances, Assessments, Management Assessments, Evaluations.

Design/Commissioning Documents

- Design specification and amendments
- Approved design change requests
- Design deviations and non-conformances
- Design Reports, Drawings, Criteria, Calculations and records of checks, procedures, system descriptions, process, and instrumentation diagrams, equipment qualification/acceptance documentation
- Reports of engineering surveillance of field activities.

Pre-Operational and Startup Records

- Component checkout test reports
- Proof of pressure test reports
- System operation test reports
- Final system adjustment data
- Initial plant – loading data
- Start-up and test procedures and results
- In-service inspection reports
- Inspection, repair, and replacement of principal items of structure systems, and components
- Periodic checks, inspections, and calibrations performed to verify that surveillance requirements are being met.

Operation & Maintenance Records

- Measuring and Test Equipment Records, Calibration Records, Review Records, Out Of Tolerance Evaluations, and Deviation Reports
- Maintenance and in-service inspection records
- Modification to controlled documents, and work orders
- Training and Qualification Records, Classroom, On-the-Job, Seminars, Testing, and Certifications
- Operating procedures
- Operating logs
- Calibration procedures and data
- Occurrence Reporting and Processing System Database.

Procurement Records

- Procurement specifications
- Purchase orders (un-priced) and amendments
- Procurement procedures
- Purchase's pre-award quality assurance surveys
- Supplier's quality assurance program manuals
- Source surveillance data plans
- Audit and surveillance reports
- Subcontracts
- Changes and modifications
- Receiving records
- Vendor data and supplier nonconformance reports.

Safety and Environmental Records

- Safety Analysis Reports (SARs)
- Environmental monitoring documentation
- Log and summary of recordable, occupational injuries and illnesses
- Soil and ground water data
- Waste management and shipment burial data
- Data complied on unplanned spills or leaks
- Records of radioactive gaseous waste discharge to atmosphere and radioactive liquid waste discharge to surface or ground water
- Radiation detection instrument calibration records
- Guides or procedures
- Safety management records
- Records pertaining to the operation of a hazardous waste treatment, storage, or disposal facility, including plans for inspection.

Appendix B -
Record Categories, Classification, Disposition, and Retention Matrix

QA records, as applicable, will be retained to the *disposition authority* (see def.) delineated in this Appendix for the duration of the project, or until transferred to DOE.

(AMWTP QAPP)(DOE/CBFO-94-1012)

Records relevant to an enforcement action under the WIPP Hazardous Waste Permit, regardless of assigned disposition, will be maintained until the New Mexico Environment Department (NMED) determines that they are no longer needed for enforcement action.

(DOE/CBFO-94-1012)

NOTE 1: *When a record falls into more than one category and disposition, apply the most stringent classification and disposition.*

NOTE 2: *Lists may not be all inclusive but will provide guidance. Records that are not specifically listed will be analyzed by the RMC for appropriate category and classification.*

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Lifetime WIPP Records • Field Sampling Data Forms • Field and Laboratory Chain of Custody Forms • Test Facility and Laboratory Batch Data Reports • Waste Stream Characterization Package • Sampling Plans • Data Reduction, Validation, and Reporting Documentation • Acceptable Knowledge Documentation • Waste Stream Profile Form • Characterization Information Summaries (Certified Drum Files) • DMS/WTS System Data • Correspondence related to any of the above.	**QA**	**ENV1-J-1** When complete, submit to RMC. Retain for **life of the project plus six years** or transfer to the WIPP Records Archive Facility at end of project/program. **(DOE/CBFO-94-1012)**

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Nonpermanent WIPP Records • Gas Canister Tags • Methods Performance/Demonstration Program Documentation • Sampling Equipment Certifications • Calculations and related Software Change Control (WIPP-related systems) • Analytical raw data • Procurement Documentation, including Vendor Data (WIPP-related) and vendor acceptance test plans • Approved Vendor List • WIPP-related procedures (all revs) • Audio/Video recordings (RTR, VE, etc.) • Correspondence related to any of the above.	**QA** Projects shall retain QA records for a minimum of ten years from the date of record generation. If the site ceases to operate, records shall be transferred before site closure. **(DOE/CBFO-94-1012)** Records, usually in the form of completed Forms, contain information specific to owner/operator of hazardous waste sites, which must be recorded, as it becomes available. These records document an activity, product, or service that has a positive or negative impact to the air, water, land, natural resources, vegetation, wildlife or surrounding population. **(MP-EC&P-7.17)** The generator shall maintain records for time periods equivalent to on-site records retention requirements, but not less than three years (or for time periods designated by other regulatory authorities). **(NTS WAC)**	**ENV1-J-1** Submit to RMC for long term storage. Destroy 10 years after submittal or transfer to the WIPP Records Archive Facility at end of project/program.
(Both) FOR / Nonpermanent WIPP Records • Nonconformance Documentation • QA Assessments and Surveillances • CA/Trackwise, Audit, Investigation, HSS-OE, and Root Cause Analysis Documentation (includes ORPS) Fact Findings and NCRs • Employee Training/Qualification Records, Classroom, On-the-Job, Testing, Certifications, and Rosters • QAPjP (all revisions) • M&TE calibration, Out of Tolerance, and Deviation Reports • Technical implementing proc (all revs) • Correspondence related to any of the above.		**ENV2-a-1-a** Submit to RMC for long term storage. Destroy 5 years after **LIFE of FACILITY** or transfer to WIPP Records Archive Facility or DOE-ID Records Storage Facility, as appropriate, at end of project/program.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Facility Operating Records (FOR) /RCRA • All (TRU, MLLW, LLW Offsite) Waste Receipt & Shipping Records • DOT related records • SWB Direct Load Packages • RadCon & Env Sample and Chain-of-Custody Records • Maintenance/In-Service Inspections and Work Orders • Operating Logs (retained in eSOMS) and Round Sheets • RCRA Inspection Records & Schedules • Environmental Determinations/Hazardous Waste Determinations • ORR, RA, MSA, and Start-up Implementation Documentation, Notification, & Objective Evidence • Authorization Basis (DSA & Permit) Implementation Documentation/OE • USQ Screens/Determinations • Engineering Documentation (As-Built Drawings, EDFs, FMPs, etc.) • Security Visitor Traffic Logs • Completed Emergency/Contingency/Spill Response Documentation • All Permit Documentation (includes modifications and applications) • Waste Minimization Documentation, including Shipment/Disposal Records (ex. Used Oil) • HEPA Filter Documentation & Reports • TSCA/PCB Documentation • MSDSs still in use (Vital Record) • Correspondence related to any of the above. **Analytical Chemistry Laboratory Facility Operating Records, including** • Facility (LTHC3) radionuclide inventory forms • Facility radionuclide inventory tracking logbook • Facility radionuclide inventory verifications • WMF-TR-14 facility daily round sheets • ACL briefing checklists • Time-sensitive chemical inspections	**QA** Records in the form of completed Forms (usually) that contain information specific to owner/operator of hazardous waste sites that must be recorded, as it becomes available. These records document an activity, product, or service that has a positive or negative impact to the air, water, land, natural resources, vegetation, wildlife or surrounding population. **(MP-EC&P-7.17)** The generator shall maintain records for time periods equivalent to on-site records retention requirements, but not less than three years (or for time periods designated by other regulatory authorities). **(NTS WAC)**	**ENV2-a-1-a** Submit to RMC for long term storage. Destroy 5 years after **LIFE of FACILITY**

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Vital Records • Emergency Plans and Procedures (EDMS Documents) • Orders of succession (EDMS Records) • Delegations of authority (EDMS Records) • Corporate payroll, finance, and budget information (Costpoint and Deltek) • Personnel (HR) and Benefits information (Costpoint) • Contracts and agreements (Maximo, EDMS Documents) • Legal and financial rights information • Obligations that impose financial risk (Maximo) • Documentation for electronic systems that manage above records (EDMS Documents)	The record designation is dependent on the actual record. Refer to the other categories and/or Appendix A to determine if a QA record. Vital records are emergency operating records that may be required during and after an emergency or as part of the recovery from a disaster. These records must be available as needed at or in the vicinity of emergency operating centers. Most AMWTP Vital records are within electronic systems as noted. **(DOE Order 243.2)**	Disposition is dependent on the actual record. Refer to one of the other categories for the disposition code and retention instructions.
Misc. Other Records The QA record designation for this entire category is dependent on the actual record. Using Appendix A as a guide, these records may or may not be QA records. * Denotes contractor-owned records.		
Employee/Personnel Files (From initial date of employment to date of separation) (SENSITIVE Vital Records) • Medical (includes fit tests, audio tests, drug screens, etc.) * • Human Resources * • Security • Union Grievance & Arbitration * • Correspondence related to any of the above		**A1-1.1** Cut off at time of separation Destroy 75 years after separation (if Security) or turned over to outgoing contractor during contract transition/project end.
• Records that relate to organization, staffing, procedures, and communications; • General e-mail correspondence not retained as with other disposition codes • Meeting minutes documenting routine activities. • Administrative reports relating to routine, daily business functions, recurring transactions, or activities. • Required employee communications, including routing slips and sign-off sheets used by management to communicate important information. • Organizational Delegations of Authority (Vital Record) • Office Systems Services Records related to service of telephone, pager, fax, and copy machine. • Operations Operator Aids and Aid Log/Index • Timely Orders/Short Term Instructions/Temporary Physical Change Records • MSDS's (No Longer Used) • Checklists used to ensure/document completion of work activities. • Correspondence related to any of the above		**A23-1-a** Submit to RMC Destroy 2 years after no longer needed.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Physical Security Records – • PSO Monthly Report • Alarm Operability Checklist • Security daily key issue log and Alarm Station Logs • Camera Guides and Passes • Key Receipt, Lost Reports, and Accountability Logs		**A18-1.1-a** Submit to RMC when no longer needed. Destroy 4 years after submittal.
• Administrative/non-Operational document case files. • Objective evidence demonstrating implementation of management improvement programs with a focus on streamlining operations, providing cost effectiveness, improving customer satisfaction, and continuing improvement of work processes or products, ex., 6-Sigma or Cost Savings Initiatives, ISMS, ISO14001, VPP. • Lessons Learned case files • Training/Course Materials (superseded) • Ergonomic Assessments and Building Ergonomic Walkdowns • Business system change control (excludes software change packages for WIPP-related systems) • Systems/Network Access Requests • Container Movement Forms (internal to the AMWTP) • Pre- and Post- Job Reviews • Tailgate and Required Reading rosters • Drill guides/scenarios (superseded) • Budget records; supplies and office services and equipment requests and receipts; and the use of office space and utilities (Vital Records) • Information used to track organization budget expenditures. • Payroll and Time/Attendance records (Vital Record) • Media clearing and sanitizing records • Property Management -managing, tracking, controlling, and excess or sale of Government furnished property (capital and non-capital (includes application for licensing and license, equipment history files for utilization of property items, manufacturer's statement of origin, equipment repair estimates, repair orders and billings, inspection reports, and move orders). • Correspondence related to any of the above.		**A16-1.2** Submit to RMC when complete, superseded, or obsolete. Destroy 5 years after submittal.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
Analytical Chemistry Laboratory (ACL) Records – • Laboratory quality trend reports • Staff signature lists • Analytical M&TE Out-of-tolerance notifications • Analytical software QA change/verification documentation • Chemical standard and reagent preparation records • Vendor chemical standard certificates of analysis/certificates of calibration • Instrument calibration and calibration verification data • Instrument quality control data • Control charts for analytical QC parameters • Performance evaluation program reports and data • Raw analytical data • Laboratory copies of analytical test reports • Analytical logbooks • Instrument quality control data • Method performance demonstration data • Analyst performance demonstration data • Sample management/custody/disposition records • Instrument/equipment maintenance records		**ENV5-d** Submit to RMC when complete, superseded, or obsolete. Destroy 10 years after submittal.
• Prime Contracts Information and associated files consisting of negotiated, signed contract(s) with the DOE and their contractors. Related documentation includes, but is not strictly limited to, background records, records depicting work scope, benefits, correspondence, cost/pricing, incentive fee provisions, regulatory compliance policies, and other contractual agreements; modifications; provisions; clauses; articles; and other such correlated documentation, e.g., Records generated by or in behalf of organizations or contractors documenting requests to and responses from DOE resulting in exemptions, waivers, or deviations from the parameters set forth by DOE. • All agreements between the Department and other signatory authorities. Agreements executed by DOE, contractor and the requesting Federal, State, local, tribal, domestic, or private organizations. Agreements stipulate contract length, provisions, articles, clauses, and other related matters. Files include subcontract agreements signed between contractor and subcontractors to perform a specific work scope in support of the larger contract. • Labor Management/Union related records agreements. • Correspondence related to any of the above.		**N1-434-95-5-a-1** Submit to RMC when no longer needed. Destroy 10 years after contract termination.

Record Category and Classification	QA Designation / Information	Disposition / Retention Instructions
• Non-WIPP related procurement files including contract, statement of work, requisitions, purchase orders, lease, bond, surety records, and related correspondence and papers pertaining to award administration, receipt, receiving acceptance inspection for payment for equipment, services, and acquisition of property **> $100,000 and construction contracts exceeding $2,000,000**. • Finance & Accounting/Travel Authorization Records (Vital) regardless of dollar value.		**A3-3-a-1-a** Submit to RMC after final payment, Destroy 6 years and 3 months after final payment.
• Non-WIPP related procurement and P-Card files including contract, statement of work, Requisitions, purchase orders, lease, bond, surety records, and related correspondence and papers pertaining to award administration, receipt, receiving acceptance inspection for payment for equipment, services, and acquisition of property **< $100,000 and construction contracts below $2,000, 000**.		**A3-3-a-1-b** Submit to RMC after final payment. . Destroy 3 years after final payment.
• Request for proposal (RFP)/Purchase Orders/Subcontract **FOR QUALITY SIGNIFICANT PROCUREMENTS** - Facility/equipment procurement packages exceeding $100,000 and construction exceeding $2,000, 000. Vendor trip reports/review meeting minutes, bid package/abstract evaluation, design review package/comments/resolutions for quality systems, structures, and components.		**A18-35-b** Submit to RMC after final payment. Destroy upon permanent removal of item from service or upon permanent termination of items use, unless the document will be applicable to a replacement item.
• Corporate-specific records (not related to DOE Contract Scope of Work) * • Unallowable financial records * • Legal records and litigation files * • Employee Human Resource files • Corporate-specific correspondence *		**Flagged in EDMS** Retain in RMC until contract end, then turn over to the outgoing contractor during transition.

Developing Management Procedures

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-8664.*) 10/15/09

Gail Brown
Document & Records Services Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	12/4/2001	All	Initial issue. DCR-2001-1067
1	6/23/2003	Page 1 & 3	DCR-2292, Change to incorporate recommendations from CBFO resulting from the WIPP Program Evaluation to 1) indicate that this document rolls down and implements requirements from the DOE CBFO QADP (CBFO-94-1012) as required by MP-DOCS-18.3 and 2) that work instructions are to be reviewed and approved in accordance with MP-DOCS-18.4
2	6/30/05	All	DCR-4396. Minor changes to apply Blue Sheet (DCR-4299) changes and to re-order sections for greater ease of use.
3	09/18/06	1.0	DCR-5355. Minor change to exempt Implementation Matrices from this format standard.
4	12/11/06	All	DCR-5528. Revised to clarify use of page numbering in appendices per AI 24076 and to rewrite requirements as steps. Added more information to Appendix A.
5	03/19/07	Global	DCR-5654. Remove “General Use” from cover sheet and header of Document, the requirement from MP-COPS-9.14 only applies to instructional documents. In Section 1 add exclusion for TRU documents.
6	03/20/08	Page 1, 8, 10, & A1	DCR-6803. Revised to support transportation transition to CCP and clarity.
7	10/15/09	Cover, 3.2.5.1, 3.2.10 Appendix A	DCR-8664. Revised to remove periodic review date from cover and clarify rolls/responsibilities, exhibits, and remove period review date from cover page example in Appendix A.

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Appendix A - Management Procedure Cover Sheet Format A1

1.0 PURPOSE/SCOPE

This procedure implements the requirements of QAPP-01, AMWTP Quality Assurance Program Plan, and the Department of Energy (DOE)/Carlsbad Field Office (CBFO) Quality Assurance Program Document (QAPD) which dictate the development of implementing procedures or other appropriate documentation for use during operation of the Advanced Mixed Waste Treatment Project (AMWTP). This procedure provides a standardized process for the development of accurate, complete, and usable management procedures (MPs) for the operation of the AMWTP. This document, in whole, implements the specific requirements of the CBFO QAPD.

This procedure is designed to assist writers, reviewers, administrators, subject matter experts, support personnel, and users involved in developing, writing, and using MPs by providing specific *format* (see def.) standards. It applies to all new MPs developed for use by the AMWTP and all pre-existing MPs as they are revised. This format standard does not apply to implementation matrices (IMs) previously designated as MPs and the following TRU Programs documents which must be formatted per CBFO guidelines:

- MP-TRUW-8.1, Certification Plan for INL Transuranic Waste
- MP-TRUW-8.2, Quality Assurance Project Plan.

Management procedures establish methods for implementing and integrating requirements, specifying roles and responsibilities for performance, as well as providing a standard for conducting business. An MP may be appropriate when describing programmatic execution of *roll down requirements* (see def.) from laws, regulations, DOE orders or standards, company objectives, and facility policies. Work instructions, on the other hand, provide specific direction for operating and maintaining systems and equipment to ensure the facility is maintained within its design basis and to support safe and reliable operation of the facility while ensuring environmental, safety, health, and quality compliance. (See MP-DOCS-18.1, Developing Written Work Instructions.)

Management procedures should assist users by presenting administrative and programmatic requirements clearly, concisely, and in proper sequence. This procedure provides a method for authors to ensure that procedures contribute to safe and efficient operations at the AMWTP.

Because MPs present administrative and programmatic requirements, rather than directing or authorizing work on systems or equipment, they should not need to contain precautions, cautions, or warnings.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
All Personnel	Develop, write, and use management procedures formatted to this standard.

3.0 PROCEDURE

3.1 Management Procedures Guidelines

3.1.1 Responsible Managers: Ensure that all new and revised MPs are reviewed and approved in accordance with the requirements of MP-DOCS-18.4, Document Control.

3.1.2 Ensure that the scope and applicability of individual MPs are readily apparent.

3.1.3 Define any unusual or unfamiliar terms that are used in an MP.

3.2 Management Procedure Format

NOTE: *The format for MPs to be prepared in accordance with this procedure is described below. Electronic templates available from Document Services may be used to ensure consistency with these format requirements.*

3.2.1 Cover Sheet

NOTE: *The* cover sheet *(see def.) is the first page of the procedure. It provides a means for the user to verify that the procedure is appropriate for the task at hand and that the procedure is approved.*

3.2.1.1 On the cover sheet, include a simple descriptive title that identifies the process or activity described in the procedure.

NOTE: *Periodic review dates are tracked in EDMS per MP-DOCS-18.4. As procedures are revised, the periodic review date will be removed from the coversheet.*

(DOE O 5480.19)

3.2.1.2 Format the cover sheet in accordance with the guidelines shown in Appendix A, Management Procedure Cover Sheet Format.

3.2.2 Revision Log

NOTE: *The* revision log *(see def.) identifies the most current revision to the procedure, including the effective date of approval of the revision.*

3.2.2.1 Include a revision log in each MP.

3.2.2.2 Place the revision log on a separate page, or pages, located at the front of the procedure immediately following the cover sheet.

3.2.3 Table of Contents

3.2.3.1 Include a *table of contents* (see def.) with each procedure.

3.2.3.2 Within the table of contents, list the procedure section and sub-section *headings* (see def.) and the titles of appendices exactly as they appear in the procedure.

3.2.3.3 Identify at the right margin the number of the page on which the heading or title first appears.

3.2.3.4 Place the table of contents on a separate page (or pages) immediately following the revision log.

3.2.4 Purpose/Scope

3.2.4.1 Place the purpose and scope of the procedure, including the applicability of the procedure, in the first section of the procedure on the first page immediately following the table of contents.

3.2.4.2 Make the purpose and scope as specific as necessary and provide sufficient detail so that anyone using it may understand the purpose and applicability of the procedure.

3.2.4.3 Number the purpose and scope section as major Section 1.0.

3.2.5 Roles and Responsibilities

3.2.5.1 The roles and responsibilities shall be in table format and shall summarize the responsibilities of all individuals (by job title) who perform actions within the procedure.

3.2.5.2 Number the roles and responsibilities section as major Section 2.0.

3.2.6 Procedure

3.2.6.1 In the procedure section, identify the requirements or steps to be followed by using sub-sections, including where appropriate, the person or organization assigned responsibility for those requirements.

3.2.6.2 In the procedure sub-sections, include the actions and requirements that prescribe the principal tasks and subtasks of the procedure.

3.2.6.2.1 Organize sub-section activities in the order that they will be performed.

3.2.6.3 Make the procedure section specific in context. Include appropriate reporting requirements if required for ensuring that important activities have been satisfactorily accomplished.

3.2.6.4 Do not include cautions or warnings in an MP.

3.2.6.5 Number the procedure section as major Section 3.0.

3.2.7 Definitions

3.2.7.1 In the definitions section, define words and phrases having a special meaning or application within the procedure.

3.2.7.2 List definitions in the same format as in this procedure.

3.2.7.3 Number the Definitions section as major Section 4.0.

3.2.7.4 If there are no definitions applicable to the procedure, write "None."

3.2.8 References

3.2.8.1 In the References section, identify only documents or procedures that interface with and are discussed within the procedure.

3.2.8.2 Include the document number and complete title of all references. If a specific revision level must be followed, include the required revision level with the reference.

3.2.8.3 List references in the same format as in this procedure.

3.2.8.4 Number the References section as major Section 5.0.

3.2.9 Records

NOTE: *Additional information on record categories, classification, disposition, and retention can be found in MP-DOCS-18.2, Records Management.*

3.2.9.1 In the Records section, identify the specific documents that are generated by implementation or execution of the MP. Include a statement as applicable to identify those documents that will be considered completed QA records and how they should be processed.

3.2.9.2 Number the Records section as major Section 6.0.

3.2.10 Exhibits

NOTE: Exhibits *(see def.) may include maps, information tags, etc. Exhibits may appear at any point in a procedure; this section is a only a list, by title, of the aggregate exhibits used in the procedure.*

3.2.10.1 In the Exhibits section, list the exhibits that are included with the procedure.

3.2.10.2 Format the list of exhibits the same as in this procedure.

3.2.10.3 Number the Exhibits section as major Section 7.0.

3.2.10.4 If there are no exhibits associated with the procedure, write "None."

3.2.11 Appendices

3.2.11.1 List the *appendices* (see def.) applicable to the instruction.

3.2.11.2 Provide an appendix when the material and function of the procedure require it.

3.2.11.3 Identify appendices with capital letters (Appendix A, Appendix B, etc.).

3.2.11.4 Number the pages of an appendix with the letter identifying the appendix, the page number within the appendix, and the total number of pages within the appendix (for example, "A1 of A6") to ensure all pages are available if the appendix is detached from the main body of the procedure.

3.2.11.5 Reference appendices within the text of the procedure.

3.2.11.6 Format the list of appendices the same as in this procedure.

3.2.11.7 Number the Appendices section as major Section 8.0.

3.2.11.8 If there are no appendices associated with the procedure, write "None."

NOTE: *Electronic templates are available from Document Services for assisting in meeting page-formatting requirements.*

3.2.12 Lay out the individual pages of MPs consistent with the layout used in this document. Specifically, format headers and footers, page numbering, and page margins as they are formatted in this document.

3.2.13 Only reference the forms associated with an MP, since forms are controlled as individual controlled documents and are not included as a part of an MP.

3.3 Writing Procedure or Requirement Steps

NOTE: *Steps in MPs at AMWTP have historically been written in two ways: some are written as action steps or commands and others are written as requirements or "shall" statements. Although both ways are acceptable, action steps (the method used in this procedure) are more direct and are preferred. The method selected for a particular procedure should be used consistently throughout the document.*

3.3.1 Select the simplest most direct terminology to convey the correct meaning.

3.3.2 Use consistent and correct terminology, grammar, and punctuation.

3.3.3 Organize steps in order of performance unless otherwise stated, and place any necessary preparatory steps directly before the step that requires the preparatory action.

3.3.4 Use emphasis techniques (for example, bold, italics, or underlining) to highlight important information, with the following constraints: (a) do not use all capital letters for blocks of text, (b) do not capitalize the first letter of any words unless they are formal, proper nouns in accordance with standard American English usage or they are the first word of a sentence, and (c) avoid the overuse of multiple emphasis techniques.

NOTE: *Horizontal bars are shown above and below examples in this procedure to distinguish between the procedural text and examples of proper formatting. They are not used in MPs to highlight notes or other items.*

3.4 Writing Procedural Notes

NOTE: Notes *(see def.) call attention to important supplemental information. Notes should be used to assist the user in making decisions or improving task performance. The information can be a reminder of preparatory information needed to perform the activities of a procedure or an action step.*

3.4.1 Position notes so they are complete on one page and appear immediately before and on the same page as the procedural step(s) to which they apply.

3.4.2 Format notes as shown in Example 3-1 below.

Example 3-1: Identification of a Note

NOTE: *Safety Significant SSC, as used in this procedure, distinguishes a specific category.*

3.4.3 Write notes as short, concise statements rather than as commands to distinguish them from action steps.

3.4.4 Use italics for the body of the note and use bold capitals for the word **NOTE**.

3.4.5 Include only one topic in each note.

3.4.6 If more than one note appears before the same step, number the notes as **NOTE 1**, **NOTE 2**, etc.

3.5 Identifying Requirements

NOTE: *Some steps in procedures will be required as a roll-down from an external requirement such as:*

- *RCRA Permit*
- *Quality Assurance Plan*
- *WIPP Requirements*
- *Documented Safety Analysis*
- *DOE Orders*
- *Contractual Requirements.*

3.5.1 Identify steps rolled down from an external requirement.

NOTE: *If the same rolled down requirement applies to an entire procedure (ex. DOE O 5480.19, Chapter X), it can be so stated in the scope and purpose section without being reiterated for each step.*

3.5.2 Place the reference to the requirement in parentheses and bold letters, directly below the step to which it applies and right margin justified.

3.5.3 Use the format illustrated in Example 3-2.

Example 3-2: Identification of a Roll-Down Requirement

3.7.2 If the DOE-ID Facility Representative or the DOE Program Manager reject the final report, prepare and submit a revised final report within 21 calendar days.

(DOE Order 232.1)

4.0 DEFINITIONS

Appendix. Supplementary material placed at the end of a procedure. Appendices include information more conveniently located after the main body of a procedure including forms, tables, figures, and graphs.

Cover Sheet. The first page of the procedure, which includes, as a minimum, the procedure title and page header.

Exhibit. Representations of forms, maps, information tags, etc, that are included throughout the procedure for clarification or example.

Format. A plan or layout for the organization of pages in a document, including the size, style, typeface, margins, etc.

Headings. Words or short phrases that introduce a section.

Note. Notes provide important supplemental information to users. This information is explanatory, and contains no action or command.

Referencing/references. Referencing instructions direct the users to temporarily abandon their place in the base procedure in order to perform action steps elsewhere in that procedure or in another procedure. When executing a reference, users always return to the base procedure action step after performing the referenced action step(s).

Revision Log. The revision log identifies the revision history of the procedure and its effective date.

Roll Down Requirement. A requirement that originates from a higher-tier document such as a DOE order, federal requirement, etc., that is implemented by a lower-tier procedure or instruction.

Table of contents. A listing of sections, sub-sections, and appendices that helps in locating those portions of the procedure.

5.0 REFERENCES

(1) DOE Order 232.1, Occurrence Reporting and Processing of Operations Information

(2) DOE/CBFO-94-1012, Quality Assurance Program Document (QAPD)

(3) MP-DOCS-18.1, Developing Written Work Instructions

(4) MP-DOCS-18.2, Records Management

(5) MP-DOCS-18.4, Document Control

(6) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(7) MP-TRUW-8.2, Quality Assurance Project Plan

(8) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-DOCS-18.3, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal

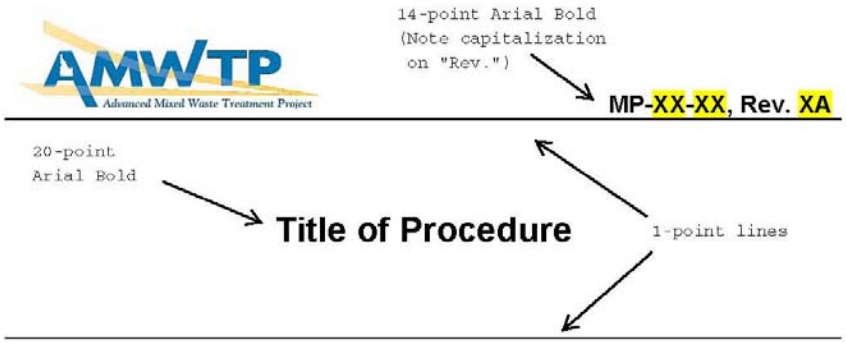
7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Management Procedure Cover Sheet Format

Appendix A -
Management Procedure Cover Sheet Format



Advanced Mixed Waste Treatment Project

16-point
Arial

EXAMPLE

12-point Times New Roman for all the approval block.
Left justify and italics for signature statement.
Left justify name and title.
Center date and word Date.

Approved:

(Signature on file. See DCR-XXXX.)
Replace with Name
Replace with Title

TBD
Date

Document Control

Advanced Mixed Waste Treatment Project

Approval:

(*Signature on file. See DCR-11581.*) 09/17/12

Date

AMWTP MANAGEMENT PROCEDURE		
MP-DOCS-18.4, Rev. 37	Issued: 09/17/12	Effective: 09/18/12
Document Control		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	09/04/02	All	Initial issue. DCR-2002-1367
0	09/06/02	All	Minor change to Effective Date. DCR-2002-1486
1	12/31/02	All	To reflect deletion of the "Enterprise" electronic document storage area, the addition of Appendix B for SPM/SQAO documents, changes to the Field Change process, and to add new section detailing SPM & SQAO review requirements. DCR-1527
2	02/18/03	Page 8 Section 4.1.7	DCR-1976. Add Step 4.1.7 as comment resolution from WIPP review.
3	4/24/03	All	Incorporate changes identified during a self-assessment, see DCR-2003-2073.
4	6/24/03	All	Incorporate changes identified by TRU Programs.
5	12/17/03	Pages: 9, 14,15,34, A3	Incorporate training changes that were made to FORM-1001, Rev 5 and controlled distribution changes. See DCR-2452
6	1/29/04	Page 39 Section 4.13.3.1.1	DCR-2635. Re-wrote sentence to reflect certification changes. Also re-wrote sentence to Form-1001, Rev 6 to reflect certification.
7	2/11/04	Page A4	DCR-2700. Removed QA Mgr and ES&H Mgr as required reviewers.
8	3/24/04	Page 17, 4.4.4.1.5	DCR-2863. Provide clarification of requirements regarding the DOE notification of Minor Changes.
9	4/20/04	Page 12, 21, 36, A6	DCR-2932. Update procedure to reflect changes in the process of document control.
10	4/26/04	Page A4	DCR-2974. Minor Editorial Change
11	07/14/04	Appendix B	DCR-3176. Updated procedure list in Appendix B.
12	01/10/05	All	DCR-3175. Entire document revised to meet CBFO requirements and to incorporate process improvements. Address corrective actions from CBFO Audit A 04-22 (ref. AMWTP CAR 9442, CBFO CAR 04-041 and AMWTP CAR 9074). Change Form-1001 to make consistent with process improvement modifications in procedure. Make additional CBFO changes received on 01/06/05. Periodic review.

Revision Number	Date Approved	Pages Affected	Description of Revision
13	01/31/05	Appendix A	DCR-4119. Minor change to correct typos in QA review column and page numbers. Also corrected numbering in Block 22 of DCR form.
14	12/7/05	Entire Document	DCR-4162. Entire document revised to apply new MP format, apply DCR-4299 (blue sheet) changes, delete next day follow-up signatures, add CBFO on-line teleconferencing review process, revise Appendix A to current organizational/ownership structure, revise streamline review process, and make editorial clarifications throughout.
15	2/1/06	Appendix B	DCR-4766. Added note clarifying intent and updates of document designation list.
16	5/9/06	Throughout	DCR-4908. Incorporation use of Form-1728 to provide quality check on documents and case files (corrective action for CBFO CAR 06-017, AMWTP CAR 21421). Clarify field change process. Replace requirement for CBFO FYI copies of WIPP-related documents. Update document owner/required reviewer and document type lists (Appendix A). Make minor editorial and clarification changes throughout. Direct that SDCR numbers be provided if revised Forms are related WTS.
17	06/20/06	Appendix A Section 3.6	DCR-5038. Revise Required Reviewer list, allow Owner directed process improvements to be Field Changed, clarified the cancellation/supersede process and made and minor changes throughout.
18	08/04/06	Various	DCR-5181. Add CTR to miscellaneous other document codes in Appendix B and editorial changes. Add instruction to allow field changes to payload or transportation related instructions. The change must be forwarded to CBFO for review and approval.
19	9/11/06	Section 3.7.2 Appendices A and B	DCR-5232. Specify worker involvement and incorporate Field Use Validations, correct reviewers list, and update document type list.
20	01/05/07	Various	DCR-5490. Add several newly identified documents to Appendix C that must have DOE approval and update Appendix B. Remove SPQAO review/approval function to implement changes to DOE-CBFO-94-1012 QAPD Add NTS WCO review and approval function and strengthen periodic review process.

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Revision Number	Date Approved	Pages Affected	Description of Revision
21	6/28/07	Sections 3.6, 3.8, and Appendices A & C.	DCR-6074. Provide instructions for inserting Field Changes into controlled documents. Removed Document Owners from Appendix A and updated both Appendix B and C. Re-aligned responsibilities to Operations re-organization. Delineated review requirements for suspension DCRs generated by the Document Services for overdue periodic reviews. Strengthened training needs analysis process by reinstating Form-1010 as part of the case file. Minor process changes with respect to EDMS and editorial changes throughout.
22	11/28/07	Various	DCR-6322. Updated Appendices A, B, C, simplified the Form-1010 process and made corrections and clarifications throughout.
23	02/11/08	Various	DCR-6633. Clarify interface between Document Control and NFM approval for field changes, remove reference to Form-1006 which has been cancelled, and clarify "gap" reviews when incorporating field change revisions.
24	03/21/08	Various	DCR-6802. Update transition to CCP. Clarify step 3.6.10 to add effective date and time in block 15 on DCR form. Editorial changes per MP-DOCS-18.3.
25	05/01/08	Various	DCR-6989. Implement Blue Sheet process for global changes, clarify processing field changes for clarification changes and added "guides" to Appendix A for review.
26	8/14/08	Throughout	DCR-7335. Added requirement to complete on-line field change and controlled copy training when requested. Assigned distinct responsibility to shift supervisors for ensuring operations controlled copies are updated. Applied DOCS-BLUESHEET-01 changes. Clarified USQ evaluations and transmittal of documents to DOE-ID, strengthened validation process and adjusted Appendix A as needed. Strengthened Form Revision DCR usage and software quality for CAR 40286.

Revision Number	Date Approved	Pages Affected	Description of Revision
27	05/26/09	Throughout	DCR-8274. Added "Approved Reviewer". Removed non-required steps related to controlled copy return receipts and added annual controlled copy assessment for CAR 44451. Made updates generated from periodic review, i.e., updated appendices, added new steps to formalize existing process for FC approvals and WTS updates, removed steps that are no longer necessary for holding case files of pending documents and Correspondence Control.
28	10/15/09	Various	DCR-8645. Revised to clarify roles & responsibilities and submittals to DOE, revised process for documenting periodic reviews, removed steps for DCR longevity tracking, and clarified minimum reviewers for PAIT and CCP documents.
29	02/09/10	Various	DCR-8940. Revised to use TrackWise AIs instead of training tracking numbers, define line management, clarify use of partial or complete validations, obtain concurrence from validators, and add the Operations Excellence group to Appendix A.
30	05/19/10	Pg 8 and 17	DCR-9197. Revised to add interface between document revisions and potential FMPs being processed in answer to AI 52557 for CAR 48277.
31	10/7/10	Various	DCR-9515. Revised to add descriptions/definitions to document types in Appendix B (AI 53393), remove controlled copy responsibilities from SS, add review requirements for policies and various clarifications in Appendix A, and rewrite Section 3.11 to capture process for submitting AK documents to CBFO.
32	12/21/10	New Section 3.8	DCR-9739. Corrective Action for CAR 54018 to formalize new Temporary Operating Instruction (TOI) process.
33	3/2/11	Throughout	DCR-9875. Revised to strengthen the FC process with respect to requirement steps for CAR 57986 and revise Appendix A per various requests.

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Revision Number	Date Approved	Pages Affected	Description of Revision
34	09/15/11	Throughout	DCR-10185. Revised to incorporate DOCS-BLUESHEET-08**,** Analytical Chemistry Laboratory (ACL) procedure process and requirements, PORC review of operational instructions, change of validation types, expanding bluesheet definition to include transition specific changes, and updated Appendix A, Minimum Reviews.
35	7/23/12	Various	DCR-10665. Rewrote document to incorporate process improvements for the review process; updated language consistent with DOE O 422.1; added language to ensure the roles and responsibilities contained in the procedures are current with the actual organization structure. Added changes for USQ process applicability review and appropriate changes to transition responsibility of required reviews to the document owner. Added PLN-ADMN-02 to Appendix C.
36	08/28/12	Appendix C	DCR-11560. Added PD-ISM-01 to Appendix C.
37	09/17/12	Various	DCR-11581. Changed references to superseded documents STD-136 and STD-137 to MP-DOCS-18.8 and MP-DOCS-18.9, respectively; eliminated ACL from the FOI/OI/TOI as required reviewers.

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AMWTP MANAGEMENT PROCEDURE		
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Document Control		

1.0 PURPOSE/SCOPE

The purpose of this *procedure* (see def.) is to ensure that *controlled documents* (see def.), used to facilitate the operation and maintenance of the Advanced Mixed Waste Treatment Project (AMWTP) are:

A. Complete

B. Technically accurate

C. In compliance with regulatory/contractual requirements and standards

D. Usable and meet user needs

E. Appropriately implemented.

This procedure includes the activities necessary to enable document owners to create, change, review, validate, suspend, cancel/*supersede* (see def.), and perform *periodic reviews* (see def.) of their controlled documents. A change can be classified as a *field change* (see def.), a *minor change* (see def.), or a *document revision* (see def.). This procedure also includes activities for Document Control distribution and notification of issued documents.

(LST-COPS-01-IM)

The document review process identified in this procedure applies to any employee who proposes changes to, owns, develops, reviews, validates, evaluates, or approves AMWTP controlled documents, including Central Characterization Project (CCP) documents. This process applies to new and revised controlled documents. Engineering documents (i.e., EDFs, specifications, drawings, etc.) are controlled using MP-CD&M-11.1, Change Control. Documents designated by the document owner or designee as *one-time use reference documents* (see def.) are exempt from this procedure.

This procedure implements the requirements of MP-COPS-9.14, Operations Procedures and LST-COPS-01-IM, Conduct of Operations Implementation Matrix. Additionally this procedure implements:

- The requirements of the Documents and Records section of QAPP-01, Quality Assurance Program Plan
- Section C5 of MP-TRUW-8.2, Quality Assurance Project Plan; Section 5 of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste
- QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing
- PD-LLW-02, Nevada National Security Site Waste Certification Program Plan.

This process does not apply to the AMWTP Hazardous Waste Management Act/Resource Conservation Recovery Act (HWMA/RCRA) permit, air permits, or Toxic Substance Control Act permits for the submittal, modification and review process.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Document Control	• Manages the control, release, and distribution of controlled documents • Provides document numbers for new documents and one-time use reference documents • Maintains *case files* (see def.) for controlled documents that fall within the scope of this procedure • Tracks periodic reviews, open field changes, *temporary operating instructions* (TOIs, see def.), and open Form-1001, Document Change Request (DCR), hereinafter referred to as the DCR, and provides appropriate notifications to document owners • Initiates TrackWise action items prior to periodic review due dates and assigns to document owner • Coordinates document transmittals for all external documents.
Document Manager	• Has oversight of document changes for a *set of documents* (see def.) • Has final approval of document changes • Facilitates resolution of issues as needed • Has final approval of changes to the recommended list of document reviewers. **NOTE**: *Typically, the document manager will be the document owner's line manager, but for certain documents, the document manager may be a manager from a different discipline.*

Performer	Responsibilities
Document Owner/ Designee **NOTE:** *Where Document Owner is listed as performer, the "designee" applies throughout.*	• Ensures documents are complete, technically accurate, and in compliance with all applicable requirements • Ensures that periodic reviews are completed on or before the periodic review date • Develops DCRs and document drafts • Evaluates documents for implementation impacts and ensure reviews by affected process owners are completed • Identifies hazard assessment and *validation* (see def.) requirements for activity-based procedures • Ensures forms which contain embedded software formulas for which the results are used for operational or programmatic decisions have been validated • Ensures that any training requirements are completed for new or revised documents • Identifies the appropriate *knowledgeable reviewers* (see def.) for documents, using Appendix A, Suggested Minimum Knowledgeable Reviewers for Document Review and Approval, and assists in the resolution of review comments • Performs unreviewed safety question (USQ) process applicability reviews in accordance with LST-NSPC-02, Document Series and Types Exempted from the USQ Process • Ensures USQ evaluations are performed on new documents or document revisions, as required by MP-NSPC-3.2, Unreviewed Safety Question Process • Ensures the accuracy of the information contained in the *bluesheet* (see def.), when a bluesheet is needed by the document owner's respective functional area • Ensures the document manager is aware of the requested changes, is involved in resolutions of issues needing management support, and provides final approval • Establishes expiration dates for TOIs.

Performer	Responsibilities
Document Services	• Processes DCRs that have been submitted to document services to include coordinating document reviews • Prepares the documents for issue (e.g., editing, applying formatting standards per MP-DOCS-18.1, Developing Written Work Instructions, MP-DOCS-18.3, Developing Management Procedures, and submits to Document Control • Ensures all case files and documents are quality checked using Form-1728, Document and Case File QC Checklist • Prepares and assembles case file contents for submittal as quality records to Document Control when the document is ready for issue.
Knowledgeable Reviewer	• Reviews documents and provides comments/concurrence to new and revised documents in timeframe specified.
Appropriate Operations Manager, Plant Shift Manager (PSMs), *Subject Matter Expert* (SME; see def.), Shift Supervisor (SS)	• Ensures that changes to controlled documents are implemented on the *effective date* (see def.) of the changed document • Notifies personnel within their span of organizational responsibility when changes have been made to controlled documents • Interfaces with document owners, Document Control, and Document Services when process improvements/issues are identified which may warrant revisions to controlled documents • Coordinates/performs validations • Completes field change training when requested.
Training	• Reviews document changes for impact to training requirements and to determine if training and/or training materials need to be modified, revised, or developed • Provides a TrackWise action number, when required, for Block 13 of the DCR.
Qualified Unreviewed Safety Question Evaluator	• Completes *USQ evaluations* (see def.) in accordance with MP-NSPC-3.2.

Performer	Responsibilities
Site Project Manager (SPM)	• Reviews and approves new AMWTP controlled documents , and determines whether the document should be added to LST-Q&SI-01 • Reviews proposed changes to Waste Isolation Pilot Plant (*WIPP)-related* (see def.) documents to determine if Carlsbad Field Office (CBFO) review/approval is required due to changes affecting data quality objectives, or performance criteria • Provides itemized data quality objective (DQO) changes for submittal to CBFO • Reviews proposed field changes to WIPP-related documents and ensures that if they are revising approved methods subject to performance demonstration or affecting data quality requirements, they are submitted to CBFO for review/approval.
Nevada National Security Site Waste Certification Official (NNSS WCO)	• Reviews and approves new documents and *NNSS-related* (see def.) documents and field changes to determine if NNSS acceptance criteria are affected • Updates LST-LLW-03, NNSS Procedure Review List, as needed.
Plant Automation Information Technology (PAIT) Personnel	• Reviews and approves new documents and PAIT-related documents revisions and field changes • Reviews and approves the suspension of all PAIT-related documents listed in LST-PAIT-01, WTS/PVCS Affected Procedures and Forms.
Quality Assurance (QA)	• Reviews documents that translate contractual, regulatory, and customer requirements • Reviews documents that translate CBFO Quality Assurance Program Description (QAPD) or other CBFO requirements • Generates revisions for needed changes to LST-Q&SI-01, WIPP Procedure List.

Performer	Responsibilities
President and Project Manager/ Contract & Logistics Manager	• Transmits requests for review and approval to the Department of Energy Idaho Operations Office (DOE-ID) Contracting Officer for documents identified in Appendix C • E-mails revised documents, as applicable.
User	• Ensures use of the latest approved revision of a document • Becomes familiar with document changes and ensures comprehension thereof.
Controlled Location Personnel (see def.)	• Ensures *controlled copy* (see def.) manuals are updated per the instructions on the Document Transmittal Form • Acknowledges receipt of and returns controlled copy transmittals • Completes controlled copy training, when requested.

3.0 PROCEDURE

3.1 General Requirements

3.1.1 The record copy of a document is the latest, approved hard copy version. An imaged version of the document is maintained in the *Electronic Document Management System* (EDMS; see def.). Electronic native files are also maintained for the purpose of providing a baseline for the next revision and are available to all users on EDMS.

3.1.1.1 Users must use the latest approved revision.

(LST-COPS-01-IM, Para 2.p.(8); QAPP-01; QAP-103)

3.1.2 Controlled hard copy versions of the latest, approved documents shall only be obtained through Document Control.

(QAPP-01, QAP-103)

3.1.3 New or revised documents issued for use from Document Control are posted on the AMWTP intranet home page. The individual employee must evaluate how the document affects their job responsibilities. Employees will be notified separately of additional training and responsibilities, if applicable.

3.1.4 Document owners and knowledgeable reviewers shall consider technical adequacy, accuracy, completeness, and compliance with established requirements, as outlined in relevant implementation matrices.

(DOE/CBFO-94-1012, 1.4.1.C)

3.1.5 With the exception of field changes, only one open DCR is allowed against a document at any given time. Should a change arise when a document already has an open DCR against it, the *requester* (see def.; if different from the document owner) will be directed to work with the document owner to have all changes published under the same DCR.

3.1.6 Offsite Low-level Waste (LLW)/Mixed Low-level Waste (MLLW) Programs manager shall compile and maintain LST-LLW-03.

(PD-LLW-02)

3.1.7 New and significantly revised operational instruction processes (OIs, FOIs, AOIs, TOIs) shall include a Plant Review Committee (PRC) review and use-type designation.

(CTR-011, MP-COPS-9.14)

NOTE: *Subcontractor documents being reviewed will not have a DCR; therefore, steps requiring review, comment resolution, and performance of a USQ evaluation still apply, but all references to a DCR do not.*

3.1.8 Subcontractor documents being worked onsite shall be reviewed, approved, and USQ evaluated by appropriate AMWTP personnel per Appendix A.

3.2 Creating or Revising a Controlled Document

NOTE 1: *Native files of existing documents are available on EDMS to use to create a redline of the proposed changes to an existing document, if desired.*

NOTE 2: *The steps involved in revising a controlled document do not apply to TOIs.*

NOTE 3: *One-time use reference documents are exempt from the DCR process.*

NOTE 4: *If a change to an instruction (INST) document (except for TOIs) is needed immediately to allow work to continue, a field change (FC) can be processed in accordance with Section 3.8.*

NOTE 5: *It is preferred, for consistency, that Document Services process the DCRs through completion; however, the document owner or designee has the option to perform the review, with the exception of the quality control check and submittal to Document Control.*

3.2.1 Document Owner: Create a draft of the new document, or obtain a native file from EDMS and revise the native file of the existing document in accordance with appropriate procedures (i.e., MP-DOCS-18.1, Developing Written Work Instructions; MP-DOCS-18.3, Developing Management Procedures; MP-DOCS-18.8, Developing Analytical Chemistry Methods; or MP-DOCS-18.9, Developing Analytical Chemistry Laboratory Procedures), if applicable.

3.2.1.1 If the document is an existing document, revise the native file per the DCR.

3.2.1.2 Ensure the formatting for documents other than Analytical Chemical Laboratory (ACL) documents is correct per MP-DOCS-18.1 or MP-DOCS-18.3.

(LST-COPS-01-IM, Para 2.p)

3.2.1.3 If the document is an ACL document, ensure the formatting is consistent with MP-DOCS-18.1, MP-DOCS-18.3, MP-DOCS-18.8, or MP-DOCS-18.9, as applicable.

(LST-COPS-01-IM, Para 2.p (4) a; QAP-103)

NOTE: *The preferred program for creating forms is Microsoft Word. However, there are occasions when formulas are required to be built into the form, in which case, the form may be created in Microsoft Excel.*

3.2.1.4 If the document is a form, create it in Microsoft Word, or Microsoft Excel, as appropriate.

NOTE: *During the development period for new documents and significantly revised documents, preliminary reviews are conducted informally to finalize the technical content and accuracy of the document prior to submittal for formal review and approval.*

3.2.2 Document Owner: If the document is an INST, ensure a hazard assessment is performed per INST-COPS-9.18.4, Hazard Assessment.

3.2.2.1 Incorporate hazards identified and hazard controls into the draft.

3.2.3 When the draft is ready for review, perform the following:

3.2.3.1 If the draft is for a NEW document, obtain a document number from Document Control.

3.2.3.1.1 Document Control: Update appropriate information, including the requester's name, in EDMS.

3.2.3.2 Obtain a DCR number from EDMS.

3.2.3.3 Complete the DCR per the DCR instructions, ensuring the titles, revisions, justifications, etc., are completed appropriately.

3.2.3.3.1 If creating a NEW document, mark the Current Revision ID field as "NEW."

3.2.3.3.2 If the document is a form that contains embedded software formulas, perform the following:

3.2.3.3.2.1 Ensure any forms containing formulas used for the purpose of the collection, reduction, production, manipulation, and storage of data that supports the transuranic (TRU) waste program characterization, transportation, and certification processes are validated and placed under configuration management in accordance with MP-CD&M-11.2, Software Quality Assurance.

3.2.3.3.3 Complete ALL the Block 4 fields being used to identify the changes, including an appropriate justification for EACH change.

3.2.3.3.4 If the justification is for the resolution of a corrective action report, management assessment report, or action item, include the appropriate referencing in the justification.

3.2.3.3.5 If the document is associated with operational process changes captured on a facility modification proposal (FMP), record the FMP number in Block 7.

3.2.3.4 Determine if the proposed change is a minor change per the following criteria:

- Revision is to correct grammar or spelling (the meaning has not changed)
- Revision is to renumber sections or attachments
- Revision is to update organizational titles NOT accompanied by a change in responsibilities
- Changes are to non-quality affecting schedules
- Revision or reformat of forms, provided the original intent of the form has not been altered
- Attachments marked “Example” or “Sample” or exhibits that are clearly intended to be representative only
- Form does NOT contain embedded software formulas.

3.2.3.4.1 If the change meets the criteria of a minor change, mark Block 6 of the DCR as a minor change and process per Section 3.3.

3.2.3.5 If any of the items listed below impact the proposed change, identify the appropriate information on the DCR.

- Associated documents and/or forms (Block 16)
- FMPs (Block 7)
- Software Change Requests/System Data Change Requests (Block 7)
- Hazard assessments (Block 10b).

3.2.3.6 Evaluate impacts listed in Step 3.2.3.5, and indicate your approval via signature in Block 7 of the DCR.

NOTE: *Appendix A serves as a matrix to aid in determining the suggested minimum level of reviews appropriate to the type of document being created or revised.*

3.2.3.7 Identify the appropriate knowledgeable reviewers in Block 9 of the DCR of the new or revised document using Appendix A for guidance.

3.2.3.7.1 Include affected process owners that may not be specifically listed in Appendix A.

3.2.3.7.2 If it is desired to deviate from the suggested minimum reviewers listed in Appendix A, obtain management approval in Block 9 of the DCR.

3.2.4 If the procedure/document is currently under review by CBFO, DO NOT make any additional changes until after receipt of the CBFO review.

3.2.4.1 Incorporate additional changes identified while the document is in CBFO review during resolution of CBFO comments per Section 3.14.

NOTE 1: *In-process records generated under the previous revision of the affected document under change may be completed unless the evaluation of the change determines there is an impact on the activity or data being recorded.*

NOTE 2: *The revision number for a draft consists of a number (indicating the revision being produced) and a letter (indicating the current draft). For example, the first draft of a change to Revision 1 of a document will be Revision 2A. When the change is approved and incorporated, the letter is deleted and the document becomes Revision 2.*

3.2.5 Raise the revision one numerical level and append a letter designator (indicating draft) in the header.

3.2.6 If the proposed change is not a minor change, proceed to Section 3.6.

3.3 Processing a Minor Change

NOTE: *This section does not apply to TOIs.*

3.3.1 Document Owner: Complete the DCR per the DCR instructions.

NOTE: *All documents listed in LST-Q&SI-01 are considered WIPP-related and are to be evaluated to determine if the changes affect QA Program Adequacy review, are data quality affecting, and require submittal to CBFO for review and approval prior to implementation. The type of documents may include AMWTP program documents (such as the Quality Assurance Project Plan [QAPjP] and Certification Plan) and implementing procedures and forms revised to incorporate any changes in characterization, certification, or transportation requirements.*

3.3.2 If the affected document is listed on LST-Q&SI-01, forward the DCR and draft revision to the SPM for concurrence with the minor change determination.

3.3.2.1 SPM: Respond with a written reply, or per telecom, indicating your concurrence.

(MP-TRUW-8.2)

3.3.3 Document Owner: If the SPM does not concur, return to Section 3.2 and process as a normal revision.

3.3.4 Document Owner: Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

NOTE: *Minor changes do not require document manager approval.*

3.3.5 Complete the DCR, initialing in Block 13 and signing Block 18, and forward document and case file to Document Services for quality control check per Section 3.15.

3.3.6 Document Services: Prepare the document for issue per Section 3.16.

3.4 Creating Bluesheets

3.4.1 Document Owner: If global changes are needed to several documents and the changes are determined to be minor per the definition in Section 4.0 (e.g., titles or references), implement the changes through the use of a bluesheet document, if desired.

3.4.1.1 Include specific direction regarding the changes within the affected procedures.

3.4.2 Incorporate changes identified on the bluesheet into the affected documents as the documents are being revised and through the normal DCR process outlined in this procedure.

3.4.2.1 Ensure the roles and responsibilities and titles of personnel contained in the documents being revised are consistent with the current organizational structure.

3.4.3 Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.4.4 Initial/sign Block 13 and 18, of the DCR, respectively.

3.4.5 Submit the files and case file to Document Services.

3.4.6 Document Services: Proceed to Section 3.15 to finalize the bluesheet.

3.5 Conducting Periodic Reviews

NOTE 1: *Plans and reports used as one-time use reference documents are exempt from periodic reviews.*

NOTE 2: *Interim revisions, if generated from thorough reviews, can be used to implement and advance the periodic review interval if documented as such on the DCR.*

3.5.1 Document Owner: Review controlled documents at periodic intervals to ensure the information and instructions are technically accurate. The frequency of periodic reviews will vary based on the complexity of the activity involved.

(QAPP-01; QAP-103; LST-COPS-01-IM, Para 2.p. (7) b)

3.5.2 Refer to the table below for the typical periodic review interval for controlled documents.

Document Type	Review Interval
Operating, maintenance, testing, abnormal operating, alarm response, emergency plans, ACL and all functional implementing procedures (except as noted below).	Every 3 years, or sooner, as directed by the document owner
Charters, lists, and description documents	Every 3 years, or sooner, as directed by the document owner
Plans, reports, and guides	As determined by the document owner
Documents with regulatory or contractual periodic review requirements (such as the QAPP, QAP-103, Documented Safety Analysis [DSA], or ISM PD).	Annual review or as directed by the regulation or requirement

3.5.3 Document Control: Ensure that periodic review intervals and due dates are cited in EDMS.

3.5.4 Track periodic reviews and notify document owners at least 60 days prior to periodic review date.

3.5.4.1 Initiate an action item in TrackWise for the periodic review to be performed and assign to the document owner.

3.5.5 Document Owner: Upon being notified that a periodic review is coming due, perform a thorough review of the document.

3.5.6 If changes do NOT result from the periodic review, update as such in the action item and process the action item to closure.

3.5.6.1 Document Control: Upon receipt of TrackWise notification, update EDMS with new periodic review date.

3.5.6.1.1 Retain the TrackWise notification in document control files.

3.5.7 Document Owner: If changes DO result from the periodic review, initiate a DCR in accordance with Section 3.2 and the DCR instructions.

3.6 Reviewing a Document

NOTE 1: *Reviews may be conducted manually (via hard copy), electronically, or through roundtable reviews.*

NOTE 2: *In an effort to facilitate timely reviews and document processing, reviews are limited to an initial review and a final review containing comments from the initial review and validation (if an instruction or form).*

3.6.1 Document Owner: Ensure the appropriate reviewers have been identified for the document being created or revised (see Appendix A for minimum suggested reviewer disciplines).

(DOE/CBFO-94-1012 Section 1.4.1 A-H)

3.6.1.1 Ensure the identified reviewers have requisite knowledge to determine the technical adequacy of the document for its identified/intended purpose.

(DOE/CBFO-94-1012 Section 1.4.1 F; QAP-103)

3.6.1.1.1 If the document is new or is listed on LST-Q&SI-01, ensure the SPM is included in the review.

3.6.1.1.2 If the document is new or listed on LST-LLW-03, ensure the NNSS WCO is included in the review.

3.6.1.1.3 If the document is new or listed in LST-PAIT-01, ensure a PAIT knowledgeable reviewer is included in the review.

NOTE: *If a revision to an instruction (INST) being reviewed per this section is to incorporate approved field changes ONLY, some steps within this section will have already been completed during the FC approval process. The previous FC DCR approvals, in conjunction with the remaining required knowledgeable reviewers for a procedure revision, will constitute a complete review. A new USQ process applicability review or USQ evaluation is required per Section 3.7.*

3.6.2 If document is a new or significantly revised operational process instruction, coordinate with the Plant Manager office for PRC review and use-type designation.

3.6.3 If the document is an ACL procedure or method, consult with the Laboratory manager to determine use-type.

3.6.4 Determine a review due date.

3.6.5 Forward an electronic copy of the draft document with tracked changes, and the associated DCR, to the knowledgeable reviewers.

3.6.5.1 Consider affected process owners and SMEs, and include in the review if appropriate.

3.6.6 If the document is listed in LST-PAIT-01, ensure WTS personnel review.

NOTE 1: *Forms associated with, or implemented by, new documents or those determined to be WIPP-, NNSS-, or PAIT-related are included in the SPM/NNSS/PAIT review, respectively.*

NOTE 2: *New forms implemented by non-WIPP-related, non-NNSS-, or non-PAIT-related procedures do not require SPM/NNSS/PAIT review.*

3.6.7 If the document is new or WIPP-related, submit to the SPM for review and approval.

3.6.7.1 SPM: Review document to determine if CBFO review and approval is required due to changes affecting data quality objectives or performance criteria, and if it should be added to LST-Q&SI-01, and respond accordingly.

3.6.7.1.1 Notify the QA manager of new documents that are to be added to LST-Q&SI-01 to generate a revision to the list.

3.6.7.1.2 QA: Initiate a DCR to LST-Q&SI-01 to add new documents that have been identified for WIPP-related review.

3.6.8 Document Owner: If the document is new or NNSS-related, submit it to the NNSS WCO for review and approval.

3.6.8.1 NNSS WCO: Review document to determine if changes impact NNSS acceptance criteria and if it should be added to LST-LLW-03 and respond accordingly.

(PD-LLW-02)

3.6.8.1.1 Revise LST-LLW-03 when new documents are identified.

3.6.9 If the document is new or PAIT-related, submit it to PAIT personnel for review and approval.

3.6.9.1 PAIT Personnel: Review document to determine if the document should be added to LST-PAIT-01 and respond accordingly.

(PD-LLW-02)

3.6.9.1.1 Revise LST-PAIT-01 when new documents are identified.

NOTE: *Training review is not required for minor changes or for changes that affect informational and non-implementing documents (e.g., RPT, PLN). The document owner is to ensure that any operating and training requirements will be flowed down to implementing procedures.*

3.6.10 Submit the document to the Training organization for a training needs determination.

3.6.11 Training: Coordinate with the document owner to determine training needs.

NOTE: *The document owner, in conjunction with the Training Department, is responsible for verification that training has been completed or will be completed prior to issuing and establishing an effective date for a new or changed document.*

3.6.11.1 Document training needs in Block 13 of the DCR.

3.6.11.1.1 If training is required, provide a TrackWise Action Item (AI) in accordance with MP-RTQP-14.17, Training Requests.

3.6.12 Knowledgeable Reviewer: Focus the review on the affected changes identified on the DCR, unless the review is identified as a periodic review.

3.6.12.1 If the document is being reviewed as a periodic review, review the entire document.

3.6.12.2 If the content of the proposed change does not have an impact on the knowledgeable reviewer's discipline, respond with an "OPT OUT" status, indicating that your department does not need to review the document.

3.6.12.3 Evaluate the change to determine whether the change:

- Is technically accurate
- Is workable as written
- Is within process and hardware limitations
- Meets applicable requirements
- Affects key procedure steps
- Is driven by a change in law, regulation, or DOE requirements, which would be a change to the contract. (If so, perform appropriate steps and evaluations in accordance with MP-ADMN-1.18, Requirements Management.)
- Requires initiation of an FMP in accordance with MP-CD&M-11.1
- Implements proper hazard mitigation controls.

(LST-COPS-01-IM, 2.p)

NOTE: *Comments from identified discipline are to be submitted from one reviewer.*

3.6.13 By the requested date, document all comments or concurrence to the changes using ONE of the following methods:

- Itemize list of comments using Form-1003, required for *significant comments* (see def.)
- Sign the DCR in Block 9
- Reply to the notification e-mail, indicating concurrence by using the "voting bar" included with the e-mail.

3.6.14 Return documented comments/concurrences to the document owner, or Document Services, as requested.

3.6.15 Document Owner: Resolve all initial review comments.

(LST-COPS-01-IM, Para 2.p (2) e. and 4)

NOTE: *Hazard assessments (HA) are required for new instructions and revised instructions related to changed conditions per INST-COPS-9.18.4.*

3.6.15.1 If the document is an INST, ensure it is validated per Section 3.9 and a hazard assessment has been performed, if applicable.

3.6.15.2 Ensure any forms containing formulas used for the purpose of the collection, reduction, production, manipulation and storage of data that supports the TRU waste program characterization, transportation and certification processes are validated and placed under configuration management in accordance with MP-CD&M-11.2.

3.6.16 Document the resolutions (e.g., e-mail print-outs, redlines, Form-1003) and retain for the case file.

3.6.17 Incorporate the comment resolutions, validation comments, and/or hazard assessment, if applicable, into the revised draft and update the revision ID to the next letter designator. Example: Draft 6A becomes Draft 6B.

3.6.18 Submit a final draft version of the revised document to the original knowledgeable reviewers and validation team, if applicable, for concurrence of changes, with all completed Forms-1003 attached, or organize a roundtable comment resolution meeting.

3.6.19 Knowledgeable Reviewers/SPM/NNSS WCO: When all significant comments received from the review period are resolved to your satisfaction, indicate your concurrence by ONE of the following methods:

- An e-mail notification response
- Signature on the DCR or Form-1003
- Per “telecom” if location logistics prohibit either of above.

3.6.20 Document Owner and Knowledgeable Reviewers: If there are significant comments with unresolvable issues resulting from the review, elevate the issue for resolution through affected management.

3.6.20.1 Include the SPM when elevating unresolvable issues to WIPP-related documents.

(MP-TRUW-8.2, C5-2)

3.6.20.2 Include the NNSS WCO when elevating unresolvable issues to NNSS-related documents.

3.6.20.3 Include PAIT when elevating unresolvable issues to PAIT-related documents.

3.6.20.4 Document the management resolution in one of the methods listed in Step 3.6.19.

3.6.20.5 If a knowledgeable reviewer will not concur to an unresolvable comment, but cannot provide a specific-source, standard-, requirement-, or safety management-based requirement to support the comment, note the objection in the case file and issue the change.

3.6.21 Document Owner: When all resolvable comments have been incorporated, ensure that the following items are provided to Document Services, as applicable, in the case file/DCR package:

- Completed DCR through Block 13, with ALL blanks filled in
- Completed Form-1003(s) with accepted comment resolutions and documented concurrence
- Any e-mail that includes comments, justifications, satisfactory resolution, and/or no comment statements
- Redline markups that are signed and dated
- Completed Form-1002, Procedure Validation Request (see Step 3.9.2)
- Completed Form-1444, Hazard Assessment Record Sheet.

3.6.22 Document Owner: Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.6.23 Forward documentation for the case file to Document Services for a quality control check per Section 3.15.

NOTE: *The document owner initials are not required for Block 13 prior to USQ evaluation but the Training response is.*

3.6.24 Document Services: Forward PDF files of the final draft revision (clean and redline), the DCR completed through Block 13, and comment forms, as appropriate, to a qualified USQ evaluator.

3.6.25 USQ Evaluator: Complete USQ evaluation in accordance with MP-NSPC-3.2.

3.6.26 If no USQ exists, check the box in Block 14b indicating a USQ does not exist on the DCR.

3.6.27 Document Owner: Upon notification that the USQ has been approved, complete and sign Blocks 13 and 18, as appropriate.

3.6.28 Document Services: Ensure the DCR is complete and approved.

3.6.28.1 Retain the USQ approval notification in the case file.

3.6.29 If the document does not require external review and approval (i.e., CBFO or DOE-ID), proceed to Section 3.15 to finalize the document.

3.6.30 If the document DOES require external review and approval (i.e., CBFO or DOE-ID):

3.6.30.1 Enter "Pending XXX Approval," where XXX = the external organization in the approved document header.

3.6.30.2 Proceed to Section 3.13 or 3.14, as appropriate.

3.7 USQ Process Applicability Review

3.7.1 Document Owner: Perform a USQ process applicability review, per the following:

3.7.1.1 If the change is to a document that meets the criteria identified in LST-NSPC-02, perform the following:

3.7.1.1.1 Mark the check box in Block 14a of the associated DCR indicating that the change does not apply to the USQ process.

3.7.1.1.2 Sign and date the signature line in Block 14a.

3.7.1.2 If the change is to a document that does not meet the criteria identified in LST-NSPC-02, request a USQ evaluator perform a USQ evaluation in accordance with MP-NSPC-3.2.

3.7.1.2.1 Forward PDF files of the final draft revision (clean and redline), the DCR completed through Block 13, and comment forms, as appropriate, to a qualified USQ evaluator.

3.7.2 Document Owner: Upon notification that the USQ has been approved, complete and sign Blocks 13 and 18, as appropriate.

3.7.3 Document Services: Ensure the DCR is complete and approved.

3.7.3.1 Retain the USQ approval notification in the case file.

3.7.3.1.1 If a USQ exists, do not approve the DCR.

3.7.3.1.1.1 Check the appropriate box in Block 14b that a USQ exists.

3.7.3.1.1.2 Submit the DCR and supporting documentation to Document Control for retention.

3.7.3.1.2 If no USQ exists, record the Categorical Exclusion Review or USQ Determination number in Block 14b on the DCR and sign Block 14b and Block 18.

3.7.3.1.2.1 Retain the USQ approval notification in the case file.

3.7.3.1.3 If the document does not require external review and approval (i.e., CBFO or DOE-ID), finalize the document per Section 3.15.

3.7.3.1.4 If the document DOES require external review and approval (i.e., CBFO or DOE-ID):

3.7.3.1.4.1 Enter "Pending XXX Approval," where XXX = the external organization in the approved document header.

3.7.3.1.5 Proceed to Section 3.13 or 3.14, as appropriate.

3.8 Processing a Field Change to a Document

NOTE 1: *Criteria for a qualified field change to an INST document are listed below:*

- *The FC addresses unanticipated conditions affecting routine operational activities that might stop work, or cause work to be unreasonably delayed; and do not introduce new hazards requiring performance of a hazard assessment or the development of a TOI.*
- *Needed for immediate corrective actions.*

NOTE 2*: Field changes cannot be made when:*

- *The INST is a TOI*
- *The changes affect steps required by, and notated with, an authorization basis document (i.e. DSA/TSR, Criticality Safety Evaluation, RCRA Permit) rolldown*
- *The changes introduce new hazards that have not been previously addressed*
- *The changes remove hold points*
- *The changes are minor or made for clarification and do not impact work to be performed.*

NOTE 3: *An online training course is available on TRAIN for processing field changes.*

3.8.1 Document Owner: Ensure training for field changes is current.

3.8.2 Forward all proposed field changes to WIPP-related or NNSS-related documents to the SPM or NNSS WCO prior to implementation.

3.8.3 If the proposed field change, as determined by the SPM, affects data quality objectives or performance criteria, submit the proposed change to CBFO for review/approval prior to finalizing field change.

(MP-TRUW-8.1; MP-TRUW-8.2; PD-LLW-02)

NOTE: *Temporary field changes to ACMM and ACLP instructions involving sample-specific changes may be kept in effect for the duration of the sample and data processing time.*

3.8.4 Discuss the proposed field change with the highest level of management available, but at least the PSM (if operations), to confirm that it meets the following criteria:

- Is technically accurate and feasible
- Complies with applicable requirements and provides equivalent safeguards
- Does not affect steps required by, and notated with, an authorization basis document (i.e., DSA/TSR, Criticality Safety Evaluation, RCRA Permit) rolldown
- Does not remove a hold point
- Does not adversely impact safety of personnel and/or facility
- Is needed immediately to prevent adverse impact to operating needs
- Is relevant to facility specific operations.

3.8.4.1 If the criteria in Step 3.8.4 are not met, process a revision to the document in accordance with Section 3.2.

3.8.5 Complete the DCR form for the field change per the form instructions.

NOTE: *ACLP, ACMM, and ALAB instructions do not require NFM approval or Plant Manager acknowledgement in Block 5 of the DCR and only ALAB instructions require Criticality Safety approval for field changes to ACL documents.*

3.8.6 Obtain Criticality Safety and NFM approval for the field change and record in Block 5 of the DCR.

(ANSI/ANS-8.19-2005)

3.8.7 Ensure the Plant Manager has acknowledged the necessity of the field change by initialing in Block 5 of the DCR.

3.8.8 Approve the proposed field change in Block 7.

3.8.9 Create a *working copy* (see def.) of the document being changed.

3.8.10 Manually update the working copy by performing the following:

3.8.10.1 Using black or blue ink handwritten or typed colored redlines, annotate the changes needed within the procedure, ensuring the following:

- Page breaks and page numbering are not affected
- Changes made are clearly visible using colored redlines and strikeouts.

3.8.10.2 Place revision bars in the left margin with the unique field change number (e.g., FC-1) to the left of each applicable bar associated with the changes.

3.8.10.3 Annotate the document revision log with a description of the change, the DCR number, and the field change number (e.g., FC-1).

3.8.10.3.1 Initial and date the revision log annotations.

NOTE: *Field change approval by SPM, NNSS WCO, Criticality Safety, and Plant Manager acknowledgement may be obtained by telecom.*

3.8.11 If the document is WIPP-related, obtain SPM approval of field change for Block 11a of the DCR.

3.8.11.1 SPM: If the field change does not affect data quality objectives, performance criteria, or Type B package quality affecting operations, submit the field change to CBFO for information only.

3.8.12 If the document is NNSS-related, obtain NNSS WCO approval of the field change for Block 11b of the DCR.

3.8.13 If the document is PAIT-related obtain PAIT approval of the field change for Block 11c of the DCR.

3.8.14 Document Owner: Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.8.15 PSM/SS/Responsible Manager: Review the DCR and annotated working copies for completeness and accuracy.

3.8.16 Document the effective date and time in Block 15 of the DCR.

(QAP-103)

3.8.16.1 PSM/SS/Designee: If the document is an operations instruction (OI, FOI, or AOI), make a log entry noting the date and time for implementing the field change from Block 15 of the DCR.

3.8.16.2 If the procedure is WIPP-related, make necessary revision update in WTS.

3.8.17 Document Owner: Replace the affected pages in the controlled AND working copies used in the field and attach a copy of the completed DCR to the front of both.

3.8.18 Perform a briefing of the field change to all affected personnel and document the briefing on the SS log unless otherwise directed in Block 18 of the FC DCR.

3.8.19 Deliver the original DCR and annotated pages to Document Control no later than the next working day.

3.8.20 Document Control: Upon receipt of an approved field change and DCR, perform a quality check on the DCR and annotated pages for completeness.

3.8.20.1 If incomplete or incorrect, return field change package to appropriate document owner for correction.

3.8.20.2 Document Owner: After correcting/completing returned field change package, repeat Steps 3.8.18 through 3.8.19.

3.8.21 Document Control: Complete the Document Control portions of the DCR per the form instructions.

3.8.22 Post the FC onto EDMS.

3.8.23 Check for any open DCRs against the document.

3.8.23.1 If an open DCR exists for the document, direct the document owner to work with the holder of the open DCR to incorporate the field change into their revision.

3.8.24 Post the FC in front of the affected document.

3.8.25 Distribute controlled copies (yellow) of the approved field change to all controlled copyholders/manual locations in accordance with Section 3.16.

3.8.26 Track open field changes and notify the document owner when either of the following conditions exist:

- There are, at the most, five field changes against one document.
- A field change is within 30 days of reaching a 6-month timeframe.

(LST-COPS-01-IM Para 2.p. (4) d)

3.8.27 Document Owner: Initiate a DCR to incorporate permanent field changes into a revision within 6 months of issuing the field change, or when several FCs have accumulated (e.g., no more than five).

(LST-COPS-01-IM, Para 2.p)

3.9 Validating a Document

NOTE: *All INST procedures, and forms that are either associated with the INST or independently direct work, require validation.*

3.9.1 Document Owner: Ensure new procedures and revisions to existing procedures (excluding minor changes) are validated to ensure accuracy and usability.

3.9.1.1 Ensure validations are not performed with actual radiological or hazardous waste or in radiological areas except as allowed during *limited field use validation* (see def.).

3.9.1.2 Prior to a limited field use validation, perform a USQ process applicability review or request a USQ evaluation as per Section 3.7.

3.9.1.3 Ensure all operations procedures (OIs, FOIs, and AOIs) are validated as Controlled Activity procedures as defined in MP-COPS-9.14, regardless of the actual use-type designation.

NOTE: *If validation of a step will disrupt plant conditions, then at the direction of the PSM/SS, or Laboratory manager as appropriate, the step may be simulated.*

3.9.2 Document Owner: Initiate Form-1002.

NOTE: *Validation of software formulas contained within approved forms which produce calculated results is completed per MP-CD&M-11.2, Software Quality Assurance, or engineering design analysis processes, not Section 3.9 of this procedure.*

3.9.2.1 Ensure any forms containing formulas used for the purpose of the collection, reduction, production, manipulation and storage of data that supports the TRU waste program characterization, transportation and certification processes are validated and placed under configuration management in accordance with MP-CD&M-11.2.

3.9.3 Determine the appropriate validation method to be used (*limited field use, mockup, walkdown* [for use by ACL only], or *tabletop validation* [see defs.]).

3.9.4 Determine whether the validation should be a *complete validation* (see def.) or a *partial validation* (see def.).

3.9.5 Assign qualified personnel, including workers, to perform the validation.

NOTE: *Validations are performed to ensure the procedure steps are correct and written to the correct level of knowledge, skills, and abilities of the personnel who will be using the procedure. It is also advisable to include Document Services personnel.*

3.9.6 SME: Ensure all affected performers that have responsibility for performing steps in the procedure are represented on the validation team, including the SS.

3.9.7 If the DCR, Section 10b is marked "Yes," then ensure a new hazard assessment for the procedure is completed and implemented prior to performance of a limited field use validation.

NOTE: *The preferred method of validation is either limited field use or mockup. A tabletop validation is recommended only when a limited field use, mockup or walkdown (for use by ACL only) validation is not practical.*

3.9.8 SME: Validate the draft procedure using Form-1002 and included guidance.

(LST-COPS-01-IM, Para 2 (p) 4 h)

3.9.8.1 If a form has embedded software formulas, ensure the reliability of the results as part of the validation.

3.9.8.2 Validate the changed sections of the procedures in their entirety to ensure usability of the procedure.

3.9.8.3 Document any comments or recommendations on Form-1003, or redline the draft working copy (initialed and dated).

3.9.8.4 Obtain signatures and dates from the personnel listed on the validation form and return the completed form and the draft markup, or Form-1003, as appropriate, to the document owner.

3.9.9 Submit the Form-1002 and markups, if applicable, to Document Services.

3.9.10 Document Services: If comments were generated from the validation, incorporate the comment resolutions and send out for final resolution, or as directed by the document owner.

3.9.11 Document Owner: When final resolutions are complete, perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.9.12 Retain the completed Form-1002 and any redlined drafts, for the document case file.

3.10 Processing Temporary Operating Instructions

NOTE 1: *This section is performed when plant management determines that a TOI is the best course of action for non-routine, one-time only operational activities. This process does not apply to operational exempt work which must follow appropriate work control procedures described in PD-COPS-9.18, Work Control.*

NOTE 2: *The cover pages and headings for TOIs will include clearly marked expiration dates in addition to the standards provided in MP-DOCS-18.1.*

3.10.1 Document Owner/Designee: Process TOIs in accordance with the following sections:

1. Section 3.2, Creating or Revising a Controlled Document
2. Section 3.6, Reviewing a Document, including performance of a hazard assessment per INST-COPS-9.18.4
3. Section 3.9, Validating a Document.

3.10.2 Establish an expiration date for the TOI, not to exceed 14 calendar days from the effective date, and document on the DCR.

3.10.3 Submit the document and supporting case file to Document Services.

3.10.4 Document Services: Finalize document per Section 3.15, Finalizing Approved Document.

3.10.5 Document Owner: If an additional one week extension is required to finish the operational activity, perform the following:

3.10.5.1 Download the DCR case file and procedure from EDMS and correct the expiration date, using redlines, dates, and initials.

3.10.5.2 Obtain approvals for the extension from:

- Plant Manager
- Nuclear Facility Manager
- Plant Shift Manager.

3.10.5.3 Ensure the extension is entered in the appropriate PSM and SS logs.

3.10.5.4 Resubmit corrected DCR, with evidence of approvals, to Document Control.

3.11 Suspending or Reinstating a Document

NOTE: *This section is performed when a document owner determines that a controlled document should be* suspended *(see def.) from authorized use, and when* reinstatement *(see def.) is needed.*

3.11.1 Document Owner: Initiate a DCR per the form instructions.

NOTE: *Reinstating suspended procedures requires the complete DCR process to ensure that changed conditions or requirements are addressed in the document.*

3.11.1.1 If reinstating the document, proceed to Section 3.2.

3.11.2 If suspending, transmit an electronic copy of the DCR and document to be suspended to the knowledgeable reviewers identified on the DCR per Appendix A, including the SPM/NNSS WCO and Environmental.

3.11.3 SPM: Review and approve the suspension of all WIPP-related documents listed in LST-Q&SI-01.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.11.4 NNSS WCO: Review and approve the suspension of all NNSS-related documents listed in LST-LLW-03.

(PD-LLW-02)

3.11.5 PAIT: Review and approve the suspension of all PAIT-related documents listed in LST-PAIT-01.

3.11.6 Document Owner: If the review results in objections, and the document is determined to be necessary, perform the following:

3.11.6.1 Discontinue the suspension.

3.11.6.2 Document the objections on the DCR.

3.11.6.3 Forward the case file to Document Control to cancel the DCR number.

3.11.7 Document Owner: If no objections are received, perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.11.8 Submit the DCR, document, and case file to Document Services.

3.11.9 Document Services: Finalize the document per Section 3.15.

3.12 Canceling or Superseding a Document

NOTE: *This section is performed when a document owner determines that a controlled document needs to be* cancelled *(see def.) or* superseded *(see def.).*

3.12.1 Document Owner: Initiate a DCR per the form instructions.

3.12.2 Ensure the justification addresses that the requirements, instructions, responsibilities, and other material contained in the document to be cancelled/superseded are adequately addressed in another identified document or are no longer needed.

3.12.3 Transmit an electronic copy of the DCR and document to be cancelled/superseded to the knowledgeable reviewers identified on the DCR per Appendix A, including the SPM, NNSS WCO and Environmental.

3.12.4 SPM: Review and approve the cancellation or supersedance of any WIPP-related documents listed in LST-Q&SI-01.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.12.5 NNSS WCO: Review and approve the cancellation or supersedance of any NNSS-related documents listed in LST-LLW-03.

(PD-LLW-02)

3.12.6 PAIT Personnel: Review and approve the cancellation or supersedance of any PAIT-related documents listed in LST-PAIT-01.

3.12.7 Document Owner: Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.12.8 If the review and/or the USQ and environmental evaluations DO result in objections, discontinue the cancellation.

3.12.8.1 Document the reason for the cancelation for the DCR in Block 7 of the DCR.

3.12.8.2 Submit the case file to Document Control to cancel the DCR number.

3.12.9 Document Owner: If no objections are received, complete the remainder of the DCR.

3.12.10 Submit the DCR, document, and case file to Document Services.

3.12.11 Document Services: Prepare the case file, including Form-1728 and submit to Document Control.

3.12.12 Document Control: Close out the DCR and update EDMS.

3.13 Obtaining DOE-ID Review/Approval on Documents

NOTE 1: *Appendix C, Documents Requiring Submittal to DOE-ID, lists those documents that require formal review and approval by DOE-ID.*

NOTE 2: *All documents identified on LST-Q&SI-01 shall be e-mailed to DOE-ID when revised, in lieu of other written correspondence.*

3.13.1 Document Services: Ensure the document has been internally reviewed, approved, and quality checked in accordance with the appropriate sections of this procedure.

3.13.2 Provide a PDF of the revised document to the document owner to submit with the transmittal letter to DOE.

NOTE: *If the redlines are such that reviewing the document would be difficult, it is recommended that a "clean" copy of the document be transmitted along with the redlined version.*

3.13.3 Document Owner: Transmit the document to the President and Project Manager or the Contract and Logistics Manager.

3.13.4 President and Project Manager/Contract and Logistics Manager: Using written correspondence, submit the document to the appropriate manager or contract office representative (COR) at DOE-ID requesting their review and approval.

3.13.4.1 Copy Document Services on the correspondence at docserv@amwtp.inl.gov.

(AMWTP Correspondence Approval Matrix)

3.13.4.2 Document Services: Retain a copy of the submittal letter for the case file.

3.13.5 Document Owner: Resolve all external organization comments when received.

3.13.6 Incorporate any required changes to the draft document and retain any comment and resolution correspondence for the case file.

NOTE: *Following satisfactory comment resolution with DOE-ID, additional review comments by AMWTP personnel should be unnecessary and avoided.*

3.13.7 Document Owner: Unless authorized to proceed with the revision by DOE-ID, submit a copy of the revised document containing the incorporated comments and a copy of the completed comment resolution documentation to the COR for resubmittal to DOE.

3.13.8 Upon receipt of document approval from DOE-ID, submit the document and case file, including a copy of the external organization approval, to Document Services.

3.13.9 Document Services: Prepare the case file, including Form-1728 and finalize per Section 3.15.

(AMWTP Correspondence Approval Matrix)

3.14 Obtaining CBFO Review and Approval

3.14.1 Document Services: Ensure the document has been internally reviewed, approved, and quality checked in accordance with the appropriate sections of this procedure.

3.14.2 Provide a PDF of the revised document to Document Control to submit to a DOE representative for approval to formally send the document to CBFO.

NOTE: *If the redlines are such that reviewing the document would be difficult, it is recommended that a "clean" copy of the document be transmitted along with the redlined version.*

3.14.3 Document Control: Forward, via e-mail, the following to DOE-ID and request concurrence for submittal to CBFO:

- Redlined PDF copy of the draft document
- PDF copy of the approved DCR and related e-mail concurrences
- Explanation of the change and why it is data quality affecting as received from the SPM.

3.14.4 When concurrence is received from DOE-ID, forward to CBFO as follows:

3.14.4.1 Document Control: Forward to site.documents@wipp.ws for review and approval.

NOTE: *Additional comments received on a document currently in review by CBFO may be incorporated during the resolution of CBFO comments but must be clearly delineated on the CBFO Document Review Record (DRR). Subject to CBFO approval, the additional comments may require a full re-review by CBFO.*

3.14.5 Document Owner/Document Services/Designee: If external comments are received, forward comments to document owner for resolution and retain for the case file.

3.14.6 Submit revised draft and completed DRR back to CBFO as follows:

3.14.6.1 Document Control: If document is WIPP-related, but not an AK report, transmit completed DRR and revised final document to CBFO at site.documents@wipp.ws and request a Web-X, if applicable.

3.14.6.2 Document Owner: If submittal is an AK report, perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

NOTE: *Final drafts of AK reports are documented via a completed DCR and document owner signature (with date) on the cover page. The effective date on the bottom right corner of the cover page remains "Pending CBFO Approval."*

3.14.6.3 Transmit the revised final draft of AK report/package requesting approval using written correspondence from TRU Program Manager to appropriate CBFO Manager or Contract Office Representative.

3.14.6.4 Document Control: Send copy of completed DRR to site.documents@wipp.ws.

3.14.7 If a Web-X is deemed appropriate, provide all potential attendee names and e-mail addresses, to include:

- SPM
- Original knowledgeable reviewers
- Document author
- Document owner
- DOE-ID.

3.14.7.1 Knowledgeable Reviewers/Meeting Attendees: Follow directions provided via the online review meeting e-mail invitation.

NOTE: *Following satisfactory comment resolution with CBFO, and to avoid a new review, additional review comments by AMWTP personnel should be held until the next revision.*

3.14.7.2 Document Owner: During the on-line resolution review meeting with CBFO, make any additional changes to the document as agreed to by the document owner, DOE-ID, and CBFO participants.

3.14.7.3 Perform a USQ process applicability review or request a USQ evaluation per Section 3.7.

3.14.8 Document Control: Send finalized document and DRR back to site.documents@wipp.ws for approval coordination.

3.14.8.1 If an approval notification is not received within a reasonable amount of time, submit a reminder request.

3.14.9 Upon receipt of final document approval from CBFO, notify document owner or Document Services to finalize the document per Section 3.15.

3.15 Finalizing Approved Documents

NOTE: *To accommodate access for implementation actions, documents can be issued by Document Control as "PENDING" without interrupting availability of current and effective documents.*

3.15.1 Document Services: Ensure that the document owner and document manager has signed indicating final approval on the DCR (Block 18) per the form instructions.

3.15.1.1 If the document is a TOI, ensure the DCR includes an expiration date.

NOTE: *If the document received CBFO review and approval, the approval date on the cover page should be the date approved by CBFO, not when Block 18 of the DCR was signed by the document owner, unless otherwise directed by CBFO.*

3.15.2 Enter the appropriate approval date on the cover page of the document, as applicable.

3.15.3 Raise the revision level by removing the alpha designator.

3.15.4 If the document is a form, and formatted in Microsoft Word, perform the following:

3.15.4.1 Accept all tracked changes before printing so the form will print consistently on all computers.

3.15.4.2 "Protect" the file for filling in forms to ensure check boxes, etc. work properly.

3.15.4.3 Save the electronic file as a template.

3.15.5 If the document is a form, and formatted in Microsoft Excel, perform the following:

3.15.5.1 If the form contains formulas, protect the appropriate cells to ensure embedded formulas cannot be changed.

3.15.5.2 "Password protect" the file, when requested by the document owner.

3.15.5.3 Save the electronic file as a template.

3.15.6 If the document is **NOT** a form, update the "Track Changes" options in Word:

3.15.6.1 Change deleted text to "hidden."

3.15.6.2 Change the color of new text to "none."

3.15.6.3 Retain the setting for revision bars in the outside margin on the printed document.

3.15.7 If the document revision involves a substantial rewrite wherein revision bars would be distracting, accept all changes, and indicate "Entire document revised" in the revision log of the document and on the DCR.

NOTE: *Forms do not require PDF copies, but will remain in the native template file format.*

3.15.8 Create a PDF copy of the native file.

3.15.9 Perform a quality control check on the document, DCR, and case file using Form-1728.

3.15.9.1 Place the completed Form-1728 in the case file.

3.15.10 Submit the entire DCR package (associated electronic native files, PDF files of the document, if created, and the case file documentation) to Document Control for processing and issuance per Section 3.16.

3.16 Issuing, Distribution, and Notification of Issued Documents

3.16.1 Document Control: Verify the DCR is complete and that a completed Form-1728 is present.

3.16.1.1 If not complete, return document and case file to submitter.

3.16.2 If the document is a TOI, ensure the expiration date is entered into EDMS and tracked to closure.

NOTE: *Documents requiring CBFO or DOE-ID review and approval cannot be issued pending that approval unless written authorization to proceed has been received from the customer. Authorization to proceed or the approval letter must be in the case file prior to implementation.*

3.16.3 Update EDMS with the appropriate DCR, case files, and updated documents.

3.16.4 Complete Blocks 19 and 20 of the DCR per the form instructions.

3.16.5 Close the document case file, ensuring all applicable case file materials are in evidence.

(QAP-103)

NOTE*: The following step is automatically performed within EDMS.*

3.16.6 Provide notification of all DCRs processed within 24 normal working hours of issuance via the AMWTP home page.

(QAP-103)

3.16.7 *Line Management* (see def.): Communicate to appropriate personnel at a pre-shift briefing, tailgate, or similar method, important information regarding changed or revised procedures, AND the need to read and sign the required reading items.

(LST-COPS-01-IM, Para 2.p. (5) a; MP-COPS-9.12)

3.16.8 Document Control: If the document is WIPP-related, provide an information only notification and an electronic copy of the document to CBFO at the following e-mail address: site.documents@wipp.ws.

3.16.9 Initiate hard copy distribution using the transmittal form that is created through the data entry process in EDMS.

3.16.9.1 If EDMS is not available, use Form-1004 to distribute the document to controlled copy holders.

3.16.10 Use yellow paper and stamp "Controlled Copy" on the title page of each controlled document.

3.16.11 Distribute the controlled copies and updated controlled location index to appropriate controlled locations within 24 normal working hours.

(QAP-103)

NOTE: *Online course 0AWT1091, Updating Controlled Copies, is the current training.*

3.16.12 Controlled Location Personnel: Ensure training for updating and maintaining controlled copies is current.

3.16.13 Ensure controlled copy manuals are updated per the instructions on the transmittal form.

(QAP-103)

NOTE: *It is preferred that the transmittals are acknowledged by returning signed transmittal forms to Document Control.*

3.16.14 Document Control: If a transmittal acknowledgement is returned, log the transaction into EDMS.

3.16.15 Upon receipt of an approved document suspension, cancellation, or suspension update the DCR status in EDMS.

3.16.15.1 Instruct the controlled copy location personnel to discard the cancelled, suspended, or superseded document, if necessary.

3.16.16 Document Owner/SME: Ensure that changes to controlled documents are implemented on the effective date of the changed document and notify personnel within their span of organizational responsibility when changes have been made to controlled documents.

3.16.17 Document Control or QA: Perform an annual assessment of all controlled copy locations to ensure updates are being maintained.

4.0 DEFINITIONS

Acceptable Knowledge reports. TRUW reports submitted to CBFO for review and approval which include AK summaries as part of new and revised Waste Stream Profile packages and AK sampling reports.

Bluesheet. Mechanism using a XXX-BLUESHEET-## designated document to implement minor changes determined to be global (i.e., applicable across organizational, functional, or operational boundaries) until such a time as the affected documents can be changed during a normal revision. These changes include references or titles not affecting roles and responsibilities or the technical content. The bluesheets must be reviewed and approved per MP-DOCS-18.4 process, upon which the EDMS system is used to link approved bluesheets to affected documents until they are revised.

Canceled. When a document is canceled, the document cannot be reinstated. It is permanently removed from active status on EDMS.

Case file. A packet containing all pertinent information documenting the change from one revision to the next, including any or all, as appropriate:

- Completed DCR
- Completed Form-1002, Procedure Validation Request
- Completed Form-1003, Comment Resolution Form, red-line comments, or e-mail comments and resolutions
- Completed Form-1444, Hazard Assessment Record Sheet
- External concurrence/approval correspondence or comments, as applicable
- Completed Form-1728, Document and Case File QC Checklist.

This packet of information will increase as the document moves through the development process and is controlled by Document Control when revision is finalized and issued.

Controlled copy. A paper copy version of a controlled document that is under configuration management, and as such, has a specific number, distribution, and copy location and owner. Controlled copies are stamped CONTROLLED and assigned to specific location, and individuals when appropriate, for tracking purposes.

Controlled document. Any document, such as a procedure, form, instruction, plan, report, etc., that requires revision control and is maintained and released for use in a controlled manner.

Controlled location personnel. Personnel working in the same area of established controlled copy locations as documented in EDMS who are responsible to update controlled copy manuals with transmitted revisions.

Document revision. A change that results in a re-typed and re-issued edition of the document that is taken to the next revision level upon issuance.

Effective date. The date the document is valid for use.

Electronic Document Management System. Integrated document management software system used to track and store electronic documents and/or images of paper documents. Capable of keeping track of document revisions for history tracking and is the AMWTP standard for automating configuration management process..

Field change. An immediate change to an operations or maintenance instruction for:

- An unanticipated operational and/or maintenance condition that might stop work or cause it to be unreasonably delayed
- Needed for immediate corrective actions
- Implementing a simple process improvement as directed by the document owner and does not introduce new hazards that have not been previously addressed.

Knowledgeable reviewer. An individual who has requisite knowledge to determine the technical adequacy of the document for its identified/intended purpose.

Line management. Supervisors or managers, typically in operations or plant management roles, who authorize or approve work in AMWTP areas (i.e., can be considered to be in an "ownership" position in an AMWTP area).

Minor change. Editorial changes that correct grammar, spelling, page or section numbers, organizational titles (but not responsibility changes), schedules (non-quality affecting changes), forms (but not changes to the intent of the form or any that contain embedded software formulas), or attachments that are representative (i.e., for example only). Changes that affect step sequences, step tiering, or the technical content of the document are not minor changes.

NNSS-related. Documents that may affect NNSS low level waste acceptance criteria and are listed on LST-LLW-03. New documents or changes to NNSS-related documents require NNSS WCO review and approval on the document/changes.

One-time use reference document. Plans or reports generated for a specific activity or analysis in a snap-shot of time. One-time use reference documents are not implementing procedures, will never be worked to, will never require revision, and will most likely be archived as a record per MP-DOCS-18.2, Records Management, when no longer needed. Examples of one-time use reference documents include, but are not limited to, implementation plans for project initiatives, position/white papers, or reports of activity/goal/milestone status for submittal to customers.

Periodic review. A review conducted by the document owner or designee, at defined intervals, which considers all aspects of a document's content to ensure continued accuracy. Periodic reviews may be accomplished through a documented validation.

Procedure. Any document used for the purpose of directing or prescribing process requirements, responsibilities, and activities. Procedures are approved for use and required for performance of any AMWTP quality affecting activity.

Reinstate. If a document has been suspended or superseded, the document may be reinstated with the revision number being elevated to the next revision number from the time the document was superseded or suspended.

Requester. Any employee who is identified in EDMS that has requested a change to a controlled document.

Set of documents. May include an individual document, a set or suite of documents, or documents from multiple areas.

Significant comment. A knowledgeable reviewer's written response that is derived from the knowledgeable reviewer's area of expertise or discipline or that addresses material assigning tasks to the knowledgeable reviewer's organization. Significant comments address issues of: (a) noncompliance with laws, regulations, permits, standards or implementing procedures; (b) proper conduct of mission-critical operations; (c) creating unsafe conditions that could result in personal injury, death, damage to the environment; or (d) creating conditions that could result in a contract change or deviation from a contractual obligation.

Subject matter expert. A person assigned by the responsible manager to a system, program, project, discipline, equipment, or other topic, who has knowledge and relevant expertise.

Supersede. Replace existing document function or scope with another document. The replacement is annotated in EDMS for the purpose of providing a trail in the case of other document references.

Suspended document. A document that is temporarily withdrawn from authorized use.

Temporary operating instruction. Procedures developed for operation of non-routine, one-time only work activities (e.g., recovery of severely degraded boxes). TOI procedures are subject to the complete document change control process for developing new procedures including hazard assessment and validation. As one-time use only procedures, they are not subject to revision but have finite expiration dates after which time they are no longer valid for use.

USQ evaluations. Evaluations required by 10 CFR 830, Nuclear Safety Management, and performed using MP-NSPC-3.2 to determine whether a proposed change or a discrepant as found condition is bounded by the AMWTP Safety Basis.

Validation. A physical process that confirms usability of an instruction. Validation confirms, either through limited field use, a walkdown, mockup, or tabletop analysis, that the intended user can perform the procedure instructions exactly as written. Validation methods are:

- *Limited field use validation*: A qualified user performs all procedure steps using the specified equipment, systems, and material at the actual work location, or using models or mockups of equipment and workspaces. This process requires USQ applicability review or a USQ evaluation, RCRA, and training checks and balances to maintain the facility safety basis.
- *Mockup validation:* Use of models or mockups of equipment and/or work spaces performed outside of process areas/buildings. Mockup validations shall not be performed on in-process equipment, on radiological waste, or in a radiological area.
- *Walkdown validation*: For use by ACL personnel only, qualified lab personnel walk through all procedure steps using the specified equipment, systems, and material at the actual work location, or using models or mockups of equipment and workspaces.
- *Tabletop validation*: A qualified user evaluates the technical content, structure, organization, and language of each procedure step. During a tabletop validation, users are asked to "talk through" the procedure to indicate when, where, and how they would perform each step.

The extent of validation can also vary. The two basic validation extents are:

- *Complete validation*: Any of the validation methods are used to validate the entire procedure. All sections of the procedure are considered, including roles and responsibilities, precautions and limitations, prerequisites, procedure steps, etc. New procedures and revisions considered to be a rewrite must have a complete validation.

- *Partial validation*: Any of the validation methods are used, but the validation is limited to specific portions of the procedure that are impacted by a limited scope modification. Only procedures with modifications identified by strikeouts and sidebars can be partially validated. New procedures and revisions considered to be a rewrite cannot be partially validated.

WIPP-related documents. Documents that specify requirements, prescribe processes, or establish requirements important to the compliance application, waste characterization, repository performance assessment, waste isolation, waste transportation, nuclear safety, environmental protection, and management and operation of the WIPP facility. WIPP-related documents are listed in LST-Q&SI-01 and may require CBFO review and approval on any changes made to them.

(DOE/CBFO-94-1012 Section 1.4)

Working copy. A white copy of a procedure that has been photocopied from a controlled copy manual (yellow) or downloaded from EDMS and verified that it is the latest approved revision, with applicable field changes, on a daily basis but prior to being worked to.

5.0 REFERENCES

(1) 10 CFR 830, Nuclear Safety Management

(2) ANSI/ANS-8.19-2005, Administrative Practices for Nuclear Criticality Safety

(3) DOE/CBFO-94-1012, Quality Assurance Program Document, U.S. Department of Energy, Carlsbad Area Office, Carlsbad, New Mexico

(4) INST-COPS-9.18.4, Hazard Assessment

(5) LST-COPS-01-IM, Conduct of Operations Implementation Matrix

(6) LST-LLW-03, NNSS Procedure Review List

(7) LST-PAIT-01, WTS/PVCS Affected Procedures and Forms

(8) LST-Q&SI-01, WIPP Procedure List

(9) MP-ADMN-1.18, Requirements Management

(10) MP-CD&M-11.1, Change Control

(11) MP-CD&M-11.2, Software Quality Assurance

(12) MP-COPS-9.12, Required Reading

(13) MP-COPS-9.14, Operations Procedures

(14) MP-DOCS-18.1, Developing Written Work Instructions

(15) MP-DOCS-18.2, Records Management

(16) MP-DOCS-18.3, Developing Management Procedures

(17) MP-DOCS-18.8, Developing Analytical Chemistry Methods

(18) MP-DOCS-18.9, Developing Analytical Chemistry Laboratory Procedures

(19) MP-NSPC-3.2, Unreviewed Safety Question Process

(20) MP-RTQP-14.17, Training Requests

(21) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(22) MP-TRUW-8.2, Quality Assurance Project Plan

(23) PD-COPS-9.18, Work Control

(24) PD-LLW-02, Nevada Test Site Waste Certification Program Plan

(25) QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing

(26) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-DOCS-18.4, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal
Records generated per this procedure but are contained in case files for each specific controlled document (as applicable): • Completed Form-1001, Document Change Request • Completed Form-1002, Procedure Validation Request • Completed Form-1003, Comment Resolution Form • Any redlines and e-mail comments, concurrences, and e-signatures • Completed Form-1004, Document Transmittal Form • Completed Form-1444, Hazard Assessment Record Sheet • Completed USQ Evaluator communications • Completed Form-1728, Document and Case File QC Checklist	Determined by the specific document case file.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Suggested Minimum Knowledgeable Reviewers for Document Review and Approval
Appendix B – Document Identifiers and Series Numbers
Appendix C – Documents Requiring DOE-Idaho Review and Approval

Appendix A –
Suggested Minimum Knowledgeable Reviewers for Document Review and Approval

The following matrix identifies the suggested minimum functional reviews for the required knowledgeable reviewer Block 9 of the DCR; reviews can be delegated within that functional organization. Document owners are identified in EDMS. Signature authority delegation for document owners is managed via formal correspondence signed by the document owner for long-term delegations. Short term delegation of signature authority is provided via electronic notifications. These review requirements are not applicable for one-time use reference documents.

The document owner or knowledgeable reviewer determines the need for these reviews based upon the scope of the change and/or the affected functional area.

Documents that are new or NNSS/WIPP/PAIT-related and listed on LST-LLW-03, LST-Q&SI-01, or LST-PAIT-01 will receive the required NNSS WCO, SPM or PAIT reviews through the DCR process independent of the required knowledgeable reviewers listed below.

DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
Implementation Matrices (Requirements) except those required for the safety basis	Document Owner						
Charters	Review by committee members for which the Charter was created.						
Project Execution Plan (PEP), Project Management Plan (PMP), ISMS Description Document	Senior Management**						
Program Descriptions (PD)	Representation from Senior Management **						

* Waste Programs KEY: TRU=TRU Programs; LLW=LLW/MLLW Programs; ACL=Analytical Chemistry Laboratory

** Senior Management is defined as organization manager directly reporting to the President & Project Manager.

***ACL Required Reviewers are the Laboratory Manager and Laboratory QA Officer. The Laboratory SME is also required for laboratory-specific documents.

****NAO=Nuclear Assurance Operations

AMWTP MANAGEMENT PROCEDURE		
MP-DOCS-18.4, Rev. 37	Issued: 09/17/12	Effective: 09/18/12
Document Control		

DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
Company Level Policies (POL)	Project Manager, Legal, and appropriate Sr. Functional Manager, as determined by Project Manager						
GENERAL ADMINISTRATIVE & HUMAN RESOURCES (ADMN unless otherwise noted)							
Human Resource related	Project Manager and Legal						
Project/Production Planning (PROJ/PRPL)			●	Both			TRU
Performance, Measurement, Analysis and Reporting, Project Controls, Cost & Schedule, EVMS related	Representation from senior management*						
Communications, Tours/Visits, Identity and Logo Use related							
Information Management and Data Security (PAIT)		NFM	●	Both			ALL
Plant Automation/Software (CD&M [11.2 Series Only]/PAIT)		NFM	●	Both	●	●	TRU
Accounting, Payroll, and Travel related (**except** Forms)	Representation from senior management**						
Accounting, Payroll, and Travel related Forms	Determined by document owner						
Procurement, Property, Vehicle related (PCMT)	●		●	CS	●	●	
Requirements Management	Document owner with input from requirement owners						
Training (RTQP)		NFM (for Operations/Plant) NAO	●	*Additional knowledgeable reviewers as determined by Training based on affected program.*			
Documents and Records (DOCS) ** Additional knowledgeable reviewers as determined by Document Services based on affected program.*		NAO	●	Both			ALL
Plans, Reports, Guides, and Lists applicable to the above functional area/organization only	Determined by document owner, but must include affected process owners and SMEs.						

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DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
OPERATIONS							
Authorization Basis Documents (DSA/TSR/NFCS, RCRA Permit, etc.) and corresponding implementation matrices	●	NAO & NFM	●	Both	●	●	Waste Program Rep.
Operating instructions (OIs, FOIs, & AOIs, & TOIs)	●	NAO & NFM	● except AOIs	Both	●	● SSWC	TRU, LLW
Conduct of Operations (COPS) **except** Transportation Documents		NAO & NFM	●	Both	●	● & SSWC for INSTs	ALL
Operations (OPS) Plans (PLN), Reports (RPTs), Guides (GDE) and Lists (LST) not designated as one-time use reference documents.		NAO	●	CS			ALL
Plans, Reports, Guides, and Lists applicable to Operations only	Determined by document owner (include affected process owners/SMEs).						
ENV AND S&H							
Emergency (EP&C) Procedures and Instructions	●	NFM	●	Both			
Security (SCTY) Procedures	●	NFM	●	Both			
Security (SCTY) Instructions	Security Only						
Emergency Planning for Off-site Facilities	●		●				
Radiological Control (RS&C)	●	NFM	●	Both		●& SSWC for INSTs	
Environmental Compliance/Permitting (EC&P)	●	NFM	●	Both		●	ALL

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DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
Industrial, Convention Safety, Health & Hygiene, and Fire Protection (ISIH) and ALL Fire Hazard Analyses (FHAs)	●	NFM	●	Both		●& SSWC for INSTs	
Plans, Reports, Guides, and Lists applicable to ES&H only	Determined by document owner (include affected process owners/SMEs).						
MAINTENANCE							
Work Control Documents (COPS)	●	NAO & NFM	●	Both	●	●	ALL
Conduct of Maintenance Procedures (CMNT) and Instructions	●	NAO & NFM	●	Both	●	●& SSWC for INSTs	
Plans, Reports, Guides, and Lists applicable to Maintenance only	Determined by document owner (include affected process owners/SMEs).						
ENGINEERING							
Engineering, design control, change control, and configuration management documents (CD&M) **except** software, system automation, or information technology related.	●	NFM	●	Both	●	●	
Plans, Reports, Guides, and Lists applicable to Engineering only	Determined by document owner (include affected process owners/SMEs).						
NUCLEAR AND CRITICALITY SAFETY							
Nuclear Safety Process & Control (NSPC) and Criticality Safety (NFCS)		NFM	●	Both			
Plans, Reports, Guides, and Lists applicable to Nuclear Safety/Criticality Safety only (except as stated in the Operations section)	Determined by document owner (include affected process owners/SMEs).						

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Document Control

DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
QUALITY ASSURANCE							
WIPP Procedure List (LST-Q&SI-01)			●				TRU
Management and Independent Assessment (M&IA)	●		●	CS	●	●	ACL
Quality Assurance procedures and Instructions (Q&SI)	●		●	CS	●	●	ACL
Quality Assurance Program Plan (QAPP)		NAO & Plant Manager	●	Both			ALL
Quality Assurance Project Plan (QAPjP) (MP-TRUW-8.2)			●				TRU
Plans, Reports, Guides, and Lists applicable to Quality Assurance only	Determined by document owner (include affected process owners/SMEs).						
WASTE PROGRAMs							
Analytical Chemistry Lab procedures and instructions (ACLP, ALAB, ACMM)	WS		●	Both (MP-ACLP-24.1, and ALAB Only)		SSWC (ALAB Only)	ACL***
Low Level Waste Management procedures and instructions (LLW)	●		●	Both			ALL
Transportation Program Procedures (TRNS/COPS)	●		●	Both			TRU
TRU Program procedures and instructions (TRUW)			●	Both			ALL
TRU Program plans, lists, and reports (TRUW)	WS		●	Both			TRU
Waste Management & Minimization on (WM&M)	●		●	Both			ALL

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DOCUMENT TYPES Forms require same review as the implementing document	ES&H (incl. Rad & Waste Services)	Ops (NFM, NAO****)	QA	Criticality (CS)/ Nuclear (NS) Safety	Eng.	Maint.	Waste Prog. (TRU, ACL, LLW/MLLW, All)
Plans, Reports, Guides, and Lists applicable to any of the Waste Programs only	Determined by document owner (include affected process owners/SMEs).						
SUBCONTRACTOR DOCUMENTS (NOTE: *Minor changes require STR and USQ approval only.)*							
CCP Documents	●	NFM	●	Both			TRU/ ACL***
CCP AK Reports & Waste Stream Profile				Both			TRU

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Appendix B –
Document Series Identifiers and Types

The following list is a tool to be used for determining document identifiers but may not be all inclusive. Updates to this list will occur during normal revisions. Contact Document Control for assistance.

Document Series

ACLP-24.0	Analytical Chemistry Laboratory Procedures
ADMN-1.0	General Administration & Human Resources
ALAB-25.0	Analytical Laboratory (facility)
CD&M-11.0	Control of Design and Modification
CMNT-10.0	Conduct of Maintenance
COPS-9.0	Conduct of Operations
DOCS-18.0	Document and Records
EC&P-7.0	Environmental Compliance and Permitting
EP&C-12.0	Emergency Planning and Control
ISIH-2.0	Industrial, conventional Safety, Health and Hygiene
LLW-19.0	Low Level Waste Management
M&IA-17.0	Management & Independent Assessment
OI/FOI/AOI/TOI/ ACMM/ACLP	Operating Instruction/Facility Operating Instruction/Abnormal Operating Instruction / Temporary Operating Instruction/Analytical Chemistry Methods/ACL Instructions
NFCS-4.0	Nuclear Facility Criticality Safety
NSPC-3.0	Nuclear Safety Process and Control
PAIT-21.0	Plant Automation/Information Technology
PASS-26.0	Performance Assurance
PCMT-15.0	Procurement
PROJ-23.0	Project Management
PRPL-22.0	Project & Production Planning
Q&SI-5.0	Quality & Safety Improvement
RS&C-6.0	Radiological Control & Safety
RTQP-14.0	Training and Qualification of Personnel
SCTY-16.0	Security
TRNS-20.0	Transportation
TRUW-8.0	TRU Waste Management
WM&M-13.0	Waste Management & Minimization

Document Types (normally used in conjunction with the above)

NOTE 1: *Templates referred to in this section are available from Document Services.*

NOTE 2: *Not all documents currently conform to the following document designator format or templates but will be corrected as they are revised.*

DOC TYPE	DESCRIPTION/DEFINITION	STANDARDS/TEMPLATES DOC DESIGNATOR FORMATS
BLUESHEET	Document used for applying global (project-wide) changes determined to be minor per the definition in Section 4.0. Examples are: title changes, company name changes, or global reference changes. Also includes documents used for applying specific change necessary for contractor transition which are supplied by the incoming contractor.	The MP template is applied for headers and footers but sections can be adjusted as necessary. MP-DOCS-18.3 does not apply. Designator: XXX-BLUESHEET-## (using acronym appropriate for functional area)
CTR	Charter - Explains the functions, operating principles, membership and responsibilities of a committee or working group. Although these are controlled documents governed by the DCR process, the document designator for charters does not contain a series identifier since the groups usually consist of personnel from multiple functional areas and/or organizations.	The RPT template is applied, sections are modified as appropriate. Designator: CTR-###
FAC-SD	Treatment Facility System Description – Reference documents only – Legacy facility system descriptions, once controlled documents, but cancelled and retained for their historical information.	Designator: FAC-SD-##
FORM	Form – Provides blank fields for standardized data collection and/or indicates completion of work. Used for INST sign-offs when required and are submitted as completed records per MP-DOCS-18.2 when required.	FORM template, either portrait or landscape as appropriate. Designator: FORM-####
GDE	Guide - Suggests work methods or provides additional information that users apply at their discretion. Information in a guide can be controlled via the DCR process if subject to revision but it is not enforceable or auditable. Document type designators are combined with series identifiers for controlled documents or left by themselves for reference/one-time-use documents.	The RPT template should be applied; sections can be modified as appropriate. Designators: Controlled: GDE-(*Series*)-## Reference: GDE-###
IAG	Interface Agreement – Reference document only - Agreements which describe functional relationships and assigns responsibilities between AMWTP and external companies/projects.	As written. Designator: IAG-###

DOC TYPE	DESCRIPTION/DEFINITION	STANDARDS/TEMPLATES DOC DESIGNATOR FORMATS
INST	Instruction - Provides specific direction and detail for performing hands-on step-by-step technical tasks. Instructions incorporate appropriate information from documentation such as facility design documents, facility safety analysis, hazard analyses, field sampling documents and technical safety requirements. Instructions include but are not limited to: • Operating instructional procedures (OI, FOI, AOI) • Analytical Chemistry instructional procedures (ACMM, ACLP, ALAB) • Functional area instructional procedures (ex: ISIH, RS&C, SCTY, etc.) • Maintenance and test instructional procedures (ex: CMNT) • Software and System instructional procedures (ex: CD&M).	MP-DOCS-18.1; MP-DOCS-18.8, MP-DOCS-18.9 INST Template Required **NOTE:** *The first digit (of 3) in the INST-ACLP/ACMM document IDs are derived from an analysis type or laboratory function and are assigned by the ACL QA Officer. The next 2 digits are consecutive only and are assigned by Document Control.* Designators: Operations: INST-XXX-## ACL: INST-ACMM/ACLP-### INST-ALAB-## All Others: INST-(*Series*)-#.#.# **NOTE:** *INST-MI-#### documents are exempt from the DCR process but are controlled per INST-CMNT-10.1.4.*
LST	List - Provides a catalog or roster of items that share common characteristics. Examples include requirement implementation matrices, waste lists, etc. Lists do not provide work instruction and only implement requirements in so much as the requirement is to list or provide a list.	The RPT template should be applied; sections can be modified as appropriate. Designator: LST-(*Series*)-## (if implementation matrix, add "-IM" to end of designator)
MP	Management Procedure - Establishes methods for administratively implementing and integrating requirements, specifying roles and responsibilities for performance, as well as providing a standard for conducting business. An MP may be appropriate when describing programmatic execution or implementation of requirements, company objectives, and/or policies.	MP-DOCS-18.3 MP Template Required Designator: MP-(*Series*)-#.#
PD	Program/Process Description - Describes the management basis and broad boundaries for how a program or process operates and interfaces.	The RPT template should be applied; sections can be modified as appropriate. Designator: PD-(*Series*)-##

DOC TYPE	DESCRIPTION/DEFINITION	STANDARDS/TEMPLATES DOC DESIGNATOR FORMATS
PLN	Plan - Provides a method or approach documenting strategies for achieving defined objectives, goals, work criteria, boundaries, etc. Plans do not provide activity based work direction and combined with objective evidence proving completion of those strategies, are usually submitted as completed records per MP-DOCS-18.2. In these cases, the plans are Reference or One Time-Use documents. Plans generated to comply with DOE directives (i.e. Security or Emergency Plans, etc). are subject to revision, therefore controlled, and the DCR process applies.	The RPT template should be applied; sections can be modified as appropriate. Designators: Controlled: PLN-(*Series*)-## Reference: PLN-###
POL	Policy – With the exception of ACL-specific policies, POLs contain executive management-level directives and/or core management values that reflect internal company requirements expected to be followed by company personnel and subcontractors.	The RPT template should be applied; sections can be modified as appropriate. Designator: POL-###
RPT	Report - Collects and records the results of engineering, technical or administrative activities, evaluations, or analyses. Also includes AK Summaries and TRU Sampling Reports. Depending on the content and intent of the report, the document can be a reference or one-time-use document. If the document is subject to revision, it must be a controlled document and the DCR process will apply.	The RPT template is applied; sections are modified as appropriate, except for TRUW reports. TRUW reports must use the established template: REPORT Template_TRU.dot Designators: Controlled: RPT-(*Series*)-## Reference: RPT-###
SOW	Statement of Work – EDMS reference document only - Required by MP-PCMT-15.1, Acquisition of Material and Services; and developed for use with purchase requisitions and subcontracts. SOWs contain work overview and background, scope of work, technical requirements/tasks, expected deliverables, and applicable site rules and regulations.	DCR process not applicable, but use of Form-1948 required. Designator: SOW-###
SRM	Subcontractor Requirements Manual - Established to ensure a consistent and controlled method of providing requirements for subcontractors and direct-hire craft as they perform work at AMWTP. Program applies to subcontractors that provide services to AMWTP. The subcontract or other procurement documents govern the work performed.	The SRM contains various document types; the format/standard and templates from above are applied as appropriate. Designators: PD-SRM-01 LST-SRM-01 SRM-(*Series*)-#.#

Appendix C – Documents Requiring DOE-Idaho Review and Approval

Submittal of the following list of documents must have President and Project Manager concurrence and be submitted under the signature of the Project Manager or Contract and Logistics Manager to the DOE Contracts Office.

NOTE: *Due to changing requirements, there may be additions or deletions to this list that will be included in the next revision.*

Procedure	Title	Source Requirement
PLN-ADMN-02	Risk Management Plan	DOE/AMWTP Contract
LST-COPS-01-IM	Conduct of Operations Implementation Matrix	DOE O 422.1
MP-COPS-9.16	Startup and Restart of Nuclear Facilities	DOE O 425.1D
PLN-EP&C-03	AMWTP Emergency Plan/RCRA Contingency Plan	DOE O 151.1C
MP-ISIH-2.7	Chronic Beryllium Disease Prevention Program (significant changes only as determined by document owner)	10 CFR 850
MP-NSPC-3.2	Unreviewed Safety Question Process	10 CFR 830
MP-PCMT-15.8	Property Management Program Procedure (significant changes only as determined by document owner)	DEAR 970.5204-21
MP-RTQP-14.20	Training Implementation Matrix	DOE O 426.2
MP-RTQP-14.3	Exceptions and Exemptions to Training, Qualification, and Certification	DOE O 426.2
PD-CMNT-01	Nuclear Maintenance Management Program Description	DOE O 433.1B
PD-ISIH-06	Worker Safety and Health Program	10 CFR 851
PD-ISM-01	Integrated Safety Management System Description Document	DOE M 450.4-1
PD-NFCS-01	Nuclear Criticality Safety Program	DOE O 420.1B
PD-Q&SI-01	Contractor Assurance Program	DOE O 226.1
PD-RS&C-01	Radiation Protection Program	10 CFR 835

Procedure	Title	Source Requirement
PLN-PAIT-004	AMWTP Certification and Accreditation System Security Plan	DOE O 205.1A
PLN-SCTY-16.9	Material Control and Accountability Plan	DOE M 470.4-6
QAPP-01	Quality Assurance Program Plan	10 CFR 830 DOE O 414.1C
RPT-DSA-02	Documented Safety Analysis	10 CFR 830
RPT-EP&C-01	Emergency Planning Hazards Survey	DOE O 151.1C
RPT-EP&C-02	Emergency Planning Hazards Assessment	DOE O 151.1C
RPT-PEP-01 RPT-PMP-01	Project Execution Plan / Project Management Plan (if required by contract modification)	DOE/AMWTP Contract
RPT-TSR-03	Technical Safety Requirements	10 CFR 830

Management Assessment

Advanced Mixed Waste Treatment Project

(Signature on file. See DCR-10556.)
Angie Morse
Quality Assurance Engineer

09/12/12
Date

AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.1, Rev. 11	Issued: 09/12/12	Effective: 09/13/12
Management Assessment		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/02	All	DCR-1346. Initial issue, this management procedure supersedes PQP 9.1 Revision 2.
1	12/2/02	All	DCR-1542; Implement Corrective Action Report # 1350, Findings RWC-2002-18.1 and RWC-2002-18.2. Implement Action Item # 1463. Incorporate TrackWise® instructions.
2	02/18/03	Pg. 12, section 4.0, step-4.3.12, 4.3.13 Pg. 13, section 5.0	DCR-2028. Revised Procedure to incorporate comments resulting from CBFO Adequacy Review (Reference: Letter CBFO:NTP:KWW:VW:03-0247:UFC:5822 received 1/23/03)
3	07/07/03	Pgs.10, 11 &12	DCR-2314. Revised Procedure to incorporate Action Items 2645 & 2646 that resulted from the Corporate ORR. CORR-Finding MG-2.2, Corrective Action Report CAR-2534. Update records section.
4	03/28/05	Pgs. 9, 12, 13, 14, & 15. Various	DCR-4011. Implement Process Improvements for review and closure of Management Assessments. Revised to align with TrackWise® process flow. Editorial/format changes to comply with MP-DOCS-18.3, Management Procedures. Incorporated CBFO comments on Rev 4A received 1/20/05.
5	11/03/05	All	DCR-4455. This revision is a complete rewrite. Procedure was simplified by consolidating content. Global changes were made due to contractor change. Sections were reordered according to MP-DOCS-18.3, Rev. 2.
6	5/8/06	Page 2, 3.1.3; and page 4, 3.2.4 and 3.2.5; and page 8, Section 6.0	DCR-4852. Revision 6 addresses CAR 20489 and Action Item 20731. Rev. 6A updates statement concerning Records generated by this procedure. Rev. 6B incorporates CBFO QAPD requirement 3.1 E. for conducting and reporting management assessments of the AMWTP QA program. Adds Condition Adverse to Quality to Definitions.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	10/24/06	Add Note before 3.5.1 and Appendix A Section 9 Note 4	DCR-5424. Notes to update and improve procedure as a result of NTS audit.
8	04/17/2007	All	DCR-5788. General rewrite for CAR 21730 follow-up improvements and address PAAA Program Evaluation issues. Updated to clarify reporting requirements for conditions adverse to quality and evaluation of reported results. Clarified criteria and method for documenting the development of Department Management Assessment Plans. Removed extraneous definitions not used in the procedure. Added two new appendices providing guidance for use in assessment planning. General editorial changes, maintenance, improvements, and clarifications.
9	05/01/08	All	DCR-6958. Addresses requirements of Action Item 28838, to update the procedure with the criteria used for evaluation of risk associated with areas of assessment.
10	11/05/09	Various	DCR-8609. Revised to identify specific MAR training requirement as required in CAR 45413, Surveillance Report # 44151 and AI 46072. Clarified manager role in documenting MAR review and assigning action items. General editorial changes and improvements.
11	09/12/12	Various	DCR-10556. Revised to update information contained in Appendix C. Incorporate DOCS-BLUESHEET-08 and ITG-BLUESHEET-119.

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Appendix B - Guidelines for Selection of Assessment Methodology B1

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AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.1, Rev. 11	Issued: 09/12/12	Effective: 09/13/12
Management Assessment		

1.0 PURPOSE/SCOPE

Management assessments (see def.) provide management with information to evaluate and improve any aspect of the organization. A rigorous and proactive Management Assessment Program is the foundation for effective, efficient management of programs, systems, and work processes, and a key implementing feedback and improvement process of safety management.

The objective of the Advanced Mixed Waste Treatment Project (AMWTP) Management Assessment Program is early identification and correction of deficiencies that could otherwise result in significant issues or events, and to promote continuous improvement.

This procedure describes AMWTP's process and requirements for planning, conducting, reporting, evaluating, and acting on management assessments, and implements requirements for a Management Assessment Program as specified in 10 CFR Part 830, Subpart A, Quality Assurance Requirements; DOE O 414.1C, Quality Assurance; DOE O 226.1A, Implementation of Department of Energy Oversight Policy; DOE-CBFO-94-1012, Quality Assurance Program Document; QAPP-01, Quality Assurance Program Plan; and QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Department Managers	• Development of Department Management Assessment Schedules. • Periodically evaluate their organization's functional areas for performance and effectiveness.
Managers at All Levels	• Plan, conduct, and report management assessments. • Participate in the management assessment processes to ensure that results contribute to improved performance of programs, systems, and work processes. • Evaluate results of management assessments. • Identify and implement improvements needed in programs, systems, and processes. • Identify problems and take timely action to correct identified problems. • Ensure all *conditions adverse to quality* (CAQ; see def.) identified through management assessment are evaluated and reported in TrackWise. • Assign *action items* (AI; see def.) to evaluate or implement improvements identified as observations or recommendations as determined by the responsible manager to require follow up. • Ensure assigned actions are completed to resolve CAQ and improve programs, systems, or processes.
Quality Assurance (QA) Manager	• Owns and maintains this procedure. • Periodically assesses implementation and effectiveness of the management assessment program. • Reviews nonconformance and corrective action reports generated during the performance of management assessments.
All Personnel	• Responsible for completing management assessment training if performing management assessments

3.0 PROCEDURE

3.1 Management Assessment Scheduling

3.1.1 Department managers shall periodically evaluate their organization's functional areas for performance and effectiveness in order to identify and correct problems that hinder their organization from achieving its objectives and to identify areas for performance improvement.

(10 CFR 830.122[i])

NOTE 1: *The hierarchy of AMWTP Departments and associated functional areas addressed by this procedure are established in* TrackWise (see def.) *and depicted in Appendix C, AMWTP Department Organizations.*

NOTE 2: *Department Annual Management Assessment schedules are incorporated into an AMWTP Contractor Assurance System Integrated Assessment Schedule*

NOTE 3: *Department Manager shall establish an annual Management Assessment schedule at the end of each calendar year for programs, facilities, systems, processes, services and subcontractor activities for which they are responsible.*

3.1.2 Annual Management Assessment schedules must be developed and prioritized based on hazards, degree of risk, and importance to safety and mission success with consideration for:

- Nature of the facility or activity being assessed, and the hazards and risks to be controlled
- Organizational goals and objectives
- Assessment required by applicable DOE directives or regulatory requirements
- Program Assessments for evaluations of the effectiveness of safety management programs important to worker safety and defense in depth

- System Assessments for evaluation of support systems to enable performance of work
- Process Assessment for evaluation of implementation and adequacy of work processes
- Periodic analysis of the collective results of process assessment.

3.1.2.1 Annual Department Management Assessment Schedules must be documented in TrackWise and identify:

- Assessment Risk Level
- Department and Functional Area to be assessed
- Assessment Level, see Appendix A, Development of Management Assessment Plans
- Responsible Manager
- Assigned Actionee
- Assessment Scope
- Completion Date.

3.1.2.2 The assessment risk level is based on the potential for conditions or events to have consequential affect on Nuclear Safety, Industrial Safety, Environmental Safety, or Program Management. The risk levels are categorized as:

- High: Condition exists or is likely within the contract period that can have direct consequence on worker, public or environmental safety, regulatory compliance, or contract delivery of regulatory milestones.
- Moderate: Condition is possible within the contract period that could have indirect consequence on worker, public or environmental safety, regulatory compliance, or contract performance.

- Low: Condition is possible within the contract period, but has no impact on worker, public or environmental safety, regulatory compliance, or contract performance.

3.1.2.3 Department managers shall ensure the Department Management Assessment Schedule includes a minimum of one management assessment per calendar quarter.

3.1.2.4 Department managers may cancel or reschedule a scheduled assessment based on reevaluation of the hazard, risk, or importance associated with the assessment subject area. Justification for the cancellation or rescheduling of a scheduled assessment must be documented within associated MAR.

3.1.2.5 Department managers may initiate management assessments in TrackWise pending a schedule date to allow for planning flexibility and review for relevance, provided the minimum scheduled assessments noted in Step 3.1.2.3 are met.

NOTE: *Computer based training, AWT4138C, AMWTP TrackWise System, provides a user overview of TrackWise.*

3.1.3 Department management assessment schedules are published in the TrackWise Summary Report link on the AMWTP Homepage.

3.1.3.1 The TrackWise Summary Report provides a readily available access to established Department Management Assessment Plans and does not require login to TrackWise.

3.2 Development of Management Assessment Plans and Review Criteria

NOTE 1: *Appendix A provides information to be utilized based on the level of management assessment to be performed.*

NOTE 2: *Appendix B, Guidelines for Selection of Assessment Methodology, provides information for selecting the most appropriate assessment method.*

Effective management assessments require development of an assessment plan and/or review criteria based on the scope and objective of the assessment, the activity to be evaluated, and the applicable performance requirements.

3.2.1 Managers must ensure that evaluation criteria or expectations are established to help focus the assessment on the goals and objectives of the program, system, or process being evaluated.

3.2.1.1 Using information from Appendix A, develop and document the management assessment plan based on the level of management assessment to be performed and to achieve the scope and objective of the assessment.

3.2.1.2 Management Assessment plans shall be fully described and documented in the TrackWise management assessment report.

3.2.2 In defining performance requirements, managers should use relevant requirements source documents such as:

A. Regulatory Requirements

B. Contract Requirements

C. DOE Orders, Manuals, and Standards

D. Appropriate Codes and Standards

E. Facility Safety Documents

F. Program Documents and Plans

G. Implementation Procedures

H. Subcontractor Statements of Work.

3.2.3 In addition to requirements source documents, managers should also consider previous performance information in the development of review criteria. Performance information documents include:

A. Previous Assessment Reports (internal management and independent)

B. External Regulatory Reviews

C. Process or System Inspections

D. Corrective Action Plans and Status Reports

E. Occurrence Reports

F. Lessons Learned

G. Event Critiques and Fact Findings

H. Trend Reports

I. Causal Analysis Reports

J. Performance Reviews

K. Project Goals and Performance Indicators

L. Safety Concerns

M. Human Performance Analyses

N. Office of Health, Safety and Security/Office of Enforcement noncompliance tracking system (NTS) Reports.

3.2.3.1 Information contained in these documents should be selected based upon impact on the organization and the relationship to the scope of the assessment.

3.3 Performing, Reporting, and Evaluating Management Assessments

NOTE: *The Nevada National Security Site (NNSS) Waste Certification Official (WCO) at AMWTP is notified of Management Assessments pertaining to NNSS activities.*

3.3.1 Managers retain overall responsibility for timely performance of management assessments and evaluation of conclusions.

3.3.1.1 Managers may delegate specific activities in support of management assessments.

3.3.1.2 Responsible managers shall directly participate in the evaluation of management assessments and conclusions.

3.3.2 Responsible managers shall ensure that personnel performing management assessments have completed course 0AWT1133, Management Assessment Training, and are knowledgeable of the program, system, or process being assessed.

3.3.3 All management assessment results shall be documented in TrackWise and contain sufficient detail that demonstrates achievement of the assessment scope and objective. Management assessment results shall include:

A. *Summary*: Describe results of the topic or area assessed, and provide sufficient details to support conclusion that were reached. Attach any supporting documents.

B. *Conditions Adverse to Quality*: Report any CAQs identified and their corresponding corrective action reports (CARs) or nonconformance reports (NCRs).

C. *Strengths*: Identify practices which should be shared with others.

D. *Observations*: Provide details on opportunities for process improvement.

E. *Recommended Actions*: Identify any noted opportunities for performance improvement or for potential Lessons Learned communication for review by the responsible management.

3.3.4 Responsible managers shall ensure the scope and results sections contain sufficient detail to reach objective conclusions and enable an independent reviewer to evaluate the validity of the assessment.

3.3.5 All CAQs identified from management assessment shall be reported in accordance with MP-Q&SI-5.3, Corrective Action, or MP-Q&SI-5.4, Identification of Nonconforming Conditions.

3.3.6 All issues, problems, performance data, and recommendations from management assessments shall be evaluated by the responsible manager to determine the appropriate level of response or action. Evaluations shall be documented on the Management Assessment Report in TrackWise.

3.3.6.1 Assign Action Items for observations or recommendations that are determined by the responsible manager to require follow up and identify the Action Items by number in the Recommended Actions section.

3.3.6.2 If minor issues were identified and corrected during the course of the management assessment, a summary of the issue and correction should be documented in the Recommendations/Observations section of the assessment.

3.3.6.3 Manager review comments will address any observations or recommendations that do not require further action or implementation.

3.3.7 Managers shall report all completed management assessments using TrackWise. Attachments may be used as supporting documentation.

3.3.8 Responsible managers shall review completed Management Assessment Reports (MARs) no later than 10 calendar days from receipt notification, irrespective of required corrective action, nonconformance disposition, or needed improvement.

3.3.9 The management evaluation of completed management assessments shall be documented in the manager review comment area in TrackWise. Manager review comments must be sufficiently detailed to validate the report performance, results, conclusions and any actions taken.

3.3.10 The manager responsible for evaluation of the MAR shall ensure that any CAQ have been correctly and accurately identified and reported in accordance with MP-Q&SI-5.3 or MP-Q&SI-5.4.

3.3.11 Managers shall respond to identified performance issues and act promptly to evaluate actions and correct the identified performance deficiencies.

3.3.12 The QA Manager shall screen all CARs and NCRs issued as a result of management assessments.

3.3.13 The QA Manager is responsible for periodic evaluation of implementation of the Management Assessment Program.

3.3.14 The QA Manager is responsible for evaluation of QA Program Management Assessments to effect corrective actions as necessary.

(DOE/CBFO-94-1012, Section 3.1.E)

4.0 DEFINITIONS

Action Items. Tasks assigned by management to specified individuals using TrackWise. Tasks may be assigned in conjunction with resolving or closing management assessments. Assigning "AIs" shall not substitute for documenting and evaluation of CAQ, but may be used to implement improvement actions.

Condition Adverse to Quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconformances. A significant condition adverse to quality is one that, if uncorrected, could have a serious effect on safety or operability.

Management Assessment. An evaluation performed by management that focuses on managements' systems and processes important to mission success, or that represent the greatest risk to the organization, or that have high potential benefit from improvement.

Observation. A condition identified as an opportunity for process improvement, but is not a deficiency or deviation from requirements.

TrackWise. Commercial off-the-shelf software used to schedule, document, report, and track management assessments, and issues or actions resulting from management assessments, such as AIs, NCRs and CARs.

5.0 REFERENCES

(1) 10 CFR Part 830, Nuclear Safety Management, Subpart A–Quality Assurance Requirements

(2) 10 CFR 830.122, Quality Assurance Criteria

(3) DOE-CBFO-94-1012, Quality Assurance Program Document

(4) DOE O 414.1C, Quality Assurance

(5) DOE O 226.1A, Implementation of Department of Energy Oversight Policy

(6) QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing

(7) QAPP-01, Quality Assurance Program Plan

(8) MP-DOCS-18.2, Records Management

(9) MP-Q&SI-5.3, Corrective Action

(10) MP-Q&SI-5.4, Identification of Nonconforming Conditions

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-M&IA-17.1, Case File	Nonpermanent WIPP Records/ENV1-J-1/Destroy 75 years after submittal.
TrackWise Management Assessment Reports	Nonpermanent WIPP Records/ENV1-J-1/Destroy 75 years after submittal.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Guidelines for the In Development of Department Management Assessment Plans

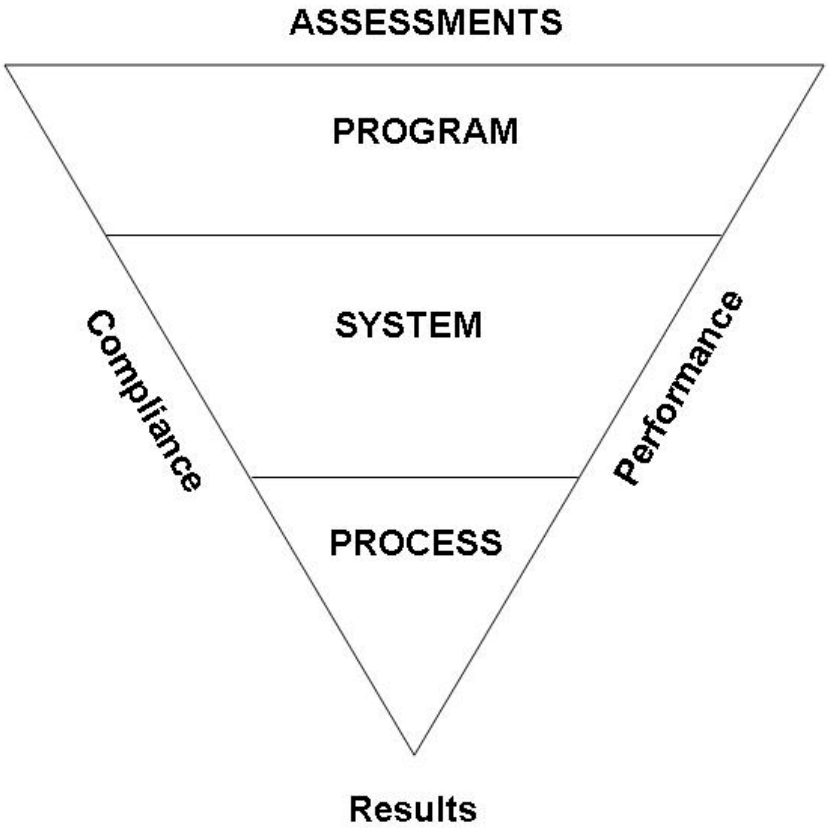
Appendix B – Guidelines for Selection of Assessment Methodology

Appendix C – AMWTP Department Organizations

Appendix D – AMWTP MAR-2 Flowchart

Appendix A -
Development of
Management Assessment Plans

Management assessment planning must identify the level of management assessment to be performed. The levels of management assessment are described as Program Assessments, Systems Assessments, or Work Process/activity assessment. Each level of assessment provides management with information that can be used to understand performance at each level and identify areas of improvement interest.



Process Assessment

A. A process is a collection of steps or actions that result in an intermediate outcome.

1. Process Assessments involve examination of work controls (such as, approved procedures and work instructions) and verification that they are being implemented effectively.

2. This level of assessment is important to ensure that workers, the public, and environment are protected from harm.

3. Process Assessments also evaluate the effectiveness of processes from a quality and customer satisfaction perspective.

System Assessment

B. A System Assessment can be used to evaluate whether appropriate leadership and support systems are provided and are effective in enabling the implementation of work processes.

1. This level of assessment evaluates if human and material resources are being properly and effectively used to achieve mission objectives.

2. At the system level, assessment would be performed to determine whether all the necessary elements and interfaces are addressed to ensure the system is capable of consistently meeting requirements and customer expectations. A management assessment of the work control system might determine the cost and resource allocation issues that impact the system.

Program Assessment

C. A Program Assessment is the most complex level of assessment. Review can involve evaluation of interdependent systems (e.g., Training & Qualification, Procedures, and Work Control) interfaces to provide the desired outcome.

1. A Program Assessment is used to determine whether overall organizational programs are properly established integrated and implemented.

2. This level of assessment is appropriate for evaluating complex organizations from several perspectives. Consequently this usually involves evaluating the integration of the many systems designed to achieve organizational goals and customer expectations with emphasis on Environmental, Safety, Health, and Quality Assurance factors.

3. A Program Assessment can be achieved through collective evaluation of system and process assessment. For example; At the program level, a maintenance management program, which relies on the work control system, would use results from the process and system level assessment to determine the effectiveness of the entire maintenance program.

Appendix B -
Guidelines for Selection of Assessment Methodology

Selection of the appropriate assessment methodology helps to establish the depth and objective of the assessment activity. Three methods are commonly used for accomplishing assessments.

A. Performance Based Assessments focus first on the adequacy of the process that produced a product or service, and then on the product or service itself. Performance Based Assessments typically provide the most useful information to management, but require a higher degree of understanding and competence on the part of the assessor.

   1. Problems found in product or service must be followed by evaluation of the methods and procedures used to implement applicable requirements to determine the failure that led to the problems.

   2. Greater emphasis must be placed on determining the extent of the condition to understand if it is isolated to one process or if it can have an affect or exist in other processes.

B. Effectiveness Assessments start with verification of requirements implementation in procedures and compliance with procedures in the workplace. Top level requirements and objectives must be considered when assessing to determine program effectiveness.

   1. This is followed with a determination of whether verbatim compliance has achieved effective implementation of the intent of top level requirements or objectives.

   2. This includes a determination whether a single noncompliance or series of noncompliances with procedures could result in failure to satisfy top level requirements or objectives.

C. Compliance Assessments focus on verifying compliance with requirements through procedure implementation.

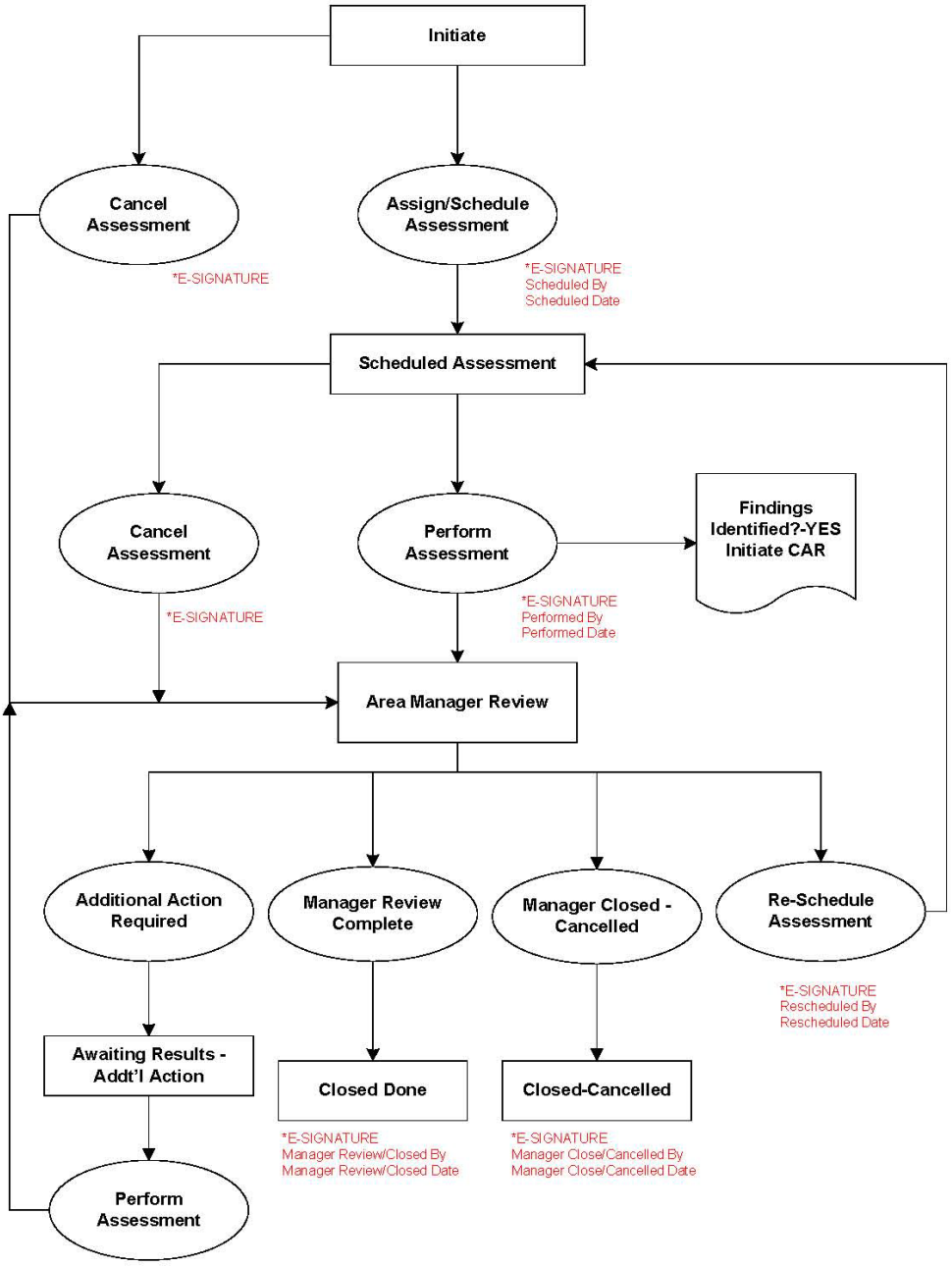
   1. Assessment for compliance alone may not adequately identify higher level systemic or programmatic problems, or determine effectiveness.

Appendix C -
AMWTP Department Organizations

	Responsible Departments	TrackWise Functional Areas
President and Project Manager	Business Services	Training
		Contracts
		Procurement
		Plant Automation
		IT
	Plant Manager	Retrieval
		Treatment
		Characterization
		Waste Handling
		Packaging/Shipping
		Container Storage
		Engineering
		Maintenance
		Treatment Tents
		Nuclear Facility Management
		Nuclear Safety
	Quality Assurance	Quality Assurance
		Document Control and Records Management
	Environmental, Security, Safety & Health	OM/IH
		IS/IH
		Environmental Compliance
		Rad Controls
		Security
		Emergency Management
		Facility Rad Con
		Waste Services
		Rad Engineering

and Proj	Responsible Departments	TrackWise Functional Areas
	Waste Programs	Production Planning
		TRU Waste Certification
		TRU Programs
		MLLW/LLW
		Transportation
		Container Movement
		Reconciliation
		Off-Site Waste
		TRU AK
		MLLW/LLW AK
		MLLW/LLW Waste Certification
		Analytical Chemistry Laboratory

Appendix D -
AMWTP MAR-2 Flowchart



Required Fields to Initiate and Schedule Assessment:

Title
Originator *
Date Opened *
Responsible Manager
Responsible Department
Functional Area
Assessment Level
Risk Level
Assigned Actionee
Date Due
Assessment Scope
Auto Populated Fields

Required Fields to Perform Assessment

Assessment Plan
Assessment Summary
Observations
Strengths
Recommended Actions
CAQ's Identified
CAR or NCR No.
Findings

Required Fields to Perform Area Manager Review

Manager Assessment Review Questions 1 through 3

Manager Review Comments

Independent Assessment

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10704.)
Angie Morse
Quality Assurance Engineer

09/12/12
Date

AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.2, Rev. 10	Issued: 09/12/12	Effective: 09/13/12
Independent Assessment		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/02	All	DCR-1363. Initial issue, this management procedure supersedes PQP 10.1 Revision 2.
1	12/11/02	Page 9 Section 4.6.2	DCR-1704, Revise Procedure to Revision 1, to incorporate the changes identified in the LMSA LOI QA Requirements- MAR 1566 & AI 1571.
1.1	4/26/03	Page 5, Section 2, Reference 2.5	DCR-1864, Minor change to correct typographical error in reference 2.5 and minor format corrections. Document review signature from the ES &H Department Manager
2	01/11/05	Page 5, Section 3.10 Page 7, Section 4.2 Page 14, Section 4.10	DCR 3395 – Revised to ensure consistency with and use of TrackWise and to allow evaluation of QA Surveillances as part of overall QA Independent Assessment process. Removed unnecessary requirements. Editorial/format changes to comply with MP-DOCS-18.3. Deleted Form-1267, findings are documented and tracked in TrackWise. Incorporated CBFO comments.
3	12/22/05	All	DCR-4456. This revision is a complete rewrite. Global changes were made due to contractor transition. A due date was established for reporting independent assessments. Roles and Responsibilities were added as Section 2.0, and other Sections were reordered according to MP-DOCS-18.3, Rev. 2.
4	03/30/2006	Page 8, Section 3.8.3	DCR-4922. Changed “The signed and approved assessment report shall be transmitted to assessed organization’s management no later than three weeks after the exit meeting date,” to “The signed and approved assessment report shall be transmitted to assessed organization's management in a timely manner after the exit meeting.”

Revision Number	Date Approved	Pages Affected	Description of Revision
5	09/12/2006	All	DCR-5202, updated for clarification for notifications of external supplier assessments, use of assessment checklists, daily briefings, include direction for documenting findings reported from external assessments activities, and resolve inconsistency with MP-Q&SI-5.3 regarding extensions for corrective action completion dates.
6	10/24/06	New Step 3.8.4	DCR-5426. New step added to update and improve procedure as a result of NTS audit.
7	07/03/07	ALL	DCR-6050. Minor change to advance date for periodic Review. Periodic review completed with no changes to document required.
8	11/30/09	Various	DCR-8468. Entire document revised. AI-46815 updated references and clarified instructions for the number of independent assessments that the AMWTP QA Manager will schedule annually (calendar year). Deleted Exhibit 7.3. Incorporated ANSI/ASME NQA-1-2008. Made editorial changes per MP-DOCS-18.3.
9	11/01/10	Various	DCR-9600. Changes made to implement corrective action for CAR 55228, Action Item 55525, to define the independent assessment requirements of DOE O 450.1A for assessment of the Environmental Management System to meet the internal audit requirement of ISO 14001:2004 (E).
10	09/12/12	All	DCR-10704. Incorporated DOCS-BLUESHEET-08 and ITG BLUESHEET-244.

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AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.2, Rev. 10	Issued: 09/12/12	Effective: 09/13/12
Independent Assessment		

1.0 PURPOSE/SCOPE

This procedure describes the Advanced Mixed Waste Treatment Project's (AMWTP's) process and requirements for scheduling, planning, conducting, reporting, and acting on *independent assessments* (see def.). This procedure applies to independent assessment of organizations internal or external to the AMWTP. This procedure addresses requirements for independent assessment specified in Title 10 CFR Part 830, Subpart A, Quality Assurance Requirements; DOE O 414.1C, Quality Assurance; DOE O 226.1A, Implementation of Department of Energy Oversight Policy; DOE-CBFO-94-1012, Quality Assurance Program Document; ANSI/ASME NQA-1-2008, Quality Assurance Requirements for Nuclear Facility Applications; and QAPP-01, Quality Assurance Program Plan.

The AMWTP Independent Assessment process is an element of the AMWTP Contractor Assurance System. All program and performance deficiencies, regardless of their source shall be documented in *TrackWise* (see def.) to ensure that adverse *conditions* (see def.) are reported, assigned to, and evaluated by the responsible management and to document (see def.) the development, implementation, and track completion of *corrective actions* (see def.).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
AMWTP Managers and Personnel	• Periodically access the AMWTP Quality Assurance web page and view the independent assessment schedule • Participate in AMWTP internal assessments.
Auditor (Assessor; see def.)	• Qualified to participate on assessment teams • Conducts interviews, observes operations, reviews data and documents, evaluates objective evidence to determine conformance to established requirements and adequacy of work performance.
Lead Auditor *(Lead Assessor*; see def.)	• Qualified to lead assessment teams • Organizes, plans, conducts, and reports assessments; directs auditors • Requests assessed organization's management to correct conditions adverse to quality.

Performer	Responsibilities
Management of Assessed Organization	• Corrects conditions adverse to quality identified during assessment • Provides assessment team with access to facilities, documents, and personnel needed for planning and performing assessments.
Quality Assurance (QA) - Manager/Designee	• Owns, maintains, and ensures implementation of this procedure • Schedules independent assessments • Ensures annual independent assessment schedule includes an assessment of the Environmental Management System • Selects, trains, qualifies, and assigns AMWTP auditors and lead auditors; reviews and approves assessment reports • Establishes required authority for the assessment team.
*Technical Specialist*s (see def.)	• Qualified by indoctrination and technical expertise to participate on assessment teams.

3.0 PROCEDURE

NOTE: *The term "assessment" used in this procedure is synonymous with "audit."*

3.1 Scheduling Independent Assessments and Communicating the Schedule

3.1.1 The QA manager/designee shall schedule independent assessments to measure item and service quality, to measure adequacy of work performance, to determine process and system effectiveness, to verify implementation and effectiveness of AMWTP's QA Program, to evaluate compliance with established policies, procedures, instructions, and contractual requirements, and to promote improvement.

3.1.2 The QA manager/designee shall schedule assessments of items, processes, systems, and services at a frequency commensurate with their hazards, status, and importance. Those that contribute the greatest risk to quality, safety, and mission success are assessed with the greatest frequency, depth, and rigor. A review of past assessments is conducted for consideration in assessment planning. Assessments that confirm acceptable performance may result in reduced frequency and depth of subjects' future assessments. Areas of poor performance should receive increased attention.

3.1.3 Early in each calendar year, the QA manager/designee shall prepare an annual (or longer) independent assessment schedule. The schedule shall identify target assessment areas or organizations and the month of proposed assessment.

3.1.3.1 The QA manager/designee will include on the annual calendar year independent assessment schedule an assessment of one or more of the Environmental Management System program elements as required by ISO 14001:2004 (E), Section 4.5.5, "Internal Audit."

3.1.4 The QA manager/designee shall issue and communicate the independent assessment schedule using the AMWTP Quality Assurance Web Page.

3.1.5 The QA manager/designee shall periodically review and update the independent assessment schedule as necessary to ensure its continual relevance.

3.1.6 AWMTP managers and other affected personnel are responsible for periodically accessing the independent assessment schedule and noting changes.

3.1.7 The QA manager/designee shall schedule assessments of *suppliers* (see def.) when source evaluations are required by MP-PCMT-15.1, Acquisition of Material and Services, Appendix E, Supplier Qualification, with a scheduled performance date promptly following contract award.

3.1.8 Unscheduled independent assessments may be conducted at any time.

3.2 Planning Independent Assessments

3.2.1 The QA manager/designee shall assign a lead auditor for each scheduled assessment. Such assignment establishes the authority of the lead auditor and assessment team to conduct scheduled assessments. The lead auditor shall plan, prepare, direct, and report independent assessments.

3.2.2 Lead auditors shall be qualified according to MP-Q&SI-5.8, Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists.

3.2.3 As needed, the lead auditor selects auditors to form an assessment team. Auditors shall be qualified according to MP-Q&SI-5.8. Auditors selected shall have the experience, training, and technical knowledge commensurate with the scope, complexity, and nature of activities to be assessed. Auditors and lead auditors selected shall have sufficient authority and freedom from line management, and they shall be independent of the program, project, work, and organization being assessed.

3.2.4 The lead auditor may select technical specialists from technical disciplines to assist *audit* (see def.) performance. The lead auditor shall indoctrinate technical specialists in their assessment responsibilities according to MP-Q&SI-5.8. Indoctrination of technical specialists shall be documented in the assessment plan.

3.2.5 The lead auditor shall determine the scope of a scheduled assessment. Audit scope may incorporate an organization's entire quality management system, or parts of the quality system, or specific processes, procedures, items, programs, projects, or products.

3.2.6 Recent audit reports of the assessed organization should be included in scope, especially actions planned by management to correct conditions adverse to quality. Corrective actions taken should be evaluated to determine their effectiveness.

3.2.7 When assessing supplier laboratories, sample receipt, analysis, data reduction and reporting should be included in scope. Measurement disciplines (inorganic, organic, etc.) provided should be identified in scope. Sampling activities, if conducted, are part of laboratory assessments.

3.2.7.1 When assessing the Analytical Chemistry Laboratory, determine the scope of the assessment based on the quality management system defined in QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing.

3.2.8 For each scheduled assessment, the lead auditor shall prepare an assessment plan. (An example assessment plan is illustrated in Exhibit 7.1.) The assessment plan shall identify the following:

- The organization to be assessed
- Scope and purpose of the assessment
- Instructions received, if any, that define an assessment's particular emphasis
- Assessment team members including any technical specialists
- Tentative or scheduled entrance and exit meeting dates, and assessment location
- Standards, requirements, contracts, governing, or applicable documents.

3.2.9 The assessment plan shall be approved by the lead auditor and distributed to the organization to be assessed. Notifications and distribution of assessment plans to suppliers will be formally communicated through the Contracts and Logistics manager.

3.2.10 By direction of the lead auditor, the assessment team may prepare checklists to guide the assessment and to record collected data. Checklists shall be reviewed by the lead auditor. In lieu of checklists, governing documents and data sheets may be used.

3.2.11 Checklists, if used, are prepared from governing documents to remind Auditors of the specific areas, items, systems, processes, procedures, or products to be assessed.

3.2.12 Checklists do not limit assessment activities when concerns are raised not addressed by checklist items. Any governing documents evaluated for implementation in the assessment shall be referenced with revision designations in the assessment report. Auditors may use governing documents or data collection sheets to record audit *observations* (see def.) during conduct of assessment activities.

3.2.13 The assessment team shall review the plan, governing documents, checklists if prepared, and familiarize themselves with their assignments prior to each assessment.

3.3 Notifying Assessed Organization's Management

3.3.1 Management of organizations external to AMWTP should be notified of a scheduled assessment at least 15 working days in advance. AMWTP management should be notified by email or memo at least 10 working days prior to an independent assessment.

3.3.2 Written notification by letter to AMWTP suppliers shall be prepared by the lead auditor, but shall be issued under the signature of the Contracts and Logistics manager.

3.3.3 Management notification shall include:

- The identity of the assessed organization
- The assessment plan
- A list of governing documents (such as quality manuals, quality plans, implementing procedures, work instructions, etc.)
- The agreed upon date(s) of the assessment.

3.3.4 Provide notification to the Nevada National Security Site (NNSS) Waste Certification Official for independent assessments related to NNSS Certification Program.

3.4 Performing Independent Assessments

3.4.1 For organizations internal to the AMWTP, the lead auditor shall determine if the scope and nature of the assessment justifies an entrance meeting.

3.4.2 Assessment Entrance Meeting Conducted. For internal independent assessments, the lead auditor will identify if a formal entrance meeting will be required. The lead auditor will coordinate the entrance meeting with the responsible management to discuss the assessment scope, schedule, and establish points of contact. An attendance roster will be used to document representative in attendance at the Entrance meeting.

3.4.3 Immediately following the entrance meeting, the assessment team shall begin the assessment according to the established plan. By conducting interviews, observing operations, reviewing data and documents, the assessment team shall seek, obtain, and evaluate objective evidence for compliance with established requirements, and determine the effectiveness of implementing processes and systems.

3.4.4 If at any time an auditor has a concern regarding safety or technical correctness of an activity at AMWTP, the auditor is empowered and obligated to stop work.

3.4.5 If areas of the planned scope cannot be evaluated, the assessment report shall so indicate, describing a rationale for the omission. The assessment scope may be expanded beyond the established plan if conditions warrant, and if approved by the lead auditor.

3.4.6 Assessment progress briefs will be held as deemed necessary by the lead auditor. The lead auditor will brief the assessed organization's management upon determination that a *condition(s) adverse to quality* (see def.), have been identified.

3.5 Identifying Conditions Adverse to Quality and Areas for Improvement

3.5.1 Auditors may identify problems: deviations, departures, deficiencies, or noncompliance with policies or procedures, or other conditions adverse to quality. When confirmed, the lead auditor shall identify such conditions as *Findings* (see def.).

3.5.2 The lead auditor shall promptly discuss with assessed organization's management those conditions believed to be findings. Discussions shall confirm agreement that a finding exists, or does not exist.

3.5.3 Findings, deficiencies, and conditions adverse to quality satisfactorily corrected during an assessment shall be discussed during an exit meeting. Corrected deficiencies shall be identified in assessment reports as *Corrected During Assessment (CDA;* see def.). Self-identified adverse conditions for which corrective action is planned, should not be identified as a finding, but should be described in the final assessment report.

3.5.4 For assessments of AMWTP organizations, the lead auditor shall identify and document findings using either a Corrective Action Report (CAR), or a nonconformance report (NCR), according to MP-Q&SI-5.3, Corrective Action, or MP-Q&SI-5.4, Identification of Nonconforming Conditions, respectively.

3.5.4.1 For assessments of organizations external to the AMWTP, the lead auditor shall identify and document findings in the assessment report, and enter them in the TrackWise issues management database.

3.5.5 Identified findings shall be reported in a manner so that effective corrective action can be planned and implemented by the affected AMWTP organization.

3.5.6 Processes, systems, and activities that need improvement but are compliant, and weaknesses or other concerns that are not findings, shall be described in independent assessment reports as “observations.” Observations do not require tracking in TrackWise.

3.6 Analyzing Independent Assessment Data and Communicating Assessment Results

3.6.1 When the assessment is complete, the assessment team shall discuss and analyze its data and reach conclusions. Based on those discussions, the lead auditor shall prepare a brief for presentation to the assessed organization's management. The brief will include a summary of observed findings and observations.

3.6.2 For AMWTP organizations, the lead auditor shall determine if the scope and nature of the assessment justifies an exit meeting.

3.6.3 Assessment Exit Meeting Conducted. For internal assessments, the lead auditor will identify when a Formal Exit meeting will be required. As a minimum, the lead auditor will provide a summary of the assessment results with the responsible management. An attendance roster will be used to document representatives in attendance in the event a Formal Exit meeting is convened.

3.7 Reporting Independent Assessments

3.7.1 The lead auditor shall prepare a final assessment report using assessment team input.

3.7.2 The final assessment report shall address each topic described in Exhibit 7.2.

3.7.3 The final assessment report should not include any additional findings or observations that were not presented and discussed during an exit meeting.

3.7.4 Supplier assessment reports will be transmitted under an Acquisitions Services cover letter addressed to the organization's senior management and shall address:

- Reference to the independent assessment by name or number, location, and date
- The approved final assessment report
- A response due date of 30 calendar days from the date of the transmittal letter when findings are identified that require a corrective action response.

3.8 Reviewing, Approving, Issuing, and Closing Independent Assessment Reports

3.8.1 The lead auditor shall forward the assessment report to the QA manager/designee for review and approval.

3.8.2 The QA manager/designee shall review and approve or request revision of the draft assessment report. The QA manager/designee shall approve the final report by signature. The lead auditor shall sign the approved report.

3.8.3 The signed and approved assessment report shall be transmitted to assessed organization's management in a timely manner after the exit meeting.

3.8.4 The NNSS waste certification official at AMWTP must be notified of independent assessments pertaining to NNSS activities.

3.8.5 Once the independent report is written and issued, the assessment is considered closed. The AMWTP independent assessment schedule shall be updated accordingly.

3.8.6 Findings resulting from independent assessments are tracked as open items. Findings and corrective actions are reported and tracked in TrackWise for all independent assessments.

NOTE 1: *The Independent Assessment Record includes the following as a minimum:*

- *Approved Independent Assessment Plan*
- *Record of assessment notification (e-mail or formal letter)*
- *Final approved Independent Assessment Report with any attachments relevant to the results*
- *Record of distribution of Final Independent Assessment Report (e-mail or letter).*

NOTE 2: *Checklists used in performance of the independent assessment are not required as a Quality Record, but may be included at the discretion of the lead auditor.*

3.8.7 The lead auditor shall prepare the final approved Independent Assessment Record for transmittal to records storage.

3.9 Taking Action to Resolve Issues, Problems, and Conditions Adverse to Quality

3.9.1 Management of the assessed organization shall respond to findings, regardless of how they are identified, and act promptly to correct problems and prevent recurrence.

3.9.2 AMWTP managers shall resolve findings through the CAR or NCR process described by MP-Q&SI-5.3 or MP-Q&SI-5.4, respectively.

3.9.3 The lead auditor will update the TrackWise CAR or NCR for findings associated with supplier assessments, and coordinate all responses to supplier corrective actions through the Contracts and Logistics manager.

3.10 Reviewing Responses to Findings and Conducting Followup

3.10.1 The lead auditor or designee shall determine adequacy of responses and accept or reject responses from the assessed organization's management. Acceptance or rejection of supplier organizations' responses, including the basis for rejection shall be communicated by written correspondence through the Contracts and Logistics manager, and documented in the TrackWise report. Acceptance or rejection to responses from AMWTP internal independent assessments shall be documented on CARs or NCRs using TrackWise.

3.10.2 When a proposed internal corrective action response is rejected, the lead auditor or designee shall review with the responsible manager. The basis for rejection shall be documented on the TrackWise report. All findings associated with internal assessments must be resolved as required by MP-Q&SI-5.3.

3.10.3 The lead auditor or designee shall determine the adequacy and verification necessary to confirm that corrective action has been implemented as planned. Follow-up shall be accomplished by review of documentation, or reassessment, or by other appropriate means. Reassessment may be conducted during a future assessment.

3.10.4 When corrective action has been accepted, the lead auditor or designee shall close the open item and transmit appropriate documentation to the assessed organization's management.

4.0 DEFINITIONS

Audit (assessment). A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with, established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An independent assessment should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

Auditor (assessor). Qualified to participate on internal and external assessment teams. Conducts interviews, observes operations, reviews data and documents, gathers and evaluates objective evidence to determine conformance to established requirements and adequacy of work performance.

Condition. Any as-found state, whether or not resulting from an event that may have adverse safety, health, quality assurance, operational or environmental implications. A condition is usually programmatic in nature; for example, errors in analysis or calculation; anomalies associated with design or performance; or items indicating a weakness in the management process are all conditions.

Condition adverse to quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconformances. A significant condition adverse to quality is one that, if uncorrected, could have a serious effect on safety or operability.

Corrected during assessment. Those deficient conditions identified during the performance of an independent assessment that are not programmatic in nature, are easily corrected, and were corrected prior to completion of the assessment to the satisfaction of the assigned lead assessor (auditor). CDAs are included as part of the final assessment report.

Corrective action. Measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition.

Finding. Deviations, departures, deficiencies, or noncompliance with AWMTP policies or procedures, or other conditions adverse to quality that require corrective action or nonconformance reporting.

Independent assessment. Independent assessment is synonymous with audit. Independent assessments are conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement. Independent assessments evaluate the performance of work processes with regard to requirements, compliance, and expectations for safely performing the work and achieving the goals of the organization. The focus of independent assessments should be the items and services produced and their associated processes. The purpose is to improve product/service performance and process effectiveness.

Observations. A condition identified as an opportunity for process improvement, but is not a deficiency or deviation from requirements. Such conditions may eventually become conditions adverse to quality if not addressed.

Lead auditor (assessor). Qualified to lead internal and external assessment teams. Organizes, conducts, and reports assessments, and directs audit personnel. Requests assessed organization's management to correct conditions adverse to quality.

Recommendation. Observations or suggestions by the assessor, which may identify inconsistencies that are noteworthy or opportunities for improvement addressed for the benefit of the assessed organization.

Supplier/vendor. Any individual or organization who furnishes items or services in accordance with a procurement document. An all inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their sub-tier levels.

Technical specialist. Individual designated to provide technical expertise support in performance of Quality Assurance assessments and audits.

TrackWise. Commercial off-the-shelf software used to schedule, document, report, and track management assessments, and issues or actions resulting from assessments, such as action items, nonconformance and corrective action reports.

5.0 REFERENCES

(1) 10 CFR 830, Nuclear Safety Management, Subpart A–Quality Assurance Requirements, Office of the Federal Register, Washington, D.C.

(2) 40 CFR 194, Subpart C, Compliance Certification and Recertification

(3) ANSI/ASME NQA-1-2008, Quality Assurance Requirements for Nuclear Facility Applications

(4) DOE-CBFO-94-1012, Quality Assurance

(5) DOE G 414.1-1B, Management and Independent Assessments Guide for Use with 10 CFR 830, Subpart A; and DOE O 414.1C; DOE M 450.4-1; and DOE O 226.1A

(6) DOE O 226.1A, Implementation of Department of Energy Oversight Policy

(7) DOE O 414.1C, Quality Assurance

(8) DOE O 450.1A, Environmental Protection Program

(9) MP-DOCS-18.2, Records Management

(10) MP-PCMT-15.1, Acquisition of Material and Services

(11) MP-Q&SI-5.3, Corrective Action

(12) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(13) MP-Q&SI-5.8, Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists

(14) QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing

(15) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-M&IA-17.2, Case File	Misc. Other Record/A16-1.2/Destroy 5 years after superseded.
Independent Assessment Record including: • Approved Independent Assessment Plan • Record of assessment notification (e-mail or formal letter) • Final approved Independent Assessment Report with any attachments relevant to the results • Record of distribution of Final Independent Assessment Report (e-mail or letter).	Both Facility Operating Record/Nonpermanent WIPP Records/ENV2-a-1-a/ Destroy 5 years after life of facility

7.0 EXHIBITS

Exhibit 7.1 – Independent Assessment Plan (Example Only)

Exhibit 7.2 – Independent Assessment Report (Example Only)

EXHIBIT 7.1

Independent Assessment Plan (EXAMPLE ONLY)

ACME Company, XXX Project
Independent Assessment #QA-02-XXX

1.0 SCOPE AND PURPOSE

Describe the scope of assessment including the methodology to be used and the documents governing the activity. Example: The scope of this assessment will be focus on ACME"s quality management system, its implementation, and effectiveness.

2.0 SPECIAL INSTRUCTIONS

Define any emphasis of the assessment scope requested by management personnel or other information pertinent to the assessment. Example: Compliance with and implementation of ACME's quality management system with the ACME Quality Manual will be emphasized.

3.0 INDEPENDENT ASSESSMENT TEAM

Identify the Assessment Team members. Identify the Lead Auditor who is responsible for the planning, direction, conduct, and reporting of the assessment.

4.0 SCHEDULE DATES AND LOCATION

Specify the location, date(s) and time on which the assessment will take place. Identify the expected entrance and exit meeting dates. Example: This assessment will be conducted at ACME's main plant, 1575 North South Street, Idaho Falls, Idaho. The entrance meeting will begin at 8:30 a.m., on Tuesday, November 15, 2005. The exit meeting is tentatively scheduled at 4:30 p.m., Thursday, November 17, 2005.

5.0 STANDARDS, REQUIREMENTS, GOVERNING DOCUMENTS

Identify applicable requirements, standards, documents, activities, processes, systems, or items to be assessed. List selected requirements from the governing procedures, or identify procedures, sections of procedures, manuals, and documents. A checklist may be used to satisfy this requirement.

_____

Approved, Lead Auditor, Date

EXHIBIT 7.2

Independent Assessment Report IA-02-XXX (EXAMPLE ONLY)

ACME Company, XXX Project

I ASSESSMENT REPORT EXECUTIVE SUMMARY

The Executive Summary should address:

- AMWTP assessment number and date
- A description of the assessment scope
- Names of lead auditor, assessment team members including technical specialists and their indoctrination
- Names of persons contacted during assessment
- A brief summary of assessment results and conclusions
- A statement of the effectiveness of the Quality Program elements assessed
- A brief statement of conditions adverse to quality identified
- A statement of *recommendations* (see def.) for improvements, if any
- A list of attachments, if any.

II ASSESSMENT REPORT DETAILS

Identify Findings: identify deviations, departures, deficiencies, or nonconformities and associated NCRs or CARs for AMWTP organizations

Identify Observation: identify processes, systems, and activities that need improvement but are compliant, and weaknesses or other opportunities for improvement

Identify Corrected Items: Those conditions identified as adverse to quality, but were corrected during the performance of the assessment

Identify Noteworthy Practices: describe practices which should be shared with others

Recommendations: suggest for consideration, possible process or system improvements.

III ASSESSMENT REPORT CONCLUSIONS

Conclusions describe the effectiveness of the assessed activities, systems, processes, etc., and should reference any recommendations or findings. For organizations external to AMWTP, if Findings are identified, the conclusion includes a requirement of management to respond to assessment findings within 30 calendar days from the date of the transmittal letter when findings are identified that require a corrective action response. Management's response should address the cause of the condition, the action taken to preclude recurrence, and an estimated completion date. Assessments internal to AMWTP shall address Findings using MP-Q&SI-5.3, Corrective Action, or MP-Q&SI-5.4, Identification of Nonconforming Conditions. Assessment reports to external organizations are distributed with a cover letter signed by the AMWTP QA Manager.

_____

Lead Auditor Signature QA Manager Approval

8.0 APPENDICES

None

Quality Assurance Surveillance

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10705.) 09/12/12

Angie Morse
Quality Engineer

Date

AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.3, Rev. 8	Issued: 09/12/12	Effective: 09/13/12
Quality Assurance Surveillance		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/02	All	DCR-1347. Initial issue, this management procedure supersedes PQP 10.2 Revision 1.
1	2/18/03	Pg.7, step, 4.4.9 & Pg. 8, step, 4.5.3 and 4.5.4 Pg. 4, section 2.0 Pg.7, step, 4.5.1 Pg. 9, section, 5	1) DCR-2004, Revised Procedure to incorporate comments provided by CBFO Adequacy Review (Reference: Letter CBFO:NTP:KWW:VW:03-0248:UFC:5822 received 1/23/03) 2) Add Reference 2.5 3) Add words to Surveillance Reporting incorporating use of TrackWise™. 4) Modify Records Section
2	10/27/03	Pgs. 4, 5, 7, 8 and 9	DCR-2399, Procedure maintenance update: References, revise sections 4.3.1 & 4.5.1 with the use of AMWTP Form-1246, which replaces AMWTP Form-1245, and records section in accordance with MP-DOCS-18.2 "*AMWTP Records Management*."
3	01/18/05	Page 4, Section 3.2, Page 7, Section 4.5.1	DCR 4083 - Revise to ensure consistency with TrackWise™. Editorial/format changes to comply with MP-DOCS-18.3. Incorporated CBFO comments.

AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.3, Rev. 8	Issued: 09/12/12	Effective: 09/13/12

Quality Assurance Surveillance

Revision Number	Date Approved	Pages Affected	Description of Revision
4	2/9/06	All	DCR 4457. Revision 4 is a complete rewrite. This revision adds Roles and Responsibility and reorders other sections according to MP-DOCS-18.3. Revision 4 requires communicating AMWTP's surveillance schedule using the QA Web Page on ORION. Revision 4 requires a surveillance report within five calendar days of completion, and aligns the surveillance process with Bechtel Corporate BSII QA Department requirements. This revision retains original DOE, DOE-CBFO, and AMWTP QAPP requirements.
5	10/24/06	Step 3.5.9	DCR-5427. Add step to update and improve procedure from NTS audit observation.
6	01/17/08	All	DCR-6329. Revision 6 is a complete rewrite to change surveillance reporting from a hard-copy system to an electronic system using TrackWise®. (Associated DCR-6330. Cancellation of Form-1246, Surveillance Log.) Incorporate CBFO comment resolutions.
7	04/14/10	Sections: 3.3, 3.4, 3.5, 4.0, 6.0, Exhibits 1 and 2	DCR 8816. Incorporated use of electronic surveillance checklist using TrackWise. Additional guidance added for surveillance planning, performance, and reporting. Made minor changes to the formatting of some steps to clarify actions. (Associated DCR-8818, Cancellation of Form-1247, Surveillance Report.)
8	09/12/12	All	DCR-10705. Incorporated DOCS-BLUESHEET-08. Incorporated source requirements for the Analytical Chemistry Laboratory (QAP-103). Incorporated DOCS-BLUESHEET-09; Updated DOE O 5480.19 to DOE O 422.1 Incorporated ITG-BLUESHEET-243; Updated to reflect contract transition.

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AMWTP MANAGEMENT PROCEDURE		
MP-M&IA-17.3, Rev. 8	Issued: 09/12/12	Effective: 09/13/12
Quality Assurance Surveillance		

1.0 PURPOSE/SCOPE

This procedure describes the AMWTP process for scheduling, planning, performing, and reporting Quality Assurance (QA) *surveillances* (see def.). This procedure addresses requirements for surveillance specified in 10 CFR Part 830, Subpart A, Quality Assurance Requirements; ANSI/ASME NQA-1-2008 Edition, Quality Assurance Requirements for Nuclear Facility Applications; DOE-CBFO-94-1012, Quality Assurance Program Document; QAPP-01, Quality Assurance Program Plan: and QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing.

QA surveillances include both planned surveillances (identified in the annual surveillance plan) and unplanned surveillances (added throughout the year as needed). Surveillances are used for observation or monitoring of work in progress to verify whether *items* (see def.), activities, systems, or processes conform to specified requirements. QA surveillances are scheduled, planned, and results reported in the AMWTP electronic issues management system *TrackWise* (see def.).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Responsible Manager	• Provides QA surveillance engineers with access to facilities, documents, and personnel necessary for surveillance performance • Evaluates results of QA surveillances in their areas of responsibility • Takes action to correct identified *Conditions Adverse to Quality* (CAQ; see def.) • May recommend QA surveillance topics (activities, equipment, processes, or systems) to the QA Manager.

Performer	Responsibilities
Quality Assurance (QA) Manager	• Owns, maintains, and ensures implementation of this procedure • Identifies planned surveillance activities • Develops the annual surveillance plan • Schedules additional surveillance activities as needed throughout the year • Reviews surveillance reports for adequate content and accurate identification and reporting of CAQs • Evaluates any recommendations for surveillance and updates surveillance schedule accordingly.
QA Engineers	• Organizes, plans, performs, and reports surveillances according to this procedure • Coordinates surveillance performance with the responsible manager • Conducts interviews, observes operations, reviews data and documents, evaluates *objective evidence* (see def.) to determine conformance to established requirements and adequacy of work performance • Determines the effectiveness of the processes and/or activities surveilled to produce the desired outcome or product • Reports surveillance results to the responsible manager or designee • Identifies CAQs and initiates C*orrective Action Reports* (CARs; see def.) or *Nonconformance Reports* (NCRs; see def.) as appropriate.

3.0 PROCEDURE

3.1 General Requirements

NOTE: *The TrackWise reporting process is described in Exhibit 1, AMWTP Surveillance Flow Chart, and Exhibit 2, Surveillance Report Format.*

3.1.1 QA surveillance activities will be scheduled, performed, and reported using TrackWise.

3.1.2 QA Manager: Identify surveillance topics and frequency of performance based on consideration of perceived risk, hazards, importance to mission and project performance, and past compliance issues.

NOTE: *TrackWise provides an automatic electronic notification to the responsible manager of QA surveillances scheduled for their areas.*

3.1.3 QA Engineer: Report all CAQs identified during QA surveillance performance in accordance with MP-Q&SI-5.3, Corrective Action, or MP-Q&SI-5.4, Identification of Nonconforming Conditions.

3.1.4 QA Manager: Select surveillance personnel based on their experience, technical knowledge, and training.

3.2 Scheduling Surveillances

3.2.1 QA Manager or Designee: Annually establish a QA Surveillance Plan to evaluate the following:

- Adequacy and effectiveness of work activities
- Completed work performance and product quality
- Compliance with established policies, procedures, instructions, and contractual requirements
- Effectiveness of implemented corrective actions based on potential risk associated with the initiating noncompliant condition.
- Past compliance issues
- Opportunities to promote improvement.

3.2.1.1 Obtain input from the Analytical Chemistry Laboratory (ACL) QA Officer to ensure that all aspects of the ACL analytical quality system defined in QAP-103, including analytical testing activities, are covered by QA surveillances on an annual basis.

3.2.2 QA Manager: Ensure surveillances are entered and scheduled in TrackWise and that QA engineers are assigned the responsibility of performing scheduled surveillances.

3.2.2.1 The QA Manager may add unplanned QA surveillances in TrackWise at any time.

3.3 Surveillance Planning

3.3.1 The scope of the surveillance will be defined and documented in the TrackWise surveillance report.

3.3.2 QA engineers performing surveillance shall be independent from and will not have direct responsibility for activities under surveillance.

NOTE: *Surveillance planning includes a review of relevant historical information to identify specific attributes for evaluation of the effectiveness of past corrective actions taken to resolve previously reported problems.*

3.3.3 QA Engineer: Review historical information during surveillance planning, including but not limited to:

- Previously completed surveillances
- Corrective action documentation (CARs and NCRs)
- Management Assessment Report (MAR)
- Independent assessments
- External audits/surveillances
- Trending reports.

3.3.4 QA Engineer: Prepare a Surveillance Checklist in TrackWise to identify line(s) of inquiry, plan, and aid in the surveillance performance. Governing documents of the activity under surveillance will be referenced in the surveillance report. The surveillance planning in TrackWise shall identify the following items as applicable:

- The item, activity, system, or process to be surveilled
- Source documents for surveillance criteria

- Requirements document criteria to which compliance will be evaluated with any regulatory references (e.g., DOE Order 422.1)
- Method(s) to be used to perform the surveillance such as:
  - Observing in-process work activities to ensure conformance to established policies, procedures, instructions, and contractual requirements.
  - Interviewing personnel to determine if they are knowledgeable and qualified to perform their assignment
  - Reviewing records and documents
  - Evaluating finished products or other items.

3.3.5 Program requirements and procedures shall be reviewed for identification of program attributes and included in the surveillance plan as applicable. Review shall include, but is not limited to, the following:

- Conduct of Operations
- Nuclear Safety
- Radiological Safety
- Regulatory Compliance
- Quality program
- Employee Safety/Industrial Hygiene.

3.4 Surveillance Performance

3.4.1 QA Engineer: Coordinate surveillance activities with the affected organization responsible management and within operational authorizations.

3.4.2 QA Engineer: Remain cognizant of and comply with access requirements, hazards, and established controls for the areas and processes under surveillance.

3.4.3 QA Engineer: Minimize interference with ongoing work processes.

3.4.4 QA Engineer: Record sufficient data in the checklist to allow objective conclusions to be reached. The data reported and referenced shall determine whether work-processes, activities, items, or products conform to established requirements.

NOTE: *The intent is to provide a data-supported basis for evaluation of effectiveness of the surveilled item, activity, system, or process in meeting established requirements or providing consistently acceptable results.*

3.4.4.1 Entries in the checklist should include data relevant to the specific line of inquiry, as appropriate:

- Personnel contacted
- Documentation reviewed
- Process observed
- Components or systems inspected
- Sample size and source
- Results of inquiry evaluation; satisfactory, unsatisfactory, or NA with details as applicable
- Statement for line(s) of inquiry that were not observed.

3.4.5 QA Engineer: Promptly notify the responsible manager of any identified CAQs to ensure the condition is understood.

3.4.5.1 Discuss the surveillance results with personnel performing the activity and the responsible manager or designee at the conclusion of surveillance activities.

3.4.5.2 Report all CAQs in accordance with MP-Q&SI-5.3 or MP-Q&SI-5.4 as applicable.

3.5 Reporting Surveillance Results

3.5.1 QA Engineer: Report surveillance results factually and accurately and include the following information, as applicable, to support the evaluation of effectiveness of the process, item, activity, or system surveilled:

- Summary of the completed surveillance, including but not limited to:
  - Purpose/Scope statement
  - Identification and description of items or activities surveilled
  - Issues, concerns, *strengths* (see def.), or *noteworthy practices* (see def.) identified (in general terms if further detail is provided elsewhere in the report such as the checklist comments)
  - Provide a conclusion of the effectiveness of the surveilled process, item, activity, system, or implemented corrective action plan, stating the basis for the conclusion and any recommendations
- Sample size with the number or percent of acceptable/unacceptable items
- Scanned or digital photographs
- Personnel interviewed or contacted, as appropriate
- Conditions identified as Adverse to Quality and their associated CAR and/or NCR numbers. Detailed descriptions of each CAQ are entered in the "Findings" block in TrackWise with reference to the associated CAR or NCR number.
- Items that were corrected during surveillance, with actions taken to correct the item noted
- *Observations* (see def.) on items, processes, systems, and activities that meet specified requirements, but are at risk of becoming adverse to quality. Include specific details regarding items identified as being at risk. Detailed descriptions of observations are entered in the "Observations" block in TrackWise.

- Strengths, including noteworthy practices
- Recommendations noted for performance improvement opportunities or for potential Lessons Learned communication for review by the responsible management
- Supporting documentation (e.g., Excel spreadsheets, copies of pertinent documentation, etc.).

3.5.2 QA Engineer: Report surveillance results in TrackWise and generate CARs or NCRs for any CAQ identified.

3.5.2.1 If the area of the surveillance deals with ACL quality systems, obtain and document ACL QA Officer concurrence with the surveillance report.

3.5.3 The TrackWise Surveillance Report is electronically signed and dated by the performer when completed and forwarded to the QA Manager for review, approval, and final closure.

3.5.4 If the QA Manager does not concur with the surveillance report, the report is returned to the originator for additional action.

3.5.5 QA Manager approval indicates review and concurrence with the surveillance scope, depth, detail, identified CAQs, and effectiveness statement.

3.5.6 Surveillance results are communicated to responsible managers through TrackWise notification of surveillance closure and initiation of any CARs or NCRs issued to report and document CAQs.

3.5.6.1 If the area of the surveillance deals with the ACL, include the ACL QA Officer in the TrackWise notification.

3.5.7 If a surveillance pertains to Nevada National Security Site (NNSS) activities, the NNSS Waste Certification Official at AMWTP shall be notified of completed surveillance activities.

3.6 Taking Action to Resolve Conditions Adverse to Quality

3.6.1 Management of the surveilled organization: Take timely action to correct CAQs in accordance with MP-Q&SI-5.3 or MP-Q&SI-5.4, as applicable.

4.0 DEFINITIONS

Conditions Adverse to Quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconforming conditions. Routine maintenance of equipment conducted to established procedures does not constitute a CAQ.

Corrective Action Report. A document or system used to record and control correction of conditions adverse to quality through the process of evaluation and corrective action implementation.

Item. An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, sub-assembly, subsystem, system, unit, or waste characterization data.

Nonconformance. A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.

Nonconformance Report. A document used to record, control, and resolve *nonconformances* (see def.).

Noteworthy Practices. Practices that exceed requirements and enhance compliance.

Objective evidence. Qualitative or quantitative information, records, data, and statements or fact pertaining to the characteristics of an item or service or to the existence and implementation of a process element. It is based on observation, measurement, or test, and can be verified.

Observation. Items, processes, systems, and activities that meet specified requirements, but are at risk of becoming adverse to quality. For example: procedural inconsistencies that do not result in a CAQ; marginal compliance - a pattern of challenging completion time limits, operational parameters or marginally meeting management expectations; unprofessional performance or attitude, etc.

Strengths. Observed strengths in compliance or knowledge. For example, consistently correct and formal radio communications, consistently professional work performance/attitude of workers, thorough knowledge of the work at hand or requirements and how the work affects the overall process and AMWTP mission, compliance well within the required parameters or management expectations, etc.

Surveillance. The act of monitoring or observing to verify whether an item, activity, system, or process conforms to specified requirements.

TrackWise. Issues Management Database that provides the capability to create different documents requiring unique information fields, different notifications for approval or action, and creates unique tracking/trending reports. Typical document types are as follows:

- QA Program Nonconformance Reports (NCRs)
- Corrective Action Reports (CARs)
- Management Assessment Reports (MARs)
- Action Items (AIs)
- Characterization NCRs
- Surveillances.

5.0 REFERENCES

(1) 10 CFR 830, Subpart A, Nuclear Safety Management, Quality Assurance Requirements

(2) ANSI/ASME NQA-1-2008 Edition, Quality Assurance Requirements for Nuclear Facility Applications

(3) DOE-CBFO-94-1012, Quality Assurance Program Document

(4) DOE Order 422.1, Conduct of Operations

(5) MP-DOCS-18.2, Records Management

(6) MP-Q&SI-5.3, Corrective Action

(7) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(8) QAP-103, Analytical Chemistry Laboratory Quality Assurance Plan for Environmental Testing

(9) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management. TrackWise is the repository for official records of surveillance scheduling, performance, and reporting.

Record Description	Classification
MP-M&IA-17.3, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
TrackWise Surveillance Report	Both FOR and NP WIPP/ENV2-a-1-a/ Destroy 5 years after Life of Facility (Maintained in Trackwise)

7.0 EXHIBITS

Exhibit 1 – AMWTP Surveillance Flow Chart

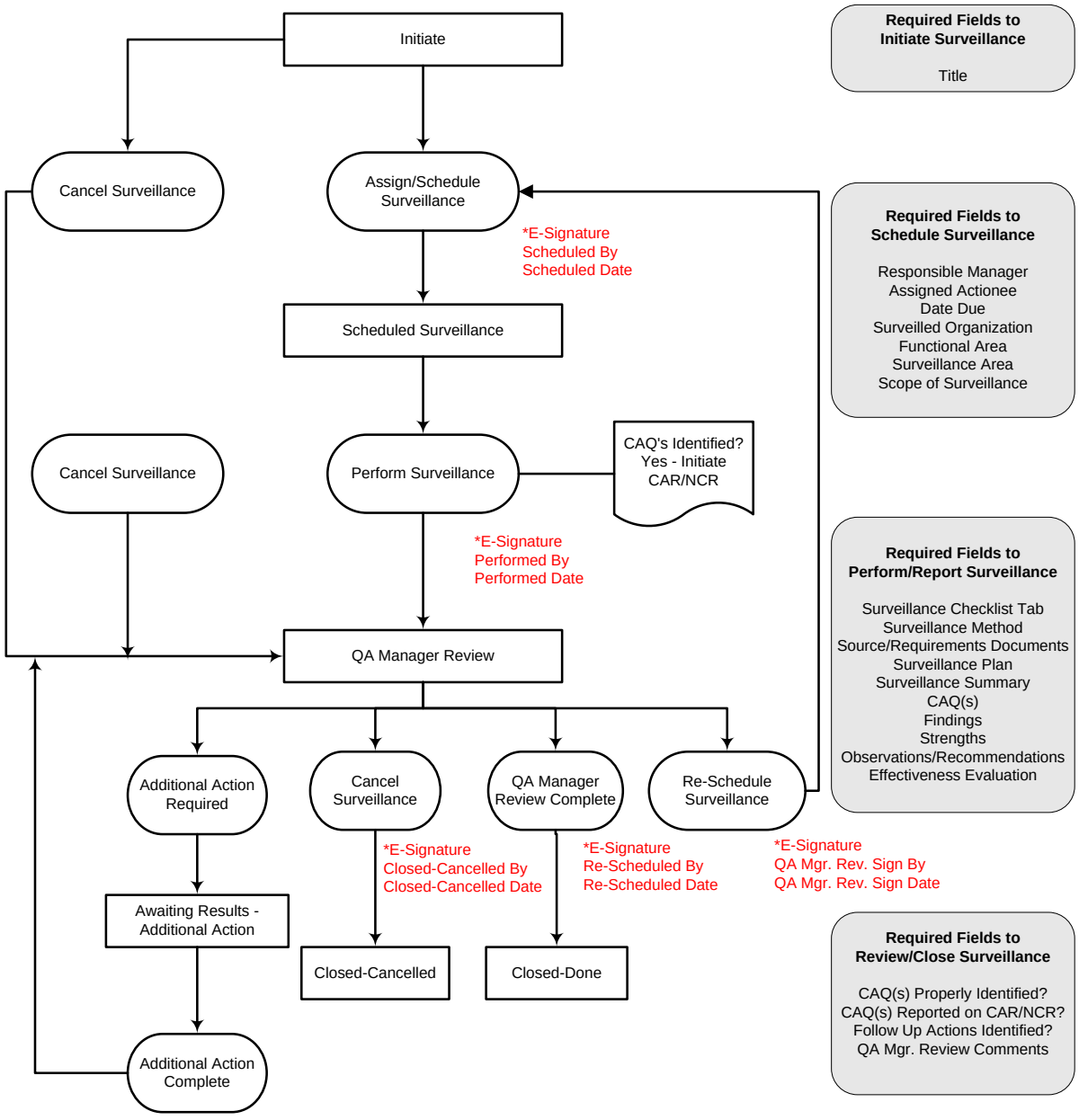
Exhibit 2 – Surveillance Report Format

Exhibit 3 – Surveillance Checklist Format

8.0 APPENDICES

None

Exhibit 1 – AMWTP Surveillance Flow Chart



Surveillance Process Flow 03-18-10 Rev. 2

Exhibit 2 – Surveillance Report Format

AMWTP SURVEILLANCE REPORT		Surveillance No.:
Title:		
Originator:	Assigned Actionee:	
Date Opened:	Date Due:	
Risk Level:	Responsible Manager:	
Functional Area:	Surveilled Organization:	
Surveillance Area:		
Scope of Surveillance:		
Scheduled By:	Scheduled Date:	
Rescheduled By:	Rescheduled Date:	
SURVEILLANCE PLAN		
	Surveillance Method:	
Source/Requirements Documents:		
Surveillance Plan:		
SURVEILLANCE RESULTS		
Surveillance Summary:		
CAQ(s) Identified?:	CAR or NCR No.	
Conditions Adverse to Quality:		
Strengths:		
Observations/Recommendations:		
Effectiveness Evaluation:		
Performed By:	Performed Date:	
Additional Action Complete By:	Additional Action Complete Date:	
QA MANAGER - SURVEILLANCE REVIEW		
1. Are all Conditions Adverse to Quality properly identified?		
2. Are all Conditions Adverse to Quality reported on a CAR or NCR?		
3. Are follow up actions identified for any Recommendations?		

AMWTP Advanced Mixed Waste Treatment Project	**AMWTP SURVEILLANCE REPORT**	**Surveillance No.:**

QA Manager Review Comments:

Additional Action Required By:	**Additional Action Required Date:**
QA Manager Review/Closed By:	**QA Manager Review/Closed Date:**
QA Manager Cancelled By:	**QA Manager Cancelled Date:**

Exhibit 3 – Surveillance Checklist Format

AMWTP Advanced Mixed Waste Treatment Project	**AMWTP SURVEILLANCE CHECKLIST**	**Surveillance Checklist No.:**

Title:	
Assigned Actionee:	**Responsible Manager:**
Surveilled Organization:	**Functional Area:**
Surveillance Area:	
Scope of Surveillance:	

SPECIFIC ATTRIBUTES	
Item No. 1. Line of Inquiry:	**Results:**
Item No. 2. Line of Inquiry:	**Results:**
Item No. 3. Line of Inquiry:	**Results:**
Item No. 4. Line of Inquiry:	**Results:**
Item No. 5. Line of Inquiry:	**Results:**
Item No. 6. Line of Inquiry:	**Results:**
Item No. 7. Line of Inquiry:	**Results:**
Item No. 8. Line of Inquiry:	**Results:**
Item No. 9. Line of Inquiry:	**Results:**
Item No. 10. Line of Inquiry:	**Results:**
Item No. 11. Line of Inquiry:	**Results:**
Item No. 12. Line of Inquiry:	**Results:**
Item No. 13. Line of Inquiry:	**Results:**
Item No. 14. Line of Inquiry:	**Results:**

	AMWTP SURVEILLANCE CHECKLIST	**Surveillance Checklist No.:**
Item No. 15. Line of Inquiry:		**Results:**
Performed By:		**Performed Date:**

Acquisition of Material and Services

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10937.*) 08/27/12

Jim Simonds
Contracts & Logistics Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/26/02	All	Initial issue. DCR 2002-1312, this management procedure supersedes PQP 7.1, Revision 4 and PQP 7.3, Revision 0.
1	2/20/03	Pgs. 1-5, 8-11,14 Section 4.1.1 Section 5.0 Exhibit 1, Form 1260 Appendix C	Reference DCR-1517 Updated to incorporate QA Line management assessment observations and Form 1373; added steps to improve implementation effectiveness. Added Identification of QA records per adequacy review comment. Update to identify all records generated from this procedure and correct record classifications. Added end use category and corrected Controller signature block. Corrected Scope designators, updated for additional clauses
2	06/26/03	3.12, 4.3.7, 4.3.14, 4.3.17, 4.4, Appendix C	Reference DCR 2128.
3	02/01/06	All	DCR-4769. Periodic Review - Apply “Blue Sheet” changes and apply new template.
4	7/07/06	All	DCR-5034. Rewrite. Procedure updated to resolve CARs and Audit Item 161. Provides requisition processing and recertification. Changed document owner. Made editorial and clarification changes throughout.
5	9/08/06	8, 15, A2	DCR-5285. Made clerical adjustments for clarification. Added reference.
6	07/02/07	All	DCR-5838. Incorporate 10 CFR 851 requirements and incorporate information to supersede MP-PCMT-15.2, MP-PCMT-15.3, and MP-PCMT-15.5.
7	02/04/08	Various	DCR-6676. Updated steps for clarity and to resolve Action Item 361976.Editorial changes per MP-DOCS-18.3, Developing Management Procedures.

AMWTP MANAGEMENT PROCEDURE		
MP-PCMT-15.1, Rev. 12	Issued: 08/28/12	Effective: 08/29/12

Acquisition of Material and Services

Revision Number	Date Approved	Pages Affected	Description of Revision
8	12/11/08	Various	DCR-7427. Added requirements from MP-PCMT-15.7 to comply with required changes from CAR 39456 and 40368. Added corrective actions from CAR 41105. Periodic review. Added new step 3.5.5.1 to close corrective action from CAR 41122.
9	07/14/09	Various	DCR-8312. Added requirements for Subcontract Oversight Team. Clarified onsite work process and requirements. Incorporated issues identified in CAR #44562 and #43139.
10	02/11/10	Various	DCR-8836. Updated document, incorporated NQA-1-2008, Safety Significant Commercial Grade Item/Services Dedication Process, and edited per MP-DOCS-18.3, Developing Management Procedures (including ensuring that all steps were written the same and revising capitalization).
11	11/11/10	Various	DCR-9579. Revised to close CARs 53728, 54546, and 54556 (AI 54941). Created new Form-2011 and renamed Form-1948. Created new Appendix I for commercial grade designation. Separated emergency procurement steps into Section 3.10. Revised for readability and document flow.
12	08/27/12	Various	DCR-10937. Revised based on contract changes.

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AMWTP MANAGEMENT PROCEDURE		
MP-PCMT-15.1, Rev. 12	Issued: 08/28/12	Effective: 08/29/12
Acquisition of Material and Services		

1.0 PURPOSE/SCOPE

This procedure specifies the requirements necessary for acquiring material and services in support of the Advanced Mixed Waste Treatment Project (AMWTP). It specifies requirements, responsibilities, and processes for identification and flow down of quality and technical requirements to suppliers; qualification of suppliers of quality affecting material and services; and performance evaluation of suppliers.

It applies to all AMWTP project personnel who initiate, approve, and undertake procurement actions in support of the AMWTP.

Purchase card acquisitions are restricted to nonsafety-related, nonquality-affecting commercial items or services, and purchase card acquisitions must be in accordance with MP-PCMT-15.22, Purchase Card Program.

The procurement process objectives are listed below:

A. Acquisition of quality products and services at fair and reasonable prices, using best commercial practices

B. Use of recycled content and bio-based content materials and other environmentally preferable products and services to the maximum practicable extent. *Purchase requisitions* (PRs; see def.) are screened by the assigned *Procurement Specialist* (see def.) for purchase of environmentally preferable materials

(DOE O 450.1A)

C. Use of qualified *vendors* (see def.) who have demonstrated successful past performance and can supply quality products and services consistent with AMWTP's needs

D. Affording small businesses the maximum practicable opportunity to participate in procurements in support of the AMWTP.

All appendices to this procedure contain additional requirements that must be complied with as applicable.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Engineering Manager or Designee	• Ensures the commercial grade dedication process is implemented for PRs, which include safety-significant *commercial grade items* (CGIs; see def.) or *commercial grade services* (see def.) • Approves PRs that contain technical requirements or include safety-significant CGIs or services.
Requester (see def.)	• Completes 0AWT2230, AMWTP Requester Training • Initiates the acquisition process for material and services as defined herein and ensures all applicable requirements are identified and approvals are obtained • Initiates and/or ensures that all forms identified herein are approved and included with the PR as applicable • Obtains General Counsel and Human Resources approval if acquisition is for the services of an Idaho National Laboratory (INL) contractor retiree (AMWTP, INL, or Idaho Cleanup Project [ICP]) • Determines if material being purchased is an engineered item or CGI • Identifies all quality requirements using Appendix D, Standard QA Procurement Clauses, to ensure procured items and services meet established requirements and are performed as specified • Ensures that materials/parts (as part of the service) are inspected and received by a Supply Chain Inspector prior to installation • Identifies established quality classification for acquisition of material and services

Performer	Responsibilities
Requester (continued)	• Ensures Form-2011, Statement of Work (SOW), is prepared and approved for the acquisition of nonhazardous services, as appropriate • Ensures Form-1948, Onsite Hazardous Services Statement of Work (SOW), is prepared and approved for the acquisition of services for onsite *hazardous work* (see def.) • Ensures appropriate safety and health requirements are included if hazardous work is being performed onsite (Appendix A) • Approves selected supplier, as required • Coordinates the disposition and resolution of nonconformance reports • Obtains Subcontract Oversight Team (SOT) concurrence if work is onsite and hazardous or if work will be performed in a *hazardous area* (see def.).
Responsible Manager (see def.)/Technical Representative	• Ensures subcontractor performs work in accordance with contract requirements • Ensures personnel performing escorting/oversight of subcontractors are trained to perform those duties as defined • Ensures work control documentation for service work is closed out in accordance with applicable procedures.
Subcontract Technical Representative (STR; see def.)	• Performs oversight of onsite construction subcontractor work activities to ensure compliance with safety, health, environmental, security, work control, and performance requirements.

Performer	Responsibilities
Quality Assurance (QA) Manager or Designee	• Reviews and approves PRs, purchase orders, and subcontracts for acquisition of *Class I* (see def.) and *Class II materials and services* (see def.) to ensure the identification and flow down of requirements is sufficient to the extent necessary to comply with QA program requirements • Determines the qualification method and conducts QA evaluations of supplier quality programs as specified in Appendix E, Supplier Qualification • Ensures the process for identification and flow down of QA program requirements to suppliers of quality affecting materials and services is established and maintained • Ensures QA oversight of the acquisition process implementation is periodically conducted through assessment and surveillance • Reviews and approves quality affecting work to be performed under *task baseline agreements* (TBAs; see def.) with INL and ICP contractors.
Radiological Controls Manager	• Reviews and approves all acquisitions for sealed radioactive sources.

Performer	Responsibilities
Environmental, Safety, and Health (ES&H) Director or Designee	• Provides information and identifies conditions, prerequisites, and stipulations to satisfy safety- and environmental-related regulatory requirements • Signifies the adequacy and/or completeness of the ES&H provisions, including the applicability of Integrated Safety Management System (ISMS) requirements • Reviews and approves PRs for safety-related materials, chemicals, and services • Reviews and approves subcontractors for hazardous *onsite work* (see def.) • Approves subcontractor-provided substance abuse programs for conformance to 10 Code of Federal Regulation (CFR) 707, Workplace Substance Abuse Programs at DOE Sites • Assists STRs with subcontractor oversight to assure conformance to applicable safety and health requirements to include 10 CFR 851, Worker Safety and Health Program • Establishes requirements for subcontractor health and safety plans and training requirements on Form-1948.
Procurement Specialist	• Acts as on-call Procurement Specialist for an emergency • Verifies adequacy of PR requirements for purchase • Coordinates and controls solicitation, evaluation, award, and closeout processes and all associated actions and deliverables in accordance with the procurement process description.
Plant Manager or Designee	• Sends e-mail notification identifying the materials or services that are needed for an emergency.
Subcontract Oversight Team (SOT; see def.)	• Performs oversight and approval of onsite hazardous work being performed by subcontractors at the AMWTP.
Supply Chain Inspector	• Performs receipt and inspection of materials as required by the subcontract/purchase order and Form-1255, Receiving Inspection Report, in accordance with MP-PCMT-15.21, Material Management.
Training Manager or Designee	• Approves all PRs for training services.

Performer	Responsibilities
Maintenance Manager	• Approves PRs for onsite hazardous work or for work performed in a hazardous area • Identifies (and concurs with) any new potential hazards if there is a change in scope for onsite hazardous work • Participates in the subcontract oversight team (SOT).

3.0 PROCEDURE

3.1 Initiating the Acquisition

NOTE 1: *Requesters should plan a 10 to 15 working-day cycle time for materials and services with an estimated value less than $100,000; and a 20 to 40 working-day cycle time for materials and services with an estimated value greater than $100,000. Cycle time is counted from the date a PR is received by Procurement through purchase order/subcontract award.*

NOTE 2: *Instructions for processing emergency procurements is found in Appendix H, Emergency Procurements.*

NOTE 3: *The following actions DO NOT require a PR:*

A. Agreements for legal services entered into and under the purview of AMWTP General Counsel

B. Acquisition requests processed in accordance with MP-PCMT-15.22, Purchase Card Program

C. Reimbursements made using Form-1968, Check Request

D. Incidental, nonquality acquisitions authorized by a cost account manager with delegated authority not to exceed $1,000.

3.1.1 Requester: To initiate the acquisition, access the Maximo system via the AMWTP home page under Applications.

NOTE 1: *The requester is responsible for including all required information and documentation and for obtaining required reviews and approvals.*

NOTE 2: *Information needed in Step 3.1.1.1 includes the safety, technical, quality, and performance requirements of the material or services needed.*

3.1.1.1 Enter all information as required.

3.1.1.2 Identify if material is an engineered or commercial item.

3.1.1.3 If item is engineered, ensure a relevant, approved design output document (e.g., engineering drawing, engineering specification) has been prepared in accordance with MP-CD&M-11.3, Design Control, and included with the PR.

NOTE: *Quality classifications for items are documented in Maximo.*

3.1.1.4 If the item has not previously been classified, then contact Engineering and Quality Assurance (QA) to ensure the appropriate evaluations are completed in accordance with MP-Q&SI-5.6, Graded Approach.

3.1.1.5 If the request is a new item for inventory, initiate a Form-1448, Notice to Code Spares, in accordance with MP-CMNT-10.19, Computerized Maintenance Management System.

NOTE: *Form-2011 is not required for the following:*

- Staff augmentation *(see def.; level-of-effort, no deliverables) requires Form-2108, Subcontractor Position Description*
- *Fabrication in accordance with a performance specification or approved drawings*
- *Onsite hazardous work (requires Form-1948).*

3.1.1.6 If requesting staff augmentation services or other nonhazardous services to be performed onsite, complete steps outlined in Appendix A, Onsite Service Acquisition, as appropriate.

3.1.1.7 If services are required to be performed, then prepare Form-2011, Statement of Work (SOW), and attach it to the PR.

3.1.1.8 If hazardous work will be performed onsite, then prepare Form-1948, Onsite Hazardous Services Statement of Work (SOW), and complete the steps outlined in Appendix A.

NOTE: *Requests for commercially available items or services from small businesses having a value less than $150,000 are exempt from Step 3.1.2.*

3.1.2 Requester: If the requirement is a noncompetitive action estimated to cost $25,000 or more, then check the appropriate PR block and attach Form-1262, Noncompetitive Procurement Justification (NCJ) (For NCJ Procurement Exceeding $25,000), unless otherwise not required.

3.1.3 Requester: Perform the following steps for material that is Class I, II, or III:

NOTE 1: *Form-1255, Receiving Inspection Report, requirements must be correct, accurate, and consistent with PR requirements.*

NOTE 2: *Form-1255 is prepared and approved by cognizant personnel to define inspection and documentation requirements for receipt inspection. This form is also used to identify any special care, storage, and handling necessary upon receipt of material.*

3.1.3.1 Identify the minimum quality requirements (including additional QA procurement clauses based on the specific technical requirements for the purchase) on the PR in accordance with Appendix D.

3.1.3.2 Prepare Form-1255 and ensure that quality clauses identified on the requisition are also accurately identified on Form-1255, as applicable, and attach it to the PR.

NOTE: *Only commercial items or services used in safety-significant Class I applications at AMWTP are candidates for commercial grade dedication.*

3.1.3.3 If a material or service is a candidate for *commercial grade dedication* (see def.), see additional requirements in Appendix I.

NOTE 1: The *PRs for Class I and II material and services are automatically routed to QA for approval to verify that adequate requirements are identified, to ensure technical and quality needs are met, and to ensure the PR includes all relevant documentation and complies with AMWTP QA Program requirements.*

NOTE 2: The *PRs for* Class III *(see def.) material and services are monitored by the QA Manager or designee via periodic assessments.*

3.1.3.4 For Class I and II procurements, obtain QA review and approval of the associated Form-1255 and identify any attributes requiring QA or Engineering review.

NOTE: Vendor data *(see def.) to be provided with shipment and/or for information only will be identified on Form-1255 and the PR.*

3.1.4 Requester: If vendor *submittals* (see def.) are required for review and/or approval prior to material shipment, then complete Form-1802, Vendor Data Submittal Register, and attach it to the PR.

3.1.4.1 When completing Form-1802, include a complete description of the items to be submitted and the due dates.

3.1.4.2 Ensure that specified due dates are compatible with applicable quality clauses and the *statement of work* (SOW; see def.) or specification.

3.1.5 Requester: If the PR is for acquisition of sealed radioactive sources, then route the PR for Radiological Controls Manager approval.

3.1.6 Requester: If the PR is for containers listed in INST-OI-24, Packaging Radioactive Waste, or low-level waste export boxes, then route the PR to the Nevada National Security Site Waste Certification Official for concurrence.

- Waste packaging/characterization services for LLW/MLLW and related procurements/contracts require review by the LLW/MLLW WCO.

3.1.7 Requester: If the PR is for services from an INL/ICP/AMWTP contractor retiree, then route the PR to the General Counsel and Human Resources Manager for approval.

3.1.8 Requester: If the PR is for training services, then route the PR to the Training Manager for approval.

3.1.9 Requester: If the PR is for onsite hazardous work or the work will be performed in a hazardous area, then route the PR to the ES&H Director and Maintenance Manager for approval.

3.1.10 Requester: If the PR is for ergonomic items, or safety-related material (chemicals, hoisting and rigging, personal protective equipment, requires material safety data sheet, etc.), then route the PR, and if applicable, Form-1366, New Chemical Request Form, for new chemicals, to ES&H for approval.

3.1.11 ES&H: When a PR is received for approval, identify conditions, prerequisites, and stipulations to satisfy applicable safety- and environmental-related regulatory requirements.

3.1.12 ES&H: If the PR is for the acquisition of a new chemical, then review the applicable material safety data sheet and associated Form-1366, completed by the requester, and provide approval prior to purchase.

(ISMS; 10 CFR 851; MP-ISIH-2.5)

3.1.13 Requester: If the PR involves acquisition of computer or data processing equipment, software, or systems, including licensing of software or systems, then route the PR for Plant Automation/Information Technology Manager or designee approval. PA/IT Manager will ensure that requirements for computer products conform to Electronic Products Environmental Assessment Tool (EPEAT).

NOTE 1: *Software acquisitions that are quality-affecting or safety significant are subject to the requirements of MP-CD&M-11.2, Software Quality Assurance, for the determination of acceptability and compliance to quality and technical requirements*.

NOTE 2: *If needed, revision to the Baseline Inventory and Software Classification list will be done in accordance with MP-DOCS-18.4, Document Control.*

3.1.13.1 If the software to be purchased is among the U.S. Department of Energy (DOE) Toolbox Codes or DOE Safety Design Codes, then ensure that an Software change request (SCR) is initiated in accordance with MP-CD&M-11.2 to have this software assigned a class and added to INST-CD&M-11.2.2, Software Inventory Classification.

3.1.13.2 Ensure that Form-1172, Software Quality Plan, has been approved for quality-affecting or safety-significant software acquisitions to identify software QA requirements and is included for incorporation into the purchase order/subcontract.

3.1.13.3 Ensure that the baseline software QA documents required by the approved Form-1172 are identified and included on Form-1802 as vendor data submittals.

3.1.14 Requester: If the PR includes engineering or technical requirements having safety and/or quality significance or safety-significant commercial grade items/services, then route the PR for Engineering Manager or designee approval.

NOTE 1: *The PRs for inventory reorder that have previously established and approved technical and quality requirements identified in Maximo do not require the PRs to be reapproved other than by the CAM >$2,500.00. Any changes to the technical or quality requirements require reapprovals documented on Form-1448.*

NOTE 2: *Each PR requires at least two approvals. The requester cannot be the same person as the manager approving the PR.*

3.1.15 Requester: If the PR is for repair or maintenance of government property (e.g., replacement of parts), ensure that the item is not shipped without attaching a completed Form-1654, Request for Shipments/Transfer of Property, to the PR.

3.1.15.1 Include quality and technical requirements and criteria for acceptance of repairs/maintenance as applicable.

3.1.15.2 Procurement Specialist: Coordinate receipt of return authorization and shipment of items to the supplier.

3.1.16 Procurement Specialist: Review each PR for purchase of environmentally preferable materials (Appendix K).

3.2 Revision of Purchase Requisitions

NOTE: The *PR changes that have an impact on the following items require the PR to be resubmitted and rerouted:*

- *The technical description (any material or part substitution must be evaluated in accordance with INST-CD&M-11.1.3, Approved Equivalent Parts)*
- *SOW/engineering specification*
- *Class I or Class II material or QA requirements, including safety, technical, quality, or performance requirements*
- *Commercial requirements.*

3.2.1 Requester: If a PR needs to be changed and the changes DO have an impact on any items listed above, then return to Section 3.1 to document the changes, additions, or deletions, so the approvers have a clear understanding of the changes.

3.2.1.1 Reroute the revised PR in Maximo for approval.

3.2.2 Requester: If the revised PR needs to be changed and the changes (1) are administrative in nature, (2) occur prior to final routing, and (3) DO NOT change or have an impact on the items listed above, then revise the PR with the changes and continue the Maximo routing process.

3.2.2.1 If the PR, Form-1255, or Form-1964, Commercial Grade Item/Service Dedication Plan, is changed after initial routing, then ensure that all forms are consistent with the revised requirements and obtain the original level of approvals.

3.3 Solicitation of Proposals

3.3.1 Requester: Obtain Subcontract Oversight Team (SOT) approval to release the solicitation package for proposals if work being performed is onsite hazardous work in accordance with Appendix A.

3.3.2 Procurement Specialist: Prepare the solicitation package and obtain functional reviews to ensure the technical, safety and health, and quality requirements are identified as appropriate.

3.3.2.1 Identify prospective sources of supply.

3.3.2.2 Include well-known and reputable sources that have a reasonable opportunity for award on the bidders' list.

3.3.2.3 Issue and administer the solicitation, ensuring the same information is provided to all prospective offerors to maintain equitable proposal preparation.

3.3.2.4 Provide a point of receipt for all proposals.

3.3.2.5 Identify potential small business concerns that may be capable of meeting procurement needs identified.

3.4 Evaluation of Proposals

NOTE 1: *Proposal evaluations are performed by the Procurement Specialist, requester, and any required functional reviewers (e.g., QA, ES&H, and General Counsel).*

NOTE 2: *Proposal evaluation is required when:*

- *Separate technical proposals are solicited*
- *Technical specifications are issued*
- *An equivalent (equal) to a solicited brand name is offered*
- *Technical exceptions are submitted*
- *Responsiveness cannot be determined without technical review.*

3.4.1 Evaluators: Maintain confidentiality regarding the content and evaluation.

3.4.1.1 Sign a Confidentiality and/or Conflict of Interest Certification when required.

3.4.2 Procurement Specialist: Determine the extent of proposal evaluation with the requester.

3.4.3 Procurement Specialist: Ensure the necessary safety, environmental, technical, quality, work plan, schedule, commercial, performance, and cost evaluations are conducted.

3.4.3.1 Procurement Specialist: If the acquisition is for a facility (lease or purchase), ensure that a fire assessment is performed and any required corrective actions are incorporated into the facility acceptance criteria prior to occupancy.

3.4.3.2 QA Manager or Designee: If the work to be performed is for Class I or II noncommercial grade material or services and the selected offeror is not currently on the *approved vendor list* (AVL; see def.), then evaluate the selected offeror's proposal, including its QA Program, to determine acceptability to perform and placement on the AVL prior to award. (See Appendix E, Supplier Qualification.)

3.4.3.3 QA Manager or Designee: If the PR includes Class I commercial grade items or services, ensure that the planning portion of the commercial grade dedication process has been completed as required by INST-CD&M-11.1.5, Commercial Grade Item/Service Dedication (see Appendix I, Commercial Grade Dedication).

3.4.4 Procurement Specialist: Identify the successful offeror and obtain written concurrence from the requester for the selection.

3.5 Subcontract/Purchase Order Award

3.5.1 Preparation of Purchase Orders/Subcontracts

3.5.1.1 Procurement Specialist: Prepare written purchase orders/subcontracts when the value of the transaction exceeds $100,000.

3.5.1.2 Procurement Specialist: If the purchase order award is for nonquality-affecting goods or services and is verbal, then perform the following steps:

3.5.1.2.1 Verify mutual understanding of requirements.

3.5.1.2.2 Provide a verbal notice to proceed.

3.5.1.2.3 Enter pertinent information into Maximo and Costpoint (unless payment will be made using a purchase card).

3.5.1.3 Procurement Specialist: If a written purchase order/subcontract is used, then complete the following:

3.5.1.3.1 Prepare the purchase order/subcontract consistent with the PR, solicitation documents, and approved changes to requirements.

3.5.1.3.2 Ensure all quality clauses applicable to the purchase are identified, as appropriate, using Form-1373 or listed in the purchase order.

3.5.1.3.3 Obtain all required reviews and approvals of the purchase order/subcontract package.

3.5.1.4 QA Manager or Designee: Review and approve Class I and Class II designated goods or services purchase orders/subcontracts to ensure that they contain or address the following:

- Applicable codes or standards, technical specifications, and quality requirements identified in the PR

- Supplier/subcontractor is qualified for the scope, items, or services required, and any limitations are identified that may require compensatory measures to be taken by AMWTP

- Purchase orders/subcontracts are complete and accurate and contain the appropriate technical and quality requirements necessary to determine and verify the acceptability of items or services required.

3.5.1.5 Procurement Specialist: If purchase orders/subcontracts are for Class I or Class II engineered items or commercial grade items for use in Class I safety-significant applications, then vendor nonconformance reporting identification/notification requirements must be identified in the purchase order/subcontract.

3.5.1.6 After verifying that required approvals have been obtained, have the individual with delegated financial authority sign the purchase order/subcontract.

3.5.1.7 Upon award, input order data into Maximo and Costpoint.

3.5.1.8 If onsite services are being acquired that require unescorted access to AMWTP facilities, then initiate the subcontractor badging process specified in MP-SCTY-16.11, Personnel Security.

3.6 Purchase Order/Subcontract Administration

3.6.1 Procurement Specialist: If work being performed is onsite and hazardous, then obtain SOT approval to issue a notice to proceed in accordance with Appendix A.

3.6.1.1 Establish and maintain the official procurement file.

3.6.1.2 Receive and distribute vendor data.

3.6.1.2.1 Process submittals in accordance with Appendix C, Vendor Data Processing Requirements.

3.6.1.3 Receive and coordinate responses to requests for information.

3.6.1.4 Process and authorize changes. (Refer to Section 3.7.)

3.6.1.5 Oversee expediting support for critical materials and services.

3.6.1.6 Transmit/receive all correspondence between AMWTP and the subcontractor, except as may be provided in the purchase order/subcontract.

3.6.1.7 Notify the supplier to ship material upon receipt of authorization from the requester if QC-33 is invoked (reference Step 3.6.2.1).

3.6.2 Requester: Review all submittals for completeness and acceptability and request corrections/additional information as needed.

3.6.2.1 Verify receipt and approval of vendor data before authorizing the Procurement Specialist to release shipment of material (reference QC-33).

3.6.3 Subcontract Technical Representative: Ensure technical coordination, control, and oversight of each assigned subcontract, in accordance with Appendix B, Subcontract Technical Representative Program, and all applicable requirements.

3.6.4 Supply Chain Inspector: Perform receiving inspections in accordance with MP-PCMT-15.21, Material Management, and approved Form-1255.

3.6.4.1 If a nonconformance has the potential to adversely affect or has affected completed or in-progress safety, quality, or technical requirements, then identify and report nonconformance and other conditions adverse to quality in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

3.6.4.2 QA Manager: Evaluate the condition in accordance with MP-Q&SI-5.3, Corrective Action.

3.6.4.2.1 Notify responsible management of any decision to issue a "Stop Work."

3.6.5 Requester or Subcontract Technical Representative: Do not authorize final payment until services rendered have been accepted.

3.6.6 Procurement Specialist: If work was performed onsite and required issuance of a security badge, then ensure that all subcontractor personnel badges have been returned as required by MP-SCTY-16.11, Personnel Security.

3.7 Revision of Purchase Orders/Subcontracts

3.7.1 Requester: Prepare a PR identifying the specific changes/revisions required (e.g., additional funding or revisions to the SOW) to be incorporated into the purchase order/subcontract.

NOTE: *If the purchase order/subcontract includes a SOW, the requester indicates specific changes in scope required, including deliverables, if appropriate.*

3.7.1.1 Ensure that changes made to AMWTP drawings and specifications are controlled in accordance with MP-CD&M-11.3; MP-CD&M-11.5, Drawing Control; and/or MP-CD&M-11.7, Documenting Engineering Specifications.

3.7.1.2 Ensure that requirements in MP-CD&M-11.3 are followed if Form-1347, Request for Information, is used to document a change in requirements.

3.7.1.2.1 If a change in scope is being requested for onsite hazardous work, then route Form-1347 to the Maintenance Manager and ES&H Director or designee for identification of any new potential hazards and concurrence.

3.7.1.2.2 If the requested deviation affects a QA requirement, then obtain QA concurrence prior to acceptance.

3.7.1.3 Forward the completed Form-1347 (if used) to the cognizant Procurement Specialist for incorporation into the purchase order/subcontract.

3.7.1.4 Identify the change impact and determine if any work needs to be suspended or re-performed and consider the quality nonconformance reporting requirements for the completed work scope.

3.7.1.5 Route the Maximo PR and obtain the same level of approval as the original PR, if applicable.

3.7.2 Procurement Specialist: Modifications to the purchase order/subcontract are prepared, approved, and issued as follows:

3.7.2.1 Ensure that all changed requirements are clearly delineated in the modification (e.g., Form-1347, delivery date, price).

3.7.2.2 Sign the modifications that do not affect the price.

NOTE: *Modifications that increase or decrease the price are subject to review and approval in accordance with the Procurement Specialist's delegation of authority.*

3.8 Purchase Order/Subcontract Closeout

NOTE: *A purchase order/subcontract is completed when the supplier has completed the required deliveries of supplies or performed all services in a satisfactory and acceptable manner.*

3.8.1 Procurement Specialist: Verify all items/services were received and accepted.

NOTE: *Records for nonquality commercial item orders <$10,000 do not require records management in accordance with MP-DOCS-18.2, Records Management.*

3.8.1.1 Retain all records for nonquality commercial item orders <$10,000 in the Maximo/Costpoint systems.

3.8.1.2 Close out the purchase order/subcontract in Maximo/Costpoint.

3.8.1.3 Close all other files as follows:

3.8.1.3.1 Complete a supplier performance evaluation as applicable in accordance with Appendix F, Supplier Performance Evaluation Program.

3.8.1.3.2 Prepare the file using Form-1851, Procurement Closeout Checklist.

3.8.1.3.3 Process the closed file in accordance with MP-DOCS-18.2, Records Management.

3.9 Special Case Procurements

3.9.1 Procurements from INL or ICP Contractors

NOTE: *Work performed and/or materials provided by INL and ICP contractors will be accomplished under agreements in accordance with this procedure. Provisions are incorporated within these agreements orders for the performance of low-dollar-value special requests via a task baseline agreement (TBA or releases), prepared by the Procurement Specialist and based on requirements provided by the requester.*

The process for establishing a TBA/Release is as follows:

3.9.1.1 Requester: Determine the need for work/material when work/material is not readily or economically available from the commercial sector.

3.9.1.2 Obtain ES&H and QA reviews of proposed work/material, as applicable.

3.9.1.3 Determine which contractor should perform work/provide material with assistance from the Procurement Specialist.

3.9.1.4 Transmit work/material requirements (including any special safety and/or quality provisions) and fund source to the Procurement Specialist.

3.9.1.5 Procurement Specialist: Obtain cost and performance information from the performing contractor.

3.9.1.5.1 Establish a TBA/Release and obtain concurrence from the performing contractor.

3.9.1.5.2 Provide copies of the TBA/Release to the performing contractor.

3.9.1.5.3 Monitor performance and completion of requirement.

3.9.1.5.4 Upon verification of final payment, close out action as appropriate.

3.9.2 Work for Other DOE Contractors

NOTE: *Work performed for other DOE contractors must be performed on a full-cost recovery basis. Work should not be initiated until approved by Procurement and Finance.*

3.9.2.1 **Procurement**: Receive requests and SOW from other DOE contractor.

3.9.2.2 Forward requests to the organization that will perform the work for development of a cost estimate and verification that the work can be performed on a noninterference basis.

3.9.2.3 Upon receipt of the cost estimate, forward to Accounting to verify that the estimate contains indirect cost elements.

3.9.2.4 Forward the approved cost estimate to the contractor.

3.9.2.5 Receive authorization from the contractor, notify the performing organization of authorization to provide service, and provide a copy of the authorization to Accounting.

3.9.2.6 Close action upon verification of final payment.

4.0 DEFINITIONS

Approved vendor list. List of vendors that have been evaluated by the QA organization and approved for supply of quality-affecting items and services. The approved vendor list is maintained by the QA Manager and is available on the AMWTP home page.

Class I materials and services. Equipment identified by the RPT-DSA-02, Documented Safety Analysis, as Safety Class or Safety Significant. Class I structures, systems, and components (SSCs) are those items whose failure presents the highest potential safety consequence and project risk. Class I SSCs are identified as Q-Listed SSCs.

Class II materials and services. Equipment controlled or designated by the RPT-DSA-02, Documented Safety Analysis,as "Other Items Important to Safety" by statutory requirements, by WIPP requirements, or certain safety equipment required by permit, or where a failure could directly cause injury to personnel, through a conventional or radiological means.

Class III materials and services. All process equipment not considered Class I or Class II.

Commercial grade dedication. An acceptance process undertaken to provide reasonable assurance that a commercial grade item (CGI) to be used as a basic component of an SSC will perform its intended safety function. A commercial grade service (CGS) applied to an SSC will provide acceptable results. The process includes the identification of critical characteristics and their verification by one or more of the acceptance methods. The selection of a method is based on factors such as (1) an item's critical characteristics, (2) available supplier information, (3) item quality history, and (4) the degree of standardization of the item.

Commercial grade item. **EITHER** (1) a commercial grade item as defined in ASME NQA-1-2008, Quality Assurance Requirements for Nuclear Facility Applications, **OR** (2) an SSC, or part thereof that affects its safety function, that was NOT designed and manufactured in accordance with ASME NQA-1.

Commercial grade service. A service that will affect equipment that performs a safety function and that is not provided in accordance with the requirements of ASME NQA-01.

Engineered item. Systems, structures, components, or other noncataloged products in which their design, manufacture, or fabrication is directly affected or directed by an AMWTP-produced specification or drawing or a specification or drawing produced for the AMWTP by a subcontractor.

Hazardous area. An area where hazardous substances (i.e., hazardous chemicals, biohazardous agents, and radioisotopes) and/or physical hazards (e.g., radiation, lasers, moving machinery parts, noise, extreme temperatures, and electrical apparatus) are present.

Hazardous work. A combination of dynamic and complex tasks associated with the erection, installation, assembly, demolition, maintenance, or fabrication activities involved in the creation of new, alteration, fabrication, repair, or rehabilitation of existing and/or the dismantling, demolition, or decontamination of facilities, systems, or structures. Includes, but is not limited to, tasks involving hoisting and rigging, work at heights, flame- or spark-producing activities, excavation, electrical work, lockout/tagout, heavy equipment operation, confined space entry, use or delivery of chemical materials, use of ladders or aerial personnel lifts, entry into radiological controlled areas, or entry into waste storage, treatment, or retrieval areas.

Onsite work. Work performed within the physical boundaries of an AMWTP controlled area or facility (excludes leased facilities when work is performed by lessor). Does not include pre-performance, coordination, or progress meetings, or other onsite administrative activities determined incidental to work performed predominantly offsite.

Procurement document. Includes purchase requisitions, purchase orders, subcontracts, solicitations, design documents and technical specifications, and scope of work used to define requirements for purchasing.

Procurement Specialist. Individual within Procurement who receives the approved PR, processes the PR, prepares and issues solicitations, and awards the purchase orders/subcontracts.

Purchase requisition. The initiating document requesting and specifying a procurement action.

Ratification. The formal act of approving, after the fact, a commitment that has been made by an individual who did not have the authority to do so.

Requester. Person(s) requesting a procurement action and responsible for initiating, preparing, and coordinating approval of a PR.

Responsible manager. Any person responsible for the budget or project. This does not necessarily require a management title.

Responsible reviewer. The individual identified by the requester responsible for coordinating and resolving all submittal comments from AMWTP reviewers and determining the final disposition of submitted items.

Staff augmentation. Subcontractor personnel acquired to provide services at a specified hourly rate under AMWTP direction in accordance with AMWTP procedures and policies. These individuals typically work at AMWTP facilities using government

equipment to accommodate workload demands that cannot be performed by employees because of a lack of resources.

Statement of Work. A detailed written description of work required to be performed under contract. It may be supplemented by engineering design specifications or design proposal drawings.

Subcontract Oversight Team. Team of functional representatives responsible for oversight and approval of subcontractor work being performed at the AMWTP.

Subcontract Technical Representative. Qualified individual responsible for field coordination, direction, and oversight of construction subcontractors performing work at the AMWTP. Individual must have completed Qualification Checklist QCSTR.

Submittal. Any item contractually required to be provided by the vendor (submitter) to be submitted for review. Submittal items include, but are not limited to, the following: shop or working drawings; schematics; calculations; manufacturer's standard data; brochures; installation, erection, application, and placing instruction; product data; samples and mockups; inspection and test reports; certificates of compliance; operating and maintenance manuals; bills of material; mill test reports; progress schedules; warrantees and guarantees; work plan; schedule; and administrative items.

Task Baseline Agreement. A document used to reflect agreement with scope, schedule, and cost for services provided by ICP or INL contractors.

Vendor. Non-AMWTP individual/company responsible for delivery of materials or equipment services as skill of the craft, and the delivery activity is not considered hazardous.

Vendor (supplier) data. Supplier-furnished data (except pre-award submittals) required by the purchase order or subcontract for AMWTP review and/or approval.

5.0 REFERENCES

(1) 10 CFR 707, Workplace Substance Abuse Programs at DOE Sites

(2) 10 CFR 851, Worker Safety and Health Program

(3) ASME NQA-1-2008, Quality Assurance Requirements for Nuclear Facility Applications

(4) DOE O 450.1A, Environmental Protection Program

(5) Form-1023, Medical Job Function Analysis

(6) Form-1087, Quality Program Evaluation Report

(7) Form-1172, Software Quality Plan

(8) Form-1255, Receiving Inspection Report

(9) Form-1262, Noncompetitive Procurement Justification (NCJ) (For NCJ Procurement Exceeding $25,000)

(10) Form-1263, Organizational Conflicts of Interest Disclosure Statement (OCI)

(11) Form-1266, Submittal Cover & Transmittal Form

(12) Form-1347, Request for Information

(13) Form-1366, New Chemical Request Form

(14) Form-1373, Standard Procurement Quality Clauses

(15) Form-1448, Notice to Code Spares

(16) Form-1639, Subcontractor Safety Performance Evaluation Form

(17) Form-1654, Request for Shipments/Transfer of Property

(18) Form-1802, Vendor Data Submittal Register

(19) Form-1808, Medical History

(20) Form-1851, Procurement Closeout Checklist

(21) Form-1898, Supplier Performance Evaluation Rating Form Services

(22) Form-1948, Onsite Hazardous Services Statement of Work (SOW)

(23) Form-1964, Commercial Grade Item/Service Dedication Plan

(24) Form-1968, Check Request

(25) Form-1970, Subcontract Oversight Team Checklist

(26) Form-2011, Statement of Work (SOW)

(27) Form-2108, Subcontractor Position Description

(28) INST-CD&M-11.1.3, Approved Equivalent Parts

(29) INST-CD&M-11.1.5, Commercial Grade Item/Service Dedication

(30) INST-CD&M-11.2.2, Software Inventory Classification

(31) INST-COPS-9.18.4, Hazard Assessment

(32) INST-OI-24, Packaging Radioactive Waste

(33) MP-CD&M 11.2, Software Quality Assurance

(34) MP-CD&M-11.3, Design Control

(35) MP-CD&M-11.5, Drawing Control

(36) MP-CD&M-11.7, Documenting Engineering Specifications

(37) MP-CMNT-10.19, Computerized Maintenance Management System

(38) MP-COPS-9.14, Operations Procedures

(39) MP-COPS-9.38, Subcontractor Work Control

(40) MP-DOCS-18.2, Records Management

(41) MP-DOCS-18.4, Document Control

(42) MP-ISIH-2.5, Hazard Communication Program

(43) MP-M&IA-17.2, Independent Assessment

(44) MP-M&IA-17.3, Quality Assurance Surveillance

(45) MP-PCMT-15.21, Material Management

(46) MP-PCMT-15.22, Purchase Card Program

(47) MP-Q&SI-5.3, Corrective Action

(48) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(49) MP-Q&SI-5.6, Graded Approach

(50) MP-SCTY-16.11, Personnel Security

(51) NQA-1-1989, Quality Assurance Program Requirements for Nuclear Facilities

(52) NQA-2a-1990 addenda, Requirements of Computer Software for Nuclear Facility Applications

(53) RPT-DSA-02, Documented Safety Analysis

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification	
MP-PCMT-15.1, Acquisition of Materials and Services, Case File	Nonpermanent WIPP /ENV1-J-1/ Destroy 75 years after submittal	
Class I, II, and III Purchase Order or Contract Transactional File* • Form-1087, Quality Program Evaluation Report (as applicable) • Form-1255, Receiving Inspection Report (as applicable) • Form-1373, Standard Procurement Quality Clauses (as applicable) • Form-1851, Procurement Closeout Checklist (as applicable) • Form-1948, Onsite Hazardous Services Statement of Work (SOW) • Form-1964, Commercial Grade Item/Service Dedication Form • Form-2011, Statement of Work (SOW)	Determined by the specific procurement transaction file	
	• Non-WIPP-related procurement files, including contracts, SOW, requisition, purchase orders, lease, bond, etc. >$100,000 and construction contracts exceeding $2,000.	Misc. Other Records/ A3-3-a-1-a Submit to RMC after final payment, Destroy 6 years and 3 months after final payment.
	• Non-WIPP-related procurement and P-card files, including contracts, requisitions, purchase orders, and related correspondence <$100,000 and construction contracts exceeding $2,000.	Misc. Other Records/ A3-3-a-1-b, Submit to RMC after final payment. Destroy 3 years after final payment.
	• Request for proposals/Purchase Orders/Subcontracts FOR QUALITY SIGNIFICANT PROCUREMENT Facility/equipment procurement packages exceeding $100,000 and construction contracts exceeding $2,000.	Misc. Other Records/ A18-35-b Submit to RMC after final payment. Destroy upon permanent removal of item from service or upon permanent termination of items use, unless the document will be applicable to a replacement item.
Purchase Order or Contract File for Transaction <$100K*	Misc. Other Records / A3-3-a-1-b / Submit to RMC after final payment. Destroy 3 years after final payment.	
Purchase Order or Contract File for Transaction >$100K*	Misc. Other Records / A3-3-a-1-a / Submit to RMC after final payment. Destroy 6 years and 3 months after final payment.	

Record Description	Classification
*The following forms may be part of a Contract Transaction File, as applicable: Form-1255, Receiving Inspection Report; Form-1639, Subcontractor Safety Performance Evaluation Form; Form-1262, Noncompetitive Procurement Justification (NCJ) (For NCJ Procurements Exceeding $25,000); Form-1263, Organizational Conflicts of Interest Disclosure Statement (OCI); Form-1266, Submittal Cover & Transmittal Form; Form-1373, Standard Procurement Quality Clauses; Form-1448, Notice to Code Spares; Form-1851, Procurement Closeout Checklist; Form-1898, Supplier Performance Evaluation Rating Form Services; Form-1087, Quality Program Evaluation Report; Form-1802, Vendor Data Submittal Register; Form-1948, Onsite Hazardous Services Statement of Work (SOW); and Form-2011, Statement of Work (SOW).	

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Onsite Service Acquisition

Appendix B – Subcontract Technical Representative Program

Appendix C – Vendor Data Processing Requirements

Appendix D – Standard QA Procurement Clauses

Appendix E – Supplier Qualification

Appendix F – Supplier Performance Evaluation Program

Appendix G – Subcontractor Oversight Team

Appendix H – Emergency Procurements

Appendix I – Commercial Grade Dedication

Appendix J – Description of Forms

Appendix K – Sustainability Requirements in Purchase Orders and Subcontracts

Appendix A - Onsite Service Acquisition

The Advanced Mixed Waste Treatment Project (AMWTP) uses a graded approach to the application of the Integrated Safety Management System (ISMS) and 10 CFR 851 program requirements to work being performed at the AMWTP.

In order to ensure that all subcontractors perform their work safely and their work practices conform to the principles of ISMS and the requirements of 10 CFR 851, as applicable, the following process must be followed.

NOTE: *Subcontracts for staff augmentation and professional services do not require incorporation of ISMS requirements, as these personnel participate via the AMWTP ISMS program. The requester or designee will provide a safety and health briefing to these personnel to familiarize them with facility hazards, evacuation information, stop work authority, and other applicable elements of AMWTP's health and safety program.*

Subcontractors performing work at the AMWTP generally fall within four categories:

1. Peripheral services, which include delivery of supplies, pick up of laundry, routine maintenance (office equipment type maintenance), and so forth.

NOTE: *Peripheral services are not considered to be work in furtherance of the U.S. Department of Energy (DOE) mission at AMWTP facilities.*

2. Staff augmentation or level-of-effort with no deliverables

3. Onsite hazardous work

4. Onsite nonhazardous work (level-of-effort with deliverables).

The processes and requirements herein are mandatory for staff augmentation, hazardous work, or work being performed in a hazardous area.

1. Subcontractors performing work that is in furtherance of the DOE mission at AMWTP facilities are subject to the requirements of 10 CFR 851 as follows:

Staff Augmentation Process Requirements

(Assumption: Subcontractor personnel will be covered by the AMWTP Worker Safety and Health Program and, for purposes of safety and health, treated the same as AMWTP employees.)

A. Requester must complete Form-2108, Subcontractor Position Description, and Form-1023, Medical Job Function Analysis, for each position and include as attachments to the purchase requisition (PR).

B. Procurement includes Form-1023 with a Request for Proposal (RFP) for use by the subcontractor in screening applicants.

C. Procurement forwards the candidate's resume to the requester who selects personnel and then notifies Procurement.

D. Procurement transmits Form-1808, Medical History, to the subcontractor for completion by selected candidate(s), and returns to Procurement.

E. Procurement submits the completed forms to the Site Occupational Medical Director (SOMD) to determine the medical screening needed. The SOMD provides approval to proceed to Procurement.

F. Procurement notifies the subcontractor of the report date for selected personnel and inserts the appropriate clause in the subcontract.

G. Human Resources (HR) facilitates physical, drug screen, and required training, as appropriate.

H. The SOMD determines if review of the subcontractor Emergency Action Plan is required. Procurement will obtain and distribute.

I. Requester is responsible for keeping Form-1023, Medical Job Function Analysis, current with the job assignment.

J. Requester must ensure that subcontractor personnel comply with all safety, health, environmental, security, work control, and performance requirements.

K. The SOMD is responsible for maintaining personnel medical history records.

L. Upon release, the SOMD is to offer a general health evaluation.

Onsite Hazardous Work or Work Being Performed in a Hazardous Area

A. Requester develops Form-1948 (Sections 6, 7, and 8 are to be completed by ES&H).

B. Requester generates the Work Order in accordance with MP-CMNT-10.19, Computerized Maintenance Management System.

C. Requester obtains a Davis-Bacon Act determination.

D. Procurement develops the RFP, incorporating the Statement of Work (SOW) and other applicable documents. The Subcontract Oversight Team (SOT) reviews and approves the RFP package prior to release (Form-1970, Subcontract Oversight Team Checklist).

E. Proposal(s) evaluated for responsiveness to requirements (requester, ES&H, and Quality Assurance [QA]).

F. The SOT approves the selected subcontractors for award (Form-1970).

G. The Procurement Specialist inserts the appropriate clause in the subcontract and awards the subcontract.

H. Responsible manager or the Subcontract Technical Representative (STR) is responsible for verifying that all pre-work requirements are met.

I. Works with the Procurement Specialist to obtain all required information, documents, records, work plans, schedules, and so forth from the subcontractor.

J. Prior to release of work, does a final turnover and review with the STR, when an STR will be involved.

K. Helps resolve contract and schedule issues during all phases of the contract.

L. Assists with contract closeout.

M. The SOT confirms that the subcontractor is ready to perform work and authorizes a Notice to Proceed (Form-1970) by verifying the following:

- Health and Safety Plan is approved
- Training/qualification documentation has been received and accepted
- Work plan and schedule are approved
- Work plan has been incorporated into work orders.
- Subcontractor is authorized to commence onsite work.

N. Upon subcontractor mobilization, the requester, responsible manager, or STR is required to:

- Provide a safety and health briefing to subcontractor personnel to familiarize them with facility hazards, evacuation information, the AMWTP work control process, stop work authority, and other applicable elements of AMWTP's health and safety program
- Validate training requirement documentation
- Ensure that work will conform to PD-COPS-9.38, Subcontractor Work Control, and MP-COPS-9.14, Operations Procedures
- Identify any jobsite hazards, and establish controls to prevent/mitigate potential or actual hazards
- Ensure subcontractor participation in Formal Hazardous Analysis in accordance with INST-COPS-9.18.4, Hazard Assessment.
- Should a change in the work scope be identified subsequent to award, requester must conform to the steps in Section 3.7.
- Participate in postcompletion performance evaluations, as required.

Onsite Nonhazardous Work

A. Requester develops Form-2011, Statement of Work (SOW), and includes it with the PR.

B. The Procurement Specialist inserts the appropriate clause in the subcontract and awards the subcontract.

Appendix B -
Subcontract Technical Representative Program

This appendix defines the Subcontract Technical Representative (STR) Program for hazardous work being performed by subcontractors at the AMWTP. The STR provides field coordination, direction, and oversight to contracted work. The STR provides the bridge between administrative and technical roles and responsibilities, serving as the field representative for both the Procurement Specialist and the requester. The STR Program is intended to ensure that personnel are identified, approved, qualified, and appointed to support and administer contracted onsite work.

1. GENERAL

A. The Contracts and Logistics Manager establishes, maintains, and manages the STR Program as defined by this appendix.

B. The responsible manager identifies STR candidates and identifies in advance STR needs and resource requirements, ensuring availability and assignment of trained and qualified STR personnel, as required. The STR assignments are optional for:

- Onsite hazardous work other than construction
- Servicing of commercially manufactured equipment by authorized service and/or repair personnel.

2. CANDIDATE SELECTION

A. STR Selection Guidance

Candidates for STR assignments possess a broad background in a variety of business and/or technical fields. Candidates possess sufficient communication and leadership skills to effectively represent the company in a business relationship with subcontractor management and staff. The STR candidates are self-starters, require minimal supervision, communicate effectively, and work exceptionally well in a team environment. As applicable to the nature, complexity, and location of the work, additional consideration is given to the following:

- General working knowledge of structures, systems, and components (SSCs) affected by contracted work
- General knowledge and understanding of Integrated Safety Management System (ISMS) concepts and requirements
- General knowledge of company business systems for documents, vendor data, and procurement.

3. TRAINING AND QUALIFICATION

A. Qualification

- The Contracts and Logistics Manager establishes and maintains STR qualification requirements by performing/coordinating the following:
  - Establish, maintain, and deliver core training associated with QCSTR requirements. Additional STR training requirements may be established. Training records are maintained in TRAIN.
  - Ensure and verify that all personnel assigned to the STR role are approved through execution of an interim, short form, or core QCSTR prior to performing the STR function.

4. APPOINTMENT/DELEGATION

A. The Contracts and Logistics Manager issues a Letter of Appointment to each STR who successfully completes QCSTR, which may include commitment authority.

- Upon completion of assignment or expiration/suspension of the STR qualification, the Contracts and Logistics Manager revokes the Letter of Appointment.

B. The STR acknowledges and accepts responsibilities in the Letter of Appointment.

C. The Responsible Manager, upon termination of employment, reassignment of job responsibilities, or any other action that results in an STR no longer requiring the QCSTR, notifies the Contracts and Logistics Manager of such event and requests that the STR Letter of Appointment be revoked.

5. CONTRACT AWARD

A. The STR participates in a pre-performance meeting(s) with the appropriate subcontractor representatives and ensures that all have a common understanding and awareness of all contract requirements, milestones, and deliverables.

6. TECHNICAL ADMINISTRATION

A. The STR provides technical coordination, control, and oversight to each assigned contract to ensure subcontractor compliance with environment, security, safety, health, and work control requirements.

B. The STR coordinates activities with other company functional representatives and ensures effective involvement and participation.

C. The STRs are responsible to know onsite physical work being performed by subcontractors on their assigned project(s), including knowledge of lower-tier subcontractors and deliveries/returns by supplies.

- The STR provides approval, in advance, of any physical work performed after regular work hours.
- The STR informs the Plant Manager or designee of the physical work being performed after regular work hours in advance of performance.
- The STR may review invoices to ensure that charges are in agreement with contract terms prior to authorizing payment.

7. CHANGE CONTROL

A. The STR authorizes and the Procurement Specialist processes all changes during the established performance period of an existing contract subject to concurrence from other functional representatives (e.g., ES&H, Project Management Office, and Quality).

8. CLOSEOUT

A. The STR completes the following remaining actions/tasks:

- Compiles and submits the final subcontractor evaluation to the Procurement Specialist
- Ensures Form-1964, Commercial Grade Item/Service Dedication Plan, is completed with all items accepted and delivered to Procurement for retention as a record
- Develops and distributes applicable Lessons Learned.

Appendix C -
Vendor Data Processing Requirements

Purpose

This appendix describes the process by which vendor data are identified to suppliers and processed through the Advanced Mixed Treatment Project (AMWTP) review and approval cycle.

Submittal items include, but are not limited to, design, shop or working drawings, schematics, calculations, manufacturer's standard data, brochures, installation, erection, application and placing instruction, product data, samples and mockups, inspection and test reports, certificates of compliance, operations and maintenance manuals, bills of material, mill test reports, progress schedules, wiring diagrams, motor data, test reports and procedures, personnel qualifications and certifications, material certifications, fabrication techniques, and software development and baseline documents.

Vendor data, for purposes of this appendix, are data identified as specific data deliverables within a specification, Statement of Work (SOW), or by incorporation of a Quality Clause (e.g., QC-27, Manufacturing, Inspection and Test Plan). This process does not apply to data that are identified as "with shipment" and/or "for information only" or to data received for administrative purposes, such as ES&H reports, certificates of compliance, invoices, progress reports, and so forth.

1. The Procurement Specialist will receive, log, maintain status and control, and coordinate reviews for all vendor data submittals as identified in the purchase order/subcontract.

2. The following outlines the process for initial receipt, logging, distribution, and documentation of vendor submittals identified on Form-1802, Vendor Data Submittal Register, received by the Procurement Specialist.

   A. The submittal item and date of receipt shall be recorded on Form-1802.

      - The log shall be maintained regularly and used to track submittal due dates (within 10 working days of issue to reviewers) and turnaround dates for the review process.

   B. The Procurement Specialist is responsible for verifying that submitted items match the numbering and description of items listed on Form-1802 and that the number of copies and originals match the requirements of the subcontract/purchase order.

NOTE: *Electronic submittals should be encouraged.*

C. All submittals shall be sent with Form-1266, Submittal Cover & Transmittal Form.

NOTE: *Form-1266 contains routing blanks, date slots, and signature blanks in Section II that may be used for routing or a transmittal letter may be used.*

- The requester shall enter a required review completion date in Section II of Form-1266.

- The requester should return reviewed submittals with all required signatures with comments to the Procurement Specialist on or before the required review completion date.

D. Immediately after initial processing, the Procurement Specialist shall route the submittal(s) to the requester and any other reviewer required in the *procurement documents* (see def.) or that the requester has designated.

3. Review Process

A. A required reviewer (RR) shall be assigned to each purchase order/subcontract or design/procurement package prior to the receipt of submittals.

B. The RR is responsible for managing and expediting the routing and review process and ensuring that review is complete and back to the Procurement Specialist within the time allotted by the required review completion date on Form-1266.

C. The RR is responsible for comment resolution with secondary reviewers and final comment and disposition on the submittal items.

D. The RR shall determine the final disposition of the submittal and enter the required data and disposition status on Form-1266.

E. Upon completion of review and dispositioning, the RR shall sign, date, and return Form-1266 with a copy of the marked-up submittal item, other reviewer comments, and any additional comments to the Procurement Specialist.

- Review documentation shall be maintained in the procurement/contractual records file.

4. Resubmittal Process

   A. The Procurement Specialist shall update Form-1802 to reflect the completed review and disposition of each submittal item.

      - If resubmittal of a data item is required, a new due date shall be entered and tracked as necessary.

   B. The Procurement Specialist will file one copy of the reviewed submittal and completed Form-1266 in the procurement file.

   C. After secondary processing, Form-1266 and the reviewed submittal will be returned to the supplier with comments and revisions attached.

5. Subcontractor Submittal Records

   A. The RR shall coordinate the AMWTP reviews to ensure the supplier complies with the submittals requirements and ensure submittals are submitted on the appropriate forms.

   B. The Procurement Specialist must file a copy of the reviewed submittal and Form-1266 in the appropriate purchase order or subcontract file.

Appendix D -
Standard QA Procurement Clauses

NOTE: *Full clause text is provided on Form-1373.*

General Requirements

Standard procurement quality clauses have been established and are required for Class I, II, and III material and service acquisitions to facilitate the identification and flowdown of specific requirements to suppliers. Clauses have been categorized and organized to establish a systematic identification system based on the Advanced Mixed Waste Treatment Project (AMWTP) graded approach and to facilitate clause selection and consistency to ensure only acceptable items and services are authorized by the AMWTP procurement system.

- AMWTP structures, systems, and components (SSCs) are categorized by significance, risk, and consequence of failure. The AMWTP SSCs include hardware and software. Procurement quality requirements are based on the classification of the procured material or service.

Standard Quality Assurance (QA) clauses are imposed based on a combination of SSC classification and technical requirements from the Statement of Work (SOW), drawings, and/or specifications. This provides the mechanism to apply the appropriate level of requirements for a commercial grade item or service as opposed to those that would be required for an engineered item or technical service.

This appendix identifies the minimum mandatory QA clauses to be utilized by all requesters of purchases for items and services intended for use at the AMWTP facilities. These minimum requirements must be considered in procurement planning. Consideration must be given to additional QA clause requirements based on the specific technical requirements for purchases. For example, special QA clauses have been developed for specialty equipment such as high-efficiency particulate air (HEPA) filters; other considerations include requirements for potential suspect counterfeit items and shelf life information requirements, if appropriate, for the type of item or material being procured.

Purchase Requisition Preparation

- Requesters must identify the minimum QA clauses in accordance with this appendix when preparing purchase requisitions (PRs) for Class I, II, and III material and service acquisitions.
- Requesters are responsible to ensure any additional requirements are identified based on the technical scope of work.
- All requests for acquisition of material, including engineered items, requiring a supplier release prior to shipment, shall include clause QC-33.
- All requests for acquisition of Class I materials and services shall include clause QC-40.
- This appendix shall be used for identification of applicable quality clauses (Form-1373, Standard Procurement Quality Clauses, or Purchase Request).

STANDARD MANDATORY QA CLAUSES

QA Procurement Clause Cross-Walk

Scope	Commercial Grade Items	Services	Engineered Items
Class I Equipment identified by the Documented Safety Analysis as Safety Class or Safety Significant SSC. Class I SSCs are those items whose failure presents the highest potential safety consequence and project risk. Class I SSCs are identified as Q-Listed SSCs.	QC-1 QC-2 QC-13 QC-16 QC-21 QC-35 QC-40	QC-1 QC-2 QC-40	QC-1 QC-2 QC-3 QC-7(1) QC-8(2) QC-9 QC-10 QC-11 QC-12 QC-13 QC-16 QC-21 QC-25 QC-26 QC-27 QC-28 QC-35 QC-40

(1) NQA-1-1989, Quality Assurance Program Requirements for Nuclear Facilities, is required for Waste Isolation Pilot Plant (WIPP)-related SSCs.

(2) NQA-2a-1990 addenda, Part 2.7, Requirements of Computer Software for Nuclear Facility Applications, is required for WIPP-related software systems.

STANDARD MANDATORY QA CLAUSES

QA Procurement Clause Cross-Walk

Scope	Commercial Grade Items	Services	Engineered Items
Class II Equipment controlled or designated by the Documented Safety Analysis as "Other Items Important to Safety," by statutory requirements, by WIPP requirements, or certain safety equipment required by Permit, or where a failure could directly cause injury to personnel through a conventional or radiological means.	QC-1 QC-2 QC-13 QC-16 QC-21 QC-35	QC-1 QC-2	QC-1 QC-2 QC-3 QC-7(1) QC-8(2) QC-9 QC-10 QC-11 QC-12 QC-16 QC-21 QC-25 QC-26 QC-28 QC-35

STANDARD MANDATORY QA CLAUSES

QA Procurement Clause Cross-Walk

Scope	Commercial Grade Items	Services	Engineered Items
Class III All process equipment not considered Class I or Class II	QC-1 QC-2 QC-13 QC-21 QC-35	QC-1 QC-2	QC-1 QC-2 QC-10 QC-13 QC-21 QC-35
Non-Quality Category (NQ) Any item or service that is not affected by the Authorization basis, WIPP, or non-nuclear regulations and is not a part of the plant or production process SSCs.	To be determined as required by the requester	To be determined as required by the requester	To be determined as required by the requester
Suspect marginal decisions will always default to the more rigorous approach.			

Appendix E - Supplier Qualification

The acquisition of items and services is controlled to ensure conformance with specified requirements. Accordingly, supplier evaluations are performed and documented as specified in this appendix in order to evaluate the supplier's capability to provide items and services in accordance with purchase order/subcontract requirements.

Quality Assurance (QA) approves Class I and Class II suppliers of noncommercial grade items and services affecting quality and reviews and approves such supplier's QA program prior to purchase order award. Review and approval of a supplier's QA program is not required in cases where other U.S. Department of Energy (DOE) facilities (e.g., Carlsbad Field Office) maintain oversight responsibility for supply of noncommercial grade items and services affecting quality. Suppliers of commercial grade and Class III items and services are evaluated using a graded approach or as directed by the QA Manager or designee, based on the complexity and importance to safety and mission objectives, to ensure that only acceptable items and services are provided.

The Advanced Mixed Waste Treatment Project (AMWTP) uses desktop and/or source evaluations as a basis for accepting or rejecting a suppliers' quality program. The determination of evaluation type is made by the QA Manager or designee.

When approved by the QA Manager or designee, Class I and Class II suppliers of noncommercial grade items or services affecting quality are identified on the approved vendor list (AVL). Purchases of Class I and Class II noncommercial grade items and services are made only from suppliers listed on the AVL, except as indicated above. Proposals may be solicited from suppliers not listed on the AVL; however, prior to purchase order award, the supplier's QA program shall be evaluated as described above.

Class I and Class II commercial grade items and services may be solicited from suppliers listed on the AVL.

This appendix specifies the process for evaluating suppliers to determine capability to meet the quality requirements of materials and services. It applies to the evaluation of suppliers of Class I and II materials and services who are not on the AVL. It may also be used for evaluating other suppliers, as appropriate, such as vendors supplying commercial grade items or services.

The QA evaluations of supplier implementation and conformance to procurement requirements are conducted through QA assessments or surveillances in accordance with MP-M&IA-17.2, Independent Assessment, or MP-M&IA-17.3, Quality Assurance Surveillance.

Desktop reviews are conducted using Form-1087, Quality Program Evaluation Report, which includes the necessary criteria addressing the regulatory and contractual requirements of the QA Program and use as a minimum:

* Copy of the prospective vendor's current QA program document, with evidence of approval or endorsement by senior management

* A listing or matrix of quality implementing procedures (copies of approved vendor procedures may be requested from the vendor to support completion of the review).

Source evaluations are conducted in accordance with MP-M&IA-17.2.

New Vendors

1. The QA Manager or designee shall:

   A. Determine the vendor evaluation criteria based on the complexity, application, quality, and safety significance of the item/service

   B. Evaluate the technical and quality requirements to determine the evaluation methodology and criteria, and assign a QA evaluator.

2. The QA evaluator shall:

   A. Evaluate the vendor's program documents against the specified evaluation criteria and the technical and quality scope

   B. Document the results and recommendations from the evaluation on Form-1087 and submit the completed report to the QA Manager for review.

3. The QA Manager or designee shall evaluate the results of the desktop review and perform the following:

   A. Add vendor status to the AVL

   B. Identify any restrictions on qualification

   C. Maintain the QA evaluation with the QA vendor files.

4. The QA evaluator shall follow up with prospective suppliers on identified issues, if required.

5. If any identified issues cannot be fully resolved, then the QA Manager or designee, Procurement, and the cognizant technical representative will evaluate the issues for impact and determine the appropriate actions.

6. If it is determined that the vendor must be used, then a determination of compensatory measures that must be taken to address the deficiency in the vendor's QA program must be documented and approved by the QA Manager or designee.

7. The compensatory measures will be provided to Procurement, the cognizant technical representative, and the supplier (by Procurement).

8. Document any such compensatory measures on the AVL and, if applicable, incorporate into the purchase order.

Existing Vendors

1. The QA Manager or designee shall assign a QA evaluator to conduct a re-evaluation of an approved vendor when notified of a revision to the vendor's accepted QA Program.

2. The QA evaluator will use the original review checklist as a guide to evaluate the change in the vendor's QA Program.

   A. If it is determined that the change effects a reduction in the vendor's QA Program commitments, then document the impacts on Form-1087 and provide the results to the QA Manager.

   B. The QA Manager will determine the need for further actions, which may include disqualification of the vendor.

Source Evaluations

3. QA Manager: Determine the need for performance of Source Evaluations, and ensure that evaluations are scheduled and conducted as early as practical after contract award.

4. Assign a certified lead auditor to conduct the source evaluation. Source Evaluations are conducted and documented in accordance with MP-M&IA-17.2.

Appendix F -
Supplier Performance Evaluation Program

Purpose: Provide requirements for the purpose of comprehensive and systematic review and evaluation of supplier performance through routine and periodic collection of performance data. Supplier performance evaluation data are utilized to identify and retain suppliers that provide satisfactory or better materials and services and eliminate unsatisfactory performers from consideration for future procurement activity.

Performance data used include:

- Technical adequacy of items or services including data submittals
- Results from the Advanced Mixed Waste Treatment Project (AMWTP) oversight (i.e., Subcontract Technical Representative [STR] oversight, management assessment, and Quality Assurance [QA] audits and surveillances)
- Nonconforming items or services
- Receipt inspection rejections
- Over, short, damaged, and discrepant shipments
- On-time delivery.

Supplier evaluations are based upon a review of documentation received, i.e., nonconformance reports, injury/accident statistics (onsite services), inspection reports, cost and technical reports and safety (onsite services) and technical surveillance of operation and information available via the Maximo purchasing system.

Contracts and purchase orders for the following do not require an evaluation:

- Services provided by affiliates
- Services provided by a federal agency, department, or commission
- Services provided by U.S. Department of Energy (DOE) contractors
- Staff augmentation
- Software providers (licensing)
- Rentals and/or leases.

Suppliers of Material

Qualifying transactions and frequency of evaluation are:

1. Blanket purchase order suppliers (annual)
2. Multiple use suppliers are defined as individual purchases totaling 5 or more in a 12-month period (annual)
3. Suppliers of Class I and II engineered materials (annual)
4. Any supplier deemed mission critical regardless of number of purchase (annual).

Process:

Suppliers will be evaluated based on the following criteria:

1. Conformance to delivery requirements is based on purchase order delivery schedules as compared to actual receipt date. Consideration will be given to events or factors outside the suppliers' control.
2. Over, short, damaged, and discrepant shipments are based on receipts over the 6-month evaluation period.
3. Receiving inspection and Quality Control (QC) rejections are based on receipts over the 6-month evaluation period. The sum of the rejected or nonconforming quantities will be compared to the total receipt quantity during the period.
4. Other —used to rate responsiveness, cooperation, and overall customer service.

Collection of relevant data will be from Maximo. The Procurement Manager will analyze delivery, receiving, and other data for suppliers to determine an overall performance assessment in accordance with the scoring table below with 1,000 total points possible. Negative trends (below 800 points) will be used to initiate corrective action or eliminate poor performers, and positive trends (over 900 points) will be used to acknowledge desired performance. The performance evaluations will be documented in TrackWise®.

Category	Point Range	Calculation	Score
Delivery	0–300	% on time × 300	
OSD&D	0–300	% items compliant × 300	
Receiving inspection/QC rejections	0–300	% items compliant × 300	
Other	0–100	Subjective	

Example of Scoring

Delivery: 45 items on time out of 50 total = 90% on time × 300 = 270
OSD&D: 23 items acceptable out of 25 total = 92% compliant × 300 = 276
Rejections: 0 out of 20 = 100% compliant × 300 = 300
Other: no issues = 100 points

Total points received = 946 points.

Suppliers of Services

Suppliers providing services >$25,000 are evaluated on an annual basis using Form-1898, Supplier Performance Evaluation Rating Form Services, in accordance with the following criteria:

1. Safety (construction, maintenance, and infrastructure services)
2. Technical performance
3. QA/inspection
4. Delivery/schedules
5. Vendor data
6. Administration.

Procurement Specialists, based on input from the Subcontract Technical Representative (STR) or requester, will complete Form-1898 and establish an overall composite score. Scores will be collected annually by the Procurement Manager. Suppliers with average scores of 900 or higher will be sent a letter recognizing excellent performance. Suppliers with average scores below 800 will be required to implement corrective action for those areas deemed deficient prior to receiving additional contracts. If the deficiency is in safety, the supplier will be immediately suspended and the ES&H Director must concur with reinstatement.

Appendix G -
Subcontract Oversight Team

This appendix defines the roles and responsibilities of the Subcontract Oversight Team (SOT) and conditions and requirements for use.

Membership

The SOT is comprised of the following personnel or delegates:

1. Plant Manager
2. Engineering Manager
3. ES&H
4. Maintenance Manager
5. Quality Assurance (QA) representative (Quality Level [QL] 1, 2, or 3)
6. Contracts and Records Manager.

Other functional representation may be included, consistent with the work and/or other company requirements.

Roles and Responsibilities

The role of the SOT is to ensure that work being performed at the Advanced Mixed Waste Treatment Project (AMWTP) by subcontractors is performed safely, compliantly, and cost effectively.

The SOT is responsible for oversight and approval of subcontractor work performed at the AMWTP that is construction, equipment maintenance, facility repair, and/or waste handling. Any other work that is determined to be potentially hazardous or may be performed in a hazardous environment will also be under SOT oversight and approval.

SOT approval is required prior to issuing a formal Request for Proposal (RFP) and notice of award and prior to the Notice to Proceed unless approved by the President and Project Manager, Plant Manager or the Vice President, Business Management, and Deputy Project Manager.

The SOT performs the following functions:

1. Reviews work control documentation to ensure it clearly defines the scope of work to be performed
2. Verifies that the hazard assessment has been completed and identified hazards are appropriately addressed or mitigated
3. Approves release of the RFP
4. Verifies that work has been scheduled and appropriate AMWTP resources are committed to support the work
5. Verifies that all subcontractor pre-work submittals, including training requirements, have been reviewed and approved, as appropriate
6. Determines the level of field oversight required for each project
7. Approves the Notice to Proceed
8. Verifies that AMWTP personnel have completed any specific training requirements needed to support the work.

Appendix H -
Emergency Procurements

This appendix describes the process by which nonquality and quality emergency procurements are managed.

1. In emergency situations, take the following steps to purchase nonquality *materials and services* (see def.):

   A. Plant Manager or Designee: Send an e-mail to the Procurement Manager and the on-call Procurement Specialist, identifying the material or services required.

   B. On-Call Procurement Specialist: Place a verbal order for the material or service.

   C. Plant Manager or Designee: Submit an approved purchase requisition (PR) within 3 working days of the emergency.

2. In emergency situations, take the following steps to purchase Class I, II, or III materials and services:

   A. Plant Manager or Designee: Send an e-mail to the Procurement Manager, on-call Procurement Specialist, and QA Manager or designee, identifying the material or services that are needed.

   B. QA Manager or designee: Send an "approval to proceed" e-mail to the on-call Procurement Specialist.

   C. On-Call Procurement Specialist: Place a verbal order for the material or service.

   D. Plant Manager or Designee: Submit an approved PR within 3 working days of the emergency.

NOTE: *Failure to submit an approved PR within 3 working days may result in a determination by the Contracts and Logistics Manager that the transaction will be treated as a* ratification *(see def.)*

Appendix I -
Commercial Grade Dedication

NOTE: *Only commercial items or services used in safety-significant Class I application at the Advanced Mixed Waste Treatment Project (AMWTP) are candidates for commercial grade dedication.*

QA: If the purchase requisition (PR) includes Class I commercial grade items or services, ensure that the planning portion of the commercial grade dedication process has been completed as required by INST-CD&M-11.1.5, Commercial Grade Item/Service Dedication.

Requester: Coordinate with Engineering and Quality Assurance (QA), as needed, to identify Form-1255, Receiving Inspection Report, acceptance criteria (including commercial grade dedication actions as required by INST-CD&M-11.1.5) necessary to confirm compliance with technical and quality requirements.

Engineering: Identify the critical characteristics to be verified by commercial grade dedication of commercial grade items or services for Class I applications.

QA: Review and concur with critical characteristics to be verified for commercial grade dedications.

Engineering/QA: Ensure commercial grade dedication requirements are identified or attached on Form-1255.

Engineering: For safety-significant commercial grade items or commercial grade services, complete the planning portion of Form-1964, Commercial Grade Item/Service Dedication Plan, and provide a copy of the form to the requester.

Requester: Attach Form-1964 to the PR.

Appendix J -
Description of Forms

Form Number	Title	Purpose
Form-1087	Quality Program Evaluation Report	Document evaluation of supplier quality programs.
Form-1255	Receiving Inspection Report	Document used for material receipt inspection.
Form-1262	Noncompetitive Procurement Justification (NCJ) (For NCJ Procurement Exceeding $25,000)	Justifies noncompetitive acquisitions.
Form-1263	Organizational Conflicts of Interest Disclosure Statement (OCI)	Organizational conflict of interest disclosure documentation.
Form-1266	Submittal Cover & Transmittal Form	Required data for review and approval.
Form-1373	Standard Procurement Quality Clauses	Defines requirements for quality clauses invoked in purchase orders and subcontracts.
Form-1448	Notice to Code Spares	Establish new materials or spares as inventory or to change existing materials or spares already in inventory.
Form-1639	Subcontractor Safety Performance Evaluation	Subcontractor safety evaluation for past 3 years, demonstrating Occupational Safety and Health Administration (OSHA) total recordable rates and workers compensation modification rates.
Form-1802	Vendor Data Submittal Register	Submittal registers to be completed by the requester with a description of items for the supplier to furnish to AMWTP.
Form-1851	Procurement Closeout Checklist	Checklist used to verify that the

Form Number	Title	Purpose
		procurement file is complete.
Form-1898	Supplier Performance Evaluation Rating Form Services	Used to document supplier performance evaluations.
Form-1948	Onsite Hazardous Services Statement of Work (SOW)	Description of services/identification of requirements for onsite hazardous work being performed by subcontractors.
Form-1964	Commercial Grade Item/Service Dedication Plan	Used to document critical characteristics, their acceptance criteria, and completion of verification activities for safety-significant, Class I and II commercial grade items and services.
Form-1970	Subcontract Oversight Team Checklist	Used to document Subcontract Oversight Team approval at each required step in the process to acquire hazardous onsite services.
Form-2011	Statement of Work (SOW)	Description of services requirements and identification of deliverables for work being performed by subcontractors.

Appendix K -
Sustainability Requirements in Purchase Orders and Subcontracts

A. Ensure requisition makes maximum use of biobased products that are United States Department of Agriculture (USDA)-designated items unless the product cannot be acquired:

- Competitively within a time frame provided for compliance with the contract performance schedule
- Meeting contract performance requirements
- At a reasonable price.

(Information about this requirement and these products is available at http://www.usda.gov/biopreferred.)

B. Ensure that energy-consuming products are energy efficient products (i.e., ENERGY STAR® products or FEMP-designated products) at the time of contract award unless:

- The energy-consuming product is not listed in the ENERGY STAR® Program or FEMP
- Otherwise approved in writing by the Contracting Officer.

Information about these products is available for:

- ENERGY STAR® at http://energystar.gov/products
- FEMP at http://www1.eere.energy.gov/femp/technologies/procuring_eeproducts.html.

(FAR 52.223-15)

C. Ensure requisition furnishes (for contractor use at a Government-owned facility) only personal computer products that at the time of submission of proposals were EPEAT.

Silver registered or higher. Silver is the second level discussed in Clause 1.4 of the IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products.

For information about the standard, see www.epeat.net.

(FAR 52.223-16)

D. Ensure requisition makes maximum use of products containing recovered materials that are Environmental Protection Agency (EPA)-designated items unless the product cannot be acquired:

- Competitively within a timeframe providing for compliance with the contract performance schedule
- Meeting contract performance requirements
- At a reasonable price.

Information about this requirement is available at EPA's Comprehensive Procurement Guidelines web site, http://www.epa.gov/cpg/. The list of EPA-designated items is available at http://www.epa.gov.cpg.products.htm.

(FAR 52.223.17)

E. Ensure requisition is compliant with initiatives that are current as of the contract award date.

The initiatives important to these Orders are explained on the following Government or Industrial Internet Sites:

- Recycled Content Products are described at http://epa.gov/cpg
- Biobased Products are described at http://www.biopreferred.gov/
- Energy Efficient products are at http://www1.eere.energy.gov/femp/technologies/eep_purchasingspecs.html for Energy Star products
- Energy Efficient products are at http://www.femp.energy.gov/procurement for FEMP designated products
- Environmentally preferable and energy efficient electronics including desktop computers, laptops, and monitors ate at http://www.epeat.net the Electronic Products Environmental Assessment Tool (EPEAT) the Green Electronic Council site

- Green house gas emission inventories are required, including Scope 3 emissions which include contractor emission. These are discussed at Section 13 of Executive Order 13514 which can be found at htpp://www.archives.gov/federal-register/executive-orders/disposition.html

- Non-Ozone Depleting Alternative Products are at http;/www.epa.gov/ozone.strthome.html

- Water efficient plumping products are at http:/www.epa.gov/watersense

F. Ensure the use of products that have biobased content, are energy efficient, or have recycled content. Provide the energy efficient and environmentally sustainable type of product unless that type of product:

- Is not available

- Is not life cycle cost effective or does not exceed 110% of the price of alternative items if life cycle cost data is unavailable (EPEAT is an example of lifecycle costs that have been analyzed by DOE and found to be acceptable at the silver and gold level)

- Does not meet performance needs

- Cannot be delivered in time to meet a critical need.

(DEAR 952.223-78)

Material Management

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11078.*)
Jim Simonds
Contracts & Records Manager

05/01/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	7/12/06	All	DCR 5083. Changes to update procedure to reflect existing current practices. This document supersedes MP-CMNT-10.3, Rev. 5, Supply Change Management.
1	11/22/06	ALL	DCR-5333. Changes to update procedure to address Trackwise and Integrated Safety Management System identified actions/issues (CAR-16474, CAR-22286, CAR-22408). Formatting changes for consistency to MP-DOCS-18.3, MP-DOCS-18.4. Create Form-1767 to meet requirements of procedure. Revise various forms from procedure for consistency to revised procedure.
2	05/12/08	Various	DCR-5925. Complete rewrite to improve process of materials received at Lindsay Warehouse and closeout CAR# 37188 and CAR# 37402.
3	08/11/08	Various	DCR-7407. Provide instruction on acceptability of tagged bulk items and removal of acceptability items. Close CAR # 39461.
4	03/18/09	Various	DCR-7866. Add clarification and update additional responsibilities to close Action Item 42614 and MAR 36300.
5	07/08/09	Various	DCR-8437. Added clarification regarding Maximo usage. Deleted references to Form-1816. Updated Roles and Responsibilities and made various formatting/editorial changes in accordance with MP-DOCS-18.3.
6	04/27/10	Various	DCR-9149. Various changes for clarity and to hand off to MP-Q&SI-5.11. Add responsibilities for material management specialist to Section 2.0. Delete Exhibits 1 and 2.
7	TBD	Various	DCR-11078. Incorporated ITG-Bluesheet-027. Made updates based on contract changes and procedure clarifications. Minor editorial changes were made.

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Appendix A – P-card Flowchart A1

AMWTP MANAGEMENT PROCEDURE		
MP-PCMT-15.21, Rev. 7	Issued: 05/01/12	Effective: 05/02/12
Material Management		

1.0 PURPOSE/SCOPE

This procedure provides the process for inventory management; receipt and acceptance and storage of purchased *material* (see def.); as well as the requirements to inventory, track, and ship respirators that are used at the Advanced Mixed Waste Treatment Project (AMWTP), documented on a nonconformance report (NCR) in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, and tagged.

This procedure applies to all AMWTP personnel involved in receipt, acceptance, and storage of items. It also applies to any and all respirators currently on-site or the purchase of any new respirators that will be used at the AMWTP.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Procurement Manager or designee	• Provides general management and direction to ensure the safe and efficient operation of the Materials Management department.
Warehouse Supervisor	• Oversees *Supply Chain Inspector* (SCI; see def.), *Hotline/Computerized Maintenance Management System* (HL/CMMS; see def.) agent, and warehouse clerk (WC) receipt and inspection of material, distribution of material, and other warehouse operations • Ensures the initiation, tracking, and processing of required unsatisfactory, over, short, and damaged (UOS&D) forms are complete.
System Engineer (see def.)	• Reviews and approves the need for additional items and/or spares.

Performer	Responsibilities
SCI	• Performs cycle/reorder inventory counts • Performs and documents receipt inspection of incoming shipments of quality items, components, equipment, and materials, and ensures parts are received, protected, stored, handled, and packaged so that identification, traceability, and condition is maintained • Stocks and applies status tagging of all received materials and spare parts • Identifies and controls materials, equipment, and items to ensure their proper use • Maintains items to prevent their damage, loss, or deterioration • Identifies and reports suspect/counterfeit items (S/CIs) • Segregates and tags items • Initiates nonconformance reports (NCRs) • Initiates, tracks, and processes required UOS&D forms.
WC	• Performs and documents receipt inspection of incoming non-quality shipments to ensure that components, equipment, materials, and parts are received, protected, stored, handled, and packaged so that identification, traceability, and condition is maintained for *non-quality items* (see def.) • Identifies and controls non-quality materials, equipment, and items to ensure their proper use • Maintains items to prevent their damage, loss, or deterioration • Identifies and reports suspect/counterfeit items • Initiates, tracks, and processes required UOS&D forms • Segregates and tags non-quality items.

Performer	Responsibilities
HL/CMMS	• Performs and documents receipt inspection of incoming non-quality shipments to ensure that components, equipment, materials, and parts are received, protected, stored, handled, and packaged so that identification, traceability, and condition is maintained for non-quality items • Identifies and controls non-quality materials, equipment, and items to ensure their proper use • Maintains items to prevent their damage, loss, or deterioration • Identifies and reports suspect/counterfeit items • Initiates, tracks, and processes required UOS&D forms • Segregates and tags non-quality items • Kits and stages material.
Respiratory Protection Program Administrator	• Selects and procures the type of respiratory protection equipment used at AMWTP, as required by MP-ISIH-2.18, Respiratory Protection Program.
Respirator users	• Attaches a respirator inventory tag to bags of used respirators, as required by MP-ISIH-2.18.
Radiological Controls Shift Supervisor (RCSS)	• Ensures received packages containing radioactive material are monitored in accordance with MP-TRNS-20.2, Shipment and Receipt of Hazardous Materials. • Submits the results of the radiological surveys to the Warehouse Supervisor or designee. That feedback must identify any deficient or non-conforming conditions.
End user	• Implements the requirements established in this procedure for the control, storage, and tracking of material withdrawn from warehouse inventory • Maintains material acceptance status tags with quality materials and equipment withdrawn from the warehouse, until installation • Identifies the delivery/storage locations for requested material.

Performer	Responsibilities
Quality Assurance (QA) Manager/ designee	• Reports confirmed or potential S/CIs to the Nuclear Facility Manager in accordance with MP-COPS-9.6, Occurrence Reporting.
Material Management Specialist	• Processes inventory reorders • Processes work order material orders • Processes Notice to Code Spares (NTCS) • Tracks inventory usage and excess.

3.0 PROCEDURE

3.1 Inventory Levels

3.1.1 Spare parts inventory levels will be maintained using a minimum and maximum stock level that has been determined from the manufacturer's recommended spares list, number of applications, lead time, projected usage, and input from Material Management Specialist, maintenance personnel, and warehouse personnel.

3.1.1.1 Minimum and maximum inventory levels will be entered into Maximo.

3.1.1.2 A stores catalog for customer use that lists items available from stock will be made available upon request.

3.1.2 Inventory levels may be adjusted over time from lessons learned, changes in lead times, supplier reliability, and usage.

3.1.2.1 Primary and secondary supplier sources will be established for spares, where applicable.

3.1.3 When a spare part inventory level reaches the established minimum level, a purchase request will be generated by Maximo to increase inventory to the appropriate quantity based on historical usage.

3.1.3.1 The Material Management Specialist or designee will generate Form-1255, Receiving Inspection Report, for performance of receipt inspections for Maximo inventoried items.

3.1.3.2 The *Receiving Inspection Report* (RIR; see def.) generated will include the originally approved quality and technical requirements for acceptance.

3.1.4 The inventory turnover ratio should be 2.0 using activity where practical. Extreme operating circumstances may preclude the achievement of ratio.

3.1.5 Items not available in the warehouse will be requested by completing Form-1448, Notice to Code Spares.

3.1.6 Any item that will need to be maintained and tracked in Maximo or will require spare parts to be stored for the new item shall have review and approval by the Maintenance Manager or designee, or the proper department manager as well as the QA Manager or designee for Quality Level 1, 2, or 3 materials.

3.1.7 Consumable items will be ordered on an as-needed basis by following MP-PCMT-15.1, Acquisition of Materials and Services.

3.1.7.1 When necessary, consumables will be held in inventory and reordered upon pre determined reorder points.

3.2 Receipt and Inspection of Material and Equipment

NOTE: *All Non-Quality and Quality related cartons, crates, packages, etc., will be inspected for signs of visible exterior damage.*

3.2.1 If visible damage is noted, a description of the damage will be recorded on both the packing slip and receiving copy of the purchase order (PO).

3.2.1.1 If shipping damage is readily apparent during the unloading sequence (prior to receipt and inspection) and renders the material unacceptable for use, the material will be immediately segregated. The material will be dispositioned within 30 days of delivery in accordance with vendor instructions. The unaccepted material will not be tagged with an NCR.

3.2.2 The carrier's agent needs to acknowledge the damage on the receiving document by signing and dating the notated document. If the agent refuses, the agents name and carrier needs to be recorded, and the agent's refusal needs to be documented.

3.2.3 Packages with visual damage will be opened and the material inspected prior to acceptance to ascertain the extent of damage.

3.2.3.1 If UOS&D is identified, UOS&D forms need to be completed in accordance with Section 3.3.

3.2.4 Quality Level 1, 2, or 3 materials found to be non-conforming during the receipt and inspection process or prior to use will be documented on an NCR and tagged. Documentation describing any damage or rejected goods, complete with the NCR number, must be forwarded to Procurement as soon as possible for appropriate action. The NCR number shall be noted on the receiving screen in Maximo, as applicable.

3.2.5 The contents of the package will be verified by ascertaining the number of pieces received of each item as well as pertinent data concerning model, serial number, etc. This information will be reconciled against the PO and RIR technical and quality requirements and the packing slip will be signed and dated. Maximo will be updated as applicable.

3.2.6 Items designated as spares in Maximo will be tagged and stocked.

3.2.7 Non-stocked items will be authenticated by determining qualitative compliance with the specification for the material delivered, and receipt inspections performed as specified on the RIR for safety and quality significant items. Items will be delivered to the requester in a timely manner.

3.2.8 Quality Level 1, 2, or 3 materials received must be inspected and accepted or rejected according to the requirements of an RIR. Maximo will be updated as applicable.

3.2.9 All items will be tagged after receipt. Form-1170, Receipt and Inspection Tag, will be used for Quality Level 3 and non-quality affecting items. The tags will identify date, item number, PO number, received/inspected by, quality level, and acceptance or non-acceptance. A green QA Acceptance Tag will be used to status Quality Level 1 and 2 items.

3.2.9.1 Bulk quantity items, lot size items, batched items, and so forth may be tagged with a single acceptance tag to show acceptance of the entire content or lot/batch.

3.2.9.2 The SCI will ensure any Engineering or QA hold points are completed, documented, and accepted on the RIR prior to release of any items or materials for use (unless post-installation test is required).

3.2.10 The SCI shall notify the requester of the rejected items as to the status and initiate an NCR as appropriate.

3.2.10.1 The SCI must notify the Procurement Manager of each NCR upon initiation.

3.2.10.2 The SCI shall segregate rejected items to prevent inadvertent mixing with accepted items and preclude use.

3.2.10.3 The SCI shall update status tags with the NCR number to maintain traceability between the item and the documentation.

3.2.11 Non-quality consumable items are received based upon PO requirements. Quantities, descriptions, part number, and documentation will be verified by warehouse personnel. Non-quality consumables will be either stocked in the warehouse location(s) or delivered to the requester.

3.2.12 When post-installation testing is used as a method of acceptance, then post installation test requirements and acceptance documentation shall be established in the technical and quality procurement documents. All post-installation test requirements shall be specified and approved by Systems Engineering and documented on the RIR.

3.2.13 When a Certificate of Conformance is used to accept an item or material, the following, at a minimum, shall be met:

3.2.13.1 The Certificate of Conformance shall certify that item(s) or service(s) delivered under the AMWTP PO conform(s) in all respects to the PO requirements.

3.2.13.2 Certificates shall be complete, accurate, legible, and reproducible.

3.2.13.3 Incomplete or inaccurate certifications shall be refused by the SCI.

3.2.13.4 Each certification shall be issued by the designated supplier's certifying authority in accordance with established supplier certification procedures.

3.2.13.5 Unless otherwise authorized, the supplier's Certificate of Conformance shall be submitted With Shipment (WS), to the shipping destination.

3.2.14 Calibrated tools will be received based upon the quality requirements established on the requisition/PO and Form-1255 for the specific tool.

3.2.14.1 The original calibration records will be filed with Records Management via the Measuring and Test Equipment (M&TE) administrator, a copy forwarded with the tool to the requester, and a copy retained by the SCI. The M&TE administrator is responsible to update Maximo with the expiration date.

3.2.14.2 As tools require re-certification of calibration, these tools will be sent using Form-1361, Property Removal Authorization, to the calibration lab and tracked by equipment property number.

3.2.14.3 Records Management is responsible to maintain all calibration records per INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment.

NOTE: *It is expected that radioactive materials below the Type A quantities (as defined in 10 CFR 71.4, Definitions) will be received at the AMWTP site: however, it has been determined that these quantities will not pose a significant health hazard to the receiving individual.*

3.2.15 Upon discovery of radioactive materials below the Type A quantities, contact the RCSS in a timely manner for further guidance.

3.2.16 Receipt of items shipped as radioactive materials in excess of Type A quantity will be performed at the AMWTP site in accordance with MP-TRNS-20.2 (the delivery address will be specified on the procurement document).

3.2.16.1 The SCI shall be responsible for notifying and coordinating support from the appropriate operations and radiological departments, as required, for sealed radiological sources, radiological devices, and radioactive materials.

3.2.16.1.1 Radioactive material packages with visible damage must be evaluated by Radiological Control prior to opening or handling and must be maintained in an area that is cordoned off.

3.2.16.2 The radiological controls representative will be notified as soon as radioactive materials are delivered to the AMWTP site.

3.2.16.3 SCI/WC shall inform RCSS following the receipt of any package containing radioactive material.

3.2.16.3.1 Notification to the RCSS shall be made promptly to allow for any required radiological monitoring to be completed. If quantities exceeding Type A are received, this monitoring must be completed within 3 hours of receipt or within 3 hours of the beginning of the next working day.

(10 CFR 835.405 [d])

3.2.16.4 RCSS shall ensure received packages containing radioactive material are monitored in accordance with MP-TRNS-20.2.

3.2.16.5 RCSS shall submit the results of the radiological surveys to the Warehouse Supervisor. That feedback must identify any deficient or non-conforming conditions.

3.2.16.6 Documentation will be completed and filed and Maximo will be updated with receipt information.

3.2.17 If the goods and documentation are determined to be in full compliance, the SCI will complete the RIR and sign the receipt copy. Signature of this document is a certification of acceptability.

3.2.17.1 The SCI will also ensure any QA and Engineering evaluations required by the RIR are completed and accepted prior to item or material release.

3.2.17.2 Spares that have special handling requirements and special storage requirements will be addressed during the receipt inspection.

3.2.18 SCI/WC will control original records maintained by the SCI until transferred to Records Management.

3.2.19 Property identified for tagging by Property personnel (PO, purchase card [P-card], etc.) will be tagged by Property personnel prior to being issued.

3.2.20 Returnable containers furnished by vendors must be controlled administratively and physically to ensure their prompt return to the vendors for credit after they have served their intended use.

3.2.21 Receiving Documentation

3.2.21.1 POs shall be accompanied by Form-1863, Warehouse Supporting Document File Check Sheet, to ensure that all documents are processed correctly, signed, scanned, and attached in Maximo.

3.2.21.1.1 The receiving SCI/WC will complete Form-1863, then sign and date the form.

3.2.21.2 The checklist will be scanned with all supporting documentation, and attached to the respective PO in Maximo by the receiving SCI/WC.

3.2.21.2.1 P-card receiving process will be completed in accordance with Appendix A, P-card Flowchart.

3.2.21.3 The *onsite* (see def.) SCI/WC receives the shipment by Lot # into Maximo.

3.2.21.4 The onsite SCI/WC scans the RIR and data package into Enterprise, attaches it to Maximo, and files the hard copies.

3.3 Unsatisfactory, Over, Short, and Damaged

3.3.1 In the event that material is received in an unsatisfactory condition, over or short of the quantity designated on the PO, or is damaged, Form-1852, Unsatisfactory, Over, Short, and Damaged (UOS&D) Material Report, shall be completed at the time of receipt. The UOS&D number should be entered on the receiving screen in Maximo as applicable.

3.3.2 UOS&D reports are to be numbered sequentially and recorded in the UOS&D log the same day received.

3.3.3 The Warehouse Supervisor or designee will be responsible for weekly reviews of the UOS&D log.

3.3.4 All UOS&D reports not completed will have weekly follow-up e-mails to ensure a timely process.

3.3.5 The SCI/WC will record description of the damage on both the packing slip and receiving copy of the PO.

3.3.6 SCI/WC shall notify Procurement of the discrepancy. In the case of damage, a copy of the UOS&D and pictures of the damage will be included.

3.3.7 Overages should be assessed by Material Management, Procurement, and the applicable organization for value and use.

3.3.8 The SCI/WC will assist Procurement in formulating a basis for subsequent refund or issuance of claims against the vendor or the carrier or for rejecting and returning the damaged goods.

NOTE: *Examples of UOS&D include but are not limited to:*

- *Damage, shortages, or overages*
- *Material received does not meet the PO specifications*
- *Serial number or model number on the documentation does not match the numbers on the item.*

3.3.9 The UOS&D form may be supported by the following documents, as applicable:

- The freight bill (with notations)
- Packing list
- Carrier's inspection report
- NCR
- Photographs
- Letter to carrier
- Letter to supplier.

3.3.10 The UOS&D form shall be completed and notification made to the following recipients:

- Procurement
- Accounting
- End user.

3.3.11 The UOS&D form is held open until resolved.

3.3.11.1 Once resolved, the SCI/WC shall initiate and complete Form-1852, to supply all additional information applicable, and notify the following recipients:

- Procurement
- Accounting
- End user.

3.4 Suspect/Counterfeit Items or Material

3.4.1 A suspect item is one in which there is an indication by visual inspection or testing, or through other information, that it may not conform to established government or industry accepted specifications or national consensus standards.

3.4.2 A counterfeit item is a suspect item or substitute without legal right or authority to do so, or one whose material, performance, or characteristics are knowingly misrepresented by the vendor, supplier, or distributor.

3.4.3 S/CIs include, but are not limited to: high-strength mechanical fasteners (e.g., bolts, washers, and nuts), lifting equipment (e.g., slings, shackles, and clevises), valves, pipe fittings, flanges, electrical circuit breakers, relays, connectors and other electronic components, lubricants, and adhesives. (See MP-Q&SI-5.11, Suspect/Counterfeit Item Identification and Control, for a more complete listing of S/CIs.)

3.4.4 Certified SCIs, the HL/CMMS, and WCs must be trained to recognize and identify indications of S/CIs.

3.4.5 For verification and inspection of materials for suspect/counterfeit indications, go to MP-Q&SI-5.11.

3.5 Storage, Issuance, and Control of Material and Equipment

3.5.1 Stored items, material, and equipment shall be maintained to prevent damage, loss, or deterioration. While in storage, status tags and other attachments used for traceability, grade, or quality acceptance purposes shall be maintained in a manner that prevents the loss or deterioration of the tag.

3.5.1.1 Warehouse personnel shall ensure that quality acceptance status tags are attached to quality materials and equipment withdrawn for use or installation.

3.5.1.1.1 Warehouse personnel will generate additional quality acceptance status tags for partial withdrawals from large lots of quality accepted materials.

NOTE: *When transferring quality level materials in operations controlled Radiation Buffer Area for contamination or for in-cell installation, the quantity of material necessary to perform task to the extent possible needs to be minimized.*

3.5.1.2 Quality acceptance status tags shall be maintained by the end user up to the installation of the material or equipment (e.g., tags may be removed at time of staging materials for in-cell installation or when transferred to operations controlled Radiation Buffer Area for contamination).

3.5.2 Items and materials received that have a Material Safety Data Sheet (MSDS) will be handled in accordance with MSDS requirements. MSDS documentation will be stored and shipped according to MSDS requirements. The MSDS will be identified on the item or materials.

3.5.3 In the absence of an MSDS, the SCI will notify the requester to initiate a new Form-1366, New Chemical Request Form, per MP-ISIH-2.5, Hazard Communication Program.

3.5.3.1 Once the MSDS has been accepted, the items will be tagged and released for use.

3.5.4 Calibrated/certified spares will be handled in accordance with manufacturer's specifications to ensure item integrity is not jeopardized.

3.5.5 Items with limited shelf or operating life cycle shall be identified and controlled.

3.5.5.1 Spares with limiting shelf/operating life cycles will be dated, tracked by Maximo, and first-in first-out approach applied to each item.

3.5.5.1.1 Items identified as having a shelf life will be classified as either nonextendable (Type 1) or extendable (Type 2).

3.5.5.1.2 Items identified as extendable and which have expired will be reviewed and tested to determine if the shelf-life period can be extended.

3.5.5.1.3 Items whose shelf/operating life cycle has expired shall be documented on an NCR to preclude use, and evaluated by the responsible system engineer and/or the process subject matter expert.

3.5.6 Inspections/calibrations of lifting/handling equipment shall be maintained current and tracked by Maximo.

3.5.7 Any items held in material storage that require periodic maintenance or testing to comply with manufacturer warranty or engineering specifications will be maintained as scheduled and tracked by Maximo.

3.5.7.1 The system engineer is responsible for development of the preventive maintenance tasks needed to support Step 3.5.7.

3.5.8 Items that require specific needs or storage such as flammable and hazardous or other material as determined at receiving inspection, will be identified, segregated, and properly stored in appropriate cabinets.

3.5.9 Control of potable alcohol will be maintained from receipt to the point of use.

3.5.9.1 Items must be maintained in a secured environment and quantities received and issued shall be identified in Maximo to allow for reporting of receipts and usage for all potable alcohol of one quart and above.

3.5.10 Controlled substances, hypodermic needles, syringes, and/or similar types of items will be managed and physically controlled, from receipt to the point of use, to prevent improper or illegal use.

3.5.10.1 Controls will include supervisory approval for issue, storage in locked repositories, and rendering items useless before disposal.

3.5.11 Access to the warehouse areas will be posted as "U.S. Government Property," and access to these areas will be restricted to authorized personnel only.

3.5.12 Metals and metal products will be identified and marked in accordance with applicable federal standards.

3.5.12.1 Additional markings not covered by federal standards should be used to show special properties, corrosion data, or test data as required. While it is preferred that the marking be done during the manufacturing process, it may be applied by suppliers, when circumstances warrant, or waived when:

- It is necessary to procure small quantities from suppliers not equipped to do the marking
- Marking would delay the delivery of emergency orders
- Procurement is from Department of Energy (DOE) or other federal agency excess.

3.6 Bench Stock and Personal Property

3.6.1 Bench Stock

3.6.1.1 All *bench stock* (see def.) is received by the warehouse and then delivered to the authorized custodian of the bench stock for stocking in the established bench stock storage area.

3.6.1.2 Bench stock shall NOT include material that is Quality Level 1, 2, or 3, nor shall bench stock be used for quality applications. Bench stock bins will be clearly marked as non-quality material.

3.6.1.3 Bench stock shall be stored in labeled containers or shall be individually marked in the case of larger items. Bench stock shall be stored in a controlled location with access limited to those authorized to withdraw and utilize bench stock. Bench stock found to be past its use date (if applicable) or damaged shall be dispositioned in accordance with MP-PCMT-15.8, Property Management Program Procedure, or shall be considered *demonstration only items* (see def.).

3.6.1.4 An annual assessment of bench stock shall be made by the area manager or designee. The assessment will evaluate material tracking, reorders, or request for material from the warehouse, and inventory turnover. During this assessment, any materials that have not been turned over within a 90 day timeframe shall be identified and returned to warehouse stock, or re-justified as bench stock. This assessment can take the form of a Management Assessment Review (MAR).

3.6.1.5 Bench stock withdrawn and not used, or withdrawn for demonstration purposes, shall be controlled by the end user and returned to the warehouse when no longer needed.

3.6.1.6 Bench stock that has been withdrawn and for some reason cannot be returned to the approved storage location shall be dispositioned in accordance with MP-PCMT-15.8.

3.6.1.7 Bench stock that is no longer required (whether demonstration only or not) shall be disposed of in accordance with MP-PCMT-15.8.

3.6.2 Material and Equipment Control

3.6.2.1 Material includes everything (55-gal drums, ten-drum overpacks [TDOPs], standard waste boxes [SWBs], etc.) staged for operational activities, and equipment issued from inventory.

NOTE: *When transferring quality level materials in an Operations controlled Radiation Buffer Area for contamination or for in-cell installation, the quantity or material necessary to perform task will be minimized to the extent possible.*

3.6.2.2 Quality affecting items withdrawn from spares for use in the assigned plant system must retain the warehouse quality acceptance status tag up to the time the installation process begins (e.g., tags may be removed at time of staging materials for in-cell installation or when transferring to Operations controlled Radiation Buffer Areas for contamination).

3.6.2.3 Items withdrawn from spares for engineering evaluation that may be used in the assigned system as a Quality Level 1, 2, or 3 part must retain the warehouse tracking tag. Following engineering evaluation, if the part is not to be used immediately, it shall be returned to spares. Unused parts shall be returned to spares (after required reinspection). Should the warehouse tracking tag be lost and the responsible person cannot assure the chain of custody of the part, the part shall be considered, "for demonstration purposes only."

3.6.2.3.1 A part without a tag/label is automatically defined as demonstration only, and shall not be used in plant installation, unless documented quality acceptance status can be demonstrated.

3.6.2.4 Non-stock items ordered through a PO, inspected and received by the warehouse, are controlled by the warehouse to ensure the identity and quality level of the items is maintained.

3.6.2.5 Items shall be maintained in the original packaging, or appropriately tagged (example PO and line item), until coded to spares.

3.6.2.6 Items without proper identification shall be considered "for demonstration only." The end user shall make any arrangements for storage of items that require special storage conditions (temperature, humidity, etc.) prior to delivery.

3.6.2.7 Engineering evaluation instruments and tools (non-M&TE) are considered non-quality and are not required to be tracked per this procedure. (This only covers non-M&TE; M&TE is covered under the M&TE program.)

3.6.2.8 An annual assessment of material and equipment control shall be made by the area manager or designee to comply with this procedure. This assessment can take the form of an MAR.

3.7 Unsatisfactory Quality Level Material as Determined by End-User

3.7.1 If the end-user has determined that quality level material is unsatisfactory for use, the following shall be performed:

3.7.1.1 If unsatisfactory quality level material is determined to be of no further use, the material needs to be marked and/or segregated.

3.7.1.1.1 Radiological Control needs to be notified to determine if the unsatisfactory quality level material can be released, if required.

3.7.1.1.2 Waste Services needs to be notified to determine if the unsatisfactory quality level material is to be processed as waste, if required.

3.7.1.1.3 If unsatisfactory quality level material can be released by Radiological Control and is determined not to be a waste by Waste Services, the material is to be dispositioned in accordance with MP-PCMT-15.8, or considered demonstration only item.

3.7.1.1.4 If the unsatisfactory quality level material requires evaluation for repair, or if the end-user has identified a condition or conditions that require vendor/manufacturer, service, repair, or replacement, then action will be taken by coordinating with the SCI or Procurement.

3.7.1.1.5 The following is required if a nonconforming condition is identified:

3.7.1.1.5.1 The SCI or end user will need to initiate the appropriate documentation to report the discrepancy, and initiates an NCR in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, and the SCI will need to tag the item with an NCR tag.

3.8 Inventory, Tracking, and Shipping of AMWTP Respiratory Equipment

NOTE: *This section provides the requirements to inventory, track, and ship any respirators currently onsite, or for the purchase of any new respirators that will be used at AMWTP. The Respiratory Protection Program Administrator shall select and procure the type of respiratory protection equipment used at AMWTP, as required by MP-ISIH-2.18.*

3.8.1 Respirator Tags

3.8.1.1 WC shall tag all respirators with a warehouse fabricated plastic/metal tag, which will indicate a unique identification number for that specific respirator and an AMWTP marking. A uniquely numbered tag will be attached to each respirator that is used or purchased for use at AMWTP.

3.8.1.2 The tags shall be completed by performing the following:

3.8.1.2.1 The unique identifying number (UIN) for the respirator must be documented on the tag. The number will be assigned based on a review of the current listing of AMWTP assigned UINs and then assignment of the next available number to the respirator. In no case will the numbers be duplicated.

3.8.2 Inventory Tags for Used Respirators

3.8.2.1 All respirators issued and used at AMWTP are done so in compliance with MP-ISIH-2.18.

NOTE: *The tag identifies the respirators inside the bag by their unique ID number being placed on the tag.*

3.8.2.1.1 Once the respirators are used, they are placed into a bag and a tag is attached to the bag by the respirator users.

3.8.3 Preparing Respirators for Shipment

3.8.3.1 WC shall collect used respirator bags from use areas and transport them to the shipping staging area.

3.8.3.2 The original copies of the respirator inventory tags will be removed from the pouch located on the respirator cart by the warehouse personnel and placed in a file folder for future review and reference.

3.8.3.2.1 A separate folder will be established by date of shipment for each shipment of respirators.

3.8.4 Receiving Respirator Shipments

3.8.4.1 WC shall check the receipt of all respirator shipments by checking delivery ticket count against the respirators actually received.

3.8.4.2 If any discrepancies are found, the Warehouse Supervisor or designee shall be notified.

3.8.4.3 Once the inventory is approved, respirators shall be stocked in accordance with MP-ISIH-2.18.

3.9 Spares/Consumables Withdrawal

3.9.1 Spares or consumables that are stored in the warehouse are withdrawn (issued) by initiating Form-1152, Stores Requisition.

3.9.2 The stores requisition will be entered into Maximo to keep the integrity of quantities and to generate the reorder of spares, ensuring inventory information is correct at all times.

3.9.3 Spares removed from inventory and not used will be returned to inventory in a timely fashion by initiating a stores requisition, completed and filled out in red, and Maximo will be updated accordingly.

3.9.4 Disposal of property will be completed in accordance with procedure MP-PCMT-15.8.

3.10 Inventory Inspections

3.10.1 On a quarterly basis (or *cycle count* [see def.] basis), stored items will be inventoried to help ensure Maximo inventory accuracy. In addition, while conducting the inventory, Form-1669, Supply Chain Inventory Checklist, will be completed for each item identified as improperly stored, such as:

- Corrosive chemicals not segregated and near equipment and metal stock
- Flammables not properly stored
- Stainless steel components not protected from direct contact with other metals, particularly carbon steel
- Relief valves, motors, and other equipment not stored on bases
- Containers, boxes, and barrels stacked to unreasonable heights and not in accordance with vendor instructions
- Parts, materials, and equipment not repackaged or protective caps not reinstalled to seal items on which previous packaging or protective caps have deteriorated, been damaged, or lost while in storage
- Elastomers and polypropylene parts stored in areas exposed to light
- Machined surfaces not protected
- Equipment internals not protected from intrusion of foreign materials
- Proper rodent control not established to protect material and equipment.

3.10.1.1 Appropriate corrective action will be initiated and documented on Form-1669.

3.10.2 Discrepancies between physical inventories and stock records shall be reconciled and the supporting adjustments reviewed and approved by the Procurement Manager or designee.

3.10.2.1 A report of the physical inventory results, as well as Form-1767, Stores Adjustment, must be maintained, signed, and dated by the Procurement Manager or designee.

3.11 Equipment Held for Future Projects

3.11.1 A record of all *Equipment Held for Future Projects* (EHFFP; see def.) will be maintained, which shall include a listing of items with original date of classification as EHFFP; initial justifications for retaining EHFFP; rejustifications for retention; and documentation of reviews made by higher levels of management and Property Management.

3.11.1.1 The original decision to classify and retain equipment and EHFFP shall be justified in writing, providing sufficient detail to support the need for retention of the equipment.

3.11.1.1.1 The justification must cite the project for which retained, the potential use to be made of the equipment, or other reason for retention. (See Form-1677, Equipment Held for Current/Future Projects.)

3.11.1.2 The validity of the initial classification EHFFP shall be reviewed by management at a level above that of the individual making the initial determination.

3.11.1.3 Retention of equipment as EHFFP must be rejustified annually to ensure that original justifications remain valid. The rejustifications will contain sufficient detail to support retention. (See Form-1697, Rejustification for Equipment Held for Current/Future Projects.)

3.11.1.4 When equipment is retained as EHFFP for longer than 1 year, the annual rejustification shall be reviewed at a level of management at least two levels above that of the individual making the determination to retain the EHFFP.

3.11.1.5 Equipment retained as EHFFP for longer than 3 years should be approved by DOE.

3.12 Management and Control of Precious Metals

3.12.1 Inventory and control of precious metals shall be in accordance with DOE Order 580.1, Department of Energy Personal Property Management Program.

3.13 Return to Vendor and/or Shipment/Transfer of Government Property

3.13.1 The RCSS will be contacted prior to shipment of radioactive materials. Radioactive materials exceeding Type A quantities shall be shipped in accordance with MP-TRNS.20.2.

3.13.2 Shipment/transfer will be in accordance with established MP-PCMT-15.8, and requires completion of Form-1654, Request for Shipments/Transfer of Property, and Form-1675, Property Review Checklist-Tripwire.

3.13.3 Shipping documents (bill of lading, etc.) will be annotated to accurately identify government property being shipped, transferred, returned to vendor, etc.

3.13.4 Documentation supporting property returned to vendor for repair/rework will be maintained in a suspense file until property has been returned to AMWTP.

3.13.4.1 A review of the suspense file will be conducted by the Warehouse Supervisor on a quarterly basis.

4.0 DEFINITIONS

Bench stock. A stock of low-cost, fast-moving materials accumulated at point of use and consisting of consumption type supplies. Bench stocks are generally restricted to maintenance, repair, or fabrication type activities.

Cycle count. Periodic inventory system audit-practice in which different portions of an inventory are counted or physically checked on a continuous schedule. Each portion is counted at a definite, preset frequency to ensure counting of each item at least once in a year. Fast-moving or more expensive items are counted more often than slower moving or less expensive ones, and certain items are counted every day.

Demonstration only items. Items for demonstration purposes only are considered non-quality. When the demonstration only part is no longer needed it shall be disposed of in accordance with the Property Management procedure MP-PCMT-15.8. Untagged material is considered non-quality, demonstration only.

Equipment Held for Future Projects. Items or equipment being retained, based on approved justifications, for a known future use, or for a potential use in planned projects.

HotLine/Computerized Maintenance Management System. The material management staging/kitting and delivery agent responsible for staging and kitting of materials, delivery of materials and kits to specified work locations in support of maintenance operations.

Material. Property that may be incorporated into or attached to an equipment item or that may be consumed or expended in normal use. AMWTP has defined the following categories of material: (a) precious metals, (b) supplies, and (c) spare equipment.

Non-quality items. Items that are not classified as Quality Level 1, 2, or 3.

Onsite. Warehouse facilities within the gates of AMWTP, including Lindsay Warehouse.

Receiving Inspection Report. Document used to record the examination and evaluation of delivered items, and basis for acceptance, rejection, or finding of deficiency.

Supply Chain Inspector. The Materials Management Receiving agent responsible for conducting and documenting the appropriate examination or evaluation of delivered items and services for compliance to procurement documents, or basis for rejection.

System Engineer. The title for all engineers qualified under PLN-CD&M-001, System Engineer Program.

5.0 REFERENCES

(1) 10 CFR 71, Packaging and Transportation of Radioactive Material

(2) 10 CFR 835.405, Receipt of Packages Containing Radioactive Material

(3) DOE Order 580.1, Department of Energy Personal Property Management Program.

(4) INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment

(5) MP-COPS-9.6, Occurrence Reporting

(6) MP-DOCS-18.2, Records Management

(7) MP-ISIH-2.5, Hazard Communication Program

(8) MP-ISIH-2.18, Respiratory Protection Program

(9) MP-PCMT-15.1, Acquisition of Material and Services

(10) MP-PCMT-15.8, Property Management Program Procedure

(11) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(12) MP-Q&SI-5.11, Suspect/Counterfeit Item Identification and Control

(13) MP-TRNS-20.2, Shipment and Receipt of Hazardous Materials

(14) PLN-CD&M-001, System Engineer Program

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-PCMT-15.21, Material Management, case file	Nonpermanent WIPP Records / ENV1-J-1 / Destroy 75 years after submittal or transfer to CBFO.
Form-1152, Stores Requisition	Dependent on type of materials received, one of the following applies: Misc. Other Records / A3-3-a-1-b / Submit to RMC after final payment. Destroy 3 years after final payment. OR Misc. Other Records / A18-35-b / Submit to RMC after final payment. Destroy upon permanent removal of item.
Form-1255, Receiving Inspection Report	
Form-1361, Property Removal Authorization	
Form-1366, New Chemical Request Form	
Form-1654, Request for Shipments/Transfer of Property	
Form-1669, Supply Chain Inventory Checklist	
Form-1675, Property Review Checklist-Tripwire	
Form-1677, Equipment Held for Current/Future Projects	
Form-1697, Rejustification for Equipment Held for Current/Future Projects	
Form-1767, Stores Adjustment	
Form-1852, Unsatisfactory, Over, Short, and Damaged (UOS&D) Material Report, Completed	
Form-1863, Warehouse Supporting Document File Check Sheet	

Record Description	Classification
Form-1170, Receipt and Inspection Tag	Misc. Other Records /A23-1-a/ Destroy 2 years after no longer needed.
Form-1448, Notice to Code Spares	Facility Operating Records (FOR) / ENV2-a-1-a / Destroy 5 years after life of facility.

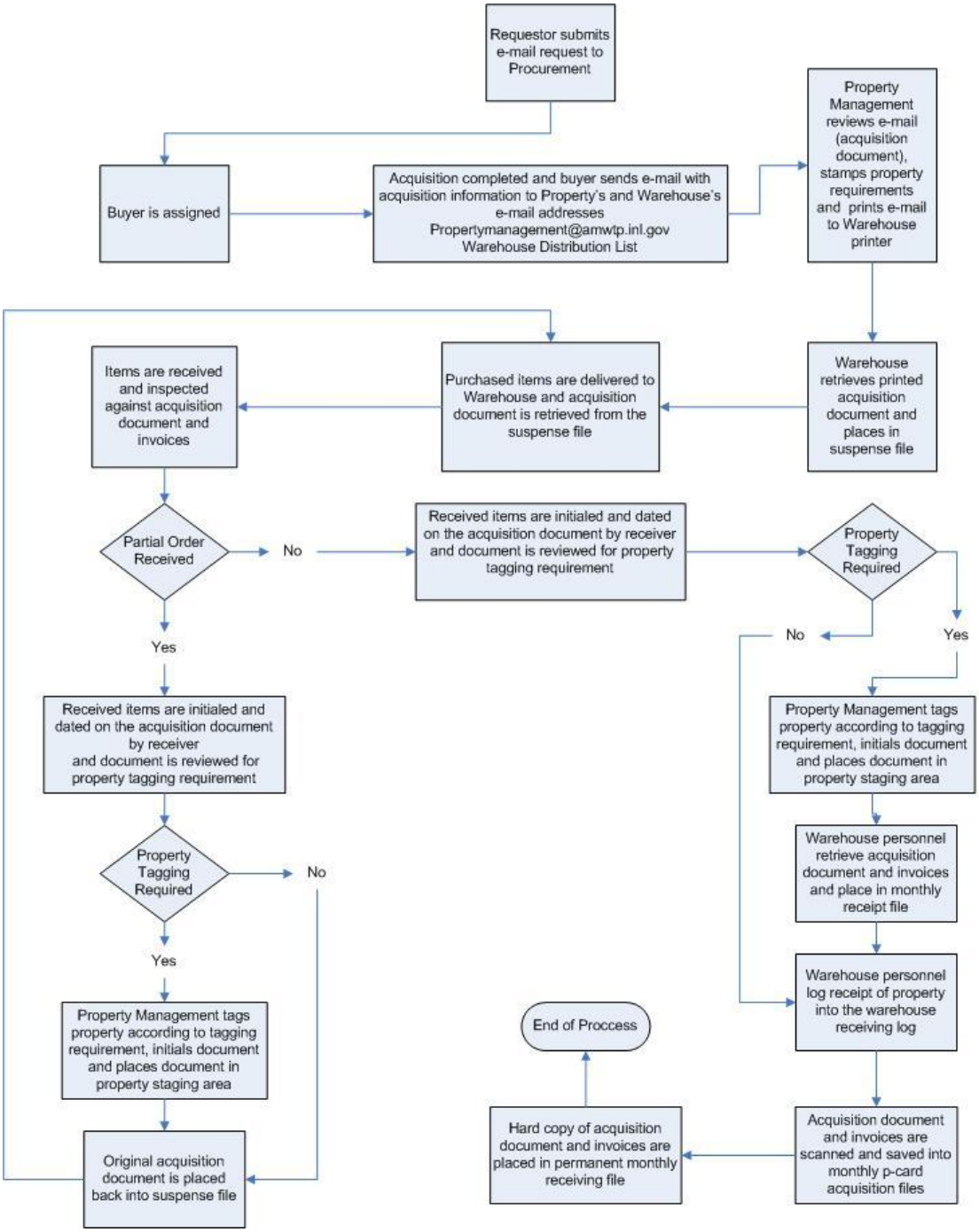
7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – P-card Flowchart

Appendix A –
P-card Flowchart



Production Planning

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11073.*) 04/09/12

Jim Jackson
Integrated Production Planning Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/13/07	All	DCR-6296. Initial issue. Incorporated CAR-28920 corrective action.
1	08/22/07	Various	DCR-6326. Update and clarify list of moves of non-WIPP payload drums.
2	01/10/08	Various	DCR-6661. Added Plant Manager and Operations Manager, MLLW Project Manager, and TCO/WCO to Section 2.0, new Section 3.6 to document process for selecting Facility boxes and MLLW project boxes.
3	03/11/08	7/8	DCR-6817. Made changes for new method of delivering certified containers for payload assembly.
4	05/22/08	Various	DCR-6996. Revised document to clarify process for the handling of WWIS certified containers (resolves CAR 39170).
5	06/12/08	Various	DCR-7195. Rewrote document to clarify process and resolve CAR 36224. Applied formatting and writing requirements per MP-DOCS-18.3 and MP-DOCS-18.4. Clarified roles and responsibilities; addressed daily electronic inventory analysis; clarified storage module and row management. Incorporated Ops Restructuring initiative (PSM/SS changes).
6	07/22/08	Section 3.2 (Note) Section 3.4.2	DCR-7341. Add bullet to Section 3.4.2; rewrite note to add “to put a container in a row” to support closure 39170 written for an uncertified container moved to a certified row.
7	09/10/08	Steps 2.0, 3.1.1.2.2, 3.4.3.6.1 3.4.4	DCR-7450. Added responsibility for resolving in transit container issues to the PSM in 2.0 and 3.1.1.2.2, added new Step 3.4.3.6.1 for historical data and new Step 3.4.4 to prepare and execute move sheets.
8	11/20/08	Step 3.4.1.1	DCR-7582. Added new Step 3.4.1.1 for the new Pad 2 Dense Pack Storage permit requirements.

Revision Number	Date Approved	Pages Affected	Description of Revision
9	12/04/08	Step 3.2.1.3	DCR-7804. Added substep 3.2.1.3.1 ("Verify that postings are in place on a weekly basis") to close out CAR 40656.
10	02/17/09	Various	DCR-7892. Made changes to MLLW section to reflect corrective action per CAR 42153 when unauthorized box was moved into the MLLW area. Made recommended changes from MAR 42605 to evaluate the effectiveness of the document for move sheet development. Made minor editorial changes.
11	03/25/09	Various	DCR-8140. Modified note below Section 3.3 to provide clarification for NCR row positing. Added a new bullet to Step 3.4.2 for Pyrophoric containers.
12	4/17/09	Pg 6/3.2.4	DCR-8269. Minor change to add Note 3 above 3.2.4 to clarify that dual verification in this method is acceptable.
13	06/29/09	Various	DCR-8331. Incorporated corrective actions for CAR 43874, 44281 and provided additional clarification throughout.
14	12/21/09	Various	DCR-8697. Changes to clarify differences between designated certified container rows and certified container rows per AI 46096 and change to allow movement of SDOP boxes to and from WMF-634 without a move sheet.
15	02/01/10	Various	DCR-8993. Revised procedure to clarify process for production/deputy production managers to resolve in-staging containers (resolves CAR 48050).
16	06/14/10	Various	DCR-9272. Steps changed to address AK inspection when building move sheets.
17	10/11/10	Section 3.4	DCR-9427 – Added new step to incorporate checks needed to ensure a container meets the criteria for INST-FOI-26, applied DOCS-BLUESHEET-06.

Revision Number	Date Approved	Pages Affected	Description of Revision
18	01/20/11	Various	DCR-9679. Changes to implement CAR 48277 and AI-55274, to provide direction for accepting SDOP boxes to the facility, and to meet the intent of the procedure.
19	02/14/11	P 18/ Step 3.4.7.6.7	DCR-9889. Corrected cross reference step 3.4.6.6.10 to 3.4.7.6.10.
20	03/01/11	Section 3.8	DCR-9914. CAR-55086. Added new Section 3.8 to resolve issue with failure to maintain separation and segregation requirements while storing IDC RF-751 drums.
21	08/02/11	Various	DCR-10253. Revised to address pyrophoric rows and sludge SDOPs.
22	09/20/11	Various	DCR-10386. Added steps to prevent potentially pyrophoric drums from being vented in 615 DVF per AI 64822 and CAR 63176.
23	12/21/11	Various	DCR-10545. Revised to address changed LLW/MLLW process and to incorporate ITG-Bluesheet-212.
24	03/06/12	Various	DCR-10808. Changes incorporated to support SCR-4318. Added reference to new Form-2091, removed Form-2062. Made corrections to Records requirements.
25	04/09/12	Step 3.4.8.3.11	DCR-11073. Removed “assembled with characterized drums” from step. This check will be performed in TRUW-8.45.

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Appendix A – AMWTP AK IDC Change Process Flow A1

AMWTP MANAGEMENT PROCEDURE		
MP-PRPL-22.1, Rev. 25	Issued: 04/09/12	Effective: 04/10/12
Production Planning		

1.0 PURPOSE/SCOPE

This procedure provides direction of the overall process by which the Advanced Mixed Waste Treatment Project (AMWTP) will develop move sheets that direct the movement and storage of waste containers outside WMF-676, the Advanced Mixed Waste Treatment Facility (AMWTF), including waste movements to and from the AMWTF. This process ensures that move sheets are consistently developed to a prescribed standard for movement and staging for containers to payload assembly for Waste Isolation Pilot Plant (WIPP) TRUPACT loading, WMF-635 Drum Repackaging Facility, and the Low-Level Waste (LLW)/Mixed Low-Level Waste (MLLW) Programs. The operational instructions for physical movement, handling, and storage of these waste containers are specified in INST-OI-11, Waste Container Handling.

This procedure also provides direction for performing daily and weekly inventory analysis to ensure containers are adequately tracked through AMWTP processes.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
LLW/MLLW Program Manager	• Evaluates "C" box list and drum population for possible MLLW candidate • Notifies Container Moves lead of containers identified for delivery to the LLW/MLLW new inventory staging area • Notifies Container Moves lead of containers identified as rejected from the LLW/MLLW new inventory staging area • Interfaces with the Integrated Production Planning manager and the TRU Programs manager, as necessary, to accomplish project objectives.
Operations Technician (OT)	• Moves waste in accordance with INST-OI-11 for containers outside the AMWTF and the move sheet(s) provided by container moves personnel • Accurately records waste movement in the Waste Tracking System (WTS).
Plant Shift Manager (PSM)	• Oversees the processing of the daily priority moves • Resolves in-transit container issues.
Task List Controller	• Updates WTS task list.

Performer	Responsibilities
Container Moves Shift Lead	• Develops waste container move sheets per standards established within this procedure • Ensures "daily priority moves" are issued, which align with daily movement priorities • Ensures daily electronic inventory analysis is completed • Obtains secondary independent verification • Reviews boxes for acceptance into the AMWTF • Coordinates the facility shift supervisor (SS) review of boxes for process ability in the treatment facility box lines • Coordinates the movement of containers at AMWTP • Processes acceptable knowledge (AK) item description code (IDC) change records, as applicable (see Appendix A, AMWTP AK IDC Change Process Flow).
Container Moves Lead	• Reviews and releases delivery requests for the LLW/MLLW Program and AMWTF direct feed.
Appropriate Operations Manager	• Provides input to the Container Moves lead for daily movement priorities • Resolves in-staging container issues • Attends resource meeting.
Shift Supervisor	• Notifies the transportation certification official (TCO) or waste certification official (WCO) if, during preparations for assembly of a payload, one or more containers are not available or are rejected • Verifies container moves have been completed as specified by the move sheets.
TRU Programs Manager	• Evaluates "C" box list and drum population for possible MLLW candidate • Interfaces with the Container Moves lead and the LLW/MLLW Programs manager as necessary to accomplish project objectives.

Performer	Responsibilities
Site Project Manager Designee (SPMD)	• Assigns containers to be assembled into direct load standard waste box (SWB) or six drum overpack (SDOP) • Notifies the Container Moves shift lead or designee of containers assigned • Supplies a list of containers approved for compaction to the Container Moves lead or designee.
Transportation Certification Official/Waste Certification Official	• Identifies waste containers for WIPP payload assemblies • Provides applicable documentation to Production Planning for containers to be built into payloads.

3.0 PROCEDURE

NOTE 1: *Container Moves shift lead or designee is responsible for all steps in this procedure unless otherwise noted.*

NOTE 2: *These steps may be performed in any order.*

3.1 Daily Electronic Inventory Analysis

NOTE: *Daily electronic inventory analysis may be performed more often as necessary to ensure that all containers delivered to WMF-635 for payload assembly have been evaluated by the daily electronic inventory analysis.*

3.1.1 Ensure that an electronic inventory analysis is performed daily.

3.1.1.1 Certified Rows

3.1.1.1.1 Verify that only certified containers with no open nonconformance reports (NCRs) are in the designated certified container rows.

3.1.1.1.2 Verify that only certified containers with no open NCRs are in the payload certified container rows in WMF-635.

NOTE: *The Morning Certification Report may be an e-mail documenting the validation of certified containers in certified container rows.*

3.1.1.1.3 Forward the Morning Certification Report to the PSM and any other personnel requesting this information.

3.1.1.1.4 If non-certified containers or containers with an open NCR have been found in a certified container row, perform the following:

3.1.1.1.4.1 Issue move sheet to have the non-certified or NCR'd containers removed.

3.1.1.1.4.2 Notify the PSM and SS to determine any corrective actions to be taken.

3.1.1.2 In-Transit or In-Staging Containers

NOTE 1: *Any container that remains in-transit or in-staging on the electronic inventory analysis list for more than 1 day is considered deficient.*

NOTE 2: *In general, WTS staging areas will be used for temporary movement and not for long term container storage.*

3.1.1.2.1 Review the in-transit and in-staging containers to determine how long each container has been in transit or in staging.

NOTE: *It is allowable for containers to be held in-transit longer than 1 day if the delay is justifiable (e.g., due to equipment malfunction that impacts the loading of vehicles).*

3.1.1.2.2 If in-transit container(s) has remained on the list longer than 1 day, with no justifiable delay, forward the container list to the on-duty PSM for resolution.

3.1.1.2.3 PSM: Ensure in-transit containers with no justifiable delay are resolved.

3.1.1.2.4 If in-staging container(s) has remained on the list longer than 1 day, with no justifiable delay, forward the container list to the appropriate operations manager for resolution.

3.1.1.2.5 Appropriate Operations Manager: Ensure in-staging containers are resolved.

3.1.1.3 Pyrophoric Containers

3.1.1.3.1 Include a list of rows that contain pyrophoric containers as part of the daily electronic inventory analysis.

3.1.1.4 High-Hydrogen Drums

3.1.1.4.1 Include a list of high-hydrogen drums with container locations as part of the daily electronic inventory analysis.

3.1.2 Develop move sheets per Section 3.4 to control the movement of waste throughout AMWTP using Form-1829, Production Planning Non-Facility Move Sheet; Form-1830, Production Planning Checks for Boxes to WMF-676; or Form-2017, Production Planning Checks for Direct Feed Drums to WMF-676.

3.2 Storage Row Management

NOTE: *WTS is designed to electronically perform special row entry checks prior to allowing an OT to put a container in a row.*

3.2.1 Take the following, at a minimum, into consideration for all move sheets in all storage modules and WMF-636, and implement as necessary:

3.2.1.1 Ensure that all changes made to move sheets Form-1829, Form-1830, or Form-2017 comply with change requirements in MP-DOCS-18.2, Records Management.

3.2.1.2 Store MLLW and transuranic (TRU) mixed waste in an approved Resource Conservation and Recovery Act (RCRA) storage area.

(HWMA/RCRA TSA IS Document; HWMA/RCRA Permit)

3.2.1.3 Store LLW in an approved RCRA storage area or in a non-RCRA area that is clearly marked and posted.

3.2.1.4 Identify and post the purpose of waste container storage areas, as appropriate (for example, high-hydrogen drums, special-case waste [SCW], liquid absorption candidates, containers waiting drum age criteria [DAC], and containers that have an NCR).

3.2.1.4.1 Verify on a weekly basis that postings are in place.

3.2.1.5 Store waste characterized by Centralized Characterization Project (CCP) processes separate (minimum 3-ft separation) from offsite waste, newly generated waste, and waste characterized by AMWTP processes.

(HWMA/RCRA Permit)

3.2.1.6 Store waste received from offsite generators (non-AMWTP waste) separate (minimum 3-ft separation) from legacy and newly generated waste characterized by AMWTP processes.

3.2.1.6.1 Store offsite waste from different generators separately, as well.

(HWMA/RCRA Permit)

3.2.1.7 Apply WTS entry rules to control container access, where appropriate (examples include stacked overmass box storage area [SOBSA], planar overmass storage area [POSA], Transuranic Storage Area-Retrieval Enclosure [TSA-RE], and certified container rows).

(RPT-NFCS-01, CWR #7.3.7, #7.3.9, #7.3.10, #7.3.12)

NOTE 1: *A designated certified container row can be used for certified containers only when it is identified in WTS and the WTS certified container electronic entry rules are applied.*

NOTE 2: *Designated certified container rows can be removed from the WTS controls and become normal waste storage rows, as needed.*

NOTE 3: *Certified container rows in WMF-635 do not require the WTS entry rules to be applied.*

3.2.2 Identify designated certified container rows in WTS.

NOTE 1: *For permitted storage on Pad 2 of WMF-636, process knowledge, visual examination (VE), or second real-time radiography (RTR) verification is used to determine the presence/absence of liquids. Process knowledge can only be used for supercompacted waste, newly generated AMWTP waste, and non-AMWTP newly generated waste.*

NOTE 2: *RTR may be used to remotely examine any of the waste managed at the AMWTP to determine the absence/presence of liquids. If RTR is used, a second verification is to be performed as described in INST-TRUW-8.13.1, TRU Programs Site Project Office Process.*

NOTE 3: *Second verification for LLW/MLLW can be performed using Form-1932, HWMA/RCRA Permit Review Second Verification.*

3.2.3 Confirm (for those containers being moved to WMF-636 dense-pack-permitted storage with RTR) that the second verification has been performed and results have been recorded in WTS or on Form-1932, in accordance with INST-TRUW-8.13.1.

(HWMA/RCRA Permit)

3.3 NCR-Designated Row Posting

3.3.1 Post all storage rows, or specific pallet(s) within a row, containing nonconforming containers as indicated by open *TrackWise* (see def.) NCRs, CCP tags, or CCP vendor project manager hold tags using solid stanchions located in front of the row designating the row as an NCR row.

NOTE 1: *Waste containers with nonconforming characterization or certification data impacting acceptability for shipment or disposal require physical segregation in addition to administrative controls.*

NOTE 2: *NCR tags are placed on individual nonconforming waste containers at the time of NCR generation or during the initial waste container movement following the generation of an NCR.*

3.3.2 OT: Tag individual nonconforming waste containers that do not have a red QA NCR HOLD tag as they are moved, in accordance with INST-OI-11 and MP-Q&SI-5.4, Identification of Nonconforming Conditions.

(DOE/CBFO-94-1012)

3.4 Move Sheet Development

NOTE 1: *A graded approach is used by applying more stringent controls on the generation of move sheets based on the complexity of the move and the consequences of moving a container to the wrong location.*

NOTE 2: *The following are the only authorized container moves that can be made without the use of an issued move sheet:*

- *General retrieval activities in WMF-636 and initial placement of waste into a storage row on Pad 1 or Pad R*
- *Receipt of offsite waste and initial placement of waste into a storage row*
- *Waste container being moved to and from related processes between buildings (for example, CCP characterization processes in WMF-610 and WMF-628, or SDOP boxes to and from WMF-634 for assay)*
- *Waste containers being moved to and from processes (for example, Drum Vent Facility/drum vent system, assay, RTR, WMF-628 Drum Treatment Facility, headspace gas sampling [HGAS], and coring/VE). (These types of moves occur in WMF-610, WMF-615, WMF-618, WMF-628, WMF-634, WMF-635, and WMF-636.)*
- *High fissile gram equivalent (FGE) containers being moved to an isolation storage area (these moves are addressed in INST-OI-11)*

- *Certified payload containers located in WMF-635 for payload assembly*
- *Assembled payloads that are being moved to a holding location or to WMF-618 or WMF-635 for loading into a TRUPACT or HALFPACT*
- *Shredder boxes, BR-90 bins (Bull Run boxes), and 100-gal product drums being exported from AMWTF for initial placement in storage/characterization rows.*

3.4.1 Generate move sheets for containers outside AMWTF using Form-1829 to ensure storage and movement complies with INST-OI-11 outside AMWTF.

NOTE: *Information may be found on the site project manager log, WTS entry into the RTR, VE, or AMWTP container screen, or on Form-1664, Mixed Low-Level Waste Container Inventory Sheet.*

3.4.1.1 Sign the move sheet in the appropriate location.

3.4.2 In order to prevent potentially pyrophoric drums from being vented in WMF-615-Drum Vent Facility (DVF), Production Planning personnel shall include the following information at a minimum for movesheets generated intended as 615-DVF feed:

- Other IDC
- "Priority" column reported on the WTS Ad Hoc Resolution Tracking – 3600 report.

NOTE: *Non RF-751 drums with an RTR QC complete status are allowed to be vented and can be included on a movesheet for 615-DVF feed or 634-DVS feed after the task list has been updated to drum vent required.*

3.4.2.1 Task List Controller: Verify that container is not included on the "Potential Roaster Oxide Containers – DO NOT VENT" list prior to updating the WTS task list to drum vent required.

3.4.2.2 Drums identified with a priority of “634”, “1634”, “2634” or “751” as reported on the WTS AD Hoc Resolution Tracking – 3600 reports shall not be included on the movesheet to prevent delivery of these containers with potentially pyrophoric material to 615-DVF.

3.4.2.3 For drums sent to 634 characterization with a priority of “634”, “1634”, “2634” or 751 as reported on the WTS AD Hoc Resolution Tracking – 3600 reports, Production Planning shall ensure that the WTS TASK LIST has been updated to Vent Not Required.

3.4.3 Generate move sheets for containers to AMWTF using Form-1830 for boxes and Form-2017 for drums to ensure storage and movement complies with LST-EC&P-11, AMWTP HWMA/RCRA Permit WMF-676 Waste Management Criteria, and INST-FOI-26, AMWTF Receipt, Storage, and Container Management.

(RPT-NFCS-07, CWR 7.2.3, 17, 18, 19, 20; HWMA/RCRA Permit)

NOTE: *Move sheets may be as simple as identifying the building and row to move containers from and the building where the containers are to be delivered or as complex as identifying each individual container, its current location in X/Y/Z coordinates, and the building and row where it is to be delivered.*

3.4.4 Segregate high-hydrogen drums when identified by CCP Flam Gas Sampling or AMWTP HGAS.

3.4.5 When generating a move sheet, consider the following data:

- Task list updated
- AK inspection status
- Vent date
- RTR status
- Assay status
- ETR review status
- Classification of boxes
- Container type
- IDC, historical IDC, or other IDC
- Liquid amount and location
- Disposition of waste (Facility Accept, MLLW, SCW, etc.)
- HGAS status
- FGE value
- Open NCRs and their dispositions
- Other containers that will be moved to retrieve the target container
- MLLW or LLW
- DAC
- Special-case items
- Certification status
- Containers being moved are compliant with WTS entry rules for destination rows
- Incompatible wastes are properly segregated
- Stacking criteria
- Impact and accessibility of waste for container movement crews
- Pyrophoric containers are properly stored and segregated.

3.4.5.1 Ensure appropriate details are included on Form-1829, Form-1830, or Form-2017 for movements with special handling requirements (e.g., leaking container, repaired container, AK inspection).

NOTE: *Two types of posted certified rows are used for the move sheet process:*

- *Certified rows which will only contain Waste Data System (WDS/WWIS) certified containers and have WTS entry rules applied.*
- *Certified payload rows which will only contain WDS/WWIS-certified containers in WDS/WWIS-approved payloads located in WMF-635.*

3.4.6 Prepare and ensure execution of move sheets (Form-1829) for pulling waste containers to build payloads.

3.4.6.1 For containers received from offsite that do not have WDS/WWIS status displayed in WTS, obtain appropriate WDS/WWIS data from the TCO/WCO, and proceed to Step 3.4.6.6.

3.4.6.2 Identify certified containers, or containers already assigned to payload (per Step 3.4.6.5), and prepare a move sheet (Form-1829) to fill designated certified rows with certified containers.

3.4.6.3 Notify TCOs or WCOs of certified containers in designated certified container rows to be assigned to payloads.

3.4.6.3.1 For containers already assigned to payloads, proceed to Step 3.4.6.6.

3.4.6.4 TCO or WCO: Assign containers to be assembled into payloads from the certified row.

3.4.6.5 Query WDS/WWIS for a listing of payloads by payload number and container numbers designated for the payload and e-mail the payload notification listing to Production Planning.

3.4.6.6 Electronically copy and paste the electronic payload notification information to generate a move sheet to move payload containers to certified payload container row(s).

3.4.6.6.1 For containers certified according to the Historical ID, include a column for Historical ID so that verification can be made to confirm the containers on the move sheet match the payload notification.

3.4.6.6.2 For WIPP shipments, include a column for WTS WDS/WWIS status to clearly indicate the drums are certified.

3.4.6.7 OT: Move payload containers per INST-OI-11 from the locations designated on the move sheet (Form-1829) to the payload certified container row(s) to be assembled into payloads.

3.4.6.8 If, during preparations for the assembly of a payload, one or more containers are not available or are rejected by the payload assembly crew, notify the TCO or WCO and return the incomplete payload documentation to TCO or WCO.

3.4.6.8.1 TCO or WCO: Start over at Step 3.4.6.1 to complete the process.

3.4.7 Prepare and ensure execution of move sheets (Form-1829) for pulling and staging waste containers to build SDOP or direct-load SWB.

3.4.7.1 SPMD: Assign containers to be assembled into direct-load SWB or SDOP.

3.4.7.2 SPMD: Notify the Container Moves shift lead or designee of containers assigned to direct-load SWB or SDOP electronically in a Microsoft Excel format and provide a PDF of one of the following forms, as appropriate:

A. Form-1775, SWB Direct Loading Form

B. Form-1862, Characterized Debris SDOP Assembly Form

C. Form-2091, Uncharacterized Debris SDOP Assembly Form.

3.4.7.3 Electronically copy and paste the electronic payload notification information to generate a move sheet to move SDOP or direct-load SWB containers to appropriate row(s) for staging builds.

3.4.7.4 Obtain an independent verification comparing Form-1775, Form-1862, or Form-2091 to Form-1829 and attachment to ensure the correct containers have been identified for staging of direct-load SWB or SDOP.

(1291-2006-025, CWR 6)

3.4.7.5 OT: Move containers per INST-OI-11 from the locations designated on the move sheet (Form-1829) to the build staging row(s) to be assembled into direct-load SWB or SDOP.

3.4.7.6 If during preparations for assembly of direct-load SWB or SDOP, one or more containers are not available or rejected by the assembly crew, notify the SPMD.

3.4.7.6.1 SPMD: Start over at Step 3.4.7.1 to complete the process.

3.4.8 Prepare boxes for delivery to WMF-676 Treatment Facility.

3.4.8.1 Prepare move sheet (Form-1829) to move boxes to and from WMF-634 characterization processes.

3.4.8.2 After characterization processes are complete, identify boxes with an *"A" classification* (see def.), or a *"B" classification* (see def.) for review.

3.4.8.3 Review all applicable containers for facility acceptability, per applicable appendices of INST-FOI-26, LST-EC&P-11, and Form-1830.

NOTE: *For boxes with the IDC RF-330, RF-336, RF-337, RF-338, RF-440, RF-441, RF-442, and RF-490, or SDOPs, a review may be performed by the* Container Moves shift lead *or designee. If any large, bulky, or difficult to process items are identified in the WTS RTR record, then a facility SS review is required. For all other IDCs, a facility SS review is required.*

3.4.8.3.1 Ensure an RTR recording review has been completed and accepted by a facility SS or designee.

(1291-2011-020, CWR 1)

3.4.8.3.2 Ensure there are no open NCRs associated with the container being evaluated.

3.4.8.3.3 Verify FGE limit is <325 for debris.

(RPT-NFCS-07, CWR 7.2.3 18)

3.4.8.3.4 Ensure the assay is complete and the "Expert Review Outcome" is "Accept," "Acceptable," or "Modify."

3.4.8.3.5 Verify the Box Classification is "A" or "B."

3.4.8.3.6 Ensure disposition field is "Facility Accept" in the WTS task list.

3.4.8.3.7 Ensure RTR status is "Complete" and task disposition is "Facility Accept" in the WTS task list.

(1291-2011-020, CWR 1)

3.4.8.3.8 Ensure that the AK_EVAL task is listed and identified as "Complete" in the WTS task list (not required for SDOPs).

3.4.8.3.9 Ensure assay status is “Complete” and task disposition is “Facility Accept” in the WTS task list.

(RPT-NFCS-07, CWR 7.2.3 17)

3.4.8.3.10 Ensure assay exam status in the WTS task list is “Complete” and the task disposition is “Facility Accept.”

3.4.8.3.11 Verify the IDC is an IDC suitable for the BN510.1 as listed in RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1) (not required for SDOPs).

3.4.8.3.12 Verify the “Explosives” question is answered as NO on the “Contents-Container” tab in the WTS RTR screen (not required for SDOPs assembled with characterized drums).

3.4.8.3.13 If the “PCB Present” tab in the “Contents-Container” tab is checked, review the polychlorinated biphenyl (PCB) contents.

3.4.8.3.13.1 If PCB items are present other than light ballasts, verify the AMWTF appropriate operations manager has approved the box (not required for SDOPs assembled with characterized drums).

3.4.8.3.14 Verify the "Non-Radionuclide Pyrophoric Materials Present" question is answered as NO on the "Contents-Container" tab in the WTS RTR screen (not required for SDOPs assembled with characterized drums).

3.4.8.3.15 Verify the "Waste Exhibiting the Characteristics of Ignitability, Corrosivity, or Reactivity Present" question is answered as NO on the "Contents-Container" tab in the WTS RTR screen (not required for SDOPs assembled with characterized drums).

3.4.8.3.16 Verify the "Surface Dose Total" is populated in the Inspection Station of the "Radiological Safety Readings" screen.

3.4.8.3.16.1 If the "Surface Dose Total" is >200 mR/hr, verify that the "RH_Eval" task in the WTS task list is "Complete" and that a Facility Modification Proposal has been approved.

3.4.8.3.17 Complete "Incompatible IDC" section on Form-1830.

3.4.8.4 If any criteria in Step 3.4.8.3 are not met, do not issue Form-1830.

3.4.8.5 Submit Form-1830 and its attachments to the facility SS for approval.

3.4.9 Prepare direct feed drums for delivery to WMF-676 Treatment Facility.

3.4.9.1 SPMD: Supply a list of containers approved for compaction to the Container Moves lead or designee on a Microsoft Excel worksheet.

3.4.9.2 Container Moves Lead: Release the list of direct-feed containers to the Container Moves shift lead or designee for delivery to WMF-676 Treatment Facility.

3.4.9.3 Ensure that the containers identified by the SPMD pass the electronic 423 and waste acceptance criteria checks.

3.4.9.4 Check Fissile Tracking System (FTS) status.

3.4.9.4.1 Verify the FTS Calibration Status is "GO" for each drum.

3.4.9.4.2 Verify the FTS FGE Limit Status is "GO" for each drum.

3.4.9.4.3 Ensure the FGE Limit in WTS matches the FGE in FTS.

(RPT-NFCS-07, CWRs 7.2.1 12 and 7.2.3 18)

NOTE 1: *If the FTS Expert Review Status is NO-GO, the facility SS may change the status to GO in accordance with INST-FOI-27, FTS Operations.*

NOTE 2: *Direct feed may be lined (LDF), unlined (UDF), or MLLW DF.*

3.4.9.5 Prepare Form-1829 for accessing approved direct feed and staging them for facility feed.

3.4.9.6 Prepare Form-2017 for delivery of staged direct feed containers to WMF-676 Treatment Facility.

3.4.9.6.1 Log in to WTS as Supervisor.

3.4.9.6.2 In WTS, go to Facility>POS>Direct Feed Load.

3.4.9.6.3 Select appropriate Plant Optimization System (POS) mode as "No Liner," "Rigid Liner," or "LLD" (lower limit detection).

3.4.9.6.4 From the staged row of the first 14 or less most accessible and approved direct feed containers, sort by FGE in descending order.

3.4.9.6.5 Identify the load as LDF, UDF, or MLLW DF on Form-2017.

3.4.9.6.6 Type in container ID numbers in the "Scanned Drum ID" field in WTS.

3.4.9.6.6.1 Ensure that all containers are colored green in the "Status" field.

3.4.9.6.6.1.1 If a container status is colored red, pick a new container and identify the problem to the SPMD.

3.4.9.6.6.1.2 If unable to identify the status, pick a new container and identify the problem to the SPMD.

3.4.9.6.6.1.3 Ensure the drum count matches the intended number of containers identified for the direct feed load.

3.4.9.6.7 For MLLW DF or UDF to be mixed with silver drums from System 370, go to Step 3.4.9.6.10.

3.4.9.6.8 Create virtual product drums (VPDs) in manual POS.

3.4.9.6.8.1 Select two to three containers for a VPD.

3.4.9.6.8.2 Verify that the total product drum weight is <1000 lb.

3.4.9.6.8.3 Verify that FGE, weight, Pe-Ci, N-Ci, and decay heat fields do not turn red.

3.4.9.6.8.4 If all criteria are met, select "Create VPD."

3.4.9.6.8.4.1 **IF** all criteria are NOT met,
THEN delete one or more containers from VPD
AND RETURN TO Step 3.4.9.6.8.1.

3.4.9.6.9 When all containers have been identified for a VPD, create a spreadsheet in the order of containers per VPD.

3.4.9.6.9.1 Include the following for selected drums:

- Container ID
- IDC
- FGE
- Weight
- Trailer location.

3.4.9.6.9.2 Order containers on the trailer load sheet by the same order in POS drum selection fields.

3.4.9.6.9.3 **GO TO** Step 3.4.9.6.12.

3.4.9.6.10 Sort MLLW DF and UDF to be mixed with silver drums from System 370 by weight.

3.4.9.6.11 Select the heaviest and lightest available drum as a potential VPD.

3.4.9.6.11.1 Continue selecting the heaviest and lightest drums available until all drums have been selected.

3.4.9.6.11.2 Identify the order on the trailer load order sheet.

NOTE: *Failure to delete the VPD group will make containers unavailable in WTS for facility supercompactor OT.*

3.4.9.6.12 Ensure that the VPD group is deleted.

3.4.9.6.13 Paste container ID, IDC, FGE limit, weight, building, Section X, Y, Z, and trailer location information on Form-2017.

3.4.9.6.14 Submit Form-2017 and its attachments to the facility SS for approval.

3.5 Production Planning Prioritization

NOTE: *Container moves for safety or for compliance receive top priority.*

3.5.1 Prepare daily movement priorities and issue for use in daily resources meeting.

3.5.2 Generate a "Daily Priority Moves" listing, in order of priority for the move sheets to be worked for the day, which aligns with the daily movement priorities.

3.5.2.1 When setting priorities, consider, but do not limit to, the following:

3.5.2.1.1 Ensure the AMWTF characterization processes, treatment processes, and payload assembly and shipping have containers to keep critical path processes actively employed.

3.5.2.1.2 Ensure waste containers are dispositioned out of areas that are not long-term storage areas.

3.5.2.2 Balance priority waste container moves to meet AMWTP's mission and production goals.

3.5.2.3 If priorities change during the day, generate and reissue a revised "Daily Priority Moves."

3.6 Move Sheet Execution

3.6.1 SS: Assign OTs to perform waste container moves in accordance with the "Daily Priority Moves," INST-OI-11 for containers outside AMWTF, and the provided move sheet(s).

3.6.2 Performing SS: Ensure that the specified moves have been completed in accordance with INST-OI-11.

3.6.2.1 Ensure that Forms-1829 and -1830 or Form-2017 have been signed where required.

3.6.2.2 Return the forms to Production Planning.

3.6.3 Update the move sheet check-out log with current move sheet status.

3.7 Process for Selecting Boxes and Drums as LLW/MLLW/Programs Feed

NOTE 1: *This section does not provide direction for delivery of containers to the facility.*

NOTE 2: *Any boxes that have been* classified as "C" *(see def.-C-classification) are not processed in the AMWTF unless agreed to by the LLW/MLLW Programs manager.*

3.7.1 Offsite LLW/MLLW Programs Manager, TRU Programs Manager, Container Moves Lead, or Designees: Review identified LLW/MLLW containers in WTS and select LLW/MLLW candidate containers for processing.

3.7.2 Container Moves Lead or Designee: Prepare move sheets, as necessary, to route containers through characterization (RTR, assay, and/or other characterization, as necessary).

NOTE: *After characterization activities are complete on the candidate containers, the containers are processed through the LLW/MLLW verification process per MP-LLW-19.7, Low-Level Waste/Mixed Low-Level Waste Verification, and LLW/MLLW TSDF disposition process per MP-LLW-19.4, Low Level Waste/Mixed Low Level Waste TSDF Disposition, to develop the IWTS container disposition process queues.*

3.7.3 Container Moves Lead or Designee: Initiate the process to retrieve containers identified on the IWTS container disposition process queues from AMWTP storage.

3.7.4 Container Moves Shift Lead or Designee: Create a move sheet to deliver containers identified on the IWTS container disposition queues to LLW/MLLW new inventory staging area.

3.7.4.1 Ensure that move sheet generated indicates correct liquid status for containers to be staged in the LLW/MLLW new inventory staging area.

3.7.5 Deliver containers to the LLW/MLLW new inventory staging area per INST-OI-11.

3.7.6 Shift Supervisor: Notify Container Moves lead of containers delivered in error to the LLW/MLLW new inventory staging area or rejected containers.

3.7.7 Container Moves Lead: For containers identified by the SS as returns or rejects, initiate a move sheet to have those rejected containers removed from the LLW/MLLW new inventory staging area per INST-OI-11.

3.8 Process for Handling AK IDC Change Reports

NOTE: *Acceptable Knowledge Expert (AKE) personnel will initiate AK IDC Change (AIC) records in TrackWise in accordance with INST-TRUW-8.13.3, TRU Programs Acceptable Knowledge Process. Once e-signature is complete, TrackWise will automatically send an e-mail notification to Production Planning personnel.*

3.8.1 Container Moves Shift Lead or Designee: Review and complete TrackWise AIC records for all notifications received.

3.8.1.1 Verify that the AIC record is not at "Initiate."

3.8.1.1.1 If the record is at initiate, notify AKE to e-sign the record.

3.8.2 Confirm that the container is in compliant storage using the WTS incompatible report.

3.8.2.1 If the container is in compliant storage, select "Yes" in the Compatible Container Storage field.

3.8.2.1.1 Verify that the Container Review Results is populated with "No Action Required."

3.8.2.1.2 Enter an appropriate comment in the Container Review Comments field.

3.8.2.1.3 In the Activity Type dropdown, select "Compatible Storage."

3.8.2.1.4 Enter an appropriate comment in the Activity Summary field.

NOTE: *Once e-signature is complete for "Compatible Storage," TrackWise will automatically send an e-mail notification to Production Planning personnel and the AKE originator.*

3.8.2.1.5 Save and e-sign record.

3.8.2.1.6 Ensure that the record state is "Closed-Done."

3.8.2.2 If the container is not in compliant storage, select "No" in the Compatible Storage field.

3.8.2.2.1 Verify that the Container Review Results field is populated with "Initiate Movesheet."

3.8.2.2.2 Enter movesheet number in the Container Storage Confirmation field.

3.8.2.2.3 In the "Activity Type" dropdown, select "Non-Compatible Storage."

3.8.2.2.4 Enter appropriate comment in the Activity Summary field.

NOTE: *Once e-signature is complete for "Non-Compatible Storage," TrackWise will automatically send an e-mail notification to Production Planning personnel, plant shift managers, plant manager, Environmental personnel, and the AKE originator.*

3.8.2.2.5 Save and e-sign.

3.8.2.2.6 When the container has been moved to compliant storage, open the AMWTP AIC record in TrackWise.

3.8.2.2.6.1 In the Activity Type field, select "Container Move Complete."

3.8.2.2.6.2 Enter appropriate comment in the Activity Summary field.

3.8.2.2.6.3 Enter appropriate comment in the Container Review Comment field.

3.8.2.2.6.4 Save and e-sign record.

3.8.3 Container Moves Shift Lead: Confirm the container is in compliant storage using the WTS incompatible report.

3.8.3.1 If the container is in compliant storage, from the "Activity Type" dropdown, select "Compatible Storage."

3.8.3.2 Enter appropriate comment in the Container Storage Confirmation and Activity Summary fields.

NOTE: *Once e-signature is complete for "Compatible Storage," TrackWise will automatically send an e-mail notification to Production Planning personnel, plant shift managers, plant manager, Environmental personnel, and the AKE originator.*

3.8.3.3 Save and e-sign record.

3.8.3.4 Ensure the record state is "Closed-Done."

3.8.3.5 If the container is not in compliant storage, from the "Activity Type" dropdown, select "Non-Compatible Storage."

3.8.3.6 Enter appropriate comment, including new movesheet number, in the Activity Summary and Container Storage Confirmation fields.

NOTE: *Once e-signature is complete for "Non-Compatible Storage," TrackWise will automatically send an e-mail notification to Container Moves group, plant shift managers, plant manager, Environmental personnel, and the AKE originator.*

3.8.3.7 Save and e-sign record.

4.0 DEFINITIONS

"*A" classification.* A waste box or container with a total TRU alpha activity concentration greater than 100 nCi of TRU alpha-emitting isotopes per gram of waste. The waste is intended for treatment in the WMF-676 Treatment Facility and is expected to contain a uniform or homogeneous distribution of the activity throughout the container. This container classification is expected to produce a majority of silver drums from box line with a TRU alpha activity concentration greater than 100 nCi/g.

"*B" classification.* A box typically containing a total TRU alpha activity concentration greater than 100 nCi of TRU alpha-emitting isotopes per gram of waste. The waste is intended for treatment in the WMF-676 Treatment Facility and is expected to contain a non-homogeneous distribution of the activity throughout the container. This container classification is expected to produce a majority of silver drums from box line with a TRU alpha activity concentration less than 100 nCi/g.

"C" Classification. A box typically containing a TRU alpha activity concentration less than 100 nCi/g intended for LLW/MLLW Program disposition. The class may be changed to "B" classification with LLW/MLLW Programs Manger consent in order to allow processing in the Treatment Facility.

TrackWise. Issues management database, provides the capability to create different documents requiring unique information fields and different notifications for approval or action and creates unique tracking/trending records. Typical document types are as follows:

A. Quality Assurance Program Nonconformance Reports

B. Corrective Action Reports

C. Management Assessment Reports

D. Action Items

E. Characterization NCRs

F. AK IDC Change records.

5.0 REFERENCES

(1) 1291-2006-025, Request for Criticality Safety Evaluation Extension for Loading SWBs

(2) 1291-2011-020, Enhanced SDOP Processing

(3) AMWTP HWMA/RCRA Permit

(4) AMWTP HWMA/RCRA TSA Interim Status Document

(5) DOE/CBFO-94-1012, U.S. Department of Energy Carlsbad Field Office Quality Assurance Program Document

(6) Form-1664, Mixed Low-Level Waste Container Inventory Sheet

(7) Form-1775, SWB Direct Loading Form

(8) Form-1829, Production Planning Non-Facility Move Sheet

(9) Form-1862, Characterized Debris SDOP Assembly Form

(10) Form-1932, HWMA/RCRA Permit Review Second Verification

(11) Form-2017, Production Planning Checks for Direct Feed Drums to WMF-676

(12) Form-2091, Uncharacterized Debris SDOP Assembly Form

(13) INST-FOI-26, AMWTF Receipt, Storage, and Container Management

(14) INST-FOI-27, FTS Operations

(15) INST-OI-11, Waste Container Handling

(16) INST-TRUW-8.13.1, TRU Programs Site Project Office Process

(17) INST-TRUW-8.13.3, TRU Programs Acceptable Knowledge Process

(18) LST-EC&P-11, AMWTP HWMA/RCRA Permit WMF-676 Waste Management Criteria

(19) MP-DOCS-18.2, Records Management

(20) MP-LLW-19.4, Low Level Waste/Mixed Low Level Waste TSDF Disposition

(21) MP-LLW-19.7, Low-Level Waste/Mixed Low-Level Waste Verification

(22) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(23) RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

(24) RPT-NFCS-01, Criticality Safety Analysis for TRU Waste Storage (EDF-0034)

(25) RPT-NFCS-07, Criticality Safety Evaluation for the AMWTF

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2.

Record Description	Classification
MP-PRPL-22.1, Case File	Misc. Other Record/A16-1.2/Destroy 5 years after submittal or being superseded
Form-1829, Production Planning Non-Facility Move Sheet	Misc. Other Record/A23-1-a/Destroy 2 years after submittal to RMC
Form-1830, Production Planning Checks for Boxes to WMF-676	Misc. Other Record/A23-1-a/Destroy 2 years after submittal to RMC
Form-2017, Production Planning Checks for Direct Feed Drums to WMF-676	Misc. Other Record/A23-1-a/Destroy 2 years after submittal to RMC
Daily Electronic Inventory Analysis	Misc. Other Record/A23-1-a/For informational purposes only. Destroy at end of shift.
WWIS/WDS Waste Container Data Report	Record stored electronically in WDS (see WWIS-WDS-0001)

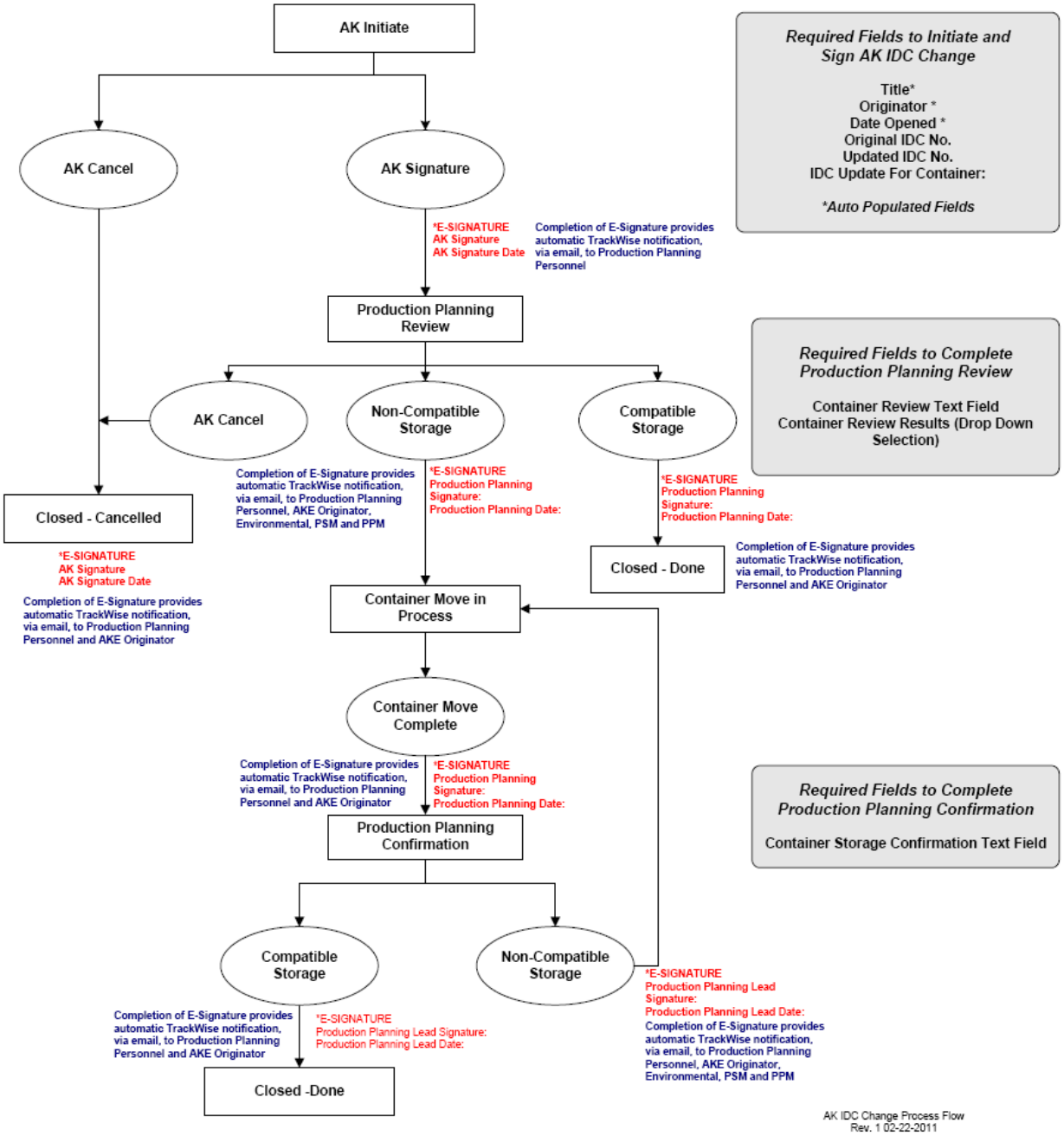
7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – AMWTP AK IDC Change Process Flow

Appendix A –
AMWTP AK IDC Change Process Flow



Investigation and Root Cause Analysis

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10706.)	09/13/12
Angie Morse Quality Assurance Engineer	Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	9/10/02	All	Initial issue, DCR-1009. This management procedure supersedes PQP 3.4 at Revision 0.
1	7/07/03	All	DCR-2045. Updated for clarification of scope processes and responsibilities; remove unnecessary requirements. Update records section.
2	2/18/04	All	DCR-2636. Updated to be consistent with changes from DOE Order 231.1A, *Environmental, Safety and Health Reporting (8-19-03)*, MP-COPS-9.6, *Occurrence Reporting*, and Corporate ESH Audit ESH-D-03-022; CAR 3806. This revision also constitutes a periodic review.
3	2/01/06	All	DCR-4774. Implement contract transition changes as identified on DCR-4299.
4	07/11/06	All	DCR-5006. Revision 4 is a complete rewrite. Revision 4 deletes Form-1302. Revision 4 modifies Roles and Responsibilities and reorders other sections according to MP-DOCS-18.3. Revision 4 addresses Action Item 18228 resulting from MAR 21717. Revision 4 addresses Action Item 20869 resulting from MAR 17336.
5	04/18/07	All	DCR-5852. Revised to implement actions addressing concerns from the Office of Enforcement PAAA Program evaluation. Reference CAR 25738. This revision includes changes in requirements for performance of formal root cause analysis.
6	10/02/08	Pg 4, Section 3.1.3.1	DCR-7596. Correct typographical error allowing a Team Lead or a Trained Investigator to be assigned.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	06/04/09	All	DCR-8134. Revised to incorporate corrective actions from CAR 41741 and recommendations for improvements from MARs 25405 and 25409. Implemented corrective action from CAR 45152, AI 45474, to clarify the severity and risk based graded approach applied to root cause analysis and clarify the criteria in the definition of significant condition adverse to quality. In step 3.1.3.5, implemented corrective actions from CAR 44541. Deleted Appendix A, which will be replaced with GDE-Q&SI-01, Causal Analysis Tree. Updated references for trained investigator and contractual references.
8	08/25/09	Step 3.6.4	DCR-8595. Clarified the step regarding resolution of comments with the Team Lead.
9	09/13/12	Various	DCR-10706. Incorporated DOCS-BLUESHEET-05, DOCS-BLUESHEET-09 and ITG-BLUESHEET-244, Applied DOCS-BLUESHEET-08.

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AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.1, Rev. 9	Issued: 09/13/12	Effective: 09/14/12
Investigation and Root Cause Analysis		

1.0 PURPOSE/SCOPE

This procedure describes the Advanced Mixed Waste Treatment Project (AMWTP) process and requirements for performance of investigations and root cause analyses, and applies to all AMWTP personnel responsible for performing root cause analyses. The conduct of an effective causal analysis is an essential step in developing the appropriate *corrective actions* (see def.) to prevent recurrence of an identified problem.

The level of investigation into root causes of problems is determined using a graded approach based on significance, severity, or risk associated with the condition. Root cause is determined through two methods: (1) formal investigation and root cause analysis performed by a trained investigator (for high risk conditions), and (2) apparent cause analysis (for lower risk conditions). Determination of problem significance is performed as specified in MP-Q&SI-5.3, Corrective Action.

This process implements requirements for causal analysis specified in the following documents:

- 10 CFR 830, Subpart A, Quality Assurance Requirements
- DOE O 226.1A, Implementation of Department of Energy Oversight Policy
- DOE O 231.1A, Environment, Safety, and Health Reporting
- DOE M 231.1-2, Occurrence Reporting and Processing of Operations Information
- DOE O 414.1C, Quality Assurance
- DOE O 422.1, Conduct of Operations
- DOE/CBFO-94-1012, Quality Assurance Program Document (QAPD)
- QAPP-01, Quality Assurance Program Plan.

The AMWTP process and requirements for conducting and reporting investigations and causal analysis are aligned with those specified in MP-COPS-9.6, Occurrence Reporting; MP-Q&SI-5.2, DOE HSS OE Reporting; and MP-Q&SI-5.3, Corrective Action.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Corrective Action Review Board (CARB; see def.)	• Reviews conclusions from formal investigations and root cause analyses • Evaluates recommended actions and identified causes for adequacy of corrective actions to resolve and prevent recurrence of issues.
Quality Assurance (QA) -Manager	• Owns and maintains this procedure • Coordinates with the responsible manager to assign a formal root cause analysis investigation team lead and *trained investigator* (see def.) to an investigation team • Coordinates with the responsible manager to ensure the scope of the investigation and analysis is clearly established, and a completion date identified for timely corrective action development • Reviews/approves formal investigation and root cause analysis reports • Chairs and coordinates the CARB evaluation of approved formal investigation and root cause analysis reports.
Responsible Managers	• Coordinates with the QA Manager to identify the members assigned to the investigation team • Coordinates with the QA - Manager to establish the investigation and causal analysis scope • Reviews and approves formal inspection and root cause analysis reports for their areas of responsibility • Implements recommended corrective actions into the overall *corrective action plan* (CAP; see def.) for resolving and preventing problems • Determines root causes using apparent cause analysis for *conditions adverse to quality* (CAQ; see def.) that are not significant.

Performer	Responsibilities
Investigation Team Lead	• Ensures the scope and schedule of the investigation and analysis is communicated and understood by the investigation team • Coordinates the investigation team's collection of data and *objective evidence* (see def.) to ensure factual accuracy, comprehensive understanding of the condition under evaluation and identification of all associated issues and underlying causes • Coordinates the preparation of Form-1302, Root Cause Analysis Report, and ensures the requirements of this procedure are addressed during investigation and analysis of the problem(s) • Reviews recommendations for consistency with the evidence, identified causes, and overall conclusions of the formal investigation and root cause analysis report • Reviews and signs Form-1302 for submittal to the QA - Manager and responsible manager.

Performer	Responsibilities
Trained Investigator	• Has successfully completed the training requirements identified in QC-TI-RCA, Training Checklist for Trained Investigator • Knowledgeable of the event or condition being investigated • Conducts unbiased investigation of a reported problem to accurately determine all facts and issues for comprehensive understanding • Evaluates the problem and associated conditions to determine the full *extent of condition* (see def.) and *generic implications* (see def.) • Conducts structured causal analysis, addressing the requirements of this procedure, and determines the *root cause* (see def.) and any significant underlying/*contributing cause(s)* (see def.) • Develops conclusions and recommends corrective actions to correct the problem and prevent its recurrence • Ensures that recommended actions are clearly linked to the causal analysis.

3.0 PROCEDURE

3.1 General Requirements

3.1.1 QA Manager and Responsible Managers: Ensure root cause analysis (RCA) is conducted to determine the full extent of an event or condition (hereafter referred to as the condition) and any generic implications to identify effective corrective actions to resolve and prevent recurrence of the condition.

3.1.2 In determining the level of investigation to establish root cause, a graded approach is used based on the significance, severity, or risk associated with the condition, as shown in the following table:

Condition	Level of RCA
Type A or B investigation, as defined in DOE O 225.1A, Accident Investigations	AMWTP will not normally perform RCA beyond that performed during the Type A or B investigation.
Operational Emergencies directly caused by AMWTP operations	Formal RCA
Significant conditions adverse to quality (SCAQs; see def.) associated with the following: • Significance Category 1 and R *occurrence reports* (see def.) • Repetitive or programmatic Health, Safety and Security Office of Enforcement (HSS-OE) noncompliances • Nuclear safety or worker safety and health noncompliance associated with DOE M 231.1-2 occurrences	Formal RCA
Significant noncompliance affecting TRU waste certification	Formal RCA
Significance Category 2 occurrence reports	Root cause determined through a*pparent causal analysis* (see def.) performed by a trained investigator using best available information from documents such as critiques, log entries, etc.
10 CFR 820.11, Information Requirements, intentional violations or misrepresentations	Determined on a case-by-case basis by the QA Manager or the CARB.
Nonsignificant conditions adverse to quality	Root cause determined through apparent cause analysis, using best available information, such as critiques, log entries, etc.
Other conditions or events	As requested by the QA - Manager or responsible manager.

3.1.3 Responsible Manager: Determine root cause using apparent cause analysis and best available information for nonsignificant CAQs.

3.1.3.1 Apparent causal analysis includes conclusions from extent-of-condition review.

3.1.3.2 Apparent causal analysis for Significance Category 2 occurrence reports must be performed by a trained investigator.

NOTE: *Many structured causal analysis techniques are acceptable for investigating adverse events or conditions and identifying cause(s). This procedure does not require that any specific causal analysis methodology be used.*

3.1.4 QA Manager and Responsible Managers: Ensure that formal RCA includes a thorough investigation of the condition and associated issues, using an appropriate recognized, structured, causal analysis technique.

3.1.4.1 For human performance issues, ensure that a human performance improvement (HPI) analysis is conducted in conjunction with the RCA to ensure that the cause(s) of performance issues are analyzed and understood sufficiently to identify error precursors and appropriate corrective actions.

NOTE: *DOE G 231.1-2, Attachment 6, provides guidance that can be used in the HPI evaluation.*

3.1.4.2 Evaluate HPI causal determinations to identify any system failures that allowed the incorrect human performance.

3.1.4.3 Ensure that investigation and RCA are documented on Form-1302, Root Cause Analysis Report.

3.1.4.4 Establish and agree on the scope of the investigation and analysis, based on the significance, complexity, severity, or risk associated with the condition.

3.1.4.5 Identify a completion date based on Occurrence Reporting and Processing System (ORPS) and Noncompliance Tracking System (NTS) reporting requirements.

NOTE: *The investigation team will consist of at least one trained investigator who can also serve as the team lead. Other personnel may be assigned to provide technical discipline support or assist in data collection as necessary.*

3.1.5 Determine if an investigation team is appropriate and assign personnel to perform investigation and formal RCA.

3.1.5.1 A team with a trained investigator is required for formal RCAs associated with operational emergencies and Significance Category 1 ORPS events.

3.1.5.2 Assign an HPI investigator if needed.

3.1.5.3 Assign investigators to the team who are trained and qualified in formal cause analysis methodologies and the occurrence reporting process.

3.1.6 Responsible Manager: If a contract with an external organizations is needed to perform root cause analyses or provide causal analysis training, then develop a contract scope of work that specifies investigator credentials, data gathering, causal analysis, report content, report reviews/approvals, etc., consistent with the requirements of this procedure and appropriate for the contracted activity.

3.1.7 Trained Investigator: Determine the causal analysis technique to be used for formal investigation and root cause analysis. DOE-NE-STD-1004-92, Root Cause Analysis Guidance Document, provides discussion on analytical techniques and may be used for reference.

3.2 Investigation Scope for Formal Root Cause Analysis

3.2.1 The scope of the investigation must be such that full evaluation and characterization of the condition is determined so that the condition is effectively corrected. The following elements shall be addressed during a formal RCA and conclusions reported:

A. Extent of condition (EOC)

B. Precursor/Historical Review

C. Evaluation of Assessment Performance.

3.2.2 Team Lead/Trained Investigator: Ensure an EOC review is performed to determine the full extent and any generic implications of the condition.

3.2.2.1 The EOC review must determine whether the same condition exists elsewhere (i.e., transportability of condition) and whether the same root/underlying causes of the condition may be affecting performances in other processes, systems, or programs (i.e., transportability of cause).

3.2.2.2 The EOC review should not be limited to ORPS or *TrackWise* (see def.) database searches or trend data review, and should include focused field observations in conjunction with document reviews to:

A. Evaluate for the same condition in other processes, systems, facilities, or programs

B. Search for other manifestations of the identified root/underlying causes of the condition

C. Look for similar or related conditions, or conditions that can potentially be anticipated based on the condition under evaluation

D. Review prior applications of the deficient process/procedure, system, or program to determine if earlier deficiencies had existed unnoticed.

3.2.3 Team Lead/Trained Investigator: Ensure that a precursor/historical review is performed to determine if the same or similar condition has occurred previously. The review shall evaluate both the reported condition and root/underlying cause(s) to determine if the condition is recurrent.

3.2.3.1 A precursor/historical review is a retrospective analysis and can be effectively conducted through review of ORPS and TrackWise data, previous assessment results, and trending analysis data.

3.2.3.2 Team Lead/Trained Investigator: If it is determined that a condition is recurrent, then include analysis evaluation to determine why prior corrective actions were ineffective in preventing recurrence, and factor this evaluation into the recommended corrective actions.

3.2.4 Team Lead/Trained Investigator: Ensure that an evaluation of internal Assessment Performance is conducted and reported to determine if the condition should have reasonably been identified through implementation of the assessment program.

3.2.4.1 The purpose of this evaluation is to identify if any deficiencies exist in assessment scheduling, quality, or corrective action development and implementation.

3.3 Depth and Breadth of Formal Investigation and Root Cause Analysis

3.3.1 Team Lead/Trained Investigator: Ensure the depth and breadth of the analysis are conducted to the extent that the root/underlying conditions and any influences causing the condition, are effectively identified. As an example, identification of root/underlying causes such as "failure to follow procedures" must be further analyzed to determine why procedures were not followed.

3.3.1.1 The breadth of the analysis must be sufficiently conducted to identify all significant issues associated with a condition.

3.3.1.2 If a condition has existed for an extended period of time, it must be determined why the condition persisted without prior identification, as well as the specific causes of the condition.

NOTE: *GDE-Q&SI-01, Causal Analysis Tree, based on the DOE causal analysis tree, is available on the Electronic Document Management System (EDMS) for use in determining cause codes.*

3.3.2 Trained Investigator: Identify the root and any contributing cause(s) using the *ORPS cause codes* (see def.) specified in GDE-Q&SI-01, Causal Analysis Tree.

3.3.3 Trained Investigator: Identify applicable Integrated Safety Management System (ISMS) core function(s) to report any observed weaknesses in the AMWTP ISMS Program. Deficient ISMS core functions are considered *causal factors* (see def.).

3.4 Collection of Data and Factual Evidence

3.4.1 Trained Investigator: Collect sufficient objective evidence, considering the adverse event or condition being investigated. The type, quantity, and quality of data collected are determined by the event or condition and the causal analysis methodology used.

3.4.1.1 Data collection must begin promptly after an adverse condition so that relevant information is identified, collected, and preserved.

3.4.2 Team Lead/Trained Investigator: Ensure that data collection does not impair personnel safety or interfere with operations. Interviews shall be conducted so that personnel are not distracted from safely performing work.

3.4.3 Team Lead/Trained Investigator: Reference any relevant documents or records collected and used in conduct of the analysis in the root cause analysis report.

3.4.3.1 Prepare Form-1302 using the case file.

3.5 Preparation of Formal Investigation and Root Cause Analysis Report

3.5.1 Team Lead/Trained Investigator: Obtain a root cause analysis report number from the QA Manager.

3.5.2 Team Lead/Trained Investigator: Ensure resolution of any unsubstantiated or inconclusive concerns before issuance of the final report.

3.5.3 Team Lead/Trained Investigator: Ensure the final report conclusions provide concise statements of causal factors.

3.5.4 Do NOT include information subject to the *Privacy Act* (see def.), *unclassified controlled nuclear information* (UCNI; see def.), or *classified information* (see def.).

3.5.4.1 Document the results of the analysis on Form-1302.

3.5.4.1.1 Complete all sections of Form-1302.

3.5.4.1.2 Include relevant data from the analysis methodology.

3.5.4.1.3 Attach supporting documentation to Form-1302 as appropriate to support the conclusions.

3.5.4.1.4 Identify any *lessons learned* (see def.) as a result of the investigation and analysis.

3.6 Review and Approval of the Formal Investigation and Root Casual Analysis Report

3.6.1 Trained Investigator: Evaluate the draft Form-1302 for completeness, soundness of conclusions and causal analysis, and recommended corrective actions.

3.6.2 Trained Investigator: Sign the Form-1302 and submit it to the QA Manager and responsible manager for approval.

3.6.3 QA Manager and Responsible Manager: Review the submitted Form-1302 to determine that the scope of the investigation and analysis has been met, and that recommended corrective actions are clearly linked to the identified root cause(s).

3.6.4 QA Manager and Responsible Manager: Coordinate and resolve any comments on the submitted Form-1302 with the trained investigator and team lead (if one is designated), and document final approval signatures on Form-1302.

3.6.5 Coordinate the CARB evaluation of the approved formal investigation and root cause analysis report and place the approved report into TrackWise as a "Supplemental Document" of its corresponding *corrective action report* (see def.).

3.6.6 QA Manager: Transmit the original approved formal investigation and root cause analysis report to Records Management.

3.7 Corrective Action

3.7.1 Responsible Manager: Document corrective actions in TrackWise as specified by MP-Q&SI-5.3.

3.7.2 Evaluate the recommended corrective actions and develop a corrective action plan or update any existing corrective actions to implement the recommended corrective actions identified in the report.

3.7.3 If corrective actions cannot be implemented as recommended, then justify and identify corrective action(s) that clearly address the identified root cause(s) in the corresponding TrackWise corrective action report.

3.7.4 Identify the root cause from the root cause analysis report in the corresponding TrackWise corrective action report.

3.7.4.1 Obtain trained investigator determination of root cause through apparent cause analysis for Significance Category 2 occurrence reports.

3.8 CARB Review of Formal Investigation and Root Cause Analysis Report

3.8.1 CARB: Evaluate conclusions from approved formal investigation and root cause analysis reports and recommended corrective actions for SCAQs in accordance with MP-Q&SI-5.10, Corrective Action Review Board Charter, for effectiveness in resolving conditions and preventing their recurrence.

4.0 DEFINITIONS

Apparent cause. The most probable cause(s) that explains why the event (or CAQ) happened, that can reasonably be identified, that local or facility management has the control to fix, and for which effective recommendations for corrective action(s) to remedy the problem can be generated, if necessary.

Apparent causal analysis. A level of analysis based on best available information such as critiques, log entries, etc., that identifies the most probable root cause(s) of events or conditions.

Causal factor. A an event or condition that either caused the occurrence [adverse event or condition] under investigation or contributed to the unwanted result. If it were not for this event or condition, the unwanted result would not have occurred or would have been less severe.

Classified information. Classified information is any data or material that belongs to the federal government and relates to sensitive topics, such as military plans or the vulnerabilities of security systems.

Conditions adverse to quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconforming conditions. All conditions adverse to quality are evaluated for significance.

Contributing cause. The cause(s) that contributed to, but that by itself would not have caused, the event or condition.

Corrective action. Measures taken to correct conditions adverse to quality and, where necessary, to preclude recurrence.

Corrective action plan. A documented plan used to identify the corrective actions necessary to correct conditions adverse to quality and prevent their recurrence.

Corrective action report. A document or system used to record and control correction of conditions adverse to quality through the process of evaluation and corrective action implementation.

Corrective Action Review Board. A committee comprised of a Chairman and AMWTP management. The CARB is chartered to evaluate SCAQs and any proposed CAPs. The evaluation is to ensure the adequacy and effectiveness of proposed corrective actions.

Extent of Condition. The transportability of an identified condition. As part of cause analysis and corrective action planning, consideration is given to where else the condition and/or causes might exist in other systems, processes, items, facilities, etc.

Generic implications. The transportability of a cause. Once an event of condition is understood, the impact of its cause(s) (apparent and/or root) on other areas or activities is determined.

Graded approach. The process of ensuring that the level of analysis, documentation, and actions used to comply with a requirement…are commensurate with: (1) the relative importance to safety, safeguards, and security; (2) the magnitude of any hazard involved; (3) the life cycle stage of a facility; (4) the programmatic mission of a facility; (5) the particular characteristics of a facility; (6) the relative importance of radiological and non-radiological hazards; and (7) any other relevant factor.

Lessons learned. A “good work practice” or innovative approach that is captured and shared to promote its repeated application. A lesson learned may also be an adverse work practice or experience that is captured and shared to avoid recurrence.

Objective evidence. Qualitative or quantitative information, records, data, and statements or fact pertaining to the characteristics of an item or service or to the existence and implementation of a process element. It is based on observation, measurement, or test, and can be verified.

Occurrence report. A written evaluation of an event or condition that is prepared in sufficient detail to enable the reader to assess its significance, consequences, or implications and evaluate actions taken to correct the condition or to avoid recurrence.

ORPS cause codes. Alpha-numeric codes selected from the GDE-Q&SI-01, Causal Analysis Tree, to identify the apparent causes of events and occurrences. Cause codes are used to categorize or bin apparent causes.

Privacy Act. The Privacy Act of 1974, 5 U.S.C. § 552a (2000), an omnibus "code of fair information practices" that attempts to regulate the collection, maintenance, use, and dissemination of personal information by federal executive branch agencies.

Reportable occurrence. An event or condition, to be reported according to the criteria defined in DOE Order 231.1A, *Environment, Safety, and Health Reporting*, and DOE M 231.1-2, *Occurrence Reporting and Processing of Operational Information*.

Root cause. The most basic cause(s) that explains why the event (or condition) happened, that can reasonably be identified, that senior management has the control to fix, and for which effective recommendations for corrective action(s) to remedy the problem, prevent specific recurrence of the problem, and preclude occurrence of similar problems can be generated, if necessary. This is typically one level further in analysis beyond the apparent causes(s) (i.e., one level beyond the Level C node of the causal analysis tree).

Root cause analysis. Any methodology that identifies causal factors that, if corrected, would prevent recurrence of an adverse event or condition.

Significant condition adverse to quality. A significant condition adverse to quality exists if:

A. The condition, if uncorrected, could have a serious impact on worker, public, environmental, radiological, or nuclear safety

B. The condition, if uncorrected, could have a serious impact on operational reliability, TRU Waste Certification Program compliance, or mission performance

C. Adverse conditions having programmatic or generic implications

D. Significant failure in worker safety and health requirements

E. Significant failure in QA program implementation

F. Pattern of a recurring condition adverse to quality such that the combined impact is indicative of a management or programmatic process breakdown.

TrackWise. This database provides the capability to create different documents requiring unique information fields and different notifications for approval or action and creates unique tracking/trending records.

Trained investigator. An individual who has been qualified to perform causal analysis in response to a *reportable occurrence* (see def.).

Unclassified controlled nuclear information. Under jurisdiction of the Department of Energy, UCNI includes unclassified facility design information, operational information concerning the production, processing or utilization of nuclear material for atomic energy defense programs, safeguards and security information, nuclear material, and declassified controlled nuclear weapon information once classified as Restricted Data (RD).

5.0 REFERENCES

(1) 10 CFR 820.11, Information Requirements

(2) 10 CFR 830, Subpart A, Quality Assurance Requirements

(3) Department of Energy Enforcement Program Plan,

(4) Department of Energy Office of Enforcement Guidance Supplement 05-01, Contractor Investigation, Causal Analysis, and Corrective Actions,

(5) DOE/CBFO-94-1012, Quality Assurance Program Document

(6) DOE O 414.1C, Quality Assurance

(7) DOE G 231.1-2, Occurrence Reporting Causal Analysis Guide

(8) DOE M 231.1-2, Occurrence Reporting and Processing of Operations Information

(9) DOE O 225.1A, Accident Investigations

(10) DOE Order 226.1A, Implementation of Department of Energy Oversight Policy

(11) DOE Order 231.1A, Chg 1, Environment, Safety, and Health Reporting

(12) DOE Order 422.1, Conduct of Operations

(13) MP-COPS-9.6, Conduct of Operations: Occurrence Reporting (ORPS)

(14) MP-DOCS-18.2, Records Management

(15) MP-Q&SI-5.2, DOE HSS OE Reporting

(16) MP-Q&SI-5.3, Corrective Action

(17) MP-Q&SI-5.10, Corrective Action Review Board Charter

(18) QAPP-01, Quality Assurance Program Plan

(19) GDE-Q&SI-01, Causal Analysis Tree

(20) DOE-NE-STD-1004-92, Root Cause Analysis Guidance Document

6.0 RECORDS

Records generated by this procedure shall be classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-Q&SI-5.1, Case File	Nonpermanent/QA WIPP / ENV1-J-1 / Submit to RMC for long term storage. Destroy 10 years after submittal or transfer to the WIPP Records Archive Facility at end of project/program.
Form-1302, Root Cause Analysis Report	FOR/Nonpermanent/QA WIPP / ENV2-a-1-a / Submit to RMC for long term storage. Destroy 5 years after life of facility or transfer to WIPP Records Archive Facility or DOE-ID Records Storage Facility, as appropriate, at end of project/program.

7.0 EXHIBITS

None

8.0 APPENDICES

None

Corrective Action

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10557.) 09/13/12

Angie Morse
Quality Assurance Engineer

Date

AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.3, Rev. 12	Issued: 09/13/12	Effective: 09/14/12
Corrective Action		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	9/3/02	All	Initial issue DCR-1007. This MP supersedes PQP 3.1 Revision 1.
1	2/18/03	Pg.8, Section 4.0, Step 4.1.2 Pg. 15, Section 6.0	DCR-2029, Revised Procedure to incorporate comments provided by CBFO Adequacy Review.
2	4/28/03	Pg. 11, Section 5.3, Step 5.3.4	DCR-2223. Revised to incorporate CBFO comments. Update references.
3	6/17/03	P. 14, Section 5.6.1, P. 14, Section 5.7 P. 6, Section 3.0 P. 15, Section 6.0	DCR-2280. 1.) Incorporate comments resulting from WIPP PE - removed unnecessary requirements on review cycle period. 2.) Correct errors and update for accuracy & consistency with other Q&SI procedures. 3.) Update records section.
4	2/19/04	All	DCR-2637. Updated to be consistent with changes from DOE Order 231.1A, Environmental, Safety & Health Reporting (8-19-03) and MP-COPS-9.6, Occurrence Reporting. Updated definitions & clarifications of closure activities.

Revision Number	Date Approved	Pages Affected	Description of Revision
5	04/08/05	Various	DCR 4037. Revised to incorporate TrackWise® process improvements. Editorial/format changes to comply with MP-DOCS-18.3. Incorporated CBFO review comments on Rev 5A. Revised to implement corrective actions from CAR-7015, ORR Post-Start. Added new Section 5.1, Roles and Responsibilities. Revised Section 5.5.1 to specify disposition response time and clarify disposition information.
6	2/14/06	All	DCR 4686. Revision 6 is a complete rewrite. This revision addresses issues raised in parent CAR 12259 and child CAR 12274. This revision adds Roles and Responsibility and reorders other sections according to MP-DOCS-18.3. Revision 6 requires completion of corrective action planning within 45 days from ORPS Categorization, or CAR validation. Revision 6 requires approval by the AWMTP President and General Manager for corrective actions that require greater than 90 days to complete. Revision 6 aligns the corrective action process with Bechtel Corporate BSII QA Department requirements. This revision retains original DOE, DOE-CBFO, and AMWTP QAPP requirements.
7	9/08/06	1, 2, 3, 5, 7, 9, 15, 16	DCR-5187. Update to address DOE O 226.1, Contractor Requirements for Contractor Assurance Systems and include prioritization in the corrective action process for consistency with ISMS.
8	10/24/06	Page 8 Section 3.6.2.1	DCR-5428.Step 3.6.2.1 added to update and improve procedure as a result of NTS audit.

Revision Number	Date Approved	Pages Affected	Description of Revision
9	04/19/07	Various	DCR-5657. Implement clarifications and process improvements, editorial changes, and updated definitions. Replaces previous 4 levels for determining significance of conditions adverse to quality with significant CAQs or non-significant CAQs. Clarifies instructions for corrective action plan development. Format changes for consistency with MP-DOCS-18.3.
10	06/04/09	All	DCR-8225: Revision to implement corrective actions from CAR 41741 and CAR 44561, and improvement actions from Management Assessments 25405 and 25409, assigned through Action Item 28871. Implement corrective action from CAR 45152, Action Item 45475, to clarify the severity and risk based graded approach applied to root cause analysis, and clarify the criteria for determining significance. Updates per Bluesheet-01. Periodic review.
11	10/13/10	Various	DCR-9280. Incorporated allowance in Section 3.2 for the use of the NCR reporting process for ORPS events that are equipment failure related, aligning with MP-COPS-9.6 and QA program intent. Incorporated DOCS-BLUESHEET-05 and updates for periodic review. Changed NTS to NNSS.
12	09/13/12	Various	DCR-10557. Incorporated DOCS-BLUESHEET-08 and ITG-BLUESHEET-244

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Appendix A – Using TrackWise to Initiate Report, Document, and Communicate Conditions Adverse to Quality through Corrective Action Reports A1

Appendix B – Example Corrective Action Report and Corrective Action Plan B1

1.0 PURPOSE/SCOPE

This procedure describes the Advanced Mixed Waste Treatment Project (AMWTP) *corrective action* (see def.) process and requirements for identifying, reporting, evaluating, and correcting *Conditions Adverse to Quality* (CAQs; see def.), verifying completion of corrective actions taken, and performance of corrective action *effectiveness reviews* (see def.).

This procedure establishes requirements for implementation of an integrated corrective action process as specified in 10 CFR Part 830, Subpart A, Quality Assurance Requirements; Department of Energy (DOE) Order (O) 414.1C, Quality Assurance*;* DOE O 226.1A, Implementation of Department of Energy Oversight Policy, Attachment 1, Contractor Requirements Document; DOE O 470.2B, Independent Oversight and Performance Assurance, Attachment 2, Contractor Requirements Document*;* DOE-CBFO-94-1012, Quality Assurance Program Document; and QAPP-01, Quality Assurance Program Plan.

All program and performance deficiencies, regardless of their source shall be documented and tracked in TrackWise® to ensure that adverse conditions are reported, assigned to, and evaluated by the responsible management; and to document and track the development, implementation, completion, and verification of corrective actions.

AMWTP Management is responsible to prepare, implement, and track to completion *corrective action plans* (CAPs; see def.) to correct and prevent adverse conditions. The corrective action process is aligned with requirements for corrective action specified in MP-COPS-9.6, Occurrence Reporting, and MP-Q&SI-5.2, DOE HSS OE Reporting.

This procedure applies to all AMWTP personnel, contractors, and subcontractors performing work at AMWTP.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
All AMWTP Personnel, Contractors, and Subcontractors	• Report and correct CAQs using this procedure, or if appropriate, MP-Q&SI-5.4, Identification of Nonconforming Conditions.
AMWTP Quality Assurance (QA) Manager	• Owns and maintains this procedure • Administers *TrackWise* (see def.) corrective action reporting system • Evaluates all reported CAQs • Identifies areas for corrective action effectiveness reviews through QA assessment and surveillance planning • Evaluates reports from external reviews for conditions requiring corrective action reporting in accordance with this procedure. • Ensures that Health, Safety and Security-Office of Enforcement (HSS-OE) screening and reporting requirements are met • Ensures notification to the Inspector General's office upon identification of *suspect/counterfeit items* (see def.) • Conducts analysis of *Corrective Action Report* (CAR; see def.) data to identify adverse trends with repetitive or programmatic implications. • As needed, issues *Stop Work Orders* (see def.) to mitigate a *significant condition adverse to quality* (SCAQ; see def.) having programmatic or generic implications • Approves proposed corrective action completion dates that extend beyond 90 calendar days from the date of CAR QA validation. • Approves requests to extend completion dates of proposed and/or approved corrective actions that exceeds, or will exceed, scheduled date to close.

Performer	Responsibilities
Departmental Manager	• Assigns department TrackWise coordinators to support management of CARs and other quality issues, as necessary.
QA Department	• Verifies actions taken to correct CAQs and validate CAR closure • Advises responsible managers if additional corrective action is required • Evaluates the effectiveness of completed corrective actions through surveillance and assessment.
Responsible Managers at all levels	• Prepare, implement, and track to completion CAPs to correct and prevent recurrence of adverse conditions • Coordinate with other line management for assignment of CAPs • Submit requests for extensions of approved CAPs to the QA Manager with justification for the extension. • Evaluate and take action to correct a reported CAQ for which they are responsible. • Evaluate reports from external reviews for conditions requiring corrective action reporting in accordance with this procedure. • Determine the level of response and analysis required to correct a CAQ and address underlying cause(s) to prevent recurrence. • Manage the CAP to ensure closure • Implement corrective action effectiveness reviews as assigned from the Corrective Action Review Board (CARB) • Ensure formal root cause analyses are performed for events as described in Step 3.6.3.
TrackWise Coordinator	• Provides TrackWise status reports for department open actions, as requested. • Manages actions due and coming due. • Notifies department members for current actions.

Performer	Responsibilities
Corrective Action Review Board	• Reviews corrective actions for adequacy in resolving significant conditions adverse to quality, operational emergencies directly caused by AMWTP operations, and Significance Category 1, 2, and R occurrence reports • Assigns responsibilities for effectiveness reviews of implemented corrective actions for significant conditions adverse to quality.
Assigned Personnel	• Perform effectiveness reviews for corrective actions.

3.0 PROCEDURE

NOTE 1: *A CAQ is "an all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconformances." All CAQs are evaluated for significance in accordance with Step 3.4.3.*

NOTE 2: *Appendix A provides guidance on the use of TrackWise for corrective action reporting and processing.*

3.1 Stop Work

3.1.1 All AMWTP personnel are empowered with Step Back and Stop Work Authority. (This may include when new hazards or unsafe workplace conditions are encountered, approved procedures or work control documents cannot be worked as written, or conditions adverse to compliant operations are identified.)

NOTE: *A CAQ may pose an immediate threat to worker safety, public health, or to the environment.*

3.1.1.1 Personnel who identify such conditions, or believe that such conditions exist, shall stop work and immediately report the condition to their shift supervisor, Plant Shift Manager, supervisor, or manager (referred to as supervisor or manager hereafter).

3.1.2 Responsible management must evaluate all employee stop work actions to identify any associated CAQs for reporting as required by this procedure.

3.1.3 The QA manager must determine if a SCAQ having programmatic or generic implication justifies issuing a formal stop work order.

3.1.3.1 If issued, the CAR becomes the record of a stop work order issuance.

3.2 Identifying and Reporting Conditions Adverse to Quality

3.2.1 All AMWTP personnel, including contractors and subcontractors, shall identify and report any CAQs using this procedure or MP-Q&SI-5.4, as applicable.

3.2.1.1 Personnel shall promptly notify and discuss such conditions with their supervisor or manager, and affected personnel to determine the need for any immediate action.

3.2.2 AMWTP personnel must document and report all conditions adverse to quality, regardless of their source, in TrackWise to ensure that adverse conditions are documented, evaluated, resolved, and tracked to completion.

3.2.3 AMWTP personnel shall use TrackWise to notify, report, document, track, and communicate identified CAQs.

3.2.3.1 Personnel who do not have access to TrackWise, or are unfamiliar with its use, should obtain assistance from their supervisor or manager, the AMWTP TrackWise Coordinator, or other AMWTP personnel as necessary.

NOTE 1: *Computer based training AWT4138C, AMWTP TrackWise System, provides a user overview of TrackWise. Personnel should consult the AMWTP TrackWise Coordinator if help is needed.*

NOTE 2: *Appendix A provides guidance on the use of TrackWise for generating corrective action reports.*

3.2.4 Using TrackWise, the CAR originator must reference the requirement that is violated and describe the condition that violates the requirement.

3.2.4.1 The CAR originator is responsible to report the condition accurately, completely, and factually.

NOTE: *Operations events reported in the Occurrence Reporting and Processing System (ORPS) are also entered in TrackWise CAR or nonconformance report (NCR) reporting processes. The NCR process is typically used for ORPS events that are attributed to equipment failures which are NOT the result of a noncompliance with a requirement and for reported suspect/counterfeit material items.*

3.2.5 The responsible manager must initiate a CAR or NCR for any *reportable occurrence* (see def.) as determined in accordance with MP-COPS-9.6.

3.2.5.1 NCRs are reported in accordance with MP-Q&SI-5.4.

NOTE 1: *DOE M 231.1, Occurrence Reporting and Processing of Operations Information, requires prompt reporting of all suspect/counterfeit items (S/CIs) to the DOE, regardless of their location or application, by means of ORPS, and to the local DOE Office of the Inspector General (OIG).*

NOTE 2: *In general,* nonconforming conditions *(see def.) concerning "items or products" may be dispositioned in accordance with MP-Q&SI-5.4. However, reported nonconforming conditions caused by systemic deficiencies, or programmatic failures are reported on a CAR to ensure corrective actions are taken to prevent recurrence.*

3.2.6 AMWTP personnel must initiate an NCR in accordance with MP-Q&SI-5.4 for all S/CIs identified.

3.2.7 The responsible manager must document CAQs identified through independent or management assessment, worker observation, external audit, or surveillance of AMWTP activities on a CAR or NCR and disposition according to this procedure or MP-Q&SI-5.4, respectively.

3.2.8 Information from external reports is reviewed and validated by the responsible manager for factual accuracy to identify any CAQs.

3.2.8.1 Inaccurate information shall be communicated back to the identifying organization to ensure clear and factual understanding of the concern.

3.2.8.2 Observations, recommendations, or opportunities for improvements from internal or external reports are entered in TrackWise as action items (AIs) at the discretion of the responsible manager(s).

NOTE: *A customer concern may cause initiation of a CAR in accordance with this procedure when considering risk and severity.*

3.2.9 Personnel initiating a CAR must confer with the supervisor or manager prior to initiating a CAR to address a customer concern.

3.3 Corrective Action Report Management Validation

NOTE: *TrackWise assigns a CAR number and notifies the originator's supervisor or manager that a CAR is ready for review.*

3.3.1 The supervisor or manager must evaluate and validate the reported condition as a CAQ or recommend cancellation of a CAR.

3.3.1.1 The supervisor or manager must provide a justification statement in TrackWise for recommending cancellation of a CAR as invalid.

3.3.2 The supervisor or manager must evaluate the CAQ, and determine if *compensatory actions* (see def.) are necessary to mitigate the CAQ.

3.3.3 If the CAR is determined to be valid, the supervisor or manager should identify the responsible manager who will assume responsibility for correcting the CAQ.

3.3.3.1 The supervisor or manager must ensure that the assigned responsible manager agrees with the reported condition within the assigned manager's area of responsibility.

3.3.3.1.1 If mutual agreement cannot be reached, then the issue should be elevated to the respective department managers.

NOTE 1: *A CAR status will remain at "Initiate" until validated or rejected by the supervisor or manager, or until 7 calendar days have elapsed, at which time the CAR is advanced automatically to "QA Evaluation."*

NOTE 2: *All CARs are advanced to QA evaluation.*

3.4 Corrective Action Report QA Evaluation

3.4.1 The QA manager/designee must review the basis for all CARs recommended for cancellation, and if the basis is determined to be valid, complete the cancellation in TrackWise.

3.4.1.1 QA must concur with the recommendation for cancellation.

3.4.1.2 If the review concludes that the CAR is reporting a valid condition adverse to quality, coordinate with the responsible manager, and reinstate the CAR for evaluation in TrackWise.

3.4.1.3 The basis for reinstated CARs must be documented in the TrackWise CAR description.

3.4.2 The QA manager/designee must evaluate all corrective action reports and confirm the selection of the responsible manager.

3.4.2.1 If the CAR was automatically advanced to QA Evaluation, then a responsible manager must be identified.

3.4.2.2 If a CAR involves Nevada National Security Site (NNSS) data, then the NNSS waste certification official at AMWTP must be notified via TrackWise for CAR evaluation and determination of impacts to NNSS certified program.

3.4.2.3 If a CAR involves Waste Isolation Pilot Plant (WIPP) requirements, then the QA manager/designee must screen for reporting to CBFO, and notify the Site Project Manager (SPM) of screening results prior to submittal to CBFO.

3.4.3 The QA manager/designee must perform the following for all identified CAQs:

3.4.3.1 The significance of the CAQ must be determined.

3.4.3.1.1 An SCAQ exists if:

A. The condition, if uncorrected, could have a serious impact on worker, public, environmental, radiological or nuclear safety

B. The condition, if uncorrected, could have a serious impact on operational reliability, TRU Waste Certification Program compliance, or mission performance.

C. Adverse conditions having programmatic or generic implications

D. Significant failure in worker safety and health requirements

E. Significant failure in QA program implementation

F. Pattern of a recurring CAQ such that the combined impact is indicative of a management or programmatic process breakdown.

3.4.3.2 Upon determination that a SCAQ exists, the QA Manager and the responsible department manager must be verbally notified.

3.4.3.3 All CARs must be screened for HSS-OE noncompliance applicability and reportability in accordance with MP-Q&SI-5.2.

3.4.3.4 A due date for development of corrective actions must be established based on the following, up to a maximum of 45 days:

- The date of initial ORPS categorization, for CARs generated from an ORPS reportable event
- The date of the HSS-OE noncompliance determination of reportability in the Noncompliance Tracking System

NOTE: *CARs validated by QA are advanced in TrackWise to the responsible manager for CAP development as specified in Section 3.6.*

- For all other CARs, from the date tha**t QA** *manager reviewed and validated the CAR.*

3.5 Notification and Transmittal to DOE-Carlsbad Field Office (CBFO)

3.5.1 The QA Manager/designee must screen valid CARs for Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan (WAP), Resource Conservation and Recovery Act (RCRA)-related compliance issues.

3.5.1.1 If it is determined that a CAR is a WIPP RCRA-related noncompliance, then this determination is communicated to the TRU Programs SPM.

3.5.1.2 Any WIPP-WAP, RCRA-related CARs must be submitted to the CBFO for tracking and closure.

3.5.2 Electronic notifications of any WIPP-WAP RCRA-related CARs must be submitted to CBFO by email as follows:

3.5.2.1 The e-mail subject line must be annotated with "[CAR]" preceding the subject, to ensure automatic transfer into the proper folder of the receiving system.

3.5.2.2 Notifications are submitted to the following email address: wipp.notify@wipp.ws

NOTE: *Hard-copy transmittals may be used if electronic submittal is unavailable.*

3.5.3 CBFO should be notified using hard-copy transmittal if electronic transmission is unavailable. Correspondence is to be sent via FEDEX to the following address:

- U.S. Department of Energy Carlsbad Field Office
  4021 National Parks Hwy
  Carlsbad, NM 88220
  Attn: Quality Assurance Manager

- Washington TRU Solutions
  P.O. Box 2078
  Carlsbad, NM 88221-2078

3.6 Development of Corrective Action Plans

3.6.1 Corrective action plans are prepared to resolve all CAQs and, where necessary, to prevent recurrence.

3.6.2 The responsible manager must evaluate the reported condition, affected requirement, and any relevant information such as fact findings or critiques to determine the level of response and analysis required to correct the CAQ; develop corrective action(s) and take timely action to correct the CAQ; and manage the CAP to ensure closure.

3.6.2.1 If evidence exists that indicates the reported CAQ is not valid, the basis and supporting evidence is to be documented in the Corrective Action Plan section, justifying the basis for not taking corrective action, and submitted to QA for review.

NOTE: *The level of investigation into root causes of problems is determined using a graded approach based on significance, severity, or risk associated with the condition. Root cause is determined in accordance with MP-Q&SI-5.1, Investigation and Root Cause Analysis, through two methods: (1) formal investigation and root cause analysis performed by a trained investigator (for high risk conditions), and (2) apparent cause analysis (for lower risk conditions).*

3.6.3 Formal investigation and root cause analysis performed by a trained investigator are required for SCAQs associated with the following:

- Operational emergencies directly caused by AMWTP operations
- Significance Category 1 and R occurrence reports
- Repetitive or programmatic HSS-OE noncompliances
- Nuclear Safety or Worker Safety and Health noncompliances associated with DOE M 231.1-2 Occurrence Reporting and Processing of Operational Information
- Significant noncompliances affecting TRU waste certification.

NOTE: *Apparent cause analysis will determine the most probable root cause of an event or condition that management has the control to remedy and correct through action to prevent recurrence.*

3.6.3.1 For Significance Category 2 occurrence reports, have a trained investigator determine root cause through apparent cause analysis, using best available information from relevant documents (such as critiques, log entries, etc.).

3.6.3.2 The responsible manager must select the root cause established from *formal root cause analysis* (see def.) for SCAQs or from *apparent cause* (see def.) analysis in TrackWise using the three ORPS level codes.

3.6.3.3 The responsible manager should refer to GDE-Q&SI-01, Causal Analysis Tree, for cause code reference.

3.6.4 The responsible manager must include the following in corrective action plans for SCAQs:

- Compensatory actions if needed to offset the impact of a SCAQ pending *remedial action* (see def.)
- Remedial actions necessary to resolve the specific condition
- *Extent of condition* (see def.), impact, and risk
- Root cause
- *Preventive actions* (see def.) to address underlying causes and preclude recurrence.

NOTE: *Human performance issues for SCAQs are evaluated as part of the formal investigation and root cause analysis in accordance with MP-Q&SI-5.1.*

3.6.5 The responsible manager should include the following in corrective action plans for non-significant CAQs:

- Remedial actions
- Remedial actions may be sufficient to correct a minor problem however; the responsible manager should evaluate condition to determine if an extent-of-condition evaluation is needed to determine any necessary actions to preclude recurrence.
- Root cause established through apparent cause analysis in accordance with MP-Q&SI-5.1 and GDE-Q&SI-01

NOTE: *The responsible manager coordinates with the Human Performance Improvement (HPI) coordinator to ensure that human performance issues are properly evaluated.*

- Human performance issues evaluated in sufficient detail to identify the appropriate corrective actions and determine if valid system or process problems existed to influence the human performance.

3.6.6 Individual Child Action Items are required for corrective action plans involving multiple corrective actions and actionees, and to establish interim completion dates.

3.6.6.1 Child Action Items must be scheduled and assigned in TrackWise prior to QA approval of the CAP.

3.6.7 Managers responsible for a CAQ must ensure the CAP is documented in TrackWise and is completed within 90 calendar days of CAR validation by QA Manager.

3.6.7.1 Proposed corrective actions requiring greater than 90 days for completion must be approved by the QA Manager.

3.6.8 The responsible manager must evaluate the CAQs to the extent necessary to:

- Determine the risk and impact
- Identify root cause and remedial actions necessary to correct the specific condition
- Identify corrective actions to correct the condition and preclude recurrence as applicable.

3.6.9 CAPs must be submitted to QA for concurrence within the established date for corrective action development.

3.6.9.1 If corrective actions, will exceed the 90 day completion, then a request and justification for an extension of the due date must be submitted to the QA manager for approval prior to final CAP approval.

NOTE: *The QA manager/designee evaluation will confirm the CAP completion date is due within 90 calendar days of QA manager evaluation or justification is documented approving the extension.*

3.6.10 The QA manager/designee must evaluate proposed corrective action plans to ensure that the analysis and corrective actions are commensurate with the significance and complexity of the problem and will effectively resolve the condition.

3.6.10.1 If additional analysis or corrective action is deemed necessary, the responsible manager should be consulted and the CAR returned for additional corrective action.

3.7 Completion of Corrective Actions

NOTE: *All corrective actions to address resolution of identified CAQs must be completed within 90 days of validation of the condition. The significance and risk of the adverse condition and its affect on safety must be considered for prioritization in corrective action completion.*

3.7.1 The responsible manager must take necessary action to complete the CAP and close a CAR within the 90 calendar day period.

3.7.2 The TrackWise coordinator must monitor department open actions and provide status reports to the responsible management, as needed.

3.7.3 The responsible manager must request approval from the QA Manager when approved corrective actions exceed, or will likely exceed, the scheduled date to close.

3.7.4 The QA Manager attaches documentation of all extension request approvals.

NOTE: *TrackWise will provide periodic notifications of pending corrective action completion due date via email.*

3.7.5 The responsible manager should generate and attach or reference in TrackWise, sufficient *objective evidence* (see def.) of CAP completion and CAR closure that can be used to verify corrective action completion.

3.7.6 The QA department must verify completed corrective actions for all CAQs and document that verification using TrackWise.

3.7.7 QA must document any closure verification failures in the TrackWise notification to the responsible management.

3.7.7.1 If a revision to the corrective action plan is necessary, then the CAR is returned to the responsible manager for additional disposition.

3.7.7.1.1 The QA Manager and responsible manager must document concurrence through resubmittal and approval of the revised CAP.

3.7.8 When completion of the corrective action and any associated AIs, and applicable objective evidence has been verified, then the QA Department will document the verification in TrackWise and close the CAR.

3.8 Corrective Action Effectiveness Reviews

NOTE 1: *The objective of a corrective action effectiveness review is to determine whether completed corrective actions have been effectively implemented and sustained to prevent recurrence of significant issues, problems, or events.*

NOTE 2: *Corrective action effectiveness reviews are conducted using a graded approach based on risk.*

NOTE 3: *Effectiveness reviews will be conducted after implementation of corrective actions, allowing sufficient time for the corrective actions to take effect but within approximately six months of corrective action completion.*

NOTE 4: *Effectiveness reviews may be performed through management assessments or QA surveillances, or may be included in the scope of a formal QA independent assessment.*

3.8.1 The QA Manager must perform effectiveness reviews to validate corrective actions are effective for SCAQs associated with the following:

- Operational emergencies directly caused by AMWTP operations
- ORPS Significance Category 1 and R events
- Repetitive or programmatic HSS-OE noncompliances
- Nuclear Safety or Worker Safety and Health noncompliances associated with DOE M 231.1-2 occurrences.

3.8.2 The QA Manager or responsible manager must implement effectiveness reviews for significance Category 2 ORPS reports, as directed by the CARB.

3.8.2.1 For other SCAQs and for non-significant CAQs, a risk-based determination should be made of whether it is necessary to perform an effectiveness review of corrective actions.

3.8.3 The QA Manager or responsible manager must assign personnel who are sufficiently independent of the corrective actions taken to perform the effectiveness review.

3.8.4 The assigned personnel using a risk-based graded approach, should determine the effectiveness of corrective actions through the following:

A. Validation that implemented corrective actions have been sustained

B. Evaluation that the corrective actions have adequately addressed the original causal factors to prevent recurrence of the problems or events.

3.8.4.1 Identify where a revision to corrective actions is necessary to effectively resolve the problem or event.

4.0 DEFINITIONS

Apparent cause. The most probable cause(s) that explains why the (CAQ) event happened, that can reasonably be identified, that local or facility management has the control to fix, and for which effective recommendations for corrective action(s) to remedy the problem can be generated, if necessary.

Compensatory action. An interim action taken to offset an error, defect, or undesired effect pending remedial action.

Condition adverse to quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconforming conditions.

Contributing cause. The cause(s) that contributed to the (CAQ) occurrence but, that by itself would not have caused the (CAQ) occurrence.

Corrective action. Measures taken to correct conditions adverse to quality and, where necessary, to preclude recurrence.

Corrective Action Plan. A documented plan used to identify the corrective actions necessary to correct conditions adverse to quality and prevent their recurrence.

Corrective Action Report. A document or system used to record and control correction of conditions adverse to quality through the process of evaluation and corrective action implementation.

Corrective Action Review Board. A committee comprised of a chairman and AMWTP management. The CARB is chartered to evaluate Significant Conditions Adverse to Quality and any proposed Corrective Action Plans. The evaluation is to ensure the adequacy and effectiveness of proposed corrective actions.

Effectiveness review. A review to determine whether completed corrective actions have been effectively implemented and sustained to prevent recurrence of significant issues, problems, or events.

Extent of condition. The transportability of an identified condition. As part of CAQ analysis and corrective action planning, consideration is given to where else the condition might exist in other systems, processes, items, facilities, etc.

Formal root cause analysis. An investigation using trained cause analysts and subject matter experts, as needed, to determine the underlying root cause and any contributing causal factors of a Significant CAQ. From the analysis, recommended corrective actions will be planned that if implemented will correct the SCAQ and prevent its recurrence.

Nonconforming condition. A deficiency in characteristic, documentation, or procedure that renders the quality of an item, material, or product unacceptable or indeterminate.

Objective evidence. Qualitative or quantitative information, records, data, and statements or fact pertaining to the characteristics of an item or service or to the existence and implementation of a process element. It is based on observation, measurement, or test, and can be verified.

Occurrence report. A written evaluation of an event or condition that is prepared in sufficient detail to enable the reader to assess its significance, consequences, or implications and evaluate actions taken to correct the condition or to avoid recurrence.

Preventive action. Corrective Action(s) implemented that address correction of a root cause(s) attributed to a CAQ, which upon implementation, will prevent recurrence of the condition.

Remedial action. Corrective actions taken to resolve a specific condition.

Reportable occurrence. An event or condition, to be reported according to the criteria defined in DOE Order 231.1A, Environment, Safety, and Health Reporting, and DOE M 231.1-2, Occurrence Reporting and Processing of Operational Information.

Significant Condition Adverse to Quality. A significant condition adverse to quality exists if:

A. The condition, if uncorrected, could have a serious impact on worker, public, environmental, radiological, or nuclear safety.

B. The condition, if uncorrected, could have a serious impact on operational reliability, TRU Waste Certification Program compliance, or mission performance.

C. Adverse conditions having programmatic or generic implications

D. Significant failure in worker safety and health requirements

E. Significant failure in QA program implementation

F. Pattern of a recurring CAQ such that the combined impact is indicative of a management or programmatic process breakdown.

Suspect/counterfeit item. An item is suspect when inspections or testing indicates that it may not conform to established Government or industry-accepted specification or national consensus standards or whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the supplier or manufacturer. A counterfeit item is one that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the supplier or manufacturer. Items that do not conform to established requirements are not normally considered S/CIs if nonconformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items):

A. defects resulting from inadequate design or production quality control

B. damage during shipping, handling, or storage

C. improper installation

D. deterioration during service

E. degradation during removal

F. failure resulting from aging or misapplication

G. other controllable factors.

Stop Work Order. An action that causes work on a designated task or project to cease immediately upon notification (internal and external).

TrackWise. Issues management database, provides the capability to create different documents requiring unique information fields and different notifications for approval or action and creates unique tracking/trending records. Typical document types are as follows:

A. QA Program Nonconformance Reports (NCRs)

B. Corrective Action Reports (CARs)

C. Management Assessment Reports (MARs)

D. Action Items (AIs)

E. Characterization NCRs.

5.0 REFERENCES

(1) 10 CFR 830, Nuclear Safety Management, Subpart A, Quality Assurance Requirements

(2) DOE-CBFO-94-1012, Quality Assurance Program Document

(3) DOE G 231.1-2, Occurrence Reporting Causal Analysis Guide

(4) DOE G 414.1-5, Corrective Action Program Guide

(5) DOE M 231.1-1A, Chg. 1, Environment, Safety and Health Reporting Manual

(6) DOE M 231.1, Occurrence Reporting and Processing of Operations Information

(7) DOE O 226.1A, Implementation of Department of Energy Oversight Policy, Attachment 2, Contractor Requirements Document

(8) DOE O 414.1C, Quality Assurance, Attachment 2, Contractor Requirements Document

(9) DOE O 470.2B, Independent Oversight and Performance Assurance, Attachment 2, Contractor Requirements Document

(10) GDE-Q&SI-01, Causal Analysis Tree

(11) INST-RS&C-6.1.1, Radiological Surveillance

(12) MP-COPS-9.6, Occurrence Reporting

(13) MP-DOCS-18.2, Records Management

(14) MP-Q&SI-5.1, Investigation and Root Cause Analysis

(15) MP-Q&SI-5.2, DOE HSS OE Reporting

(16) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(17) MP-Q&SI-5.10, Corrective Action Review Board Charter

(18) MP-RS&C-6.1, Radiological Assessment Program

(19) PD-ISM-01, Integrated Safety Management System Description Document

(20) PD-Q&SI-01, Contractor Assurance Program Description

(21) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-Q&SI-5.3, Case file	Nonpermanent/QA WIPP / ENV1-J-1 / Submit to RMC for long term storage. Destroy 10 years after submittal or transfer to the WIPP Records Archive Facility at end of project/program.
TrackWise data including verified CAQs, corrective action plans, objective evidence of corrective action closures, and verifications of corrective actions taken	Nonpermanent/QA WIPP / ENV2-a-1-a / Submit to RMC for long term storage. Destroy 5 years after life of facility or transfer to WIPP Records Archive Facility or DOE-ID Records Storage Facility, as appropriate, at end of project/program.

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Using TrackWise to Initiate, Report, Document, and Communicate Conditions Adverse to Quality through Corrective Action Reports

Appendix B – Example Corrective Action Report and Corrective Action Plan

Appendix A – Using TrackWise to Initiate Report, Document, and Communicate Conditions Adverse to Quality through Corrective Action Reports

NOTE: *In these instructions and in TrackWise, personnel who initiate a corrective action report (CAR) are referred to as originators. In these instructions, the individual who initially reviews and validates the CAR is the originator's supervisor or manager. In TrackWise, these individuals are referred to as the originator's supervisor. TrackWise will automatically notify an originator's supervisor or manager that a CAR has been initiated, requiring their review.*

1.0 Log on to TrackWise and Initiate a New Corrective Action Report (CAR).

1.1 Users must have a user ID and password established in TrackWise for access.

1.1.1 Contact QA TrackWise Administrator to obtain access to TrackWise.

1.2 Proceed to AMWTP web page and from the top menu bar select "Applications," then choose TrackWise. Click on "Enter Team Access," enter user ID and password, and then click "Login." The TrackWise Web TeamAccess desktop page appears.

1.3 From the top menu bar listing File, New, View, Find, Queries, Scope and Help, select "Scope," and then choose "View/Change Scope" from the pull-down menu.

1.4 From pop-up screen, check the "AMWTP CAR-1," "Include in Scope," box located on right side of screen. Ensure that other boxes are unchecked.

1.5 Desktop page reappears.

1.6 From the menu bar listing Log Out, Dashboard, New, Query, Reports, and InTray, select "New." (A "Create New Doc" screen page is displayed, ready for corrective action report data entry.)

2.0 Corrective Action Report – Initial Data Entry

2.1 Enter data in the following fields to "Initiate" a Corrective Action Report.

2.2 **Title** – Provide a title descriptive of the condition adverse to quality (CAQ) identified, (e.g., "ORPS ID-BBWI-AMWTF-2005-0018, LO/TO Violation at AMWTF," or "CBFO Audit A-05-012-WIPP Related NCRs for Electronic Notifications," or "MAR #13688-Respirator Issued w/o Proper Documentation"). For the purposes of cross-reference, enter applicable numbers from management or independent assessment, surveillance, ORPS reportable occurrence, etc.

2.3 **Category** – From the drop-down menu, select the appropriate category to which the CAQ can be assigned.

2.4 **Originator** – The name of the individual logged onto TrackWise will appear automatically as the default CAR originator.

2.5 **Date Opened** – The date that the CAR was initiated is assigned by default.

2.6 **Source Type** – Use the pull-down menu to choose a "source type" that best fits the source that identified CAQ (e.g. DOE-WIPP, DOE, DEQ, etc). This indicates the organization that identified the CAQ.

2.7 **Source Type Document** – If applicable, enter document number that identifies the "source" of the CAQ (e.g., surveillance number, management assessment number, etc.).

2.8 **Entity** – No data entry by the User is required. The identity of the organization associated with CAR originator will appear automatically as the default "entity."

2.9 **Requirement Violated –** Cite or quote the requirement that was violated to create the CAQ. Example: "MP-RS&C-6.1, Radiological Assessment Program, Rev 2, Section 4.3.2 and INST-RS&C-6.1.1, Radiological Surveillances."

2.10 **Supporting Documentation –** Use this field to attach any data, reports, records, documents, letters, memos, standards, procedures, etc., that support a better understanding of the CAQ.

2.10.1 Use the "File," "Browse...," and then "Add" buttons, to attach one or more supporting documents. Click the "OK" button when done.

2.10.2 Individual file size for attachment is limited to 10MB.

2.11 **Finding Number** – If the CAQ was identified during an audit or assessment as a "*Finding*," specify the Finding numbers used, if any, to identify one or more "Findings."

2.12 **Description of CAR** – Describe the CAQ that violates the requirement. The CAR originator must describe the deficiency accurately, completely, and factually. If the "**Requirement Violated**" at 2.11 was only a citation of the requirement, e.g., "MP-RS&C-6.1, Rev 2, Section 4.3.2," then describe the CAQ fully to provide reviewers a better understanding.

3.0 Save Data and Obtain A Corrective Action Report Number

3.1 After entering the CAQ data, from the top menu bar listing Save, Save +, Cancel, Check Spelling, select and click on "Save."

NOTE: *The Save + function is disabled and not available to the user.*

3.2 TrackWise saves the CAQ data, assigns a CAR number, and returns the user to the Web TeamAccess desktop page, where the CAR data is now displayed in a table as "Initiate" under the "Status" column.

4.0 Originator's Supervisor or Manager Evaluates, Validates, or Recommends for Cancel, Corrective Action Report and Selects a Responsible Manager

4.1 When a CAR is saved, TrackWise automatically notifies the originator's manager by email that a CAR is ready for review.

4.2 Accessing the TrackWise CAR as above, the originator's manger promptly reviews the CAR to determine if any immediate actions must be taken.

4.3 If necessary, the originator's manager contacts the originator to obtain additional information prior to validating the CAR.

4.4 From the TrackWise data, the originator's manager evaluates and validates, or recommends cancellation of the CAR.

4.5 If the originator's manager does not concur with the CAR, he or she provides a written justification for cancellation in the "Description of CAR" field. At "Activity Type," select "Recommend Cancel," and then update the "Activity Summary" with the justification for cancellation. Select "Save." In TrackWise, the CAR "Document State" advances automatically to "QA Cancel Confirmation."

4.6 If the CAR is valid, the originator's manager identifies the responsible manager who is responsible for the affected program, process, or system, and assumes responsibility for: 1) taking timely action to correct the CAQ; 2) determining the level of response and analysis required to correct the CAQ; and 3) managing the Corrective Action Plan to ensure closure.

4.7 If the originator's manager concurs with the validity of the CAQ, in TrackWise at "Activity Type," select "Originator Supervisor's Approval," and finally "Save." In TrackWise, the "Document State" will advance to "QA Evaluation."

4.8 A CAR status remains at "Initiate" in TrackWise until validated or rejected by the originator's manager, or until seven calendar days have elapsed after initiation, at which time the CAR is advanced automatically to "QA Evaluation."

5.0 QA Manager Evaluation

5.1 Accessing the TrackWise CAR as above, the QA Manager evaluates and validates or cancels each CAR reported in TrackWise. CARs recommended for cancellation by the originator's manager will be reinstated by the QA manager, if determined to be a valid CAQ.

5.2 If a CAR was recommended for cancellation by the originator's manager and the QA Manager concurs with this determination, QA selects "Activity Type," then "Cancel," and updates the "Activity Summary," and selects "Save." TrackWise will prompt for e-signature and the 'Document State advances to "Closed-Cancelled."

5.3 However, if the QA Manager determines that the CAR recommended for cancellation is valid, the QA Manager enters a brief statement of justification. Then select "Activity Type," then "Reinitiate," and update the "Activity Summary," and select "Save." TrackWise will prompt for e-signature and the Document State returns to "Originator Update." The TrackWise process continues at Step 4.0, Originator's Manager Evaluates, Validates, or Recommends for Cancellation, Corrective Action Report.

5.4 QA Manager continues the CAR evaluation process by entering data into the following fields.

5.5 **Is (the CAR) Valid** – Select either "Yes" or "No."

5.6 **Responsible Manager** – The QA Manager confirms the selection of the responsible manager, or identifies another manager as the responsible manager, or identifies a responsible manager if the CAR was automatically advanced to QA Evaluation.

5.6.1 The name of the responsible manager identified by the originator's manager will appear as the responsible manager. To identify another individual; high light and delete current individual then type last name of appropriate individual. TrackWise will provide a list of individuals to select from.

5.7 **Significance Level** – From the pull-down menu, select YES if the identified condition is a Significance CAQ as per the DEFINITIONS in this procedure, or NO for other CAQs.

5.8 **Stop Work** – Does the CAQ warrant a Formal Stop Work Order? Select "Yes" or "No." If "No," proceed to the next item. If "Yes," the QA Manager notifies the Corrective Action Review Board according to MP-Q&SI-5.10, Corrective Action Review Board Charter. The CAR becomes the record of the Stop Work Order issuance.

5.9 **HSS-OE Applicable** – Is the CAQ HSS-OE "Applicable"? The QA Manager screens each CAR for HSS-OE applicability and reportability in accordance with MP-Q&SI-5.2, DOE HSS OE Reporting. Select "Yes," or "No" from the pull-down menu.

5.10 **HSS-OE Reportable** – Is the CAQ HSS-OE "Reportable"? Select either "Yes," or "No" from the pull-down menu.

5.11 **HSS-OE Applicable Standard** – Select the HSS-OE standard(s) associated with the condition.

5.12 **NTS Report Date** – For a HSS-OE "Reportable" occurrence, enter the date on which the occurrence was reported to DOE through the Noncompliance Tracking System.

5.13 **NTS Report No**. – As above, for a HSS-OE "Reportable" occurrence, enter the Noncompliance Tracking System report number.

5.14 **ORPS No.** – If the CAR was generated as a result of an ORPS reportable occurrence, enter its number (e.g., ORPS ID-BBWI-AMWTF-2006-0002).

5.15 **ORPS Category –** Select the category assigned to the ORPS report from the pull-down menu.

5.16 **WIPP Submittal Required** – Is the CAQ WIPP–Waste Analysis Plan-, RCRA-related? Select either "Yes" or "No" from the pull-down menu. Any WIPP-WAP, RCRA-related CARs must be submitted to the CBFO by the SPM for tracking and closure.

5.17 **PO Number** – If the CAQ concerned a purchased item or service, identify the Purchase Order number used to procure the item or service.

5.18 **Responsible Department** – Use the pull-down menu to identify the AMWTP Department responsible for resolving the CAQ.

5.19 **Functional Area** – Use the pull-down menu to identify the AMWTP Functional Area responsible for resolving the CAQ.

5.20 HSS-OE **Screening** –Attach the HSS-OE Noncompliance Screening Form using the File Attachment Field.

5.21 Use the "File," "Browse...," and then "Add" buttons, to attach the HSS-OE Noncompliance Screening Form, located on 'Q' drive. Click the "OK" button when done.

5.22 **Disposition (Corrective Action Plan) Due Date** – The QA Manager enters the date that the Corrective Action Plan is due, using the calendar function.

5.23 To complete the CAR evaluation, select "Activity Type," then "Valid," and then "Save." TrackWise will prompt for an e-signature and the Document State will advance to "Manager Disposition." If necessary, the QA Manager shall escalate the level of management attention given to an identified adverse condition to assure that it is effectively resolved.

5.24 If the QA Manager determines the CAR is not valid, select "Activity Type," then "Cancel," and then update the "Activity Summary," with justification and select "Save." TrackWise will prompt for e-signature. The Document State is advanced to "Closed-Cancelled."

6.0 Corrective Action Plan Input

6.1 When a CAR is validated by the QA Manager, TrackWise automatically notifies the assigned Responsible manager by email that a CAR is ready for Corrective Action Planning.

6.2 Accessing the TrackWise CAR as above, the Responsible Manager evaluates the CAR, conducts an appropriate cause analysis, and submits a proposed Corrective Action Plan by the due date required.

6.3 Open the CAR. In the "Disposition Description or CAP," describe the action to be taken to disposition the CAQ.

6.4 The Responsible Manager completes the following TrackWise fields:

6.4.1 **(Corrective Action Plan Completion) Date Due –** The Responsible Manager enters the date due which is 90 calendar days from the date of QA Manager evaluation, or as approved by the QA Manager. The date is selected using the Calendar function.

6.4.2 **Root Cause Analysis** – If a formal Root Cause Analysis is required or has been conducted. Answer "Yes," or "No."

6.4.3 **Level A, B, C Cause Codes** – From the pull-down menu, select the code that best represents the root cause of the CAQ.

6.4.4 **Contributing Cause Codes A, B, C** – If there were *contributing causes* (see def.) to the CAQ, select them from the choices available.

6.4.5 **Actionee**(s) – Identify one or more individuals responsible for conducting specific tasks to implement the CAP. If more than one Actionee is identified, initiate and assign individual AIs. TrackWise will automatically notify each Actionee so identified.

6.5 The responsible manager selects "Activity Type," then "Submit Disposition," and then "Save." TrackWise will prompt for an e-signature.

7.0 QA Corrective Action Plan Review

7.1 QA reviews proposed CAP for concurrence.

7.2 From "Activity Type" QA user can accept the CAP by selecting "QA Approved disposition", or can return to the responsible manager for additional action by selecting "Add Disposition Required".

8.0 Input Completion Data

8.1 When actions identified in the Disposition Description or CAP are complete, including associated AIs, the responsible manager or actionee provides confirmation in the "Disp./CAP Action Complete" field.

8.3 Objective evidence documenting Corrective Plan completion may be inserted in the TrackWise "Supporting Document Field," or referenced in the "Disp./CAP Action Complete"

8.4 Select "Activity Type," then "Action Complete," and "Save." TrackWise will prompt for e-signature and the Document State advances to "QA Verification."

8.5 To perform "Add'l Action Req'd," the responsible manager or actionee provides an update in the "Disp./CAP Action Complete" field, Select "Activity Type," then "Add'l Action Complete," and then update the "Activity Summary" and then select "Save." TrackWise will prompt for e-signature and the Doc State will advance to "QA Verification."

9.0 Verify CAP Implementation and Close CAR

9.1 QA Department personnel verify completion of corrective actions for all CAQs.

9.2 QA Department personnel may attach "Objective Evidence" file(s) or evidence of CAP completion in the "Supporting Documentation" field or by direct reference in the disposition.

9.3 If QA Department personnel determine that implementation of corrective action is incomplete, select "Activity Type," then "Additional Action Required," and then update "Activity Summary." Then select "Save." TrackWise will prompt for e-signature and the Document State will advance to "Awaiting Results-Add'l Action Req'd" and cycles through CAR verification process starting at Step 8.5.

9.4 When QA Department personnel have verified completion of the corrective action and associated AIs, and completed review of applicable objective evidence, document closure comment in the "Disp./CAP Action Complete" field, select "Activity Type," "QA Verification Complete," update Activity Summary," and select "Save." TrackWise will prompt for e-signature and the Doc State will move to "Closed-Done."

Appendix B –
Example Corrective Action Report and Corrective Action Plan

The following example guides the responsible manager in developing a Corrective Action Plan and closing a Corrective Action Report.

AMWTP	CORRECTIVE ACTION REPORT	CAR #: 17847 PARENT:

Title: Use of unapproved Training Form

Category: Other	**Affected Item:** Training Records
Originator: Dumas, Elvin	**Affected Item Type:** Other
Source Type: CBFO-WIPP	**Date Opened:** 9/1/2005 2:33:00PM
Source: Audit	**ORPS No.:**

Requirement Violated: MP-DOCS-18.4: QAPP-01

Finding #: CBFO CAR 05-042

Description of CAR: Form-1244 Rev. 2A has been used since May to document training requirements. However, Revision 2A has not been approved for use. Document Control cites Revision 1 as the current approved Form-1244. This is a violation of the Document Control management procedure and the AMWTP QA Program. See attached CBFO Corrective action report.

The Corrective Action Plan shall address Remedial Actions. Investigative (Extent of Condition) Actions and Actions to Preclude Recurrence. The proposed Corrective Action Plan must be submitted to CBFO for approval by 9/16/05.

Supervisor Review By: Elvin Dumas	**Supervisor Review Date:** 9/1/2005 2:34:00PM
QA Closed-Cancelled By:	**QA Closed-Cancelled Date:**

Note: QA Closed-Cancelled Signature is based on concurrence between Responsible Manager and Quality Assurance

Is Valid: Yes	**Responsible Manager:** Uptergrove, Joe
Significance: Level 3	**Stop Work Order:** No
PAAA Applicable: Yes	**PAAA App Standard:** 10CFR830
PAAA Reportable: No	**WIPP Submittal Req'd?:** No
NTS Report Date:	**PO Number:**
NTS Report Number:	**Quality(Type Material):** WIPP Program
ESH & QA Element: 6 Document Control	**Operations Group:** Training
Building:	**Responsible Department:** Operations Support
Room:	**Disposition Due Date:** 9/8/2005 2:41:00PM
QA Mgr Rev Sign By: Elvin Dumas	**QA Mgr Rev Sign Date:** 9/1/2005 2:42:00PM

AMWTP Advanced Mixed Waste Treatment Project

CORRECTIVE ACTION REPORT

CAR #: 17847
PARENT:

	Date Due: 09/30/2005
Priority: 2	**Assigned Actionee:** Posegate, Charles
Root Cause Analysis: No	**Root Cause Code:** 3C = Violation of requirement or procedure
	ContributingCause Codes: 6F = Other management problem

Disposition Description/CAP:

Corrective action response for CAR # 17847:

A. Remedial Action - Describe actions required or taken to correct the specific conditions noted and any similar conditions identified during the investigations.

1. Submit the revised form for review an approval. Issue for use.
2. Evaluate the difference in the documentation required by the unapproved form compared to the current approved revision for required elements and determine if any gaps exist.
3. If no gaps exist, document the gap analysis in a letter to file. Attach a copy of this letter to task analyses perfomred since May 1 (from B.1 below). Corrective action will then be complete.
4. If gaps are identified, re-perform the applicable portions of the task analysis and document on the approved Form-1244.
5. If task analyses are re-performed, evaluate the deference in the analyses on the training required for the appropriate qualification and make revisions as necessary to the qualification packages.

B. The following Investigative actions will be taken to determine the extent and impact of the conditions and the results. This will include a determination of the acceptability of any data generated prior to resolution of the deficiency.

1. Identify all task analysis performed since May using the unapproved Form-1244.
2. Determine if there are other unapproved modifications to approved forms in use to document training records.

C. Corrective Action to Preclude Recurrence -

1. - Corrective action with regard to Conduct of Operations issues in using a draft copy of an approved form will be addressed in the form of a briefing conducted by the Training Manager with the Training Organization with emphasis on ensuring only the current approved copy of a document on the Orion home page be used in performance of their duties.

QA Action: Dispostion plan is approved. Actionee changed from Carl Farmer to Charles Posegate. Letter to CBFO is attached in supporting documentation on the proposed Corrective Action Plan. R. Laing 9/21/05
Revised the CAP to make it consistent with the CAP described on CAR No. 05-042 that was sent to CBFO for approval. See the attached 'Response to CBFO CAR on Training Form.pdf.' Coy Bible 9/23/05

Mgr Disp App By: Roger Claycomb	**Mgr Disp App Date:** 9/1/2005 3:28:00PM
QA Add'l Disp. Req'd By:	**QA Add'l Disp. Req'd Date:**
Mgr Add'l. Disp App By:	**Mgr Add'l. Disp App Date:**
QA Mgr Rev Disp Sign By: Rick Laing	**QA Mgr Rev Disp Sign Date:** 9/21/2005 6:29:00AM

Identification of Nonconforming Conditions

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10708.*) 09/17/12

Angie Morse
Quality Assurance Engineer

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/23/02	All	DCR-1008-Initial issue, this management procedure supersedes PQP 3.2 revision 0.
1	07/07/03	All	DCR-2281-Correct errors & update for accuracy and consistency with other Q&SI procedures.
2	09/15/03	Page 10, Section 5.3.1,3rd bullet	DCR-2664-Incorporate additional guidance per CBFO Audit A-03-05; CAR 03-075
3	10/27/03	All	DCR-2502-Insert page numbering to document and non-editorial format correction to section 5.1.
4	02/19/04	All	DCR-2367-Added clarification to the definition Level I Significance. Other clarification for closure activities.
5	04/20/04	New Sections 4.8, 4.9, 5.1, and various.	DCR-2875-Added one requirement from Appendix D of the HWMA/RCRA Implementing Matrix. Updated in response to CAR-4465 Corrective Actions. Added Appendix A instructions for TrackWise® queries.
6	07/14/04	All	DCR-3045-Revise to incorporate TrackWise® 6.0 upgraded. Incorporated changes to reflect the new Characterization NCR process.
7	08/10/04	Various	DCR-3229-Revised to incorporate CBFO review comments and made minor editorial/format changes.
8	04/08/05	Various	DCR-4038-Revised to incorporate TrackWise® process improvements. Editorial/format changes to comply with MP-DOCS-18.3. Incorporated CBFO comments on Rev 8A. Revised to implement corrective actions from CAR-7015, ORR Post-Start and process improvement from Management Assessment Report-12627. Added new Step 4.10. Added new Section 5.1, Roles and Responsibilities. Revised Section 5.5.1 to specify disposition response time and clarify disposition information.

Revision Number	Date Approved	Pages Affected	Description of Revision
9	08/24/05	Pg. 14, section 5.4.2	DCR-4512-Add Substep 5.4.2.1 for process improvement.
10	09/27/05	4.4.2	DCR-4575-Correct step numbering error. Minor change.
11	5/08/06	4	DCR-4841-Add two steps to close out CAR 20489, Action Item 20720.
12	06/20/2006	Cover Page	DCR-5048. Minor change to correct document title.
13	09/08/06	Pg. 1, Section 1.0 Pgs. 11, Section 3.5.1 Pg. 14, Section 3.8.1.2 Pgs 6 & 9, Sections 3.2.1.4 and 3.4.1 Various	DCR 5188, update Purpose & Scope for List B directives and address implementation issues identified during ISMS implementation verification. Implement corrective action for CAR 21973. Miscellaneous editorial corrections.
14	04/19/07	Various	DCR-5658. Updated roles and responsibilities to implement changes resulting from WIPP 311 Permit Modification. Revised document includes minor clarifications, and definition updates and editorial/formatting changes consistent with MP-DOCS-18.3, 18.4.
15	01/22/08	Various	DCR-6690. Clarifications added as required by CAR 34753; additional clarifications added for NCR tagging.

Revision Number	Date Approved	Pages Affected	Description of Revision
16	04/10/08	Various	DCR-6820. Added new step for notifying CBFO about results that are inconsistent with AK documentation. Corrected external requirements and deleted references of MP-TRUW-8.3 in support to transportation transition to CCP.
17	12/16/08	Various	DCR-7336. Revised steps as part of the implementation of new USQ process. Editorial changes per MP-DOCS-18.3, Developing Management Procedures.
18	05/27/10	Various	DCR-9191. Added new Section 3.12 to address process for Waste Programs evaluation and verification of container disposition as required in CAR 48277. Divided Section 3.10 into two sections (3.10 and 3.11) and added material to those sections. Updated characterization NCR process flow and incorporated flow chart as Exhibit 1 of procedure.
19	06/18/10	Page 13	DCR-9329. Revised Step 3.4.2 to address WIPP permit modification.
20	03/24/11	Various	DCR-9873. Periodic review and update. Reference Action Items 56147 and 58550.
21	09/17/12	All	DCR-10708. Incorporated ITG-BLUESHEET-244, and applied DOCS-BLUESHEET-08.

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AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.4, Rev. 21	Issued: 09/17/12	Effective: 09/18/12

Identification of Nonconforming Conditions

1.0 PURPOSE/SCOPE

This procedure specifies implementing requirements for the identification, reporting, control, and disposition of materials, parts, components, *items* (see def.), services, processes and data which do not meet established requirements as specified in 10 CFR 830, Subpart A, Nuclear Safety Management, Quality Assurance Requirements; ANSI/ASME NQA-1-2008 Edition, Quality Assurance Requirements for Nuclear Facility Applications; DOE O 414.1C, Quality Assurance; DOE O 226.1A, Implementation of Department of Energy Oversight Policy, Attachment 2, Contractor Requirements Document; DOE/CBFO-94-1012, Quality Assurance Program Document; and QAPP-01, Quality Assurance Program Plan.

This procedure also implements requirements for controlling characterized waste containers that require additional *remediation* (see def.) to meet Waste Isolation Pilot Plant (WIPP) criteria for disposal; have been found to contain WIPP prohibited items; or for which the WIPP Waste Analysis Plan (WAP) Data Quality Objectives (DQOs) or Quality Assurance Objectives could not be achieved.

This procedure is applicable to all AMWTP personnel, subcontractors, and *suppliers* (see def.).

(10 CFR 830, Subpart A; DOE/CBFO-94-1012; MP-TRUW-8.1, MP-TRUW-8.2)

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Quality Assurance (QA) Manager or Designee	• Manages and administers *TrackWise* (see def.). • Performs independent verification of objective evidence for completed *corrective actions* (see def.). • Ensures external reporting requirements are completed. • Analyzes nonconformance report (NCR) data for adverse trend indicators. • Oversees the overall NCR process.
Responsible Managers or Designees	• Provide timely evaluation and disposition of nonconforming conditions. • Complete assigned corrective actions and generate the associated objective evidence.

Performer	Responsibilities
Site Project Manager (SPM)	• Oversees the Characterization, WIPP WAP, and WIPP-WAC related NCR process. • Identifies and tracks waste program related NCRs related to TRU Program Characterization activities and notifies the permittee, when applicable. • Notifies project personnel of the NCR. • Verifies completion of the corrective action for characterization NCRs. • Reviews and approves WIPP-related NCRs before submittal to the Carlsbad Field Office (CBFO).
QA Personnel	• Ensure that NCR Hold Tags (red) are attached to an item where installation or operation of that item could impact the safe operation of the facility and to prevent inadvertent use of the nonconforming item.
Supply Chain Inspectors	• Attach NCR Hold Tags (red) to any item rejected during the Supply Chain receiving inspection.

3.0 PROCEDURE

3.1 General Requirements

3.1.1 Material, components, equipment, data, and waste containers that do not conform to requirements shall be controlled to prevent their inadvertent use. Control is achieved through the identification, segregation, discrepancy reporting, and disposition of the *nonconforming condition* (see def.) by authorized individuals and confirmed through verification activities. When necessary, items may be conditionally released for use at risk, with appropriate justification, limitations, and appropriate approvals, for further processing or installation. In such cases, *conditional use* (see def.) shall include measures that clearly identify the items as nonconforming. Required corrective actions shall be completed prior to final acceptance of the item or subsequent unconditional operation.

3.1.2 NCRs shall be used to identify and describe discrepant items and provide documented, approved disposition and re-inspection requirements. Any individual(s) identifying a nonconforming condition shall initiate an NCR in TrackWise or notify their manager to ensure appropriate reporting is completed. The identification of authorized cognizant personnel is shown on the NCR electronically to register their actions or approvals of the disposition.

3.1.2.1 *QA Program NCRs* (see def.) (listed as AMWTP-1 NCR in TrackWise) are used to report nonconforming conditions that require technical and quality evaluation for disposition. QA Program NCRs will be assigned to the appropriate manager for disposition.

3.1.2.2 *Characterization NCRs* (see def.) (listed as AMWTP-3 NCR in TrackWise) have pre-approved dispositions for remediation of waste conditions. Characterization NCRs do not require additional management approvals.

3.1.3 "*Use-As-Is*" (see def.), "*Repair*" (see def.), or "Conditional Use" dispositions associated with facility configuration must be approved by the responsible manager and the QA manager and must include a technical justification. Any affected design documents must be identified for revision.

3.1.3.1 All "Use-As-Is," "Repair," or "Conditional Use" dispositions which propose a change to existing facility, system, equipment configuration, or operations processes must be evaluated through the *Unreviewed Safety Question* (USQ; see def.) process.

3.1.4 Requirements for Supplier Nonconformance reporting are identified in procurement documents, in accordance with MP-PCMT-15.1, Acquisition of Material and Services.

3.1.5 NCRs that identify defects or deficiencies affecting an item or service supplied, fit, or function to fulfill its intended safety function, or which could create a substantial safety hazard are evaluated for reportability and impact on safe operation of the AMWTP facilities.

3.1.6 QA personnel shall ensure for "repair" or "*rework*" (see def.) dispositions, that supplemental *inspections* (see def.) or verifications are performed to assure compliance with the NCR disposition.

3.1.7 TrackWise is the AMWTP Issues Management System that provides the ability to document the reporting, evaluation, approval, and verification of resolution of nonconforming conditions, and c*onditions adverse to quality* (CAQs; see def.).

3.1.8 The reliability and quality of data used for waste characterization is assured by compliance with the MP-TRUW-8.2, Quality Assurance Project Plan (QAPjP). Any items affecting the quality of data, as discussed in Section C3-13 of the QAPjP, if not readily resolved, are addressed as nonconforming conditions and documented on an NCR, or if a programmatic or recurring nature, on a Corrective Action Report (CAR) in accordance with MP-Q&SI-5.3, Corrective Action.

(AMWTP HWMA/RCRA Permit)

3.1.9 NCRs shall be initiated for any identified *Suspect/Counterfeit Item* (S/CI; see def.) to ensure proper evaluation and disposition.

3.1.9.1 MP-Q&SI-5.3 provides direction for additional reporting requirements for any identified S/CIs.

3.1.10 Nonconforming conditions identified during characterization, validation, reconciliation, and certification under the AMWTP TRU Program that do not meet the requirements of the WIPP WAP or WIPP Waste Acceptance Criteria (WAC) shall be documented in TrackWise in accordance with this procedure and/or MP-Q&SI-5.3.

3.1.10.1 NCRs will remain open pending final disposition of nonconforming data or removal/remediation of prohibited items.

3.1.10.2 NCRs shall be generated on a container basis. If the nonconforming condition affects the entire Batch Data Report, the condition shall be reported as a QA Program NCR using the AMWTP-1 NCR.

3.1.10.3 Waste conditions that do not meet WIPP criteria for disposal and have pre-approved dispositions for remediation are reported on Characterization NCRs as described in Section 3.9 of this procedure.

3.1.10.4 The initiator of the NCR is responsible to accurately identify the affected container number, Batch Data Report number, and problem description in the NCR.

3.1.10.5 All WIPP-data-related NCRs will be distributed to the Site Project Office for inclusion into the container files.

3.1.10.6 All NCRs shall be referenced or included in the affected Batch Data Reports.

(MP-TRUW-8.2)

3.1.11 Documentation for a WIPP TRU Program nonconformance is reported and tracked in TrackWise and made available to the SPM.

3.1.11.1 The SPM is responsible for identifying and tracking all WIPP related NCRs and notifying CBFO when required.

3.1.11.2 The SPM is also responsible for notifying project personnel, as appropriate, of nonconforming conditions and verifying completion of corrective actions for NCRs.

(MP-TRUW-8.2)

3.1.12 Open NCRs issued for mixed waste, including TRU, must be resolved and closed prior to AMWTP either shipping the waste to a disposal facility or transferring the waste to another organization.

3.1.13 NCRs for other than TRU waste to be transferred by AMWTP to another organization must be reviewed with the receiving organization to assure the waste characterization is within the scope of their waste management plan or QAPjP prior to closure of the NCR. In any case the NCR must be closed prior to waste transfer.

NOTE 1: *Supporting documentation in the form of an electronic file up to 10 megabytes in size may be attached to an NCR. Supporting documentation may be attached at any stage of processing the NCR. Appendix B, Attaching Supporting Documentation, of this procedure provides guidelines on how to attach supporting documentation.*

NOTE 2: *Upon initiation of an NCR in TrackWise, all changes/activity summaries/entries for the subject NCR are recorded in TrackWise and can be viewed by using the "History" function on the DeskTop.*

NOTE 3: *Appendix A, TrackWise Queries, provides guidance on the use of TrackWise for NCR reporting and processing.*

3.2 Initiation of QA Program Nonconformance Reports Using TrackWise

NOTE 1: *All nonconforming conditions for which AMWTP is responsible to control, disposition and resolve are to be documented using the appropriate NCR process in TrackWise.*

NOTE 2: *Any individual may initiate NCRs, including AMWTP employees, subcontractors, or supplier/vendor, upon identification of nonconforming items, material, or component. All NCRs initiated by AMWTP employees and subcontractors are initiated using the TrackWise database.*

NOTE 3: *Suppliers' requirements for generation of NCRs are addressed in MP-PCMT-15.1, and invoked through specific contract documents and submittal clauses.*

(AMWTP HWMA/RCRA Permit; 10 CFR 830, Subpart A)

3.2.1 To initiate a QA Program NCR in TrackWise, log into TrackWise and ensure scope is set for "AMWTP-1 NCR."

NOTE: *Completing Step 3.2.1.1 will place the user in the NCR report form.*

3.2.1.1 From the TrackWise Desktop Screen, select "new" to create a new document, and select "AMWTP-1 NCR" and "Continue."

3.2.1.2 Enter the appropriate information in the "Initial NCR Fields" section of the form.

3.2.1.2.1 For NCRs affecting WIPP data, enter all relevant information to ensure data quality issues are identified and tracked.

NOTE: *The required fields are string fields (initiator enters specific information) and selection fields (initiator selects the appropriate information). These fields are listed from left to right as they appear on the screen.*

3.2.1.3 Complete the following required fields:

- Affected Item
- Affected Item Type
- Category (hardware, software, WIPP Data, other)
- Title
- Source Type
- Requirement Violated
- Description of Condition (the initiator must provide a complete description of the condition being reported).

3.2.1.4 If a container is affected, then enter the container identification number into the Container ID field to ensure proper tracking and management of the affected container.

3.2.1.5 Ensure the following additional fields are completed for NCRs associated with WIPP Batch Data, Containers, Shipments, Payloads or specific equipment identifiers:

- Characterization Batch #
- Container ID (For Batch Data Quality conditions, **all** affected container numbers shall be entered by the originator using only numerical characters. This field will accommodate up to twenty container identifiers. Multiple container numbers shall be entered in the following format with a comma and space separating each entry: 12345678, 12345678.)
- Equipment ID

- Shipment ID
- Payload ID.

NOTE 1: *The "Save+" functionality has been disabled for AMWTP and is not in use.*

NOTE 2: *After Step 3.2.1.6 is completed, TrackWise will automatically assign the NCR number and return the user to the Desktop Screen, and notify the user's manager for review and concurrence.*

3.2.1.6 Upon completion of data entry, select "Save."

NOTE: *Measures to segregate, control, and prevent inadvertent installations or use of nonconforming items pending evaluation and approval of the disposition are specified in Section 3.14 of this procedure*.

3.2.1.7 After completing the "Save" in Step 3.2.1.6, open the NCR respond to the "tags applied?" question, enter the number of NCR tags applied, Save and Exit.

3.2.1.7.1 Document the NCR number and information on the NCR tag(s).

3.2.1.7.2 If the nonconforming condition affects characterization or certification data impacting the acceptability of waste containers for shipment or disposal, tagging or physical segregation is required in addition to administrative controls.

3.2.1.7.2.1 Ensure the waste container identification is accurately reported and documented on the NCR and the NCR tag.

3.2.1.7.3 Place the NCR tag on the affected waste container.

3.2.1.7.4 If the container is not readily accessible for placement of the NCR tag, notify the SS for coordination with Production Planning.

3.3 Approvals – QA Program NCRs

NOTE: *QA Program NCR status will remain "Initiate" until reviewed by the originator's manager, or until 7 calendar days have elapsed, at which time the NCR is advanced automatically to QA evaluation.*

3.3.1 Responsible Manager: Perform a review to evaluate the nonconforming condition, and determine any immediate actions.

3.3.1.1 Notify the originator (i.e., e-mail, telephone, or TrackWise notification) if additional information (i.e., additional description, correct format of container ID, additional actions, etc.) is required prior to performing "Original Supervisor's Approval."

3.3.1.2 If the condition is valid, then perform the following:

3.3.1.2.1 Select "Activity Type."

NOTE: *After Step 3.3.1.2.2 is completed, TrackWise will prompt the manager for e-signature, and* Doc State *(see def.) will advance to "QA Evaluation."*

3.3.1.2.2 Select "Original Supervisors Approval."

3.3.1.3 If the condition reported on the NCR is not a valid nonconforming condition, then perform the following:

3.3.1.3.1 Provide a written justification for cancellation in the "Condition Description" field,

3.3.1.3.2 Select: "Activity Type," "Recommend Cancel."

3.3.1.3.3 Update the "Activity Summary."

NOTE: *After Step 3.3.1.3.4 is completed, TrackWise Doc State will advance to "QA Cancel Confirmation."*

3.3.1.3.4 Select "Save."

3.3.1.4 QA Manager: Review the NCR for concurrence to cancel.

3.3.1.4.1 If the NCR is to be cancelled, then select "Activity Type," then "Cancel."

NOTE: *After Step 3.3.1.4.2 is completed, TrackWise will prompt for e signature, and the Doc State will advance to "Closed-Cancelled."*

3.3.1.4.2 Update the "Activity Summary" and select "Save."

3.3.1.4.3 QA Manager: If the NCR is valid, then perform the following:

3.3.1.4.3.1 Communicate the basis for reinstatement of the NCR with the responsible manager.

3.3.1.4.3.2 Enter a brief statement of justification.

3.3.1.4.3.3 Select "Activity Type," "Reinitiate."

NOTE: *After Step 3.3.1.4.3.4 is completed, TrackWise will prompt for e-signature, and the Doc State will change back to "Initiate" and continue the process starting with Step 3.3.1.*

3.3.1.4.3.4 Update the "Activity Summary" and select "Save."

3.4 Quality Assurance Manager Evaluation

3.4.1 QA Manager: Evaluate the NCR record and provide response to the following required fields:

- Is it valid
- Responsible Manager
- *Stop Work Order* (see def.)
- Health, Safety, and Security Office of Enforcement (HSS-OE) applicable
- HSS-OE applicable standard
- HSS-OE reportable (see MP-Q&SI-5.2, DOE HSS-OE Reporting)
- Determine if a CAR is warranted. (Nonconformance caused by systemic deficiencies or programmatic failures shall also be reported in accordance with MP-Q&SI-5.3.)
- Corrective actions for minor procedure violations that are not programmatic in nature can be addressed in the corrective action of the nonconformance
- Perform an HSS-OE Applicability screen
- Review the Source Type and; if applicable, the Source Type Document Number
- Quality (Type Material)
- Responsible Department
- WIPP Submittal Req'd
- Disposition Due Date.

3.4.1.1 QA Manager: Complete the evaluation of the record.

NOTE: *After Step 3.4.1.2 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Manager Disposition."*

3.4.1.2 Select "Activity Type," "Valid," and "Save."

3.4.1.3 QA Manager: If the record is not valid, then perform the following:

3.4.1.3.1 Select: "Activity Type," "Cancel."

3.4.1.3.2 Update the "Activity Summary."

NOTE: *After Step 3.4.1.3.3 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Closed-Cancelled."*

3.4.1.3.3 Select "Save."

3.4.1.3.4 If an NCR involves Nevada National Security Site (NNSS) data, then notify the NNSS Waste Certification Official (WCO) at AMWTP via TrackWise for NCR evaluation and determination of impacts to NNSS Certification Program.

3.4.2 SPM: For WIPP related NCRs, notify the Carlsbad Field Office (CBFO) in writing within 7 calendar days of identification of any non-administrative nonconformance (i.e., failure to meet a DQO) that has been first identified at the SPM level.

NOTE: *Notification to CBFO is required, if the sampling and analysis results are inconsistent with AK documentation.*

3.4.2.1 Submit the nonconformance report to CBFO within 30 calendar days of identification of the condition.

3.4.2.2 Implement a corrective action process and resolve the NCR prior to any affected data being used to certify waste for shipment.

(MP-TRUW-8.1; MP-TRUW-8.2)

3.4.2.3 Monitor TrackWise for initiated NCRs for CBFO notification. This monitoring can be completed using the TrackWise query function.

3.4.3 Submit electronic notifications to CBFO as follows:

3.4.3.1 Transmit e-mail with the subject line annotated **[NCR]** to ensure automatic transfer into the proper folder of the receiving system.

3.4.3.2 Submit notifications to the following e-mail address, wipp.notify@wipp.ws.

3.4.4 If electronic submittal is unavailable, then utilize hard copy transmittals by sending correspondence via FedEx to the following addresses:

U.S. Department of Energy Carlsbad Field Office
4021 National Parks Hwy
Carlsbad, New Mexico 88220
Attn: Quality Assurance Manager

Washington TRU Solutions
P.O. Box 2078
Carlsbad, New Mexico 88221-2078
Attn: Parrish Roush M/S 486-06

3.5 Disposition by Responsible Manager

NOTE 1: *Dispositions associated with "Use-As-Is," "Repair," and "Conditional Use" which propose a change to existing facility, system, equipment configurations, or operating processes will have a USQ review performed in accordance with MP-NSPC-3.2, Unreviewed Safety Question Process, as delineated in Step 3.5.1.3.*

NOTE 2: *Action Items (AIs) may be used to manage NCR dispositions with multiple actions and actionees.*

NOTE 3: *Action Items are not used to document the evaluation of nonconforming conditions.*

NOTE 4: *When Actionee has been assigned, TrackWise will automatically send notification to the Actionee.*

3.5.1 Responsible Manager: Review the NCR record, research appropriately and submit a proposed disposition in a timely manner.

3.5.1.1 Select Recommended Disposition categories from the TrackWise pull down menu.

3.5.1.2 Document the disposition and technical justification in the "Disposition Description/CAP" field of the NCR as described in Step 3.5.1.3.

- Repair – Restores safe functionality but does not conform to original design
- Rework – Restores item to original design
- Use-As-Is
- Reject/scrap
- Return to supplier
- Conditional use – Yes or No (Select from drop-down menu)
- If "Yes" is selected for Conditional Use, provide expiration date in "Conditional Use Expiration Date" field
- USQ review required – Yes or No (Required for "Use-As-Is," "Repair," or "Conditional Use" dispositions)
- If "Yes" is selected for USQ review required, provide USQ review number(s) in "USQ review Number(s)" field.

3.5.1.3 Responsible Manager: Provide technical justification for the proposed dispositions of:

- Use-As-Is
- Repair
- Conditional Use – the conditions and limitations shall be identified in addition to the justification for approval of conditional use.

3.5.1.3.1 Evaluate "Use-As-Is," "Repair," or "Conditional Use" dispositions which propose a change to established design criteria for existing facility, system, equipment configuration, or operation processes in accordance with MP-NSPC-3.2.

3.5.1.3.2 Forward requests to a qualified USQ evaluator for evaluation of impact on the safety basis.

3.5.1.4 Responsible Manager: Provide the information in the following required fields:

- Cause Code
- Actionee(s)
- If more than one Actionee is responsible, individual AIs may be initiated
- All AIs must be completed and closed before the NCR can be submitted for closure
- Due Date.

3.5.1.5 Identify any affected design documents requiring as-built drawings; and create/develop AIs in TrackWise, as appropriate.

3.5.1.6 Complete the "Disposition Description/CAP" field of the NCR for all actions necessary to resolve the nonconformance.

NOTE: *After Step 3.5.1.7 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Disposition Concurrence."*

3.5.1.7 Select "Activity Type," "Submit Disposition," and "Save."

3.6 QA Disposition Concurrence

3.6.1 QA Manager: Review and approve the NCR dispositions and justification.

3.6.1.1 If additional disposition or justification is required, select the following:

3.6.1.1.1 Select "Activity Type."

3.6.1.1.2 Select "Addt'l Disposition Required."

NOTE: *After Step 3.6.1.1.3 is completed, TrackWise will prompt for e-signature and the Doc State will advance to "Manager Add'l Disposition.*"

3.6.1.1.3 Update the "Activity Summary" and select "Save."

3.6.1.1.4 Responsible Manager: Perform the following:

3.6.1.1.4.1 Provide the additional requested disposition information in the "Disposition Description/CAP" field.

3.6.1.1.4.2 Select: "Activity Type," "Submit Add'l Disposition."

NOTE: *After Step 3.6.1.1.4.3 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Disposition Concurrence."*

3.6.1.1.4.3 Update the "Activity Summary," and select "Save."

3.6.1.2 QA Manager: If the Disposition/CAP is acceptable, then:

3.6.1.2.1 Select "Activity Type."

NOTE: *After Step 3.6.1.2.2 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Awaiting Results." TrackWise will also automatically notify the Actionee and Responsible Manager for action completion of disposition details.*

3.6.1.2.2 Select "QA Approve Disposition," and "Save."

3.6.1.3 Responsible Manager and QA Manager: Approve all items/processes proposed for Conditional Use.

3.6.1.4 QA Manager: Ensure that conditional use items/processes are tagged to indicate the expiration and limitations of the conditional use.

3.6.1.5 Resubmit, review, and approve any changes to the approved disposition actions as described in Step 3.6.1.1.

3.7 Disposition/Corrective Action Plan (CAP) Action Complete

3.7.1 Responsible Manager/Actionee: When all actions identified in the Disposition Description/CAP are complete, including any associated AIs, then provide confirmation in the "Disp./CAP Action Complete" field.

NOTE: *After Step 3.7.1.1 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Verification."*

3.7.1.1 Select: "Activity Type," "Action Complete," and "Save."

3.7.1.2 Perform "Add'l Action Req'd," by performing the following:

3.7.1.2.1 Provide an update in the "Disp./CAP Action Complete" field.

3.7.1.2.2 Select: "Activity Type," "Add'l Action Complete."

NOTE: *After Step 3.7.1.2.3 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Verification."*

3.7.1.2.3 Update "Activity Summary," and select "Save."

3.7.1.3 Any changes to the approved disposition actions must be resubmitted, reviewed, and approved as described in Step 3.6.1.1.

3.7.2 Site Project Manager:

NOTE: *After Step 3.7.2.1 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Verification.*"

3.7.2.1 When all actions are complete for TRU Characterization Activity NCRs, then verify completion of actions identified in the Disposition Description/CAP field, and provide confirmation.

3.7.2.2 Perform the following for "Add'l Action Req'd":

3.7.2.2.1 Provide an update in the "Disp./CAP Action Complete" field.

3.7.2.2.2 Select: "Activity Type," "Add'l Action Complete."

NOTE: *After Step 3.7.2.2.3 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Verification."*

3.7.2.2.3 Update "Activity Summary," and select "Save."

3.8 Quality Assurance Verification Complete

3.8.1 Responsible Manager: Notify the QA Manager that the NCR record and all associated AIs are complete.

3.8.2 QA Manager: Verify completion of required disposition to ensure acceptable completion of the disposition and documentation of actions taken.

3.8.2.1 If QA determines that additional corrective action is required, then perform the following:

3.8.2.1.1 Select: "Activity Type," "Add Action Required."

NOTE: *After Step 3.8.2.1.2 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Awaiting Results-Add'l Action Req'd" and continue through the process as identified in Section 3.7.*

3.8.2.1.2 Update "Activity Summary," and select "Save."

3.8.3 When QA verifies the disposition and AIs, as applicable, and all associated documents are complete, then enter a closure comment in the "Disp./CAP Action Complete" text field.

3.8.3.1 Objective evidence file(s) may be attached electronically in the "supporting documentation" field (see Appendix B) or by direct reference in the disposition closure statement.

NOTE: *After Step 3.8.3.2 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Closed-Done."*

3.8.3.2 Select "Activity Type," "QA Verification Complete," update "Activity Summary," and select "Save."

3.9 Initiation of Characterization NCRs Using TrackWise

3.9.1 User: Initiate a Characterization NCR in TrackWise.

3.9.1.1 Log into TrackWise and from the Desktop menu, select "Scope."

NOTE: *Selecting "View/Change Scope," will allow the user to select the appropriate database for NCR generation.*

3.9.1.2 Select "View/Change Scope."

3.9.2 Ensure that the scope is set for AMWTP-3 NCR and select the appropriate affected characterization process.

NOTE 1: *The "Save+" functionality has been disabled for AMWTP and is not in use.*

NOTE 2: *After "Save and Exit" are selected, TrackWise will return the user to the TrackWise desktop.*

3.9.3 Ensure that no other selections are checked, then "Save and Exit."

NOTE: *Selecting "New" on Desktop will place the user into the Characterization NCR report form.*

3.9.4 Select "New" from the Desktop to initiate the NCR.

3.9.5 Enter the appropriate information in the "Initial NCR Fields" section of the form.

3.9.5.1 For NCRs affecting WIPP data, enter all relevant information to ensure the waste container and characterization issues are accurately identified and tracked.

3.9.5.1.1 Ensure the following required fields are completed:

- Batch ID
- Container ID – only numeric characters can be entered

- Characterization Problem – select from pre-established conditions list from pull down menu).

NOTE: *Waste containers with nonconforming conditions affecting characterization or certification data impacting acceptability for shipment or disposal require physical segregation or tagging in addition to administrative controls.*

3.9.6 Select "Save" from the NCR report menu, which will take the user back to the Desktop and assign a unique number to the NCR.

3.9.7 Document the NCR number and information on the NCR tag.

3.9.7.1 Ensure the waste container identification is accurately reported and documented on the NCR and the NCR tag.

3.9.7.2 Place the NCR tag on the affected waste container.

3.9.7.3 If the container is not readily accessible for placement of the NCR tag, notify the SS for coordination with Production Planning.

NOTE: *Entering the NCR report is necessary to electronically sign the NCR.*

3.9.8 From the Desktop, enter the NCR report by clicking on the NCR number.

3.9.8.1 Ensure the required field "Tag Applied" is completed.

NOTE: *After Step 3.9.8.2 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Awaiting Results."*

3.9.8.2 Select "Activity Type," select "Originator's Signature," and select "Save."

3.10 Characterization NCR Remediation

NOTE: *Applicable information may be added to a Type-3 Characterization NCR by any AMWTP personnel (characterization, validation, 200% review, SME, AK, reconciliation, etc.) involved in the processing or review of data associated with the container identified in the nonconformance.*

3.10.1 Select the appropriate Characterization NCR from TrackWise.

3.10.2 From the desktop, enter the NCR report by clicking on the NCR number.

3.10.3 Ensure correct selection from "Approved Remediation" drop down menu is identified.

3.10.4 Enter activity comments for Production Status in the "Comments" field of the NCR.

3.10.4.1 Select "Save."

3.11 Characterization NCR Remediation Complete

NOTE: *Applicable information may be added to a Type-3 Characterization NCR by any AMWTP personnel (characterization, validation, 200% review, SME, AK, reconciliation, etc.) involved in the processing or review of data associated with the container identified in the nonconformance.*

3.11.1 Select the appropriate Characterization NCR from TrackWise.

3.11.1.1 From the desktop, enter the NCR report by clicking on the NCR number.

3.11.1.2 Verify identified Approved Remediation is correct.

3.11.1.3 Select "Activity Type" and "Work Complete."

NOTE: *After Step 3.11.1.4 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "SPM Verification."*

3.11.1.4 Select "Save."

3.12 Waste Programs SPM Evaluation and Verification of Completed Approved Remediation

3.12.1 SPM: Access the NCR information in TrackWise and verify the appropriate container information in the NCR.

3.12.2 SPM: Ensure the selected remediation is appropriate.

3.12.2.1 If the identified remediation is incorrect, select correct remediation from the "Approved Remediation" drop down selection in TrackWise.

NOTE: *When Step 3.12.2.2 is complete, final evaluation and verification will be performed in conjunction withMP-LLW-19.7, Low Level Waste/Mixed Low Level Waste Verification, with closure performed in accordance with this procedure.*

3.12.2.2 If NCR is associated with a MLLW/LLW container, select "Approved MLLW/LLW TSDF" as the approved remediation and notify appropriate MLLW/LLW personnel.

NOTE: *After Step 3.12.2.2.1 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "MLLW/LLW Verification."*

3.12.2.2.1 Select "Activity Type," "Transfer to MLLW/LLW," and "Save."

3.12.3 SPM: Upon confirmation that remediation is accurate and information in NCR is adequate and appropriate supporting documentation, when applicable, has been included; enter final SPM verification statement for completion of identified remediation.

NOTE: *After Step 3.12.3.1 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Closure."*

3.12.3.1 Select "Activity Type," "Waste Programs Evaluation," and "Save."

3.12.4 MLLW/LLW: Upon confirmation that remediation is accurate and information in NCR is adequate and appropriate supporting documentation, when applicable, has been included; enter final MLLW/LLW verification statement for completion of identified remediation.

NOTE: *After Step 3.12.4.1 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "QA Closure."*

3.12.4.1 Select "Activity Type," "MLLW/LLW Verification," and "Save."

3.13 Characterization NCR QA Closure

3.13.1 Quality Assurance Personnel: After appropriate remediation is complete and verified by SPM or MLLW/LLW personnel, verify Characterization NCRs for closure by checking the following items:

- Remediation selected is accurate.
- Remediation action is complete.
- Appropriate SPM or MLLW/LLW final verification statement has been entered.
- Appropriate supporting documentation is attached and complete.

NOTE: *If the NCR is rejected, the Doc State will return to SPM Verification.*

3.13.1.1 If the above items are not met, reject the NCR.

3.13.1.2 If the above items are met, from the desktop, enter the NCR report by clicking on the NCR number.

3.13.1.3 Enter verification comments for QA closure in the "Recommended Actions" field of the NCR.

3.13.1.4 Select "Activity Type" and "QA Verify Complete."

NOTE: *After Step 3.13.1.5 is completed, TrackWise will prompt for e-signature, and the Doc State will advance to "Closed-Done."*

3.13.1.5 Update "Activity Summary" and select "Save."

3.14 NCR Tagging

3.14.1 When an item is identified as being nonconforming, or will result in a nonconforming condition, a process to provide control of the nonconforming item through physical identification or an alternate administrative control is required.

3.14.2 Where physical tagging of nonconforming items is not practical, (i.e., in a radiation area, painted surfaces, conditions involving numerous items, installed items that are not accessible, installed software, etc.), use the following alternate means of identification:

A. NCRs associated with facility operations systems may be tracked via the operations status board and reviewed during shift turnover.

B. NCRs associated with numerous items will be identified by equipment/part numbers included on a list attached to the NCR as supporting documentation in TrackWise.

C. Nonconforming conditions affecting characterization or certification data impacting the acceptability of waste containers for shipment or disposal require tagging or physical segregation in addition to administrative control through TrackWise.

3.14.3 QA Personnel: Ensure that NCR Hold Tags (red) are attached to an item where installation or operation of that item could impact the safe operation of the facility and to prevent inadvertent use of the nonconforming item, except where noted in Item B and Step 3.14.4.

A. QA is responsible for removal and destruction of NCR Hold Tags (red) upon closure verification of NCR dispositions, except where noted in Step 3.14.4.2.

B. Operations personnel are authorized to remove and destroy NCR hold tags from waste containers after verification in TrackWise that the NCR has been closed by QA.

3.14.4 Supply Chain Inspector: Attach NCR Hold Tags (red) to any item rejected during the Supply Chain receiving inspection in accordance with MP-PCMT-15.21, Materials Management.

3.14.4.1 Use segregation areas for nonconforming items when a large lot or quantities of items are affected.

3.14.4.2 Remove and destroy NCR Hold Tags (red) from received items following QA Verification and closure of the associated NCR.

3.14.5 Attach NCR Conditional Release tags to an item where installation or operation has been reviewed and a technical justification developed that supports Conditional Use for installation and/or safe operation pending final NCR disposition and resolution, as provided in Section 3.5.

3.14.5.1 Remove NCR Hold Tags upon placement of an NCR Conditional Release Tag based on an approved disposition on the NCR.

4.0 DEFINITIONS

Case file. A packet that contains information about each revision to a document with the information increasing as the document advances through the development process.

Characterization NCRs. NCRs used to report and control characterized waste container conditions which require additional remediation to meet WIPP WAP and WAC criteria for disposal. Remediation can include removal of WIPP prohibited items or re-characterization in order to achieve the WIPP Data Quality Objectives. Characterization NCRs do not require Quality or Technical evaluations and are not used to report QA Program issues.

Corrective action. Measures taken to correct conditions adverse to quality and, where necessary, to preclude recurrence.

Condition adverse to quality. An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, and nonconforming conditions.

Conditional use. A controlled, documented, and approved release of a nonconforming item or process for limited use (pending nonconformance disposition) to permit continuation of construction, installation, maintenance, or modification where scheduled delay has been determined to be critical impact to the facility or project. Conditional use must include:

- Technical justification
- Limits of use
- Expiration date
- Approvals.

Doc State. TrackWise terminology for status of record. The Doc State describes where the record is currently in the overall workflow process.

Inspection. A phase of quality control, which by means of examination, observation, or measurement determines the conformance of materials, supplies, parts, components, appurtenances, systems, processes, or structures to predetermined quality requirements.

Item. An all-inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, sub-assembly, subsystem, system or unit.

Nonconforming condition. A deficiency in characteristic, documentation, or procedure that renders the quality of an item, material, or product unacceptable or indeterminate.

QA Program NCRs. Document utilized for adverse conditions that require technical and QA evaluation to identify appropriate corrective actions. Equipment problems or QC failures, which can potentially impact safe operations or characterization data quality are examples of conditions reported using QA Program NCRs.

Remediation. Preapproved process used to characterize or treat waste containers in order to meet WIPP Data Quality Objectives or to remove a WIPP prohibited item.

Repair. The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safety is unimpaired, even though that item still does not conform to original design.

Rework. The process by which, an item is made to conform to original design requirements by completion or correction.

Significant Condition Adverse to Quality. A significant condition adverse to quality exists if:

A. The condition, if uncorrected, could have a serious impact on worker, public, environmental, radiological or nuclear safety.

B. The condition, if uncorrected, could have a serious impact on operational reliability, TRU Waste Certification, or mission performance.

C. Condition where regulatory compliance demonstration is affected, requiring notification to the regulatory entities.

D. Adverse conditions having programmatic or generic implications.

E. Significant failure in worker safety and health requirements.

F. Significant failure in QA program implementation.

G. Pattern of a recurring CAQ such that the combined impact is indicative of a management or programmatic process breakdown.

Stop Work Order. An action that causes work on a designated task or project to cease immediately upon notification (internal and external).

Supplier. Any individual or organization, that furnishes items or services in accordance with a procurement document. An all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, consultant, and their sub-tier levels.

Suspect/counterfeit items. An item is suspect when inspections or testing indicates that it may not conform to established Government or industry-accepted specification or national consensus standards or whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the supplier or manufacturer. A counterfeit item is one that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the supplier or manufacturer. Items that do not conform to established requirements are not normally considered S/CIs if nonconformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items):

- Defects resulting from inadequate design or production quality control
- Damage during shipping, handling, or storage
- Improper installation

- Deterioration during service
- Degradation during removal
- Failure resulting from aging or misapplication
- Other controllable factors.

TrackWise. Issues management database that provides the capability to create different documents requiring unique information fields and different notifications for approval or action and creates unique tracking/trending records. Typical document types are as follows:

- QA Program NCRs
- CARs
- Management assessment reports
- AIs
- Characterization NCRs
- QA surveillance reports.

Use-As-Is. A disposition permitted for a nonconforming item when it can be established that the item is satisfactory for its intended use. Justification for the disposition must be documented.

Unreviewed safety question. A situation where (1) The probability of occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased; (2) The possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; (3) A margin of safety could be reduced; or (4) The documented safety analysis may not be bounding or may be otherwise inadequate.

5.0 REFERENCES

(1) 10 CFR 830, Subpart A, Nuclear Safety Management, Quality Assurance Requirements

(2) AMWTP HWMA/RCRA Permit

(3) ANSI/ASME NQA-1-2008 Edition, Quality Assurance Requirements for Nuclear Facility Applications

(4) DOE/CBFO-94-1012, Quality Assurance Program Document

(5) DOE O 226.1A, Implementation of Department of Energy Oversight Policy

(6) DOE O 414.1C, Quality Assurance

(7) MP-DOCS-18.2, Records Management

(8) MP-LLW-19.7, Low Level Waste/Mixed Low Level Waste Verification

(9) MP-NSPC-3.2, Unreviewed Safety Question Process

(10) MP-PCMT-15.1, Acquisition of Material and Services

(11) MP-PCMT-15.21, Materials Management

(12) MP-Q&SI-5.2, DOE HSS OE Reporting

(13) MP-Q&SI-5.3, Corrective Action

(14) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(15) MP-TRUW-8.2, Quality Assurance Project Plan

(16) PD-Q&SI-01, Contractor Assurance Program Description

(17) QAPP-01, Quality Assurance Program Plan

6.0 RECORDS

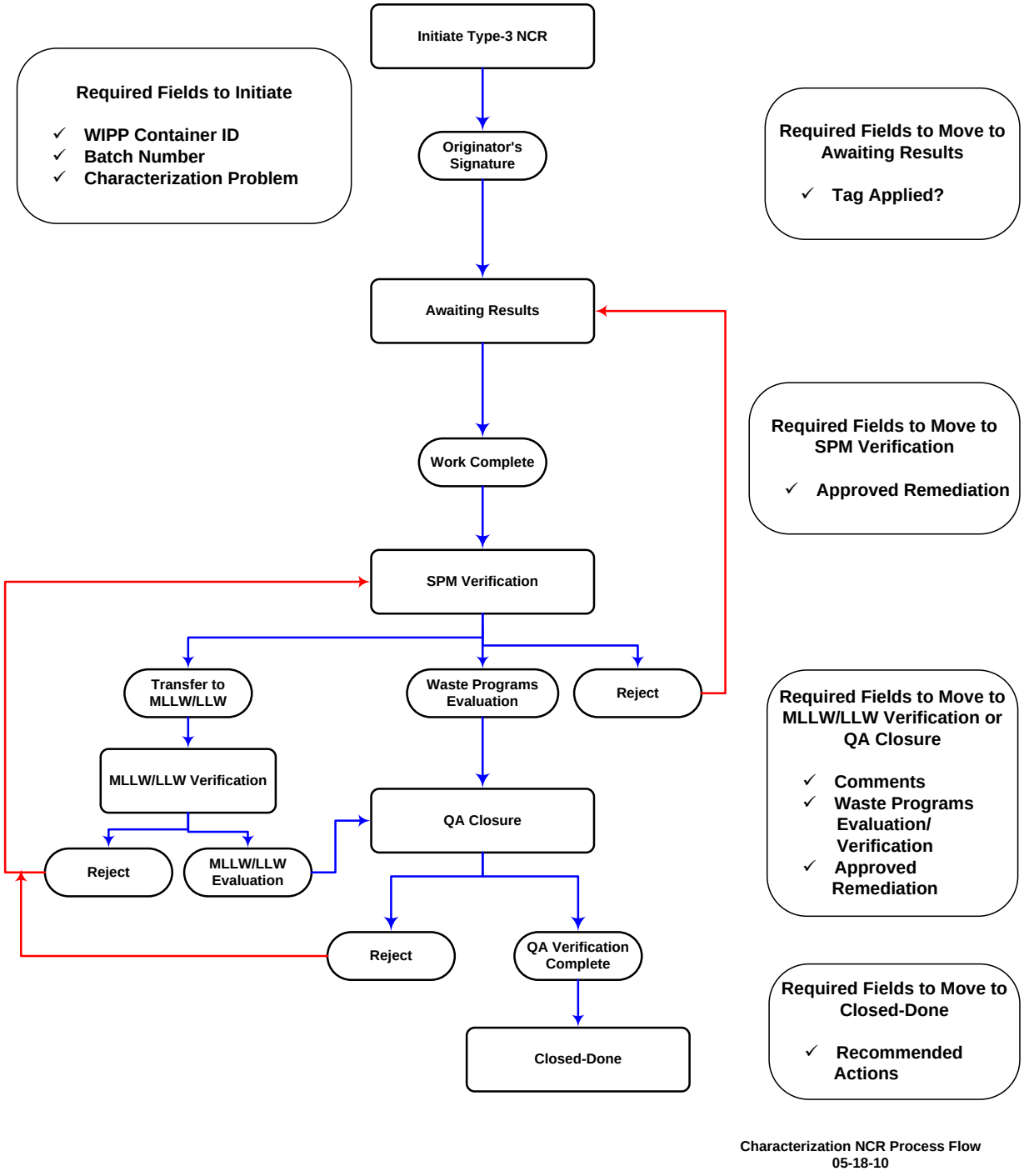
Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-Q&SI-5.4, *Case File* (see def.)	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal
TrackWise database NCRs including objective evidence and verification (Records maintained in TrackWise database system)	Both FOR/NP WIPP/ENV2-a-1-a/ Destroy 5 years after life of facility

7.0 EXHIBITS

Exhibit 1 – AMWTP Characterization NCR (RTR, HGAS, Assay, AK, CCP) Process Flow

Exhibit 1 – AMWTP Characterization NCR (RTR, HGAS, Assay, AK, CCP) Process Flow



Characterization NCR Process Flow
05-18-10

8.0 APPENDICES

Appendix A – TrackWise Queries

Appendix B – Attaching Supporting Documentation

Appendix A – TrackWise Queries

Queries are most commonly performed when looking for some specific records to review or edit. TrackWise queries can also be saved and reused for reviewing records, generating a report, or performing trends.

Scope/Function Selection:

The Scope allows the user to select which data of interest is desired when searching or reviewing records. Scope is a user-defined range of the projects that are to be used when performing searches, queries, etc. To modify your scope, do the following:

1. On the TrackWise Desktop, click on the Scope pull-down menu and select View/Change Scope.

2. Turn On or Off the Projects you wish to include in the Scope by checking the appropriate check boxes ON or OFF.

3. Click on the Ok button, and the selected Scope will take effect.

There are six functions/record types to choose from:

- QA Program Nonconformance Reports (NCR)
- Corrective Action Reports (CARs)
- Management Assessment Reports (MAR)
- Action Item (AI)
- Characterization NCRs
- QA Surveillance Reports.

Creating and Saving a Query:

1. On the Menu Bar on the TrackWise DeskTop, press the Query button on the Tool Bar on the DeskTop.

2. Fill in the fields or selections from the various list boxes to create your query. Note that in the classification section, you have to select the name of a record field in the Primary List Box to the left, and then select or type in the value of the selected record field for the query in the Secondary List Box or area to the right.

3. To execute the query you have designated, press the Run button at the top of the screen.

4. If saving your query, press the Save button. Query name "New Query" is selected and ready for you to modify. This is a temporary name given to the query you have just created. Give your Query a meaningful name:

5. If the box is checked next to the query, this will cause the query to be made **public**, so all TrackWise users will be able to use it. It will appear in the Saved Queries drop-down list on the DeskTop, and will have (pub) following its name.

Public Queries:
On the TrackWise DeskTop public queries have been designed/built/saved for specific reviews and processes. The specific queries have been designed/built/saved to query for **NCR Batch Review** and **SPM NCR** Reviews processes. These queries are compiled of two selection values:

- Category – WIPP Data
- Quality (Type Material)-WIPP Batch – RTR, or Assay, or Core Sample, or HSGS, or VE New Gen or VE-Miscert.

NOTE: *Query Selections returns an exact match only.*

The below queries have been designed to query for NCR Batch and SPM Reviews for open records only:

- WIPP Batch ALD Lab (pub)
- WIPP Batch Assay (pub)
- WIPP Batch Core Sample (pub)
- WIPP Batch HSGS (pub)
- WIPP Batch RTR (pub)
- WIPP Batch VE New Gen (pub)
- WIPP Batch VE-Miscert (pub)
- WIPP Shipment (pub).

NOTE: *Saved public queries are open records only.*

Query for Closed Records:

Queries for closed records must be built for each inquiry. A closed query cannot be saved as a public query because a date range is required.

1. On the Menu Bar on the TrackWise DeskTop, press the Query button on the Tool Bar on the DeskTop.

2. Select Date Closed from the Primary List Box to the left under the Non-Selection Field, and then select the value (date) by clicking on the calendar for the date range. The date range will start with a date > = the start, and end range will end with a date < = the end.

3. To execute the query you have designated, press the Run button at the top of the screen.

4. The Date Closed query will result in closed records only.

General Search:

Using the Ad-Hoc Query Builder, the user can create queries and search for records in the database using multiple search criteria. The searches can be as general or as specific as the user wishes. Search results are viewed on the DeskTop, or saved for later use. The Ad-Hoc Query Builder screen is accessible via the Build New Query option in the Queries menu or *Query* button on the DeskTop. Filling in the available fields and/or selecting the desired options from the variety of selection boxes accomplish building a query. See below for selection box examples:

- Title: and Affected Item: Enter the title or partial title of the record you are searching for, preceded and/or followed by the "*" (Wildcard), and push the Run button.
- DOC From #, DOC To #: Type record numbers in both field, and push the Run button.
- Exclude Closed DOCS is pre-selected by the system; to Include Closed DOCS, select the radio button to the left.
- Classification (Selection Fields): The top left most box is the Primary List Box. This list box contains all the record fields of type "selection." The top right box is the Secondary List Box. This list box shows the selections available for each field name selected in the Primary List Box. For each field selected in the Primary List Box, the Secondary List Box will display a list of the contents or selections available for the primary selection.

  Example: Select Category from the primary list and select WIPP Data from the secondary list and push the *Run* button.

- All Non-Selection Fields: The bottom left most box is the Primary List Box for Additional Fields. This box contains names of all other non-selection type record fields. To the right of this box will be additional selection fields, based on the selection made in the Primary List Box for additional fields. The selection criteria available will be based on the format of the field selected.

  Example: Select Batch # from the primary list, Type *RTR03-00024*, Select Add, and push the Run button.

  Example: Select Container # from the primary list, Type *10000232* Select Add, and push the Run button.

Crystal Reports:
The user may select from two crystal reports. The first report is titled, "NCR Status Report" and the second titled, "Title Parent Child Report." The Operations Record Report was specifically designed for **NCR Batch Review** and **SPM NCR Review** processes, the report output will reflect the following fields:

- DOC ID #
- Function
- Record Status
- Affected Item Type
- Affected Item
- Short Description
- Batch #
- Container #
- Payload #
- Shipment #.

The Title Parent Child Report was designed for a general use including the children documents; the report output will reflect the following fields:

- DOC ID #
- Short Description
- Record Status
- Date Due
- Date Initiated
- Assigned To:
- Responsible Department
- Assigned Actionee
- Source
- Function.

1. Once you have run a query on your desktop, press the *REPORTS* button on the tool bar.
2. Next to the REPORTS: window, scroll down and select either report.
3. Push the *RUN* button, the report will run.
4. In the left hand corner, press the *PRINT* icon or *EXPORT* icon.
5. Exit the print screen and return to the desktop.

Appendix B –
Attaching Supporting Documentation

1. Place the scanned document on your hard drive in a known folder.
2. Open the TrackWise document.
3. Click on the file beside the “supporting documentation” section.
4. A window will open up. In that window, click on “browse.” This will open an explorer type window.
5. Go through the folders to the location of the file you placed on the drive earlier and highlight that file.
6. Click on “open.” This will take you back to the window with the browse button.
7. Click on the “add” button. This will pull the document into TrackWise.
8. Click on “view” to assure that the file was not corrupted.
9. Click on OK. This will close that window.
10. Hit the save button on the document.

Graded Approach

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10709.*) 09/13/12

Angie Morse
Quality Assurance Engineer

Date

AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.6, Rev. 4	Issued: 09/13/12	Effective: 09/14/12
Graded Approach		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/22/02	All	DCR-1408. Initial issue, this management procedure supersedes PQP 6.2, Revision 2.
1	2/18/03	All	Re-issue, see DCR-2002-1810. Revised to standardize definitions, and to incorporate comment resulting from CBFO review of procedure.
2	2/1/06	ALL	DCR-4776. Implement contract transition changes as identified on DCR-4299. Implement current MP-DOCS-18.3 requirements.
3	01/25/07	Cover Page	DCR-5677. Periodic Review. Minor change (advance periodic review date). As written, continues to meet AMWTP QA program requirements. No changes in content or responsibility.
4	09/13/12	Various	DCR 10709. Incorporate DOCS-BLUESHEET-08 and ITG-BLUESHEET-244

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AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.6, Rev. 4	Issued: 09/13/12	Effective: 09/14/12
Graded Approach		

1.0 PURPOSE/SCOPE

The purpose of this procedure is to describe the Quality Assurance Graded Approach to AMWTP Systems, Structures, and Components (SSCs) and services. This process is required to provide adequate and sufficient application of safety and quality requirements for public, worker, and nuclear safety, environmental protection, and radiological operations. This procedure describes the methodology, criteria, and documentation for implementing a graded approach to classification of items/services consistent with their function and importance to safe nuclear operations. The classification methodology allows a graded approach by applying the applicable 10 CFR 830 quality assurance criteria to an extent that is commensurate with the item's importance to public and worker safety, nuclear safety, environmental protection and commercial risk.

This procedure shall be used to apply the graded approach at the AMWTP. This procedure applies to all engineering, design, construction, procurement, installation, operations and maintenance work performed at the AMWTP. The Graded Approach does not allow quality requirements to be ignored or waived, rather it allows the degree of control, verification, and documentation to be varied based on risk and importance to safety. The implementation of this graded approach applies to AMWTP and subcontractor work activities.

(10 CFR 830)

This procedure also establishes and implements the graded approach for items and activities under the cognizance of the Carlsbad Field Office (CBFO), and therefore is submitted to CBFO for approval.

(CBFO-94-1012)

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Engineering and Maintenance Manager/designee	Responsible for maintaining SSC classifications in the MMS and identifying new SSCs for analysis and classification.
Environmental, Safety & Health (ES&H) Director	Responsible for the hazard and safety analysis and the identification of Safety-Class, Safety-Significant, and Important to Safety SSCs in the Documented Safety Analysis.
QA Manager	Responsible for review and concurrence of the classification of SSCs in the MMS, and for identification of the applicable QAPP requirements for AMWTP SSCs.

PROCEDURE

2.1 Classification Analysis

2.1.1 Classification is the process of identifying the activities and items within the AMWTP to which the QA program applies. The basis of the graded approach and classification of SSCs begins with the accident analysis principles applied for the determination of specific attributes of a SSC, as documented in the Documented Safety Analysis. At the AMWTP, SSCs are classified as Class I, Safety Class, Safety Significant; Class II, Items Important to Safety; and Class III, Non Nuclear Balance of Plant SSCs.

2.1.2 A Documented Safety Analysis is performed to document the facility hazard classification, and on the basis of a hazard and accident analysis, identify the Safety Class and Safety Significant SSCs to which full application of the QAPP management processes apply.

2.1.3 AMWTP SSCs that are not classified as Safety-Class or Safety-Significant, are then evaluated further for contribution to the protection of either the public, co-located workers, or facility workers, and to defense in depth. These Items Important to Safety identified in the DSA, and those SSCs whose reliability are of impact to regulatory, statutory, or contractual requirements are identified as Class II SSCs, to which the full application of the QAPP management processes apply.

2.1.4 AMWTP SSCs that do not meet the criteria of Class I or Class II are considered as Class III, Non Nuclear Balance of Plant items. Consequence of Failure of these SSCs results in minimal or no safety risk to the public, co-located workers, facility workers or defense in depth. The application of the QAPP management processes is determined based on the commercial risks to the project.

2.1.5 Classifications of SSCs are documented and maintained in the AMWTP Maintenance Management System (MMS).

3.0 DEFINITIONS

Class I Equipment – Equipment identified by the Documented Safety Analysis (DSA) as Safety Class or Safety Significant. Class I SSCs are those items whose failure presents the highest potential safety consequence and project risk. Class I SSCs are identified as Q-Listed SSCs. (See Appendix A, Equipment Classification Flow Chart)

Class II Equipment. Equipment controlled or designated by the DSA as "Other Items Important to Safety" by statutory requirements, by WIPP requirements, or certain Safety Equipment required by permit, or where a failure could directly cause injury to personnel, through a conventional or radiological means. (See Appendix A.)

Class III Equipment. All process equipment not considered Class I or Class II. (See Appendix A.)

Commercial Grade Item. An item that is (1) generally of a type customarily used by the general public or by non-government purposes, (2) not subject to design or specification criteria unique to the program or nuclear facilities, (3) used in applications other than the nuclear industry, (4) ordered from the manufacturer or supplier on the basis of specifications set forth in the manufacturer's published product description, and (5) a service ancillary to a commercial item, such as installation, maintenance, repair, and training, is considered a commercial service.

Graded Approach. A process by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with:

- The relative importance to safety, safeguards, and security.
- The magnitude of any hazard involved
- The life cycle stage of a facility
- The programmatic mission of a facility
- The particular characteristics of a facility
- The relative importance of radiological and non-radiological hazards
- Any other relevant factor

The graded approach process also includes evaluations for the level of application of managerial controls applied to a SSC or activity, based on the intended application and use, complexity, and degree of confidence needed.

Off-the-Shelf: An Item that is specified by a manufacturer's designation (such as Name, Model and /or Part Number) without modification, approved design output document, or supplemental requirement, which is used in various non-quality applications/activities and ordered from a supplier or the manufacturer.

Quality Listed. A designator applied to Class I SSCs specified in the Documented Safety Analysis as safety class or safety significant, whose function is necessary to assure that safety class and safety significant SSCs will continue to perform their intended function during a design basis accident.

Items Important to Safety. Class II SSCs that are not designated as Safety-significant or safety-class SSCs, but that provide a function that is a significant contributor to the protection of either the public, co-located workers, or facility workers, or is a significant contributor to defense in depth.

Safety Category. A designator used to identify the level of rigor applied to activities associated with SSCs based upon varying levels of potential consequence of their safety function, if any.

Safety - Class Systems, Structures, and Components. SSCs that have preventive or mitigative function(s) necessary to limit the dose or exposure from radioactive or other hazardous materials to a member of the offsite public to an acceptable value, as determined from the Documented Safety Analysis.

Safety Significant Systems, Structures, and Components. SSCs not designated as safety-class SSCs but whose preventive or mitigative function is a major contributor to defense in depth and/or worker safety and health, as determined from the Documented Safety Analysis.

Systems, Structures, and Components (SSCs). Consist of hardware or software used in the design, construction, and operation of the AMWTP.

4.0 REFERENCES

(1) QAPP-01, AMWTP Quality Assurance Program Plan

(2) RPT-DSA-02, AMWTP Documented Safety Analysis -

(3) MP-Q&SI-01-IM, Quality Assurance Program Requirements Matrix

(4) 10 CFR 830, Nuclear Safety Management

(5) DOE-CBFO-94-1012, Quality Assurance Program Document

5.0 RECORDS

Records may be either quality affecting or non-quality affecting records. If they are quality- affecting records, they may either be classified as Lifetime, Permanent, or Non-Permanent. Determination of record type is the responsibility of the Document owner, who may consult with Document Control or the Quality Assurance Department to help determine the record classification. Records are submitted to the National Archives and Records Administration (NARA) at the end of the retention period. The following records are generated as a result of this procedure.

Record Description	Classification
MP-Q&SI-5.6, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal

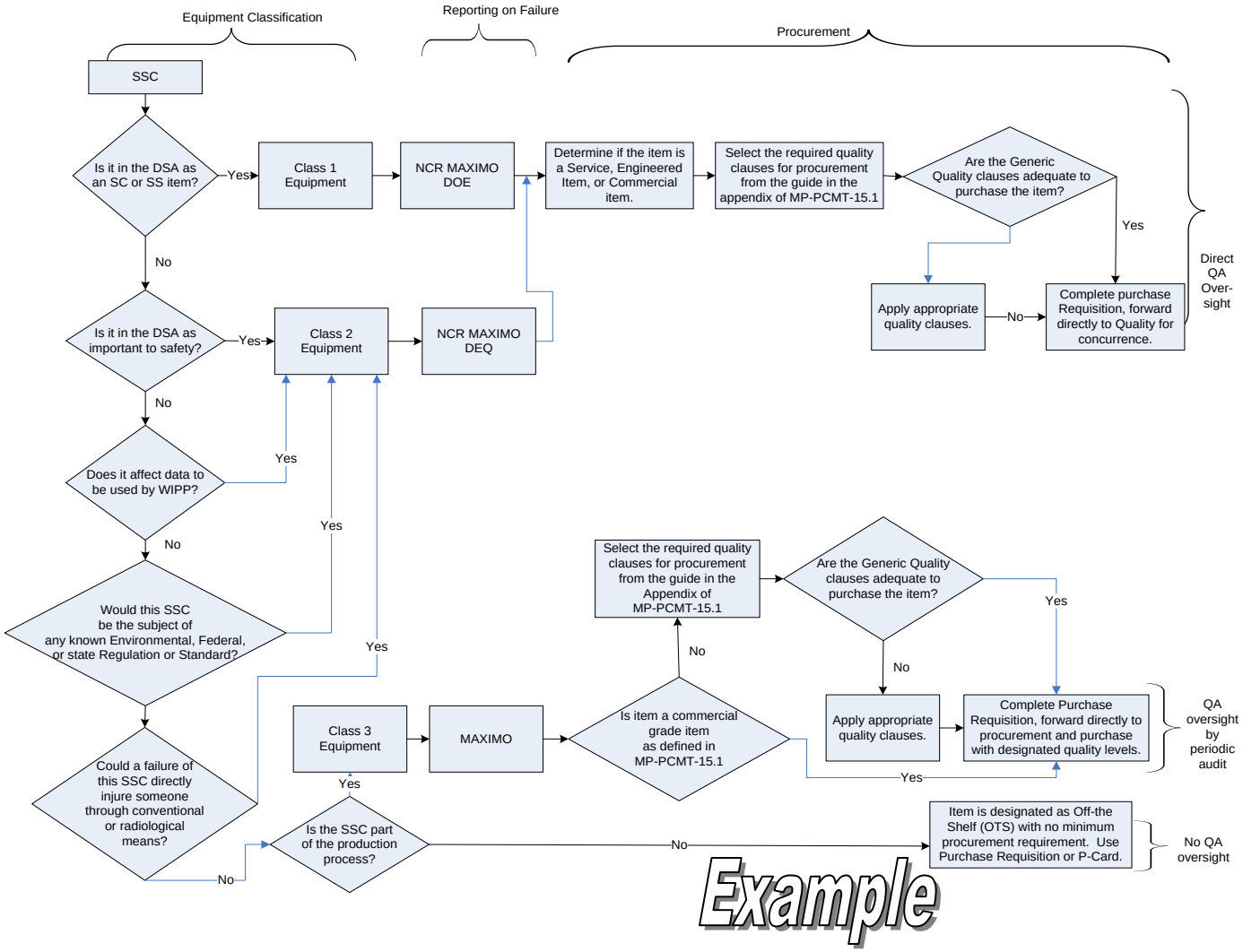
6.0 EXHIBITS

None

7.0 APPENDICES

Appendix A, Equipment Classification Flow Chart

Appendix A - Equipment Classification Flow Chart



Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-10710.)
Angie Morse
Quality Assurance Engineer

09/13/12
Date

AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.8, Rev. 8	Issued: 09/13/12	Effective: 09/14/12
Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/19/02	All	Initial issue. This management procedure supersedes PQP 11.2 Revision 0. Approvals documented on DCR-1333.
1	1/9/03	See DCR-1543	DCR-1543, Revise Procedure to incorporate QA observations during Line Management Assessment. Ref. Management Assessment Report 1457 and Action Item 1468.
2	2/18/03	Pg. 4, section 2.0 Pg. 8, section 4.3.1.3	DCR-2005, Revised Procedure to incorporate comments provided by CBFO Adequacy Review (Reference: Letter CBFO: NTP: KWW: VW:03-0291:UFC: 5822 received 1/24/03)
3	02/23/03	Pages 4, 19, and 20	DCR-2055, Added section 5.4 to include qualification of Leak Detection Testers, referencing to AMWTP Forms-1439 and -1440, and written practice policy TRN-WPP-03-01
4	11/28/05	All	DCR-4352. This revision is a complete rewrite. Procedure was simplified by consolidating content. Global changes were made due to contractor change. Sections were reordered according to MP-DOCS-18.3, Rev. 2.
5	06/20/2006	Headers	DCR-5049. Minor changes to revise title to: "Qualifying Test Engineers, Supply Chain Inspectors, Audirots, Lead Audirotors and Technical Specialists."
6	6/20/2006	Revision Log	DCR-5112. Editorial. Correct revised title to: "Qualifying Test Engineers, Supply Chain Inspectors, Auditors, Lead Auditors and Technical Specialists."
7	04/08/08	Various	DCR-5770. Complete re-write to delete all requirements for and reference to test engineers.
8	09/13/12	Various	DCR-10710. Incorporated DOC-BLUESHEET-08 and ITG-BLUESHEET-244.

AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.8, Rev. 8	Issued: 09/13/12	Effective: 09/14/12

Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists

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Appendix A – Instructions for Determining Auditor/Lead Auditor Qualification Points A1

AMWTP MANAGEMENT PROCEDURE		
MP-Q&SI-5.8, Rev. 8	Issued: 09/13/12	Effective: 09/14/12

Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists

1.0 PURPOSE/SCOPE

This procedure describes the *qualification* (see def.) of *Supply Chain Inspectors* (SCIs; see def.), *Auditors* (see def.), *Lead Auditors* (see def.), and *Technical Specialists* (see def.) to perform assigned inspection and audit activities. This procedure addresses *applicable qualification* (see def.) requirements of 10 CFR Part 830, Subpart A, Quality Assurance Requirements; DOE-CBFO-94-1012, Quality Assurance Program Document; and QAPP-01, Quality Assurance Program Plan.

2.0 ROLES AND RESPONSIBLITIES

Performer	Responsibilities
Responsible Manager	• Select and assign personnel to qualify as a SCI.
Quality Assurance (QA) Manager	• Owns and maintains this procedure • Annually evaluates and documents SCIs qualification on Form-1235, Inspection and Test Personnel Qualification Record - QSCINSPE • Selects, trains, qualifies, re-qualifies, and assigns Auditors and Lead Auditors
Instructor (see def.)	• Instructs SCIs, administers and grades SCI examinations • Approves SCI candidates on the basis of having completed training and successfully passed examination
Training Organization	• Maintains SCI instructional materials and completed examination records • Maintains completed SCI, Auditor and Lead Auditor qualification and re-qualification records.
Supply Chain Inspectors	• Are qualified according to this procedure, are trained and/or oriented to develop competence in performing receipt *inspections* (see def.), including identifying *suspect/counterfeit items* (S/CIs; see def.).
Auditors	• Are qualified according to this procedure to plan and perform quality *audits* (see def.), and to evaluate the effectiveness of actions taken to correct conditions adverse to quality.
Lead Auditors	• Are qualified according to this procedure to organize, direct, and report audits, and lead audit personnel • Indoctrinate and qualify Technical Specialists to participate in specific audits.

3.0 PROCEDURE

3.1 Selecting and Qualifying Supply Chain Inspectors

3.1.1 The SCI selection shall be based on candidates' education, experience, and/or training commensurate with the scope, complexity, or special nature of receipt inspections to be performed.

3.1.2 The SCI candidates shall receive training and indoctrination on the methods, requirements, tools, applicable codes and standards, and AMWTP policies and procedures used to conduct receipt inspections.

3.1.3 SCI candidates shall demonstrate knowledge of the fundamentals and technical objectives of receipt inspection, including recognizing and identifying suspect/counterfeit items.

3.2 Supply Chain Inspectors Visual Examination

3.2.1 A Near-Vision Acuity exam is required annually. This exam verifies natural or corrected near-distance acuity in at least one eye. The applicant must be capable of reading a minimum of Jaeger Number 2, or equivalent type and size letter, at a distance of not less than 12 inches on a standard Jaeger test chart. The ability to perceive an Ortho-Rater minimum of 8 or similar test pattern is also acceptable.

3.2.2 A Color Contrast Differentiation exam is conducted upon initial qualification and at three-year intervals thereafter. This exam verifies the ability to distinguish and differentiate contrast among colors or shades of gray used in the method.

3.2.3 Contact the AMWTP Occupational Medical Program to schedule eye examinations.

3.3 Supply Chain Inspectors Written Examination

3.3.1 The SCI candidates must pass a general written examination administered and graded by an instructor.

3.3.2 SCI candidates shall achieve an exam grade of at least 80 percent to pass.

3.3.3 After examinations are graded, SCI candidates will review all incorrect answers (regardless of having passed or failed the exam) to aid comprehension of test material. Candidates shall document post exam reviews by signing and dating examination answer sheets.

3.3.4 The SCI candidates failing to achieve the required score should wait at least thirty days prior to reexamination, or receive suitable additional training prior to reexamination, as determined by the Instructor.

3.3.5 The instructor transmits completed examination records to the Training Department using Form-1044, Record Transmittal.

3.3.6 The Training Department controls SCI instructional material and examinations according to MP-RTQP-14.9, Instructional Materials Development, Revision, and Control.

3.4 Completing, Approving, and Maintaining Records of Supply Chain Inspector Qualification

3.4.1 The responsible manager shall initiate Form-1235 to document qualifications of candidate SCIs.

3.4.2 Each Form-1235 shall be approved prior to any SCI candidate's commencement of actual receipt inspections.

3.4.3 On each Form-1235, the QA Manager and the Instructor delivering the SCI training documents via signature that each candidate has been tested, evaluated, and qualified as capable of performing as a SCI.

3.4.4 The QA Manager shall identify a SCI qualification date, and a qualification expiration date, not to exceed three years on each Form-1235. The completed SCI qualification, Form-1235, is forwarded to the Training Department using Form-1044.

3.4.5 The Training Department shall maintain the completed SCI Form-1235.

3.5 Annual Reviews of Supply Chain Inspectors

3.5.1 The QA Manager shall review the SCI qualification annually and determine if additional training or requalification is necessary. This review verifies adequate job performance and annual completion of visual acuity testing.

3.5.2 The QA Manager shall document SCI annual review using Form-1235. The QA Manager transmits completed Form-1235 to the Training Department using Form-1044.

3.6 Requalifying Supply Chain Inspectors

3.6.1 The Responsible Manager shall ensure that a SCI qualification has not expired, and shall initiate requalification of SCIs.

3.6.2 The SCIs shall be re-qualified on the basis of: (1) evidence of continuing satisfactory performance and capability; or (2) reexamination of capabilities as determined necessary by the QA Manager.

3.6.3 The QA Manager shall initiate and complete a new Form-1235 to document and approve requalification of SCI's.

3.6.4 The QA Manager may examine the qualifications of SCI's at any time, and extend or revoke qualifications. The QA Manager transmits original SCI qualifications to the Training Department using Form-1044.

3.6.5 The Training Department shall maintain SCI requalification documentation.

3.7 Qualification Review of Supply Chain Inspectors Experiencing Interrupted Service

3.7.1 The qualification of SCIs shall be reviewed whenever inspection job duties have been interrupted for a period of six months or more.

3.7.1.1 The QA Manager may suspend a qualification upon review of current qualification requirements.

3.7.1.1.1 The QA Manager may suspend an SCI's qualification by so stating on that SCI's Form-1235, and transmits original of the qualification to the Training Department.

3.8 Employment Termination and Revoking Supply Chain Inspector's Qualification

3.8.1 An SCI's qualification shall be revoked when his or her employment is terminated, but may be reinstated if that SCI returns to employment within 6 months.

3.9 Qualifying Candidate Auditors and Auditors Qualified by Other Organizations

3.9.1 The QA Manager selects, qualifies, and assigns Auditor candidates based on their experience, education, and training commensurate with the scope, complexity, and nature of audit activities.

3.9.2 Required indoctrination and training shall be identified and documented according to MP-RTQP-14.1, Preparation and Administration of Training Plans.

3.9.3 Auditor candidates shall be trained in, or have a working knowledge of, 10 CFR Part 830, Subpart A, Quality Assurance Requirements; DOE-CBFO-94-1012, Quality Assurance Program Document; ANSI/ASME NQA-1 with its supplements; applicable codes, standards, DOE orders, and AMWTP procedures, manuals, and requirements necessary to conduct audits and report audit results.

3.9.4 Auditor candidates shall be knowledgeable of audit principles, objectives, and methods, and be trained to plan, perform, and report audits, and conduct audit planning in nuclear QA functional areas (software, nonconformance, etc.), and to evaluate the effectiveness of actions taken to correct conditions adverse to quality.

3.9.5 Auditor training shall include methods of examining, questioning, evaluating, and documenting specific audit items.

3.9.6 In lieu of formal training, Auditor candidates may receive OJT under the direction of a qualified Lead Auditor. This OJT shall include audit planning, performing, reporting, and conducting follow-up evaluations.

3.9.7 Auditor candidates shall have participated in at least three audits within the past two years as an auditor-in-training under the direction of a qualified Lead Auditor. One audit shall have been performed in the past year. Auditor participation shall be documented on QCAUDITR, Determining Auditor Qualification Checklist.

3.9.7.1 Auditor candidates must accumulate at least five "credits," as determined from Instructions for Auditor/Lead Auditor Qualification Points shown in Appendix A.

3.9.8 Auditors previously qualified by other organizations may receive qualification per MP-RTQP-14.3, "Training Exceptions, Exemptions and Extensions." Such Auditors must present their qualifications, credentials, formal certifications, and audit history to the QA Manager for review. This information is documented on Form-1031 "Request for an Exception to Training" and is approved by the QA Manager and Training Manager.

3.10 Completing, Approving, and Maintaining Records of Auditor Qualifications

3.10.1 QA Manager shall certify by signature that each Auditor candidate is qualified on QCAUDITR.

3.10.2 The completed QCAUDITR shall be transmitted to the Training Department using Form-1044.

3.11 Qualifying Candidate Lead Auditors and Lead Auditors Qualified by Other Organizations

3.11.1 Lead Auditor candidates shall meet the above Auditor qualification requirements and shall also be capable of organizing and directing audits, leading audit personnel, and evaluating planned actions to correct conditions adverse to quality.

3.11.2 Required indoctrination and training shall be identified and documented according to MP-RTQP-14.1, Preparation and Administration of Training Plans.

3.11.3 Lead Auditor candidates shall have conducted five or more audits within the past three years, one of which shall be a nuclear QA audit within the year prior to qualification. Lead Auditor candidates must accumulate at least ten "credits," as determined from Instructions for Auditor/ Lead Auditor Qualification Points, Appendix A.

3.11.4 The QA Manager shall certify that Lead Auditor candidates meet qualification requirements for education and experience, effective oral and written communication skills, training, audit participation, and successful completion of the Lead Auditor examination.

3.11.5 Lead Auditor candidates shall pass a Lead Auditor examination achieving an exam grade of at least 80 percent. The exam shall be provided, administered, and graded by the QA Manager.

3.11.6 Lead Auditor examinations may be oral, written, practical, or any combination, but administered without access to reference material. Examination results shall be recorded.

3.11.6.1 The Training Department controls Lead Auditor exams according to MP-RTQP-14.9.

3.11.7 After examinations have been graded, Lead Auditor candidates will review all incorrect answers (regardless of having passed or failed the exam) as an aid to comprehending test material.

3.11.7.1 Each candidate shall document post-exam reviews by signing and dating an answer sheet, or other form of documentation.

3.11.7.2 Exam records shall be transmitted to the Training Department using Form-1044.

3.11.8 Lead Auditor candidates failing to achieve a passing score should wait at least thirty days prior to reexamination, or receive suitable additional training prior to re-examination, as determined by the QA Manager.

3.11.9 Lead Auditors previously qualified by other organizations may receive qualification per MP-RTQP-14.3, Training Exceptions, Exemptions and Extensions. Such Lead Auditors must present their qualifications, credentials, formal certifications, and audit history to the QA Manager for review. This information is documented on Form-1031, Request for an Exception to Training, and is approved by the QA Manager and Training Manager.

3.12 Completing, Approving, and Maintaining Records of Lead Auditor Qualification

3.12.1 QA Manager shall document and certify by signature that each Auditor candidate is qualified on QCLEADAD, Lead Auditor Qualification Checklist.

3.12.2 The completed QCLEADAD shall be transmitted to the Training Department using Form-1044.

3.13 Maintenance of Auditor and Lead Auditor Qualification

3.13.1 Auditors and Lead Auditors remain qualified through one or a combination of the following activities:

3.13.1.1 Participation as an audit team member in at least one audit per year, such as management, independent, project, supplier, comprehensive surveillance, or process audit.

3.13.1.2 Review and study of codes, standards, QA procedures, instructions, or other documents related to QA programs, program auditing, or participation in quality auditor training programs.

3.13.2 Auditor and Lead Auditor participation in audits are recorded periodically on Form-1662, Audit Participation Record.

3.13.3 The QA Manager shall evaluate Auditors and Lead Auditors annually, and may extend their qualification, require additional training, require requalification, or suspend an Auditor or Lead Auditor qualification. This evaluation shall be documented in the qualification checklist (QCLEADAD or QCAUDITR) and transmitted to the Training Department using Form-1044.

3.14 Requalification Requirements for Auditors and Lead Auditors Experiencing Interrupted Service

3.14.1 Auditors and Lead Auditors who have failed to maintain their audit experience for two or more years shall re-qualify by one or more of the following methods as determined by the QA Manager.

3.14.1.1 Training in the principles and practices of quality auditing

3.14.1.2 Participation as an Auditor in at least one quality audit

3.14.1.3 Requalifying as a Lead Auditor to current procedural requirements.

3.14.2 The QA Manager shall document actions taken to re-qualify Auditors or Lead Auditors using the QCAUDITR or QCLEADAD checklist, respectively.

3.15 Reinstating Auditor or Lead Auditor Qualification

3.15.1 Having left AMWTP employment, an Auditor or Lead Auditor qualification may be reinstated without additional experience or re-examination after review by the QA Manager. The Auditor or Lead Auditor must return to employment within 6 months.

3.16 Qualifying Technical Specialists

3.16.1 The QA Manager or Lead Auditor may qualify Technical Specialists to participate in specific audits. Such personnel are qualified by indoctrination in the scope and conduct of the audits as described by AMWTP procedures. This indoctrination shall be commensurate with the scope, complexity, or special nature of the audit.

3.16.2 The QA Manager or Lead Auditor documents the indoctrination of Technical Specialists in the audit or assessment report.

4.0 DEFINITIONS

Audit. A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with, established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An independent assessment should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

Auditor (Assessor). Qualified (according to this procedure) to participate on internal and external assessment teams. Conducts interviews, observes operations, reviews data and documents, gathers and evaluates objective evidence to determine conformance to established requirements and adequacy of work performance.

Inspection. Measuring, examining, testing, and gauging one or more characteristics of a product or service and comparing the results with specified requirements to determine whether conformity is achieved for each characteristic.

Instructor. Individual who leads instruction of trainees by delivering prepared instructional materials. Delivers instructional material, administers and grades examinations of trainees.

Lead Auditor (Assessor). Qualified (according to this procedure) to lead internal and external assessment teams. Organizes, conducts, and reports assessments, and directs audit personnel. Requests assessed organization's management to correct conditions adverse to quality.

Qualification. Demonstrated skill and knowledge, documented training, and documented experience required for personnel to properly perform the duties of a specific job.

Supply Chain Inspector (SCI). The Supply Chain Management receiving agent responsible for conducting and documenting the evaluation of delivered items for compliance to procurement documents, or basis for rejection.

Suspect/Counterfeit Items (S/CIs). An item is suspect when inspections or testing indicates that it may not conform to established government or industry-accepted specification or national consensus standards or whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the supplier or manufacturer. A counterfeit item is one that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the supplier or manufacturer. Items that do not conform to established requirements are not normally considered S/CIs if nonconformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items): (1) defects resulting from inadequate design or production quality control; (2) damage during shipping, handling, or storage; (3) improper installation; (4) deterioration during service; (5) degradation during removal; (6) failure resulting from aging or misapplication; or (7) other controllable factors.

Technical Specialist. Individual designated to provide technical expertise support in performance of Quality Assurance assessments and audits.

5.0 REFERENCES

(1) 10 CFR Part 830, Nuclear Safety Management, Subpart A–Quality Assurance Requirements, Office of the Federal Register, Washington, D.C.

(2) DOE/CBFO-94-1012, Quality Assurance Program Document, U.S. Department of Energy, Carlsbad Area Office

(3) ANSI/ASME NQA-1-2008, Quality Assurance Requirements for Nuclear Facility Application

(4) QAPP-01, Quality Assurance Program Plan

(5) MP-DOCS-18.2, Records Management.

(6) MP-RTQP-14.1, Preparation and Administration of Training Plans

(7) MP-RTQP-14.9, Instructional Materials Development, Revision, and Control

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-Q&SI-5.8, Case File	Nonpermanent WIPP/ENV1-J-1 Destroy 75 years after submittal to RMC
Form-1235, Inspection and Test Personnel Qualification Record - QSCINSPE	Nonpermanent WIPP/ENV1-J-1 Destroy 75 years after submittal to RMC
Form-1662, Audit Participation Record	Nonpermanent WIPP/ENV1-J-1 Destroy 75 years after submittal to RMC
Form-1031, Request for an Exception to Training	Nonpermanent WIPP/ENV1-J-1 Destroy 75 years after submittal to RMC

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Instructions for Determining Auditor/Lead Auditor Qualification Points

Appendix A – Instructions for Determining Auditor/Lead Auditor Qualification Points

5 Credits are needed to qualify as an Auditor
10 Credits Are Needed to Qualify as Lead Auditor

I	EDUCATION (count highest degree only) only from an accredited institution	MAXIMUM 4 CREDITS
	Associate's Degree	Award 1 Credit
	Associate's Degree in Engineering, Physical Sciences, Mathematics, or Quality Assurance	Award 2 Credits
	Bachelor's Degree	Award 2 Credits
	Bachelor's Degree in Engineering, Physical Sciences, Mathematics, or Quality Assurance	Award 3 Credits
	Master's Degree in Engineering, Physical Sciences, Business Management, or Quality Assurance	Award 4 Credits

II	EXPERIENCE.	MAXIMUM 9 CREDITS
	Technical - One credit for each year, up to five credits maximum	Award 1 Credit/Year
	Nuclear Industry - One additional credit for two or more years	Award 1 Credit Max
	Quality Assurance – Two additional credits for two or more years	Award 2 or 0 Credits
	Auditing – Three additional credits for two or more years	Award 3 or 0 Credits
	Nuclear related QA – Three additional credits for two or more years	Award 3 or 0 Credits
	Nuclear related QA auditing – Four additional credits for two years or more years	Award 4 or 0 Credits

III	PROFESSIONAL CERTIFICATION	MAXIMUM 2 CREDITS
	Engineering, Science, or Quality Assurance	Award 2 Credits
	Professional Engineer (Registered by State Agency)	Award 2 Credits
	National Professional or Technical Society	Award 2 Credits

IV	RIGHTS OF MANAGEMENT**	MAXIMUM 2 CREDITS

** Based on performance factors such as leadership, sound judgment, maturity, analytical ability, tenacity, past performance, and QA training courses beyond those specifically required by this procedure.

Personnel Qualification and Certification

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11543.*) 08/28/12

Todd Golberg
Training Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/26/02	All	Initial issue, MP-RTQP-14.4; Personnel Qualification and Certification. This MP supercedes PQP 2.1, Revision 2.
1	01/06/03	All	Re-structured procedure for smoother flow. Added requirements of HWMA/RCRA document. Added definition of "Provisional and Final qualifications". Added section on SWPP Requirements. Added section on Fissile Material Handlers qualification. Added description of qualification packages. Added Note at end of Section 4.4.1.9. Added Technical Staff listing and training section. Added section on Entry Level Requirements. Re-defined Access Requirements and General Employee Training Sections.
2	01/28/03	Page 29 Section 4.5.2.6.2	Changed 4 hours to 6 hours. This was mistakenly entered as a typo. The correct number should have been 6 hours, not 4 as in previous revision.
3	02/25/03	Sections 4.2.4 & 4.2.5	Corrected typo in Sections 4.2.4 & 4.2.5 that should have said "as specified in Step 4.2.1.1" not Step 4.1.1.1.
4	03/19/03	Sections 4.2.1.1.1.1. Section 4.2.2.1	Added Waste Management Activities performed in the AMWTP. Reworded paragraph to meet RCRA requirements.
5	07/08/03	Section 4.7.15 & 16 Page 43	Renumbered Section 4.7.15 Management and Supervisory Personnel to Section 4.7.16 and added Independent Technical Reviewer to Section 4.7.15 to satisfy comments from Carlsbad Field Office on ITR Requirements.
6	8/29/03	Page 16 Section 4.4.1.10	Renumbered Section 4.4.1.10 through 4.4.1.18 due to correct typo that listed Step 4.4.1.10 twice.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	01/20/04	Sections 4.2.1.1.1.1, 4.2.2.1, 4.2.3, 4.2.3.1, 4.2.7, 4.2.8, 4.4.1.2.1, 4.4.1.4, 4.4.1.7, 4.4.1.8, 4.4.2.3, 4.4.2.3.1, Section 4.2.10 Section 4.4.1.9 Section 4.4.1.10 Sections 4.4.1.11-4.4.1.19	Added (HWMA/RCRA Treatment Permit) as a procedural driver Removed "in the form of a video. No exam is required for this course" and added "…as part of Facility Access Training" Added "Retrieval" before Operations Technicians to differentiate between Facility and Retrieval Technicians; added QP-OT-2-C "Headspace Gas Automated Manifold" under Sampling Core Skill Set and QP-OT-7-A "Packaging/Shipping/Storage" under Packaging/Shipping/Storage Core Skill Set Added section to read: "Facility Operations technicians must complete qualification in the core skills assigned to support operations. Level 1 Technicians must complete one core skill listed below, while Level 2 Technicians must complete three core skills." Facility Skill sets and Qualification Packages are delineated in this section. Renumbered sections to account for addition of Facility Qualification Packages.
8	05/19/04	All	DCR-2962. Clarified the intent of Sections 4.6 and 4.7.13. Reformatted the document, bringing it to the standard. Correct reference CAO-94-1012 to DOE/CBF0-94-1012. Add WAP required items for a test drum to Section 4.7.1.1. Add appropriate reference to Welder qualification process/requirements in Section 4.7.9 to reflect the direction of Phase 3 activity. No rev bars, complete rewrite.
9	06/17/04	Page 15 All	DCR-3088. Remove "to all candidates" throughout as it is not applicable to procedure. Update formatting to standard.

Revision Number	Date Approved	Pages Affected	Description of Revision
10	2/17/05	Sections 4.2.B, 4.2.1.1.1, 4.2.6, 4.4.1.9, 4.4.1.10, 4.4.2.2, 4.7.9.3, 4.7.14.1	DCR-4156. Remove reference to Storm Water Pollution Prevention; Update Facility Qualification Packages; add completing written Qualification Package Examination with a score of 80% or better; add positions of Maintenance Engineer, Design Engineer, Process Engineer, IT/Network Engineer, Criticality Safety Engineer.
11	2/14/06	All	DCR-4216. Major revision. AI 7234 - Describe the qualification process for operations technicians. AI 7235 - Identify continuing training requires as defined in DOE O 5480.20A, and include elements designed to improve Level of Knowledge. AI-8681, address qualification status when recurring training, (Hazwoper, RCRA, Respiratory, Radworker, etc), expires to minimize the potential for assigning expired operators to work tasks. CAR 13077, Remove Technical Staff list to eliminate duplication of the list. The Tech Staff list is in MP-RTQP-14.20. CAR 13079, Define the process for capturing the QAPP requirement for management to continually review the qualification. Form-1010 is required to revise a qual pack, to document evidence to 'continually reviewing' the qualification requirement. Car 13083, Describe re-qualification process when an employee is disqualified due to performance issues who was previously excepted from Training. CAR 13819 – 1. Establish DOE OJT requirements into Section 3.0 and 4.0 of the qualification package. 2. Define the qualification package revision control process and forms required to conform with QAPP Step 2.2.6. Incorporate requirements from contract transition, including BLUE SHEET requirements as listed on DCR-4299. Incorporate current MP-DOCS-18.3 formatting requirements.

Revision Number	Date Approved	Pages Affected	Description of Revision
12	06/19/06	Various	DCR 4983. Add new Section "Proficiency Program for Fissile Material Handler Qualified Personnel" for implementation of DSA annual update.
13	12/29/06	Various	DCR-5553. Added education requirements for identified managerial positions per DOE O 5480.20A.
14	11/19/08	Various	DCR-7249. Changes made to address CAR 38437. Clarified directions for including courses in qualification packages and checklists and clarified wording for disqualification. Deleted requirement to use Form-1657. Deleted unnecessary appendices. Refer to qualification packages, checklists, and individual training plans for requirements. Made editorial corrections per MP-DOCS-18.3.
15	01/13/09	Various	DCR-7859. Minor change to remove roll-down requirement, is no longer needed, as the requirement for FH Qualification if driven by the Order, not the DSA or the TSR. Apply DOCS-BLUESHEET-01, and DOCS-BLUESHEET-03 changes.
16	03/18/10	Various	DCR-9073. Add additional direction and clarification for continuing training and technical staff position analysis to address issues from CAR 47696 and CAR 47697.
17	02/10/11	Pg 9	DCR-9886. Minor change to add note to Step 3.5.2 that clarifies the requirements of DOE O 5480.20A.
18	08/28/12	Various	DCR-11543. Incorporated changes for process improvement for DOE Order 426.2 implementation.

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AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.4, Rev. 18	Issued: 08/29/12	Effective: 08/30/12
Personnel Qualification and Certification		

1.0 PURPOSE/SCOPE

This procedure defines the process for developing and implementing the *qualification* (see def.) process for personnel involved in the operation, maintenance, support, and other job duties that require qualification at the Advanced Mixed Waste Treatment Project (AMWTP). This procedure implements the requirements of Department of Energy Order (DOE O) 426.2 Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities. This procedure also implements training and qualification process requirements, which are described in the MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and MP-TRUW-8.2, Quality Assurance Project Plan.

This procedure describes the process for documenting qualifications and certifications for AMWTP management, supervision, operations, and support personnel. It mandates the identification of initial and continuing training requirements, qualification and certification requirements, and describes the proficiency, requalification and disqualification processes.

The qualification processes ensure that AMWTP employees, subcontractors, and temporary employees are trained to be competent and proficient in performing plant operations.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Manager	• Ensures that clear lines of authority, responsibility, and communication are established, defined, and maintained, and that these relationships are documented in the form of organization charts and job descriptions for all personnel • Directs the activities of their staff to ensure AMWTP establishes and maintains a fully trained and qualified workforce per applicable requirements.

Performer	Responsibilities
Operations Management	• Defines training and qualification requirements in each functional level • Reviews and update qualification and *training programs* (see def.) to reflect changes to the facility, procedures, regulations • Ensures all personnel are properly trained and qualified before performing assigned job duties • Receives and acts on training and qualification direction/ guidance offered by Managers • Provides direction to Supervisors and other support personnel • Works with the Training Organization to ensure that personnel training and qualification needs are met.
Supervisors	• Ensures that all operations, technicians, and maintenance personnel are qualified to perform tasks or are working under direct supervision of qualified personnel. • Directs, oversees, and supervises day-to-day operations • Works with the Training Organization to ensure that personnel training and qualification needs are met.
Training Department	• Implements the *systematic approach to training* (SAT; see def.) process for developing qualification packages and checklists.
Training Manager	• Implements the training and qualification program • Reviews and approves training and qualification packages.
Subject Matter Expert (SME)	• Performs technical reviews on qualification packages.

3.0 PROCEDURE

3.1 Introduction

The requirements in DOE O 426.2 apply to personnel involved in the operation, maintenance, and technical support of non-reactor nuclear facilities. Entry-level requirements, training, and qualification for personnel working in nuclear facilities are intended to provide reasonable assurance that these personnel have, or can acquire, the knowledge and skills to operate and maintain the facility in a safe and reliable manner under all conditions.

The Human Resources Department performs selection and hiring functions in accordance with MP-ADMN-1.6, AMWTP Recruitment, Selection, and Hiring of Personnel. This process considers factors such as background, experience, and education and is based on the ability of the applicant to meet job performance requirements. If an individual does not meet the experience requirements, consideration may be given to the collective experience of the facility. Individuals who do not meet the experience requirements for a position may be assigned to that position provided the overall organization is considered balanced and strong and that approval is obtained from DOE in accordance with MP-RTQP-14.1, Preparation and Administration of Training Plans, on a case-by-case basis.

3.1.1 Education and experience shall be verified by the manager on the Employee Position Description (EPD) in accordance with MP-RTQP-14.1.

3.1.2 AMWTP management and supervision are responsible for ensuring that company personnel are properly trained, qualified, and proficient prior to performing unsupervised job functions.

3.1.3 For personnel who do not meet the requirements, work activities on engineered safety features as identified in the facility Documented Safety Analysis must be supervised by a person who meets the qualification criteria established by the operating organization for conduct of the activities.

3.1.4 Subcontractors and temporary personnel who perform specialized activities (such as, radiation protection, maintenance, in-service inspection, radiography, and welding) shall be supervised by a person who meets the qualification criteria or shall be qualified to perform their assigned tasks by properly documenting one of the following:

- The satisfactory result of an audit of subcontractor records that relate to qualification of the subcontractor personnel being considered for assignment by the operating organization
- Previous verification (within 2 years) of the ability of the subcontractor employee to perform assigned tasks safely and efficiently
- Successful completion by the subcontractor employee of those segments of the operating organizations qualification program that are considered pertinent to the accomplishment of the task to be performed.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document; DOE/CBFO-94-1012)

3.2 Initial Training

NOTE: *At AMWTP, the SAT process uses job analysis for operator, shift supervisor, and maintenance and technician positions. Less formal position analysis approaches may be used for technical staff, supervisor, and manager positions.*

3.2.1 All training and qualification programs shall be identified and developed per the SAT process using the *graded approach* (see def.).

NOTE: *The training and qualification program must be developed using a graded approach based on the hazards involved and risk associated with the operation of the facility or activity. Accordingly, the level of detail and content of the training program, and associated documents or procedures must reflect the personnel selection, training and qualification that are required at AMWTP.*

3.2.2 All personnel who need unescorted access to AMWTP shall receive Facility Access Training including training in the following areas:

- General description of the facilities
- Job-related policies, procedures, and instructions
- Radiological health and safety program
- Facility emergency plans
- Industrial Safety/Industrial Hygiene program
- Security program
- Quality Assurance (QA) program
- Criticality safety
- Fire protection.

3.2.3 An understanding of Facility Access Training shall be evaluated by administering written examinations.

3.2.3.1 Persons who do not pass this examination must not be permitted access without a continuous escort.

3.2.3.2 All hazard identification and safety signage on the written examination must be identical in appearance and language as it exists at the facility.

3.2.3.3 The examination must cover area selected for training and must be of sufficient difficulty to ensure the person has adequate knowledge to work independently at the facility.

3.2.4 Visitors, contracted personnel, and temporary personnel shall be under continuous escort while at the facility unless they have completed Facility Access Training.

3.2.5 For persons requiring long-term (e.g., more than 10 working days) access, understanding of the information provided by the General Employee Training program must be evaluated by administering a written examination (includes computer and web based training examinations).

NOTE: *Initial training is designed to familiarize new Operations personnel with the information and protocols necessary to maintain a safe work environment at the AMWTP.*

3.2.6 Initial training is required for Operations personnel at AMWTP to enhance their knowledge and skills to perform job assignments.

3.2.7 Initial training shall include a core of subjects such as industrial safety, instrumentation and control, basic physics, chemistry, industry operating experience, and major facility systems as applicable to the position and the facility.

3.2.7.1 All initial and recurring training courses, qualification checklists, and qualification packages shall be listed in the employee's *individual training plan* (ITP; see def.) per MP-RTQP-14.1.

3.2.8 Personnel who are in the process of completing training on tasks and activities for which that are not fully qualified must work under the direct supervision of someone who is qualified, and must not independently make decisions or take action when that work could affect facility safety.

3.2.8.1 AMWTP management must not place personnel who are in training in such positions. However, they may independently perform specific tasks or job assignments for which they are qualified.

3.2.9 Personnel involved with the management of mixed waste shall receive annual Hazardous Waste Management Act/Resource Conservation Recovery Act (HWMA/RCRA) training.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.2.10 Documentation that personnel working at the mixed waste facilities have received initial emergency response training, annual training, and specialized training shall be maintained in their training records.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.2.11 Personnel with the potential to be exposed to mixed waste shall receive Hazardous Waste Operations and Emergency Response (HAZWOPER) training for treatment, storage, and disposal facilities (24-hr initial).

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.2.12 Initial training requirements shall be completed within 6 months of the individual's date of employment or assignment to a mixed waste facility, when their position involves the management of mixed waste.

(HWMA/RCRA TSA IS Document; HWMA/RCRA Permit)

3.3 Continuing Training

3.3.1 Continuing training programs shall be identified and developed per the SAT process during the initial development of training programs.

3.3.2 Continuing training programs shall be designed to maintain and enhance the knowledge and skills of AMWTP personnel.

3.3.2.1 Continuing training programs shall be required for Operations personnel who perform functions associated with *safety significant systems structures, and components* (see def.).

3.3.3 The guidance in DOE-HDBK-1118-99, Guide to Good Practices for Continuing Training, should be used to develop continuing training programs.

3.3.4 Continuing training programs for operators, technicians, maintenance personnel, and their supervisors shall be defined in the requalification package for each position.

3.3.4.1 The requalification package for operator, shift supervisor, maintenance, and technician positions is required to be completed every 2 years.

3.3.4.2 The requalification package shall include selected fundamentals with the emphasis on seldom used knowledge and skills necessary to assure safety.

3.3.5 The employee's supervisor or manager shall assign additional courses, tailgate briefings, required reading, proficiency evaluations, or qualification package addendums to cover significant facility and component changes, procedure changes, industry operating experience, and other training needed to correct identified performance problems.

3.3.6 An understanding of continuing training for operators and their immediate supervisors shall be evaluated by administering periodic tests during the continuing training cycle or comprehensive written examinations

3.3.7 Continuing training programs for the certified positions of fissile material handler and fissile material supervisor shall also consist of the requirements from MP-RTQP-14.21, Criticality Safety Training, listed in the recertification package and the annual continuing training course 0AWT2650, which includes a written exam covering abnormal conditions and emergencies.

3.3.8 Personnel involved with the management of mixed waste shall receive annual HWMA/RCRA refresher training as part of HAZWOPER refresher.

3.3.8.1 This training reviews the Contingency Plan, required HWMA/RCRA inspections, and mixed waste management procedures.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.3.9 Personnel with the potential to be exposed to mixed waste shall receive HAZWOPER refresher training for treatment, storage, and disposal facilities (8-hr).

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

NOTE: *Continuing training at AMWTP includes recurring training courses for required health and safety topics, criticality safety, and Safety Basis as listed on the employee's ITP.*

3.3.10 All personnel shall complete all other recurring training required for their assigned duties.

3.4 DOE O 426.2 Operators, Technicians, and Maintenance Personnel Training Requirements

NOTE: *Technicians and maintenance personnel are principally involved in calibration, inspection, troubleshooting, testing, maintenance, and radiation protection activities.*

3.4.1 Operators, technicians, and maintenance personnel shall meet the entry-level education and experience requirements as follows:

Position	Education/Job-Related Experience[1]
Operators, Technicians, and Maintenance Personnel	High School Diploma
Operators and Technicians	1 year job-related experience
Maintenance Personnel	1 year maintenance-related experience

1. Alternatives to education and experience are described in MP-RTQP-14.1.

3.4.2 All technicians and maintenance personnel shall be qualified to perform tasks or work under direct supervision of qualified personnel.

(HWMA/RCRA Permit; HWMA/RCRA TSA IS Document)

3.4.2.1 Written exam should be administered to technicians and maintenance personnel.

3.4.2.2 A comprehensive final examination need not be administered to ascertain formal qualification of technicians and maintenance personnel (with the exclusion of radiological control technicians, who must comply with the requirements of 10 CFR 835).

3.4.2.3 Satisfactory completion of the continuing training program, performance of their assigned duties, and assessment of individual performance such as that which is typically included in personal performance appraisals may be used to document continued satisfactory performance.

3.4.3 Personnel who work on safety significant systems, as identified in RPT-DSA-02, Documented Safety Analysis, or systems that have a direct impact on the safe operation of the plant, shall be trained to work on those systems/components.

3.4.3.1 System training shall include:

- Purpose of the system
- General description of the system including major components, relationship to other systems, and all safety implications associated with working on the system
- Related industry and facility-specific experience.

3.4.4 Training program content for radiological control technicians (RCT) must be in accordance with the requirements contained in 10 Code of Federal Regulations (CFR) 835, Occupational Radiation Protection; and DOE-STD-1098-2008, Radiological Control.

3.4.4.1 DOE HDBK-1122-99, Radiological Control Technician Training, which includes additional guidance, should be used in developing initial and continuing training for radiation technicians.

3.4.5 RCT training program elements (i.e., selection, training process, continuing training, qualification) must be in accordance with the requirements of this DOE Order 426.2.

3.5 Technical Staff Training

NOTE: *Technical staff personnel are typically involved in surveillance, testing, analyzing facility data, planning modifications, program review, and technical problem resolution in their area of expertise.*

3.5.1 Technical staff personnel who provide support to AMWTP nuclear operations are identified in MP-RTQP-14.20 Training Implementation Matrix, Appendix A, DOE Order 426.2 Positions.

3.5.1.1 This list also identifies the staff that has a direct impact on employee, facility, or public safety, as required by MP-RTQP-14.20.

NOTE: *The education and experience requirement for technical staff do not apply to entry level positions.*

3.5.2 Technical staff shall meet the education and experience requirements as follows:

- Education: Baccalaureate in engineering or related science
- Nuclear experience: 1 year
- Job related experience: 2 years
- Alternatives to education and experience are described in MP-RTQP-14.1.

NOTE: *Training for technical staff is based on less formal position analyses using Form-1978, Position Analysis for Technical Staff, as described in MP-RTQP-14.1. Position analysis information may also be in existing program documentation or on Form-1244, Job Analysis and Task-to-Train Matrix.*

3.5.3 Technical staff training and qualification requirements shall be based on the position analysis and identified on their ITP.

3.5.3.1 Technical staff personnel are considered qualified by virtue of meeting the entry-level requirements associated with the position and by completing applicable facility-specific training.

3.5.3.2 Qualification checklists may be required for special positions or duties.

3.5.4 Training on the following topics shall be provided for entry-level technical staff personnel as determined by the position analysis:

- Facility organization
- Facility fundamentals
  - Heat transfer, fluid flow, and thermodynamics
  - Electrical science
  - Nuclear physics

- Chemistry/chemistry controls
- Process controls.

- Facility systems, components, and operations
- Environment, Safety, and Health Orders
- Codes and standards overview
- Facility document system
- Facility authorization basis documents
- Nuclear criticality control
- Material, maintenance, and modification control
- ALARA and rad waste reduction program
- Quality Assurance/Quality Control practices.

NOTE: *Continuing training for technical staff may also include participation in continuing education courses, attending related professional organization conferences or seminars, or presentations/discussions at staff meetings*.

3.5.5 Continuing training shall be designed to reinforce, maintain, and improve skills and knowledge of technical staff personnel by providing information regarding applicable facility and industry events, major procedure changes, significant facility modifications, and continuing training on selected initial training topics, as appropriate.

3.5.6 Technical staff line management shall be responsible for providing topical input for the continuing training program.

3.5.7 Technical staff qualification will be maintained by participation in continuing training and satisfactory annual personal performance appraisal.

3.6 Qualification of Managers and Operations Management Personnel

NOTE 1: *Managers are considered qualified by virtue of meeting the entry-level requirements associated with the position and by completing applicable position-specific or facility-specific training and/or qualification.*

NOTE 2: *Personnel may fill management positions while completing any identified training.*

3.6.1 Manager training and qualification requirements shall be identified on their ITP.

NOTE: *Alternatives to education and experience are described in MP-RTQP-14.1.*

3.6.2 The AMWTP manager and operations management positions identified in MP-RTQP-14.20, Appendix A, are required to have a minimum of a baccalaureate degree in engineering or related science. Managers must have four years nuclear experience and operations managers must have three years job related and two years nuclear experience.

3.6.3 The training manager shall have a baccalaureate including courses in education and technical subjects (baccalaureate need not be in engineering or related science).

3.6.4 The management training program should include the following or equivalent in an ongoing professional development program:

- Supervisory skills training
- Quality assurance and quality control
- Facility security and emergency plans
- Purchasing
- Material storage
- Facility modifications (configuration control)
- Nuclear, industrial, and radiation safety
- Environmental issues
- Budgeting.

3.6.5 Operations management personnel must be qualified.

3.6.5.1 Training must be satisfactorily completed on applicable facility/process safety basis documents.

3.6.5.2 Training must be provided on process knowledge to demonstrate operational knowledge of applicable facilities/processes.

3.7 Qualification of Supervisors

NOTE: *Supervisors are considered qualified by virtue of meeting the entry-level requirements associated with the position and by completing applicable position-specific or facility-specific training and/or qualification.*

3.7.1 Supervisor training and qualification requirements shall be identified on their ITP.

NOTE: *Alternatives to education and experience are described in MP-RTQP-14.1.*

3.7.2 Supervisors shall meet the entry-level education and experience requirements as follows:

- Education: High school diploma
- Nuclear Experience: 3 years.

3.7.3 Shift supervisors must complete a qualification package to attain qualification for their positions.

3.7.4 The supervisory skills training program shall include the following or equivalent in an ongoing professional development program:

- Leadership
- Interpersonal communication
- Responsibilities and authority
- Motivation of personnel
- Problem analysis and decision making
- Fitness for duty procedures
- Administrative policies and procedures
- Conduct of Operations
- Conduct of maintenance

- Conduct of selection, training, qualification and certification of personnel
- Work control process
- Management of personnel performance issues and performance appraisals.

3.8 Development of a Qualification Package

NOTE: *Qualification packages are used for operator, fissile material handler, shift supervisor, maintenance, and technician positions at AMWTP to meet the formal qualification requirements from DOE O 426.2.*

3.8.1 The applicable manager shall request the Training Department and/or an SME to analyze the job and from these analyses develop a task list in accordance with MP-RTQP-14.6, Job Analysis, to direct training content.

3.8.1.1 General criteria should be considered, including applicable QA plans, codes, regulations, and standards.

3.8.1.2 Specific criteria shall be used, including applicable QA project plans and implementing procedures.

3.8.1.3 Fissile material handlers and fissile material handler supervisors shall obtain certification per the Fissile Material Hander certification requirements listed in MP-RTQP-14.21.

3.8.1.4 The responsible work group (Maintenance, Operations, etc.) shall analyze each job position to determine the task responsibility of the position subject to the Quality Assurance Project Document.

(DOE/CBFO-94-1012)

NOTE: *Qualification packages or checklists developed prior to the effective date of this revision of this procedure are not required to comply with the requirements of Step 3.8.2 until revised.*

3.8.1.5 General training courses, qualification packages, and additional qualification checklists that each employee needs to complete shall be listed on the ITP.

3.8.2 Training Department: A qualification package and requalification package shall be developed for each operator, operator supervisor, technician, and maintenance position identified in MP-RTQP-14.20, Appendix A.

3.8.2.1 A cover sheet (not a part of the qualification package issued to the student) shall be used to identify:

- The qualification package title and number
- The current revision number
- A description of the qualification and who needs to complete the qualification
- Requalification frequency
- Any information needed to enter the qualification package in the training database
- All review and approval signatures.

3.8.2.2 The first page of the qualification package that will be issued to the student shall include the following:

- The qualification title and number
- A block for the employee's name and security number
- A block for the manager to sign granting qualification on completion of training in the qualification package
- A block for the plant manager or designee to endorse the employee is certified (this is only needed for positions requiring certification).

- Approval signatures of the Training manager and the manager responsible for the qualification
- A list of all attachments that must be submitted with the qualification package (e.g., written examinations, oral or walk-through examination sheets, remedial training forms, and exceptions).

NOTE: *The Knowledge Requirements section includes general discussions of safety basis and technical safety requirements (TSRs) that affect the position and general theory or operating principles that will improve understanding of the tasks performed in the position. Specialized training courses needed for the position are included. General training courses are not listed in the qualification package but on the ITP. Documents and procedures that need to be read and discussed with the supervisor or on-the-job training (OJT) instructor will be listed.*

3.8.2.3 The body of the qualification package shall contain the following sections:

- Revision/Modification Record
- Signature Roster
- Prerequisites
- Knowledge Requirements
- Training Objectives
- Examinations.

NOTE: *Medical information is maintained solely in the Occupational Health Manager software program, maintained by the AMWTP Industrial Safety and Industrial Hygiene department.*

3.8.2.4 Unique prerequisites required for the qualification package should be listed, including any required medical examination.

3.8.2.5 The Training Objectives section shall include the following:

3.8.2.5.1 Technician and maintenance personnel qualifications shall include performance demonstrations and assessments to ascertain their ability to adequately perform assigned tasks and be sufficiently comprehensive to cover areas fundamental to the job duties.

3.8.2.5.2 OJT training shall contain the following topics as applicable:

- Normal and emergency operating procedures pertinent to the job and general plant emergencies
- Administrative procedures
- Rad control practices, including good personnel protection practices to maintain personnel exposure ALARA to radiation
- Exposure levels and the appropriate action to minimize exposures to chemicals, electromagnetic fields, toxic materials, or other personnel hazards
- Appropriate techniques for verifying the position of facility components
- Utilization of appropriate monitoring instruments when required
- Conduct of Operations
- Locations and functions of pertinent safety systems and equipment
- Procedures for making changes or alterations in operations or operating procedures
- TSRs, as required.

3.8.2.6 The examination section of the qualification package shall list the examinations that are required to be completed and provide space to document successful completion.

3.8.2.6.1 Qualification of operators and their immediate supervisors shall include examinations (written, oral, operational evaluations), as applicable to the position.

3.8.2.6.2 Initial qualification shall include a comprehensive written examination.

3.8.2.6.3 Comprehensive written examinations and operational evaluations (consisting of a walkthrough and oral examination) are required for the certified positions of fissile material handler and fissile material handler supervisor.

3.9 Qualification/Certification Process

3.9.1 Assignment of Job Duties

3.9.1.1 The applicable manager shall review and update the employee's EPD (per MP-RTQP-14.1), to include the new duties being assigned and to verify the employee has the required education and experience for the position.

3.9.1.2 The applicable manager shall update the employee's ITP (per MP-RTQP-14.1) to include the additional training courses and qualification packages/checklists needed to complete the new qualification.

3.9.2 Qualification of the Candidate

3.9.2.1 The candidate shall successfully complete all of the necessary training requirements listed in the qualification package.

3.9.2.2 The candidate shall demonstrate operational proficiencies listed in the performance demonstration sections of the qualification package per MP-RTQP-14.13, Performance Assessments.

3.9.2.3 The candidate shall complete a qualification examination associated with each Qualification package, when required, with a minimum score of 80%.

3.9.2.4 The candidate shall complete an interview with a shift supervisor, plant shift manager, or appropriate manager.

NOTE: *The date signed is the effective date of the qualification.*

3.9.2.5 The appropriate manager shall sign and date the cover of the qualification package granting qualification.

3.9.2.5.1 If the qualification package or checklist has not been updated to include the manager's signature to grant qualification on the cover, Form-1657, Qualification/Certification Endorsement, may be used.

3.9.2.6 For certified positions, the plant manager or designee shall sign the cover endorsing the candidate for the position.

3.9.2.7 Written examinations must be administered to certified operator candidates (fissionable material handlers). These examinations must contain a representative selection of questions on the knowledge and skills identified from learning objectives developed from the analysis of the job and from information in Documented Safety Analysis, Technical Safety Requirements, system description manuals and operating procedures, lessons learned from Occurrence Reports, and other applicable sources.

3.9.2.8 Written examinations must be administered to certified supervisor candidates. These examinations must be based on the sources discussed in Section 3.2.7. The examination must include a representative sampling from the following items, in addition to those required for certified operators, as appropriate to the position and to the facility.

1. Design, control, and operating limitations for the nuclear facility, including instrumentation characteristics and adjustment, nuclear facility operation, and nuclear facility console control mechanisms

2. Radiation hazards that may arise during the performance of experiments

3. Nuclear and radiation theory, including details of the fission process, neutron multiplication, source effects, and neutron poison effects

4. Procedures and limitations involved in initial equipment loading, alterations in fissionable material configuration, and determination of various internal and external effects on criticality safety

5. Procedures, equipment, and facilities available for handling and disposing of radioactive materials and effluent

6. Functions, assignments, and responsibilities of the maintenance and technical support organizations as related to nuclear facility safety; and

7. Applicable portions of the facility Documented Safety Analysis.

3.9.2.9 Operational drills conducted in the facility must be provided at least biennially for certified operators and supervisors.

NOTE: *Facility evacuation drills are not considered operational drills.*

3.9.2.10 Fissile material handlers (FMH) and fissile material handler supervisors (FMHS) shall receive instruction in the use of facility systems to control or mitigate accidents. Such training must include both classroom-type training and training conducted in the facility.

3.9.2.11 Personnel who are responsible for developing and delivering training may be excused from continuing training for the area of primary administrative responsibility.

3.10 Requalification and Recertification Requirements

3.10.1 Personnel (including operations, maintenance, and technical support personnel) may be requalified by management upon completion of the continuing training program, including requisite examinations (written, oral, and operational/performance).

3.10.2 Requalification/certification is required in a 2-year continuing training cycle for operators, operator supervisors, technicians, and maintenance personnel as listed in MP-RTQP-14.20, Appendix A.

3.10.3 Personnel and their immediate supervisors must not be allowed to continue to function in qualified or certified positions if they have not completed all of the requalification or recertification program elements within the 2-year continuing training cycle.

3.10.4 Extensions may be granted in accordance with MP-RTQP-14.3, Training Exceptions, Exemptions, and Extensions.

3.10.5 Requalification must include requisite examinations. This may be achieved by either administering a comprehensive biennial requalification examination, including any operational evaluations or performance demonstrations that may be specified, or by administering periodic examinations (e.g., quarterly) during the requalification cycle.

3.10.6 Operational evaluations must require FMH and FMHS to demonstrate an understanding of and the ability to perform a representative sampling of the control manipulations applicable to the position and the facility.

3.10.7 When a qualified or certified individual has been absent from duties for greater than 3 months, but less than 12 months, selected retraining (including written and oral examinations and operational/performance evaluations, as deemed necessary) must be given prior to reassignment to duties.

3.10.7.1 The qualification or certification base date remains the same as it was before the absence.

3.10.8 When qualified or certified individual has been absent for greater than 12 months, comprehensive written and oral examinations and operational/performance evaluations (as required of initial candidates) must be given to determine weak areas. Retraining and reexamination must be required in area of weakness, and upon successful completion, a new qualification or certification date may be established.

3.10.9 Requalification requirements shall be defined in a requalification package developed consistent with the requirements in Section 3.8.

(HWMA/RCRA TSA IS Document; HWMA/RCRA Permit)

3.10.10 The employee's manager shall approve requalification upon successful completion of the requalification package.

3.10.11 The plant manager or designee shall endorse recertification for fissile material handlers and fissile material handler supervisors in accordance with DOE O 426.2.

3.11 Changing Qualification Package Training Requirements

NOTE: *Qualification package modifications and revisions are initiated by site personnel for a host of reasons, including:*

- *Adding or removing OJT*
- *Adding or removing initial training*
- *Making editorial changes*
- *Providing clarification of or change of operation procedure in an OJT section, reflecting changes to the facility, Documented Safety Analysis, TSRs, procedures, regulations, and applicable industry operating experience, etc.*

3.11.1 A qualification package revision is required when training objectives have changed.

3.11.2 A modification is used for correction of typographical errors, clarifications, and other changes that do not affect the training objectives.

3.11.2.1 Revisions and modifications to qualification packages or checklists shall be completed in accordance with the directions in MP-RTQP-14.9, Instructional Materials Development, Revision, and Control.

3.11.2.2 Qualification package revisions shall be implemented by an Instructional Analyst/Developer (IA/D), reviewed by the SME, and approved by the Training manager and appropriate manager.

3.11.2.3 The IA/D will prepare an addendum to the qualification package for qualified employees to complete new training requirements or new OJT.

3.11.2.3.1 The addendum is prepared in conjunction with the qualification package revision for concurrent review and approval.

3.11.2.3.2 A standardized format will be used and a unique admin form number will be assigned for tracking completion in the training database.

3.11.2.3.3 The addendum Train Admin form number will be listed on the revision page of the revised qualification package.

3.11.2.3.4 The responsible manager will assign the addendum to qualified employees and will designate the period for completion of the addendum.

3.11.2.3.5 When completed, the addendum will be attached to the qualification package in the employee's file.

3.12 Disqualification

3.12.1 Any employee qualified or certified using a qualification package or checklist may be disqualified for the following reasons:

- Medical reasons
- Fails a requalification or recertification examination
- Shows job performance deficiency
- Performs work in an unsafe manner
- Expiration of recurring training or qualification.

3.12.1.1 If the employee fails a requalification or recertification examination, remedial training shall be assigned that is designed to correct the deficiency.

3.12.1.1.1 The remedial training shall be documented on Form-1039, Remedial Training Program Form.

3.12.1.1.2 The examination shall be retaken and passed.

3.12.1.2 If the employee shows job performance deficiency, a training needs analysis should be performed in accordance with MP-RTQP-14.24, Training Needs Analysis.

NOTE: *Items that were "excepted" in their training become part of the needed remedial training program.*

3.12.1.2.1 Requalification shall require remedial training designed to correct the deficiency.

3.12.1.2.2 The remedial training shall be documented on Form-1039.

3.12.1.3 If the employee performs work in an unsafe manner, the reason the unsafe actions were performed, shall be determined.

3.12.1.3.1 A training needs analysis should be performed in accordance with MP-RTQP-14.24.

3.12.1.3.2 Requalification requires remedial training designed to correct the deficiency.

3.12.1.3.3 The remedial training shall be documented on Form-1039.

3.12.1.4 If the employee's training or qualification has expired, the expired recurring training or qualification shall be completed.

3.12.2 Any time an employee is disqualified, limitations are placed on a qualification, or a qualification is reinstated, the manager must submit Form-1902, Change in Qualification Status, to the Training manager for approval.

3.12.2.1 The manager will evaluate if disqualification is required or if the employee may perform the duties with reasonable limitations.

3.12.2.2 The employee's training file and the training database will be updated upon approval.

3.13 Qualification Checklists

3.13.1 Qualification checklists may be developed for equipment operation or for positions or duties that do not require formal qualification per DOE O 426.2.

3.13.2 The format and content should be developed using the graded approach to the process defined in Section 3.8.

3.13.3 The periodicity of the qualification checklist is determined and documented during the job analysis.

3.13.3.1 Requalification requirements are also documented in the analysis.

3.13.4 Written examinations are not required for checklists but may be included if needed.

3.14 Proficiency Program for Fissile Material Handler Qualified Personnel

3.14.1 Proficiency for fissile material handler certified personnel is defined in MP-RTQP-14.21.

4.0 DEFINITIONS

Graded approach. A process by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with: (1) the relative importance to safety, safeguards, and security; (2) the magnitude of any hazard involved; (3) the life cycle stage of the facility; (4) the programmatic mission of the facility; (5) the particular characteristics of the facility; and (6) any other relevant factor.

Individual training plan. A description of the required training pertaining to an employee's job function.

Qualification. Qualification is defined in terms of education, experience, training, examination, or any special requirements for performance of assigned responsibilities.

Safety Significant systems, structures, and components. Systems, structures, or components, designated as having a safety function that reduces the risk of exposure to on-site workers from postulated accidents evaluated in the Documented Safety Analysis.

Systematic approach to training. Systematic process of analyzing, designing, developing, implementing, and evaluating training process to achieve performance-based training programs.

Training program. A planned, organized sequence of activities designed to prepare individuals to perform their jobs, to meet a specific position or classification need, and to maintain or improve their performance on the job.

5.0 REFERENCES

(1) 10 CFR 835, Occupational Radiation Protection

(2) AMWTP HWMA/RCRA Permit

(3) AMWTP HWMA/RCRA TSA Interim Status Document

(4) DOE/CBFO-94-1012, U.S. DOE Carlsbad Field Office Quality Assurance Program Document;

(5) DOE HDBK-1122-99, Radiological Control Technician Training

(6) DOE O 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities

(7) Form-1244, Job Analysis and Task-to Train Matrix

(8) Form-1978, Position Analysis for Technical Staff

(9) MP-ADMN-1.6, AMWTP Recruitment, Selection, and Hiring of Personnel

(10) MP-RTQP-14.1, Preparation and Administration of Training Plans

(11) MP-RTQP-14.3, Training Exceptions, Exemptions, and Extensions

(12) MP-RTQP-14.6, Job Analysis

(13) MP-RTQP-14.9, Instructional Materials Development, Revision, and Control

(14) MP-RTQP-14.13, Performance Assessments

(15) MP-RTQP-14.20, Training Implementation Matrix

(16) MP-RTQP-14.21, Criticality Safety Training

(17) MP-RTQP-14.24, Training Needs Analysis

(18) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(19) MP-TRUW-8.2, Quality Assurance Project Plan

(20) RPT-DSA-02, Documented Safety Analysis

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-RTQP-14.4 Case File	Nonpermanent/WIPP ENV1-J-1/ Destroy 10 years after submittal
Employee and subcontractor personnel qualification documentation	Facility Operating Record (FOR) and NP WIPP/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Form-1039, Remedial Training Program Form	FOR and NP WIPP/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Form-1657, Qualification/Certification Endorsement Form	FOR and NP WIPP/ENV2-a-1-a/ Destroy 5 years after Life of Facility
Form-1902, Change in Qualification Status	FOR and NP WIPP/ENV2-a-1-a/ Destroy 5 years after Life of Facility

7.0 EXHIBITS

None

8.0 APPENDICES

None

Job Analysis

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11539.*) 08/23/12

Todd Golberg
Training Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.6, Rev. 7	Issued: 08/29/12	Effective: 08/30/12
Job Analysis		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/8/02	All	Initial issue. MP-RTQP-14.6; Job and Training Needs Analysis.
1	01/06/03	5 10 Exhibit A	Section 3.0; Made definitions generic in all training procedures Section 4.1.4; Added list of Tech Staff Positions Added Revised Sample Form-1244
2	2/25/2004	4, 13, 14, 15, A-1, A-2, A-3	Section 2.0, References: Changed "DOE ORDER 5480.20A Section I.7.b. (1)" to "DOE Order 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities" Added DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities Section 4.3.1: Changed "Training Action Form" to "Training Request Form" Section 5.0: In the "Classification" Column, replaced all "Permanent/ Quality Record" with "Non-permanent/Quality Record." Removed Columns "Uniform File Code," "Disposition Authority," and "Retention Period." In the Record Description Column, replace "Training Action Form" with "Training Request Form." Replaced "AMWTP-1244, Job Analysis Form" with "Advanced Mixed Waste Treatment Project Task Analysis, AMWTP Form-1244." Section 6.0: Deleted "A. Sample Job Analysis Summary form AMWTP-1244." Reassigned "Performance Analysis Flowchart" and "Training Needs Analysis Flowchart" "A" and "B," respectively. Removed Exhibit A, Sample Form-1244.

AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.6, Rev. 7	Issued: 08/29/12	Effective: 08/30/12
Job Analysis		

Revision Number	Date Approved	Pages Affected	Description of Revision
3	06/17/04	Various	DCR-3104. Update formatting to standard. Minor editorial changes.
4	02/22/05	Page 7	DCR-4165 Resolution to CAR-7142 Added the following positions to step 4.1.4.1 Radiological Engineer, Maintenance Engineer, Design Engineer, Process Engineer, IT/Network Engineer, and Criticality Safety Engineer.
5	9/12/05	ALL	DCR-4263. Change title of this document from 'Training and Job Needs Analysis' to 'Job Analysis.' This is a major revision to implement BBWI training program at AMWTP. Incorporate Transition requirements (including logo, etc. changes as listed on DCR-4299. Revise Form-1244, Job Analysis Task Listing. Create new Form-1636.
6	06/08/09	All	DCR-8409. Periodic review date due. Change review date and roll rev.
7	08/23/12	Various	DCR-11539. Revised as part of ISMS update and for DOE O 426.2 implementation. Incorporated ITG-BLUESHEET-137 and DOCS-BLUESHEET-09.

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AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.6, Rev. 7	Issued: 08/29/12	Effective: 08/30/12
Job Analysis		

1.0 PURPOSE/SCOPE

This procedure directs the process for performing a job analysis (see def.), per the systematic approach to training model. This procedure applies to any request for job analysis and is used to determine the action(s) and response(s) required by the training organization.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Instructional Analysis/Developer (IA/D)	Develops the job analysis.
Training Manager	Reviews the job analysis.
Course Owner (see def.)	Approves the job analysis.

3.0 PROCEDURE

3.1 Prerequisites

3.1.1 A training needs analysis must be performed, per MP-RTQP-14.24, Training Needs Analysis, to determine if training is required by policies, procedures, DOE Orders, regulatory standards, etc.

3.2 Instructions

3.2.1 IA/D: Review the information given by the requestor or listed on AMWTP Form-1010, Training Request Form.

NOTE: *Interviews with* subject matter experts *(*SMEs; *see def.) may be necessary to complete Step 3.2.2.*

3.2.2 IA/D: Gather any related information.

3.2.2.1 If the request is driven by a new or modified requirement, gather and investigate the criteria necessary to meet the requirement.

3.2.3 IA/D: Select the appropriate SMEs and/or supervisors of the *job incumbents* (see def.).

3.2.3.1 Brief these selected individuals on the process used to complete a job analysis.

3.2.3.2 Record the names and position titles of these selected individuals on Form-1244, Job Analysis and Task-to-Train Matrix.

3.2.4 Training Specialist: Facilitate these individuals in identifying the tasks the incumbents would be assigned to complete as a normal part of their job assignment and identifying physical demands for routine and emergency job functions.

(DOE O 426.2)

NOTE: *Personnel should use the table-top method of job analysis, unless special circumstances call for a traditional method. DOE HDBK-1076, Table Top Job Analysis, or DOE HDBK-1078, Systematic Approach to Training, should be referred to as required.*

3.2.4.1 Perform a job analysis and record the tasks in terms of observable behaviors, (see def.), on Form-1244.

3.2.4.1.1 If job functions require team solutions and activities, then include team training of personnel in the analysis, stressing team communications and interactions.

3.2.4.2 Use Form-1244, as needed, to document training requirements for tasks identified in previous step.

3.2.4.2.1 Determine which tasks are selected for initial training (*Train*; see def.), continuing training (*Over Train*; see def.), no training (*No Train*; see def.), and pre-training (*Pre-Train*; see def.) considering the difficulty, importance and frequency of the tasks.

3.2.5 Training Specialist: Give the summary and other documentation to the Training Manager for that job position as a prerequisite for developing a training program plan.

3.2.6 Training Manager: Review the Job Analysis.

3.2.7 Course Owner: Approve the Job Analysis by signing Form-1244, as applicable.

4.0 DEFINITIONS

Course Owner. The organization/individual responsible for maintaining an existing training course and its instructional materials.

Job Analysis. Lists the tasks necessary for successful performance of jobs and identifies those tasks selected for initial and continuing training.

Job Incumbents. Personnel normally assigned to the job being analyzed.

No Train. Is not to be interpreted to mean that no training at all is required. It means that no formal training (refer to Train) is necessary; the task can be learned on the job.

Observable Behavior. Physical actions the trainee performs on the job that can be seen and evaluated.

Over Train. Provide a combination of formal training plus periodic practice of the task (retraining).

Pre-Train. Provide formal training immediately before the need to perform the task because performance is infrequent but task is difficult.

Subject Matter Experts. Those qualified (or previously qualified) and experienced in performing a particular task. A subject matter expert may also be one who, by education, training and/or experience, is a recognized job incumbent familiar with a particular subject, topic, or system.

Train. Provide a combination of formal training (for example, classroom, on-the-job, drills, and/or simulators).

5.0 REFERENCES

(1) DOE Order 426.2, Personnel, Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities

(2) DOE-HDBK-1076-94, Table Top Job Analysis

(3) DOE-HDBK-1078, Training Program Handbook: A Systematic Approach to Training

(4) MP-RTQP-14.24, Training Needs Analysis

(5) MP-DOCS-18.2, Records Management

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-RTQP-14.6, Job Analysis, Case File	Misc. Other Records/A16-1.2/Destroy 5 years after submittal
Form-1244, Job Analysis Task Listing and Task-to-Train Matrix	Both FOR and NP-WIPP-ENV2-a-1-a/Destroy 5 years after submittal
Form-1010, Training Request Form	Both FOR and NP-WIPP-ENV2-a-1-a/Destroy 5 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

None

Training Program Evaluation

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11508.*) 08/29/12

Todd Golberg
Training Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.16, Rev. 6	Issued: 08/30/12	Effective: 08/31/12
Training Program Evaluation		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/8/02	All	Initial issue. MP-RTQP-14.16; "Training Program Evaluation"
1	2/24/04	4, 7-11	Section 2.0, References: Added BNFL-5232-RPT-ESH-02, "Documented Safety Analysis for Retrieval Operations;" BNFL-5232-RPT-ESH-03, "Technical Safety Requirements for Retrieval Operations;" 10 CFR 830, "Nuclear Safety Management", Subpart A, "General Provisions". Section 4.1.2.1.1:Delete "Form" from "Instructor Evaluation Form." Section 5.0: In the "Classification" Column, replaced all "Permanent Quality" with "Non-permanent/Quality Record." Removed Columns "Uniform File Code," "Disposition Authority," and "Retention Period." In the Record Description Column, changed "Oral Examination Record" to "Oral/Walkthrough Examination Record." In the Record Description Column, deleted "Form" from "Instructor Evaluation Form." Section 6.0: Removed Sections 6.1 and 6.2. Removed Instructor Evaluation (AMWTP Form-1223) and Training Facility and Material Evaluation Form (AMWTP Form-1224).
2	06/17/04	Various	DC-3111. Update formatting to standard.

AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.16, Rev. 6	Issued: 08/30/12	Effective: 08/31/12
Training Program Evaluation		

Revision Number	Date Approved	Pages Affected	Description of Revision
3	09/21/05	All	DCR-4203. Incorporate current MP-DOCS-18.3 formatting requirements. AI 8678 Define the process to review trainee classroom evaluations and initiate improvements to training programs. CAR 13079 - Describe the process for evaluating training programs Update Form-1224, and change title to: Training Evaluation and Comments
4	02/12/08	2/3.1.1.1 Section 6.0	Change requirement to periodic QA evaluations of the Training Program. Corrected Records Section.
5	06/08/09	All	DCR-8410. Periodic review date due. Change review date and roll rev. Incorporate Bluesheet-03.
6	08/29/12	Various	DCR-11508. Incorporated DOE O 426.2 changes.

AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.16, Rev. 6	Issued: 08/30/12	Effective: 08/31/12
Training Program Evaluation		

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AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.16, Rev. 6	Issued: 08/30/12	Effective: 08/31/12
Training Program Evaluation		

1.0 PURPOSE/SCOPE

This procedure describes the methods of performing continuous evaluations of training programs governed by DOE O 426.2, Personnel Selections, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities. Evaluation of training programs not required to meet DOE O 426.2 should be conducted using this procedure as a good management practice. Training evaluation should employ a *graded approach*, (see def.), as appropriate.

(DOE O 426.2)

Training program evaluations are conducted to provide reasonable assurance that training programs are producing competent employees capable of performing their work safely and efficiently. Training evaluations document the continuous assessment of training programs (i.e., lesson plans, qualification processes, qualification packages, qualification checklists, etc.), to increase their effectiveness and ensure that the training programs are kept up-to-date in dynamic work processes.

Qualification and certification programs are reviewed by facility management and maintained to reflect any changes to the facility, RPT-DSA-02, Documented Safety Analysis, RPT-TSR-03, Technical Safety Requirements, procedures, regulations, and applicable industry operating experiences.

(DOE O 426.2)

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Plant Manager or Designee	• Continually reviews training and qualification programs to ensure training programs convey all the required skills and knowledge.
Training Manager	• Schedules Training program evaluations per MP-M&IA-17.1, Management Assessment • Ensures Training staff assigned to perform Training evaluations are qualified • Reviews trainee classroom evaluations and follow-up with corrective actions as applicable.

3.0 PROCEDURE

3.1 Program Evaluation

3.1.1 Planning the Training Program Evaluation

NOTE 1: *QAPP-01, Quality Assurance Program Plan, requires periodic Quality Assurance (QA) assessments of the Training Program.*

NOTE 2: *QAPP-01 also requires Training management to perform management assessments per MP-M&IA-17.1.*

NOTE 3: *DOE O 426.2 requires periodic reviews and facility or process change reviews of MP-RTQP-14.20, Training Implementation Matrix, to ensure that the document is applicable to current facility conditions.*

3.1.1.1 Ensure periodic systematic evaluations of training and qualification programs are conducted (not to exceed 3 years) in accordance with DOE-STD-1070-94, Guidelines for Evaluation of Nuclear Facility Training Programs.

3.1.1.1.1 Include the training implementation matrix in these reviews to ensure the document reflects current facility conditions and meets the requirements of DOE O 426.2.

3.1.1.2 Use a systematic evaluation of training effectiveness and its relation to on-the-job (OJT) performance to ensure that training programs convey all the required skills and knowledge.

NOTE: *The evaluation may consist of one overall review or be conducted incrementally over a period of time.*

3.1.1.3 Training Manager: Schedule comprehensive training program evaluations as management assessments in TrackWise system per MP-M&IA-17.1.

3.1.1.4 Ensure that evaluations of training programs are conducted by qualified individuals or a team.

3.1.1.5 Training Manager: Develop the scope of the evaluation.

3.1.1.6 Training Manager: Develop objectives for the evaluation, using objectives from DOE-STD-1070-94, ensuring they identify expected program processes defined by procedure or DOE O 426.2.

NOTE: *Other areas of examination may include the following*:

- Instructional skills and technical competency of instructors are evaluated regularly.
- Feedback from trainee performance during training is used to evaluate and refine the training programs.
- Feedback from former trainees and their supervisors is used to evaluate and refine the training program.
- Change actions (procedure changes, equipment changes, facility-specific and lessons learned) should be monitored and evaluated for their applicability to both initial and continuing training programs and should be incorporated in a timely manner. Changes in job scope should also be evaluated to determine the need for revisions to initial and continuing training programs (refer to MP-RTQP-14.17, Incorporating Change Actions and Lessons Learned into Training).
- Improvements/changes to initial and continuing training should be systematically initiated, evaluated, tracked, and incorporated to correct training deficiencies and performance problems (refer to MP-RTQP-14.17).
- Current training materials should be maintained based upon the results of training program evaluations (refer to MP-RTQP-14.17).
- Training facilities and materials are evaluated to determine if they are conducive to the learning process.

- An evaluation of an instructor's performance should be performed in a setting in which he or she trains or assesses. Training management, line organization supervision, or peers should perform this evaluation. The instructor should be evaluated against an established set of criteria and the results should be used to improve instructor performance (refer to MP-RTQP-14.2, Training Staff Qualification).

- Personnel who have attended the AMWTP OJT Trainer/Assessor Training should perform an OJT Trainer/Assessor evaluation.

3.2 Conduct the Training Program Evaluation

3.2.1 Training Manager: Conduct Training Program evaluations as scheduled in TrackWise.

3.2.2 Measure the actual program training processes against the program requirements listed in the evaluation objectives.

3.2.2.1 Document the in-situ condition of the training program.

3.2.2.2 Compare the in-situ condition to program requirements.

3.2.2.3 Identify training program implementation strengths and weaknesses.

3.2.2.4 Document observations and non-compliances in TrackWise per MP-M&IA-17.1.

3.3 Training Facility & Material Evaluation

NOTE: *Trainees are encouraged to fill out Form-1224, Training Evaluation and Comments, provided by the instructor at the end of a course, per MP-RTQP-14.11, Delivery of Training.*

3.3.1 Training Manager: Review the Training Evaluation and Comments forms (Form-1224).

3.3.1.1 Investigate derogatory comments to determine if an opportunity for improvement exists.

3.3.1.2 Ensure materials are current and convey the required knowledge and skills, and lead to results that meet the objectives.

3.3.1.3 Initiate Form-1010, Training Request Form, to revise training materials if training evaluation comments indicate a training deficiency.

3.4 Informal Training Program Evaluations

3.4.1 Plant Manager or Designee: Review qualification packages, qualification checklists, or classroom training to ensure they reflect current procedures, controls, or operating requirements

3.4.1.1 Identify weaknesses on Form-1010 and forward it to the Training Department for processing per MP-RTQP-14.17.

3.4.1.2 Use Form-1010 to document evidence of continual training program evaluations.

4.0 DEFINITIONS

Comprehensive evaluation report. A formal document communicating an evaluation's purpose, approach, findings, and recommendations to management.

Documentation. Refers to any handwritten, printed, or electronic document or file or any electronic database or depository where information is stored for retrieval (for example, TRAIN training records database).

Graded approach. A process by which the level of analysis, *documentation*, (see def.), and actions necessary to comply with a requirement are made commensurate with: (1) the relative importance to safety, safeguards, and security; (2) the magnitude of any hazard involved; (3) the life cycle stage of a facility; (4) the programmatic mission of a facility; (5) the particular characteristics of a facility; and (6) any other relevant factor.

5.0 REFERENCES

(1) DOE O 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities

(2) DOE-STD-1070-94, Guidelines for Evaluation of Nuclear Facility Training Programs

(3) QAPP-01, Quality Assurance Program Plan

(4) MP-M&IA-17.1, Management Assessment

(5) MP-RTQP-14.2, Training Staff Qualification

(6) MP-RTQP-14.11, Delivery of Training

(7) MP-RTQP-14.17, Incorporating Change Actions and Lessons Learned into Training

(8) MP-RTQP-14.20, Training Implementation Matrix

(9) RPT-DSA-02, Documented Safety Analysis

(10) RPT-TSR-03, Technical Safety Requirements

6.0 RECORDS

Records generated by this procedure shall be classified per the table below and dispositioned per MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-RTQP-14.16, Training Program Evaluation, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Form-1224, Training Evaluation and Comments	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Form-1010, Training Request Form	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

None

Page number code—do not delete or use this marker for anything else!

Training Records Administration

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11503.*)
Todd Golberg
Training Manager

08/29/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/08/02	All	Initial issue. MP-RTQP-14.19; Training Records Administration
1	01/09/03	4 5 6 & 7	Added reference to 10CFR830 Subpart A and CAO-94-1012 Added CAO-94-1012 and MP-DOCS-18.2 to Section 4.1.1 Added HWMA/RCRA Requirements to Sections 4.1.2; 4.1.3; 4.1.4; 4.2.4; and 4.2.5
2	06/22/04	Various	DCR-3113. Update formatting to standard, minor editorial changes. Step 4.1.2, Remove first bullet. Step 4.3.6, Delete Step. Step 4.3.7: Change to read: "If a training record is lost or damaged beyond recovery, place a signed and dated letter, or copy, in the individual file that describes the record and the circumstances leading to the loss or damage." Add HWMA/RCRA Treatment Permit Driver.
3	9/12/05	All	DCR-4333. Rewrite document to incorporate requirements due to new contractor, including blue sheet requirements identified in DCR-4299. Incorporate formatting changes to update to MP-DOCS-18.3. AI 12234 Implement WIPP QAPD CBFO-94-1012, DOE CBFO Quality Assurance Program Plan, Step 1.5.6.1.K. Measures shall be taken to provide for replacement, restoration, or substitution of lost or damaged records.
4	6/14/06	1	DCR-5096. Correcting the section title 1.0 to "Purpose/Scope" per MP-DOCS-18.3 formatting requirements.
5	06/15/09	Various	DCR-8159. Rewrite to clarify training records management processes to address issues from CAR 41818.
6	08/29/12	Various	DCR-11503. Incorporated DOC O 426.2 and organization and ITP and location changes

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AMWTP MANAGEMENT PROCEDURE		
MP-RTQP-14.19, Rev. 6	Issued: 08/30/12	Effective: 08/31/12

Training Records Administration

1.0 PURPOSE/SCOPE

This procedure describes the process to maintain training, qualification, and certification records for all personnel at the Advanced Mixed Waste Treatment Project (AMWTP). This procedure defines how AMWTP maintains *training records* (see def.) in an easily auditable format to meet the requirements in DOE Order 426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities, the AMWTP HWMA/RCRA Permit, and the AMWTP HWMA/RCRA TSA IS document.

Guidance in Nuclear Information and Records Management Association (NIRMA) TG-17, Guidelines for Management of Nuclear Related Training Records; TG-15, Management of Electronic Records; and TG-21, Electronic Records Protection and Restoration, should be used to help standardize identification, handling, and storage of training, qualification, and certification records are used as appropriate to help standardize identification, handling, and storage of training records.

This procedure is used in conjunction with MP-DOCS-18.2, Records Management, which implements requirements of QAPP-01, AMWTP Quality Assurance Program Plan; DOE/CBFO-94-1012, WIPP Quality Assurance Program Document (QAPD), 10 CFR 830 Subpart A, Quality Assurance Requirements; and DOE Order 243.1, Records Management Program.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Employee or Employee's Supervisor	• Forwards completed training documents to the training department for inclusion in the *employee's individual training file* (see def.) • Completes validation of records of employee's qualification and training in accordance with MP-DOCS-18.2.
Instructors	• Completes validation of course rosters and graded examination or answer sheets • Submits completed course rosters and graded examination/answer sheets to the *training coordinator* (TC; see def.).

Performer	Responsibilities
Training Coordinator	• Establishes and maintains course and qualification records to meet the requirements of this procedure • Maintains an index for satellite file location (SFL) in WMF-1620 in accordance with MP-DOCS-18.2 • Establishes and maintains employees individual training file to meet the requirements of this procedure • Ensures data on employee completion of courses or qualification is properly entered into the training database.
Training Manager	• Controls access to training records in all formats • Ensures only authorized personnel enter or change entries in the training database.
Training Staff and/or Subject Matter Expert (SME)	• Forwards *instructional materials* (see def.) and course documents to the applicable training coordinator/training records administrator • Completes validation of new or revised instructional material in accordance with MP-DOCS-18.2.

3.0 PROCEDURE

3.1 Specific Requirements

3.1.1 TC: Maintain documentation of the training that personnel have completed in accordance with MP-TRUW-8.2, Quality Assurance Project Plan, MP-DOCS-18.2, and MP-TRUW-8.1, Certification Plan for INL Transuranic Waste.

3.1.2 Ensure that records generated during qualification, general indoctrination and training, or specific skill training activities are collected and maintained as *quality records* (see def.).

NOTE: *Although some legacy personally identifiable information (PII) may be found in protected historical records, current documentation that contains PII, such as Social Security Number, employment history, and medical information will be maintained in Human Resource and Environmental, Safety, and Health files, not by the Training Department.*

3.1.3 Maintain records of qualification and certification of personnel in each employee's individual training file including:

A. The employee's current employee position description (EPD) listing the job title, position duties, responsibilities, requisite skills, education, and experience

B. The employee's current individual training plan (ITP) listing completed courses, qualification/certification packages, and checklists

NOTE: *Records of oral examinations will include the list of questions asked and the examiner's overall evaluation of the responses.*

C. Latest completed qualification/certification packages and checklists, with supporting documents (such as, graded written examinations, walkthrough or operational evaluations, or oral board examinations) as needed

D. Records of qualification for one time only special tests or operations

E. Current approved requests for exceptions, exemptions, or extensions

F. Current approved forms for suspension of qualifications, disqualification, or reinstatement of qualifications

G. Copies of documentation for training provided by organizations external to the AMWTP.

3.1.4 TC: Establish or maintain temporary storage of completed examinations required for qualification/certification packages or checklists.

3.1.4.1 Attach the examinations to the employee's package or checklist when submitted.

3.1.5 Maintain a historical record of initial qualification or certification, subsequent requalification or certification, and all completed training in the training database for each active employee.

3.1.6 Establish and/or maintain training documents for current courses or qualification packages or checklists in accordance with MP-RTQP-14.9, Instructional Materials Development, Revision, and Control.

3.1.7 Establish and/or maintain course files of graded examinations or score sheets.

3.2 Training Records Management

3.2.1 Employee or Employee's Supervisor: Forward any of the following completed documents to the training department for inclusion in the employee's individual training file:

- EPD
- ITP
- Qualification/certification packages or checklists
- Approved exception, exemption, or extension
  - Form-1031, Training/Qualification Exception Form
  - Form-1032, Request for Re-Qualification/Re-Certification Extension Form
  - Form-1640, Request for An Exemption From Written Examination(s)
- Form-1902, Change in Qualification Status
- Copies of documentation for training provided by an organization external to AMWTP (correspondence, copies of certificates, cards, or rosters).

3.2.2 TC**:** Maintain required training records that are created by the various training activities.

3.2.3 Training Staff/SMEs/Instructors: Forward instructional materials (such as needs or job analyses, design plans, lesson plans, examination question banks and keys) per MP-RTQP-14.9 to the TC.

NOTE: *Rosters and completed examinations will be maintained in separate files.*

3.2.4 Instructors: Submit completed course rosters and examinations to the TC.

3.2.5 TC or Training Staff: Review training records on receipt for:

A. Person's name

B. Employee security number

C. Job/title position

D. Any associated training documentation

E. Legibility, accuracy, completeness and appropriateness to the work accomplished

F. Required signatures (such as instructor, line manager, and/or training manager)

G. Authorization by instructor of any corrections made on the record, ensuring appropriate signature and date requirements

H. Appropriate medium (black or blue ink) used that cannot be easily removed, washed away, or erased.

3.2.5.1 If medium is NOT black or blue ink, convert to permanent ink or other indelible agent.

3.2.6 Do not accept any incomplete document; return it to the originator for corrections.

3.2.7 If errors are found after a record has been accepted, either make corrections as directed by the training manager or return it to the originator for corrections.

3.2.7.1 Before returning any previously accepted records, scan or make a copy of the record.

3.2.7.2 Keep a log of the routing.

3.2.7.3 When the corrected record is returned, destroy the copy.

3.2.8 TC: Enter the following data from qualification/certification packages or checklists and admin forms into the Training database:

- Employee's security number
- Completion date and expiration date
- Comments (if needed).

3.2.8.1 Ensure the correct expiration date is assigned.

3.2.9 Enter the following data from rosters, exception, or exemption forms into the training database:

- Course or qualification title, identifier, or unique class ID
- Employee's security number
- Completion date
- Completion status.

3.2.10 If the record is an extension, qualification/certification suspension, reinstatement, or disqualification, revise the qualification dates.

3.2.10.1 Record the reasons in the comments section in the training database.

3.2.11 Enter the following data into the training database for new, revised, or discontinued courses or tailgate sessions:

- Course title, identifier, and description
- Revision number
- Effective or discontinue date
- Retrain period.

3.2.12 Enter the following data into the training database for new, revised, or discontinued qualification/certification packages, checklists, or admin forms:

- Qualification, certification, or admin form identifier
- Title and description
- Effective date and/or discontinue date
- Retrain period
- Revision number (as appropriate).

3.2.13 Use peer checking to verify data entry into the training database for qualification/certification packages, or that checklists have been properly completed.

3.2.14 TC: Place records, as appropriate, into the employee's individual training files.

3.3 Storage and Maintenance of Training Records

3.3.1 Training Manager: Control access to training records in all formats in accordance with MP-DOCS-18.2.

3.3.1.1 Limit the number of persons able to enter or remove records from the hard copy or electronic employee's individual training file to those authorized by the training manager.

3.3.1.2 Limit the number of persons able to enter, change, or delete entries in the training database to those authorized by the training manager.

3.3.2 TC: Maintain storage of course records, instructional material records, and employee individual training records as directed in MP-DOCS-18.2.

NOTE: *Training records that are quality records are to be protected from loss or damage in accordance with MP-DOCS-18.2.*

3.3.3 If a training record is lost or damaged beyond recovery, ensure measures are taken to provide for replacement (i.e., use reproducible copies, restoration, or substitution of lost or damaged records).

(DOE/CBFO-94-1012)

3.3.4 Store *electronic training records* (see def.) so that those needed for legal purposes can be easily retrieved in a hard copy form.

3.3.4.1 Ensure that a backup copy is made and updated whenever revisions to the record are made and that a backup copy of the electronic training record is maintained and stored in a location separate from the working copy.

NOTE: *A differential back-up is performed nightly and a full back-up is performed weekly on Enterprise.*

3.3.4.2 TC: Ensure electronic copies of instructional material are stored on Enterprise per MP-RTQP-14.9.

3.3.4.3 TC: Maintain a scanned copy of all documents in an employee's individual training file in the active employee folder on Enterprise for dual storage.

3.4 Records and Record Retention

3.4.1 TC: Discard *non-record* (see def.) material and duplicates as appropriate.

NOTE: *An informational copy of superseded documents for active employees may be retained on Enterprise.*

3.4.2 TC: : Transmit expired or superseded records for active employees to Records Management.

3.4.3 Send *inactive training records* (see def.) to Records Management per MP-DOCS-18.2.

3.4.4 Maintain records storage receipts for documentation of records sent to Records Management to facilitate retrieval of inactive records.

4.0 DEFINITIONS

Electronic training records. Training records created, stored, or transmitted using personal computers, word processors, and associated electronic office equipment.

Employee's individual training file. The folder where documentation of an individual's training and qualification records are compiled. The records may include completed employee position descriptions, individual training plans, written examinations, oral examinations, qualification or certification documents, documentation of non-company training, completed training exception records, completed requests for extension forms, records of qualification for one-time-only special tests or operational evaluations, and any other training documentation, whether microfilm, hard copy, or electronic database.

Inactive training records. Training materials that have been superseded by revision or discontinued, and individual training records of terminated personnel.

Instructional materials. Documents used in the delivery of training, including course lesson plans, trainee guides, exercise directions, handouts, instructional aids, qualification packages or checklists, tests and other such materials.

Non-record. Includes those classes of documentary material that may be disposed of without archival authority, such as copies of documentation of outside training, forms used only to provide information for the *training database* (see def.), informational checklists, and private or non-official papers.

Quality records. A completed document (or other medium) that furnishes evidence of the quality of items and/or activities affecting quality. In the training area, these are records providing evidence that an activity was performed in accordance with the applicable requirements of 10 CFR 830.120, Quality Assurance Requirements, Scope, DOE 414.1C, and ASME/NQA-1, Quality Assurance Requirements for Nuclear Facility Applications (i.e., files that provide documented proof of an individual's capability to perform assignments safely and proficiently). These records may include personal qualification records, completed qualification packages or checklists, and final examinations.

Training coordinator. Individual responsible for tasks such as tracking qualification status, interacting with the Training database, performing physical records management, scheduling training, and providing management status reports.

Training database. A computerized method of tracking and reporting training activities. The training database tracks course schedules and rosters, training activities, and employee completion of training records such as completion of training courses, qualifications, administration forms, required reading, and completion and expiration dates.

Training records. The validated paper and/or electronic data that comprise documentation of completed training. Formal training records are established and maintained for compliance with legislative, regulatory, corporate, company, or contract requirements. Informal training records are established and maintained in accordance with best business practices, such as documentation of completed personal development or computer training classes.

5.0 REFERENCES

(1) 10 CFR 830, Nuclear Safety Management

(2) 10 CFR 830.120, Quality Assurance Requirements, Scope

(3) ASME/NQA-1, Quality Assurance Requirements for Nuclear Facility Applications

(4) Form-1031, Training/Qualification Exception Form

(5) Form-1032, Request for Re-Qualification/Re-Certification Extension Form

(6) Form-1640, Request for An Exemption From Written Examination(s)

(7) Form-1902, Change in Qualification Status

(8) AMWTP HWMA/RCRA Permit

(9) AMWTP HWMA/RCRA TSA IS Document

(10) DOE/CBFO-94-1012, Quality Assurance Program Document

(11) DOE O 243.1, Records Management Program

(12) DOE 414.1C, Quality Assurance

(13) DOE O426.2, Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities

(14) Guidance in Nuclear Information and Records Management Association (NIRMA)

(15) MP-DOCS-18.2, Records Management

(16) MP-RTQP-14.9, Instructional Materials Development, Revision, and Control

(17) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(18) MP-TRUW-8.2, Quality Assurance Project Plan

(19) QAPP-01, AMWTP Quality Assurance Program Plan

(20) TG-15, Management of Electronic Records

(21) TG-17, Guidelines for Management of Nuclear Related Training Records

(22) TG-21, Electronic Records Protection and Restoration

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-RTQP-14.19, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
Individual training records as discussed in Section 3.1 and 3.2	Both FOR and NP WIPP/ENV2-a-1-a/Destroy 5 years after Life of Facility
For instructional material discussed in 3.2.3	Misc. Other Records A16-1.2 Submit to RMC when complete, superseded, or obsolete. Destroy 5 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

None

Certification Plan for INL Transuranic Waste

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11153.*)	09/12/12
Susan M. Peterman TRU Programs Manager	Date

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.1, Rev. 22	Issued: 09/13/12	Effective: 09/14/12
CERTIFICATION PLAN FOR INL TRANSURANIC WASTE		

DOCUMENT APPROVAL SHEET

Document Type: Compliance Plan **Document Number:** MP-TRUW-8.1

Title: Certification Plan for INL Transuranic Waste

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REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/01/02	All	Initial issue. DCR-1230. Document issue date was 07/17/02. DOE/WIPP approval was received 07/30/02 thus the change in effective date to 08/01/02.
1	12/19/02	Various	DCR-1820. Correct procedure titles and numbers. Added verbiage to include manual data review. Added DOE-ID to the Document Approval Sheet in accordance with MP-DOCS-18.4. Document issue date was 12/19/02. DOE/WIPP approval was received 01/14/03 thus the change in effective date to 02/06/03.
2	06/11/03	Various	DCR-2117: Incorporate WIPP WAC Rev. 0.1 and QAPD Rev. 4 requirements. Correct procedure references in Section 4. Document issue date was 03/20/03. DOE/WIPP approval was received 04/03/03. The original signature page was lost and was resigned, thus the change in effective date is 06/11/03.
3	10/07/03	Various	DCR-2478. Updated to clarify QA Organization roles & responsibilities and to include reference to 40 CFR 194. These updates address EPA Finding discussed during CBFO Audit A 03-05.
4	03/04/04	Various	DCR-2633: Annual review and update and incorporate new headspace gas procedure references
5	08/18/04	Various	DCR-2825. Incorporate WIPP CH-WAC DOE/WIPP-02-3122 Revision 1 changes and incorporate facility procedures.

Revision Number	Date Approved	Pages Affected	Description of Revision
6	11/15/04	Various	DCR-3263. Incorporate the CH-WAC, DOE/WIPP 02-3122 Revision 2 changes and incorporate the draft Revision 3 changes addressing the proposed disposal acceptance criteria pertaining to ^{239}Pu FGE limits for machine compacted waste. (WIPP memorandum CBFO:NTP:RJM:VW:04-2024:UFC:5822) Revision 6 was rejected by CBFO. Revision 6 will not be issued.
7	12/02/04	16 of 74	See DCR-4026.
8	04/25/05	Various	DCR-4252 Incorporation of DOE/WIPP-02-3120, WIPP Waste Acceptance Criteria Revision 3 requirements. Incorporation of CBFO DRR comments.
9	06/09/05	34	DCR-4281. Incorporation of Class 1 Permit Modification Notification to Revise Language for Compacted 55-Gallon Drums With Rigid Liners, April 27, 2005 and WIPP Memorandum CBFO:OCT:KWW:VW:05-1164-UFC:5822. Incorporated the procedure to implement the UFGTP long-term objective.
10	01/03/06	All	DCR-4399. Implementation of Rev. 4 of CH-WAC.
11	06/30/06	All	DCR-5040. Various changes to reflect new contractor and laboratory titles, additional requirements from the WAC, OSM implementation, training program changes, and numerous editorial changes, corrections, and clarifications.
12	01/04/07	All	DCR-5542. Incorporate changes to the DOE/WIPP-02-03122, Transuranic Waste Acceptance Criteria (WAC) for WIPP, and DOE/CBFO-94-1012, Quality Assurance Program Plan (QAPD).
13	07/26/07	All	DCR-6071. Update the procedural reference titles for implementation of DOE/WIPP 02/3184 and DOE/WIPP 06-3345. CCP Analytical Laboratory Changes, delete MP-TRUW-8.16, WWIS Data Transfer from procedure.

Revision Number	Date Approved	Pages Affected	Description of Revision
14	12/21/07	All	DCR-6556. Incorporated requirements from DOE/WIPP-02-3122, WIPP WAC, Rev. 6.1. Periodic review.
15	3/28/08	All	DCR-6782. Incorporated CCP transportation and flammable gas changes for transition.
16	07/07/08	Appendix G	DCR-7194. Incorporated requirements from DOE/WIPP-02-3122, WIPP WAC, Rev. 6.2, and corrected revision log approval date for Rev. 15.
17	04/01/09	Various	DCR-8014. Incorporate requirements from DOE/WIPP-02-3122, WIPP WAC, Revision 6.3, add INST-OI-75 and INST-OI-81, and minor editorial corrections. Periodic review.
18	12/18/09	Various	DCR-8904. Incorporate DOE/WIPP-02-3122, Revision 6.4, The majority of the changes to this document are contained in Tables 3.3.2 and 3.3.4. These changes capture the FGE and PE-Ci requirements contained in the Waste Isolation Pilot Plant Documented Safety Analysis. Other changes include updates to the acronym list, an addition to the glossary, modification of the references, and minor editorial changes.
19	06/24/10	Various	DCR-9317. Incorporated the WIPP Hazardous Waste Permit modification of April 1, 2010; DOE/WIPP-03-3122, Revision 6.5; and DOE/CBFO-94-1012, Quality Assurance Program Plan, Revision 11. Sections 3.4.1, 4.4.1, and Appendix G were revised to clarify language regarding liquid prohibition and visual examination. The term “residual liquid” was replaced with “observable liquid.” Deleted the CNS designation for the 10-160B cask, revised references in Chapter 6.0, deleted a reference in Appendix E, and updated the glossary.

Revision Number	Date Approved	Pages Affected	Description of Revision
20	12/16/10	Various	DCR-9709. Incorporate the WIPP Waste Acceptance Criteria, Rev. 7.0. Revision 7.0 incorporates extensive editorial changes and includes renumbering of the pages, renumbering of the references to correspond with the order of their appearance in the document, alignment of the cited sections of the WIPP Hazardous Waste Permit Renewal, renumbering of the tables, reformatting the table addressing ^{239}Pu FGE limits for payload containers to minimize the use of footnotes, numerous punctuation and grammatical changes, addition/deletion of acronyms, updates to Internet links, and minor text changes for the purposes of clarification, including the incorporation of a statement in Section 3.1.4.1 that Appendices F and G specify the methodologies used to quantify the waste component limits of interest to EPA. Also added a statement in Sections 3.1 and 4.1 that the WIPP Waste Information System (WWIS) database is a subsystem of the Waste Data System (WDS).

Revision Number	Date Approved	Pages Affected	Description of Revision
21	07/27/11	4, 7, 15, 26, 59, A6, A9, A11, A12, A14, B2, and E1.	DCR-10200. Incorporated the WIPP Waste Acceptance Criteria, Revision 7.1 and 7.2. Revision 7.1 incorporates editorial changes. These changes include changes in terminology to mirror the WCPIP, the incorporation of clarification text in Sections 3.0 and A.6.1 as recommended by the U.S. Environmental Protection Agency, the reformatting of bullet lists and table footnote fonts to improve readability, and the correction of typographical errors. This document does not address the editorial changes that align Section 4.2.5 with the radiation dose equivalent dose rate requirements from the Remote-Handled (RH) TRU Waste Characterization Program Implementation Plan (WCPIP) or the clarifications addressed in Section 4.0 as the AMWTP does not ship RH waste. Revision 7.2 incorporates the requirements for the TRUPACT-III and SLB2. References have been updated to include the Certificate of Compliance and the Transuranic Waste Authorized Methods for Payload Control for the TRUPACT-III. Other changes include updates to the list of acronyms, glossary, and Table A-1.
22	09/12/12	Various	DCR-11153. Annual Review. Changed document owner and Site QA Manager on the Document Approval Page, updated Section 5.4.1 and Figure 5.1 to reflect ITG organizational changes, and made small editorial changes. Updated to ITG-BLUESHEET-073.

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ACRONYMS AND ABBREVIATIONS

AIM	Association for Automatic Identification and Mobility
AK	acceptable knowledge
ALARA	as low as reasonably achievable
AMAD	activity mean aerodynamic diameter
AMWTP	Advanced Mixed Waste Treatment Project
ANS	American Nuclear Society
ANSI	American National Standards Institute
ASNT	American Society of Nondestructive Testing
ASTM	American Society for Testing and Materials
CAR	Corrective Action Report
CBFO	Carlsbad Field Office
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
CH-TRAMPAC	Contact-Handled Transuranic Waste Authorized Methods for Payload Control
Ci	curie
CIS	Characterization Information Summary
CPR	cellulose, plastic, and rubber
DAS	drum assay system
DDA	differential die-away
DOE	U.S. Department of Energy
DOE-ID	Department of Energy Idaho Operations Office
DOT	U.S. Department of Transportation
dpm	disintegrations per minute
DQO	data quality objective
DSA	Documented Safety Analysis
EDF	Energy Drive Facility
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FGE	fissile gram equivalent
HGS	headspace gas sampling
HWFP	Hazardous Waste Facility Permit

ICP	Idaho Cleanup Project
ICV	inner container vessel
ID	Idaho
INL	Idaho National Laboratory
IWAS	Integrated Waste Assay System
keV	kiloelectron volt
LLD	lower limit of detection
LWA	Land Withdrawal Act
M&TE	measuring and test equipment
mrem	milliroentgen equivalent man
nCi/g	nanocuries per gram
NCR	nonconformance report
NDA	nondestructive assay
NDE	nondestructive examination
NEPA	National Environmental Policy Act
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NRC	U.S. Nuclear Regulatory Commission
OJT	on-the-job training
PCB	polychlorinated biphenyl
PCTCD	payload container transportation certification document
PDP	Performance Demonstration Program
PE-Ci	^{239}Pu equivalent curie
QA	quality assurance
QAO	Quality Assurance Objective
QAP	Quality Assurance Plan
QAPD	Quality Assurance Program Document
QAPjP	Quality Assurance Project Plan
QC	quality control
%R	percent recovery
RC	radiochemistry
RCRA	Resource Conservation and Recovery Act
rem	roentgen equivalent man
RH	remote-handled
RH-TRAMPAC	Remote-Handled Transuranic Waste Authorized Methods for Payload Control
RSD	relative standard deviation
RTR	real-time radiography

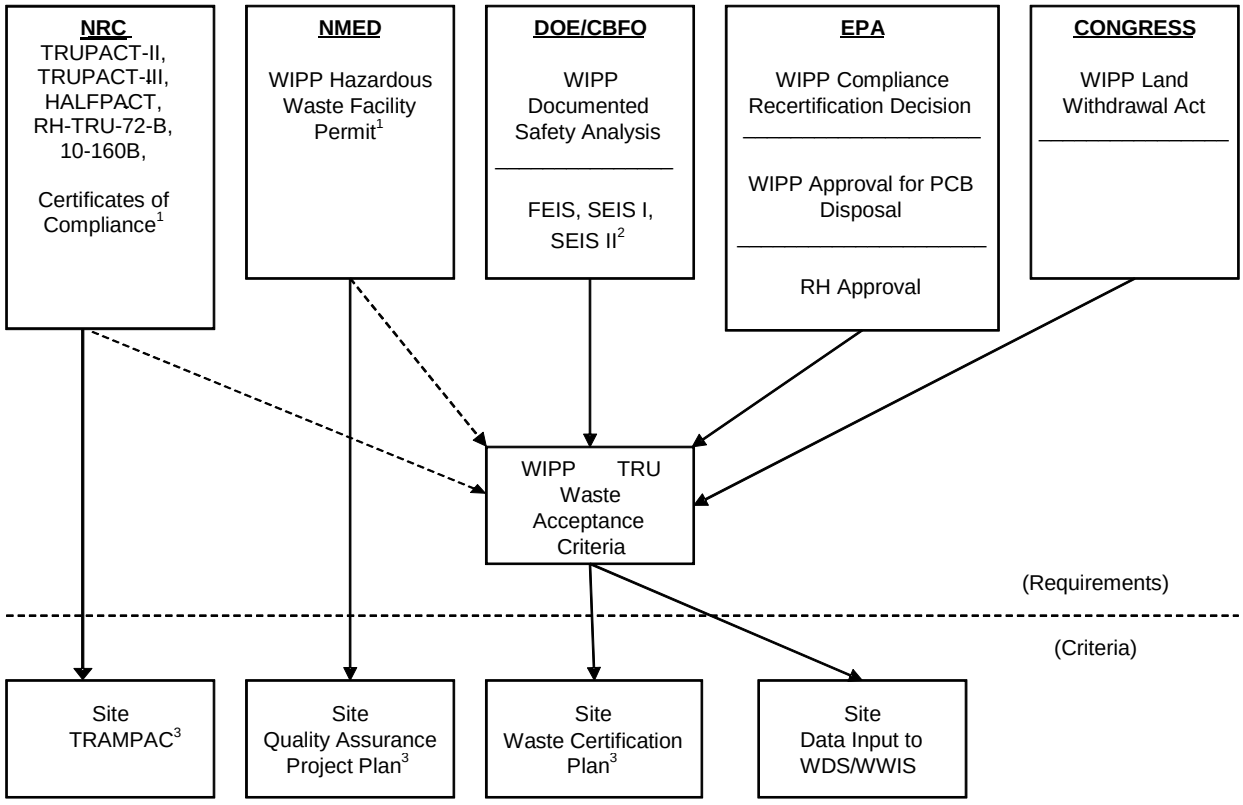
SATR	Site Acceptance Test Reports
SAR	Safety Analysis Report
SEIS	Supplemental Environmental Impact Statement
SLB2	standard large box 2
SME	subject matter expert
SNM	special nuclear material
SOW	Statement of Work
SPM	Site Project Manager
SPO	Site Project Office
SWB	standard waste box
TCO	Transportation Certification Official
TDOP	ten-drum overpack
TMU	total measurement uncertainty
TRAMPAC	Transuranic Waste Authorized Methods for Payload Control
TRU	transuranic
TRUPACT-II	Transuranic Package Transporter II
TRUPACT-III	Transuranic Package Transporter III
TSDF	Treatment, Storage, and Disposal Facility
VE	visual examination
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WCO	Waste Certification Official
WCPIP	Waste Characterization Program Implementation Plan
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WSPF	Waste Stream Profile Form
WTES	WIPP TRAMPAC Evaluation Software
WTS	Waste Tracking System
WWIS	WIPP Waste Information System

1.0 INTRODUCTION

The purpose of this document is to summarize the methods and procedures used by the Idaho National Laboratory (INL) Advanced Mixed Waste Treatment Project (AMWTP) to certify waste as compliant to the waste acceptance criteria (WAC) applicable to the transportation, storage, and disposal of contact-handled (CH) and remote-handled (RH) transuranic (TRU) waste at the Waste Isolation Pilot Plant (WIPP). The Central Characterization Project (CCP) provides transportation services through the CCP Certified Program as specified in the AMWTP Statement of Work (SOW). These criteria serve as the U.S. Department of Energy's (DOE's) primary directive for ensuring that CH- and RH-TRU waste is managed and disposed of in a manner that protects human health and safety and the environment.

The WIPP authorization basis for the disposal of CH- and RH-TRU waste includes the Department of Energy (DOE) National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Reference 23) and the WIPP Land Withdrawal Act (LWA; Reference 24). Included in this document are the requirements and associated criteria imposed by these acts and the Resource Conservation and Recovery Act (RCRA, Reference 25), as amended, on the TRU waste destined for disposal at WIPP.

The AMWTP certifies CH-TRU waste payload containers to the waste acceptance criteria identified in this document. As shown in Figure 1.0, the Regulatory Basis of TRU Waste Acceptance Criteria, the flow-down of applicable requirements to the WAC is traceable to several higher-tier documents, including the WIPP safety requirements taken from the WIPP Documented Safety Analysis (DSA; Reference 20), the transportation requirements for CH wastes derived from the Transuranic Package Transporter II (TRUPACT-II), Transuranic Package Transporter III (TRUPACT-III), and HalfPACT Certificate of Compliance (References 45, 46, and 47), the transportation requirements for RH wastes derived from the 10-160B and RH-TRU 72-B Packaging Certificates of Compliance (References 51 and 52), the WIPP LWA (Reference 24), the WIPP Hazardous Waste Facility Permit (HWFP) (Reference 43), and the U.S. Environmental Protection Agency (EPA) Compliance Recertification Decision and approval for polychlorinated biphenyls (PCBs) disposal (References 15, 17, 29, 31, 32, and 42) and the EPA's letter of approval of DOE's RH-TRU Waste Characterization Program (Reference 30). The solid arrows shown in Figure 1.0 represent the flow-down of all applicable payload container-based requirements. The dotted arrows shown in Figure 1.0 represent the flow down of summary level requirements only; i.e., sites must reference the regulatory source documents from the U.S. Nuclear Regulatory Commission (NRC) and the New Mexico Environment Department (NMED) for a complete listing of the requirements.



1. The Transuranic Waste Authorized Methods for Payload Control (TRAMPACs) as referenced by the TRUPACT-II, TRUPACT-III, HalfPACT, and RH-TRU-72-B Certificate of Compliance Safety Analysis Report as referenced in the 10-160B Certificate of Compliance and the WIPP HWFP provide detailed requirements. This WAC provides only and overview of these requirements.
2. Final Environmental Impact Statement (FEIS), Supplemental Environmental Impact Statement (SEIS).
3. All work performed by the site for the Carlsbad Field Office (CBFO) must be performed under an approved quality assurance (QA) program. The site-specific TRAMPAC can be a separate document or can be embodied in the site waste certification plan. The 10-160B Safety Analysis Report (SAR) does not require the preparation of a site-specific TRAMPAC. Instead, acceptable methods for payload compliance for the 10-160B package are implemented by an NRC-approved site-specific appendix to the 10-160B SAR.

Figure 1.0 Regulatory Basis of TRU Waste Acceptance Criteria.

This Certification Plan for INL Transuranic Waste, also referred to as the Certification Plan, does not address the subject of waste characterization relating to a determination of whether the waste is hazardous; rather, the AMWTP refers to the MP-TRUW-8.2, Quality Assurance Project Plan, for details of the sampling and analysis protocols to be used in determining compliance with the required physical and chemical properties of the waste. Requirements and associated criteria pertaining to a determination of the radiological properties of the waste, however, are addressed in Appendix A.

The requirements and associated criteria pertaining to a determination of the radiological properties of RH waste are addressed in the Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPIP, Reference 18). The collective information obtained from waste characterization records and acceptable knowledge (AK) serves as the basis for AMWTP to certify that its TRU waste satisfies the WIPP waste acceptance criteria.

Section 2.0 of this document identifies the responsible organizations and associated activities for ensuring that the TRU waste is managed in a manner that protects human health and safety and the environment.

Section 3.0 identifies the authorization basis of the CH requirements and lists the associated waste acceptance criteria relating to the physical, chemical, and radiological attributes of the waste as well as the properties of the applicable payload containers and packages.

Section 4.0 identifies the authorization basis of the RH requirements and lists the associate waste acceptance criteria relating to the physical, chemical, and radiological attributes of the waste as well as the properties of the applicable payload containers and packaging. Containers suspected to be RH-TRU waste will undergo preliminary characterization to ensure that the waste is candidate RH-TRU waste. RH-TRU waste will be transferred to the Idaho Cleanup Project (ICP) contractor for subsequent characterization, certification, and shipment to WIPP.

Section 5.0 summarizes the AMWTP Quality Assurance (QA) requirements relating to waste characterization, and certification. The AMWTP has developed and implemented a QA program that meets all applicable requirements of the Carlsbad Field Office (CBFO) Quality Assurance Program Document (QAPD; Reference 6). Characterization of TRU waste must be in accordance with the WIPP Waste Analysis Plan (WAP) (Reference 43), the WCPIP (Reference 18), and the WAC (Reference 13), and implemented in accordance with MP-TRUW-8.2 and this document. Certification of payload containers for shipment in the TRUPACT-II, TRUPACT-III, HalfPACT, RH-TRU 72-B, or 10-160B is performed under the CCP QA program, which provides confidence for both the shipper and the receiver that the requirements for the transportation system have been met.

The appendices provide supplemental information relating to radioassay (Appendix A, Radioassay Requirements for Contact-Handled Transuranic Waste) and radiotoxic inhalation hazard analyses (Appendix B, ^{239}Pu Equivalent Activity). Appendix C, Glossary, provides definitions for terms used in this document. Appendix D, Payload Container Integrity Checklist, addresses the visual examination requirements and compliance criteria for determining if CH and some RH payload containers meet the criteria of Section 3.2.1 and Section 4.2.1. Appendix E, Payload Management of TRU Alpha Activity Concentration, describes the policy and implementation methods for the payload management of TRU alpha activity concentration when overpacking waste containers. Appendices F, Radiography Requirements for Contact-Handled Transuranic Waste, and G, Visual Examination Requirements for Contact-Handled Transuranic

Waste for EPA Compliance, provide the radiography and visual examination (VE) requirements relating to EPA's physical characterization requirements for CH waste.

The WAC is a controlled document. The current version of the WAC may be downloaded from the CBFO web page at http://www.wipp.energy.gov/library/wac/WAC.pdf. This Internet link is provided for informational purposes only and may change without prior public notification.

2.0 RESPONSIBILITIES

This section identifies the responsibilities of organizations that develop and approve the WIPP WAC and of those that oversee the implementation of the requirements defined herein. The responsibilities of the AMWTP to which these requirements apply are also identified in this section.

2.1 DOE Headquarters

The Assistant Secretary for Environmental Management (EM-1) provides policy and guidance for DOE environmental management sites, facilities, and operations.

2.2 DOE Carlsbad Field Office

The CBFO is responsible for the day-to-day management and direction of strategic planning and related activities associated with the characterization, certification, transportation, and disposal of defense TRU waste. The CBFO holds the applicable permits, certifications, and records of decision necessary for the operation and closure of the WIPP facility.

The CBFO assists the sites in resolving issues about the management of TRU waste as requested. The CBFO provides policy and oversight direction for TRU waste program activities related to site certification of waste for disposal at WIPP. The CBFO is also responsible for the following:

- Ensuring that the sites prepare implementation documentation and programs to meet the requirements and criteria in the WAC
- Overseeing activities associated with the:
  - Characterization and certification of TRU waste
  - Proper use of approved transportation packaging
  - Receipt, management, and disposal of TRU waste at WIPP.
- Providing a fleet of NRC-approved Type B transportation packaging for shipment of TRU waste from the sites to WIPP

- Ensuring that TRU waste accepted for management and disposal at WIPP complies with the WIPP HWFP, applicable laws, and regulations as described in the WAC
- Reviewing and approving proposed revisions to the WAC to ensure that environmental impacts associated with any revision are bounded by existing WIPP National Environmental Policy Act (NEPA) documentation including the Final Environmental Impact Statement (Reference 10), and related Supplements I (Reference 11) and II (Reference 12)
- Reviewing and approving the site's waste certification plan, site-specific Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPACs), QA plans, and QAPjPs
- Performing site certification audits and surveillances
- Granting transportation and waste certification authority to sites.

2.3 DOE Field Elements

Each DOE Field Element is responsible for overseeing the management of the site TRU waste program in compliance with established CBFO requirements, policies, and guidelines; and providing liaison between the CBFO and the management and operating contractors.

2.4 TRU Waste Sites

The AMWTP is responsible for developing and implementing site-specific TRU waste program documents (plans) that address applicable requirements and criteria pertaining to packaging, characterization, and certification of defense TRU waste to WIPP for disposal. The AMWTP has prepared this Waste Certification Plan and associated QA Plan, and a Quality Assurance Project Plan (QAPjP). The CCP Transuranic Waste Authorized Methods for Payload Control (TRAMPAC) (Reference 57) fulfills the Nuclear Regulatory Commission (NRC) approved CH-TRAMPAC requirements for payload compliance. Methods of compliance with each requirement and associated criterion to be implemented are described or specifically referenced and include procedural and administrative controls consistent with the CBFO QAPD (Reference 6). The AMWTP and CCP submit these program documents to the CBFO for review and approval prior to implementation. The AMWTP certifies that each TRU waste payload container meets the waste acceptance criteria contained in this document. The AMWTP QA requirements relating to waste characterization, certification, and transportation are contained in Section 5.0. The following AMWTP and CCP site-specific TRU waste program documents are submitted to CBFO for review and approval prior to implementation:

- MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

- MP-TRUW-8.2, Quality Assurance Project Plan
- CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC; Reference 57).

Additional implementing procedures not listed above also require CBFO approval prior to implementation. The AMWTP Site Project Office, project level positions, and primary responsibilities are described in Section 5.4.1 of this document.

3.0 WIPP WASTE ACCEPTANCE REQUIREMENTS AND CRITERIA

The requirements and associated criteria for acceptance of defense TRU waste at WIPP for disposal are identified in the WAC. The acceptance criteria of the WAC describe the controlling (i.e., the most restrictive) requirements to be used by the AMWTP in preparing their waste for transportation to and disposal at the WIPP. In some instances, the acceptance criteria and regulatory requirements are synonymous. WAC requirements are taken from several source documents, including, but not limited to, the following: the WIPP DSA (Reference 20), the TRUPACT-II, TRUPACT-III, and HalfPACT Certificates of Compliance (References 45, 46, and 47), the WIPP LWA (Reference 24), the WIPP HWFP (Reference 43), Compliance Recertification Decision (Reference 32), the Initial Report for PCB Disposal Authorization (Reference 17), the EPA letter of approval to land dispose non-liquid PCBs at WIPP (References 29 and 42) and the Revision to the Record of Decision for the DOE's WIPP Disposal Phase and associated WIPP NEPA database (References 31and 15). Terms used in this Certification Plan are defined in Appendix C.

When implementing the WAC, TRU waste characterization programs should refer to these source documents, 40 Code of Federal Regulations (CFR) § 194.8 and 194.24, and other WIPP program documents including Performance Demonstration Program Plans and the Quality Assurance Program Document, as applicable, for information pertinent to the DOE system of controls, including compilation of AK.

3.1 Summary of WIPP Authorization Basis

The purpose of Section 3.0 and related appendices is to present the requirements and associated criteria that must be met for CH-TRU waste to be transported to, managed at, and disposed of at the WIPP. The requirements and associated criteria are organized under five major headings: Container Properties, Radiological Properties, Physical Properties, Chemical Properties, and Data Package Contents. Only TRU waste from a properly characterized and approved waste stream may be certified as meeting the requirements and associated criteria contained in this Certification Plan. Any waste container from a waste stream that has not been preceded by a permittee approved Waste Stream Profile Form (WSPF) is not acceptable at WIPP (Reference 43, Part 2, Section 2.3.3.10).

Site-specific plans and procedures shall contain details of the processes, controls, techniques, tests, and other actions to be applied to each TRU payload container, waste stream, and shipment. Methods of compliance with each requirement shall be described and the specific procedure cited. These methods of compliance shall include procedural controls, administrative controls, and waste generation process controls. The QA requirements applicable to waste characterization, certification, and transportation are addressed in various sections of this Certification Plan and are briefly summarized in Section 5.0. The data resulting from the implementation of the plans and procedures will form the basis for verifying that TRU waste to be sent to WIPP is certified to meet the WAC by the responsible site certifying official(s).

Sites shall transmit required characterization, certification, and shipping data to the WIPP Waste Information System (WWIS) using the Waste Data System (WDS). The WWIS is an electronic database and is a subset of the WDS. The WDS is equipped with edit/limit checks to ensure that the data representing the waste payload containers are in compliance with the WAC. Before shipping TRU waste payload containers from a WIPP-accepted waste stream, the site shall transmit the required waste characterization, certification, and shipping data via WDS to the WWIS database. Sites may be periodically requested to transmit payload container radiography reports or other data to the WWIS using the WDS. The WIPP will not accept any waste shipments for disposal if the waste payload container information has not been correctly submitted and approved for shipment by the WDS/WWIS Data Administrator. The Waste Data System User's Manual (Reference 9) provides the information needed to perform tasks associated with transmittal of the payload container's characterization, certification, and shipment information to WIPP.

Sites will be notified of revisions to external regulatory requirements by CBFO. Revisions of requirements in referenced documents not controlled by the DOE (but by, for example, the EPA, NRC, or NMED) shall have precedence over the values specified here if they are more restrictive. These changes will be incorporated in future revisions of the WAC.

3.1.1 DOE Operations and Safety Requirements for WIPP

The WIPP DSA (Reference 20) addresses TRU waste handling and emplacement operations. The waste accepted for emplacement in the WIPP must conform to the WAC to meet the DSA. The DSA documents the safety analyses that develop and evaluate the adequacy of the WIPP safety bases necessary to ensure the safety of workers, the public, and the environment from the hazards posed by WIPP waste receiving, handling, and emplacement operations. The DSA establishes and evaluates the adequacy of the safety bases in response to plant normal and abnormal operations and postulated accident conditions.

3.1.2 NRC Transportation Safety Requirements

Acceptable methods for payload compliance are defined in the TRUPACT-II, TRUPACT-III, and HalfPACT Certificates of Compliance and implemented by the CH-TRAMPAC and TRUPACT-III TRAMPAC (Reference 48 and 49). For shipments to WIPP, each site must prepare a site-specific TRAMPAC describing how it will ensure compliance with each payload parameter. The site specific TRAMPAC shall contain sufficient detail to allow reviewers to adequately understand and evaluate the compliance methodology for each payload parameter.

Sites shall have a packaging QA program that defines the QA activities that apply to the use of NRC-approved transportation packaging equivalent to Title 10 of the Code of Federal Regulations (10 CFR) Part 71, Subpart H, (Reference 34).

3.1.3 NMED Hazardous Waste Facility Permit Requirements

TRU waste is classified as TRU-mixed waste if it contains hazardous constituents regulated under the New Mexico Hazardous Waste Act (Reference 44). Only TRU-mixed waste and TRU waste that have been characterized in accordance with the WIPP WAP and that meet the Treatment, Storage, and Disposal Facility (TSDF) waste acceptance criteria as presented in the HWFP Sections 2.3.3.1 through 2.3.3.10 will be accepted at the WIPP facility for disposal in the permitted underground hazardous waste disposal unit.

The AMWTP has developed and implemented a QAPjP that addresses all the applicable requirements specified in the WIPP WAP. In accordance with Attachment C5 of the WIPP WAP, the QAPjP includes the qualitative and/or quantitative criteria for determining whether the waste characterization program is being satisfactorily performed. All QAPjPs are reviewed and approved by the CBFO.

3.1.4 EPA Requirements

3.1.4.1 EPA Compliance Recertification Decision

Title 40 CFR 194.24(c) states that the DOE shall specify the limiting values for waste components to be emplaced in the repository (Reference 38). The EPA's Compliance Recertification Decision (Reference 32) identifies the repository limits for several waste components including free water, metals, and cellulose, plastic, and rubber (CPR). Although the recertification does not specify limiting values for the activities and masses of specific radionuclides, it identifies the listed values for a number of radionuclides that are considered in the Performance Assessment. To demonstrate that the cumulative total activities of the specified radionuclides (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) are consistent with the levels used for the Performance Assessment and the Recertification, and reporting, tracking of the specified radionuclides is necessary (see Appendix A). TRU waste payload

containers shall contain more than 100 nanocuries per gram of waste (nCi/g) of alpha-emitting TRU isotopes with half-lives greater than 20 years, as specified in Section 3.3.3.

The repository limit for free water is a maximum of 1,684 cubic meters (m^3) and is met by the observable liquid criterion specified in Section 3.4.1.

The limits for metals are a minimum of 2×10^7 kilograms (kg) for ferrous metals and 2×10^3 kg for nonferrous metals. These limits will be met in the total repository inventory by the metals that constitute the payload containers alone; thus, WIPP tracks the number and type of payload containers emplaced in the repository as reported in the WDS/WWIS by the sites (see Section 3.2.1).

The repository limit for CPR is a maximum of 2.2×10^7 kg. Sites are required to estimate the CPR weights and report these estimates in the WDS/WWIS on a payload container basis as required by Section 3.6.1.

Sites must quantify and report the activities and masses of specific radionuclides for the purpose of tracking the total radionuclide inventory of the repository as specified in Section 3.3.1. The presence or absence of these specific radionuclides is determined from AK, radioassay, or both in accordance with Appendix A. The results of this determination are reported in the WDS/WWIS on a payload container basis.

The methods used to quantify the above waste components for purposes of EPA compliance are discussed in Appendices A, F, and G.

3.1.4.2 EPA Approval for PCB Disposal

PCB-contaminated TRU and PCB-contaminated TRU waste mixed with a hazardous waste including PCB remediation waste, PCB articles, and PCB bulk product waste may be stored and disposed at the WIPP (References 15, 17, 29, 31, and 42).

Waste streams identified as containing PCBs shall be brought to the attention of the CBFO in order that a determination can be made regarding their acceptability at WIPP.

3.1.5 Land Withdrawal Act Requirements

The term “WIPP” means the Waste Isolation Pilot Plant project authorized under Section 213 of the Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Pub. L. 96-164; 93 Stat. 1259-1265), to demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities (Reference 23). Hence, by law, WIPP can accept only radioactive waste generated by atomic energy defense activities of the United States (Reference 24, Section 2[19]).

The DOE and its predecessor agencies were engaged in a broad range of activities that fall under the heading of atomic energy defense activities. A TRU waste is eligible for disposal at WIPP if it has been generated in whole or in part by one or more of the following functions (References 26 and 27):

- Naval reactors development
- Weapons activities, including defense inertial confinement fusion
- Verification and control technology
- Defense nuclear materials production
- Defense nuclear waste and materials by-products management
- Defense nuclear materials security and safeguards and security investigations
- Defense research and development.

Using AK, DOE sites must determine that each waste stream to be disposed of at WIPP is "defense" TRU waste.

High-level radioactive waste or spent nuclear fuel shall not be transported, emplaced, nor disposed of at WIPP (Reference 24, Section 12). Also, no TRU waste may be transported by or for the DOE to or from WIPP, except in packages (1) the design of which has been certified by the NRC, and (2) that have been determined by the NRC to satisfy its quality assurance requirements (Reference 24, Section 16[a]).

3.2 Container Properties

3.2.1 Description

Acceptance Criterion. Each payload container shall be assigned to a payload shipping category (Reference 48 and 49, Section 5.1.1). Authorized payload containers types include the:

- 55-gallon drum
- 55-gallon drum (containing a pipe component)
- 85-gallon drum[1]
- 100-gallon drums

1. The term "85-gallon drum" includes 75- to 88-gallon drums.

- Standard large box 2 (SLB2), either direct loaded or containing various individual container (4 × 4 × 7-ft and 5 × 5 × 8-ft boxes as well as other containers of smaller size)
- Standard waste box (SWB, either direct loaded, containing up to four 55-gallon drums, or containing one bin)
- Ten-drum overpack (TDOP, either direct loaded, containing up to ten 55-gallon drums, up to six 85-gallon drums, or one SWB).

Payload containers shall meet U.S. Department of Transportation (DOT) Specification 7A; Type A, packaging requirements delineated in 49 CFR 173.465 (Reference 20, Section 2.6.2; Reference 43, Attachment A1, Section A1-1b; Reference 29, Section VI.F). Payload containers must be made of steel and be in good and unimpaired condition prior to shipment from the sites. To demonstrate compliance with the requirement that payload containers be in good and unimpaired condition, the exterior of all payload containers shall undergo 100% visual inspection prior to loading into an authorized package. The results of this visual inspection shall be documented using the Payload Container Integrity Checklist contained in Appendix D. A payload container in good and unimpaired condition (1) does not have significant rusting, (2) is of sound structural integrity, and (3) does not show signs of leakage. Significant rusting is a readily observable loss of metal due to oxidation (e.g., flaking, bubbling, or pitting) that causes degradation of the payload container's structural integrity. Rusting that causes discoloration of the payload container surface or consists of minor flaking is not considered significant. A payload container is not of sound structural integrity if it has breaches or significant denting or deformation. Breaching is defined as a penetration in the payload container that exposes the internals of the container. Significant denting or deformation is defined as damage to the payload container that results in creasing, cracking, or gouging of the metal, or damage that affects payload container closure. Dents or deformations that do not result in creasing, cracking, or gouging or affect payload container closure are not considered significant. Sites will report to the WDS/WWIS the number and types of payload containers planned for shipment to the WIPP (Reference 32).

Compliance. Authorized payload containers are controlled and verified in accordance with CCP-TP-033, CCP Shipping of CH TRU Waste (Reference 59).

MP-PCMT-15.1, Acquisition of Material and Services, and MP-PCMT-15.21, Material Management, provide the protocol for procuring and inspecting payload containers (e.g., drums, standard waste boxes [SWBs], and ten-drum overpacks [TDOPs]) to ensure compliance with U.S. Department of Transportation (DOT) Specification 7A, Type A, packaging requirements

Operators visually inspect 100% of the payload containers to determine if the payload container meets the criteria detailed in Appendix D in accordance with CCP-TP-033. Payload containers that do not meet the container integrity visual inspection are overpacked prior to shipment. The

numbers and types of payload containers planned for shipment to WIPP are reported to the WDS/WWIS in accordance with MP-TRUW-8.5, TRU Waste Certification.

3.2.2 Weight Limits and Center of Gravity

Acceptance Criterion. See the CH-TRAMPAC for weight limits and center of gravity requirements (Reference 48). See the TRUPACT-III TRAMPAC for applicable weight limits (Reference 49).

Compliance. Containers are weighed on calibrated scales in accordance with INST-OI-14, Drum Assay Operations; or INST-FOI-01, In-Plant Drum Assay Operations, as applicable. Calibrations of the scales are performed in accordance with the NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices (Reference 55), or an equivalent standard and INST-CMNT-10.5.1, Calibration and Control of Measuring and Test Equipment. The CCP Transportation Certification Official (TCO) confirms the individual payload container weights using the WDS/WWIS Payload Container Transportation Certification Document (PCTCD) to verify compliance with CCP-PO-003 weight limits and center of gravity requirements. Weights are reported to the WDS/WWIS in accordance with MP-TRUW-8.5.

Additional weight limits may be implemented based on restrictions identified by procurement specifications and testing. These restrictions will also be addressed in the applicable work instructions as they are identified.

Using the WDS/WWIS shipping module, the CCP TCO confirms that the TRUPACT-II, TRUPACT-III, or HalfPACT payload assemblies are evaluated for compliance with the weight requirements identified in CCP-PO-003, using the location and weight of the individual payload containers. These weights are based on calculated payload assembly weights, TRUPACT-II or HalfPACT weights, and the reported truck weight, in accordance with CCP-TP-033. No center of gravity requirements exist for HalfPACT payloads.

3.2.3 Assembly Configurations

Acceptance Criterion. See the CH-TRAMPAC and the TRUPACT-III TRAMPAC for payload assembly configuration requirements (Reference 48 and 49).

Compliance. The maximum number of containers per TRUPACT-II, TRUPACT-III, or HalfPACT and the authorized packaging configurations are controlled in accordance with CCP-TP-033.

3.2.4 Removable Surface Contamination

Acceptance Criterion. Removable surface contamination on CH-TRU waste payload containers, payload assemblies, and packaging shall not exceed 20 disintegrations per minute (dpm)/ 100 square centimeters (cm^2) alpha and 200 dpm/100 cm^2 beta-gamma (Reference 43, Attachment A1, Section A1-1d [2]; References 5 and 36). The fixing of surface contamination to meet these criteria is not allowed by WIPP in accordance with best management practices for ensuring worker radiation dose as low as reasonable achievable (ALARA).

Compliance. Radiological technicians survey each container in accordance with INST-OI-09, Retrieval Inspection Station Operations; INST-OI-11, Waste Container Handling; CCP-TP-033; and CCP-TP-086, CCP CH Packaging Payload Assembly (Reference 60), as applicable. Containers that exceed allowable surface contamination levels are decontaminated and/or overpacked. Surveys on the loaded TRUPACT-II are performed in accordance with DOE/WIPP 02-3184, CH Packaging Operations Manual (Reference 7). Results are reported to the WDS/WWIS in accordance with MP-TRUW-8.5.

3.2.5 Identification/Labeling

Acceptance Criterion. Each payload container to be shipped in a TRUPACT-II, TRUPACT-III, or a HalfPACT shall be labeled with a unique payload container identification number using bar code labels permanently attached in conspicuous locations (Reference 48, Section 2.4, and 49, Section 2.3). The unique payload container identification number shall include a site identifier as a prefix (Reference 48 and 49, Section 6.2.1).

The payload container identification number shall be in medium to low density Code 39 bar code symbology as required by American National Standards Institute (ANSI) Standard ANSI/ Association for Automatic Identification and Mobility (AIM) BC1-1995 (Reference 54) in characters at least 1 inch high and alphanumeric characters at least 1/2-inch high. In the case of 55-, 85-, and 100-gallon drums, a minimum of three bar code identification labels shall be placed at approximately equal intervals around the circumference of the drum (120 degrees for three labels, 90 degrees for four labels, etc.) so that at least one label is clearly visible when the drums are assembled into a payload (i.e., a label must be visible after slip sheets and wrapping are applied). In the case of SWBs, bar code labels are required on the flat sides of the SWB (Reference 2). For TDOPs and SLB2s, a minimum of one bar code is required.

Payload containers shall be marked “Caution Radioactive Material” using a yellow and magenta label as specified in 10 CFR § 835 (Reference 36). Those payload containers whose contents are also RCRA regulated (mixed-TRU) shall be additionally marked “Hazardous Waste” as specified in 40 CFR § 262.32 (Reference 39). For TRU and TRU-mixed wastes containing PCBs, the payload containers shall be marked in accordance with 40 CFR § 761.40 (Reference 42). Additionally, DOT Type B packages (i.e., TRUPACT-II, TRUPACT-III, and

HalfPACT) containing PCBs must be properly marked in accordance with the EPA Conditions of Approval and 40 CFR § 761.40 (References 29 and 42).

If an empty 55-, 85-, or 100-gallon drum is used as dunnage to complete a payload configuration, dunnage containers shall be labeled with the following information:

- Unique payload container identification number
- "EMPTY" or "DUNNAGE."

If a seven-pack of only dunnage 55-gallon drums, a four-pack of only dunnage 85-gallon drums, a three-pack of only dunnage 100-gallon drums, or a dunnage SWB is used in the TRUPACT-II, the container(s) shall be labeled only "EMPTY" or "DUNNAGE." The unique container identification number label is not required for these containers (Reference 48, Section 2.4.1).

Compliance. Payload containers certified for shipment by the AMWTP, are labeled in medium to low density Code 39 bar code symbology as required by ANSI standard ANSI/AIM BC1-1995 in characters at least one inch high and alphanumeric characters at least one-half inch high in the following format: BNXXXXXXXX, where BN represents AMWTP (formerly operated by BNFL, Inc.) and XXXXXXXX represents a sequential number generated by the Waste Tracking System (WTS). The WTS also verifies that the identification number is unique and that duplicate container identification numbers do not exist. Empty containers used as dunnage are labeled with a unique container identification number and "EMPTY" or "DUNNAGE."

Payload containers are marked "Caution Radioactive Material" using a yellow and magenta label as specified in 10 CFR § 835. Those payload containers whose contents are also RCRA regulated (mixed-TRU) are additionally marked "Hazardous Waste."

For TRU and TRU-mixed wastes containing PCBs, the payload containers shall be marked in accordance with 40 CFR § 761.40. Additionally, DOT Type B packages (i.e., TRUPACT-II, TRUPACT-III, and HalfPACT) containing PCBs must be properly marked in accordance 40 CFR § 761.40.

Payload containers are labeled in accordance with INST-OI-11 and/or INST-FOI-20, Supercompactor and Post-Compaction Operations, as applicable.

The CCP TCO ensures that each payload container is clearly marked with a unique identification number (bar code), radioactive material, hazardous waste and EPA hazardous waste numbers, and, when applicable, PCB labels in accordance with CCP-TP-086 and CCP-TP-033.

3.2.6 Dunnage

Acceptance Criterion. See the CH-TRAMPAC for payload assembly configuration requirements (Reference 48).

To maximize the efficiency of disposal operations at the WIPP, the use of dunnage drums should be minimized. In the event the use of dunnage drums cannot be avoided, the preferred practice for maximizing the efficiency of waste handling and the utilization of disposal room capacity is to ship them in assemblies (e.g., a seven-pack assembly of 55-gallon drums).

Compliance. The use of dunnage is minimized through load management. Dunnage containers, when used, are inspected in accordance with CCP-TP-033, to ensure compliance with packaging requirements required by CCP-PO-003. Dunnage containers are reported in the WDS/WWIS in accordance with CCP-TP-033.

3.2.7 Filter Vents

Acceptance Criterion. Containers that have been stored in an unvented condition (i.e., no filter and/or unpunctured liner) shall be aspirated for a specific length of time to ensure equilibration of any gases that may have accumulated in the closed payload container (Reference 48 and 49, Section 5.3.1).

Each payload container shall have one or more filter vents (Reference 20, Section 2.6.2; Reference 48, Section 2.5.1; Reference 49, Section 2.4.1; Reference 43, Attachment A1, Section A1-1b[2]). These filter vents shall meet the specifications of the WIPP HWFP, CH-TRAMPAC, and TRUPACT-III TRAMPAC, as applicable (Reference 43, Attachment A1, Section A1-1d (1); Reference 48, Section 2.5.1; and Reference 49, Section 2.4.1). The model number of each filter vent or combination of filter vents installed on a payload container shall be reported to the WDS/WWIS. A listing of approved CBFO filter vent models is provided on the CBFO Web Page (http://www.wipp.energy.gov/library/Filter Vents/DOE-WIPP-11-3384-REV1.pdf). This Internet link is provided for informational purposes only and may change without prior public notification.

Compliance. QA procedures provide protocol for procuring and inspecting filters to ensure compliance with CCP-PO-003 and WIPP HWFP specifications for filter vents, which are performed in accordance with MP-PCMT-15.1 and MP-PCMT-15.21.

Payload containers that have been stored in an unvented condition (i.e., no filter and/or unpunctured liner) are vented and aspirated in accordance with INST-OI-43, HGAS Sampling and Analysis Operations, INST-OI-45, Drum Filter Installation; or INST-OI-50, WMF-615 Filter Insertion Operations, as applicable. In addition, the CCP ensures that payload containers that have been stored in an unvented condition are vented and aspirated in accordance with DOE/WIPP-06-3345, Waste Isolation Pilot Plant Flammable Gas Analysis (Reference 16).

Payload containers are verified prior to payload assembly to ensure the filter diffusivity has been met, as specified in Section 2.5 of CCP-PO-003 and are verified by the CCP TCO in accordance with CCP-TP-033 or CCP-TP-086 (as applicable). The model number of each filter or combination of filters installed in a payload container is recorded and reported to the WDS/WWIS in accordance with MP-TRUW-8.5 or CCP-TP-030, CCP CH TRU Waste Certification and WWIS/WDS Data Entry (Reference 58).

3.3 Radiological Properties

With respect to the required radiological properties identified within this section, they can be divided into two distinct groups.

The first group includes the activities and masses of the ten WIPP-tracked radionuclides (i.e., ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) and the TRU alpha activity concentration of the waste (i.e., >100 nCi/g of alpha-emitting TRU isotopes with half lives greater than 20 years). This set of radiological properties is regulated by the EPA in accordance with 40 CFR Parts 191 and 194 (References 37 and 38). Estimates of their activities and masses shall be derived from a system of controls certified by CBFO that includes AK, computations, measurements, sampling, etc. (Reference 8, Appendix TRU Waste). Appendix A provides the methods and requirements by which to characterize the radiological composition of the CH-TRU waste utilizing radioassay techniques.

The second group includes the remaining radionuclides contributing to the ^{239}Pu fissile gram equivalent (FGE), the ^{239}Pu equivalent curies (PE-Ci), and the decay heat of the payload container. This set of radiological data is regulated both by the NRC as specified in the CH-TRAMPAC (Reference 48) and the TRUPACT-III TRAMPAC (Reference 49) and by the CBFO as summarized by the WIPP DSA (Reference 20). PE-Ci quantities shall be calculated for each payload container in accordance with Appendix B. Any CH-TRAMPAC and/or TRUPACT-III TRAMPAC compliant method may be used to quantify the remaining radiological properties at the discretion of the shipping facility. Appendix A provides recommended radioassay methods by which to characterize the remaining radiological properties. However, the resulting data (e.g., AK from Safeguards and Security data), the source/method from which the data were generated, and the basis for the reliability of the data shall be submitted to and approved by CBFO prior to use.

3.3.1 Radionuclide Composition

Acceptance Criterion. The activities and masses of ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs shall be established on a payload container basis for purposes of tracking their contributions to the total WIPP radionuclide inventory (Reference 8, Appendix TRU Waste). The estimated activities and masses, including their associated total measurement uncertainties (TMUs) expressed in terms of one standard deviation, for these ten radionuclides shall be reported to the WDS/WWIS on a payload container basis. For any of these ten radionuclides whose presence can be substantiated from AK, direct measurement, computations, or a combination thereof, and whose measured data are determined to be below the lower limit of detection (LLD) for that radionuclide, the site shall report the character string "< LLD" to the WDS/WWIS for the activity and mass of that radionuclide; otherwise a value of zero shall be reported. Quantitative estimates for LLD shall not be used when calculating related radiological properties of the waste such as TRU alpha activity concentration, ^{239}Pu FGE, decay heat, etc. See Appendix A, Section A.3, of this document for information pertaining to the development and application of LLD.

In addition, all radionuclides other than the ten WIPP-tracked radionuclides (i.e., ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) that contribute to 95% of the radioactive hazard for the payload container shall be reported on the TRUPACT-II, TRUPACT-III, or HalfPACT bill of lading or manifest in accordance with 49 CFR § 172.203 and 49 CFR § 173.433 (References 40 and 41). The activities and masses of these other radioisotopes shall also be reported to the WDS/WWIS along with their associated TMU, expressed in terms of one standard deviation for each waste container.

Compliance. The quantity of radionuclides in each payload container along with the associated TMU values (expressed in terms of one standard deviation) is determined using the NDA method described in Appendix A and is performed in accordance with INST-OI-14 or INST-FOI-01. Each radionuclide quantity and its associated TMU are transferred from the drum assay system (DAS) to the WTS. The method used to perform the calculations for the radionuclides and associated TMU values are documented in the Canberra Industries, Genie 2000 Spectroscopy System Customization Tools, NDA 2000 Technical Reference Manual, and Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, CI-IDA-NDA-0055 (Reference A22; see Appendix A).

The WTS reports the character string "<LLD" to the WDS/WWIS for the activity and mass of the ten tracked radionuclides (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) whose presence can be substantiated from AK, direct measurement, computations, or a combination thereof, and whose measured data are determined to be below the LLD for that radionuclide; otherwise, a value of zero is reported. Electronic or manual entry of data into the WDS/WWIS is performed in accordance with MP-TRUW-8.5. In addition to the ten WIPP-tracked radionuclides, ^{235}U is also quantified, if present above its LLD, in order to calculate the ^{239}Pu FGE for compliance with the TRUPACT-II and the HalfPACT requirements. All radionuclides other than the ten WIPP-tracked radionuclides that contribute to 95% of the radioactive hazard for each payload container are also stored in the WTS.

The quantity of each radionuclide comprising 95% of the radioactive hazard whose value is above the LLD and its associated TMU expressed in terms of one standard deviation are reported to the WDS/WWIS for each waste container and on the TRUPACT-II or the HalfPACT bill of lading or manifest for each shipment.

3.3.2 ^{239}Pu Fissile Gram Equivalent

Acceptance Criterion. For each payload container, the sum of ^{239}Pu FGE plus two times its associated TMU, expressed in terms of one standard deviation, shall comply with the limits in Table 1. (Reference 20, Section 6.4.2; Reference 48; and 49, Section 3.1.1). The values calculated for ^{239}Pu FGE and its associated TMU (expressed in terms of one standard deviation) shall be reported to the WDS/WWIS for each payload container.

See the CH-TRAMPAC and TRUPACT-III TRAMPAC for ^{239}Pu FGE limits applicable to the TRUPACT-II, TRUPACT-III, and HalfPACT packaging (Reference 48 and 49).

Table 1
^{239}Pu FGE Limits for Payload Containers

Waste Container Type	Be/BeO Limits	Special Waste Container Geometry/Material Requirements	^{239}Pu FGE Limit
Non-Machine Compacted Waste			
55- (excluding pipe overpacks), 85-, and 100-gallon drums	≤1% by weight of the waste	None	≤200
55-gallon drum configured as a pipe overpack (i.e., a standard, S100, S200, or S300 pipe overpack)	≤1% by weight of the waste	None	≤200
SLB2	≤1% by weight of the waste	The minimum ^{240}Pu content in grams for the SLB2 waste container, denoted in the adjacent ^{239}Pu FGE Limit column as a parenthetical, shall be determined after the subtraction of two times the error (i.e., two standard deviations).	≤325 ≤340 (5) ≤360 (15) ≤380 (25)
SWB	≤1% by weight of the waste	None	≤325
TDOP	≤1% by weight of the waste	None	≤325
55- (excluding pipe overpacks), 85-, and 100-gallon drums	>1% by weight of the waste up to 100 kg	None	≤100
SWB	>1% by weight of the waste	None	≤100
TDOP	>1% by weight of the waste	None	≤100
Pipe Overpacks (i.e., a standard, S100, S200, or S300 pipe overpack)	>1% by weight of the waste	None	≤140

Waste Container Type	Be/BeO Limits	Special Waste Container Geometry/Material Requirements	^{239}Pu FGE Limit
Machine-Compacted Waste			
55- (excluding pipe overpacks), 85-, and 100-gallon drums	≤1% by weight of the waste	Partially compacted waste. Applies to waste that has been compacted such that the distribution and form of polyethylene in the waste does not exceed 0.646 gram/cubic centimeter (g/cm^3), i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3).	≤200
55- (excluding pipe overpacks), 85-, and 100-gallon drums	≤1% by weight of the waste	Fully compacted waste without design vertical spacing. Applies to waste that has been compacted such that the distribution and form of polyethylene in the waste exceeds 0.646 g/cm^3, i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3).	≤170
55- (excluding pipe overpacks), 85-, and 100-gallon drums	≤1% by weight of the waste	Fully compacted waste with design vertical spacing. Applies to waste that has been compacted such that the distribution and form of polyethylene in the waste exceeds 0.646 g/cm^3, i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3) and the dimensions of the payload containers (e.g. 100-gallon drums) ensure a minimum of 0.5 inch separation between their compacted waste contents and other axially adjacent payload containers.	≤200
SLB2	—	Unauthorized	—

Waste Container Type	Be/BeO Limits	Special Waste Container Geometry/Material Requirements	^{239}Pu FGE Limit
SWB/TDOP	≤1% by weight of the waste	Fully compacted waste with design vertical spacing. Applies to waste that has been compacted such that the distribution and form of polyethylene in the waste exceeds 0.646 gram/cubic centimeter (g/cm^3), i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3) and contains one 16-gauge steel 100-gallon drum having a top and bottom design spacing of 0.75 and 0.50 inches, respectively, with no loose material or other drums of waste in the SWB/TDOP.	≤250
SWB/TDOP	≤1% by weight of the waste	Fully compacted waste with design vertical spacing. Containing one 55-, 85-, or 100-gallon drum whose design ensures a minimum of 0.5-inch vertical spacing between drum contents and the exterior top and bottom of the drum (e.g., a recessed lid) with no loose material or other drums of waste in the SWB/TDOP.	≤200
SWB/TDOP	≤1% by weight of the waste	Partially compacted waste. Containing one 55-, 85-, or 100-gallon drum whose contents have been compacted such that the distribution and form of polyethylene in the waste does not exceed 0.646 gram/cubic centimeter (g/cm^3), i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3) with no loose material or other drums of waste in the SWB/TDOP.	≤200
SWB/TDOP	≤1% by weight of the waste	Fully compacted waste with design vertical spacing. Applies to waste that has been compacted such that the distribution and form of polyethylene in the waste does not exceed 0.646 gram/cubic centimeter (g/cm^3), i.e., 70% of the theoretical full density of polyethylene (0.923 g/cm^3).	≤185

Compliance. Beryllium content is verified and documented in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. AK documentation identifies physical properties of the waste, which is augmented through INST-OI-12, Real-Time Radiography Operations (Drum); INST-OI-34, Non-Facility Visual Examination Operations; INST-OI-81, Real-Time Radiography Operations (for WIPP Certification of Boxes); INST-FOI-17, Facility Visual Examination Operations; or INST-FOI-20.

The ^{239}Pu FGE quantities in each drum container along with the associated TMU values (expressed in terms of one standard deviation) is calculated for each container using the radionuclide values determined by the DAS and the associated ^{239}Pu FGE values tabulated in the American National Standards Institute/American Nuclear Society (ANSI/ANS) Standard 8.15-1981, Nuclear Criticality Control of Special Actinide Elements. The method that is used to perform the calculations for the ^{239}Pu FGE and its associated TMU is documented in the Canberra Industries, Genie 2000 Spectroscopy System Customization Tools, NDA 2000 Technical Reference Manual, and Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, CI-IDA-NDA-0055. The calculated ^{239}Pu along with its associated TMU are transferred from the DAS to the WTS in accordance with INST-OI-14 or INST-FOI-01. The WTS evaluates each payload container for compliance with the limits in Tables 3.3.2.1. The values calculated for ^{239}Pu FGE and its associated TMU (expressed in terms of one standard deviation) are reported to the WDS/WWIS for each payload container in accordance with MP-TRUW-8.5.

In addition, CCP performs nondestructive assay (NDA) measurements in support of the AMWTP using the SuperHENC in accordance with CCP-PO-002, CCP Transuranic Waste Certification Plan (Reference 56), and CCP-TP-146, CCP SuperHENC Operating Procedure (Reference 62).

3.3.3 TRU Alpha Activity Concentration

Acceptance Criterion. TRU waste payload containers shall contain more than 100 nCi/g of alpha-emitting TRU isotopes with half-lives greater than 20 years. Without taking into consideration the TMU, the TRU alpha activity concentration for a payload container is determined by dividing the TRU alpha activity of the waste by the weight of the waste. The weight of the waste is the weight of the material placed into the payload container (i.e., the net weight of the container). The weight of the waste is typically determined by subtracting the tare weight of the payload container (including the weight of the rigid liner and any shielding external from the waste, if applicable) from the gross weight of the payload container. In the event waste containers (e.g., 55-gallon drums) that have been radioassayed are overpacked in a payload container (e.g., in an SWB), sites shall sum the individual TRU alpha activity values of the individual waste containers and divide by the sum of the individual net waste weights (i.e., less container, shielding, and liner weights as appropriate) to determine the activity per gram for the payload container. Waste containers selected for payload management shall comply with the

policy for the management of TRU alpha activity concentration (see Appendix E). Loading a 55-gallon pipe-overpack with cans is considered direct loading – not overpacking for the purposes of calculating the weight of the container. The TRU alpha activity concentration shall be reported to the WDS/WWIS; however, there are no reporting requirements for its associated TMU (Reference 8, Chapter 4).

Compliance. The TRU alpha activity in each drum is determined from the alpha-emitting TRU isotopes with half-lives greater than 20 years. The TRU alpha activity is determined using the DAS in accordance with INST-OI-14 or INST-FOI-01.

The TRU alpha activity concentration for each payload container is calculated by dividing the TRU alpha activity by the net weight of the container (weight of the waste). The net weight of the container is determined by subtracting the tare weight of the container (including the weight of the rigid liner and any shielding external to the waste, if applicable) from the gross weight of the container. The TRU alpha activity concentration is transferred from the DAS and stored on the WTS. In the event a waste drum is overpacked in a payload container, the reported TRU alpha activity concentration for the payload container is determined by summing the TRU alpha activity values of the individual waste containers and dividing by sum of the net waste weights of the individual waste containers.

The WTS software evaluates each payload container for compliance with the TRU alpha activity concentration limit (>100 nCi/g). The TRU alpha activity concentration and the associated TMU are reported to the WDS/WWIS in accordance with MP-TRUW-8.5.

In addition, CCP performs nondestructive assay (NDA) measurements in support of the AMWTP using the SuperHENC in accordance with CCP-PO-002, CCP Transuranic Waste Certification Plan (Reference 56), and CCP-TP-146, CCP SuperHENC Operating Procedure (Reference 62).

3.3.4 ^{239}Pu Equivalent Activity

Acceptance Criterion. PE-Ci limits are shown in Table 2. PE-Ci quantities shall be calculated for each payload container (see Appendix B) and reported to WIPP using the WDS/WWIS (Reference 20, Section 3.3.2.3.1 and Table 3.3-6). There are no reporting requirements for the associated TMU.

Table 2
PE-Ci limits

Payload Container	Packing Configuration	PE-Ci Limit
55-, 85-, and 100-gallon drum	Direct loaded – all approved waste forms other than solidified/vitrified waste	≤ 80 PE-Ci
SLB2	Direct loaded – all approved waste forms other than solidified/vitrified waste	≤ 560 PE-Ci
SWB	Direct loaded (or a bin) – all approved waste forms other than solidified/vitrified waste	≤ 560 PE-Ci
TDOP	Direct loaded – all approved waste forms other than solidified/vitrified waste	≤ 800 PE-Ci
85-gallon drum	Overpacking an undamaged[a] 55-gallon drum – all approved waste forms other than solidified/vitrified waste	≤ 1,100 PE-Ci
SWB, TDOP	Overpacking an assembly of undamaged[a] 55- or 85-gallon drums with no single payload container within the assembly exceeding 1,100 PE-Ci – all approved waste forms other than solidified/vitrified waste	≤ 1,200 PE-Ci
TDOP	Overpacking an undamaged[a] SWB – all approved waste forms other than solidified/vitrified waste	≤ 1,200 PE-Ci
Pipe overpacks (standard, S100, S200, and S300)	All approved waste forms	≤ 1,800 PE-Ci
All	Solidified/vitrified waste	≤ 1,800 PE-Ci

a. An undamaged container provides an additional barrier should a breach occur in the overpack. When overpacking one or more damaged waste containers, direct loaded PE-Ci limits apply.

Compliance. The PE-Ci for each drum is determined using the DAS in accordance with INST-OI-14 or INST-FOI-01. The DAS calculates the PE-Ci value based on the methodology described in Appendix B. PE-Ci values are transferred from the DAS and stored in the WTS. The WTS calculates the PE-Ci value for overpack configurations and evaluates compliance. The PE-Ci value is reported to the WDS/WWIS for each payload container in accordance with MP-TRUW-8.5.

3.3.5 Radiation Dose Equivalent Rate

Acceptance Criterion. The external radiation dose equivalent rate of individual payload containers shall be ≤ 200 milliroentgen equivalent man (mrem)/hour (hr) at the surface with the exception of the S100 and S300 pipe overpacks which are limited to ≤ 179 mrem/hr and ≤ 155 mrem/hr, respectively, at the surface (Reference 48 and 49, Section 3.2; Reference 20, Sections E1 and 2.1). Internal payload container shielding shall not be used to meet this criterion, except for authorized shielded payload container configurations such as the use of 55-gallon drums containing a pipe component (Reference 48, Section 2.9). Total dose equivalent rate and the neutron contribution to the total dose equivalent rate shall be reported for each payload container in the WDS/WWIS.

See the CH-TRAMPAC and TRUPACT-III TRAMPAC for the associated package requirements (Reference 48).

Compliance. Containers are surveyed by radiological technicians and documented in accordance with INST-OI-11, INST-FOI-20, or CCP-TP-086. The highest measured combined dose rate at the drum surface is entered in the WDS/WWIS in accordance with MP-TRUW-8.5 or CCP-TP-030.

The TRUPACT-II or HalfPACT is also surveyed and the combined dose rate at the surface and 2 m from any side is recorded on the shipping documentation and reported in WDS/WWIS. Dose rates for beta-gamma and neutron dose are reported separately.

3.3.6 Decay Heat

Acceptance Criterion. See the CH-TRAMPAC and TRUPACT-III TRAMPAC for decay heat requirements (Reference 48 and 49).

Compliance. Decay heat values are determined using the DAS in accordance with INST-OI-14, or INST-FOI-01. The total decay heat from the radioactive decay of the radioisotopes within an individual payload container, and the total decay heat from all payload containers in a TRUPACT-II or HalfPACT are determined using the method described in Appendix A. The sum of the calculated value of the decay heat and the total measurement uncertainty at one standard deviation is transferred from the DAS and stored in the WTS.

The WTS and the WDS/WWIS verifies the analytical decay heat limit derived for specific shipping categories presented in Appendix 5.1 of CCP-PO-003. The decay heat value and the associated TMU are reported to the WDS/WWIS in accordance with MP-TRUW-8.5.

3.4 Physical Properties

3.4.1 Observable Liquid

Acceptance Criterion. Liquid waste is not acceptable at WIPP. Observable liquid containing PCBs is prohibited at WIPP. Liquid in the quantities delineated below is acceptable.

- Observable liquid shall be less than 1 percent[2] by volume of the outermost container at the time of radiography or visual examination (Reference 43).
- Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.
- Containers with Hazardous Waste Number U134 assigned shall have no observable liquid.
- Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

If VE is used, then the detection of any liquid in non-transparent internal containers, detected from shaking the internal container, will be handled by assuming that the internal container is filled with liquid and adding this volume to the total liquid in the container being characterized using VE (Reference 43, Part 2, Section 2.3.3.1; Reference 43, Attachment C, Sections C-1c and C-3c; Reference 48, Section 2.6.1; Reference 49, Section 2.5.1; Reference 8, Appendix TRU Waste).

Compliance. Observable liquid is verified through INST-OI-12; INST-OI-16, Drum Coring Operations; INST-OI-73, Manual Drum Coring Operations; INST-OI-75, Container-in-Container Sampling, INST-OI-81, INST-OI-34; INST-FOI-17; or INST-FOI-20, in conjunction with MP-TRUW-8.13.

If VE is used, the detection of any liquid in non-transparent internal containers, detected from shaking the internal container, will be handled by assuming that the internal container is filled with liquid and adding this volume to the total liquid in the container. The container being characterized using VE would be rejected and/or repackaged to exclude the internal container if

2. The limit of "less than 1 percent" is taken from the CH-TRAMPAC and TRUPACT-III TRAMPAC and is more restrictive than the limit of "no more than 1 percent" in the HWFP.

it is over these limits. When real-time radiography (RTR) is used, if any liquid in internal containers is detected, the volume shall be added to the total for the container.

When the sum of all liquids exceeds one percent by volume of the outermost container at the time of RTR or VE or when liquids have been identified in internal containers above specified limits, the container is segregated and sent for future treatment.

The WTS stores a description of the location of any liquid detected and an estimate of the volume. Observable liquid containing PCBs is prohibited at WIPP.

When VE is used, the liquids identified will be removed and treated as appropriate.

3.4.2 Sealed Containers

Acceptance Criterion. Sealed containers that are greater than 4 liters (nominal) are prohibited except for Waste Material Type II.2 packaged in a metal container (Reference 48, Section 2.8.1, and Reference 49, Section 2.7.1).

All waste containers with unvented rigid containers greater than 4 liters (exclusive of rigid poly liners) shall be subject to innermost layer of containment sampling or shall be vented prior to initiating drum age and equilibrium criteria (Reference 43, Attachment C1, Section C1-1a[1]).

Compliance. The absence of sealed containers greater than 4 liters (nominal) are verified through INST-OI-12, INST-OI-34, INST-OI-81, INST-FOI-17, or INST-FOI-20 in conjunction with MP-TRUW-8.13. Payload containers with sealed containers greater than 4 liters will be supercompacted or segregated for future treatment.

When VE is used, the VE operators remove and/or vent sealed containers.

3.5 Chemical Properties

3.5.1 Pyrophoric Materials

Acceptance Criterion. Radioactive pyrophoric materials shall be present only in small residual amounts (≤1 percent by weight) in payload containers and shall be generally dispersed in the waste. Radioactive pyrophorics in concentrations greater than 1 percent by weight and all nonradioactive pyrophorics shall be reacted (or oxidized) and/or otherwise rendered nonreactive prior to placement in the payload container (Reference 48 and 49, Section 4.1.1).

Nonradionuclide pyrophoric materials are not acceptable at WIPP (Reference 20, Section 11.4.1; Reference 43, Attachment C, Section C-1c; Reference 43, Part 2, Section 2.3.3.2).

Compliance. Nonradionuclide pyrophoric material is subject to the same controls as explosives (e.g., procurement controls and safety assessments). In general, pyrophoric materials are not permitted in TRU process areas. Processes that require the use of pyrophoric materials require a safety analysis that is used to determine the applicable controls. Generator sites administrative, operational and QA procedures dictate the quantity of pyrophoric materials that enter processes, which are limited and controlled. Operating procedures require that pyrophoric materials be rendered chemically safe by processing before being placed in payload containers (e.g., oxidation at high temperature in the presence of oxygen).

No pyrophoric materials or pyrophoric radionuclides exceeding one percent of the waste weight have been identified in any of the AK documentation, content code evaluations, or sampling programs.

3.5.2 Hazardous Waste

Acceptance Criterion. Hazardous wastes not occurring as co-contaminants with TRU wastes (non-mixed hazardous wastes) are not acceptable at WIPP. Each CH-TRU mixed waste container shall be assigned one or more EPA hazardous waste numbers, as appropriate. Only EPA hazardous waste numbers listed as allowable in the HWFP may be managed at WIPP. Some of the waste may also be identified by unique state hazardous waste codes. These wastes are acceptable at WIPP as long as the TSDF waste acceptance criteria are met (Reference 43, Attachment C, Section C-1b; Reference 43, Part 2, Section 2.3.4). Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA hazardous waste numbers of D001, D002, or D003) are not acceptable at WIPP. (Reference 43, Attachment C, Section C-1c; Reference 43, Part 2, Sections 2.3.3.3, 2.3.3.7, and 2.3.4).

Compliance. AK documentation identifies physical and chemical properties of the waste which is augmented by data collected using INST-OI-12, INST-OI-81, INST-FOI-20, INST-OI-34, or INST-FOI-17.

Representative sampling of homogeneous waste is accomplished through coring or other EPA-approved sampling in accordance with INST-OI-16, INST-OI-73, or INST-OI-75. The following analytical procedures are used by AMWTP to resolve the assignment of EPA hazardous waste numbers:

- CCP-TP-181, CCP Determination of Mercury by CVAA for TRU Waste Characterization
- CCP-TP-182, CCP Determination of Metals by ICP-AES for TRU Waste Characterization
- CCP-TP-183, CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel

- CCP-TP-184, CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
- CCP-TP-185, CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
- CCP-TP-186, CCP Determination of Nonhalogenated Volatile Organics by Gas Chromatography
- CCP-TP-187, CCP Sample Preparation for Semivolatile Organic Compounds (References 63 through 69).

Representative headspace gas sampling and analysis of debris waste streams, performed in accordance with INST-OI-43 is used to determine the types and concentrations of VOCs in the void volume in order to resolve the assignments of EPA Hazardous Waste Numbers.

Waste Stream Profile Forms (WSPFs) document the hazardous waste numbers for payload containers in a waste stream. EPA hazardous waste numbers are reported in the WDS/WWIS in accordance with MP-TRUW-8.5.

3.5.3 Chemical Compatibility

Acceptance Criterion. TRU waste containing incompatible materials or materials incompatible with payload container and packaging materials, shipping container materials, other wastes, repository backfill, or seal and panel closure materials are not acceptable for transport in the TRUPACT-II, TRUPACT-III, and HalfPACT or for disposal at the WIPP. Chemical constituents shall conform to the lists of allowable materials in Tables 4.3-1 through 4.3-8 of the CH-TRAMPAC, and Tables 4.3-1 through 4.3-7 of the TRUPACT-III TRAMPAC, as applicable. Other chemicals or materials not identified in these tables are allowed provided that they meet the requirements specified in Section 4.3.1 of the CH-TRAMPAC and TRUPACT-III TRAMPAC (Reference 43, Attachment C, Section C-1c; Reference 43, Part 2, Section 2.3.3.4; Reference 48 and 49, Sections 4.3 and 4.4).

Compliance. Potential chemical incompatibilities were evaluated by the NRC for each content code, between one content code and another, and between each content code and the TRUPACT-II inner containment vessel (ICV) and the o-ring seals to ensure that the chemical processes do not threaten the safe transport of the TRUPACT-II and HalfPACT. Only waste with an approved TRUCON code will be shipped in the TRUPACT-II and HalfPACT.

Waste generated by new processes, or an existing process that has changed, will be evaluated by the WIPP CH-TRU Payload Engineer to ensure that compliance with the transportation requirements of CCP-PO-003 can be demonstrated.

Waste compatibilities with backfill, seal, and panel closure materials are verified through the use of approved CH-TRUCON codes.

All payload containers selected for shipment to WIPP are evaluated with the WIPP TRAMPAC Evaluation Software (WTES) to ensure that waste being shipped belongs to an approved CH-TRUCON Code.

3.5.4 Explosives, Corrosives, and Compressed Gases

Acceptance Criterion. Waste shall contain no explosives, corrosives, or compressed gases (pressurized containers) (Reference 43, Attachment C, Section C-1c; Reference 43, Part 2, Sections 2.3.3.5 and 2.3.3.7; Reference 48 and 49, Section 4.2.1).

Compliance. Most generator sites did not allow explosives in the same facility as TRU waste. Waste generating processes were assessed for safety hazards such as potential explosive hazards and potential inadvertent production of explosive materials. Corrosive liquids were neutralized or absorbed by the generator sites before being shipped to the INL. Content code assessments have been performed to ensure liquids have been adequately neutralized.

AK documentation identifies physical and chemical properties of the waste that is augmented by using INST-OI-12, INST-OI-34, INST-OI-81, INST-FOI-17, or INST-FOI-20. For homogeneous wastes, sampling and analysis confirm the absence of corrosives.

Containers that contain compressed gases (pressurized containers) are segregated and sent for future treatment. Payload containers that contain explosives are segregated and documented on a nonconformance report (NCR).

3.5.5 Headspace Gas Concentrations

Acceptance Criterion. The headspace gas of payload containers shall be sampled and analyzed in accordance with an approved site-specific QAPjP, as defined in the WIPP WAP (Reference 43, Attachment C), and site specific TRAMPAC (Reference 48 and 49, Section 5.2), respectively.

Compliance. Containers randomly selected from summary category S5000 (debris) waste undergo headspace gas sampling and analysis in accordance with INST-OI-43, to resolve the assignment of EPA hazardous waste numbers for debris waste streams.

Waste containers intended for shipment in the TRUPACT-II or HalfPACT are sampled and analyzed by CCP to establish the concentration of flammable gas, volatile organic compounds (VOCs), hydrogen, and methane in accordance with DOE/WIPP-06-3345, Waste Isolation Pilot Plant Flammable Gas Analysis (Reference 16) and CCP-TP-093, CCP Sampling of TRU Waste Containers (Reference 61).

3.5.6 Polychlorinated Biphenyls

Acceptance Criterion. For TRU and TRU-mixed wastes containing PCBs meeting the conditions of approval in Reference 29, the payload container data entered into the WDS/WWIS shall include the earliest date of waste generation (i.e., the date of removal from service for disposal), the date of waste certification for disposal, and the date the waste was sent to the WIPP for disposal (Reference 29, Section III.D.4). Additionally, the estimated weight of the PCBs in kilograms (as recorded on the uniform hazardous waste manifest) and a description of the type of PCB waste (e.g., PCB remediation waste, PCB bulk product waste, etc.) shall be entered into the WDS/WWIS (Reference 42, § 761.207(a)(2) and § 761.180). Hanford, Idaho National Laboratory, Savannah River Site, Oak Ridge Reservation, Knolls Atomic Power Laboratory, and Los Alamos National Laboratory are authorized to ship their TRU and TRU-mixed wastes containing PCBs to WIPP (References 15 and 31).

Other sites in the DOE complex may also identify some TRU waste that contains PCBs during the process of characterizing their TRU waste for disposal at WIPP. Subject to NEPA review, as appropriate, CBFO will make a determination regarding the acceptability of waste from these sites at WIPP.

Compliance. AK documentation identifies the waste streams known to contain PCBs. The presence or absence of observable liquid and items suspected of containing PCBs (i.e., ballasts, transformers) are verified through INST-OI-12, INST-OI-34, INST-OI-81, or INST-FOI-17. Payload containers identified with prohibited PCBs (e.g., liquids) will be segregated and sent for future treatment. PCB out-of-service date, concentration, and description (e.g., remediation waste, bulk, etc.) are reported in WDS/WWIS per MP-TRUW-8.5.

3.6 Data Package Contents

3.6.1 Characterization and Certification Data

Acceptance Criterion. Sites shall prepare a WSPF for each waste stream. Each WSPF shall be approved by the CBFO prior to the first shipment of that waste stream. Characterization and certification information for each payload container shall be submitted to the WWIS/WDS and approved by the Data Administrator. Sites are required to estimate the CPR weights and report these estimates in the WDS/WWIS on a payload container basis. Any payload container from a waste stream that has not been preceded by an appropriate certified WSPF is not acceptable at WIPP (Reference 43, Part 2, Section 2.3.3.10).

Compliance. The Site Project Manager (SPM) or designated alternate prepares the WSPF and Characterization Information Summary (CIS) in accordance with MP-TRUW-8.14, Preparation of Waste Stream Profile Forms, and transmits a copy of the WSPF, CIS, and AK Summary Report to the WIPP for review and approval. This transmittal is coordinated with the initial characterization data transfer to the WDS/WWIS in accordance with MP-TRUW-8.5 for the data

administrator review and approval. Payload containers from a waste stream that does not have an approved WSPF will not be certified and shipped.

Payload containers are certified and sent to WDS/WWIS in accordance with MP-TRUW-8.5 for the Data Administrator review and approval. Data will only be entered into the WDS/WWIS after all reviews and quality assurance checks are complete and all open nonconformance documentation is satisfactorily closed.

The policies and methods described in Appendix E for the management of TRU alpha activity concentrations with each TRU waste payload container disposed of at WIPP are performed in accordance with MP-TRUW-8.5.

3.6.2 Shipping Data

Acceptance Criterion. Sites shall prepare either a bill of lading or a uniform hazardous waste manifest for CH-TRU waste shipments as required by the transportation requirements. The land disposal restriction notification for CH-TRU mixed waste shipments shall state that the waste is not prohibited from land disposal. (Reference 43, Attachment C, Section C-4b [2]).

Compliance. The CCP TCO verifies that all requirements for the transportation parameters have been met and completion of the signature authorizes payload containers for shipment in the TRUPACT-II in accordance with CCP-TP-033.

The AMWTP prepares a bill of lading or a uniform hazardous waste manifest, as applicable, for each CH-TRU waste shipment in accordance with MP-TRUW-8.12, Waste Receipt and Shipping Inspection.

4.0 WASTE ACCEPTANCE REQUIREMENTS AND CRITERIA FOR RH WASTE

This section identifies the requirements and associated criteria for acceptance of RH-TRU waste to be transported, managed, and disposed of at the WIPP.

Containers suspected to be RH-TRU waste will undergo preliminary characterization to ensure that the waste is candidate RH-TRU waste. RH-TRU waste will be transferred to the ICP contractor for subsequent characterization, certification, and shipment to WIPP.

5.0 QUALITY ASSURANCE REQUIREMENTS

Quality assurance is an integral part of TRU waste characterization, certification, transportation, and operation activities. This section defines the QA program requirements that provide confidence that TRU waste characterization and certification activities are performed satisfactorily. The QA requirements applicable to WIPP are addressed in the QAPD (Reference 6).

The AMWTP is responsible for developing, documenting, and implementing a site-specific QA plan that address the elements of the QAPD that apply to its program. This section defines the AMWTP QA program requirements for TRU waste characterization and certification activities. This *Certification Plan* will be submitted to the CBFO for approval before TRU wastes are characterized, certified, or shipped to WIPP. The CBFO and the Management and Operating Contractor will conduct audits and surveillances to ensure compliance with this plan.

5.1 Waste Characterization QA Requirements

MP-TRUW-8.2 documents the QA and quality control (QC) activities applicable to TRU characterization. Analytical laboratories analyzing WIPP waste characterization samples for the AMWTP have established documented QA/QC programs.

Data quality objectives (DQOs) are qualitative and quantitative statements that specify WIPP program technical and quality objectives; they are determined through the data quality objective (DQO) process. The DQOs for waste characterization activities relating to physical and chemical properties of the waste are contained in the QAPjP. The radioassay DQOs are given in Appendix A of this document.

Corrective Action Reports (CARs) applicable to the QAPjP requirements shall be resolved prior to waste shipment (Reference 43, Attachment C6, Section C6-4).

5.2 Waste Certification QA Requirements

This document, MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, describes the QA and QC activities applicable to certification of TRU waste to the WAC and also complies with the requirements of the QAPD.

5.3 Waste Transportation QA Requirements

The AMWTP characterizes and certifies CH-TRU waste for shipment to WIPP; however, the shipment of the waste will be performed by CCP.

CCP-PO-003 describes the QA and QC activities applicable to the specific parameters of the transportation packaging methods for payload control. The development, usage, operation, and maintenance of the transportation systems are conducted under the CCP QA program approved by the DOE-CBFO. These documents control the use of the NRC-certified packaging and comply with DOE/WIPP 02-3183, CH Packaging Program Guidance (Reference 14), and RH Packaging Program Guidance (Reference 19), as applicable.

5.4 Quality Assurance Program

The AMWTP Quality Assurance Program (QAP) is based on the WIPP QAPD (Reference 6) elements outlined below. Table 5.1 provides a cross-reference of identical or related QA requirement elements from 10 CFR 830, Subpart A (Reference 35), and 10 CFR 71, Subpart H (Reference 34).

- **Organization and QA Program** (QAP) documents the organizational structure, primary interfaces, functional responsibilities, levels of authority, and lines of communication for activities affecting quality, and identifies the activities and items to which the QA program applies.
- **Personnel Qualification and Training** identifies the AMWTP qualification and training programs and plans established to ensure personnel are provided training to perform their assignments and maintain job proficiency.
- **Quality Improvement** describes the processes to detect and prevent conditions adverse to quality, pursue continuous quality improvement, and control and correct nonconforming items.
- **Documents and Records** describes the processes for preparation, review, approval, issue, use, revision, and control of the AMWTP documents and records.
- **Work Processes** identifies the processes by which work conditions, equipment, and special processes are controlled to ensure quality.
- **Procurement** identifies the technical and QA requirements for procured items and services.
- **Inspection and Testing** identifies the processes for inspection and testing.
- **Assessment Requirements** describes the requirements for conducting management and independent assessments to measure management effectiveness, item quality, and process effectiveness and to promote improvement.
- **Sample Control Requirements** identifies the requirements for the control of waste samples, including identification, handling, storing, shipping, and archiving.
- **Scientific Investigation Requirements** describes the requirements for defining, controlling, verifying, and documenting scientific investigations.
- **Software Requirements** specifies the requirements for developing, procuring, maintaining, and using software.

Table 5.1. Quality Assurance Requirements Cross-Reference Table.

QAPD and Certification Plan Section [a]	Equivalent Section in 10 CFR 830, Subpart A, Nuclear Safety Management	Equivalent Section in 10 CFR § 71, Subpart H, Quality Assurance
Organization and QA Program	Program	QA Organization QA Program
Personnel Qualification and Training	Personnel Training and Qualification	QA Program
Quality Improvement	Quality Improvement	Corrective Action Nonconforming Materials, Parts, or Components
Documents Records	Documents and Records	Document Control QA Records
Work Processes	Work Processes	Instructions, Procedures, and Drawings Identification and Control of Materials, Parts, and Components Control of Special Processes
Procurement	Procurement	Procurement Document Control Control of Purchased Material, Equipment, and Services
Inspection and Testing	Work Process and Acceptance Testing	Internal Inspection Test Control Control of Measuring and Test Equipment Inspection, Test, and Operating Status Handling, Storage, and Shipping
Assessment Requirements	Management Assessment Independent Assessment	Audits
Sample Control Requirements	Work Processes	Not applicable
Scientific Investigation Requirements	Not applicable	Not applicable
Software Requirements	Not applicable	Not applicable

a. Reference 40 CFR 194.22 source requirements.

5.4.1 AMWTP TRU Program Organization

The TRU Program organization is part of the overall AMWTP organization. This section describes the principal organizations involved, the project level positions, and their primary responsibilities. Data generation organizations also support the AMWTP. The central organizational structure is depicted in Figure 5.1.

President and Project Manager has overall responsibility for all aspects of the AMWTP, which includes permitting, operations, characterization, and certification.

Plant Manager is responsible for the production, maintenance, and implementation necessary to support waste treatment and disposal.

TRU Programs Manager has overall responsibility for successfully accomplishing activities subject to the QAPD requirements. Management provides the necessary planning, organization, direction, control, resources, and support to achieve their defined objectives. Management is responsible for planning, performing, and improving the work.

The TRU Programs Manager is also responsible for establishing and implementing policies, plans, and procedures that control the quality of work, consistent with the provisions of the Certification Plan.

The TRU Programs Manager's responsibilities include the following:

- Ensuring that adequate technical and QA training are provided for personnel performing activities subject to the QAPD
- Ensuring compliance with all applicable regulations, DOE orders and requirements, and applicable Federal, state, and local laws
- Ensuring that personnel adhere to procedures for the generation, identification, control, and protection of QA records
- Exercising the authority and responsibility to stop unsatisfactory work such that cost and schedule do not override environmental, safety, or health considerations
- Developing, implementing, and maintaining plans, policies, and procedures that implement the QAPD requirements
- Identifying, investigating, reporting, and correcting quality problems.

Quality Assurance Manager has the authority and overall responsibility to independently assess the organization's effective implementation of the QA program to verify the achievement of quality. The QA Manager has direct access and organizational freedom to communicate with responsible management where appropriate action can be effected and is sufficiently independent from cost and schedule considerations.

The Quality Assurance Manager's responsibilities include the following:

- Reviewing the QAPjP and subsequent revisions
- Scheduling and conducting QA assessments

- Maintaining liaison with participant QA organizations and other affected organizations
- Ensuring the preparation, review, and issuance of QA plans and procedures that implement the provisions of the QAPD
- Reviewing and approving supplier and subcontractor QA plans
- Tracking or performing trend analysis of quality problems and reporting quality problem areas
- Providing for the administrative processing of documentation concerning conditions adverse to quality
- Developing, establishing, and interpreting QA policy and ensuring effective implementation
- Interfacing, as appropriate, with CBFO staff, participants, and other stakeholders on QA matters
- Assisting subordinate organizations with QA planning, documentation, quality measurement, and problem identification and resolution
- Providing guidance to all applicable subordinate organizations concerning identification, control, and protection of QA records
- Summarizing all relevant information on the QA/QC activities during the period in a semi-annual report and distributing it to DOE and the SPM.

The QA Manager ensures that the QA organization has sufficient authority, access to work areas, and organizational freedom to identify quality problems, recommend solutions, verify implementation of solutions and ensure that unsatisfactory conditions are controlled until proper disposition has occurred.

Site Project Manager has overall responsibility for ensuring that TRU waste is successfully characterized in accordance with the WIPP WAP and meets the requirements of the WIPP WAC and the CH-TRAMPAC, Remote-Handled Transuranic Waste Authorized Methods for Payload Control (RH-TRAMPAC), and MP-TRUW-8.2, as applicable. The SPM (or designated alternate) responsibilities include:

- Reviewing and approving the QAPjP and subsequent revisions before it is submitted to CBFO for approval
- Waste selection and tracking
- Data validation/verification
- Data reconciliation with DQOs

- Assignment of EPA Hazardous Waste Numbers
- QA/QC reports to DOE-ID
- Data transmittal to CBFO.

The SPM reviews the semiannual report, comments if appropriate, and forwards a copy of the report with comments to DOE-ID.

Waste Certification Official (WCO), or designated alternate, is responsible for documenting and certifying that all TRU waste payload containers prepared for shipment to the WIPP meet all the requirements specified in the WAC, and for transmitting the waste certification data to the WIPP. The WCO is responsible for final compilation and approval of TRU Waste Certification Statements.

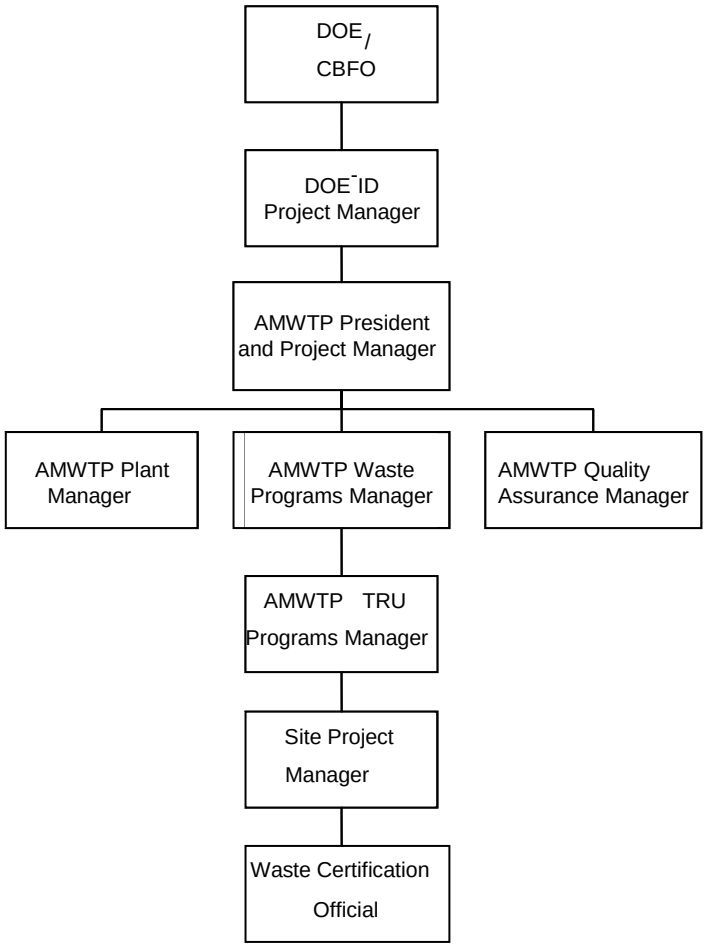


Figure 5.1 AMWTP TRU Program Organization Structure.

5.4.2 AMWTP QA Program Description

This QAP applies to items and activities affecting AMWTP quality. The QA Organization verification of the achievement of quality is accomplished through reviews, assessments, surveillances, inspections, and approval and control of records and documents. All personnel involved with TRU waste characterization, and certification are responsible for the quality of their activities and products. If work is delegated, the individual making the delegation retains responsibility for the delegated work. The QA Manager and the responsible manager will resolve disputes related to QAP requirements.

AMWTP TRU Program personnel plan certification activities and document this process. Planning documentation is subject to review by TRU Program management and subject matter experts (SMEs). Project planning documentation consists of the documents discussed in this section, implementing procedures, and training plans. These documents establish performance criteria and methods to measure performance relevant to the AMWTP. All Site Project Office (SPO) personnel are accountable for ensuring quality within their assigned areas of responsibility. The QA Manager (or designee) is responsible for verifying the achievement of quality requirements and evaluating the effectiveness of this QAP, which is accomplished through internal reporting procedures, assessments, and surveillances performed in accordance with MP-M&IA-17.1, Management Assessment; MP-M&IA-17.2, Independent Assessment; and MP-M&IA-17.3, Quality Assurance Surveillance, respectively.

AMWTP management at all levels has established communication channels that provide timely and wide dissemination of information related to performance, which includes:

- QA program status
- Status and resolution of significant quality problems
- Lessons learned
- Quality improvement
- Results of trend analysis.

5.4.3 Implementation of the CBFO QA Program

The provisions of the AMWTP QAP are implemented through the use of numerous program documents and procedures. The relationships between the various external requirements sources and AMWTP programmatic and implementing documents are depicted in Figure 5.2, AMWTP TRU Program document hierarchy. Implementing procedures are listed within sub-tier program plans, matrices, or other documents. Documents that collectively define these activities are presented in Figure 5-2.

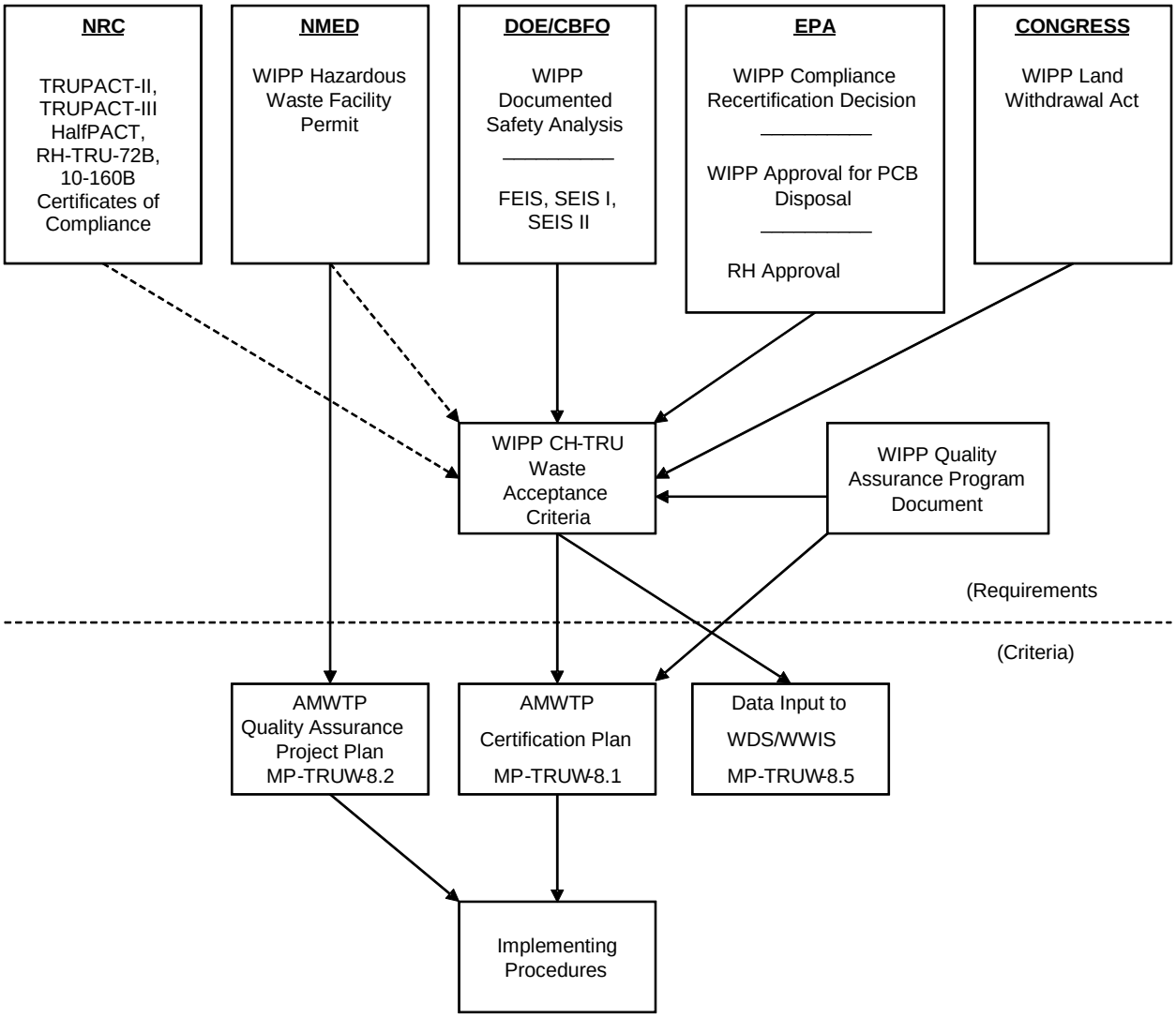


Figure 5.2 AMWTP TRU Program document hierarchy.

5.4.4 Graded Approach

Implementation of the AMWTP QAP is based on the application of the graded approach. The levels of analysis, documentation, verification, and other controls are applied commensurate with an item's risk and importance. The AMWTP graded approach process is implemented in accordance with MP-Q&SI-5.6, Graded Approach. The AMWTP QA Manager is responsible for review and concurrence with quality level designations for the AMWTP systems, structures, and components. MP-Q&SI-5.6 is submitted to the CBFO QA Manager for approval.

5.5 Personnel Qualification and Training

Personnel performing waste characterization and certification activities affecting quality are qualified and trained to ensure that suitable proficiency is achieved and maintained in the performance of their assigned tasks.

5.5.1 Qualification

The appropriate managers, with support of the training organization, determine job positions and qualification standards for each job category relevant to the AMWTP. Task responsibilities for personnel are analyzed in accordance with MP-RTQP-14.6, Job Analysis. Education, experience, and training prerequisites commensurate with minimum requirements are included in the qualification packages in accordance with MP-RTQP-14.4, Personnel Qualification and Certification.

5.5.2 Training

Managers ensure that AMWTP personnel receive indoctrination and training on the scope, purpose, and objectives of the WIPP Program and the specific Quality Assurance Objectives (QAOs) of the tasks being performed. Personnel performing activities affecting quality are trained according to their respective training plans to ensure they achieve and maintain proficiency prior to performing any tasks subject to these QAP requirements. Personnel receive training, including on-the job training and hands-on training, as needed, to achieve initial proficiency and continuing training requisite with their activities and level of responsibility to maintain proficiency; and adapt to changes in technology, methods, job responsibilities and authority, and QA implementing procedures in accordance with MP-RTQP-14.1, Preparation and Administration of Training Plans, and MP-RTQP-14.4.

Training is designed, developed, conducted, and evaluated in accordance with approved AMWTP training procedures. Training programs may include classroom instruction, practical hands-on experience, supervised on-the-job training, self-paced individual study, and written, oral, or practical demonstration of worker competence.

The period of effectiveness for qualification associated with special processes, operations that require special skills, and the requalification criteria are specified or referenced in MP-RTQP-14.4 or supporting training program plans.

Nondestructive examination (NDE) and NDA are considered to be characterization processes. Personnel performing NDE are qualified to a program based on the American Society of Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A, June 1980 Edition. Later editions of SNT-TC-1A may be used as long as the minimum requirements of the June 1980 edition are met. Personnel performing NDA are qualified to American Society for Testing and Materials (ASTM) C1490, Standard Guide for Selection, Training and Qualification of Nondestructive Assay (NDA) Personnel. Training is subject to ongoing review to determine instruction and training program effectiveness and shall be upgraded whenever improvements or enhancements are identified.

Personnel performing TRU Program activities affecting quality receive indoctrination in the following:

- General criteria, this QAP, and applicable codes, regulations, and standards
- Specific criteria, including the QAPjP, Certification Plan, CH-TRAMPAC, and any implementing procedures, as applicable.

Auditable records documenting the required training and qualifications are maintained as QA records and controlled in accordance with MP-RTQP-14.19, Training Records Administration.

5.6 Quality Improvement

AMWTP personnel continually evaluate and improve project activities. Personnel are responsible for identifying nonconforming items and processes that do not meet established requirements in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, and MP-Q&SI-5.3, Corrective Action.

5.6.1 Quality-Affecting Problems

Quality-affecting problems, items, services, and processes that do not meet established requirements are identified, documented, reported, controlled, and corrected. Management at all levels fosters a “no-fault” attitude to encourage the identification of nonconforming items and processes.

Quality-affecting problems involve noncompliance with a QA program requirement or a nonconforming item that does not conform to specific requirements (i.e., suspect or counterfeit items or data). A noncompliance with QA program requirements is classified either as a condition adverse to quality or as a significant condition adverse to quality.

5.6.2 Nonconforming Items

Nonconformances are uncontrolled and unapproved deviations from an approved plan or procedure. Nonconforming items are those that do not meet the AMWTP requirements, procurement document criteria, or approved work procedures. All AMWTP personnel are

responsible for promptly reporting any nonconformance condition identified as adverse to quality to management. Nonconformance reports (NCRs) are processed electronically in the AMWTP issues management system, TrackWise.

MP-Q&SI-5.4 also assigns responsibilities to AMWTP organizations and personnel to identify, report, control, evaluate the nonconformances, obtain and document a disposition, determine cause, track, and define corrective action for reported nonconforming items. It also describes the methods to identify nonconforming items by marking, tagging, segregating, or other methods that do not adversely affect the end use. Identification of nonconforming items is not solely reliant on administrative means.

An NCR is prepared for each nonconformance identified, including or referencing, as appropriate, results of laboratory analysis, QC tests, audit reports, internal memoranda, or letters. The NCR provides the following information:

- Identification of the individual(s) identifying or originating the nonconformance
- Description of the nonconformance
- Method(s) or suggestions for correcting the nonconformance (corrective action)
- Schedule for completing the corrective action
- An indication of the potential ramifications and overall usability of the data, if applicable
- Any approval signatures specified in the site nonconformance procedures.

The SPM (or designated alternate) oversees the NCR process and is responsible for identifying and tracking all nonconformances and reporting to CBFO. The SPM and the QA organization are notified when a nonconformance related to the waste characterization and certification processes is observed or detected. Operations, QA, and the SPM are responsible for evaluating nonconformances and taking appropriate corrective action.

Any waste container for which an NCR has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container has been dispositioned.

The CBFO receives written notification within seven calendar days of any non-administrative nonconformances related to the applicable requirements in the WAP (that is, a failure to meet a DQO) which are first identified at the SPM signature release. Notification is also required when the results of sampling and analysis are inconsistent with acceptable knowledge documentation. NCRs are submitted to CBFO within 30 calendar days of identification of the incident (Reference 43, Section C3-13) in accordance with MP-Q&SI-5.4.

5.6.3 Conditions Adverse To Quality

A condition adverse to quality is an all-inclusive term used in reference to failures, malfunctions, deficiencies, and nonconforming items, materials, parts, components, data, and processes. Significant conditions adverse to quality are those that, if uncorrected, could have a serious effect on safety, operability, waste characterization and certification, or effective implementation of the QA program.

Conditions adverse to quality are investigated, documented, and classified according to their significance, including the extent of the condition and the impact on completed work. As appropriate, corrective action plans are developed, documented and implemented as soon as practicable. Any condition adverse to quality determined to be noncompliant with a WAP condition or requirement will be documented in accordance with MP-Q&SI-5.3 for development of a corrective action plan to meet the requirements of Section 5.6.4.

Significant conditions adverse to quality are reported and evaluated by the AMWTP QA Manager (or designee), other relevant regulatory compliance organizations (e.g., environmental and safety), and the responsible management, to determine if a work suspension is necessary. If a work suspension is warranted, the AMWTP QA Manager (or designee) verifies and documents the completion of applicable corrective actions prior to any management action releasing the work suspension. AMWTP work suspensions are processed in accordance with MP-Q&SI-5.4.

The QA Manager (or designee) ensures quality in the TRU Program by identifying and reporting conditions adverse to quality, analyzing trends, reporting and tracking nonconformances, and implementing corrective actions in accordance with MP-Q&SI-5.1, Investigations and Root Cause Analysis. These quality improvement activities detect and prevent unacceptable quality problems and thereby increasing accuracy and reliability, and reducing variability.

The CBFO is notified of CARs that relate to violations of the AMWTP QAPjP. Corrective action plans relating to these violations of the QAPjP address corrective action planning and follow-up for significant conditions adverse to quality. Instructions governing these activities are detailed in procedures referenced in MP-Q&SI-5.4.

5.6.4 Corrective Action

Corrective actions are planned and prepared for all significant conditions adverse to quality and for any violation of the WAP. The quality systems established for corrective actions and reporting are described in MP-Q&SI-5.3. The AMWTP identifies and implements corrective actions before TRU waste is shipped to WIPP. Corrective Action Reports generated by CBFO are tracked in hard copy and processed per CBFO instructions. These corrective actions address considerations including:

- Remedial Action – Actions to resolve the initial problem

- Investigative Actions – Assess the extent and impact of the significant condition adverse to quality
- Root Cause Determination – Root cause of the problem
- Actions necessary to prevent recurrence
- Schedule – Responsible personnel, responsibilities, and expected completion dates for the required actions
- Verification of corrective action implementation.

5.6.5 Improvement Analysis and Trending

Performance data are identified, collected, and routinely analyzed to identify opportunities to improve items, services, activities, and processes. Analysis of quality performance data serves to identify trends adverse to quality. These analyses shall consider information from external sources and not be limited to one type of work or to one organization. Reports of conditions adverse to quality are evaluated to identify adverse quality trends and root causes, with results reported to responsible management and to the applicable quality assurance organization. The QA Manager (or designee) is responsible for generating a trend analysis report semiannually in accordance with INST-Q&SI-5.1.1, Trending.

When conditions adverse to quality are identified on a recurring basis, actions are taken to evaluate those conditions in order to minimize their impact and to preclude recurrence. For recurring conditions adverse to quality, management shall, as appropriate:

- Determine the events leading to the occurrences
- Develop an understanding of the technical and work activities associated with the conditions adverse to quality
- Ascertain and identify any generic implications and impacts on completed work
- Determine the extent to which similar quality problems, or precursors to the problem, have been recognized by the responsible organization
- Determine the effectiveness of any corrective actions that were taken
- Consider suspending work associated with the applicable activity
- Suggest actions that can be taken by the responsible organization to preclude recurrence.

5.7 Documents and Records

5.7.1 Document Control

Documents that specify quality requirements or establish activities affecting quality are controlled to ensure that accurate and current documents are used. AMWTP personnel prepare and control documents supporting quality in accordance with MP-DOCS-18.4, Document Control. Document owners ensure that documents are developed, reviewed for adequacy, correctness, completeness, and are approved and revised, as needed. Document control personnel verify proper document approval and ensure the documents are distributed to the appropriate personnel.

5.7.1.1 Document Preparation, Review, Approval, and Issuance

Instructions, procedures, and drawings are reviewed for adequacy, correctness, and completeness prior to approval and issuance. MP-DOCS-18.1, Developing Written Work Instructions, addresses approved AMWTP policies and procedures for the initiation, preparation, review, and revision control of work instructions, and MP-DOCS-18.3, Developing Management Procedures, addresses approved AMWTP policies and procedures for the initiation, preparation, review, and revision control of management procedures for all quality-related activities.
Non-routine/temporary processes may be addressed by making temporary changes in procedures and plans. CBFO approves quality-affecting changes prior to implementation.

Qualified and independent personnel review all quality documents for adequacy, correctness, and completeness prior to approval and issuance. MP-DOCS-18.4 identifies the individuals and/or organizations responsible for the preparation, review, approval, and issuance of controlled documents.

- Documents are controlled during the review and approval phase, by the document owner.
- The requesting organization identifies the applicable criteria for the review. These criteria consider technical adequacy, accuracy, completeness, and compliance with established requirements.
- Pertinent background information or data are made available by the organization requesting the review if the information is not readily available to the reviewer.
- The review will be performed by individuals other than the originator.
- Reviewers are technically competent in the subject area being reviewed.
- The organization or technical discipline affected by the document reviews the document according to the established review criteria.

- The appropriate quality assurance organization reviews documents that translate CBFO QAPD, or other CBFO, requirements.
- Review comment documentation is resolved by the document owner. Evidence of review comment resolution is maintained in the document case files.
- Designated individuals or organizations issue documents.

Distribution and use of controlled documents and forms that document or prescribe work, including changes and editorial corrections to documents are described in MP-DOCS-18.4.

Changes to WAP-related plans and procedures are reviewed and approved by the SPM and the QA Manager. All non-administrative changes are reviewed and evaluated to determine whether changes will affect performance criteria or data quality, such as sample handling and custody requirements, sampling and analytical procedures, quality assurance objectives, calibration requirements, or QC sample acceptance criteria. Any changes to WIPP WAP related plans or procedures that could positively or negatively impact data quality (that is, those changes that require prior approval of WIPP as defined in Section C5-2 of the WIPP WAP) shall be reported to CBFO within five days of identification by the Project Level review.

5.7.2 Records

A QA record is an authenticated record that provides objective evidence of the quality of items and/or activities. QA records are controlled and maintained to certify compliance with requirements and to reflect completed work. The QA records are identified, indexed, classified, controlled, maintained, and dispositioned by records management personnel as described in MP-DOCS-18.2, Records Management.

Records related to waste characterization are maintained in the testing, sampling, or analytical facility files at the AMWTP or at the WIPP Records Archive Facility. Contract laboratories forward testing, sampling, and analytical QA documentation along with batch data reports, to the Energy Drive Facility (EDF). Raw data obtained by testing, sampling, and analyzing TRU waste in support of this document is identifiable, legible, and provides documentary evidence of quality.

Records that are designated as lifetime records shall be maintained for the life of the waste characterization program plus six years or transferred for permanent archival storage to the WIPP Records Archive Facility. Waste characterization records designated as nonpermanent records shall be maintained for ten years from the date of record generation and then dispositioned according to the approved records inventory and disposition schedule, or at the WIPP Records Archive Facility. If the AMWTP ceases to operate, records will be transferred before closeout for management at the WIPP Records Archive Facility.

All records relevant to an enforcement action under the WIPP Permit (Reference 43), regardless of disposition, will be maintained by the AMWTP until NMED determines that the records are no longer needed for enforcement action. The records will then be dispositioned as specified in MP-DOCS-18.2.

5.8 Performance Requirements

The work processes and items supporting and affecting quality are controlled through approved plans and procedures. Technical and QA personnel comply with the applicable technical standards and administrative controls described in procedures, which are reviewed and approved by the SPM (or designee), the QA Manager (or designee), and cognizant management for use in the TRU Program. Cognizant managers ensure personnel perform work following established procedures. These procedures provide the following information:

- Organizational and individual responsibilities
- Training and qualification requirements
- Technical, regulatory, and QA requirements
- Step-by-step instructions for the process (prepared by an SME of the cognizant organization)
- Equipment specifications
- Methods and criteria for ensuring and verifying the acceptability of equipment and materials used in the process (e.g., calibration)
- Requirements, precautions, process parameters, and other limiting conditions
- Products of the process
- Quantitative and/or qualitative criteria for determining that prescribed process activities have been performed satisfactorily
- Records generated by the process
- Package and design control of equipment and materials.

The SPM and cognizant managers ensure that activities are controlled and conducted in accordance with process-specific procedures that describe and control work processes applicable to TRU waste characterization and certification. If equipment is designed for TRU waste characterization and certification, site personnel comply with requirements of the QAPD for design control. Each individual performing the work is responsible for ensuring that work processes are controlled and comply with established criteria. Facility managers are responsible for ensuring that workers have the correct procedures, materials, and training to perform quality work. All instructions and procedures are maintained current with a documented and controlled

method of revision. Instructions, procedures, and drawings are readily available to AMWTP personnel at locations requiring their use.

Fabrication, installation, and inspection processes that have an effect upon the quality of items or services important to safety are controlled by process procedures.

Special processes controlled under this QAP are NDE, and NDA. These processes are controlled through the use of approved procedures.

5.9 Design Control

Design Control is not applicable to the AMWTP TRU Program QA requirements.

5.10 Procurement

The AMWTP ensures that procurement of items and services important to safety and quality meet requirements and perform as intended. Procurement controls are also applicable to equipment and services that directly affect testing, sampling, and analytical data quality. Project personnel adhere to procurement and record-keeping practices established in written procedures.

The procurement criteria are implemented according to the procedures specified in the following subsections.

5.10.1 Procurement Document Control

The AMWTP Acquisition Services Manager and AMWTP QA Manager ensure personnel control procurement documents in accordance with MP-PCMT-15.1. Procurement documents supporting waste management must include required specifications and acceptance criteria. Procurement documents are reviewed by appropriate organizations and engineering disciplines to ensure that they contain adequate scope of work, technical requirements, supplier QA program requirements, and provisions for acceptance.

5.10.2 Control of Purchased Items and Services

The AMWTP Acquisition Services Manager and QA Manager ensure that personnel control items and services purchased (including supplier evaluations and inspections) in accordance with MP-PCMT-15.21. Documentary evidence that items, material, and equipment conform to the procurement specifications is provided before installation or use of the item, material, and equipment, and is retained in accordance with MP-PCMT-15.1. Potential suppliers of goods and services will have their own QA program or will comply with applicable AMWTP requirements. Measures are established to ensure that materials, parts, and components used for repair work for maintenance purposes, are adequately identified to preclude the use of incorrect or defective items. Also, where replacement of limited-life items is specified, measures are established to preclude use of items whose shelf life or time in operation has expired.

5.10.3 Control of Subcontractors

MP-PCMT-15.1 also applies to subcontractors who perform work that directly affects the quality of characterization and certification data. Subcontractors are required to establish procurement controls and a QA program to ensure that purchased materials, equipment, and services conform to AMWTP procurement and QAP procedures. The controls must include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products on delivery. Subcontractors are subject to periodic assessments and audits at intervals consistent with the importance, complexity, and quantity of the product or services provided, to ensure compliance with procurement requirements.

Subcontractors may support activities under a "staff augmentation" role or for procurement of products and services. The staff augmentation subcontractors operate under the purview of this QAP and are subject to all applicable requirements for the AMWTP-related functions they perform. All subcontractors who support the AMWTP will be informed of the need to perform operations in compliance with QAPD requirements.

5.11 Inspection and Testing

Equipment is tested, inspected, and identified, in accordance with MP-PCMT-15.21. AMWTP personnel identify and control items (e.g., items with limited shelf or operating lives, materials, equipment, samples) and ensure that only correct and accepted items are used. This procedure addresses planning, parameters for evaluation, techniques to be used, and qualification of inspection and test personnel; hold points, documentation, acceptance criteria, and organizational responsibilities.

AMWTP personnel routinely test and inspect items and processes and control, calibrate, and maintain equipment to ensure proper operation and data quality. MP-PCMT-15.21 implements an inspection program that establishes criteria for inspection of activities affecting quality by, or for, the organization performing the activity, and to verify conformance with the requirements for accomplishing the activity. Personnel performing the inspections are independent from the individuals performing the activity being inspected. Equipment modifications, repairs, and replacement are inspected in accordance with the original design and inspection requirements, unless an approved alternative exists. The inspection program also provides for identification and documentation of deficiencies discovered during the inspection. Identification and documentation of deficiencies are accomplished in accordance with MP-Q&SI-5.4.

Measures are established to indicate, by the use of markings, tags, stamps, labels, routing cards, or other suitable means, the status of inspections and tests performed. These measures provide for the identification of items that have satisfactorily passed required inspections and tests, where necessary, to preclude inadvertent bypassing of the inspections and tests.

Measuring and test equipment (M&TE) with the necessary range and accuracy is provided to qualified personnel for the inspection, test, and acceptance of material, parts, components, and systems. Equipment accuracy is ensured by periodic calibration that is traceable to national standards or a documented equivalent basis for calibration.

The AMWTP ensures that equipment used for inspection and testing is properly controlled, calibrated, and maintained in accordance with MP-CMNT-10.5, Measuring and Test Equipment Program.

The test control program is established for items and services important to safety. No testing requiring a test control program relative to waste payload containers will be performed under this program.

5.12 Assessment Requirement

The AMWTP participates in an assessment program to ensure compliance with applicable QA requirements. Management assessments are performed on every level of management. Qualified personnel who are independent from the activities being assessed perform independent assessment and surveillance activities. The CBFO and external regulatory agencies also conduct assessments of the AMWTP. The QA Manager, or designee, tracks deficiencies identified during assessments and the corrective actions to resolve deficiencies according to MP-Q&SI-5.3.

5.12.1 Management Assessments

The AMWTP managers periodically assess the performance of their organization to determine the effectiveness of QAP provisions that enable the organization to comply with requirements of the WIPP WAP, QAPD, WIPP WAC, and CH-TRAMPAC, as applicable. Managers evaluate the QAP effectiveness by focusing on the identification and resolution of both systemic and management issues and problems, and by identifying strengths and weaknesses to facilitate actions to improve quality, efficiency and cost-effectiveness. The management assessment should include an introspective evaluation to determine whether the entire integrated management system effectively focuses on meeting strategic goals. Management assessments are conducted as described in MP-M&IA-17.1. The SPM is responsible for ensuring that assessments affecting TRU Program characterization and certification are conducted regularly and reported at least annually on relevant findings.

5.12.2 Independent Assessments

Documented independent assessments are used to measure item service and quality, process adequacy and effectiveness, and to promote improvement. AMWTP personnel and facilities are subject to periodic independent assessments as identified by the QA Manager, or designee. The QA Manager, or designee, ensures that characterization facilities and analytical laboratories are assessed.

Assessment teams include one or more qualified assessors, one of whom must be a certified lead assessor. Assessment personnel qualifications are addressed in MP-Q&SI-5.8, Qualifying Supply Chain Inspectors, Auditors, Lead Auditors, and Technical Specialists.

The assessment team is made up of a team leader appointed by the QA Manager, or designee, and team members and technical specialists selected by the team leader in conjunction with the QA Manager. The team leader provides indoctrination and supervision of the team, organizes and directs the assessment, establishes the scope of the assessment, prepares a plan for conducting the assessment, and prepares and issues an assessment report to the management of the assessed organization and any affected organizations. The assessment team members and technical specialists prepare the assessment checklist, conduct the assessment, brief the management of the assessed organization on a daily basis, and prepare presentation for the exit. Independent assessments are performed in accordance with MP-M&IA-17.2.

The QA Manager, or designee, ensures the acceptable knowledge process and waste stream documentation is evaluated through internal assessments by the AMWTP quality organization and assessments by auditors or observers external to the AMWTP.

5.12.3 Surveillances

The surveillance program is conducted primarily to monitor work in progress and to follow up on corrective actions. Surveillance results are reported and monitored similarly to other assessment activities. Surveillances are performed in accordance with MP-M&IA-17.3.

5.12.4 CBFO Audits

Facilities participating in characterization, certification, and shipment of waste to WIPP are subject to CBFO audits, as discussed in Attachment C6 of the WIPP WAP (C-4b [1][iii]). CBFO will conduct an initial audit prior to certifying AMWTP for shipment of TRU mixed waste to the WIPP facility. This initial audit will establish an approved baseline that will be reassessed annually. These audits are the responsibility of the CBFO QA manager, who coordinates these audits through the SPM.

The CBFO is responsible for granting or suspending a site’s authority to certify and ship TRU waste based upon an assessment of their documented TRU waste program and its implementation. Subsequent to the initial audit, the CBFO will perform audits at least annually. CBFO may also perform unannounced audits and surveillance’s at the AMWTP to confirm continued compliance with the approved plans.

5.12.5 Reports to Management

The QA Manager or designee shall summarize all relevant information on the QA/QC activities during the period in a semi-annual report. The QA Manager or designee reports these

independent assessment results to the SPM in accordance with MP-TRUW-8.26, Reports to Management. The SPM shall review the report; comment, if appropriate, and then forward a copy of the report with comments to the DOE Field Office and the AMWTP General Manager. The annual QA report includes the following information, as appropriate:

- Any changes to the AMWTP QAPjP
- Identification of any significant QA/QC problems, recommended solutions, and corrective actions
- An assessment of QC data collected during the period, including the frequency of repeated analyses, reasons they were repeated, and corrective actions
- Discussions of whether QAOs have been met and any resulting impact on decision making
- Limitations on the use of measurement data
- Status of Performance Demonstration Program (PDP) results
- Results of audits and surveillances conducted during the period.

The AMWTP and supporting facilities participate in the headspace gas sampling (HGS) and solids sampling PDP as summarized in the AMWTP QAPjP. PDP samples are processed according to the facility procedures applicable to the specific testing or analytical characterization activity being assessed. Results are reported to CBFO for evaluation and approval of the system.

The AMWTP also participates in the NDA PDP as summarized in the Appendix A of this document. The AMWTP demonstrates compliance with the QAO for precision and accuracy by performing replicate processing of a mock waste container containing quantities of TRU isotopes for each range for which the measurement system is to be qualified. Results are reported to CBFO for evaluation and approval of the system.

5.13 Sample Control Requirements

AMWTP personnel and supporting contractors follow procedures to ensure proper documentation and tracking of sample possession from the time of collection/identification, through handling, preservation, shipment, transfer, analysis, storage, and final disposition. Sample control procedures used by personnel are described in MP-TRUW-8.2; INST-OI-16; INST-OI-73; INST-OI-75, and MP-TRUW-8.34, WIPP Sample Transfers.

AMWTP personnel ship samples in compliance with the DOT regulations and Project QA requirements.

5.14 Scientific Investigation Requirements

The AMWTP uses data validation as a systematic process for reviewing data to ensure that data are of known and documented quality and that the required DQOs are met. Results of the review may require that qualifiers be placed on the use of the data.

All data is reviewed and approved by qualified personnel prior to being reported. Personnel performing validation at the AMWTP are trained to the existing industry standardized training requirements (e.g., ASTM C1490, Standard Guide for Selection, Training and Qualification of Nondestructive Assay [NDA] Personnel).

The Independent Technical Reviewer is independent of the collection activities and the results of the review are documented as defined in MP-TRUW-8.8, Level I Data Validation. The review ensures the following as applicable:

- Data is recorded so that it is clearly identifiable and traceable to the source of generation.
- Data transferred and reduced from logbooks, data sheets, and radioassay instrumentation are evaluated to determine if the data was collected in a technical correct manner.
- Deviations are documented.
- QA results are complete and documented correctly.
- Results are compared to the acceptance criteria to determine if the data is valid.
- Data that are determined to be rejected, superseded, or otherwise unsuited for their intended use, are controlled to prevent their inadvertent use. Controls include the identification, segregation, and disposition of inadequate data. The basis for the disposition of erroneous data is justified and documented in accordance with MP-Q&SI-5.4.
- All data records from logbooks, data sheets, or radioassay instrumentation are maintained in accordance with MP-DOCS-18.2.

5.15 Software Requirements

Computer software used in the manipulation or production of data in the processing, gathering, or generation of information whose output is relied upon to make design, analytical, operational, or compliance related decisions in the performance of waste characterization, waste transportation, or waste acceptance is developed and maintained in a controlled manner. Computer hardware/software configurations used in AMWTP activities are developed, documented, verified, validated, tested, and controlled prior to use in compliance with requirements contained in the QAPD. Instructions governing these activities are detailed in MP-CD&M-11.2, Software Quality Assurance.

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68. CCP-TP-186, *CCP Determination of Nonhalogenated Volatile Organics by Gas Chromatography*
69. CCP-TP-187, *CCP Sample Preparation for Semivolatile Organic Compounds*

Appendix A –
Radioassay Requirements
for Contact-Handled Transuranic Waste

A-1 Introduction

To support the radiological characterization data required by WIPP, the AMWTP performs nondestructive assay (NDA) on each payload container to:

- Track the WIPP radionuclide inventory, by isotopic activity and mass, for those radionuclides listed in Section 3.3.1,
- Demonstrate that each payload container disposed of at the WIPP contains TRU waste as specified in Section 3.3.3, and
- Verify that applicable transportation and facility limits on individual payload containers and assemblies for FGE, PE-Ci, and decay heat are not exceeded, as specified in Sections 3.3.2, 3.3.4, and 3.3.6.

The radioassay process quantifies at least one of the more prevalent radionuclides known to be present in the waste. The remaining listed radionuclides present in the waste in significant quantities will be identified by direct measurement of isotopic ratios as discussed in Section A.2. The isotopic ratios are then used to quantify radionuclides based on the assay value.

The requisite data on isotopic ratios and quantities will be derived from AK (see Section A.2), radioassay or both using CBFO approved NDA, instruments and procedures. The AMWTP technically justifies that the AK and/or radioassay techniques, instruments, and procedures used:

- Are appropriate for the specific waste stream and waste content code descriptions being assayed, and
- Will result in unbiased values for the cumulative activity and mass of the WIPP radionuclide inventory.

The AMWTP uses four Drum Assay Systems to evaluate the NDA techniques to quantify the radionuclides entrained in the TRU waste drums. The DASs are designed to accommodate both 55-gallon and 83/85-gallon drums. The measurement techniques used with the drum assay systems are passive neutron multiplicity counting, active neutron counting using the differential die-away (DDA) technique, gamma-ray isotopic analysis and quantitative gamma-ray energy analysis. The high-resolution gamma-ray measurements provide direct information on the isotopic composition of the plutonium (Pu), uranium (U), americium (Am), and other isotopes in the waste or isotopic ratios. The integrated information from the neutron measurements, gamma-ray measurements, and Acceptable Knowledge (AK) are used to determine the isotopic material composition, quantify the radionuclide masses, and compute the associated derived quantities for each payload container.

AMWTP will not use existing radioassay data collected prior to the implementation of a quality assurance program pursuant to 40 CFR § 194.22 (a) (1) to characterize and certify payload containers for disposal at WIPP.

Proposals for alternative approaches to identification and quantification of radioisotopes (e.g., quantification of isotopic ratio AK on a waste stream basis) must be submitted to CBFO for review and approval. CBFO will report such proposals to EPA for consideration prior to issuing approval.

Controlled changes to radioassay (NDA or radiochemistry) related plans or procedures are managed through a document control process that complies with the QAPD. The Site Project Manager (SPM) and the Site QA Manager review all such changes and report to the CBFO those changes that could impact compliance with the criteria in this document. The SPM ensures that site approved changes to radioassay related plans or procedures affecting either the performance criteria or data quality of certified systems/processes are not used in the collection of waste certification data prior to CBFO's review and approval. Relating testing, calibration, and training performed in accordance with these site-approved changes, however, is not precluded from being conducted prior to CBFO's review and approval. (Memorandum from CBFO to Distribution, CBFO:NTP:RMK:VW:02-2734:UFC:5822, July 29, 2002)

A.2 Radionuclide Isotopic Ratios

Establishing isotopic ratios for use in quantifying radionuclides is performed by direct measurement of each container using the WIPP-certified AMWTP Drum Assay Systems (DASs). Sites may opt to qualify AK as permitted by 40 CFR § 194.22(b) by performing confirmatory testing using WIPP-certified radioassay systems. The AMWTP performs an assay on each container characterized for disposal at WIPP. When direct measurements of isotopic ratios do not yield useable data as a result of technical reasons (e.g., lack of sufficient signal or poor counting statistics), AK is used. All such instances will be documented and appropriately dispositioned.

A.2.1 Methods for Confirmation of Isotopic Ratio AK

As a minimum, to confirm existing AK data, it is necessary to compare the ratio of the two most prevalent radionuclides in the isotopic mix. For weapons and reactor grade plutonium, these are typically ^{239}Pu and ^{240}Pu. For heat source waste, the predominant radionuclides are typically ^{238}Pu and ^{239}Pu. Measured isotopic ratios for ^{241}Am may confirm existing AK by waste stream. However, due to the fluctuation of ^{241}Am in certain waste streams, it may become necessary to measure ^{239}Pu to ^{241}Am isotopic ratios on all containers in that waste stream.

^{241}Am is the daughter of ^{241}Pu, which decays with a half-life of about 14 years. If the time since the chemical separation of the plutonium is known, the quantity of measured ^{241}Am can be used to calculate the quantity of ^{241}Pu. This assumes there was no ^{241}Am in the waste just after the chemical separation and that no ^{241}Am was added to or removed from the waste during the time since the separation. Since ^{241}Am is an indirect measurement of ^{241}Pu, it could be compared (by ratio) to any plutonium isotope (^{239}Pu or ^{240}Pu) associated with weapons and reactor grade plutonium.

For weapons grade and reactor grade waste, isotopic ratio values for ^{238}Pu can be assumed to be valid in AK data if the values for ^{239}Pu and ^{240}Pu have been confirmed. Because ^{242}Pu cannot be measured using NDA methods, the contribution of ^{242}Pu isotopic ratio is calculated by correlation technique.

For some of the generator sites that were involved primarily in weapons production, the fissile isotopes ^{235}U and ^{233}U and the fissionable isotope ^{238}U may not have been measured when the transuranic waste was originally assayed (i.e., using non-WIPP-certified systems), primarily because the plutonium isotopes were the radionuclides of interest to the generator site. However, other forms of AK may be available. If so, then the AK can be confirmed by data generated on a WIPP-certified system. If valid AK does not exist, then the data generated on a WIPP-certified system can only be used to detect or calculate ^{238}U, ^{235}U, and ^{233}U or to confirm their absence. Because ^{234}U cannot be measured using NDA methods, the isotopic ratios for ^{234}U may be calculated from the ^{235}U enrichment. Values or lack thereof, for ^{137}Cs can be confirmed by the data generated on a WIPP-certified system. This is typically done by measuring ^{137}Cs directly, or by comparing the NDA measured ^{241}Am 662 kiloelectron volt (keV) peak to the other ^{241}Am peaks (e.g., the 125 keV or 721 keV peaks) to determine if the 662 keV peak's intensity is consistent with the expected ^{241}Am intensity.

A disproportionate response for the 662 keV peak relative to the other ^{241}Am peaks may indicate the presence of ^{137}Cs. ^{90}Sr may be calculated from the value for ^{137}Cs and AK. If detected, a waste container's concentration of ^{137}Cs can be used to derive a value of ^{90}Sr, through the application of the appropriate scaling factor(s). All scaling factors used will be technically sound and based on known, documented relationships or correlations. The data report for the waste containers for which the ^{90}Sr, value is derived in this manner shall reflect the use of a scaling factor(s) and provide sufficient documentation to enable its independent calculation. Finally, the gamma spectra must be carefully examined for significant presence of other radionuclides to ensure compliance with transportation requirements. Data obtained for radionuclides other than the WIPP-tracked radionuclides presented above are required to address confounding isotope issues (i.e., masking) with regard to NDA.

The technique used to confirm that the absence or the ratio of non-measurable radionuclides are valid for the radioassay method used to confirm AK are documented in RPT-TRUW-03, Drum Assay Technical Review Report.

A.2.2 Acceptable Knowledge (AK) Documentation

The use of AK information concerning the radiological composition of a waste stream will be documented either in the AK summary report for the waste characterization of the waste stream or in another controlled document approved by the Site Project Manager. Should this information be contained in AK package(s) prepared to meet other general waste characterization requirements, it need not be duplicated in other controlled documents that address the radiological properties of the waste stream; however, all relevant information must be included in the AK record. The AMWTP AK process is controlled and documented in accordance with MP-TRUW-8.13. The following discussion is included for the sake of completeness.

A.2.2.1 Required Elements

This section identifies the required radiological information that the AMWTP must maintain for a waste stream. A TRU waste generator site or waste characterization facility may use AK to delineate the distribution of the 10 WIPP-tracked radioisotopes within a TRU waste stream and the presence or absence of isotopes. The type and quantity of supporting documentation may vary by waste stream and shall be compiled in a written record that shall include a summary identifying all sources of information used to delineate the waste stream's isotopic distribution. The basis and rationale for the delineation shall be clearly summarized in an AK report and traceable to referenced documents. Assumptions made in this delineation shall be identified. The following information shall be included as part of the AK written record:

- Map of the site with the areas and facilities involved in TRU mixed waste generation, treatment, and storage identified
- Facility mission description as related to radionuclide-bearing materials and their management, e.g., routine weapons production, fuel research and development and experimental processes
- Description of the specific site locations (such as the area or building) and operations relative to the isotopic composition of the TRU wastes they generated, e.g., plutonium recovery, weapons fabrication, pyrochemical operations and waste incineration
- Waste identification or categorization schemes used at the facility relevant to the waste material's isotopic distribution, e.g., the use of codes that correlate to a specific isotopic distribution, and a description of the isotopic composition of each waste stream
- Information regarding the waste's physical and chemical composition that could affect the isotopic distribution, e.g., processes used to remove ingrown ^{241}Am or alter its expected contribution based solely on radioactive decay kinetics

- Statement of all numerical adjustments applied to derive the material's isotopic distribution, e.g., scaling factors, decay/ingrowths corrections and secular equilibrium considerations
- Specification of the isotopic ratios for the 10 WIPP-tracked radionuclides (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs) and, if applicable, the radionuclides that comprise 95% of the radiological hazard on a waste stream, waste stream subpopulation, or container basis.

A.2.2.2 Supplemental Acceptable Knowledge Information

Each generator site or measurement facility shall obtain supplemental AK information, dependent on availability. The amount and type of this information cannot be mandated, but sites shall collect information as appropriate to support their contention regarding the waste's isotopic distribution. This information will be used to compile the waste's AK written record. Supplemental AK documentation that may be used includes, but is not limited to, information from the following sources:

- Safeguards and Security, Materials Control and Accountability, and other nuclear materials control systems or programs and the data they generated.
- Reports of nuclear safety or criticality, or accidents/excursions involving the use of special nuclear material (SNM) or nuclear material.
- Waste packaging, waste disposal, building or nuclear material management area logs or inventory records, and site databases that provide information on SNM or nuclear materials.
- Test plans, research project reports or laboratory notebooks that describe the radionuclide content of materials used in experiments.
- Information from site personnel (e.g., documented interviews).
- Historical analytical data relevant to the isotopic distribution of the waste stream.

A.2.2.3 Discrepancy Resolution

If there is a discrepancy between AK information related to isotopic ratios or composition, the site will evaluate the sources of the discrepancy to determine if the discrepant information is credible. Information that is not credible or information that is limited in its applicability to WIPP characterization will be identified as such and the reasons for dismissing it will be justified in writing in accordance with MP-TRUW-8.13. Limitations concerning the information will be documented in the AK record and summarized in the AK report. In the event that the discrepancy cannot be resolved, the site will perform direct measurements for the impacted population of containers.

If discrepancies result in a change to the original determinations, the AK summary will be updated.

A.3 Data Quality Objectives

The DQOs for WIPP certifiable radiological characterization data are established in Section 3.3 of this Certification Plan. They are summarized below in Table A-1 as they apply to individual payload containers. The AMWTP does not use radiochemistry (RC) or calorimetry methods to characterized TRU waste for disposal at WIPP.

Table A-1. Data Quality Objectives for Radioassay

Requirement	DQO	Confidence[1]
TRU α-activity concentration > 100 nCi/g[2]	A > LLD	N/A
Fissile mass ≤ FGE limit	$FGE + 2\sigma_{TMU}(FGE) \leq$ FGE limit	97.5%
Decay heat ≤ TRAMPAC[3] limit	$DH + 1\sigma_{TMU}(DH) \leq L_{\text{-TRAMPAC}}$	84%

1. Confidence means the statistical level of confidence that the limit is exceeded or not exceeded depending on the requirements of the individual DQOs. The confidence is derived from the specified DQOs, which assume contributions to TMU are normally distributed.

2. TRU waste determinations shall be in accordance with the policy for the management of TRU alpha activity concentrations when overpacking waste containers (see Appendix E).

3. TRAMPAC included both the CH-TRAMPAC and the TRUPACT-III TRAMPAC.

There are no stipulated DQOs for PE-Ci or individual isotope activities (except as they impact the requirements listed above). However, at a minimum, radioassay programs must be capable of identifying, measuring, and reporting the presence or absence of:

- The ten radionuclides identified in Section 3.3.1 for tracking of the WIPP radionuclide inventory (see Section A.2.1),
- ^{235}U, in order to calculate FGE, as required in Section 3.3.2 for compliance with transportation requirements, and
- Other radionuclides whose presence contributes to 95% of the radioactive hazard, as specified in Section 3.3.1, for compliance with transportation requirements.

In support of the above requirements, the Canberra Site Acceptance Test Reports (SATR) for the Integrated Waste Assay Systems, CI-IDA-NDA-0051, CI-IDA-NDA-0052, CI-IDA-NDA-0053, and CI-IDA-NDA-0054 documents and provides technical justification for the following determinations.

Lower Limit of Detection: The lower limit of detection (LLD) for the DAS has been determined. Only DAS measurement modalities that have an LLD of 100 nCi/g or less are used to perform TRU/low-level waste discrimination measurements. Background and container specific

interferences are factored into LLD determinations. The LLD is that level of radioactivity which, if present, yields a measured value greater than the critical level with a 95% probability, where the critical level is defined as that value which measurements of the background will exceed with 5% probability. Because the LLD is a measurement-based parameter, it is not feasible to calculate LLDs for radionuclides that are not determined primarily by measurement, e.g., ^{90}Sr. In such cases, the AMWTP has derived and documented the equivalent of an LLD, i.e., a reporting threshold for a radionuclide(s), when it is technically justified. For purposes of reporting radionuclide data in the WDS/WWIS, this value will be the equivalent of an LLD. References A3 and A4 provide information in developing the LLD.

Total Measurement Uncertainty (TMU): The method used to calculate the TMU for the quantities in Table A-1 must be documented and technically justified in the Canberra Industries, Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems, CI-IDA-NDA-0055. Compliance with this requirement will be evaluated in reviews of the TMU documentation package for each assay system by CBFO.

Calibration Procedures and Frequencies: Each DAS has been calibrated before initial use. During calibration or re-calibration, system correction factors are established and algorithms adjusted such that the value of percent recovery (%R) is set equal to 100%, i.e., the system is calibrated to 100 %R. The range of applicability of system calibrations is specified in SATR. The matrix/source surrogate waste combination(s) used for calibration are representative of the

- Activity range(s) or gram loading(s), and
- Relevant waste matrix characteristics (e.g., densities, moderator content, and container size) planned for measurement by the system.

Calibration(s) shall be performed in accordance with consensus standards, when such standards exist. If consensus standards are not used, full documentation of the calibration technique is provided to and approved by CBFO prior to performing WIPP related assays. Primary calibration standards shall be obtained from suppliers maintaining a nationally accredited measurement program. When primary standards are not available, the standards are correlated with primary standards obtained from a nationally accredited measurement program.

Calibration Verification: Notwithstanding the need to calibrate individual components for replacement, changes or adjustments (e.g., energy calibration of a detector), verification of the DAS calibration is performed after any one of the following occurs:

- Major system repairs and/or modifications
- Replacement of the measurement system's components, e.g., detector, neutron generator or supporting electronic components that have the capacity to affect data

- Significant changes to the system's software
- Relocation of the system.

Calibration verification shall consist of demonstrating that the system is within the range of acceptable operation. Secondary standards can be used for the calibration verification if their performance has been correlated with the calibration standard. If a verification of the measurement system's calibration or other test demonstrates that the system's response has significantly changed, a re-calibration of the system shall be performed. Calibrated verification tests, along with acceptance criteria are detailed in INST-TRUW-8.1.1, Drum Assay Post-Maintenance Calibration and Verification.

Calibration Confirmation: In order to confirm that the calibration of each DAS was correctly established, the accuracy and precision of each DAS are determined after each calibration or re-calibration by performing replicate measurements of a non-interfering matrix. Calibration confirmation replicate measurements are performed on containers of the same nominal size as those in which actual waste is assayed and according to INST-OI-14, Drum Assay Operations, or INST-FOI-01, In-Plant Drum Assay Operations. The number of replicate measurements to be performed is documented and technically justified. The replicate measurements are performed using nationally recognized standards, or certified standards derived from nationally recognized standards that span the range of use. The standards used to calculate accuracy are not the same as those used for the system calibration. Accuracy is reported as %R. The applicable range for accuracy shall not exceed $\pm$ 30% on a non-interfering matrix. Precision is reported as percent relative standard deviation (% RSD). The % RSD shall not exceed the values listed in Table A-2 for the corresponding number of replicate measurements in a non-interfering matrix. Calibration confirmation tests are conducted and documented in accordance with CI-IDA-NDA-0035, Calibration Verification & Confirmation Procedure for the Integrated Waste Assay System (IWAS) at AMWTP and SATR.

Table A-2
Upper Limits for %RSD vs. Number of Replicates

Number of Replicates	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Max %RSD[1]	1.8	6.6	10.0	12.3	14.0	15.2	16.2	17.1	17.7	18.3	18.8	19.3	19.7	20.0

1. The values listed are derived from the measured standard deviation of the replicate measurements using:

$$\frac{s}{\mu} \bullet 100\% < \sqrt{\frac{(0.292) \bullet \chi^2_{0.05,n-1}}{n-1}} \bullet 100\%$$

where s is the measured standard deviation, n is the number of replicates, μ is the true value, $\chi^2_{0.05,n-1}$ is the critical value for the upper 5% tail of a one sided chi-squared distribution with n-1 degrees of freedom, and 0.292 corresponds to a 95% upper confidence bound on the true system precision limit of 29.2%.

Measurement facilities may develop alternate limits for accuracy and precision subject to approval by CBFO prior to certification of waste.

A.4 Quality Control

Section 5.0 of this Certification Plan summarizes the QA requirements relating to waste characterization, certification, and transportation that meet all applicable requirements of the CBFO QAPD. The AMWTP DAS uses calibration and operating procedures that have been written, approved, and controlled. Nonconforming items and processes that do not meet established criteria are identified, controlled and corrected in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, and MP-Q&SI-5.3, Corrective Action.

A.4.1 General Requirements

Radioassay Training: Only appropriately trained and qualified personnel are allowed to perform radioassay and data validation/review. Standardized Training requirements for radioassay personnel are based upon existing industry standardized training requirements (e.g., ASTM C1490, Standard Guide for Selection, Training and Qualification of Nondestructive Assay [NDA] Personnel [Reference A8]) and meet the specifications in the QAPD. Requalification of radioassay personnel shall be based upon evidence of continued satisfactory performance and must be performed at least every two years. Personnel receive training requisite with their activities and level of responsibility in accordance with MP-RTQP-14.4, Personnel Qualification and Certification. The period of effectiveness for qualification and the requalification criteria are also specified.

Software QC Requirements: All computer programs and revisions thereof used for radioassay meet the applicable requirements in Section 6.0 of the QAPD (Reference A2) and are performed in accordance with MP-CD&M-11.2, Software Quality Assurance.

*Comparison Program*s: The AMWTP participates in any relevant measurement comparison program(s) sponsored or approved by the CBFO. Such programs may be conducted as part of the NDA performance demonstration program (References A7 and A10) or through other third parties (Reference: WIPP Compliance Recertification Application, including Annual Reports to the EPA).

A.4.2 NDA QC Requirements

The assay procedures cited in various American Society for Testing and Materials (ASTM) and American National Standards Institute (ANSI) standards (References A9 and A11 to A15) and NRC standard practices and guidelines (Reference A16) as referenced in this Appendix are recommended for use at all testing facilities.

*Background Measurement*s: Background measurements are performed and recorded at least once per operational day, unless otherwise approved by CBFO. Contributions to background due to radiation from nearby radiation producing equipment, standards or wastes are engineered into the facility and DAS design and controlled in accordance with INST-OI-14 or INST-FOI-01.

Instrument Performance Measurements: Performance checks on the calibrated and operable DAS (both gamma and neutron modalities) are performed and recorded as described in INST-OI-14 or INST-FOI-01. Performance checks shall include daily efficiency checks and checks for spectrometric instruments, peak position and resolution checks, and weekly matrix correction with an interfering matrix.

Both radioactive sources and surrogate waste matrix containers (both non-interfering and interfering) are used. At least once per operational week an interfering matrix must be used to assess the long-term stability of the NDA instrument's matrix correction. Surrogate waste containers must reflect the type of waste, e.g., debris, sludge, currently being assayed. To verify calibration, radioactivity standards must be selected such that, over a six-month period, the operating range of the assay system is tested in each applicable surrogate waste matrix. The use of interfering and non-interfering matrices provides a realistic assessment of the assay system's performance over time, and will assist measurement personnel in detecting potential problems relative to the matrices currently assayed by the measurement system.

Interfering surrogate matrix containers must be constructed in such a way that the waste characteristics do not change over time.

Radioactive sources should be long-lived, easy to position relative to the detector(s), and of sufficient radioactivity to obtain good results with relatively short count times.

Data Checks: Background and performance measurements (standardization, daily performance verification, and weekly check with an interfering matrix drum) are evaluated against established criteria at the time of the measurements to determine acceptability of the DAS. At least once per week, the background and performance measurement results are reviewed and evaluated to monitor performance trends in accordance with MP-TRUW-8.8, Level I Data Validation. If daily performance checks result in data that are outside the acceptable range, the required responses in Table A-3 shall be followed.

Table A-3
Range of Applicability

Category	Acceptability Range[1,2]	Required Response
Acceptable Range	$\|Data\|^c \leq 2\sigma$	No action required.
Warning Range	$2\sigma < \|Data\| \leq 3\sigma$	The performance check standard shall be rerun no more than two times. If the rerun performance check(s) result in data within +/-2σ, then the additional performance checks shall be documented and work may continue. If the system does not fall within +/- 2σ after two rerun performance checks, then the required response for the Action Range shall be followed.

Category	Acceptability Range[1,2]	Required Response
Action Range	$\|Data\| > 3\sigma$	Work shall stop and the occurrence shall be documented and appropriately dispositioned (e.g., a nonconformance report is initiated). The DAS shall be removed from service pending successful resolution of all necessary actions, and all assays performed since the last acceptable performance check are suspect, pending satisfactory resolution. Recalibration or calibration verification is required prior to returning the system back to service.

1. Reference A15.
2. The standard deviation "σ" is only based on the reproducibility of the data check measurements themselves. This is not TMU.

A.4.3 Radiochemistry QC Requirements

AMWTP does not use RC methods to characterize TRU waste for disposal at WIPP. Assay standards are prepared and used as indicated in the standard test methods.

A.5 Data Management

A.5.1 Data Review and Validation

All radioassay data must be reviewed and approved by qualified personnel prior to being reported. At a minimum, the data must be reviewed by a technical reviewer and approved by the SPM or their designee. Personnel are qualified as specified in MP-RTQP-14.4. The validation process described in MP-TRUW-8.8 and MP-TRUW-8.9, Level II Data Validation, includes verification that the applicable quality controls specified in Section A.4 have been met.

A.5.2 Data Reporting

Radioassay data are reported to the site project office on a testing batch basis. A batch is defined as a suite of waste containers undergoing radioassay using the same testing equipment. For NDA, the AMWTP specifies the size of the testing batch as needed, without regard to waste matrix.

The AMWTP submits testing batch data reports (either by the WTS or hard copy) for each testing batch to the site project office, as defined in MP-TRUW-8.8. Radioassay testing batch data reports shall consist of the following:

- Testing facility name, testing batch number, container numbers included in that testing batch, and signature release by the SPM or their designee(s).
- Table of contents

- Background and performance data or control charts for the relevant time period.
- Data validation per the QAPD (Reference A2, Section 5.3.2) and as described in MP-TRUW-8.8.
- Separate testing report sheet(s) for each container in the testing batch that includes:
  - Title "Radioassay Data Sheet"
  - Method used for radioassay (i.e., procedure identification)
  - Date of radioassay
  - Activities and/or masses of individual radioisotopes present and their associated TMUs (curies and/or grams)
  - Operator signature/date
  - Reviewer signature/date.

Other radiological properties to be documented for each container include:

- Decay heat expressed in watts (W) and its associated TMU
- Total ^{239}Pu FGE expressed in grams (g) and its associated TMU
- TRU alpha activity concentration expressed in curies/gram (Ci/g) and its associated TMU
- Total ^{239}Pu equivalent activity expressed in curies (Ci).

These derived radiological properties are stored in WTS.

Radioassay data for each performance check (i.e., daily performance check and weekly interfering matrix performance check) and each container is transferred from the DAS to the WTS.

TMU is reported in terms of one standard deviation on the DAS and the WTS reports

A.5.3 Data and Records Retention

The following nonpermanent records are maintained at the AMWTP for maintenance, and are documented and retrievable by testing batch number, in accordance with the QAPD:

- Testing batch reports
- All raw data, including instrument readouts, calculation records, and radioassay QC results
- All instrument calibration reports, as applicable.

A.6 Quality Characteristics Assessment

Per 40 CFR § 194.22(c), there are five "quality characteristics" that must be assessed. These quality characteristics and the method by which they are assessed are described in the following sections.

A.6.1 Data Accuracy

Per 40 CFR § 194.22(c)(1), *Data Accuracy* is defined as "the degree to which data agree with an acceptable reference or true value." For the AMWTP NDA methods, this quality characteristic is reported as %R and is met and maintained as described in section A.3. The AMWTP does not use RC methods for characterizing CH-TRU waste. See References A7 and A10 for application of this quality characteristic in formulating the scoring criteria for data generated by the Performance Demonstration Program. Specifically, Section D.1 of these references give the definitions of limits, bounds, and point estimates as they relate to NDA measurement systems and the relationship between accuracy, bias, and %R.

A.6.2 Data Precision

Per 40 CFR § 194.22(c)(2), *Data Precision* is defined as "a measure of the mutual agreement between comparable data gathered or developed under similar conditions expressed in terms of standard deviation." For AMWTP NDA methods, this quality characteristic is met and maintained as described in Section A.3. The AMWTP does not use RC methods for characterizing CH-TRU waste.

A.6.3 Data Representativeness

Per 40 CFR § 194.22(c)(3), *Data Representativeness* is defined as "the degree to which data can accurately and precisely represent a characteristic of a population, a parameter, variations at a sampling point, or environmental conditions." For NDA and RC methods, this quality characteristic for the waste stream is met and maintained through 100% measurement confirmation on a payload container basis. For NDA, since the entire waste container is subjected to measurement, representativeness pertaining to the actual measurement is not applicable. The AMWTP does not use RC methods for characterizing CH-TRU waste.

A.6.4 Data Completeness

Per 40 CFR § 194.22(c)(4), *Data Completeness* is defined as "a measure of the amount of valid data obtained compared to the amount that was expected." For NDA methods, this quality characteristic is met and maintained by requiring 100% valid results. For the AMWTP NDA program, any results indicating the NDA measurement was invalid require re-measurement. The AMWTP does not use RC methods for characterizing CH-TRU waste.

A.6.5 Data Comparability

Per 40 CFR § 194.22(c)(5), *Data Comparability* is defined as "a measure of confidence with which one data set can be compared to another." For NDA methods, this quality characteristic is addressed by ensuring that all data are produced under the same system of controls. These

controls apply to all aspects of the data generation process, including: procurement of analytical instruments; calibration and operation of assay equipment according to industry standards; preparation and use of standardized instrument and data review procedures; and, training of equipment operators and technical/data review personnel to the QAPD, as specified in Section A.4.1. All NDA, and RC systems and methods are approved by CBFO prior to use in generating waste characterization data. Additionally, comparison of measured data with AK derived or based values, as applicable, provides a means to assess comparability on a waste stream basis. Although no specific confidence level is specified, these controls provide comparability among all data generated under this program. Sites using radioassay systems shall participate in measurement comparison programs as specified in Section A.4.1.

References

NOTE: *The current revisions of the referenced documents are applicable. The Internet links are provided for information purposes only and may change without prior notification.*

A1. *U.S. Nuclear Regulatory Commission.* Peer Review for High-Level Nuclear Waste Repositories, NUREG-1297, *Washington D.C., Office of Nuclear Material Safety and* Safeguards, *U.S. Nuclear Regulatory Commission*

A2. U.S. Department of Energy. *Quality Assurance Program Document*. DOE/CBFO-94-1012. Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy. http://www.wipp.energy.gov/library/qapd/qapd.pdf

A3. Currie, Lloyd A., 1968. *Limits for Qualitative Detection and Quantitative Determination. Anal.Chem.* 40: 586-93

A4. EPA, 1980. *Upgrading Environmental Radiation Data.* EPA 520/1-80-012, Washington D.C., Office of Radiation Programs, U. S. Environmental Protection Agency

A5. K. C. Smith, R. A. Stroud, K. L. Coop, and J. F. Bresson. 1998. *Total Measurement Uncertainty Assessment for Transuranic Waste Shipments to the Waste Isolation Pilot Plant*. Proceedings of the 6th Nondestructive Assay Waste Characterization Conference, Salt Lake City, Utah, Nov. 17-19, 1998, pp.21-37

A6. K. L. Coop, J. F. Bresson, M. E. Doherty, B. M. Gillespie, and D. R. Davidson. *Standardized Total Measurement Uncertainty Reporting for WIPP*. Nondestructive Assay Interface Working Group, Salt Lake City, Utah, May 22, 2000

A7. U.S. Department of Energy. *Performance Demonstration Program Plan for Nondestructive Assay of Boxed Wastes for the TRU Waste Characterization Program*. DOE/CBFO-01-1006. Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy http://www.wipp.energy.gov/Documents_NTP.htm

A8. American Society for Testing and Materials. *Standard Guide for Selection, Training and Qualification of Nondestructive Assay (NDA) Personne*l, ASTM C1490, Annual Book of ASTM Standards, Philadelphia, Pennsylvania, American Society for Testing and Materials

A9. American National Standards Institute. *Radiometric Calorimeters – Measurement Control Program*, ANSI N15.54, American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018

A10. U.S. Department of Energy. *Performance Demonstration Program Plan for Nondestructive Assay of Drummed Wastes for the TRU Waste Characterization Program.* DOE/CBFO-01-1005. Carlsbad, New Mexico, Carlsbad Field Office, U.S. Department of Energy http://www.wipp.energy.gov/library/pdp/DOE-CBFO-01-1005Rev0.1.pdf

A11. American Society for Testing and Materials. *Standard Test Method for Determination of Plutonium Isotopic Composition by Gamma-Ray Spectrometry*. ASTM C1030, Annual Book of ASTM Standards, Philadelphia, Pennsylvania, American Society for Testing and Materials

A12. American Society for Testing and Materials. *Standard Test Method for Nondestructive Assay of Nuclear Material in Scrap and Waste by Passive-Active Neutron Counting Using a ^{252}Cf Shuffler.* ASTM C1316, Philadelphia, Pennsylvania, American Society for Testing and Materials

A13. American Society for Testing and Materials. *Standard Test Method for Nondestructive Assay of Special Nuclear Material in Low Density Scrap and Waste by Segmented Passive Gamma-Ray Scanning.* ASTM C1133, Annual Book of ASTM Standards, Philadelphia, Pennsylvania, American Society for Testing and Materials

A14. American Society for Testing and Materials. *Standard Test Method for Nondestructive Assay of Plutonium, Tritium and ^{241}Am by Calorimetric Assay*. ASTM C1458, Annual Book of ASTM Standards, Philadelphia, Pennsylvania, American Society for Testing and Materials

A15. American National Standards Institute. *Nondestructive Assay Measurement Control and Assurance,* ANSI N15.36. American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018

A16. U.S. Nuclear Regulatory Commission. 1984. *Nondestructive Assay of Special* Nuclear *Material Contained in Scrap and Waste.* Regulatory Guide 5.11, Washington, D.C., Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission

A17. American National Standards Institute. *Plutonium-Bearing Solids Calibration Techniques for Calorimetric Assay.* ANSI N15.22-1987, American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018

A18. Canberra Industries, *Genie 2000 Spectroscopy System Operation*

A19. Canberra Industries, *Genie 2000 Spectroscopy System Customization Tools*

A20. Canberra Industries, *NDA 2000 Technical Reference Manual*

A21 Canberra Industries, *NDA 2000 Users Manual*

A22. Canberra Industries, *Total Measurement Uncertainty for the AMWTP Integrated Waste Assay Systems*, CI-IDA-NDA-0055

A23. Canberra Industries, *Neutron Multiplicity Counter Characterization Report for the Integrated Waste Assay System*, Unit 1, 34000

A24. Canberra Industries, *Neutron Multiplicity Counter Characterization Report for the Integrated Waste Assay System*, Unit 2, 34001

A25. Canberra Industries, *Neutron Multiplicity Counter Characterization Report for the Integrated Waste Assay System*, Unit 3, 34034

A26. Canberra Industries, *Neutron Multiplicity Counter Characterization Report for the Integrated Waste Assay System*, Unit 4, 34035

A27. Canberra Industries, *Differential Die-Away Analysis Characterization Report for the Integrated Waste Assay System*, Unit 1, 34002

A28. Canberra Industries, *Differential Die-Away Analysis Characterization Report for the Integrated Waste Assay System*, Unit 2, 34003

A29. Canberra Industries, *Differential Die-Away Analysis Characterization Report for the Integrated Waste Assay System*, Unit 3, 34036

A30. Canberra Industries, *Differential Die-Away Analysis Characterization Report for the Integrated Waste Assay System,* Unit 4, 34037
A31. Canberra Industries, *Q2 Calibration Report for the Integrated Waste Assay System,* Unit 1, 34004
A32. Canberra Industries, *Q2 Calibration Report for the Integrated Waste Assay System,* Unit 2, 34005
A33. Canberra Industries, *Q2 Calibration Report for the Integrated Waste Assay System,* Unit 3, 34038
A34. Canberra Industries, *Q2 Calibration Report for the Integrated Waste Assay System,* Unit 4, 34039
A35. Canberra Industries, *Site Acceptance Test Reports (SATR) for the Integrated Waste Assay Systems* Unit 1 at AMWTP, CI-IDA-NDA-0051
A36. Canberra Industries, *Site Acceptance Test Reports (SATR) for the Integrated Waste Assay Systems* Unit 2 at AMWTP, CI-IDA-NDA-0052
A37 Canberra Industries, *Site Acceptance Test Reports (SATR) for the Integrated Waste Assay Systems* Unit 3 at AMWTP, CI-IDA-NDA-0053
A38. Canberra Industries, *Site Acceptance Test Reports (SATR) for the Integrated Waste Assay Systems* Unit 4 at AMWTP, CI-IDA-NDA-0054
A39. Canberra Industries, *Calibration Verification & Confirmation Procedure for Integrated Waste Assay (IWAS) at AMWTP,* CI-IDA-NDA-0035
A40. *Drum Assay Technical Review Report,* RPT-TRUW-03
A41. *Drum Assay Post-Maintenance Calibration and Verification,* INST-TRUW-8.1.1
A42 *Surveillances,* MP-M&IA-17.3

Appendix B – ^{239}Pu Equivalent Activity

The concept of ^{239}Pu equivalent activity (PE-Ci) is intended to eliminate the dependency of radiological analyses on specific knowledge of the radionuclide composition of a TRU waste stream. A unique radionuclide composition and/or distribution are associated with most TRU waste streams at each site. By normalizing all radionuclides to a common radiotoxic hazard index, radiological analyses that are essentially independent of these variations can be conducted for the WIPP facility. ^{239}Pu, as a common component of most defense TRU wastes, was selected as the radionuclide to which the radiotoxic hazard of other TRU radionuclides could be indexed. Modeled operational releases from the WIPP facility, including both routine and accident-related, are airborne. There are no known significant liquid release pathways during the operational phase of the facility. This, and the fact that TRU radionuclides primarily represent inhalation hazards, allows a valid relationship to be established, which normalizes the inhalation hazard of a TRU radionuclide to that of ^{239}Pu for the purpose of the WIPP radiological analyses. In effect, the radiological dose consequences of an airborne release of a quantity of TRU radioactivity with a known radionuclide distribution will be essentially identical to that of a release of that material expressed in terms of a quantity of ^{239}Pu. To obtain this correlation, the 50-year effective whole-body dose commitment or dose conversion factor for a unit intake of each radionuclide will be used.

For a known radioactivity quantity and radionuclide distribution, the ^{239}Pu equivalent activity is determined using radionuclide-specific weighting factors. The ^{239}Pu equivalent activity (AM) can be characterized by:

$$AM = \sum_{i=1}^{K} A_i / WF_i$$

where K is the number of TRU[3] radionuclides, A_i is the activity of radionuclide i, and WF_i is the PE-Ci weighting factor for radionuclide i.

WF_i is further defined as the ratio

$WF_i = E_o / E_i$

where E_o (rem/ μCi) is the 50-year effective whole-body dose commitment due to the inhalation of ^{239}Pu particulates with a 1.0 μm activity median aerodynamic diameter (AMAD) and a weekly pulmonary clearance class, and E_i (rem/ μCi) is the 50-year effective whole-body dose commitment due to the inhalation of radionuclide (i) particulates with a 1.0 μm activity median aerodynamic diameter and the pulmonary clearance class resulting in the highest 50-year effective whole-body dose commitment.

Weighting factors calculated in this manner are presented in Table B-1 for radionuclides typically present in CH-TRU waste. If other TRU radionuclides are determined to be present in the payload container, their weighting factors can be obtained from the values of E_o and E_i contained in DOE/EH-0071 (Reference B1).

Table B-1
PE-Ci Weighting Factors for Selected Radionuclides

3. TRU as designated in this equation refers to any radionuclide with an atomic number greater than 92 and including ^{233}U.

Radionuclide	Pulmonary Clearance Class[1]	Weighting Factor
^{233}U	Y	3.9
^{237}Np	W	1.0
^{236}Pu	W	3.2
^{238}Pu	W	1.1
^{239}Pu	W	1.0
^{240}Pu	W	1.0
^{241}Pu	W	51.0
^{242}Pu	W	1.1
^{241}Am	W	1.0
^{243}Am	W	1.0
^{242}Cm	W	30.0
^{244}Cm	W	1.9
^{252}Cf	Y	3.9

1. (W) Weekly, (Y) Yearly

References

B1. U.S. Department of Energy. *Internal Dose Conversion Factors for Calculation of DOSE to the Public.* DOE/EH-0071, July 1988

Appendix C –
Glossary

10-160B Packaging - An NRC-certified Type B transportation packaging used for transportation of RH TRU wastes.

Acceptable knowledge (AK) - Any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as data resulting from the analysis of waste, conducted prior to or separate from the waste certification process authorized by EPA's Certification Decision, to show compliance with Condition 3 of the certification decision (Appendix A of 40 CFR 194.2 and 194.67).

Activity - A measure of the rate at which a material emits nuclear radiation, usually given in terms of the number of nuclear disintegrations occurring in a given length of time. The common unit of activity is the curie, which amounts to 37 billion (3.7×10^{10}) disintegrations per second. The International Standard unit of activity is the Becquerel and is equal to one disintegration per second.

Administrative controls - Provisions relating to organization and management, procedures, record keeping, assessment, and reporting necessary to ensure the safe operation of the facility.

Atomic energy defense activities - Activities of the Secretary of Energy (and predecessor agencies) performed in whole or in part in carrying out any of the following functions: naval reactors development; weapons activities, including defense inertial confinement fusion; verification and control technology; defense nuclear material production; defense nuclear waste and materials by-product management; defense nuclear materials security investigations; and defense research and development.

Authorization basis - Those aspects of the facility design and operational requirements relied upon by DOE to authorize the operation of nuclear facilities and processes.

Characterization - Sampling, monitoring, and analysis—whether by review of AK, nondestructive examination, NDA, RC, headspace gas analysis, or chemical analysis of the volatile or semivolatile organic compounds or metals—to identify and quantify the constituents of a waste material.

Chemical compatibility - Assessing the properties of chemicals in a payload container (>1 weight percent); there must be no adverse safety or health hazards produced as a result of any mixtures that occur.

Completeness - The percentage of measurements made that are judged to be valid measurements. The completeness goal is to generate a sufficient amount of valid data based on program needs. Valid results for analytical, radioassay, and radiography data are those that were obtained when the laboratory or testing facility demonstrated that the instrumentation and method were in control; that is, that all calibration, verification, interference, and zero matrix checks met acceptance criteria. Valid samples are those collected and submitted for analysis that were representative and met all preservation requirements upon arrival at the laboratory.

Compressed gas - Compressed gases are those materials defined as such by 49 CFR § 173, Subpart G.

Contact-handled transuranic waste - Transuranic waste with a surface dose rate not greater than 200 millirem/per hour.

Contact-handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) - The governing document for shipments in the Transuranic Package Transporter-II (TRUPACT-II) and HalfPACT packagings.

Content code - A uniform system applied to waste forms to group those with similar characteristics for purposes of shipment in the TRUPACT-II, TRUPACT-III, HalfPACT, and RH-TRU 72-B packagings.

Corrosive/Corrosivity - A solid waste exhibits corrosivity if a sample of the waste is either aqueous and has a pH ≤ 2 or ≥ 12.5, or it is a liquid and corrodes steel at a rate >6.35 mm (0.250 inch) per year at a test temperature of 55º (130ºF). (40 CFR § 261.22)

Curie - A unit of activity equal to 37 billion (3.7×10^{10}) disintegrations per second.

Disposal - Permanent isolation of TRU waste from the accessible environment with no intent of recovery, whether or not such isolation permits the recovery of such waste (Reference 24, Section 2 [5]).

Dose conversion factor - A numerical factor used in converting radionuclide uptake (curies) in the body to the resultant radiation dose (rem).

Dose equivalent rate - The radiation dose equivalent delivered per unit time (e.g., rem per hour).

Drum - Includes 55-gallon, 85-gallon, and 100-gallon drums as described in the CH-TRAMPAC and WIPP HWFP.

Fissile gram equivalent - An isotopic mass of radionuclide normalized to ^{239}Pu.

Fissile material - Any material consisting of or containing one or more radionuclides that can undergo neutron-induced fission with neutrons of essentially zero kinetic energy (e.g., thermal neutrons) such as ^{233}U, ^{235}U, and ^{239}Pu.

HalfPACT - An NRC-certified Type B transportation packaging used for transportation of CH-TRU wastes.

Hazardous waste - Those wastes that are designated hazardous by EPA (or state) regulations. For a detailed description, see 40 CFR § 261.3. Hazardous wastes are listed in 20.4.1 New Mexico Administrative Code (NMAC), Subpart II (40 CFR § 261) and/or exhibit one of the four characteristics in 20.4.1 NMAC, subpart II (40 CFR § 261) (i.e., ignitability, corrosivity, reactivity, and toxicity).

Headspace - The total contained volume of a container minus the volume occupied by the waste material.

Headspace gas - The gas within the headspace of a container.

Internal container – A container inside the outermost container examined during RTR or VE. Drum liners, liner bags, plastic bags used for contamination control, capillary-type lab ware, and debris not designed to hold liquid at the time of original waste packaging are not internal containers (Reference 43, Part 1, Section 1.5.17).

Lower Limit of Detection - The level of radioactivity, which, if present, will yield a measured value greater than the critical limit with a 95% probability. The critical limit is defined as that value which measurements of the background will exceed with a 5% probability.

Machine-compacted waste - Waste whose volume has been reduced using a mechanical process.

Observable liquid – Liquid that is observable using RTR or VE as specified in Permit Attachment C, Waste Analysis Plan (Reference 43, Part 1, Section 1.5.18).

Overpack - A container put around another container (Reference 8, Glossary of Terms).

Package - (1) A packaging plus its contents. (2) The reusable Type B shipping container (i.e., TRUPACT-II, HalfPACT, RH-TRU 72-B, or 10-160B) loaded with TRU waste payload containers, which has been prepared for shipment in accordance with the package QA program. (3) In the regulations governing the transportation of radioactive materials, the packaging, together with its radioactive contents, as presented for transport.

Packaging - The reusable Type B shipping container for transport of TRU waste payload containers (i.e., TRUPACT-II, TRUPACT-III, HalfPACT, RH-TRU 72-B, or 10-160B).

Packaging quality assurance program - A site-specific document that defines the quality assurance and quality control activities applicable to usage of the NRC-approved packaging. This program shall meet the requirements of 10 CFR § 71, Subpart H.

Payload container - The outermost container (i.e., drum, SLB2, SWB, TDOP, or canister) for TRU waste material that is placed in a reusable Type B shipping container (i.e., TRUPACT-II, TRUPACT-III, HalfPACT, RH-TRU 72-B, or 10-160B) for transport.

Payload assembly - An assembly of payload containers qualified for transport in a TRUPACT-II, HalfPACT, or 10-160B.

Pipe overpack - A packaging configuration consisting of a vented cylindrical pipe component surrounded by dunnage within a vented 55-gallon drum with a rigid polyethylene liner and vented lid.

^{239}Plutonium equivalent activity - An equivalent radiotoxic hazard of a radionuclide normalized to ^{239}Pu.

Precision - A measure of mutual agreement among individual measurements of the same property made under prescribed similar conditions; often expressed as a standard deviation or relative percent difference.

Pyrophoric - Materials that may ignite spontaneously in air or that emit sparks when scratched or struck, especially with materials such as steel. A flammable solid that, under transport conditions, might cause fires through friction or retained heat or that can be ignited readily and, when ignited, burns vigorously and persistently so as to create a serious transportation hazard. Included in the pyrophoric definition are spontaneously combustible materials, water reactive materials, and oxidizers. Examples of nonradioactive pyrophorics are organic peroxides, sodium metal, and chlorates.

Radioassay - Methods used to identify and quantify radionuclides in TRU waste. Radioassay includes NDA and RC.

Radiography - A nondestructive testing method that uses x-rays to inspect and determine the physical form of waste.

Radionuclide - A nuclide that emits radiation by spontaneous transformation.

Remote-handled transuranic waste - Transuranic waste with a surface dose rate of 200 millirem per hour or greater.

Remote-handled Transuranic Waste Authorized Methods for Payload Control (RH-TRAMPAC) - The governing document for shipments in the RH-TRU 72-B packaging.

RH-TRU Waste Canister - Container that is transported in the RH-TRU 72B cask.

RH-TRU 72B Packaging- An NRC-certified Type B transportation packaging used for transportation of RH TRU shipments.

Shipper - A TRU waste site that releases NRC-approved packaging to a carrier for shipment.

Shipping category - A shipping category is defined by the following parameters: chemical composition of the waste (waste type), gas generation potential of the waste material type (quantified by the g-value for hydrogen), and gas release resistance (type of payload container and type and maximum number of confinement layers used).

Sites - Department of Energy TRU waste generator/storage sites.

Standard large box 2 – A specialized metal payload container with a top-loading and a bottom-loading option for use within the TRUPACT-III packaging, that has been tested by DOE to meet DOT Specification 7A Type A requirements.

Standard waste box - A metal payload container authorized for use within the TRUPACT-II or HalfPACT packaging, that has been tested by DOE to meet DOT Specification 7A Type A requirements.

Summary category group - Used to segregate TRU mixed wastes into broad groups having similar physical forms. The summary category groups include homogeneous solids (S3000) that are at least 50 percent by volume solid process residues, soil/gravel (S4000) that is at least 50 percent by volume soil/gravel, and debris (S5000) that is at least 50 percent by volume materials that meet the criteria specified in 20.4.1.800 New Mexico Administrative Code (incorporating 40 CFR 268.2[g]). If a waste does not include at least 50 percent of any given category by volume, then the summary category group assigned shall be the same as that constituting the greatest volume of waste for that waste stream (Reference 43, Attachment C).

Ten-drum overpack - A metal payload container authorized for use within the TRUPACT-II packaging, that has been tested by DOE to meet DOT Specification 7A Type A requirements.

Test category - Payload containers that do not meet the analytical category decay heat limits or whose concentration of flammable VOCs in the headspace exceeds 500 ppm are classified as test category (Reference 48, Section 5.2.2).

Trace chemicals/materials - Chemicals/materials that occur individually in the waste in quantities less than 1 weight percent. The total quantity of trace chemicals/materials not listed as allowed materials for a given waste material type in any payload container is restricted to less than 5 weight percent (Reference 48, Section 4.3.1; Reference 50, Section 4.3.1).

TRU isotope - An isotope of any element having an atomic number greater than uranium (i.e., 92).

TRU waste - Waste containing more than 100 nCi of alpha-emitting isotopes per gram of waste, with half-lives greater than 20 years, except for:

1. High-level radioactive waste
2. Waste that the Secretary of Energy has determined, with the concurrence of the administrator of the EPA, does not need the degree of isolation required by the disposal regulations, or
3. Waste that the NRC has approved for disposal on a case-by-case basis in accordance with 10 CFR 61 (Reference 24, Section 2[18]

TRU-mixed waste - TRU waste that is also a hazardous waste as defined by the Hazardous Waste Act and 20.4.1.200 NMAC (incorporating 40 CFR § 261.3) (Reference 43, Part 1, Section 1.5.7).

TRUPACT-II - An NRC-certified Type B transportation packaging used for transportation of CH-TRU wastes.

TRUPACT-III – An NRC-certified Type B transportation packaging used for transportation of CH-TRU wastes in the SLB2 container.

TRUPACT-III Transuranic Waste Authorized Methods for Payload Control (TRUPACT-III TRAMPAC) – The governing document for shipments in the TRUPACT-III packaging (Reference 49, Section 1).

Verification - The act of authenticating or formally asserting the truth that a process, item, data set, or service is, in fact, that which is claimed. Data verification is the process used to confirm that all review and validation procedures have been completed.

Volatile organic compounds - For the purposes of the TRU waste program, those RCRA-regulated VOCs listed in the WIPP WAP and any additional compounds tentatively identified by VOC analytical procedures used to satisfy program requirements (i.e., any compound containing carbon and hydrogen with any other element that has a vapor pressure of 77.6 mm of mercury (1.5 psia) or greater under actual storage conditions).

Waste acceptance criteria - Constraints (limits) on the physical, chemical, and radiological properties of TRU waste and its packaging as determined by WIPP's authorization basis requirements. TRU waste will not be approved for shipment to and disposal at the WIPP until it has been certified as meeting these criteria. Waste acceptance criteria ensure that TRU waste is managed and disposed of in a manner that protects human health and safety and the environment.

Waste analysis plan - The waste analysis plan includes test methods, details of planned waste sampling and analysis, a description of the waste shipment screening and verification process, and a description of the QA/QC program. Sites are required to implement the applicable requirements of the WIPP WAP (HWFP, Attachment C).

Waste characterization - The process of determining that TRU waste meets the requirements of the WAC by the acceptable performance of the activities defined by CBFO-approved site-specific plans.

Waste certification - Formal and documented declaration by sites that waste has been characterized and meets the requirements of the WIPP WAC.

Waste matrix code - A DOE-developed coding system for grouping waste streams that have similar matrix constituents, especially for treatment objectives. This coding system allows waste streams within the DOE TRU waste system that has similar physical and chemical waste for properties to be categorized together (Transuranic Waste Baseline Inventory Report, DOE/CAO-95-1121).

Waste stream - A waste stream is waste materials that have common physical form, that contain similar hazardous constituents and that are generated from a single process or from an activity. (Reference 43, Attachment C).

WIPP Waste Information System - A computerized data management system used by WIPP to gather, store, and process information pertaining to CH- and RH-TRU waste destined for or disposed of at WIPP. The WWIS database is a subsystem of the Waste Data System (WDS).

Appendix D –
Payload Container Integrity Checklist

The operator is to visually examine 100% of the payload container exterior to determine if the payload container meets the criteria of Section 3.2.1. At a minimum, sites shall incorporate the questions and criteria contained in the following checklist into applicable site procedures. This payload container inspection shall be performed and documented as a part of the loading process. Any YES answer on the inspection checklist will result in the operator discontinuing the inspection, marking the payload container as unacceptable for shipment, and removal of the payload container from the shippable inventory. Before the rejected container can be shipped, it must undergo appropriate corrective actions (e.g., evaluation, repackaging, overpacking, etc.), as applicable. All containers must have an acceptable and complete inspection checklist documenting that it meets the DOT 7A criteria.

Container Examination	Discussion of Criteria	Compliance	
		YES	NO
1. Is the payload container obviously degraded?	Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		
2. Is there evidence that the payload container is, or has been, pressurized?	Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the payload container is not warped.		
3. Is there any potentially significant rust or corrosion such that wall thinning, pin holes, or breaches are likely or the load bearing capacity is suspect?	Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products. In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur).		

Container Examination	Discussion of Criteria	Compliance	
		YES	NO
4. Are any of the following apparent? • wall thinning • pin holes • breaches	Wall thinning, pin holes and breaches can be a result of rust/corrosion (see discussion on #3).		
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?	Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the applicable package.		
6. Is the load-bearing capacity suspect?	The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		
7. Is the payload container improperly closed?	Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?	Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity.		

Container Examination	Discussion of Criteria	Compliance	
		YES	NO
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?	Examine the payload container regions near the filter vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		
10. Is the payload container bulged?	For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		

References

D1. INEEL Engineering Design File, *Waste Container Integrity Evaluation for Storage*, EDF-RWMC-705, September 25, 1996, Idaho National Engineering and Environmental Laboratory, Idaho Falls, ID.

D2. Title 49 CFR § 173, Subpart 475, *Quality Control Requirements Prior to Each Shipment of Class 7 (Radioactive) Materials,* Code of Federal Regulations, Washington, D.C., Office of the Federal Register, National Archives and Records Administration.

D3. DOE/RL-96-57, Section 2.5.5, *Test & Evaluation Document for the U.S. Department of Transportation Specification 7A Type A Packaging* (formerly WHC-EP-0558).

Appendix E –
Payload Management of TRU Alpha Activity Concentration

E.1 Scope

The policies and methods for the management of TRU alpha activity concentration within each TRU waste payload container disposed of at WIPP are set out below. They are based on the definition of TRU waste in the Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act (LWA), Public Law 102-579. The WIPP LWA defines TRU waste as:

"…waste containing more than 100 nanocuries of alpha emitting transuranic isotopes per gram of waste, with half lives greater than 20 years…" (Section 2[18]).

This appendix pertains specifically to the payload management of TRU alpha activity concentration of waste containers selected for overpacking.

E.2 Policies

The National TRU Waste Program has established the following policies for managing TRU alpha activity concentration in compliance with the WIPP LWA: (References E1, E2, and E3):

- The TRU alpha activity concentration limit for TRU waste (>100 nCi/g) applies to the TRU waste stream as a whole.

- Waste containers belonging to a TRU waste stream may vary in their TRU alpha activity concentration, some containing >100 nCi/g and some containing ≤ 100 nCi/g. Using process knowledge in combination with radioassay measurements to determine the presence of transuranic isotopes within the waste stream, generator sites define a TRU waste stream based on its potential to include waste containers with a TRU alpha activity concentration in excess of 100 nCi/g.

- Waste containers belonging to the same TRU waste stream may be overpacked into a payload container (e.g., SWB or TDOP) provided the TRU alpha activity concentration of the payload container exceeds 100 nCi/g.

E.3 Prerequisites for Implementation

- Each waste container selected for payload management must be part of the TRU waste stream identified in the AK summary report for that waste stream (References E2 and E3).

- The AMWTP will submit to the CBFO, for its review and approval, applicable plans and procedures for making TRU waste determinations based on payload management practices that involve overpacking of waste containers (Reference E2).

- CBFO will notify EPA of the AMWTP seeking such authorization prior to CBFO's approval of the AMWTP to manage TRU alpha activity concentration using payload management. The WIPP will not accept payload managed waste for disposal until EPA has received notice (Reference E3).

E.4 Implementation and Practice

- Each TRU waste stream selected for payload management must include in its acceptable knowledge summary report an estimate of the total waste volume and the percentage of the waste volume that is above and below 100 nCi/g. (It should be noted that this information, although based on the best available AK information, is preliminary and subject to the performance of WIPP certified NDA measurements and cannot and will not be used as a measure of AK accuracy) (Reference E3).

- Each waste container selected for payload management must contain at least one TRU isotope (e.g., ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, etc.) whose activity exceeds the LLD of the radioassay system used to characterize the waste (Reference E2 and E3). The applicability of LLD will vary from system to system and may be on a container basis. Sections 3.3.1 and A.3 of this document provide the applicable requirements for determining and reporting LLDs.

- Each waste container selected for payload management may only be overpacked into a payload container (e.g., SWB or TDOP) with other waste containers from the same TRU waste stream.

- The TRU alpha activity concentration of the payload container is determined according to Section 3.3.3 of this document.

References

E1. Public Law 102-579, 106 Stat. 4777, 1992 (as amended by Public Law 104-201, 1996). Waste Isolation Pilot Plant Land Withdrawal Act.

E2. Letter to Mr. Frank Marcinowski (Director, Office of Radiation and Indoor Air, U.S. Environmental Protection Agency), from Dr. Ines R. Triay (Manager, Carlsbad Field Office, U.S. Department of Energy). August 4, 2003.

E3. Letter to Dr. Ines R. Triay (Manager, Carlsbad Field Office, U.S. Department of Energy) from Mr. Frank Marcinowski (Director, Office of Radiation and Indoor Air, U.S. Environmental Protection Agency), August 8, 2003.

Appendix F –
Radiography Requirements for
Contact-Handled Transuranic Waste for EPA Compliance

F.1 Radiography Requirements for Contact-Handled Waste

Radiography aids in the examination and identification of containerized waste. All activities required to achieve radiography objectives are described in INST-OI-12 and INST-OI-81. This appendix applies to radiography of CH waste; requirements for radiography of RH waste are found in the WCPIP.

A radiography system (e.g., real-time radiography or digital radiography/computed tomography), normally consists of an x-ray-producing device, an imaging system, an enclosure for radiation protection, a waste container handling system, an audio/video recording system, and an operator control and data acquisition station. Although these six components are required, it is expected there will be some variation within a given component between sites. The radiography system shall have controls or an equivalent process, which allow the operator to control image quality. On some radiography systems, it should be possible to vary the voltage between 150 and 400 kilovolts to provide an optimum degree of penetration through the waste.

To perform radiography, the waste container is scanned while the operator views the video monitor. An audio/video recording is made of the waste container scan and is maintained as a non-permanent record. A radiography data form is also used to document the Waste Matrix Code; verify there are no ignitable, reactive, or corrosive wastes present by verification that there is no observable liquid in excess of the WAC limits and there are no compressed gases; and estimated waste material parameter weights of the waste.

The estimated waste material parameter and weights for CH waste is determined by compiling an inventory of waste items and packaging materials. The items on this inventory are sorted by waste material parameter and combined with a standard weight look-up table to provide an estimate of waste material parameter weights.

Containers whose contents prevent full examination of the remaining contents shall be subject to visual examination unless the site certifies that visual examination would provide no additional relevant information for that container using acceptable knowledge for the waste stream.

For containers, which contain classified shapes and undergo radiography, the radiography recording shall be considered classified. The radiography data forms will not contain classified information.

F.2 Radiography Training

The radiography system involves qualitative and semi-quantitative evaluations of visual displays. Operator training and experience are the most important considerations for assuring quality controls in regard to the operation of the radiography system and for interpretation and disposition of radiography results. Only trained and qualified radiography operators shall be allowed to operate radiography equipment.

Standardized training and qualification requirements for radiography operators are based upon existing industry standard training requirements as detailed in the radiography qualification package and comply with the training and qualification requirements in MP-RTQP-14.4.

The AMWTP has developed a training program that provides radiography operators with both formal and on-the-job training (OJT). Radiography operators are instructed in the specific waste generating practices, typical packaging configurations, and associated waste material parameters expected to be found in each Waste Matrix Code at the site. The OJT and apprenticeship is conducted by an experienced, qualified radiography operator prior to qualification of the training candidate. Radiography operators are trained on the types of waste that are generated, stored, or characterized at the AMWTP.

The training program contains the following elements:

- Project Requirements
- State and Federal Regulations
- Basic Principles of Radiography
- Radiographic Image Quality
- Radiographic Scanning Techniques
- Application Techniques
- Radiography of Waste Forms
- Standards, Codes, and Procedures for Radiography
- Site-Specific Instruction.

The training program also contains OJT, which addresses:

- System Operation
- Identification of Packaging Configurations
- Identification of Waste Material Parameters
- Weight and Volume Estimation
- Identification of Prohibited Items.

Radiography test drums contain items common to the waste streams to be generated and stored at the AMWTP. The test drums are divided into layers with varying packing densities or different drums may be used to represent different situations that may occur during radiography examination at the site. Test drums shall be representative of the waste matrix codes for which WSPF approval is sought. Test drums shall be examined and successfully identified prior to waste stream shipment. The following is a list of required elements of a radiography test drum:

- A punctured aerosol can
- Pigtails on poly liners (horsetail bag)
- Pair of coveralls
- Empty bottle
- Irregular shaped pieces of wood
- Empty one-gallon paint can
- Full container
- Aerosol can with fluid
- One-gallon bottle with three tablespoons of fluid
- One-gallon bottle with one cup of fluid (upside down)
- Leaded glove or leaded apron
- Wrench.

These items shall be successfully identified by the operator as part of the qualification process. Qualifications of radiography operators shall, at a minimum, encompass the following requirements:

- Successfully pass a comprehensive exam based upon training enabling objectives. The comprehensive exam will address all of the radiography operations, documentation, characterization and procedural elements stipulated in this WAC.

- Perform a practical capability demonstration in the presence of appointed site radiography subject matter expert. The person will be an experienced radiography operator who is also qualified as an OJT trainer.

Requalifications of operators are based on evidence of continued satisfactory performance (primarily audio/video recording reviews), and shall be done at least every two years. Unsatisfactory performance will result in disqualification. Unsatisfactory performance is defined as the misidentification of a prohibited item in a training container or a score of less than 80% on the comprehensive exam. Retraining and demonstration of satisfactory performance are required before a disqualified operator is again allowed to operate the radiography system.

A training container with internal containers of various sizes is scanned semiannually by each operator. The audio/video recording is then reviewed by a supervisor to ensure that operator's interpretations remain consistent and accurate. Imaging system characteristic shall be verified on a routine basis.

F.3 Quality Control

Independent replicate scans and replicate observations of the video output of the radiography process are performed under uniform conditions and procedures. Independent replicate scans are performed on one waste container per day or once per testing batch, whichever is less frequent. Independent observations of one scan (not the replicate scan), are also made once per day or once per testing batch, whichever is less frequent, by a qualified radiography operator other than the individual who performed the first examination. A testing batch is a suite of waste containers undergoing radiography using the same testing equipment. A testing batch can be up to 20 waste containers without regard to waste matrix.

Oversight functions include periodic audio/video recording reviews of accepted waste containers by a qualified radiography operator other than the operator who dispositioned the waste container. The results of this independent verification are made available to the radiography operator.

F.4 Data Review and Validation

A testing batch data report for data validation and QA purposes is required when radiography is used to characterize waste. A testing batch data report (or equivalent) includes data pertaining to radiography for up to 20 waste containers or samples.

All measurement data must be reviewed and approved by qualified personnel prior to being reported. Reviews shall meet the requirements of the QAPD. At a minimum, the data must be reviewed by an independent technical reviewer and approved by the SPM or designee. This review shall be performed by an individual other than the data generator who is qualified to have performed the initial work. The independent technical reviewer verifies, at a minimum, the following information:

- Data generation and reduction were conducted in a technically correct manner in accordance with the methods used (verification of procedure and revision).
- Data were reported in the proper units and correct number of significant figures.

- Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100 percent check of all hand calculations.

- Values that are not verifiable to within rounding or significant difference discrepancies must be rectified prior to completion of independent technical review.

- The data have been reviewed for transcription errors.

- The testing QA documentation for batch data reports is complete and includes, as applicable, raw data, calculation records, calibration records (or references to an available calibration package), list of containers in the batch, and QC sample results. Corrective action will be taken to ensure that all batch data reports are complete and include all necessary raw data prior to completion of the independent technical review.

- QC sample results are within established control limits and, if not, the data have been appropriately dispositioned using the nonconformance process. This shall include complete summarized qualitative and quantitative data for all waste containers with data flags or qualifiers.

- Radiography tapes have been reviewed (independent observation) on a waste container basis at a minimum of once per testing batch or once per day of operation, whichever is less frequent.

- The container contains no indication that there is observable liquid in excess of this waste acceptance criteria, no indication of compressed gas, no indication of incompatible wastes, and the physical form matches the Waste Matrix Code.

- The appropriate QAOs have been met.

All data is approved by the SPM or designee. The SPM verifies, at a minimum, the following information:

- Data generation-level independent technical review, validation, and verification have been performed as evidenced by the completed review checklists and appropriate signature release. Batch data review checklists are complete.

- Batch data reports are complete and data are properly reported (e.g., data are reported in the correct units and with the correct number of significant figures).

- Data meet all applicable Quality Assurance Objectives.

The SPM provides a SPM Summary and a Data Validation Summary for each batch data report. These reports are combined and consist of a detailed checklist documenting that the batch has been adequately reviewed and that the data meet program objectives.

To ensure that data of known and documented quality are generated, each participating measurement facility shall implement a documented facility QA program. Facility QA programs shall specify qualitative and quantitative acceptance criteria for the QC checks of this program, and corrective actions to be taken when these criteria are not satisfied. Only appropriately trained and qualified personnel shall be allowed to perform data validation/review.

Appendix G –
Visual Examination Requirements for
Contact-Handled Transuranic Waste for EPA Compliance

G.1 Visual Examination Requirements for Contact-Handled Waste

This appendix applies to visual examination requirements for CH waste; requirements for visual examination of RH waste are found in the WCPIP.

Contact-handled waste container contents may be verified directly by performing VE on the waste container contents. Visual examination may also be performed during packaging or repackaging of waste.

Visual examination does not require audio/video recordings of the examination; the examination is documented on a data form and certified with signatures from two qualified VE operators. If the second operator cannot verify the descriptions of the first operator, corrective actions will be taken in accordance with the established QA Program.

Visual examination is conducted to describe all contents of a waste container and includes estimated or measured weights of the contents. The description clearly identifies all discernible waste items, packaging materials, and waste material parameters. Visual examination activities shall be documented on VE data forms.

Visual examination audio/video recordings of containers that contain classified shapes shall be considered classified information. Visual examination data forms will not contain classified information.

G.2 Visual Examination Training

Visual examination consists of a semi-quantitative and qualitative evaluation of the waste container contents and may be recorded on audio/video recording media. Standardized training for VE has been developed to include both formal classroom training and OJT. Personnel performing VE are instructed in the specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the site. The OJT and apprenticeship is conducted by an operator experienced and qualified in VE prior to qualification of the candidate. The training shall be site-specific to include the various waste configurations at the site. Training and qualification requirements for VE are detailed in the VE qualification package in accordance with MP-RTQP-14.4. Visual examination operators need only be trained to the physical forms and packaging configurations used on the waste stream that they are examining and packaging. Visual examination personnel are requalified once every two years.

Training shall address the following required elements:

- Project requirements
- State and Federal regulations
- Application techniques
- Site-specific instruction.

Training shall also include OJT that addresses:

- Identification of Packaging Configurations
- Identification of Waste Material Parameters
- Weight and Volume Estimation
- Identification of Prohibited Items.

Each VE facility shall designate one or more VE experts. The VE expert is familiar with the waste generating processes and with all types of waste being characterized at that site. The VE expert shall be responsible for the overall direction and implementation of the visual examination at the AMWTP. The VE expert receives training in the same elements as the visual examination personnel, including both formal training and OJT. Qualification of a VE expert is based on familiarity with waste generating processes, familiarity with the types of waste being characterized, and meeting the training requirements discussed above. Consistent with other VE personnel, the VE expert is requalified once every two years. VEE training requirements are detailed in the VEE qualification package in accordance with MP-RTQP-14.4.

G.3 Method

Visual examination recorded on video/audio media shall meet the following minimum requirements:

- The video/audio media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail and shall contain an inventory of waste items in sufficient detail that another trained VE operator can identify the associated waste material parameters.

- The video/audio media shall capture the waste container identification number.

- The personnel loading the waste container shall be identified on the video/audio media or on packaging records traceable to the loading of the waste container.

- The date of loading of the waste container will be recorded on the video/audio media or on packaging records traceable to the loading of the waste container.

Visual examination performed using two operators shall meet the following minimum requirements:

- At least two site personnel who witnessed the packaging of the waste shall approve the data forms or packaging records attesting to the contents of the waste container.

- The data forms or packaging records shall contain an inventory of waste items in sufficient detail that a trained VE operator can identify the associated waste material parameters.

- The container identification number shall be recorded on the data forms or packaging records.

A description of the waste container contents is recorded on a VE data form. The description clearly identifies all waste material parameters and provides enough information to estimate weights of waste material parameters. In cases where bags are not opened, a brief written description of the contents of the bags shall contain an estimate of the amount of each waste type in the bags. The written records of VE are supplemented with the audio/videotape recording, if applicable.

G.4 Data Review and Validation

A testing batch data report for data validation and QA purposes is required when VE is used to characterize waste. A testing batch data report (or equivalent) includes data pertaining to VE for up to 20 waste containers or samples.

All measurement data is reviewed and approved by qualified personnel prior to being reported. Reviews shall meet the requirements of the QAPD. At a minimum, the data is reviewed by an independent technical reviewer and approved by the SPM or designee. This review is performed by an individual other than the data generator who is qualified to have performed the initial work. The independent technical reviewer verifies, at a minimum, the following information:

Data generation and reduction were conducted in a technically correct manner in accordance with the methods used (verification of procedure and revision).

- Data were reported in the proper units and correct number of significant figures.
- Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100 percent check of all hand calculations.
- Values that are not verifiable to within rounding or significant difference discrepancies must be rectified prior to completion of independent technical review.
- The data have been reviewed for transcription errors.
- The testing QA documentation for batch data reports is complete and includes, as applicable, raw data, calculation records, and list of containers in the batch. Corrective action will be taken to ensure that all batch data reports are complete and include all necessary raw data prior to completion of the independent technical review.

- The container contains no indication that there is observable liquid in excess of this waste acceptance criteria, no indication of compressed gas, no indication of incompatible wastes, and the physical form matches the Waste Matrix Code.
- The appropriate QAOs have been met.

All data must be approved by the SPM or designee. The SPM verifies, at a minimum, the following information:

- Data generation-level independent technical review, validation, and verification have been performed as evidenced by the completed review checklists and appropriate signature release. Batch data review checklists are complete.
- Batch data reports are complete and data are properly reported (e.g., data are reported in the correct units and with the correct number of significant figures).
- Data meet all applicable Quality Assurance Objectives.

The SPM provides an SPM Summary and a Data Validation Summary for each batch data report. These reports are combined and consist of a detailed checklist documenting that the batch has been adequately reviewed and that the data meet program objectives.

To ensure that data of known and documented quality are generated, each participating measurement facility shall implement a documented facility QA program. Facility QA programs shall specify qualitative and quantitative acceptance criteria for the QC checks of this program, and corrective actions to be taken when these criteria are not satisfied. Only appropriately trained and qualified personnel are allowed to perform data validation/review.

Quality Assurance Project Plan

Advanced Mixed Waste Treatment Project

(*Signature on file. See DCR-10657.)*
Ed Vokoun
Quality Assurance Manager

06/14/12
Date

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.2, Rev. 16	Issued: 06/21/12	Effective: 06/22/12
Quality Assurance Project Plan		

DOCUMENT APPROVAL SHEET

Document Type: Compliance Plan **Document Number:** MP-TRUW-8.2

Title: Quality Assurance Project Plan

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REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/29/02	All	Initial issue. DCR-2002-1171. Document issue date was 08/29/02. DOE/WIPP approval was received 09/09/02 thus the change in effective date to 09/12/02.
1	02/26/03	Various	DCR-1821. Correct procedure titles and numbers. Added DOE-ID to the Document Approval Sheet in accordance with MP-DOCS-18.4. Document issue date was 12/19/02. DOE/WIPP approval was received 02/25/03 thus the change in effective date to 02/26/03.
2	03/10/03	12, 153	DCR-2094. Added changes to the training sections A-7 & B3-14. Document issue date was 03/10/03. DOE/WIPP approval was received 03/17/03. The change in effective date is 03/31/03.
3	08/19/04	Various	DCR-2895: Revised to reflect the addition of new headspace gas sampling system, references to facility procedures and updates to NMED's WAP. Incorporation of CBFO review comments
4	04/18/05	P69	DCR-3280. Add text to P.69, B1-1a(5): "This Section is applicable to the AMWTP such that sampling and analysis may be performed by other contractors. Level I validation will be performed by a subcontractor. Level II validation will be performed by the AMWTP PLV&V group."
5	06/09/05	54, 55	DCR-4365 Incorporation of Class 1 Permit Modification Notification to Revise Language for Compacted 55-Gallon Drums With Rigid Liners, April 27, 2005 and WIPP Memorandum CBFO:OCT:KWW:VW:05-1164-UFC:5822. Incorporated the procedure to implement the UFGTP long-term objective.
6	02/03/06	All	DCR-4640. Periodic Review. Added carbon disulfide to the target analyte list in Table B3-2. Various editorial changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
7	06/01/06	Various	DCR-5039. Change reference to reflect change in contractor. Editorial. BBWI address change. Optional headspace system configuration.
8	01/04/2007	All	DCR-5381. Implementation of the NMED 311 Permit modification. Incorporate CBFO DRR comments, AMWTP organization, OI-34 title change (global), and effective date to 1/24/07
9	08/09/07	Various	DCR-6104. Incorporate WIPP Class 1 Permit modifications, update procedural titles and references, and editorial changes.
10	10/24/07	Various	DCR-6307. Incorporate August 2007 WIPP Class 1 permit modifications.
11	08/29/08	Various	DCR-6887. Incorporate the Class 1 Permit Notifications, July, 2008. Add references to INST-OI-75, INST-OI-81, and CCP procedures. Update organization chart in Figure B5-1.
12	12/22/09	Various	DCR-8769. Annual review: updated the overview, description of the site, project description, and AMWTP organizations and responsibilities, WDS implementation; added characterization and AK of off-site waste, and update analytical lab name and location. Editorial changes consistent with MP-DOCS-18.3.
13	05/27/10	Various	DCR-9164. Incorporate Class 2 PMR change for liquid, VE, and NCRs.
14	12/17/10	Various	DCR-9605. Incorporate the new WIPP Hazardous Waste Permit Renewal structure (attachments and sections from B to C and modules to parts/subparts), revise the definitions of *waste stream* and *ITR*, delete (cis)1, 2-dichloroethylene, clarify the RTR training drum VEE training, RTR independent replicate scan and oversight functions, and AK.

Revision Number	Date Approved	Pages Affected	Description of Revision
15	06/20/11	Various	DCR-10191. Incorporate the Class 2 PMR to add the TRUPACT-III and Standard Large Box 2. Also incorporated editorial comments from the Class 1 permit notification dated 07/11/2011.
16	06/14/12	Various	DCR-10657. Annual review. Added sentence on Page 128. Incorporated ITG BLUESHEET-073. Updated acronyms and references.

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MP-TRUW-8.2, Rev. 16	Issued: 06/21/12	Effective: 06/22/12
Quality Assurance Project Plan		

A. INTRODUCTION

The Advanced Mixed Waste Treatment Project (AMWTP) characterizes and certifies contact-handled (CH) transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP). The AMWTP has developed this Quality Assurance Project Plan (QAPjP) to comply with the *WIPP Hazardous Waste Facility Permit* (NMED 1999), *Attachment C, Waste Analysis Plan* (WIPP-WAP).The format of this document parallels that of the WIPP-WAP.

A-0 Scope

This QAPjP describes how the characterization and certification requirements of the WIPP-WAP are met at the AMWTP. The Site Project Manager (SPM) will ensure any conflicts between this QAPjP and any existing WIPP-WAP requirements are resolved.

This QAPjP implements the applicable requirements of United States (U.S.) Department of Energy (DOE)/Carlsbad Field Office (CBFO)-94-1012, Quality Assurance Program Document, which identifies the quality of data necessary to maintain quality.

A-1 Overview

The AMWTP is operated under a non-commercial contract with the DOE and is located at the Idaho National Laboratory's (INL) Radioactive Waste Management Complex (RWMC).

The AMWTP plans to dispose of approximately 65,000 m^3 of contact-handled transuranic (CH-TRU) waste at the WIPP. These wastes are byproducts of nuclear weapons production and are identified in terms of waste streams based on the processes that produced them. Each waste stream is assigned to a waste category summary to facilitate Resource Conservation and Recovery Act (RCRA) waste characterization and reflect the final waste forms acceptable for WIPP disposal. TRU mixed waste processed at the AMWTP is currently stored in drums, boxes, and bins in the Transuranic Storage Area (TSA) Retrieval Enclosure (RE) and in Type II storage modules at the RWMC.

The AMWTP has the capability of treating specific waste streams to be retrieved from the TSA-RE and may treat other applicable INL and DOE national waste streams. The majority of TRU mixed waste within the TSA-RE is CH-TRU. Although some remote-handled (RH) TRU waste will be encountered during the retrieval operations, the RH-TRU waste will be segregated from the CH-TRU and will not be shipped to the WIPP for disposal.

Approximately 95% of the TRU waste stored at the RWMC contains hazardous waste regulated under the RCRA. Mixed waste refers to waste that is both radioactive and contaminated by hazardous constituents, and is regulated by both the Atomic Energy Act and RCRA. Some of the waste stored at the RWMC may also contain Toxic Substance Control Act (TSCA)-regulated material such as polychlorinated biphenyls (PCBs) and asbestos.

Capabilities established to support the TRU waste management mission include: storage; characterization (nondestructive examination [NDE], nondestructive assay [NDA], headspace gas sampling [HSGS] and analysis, and solid sampling); and treatment, as appropriate. Transportation and chemical analysis of homogeneous solids are performed by the Central Characterization Project (CCP).

A-2 Description of the Site

The AMWTP is located in the southwest corner of the INL. The INL, located approximately 30 miles west of Idaho Falls, encompasses 900 square miles. Facilities supporting characterization, treatment, certification, and transportation activities are located within the INL at the RWMC.

B. PROJECT DESCRIPTION

Consistent with requirements in the WIPP-WAP, AMWTP uses acceptable knowledge (AK) to initially characterize TRU waste which provides the basis for identifying TRU waste streams eligible for WIPP disposal. A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

Once a waste stream has been identified, characterization information must be collected in order to complete and submit the WIPP Waste Stream Profile Form (WSPF) to the CBFO for approval. Waste characterization activities include the following, although not all of these techniques are used on each container: AK, HSGS, and analysis, homogeneous solids waste sampling and analysis, radioassay (RA), real-time radiography (RTR), and visual examination (VE). RA characterization is covered in MP-TRUW-8.1, *Certification Plan for INL Transuranic Waste*. Data generated by these methods are assessed on a waste stream basis or lot. For each waste stream characterized, the SPM determines if sufficient data have been collected to determine the waste parameters required for completion of the WSPF. After a WSPF has been submitted to and approved by CBFO, characterization activities continue on subsequent lots of the waste stream to verify consistency with the WSPF.

B-0 AMWTP Organization and Responsibilities

The AMWTP organization and responsibilities for implementation of the requirements of this QAPjP are described in the following sections. Figure B-1 provides the organization structure.

President and Project Manager has overall responsibility for all aspects of the AMWTP, which includes permitting, operations, characterization, and certification.

Plant Manager is responsible for the production, maintenance, and implementation necessary to support waste treatment and disposal.

TRU Programs Manager is responsible for the management and direction of activities related to the characterization, certification, transportation, and disposal of TRU waste destined for WIPP. The TRU Programs Manager's responsibilities include the following:

- Providing the necessary planning, organization, direction, control, resources, and support to achieve the defined objectives
- Ensuring compliance with all applicable regulations, DOE orders and requirements, and applicable Federal, state, and local laws
- Developing, implementing, and maintaining plans, policies, and procedures that implement WIPP requirements
- Ensuring that adequate technical and quality assurance (QA) training are provided for personnel performing WIPP activities.
- Ensuring that personnel adhere to procedures for the generation, identification, control, and protection of QA records
- Identifying, investigating, reporting, and correcting quality problems.

Site Project Manager has overall responsibility for TRU waste characterization and certification activities and is responsible for the following:

- Development, maintenance, review, and implementation of procedures and reports
- Review and approval of the QAPjP and subsequent revisions
- Waste selection and tracking
- Validation/verification of data
- Reconciliation of data with data quality objectives (DQOs)
- Assignment of EPA hazardous waste numbers (HWNs)
- Preparation and submission of SPM Data Validation Summaries, WSPFs, Characterization Information Summaries, and Waste Stream Characterization Packages (if requested by CBFO)
- Review of the QA/semiannual report, commenting if appropriate, and forwarding a copy of the report with comments to DOE-ID.

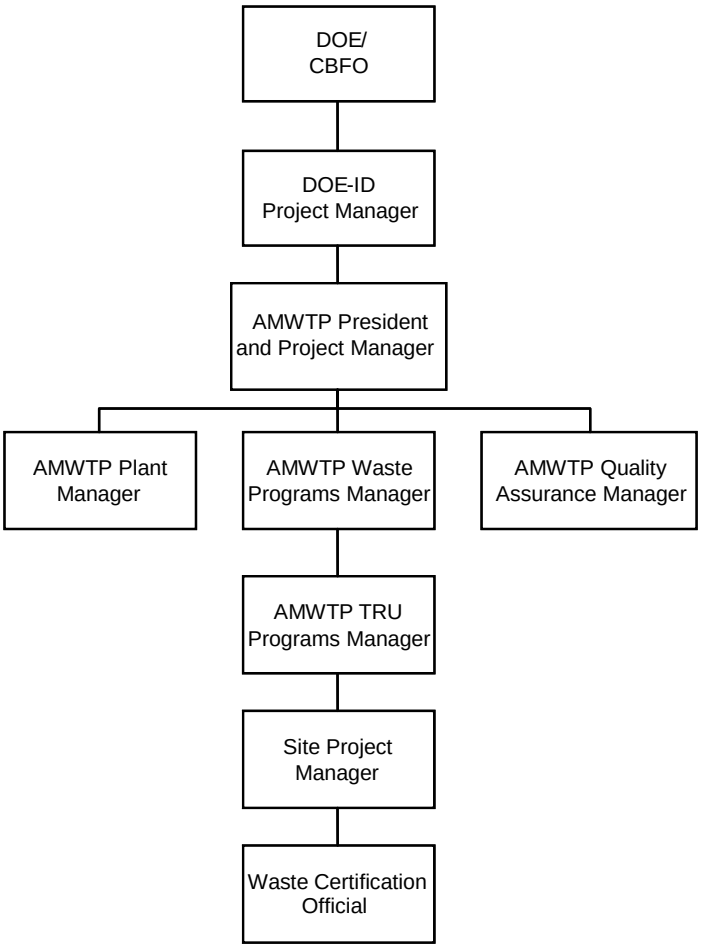


Figure B-1. AMWTP Organization.

C. WASTE ANALYSIS PLAN

C-0 Introduction and Highlights

This QAPjP has been prepared for the management, storage, or disposal activities to be conducted at the WIPP facility to meet the requirements set forth in 20.4.1.500 New Mexico Administrative Code (NMAC; incorporating 40 Code of Federal Regulations [CFR] §264.13). Guidance in the most recent U.S. Environmental Protection Agency (EPA) manual on waste analysis has been incorporated into the preparation of the WIPP-WAP (EPA 1994a). This QAPjP includes test methods, details of planned waste sampling and analysis for complying with the general waste analysis requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.13), a description of the waste shipment screening and verification process, and a description of the quality assurance/quality control (QA/QC) program. The AMWTP will implement the requirements of the WIPP-WAP prior to offering waste for shipment and disposal at WIPP.

TRU mixed wastes stored at the AMWTP were generated by DOE generator/storage sites by various specific processes and activities. Examples of the major types of operations that generated these wastes include:

- Production of Nuclear Products – Production of nuclear products includes reactor operation, radionuclide separation/finishing, and weapons fabrication and radionuclide separation/finishing processes. More specifically, wastes consist of residues from chemical processes, air and liquid filtration, casting, machining, cleaning, product quality sampling, analytical activities, and maintenance and refurbishment of equipment and facilities.

- Plutonium Recovery – Plutonium recovery wastes are residues from the recovery of plutonium-contaminated molds, metals, glass, plastic, rags, salts used in electro refining, precipitates, firebrick, soot, and filters.

- Research and Development (R&D) – R&D projects include a variety of hot cell or glovebox activities that often simulate full-scale operations described above, producing similar TRU mixed wastes. Other types of R&D projects include metallurgical research, actinide separations, process demonstrations, and chemical and physical properties determinations.

- Decontamination and Decommissioning – Facilities and equipment that are no longer needed or usable are decontaminated and decommissioned, resulting in TRU mixed wastes consisting of scrap materials, cleaning agents, tools, piping, filters, Plexiglas, gloveboxes, concrete rubble, asphalt, cinder blocks, and other building materials.

TRU mixed waste contains both TRU radioactive and hazardous components, as defined in Permit Section 1.5.7. TRU and TRU mixed waste are designated and separately packaged as either CH or RH based on the radiological dose rate at the surface of the waste container.

The hazardous components of the TRU mixed waste to be managed at the WIPP are designated in Table C-9. Some of the waste may also be identified by unique state hazardous waste codes or numbers. These wastes are acceptable at WIPP as long as the WIPP Hazardous Waste Permit Treatment, Storage, and Disposal Facility (TSDF) Waste Acceptance Criteria (WAC) in Part 2 are met. This QAPjP describes the measures that will be taken to ensure that the TRU mixed wastes received at the WIPP facility are within the scope of Table C-9 as established by 20.4.1.500 NMAC (incorporating 40 CFR §264), and that they comply with unit-specific requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.600), Miscellaneous Units.

Some TRU waste is retrievably stored at the AMWTP. Additional TRU waste is generated and packaged into containers. Retrievably stored waste is defined as TRU mixed waste generated after 1970 and before the New Mexico Environment Department (NMED) notifies the CBFO, by approval of the final audit report, that the characterization requirements of the WAP have been implemented. Newly generated waste is defined as TRU mixed waste generated after NMED approves the final audit report. Acceptable Knowledge (AK) information is assembled for both retrievably stored and newly generated waste. Waste characterization of retrievably stored TRU mixed waste will be performed on an ongoing basis, as the waste is retrieved. Waste characterization of newly-generated TRU mixed waste is typically performed as it is generated, although some characterization occurs post-generation. Waste characterization requirements for retrievably store and newly-generated TRU mixed waste differ, as discussed in Sections C-3d(1) and C-3d(2).

Waste characterization is defined in Part 1 of the WIPP RCRA Permit as the activities performed by the waste generator to satisfy the general waste analysis requirements of 20.4.1.500 NMAC (incorporating 40 CFR §240.13[a]) before waste containers have been certified for disposal at WIPP. The characterization process for WIPP waste is presented in Figure C-2. AMWTP's waste characterization program was first audited by CBFO in August 2003, with NMED approving the final audit report. After this, AMWTP determines whether AK alone is sufficient for characterization, or whether a Sampling and Analysis Program in conjunction with AK is necessary to adequately characterize wastes. If an AK Sufficiency Determination is sought, information is provided to the CBFO for their review and provisional approval. NMED determination of adequacy of the AK information is required before final approval by the CBFO. If the sampling and analysis route is chosen, AMWTP proceeds to sample and analyze waste in conjunction with AK and in accordance with this QAPjP. Once an AK Sufficiency Determination is obtained, or when required sampling and analysis data are obtained, AMWTP would then prepare and submit the WSPF for CBFO approval. Once the WSPF is approved, AMWTP may ship waste to WIPP. AMWTP will provide sufficient data to allow CBFO to perform waste confirmation prior to shipment of the waste from AMWTP to WIPP pursuant to Section C7 by performing RTR or VE of a representative subpopulation of certified waste containers, to ensure that the wastes meet the applicable requirements of the TSDF-WAC.

C-0a Waste Characterization

Characterization requirements for individual containers of TRU mixed waste are specified on a waste stream basis. A waste stream is defined as waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. Waste streams are grouped by Waste Matrix Code Groups that relate to the physical and chemical properties of the waste. The AMWTP uses the characterization techniques described in the WIPP-WAP to assign appropriate Waste Matrix Code Groups to waste streams for WIPP disposal. The Waste Matrix Code Groups are solidified inorganics, solidified organics, salt waste, soils, lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal. Waste Matrix Code Groups can be grouped into three Summary Category Groups: Homogeneous Solids (Summary Category S3000), Soil/Gravel (Summary Category S4000), and Debris Waste (Summary Category S5000).

TRU mixed waste are initially categorized into the three broad Summary Category Groups that are related to the final physical form of the waste. Waste characterization requirements for these Summary Category Groups are specified separately in Section C-2 of this document. Each of the three broad groups is described below.

- S3000 – Homogeneous Solids

  Homogeneous solids are defined as solid materials, excluding soil, that do not meet the NMED criteria for classification as debris (20 NMAC 4.1.800 (incorporating 40 CFR §268.2[g] and [h]). Included in the series of homogeneous solids are inorganic process residues, inorganic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this Summary Category Group based on the specific waste stream types and final waste form. This Summary Category Group is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume homogeneous solids.

- S4000 – Soils/Gravel

  This Summary Category Group includes S4000 waste streams that are at least 50 percent by volume soil/gravel. This Summary Category Group is expected to contain toxic metals.

- S5000 – Debris Wastes

  This Summary Category Group includes heterogeneous waste that is at least 50 percent by volume materials that meet the criteria specified in 20 NMAC 4.1.800 (incorporating 40 CFR §268.2[g]). Debris means solid material exceeding a 2.36-inch (60 millimeter [mm]) particle size that is intended for disposal and that is:

  1. A manufactured object, or

  2. Plant or animal matter, or

  3. Natural geologic material.

  Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material.

If a waste does not include at least 50% of any given Summary Category Group by volume, characterization shall be performed using the waste characterization process required for the category constituting the greatest volume of waste for that waste stream (see Section C-3d).

The AMWTP characterizes waste in accordance with this QAPjP and ensures that waste proposed for storage and disposal at WIPP meets the applicable requirements of the WIPP Hazardous Waste Permit TSDF-WAC. The AMWTP assembles the AK information into an auditable record[a] for the waste stream as described in Attachment C4. For those waste streams with an approved AK Sufficiency Determination, sampling and analysis per the methods described in Attachments C1 and C2 are not required.

All waste characterization activities specified in this QAPjP are carried out at the AMWTP and, as applicable, at the WIPP approved laboratories in accordance with the WIPP-WAP. CBFO will audit generator/storage site waste characterization programs and activities as described in Section C-3. Waste characterization activities at the AMWTP include the following, although not all these techniques will be used on each container, as discussed in Section C-3:

- Real-time radiography, which is an x-ray technique to determine physical contents of containers

- Visual examination of opened containers as an alternative way to determine their physical contents

a. "Auditable Records" are those records which allow the CBFO to conduct a systematic assessment, analysis, and evaluation of the site's compliance with the QAPjP and the WIPP RCRA Permit.

- Headspace-Gas Sampling to determine volatile organic compound (VOC) content of gases in the void volume of the containers

- Sampling and Analysis of waste forms that are homogeneous and can be representatively sampled to determine concentrations of hazardous waste constituents and toxicity characteristic (TC) contaminants of waste in containers

- Compilation of AK documentation into an auditable record.

C-0b AK Sufficiency Determination

AMWTP may submit a request to the CBFO for an AK Sufficiency Determination (Determination Request) to meet all or part of the waste characterization requirements. The contents of the Determination Request are specified in Attachment C4, Section C4-3d. The Determination Request may take one of the following forms:

Scenario 1 Radiography or VE of the waste stream is not required, and Chemical Sampling and Analysis is not required;

Scenario 2 Radiography or VE of the waste stream is not required, but Chemical Sampling and Analysis of a representative sample of the waste stream is required; or

Scenario 3 Chemical Sampling and Analysis is not required, but RTR or VE of 100% of the containers in the waste stream is required.

The CBFO shall evaluate the Determination Request for completeness and technical adequacy. This evaluation shall include, but be limited to whether the Determination Request is technically sufficient for the following:

- The Determination Request must include all information specified in Attachment C4, Section C4-3d.

- The AK Summary must identify relevant hazardous constituents and must correctly identify all TC and listed EPA HWNs.

- All EPA HWN assignments must be substantiated by supporting data and, if not, whether this lack of substantiation compromises the interpretation.

- Resolution of data discrepancies between different AK sources must be technically correct and documented.

- The AK Summary must include all the identification of waste material parameter weights by percentage of the material in the waste stream and determinations must be technically correct.

- All prohibited items specified in the WIPP Hazardous Waste Permit TSDF-WAC should be addressed and conclusion drawn must be technically adequate and substantiated by supporting information.

- If the AK record includes process control information specified in Attachment C4, Section C4-3b, the information should include procedures, waste manifests, or other documentation demonstrating that the controls were adequate and sufficient.

- The AMWTP must provide the supporting information necessary to substantiate technical conclusions within the Determination Request and this information must be correctly interpreted.

The CBFO will review the Determination Request for technical adequacy and compliance with the requirements of the WIPP-WAP, using trained and qualified individuals in accordance with the standard operating procedures that, at a minimum, address all of the technical and procedural requirements listed above. CBFO shall resolve comments with AMWTP and the CBFO may change the scope of the Determination Request to one of the three scenarios.

If CBFO determines that the AK is sufficient, they will inform the public of the Determination Request, the CBFO evaluation of it, and the date and time of a public meeting to provide information to and solicit comments from interested members of the public hearing regarding the Determination Request. Notice of the meeting and comment period shall be provided by the following:

1. Written notice to all individuals on the facility mailing list

2. Public notice in area newspapers, including the *Carlsbad Current-Argus*, *Albuquerque Journal*, and *Santa Fe New Mexican*

3. Notice on the WIPP home page

4. E-mail notification as specified in Permit Section 1.11.

CBFO will take written comment of the Determination Request for at least 30 days following the public meeting. CBFO will compile all comments, including any disagreement between the CBFO and commenters.

If CBFO provisionally approves the Determination Request, they may forward it along with all relevant information submitted with the Determination Request to NMED for an evaluation that the provisional approval made by the CBFO is adequate. CBFO will also provide NMED with a

separate appendix to the Determination Request, the compilation of all comments, and CBFO's response to each comment. After submitting a Determination Request to NMED, the CBFO will post a link to the transmittal letter to NMED on the WIPP Home Page and inform those on the e-mail notification list as specified in Permit Section 1.11. Based on the results of NMED's evaluation, the CBFO will notify the AMWTP whether the AK information is sufficient and the Determination Request is approved. The CBFO will not approve a Determination Request that NMED has determined to be inadequate unless the AMWTP resolves the inadequacies and provides the resolution to NMED for evaluation of adequacy. Should the inadequacies not be resolved to NMED's satisfaction, the CBFO shall not submit a Determination Request for the same waste stream at a later date. CBFO shall not submit a Determination Request if a previous Determination Request is pending evaluation by NMED.

In the event CBFO disagrees, in whole or in part, with an evaluation performed by NMED resulting in a determination by NMED that CBFO's provisional approval for a particular waste stream is inadequate, CBFO may seek dispute resolution. The dispute resolution process is specified in Part 1. The Secretary's final decision under Permit Section 1.16.4 shall constitute a final agency action.

By July 1 of each year, the CBFO will submit to NMED a list of waste streams that CBFO may submit for an AK Sufficiency Determination during the upcoming federal fiscal year. The CBFO will post a link to the transmittal letter to NMED and announce a public meeting to discuss the list with interested members of the public on the WIPP Home Page and inform those on the e-mail notification list as specified in Permit Section 1.11.

If AMWTP does not submit a Determination Request, or if the CBFO does not approve a Determination Request, or if NMED finds that the CBFO's provisional approval of a Determination Request is inadequate, the AMWTP shall perform RTR or VE on 100% of the containers in a waste stream and chemical sampling and analysis on a representative sample of the waste stream using HSGS and analysis (for debris wastes) or solids sampling and analysis (for homogeneous solid or soil/gravel waste) as specified in Attachments C1 and C2.

If AMWTP submits a Determination Request, the CBFO provisionally approves the Determination Request as Scenario 1, and NMED finds that the CBFO's provisional approval is adequate, neither RTR or VE nor chemical sampling and analysis of the waste stream is required.

If AMWTP submits a Determination Request, the CBFO provisionally approves the Determination Request as Scenario 2, and NMED finds that the CBFO's provisional approval is adequate, chemical sampling and analysis of a representative sample of the waste stream is required, but RTR or VE is not required.

If AMWTP submits a Determination Request, the CBFO provisionally approves the Determination Request as Scenario 3, and NMED finds that the CBFO's provisional approval is adequate, RTR or VE of 100% of the containers in the waste stream is required, but chemical sampling and analysis is not required.

C-0c Waste Stream Profile Form Completion

After a complete AK record has been compiled and either a Determination Request has been approved by the CBFO or the AMWTP has completed the applicable representative sampling and analysis requirements specified in Attachments C1 and C2, AMWTP will complete a WSPF and Characterization Information Summary (CIS). The requirements for the completion of a WSPF and a CIS are specified in Attachment C3, Sections C3-12b(1) and C3-12b(2), respectively.

The WSPF and CIS for the waste stream resulting from waste characterization activities are transmitted to the CBFO, who reviews them for completeness and screens them for acceptance prior to loading any TRU mixed waste into the CH or RH Packaging, as described in Section C-4. The review and approval process will ensure the submitted waste analysis information is sufficient to meet the DQOs for AK in Section C-4a(1) and allow the CBFO to demonstrate compliance with the requirements of this QAPjP. Only TRU mixed waste and TRU waste that has been characterized in accordance with the WIPP-WAP and that meets the WIPP Hazardous Waste Permit TSDF-WAC will be accepted at the WIPP facility for disposal. Upon notification of DOE's approval of the WSPF by the CBFO, the AMWTP may be authorized to ship waste to WIPP.

In the event CBFO requests detailed information on a waste stream, the AMWTP will provide a Waste Stream Characterization Package (Section C3-12b[2]). For each waste stream, this package will include the WSPF, the CIS, and the complete AK summary. The Waste Stream Characterization Package will also include specific Batch Data Reports (BDRs) and raw analytical data associated with waste container characterization as requested by CBFO.

C-0d Waste Confirmation

The CBFO will perform waste confirmation on a representative subpopulation of each waste stream shipment after certification and prior to shipment pursuant to Attachment C7. The CBFO will use radiography, review of radiography audio/video recordings, VE, or review of VE records (e.g., VE data sheets or packaging logs), to examine at least 7 percent of each waste stream shipment to confirm that the waste does not contain ignitable, corrosive, or reactive waste. Waste confirmation will be performed by the CBFO prior to shipment of the waste from AMWTP to WIPP.

C-1 Identification of TRU Mixed Waste to be Managed at the WIPP Facility

C-1a Waste Stream Identification

TRU mixed waste destined for disposal at WIPP is characterized on a waste stream basis. The AMWTP delineates waste streams using AK. Required AK is specified in Section C-3b and C4.

All of the waste within a waste stream may not be accessible for sampling and analysis at one time. Attachment C2 addresses the requirements for selecting waste containers used for characterization of waste streams as they are generated or retrieved.

C-1b Waste Summary Category Groups and Hazardous Waste Accepted at the WIPP Facility

Once a waste stream has been delineated, a Waste Matrix Code is assigned to the waste stream based on the physical form of the waste. Waste streams are then assigned to one of three broad Summary Category Groups: S3000-Homogeneous Solids, S4000-Soils/Gravel, and S5000-Debris Wastes. These Summary Category Groups are used to determine further characterization requirements.

The AMWTP ships only those TRU mixed waste streams which have EPA HWNs already listed in Table C-9. Some of the waste may also be identified by unique state hazardous waste codes or numbers. These wastes are acceptable at the WIPP as long as the WIPP Hazardous Waste Permit TSDF-WAC is met. The AMWTP will perform characterization of all waste streams as required by the WIPP-WAP. If during the characterization process, new EPA HWNs are identified; those wastes will not be shipped for disposal to the WIPP facility until the EPA HWN has been added to the WIPP Hazardous Waste permit and AMWTP WSPF.

C-1c Waste Prohibited at the WIPP Facility

The following TRU mixed wastes are prohibited at WIPP and therefore will not be shipped to the WIPP facility for disposal:

- Liquid waste is not acceptable at WIPP. Liquid in the quantities delineated below is acceptable.
    - Observable liquid shall be no more than 1 percent by volume of the outermost container at the time of RTR or VE.
    - Internal containers with more than 60 milliliters or 3 percent by volume observable liquid, whichever is greater, are prohibited.
    - Containers with EPA HWN U134 assigned shall have no observable liquid.

- Overpacking the outermost container that was examined during radiography or visual examination or redistributing untreated liquid within the container shall not be used to meet the liquid volume limits.

- Non-radionuclide pyrophoric materials, such as elemental potassium.

- Hazardous wastes not occurring as co-contaminants with TRU mixed waste (non-mixed hazardous waste).

- Wastes incompatible with backfill, seal and panel closures materials, container and packaging materials, shipping container materials, or other wastes.

- Wastes containing explosives or compressed gases.

- Wastes with PCBs not authorized under an EPA PCB waste disposal authorization.

- Wastes exhibiting the characteristic of ignitability, corrosivity, or reactivity (EPA HWNs D001, D002, or D003).

- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8, unless specifically approved through a WIPP RCRA Permit Modification.

- Any waste container from a waste stream (or waste stream lot), which has not undergone either radiographic examination or VE of a statistically representative subpopulation of the waste stream in each shipment, pursuant to Attachment C7.

- Any waste container from a waste stream, which has not been preceded by an appropriate, certified WSPF (refer to Section C-ld of this document).

Before shipping a container holding TRU mixed waste to the WIPP facility, CBFO will perform waste confirmation activities pursuant to Attachment C7 on each waste stream shipment to confirm that the waste does not contain ignitable, corrosive, or reactive waste and the assigned EPA HWNs are allowed for storage and disposal by the WIPP RCRA Permit. Section C-4 and Attachment C7 include descriptions of the waste confirmation processes that are conducted prior to shipping waste to the WIPP facility.

Containers are vented through filters allowing any gases that are generated by radiolytic and microbial processes within a waste container to escape, thereby preventing over pressurization or development of conditions within the container that would lead to the development of ignitable, corrosive, reactive, or other characteristic wastes.

To ensure the integrity of the WIPP facility, waste streams identified to contain incompatible materials or materials incompatible with waste containers are not shipped to the WIPP until after they have been treated to remove the incompatibility. Only those waste streams that are compatible or have been treated to remove incompatibilities are shipped to the WIPP.

C-1d Control of Waste Acceptance

Every waste stream shipped to WIPP shall be preceded by a WSPF (Figure C-1) and a CIS. The required WSPF information and the CIS elements are discussed in Section C3-12b(1) and Section C3-12b(2).

The AMWTP provides the WSPF for each waste stream to CBFO for acceptance prior to shipping the waste (refer to MP-TRUW-8.14, *Preparation of Waste Stream Profile Forms*) to the WIPP. The WSPF and CIS will be transmitted to CBFO for each waste stream. If continued waste characterization reveals discrepancies that identify different EPA HWNs or indicates that the waste belongs to a different waste stream, the waste is redefined to a separate waste stream, and a new WSPF is submitted. The AMWTP will develop criteria to determine the specific circumstances under which a WSPF is revised, versus when a new WSPF is required. These criteria will be evaluated during site audits (Attachment C6). Any time CBFO requests additional information concerning a waste stream, the AMWTP will provide a Waste Stream Characterization Package. The option to request additional information ensures that waste being offered for disposal is adequately characterized and accurately described in the WSPF.

C-1e Waste Generating Processes at the WIPP Facility

The requirements contained in this section are specific to the WIPP facility. Therefore, these requirements have not been addressed in this document.

C-2 Waste Characterization Program Requirements and Waste Characterization Parameters

AMWTP has developed procedures which specify programmatic waste characterization requirements. CBFO evaluates the procedures during audits conducted under the CBFO Audit and Surveillance Program (Section C-5a[3]), and may also evaluate the procedures as part of the review and approval process of the WSPF. AMWTP must notify CBFO and obtain approval prior to making data-affecting modifications to procedures (Attachment C3, Section C3-15). Program procedures shall address the following minimum elements:

- Waste characterization and certification procedures for retrievably stored and newly generated wastes to be sent to the WIPP facility.

- Methods used to ensure prohibited items are documented and managed. These will include procedures for performing RTR, VE, or treatment, if these methods are used to ensure prohibited items are not present in the waste prior to shipment of the waste to WIPP.

- Procedures used to verify packaging configurations to determine the correct drum age criteria (DAC) if HSGS and analysis is used to collect waste characterization information per Section C1-1a(1) of this QAPjP.

- Identify the organizations responsible for compliance with waste characterization and certification procedures.

- Identify the oversight procedures and frequency of actions to verify compliance with waste characterization and certification procedures.

- Develop training specific to waste characterization and certification procedures.

- Ensure that personnel may stop work if noncompliance with waste characterization or certification procedures is identified.

- Develop a nonconformance process that complies with the requirements in Attachment C3 of this QAPjP to document and establish corrective actions.

- As part of the corrective action process, assess the potential time frame of the noncompliance, the potentially affected waste populations, and the reassessment and recertification of those wastes.

- A list of all approved EPA HWNs which are acceptable at WIPP is included in Table C-9.

For those waste streams or containers that are not amenable to RTR (e.g., RH TRU mixed waste, direct loaded ten-drum overpacks [TDOPs]) for waste confirmation by CBFO pursuant to Attachment C7, AMWTP VE data may be used for waste acceptance. In those cases, the CBFO will review the AMWTP VE procedures to ensure that data sufficient for the CBFO's waste acceptance activities pursuant to Attachment C7 will be obtained and the procedures meet the minimum requirements for VE specified in Attachment C1, Section C1-4.

The following waste characterization parameters are obtained at the AMWTP:

- Determination whether TRU mixed waste streams comply with the applicable provisions of the WIPP Hazardous Waste Permit TSDF-WAC
- Determination whether TRU mixed wastes exhibit a hazardous characteristic (20.4.1.200 NMAC incorporating 40 CFR, §261, Subpart C)
- Determination whether TRU mixed waste are listed (20.4.1.200 NMAC incorporating 40 CFR §261, Subpart D)

- Estimation of waste material parameter weights.

Tables C-1, C-2, C-3, and C-4 provide the parameters of interest for the various constituent groupings and analytical methodologies. The following sections provide a description of the acceptable methods to evaluate these parameters for each Summary Category Group.

C-3 Generator Waste Characterization Methods

The characterization techniques used by the AMWTP includes AK and may also include, as necessary, HSGS and analysis, RTR, VE, and homogeneous waste sampling and analysis. AMWTP receives off-site DOE CH-TRU waste that may require generator requested characterization (e.g., solid sampling) or characterization, profiling, and certification by AMWTP for disposal at WIPP. All characterization activities are performed in accordance with this QAPjP. Table C-5 provides a summary of the characterization requirements for TRU mixed waste.

C-3a Sampling and Analytical Methods

C-3a(1) Headspace Gas Sampling and Analysis

Representative HSGS and analysis is used by the AMWTP to determine the types and concentrations of VOCs in the void volume of randomly selected waste containers in order to resolve the assignment of EPA HWNs for those debris waste streams for which an AK Sufficiency Determination Request has not been approved by the CBFO. In addition, VOC constituents are compared to those assigned by AK which may include an analysis of radiolytically derived VOCs. The AMWTP may also consider radiolysis and packaging materials when assessing the presence of hazardous constituents in the headspace gas results, and whether radiolysis would generate wastes which exhibit the TC. Refer to Section C4 for additional clarification regarding EPA HWN assignment and headspace gas results. The methods for random selection of containers for HSGS and analysis are specified in Attachment C2. HSGS and analysis shall be subject to the CBFO Audit and Surveillance Program (Attachment C6).

In accordance with EPA convention, identification of hazardous constituents detected by gas chromatography/mass spectrometry (GC/MS) methods that are not on the list of target analytes shall be reported. These compounds are reported as tentatively identified compounds (TICs) in the analytical BDR and shall be added to the target analyte list if detected in a given waste stream, if they appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, and if they are reported in 25% of the waste containers sampled from a given waste stream. The headspace gas analysis method quality assurance objectives (QAOs) are specified in Section C3.

C-3a(2) Homogeneous and Soil/Gravel Waste Sampling and Analysis

Representative homogeneous and soil/gravel waste sampling and analysis shall be used by AMWTP to resolve the assignment of EPA HWNs for homogeneous and soil/gravel waste streams for which an AK Sufficiency Determination Request has not been approved by the CBFO. Sampling of homogeneous and soil/gravel wastes results in the collection of a sample that is used to resolve the assignment of EPA HWNs. Sampling is accomplished through coring or other EPA approved sampling, which is described in Section C1. For those waste streams defined as Summary Category Groups S3000 or S4000, debris that may also be present within these wastes is not sampled. The waste containers for sampling and analysis are randomly selected from the population of containers for the waste stream. The random selection methodology is specified in Section C2. Homogeneous and soil/gravel sampling and analysis shall be subjected to the CBFO's Audit and Surveillance Program (Attachment C6).

Totals or Toxicity Characteristic Leaching Procedure (TCLP) analyses for VOCs, semivolatile organic compounds (SVOCs), and RCRA-regulated metals (refer to Table C-3 and Table C-4) are used to determine waste parameters and to determine if a waste exhibits a TC for compounds specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. The results from these analyses are used to determine if a waste exhibits a TC. The mean concentration of TC contaminants is calculated for each waste stream such that it can be reported with an upper 90 percent confidence limit (UCL_{90}). The UCL_{90} values for the mean measured contaminant concentrations in a waste stream are compared to the specified regulatory levels in 20 NMAC 4.1.200 (incorporating 40 CFR §261 Subpart C), expressed as total/TCLP values, to determine if the waste stream exhibits a TC. A comparison of total analyses and TCLP analyses is presented in Appendix C3 of the WIPP RCRA Part B Permit Application, and a discussion of the UCL_{90} is included in Section C2. If TC wastes are identified, these will be compared to those determined by AK and TC waste numbers will be revised, as warranted. Refer to Section C4 for additional clarification regarding EPA HWN assignment and homogeneous solid and soil/gravel analytical results.

C-3a(3) Laboratory Qualification

Chemical analysis of AMWTP homogeneous solids/soils is performed by the INL/CCP Analytical Chemistry Laboratory (ACL) which is audited and certified as a separate program and qualified through participation in the Performance Demonstration Program (PDP). Required QAOs are specified in Section C3.

Analytical methods used by CCP (1) satisfy all of the appropriate QAOs, and (2) are implemented through laboratory-documented standard operating procedures. These analytical QAOs are discussed in detail in Section C3 of this document.

C-3b Acceptable Knowledge

AK is used in TRU mixed waste characterization activities in five ways:

- To delineate TRU mixed waste streams
- To assess whether TRU mixed wastes comply with the WIPP Hazardous Waste Permit TSDF-WAC
- To assess whether TRU-mixed wastes exhibit a hazardous characteristic (20.4.1.200 NMAC, incorporating 40 CFR §261, Subpart C)
- To assess whether TRU mixed wastes are listed (20 NMAC 4.1.200, incorporating 40 CFR §261, Subpart D)
- To estimate waste material parameter weights.

AK is discussed in detail in Section C4, which outlines the minimum set of requirements and DQOs that are met by the AMWTP in order to use AK. In addition, Section C-5a(3) of this QAPjP describes the assessment of AK through the CBFO's Audit and Surveillance Program.

C-3c Radiography and Visual Examination

Radiography and VE are nondestructive qualitative and quantitative techniques used to identify and verify waste container contents as specified in Attachment C1. AMWTP performs RTR or VE on 100 percent of CH-TRU mixed waste containers in waste streams except for those waste streams for which the CBFO approves a Scenario 1 or Scenario 2 Determination Request. No RH-TRU mixed waste will be shipped to WIPP for storage or disposal without documentation of RTR or VE of 100 percent of the containers as specified in Attachment C1.

Radiography and/or VE are used, when necessary, to examine a waste container to verify its physical form. These techniques can detect observable liquid in excess of TSDF-WAC limits and containerized gases, which are prohibited for WIPP disposal. The prohibition of liquid in excess of TSDF-WAC limits and containerized gases prevents the shipment of corrosive, ignitable, or reactive wastes.

Radiography and/or VE are also used to verify that the physical form of the waste matches its waste stream description (i.e., Homogeneous Solids, Soil/Gravel, or Debris Waste [including uncategorized metals]). If the physical form does not match the waste stream description, the waste is designated as another waste stream and assigned the preliminary EPA HWNs associated with that new waste stream assignment. That is, if RTR and/or VE indicate that the waste does not match the waste stream description arrived at by AK characterization, a nonconformance report (NCR) is completed, the inconsistency is resolved as specified in Section C4, and the

NCR will be dispositioned as specified in Section C3-13 of this document. The proper waste stream assignment is determined (including preparation of a new WSPF), the correct EPA HWNs are assigned, and the resolution is documented. Refer to Attachment C4 for a discussion of AK and its verification process.

When VE is used, the detection of any liquid in non-transparent internal containers, detected from shaking the internal container, will be handled by assuming that the internal container is filled with liquid and adding this volume to the total liquid in the container being characterized using VE. The container being characterized using VE will be rejected and/or repackaged to exclude the internal container if it is over the WIPP Hazardous Waste Permit TSDF-WAC limits. When RTR is used, or VE of transparent containers is performed, if any liquid in internal containers is detected, the volume of liquid is added to the total for the container being characterized using RTR or VE.

Radiography, or the equivalent, will be used as necessary on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. Radiographic examination protocols and QA/QC methods are provided in Section C1. Radiography and VE shall be subjected to the CBFO's Audit and Surveillance Program (Attachment C6).

C-3d Characterization Techniques and Frequency for Newly Generated and Retrievably Stored Waste

The AMWTP uses AK to delineate all TRU mixed waste containers into waste streams for the purposes of grouping waste for further characterization. The analyses performed may differ based on the waste stream and the physical form of the waste (i.e., heterogeneous debris waste cannot be sampled for totals analyses). Both retrievably stored and newly generated wastes are delineated in this fashion, though the types of AK used may differ. Section C-3b discusses the use of AK, sampling, and analysis in more detail. AK is discussed more completely in Section C4. Every TRU mixed waste stream will be assigned EPA HWNs based upon AK, and the AMWTP may resolve the assignment of EPA HWNs using headspace gas (Summary Category Group S5000 only) and solid sampling and analysis (Summary Category Groups S3000 and S4000 only).

In the CIS for each waste stream, the AMWTP will document its methods, and the findings from those methods, for determining the physical form of the waste and the presence or absence of prohibited items for both retrievably stored and newly generated waste.

Radiography and/or VE may be used to verify the physical form of retrievably stored TRU mixed waste. For newly generated waste, physical form and prohibited items may either be documented during packaging using VE or verified after packaging using RTR or VE.

For debris waste streams that do not have an AK Sufficiency Determination approved by the CBFO, containers selected in accordance with Attachment C2 from those waste streams are sampled and analyzed for VOCs in the headspace gas. Likewise, a statistically selected portion of homogeneous solids and soil/gravel waste stream are sampled and analyzed for RCRA regulated total VOCs, SVOCs, and metals when those waste streams do not have an AK Sufficiency Determination approved by CBFO. Sampling and analysis methods used for waste characterization are discussed in Section C-3a.

In the process of performing organic headspace and solid sample analyses, nontarget compounds may be identified. These compounds are reported as TICs. TICs reported in 25% of the samples and listed in 20 NMAC 4.1.200 (incorporating 40 CFR §261) Appendix VIII, are compared with AK data to determine if the TIC is in a listed hazardous waste in the waste stream. TICs identified through headspace gas analyses that meet the Appendix VIII list criteria and the 25 percent reporting criteria for a waste stream are added to the headspace gas waste stream target list, regardless of the hazardous waste listing associated with the waste stream. TICs subject to inclusion on the target analyte list that are TC parameters are added to the target analyte list regardless of origin because the hazardous waste designation for these numbers is not based on source. However, for TC and non-toxic F003 constituents, the AMWTP may take concentration into account when assessing whether to add an EPA HWN. TICs reported from the Totals VOC or SVOC analyses may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence is attributable to waste packaging materials or radiolytic degradation from AK documentation.

If the TIC associated with a total VOC or SVOC analysis cannot be identified as a component of waste packaging materials or as a product of radiolysis, the AMWTP will add these TICs to the list of hazardous constituents for the waste stream (and assign additional EPA listed HWNs, if appropriate). For TC compounds and non-toxic F003 constituents, the AMWTP may consider waste concentration when determining whether to change an EPA HWN. Refer to Attachment C3 for additional requirements on TIC identification.

Waste characterization solid sampling and analysis activities may differ for retrievably stored waste and newly generated waste. The waste characterization processes used by the AMWTP for both retrievably stored and newly generated waste streams will be evaluated during the CBFO audit of the site. The typical waste characterization data collection design for each type of waste is described in the following sections. Table C-1 provides a summary of hazardous waste characterization requirements for all TRU mixed waste characterization parameters.

Table C-5 summarizes the parameters, methods, and rationales for stored and newly generated TRU mixed wastes according to their waste forms.

TRU mixed waste that has been repackaged or treated may be shipped to the WIPP facility, but it shall retain the original waste stream's listed EPA HWN designation.

C-3d(1) Newly Generated Waste

The RCRA-regulated constituents in newly generated wastes will typically be documented at the time of generation based on AK for the waste stream. Newly generated TRU mixed waste characterization typically begins with the verification that the processes generating the waste have operated within established written procedures. Waste containers are delineated into waste streams using AK. AMWTP will document the methods used to delineate waste streams in the AK Record and AK Summary Report. Determination that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream may be accomplished either using VE during packaging or by performing RTR as specified in Section C1-3 for retrievably stored waste. Instead of using a video/audio tape and a single operator, the VE method for newly generated waste (or repackaged retrievably stored waste) may use a second operator, who is equally trained to the requirements stipulated in Attachment C1 to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. If the second operator cannot provide concurrence, correct actions[b] are taken as specified in Attachment C3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups may be characterized using different techniques than the waste in the Debris Waste Summary Category Group. The packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate DAC in accordance with Attachment C1, Section C1-1, may be documented as part of the characterization information collected during the packaging of newly generated waste or repackaging of retrievably stored waste for those containers of debris waste that will undergo HSGS and analysis.

C-3d(1)(a) Sampling of Newly Generated Homogeneous Solids and Soil/Gravel

When a Determination Request has not been approved by the CBFO, sampling and analysis of newly generated homogeneous solid and soil/gravel waste streams are conducted in accordance with the requirements specified in Attachment C1, Section C1-2. The number of newly generated homogeneous solid and soil/gravel waste containers to be sampled is determined using the procedure specified in Section C2-1, wherein a statistically selected portion of the waste will be sampled.

b. "Corrective Action" as used in the QAPjP does not mean corrective action as defined under HWA, RCRA, and their implementing regulations.

C-3d(2) Retrievably Stored Waste

All retrievably stored waste containers are first delineated into waste streams using AK. The AMWTP documents the methods used to delineate waste streams in the AK record and AK Summary Report in accordance with MP-TRUW-8.13, *Collection, Review, and Management of Acceptable Knowledge Documentation*. Retrievably stored waste containers may be examined using RTR or VE to determine the physical waste form (Summary Category Group), the absence of prohibited items, and additional waste characterization techniques that may be used based on the Summary Category Groups (i.e., S3000, S4000, S5000).

The HSGS method provided in Attachment C1 is used, when necessary, to resolve the assignment of EPA HWNs to debris waste streams, as specified in Attachment C4.

A statistically selected portion of retrievably stored homogeneous solids and soil/gravel wastes are sampled and analyzed for total VOCs, SVOCs, and metals, when necessary. The sampling location selection methodology is described in Attachment C2. The sampling methods for these wastes are provided in Attachment C1.

The TC of retrievably stored homogeneous solids and soil/gravel wastes is determined using total analysis of TC parameters or TCLP. To determine if a waste exhibits a TC for compounds specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. Appendix C3 of the WIPP RCRA Part B Permit Application discusses comparability of totals analytical results to those of the TCLP method.

Representativeness of containers selected for HSGS and waste subjected to homogeneous solids and soil/gravel sampling and analysis will be validated by the AMWTP via examination of documentation that shows that random samples were collected. Because representativeness is a quality characteristic that expresses the degree to which a sample or group of samples represent the population being studied, the random sampling of waste streams ensures representativeness. The AMWTP procedure that addresses random selection is MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*.

C-4 Data Verification and Quality Assurance

Data validation, usability, and reporting controls are used to ensure that the TRU mixed waste shipped to the WIPP facility for disposal meets WIPP-WAP requirements. Verification steps are taken at three levels: (1) the AMWTP data generation level, (2) the AMWTP project level, and (3) the CBFO level. The validation and verification process and requirements at each level are described in Section C3-10. The verification process at the CBFO level is also described in Section C-5.

C-4a Data Generation and Project Level Verification Requirements

C-4a(1) Data Quality Objectives

The waste characterization data obtained through implementation of the QAPjP will be used to ensure that the waste meets regulatory requirements and to ensure that TRU mixed waste is properly managed during the disposal phase. To satisfy the RCRA regulatory compliance requirements, the following DQOs are established in the WIPP-WAP:

- Acceptable Knowledge
  - To delineate TRU mixed waste streams.
  - To assess whether TRU mixed wastes comply with the applicable requirements of the WIPP Hazardous Waste Permit TSDF-WAC.
  - To assess whether TRU mixed wastes exhibit a hazardous characteristic (20.4.1.200 NMAC, incorporating 40 CFR §261, Subpart C).
  - To assess whether TRU mixed wastes are listed (20.4.1.200 NMAC, incorporating 40 CFR §261, Subpart D).
  - To estimate waste material parameters weights.
- Headspace Gas Sampling and Analysis
  - To identify VOCs and quantify the concentrations of VOC constituents in waste containers to resolve the assignment of EPA HWNs.
- Homogeneous Waste Sampling and Analysis
  - To compare upper 90% confidence level (UCL_{90}) values for the mean measured contaminant concentrations in a waste stream with specified TC levels in 20 NMAC 4.1.200 (incorporating 40 CFR §261), to determine if the waste is hazardous, and to resolve the assignment of EPA HWNs.
- Radiography
  - To determine the physical waste form, the absence of prohibited items, and additional waste characterization techniques that maybe used based on the Summary Category Groups (i.e., S3000, S4000, and S5000).

- Visual Examination

  - To determine the physical waste form, the absence of prohibited items, and additional waste characterization techniques that may be used based on the Summary Category Groups (i.e., S3000, S4000, or S5000).

Reconciliation of these DQOs by the SPM or CBFO-approved laboratories, as applicable, is addressed in Attachment C3. Reconciliation requires determining whether sufficient type, quality, and quantity of data have been collected to ensure the DQOs cited above can be achieved (refer to MP-TRUW-8.11, *Data Reconciliation*).

C-4a(2) Quality Assurance Objectives

The AMWTP or CBFO-approved laboratories, as applicable, demonstrate compliance with each QAO associated with the various characterization methods as presented in Attachment C3. The SPM or CBFO-approved laboratories, as applicable, perform a reconciliation of the data with the DQOs established in the WIPP-WAP. The SPM or CBFO-approved laboratories, as applicable, conclude that all of the DQOs have been met for the characterization of the waste stream prior to submitting a WSPF to the WIPP facility for approval (refer to Attachment C3). The following QAO elements are considered for each technique, as a minimum:

- Precision

  - Precision is a measure of the mutual agreement among multiple measurements.

- Accuracy

  - Accuracy is the degree of agreement between a measurement result and the true or known value.

- Completeness

  - Completeness is a measure of the amount of valid data obtained from a method compared to the total amount of data obtained that is expressed as a percentage.

- Comparability

  - Comparability is the degree to which one data set can be compared to another.

- Representativeness

  - Representativeness expresses the degree to which data represent characteristics of a population.

A more detailed discussion of the QAOs, including mathematical representation, where appropriate, can be found in Attachment C3, which describes the QAOs associated with each method of sampling and analysis.

C-4a(3) Sample Control

The AMWTP and CBFO-approved laboratories, as applicable, have implemented a sample handling and control program that includes the maintenance of field documentation records, proper labeling, and a chain-of-custody (COC) record. This QAPjP and CBFO-approved laboratory QAPjPs, as applicable, or procedures referenced in the QAPjP document this program and include COC forms to control the sample from the point of origin to the final analysis result reporting. Details of the AMWTP sample control program are provided in instruction INST-OI-16, *Drum Coring Operations*; INST-OI-73, *Manual Drum Coring Operations*; INST-OI-75, *Container-in-Container Sampling;* INST-OI-43, *HGAS Sampling and Analysis Operations*; MP-TRUW-8.34, *WIPP Sample Transfers*; and Attachment C1 of this QAPjP and are summarized below to include:

- Field documentation of samples including: point of origin, date of sample, container ID, sample type, analysis requested, and COC number
- Labeling and/or tagging including: sample numbering, sample ID, sample date, sampling conditions, and analysis requested
- COC control including: name of sample relinquisher, sample receiver, and the date and time of the sample transfer
- Proper sample handling and preservation.

C-4a(4) Data Generation

Batch Data Reports, in a format approved by the CBFO, are used by the AMWTP and CBFO-approved laboratories, as applicable, for reporting waste characterization data. This format is included in the AMWTP and CBFO-approved laboratory QAPjPs, as applicable, controlled electronic databases, and MP-TRUW-8.8, *Level 1 Data Validation*, which includes all of the elements required by this QAPjP for BDRs (refer to Attachment C3).

The CBFO performs audits of the AMWTP waste characterization program, as implemented by the AMWTP QAPjP, to verify compliance with the WAP and the DQOs in this QAPjP (See Attachment C6 for a discussion of the content of the audit program). The primary functions of these audits are to review AMWTP adherence to the requirements of this QAPjP and ensure adherence to the WAP characterization program. CBFO shall provide the results of the audit to NMED. If audit results indicate that the AMWTP is not in compliance with the requirements of this QAPjP, the CBFO will take appropriate action as specified in Attachment C6.

CBFO further requires all CBFO-approved laboratories analyzing WIPP waste samples to have established, documented QA/QC programs. CBFO annually evaluate these laboratories and their QA/QC programs as part of their participation in the CBFO PDP laboratory performance program. The CBFO audits of the laboratory verify that the laboratories analyzing waste have been properly audited. The laboratory's QA/QC program includes the following:

- Facility organization
- A list of equipment/instrumentation
- Operating procedures
- Laboratory QA/QC procedures
- QA review
- Laboratory records management.

C-4a(5) Data Verification

Batch Data Reports document the testing, sampling, and analytical results from the required characterization activities, and include documentation of required QA/QC activities. Data validation and verification at both the data generation level and the project level are performed before the required data are transmitted to the WIPP facility. Attachment C3 discusses the data validation process in more detail. NMED may request, through the CBFO, copies of any BDR, and/or the raw data validated by the AMWTP, to check the CBFO audit of the validation process.

C-4a(6) Data Transmittal

Batch Data Reports include information required by Section C3-10 and are transmitted by hard copy or electronically (provided a hard copy is available on demand) from the data generation level to the project level. The AMWTP transmits waste container information electronically via the Waste Data System (WDS)/WIPP Waste Information System (WWIS) in accordance with MP-TRUW-8.5, *TRU Waste Certification*. Data is entered into the WDS/WWIS in the exact format required by the database. Refer to Section C-5a(1) for WDS/WWIS reporting requirements and DOE/WIPP-09-3427, *Waste Data System User's Manual*, for WDS/WWIS data fields and format requirements.

Once a waste stream is characterized, the SPM also submits to the WIPP facility a WSPF (Figure C-1) accompanied by the CIS for the waste stream which includes reconciliation with DQOs (refer to Sections C3-12b[1] and C3-12b[2]). The WSPF, the CIS, and information from the WDS/WWIS are used as the basis for acceptance of waste characterization information on TRU mixed waste disposed at WIPP.

C-4a(7) Records Management

Records related to waste characterization activities performed by the AMWTP are maintained in the AMWTP site project files or at the WIPP Records Archive facility.

CBFO-approved laboratories forward testing, sampling, and analytical records along with BDRs, to the AMWTP site project files and to CBFO for inclusion in the WIPP facility operating record. Raw data obtained by testing, sampling, and analyzing TRU mixed waste in support of this QAPjP is identifiable, legible, and provides documentary evidence of quality. Refer to MP-DOCS-18.2, *Records Management,* for a detailed description of records.

An electronic records system, (the equivalent of a CBFO required Records Inventory and Disposition Schedule [RIDS]) has been prepared, approved, and implemented by the AMWTP. All records relevant to an enforcement action under the WIPP Permit, regardless of disposition, are maintained at the AMWTP until NMED determines that the records are no longer needed for enforcement action. The records will then be dispositioned as specified in the approved implementing procedure. All waste characterization data and related QA/QC records for TRU mixed waste to be shipped to the WIPP facility are designated as either Lifetime Records or Non-Permanent Records. Records that are designated as Lifetime Records are maintained for the life of the AMWTP waste characterization program plus six years or transferred for permanent archival storage to the WIPP Records Archive facility.

Waste characterization records designated as Non-Permanent Records are maintained for ten years from the date of (record) generation either at AMWTP or at the WIPP Records Archive facility and then dispositioned according to the requirements defined in MP-DOCS-18.2. If the AMWTP ceases to operate, all records will be transferred before closeout for management at the WIPP Records Archive facility. Table C-6 provides a listing of records designated as Lifetime Records and Non-Permanent Records. Classified information will not be transferred to WIPP. Although the AMWTP expects no classified information, a notation will be provided to CBFO indicating the absence of classified information. The AMWTP will identify appropriate disposition of classified information. Nothing in this QAPjP is intended to, nor should it be interpreted to, require the disclosure of any DOE classified information to persons without appropriate clearance to view such information.

C-5 CBFO Level Waste Stream Screening and Verification of TRU Mixed Waste

CBFO waste screening is a two-phased process. Phase 1 occurs prior to configuring shipments of TRU mixed waste. Phase II occurs after configuration of shipments of TRU mixed waste but before it is disposed at the WIPP facility. Figure C-3 presents Phase I and a portion of Phase II of the TRU mixed waste screening process. Attachment C7 presents the TRU mixed waste confirmation portion of Phase II activities.

C-5a Phase 1 Waste Stream Screening and Verification

The first phase of the waste screening and verification process occurs before TRU mixed waste is shipped to the WIPP facility. Before CBFO begins the process of accepting TRU mixed waste from the AMWTP, an initial audit of the AMWTP is conducted as part of the CBFO Audit and Surveillance Program. The RCRA portion of the AMWTP audit provides on-site verification of characterization procedures; BDR preparation; and recordkeeping to ensure that all applicable provisions of the WAP requirements are met. Another portion of the Phase 1 verification is the WSPF approval process. At the WIPP facility, this process includes verification that all of the required elements of the WSPF and the CIS are present and that the waste characterization information meet the acceptance criteria required for compliance with this QAPjP (Section C3-12b[1]).

After the AMWTP has prepared this QAPjP, which includes applicable WAP requirements, it is submitted to CBFO for review and approval. Once approved, a copy is provided to NMED for examination. The AMWTP will implement the specific parameters of the QAPjP after it is approved. An initial audit was performed after QAPjP implementation and prior to AMWTP being certified for shipment of waste to WIPP. Additional audits, focusing on the results of waste characterization, will be performed at least annually. CBFO has the right to conduct unannounced audits and to examine any records that are related to the scope of the audit. See Section C-5a(3) and Attachment C6 for further information regarding audits.

When the required waste stream characterization data have been collected by the AMWTP and the initial AMWTP audit has been successfully completed, the SPM will verify that the waste stream characterization meets the applicable QAPjP requirements as part of the project level verification (Section C3-10b). If the waste characterization does not meet the applicable requirements of the QAPjP, the mixed waste stream cannot be shipped until those requirements are met. The SPM will then complete a WSPF and submit it to CBFO, along with the accompanying CIS for that waste stream (Section C3-12b[1]). All data necessary to check the accuracy of the WSPF will be transmitted to CBFO for verification. This provides notification that the AMWTP considers that the waste stream (identified by the waste stream identification number) has been adequately characterized for disposal prior to shipment to WIPP. The CBFO compares headspace gas, radiographic, VE, and solid sampling/analysis data obtained subsequent to submittal and approval of the WSPF (and prior to submittal) with characterization information presented on this form. If CBFO determines (through the data comparison) that the characterization information is adequate, the WSPF will be approved. Prior to the first shipment of containers from the approved waste stream, the approved WSPF and accompanying CIS is provided to the NMED. If the data comparison indicates that analyzed containers have hazardous wastes not present on the WSPF, or a different Waste Matrix Code applies, the WSPF is in error and shall be resubmitted. Ongoing WSPF examination is discussed in detail in Section C-5a(2).

Audits of AMWTP are conducted as part of the CBFO's Audit and Surveillance Program (Attachment C6). The RCRA portion of the AMWTP site audit program provides on-site

verification of waste characterization procedure; BDR preparation; and record keeping ensuring that all applicable provisions of the WIPP-WAP requirements are met. As part of the waste characterization data submittal, the AMWTP also transmits the data on a container-by-container basis via the WDS/WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to shipment of that container. The WDS/WWIS will conduct internal edit/limit checks as the data is entered and made available to CBFO as supporting information for WSPF review. The initial WSPF check performed by CBFO will include WDS/WWIS data submitted by AMWTP for each waste container submitted for the WSPF review and the CIS. The CBFO will compare ongoing sampling/analysis characterization data obtained and submitted via the WDS/WWIS to the approved WSPF. If this comparison shows that containers have hazardous wastes not reported on the WSPF, or a different Waste Matrix Code applies, the data are rejected and the waste containers are not accepted for shipment until a new or revised WSPF is submitted to and approved by the CBFO.

If discrepancies regarding EPA HWN assignment or Waste Matrix Code designation arise as a result of the Phase 1 review, the AMWTP will be contacted and required to provide the necessary additional information to resolve the discrepancy before the waste stream is approved for disposal at the WIPP facility. If the discrepancy is not resolved, the waste stream will not be approved.

C-5a(1) WDS/WWIS Description

All generator/storage sites planning to ship TRU mixed waste to WIPP will supply the required data to the WDS/WWIS. The WDS/WWIS Data Dictionary includes all of the data fields, the field format, and the limits associated with the data as established by this QAPjP. The data will be subjected to edit and limit checks that are performed automatically by the database as defined in DOE/WIPP-09-3427.

The CBFO will coordinate the data transmission with AMWTP. Actual data transmission will use appropriate technology to ensure the integrity of the data transmissions. The CBFO requires the AMWTP to populate a data structure provided by the CBFO that contains the required data dictionary fields that are appropriate for the waste streams at the site. The CBFO will access the data via the Internet to ensure an efficient transfer of this data.

CBFO uses the WDS/WWIS to verify that all supplied data meet the edit and limit checks prior to shipment of TRU mixed waste to WIPP. The WDS/WWIS notifies the AMWTP if any of the supplied data fails to meet the requirements of the edit and limit checks via an appropriate error message. The AMWTP corrects the discrepancy with the waste or the waste data and re-transmit the corrected data prior to acceptance of the data by the WDS/WWIS. CBFO will review data reported for each container of each shipment prior to providing notification to the AMWTP that the shipment is acceptable. Read-only access is provided to NMED. Table C-7 contains a listing of the data fields contained in the WDS/WWIS that is required as part of this QAPjP.

The WDS/WWIS generates a Waste Emplacement Report, Shipment Summary Report, Waste Container Data Report, and a Change Log Report.

Access to the WDS/WWIS is controlled by CBFO based on approval from management. All data formally accepted by CBFO is protected from indiscriminate change and can only be changed by an authorized Data Administrator (DA).

C-5a(2) Examination of the Waste Stream Profile Form and Container Data Checks

CBFO verifies the completeness and accuracy of the WSPF (Section C3-12b[1]). Figure C-2 includes the waste characterization and waste stream approval process. The assignment of the waste stream description, Waste Matrix Code Group, and Summary Category Groups; the results of waste analyses, as applicable; the AK summary documentation; the method used for characterization; CBFO certification; and appropriate designation of EPA HWN(s) will be examined by CBFO. If the WSPF is inaccurate, efforts will be made to resolve discrepancies by contacting the AMWTP in order for the waste stream to be eligible for shipment to the WIPP facility. If discrepancies in the waste stream are detected at the AMWTP, the AMWTP will implement a non-conformance program in accordance with MP-Q&SI-5.4, *Identification of Nonconforming Conditions*, to identify, document, and report discrepancies (Attachment C3).

The WSPF will pass all verification checks by CBFO in order for the waste to be approved by CBFO for shipment to the WIPP facility. The WSPF check against waste container data will occur during the initial WSPF approval process (Section C-5a).

The EPA HWNs for the waste that appear on the WSPF will be compared to those in Table C-9 to ensure that only approved wastes are accepted for management, storage, or disposal at WIPP. Some of the waste may also be identified by unique state hazardous waste codes or numbers. These wastes are acceptable at WIPP as long as the WIPP Hazardous Waste Permit TSDF-WAC is met. The CIS will be reviewed by the CBFO to verify that the waste has been classified correctly with respect to the assigned EPA HWNs. Any analytical method used will be compared to those listed in Tables C-2, C-3, and C-4 to ensure that only approved analytical methods are used for analysis of the waste. CBFO verifies that the applicable requirements of the WIPP Hazardous Waste Permit TSDF-WAC have been met.

Waste data transferred via the WDS/WWIS after WSPF approval will be compared with the approved WSPF. Any container from an approved hazardous waste stream with a description different from its WSPF will not be managed, stored, or disposed at WIPP.

CBFO will also verify that three different types of data specified below are available for every container holding TRU mixed waste before that waste is managed, stored, or disposed at WIPP.

1. An assignment of the waste stream's waste description (by Waste Matrix Codes) and Waste Matrix Code Group;
2. A determination of ignitability, reactivity, and corrosivity; and
3. A determination of compatibility.

The verification of waste stream description will be performed by reviewing the WDS/WWIS for consistency in the waste stream description and WSPF. The CIS will indicate if the waste has been checked for the characteristics of ignitability, corrosivity, and reactivity. The final verification of waste compatibility is performed using Appendix C1 of the WIPP RCRA Part B Permit Application, the compatibility study.

Any container with unresolved discrepancies associated with hazardous waste characterization will not be managed, stored, or disposed at the WIPP facility until the discrepancies are resolved. If the discrepancies cannot be resolved, the CBFO will revoke the approval status of the waste stream, suspend shipments of the waste stream, and notify NMED. Waste stream approval will not be reinstated until the AMWTP demonstrates all corrective actions have been implemented and the AMWTP program is reassessed by CBFO.

C-5a(3) CBFO's Audit and Surveillance Program

An important part of CBFO's verification process is the CBFO's Audit and Surveillance Program. The focus of this audit program is compliance with the QAPjP and the WIPP Permit. This audit program addresses all AK implementation and waste sampling and analysis activities, from waste stream classification assignment through waste container certification, and ensures compliance with standard operating procedures and the QAPjP. Audits will ensure that containers and their associated documentation are adequately tracked throughout the waste handling process. Operator qualifications will be verified, and implementation of QA/QC procedures will be surveyed. A final report that includes AMWTP or CBFO-approved laboratory audit results and applicable WIPP-WAP-related corrective action report (CAR) resolution will be provided to NMED for approval.

Audits will be performed at least annually, including the possibility of unannounced audits (i.e., not a regularly scheduled audit).

C-5b Phase II Waste Shipment Screening and Verification

As presented in Figure C-3, Phase II of the waste screening and verification process begins with confirmation of the waste pursuant to Attachment C7 after waste shipments are configured. After the waste shipment has arrived at WIPP, CBFO screens the shipments to determine the completeness and accuracy of the EPA Hazardous Waste Manifest and land disposal restriction notice completeness. CBFO will verify there are no waste shipment irregularities and the waste containers are in good condition. Only those waste containers that are from shipments that have been confirmed pursuant to Attachment C7 and that pass all Phase II waste screening and verification determinations will be emplaced at WIPP. For each container shipped, the AMWTP provides the following information:

Hazardous Waste Manifest Information

- Generator/storage site name and EPA ID
- Generator/storage site contact name and phone number
- Quantity of waste
- List of up to six state and/or EPA HWNs in each line item
- List of all container IDs (Shipping Package serial number)
- Signature of authorized generator representative.

Specific Waste Container Information

- Waste Stream Identification Number
- List of EPA HWNs per container
- Certification date
- Shipping data (Assembly numbers, ship date, shipping category, etc.).

This information is also supplied electronically to the WDS/WWIS. The container-specific information is supplied as described in Section C-5a(1), and is supplied prior to shipment.

C-5b(1) Examination of the EPA Uniform Hazardous Waste Manifest and Associated Waste Tracking Information

Upon receipt of a TRU mixed waste shipment, CBFO will make a determination of EPA Uniform Hazardous Waste Manifest (UHWM) completeness. For CH-TRU mixed waste, the CBFO will then make a determination of waste shipment completeness by checking the unique, barcode identification number found on each container holding TRU mixed waste against the WDS/WWIS database after opening the Shipping Package.

For shipments in the RH-TRU 72B cask, the identification number of the single payload container is read during cask-to-cask transfer in the Transfer Cell and then checked against the WDS/WWIS database. For shipments in the CNS 10-160B cask, CBFO will make a determination of waste shipment completeness by checking the unique identification number found on each container holding TRU mixed waste in the Hot Cell against the WDS/WWIS database after unloading the cask.

Manifest discrepancies may be identified during manifest examination and container barcode WDS/WWIS data comparison. A manifest discrepancy is a difference between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the WIPP facility actually receives. The AMWTP technical contact (as listed on the manifest) will be contacted to resolve the discrepancy. Errors on the manifest can be corrected by the WIPP facility with a verbal (followed by a mandatory written) concurrence by the AMWTP technical contact. All discrepancies that are unresolved within fifteen days of receiving the waste at the WIPP facility will be immediately reported to the NMED in writing by CBFO. If the manifest discrepancies have not been resolved within thirty days of waste receipt, the shipment will be returned to the AMWTP.

C-5b(2) Examination of the Land Disposal Restriction Notice

With the initial shipment of a TRU mixed waste stream, AMWTP will provide WIPP with a notice that the waste is not prohibited from land disposal (The Land Disposal Restriction [LDR] Notice). The Notice will be prepared per the requirements of 20 NMAC 4.1.800 (incorporating 40 CFR 268.7[a][4]). The LDR Notice information includes:

- EPA HWN(s) and manifest number of first shipment of a mixed waste stream
- Date the waste is subject to prohibition
- Statement that the waste is not prohibited from land disposal at WIPP.

This information is the applicable information taken from column "268.7(a)(4)" of the "Generator Paperwork Requirements Table" in 20.4.1.800 NMAC (incorporating 40 CFR 268.7[a][4]). Note that item "5" from the "Generator Paperwork Requirements Table" is not applicable since waste analysis data are provided electronically via WDS/WWIS and item "7" is not applicable, since waste designated by the Secretary of Energy for disposal at WIPP is exempted from the treatment standards.

CBFO will review the LDR notice for accuracy and completeness. The AMWTP will prepare this notice in accordance with the applicable requirements of 20.4.1.800 NMAC (incorporating 40 CFR 268.7[a][4]).

C-5b(3) Verification

This is a CBFO function.

C-6 CBFO's Waste Shipment Screening QA/QC

This is a CBFO function.

C-7 Records Management and Reporting

As part of the WIPP facility's operating record, data and documents associated with waste characterization and waste confirmation activity records are managed in accordance with MP-DOCS-18.2.

The storage of the AMWTP's copy of the manifest, LDR information, waste characterization data, WSPFs, waste confirmation activity records, and other related records are identified on an electronic records system, (the equivalent of a CBFO-required RIDS).

C-7a General Requirements

- Records are legible.
- Corrections are made with a single line through the incorrect information, and the date and initial of the person making the correction are added.
- Black ink is encouraged, unless a copy test has been conducted to ensure the other color ink will copy.
- Use of highlighters on records is discouraged.
- Records are reviewed for completeness.
- Records are validated by the cognizant manager or designee.

C-7b Records Storage

- Active records are stored when not in use
- Quality records are kept in one-hour (certified) fire-rated container or a copy of a record is stored separately (sufficiently remote from the original) in order to prevent destruction of both copies as a result of a single event such as fire or natural disaster
- Unauthorized access to the records is controlled by locking the storage container or controlling personnel access to the storage area.

C-8 Reporting

This is a CBFO function.

Table C-1. Summary of Hazardous Waste Characterization Requirements for Transuranic Mixed Waste[a].

PARAMETER	TECHNIQUES AND PROCEDURE	SITE-SPECIFIC DATA COLLECTION PROCEDURES	SITE-SPECIFIC DATA RELEASE PROCEDURES
Physical Waste Form Summary Category Names S3000 Homogeneous Solid S4000 Soil/Gravel	**RTR/Visual Examination** Retrievably Stored Waste Radiography (RTR) Visual Examination (VE)	**RTR/Visual Examination** (Refer to Section C1-3 and Section C3-4) Retrievably Stored Waste INST-OI-12, *Real-Time Radiography Operations (Drum)* INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)* INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-17, *Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations*	**RTR/Visual Examination** Retrievably Stored Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*
	Newly Generated Waste Visual Examination Radiography (RTR)	Newly Generated Waste INST-OI-12, *Real-Time Radiography Operations (Drum)* INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)* INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-17, *Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations*	Newly Generated Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*
	Repackaging of Retrievably Stored Waste Visual Examination	Repackaging of Retrievably Stored Waste INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations* INST-FOI-17, *Facility Visual Examination Operations*	Repackaging of Retrievably Stored Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*

Table C-1. (continued)

PARAMETER	TECHNIQUES AND PROCEDURE	SITE-SPECIFIC DATA COLLECTION PROCEDURES	SITE-SPECIFIC DATA RELEASE PROCEDURES
Summary Category Names S5000 Debris Waste	Retrievably Stored Waste Radiography (RTR) Visual Examination	Retrievably Stored Waste INST-OI-12, *Real-Time Radiography Operations (Drum)* INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)* INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-17, *Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations*	Retrievably Stored Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*
	Newly Generated Waste Radiography (RTR) Visual Examination	Newly Generated Waste INST-OI-12, *Real-Time Radiography Operations (Drum)* INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)* INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-17, *Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations*	Newly Generated Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*
	Repackaging of Retrievably Stored Waste Visual Examination	Repackaging of Retrievably Stored Waste INST-OI-34, *Non-Facility Visual Examination Operations* INST-FOI-17, *Facility Visual Examination Operations* INST-FOI-20, *Supercompactor and Post-Compaction Operations*	Repackaging of Retrievably Stored Waste MP-TRUW-8.8, *Level I Data Validation* MP-TRUW-8.9, *Level II Data Validation*

Table C-1. (continued)

PARAMETER	TECHNIQUES AND PROCEDURE	SITE-SPECIFIC DATA COLLECTION PROCEDURES	SITE-SPECIFIC DATA RELEASE PROCEDURES
Total Semivolatile Organic Compounds Cresols 1,4-Dichlorobenzene [e] 1,2-Dichlorobenzene [e] 2,4-Dinitrophenol 2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Nitrobenzene Pentachlorophenol Pyridine [c]	**Total Semivolatile Organic Compound Analysis** TCLP, SW-846 1311 GC/MS, SW-846 8270 Acceptable Knowledge for Summary Category S5000 (Debris Wastes)	**Sample Collection** INST-OI-16, *Drum Coring Operations* INST-OI-73, *Manual Drum Coring Operations* INST-OI-75, *Container-in-Container Sampling* **Analysis** (refer to Section C3) CCP-TP-187, *Sample Preparation for Semi-volatile Compounds* CCP-TP-185, *Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry*	**Analysis** CCP-TP-188, *Analytical Data Recording, Review, and Reporting* MP-TRUW-8.9, *Level II Data Validation*
Total Metals Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc	**Total Metals Analysis** TCLP, SW-846 1311 ICP- MS, SW-846 6020, ICP Emission Spectroscopy, SW-846 6010 Atomic Absorption Spectroscopy , SW-846 7000 Acceptable Knowledge for Summary Category S5000 (Debris Wastes)	**Sample Collection** INST-OI-16, *Drum Coring Operations* INST-OI-73, *Manual Drum Coring Operations* INST-OI-75, *Container-in-Container Sampling* **Analysis** (refer to Section C3-8) CCP-TP-183, *CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel* CCP-TP-182, *CCP Determination of Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) for TRU Waste Characterization* CCP-TP-181, *CCP Determination of Mercury by CVAA for TRU Waste Characterization*	**Analysis** CCP-TP-188, *Analytical Data Recording, Review, and Reporting* MP-TRUW-8.9, *Level II Data Validation*

a. Permit Attachment C
b. Required only for homogeneous solids and soil/gravel waste from Savannah River Site to resolve the assignment of EPA HWNs.
c. Required only for homogeneous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site to resolve the assignment of EPA HWNs.
d. Can also be analyzed as a semi-volatile organic compound.
e. Can also be analyzed as a volatile organic compound
f. Required only to resolve the assignment of EPA HWNs to debris waste streams.
g. Required only to resolve the assignment of EPA HWNs to homogeneous sold and soil/gravel waste streams.

Table C-2. Headspace Target Analyte List and Methods[b].

PARAMETER	EPA SPECIFIED ANALYTICAL METHOD
Benzene Bromoform Carbon tetrachloride Chlorobenzene Chloroform Cyclohexane [c] 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene (trans)-1, 2- Dichloroethylene Ethyl benzene Ethyl ether Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,1,1-Trichloroethane Trichloroethylene 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2,4-Trimethylbenzene [c] 1,3,5-Trimethylbenzene [c] Xylenes	EPA: Modified TO-14A or TO-15[a]; Modified 8260 EPA - Approved FTIRS
Acetone Butanol Methanol Methyl ethyl ketone Methyl isobutyl ketone	EPA: Modified TO-14A or TO-15[a]; Modified 8260 Method 8015 EPA - Approved FTIRS

a., Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air – Second Edition (EPA 1999). The most current revision of the specified methods may be used.

b. Required only for debris waste when required to resolve the assignment of EPA HWNs.

Table C-3. Required Organic Analyses and Test Methods Organized by Organic Analytical Groups[e].

ORGANIC ANALYTICAL GROUP	REQUIRED ORGANIC ANALYSES	EPA SPECIFIED ANALYTICAL METHOD [a, d]
Nonhalogenated VOCs	Acetone Isobutanol Benzene Methanol n-Butanol Methyl ethyl ketone Carbon disulfide Toluene Ethyl benzene Xylenes Ethyl ether Formaldehyde Hydrazine[b]	8015 8260 8315A
Halogenated VOCs	Bromoform Carbon tetrachloride Chlorobenzene Chloroform 1,2-Dichloroethane 1,1-Dichloroethylene (trans)-1, 2- Dichloroethylene Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethylene 1,1,2-Trichloroethane 1,1,1-Trichloroethane Trichloroethylene Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-trifluoroethane Vinyl Chloride	8015 8260
SVOCs	Cresols (o, m, p) 1,2-Dichlorobenzene[c] 1,4-Dichlorobenzene[c] 2,4-Dinitrophenol 2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Nitrobenzene Pentachlorophenol Pyridine[c]	8270

a. , "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition. (EPA 1996)
b. Generator/Storage Sites will have to develop an analytical method for hydrazine. This method will be submitted to the CBFO for approval.
c. These compounds may also be analyzed as VOCs by SW-846 Method 8260.
d. TCLP (SW-846 Method 1311) may be used to determine if compounds in 20 NMAC 4.1.200 (incorporating 40 CFR §261, Subpart C) exhibit a TC.
e. Required only to resolve the assignment of EPA HWNs.

Table C-4. Summary of Sample Preparation and Analytical Methods for Metals.

PARAMETERS	**EPA SPECIFIED ANALYTICAL METHODS** [a, b, c]
Sample Preparation	3051, or equivalent, as appropriate for analytical method
Total Antimony	6010, 6020, 7000, 7010, 7062
Total Arsenic	6010, 6020, 7010, 7061, 7062
Total Barium	6010, 6020, 7000, 7010
Total Beryllium	6010, 6020, 7000, 7010
Total Cadmium	6010, 6020, 7000, 7010
Total Chromium	6010, 6020, 7000, 7010
Total Lead	6010, 6020, 7000, 7010
Total Mercury	7471
Total Nickel	6010, 6020, 7000, 7010
Total Selenium	6010, 7010, 7741, 7742
Total Silver	6010, 6020, 7000, 7010
Total Thallium	6010, 6020, 7000, 7010
Total Vanadium	6010, 7000, 7010
Total Zinc	6010, 6020, 7000, 7010

a. "Test Methods for Evaluating Solid Waste," Laboratory Manual Physical/Chemical Methods, SW 846, 3rd ed., U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C. (EPA 1996)

b. TCLP (SW-846 Method 1311) may be used to determine if compounds in 20 NMAC 4.1.200 (incorporating 40 CFR 261, Subpart C) exhibit a TC.

c. Required only for homogeneous solids and soil/gravel to resolve the assignment of EPA HWNs.

Table C-5. Summary of Parameters, Characterization Methods, and Rationale for Transuranic Waste (For Both Stored Waste and Newly Generated Waste Unless Otherwise Specified).

WASTE MATRIX CODE SUMMARY CATEGORIES	WASTE MATRIX CODE GROUPS	CHARACTERIZATION PARAMETER	METHOD	RATIONALE
S3000-Homogeneous Solids S4000-Soil/Gravel	• Solidified inorganics • Salt waste • Solidified organics •Contaminated soil/debris	Physical waste form	Acceptable Knowledge, Radiography and/or Visual Examination.	• Determine waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no liquid in excess of TSDF-WAC limits,, no incompatible wastes, no compressed gases)
		Hazardous constituents • Listed • Characteristic	**Retrievably Stored** Acceptable Knowledge or Statistical Sampling [a] (see Tables C-3 and C-4) **Newly Generated** Statistical Sampling [a] (see Tables C-3 and C-4)	• Determine characteristic metals and organics • Resolve the assignment of EPA HWNs
S5000–Debris Waste	• Uncategorized metal (metal waste other than lead/cadmium) • Lead/cadmium waste • Inorganic nonmetal waste • Combustible waste • Graphite waste • Heterogeneous debris waste • Composite filter waste	Physical waste form	Acceptable Knowledge, Radiography and/or Visual Examination.	• Determine waste matrix • Demonstrate compliance with waste acceptance criteria (e.g., no liquid in excess of TSDF-WAC limits, no incompatible wastes, no compressed gases)
		Hazardous constituents • Listed • Characteristic	Statistical Gas Sampling and Analysis[a] (See Table C-2)	• Resolve the assignment of EPA HWNs
		Hazardous constituents • Characteristic	Acceptable knowledge	• Determine characteristic metals and organics
a. Applies to waste streams that require sampling.				

Table C-6. Required Program Records Maintained in AMWTP Project Files.

LIFETIME RECORDS
· Field sampling data forms · Field and laboratory COC forms · Test facility and laboratory batch data reports · Waste Stream Characterization Package · Sampling Plans · Data reduction, validation, and reporting documentation · AK documentation · Waste Stream Profile Form and Characterization Information Summary
NON-PERMANENT RECORDS
· Nonconformance documentation · Variance documentation · Assessment documentation · Gas canister tags · Methods performance documentation · PDP documentation · Sampling equipment certifications · Calculations and related software documentation · Training/qualification documentation · QAPjPs (generator/storage sites) documentation (all revisions) · Calibration documentation · Analytical raw data · Procurement documentation · QA procedures (all revisions) · Technical implementing procedures (all revisions) · Audio/video recording (radiography, visual, etc.)

Table C-7. Waste Data System/WIPP Waste Information System Data Fields[a].

CHARACTERIZATION MODULE DATA FIELDS b	
Container ID [c]	Total VOC Sample Date
Generator EPA ID	Total VOC Analysis Date
Generator Address	Total VOC Analyte Name [d]
Generator Name	Total VOC Analyte Concentration [d]
Generator Contact	Total Metal Sample Date
Hazardous Code	Total Metal Analysis Date
Headspace Gas Sample Date	Total Metal Analyte Name [d]
Headspace Gas Analysis Date	Total Metal Analyte Concentration [d]
Layers of Packaging	Semi-VOC Sample Date
Liner Exists	Semi-VOC Analysis Date
Liner Hole Size	Semi-VOC Analyte Name [d]
Filter Model	Semi-VOC Concentration [d]
Number of Filters Installed	Transporter EPA ID
Headspace Gas Analyte [d]	Transporter Name
Headspace Gas Concentration [d]	Visual Exam Container [e]
Headspace Gas Char. Method [d]	Waste Material Parameter [d]
Total VOC Char. Method [d]	Waste Material Weight [d]
Total Metals Char. Method [d]	Waste Matrix Code
Total Semi-VOC Char. Method [d]	Waste Matrix Code Group
Item Description Code	Waste Stream Profile Number
Haz. Manifest Number	
NDE Complete [e]	
CERTIFICATION MODULE DATA FIELDS	
Container ID [c]	Handling Code
Container type	
Container Weight	
Contact Dose Rate	
Container Certification date	
Container Closure Date	
TRANSPORTATION MODULE DATA	
Contact Handled Package Number	Ship Date
Assembly Number [f]	Receive Date
Container IDs [c, d]	
Inner Containment Vessel (ICV) Closure Date	
DISPOSAL MODULE DATA	
Container ID [c]	
Disposal Date	
Disposal Location	

a. This is not a complete list of the WDS/WWIS data fields.
b. Some of the fields required for characterization are also required for certification and/or transportation.
c. Container ID is the main relational field in the WDS/WWIS Database.
d. This is a multiple occurring field for each analyte, nuclide, etc.
e. These are logical fields requiring only a yes/no.
f. Required for 7 packs of 55-gal. drums, 4-packs of 85-gal drums, or 3-packs of 100-gal drums to tie all of the drums in that assembly together. This facilitates the identification of waste containers in a shipment without need to break up the assembly.

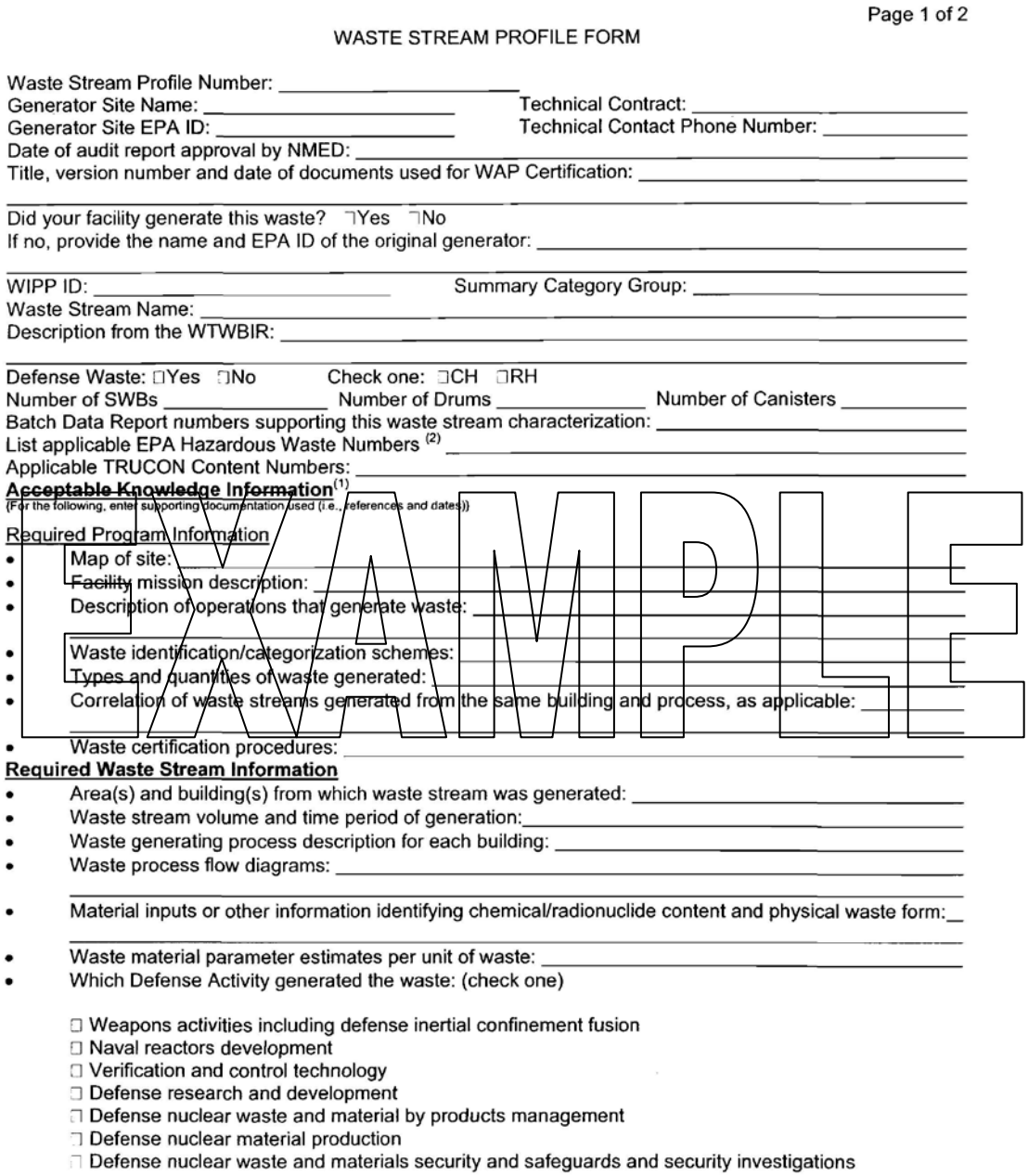
Table C-8. Waste Tanks Subject to Exclusion.

Hanford Site – 177 Tanks	
A-101 through A-106	C-201 through C-204
AN-101 through AN-107	S-101 through S-112
AP-101 through AP-108	SX-101 through SX-115
AW-101 through AW-106	SY-101 through SY-103
AX-101 through AX-104	T-101 through T-112
AY-101 through AY-102	T-201 through T-204
B-101 through B-112	TX-101 through TX-118
B-201 through B-204	TY-101 through TY-106
BX-101 through BX-112	U-101 through U-112
BY-101 through BY-112	U-201 through U-204
C-101 through C-112	
Savannah River Site – 51 Tanks	
Tank 1 through 51	
Idaho National Laboratory – 15 Tanks	
WM-103 through WM-106	WM-180 through 190

Table C-9. Listing of Permitted EPA Hazardous Waste Numbers.

EPA Hazardous Waste Numbers			
F001	D019	D043	U079
F002	D021	P015	U103
F003	D022	P030	U105
F004	D026	P098	U108
F005	D027	P099	U122
F006	D028	P106	U133*
F007	D029	P120	U134*
F009	D030	U002*	U151
D004	D032	U003*	U154*
D005	D033	U019*	U159*
D006	D034	U037	U196
D007	D035	U043	U209
D008	D036	U044	U210
D009	D037	U052	U220
D010	D038	U070	U226
D011	D039	U072	U228
D018	D040	U078	U239*

* Acceptance of U-numbered wastes listed for reactivity, ignitability, or corrosivity characteristics is contingent upon a demonstration that the wastes no longer exhibit the characteristic of reactivity, ignitability, or corrosivity.



Page 1 of 2

WASTE STREAM PROFILE FORM

Waste Stream Profile Number: _____
Generator Site Name: _____ Technical Contract: _____
Generator Site EPA ID: _____ Technical Contact Phone Number: _____
Date of audit report approval by NMED: _____
Title, version number and date of documents used for WAP Certification: _____
_____
Did your facility generate this waste? ☐Yes ☐No
If no, provide the name and EPA ID of the original generator: _____
_____
WIPP ID: _____ Summary Category Group: _____
Waste Stream Name: _____
Description from the WTWBIR: _____
_____
Defense Waste: ☐Yes ☐No Check one: ☐CH ☐RH
Number of SWBs _____ Number of Drums _____ Number of Canisters _____
Batch Data Report numbers supporting this waste stream characterization: _____
List applicable EPA Hazardous Waste Numbers [2] _____
Applicable TRUCON Content Numbers: _____
Acceptable Knowledge Information[1]
(For the following, enter supporting documentation used (i.e., references and dates))

Required Program Information

- Map of site: _____
- Facility mission description: _____
- Description of operations that generate waste: _____
- Waste identification/categorization schemes: _____
- Types and quantities of waste generated: _____
- Correlation of waste streams generated from the same building and process, as applicable: _____
- Waste certification procedures: _____

Required Waste Stream Information

- Area(s) and building(s) from which waste stream was generated: _____
- Waste stream volume and time period of generation: _____
- Waste generating process description for each building: _____
- Waste process flow diagrams: _____
- Material inputs or other information identifying chemical/radionuclide content and physical waste form: _____
- Waste material parameter estimates per unit of waste: _____
- Which Defense Activity generated the waste: (check one)

☐ Weapons activities including defense inertial confinement fusion
☐ Naval reactors development
☐ Verification and control technology
☐ Defense research and development
☐ Defense nuclear waste and material by products management
☐ Defense nuclear material production
☐ Defense nuclear waste and materials security and safeguards and security investigations

EXAMPLE

Figure B-1 (Example Only)
WASTE STREAM PROFILE FORM

Figure C-1.WIPP waste stream profile form (example only).

WASTE STREAM PROFILE FORM

Supplemental Documentation
Process design documents: _____
Standard operating procedures: _____
Safety Analysis Reports: _____
Waste packaging logs: _____
Test plans/research project reports: _____
Site data bases: _____
Information from site personnel: _____
Standard industry documents: _____
Previous analytical data: _____
Material safety data sheets: _____
Sampling and analysis data from comparable/surrogate waste: _____
Laboratory notebooks: _____

Confirmation Information(2)
(For the following, when applicable, enter procedure title(s), number(s), and date(s))

Radiography: _____

Visual Examination: _____

EXAMPLE

Waste Stream Profile Form Certification

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

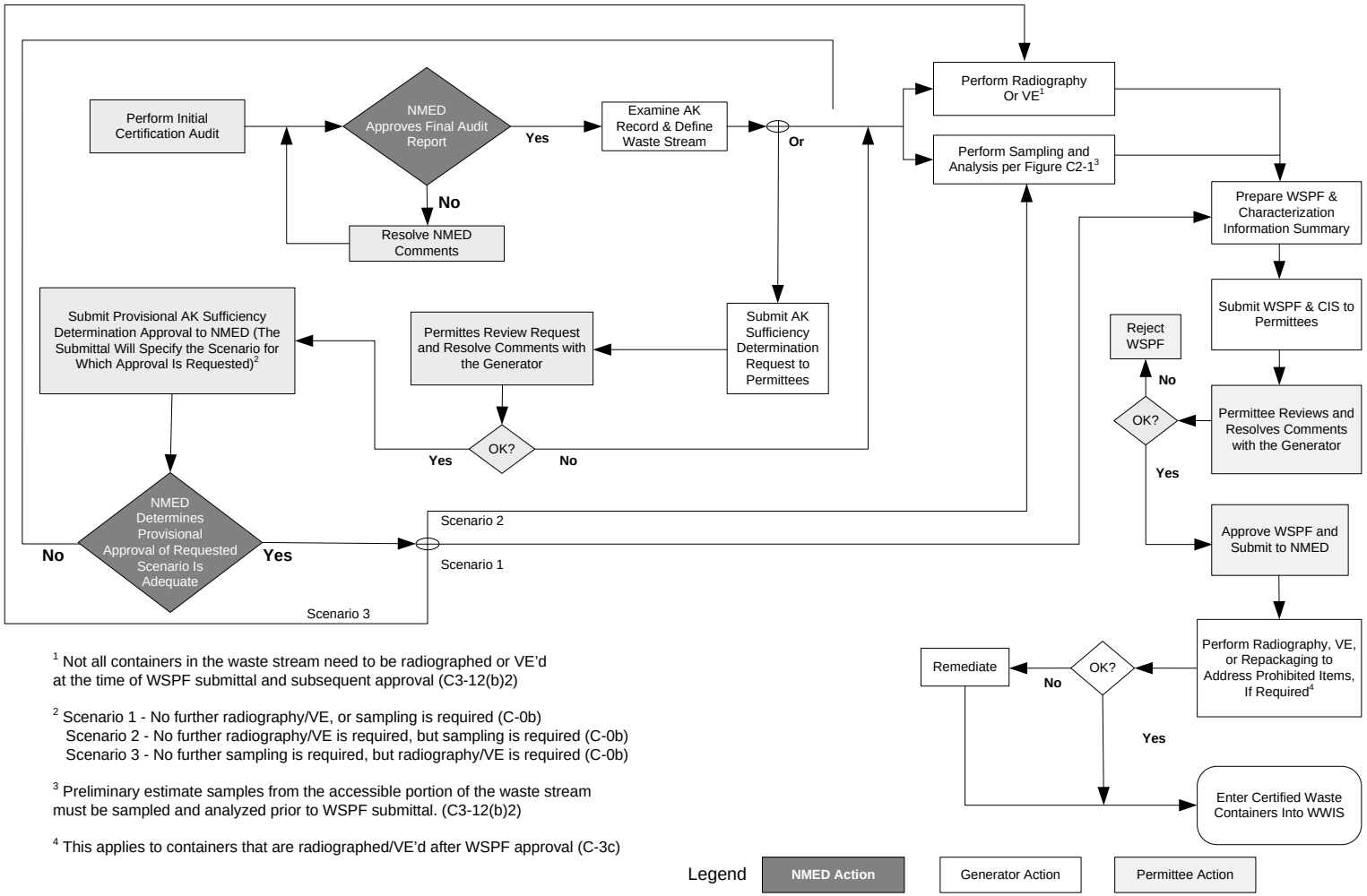
Signature of Site Project Manager	Printed Name and Title	Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.

Figure B-1 (Example Only) (Continued)
WASTE STREAM PROFILE FORM

Figure C-1. (continued)



[1] Not all containers in the waste stream need to be radiographed or VE'd at the time of WSPF submittal and subsequent approval (C3-12(b)2)

[2] Scenario 1 - No further radiography/VE, or sampling is required (C-0b)
Scenario 2 - No further radiography/VE is required, but sampling is required (C-0b)
Scenario 3 - No further sampling is required, but radiography/VE is required (C-0b)

[3] Preliminary estimate samples from the accessible portion of the waste stream must be sampled and analyzed prior to WSPF submittal. (C3-12(b)2)

[4] This applies to containers that are radiographed/VE'd after WSPF approval (C-3c)

Figure C-2. Waste characterization process.

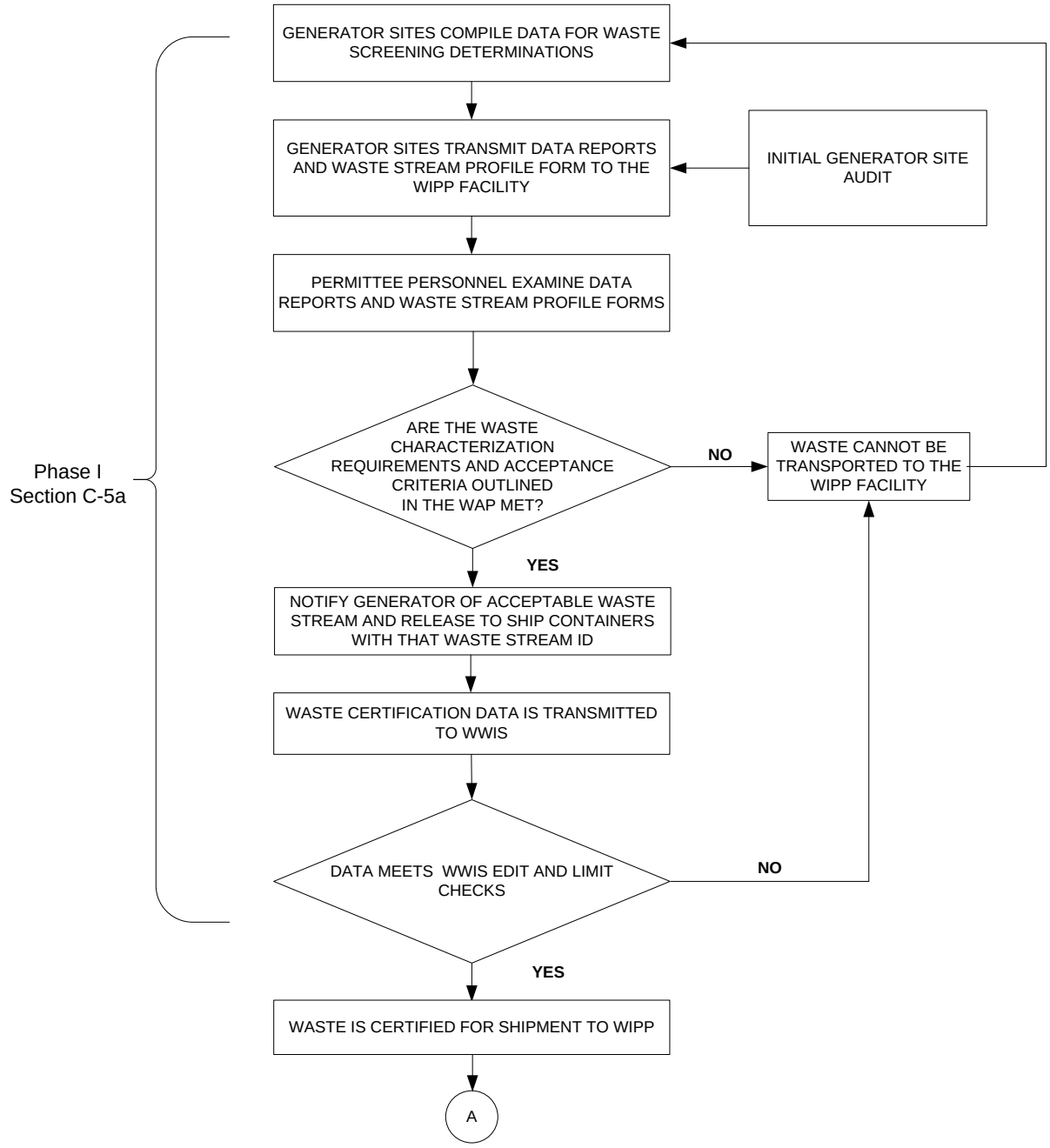


Figure C-3. TRU mixed waste screening and verification flow diagram.

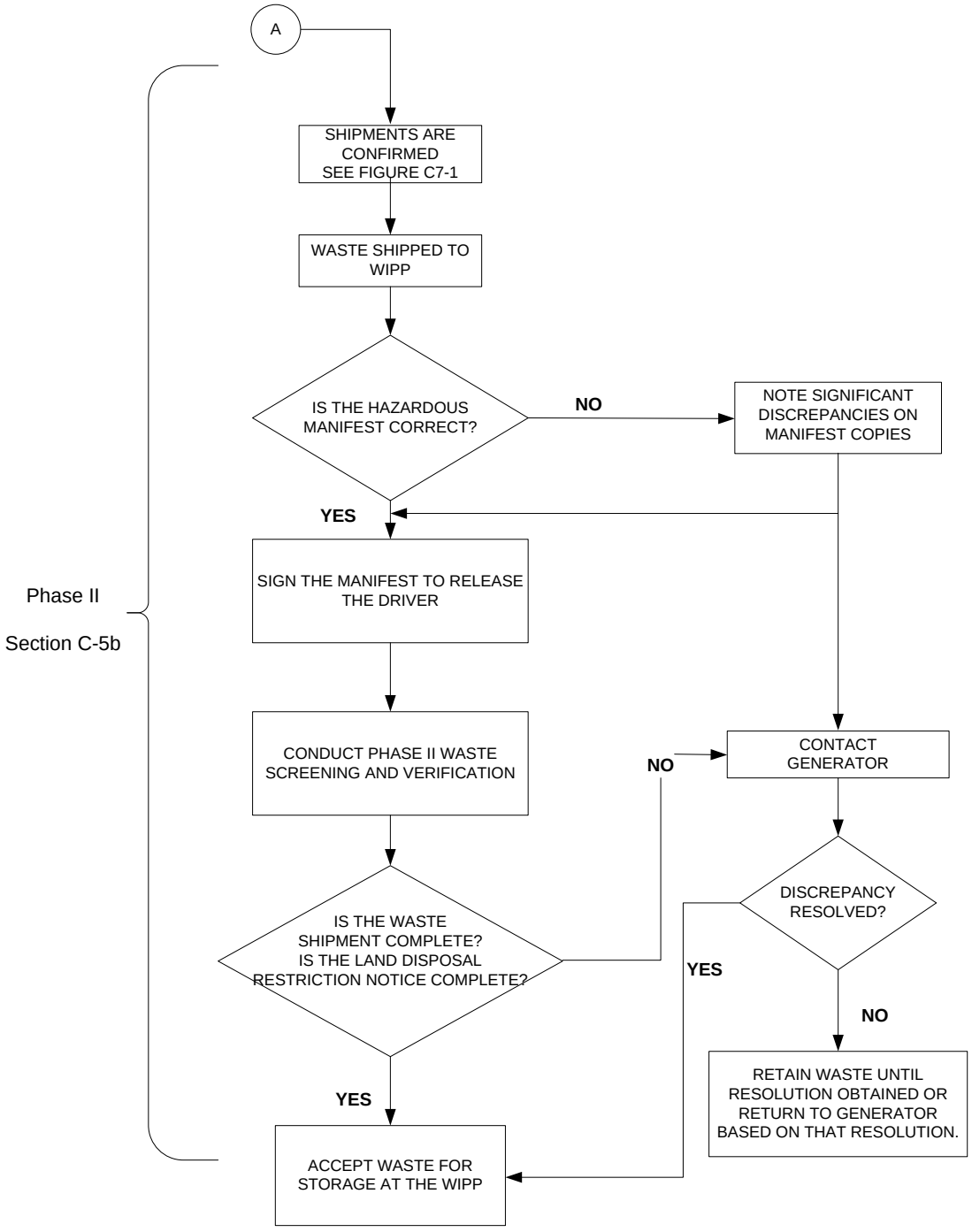


Figure C-3. (continued)

Attachment C1.
Waste Characterization Sampling Methods

The AMWTP uses the following methods as applicable for characterization of TRU mixed waste to be disposed of at the WIPP facility. These methods include requirements for HSGS, sampling of homogeneous solids and soil/gravel, and RTR or VE. Additionally, this section provides quality control (QC), sample custody, and sample packing and shipping requirements.

C1-1 Sampling of Debris Waste (Summary Category S5000)

Headspace gas sampling and analysis is used to resolve the assignment of EPA HWNs to debris waste streams.

The AMWTP on-line integrated HSGS operations are described in INST-OI-43 which list the specific activities and requirements necessary to prepare and test the sampling equipment to ensure sampling readiness and for obtaining the required field blank, field reference standard, and headspace samples. These activities and requirements assure that the sampling and analytical QA objectives are met.

C1-1a Method Requirements

Headspace gas sampling is performed in an appropriate radiation containment area on waste containers that are in compliance with the container equilibrium requirement (i.e., 72 hours at 18° C or higher).

For those waste streams without an AK Sufficiency Determination approved by the CBFO, containers are randomly selected from waste streams designated as summary category S5000 (debris waste) and are categorized under one of the sampling scenarios shown in Table C1-5 and depicted in Figure C1-1. If the container is categorized under Scenario 1, the applicable DAC from Table C1-6 must be met prior to headspace gas sampling. If the container is categorized under Scenario 2, the applicable Scenario 1 DAC from Table C1-6 must be met prior to venting the container and then the applicable Scenario 2 DAC from Table C1-7 must be met after venting the container. The DAC for Scenario 2 containers that contain filters or rigid liner vent holes other than those listed in Table C1-7 shall be determined using footnotes “a” and “b” in Table C1-7. Containers that have not met the Scenario 1 DAC at the time of venting must be categorized under Scenario 3. Containers categorized under Scenario 3 must be placed into one of the Packaging Configuration Groups listed in Table C1-8. If a specific packaging configuration cannot be determined based on the data collected during packaging and/or repackaging (Attachment C, Section C-3d[1]), a conservative default Packaging Configuration Group of 3 for 55-gallon drums, 6 for standard waste boxes (SWBs), standard large box 2s (SLB2s) and TDOPs, and 8 for 85-gallon and 100-gallon drums must be assigned, provided the drums do not contain pipe component packaging. If a container is designated as Packaging Configuration Group 4 (i.e., a pipe component), the headspace gas sample must be taken from

the pipe component headspace. Drums, TDOPs, SLB2s or SWBs that contain compacted 55-gallon drums containing a rigid liner may not be disposed of under any packaging configuration unless headspace gas sampling was performed before compaction in accordance with this QAPjP. The DAC for Scenario 3 containers that contain rigid liner vent holes that are undocumented during packaging, repackaging, and/or venting (Section C1-1a[4][ii]) shall be determined using the default conditions in footnote "b" in Table C1-9. The DAC for Scenario 3 containers that contain filters that are either undocumented or are other than those listed in Table C1-9 shall be determined using footnote "a" in Table C1-9. Each of the Scenario 3 containers shall be sampled for headspace gas after waiting the DAC in Table C1-9 based on its packaging configuration (Note: Packaging Configuration Groups 4, 5, 6, 7, and 8 are not summary category group dependent, and 85-gallon drum, 100-gallon drum, SWB, SLB2s, and TDOP requirements apply when the 85-gallon drum, 100-gallon drum, SWB, SLB2, or TDOP is used for the direct loading of waste).

C1-1a(1) General Requirements

The determination of packaging configuration consists of identifying the number of confinement layers and the identification of rigid poly liners when present. AMWTP shall use either the default conditions specified in Tables C1-7 through C1-9 for retrievably stored waste or the data documented during packaging, repackaging, and/or venting (Section C1-1a[4][ii]) for determining the appropriate DAC for each container from which a headspace gas sample is collected. These drum age criteria are to ensure that the container contents have reached 90 percent of steady state concentration within each layer of confinement (Lockheed 1995, BWXT 2000). The following information must be reported in the headspace gas sampling documents for each container from which a headspace gas sample is collected:

- Sampling scenario from Table C1-5 and associated information from Table C1-6 and/or Table C1-7;
- The packaging configuration from Table C1-8 and associated information from Table C1-9 including the diameter of the rigid liner vent hole, the number of inner bags, the number of liner bags, the presence/absence of drum liner, and the filter hydrogen diffusivity;
- The permit–required equilibrium time; and
- The drum age.
- For supercompacted waste, both:
    - The absence of rigid liners in the compacted 55-gallon drums which have not been headspace gas sampled in accordance with this QAPjP prior to compaction, and

- The absence of layers of confinement must be documented in the WDS/WWIS if Packaging Configuration Group 7 is used.

For all retrievably stored waste containers, the rigid liner vent hole diameter must be assumed to be 0.3 inches unless a different size is documented during drum venting or repackaging. For all retrievably stored waste containers, the filter hydrogen diffusivity must be assumed to be the most restrictive unless container-specific information clearly identifies a filter model and/or filter diffusivity characteristic that is less restrictive. For all retrievably stored waste containers that have not been repackaged, AK shall not be used to justify any packaging configuration less conservative than the default (i.e., Packaging Configuration Group 3 for 55-gallon drums, 6 for SWBs, SLB2s, and TDOPs, and 8 for 85-gallon and 100-gallon drums). For information reporting purposes listed above, AMWTP may report the default packaging configuration for retrievably stored waste without further verification.

All waste containers with unvented rigid containers greater than 4 liters (exclusive of rigid poly liners) are subject to innermost layer of containment sampling or are vented prior to initiating drum age and equilibrium criteria. When sampling the rigid poly liner under Scenario 1, the sampling device must form an airtight seal with the rigid poly liner to ensure that a representative sample is collected (using a sampling needle connected to the sampling head to pierce the rigid poly liner, and that allows for the collection of a representative sample, satisfies this requirement). The configuration of the containment area and remote-handling equipment at each sampling facility are expected to differ. Headspace-gas samples will be analyzed for analytes listed in Table C3-2 of Attachment C3. If additional packaging configurations are identified, an appropriate Permit Modification will be submitted to incorporate the DAC using the methodology in INEEL-EXT-00-1207, *Determination of Drum Age Criteria and Prediction Factors Based on Packing Configuration* (Liekhus 2000). Consistent with the footnote "a" in Table C1-8, any waste container selected for headspace gas sampling that cannot be assigned a packaging configuration specified in Table C1-8, shall be assigned a conservative default packaging configuration.

Drum age criteria apply only to 55-gallon drums, 85-gallon drums, 100-gallon drums, SWBs, SLB2s, and TDOPs. Drum age criteria for all other container types must be established through permit modification prior to performing headspace gas sampling.

AMWTP collects samples in SUMMA or equivalent canisters using standard headspace gas sampling methods that meet the general guidelines established by the EPA in the Compendium Method TO-14A or TO-15, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air (EPA 1999) or by using on-line integrated sampling/analysis systems. Samples will be directed to an analytical instrument instead of being collected in SUMMA® or equivalent canisters if a single-sample on-line integrated sampling/analysis system is used. If a multi-sample on-line integrated sampling/analysis system is used, samples will be directed to an integrated holding area that meets the cleaning requirements of C1-1c(1). The leak proof and inert nature of the integrated holding area interior surface has been demonstrated and

documented. Since samples will not be transported to another location when using on-line integrated sampling/analysis systems, the sample custody requirements of Section C1-4 and C1-5 do not apply. The same sampling manifold and sampling heads are used with on-line integrated sampling/analysis systems and all of the requirements associated with sampling manifolds and sampling heads will be met. When using an on-line integrated system, the sampling batch and analytical batch QC samples are combined as on-line batch QC samples as outlined in Section C1-1b.

Headspace gas sampling of waste drums at the AMWTP is conducted per INST-OI-43.

C1-1a(2) Manifold Headspace Gas Sampling

The headspace gas sampling protocol employs a multiport manifold capable of collecting multiple simultaneous headspace samples for analysis and QC purposes in accordance with INST-OI-43. The manifold can be used to collect samples in SUMMA or equivalent canisters or as part of an on-line integrated sampling/analysis system. The sampling equipment is leak checked and cleaned prior to first use and as needed thereafter. The manifold and sample canisters will be evacuated to 0.0039 inches (in.) (0.10 mm mercury [Hg]) prior to sample collection. Cleaned and evacuated sample canisters will be attached to the evacuated manifold before the manifold inlet valve is opened. The manifold inlet valve is attached to a changeable filter connected to either a side port needle sampling head capable of forming an airtight seal (for penetrating a filter or rigid poly liner when necessary), a drum punch sampling head capable of forming an airtight seal (capable of punching through the metal lid of a drum for sampling through the drum lid), or a sampling head with an airtight fitting for sampling through a pipe overpack container filter vent hole. Refer to Section C1-1a(4) for descriptions of these sampling heads.

The manifold is equipped with a purge assembly that allows applicable QC samples to be collected through all sampling components that may affect compliance with the QAOs. AMWTP will demonstrate and document the effectiveness of the sampling equipment design in meeting the QAOs. Field blanks are samples of room air collected in the sampling area in the immediate vicinity of the waste container to be sampled. If using SUMMA or equivalent canisters, field blanks will be collected directly into the canister without using the manifold.

The manifold, the associated sampling heads, and headspace gas sample volume requirements are designed to ensure that a representative sample is collected. The manifold internal volumes must be calculated and documented in field logbooks dedicated to headspace-gas sampling collection. The total volume of headspace gases collected during each sampling operation is determined by adding the combined volume of the canisters attached to the manifold and the internal volume of the manifold. The sample volume should remain small in comparison to the volume of the waste container. When an estimate of the available headspace gas volume in the drum can be made, less than 10 percent of that volume should be withdrawn. The manifold must consist of a sample side and a standard side. The sample side must be connected to the standard

side for cleaning and collecting equipment blanks and field reference standards. The sample side of the sampling manifold consists of the following major components:

- An applicable sampling head that forms a leak-tight connection with the headspace sampling manifold.

- A flexible hose that allows the movement of the sampling head from the purge assembly (standard side) to the waste container.

- A pressure sensor(s) pneumatically connected to the manifold. This manifold pressure sensor(s) is capable of measuring absolute pressure in the range from 0.05 millimeters mercury (mm Hg) to 1,000 mm Hg. Resolution for the manifold pressure sensors must be ± 0.01 mm Hg at 0.05 mm Hg. The manifold pressure sensor(s) must have an operating range from approximately 15° C to 40° C.

- Ports available for attaching sample canisters. If using canister-based sampling methods, a sufficient number of ports shall be available to allow simultaneous collection of headspace-gas samples and duplicates for VOC analyses. If using on-line integrated sampling/analysis system, only one port is necessary for the collection of comparison samples. Ports not occupied with sample canisters during cleaning or headspace-gas sampling activities require a plug to prevent ambient air from entering the system. In place of using plugs, the AMWTP may choose to install valves that can be closed to prevent intrusion of ambient air into the manifold. Ports have VCR fittings for connection to the sample canister(s) to prevent degradation of the fittings on the canisters and manifold.

- Sample canisters are leak-free, stainless steel pressure vessels, with a chromium-nickel oxide (Cr-NiO) SUMMA-passivated interior surface, bellows valve, and a pressure/vacuum gauge. Equivalent designs, such as Silco Steel canisters, may be used so long as the leak proof and inert nature of the canister interior surface is demonstrated and documented. All sample canisters must have VCR fittings for connection to sampling and analytical equipment. The pressure/vacuum gauge must be mounted on each manifold. The canister must be helium-leak tested to 1.5×10^{-7} standard cubic centimeters per second (cc/s), have all stainless steel construction, and be capable of tolerating temperatures to 125° C. The gauge range is capable of operating in the leak test range as well as the sample collection range.

- A dry vacuum pump with the ability to reduce the pressure in the manifold to 0.05 mm Hg. A vacuum pump that required oil may be used, but precaution must be taken to prevent diffusion of oil vapors back to the manifold. Precautions may include the use of a molecular sieve and a cryogenic trap in series between the headspace sampling ports and the pump. The AMWTP systems use either an oil-free scroll vacuum pump or an oil vacuum pump to reduce the pressure in the headspace sampling manifold to 0.05 mm Hg. Precautions have been taken to prevent diffusion of oil vapors back to the manifold including the use of a non-interfering silicone-based lubricant, continuous pump operation and piping dimensioning from the pump to the manifold. Compliance is demonstrated by several months of operation and equipment blank analyses without indication of contamination due to oil diffusion.

- A minimum distance, based on the design of the manifold system, between the tip of the needle and the valve that isolates the pump from the manifold in order to minimize the dead volume in the manifold.

- If real-time equipment blanks are not available, the manifold must be equipped with an organic vapor analyzer (OVA) that is capable of detecting all analytes listed in Table C3-2. The OVA shall be capable of measuring total VOC concentrations below the lowest headspace program required quantitation limit (PRQL). Detection of 1,1,2-trichloro-1,2,2-trifluoroethane may not be possible if a photoionization detector is used. The OVA measurement shall be verified by the collection of equipment blanks at the frequency specified in Section C1-1 to check for manifold cleanliness.

- At the AMWTP, the manifold is equipped with GC/MS that is capable of measuring all analytes listed in Table C3-2. The GC/MS is capable of measuring total VOC concentration below the lowest headspace gas PRQL. The GC/MS measurement is confirmed by the collection of equipment blanks and as specified in C1-1 to check for manifold cleanliness.

The standard side of the sampling manifold consists of the following major components:

- A cylinder of compressed zero air, helium, argon, or nitrogen gas that is used to clean the manifold between samples and provide gas for the collection of equipment blanks or on-line blanks. The high-purity gas is certified by the manufacturer to contain less than one parts per million (ppm) total VOCs. The gases are metered into the standard side of the manifold using devices (solenoid controlled valves), that are corrosion proof and that do not allow for the introduction of manifold gas into the purge gas cylinders or generator. Alternatively, a zero air or nitrogen generator may be used, provided a sample of the zero air or nitrogen is collected and demonstrated to contain less than one ppm total VOCs. Zero air or nitrogen from a generator will be humidified. Gas quality is of ultra-high purity grade and metered by a two-stage stainless steel regulator.

- Cylinders of field reference standard gases or on-line control sample (OLCS) gases. These cylinders provide gases for evaluating the accuracy of the headspace sampling process. Each cylinder of field reference gas or OLCS gas has a flow regulating device. The field reference standard gas or OLCS gas is certified by the manufacturer to contain analytes from, Table C3-2 at known concentrations.

- A humidifier filled with American Society for Testing and Materials (ASTM) Type I or Type II water is connected and opened to the standard side of the manifold between the compressed gas cylinder and the purge assembly. Dry gases flowing to the purge assembly pick up moisture from the humidifier. Moisture is added to the dry gases to condition the equipment blanks and field reference standards and to assist with system cleaning between headspace gas sample collection or pre-humidified certified nitrogen cylinders are used.

NOTE: *Caution should be exercised to isolate the humidifier during the evacuation of the system to prevent flooding the manifold. In lieu of the humidifier, the compressed gas cylinders (e.g., zero air and field reference standard gas), may contain water vapor in the concentration range of 1,000 to 10,000 parts per million by volume (ppmv).*

- A purge assembly allows the sampling head (sample side) to be connected to the standard side of the manifold. The ability to make this connection is required to transfer gases from the compressed gas cylinders to the canisters or on-line analytical instrument. This connection is required for system cleaning.

- A flow indicating device or a pressure regulator connected to the purge assembly monitors the gas flow rate through the purge assembly. The flow rate or pressure through the purge assembly is monitored to assure excess flow during cleaning activities and during QC sample collection. Maintaining excess flow prevents ambient air from contaminating QC samples and allows samples of gas from the compressed gas cylinders to be collected near ambient pressures.

In addition to a manifold consisting of a sample side and a standard side, the area in which the manifold is operated contains sensors for measuring ambient pressure and ambient temperature as follows:

- An ambient-pressure sensor with a sufficient measurement range for the ambient barometric pressures expected at the sampling location. It must be kept in the sampling area during sampling operations. Resolution is 1.0 mm Hg or less and calibration performed by the manufacturer is based on National Institute of Standards and Technology (NIST), or equivalent, standards.

- The temperature sensor must have a sufficient measurement range for the ambient temperatures expected at the sampling location. The measurement range of the temperature sensor must be 18° C to 50° C. The temperature sensor calibration is traceable to NIST, or equivalent, standards.

C1-1a(3) Direct Canister Headspace Gas Sampling

This section is applicable to the AMWTP such that sampling and analysis may be performed by other contractors. Data generation level validation will be performed by a subcontractor. Project level validation will be performed by the AMWTP PLV&V groups.

This headspace-gas sampling protocol employs a canister-sampling system to collect headspace gas samples for analysis and QC purposes without the use of the manifold described above. Rather than attaching sampling heads to a manifold, in this method the sampling heads are attached directly to an evacuated sample canister.

Canisters shall be evacuated to 0.0039 in. (0.10 mm) Hg prior to use and attached to a changeable filter connected to the appropriate sampling head. The sampling head(s) must be capable of either punching through the metal lid of the drums (and/or the rigid poly liner when necessary) while maintaining an airtight seal when sampling through the drum lid, penetrating a filter or the septum in the orifice of the self-tapping screw, or maintaining an airtight seal for sampling through a pipe overpack container filter vent hole to obtain the drum headspace samples. Field duplicates must be collected at the same time, in the same manner, and using the same type of sampling apparatus as used for headspace-gas sample collection. Field blanks shall be samples of room air collected in the immediate vicinity of the waste-drum sampling area prior to removal of the drum lid. Equipment blanks and field reference standards must be collected using a purge assembly equivalent to the standard side of the manifold described above. These samples shall be collected from the needle tip through the same components (e.g., needle and filter) that the headspace-gas samples pass through.

The sample canisters, associated sampling heads, and the headspace-sample volume requirements ensure that a representative sample is collected. When an estimate of the available headspace-gas volume of the waste container can be made, less than 10 percent of that volume should be withdrawn. A determination of the sampling head internal volume shall be made and documented. The total volume of headspace gases collected during each headspace gas sampling operation can be determined by adding the volume of the sample canister(s) attached to the sampling head to the internal volume of the sampling head. Every effort shall be made to minimize the internal volume of sampling heads.

Each sample canister used with the direct canister method shall have a pressure/vacuum gauge capable of indicating leaks and sample collection volumes. Canister gauges are intended to be gross leak-detection devices, not vacuum certification devices. If a canister pressure/vacuum gauge indicates an unexpected pressure change, determination of whether the change is a result

of ambient temperature and pressure differences or a canister leak shall be made. This gauge shall be helium-leak tested to 1.5×10^{-7} standard cc/s, have all stainless steel construction, and be capable of tolerating temperatures to 125°C.

The SUMMA® or equivalent sample canisters as specified in EPA's Compendium Method TO-14A or TO-15 (EPA 1999) shall be used when sampling each drum. These heads shall form a leak-tight connection with the canister and allow sampling through the drum-lid filter, through the drum lid itself and/or rigid poly liner when necessary (by use of a punch or self-tapping screw), using an airtight fitting to collect the sample through the filter vent hole of a pipe overpack container, or using a hollow side port needle. Figure C1-4 illustrates the direct canister-sampling equipment.

C1-1a(4) Sampling Heads

A sample of the headspace gas directly under the container lid, pipe overpack filter vent hole, or rigid poly liner shall be collected. Several methods have been developed for collecting a representative sample: sampling through the filter, sampling through the drum lid by drum punching, sampling through a pipe overpack container filter vent hole, and sampling through the rigid poly liner. The chosen sampling method shall preserve the integrity of the drum to contain radionuclides (e.g., replace the damaged filter, replace set screw in filter housing, and seal the punched drum lid). The AMWTP samples through the filter and preserves the integrity of the drum to contain radionuclides (e.g., replace the damaged filter, replace set screw in filter housing, and seal the punched drum lid).

C1-1a(4)(i) Sampling Through the Filter

To sample the drum-headspace gas through the drum's filter, the AMWTP uses, a side-port needle (e.g., a hollow needle sealed at the tip with a small opening on its side close to the tip) pressed through the filter and into the headspace beneath the drum lid in accordance with INST-OI-43. This permits the gas to be drawn into the manifold or directly into the canister(s). All of the general method requirements, sampling apparatus requirements, and QC requirements described in this section are met in addition to the following requirements that are pertinent to drum headspace-gas sampling through the filter:

- The lid of the drum's 90-mil poly rigid liner shall contain a hole for venting to the drum headspace. A representative sample cannot be collected from the drum headspace until the 90-mil poly-liner has been vented. If the DAC for Scenario 1 is met, a sample may be collected from inside the 90-mil rigid poly liner. If the sample is collected by removing the drum lid, the sampling device shall form an airtight seal with the rigid poly liner to prevent the intrusion of outside air into the sample (using a sampling needle connected to the sampling head to pierce the rigid poly liner satisfies this requirement). If headspace-gas samples are collected from the drum headspace prior to venting the 90-mil rigid poly liner,

the sample is not acceptable and an NCR shall be prepared, submitted, and resolved. Nonconformance procedures are outlined in Attachment C3.

- For sample collection, the drum's filter shall be sealed to prevent outside air from entering the drum and diluting and/or contaminating the sample.

The sampling head for collecting drum headspace by penetrating the filter consists of a side- port needle, a filter to prevent particles from contaminating the gas sample, and an adapter to connect the side-port needle to the filter. To prevent cross contamination, the sampling head is cleaned or replaced after sample collection, after field-reference standard collection, and after field-blank collection. The following requirements shall also be met:

The housing of the filter shall allow insertion of the sampling needle through the:

- Filter element or a sampling port with septum that bypasses the filter element into the drum headspace.

- The side-port needle shall be used to reduce the potential for plugging.

- The purge assembly shall be modified for compatibility with the side-port needle.

C1-1a(4)(ii) Sampling Through the Drum Lid by Drum Lid Punching

Sampling through the drum lid at the time of drum punching or thereafter may be performed as an alternative to sampling through the drum's filter if an airtight seal can be maintained. To sample the drum headspace gas through the drum lid at the time of punching or thereafter, the lid is breached using an appropriate punch (sparkless drill/filter assembly). The punch forms an airtight seal between the drum lid and the manifold or direct canister sampling equipment. To assure that the sample collected is representative, all of the general method requirement, sampling apparatus requirements, and QC requirements specified in EPA's Compendium Method TO-14A or TO-15 (EPA 1999) as appropriate, are met in addition to the following requirements:

- The seal between the drum lid and sampling head minimizes the intrusion of ambient air.

- All components of the sampling system that come into contact with sample gases are purged with humidified zero air, nitrogen, or helium prior to sample collection.

- Equipment blanks and field reference standards are collected through all the components of the punch that contact the headspace gas sample.

- Pressure is applied to the punch until the drum lid has been breached.

- Provisions are made to relieve excessive drum pressure increases during the drum-punch operations; potential pressure increases may occur during sealing of the drum punch to the drum lid.

- The lid of the drum's 90-mil rigid poly liner shall contain a hole for venting to the drum headspace. The drill filter assembly design ensures penetration of drum poly liners. A representative sample cannot be collected from the drum headspace until the 90-mil rigid poly liner has been vented. If the DAC for Scenario 1 is met, a sample may be collected from inside the 90-mil rigid poly liner. If headspace gas samples are collected from the drum headspace prior to venting the poly liner, the sample is not acceptable and an NCR is prepared, submitted, and resolved. Nonconformance procedures are outlined in Section C3-13.

- During sampling, the drums filter, if present, is sealed to prevent outside air from entering the drum.

- While sampling through the drum lid using manifold sampling a flow indicating device or pressure regulator to verify flow of gases is pneumatically connected to the drum punch and operated in the same manner as the flow indicating device described in C1-1a(2).

- Equipment shall be used to adequately secure the drum-punch sampling system to the drum lid.

- If the headspace gas sample is not taken at the time of drum punching, the presence and diameter of the rigid liner vent hole shall be documented during the punching operation for use in determining an appropriate Scenario 2 DAC.

C1-1a(4)(iii) Sampling Through a Pipe Overpack Container Filter Vent Hole

This section is not applicable to the AMWTP.

Sampling through an existing filter vent hole in a pipe overpack container (POC) may be performed as an alternative to sampling through the POC's filter if an airtight seal can be maintained. To sample the container headspace-gas through a POC filter vent hole, an appropriate airtight seal shall be used. The sampling apparatus shall form an airtight seal between the POC surface and the manifold or direct canister sampling equipment. To assure that the sample collected is representative, all of the general method, sampling apparatus, and QC requirements specified in EPA's Compendium Method TO-14A or TO-15 (EPA 1999) as appropriate, shall be met in addition to the following requirements:

- The seal between the POC surface and sampling apparatus shall be designed to minimize intrusion of ambient air.

- The filter shall be replaced as quickly as is practicable with the airtight sampling apparatus to ensure that a representative sample can be taken. Sites must provide documentation demonstrating that the time between removing the filter and installing the airtight sampling device has been established by testing to assure a representative sample.

- All components of the sampling system that come into contact with sample gases shall be cleaned according to requirements for direct canister sampling or manifold sampling, whichever is appropriate, prior to sample collection.

- Equipment blanks and field reference standards shall be collected through all the components of the sampling system that contact the headspace-gas sample.

- During sampling, openings in the POC shall be sealed to prevent outside air from entering the container.

- A flow-indicating device shall be connected to sampling system and operated according to the direct canister or manifold sampling requirements, as appropriate.

C1-1b Quality Control

For the manifold and direct canister sampling systems, field QC samples are collected on a per sampling basis. A sampling batch is a suite of samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding QC samples), all of which shall be collected within 14 days of the first sample in the batch. For the on-line integrated sampling/analysis systems, QC samples shall be collected and analyzed on an on-line batch basis. Holding temperatures and container requirements for gas sample containers are provided in Table C1-1. An on-line batch is the number of headspace-gas samples collected within a 12-hour period using the same on-line integrated analysis system as described in INST-OI-43. The analytical batch requirements are specified by the analytical method being used in the on-line system. Table C1-2 provides a summary of field QC sample collection requirements, and Table C1-3 provides a summary of QC sample acceptance criteria.

For the on-line integrated sampling/analysis systems, the on-line batch QC samples serve as combined sampling batch/analytical batch QC samples as follows:

- The on-line blank replaces the equipment blank and laboratory blank.

- The OLCS replaces the field reference standard and laboratory control sample (LCS).

- The on-line duplicate replaces the field duplicate and laboratory duplicate.

The acceptance criteria for on-line batch QC samples are the same as for the sampling batch and analytical batch QC samples they replace. Acceptance criteria are shown in Table C1-3. A

separate field blank is collected and analyzed for each on-line batch. If the results of a field blank collected through the sampling manifold meets the acceptance criterion, a separate on-line blank need not be collected and analyzed for AMWTP systems that deliver samples directly to the GC/MS for analysis. For systems that collect samples temporarily in on-line passivated canisters, a separate on-line blank will be collected and analyzed to demonstrate canister cleanliness.

The SPM monitors and documents field QC sample results and fills out an NCR if acceptance or frequency criteria are not met. The SPM also ensures appropriate corrective action is taken if acceptance criteria are not met.

C1-1b(1) Field Blanks

Field blanks are collected to evaluate background levels of program-required analytes. Field blanks are collected prior to sample collection, and at a frequency of one per sampling batch. The SPM uses the field blank data to assess impacts of ambient contamination, if any, on the sample results. Field blank results determined by gas GC/MS or gas chromatography/flame ionization detection (GC/FID) are acceptable if the concentration of each VOC analyte is less than or equal to three times the method detection limit (MDL) listed in Table C3-2. An NCR is initiated and resolved if the final reported QC sample results do not meet the acceptance criteria.

C1-1b(2) Equipment Blanks

Equipment blanks shall be collected to assess cleanliness prior to first use after cleaning of all sampling equipment. On-line blanks are used to assess equipment cleanliness as well as analytical contamination. After the initial cleanliness check, equipment blanks collected through the manifold shall be collected at a frequency of one per sampling batch for VOC analysis or one per day, whichever is more frequent. If the direct canister method is used, field blanks may be used in lieu of equipment blanks. The SPM uses equipment blank data to assess impacts of potentially contaminated sampling equipment on the sample results. Equipment blank results determined by GC/MS or GC/FID are acceptable if the concentration of each VOC analyte is less than or equal to three times the MDL listed in Table C3-2.

C1-1b(3) Field Reference Standards

Field reference standards are used to assess the accuracy with which the sampling equipment collects VOCs samples into SUMMA or equivalent canisters prior to first use of the sampling equipment. The OLCS is used to assess the accuracy with which the sampling equipment collects VOC samples as well as an indicator of analytical accuracy for the on-line sampling system. Field reference standards contain a minimum of six of the analytes listed in Table C3-2 at concentrations within a range of 10 to 100 ppmv and greater than the MDL for each compound.

Field reference standards have a known valid relationship to a nationally recognized standard (e.g., NIST), if available. If NIST traceable standards are not available and commercial gases are

used, a Certificate of Analysis from the manufacturer documenting traceability is required. Commercial stock gases are not used beyond their manufacturer-specified shelf life.

After the initial accuracy check, field reference standards collected through the manifold are collected at a frequency of one per sampling batch and submitted blind to the analytical laboratory. For the direct canister method, field reference standards collection may be discontinued if the field reference standard results demonstrate the QAO for accuracy specified in Attachment C3. Field reference standard results are acceptable if the accuracy for each tested compound has a recovery of 70 to 130 percent.

C1-1b(4) Field Duplicates

Field duplicates are collected sequentially and in accordance with Table C1-1 to assess the precision with which the sampling procedure collects samples into SUMMA equivalent canisters. Field duplicates also serve as a measure of analytical precision for the on-line sampling system. Field duplicate results are acceptable if the relative percent difference (RPD) is less than or equal to 25 for each tested compound found in concentrations greater than the PRQL in both duplicates.

C1-1c Equipment Testing, Inspections, and Maintenance

All sampling equipment components that come into contact with headspace sample gas are constructed of relatively inert materials such as stainless steel or Teflon®. A passivated interior surface on the stainless steel components is recommended.

To minimize the potential for cross-contamination of samples, the headspace gas sampling manifold and sample canisters are properly cleaned and leak-checked prior to each headspace gas sampling event. Procedures used for cleaning and preparing the manifold and sample canisters are equivalent to those provided in EPA's Compendium Method TO-14A or TO-15 (EPA 1999). Cleaning requirements are presented below.

C1-1c(1) Headspace Gas Sample Canister Cleaning

SUMMA® or equivalent canisters used in these methods are subject to a rigorous cleaning and certification procedures prior to use in the collection of any samples. Guidance for the development of this procedure has been derived from Method TO-14A or TO-15 (EPA 1999). Specific detailed instructions are provided in INST-OI-43 for cleaning and certification of canisters.

Canisters are cleaned and certified on an equipment cleaning batch basis. An equipment cleaning batch is any number of canisters cleaned together at one time using the same cleaning method. A cleaning system, capable of processing multiple canisters at a time, composed of an oven (optional) and a vacuum manifold which uses a dry vacuum pump or cryogenic trap backed by an oil sealed pump used to clean SUMMA® or equivalent canisters. Prior to cleaning, a positive or negative pressure leak test is performed on all canisters. The duration of the leak test must be

greater than or equal to the time it takes to collect a sample, but no greater than 24 hours. For a leak test, a canister passes if the pressure does not change by a rate greater then ±2 pounds per square inch gauge (psig) per 24 hours. Any canister that fails will be checked for leaks, repaired, and reprocessed. One canister per equipment cleaning batch will be filled with humid zero air or humid high purity nitrogen and analyzed for VOCs. The equipment cleaning batch of canisters is considered clean if there are no VOCs above three times the MDLs listed in Table C3-2. After the canisters have been certified for leak-tightness and found to be free of background contamination, they are evacuated to 0.0039 in. (0.10 mm) Hg or less for storage prior to shipment. The AMWTP is responsible for canister cleaning and certification to maintain canister certification documentation and initiate the canister tags as required in Attachment C3.

C1-lc(2) Sampling Equipment Initial Cleaning and Leak-Check

The surfaces of all headspace-gas sampling equipment components that will come into contact with headspace gas is thoroughly inspected and cleaned prior to assembly. The manifold and associated sampling heads are purged with humidified zero air, nitrogen, or helium, and leak checked after assembly. This cleaning is repeated if the manifold and/or associated sampling heads are contaminated to the extent that the routine system cleaning is inadequate.

C1-1c(3) Sampling Equipment Routine Cleaning and Leak-Check

The manifold and associated sampling heads which are reused are cleaned and checked for leaks in accordance with the cleaning and leak check procedures described in EPA's Compendium Method TO-14A or TO-15 (EPA 1999). The procedure is conducted after headspace gas and field duplicate collection; after field blank collection, after field blanks are collected through the manifold; and after the additional cleaning required for field reference standard collection has been completed. The protocol for routine manifold cleaning and leak check requires that sample canisters be attached to the canister ports, or that ports be capped or closed by valves, and requires that the sampling head be attached to the purge assembly.

VOCs are removed from the internal surfaces of the headspace sampling manifold to levels that are less than or equal to three times the MDLs of the analytes listed in Table C3-2, as determined by analysis of an equipment blank or through use of an OVA. It is recommended that the headspace sampling manifold be heated to 150° Centigrade and periodically evacuated and flushed with humidified zero air, nitrogen, or helium. When not in use, the manifold shall be demonstrated clean before storage with a positive pressure of high purity gas (i.e., zero air, nitrogen, or helium) in both the standard and sample sides.

Sampling is suspended and corrective actions are taken when the analysis of an equipment blank indicates that the VOC limits have been exceeded or if a leak test fails. The SPM ensures that corrective action has been taken prior to resumption of sampling.

C1-1c(4) Manifold Cleaning After Field Reference Standard Collection

The sampling systems are specially cleaned after a field reference standard has been collected because the field reference standard gases contaminate the standard side of the headspace gas sampling manifold when they are regulated through the purge assembly. This cleaning requires the installation of a gas-tight connector in place of a sampling head, between the flexible hose and the purge assembly. This configuration allows both the sample and standard sides of the sampling system to be flushed (evacuated and pressurized) with humidified zero air, nitrogen, or helium which, combined with heating the pneumatic lines, should sweep and adequately clean the system's internal surfaces. After this protocol has been completed and prior to collecting another sample, the routine system cleaning and leak check (see previous section) shall also be performed in accordance with INST-OI-43.

C1-1c(5) Sample Head Cleaning

To prevent cross-contamination, the needle, airtight fitting or airtight seal, adapters, and filter of the sampling heads are cleaned in accordance with the cleaning procedures, INST-OI-43 which use the cleaning procedures described in EPA in the Compendium Method TO-14 (EPA 1988). After sample collection, a sampling head will be disposed of or cleaned in accordance with EPA's Compendium Method TO-14A or TO-15 (EPA 1999), prior to reuse. As a further QC measure, the needle, airtight fitting or airtight seal, and filter, after cleaning, should be purged with zero air, nitrogen, or helium and capped for storage to prevent sample contamination by VOCs potentially in the ambient air.

C1-1d Equipment Calibration and Frequency

The manifold pressure sensors are certified prior to initial use, then annually as described in MP-CMNT-10.5, *Calibration and Control of Measuring and Test Equipment Program*, using NIST traceable, or equivalent, standards. If necessary, the pressure indicated by the sensor is temperature compensated. The ambient air temperature sensor, if present, is certified prior to initial use, then annually, to NIST traceable, or equivalent, temperature standards.

The OVA shall be calibrated once per day, prior to first use, or as necessary according to the manufacturer's specifications Calibration gases are certified to contain known analytes from Table C3-2 at known concentrations. The balance of the OVA calibration gas is consistent with the manifold purge gas when the OVA is used (i.e., zero air, nitrogen, or helium).

The AMWTP HGAS units from Consonant Technology, Inc., do not employ an OVA, rather an automatic manifold capable of collecting samples from a single sampling probe, or from in-line QC sample gas cylinders, routes the sample to a manifold of canisters or directly to the GC/MS, for analysis of VOCs, hydrogen, and methane. Calibration and standardization are performed in accordance with INST-OI-43.

C1-2 Sampling of Homogeneous Solids and Soil/Gravel (Summary Categories S3000/S4000)

For those waste streams without an AK Sufficiency Determination approved by the CBFO, randomly selected containers of homogeneous solid and/or soil/gravel waste streams (S3000/S4000) shall be sampled and analyzed to resolve the assignment of EPA HWNs. For example, analytical results may be useful to resolve uncertainty regarding hazardous constituents used in a process that generated the waste stream when the hazardous constituents are not documented in the AK information for the waste.

This section describes the requirements for collecting samples of TRU mixed waste classified as homogeneous solids and soils/gravels. Sampling protocols are based upon methods similar to those approved by EPA methods and ASTM and are implemented in INST-OI-16, INST-OI-73, or INST-OI-75.

C1-2a Method Requirements

The methods used to collect samples of TRU mixed waste classified as homogeneous solids and soil/gravel from waste containers is such that the samples are representative of the waste from which they are taken. To minimize the quantity of investigation-derived waste, the laboratories conducting the analytical work will receive no more than is required for analysis, based on the analytical methods.

A sufficient number of samples are collected to adequately represent the waste being sampled. For those waste streams defined as Summary Category Groups S3000 and S4000, debris that may be present within these wastes is not sampled.

Samples of retrievably stored waste containers will be collected using appropriate coring equipment or other EPA approved methods to collect a representative sample. Newly generated wastes that are sampled from a process as it is generated may be sampled using EPA approved methods, including scoops and ladles that are capable of collecting a representative sample. All sampling and core sampling will comply with the QC requirements specified in C1-2b.

C1-2a(1) Core Collection

Coring tools are used to collect cores of homogenous solids and soil/gravel from waste containers, when possible, in a manner that minimizes disturbance to the core. A rotational coring tool (i.e., a tool that is rotated longitudinally), similar to a drill bit, to cut, lift the waste cuttings, and collect a core from the bore hole, is used to collect sample cores from waste containers. For homogenous solids and soil/gravel that are relatively soft, non-rotational coring tools may be used in lieu of a rotational coring tool.

The following requirements apply to the use of coring tools:

- Each coring tool shall contain a removable tube (liner) that is constructed of fairly rigid material unlikely to affect the composition and/or concentrations of target analytes in the sample core. Materials that are acceptable for use for coring device sleeves and end caps are polycarbonate, Teflon, or glass for most samples, and stainless steel or brass if samples are not to be analyzed for metals. The AMWTP uses polycarbonate sleeves and Teflon lined end caps that are cleaned in accordance with C1-2b prior to use. An equipment blank is taken prior to first use to ensure the absence of target analytes. Liner outer diameter is no more than 2 in. and no less than one in. Liner wall thickness is recommended to be no greater than 1/16 in. Before use, the liner is cleaned in accordance with the requirements in Section C1-2b. The liner fits flush with the inner wall of the coring tool and shall be of sufficient length to hold a core that is representative of the waste along the entire depth of the waste. The depth of the waste is calculated as the distance from the top of the sludge to the bottom of the drum (based on the thickness of the liner and the rim at the bottom of the drum).

- The liner material is sufficiently transparent to allow VE of the core after sampling. If sub-sampling is not conducted immediately after core collection and liner extrusion, then end caps constructed of material unlikely to affect the composition and/or concentrations of target analytes in the core (e.g., Teflon®) is placed over the ends of the liner. End caps shall fit tightly to the ends of the liner.

- A spring retainer is used with each coring tool when the physical properties of the waste are such that the waste may fall out of the coring tool's liner during sampling activities. The spring retainer is constructed of relatively inert material (e.g., stainless steel or Teflon) and its inner diameter shall not be less than the inner diameter of the liner. Before use, spring retainers are cleaned in accordance with the requirements given in Section C1-2b.

- Coring tools may have an air-lock mechanism that opens to allow air inside the liners to escape as the tool is pressed into the waste (e.g., ball check valve). If used, this air-lock mechanism shall also close when the core is removed from the waste container.

- After disassembling the coring tool, a device (extruder) to forcefully extrude the liner from the coring tool is used if the liner does not slide freely. All surfaces of the extruder that may come into contact with the core will be cleaned in accordance with the requirements in Section C1-2(b) prior to use.

- Coring tools are of sufficient length to hold the liner and have been constructed to allow placement of the liner leading edge as close as possible to the coring tools leading edge.

- All surfaces of the coring tool that have the potential to contact the sample core or sample media are cleaned in accordance with the requirements in Section C1-2(b) prior to use.

- The leading edge of the coring tools may be sharpened and tapered to a diameter equivalent to, or slightly smaller than, the inner diameter of the liner to reduce the drag of the homogenous solids and soil/gravel against the internal surfaces of the liner, thereby enhancing sample recovery.

- Rotational coring tools have a mechanism to minimize the rotation of the liner inside the coring tool during coring activities, thereby minimizing physical disturbance to the core.

- Rotational coring is conducted in a manner that minimizes transfer of frictional heat to the core, thereby minimizing potential loss of VOCs.

- Non-rotational coring tools shall be designed such that the tool's kerf width is minimized. Kerf width is defined as one-half of the difference between the outer diameter of one tool and the inner diameter of the tool's inlet.

C1-2a(2) Sample Collection

Sampling of cores is conducted in accordance with the following requirements:

- Sampling is conducted as soon as possible after core collection. If a substantial delay (i.e., more than 60 minutes) is expected between core collection and sampling, the core shall remain in the liner and the liner shall be capped at each end. If the liner containing the core is not extruded from the coring tool and capped, then two alternatives are permissible: (1) the liner shall be left in the coring tool and the coring tool shall be capped at each end, or (2) the coring tool shall remain in the waste container with the air-lock mechanism attached.

- Samples of homogenous solids and soil/gravel for VOC analyses are collected prior to extruding the core from the liner. These samples may be collected by collecting a single sample from the representative subsection of the core, or three sub-samples may be collected from the vertical core to form a single 15-gram (g) composite sample. Smaller sample sizes may be used if method PRQL requirements are met for all analytes. The sampling locations shall be randomly selected. If a single sample is used, the representative subsection is chosen by randomly selecting a location along the portion of the core (i.e. core length). If the three sub-sample method is used, the sampling locations shall be randomly selected within three equal-length subsections of the core along the long axis of the liner and access to the waste shall be gained by making a perpendicular cut through the liner and the core. The procedures to select, and record the selection, of random sampling locations is given in INST-OI-16, INST-OI-73, and INST-OI-75. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the CBFO. A sampling device such as the metal coring cylinder described in EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Manual (EPA 1996), or equivalent, is immediately used to collect the sample once the core has been exposed to air.

Immediately after sample collection, the sample shall be extruded into 40-ml volatile organics analysis (VOA) vials (or other containers specified in appropriate SW-846 methods), the top rim of the vial visually inspected and wiped clean of any waste residue, and the vial cap secured. Sample handling requirements are outlined in Table C1-4. Additional guidance for this type of sampling can be found in SW-846.

- Samples of the homogenous solids and soil/gravel for semi-volatile organic compound and metals analyses are collected. These samples may be collected from the same sub-sample locations and in the same manner as the sample collected for VOC analysis, or they may be collected by splitting or compositing the representative subsection of the core. The representative subsection is chosen by randomly selecting a location along the portion of the core (i.e. core length). The procedures to select, and record the selection, of random sampling locations is given in INST-OI-16, INST-OI-73, and INST-OI-75. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the CBFO. Guidance for splitting and compositing solid materials can be found in SW-846. All surfaces of the sampling tools that have the potential to come into contact with the sample shall be constructed of materials unlikely to affect the composition or concentrations of target analytes in the waste (e.g., Teflon). In addition, all surfaces that have the potential to come into contact with core sample media shall either be disposed or decontaminated according to the procedures found in Section C1-2(b). Sample sizes and handling requirements are outlined in Table C1-4.

Newly generated waste samples may be collected using methods other than coring, as discussed in Section C1-2a. Newly generated wastes samples will be collected as soon as possible after sampling, but the spatial and temporal homogeneity of the waste stream dictate whether a representative grab sample or composite sample shall be collected. As part of the site audit, CBFO will assess waste sampling to ensure collection of representative samples.

C1-2b Quality Control Requirements

QC requirements for sampling of homogeneous solids and soil/gravel include collecting co-located samples from cores or other sample types to determine precision; collection of equipment blanks to verify cleanliness of the sampling and coring tools and sampling equipment; and analysis of reagent blanks to ensure reagents, such as deionized and high pressure liquid chromatography (HPLC) water, are of sufficient quality. Coring and sampling of homogeneous solids and soil/gravel comply, at a minimum, with the QC requirements.

C1-2b(1) Co-located Samples

In accordance with the requirement to collect field duplicates required by the EPA methods found in SW-846, samples are collected to determine the combined precision of the coring and sampling procedures in accordance with INST-OI-16, INST-OI-73, and INST-OI-75. The co-located core methodology is a duplicate sample collection methodology intended to collect

samples from a second core placed at approximately the same location within the drum when samples are collected by coring. Waste may not be amenable to coring in some instances. In this case, a co-located sample may be collected from a sample (e.g. scoop) collected from approximately the same location in the waste stream. A sample from each co-located core or waste sample collected by other means is collected side by side as close as feasible to one another, handled in the same manner, visually inspected through the transparent liner (if cored), and sampled in the same manner at the same randomly selected sample location(s). If the VE detects inconsistencies such as color, texture, or waste type in the waste at the sample location, another sampling location may be randomly selected, or the samples may be invalidated and co-located samples or cores may again be collected. Co-located samples, from either core or other sample type, shall be collected at a frequency of one per sampling batch or once per week, whichever is more frequent. A sampling batch is a suite of homogenous solids and soil/gravel samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field QC samples), all of which shall be collected within 14 days of the first sample in the batch.

C1-2b(2) Equipment Blanks

In accordance with SW-846 equipment blanks are collected from fully assembled sampling and coring tools (i.e., at least those portions of the sampling equipment that contact the sample) prior to first use after cleaning at a frequency of one per "equipment cleaning batch" in accordance with INST-OI-16, INST-OI-73, and INST-OI-75. An equipment cleaning batch is the number of sampling equipment items cleaned together at one time using the same cleaning method. The equipment blank shall be collected from the fully assembled sampling or coring tool in the area where the sampling or coring tools are cleaned, prior to covering with protective wrapping and storage. The equipment blank is collected by pouring clean water (e.g., deionized water, HPLC water) down the inside of the assembled sampling or coring tool. The water is collected in a clean sample container placed at the leading edge of the sampling or coring tool and analyzed for the analytes listed in Tables C3-4, C3-6 and C3-8. The results of the equipment blank will be considered acceptable if the analysis indicates no analyte at a concentration greater than three times the MDLs listed in Tables C3-4 and C3-6 or in the Program Required Detection Limits (PRDLs) in Table C3-8. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling or coring tools shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

Equipment blanks for coring tools are collected from liners that are cleaned separately from the coring tools. These equipment blanks shall be collected at a frequency of one per equipment cleaning batch. The equipment blanks shall be collected by randomly selecting a liner from the equipment cleaning batch, pouring clean water (e.g., deionized water or HPLC water) across its internal surface, collecting the water in a clean sample container, and analyzing the water for the analytes listed in Tables C3-4, C3-6, and the analytes in Table C3-8. The results of the equipment blank analysis will be considered acceptable if the results indicate no analyte at a

concentration greater than three times the MDLs listed in Tables C3-4, C3-6, or the PRDLs in Table C3-8. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of liners shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

Sampling equipment (e.g., bowls, spoons, chisel, and VOC sub-sampler) is also to be cleaned. Equipment blanks are collected for the sampling equipment at a frequency of one per equipment cleaning batch. After the sampling equipment has been cleaned, one item from the equipment cleaning batch is randomly selected, and water (e.g., deionized water, HPLC water) is passed over its surface, collected in a clean container, and analyzed for the analytes listed in Tables C3-4, C3-6, and C3-8. The results of the equipment blank will be considered acceptable if the results indicate no analyte present at a concentration greater than three times the MDLs listed in Tables C3-4 and C3-6 and in the PRDLs in C3-8. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling equipment shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank. The above equipment blanks may be performed on a purchased batch basis for sampling equipment purchased sterile and sealed in protective packaging. Equipment blanks need not be performed for equipment purchased in sealed protective packaging accompanied by a certificate certifying cleanliness.

The results of equipment blanks are traceable to the items in the equipment cleaning batch that the equipment blank represents. All sampling items should be identified, and the associated equipment cleaning batch should be documented. The method of documenting the connection between equipment and equipment cleaning batches shall be documented. Equipment blank results for the coring tools, liners, and sampling equipment shall be reviewed prior to use. A sufficient quantity of these items should be maintained in storage to prevent disruption of sampling operations.

The AMWTP may use certified clean disposable sampling equipment and discard liners and sampling tools after one use. As a result, cleaning and equipment blank collection is not required.

C1-2b(3) Coring Tool and Sampling Equipment Cleaning

Coring tools and sampling equipment must be cleaned in accordance with the following requirements:

- All surfaces of coring tools and sampling equipment that will come into contact with the samples are cleaned prior to use in accordance with INST-OI-16, INST-OI-73, and INST-OI-75. All sampling equipment is cleaned in the same manner. Immediately following cleaning, sampling equipment and coring tools are assembled and sealed inside clean protective wrapping.

- Each reusable sampling or coring tool (e.g., drill heads, ball mills, sample splitters, etc.) have a unique identification number. Each number is referenced to the waste container on which it is used. This information is recorded in the field records. One sampling or coring tool from each cleaning batch is tested for cleanliness in accordance with the requirements specified above. The identification number of the sampling or coring tool from which the equipment blank is collected is recorded in the field records. The results of the equipment blank analysis for the equipment cleaning batch in which each sampling or coring tool was cleaned are submitted to the sampling facility with the identification numbers of all sampling or coring tools in the equipment cleaning batch. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling equipment shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

- Sample containers should be purchased pre-cleaned per EPA cleaning protocols. If sampling containers are not purchased pre-cleaned, they are cleaned in accordance with SW-846 criteria.

C1-2c Equipment Testing, Inspection, and Maintenance

Prior to initiation of sampling or coring activities, sampling and coring tools are tested in accordance with manufacturer specifications to ensure operation within manufacturer's tolerance limits. Other specifications specific to the sampling operations (e.g., operation of containment structure and safety systems) are also tested and verified as operating properly prior to initiating sampling activities. Coring tools shall be assembled, including liners, and tested. Air lock mechanism and rotation mechanism shall be inspected for free movement of critical parts. Sampling and coring tools found to be malfunctioning are repaired or replaced prior to use.

Coring tools and sample collection equipment shall be maintained in accordance with manufacturer's specifications. Clean sampling and coring tools and sampling equipment shall be sealed inside clean protective wrapping and maintained in a clean storage area prior to use. Sampling equipment shall be properly maintained to avoid contamination. A sufficient supply of spare parts should be maintained to prevent delays in sampling activities due to equipment down time. Records of equipment maintenance and repair are maintained in the field records.

Inspection of sampling equipment and work areas shall include the following:

- Sample collection equipment in the immediate area of sample collection is inspected daily for cleanliness. Visible contamination on any equipment (e.g., waste on floor of sampling area, hydraulic fluid from hoses) that has the potential to contaminate a waste core or waste sample is thoroughly cleaned upon its discovery.

- The waste coring and sampling work areas are maintained in a clean condition to minimize the potential for cross contamination between waste (including cores) and samples.

- Expendable equipment (e.g., plastic sheeting, plastic gloves, and pans) are visually inspected for cleanliness prior to use and properly discarded after each sample.

- Prior to removal of the protective wrapping from a coring tool designated for use, the condition of the protective wrapping is visually assessed. Coring tools with torn protective wrapping are returned for cleaning. Coring tools visibly contaminated after the protective wrapping has been removed shall not be used and shall be returned for cleaning or properly discarded.

- Sampling equipment is visually inspected prior to use. All sampling equipment that comes into contact with waste samples must be stored in a protective wrapping until use. Prior to removal of the protective wrappings from sampling equipment, the condition of the protective wrappings is visually assessed. Sampling equipment with torn protective wrapping should be discarded or returned for cleaning. Sampling equipment visibly contaminated after the protective wrapping has been removed shall not be used and shall be returned for cleaning or properly discarded.

- Cleaned sampling and coring equipment will be physically segregated from all equipment that has been used for a sampling event and has not been decontaminated.

C1-2d Equipment Calibration and Frequency

The scales used for weighing sub samples are calibrated as necessary to maintain scale operation within manufacture's specifications, and after repairs and routine maintenance. Weights used for calibration are traceable to nationally recognized standards. Calibration records are maintained in the field records.

C1-3 Radiography

Radiography has been developed to aid in the examination and identification of containerized waste. INST-OI-12, *Real-Time Radiography Operations (Drum)*, and INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*, describe all activities required to achieve the radiography objectives in this QAPjP. INST-OI-12 and INST-OI-81 provide instructions specific to the radiography systems used at the site. For example, to detect liquids, some systems require the container to be rotated back and forth while other systems require the container to be tilted.

A radiography system (e.g., real-time radiography digital, digital radiography/computed tomography) normally consists of an X-ray producing device, an imaging system, an enclosure for radiation protection, a waste container handling system, an audio/video recording system, and an operator control and data acquisition station. Although these six components are required, it is expected there will be some variation within a given component between sites. The RTR system has controls or an equivalent process, which allow the operator to control image quality. On some radiography systems, it should be possible to vary the voltage, typically between 150 and 400 kilovolts to provide an optimum degree of penetration through the waste. The imaging system typically uses either a fluorescent screen or a low-light television camera or x-ray detectors to generate the image.

To perform RTR, the waste container is scanned while the operator views the television screen. A video and audio recording is made of the waste container scan and is maintained as a non-permanent record. A radiography data form is also used to document the Waste Matrix Code, to ensure that the waste container contains no ignitable, corrosive, or reactive waste by documenting the absence of liquids in excess of WIPP Hazardous Waste Permit TSDF-WAC limits or compressed gases, and verify that the physical form of the waste is consistent with the waste stream description documented in the AK summary. Containers whose contents prevent full examination of the remaining contents shall be subject to VE unless the AMWTP certifies that VE would provide no additional relevant information for that container based on the AK information for the waste stream. Such certification will be documented in the AMWTP record.

For containers which contain classified shapes and undergo RTR, the RTR video and audio recording will be considered classified. The radiography data forms will not contain classified information.

The RTR system involves qualitative and semiquantitive evaluations of visual displays. Operator training and experience are the most important considerations for ensuring QCs in regard to the operation of the RTR system and for interpretation and disposition of radiography results. Only trained personnel are allowed to operate RTR equipment.

Standardized training requirements for RTR operators are based upon existing industry standard training requirements as detailed in the RTR qualification package in accordance with MP-RTQP-14.4, *Personnel Qualification and Certification*.

The AMWTP has developed a training program that provides RTR operators with both formal and on-the-job training (OJT). Radiography operators are instructed in the specific waste generating practices, typical packaging configurations, and associated waste material parameters expected to be found in each Waste Matrix Code at the site. The OJT and apprenticeship is conducted by an experienced, qualified RTR operator prior to qualification of the training candidate. Radiography operators are trained on the types of waste that are generated, stored, and characterized at the AMWTP. All of the radiography QC requirements specified in the WIPP-WAP are incorporated into the AMWTP training program and RTR operations to ensure data quality and comparability.

Radiography training programs are subject to the CBFO Audit and Surveillance Program.

One or more training containers with items (including prohibited items) common to the waste streams to be characterized and internal containers of various sizes are scanned semiannually by each operator. The audio and video media is then reviewed by a supervisor to ensure that operator's interpretations remain consistent and accurate. Imaging system characteristic are verified on a routine basis.

Independent replicate scans and replicate observations of the video output of the RTR process are performed under uniform conditions and procedures. Independent replicate scans are performed on one waste container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator that was not involved in the original scan of the waste container. Independent observation of one scan (not the replicate scan) are also made once per day or once per testing batch, whichever is less frequent, by a qualified RTR operator that was not involved in the original scan of the waste container. A testing batch is a suite of waste containers undergoing RTR using the same testing equipment. A testing batch can be up to 20 waste containers without regard to waste matrix.

Oversight functions include periodic audio/video media reviews of accepted waste containers and shall be performed by qualified RTR operators that were not involved in the original scan of the waste containers. The results of this independent verification are available to the RTR operators who performed the original scans. The AMWTP SPM is responsible for monitoring the quality of the RTR data and calling for corrective action, when necessary.

C1-4 Visual Examination

The waste container contents may be verified directly by performing VE on the waste container contents. VE may be performed by physically examining the contents of waste containers to verify the Waste Matrix Code and to verify that the container is properly included in the appropriate waste stream.

VE is conducted on a waste container to identify and describe all waste items, packaging materials, and waste material parameters in the waste container.

VE activities are documented on video/audio media, or by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting as specified in INST-OI-34, *Non-Facility Visual Examination Operations*, and INST-FOI-17, *Facility Visual Examination*. When VE is performed using a second operator, each operator performing the VE will observe for themselves the waste being placed in the waste container or the contents within the examined waste container when waste is not removed. The results of all VE are documented on manual VE data forms or electronically in WTS which are used to document the Waste Matrix Code, ensure that the waste container contains no ignitable, corrosive, or reactive waste by documenting the absence of liquids in excess of TSDF-WAC limits or compressed gases, and verify that the physical form of the waste is consistent with the waste stream description documented in the AK summary.

VE recorded on video/audio media shall meet the following minimum requirements:

- The video/audio media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail and contain an inventory of waste items in sufficient detail that another trained VE operator can identify the associated waste material parameters.

- The video/audio media shall capture the waste container identification number.

- The personnel loading the waste container shall be identified on the video/audio media or on packaging records traceable to the loading of the waste container.

- The date of loading of the waste container will be recorded on the video/audio media or on packaging records traceable to the loading of the waste container.

VE performed using two generator site personnel shall meet the following minimum requirements:

- At least two generator site personnel who witnessed the packaging of the waste shall approve the data forms or packaging records attesting to the contents of the waste container.

- The data forms or packaging records shall contain an inventory of waste items in sufficient detail that another trained VE operator can identify the associated waste material parameters.

- The waste container identification number shall be recorded on the data forms or packaging records.

Although the AMWTP does not expect classified materials, VE video/audio media of containers which contain classified shapes are considered classified information. VE data forms or packaging records will not contain classified information.

Waste container packaging records may be used to meet the VE DQOs in Section C-4a(1). These records must meet the minimum requirements listed above for either VE recorded on video/audio media or VE performed by two operators, and shall be reviewed by operators trained and qualified to the requirements listed below. The operators will prepare data forms based on the VE records. VE batch data reports will be prepared, reviewed, and approved as described in Section C-4, and Attachment C-3.

Standardized training for VE has been developed. Personnel performing VE are instructed in the specific waste generating processes, typical packaging configurations, and the waste material parameters expected to be found in each Waste Matrix Code at the AMWTP. The training is site specific to include the various waste configurations at the AMWTP. For example, the particular physical forms and packaging configurations vary so operators are trained to examine the types of waste that are generated, stored, and characterized at the site. Training will include the following regardless of Summary Category Group:

- Identifying and describing the contents of a waste container by examining all items in waste containers of previously packaged waste

- Identifying when VE cannot be used to meet the DQOs.

VE personnel are requalified once every two years in accordance with MP-RTQP-14.4, *Personnel Qualification and Certification*.

The AMWTP designates visual examination experts (VEE). The VEE will be familiar with the waste generating processes that have taken place at the AMWTP and will also be familiar with all types of waste being characterized at the AMWTP. The VEE is responsible for the overall direction and implementation of the VE at the AMWTP. The VEE is selected based on experience and training in the types of waste being characterized. The VEE will receive training in the same elements as the VE personnel with both formal training and OJT. Qualification of a VEE is based on familiarity with waste generating processes, familiarity with the types of waste being characterized, and meeting the training requirements discussed above. The SPM evaluates personnel, using the above criteria, and designates VEEs accordingly. Consistent with other VE

personnel, the VEE will be requalified once every two years. VEE training requirements are detailed in the VEE qualification package in accordance with MP-RTQP-14.4.

C1-5 Custody of Samples

Chain of Custody (COC) on field samples (including field QC samples) is initiated immediately after sample collection or preparation (refer to INST-OI-16, INST-OI-73, and INST-OI-75). Sample custody is maintained by ensuring that samples are custody sealed during shipment to the laboratory. After samples are accepted by the analytical laboratory, custody is maintained by assuring the samples are in the possession of an authorized individual, in that individual's view, in sealed or locked container controlled by that individual, or in a secure controlled access location.

Sample custody is maintained until the sample is released by the SPM or until the sample is expended. The AMWTP COC includes provisions for each of the following:

- Signature of individual initiating custody control, along with date and time
- Documentation of sample numbers for each sample under custody. Sample numbers will be referenced to a specific sampling event description that will identify the sampler(s) through signature, the date and time of sample collection, type/number containers for each sample, sample matrix, preservatives (if applicable), requested methods of analysis, place/address of sample collection and the waste container number
- For off-site shipping, method of shipping transfer, responsible shipping organization or corporation, and associated air bill or lading number
- Signatures of custodians relinquishing and receiving custody, along with date and time of the transfer
- Description of final sample container disposition, along with signature of individual removing sample container from custody
- Comment section
- Documentation of discrepancies, breakage or tampering.

All samples and sampling equipment are identified with unique identification numbers. Sampling Coring tools and equipment are identified with unique equipment numbers to ensure that all sampling equipment, coring tools, and sampling canisters are traceable to equipment cleaning batches.

All samples are uniquely identified to ensure the integrity of the sample and can be used to identify the AMWTP and date of collection. Sample tags and labels identify at a minimum the following:

- Sample ID number
- Sampler initials and organization
- Ambient temperature and pressure (for gas samples only)
- Sample description
- Requested analyses
- Date and time of collection
- QC designation (if applicable).

C1-6 Sample Packing and Shipping

The samples are packaged by the AMWTP and transferred to the INL/CCP ACL. Sample containers are packed to prevent damage to the sampling container and to maintain the preservation temperature, if necessary. Department of Transportation (DOT) regulations are adhered to for shipment of the package.

When preparing SUMMA® or equivalent canisters for shipment, special care is taken with the pressure gauge and the associated connections. Metal boxes which have separate compartments or cardboard boxes with foam inserts are standard shipping containers. The chosen shipping container shall meet selected DOT regulations. Cold packs are added to the approved shipping container when it is necessary to maintain the preservation temperatures in the package.

Glass jars are wrapped in bubble wrap or similarly protected. The wrapped jars are placed in plastic bags inside of the shipping container so that the inside of the shipping container and the other samples in the shipping container are not contaminated in the event that one of the jars breaks. The plastic bag enables the receiving laboratory to prevent contamination of their shipping and receiving area. Plastic jars do not present a shipping problem.

Shipping containers contain appropriate blank samples to detect VOC cross-contamination. A DOT-approved cooler, or similar package, is used as a shipping container. When sample preservation temperatures must be maintained, an adequate number of cold packs are placed in the shipping container. If fill material is needed, the compatibility between the sample containers and the fill material is evaluated prior to use.

Sample containers are affixed with signed tamper proof seals or devices so that it is apparent if the sample integrity has been compromised and to ensure that the seal or device is traceable to the individual who affixed the seal. A seal is also placed outside the shipping container for the same reason. Sample custody documentation, with the signature of the current custodian showing sample custody release, is placed inside the shipping container. A seal is then placed on the outside of the shipping container, or the shipping container is locked, so that the integrity of the

custody of the sample inside the shipping container is evident. Transfer of sample custody is complete when the receiving custodian opens the shipping container and signs the sample custody documentation. The sample custody documentation serves to track the physical transfer of samples between the two custodians.

A UHWM is not required, since samples are exempted from the definition of hazardous waste under RCRA. All other shipping documentation specified in MP-TRUW-8.34 (i.e., bill of lading, site specific shipping documentation) is required.

Table C1-1. Gas Sample Requirements.

PARAMETER	Container [a]	HEADSPACE SAMPLE[b] MINIMUM VOLUME (ML)	HOLDING TEMPERATURES
VOCs	Summa® Canister	250 mil	0-40 ^{o} C

a. Alternatively, canisters that meet QAOs may be used.
b. Alternatively, if available headspace is limited, a single 100 milliliter (mL) sample may be collected for determination of VOCs.

Table C1-2. Headspace Gas: Summary of Field Quality Control Sample Frequencies.

QC SAMPLES	MANIFOLD	DIRECT CANISTER	ON-LINE SYSTEMS
Field Blanks[a]	1 per sampling batch[d]	1 per sampling batch[d]	1 per on-line batch[f]
Equipment Blanks[b]	1 per sampling batch[d]	Once[e]	1 per on-line batch[f]
Field Reference Standards[c]	1 per sampling batch[d]	Once[e]	1 per on-line batch[f]
Field Duplicates	1 per sampling batch[d]	1 per sampling batch[d]	1 per on-line batch[f]

a. Analysis of field blanks for VOCs (Table C3-2), only, is required. For on-line integrated sampling/analytical systems, if field blank results meet the acceptance criterion, a separate on-line blank is not required.

b. One equipment blank or on-line equipment blank must be collected, analyzed for VOCs (Table C3-2), and demonstrated clean prior to first use of the headspace sampling equipment with each of the sampling heads, then at the specified frequency, for VOCs, only thereafter. Daily, prior to work, the sampling manifold, if in use, must be verified as clean.

c. One field reference standard or OLCS must be collected, analyzed, and demonstrated to meet the QAOs specified in Attachment C3 prior to first use, then at the specified frequency thereafter.

d. A sampling batch is a suite of samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field QC samples), all of which must be collected within 14 days of the first sample in the batch.

e. One equipment blank and field reference standard must be collected after equipment purchase, cleaning, and assembly.

f. An on-line batch is the number of samples collected within a 12-hour period using the same on-line integrated sampling/analysis system. The analytical batch requirements are specified by the analytical method being used in the on-line system.

Table C1-3. Summary of Sampling Quality Control Sample Acceptance Criteria.

QC SAMPLES	ACCEPTANCE CRITERIA	CORRECTIVE ACTION [a]
Field Blanks	VOC amounts ≤ 3 × MDLs in Table C3-2 for GC/MS or GC/FID; ≤ PRQLs in Table C3-2 for FTIRS	Nonconformance if any VOC amount > 3 × MDLs in Table C3-2 for GC/MS or GC/FID; > PRQLs in Table C3-2 for FTIRS
Equipment Blanks	VOC amounts ≤ 3 × MDLs in Table C3-2 for GC/MS or GC/FID; ≤ PRQLs in Table C3-2 for FTIRS	Nonconformance if any analyte amount > 3 × MDLs in Table C3-2 for GC/MS or GC/FID; > PRQLs in Table C3-2 for FTIRS
Field Reference Standards Or On-Line Control Samples	70 - 130 percent recovery (%R)	Nonconformance if %R <70 or > 130
Field Duplicates Or On-Line Duplicates	RPD ≤ 25 %	Nonconformance if RPD > 25 %

a. Corrective action is only required if the final reported QC sample results do not meet the acceptance criteria.

MDL = Method detection limit
%R = Percent recovery
RPD = Relative percent difference

Table C1-4. Sample Handling Requirements for Homogeneous Solids and Soil/Gravel.

PARAMETER	SUGGESTED QUANTITY[a]	REQUIRED PRESERVATIVE	SUGGESTED CONTAINER	MAXIMUM HOLDING TIME[b]
VOCs	15 grams	Cool to 4 ^{o} C	Glass Vial[c]	14 Days Prep/ 40 Days Analyze[d]
SVOCs	50 grams	Cool to 4 ^{o} C	Glass Jar[e]	14 Days Prep/ 40 Days Analyze[d]
Metals	10 grams	Cool to 4 ^{o} C	Plastic Jar[f]	180 Days[g]

a. Quantity may be increased or decreased according to the requirements of the analytical laboratory, as long as the QAOs are met.
b. Holding time begins at sample collection (holding times are consistent with SW-846 requirements).
c. 40-mL VOA vial or other appropriate containers shall have an airtight cap.
d. 40-day holding time allowable only for methanol extract – 14-day holding time for non extracted VOCs.
e. Appropriate containers should be used and should have Teflon® lined caps.
f. Polyethylene or polypropylene is preferred, glass jar is allowable.
g. Holding time for mercury analysis is 28 days.

NOTE: *Preservation requirements in the most recent version of SW-846 may be used if appropriate.*

Table C1-5. Headspace Gas Drum Age Criteria Sampling Scenarios.

Scenario	Description
1	A. Unvented 55-gallon drums without rigid poly liners are sampled through the drum lid at the time of venting. B1. Unvented 55-gallon drums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. B2. Vented 55-gallon drums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. C. Unvented 55-gallondrums with vented rigid poly liners are sampled through the drum lid at the time of venting.
2	55-gallon drums that have met the criteria for Scenario 1 and then are vented, but not sampled at the time of venting. [a]
3	Containers (i.e., 55-gallon drums, 85-gallon drums, 100-gallon drums, SWBs, SLB2s.TDOPs, and pipe components) that are initially packaged in a vented condition and sampled in the container headspace and containers that are not sampled under Scenario 1 or 2.

a. Containers that have not met the Scenario 1 DAC at the time of venting must be categorized under Scenario 3. This requires the additional information required of each container in Scenario 3 (i.e., determination of packaging configuration), and such containers can only be sampled after meeting the appropriate Scenario 3 DAC.

Table C1-6. Scenario 1 Drum Age Criteria (In Days) Matrix.

Summary Category Group	DAC (days)
S5000	53

NOTE: *Containers that are sampled using the Scenario 1 DAC do not require information on the packaging configuration because the Scenario 1 DAC are based on a bounding packaging configuration. In addition, information on the rigid liner vent hole presence and diameter do not apply to containers that are sampled using the Scenario 1 DAC because they are unvented prior to sampling.*

Table C1-7. Scenario 2 Drum Age Criteria (In Days) Matrix.

	Summary Category Group S5000			
Filter H_2 Diffusivity [a]	**Rigid Liner Vent Hole Diameter (in) [b]**			
(mol/s/mod fraction)	0.30	0.375	0.75	1.0
1.9×10^{-6}	29	22	13	12
3.7×10^{-6}	25	20	12	11
3.7×10^{-5}	7	6	6	4

a. The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with a 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9 × 10-6 filter H2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3d[1]), repackaging (Attachment C, Section C-3d[1]), and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

NOTE: *Containers that are sampled using the Scenario 2 DAC do not require information on the packaging configuration because the Scenario 2 DAC is based on a bounding packaging configuration.*

Table C1-8. Scenario 3 Packaging Configuration Groups.

Packaging Configuration Group	**Covered S5000 Packaging Configuration Groups**
Packaging Configuration Group 1, 55-gal. drums [a]	• No layers of confinement, filtered inner lid [b] • No inner bags, no liner bags (bounding case)
Packaging Configuration Group 2, 55-gal. drums [a]	• 1 inner bag • 1 filtered inner bag • 1 liner bag • 1 filtered liner bag • 1 inner bag, 1 liner bag • 1 filtered inner bag, 1 filtered liner bag • 2 inner bags • 2 filtered inner bags • 2 inner bags, 1 liner bag • 2 filtered inner bags, 1 filtered liner bag • 3 inner bags • 3 filtered inner bags • 3 filtered inner bags, 1 filtered liner bag • 3 inner bags, 1 liner bag (bounding case)
Packaging Configuration Group 3, 55- gal. drums [a]	• 2 liner bags • 2 filtered liner bags • 1 inner bag, 2 liner bags • 1 filtered inner bag, 2 filtered liner bags • 2 inner bags, 2 liner bags • 2 filtered inner bags, 2 filtered liner bags • 3 filtered inner bags, 2 filtered liner bags • 4 inner bags • 3 inner bags, 2 liner bags • 4 inner bags, 2 liner bags (bounding case)
Packaging Configuration Group 4, pipe components	• No layers of confinement inside a pipe component • 1 filtered inner bag, 1 filtered metal can inside a pipe component • 2 inner bags inside a pipe component • 2 filtered inner bags inside a pipe component • 2 filtered inner bags, 1 filtered metal can inside a pipe component • 2 inner bags, 1 filtered metal can inside a pipe component (bounding case)

Table C1-8. (continued)

Packaging Configuration Group	**Covered S5000 Packaging Configuration Groups**
Packaging Configuration Group 5, Standard Waste Box, Standard Large Box 2 or Ten-Drum Overpack [a]	• No layers of confinement • 1 SWB liner bag (bounding case)
Packaging Configuration Group 6, Standard Waste Box, Standard Large Box 2 or Ten-Drum Overpack [a]	• Any combination of inner and/or liner bags that is less than or equal to 6 • 5 inner bags, 1 SWB liner bag (bounding case)
Packaging Configuration Group 7, 85-gallon drums and 100-gallon drums[a]	• No inner bags, no liner bags, no rigid liner, filtered inner lid (bounding case)b • No inner bags, no liner bags, no rigid liner
Packaging Configuration Group 8, 85-gallon drums and 100-gallon drums[a]	• 4 inner bags and 2 liner bags, no rigid liner, filtered inner lid (bounding case)b

a. If a specific Packaging Configuration Groups cannot be determined based on the data collected during packaging and/or repackaging, a conservative default Packaging Configuration Group of 3 for 55-gallon drums, 6 for SWBs, SLB2s and TDOPs, and 8 for 85-gallon and 100-gallon drums must be assigned provided the drums do not contain pipe component packaging. If pipe components are present as packaging in the drums, the pipe components must be sampled following the requirements for Packaging Configuration Group 4.

b. A "filtered inner lid" is the inner lid on a double lid drum that contains a filter.

Definitions:

Liner Bags. One or more optional plastic bags that are used to control radiological contamination. Liner bags for drums have a thickness of approximately 11 mils. Liner bags are typically similar in size to the container. SWB liner bags have a thickness of approximately 14 mils. TDOPs and SLB2s use SWB liner bags.

Inner Bags. One or more optional plastic bags that are used to control radiological contamination. Inner bags have a thickness of approximately 5 mils and are typically smaller than liner bags.

Table C1-9. Scenario 3 Drum Age Criteria (In Days) Matrix for S5000 Waste by Packaging Configuration Group.

Packaging Configuration Group 1

Filter H_2 Diffusivity [a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	131	95	37	24	4	4
3.7×10^{-6}	111	85	36	24	4	4
3.7×10^{-5}	28	28	23	19	4	4

Packaging Configuration Group 2

Filter H_2 Diffusivity [a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	175	138	75	60	30	11
3.7×10^{-6}	152	126	73	59	30	11
3.7×10^{-5}	58	57	52	47	28	8

Packaging Configuration Group 3

Filter H_2 Diffusivity [a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	199	161	96	80	46	16
3.7×10^{-6}	175	148	93	79	46	16
3.7×10^{-5}	72	72	67	62	42	10

Packaging Configuration Group 4

Filter H_2 Diffusivity [a] (mol/s/mol fraction)	Headspace Sample Taken Inside Pipe Component
$> 1.9 \times 10^{-6}$	152

Table C1-9. (continued)

Packaging Configuration Group 5	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP/SLB2**
$> 7.4 \times 10^{-6}$ (SWB)	15
3.33×10^{-5} (TDOP)	15
$6.60 \text{ X } 10^{-4}$ (SLB2)	21

Packaging Configuration Group 6	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP/SLB2**
$> 7.4 \times 10^{-6}$ (SWB)	56
3.33×10^{-5} (TDOP)	56
$6.60 \text{ X } 10^{-4}$ (SLB2)	56

Packaging Configuration Group 7			
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol fraction)**		
	7.4×10^{-6}	**1.85×10^{-5}**	**9.25×10^{-5} [e]**
3.7×10^{-6}	13	7	2
7.4×10^{-6}	10	6	2
1.85×10^{-5}	6	4	2

Table C1-9. (continued)

Packaging Configuration Group 8	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol/fraction)**
	7.4×10^{-6}
3.7×10^{-6}	21

a. The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9×10^{-6} filter H_2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging, repackaging, and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

c. The filter H_2 diffusivity for SWBs, SLB2s or TDOPS is the sum of the diffusivities for all of the filters on the container because SWBs, SLB2s and TDOPs have more than 1 filter.

d. Headspace sample taken between inner and outer drums lids. If headspace sample is taken inside the filtered inner drum lid prior to placement of the outer drum lid, then a DAC value of 2 days may be used. Footnote e is also applicable. Packaging Configuration Group 7 DAC values apply to drums with up to two lids.

e. While a DAC value of 2 days may be determined, containers must comply with the equilibrium requirements specified in Section C1-1a (i.e., 72 hours at 18°C or higher). The equilibrium requirement for headspace gas sampling shall be met separately.

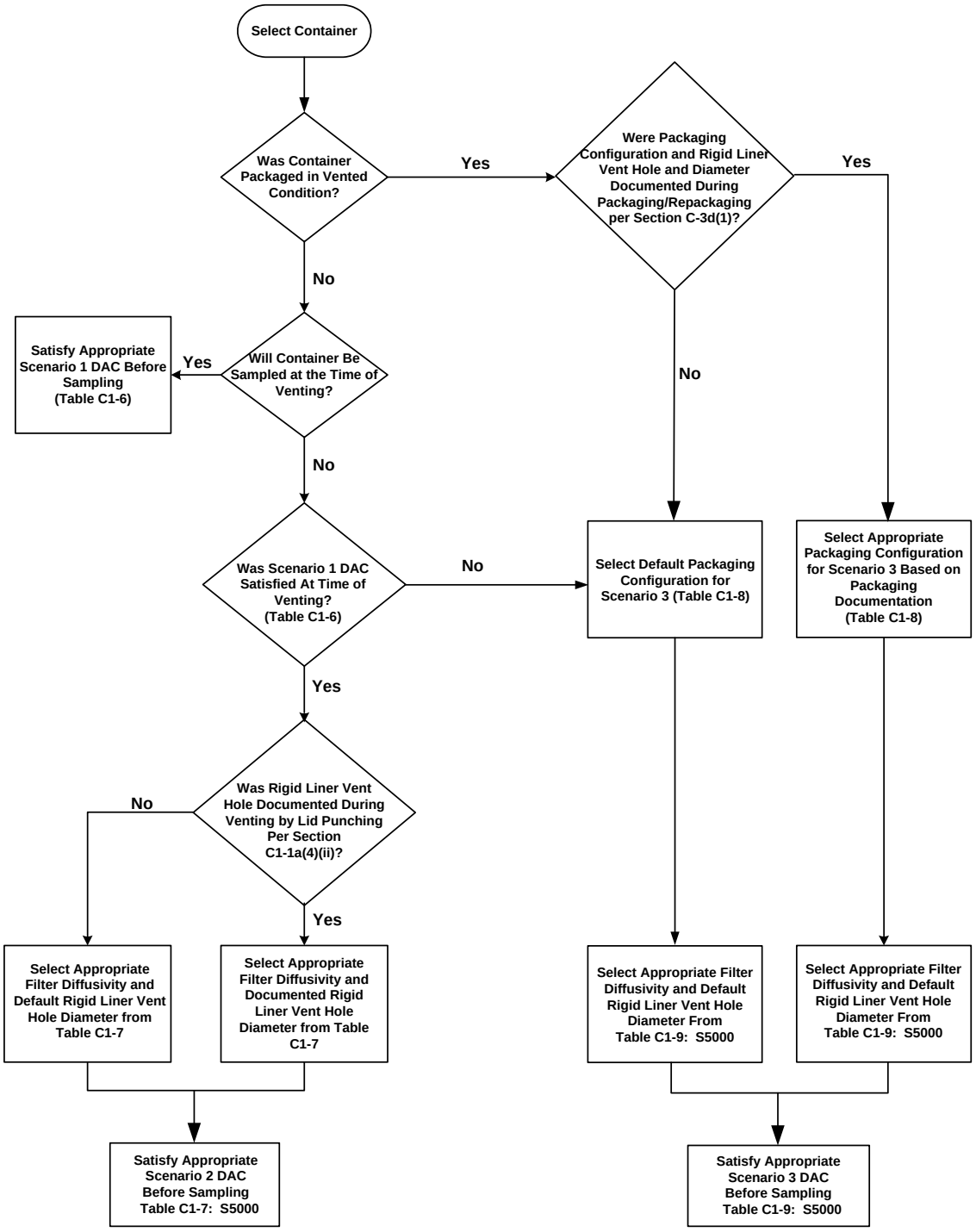


Figure C1-1. Headspace Gas Drum Age Criteria Sampling Scenario Selection Process.

Attachment C2.
Statistical Methods Used In Sampling and Analysis

The AMWTP uses the following statistical methods for sampling and analysis of TRU mixed waste, unless determined unnecessary by the CBFO as a result of an AK Sufficiency Determination. These statistical methods include methods for selecting waste containers for totals analysis, selecting waste containers for headspace gas sampling and analysis, and setting the upper confidence limit.

C2-1 Approach for Selecting Waste Containers for Statistical Sampling

C2-1a Statistical Selection of Containers for Totals Analysis

The statistical approach for characterizing retrievably stored and newly generated homogeneous solids and soil/gravel waste and repackaged or treated S3000 waste relies on using AK to segregate waste containers into relatively homogeneous waste streams. Using AK, the entire waste stream is classified as hazardous or nonhazardous rather than individual waste containers. Individual waste containers serve as convenient units for characterizing the combined mass of waste from the waste stream of interest. Once segregated by waste stream, random selection and sampling of the waste containers followed by analysis of the waste samples is performed to ensure that the resulting mean contaminant concentration provides an unbiased representation of the true mean contaminant concentration for each waste stream. The SPM verifies that the samples collected from within a waste stream were selected randomly in accordance with MP-TRUW-8.25.

An end use of analytical results for retrievably stored homogeneous solids and soil/gravel is for assigning the EPA HWNs associated with TCs (D-numbers) that apply to each mixed waste stream. The D-numbers are indicators that the waste exhibits the TC for specific contaminants under RCRA. The RCRA-toxicity determination is made on the basis of sampling and analysis of waste streams and on whether or not the waste stream includes F-number wastes. If a waste stream includes one or more RCRA F-numbers identified via AK, TC contaminants associated with the F-number waste(s) are not included in the RCRA-TC determination. That is, the F-numbers take precedence over RCRA-toxicity D-code, and the waste stream is assumed hazardous regardless of the concentration. Therefore, TCs contaminants associated with F-numbers for a waste stream is omitted from all calculations for determining the number of containers to sample because these wastes streams are assumed to be hazardous. In addition, each TC contaminant associated with the F-numbers is excluded from evaluation of analytical results to determine D-numbers. Contaminants of interest for the sampling, analysis, and RCRA-toxicity determination of a waste stream, then, exclude contaminants associated with F-numbers that have been assigned to the waste stream.

The sampling and analysis strategy is illustrated in Figure C2-1. Preliminary estimates of the mean concentration and variance of each RCRA regulated contaminant in the waste is used to determine the number of waste containers to select for sampling and analysis. Preliminary estimates are based on a minimum of five samples randomly from the waste stream. If the entire waste stream is not accessible for sampling, then a minimum of five preliminary samples will be selected randomly from the accessible population. As the rest of the waste stream is retrieved or generated, additional selected containers will be sampled as provided below and the analytical results will be reported to the CBFO. Samples collected to establish preliminary estimates that are selected, sampled, and analyzed using a CBFO-approved laboratory in accordance with applicable provisions of the WIPP-WAP may be used as part of the required number of samples to be collected. The applicability of the preliminary estimates to the waste stream to be sampled is justified and documented. The preliminary estimates are calculated in accordance with the following equations:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \qquad \text{(C2-1)}$$

$$s^2 = \frac{1}{n-1}\sum_{i-1}^{n}\left(x_i - \bar{x}\right)^2 \qquad \text{(C2-2)}$$

Where:

$\bar{x}$ = the calculated mean and

s^2 = the calculated concentration variance

n = the number of samples analyzed

x_i = the concentration determined in the ith sample

i = an index from 1 to n.

Based upon the preliminary estimates of $\bar{x}$ and s^2 for each chemical contaminant of concern, AMWTP estimates the appropriate minimum number of samples (*n*) to be collected for each contaminant using the following formula from SW-846 (EPA 1996):

$$n = \frac{t^2_{\alpha,n_0-1} s^2}{(RT - \bar{x})^2} \qquad \text{(C2-3)}$$

Where:

n_0 = the initial number of samples used to calculate the preliminary estimates

n = the calculated minimum number of required samples

$t_{\alpha,n-1}$ = the 90th percentile for the *t* distribution with n_0 -1 degrees of freedom

RT = the Regulatory Threshold of the contaminant (TC limit for toxicity characteristic wastes, PRQL for listed wastes).

The number of samples collected is based upon the largest *n* calculated for each of the contaminants of concern. The actual number of samples collected is adjusted as necessary to ensure that an adequate number of samples are collected to allow for acceptable levels of completeness.

Non-integer results of calculations for required sample size should be rounded up to the next integer. A minimum of five containers are sampled and analyzed in each waste stream. If there are fewer containers than the minimum or required number of samples in a waste stream, one or more randomly selected containers is sampled more than once to obtain the number of needed samples of the waste. Otherwise any one container may be selected for sampling only once.

The calculated total number of required waste containers will then be randomly sampled and analyzed using a CBFO-approved laboratory. Waste containers from the preliminary mean and variance estimates may be counted as part of the total number of calculated required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples were identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples were identical to the analytical methodology employed for the required samples.

- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples were comparable to the validation employed for the required samples. In addition, the validated samples results shall indicate that all sample results were valid according to the analytical methodology.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage at the generator/storage site, or only a portion of the waste stream has been repackaged, treated, or generated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of five randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the WSPF and authorize the AMWTP to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream have been obtained.

The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of five randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of five randomly selected sample locations will be selected from within each subsequent lot. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to completing sampling and analysis of the lot.

The AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section C2-2a and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may assign EPA HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP shall collect the required number of samples if the AMWTP intends to establish that the constituent is below the regulatory threshold.

C2-1b Statistical Selection of Containers for Headspace Gas Analysis

Headspace gas sampling of a waste stream may be done on a randomly selected portion of containers in the waste stream in accordance with MP-TRUW-8.25. The minimum number of containers, *n*, that must be sampled is determined by taking an initial VOC sample from ten randomly selected containers. These samples are analyzed for all the target analytes using INST-OI-43. The standard deviation, *s*, is calculated for each of the nine VOCs in Part 4, Table 4.4.1. The value of *n* is determined as the largest number of samples (not to exceed the number of containers in the waste stream or waste stream lot) calculated using the following equation:

$$n_{VOC_i} = \frac{t^2_{\alpha,n-1} s^2_{eVOC_i}}{E^2_{VOC_i}} \qquad \text{(C2-4)}$$

Where:

n_{VOC_i} = the number of samples needed to representatively sample the waste stream for the VOC_i from Table 4.4.1

$t_{\alpha,n-1}$ = the 90th percentile for the *t* distribution with *n-1* degrees of freedom

s_{eVOCi} = the estimated standard deviation, based on the initial *n*-samples for VOC_i from Table 4.4.1

E_{VOCi} = the allowable error determined as 1 percent of the limiting concentration for VOC_i. from Table 4.4.1

Non-integer results of calculations for the required sample size should be rounded up to the next integer. A minimum of ten containers will be sampled and analyzed in each waste stream. If there is fewer than the minimum or required number of containers in a waste stream, then each container should be sampled once. The calculated total number of required waste containers will then be randomly sampled and analyzed. Waste container samples from the preliminary mean and variance estimates may be counted as part of the total number of calculated required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples were identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples were identical to the analytical methodology employed for the required samples.

- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples were comparable to the validation employed for the required samples. In addition, the validated samples results shall indicate that all sample results were valid according to the analytical methodology.

The mean and standard deviation calculated after sampling *n* containers can be used to calculate a UCL_{90} for each of the headspace gas VOCs using the methodology presented in Section C2-2b.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage or only a portion of the waste stream has been repackaged or treated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of ten randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the WSPF and authorize the AMWTP site to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream has been obtained.

The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of ten randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of ten randomly selected containers will be selected from within each subsequent lot. As those randomly selected containers (e.g., buried or newly generated waste containers) become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to completing sampling and analysis of the lot.

The AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section C2-2b and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record upon completion of project level data validation in Section C3-10b. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may presumptively assign EPA HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP will collect the required number of samples if the site intends to establish that the constituent is below the regulatory threshold.

C2-2 Upper Confidence Limit for Statistical Sampling

C2-2a Upper Confidence Limit for Statistical Solid Sampling

Upon completion of the required sampling, final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant is determined. The observed sample *n** is checked against the preliminary estimate for the number of samples (n) to be collected before proceeding using the following equation:

$$n^* = \frac{t^2_{\alpha,n-1}\, s^2}{(RT - x)^2} \qquad \text{(C2-5)}$$

and the right-side terms in the equation are as defined in Section C2-1a.

If the observed sample *n** estimate results in greater than 20 percent or more required samples than were originally calculated, then the additional samples required to fulfill the revised sample estimate are collected and analyzed. The determination of *n** is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between *n** and the previous sample size determination is less than 20 percent.

Once sufficient sampling and analysis has occurred, the waste characterization will proceed. The assessment is made at the 90-percent confidence level. The UCL_{90} for the mean concentration of each contaminant will be calculated using the following equation from OSWER 9285.6-10 (EPA 2002):

$$UCL_{90} = \bar{x} + \frac{(t_{\alpha,n-1}\, s)}{\sqrt{n}} \qquad \text{(C2-6)}$$

If the UCL_{90} for the mean concentration is less than the regulatory threshold limit (RTL), the waste stream is not required to be assigned the EPA HWN for the associated contaminant. If the UCL_{90} is greater than or equal to the RTL, the waste stream is assigned the EPA HWN for the associated contaminant.

Compliance with the requirements for comparison of the UCL_{90} to regulatory thresholds is achieved through the execution of procedure MP-TRUW-8.11.

C2-2b Upper Confidence Limit for Statistical Headspace Gas Sampling

A UCL_{90} concentration for each of the headspace gas VOCs is calculated from the sample data collected. The observed sample *n** is checked against the estimate for the number of samples (n) to be collected before proceeding, where: n* is:

$$n^* = \frac{t^2_{\alpha,n-1}\, s^2}{E^2} \qquad \text{(C2-7)}$$

where *E* is as defined in Section C2-1b and the remaining right-side terms in the equation are as defined in Section C2-1a. When composite headspace gas sample results are used, the mean, standard deviation, and t-statistic are based on the number of composite samples analyzed, rather than on the number of drums sampled.

If the observed sample *n** estimate results in greater than 20 percent or more required samples than were originally calculated, then the additional samples required to fulfill the revised sample estimate are collected and analyzed. The determination of *n** is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between *n** and the previous sample size determination is less than 20 percent.

The UCL_{90} is then calculated using the UCL_{90} equation C2-6. In this case, the UCL_{90} is the 90 percent upper confidence limit for the mean VOC concentration, $\bar{x}$ is the calculated sample mean VOC concentration, and *s* is the calculated sample standard deviation. The value of $t_{(\alpha, n-1)}$ is found in Table 9-2 of Chapter 9 of SW-846.

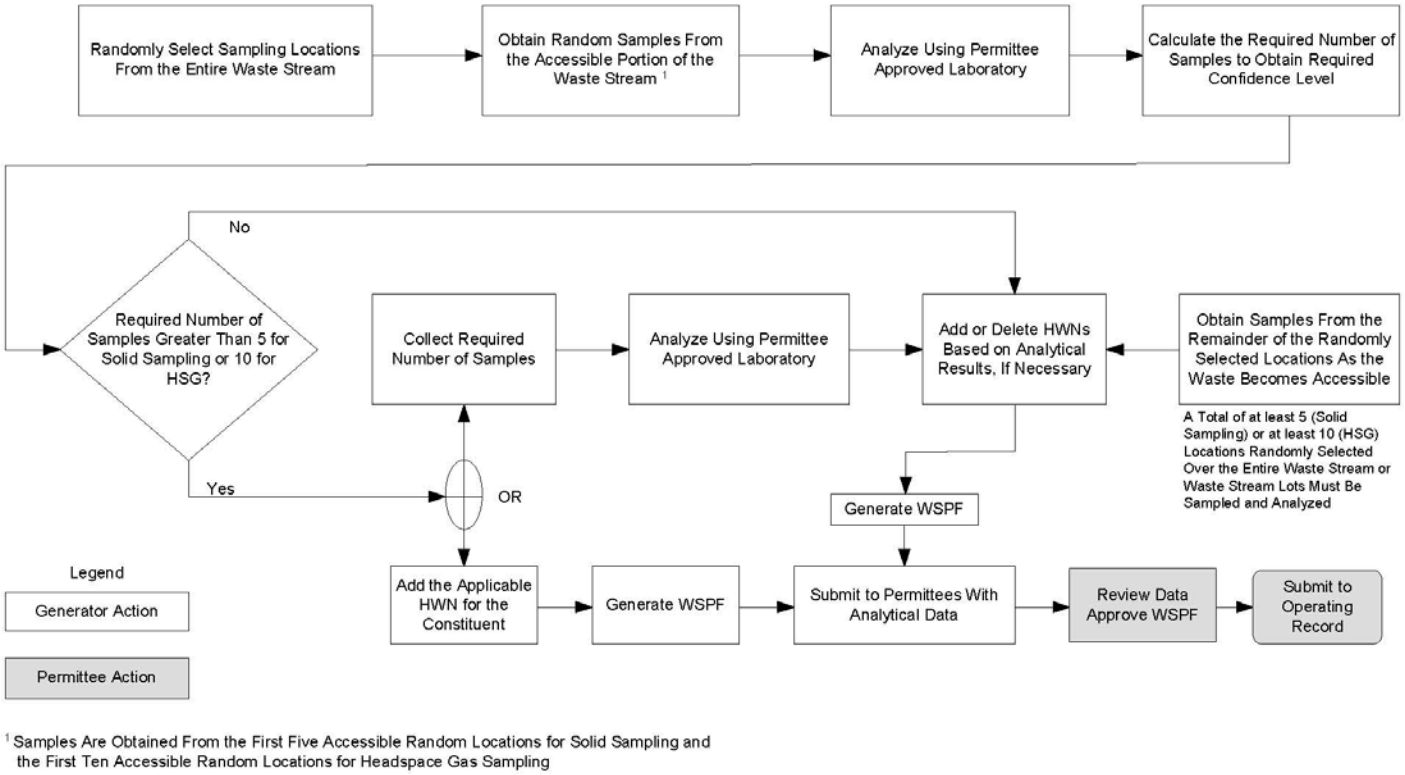


Figure C2-1. Approach for Solid and Headspace Gas Sampling and Analysis to Obtain Additional Waste Characterization Information.

Attachment C3.
Quality Assurance Objectives and Data Validation Techniques for Waste Characterization Sampling and Analytical Methods

C3-1 Validation Methods

Validation of all data (qualitative as well as quantitative) is performed so that data used for WIPP compliance activities are of known and acceptable quality. Validation includes a quantitative determination of precision, accuracy, completeness, and MDL (as appropriate) for analytical data (headspace gas VOCs, total VOCs, SVOC, and metals data). Quantitative data validations are performed according to the conventional methods outlined below (equations in C3-1 through C3-8). These quantitative determinations are compared with the QAOs specified in Sections C3-2 through C3-9. Qualitative determination of comparability and representativeness is also performed.

The qualitative data or descriptive information generated by RTR and VE is not amenable to statistical data quality analysis. However, RTR and VE are complementary techniques yielding similar data to determine the waste matrix code. The waste matrix code is determined to ensure the container is properly included in the appropriate waste stream.

Data validation will be used to assess the quality of waste characterization data collected based upon project precision, accuracy, completeness, comparability, and representativeness objectives described below:

Precision

Precision is a measure of the mutual agreement among multiple measurements of a single analyte, either by the same method or by different methods. Precision is either expressed as the relative percent difference (RPD) for duplicate measurements or as the percent relative standard deviation (%RSD) for three or more replicate measurements. For duplicate measurements, the precision expressed as the RPD is calculated as follows:

$$RPD = \frac{(C_1 - C_2)}{\frac{(C_1 + C_2)}{2}} \times 100 \qquad \text{(C3-1)}$$

where C_1 and C_2 are the two values obtained by analyzing the duplicate samples. C_1 is the larger of the two observed values.

For three or more replicate measurements, the precision expressed as the %RSD is calculated as follows:

$$\%RSD = \frac{s}{\bar{y}} \times 100 \qquad \text{(C3-2)}$$

where *s* is the standard deviation and $\bar{y}$ is the mean of the replicate sample analyses.

The standard deviation, *s*, is calculated as follows:

$$s = \sqrt{\frac{\sum_{i=1}^{n} \left(y_i - \bar{y}\right)^2}{n-1}} \qquad \text{(C3-3)}$$

where y_i is the measured value of the ith replicate sample analysis measurement, and n equals the number of replicate analyses.

Precision, associated with analytical equipment calibration, is also measured as the percent difference (%D) between multiple measurements of an equipment calibration standard is calculated as follows:

$$\%D = \frac{\left|C_1 - C_2\right|}{C_1} \times 100 \qquad \text{(C3-4)}$$

where C_1 is the initial measurement and C_2 is the second or other additional measurement.

Accuracy

Accuracy is the degree of agreement between a measured analyte concentration (or the average of replicate measurements of a single analyte concentration) and the true or known concentration. Accuracy is determined as the percent recovery (%R).

For situations where a standard reference material is used, the %R is calculated as follows:

$$\%R = \frac{C_m}{C_{srm}} \times 100 \qquad \text{(C3-5)}$$

where C_m is the measured concentration value obtained by analyzing the sample and C_{srm} is the "true" or certified concentration of the analyte in the sample.

For measurements where matrix spikes are used, the %R is calculated as follows:

$$\%\ R = \frac{S\text{-}U}{C_{sc}}\ x\ 100 \qquad \text{(C3-6)}$$

where *S* is the measured concentration in the spiked aliquot, *U* is the measured concentration in the unspiked aliquot, and C_{sc} is the actual concentration of the spike added.

Method Detection Limit (MDL)

The MDL is the minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL for all quantitative measurements (except for those using Fourier Transform Infrared Spectroscopy [FTIR]) is defined as follows:

$$MDL = t_{(n-1,1-\alpha=0.99)} \times s \qquad \text{(C3-7)}$$

where $t_{(n\text{-}1,\ 1\text{-}\square=\ .99)}$ is the *t*-distribution value corresponding to a 99% confidence level with *n-1* degrees of freedom, *n* is the number of observations, and *s* is the standard deviation of replicate measurements.

Currently, the AMWTP has no plans to use FTIR; however, should FTIR be used for headspace-gas analysis, the MDL is defined as follows:

$$MDL = 3s \qquad \text{(C3-8)}$$

where *s* is the standard deviation. Initially, a minimum of seven samples spiked at a level of three to five times the estimated MDL and analyzed on non-consecutive days must be used to establish the MDLs. MDLs should be updated using the results of the LCS or OLCSs.

Completeness

Completeness is a measure of the amount of valid data obtained from the overall measurement system compared to the amount of data collected and submitted for analysis. Completeness must be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Completeness, expressed as the percent complete (%C), is calculated as follows:

$$\%C = \frac{V}{n} \times 100 \qquad \text{(C3-9)}$$

where V is the number of valid sampling or analytical results obtained and n is the number of samples submitted for analysis.

Comparability

Comparability is the degree to which one data set can be compared to another. Comparability of data generated at different sites is ensured through the use of standardized, approved testing, sampling, preservation, and analytical techniques and by meeting the QAOs specified in Sections C3-2 through C3-9.

The comparability of waste characterization data shall be ensured through the use of data usability criteria (based on guidance provided by CBFO), which address, as appropriate, the following:

- Definition or reference of criteria used to define and assign data qualifier flags based on QAO results
- Criteria for assessing the usability of data impacted by matrix interferences
- Criteria for assessing the usability of data based upon positive and negative bias as indicated by QC data, of data qualifiers, and qualifier flags
- Criteria for assessing the usability of data due to:
    1. Severe matrix effects
    2. Misidentification of compounds
    3. Gross exceedance of holding times
    4. Failure to meet calibration or tune criteria
- Criteria for assessing the usability of data that does not meet minimum detection limit requirements.

Representativeness

Representativeness is the degree to which sample data represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that concerns the proper design of the sampling program.

The representativeness of waste containers from waste streams subjected to headspace gas and homogeneous solids and soil/gravel sampling and analysis is validated through documentation, that a true random sample with an adequate population was identified and collected consistent with Section C2-1. Since representativeness is a quality characteristic that expresses the degree to which a sample or group of samples represents the population being studied, the random selection of waste containers ensures representativeness at a Program level. The SPM documents that the selected waste containers from within a waste stream are randomly selected. Sampling personnel verify that proper procedures are followed to ensure that samples are representative of the waste contained in a particular waste container or a waste stream.

Identification of Tentatively Identified Compounds

In accordance with EPA SW-846 convention, identification of compounds detected by GC/MS methods that are not on the list of target analytes shall be reported. Both composited and individual container headspace gas, volatile analysis (TCLP/Totals), and semi-volatile (TCLP/Totals) analysis are subject to TIC reporting.

AMWTP and CCP procedures for identifying and reporting TICs when using GC/MS methods are based on guidance provided in EPA SW-846 Method 8260B and SW-846 Method 8270C. TIC evaluation for headspace gas is addressed in INST-OI-43. TIC evaluation for total VOC and SVOC analysis is addressed in CCP-TP-184, *CCP Volatile Organic Compounds by Gas Chromatography Mass Spectrometry (GC/MS)*, and CCP-TP-185, *CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry*. These procedures assign tentative identifications in accordance with the following SW-846 criteria:

- Relative intensities of major ions in the reference spectrum (ions greater than 10% of the most abundant ion) should be present in the sample spectrum.
- The relative intensities of the major ions should agree within ± 20%.
- Molecular ions present in the reference spectrum should be present in the sample spectrum.
- Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of coeluting compounds.

- Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting peaks.

- The reference spectra used for identifying TICs shall include, at minimum, all of the available spectra for compounds that appear in the 20.4.1.200 NMAC (incorporating 40 CFR Part 261) Appendix VIII list. The reference spectra may be limited to VOCs when analyzing headspace gas samples.

- TICs for headspace gas analysis that are performed through FTIR analyses shall be identified in accordance with the specifications of SW-846 method 8410.

TICs shall be reported as part of the analytical batch data reports for GC/MS Methods in accordance with the following minimum criteria:

- A TIC in an individual container headspace gas or solids sample shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria above and is present with a minimum of 10% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 2 to 5 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 2% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 6 to 10 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 1% of the area of the nearest internal standard.

- A TIC in a composited headspace gas sample that contains 11 to 20 individual container samples shall be reported in the analytical batch data report if the TIC meets the SW-846 identification criteria listed above and is present with a minimum of 0.5% of the area of the nearest internal standard.

TICs that meet the SW-846 identification criteria, are reported in 25% of all waste containers sampled from a given waste stream and that appear in the 20.4.1.200 NMAC (incorporating 40 CFR Part 261) Appendix VIII list will be compared to AK to determine if the TIC is a listed waste in the waste stream. TICs identified through headspace gas analyses that meet the Appendix VIII list criteria and the 25% reporting criteria for a waste stream will be added to the headspace gas waste stream target list regardless of the hazardous waste listing associated with the waste stream. TICs reported from the Totals VOC or SVOC analyses may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence is attributable to waste packaging materials, or radiolytic degradation from AK

documentation. If a listed waste constituent TIC cannot be attributed to waste packaging materials, radiolysis, or other origins, the constituent will be added to the target analyte list and new EPA HWNs will be assigned, if appropriate. TICs subject to inclusion on the target analyte list that are TC parameters shall be added to the target analyte list regardless of origin because the hazardous waste designation for these numbers is not based on source. However, for TC and nontoxic F003 constituents, the site may take concentration into account when assessing whether to add an EPA HWN. If a target analyte list for a waste stream is expanded due to the presence of TICs, all subsequent samples collected from that waste stream will be analyzed for constituents on the expanded list. The comparison to AK and the determination of whether or not to add the TIC to the target analyte list will be done in accordance with MP-TRUW-8.11and MP-TRUW-8.13.

C3-2 Headspace Gas Sampling

Quality Assurance Objectives

Headspace gas samples are collected in accordance with INST-OI-43. The precision and accuracy of container headspace gas sampling operations are assessed by analyzing field QC headspace gas samples. These samples must include equipment blanks, field reference standards, field blanks, and field duplicates. If the QAOs in this section are not met, then an NCR must be prepared, submitted, and resolved (see Section C3-13).

Precision

The precision of the headspace gas sampling and analysis operations is assessed by sequential collection of field duplicates for manifold sampling operations or simultaneous collection of field duplicates for direct canister sampling operations for VOC determination. Corrective actions must be taken if the RPD exceeds 25% for any analyte found greater than the PRQL in both of the duplicate samples.

Accuracy

A field reference standard is collected using headspace-gas sampling equipment to assess the accuracy of the headspace-gas sampling operation at a frequency of one field reference standard for every 20 containers sampled or per sampling batch. Corrective action must be taken if the %R of the field reference standard is less than 70 or greater than 130.

Field blanks are collected at a frequency of 1 field blank for every 20 containers or sampling batch sampled to assess possible contamination in the headspace gas sampling method. Equipment blanks must also be collected at a frequency of one equipment blank for each equipment cleaning batch to assess possible contamination in the equipment cleaning method. Corrective actions must be taken if the blank exceeds three times the MDLs listed for any of the compounds listed in Table C3-2.

Field reference standard and blanks are collected in accordance with INST-OI-43.

Completeness

Sampling completeness is expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream. A valid sample is defined as a sample collected in accordance with approved sampling methods and the container was properly prepared for sampling (e.g., the poly liner was vented to the container headspace). The AMWTP shall achieve a minimum 90% completeness. The amount and type of data that may be lost during the headspace gas sampling operation cannot be predicted in advance. The AMWTP SPM or designee evaluates the importance of any lost or contaminated headspace gas samples and takes corrective action, as appropriate.

Comparability

Consistent use and application of uniform procedures and equipment, as specified in Attachment C1 and application of data usability criteria, should ensure that headspace gas sampling operations are comparable when sampling headspace at the different sampling facilities. The AMWTP takes corrective actions if uniform procedures, equipment, or operations are not followed without approved and justified deviations. In addition, the AMWTP sampling and analysis systems successfully participate in the PDP. INST-OI-43 describes the headspace sampling process at the AMWTP.

Representativeness

Specific headspace gas sampling steps to ensure samples are representative include:

- Selection of the correct DAC Scenario and waste packaging configuration and meeting DAC equilibrium times
- Sample canister cleaning and leak-check after assembly
- Sampling equipment cleaning or disposal after use
- Sampling equipment leak-check after sample collection
- Use of sample canisters with passivated internal surfaces
- Use of low-internal-volume sampling equipment
- Collection of samples with a low-sample volume to available headspace volume ratio (less than 10% of the headspace when the headspace can be determined)
- Careful and documented pressure regulation of sampling activities specified in Section C1-1

- Performance audits
- Collection of equipment blanks, field reference standard, field blanks, and field duplicates at the specified frequencies
- Manifold pressure sensors and temperature sensors calibrated before initial use and annually using NIST, or equivalent standards.

Failure to perform the checks at the prescribed frequencies results in corrective actions.

C3-3 Sampling of Homogeneous Solids and Soils/Gravel

Quality Assurance Objectives

This section presents QAOs to ensure sampling is conducted in a representative manner on a waste stream basis for containers containing homogeneous solids or soil/gravel. Samples are randomly collected in both the horizontal and vertical planes of each container's waste as described in INST-OI-16 and INST-OI-73. For waste containers that contain homogeneous solids or soils/gravel in smaller containers (for example, 1 gal poly bottles) within a waste container, one randomly chosen smaller container must be sampled from each drum in accordance with INST-OI-75.

Precision

Sampling precision is determined by collecting and sampling field duplicates (e.g., co-located cores or co-located samples as described in Section C1-2b[1]), once per sampling batch or once per week during the sampling operations, whichever is more frequent. A sampling batch is a suite of homogeneous solids and soil/gravel samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field QA samples), all of which must be collected within 14 calendar days of the first sample in the batch. The RPD between collocated core samples is calculated and reported by the SPM or designee per MP-TRUW-8.17, *Co-Located Core Sampling Control Charts*.

The recommended method for establishing acceptance criteria for co-located cores and co-located samples is the F-Test method because the F-Test: (1) does not require potentially arbitrary groupings into batches, (2) is based on exact distributions, and (3) is more likely to detect a change in the process. When a sufficient number of samples are collected (25 to 30 pairs of collocated cores or samples), control charts of the RPD will be developed for each constituent and for each waste matrix or waste type (e.g. pyrochemical salts or organic sludges). The limits for the control chart will be three standard deviations above or below the average RPD. Once constructed, RPDs for additional co-located pairs will be compared with the control chart to determine whether or not the co-located cores are acceptable. Periodically, the control charts will be updated using all available data.

The statistical test will involve calculating the variance for co-located cores and samples by pooling the variances computed for each pair of duplicate results. The variance for the waste stream will be computed excluding any data from containers with co-located cores, because the test requires the variance estimate to be independent. All data must be transformed to normality prior to computing variances and performing the test. The test hypothesis is evaluated using the F distribution and the method for testing the difference in variances.

Accuracy

Sampling accuracy through the use of standard reference materials is not measured. Because waste containers containing homogeneous solids and soil/gravel with known quantities of analytes are not available, sampling accuracy cannot be determined. However, sampling methods and requirements described are designed to minimize sample degradation and hence maximize sampling accuracy.

Sampling accuracy as a function of sampling cross-contamination will be measured. Equipment blanks will be collected at a frequency of once per equipment cleaning batch. Corrective actions must be must be taken if the blank exceeds three times the MDLs (PRDLs for metals) listed for any of the compounds or analytes listed in Tables C3-4, C3-6, and C3-8. Equipment blanks will be collected from the following equipment types:

- Fully assembled coring tools
- Liners cleaned separately from coring tools
- Miscellaneous sampling equipment that is reused (bowls, spoons, chisels)

Completeness

Sampling completeness is expressed as the number of valid samples collected as a percent of the total samples collected for each waste stream. A valid sample is any sample collected from a randomly selected container using randomly selected horizontal and vertical planes in accordance with INST-OI-16, INST-OI-73, and INST-OI-75. The AMWTP must achieve a minimum 90% completeness.

Comparability

Consistent use and application of uniform procedures, sampling equipment, and measurement units must ensure that sampling operations are comparable. Consistent application of data usability criteria will also ensure comparability. In addition, laboratories analyzing samples successfully participate in the PDP.

Representativeness

Specific steps to ensure representativeness of samples include the following for both waste containers and smaller containers:

- Coring tools and sampling equipment used are clean before sampling
- The entire depth of waste minus a defined approved safety factor is cored, and the core collected must have a length greater than or equal to 50% of the waste depth. This is called core recovery and is calculated as follows:

$$Core\ recovery\,(\%) = \frac{y}{x} \times 100 \qquad \text{(C3-10)}$$

  Where:

  x = waste depth in the container

  y = the length of the core collected from the waste

- Coring operations and tool selection should be designed to minimize alteration of the in-place waste characteristics. Minimal waste disturbance must be verified by visually examining the core and describing the observation (e.g., undisturbed, cracked, or pulverized) in the field logbook.

If core recovery is less than 50% of the depth of the waste, a second coring location is randomly selected. The core with the best core recovery is used for sample collection.

One randomly selected container within a container will be chosen if the drum contains individual containers.

C3-4 Non-Destructive Examination Methods

Quality Assurance Objectives

The QAOs for non-destructive examination (NDE) are detailed in this section. NDE can be either RTR or VE. In the event QAOs are not met, then corrective action is taken in accordance with MP-Q&SI-5.4. It should be noted that NDE does not have a specific MDL because it is primarily a qualitative determination. The objective of NDE is to determine the physical waste form, the absence of prohibited items, and additional waste characterization techniques that may be used based on Summary Category Groups (i.e., S3000, S4000, S5000). All activities required to achieve these objectives are described in INST-OI-12 and INST-OI-81.

C3-4a Radiography

Data to meet these objectives are obtained from a video and audio recorded scan provided by trained and qualified RTR operators. Results are also recorded on a radiography data form. The precision, accuracy, completeness, and comparability objectives for RTR data are presented below.

Precision

Precision is maintained by reconciling any discrepancies between two RTR operators with regard to identification of the waste matrix code, liquids in excess of WIPP Hazardous Waste Permit TSDF-WAC limits, and compressed gases through independent replicate scans and independent observations.

Additionally, the precision of RTR is verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern.

Accuracy

Accuracy is obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100 percent of the items required to meet the DQOs for radiography specified in Section C-4a(1) in a training container during their initial qualifications and subsequent requalification.

Completeness

A video and audio media recording of the RTR examination and a validated radiography data form is obtained for 100 percent of the waste containers subject to RTR. All video and audio recording and radiography data forms are subject to validation as indicated in Sections C3-10.

Comparability

The comparability of RTR data from different operators is enhanced by using standardized RTR procedures and operator qualification. Operator training requirements are detailed in the RTR qualification package in accordance with MP-RTQP-14.4.

C3-4b Visual Examination

Results are recorded on a VE data form. The precision, accuracy, completeness, and comparability objectives for VE data are presented below.

Precision

Precision is maintained by reconciling any discrepancies between the operator and the independent technical reviewer with regard to identification of the waste matrix code, liquids in excess of WIPP Hazardous Waste Permit TSDF-WAC limits, and compressed gases.

Accuracy

Accuracy is maintained by requiring operators to pass a comprehensive examination and demonstrate satisfactory performance in the presence of the VEE during their initial qualification. VE operators shall be requalified every two years.

Completeness

A validated VE data form is obtained for 100 percent of the waste containers subject to VE.

Comparability

The comparability of VE data from different operators is enhanced by using standardized VE procedures and operator qualification. Operator training requirements are detailed in the VE qualification package in accordance with MP-RTQP-14.4.

C3-5 Gas Volatile Organic Compounds Analysis

Quality Assurance Objectives

The specified QAOs in Table C3-2 represent the required quality of data necessary to draw valid conclusions regarding program objectives. WIPP-WAP required limits, such as the PRQL associated with VOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of the data users. A summary of required QC samples and the associated acceptance criteria is included in Table C3-3. Key data quality indicators for laboratory measurements are defined below.

Precision

Precision is assessed by analyzing duplicates, and replicate analyses of control samples, and PDP blind audit samples. The results from measurements on these QC samples are compared with the acceptance criteria in Tables C3-2. These QC measurements are used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Precision is initially assessed using analytical methods described in INST-OI-43.

Accuracy

Accuracy as %R is assessed for the laboratory operations by analyzing PDP blind-audit samples and LCSs. The results from these measurements are compared with the acceptance criteria in Table C3-2. These QC measurements are used to demonstrate acceptable method performance and trigger corrective action when control limits are exceeded.

Accuracy is initially assessed using INST-OI-43 by analyzing a minimum of seven replicate method performance samples.

Calibration

GC/MS tunes, initial calibrations, and continuing calibrations are performed and evaluated using the criteria specified in Table C3-3 as implemented in INST-OI-43. These criteria will be used to demonstrate acceptable calibration and trigger corrective action when control limits are exceeded.

Method Detection Limits (MDLs)

MDLs are expressed in units of nanograms (ng) for VOCs and must be less than or equal to those listed in Table C3-2. MDLs are determined based on the method described in Section C3-1 and in accordance with INST-OI-43, as applicable.

Program Required Quantitation Limit

The AMWTP demonstrates the capability to quantitate analytes at or below the PRQL given in Table C3-2. The AMWTP sets the concentration of at least one calibration standard below the PRQL. INST-OI-43 details the procedures for PRQL demonstration.

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. A composited sample is treated as one sample for the purposes of completeness because only one sample is run through the analytical instrument. Valid results are defined as results that meet the data usability criteria based on application of the QC Criteria specified in Tables C3-2 and C3-3; and meet the detection limit, calibration, representativeness, and comparability criteria within this section and in Table C3-2.

Comparability

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability of analytical data is achieved by using standardized methods and traceable standards and successful participation in the PDP.

Representativeness

Representativeness for VOC analysis is achieved by collection of sufficient numbers of samples using clean sampling equipment that does not introduce sample bias. Samples must be collected as specified in Attachment C1.

C3-6 Total Volatile Organic Compound Analysis

Total VOC analysis is performed for the AMWTP by the INL/CCP ACL.

Quality Assurance Objectives

The development of DQOs has resulted in the QAOs listed in Table C3-4. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. QAPjP-required limits, such as the PRQL associated with VOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision is assessed through the analysis of laboratory duplicates or matrix spike duplicates (MSDs), replicate analyses of LCSs, and PDP blind audit samples. The results of these QC samples are compared with the acceptance criteria in Table C3-4. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy as %R is assessed for the laboratory operations by analyzing LCSs, matrix spikes, surrogate compounds, and PDP blind-audit samples. The results from these measurements for matrix spike samples are compared to the %R criteria listed in Table C3-4. Surrogates and internal standards are evaluated as specified in SW-846 method (EPA 1996) or Table C3-5. The QC measurements will be used to demonstrate acceptable method performance and to trigger corrective actions when control limits are exceeded.

Laboratory blanks are assessed to determine possible laboratory contamination and are evaluated as specified in Table C3-5. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

GC/MS Tunes, initial calibrations, and continuing calibrations are performed and evaluated using criteria specified in Table C3-5 and the SW-846 method (EPA 1996). These criteria will be

used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Method Detection Limit

MDLs are expressed in milligrams per kilogram (mg/kg) for VOCs and must be less than or equal to those listed in Table C3-4. The detailed procedures for MDL determination are included in the laboratory procedures.

Program Required Quantitation Limit

Laboratories will quantitate analytes in samples at or below the PRQLs given in Table C3-4. Laboratories set the concentration of at least one calibration standard below the PRQL. The detailed procedures for MDL determination are included in the laboratory procedures.

Completeness

Laboratory completeness is expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data usability criteria based upon an application of the QC criteria specified in Tables C3-4 and C3-5 and meet the calibration, detection limit, representativeness, and comparability criteria within this section. Participating laboratories must meet the completeness criteria specified in Table C3-4.

Comparability

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability of analytical data is ensured by consistent use of standardized SW-846 sample preparation and methods that meet the QAOs specified in Tables C3-4 and C3-5, traceable standards, and by successful participation in the PDP. AMWTP may use the most recent version of SW-846. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for VOC analysis is achieved by collecting unbiased samples as addressed in Attachment C1.

C3-7 Total Semivolatile Organic Compound Analysis

Total SVOC analysis is performed for the AMWTP by the INL/CCP ACL.

Quality Assurance Objectives

The development of DQOs has resulted in the QAOs listed in Table C3-6. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. QAPjP-required limits, such as the PRQL associated with SVOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of Quality Control samples and associated acceptance criteria for this analysis is included in Table C3-7. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision is assessed through the analysis of laboratory duplicates or MSDs, replicate analyses of LCSs and PDP blind audit samples. The results of these QC samples are compared with the acceptance criteria in Table C3-6. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy as %R is assessed for the laboratory operations by analyzing LCSs, matrix spikes, surrogate compounds, and PDP blind-audit samples. The results from these measurements for matrix spike samples are compared to the %R criteria listed in Table C3-6. Surrogates and internal standards are evaluated as specified in SW-846 method (EPA 1996) or Table C3-7. The QC measurements will be used to demonstrate acceptable method performance and to trigger corrective actions when control limits are exceeded.

Laboratory blanks are assessed to determine possible laboratory contamination and are evaluated as specified in Table C3-7. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

GC/MS tunes, initial calibrations, and continuing calibrations are performed and evaluated using criteria specified in Table C3-7 and the SW-846 method (EPA 1996). These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Method Detection Limit

MDLs are expressed in mg/kg for SVOCs and must be less than or equal to those listed in Table C3-6. The detailed procedures for MDL determination are included in the laboratory procedures.

Program Required Quantitation Limit

Laboratories will quantitate analytes in samples at or below the PRQLs given in Table C3-6. Laboratories set the concentration of at least one calibration standard below the PRQL. The detailed procedures for MDL determination will be included in the site procedures.

Completeness

Laboratory completeness is expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data usability criteria based upon an application of the QC criteria specified in Tables C3-6 and C3-7 and meet the calibration, detection limit, representativeness, and comparability criteria within this section. Participating laboratories must meet the completeness criteria specified in Table C3-6.

Comparability

For SVOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability of analytical data is ensured by consistent use of standardized SW-846 sample preparation and methods that meet the QAOs specified in Tables C3-6 and C3-7, traceable standards, and by successful participation in the PDP. AMWTP may use the most recent version of SW-846. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for SVOC analysis is achieved by collecting unbiased samples as addressed in Attachment C1.

C3-8 Total Metal Analysis

Total metal analysis is performed for the AMWTP by the INL/CCP ACL.

Quality Assurance Objectives

The development of DQOs has resulted in the QAOs listed in Table C3-8. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program

objectives. QAPjP-required limits, such as the PRQL associated with metals analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of Quality Control samples and the associated acceptance criteria for this analysis is provided in Table C3-9. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision is assessed through the analysis of laboratory duplicates or laboratory MSDs, replicate analyses of LCSs, and PDP blind audit samples. The results of these QC samples are compared with the acceptance criteria in Table C3-8. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

Accuracy

Accuracy is assessed through the analysis of laboratory matrix spikes, PDP blind-audit samples, serial dilutions, interference check samples, and LCSs. The results from these measurements for matrix spike samples are compared to the criteria listed in Tables C3-8 and C3-9. The QC measurements will be used to demonstrate acceptable method performance and to trigger corrective actions when control limits are exceeded.

Laboratory blanks and calibration blanks are assessed to determine possible laboratory contamination and are evaluated as specified in Table C3-9. These QC measurements will be used to demonstrate acceptable levels of laboratory contamination and to trigger corrective action when control limits are exceeded.

Calibration

Mass Tunes (for ICP MS only), Standards Calibrations, Initial Calibration Verifications (ICVs), and continuing calibrations are performed and evaluated using the procedures and criteria specified in Table C3-9 and the SW-846 method (EPA 1996). These criteria will be used to demonstrate acceptable calibration and to trigger corrective action when control limits are exceeded.

Program Required Detection Limits

PRDLs, expressed in units of micrograms per liter (µg/L), are the maximum values for instrument detection limits (IDLs) permitted by the QAPjP. IDLs will be less than, or equal to, the PRDL for the method used to quantitate a specific analyte. The methods listed in Table C-5 will be used if the IDL meets this criterion. For high concentration samples, an exception to the above requirements will be made in cases where the sample concentration exceeds five times the IDL of the instrument being used. In this case, the analyte concentration may be reported even

though the IDL may exceed the PRDL. IDLs will be determined semiannually (i.e., every six months). Detailed procedures for IDL determination are included in the laboratory procedure.

Program Required Quantitation Limit

Laboratories will quantitate analytes in samples at or below the PRQLs in units of mg/kg wet weight given in Table C3-8. The PRDLs are set an order of magnitude less than the PRQLs (assuming 100 percent solid sample diluted by a factor of 100 during preparation). Laboratories set the concentration of at least one QC or calibration standard at or below the solution equivalent of the PRQL. The detailed procedures for MDL determination are included in the laboratory procedures.

Completeness

Laboratory completeness is expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet the data usability criteria based upon an application of the QC criteria specified in Tables C3-8 and C3-9 and meet the calibration, detection limit, representativeness, and comparability criteria within this section. Participating laboratories must meet the completeness criteria specified in Table C3-8.

Comparability

For metals analysis, data generated through analysis of samples from different sites shall be comparable. Comparability of analytical data is ensured by consistent use of standardized SW-846 sample preparation and methods that meet the QAOs specified in Tables C3-8 and C3-9, demonstrating successful participation in the PDP, and use of traceable standards. AMWTP may use the most recent version of SW-846. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data before and after the SW-846 modification.

Representativeness

Representativeness for metals analysis is achieved by collecting unbiased samples and the preparation of samples in the laboratory using representative and unbiased methods as addressed in Attachment C1.

C3-9 Acceptable Knowledge

AK documentation provides primarily qualitative information that cannot be assessed according to specific data quality goals used for analytical techniques. QAOs for analytical results are described in terms of precision, accuracy, completeness, comparability, and representativeness. Appropriate analytical and testing results may be used to augment the characterization of wastes based on AK (refer to Section C 4 and MP-TRUW-8.13). To ensure the AK process is

consistently applied, the AMWTP complies with the following data quality requirements for AK documentation:

- *Precision* - Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing AK documentation, do not lend themselves to statistical evaluations of precision. However, the AK information is addressed by the independent review of AK information during internal and external audits.

- *Accuracy* - Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers that require reassignment to a new waste matrix code and/or designation of different EPA HWNs based on sampling and analysis data and discrepancies identified by the CBFO during waste confirmation are reported as a measure of AK accuracy.

- *Completeness* - Completeness is an assessment of the number of waste streams or number of samples collected to the number of samples determined to be usable through the data validation process. The AK record must contain 100 percent of the required information (Section C4-3). The usability of AK information is assessed for completeness during audits.

- *Comparability* - Data are considered comparable when one set of data can be compared with another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the AK process. Assignment of EPA HWNs will be made in accordance with Section C3-3b. This information will be provided to other sites that store or generate a similar waste stream.

- *Representativeness* - Representativeness expresses the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring the process of obtaining, evaluating, and documenting AK information is performed in accordance with the minimum standards established in Attachment C4. The AMWTP also assesses and documents the limitations of the AK information used to assign EPA HWNs (for example, purpose and scope of information, date of publication, type and extent to which waste parameters are addressed).

The AMWTP complies with the nonconformance notification and reporting requirements of Section C3-13 if the results of sampling and analysis specified in Attachment C are inconsistent with AK documentation.

The AMWTP addresses QC by tracking its performance with regard to the use of AK by: (1) assessing the frequency of inconsistencies among information, and (2) documenting AK inconsistencies identified through RTR, VE, headspace gas analyses, and solidified waste analyses. In addition, the AK process and waste stream documentation are evaluated through

internal assessments by QA organizations and assessments by auditors external to the organization.

C3-10 Data Review, Validation, and Verification Requirements

Procedures have been developed for the review, validation, and verification of data at the data generation level and the validation and verification of data at the project level. Data review determines if raw data is properly collected and ensures raw data are properly reduced. Data validation verifies that the data reported satisfies the requirements of the WIPP-WAP and is accompanied by signature release. Data verification authenticates that data as presented represent the sampling and analysis activities as performed and have been subject to the appropriate levels of data review. These requirements ensure that QAPjP records furnish documentary evidence of quality.

The AMWTP has implemented an electronic data processing system called the Waste Tracking System (WTS). Data are collected by the operator, entered into the WTS (automated or key entry), signed electronically, and promoted for data generation level review and validation. The data are progressively reviewed (on a batch basis) at the data generation level using paper/electronic data validation checklists. The reviews are performed in the sequence specified. If data are approved, the data are manually/automatically promoted to the next reviewer. If the data are rejected, the data are manually/automatically demoted to the data generator for problem resolution.

The following Batch Data Reports are used for data validation, verification, and QA activities:

- A Testing Batch Data Report or equivalent includes all data pertaining to RTR or VE for up to 20 waste containers without regard to waste matrix. Table C3-11 lists all of the information required in Testing Batch Data Reports (identified with an “X”) and other information that is necessary for data validation, but is optional in Testing Batch Data Reports (identified with an “O”).

- A Sampling Batch Data Report or equivalent includes all sample collection data pertaining to a group of no more than 20 samples headspace or homogeneous waste samples that were collected for chemical analysis. Table C3-12 lists all of the information required in Sampling Batch Data Reports (identified with an “X”) and other information that is necessary for data validation, but is optional in Sampling Batch Data Reports (identified with an “O”).

- An Analytical Batch Data Report or equivalent includes analytical data from the analysis of TRU mixed waste for up to 20 samples headspace or homogeneous waste samples. Analytical Batch Data Reports or equivalent that contain results for composited headspace gas samples must contain sufficient information to identify the containers that were composited for each composite sample and the sample volume that was taken from each waste container. Because Analytical Batch Data Reports are generated based on the number of samples analyzed, an Analytical Batch Data Report may contain results that are applicable to more than 20 containers depending on how many composite samples are part of the report, but may not exceed a total of 20 samples analyzed. Table C3-13 lists all of the information required in Analytical Batch Data Reports (identified with an "X") and other information that is necessary for data validation, but is optional in Analytical Batch Data Reports (identified with an "O").

  Raw analytical data need not be included in Analytical Batch Data Reports, but must be maintained in the site project files and be readily available for review upon request. Raw data may include all analytical bench sheet and instrumentation readouts for all calibration standard results, sample data, QC samples, sample preparation conditions and logs, sample run logs, and all re-extraction, re-analysis, or dilution information pertaining to the individual samples. Raw data may also include calculation records and any qualitative or semi-quantitative data collected for a sample and that has been recorded on a bench sheet or in a logbook.

- An On-line Batch Data Report or equivalent contains the combined information from the Sampling Batch Data Report and Analytical Batch Data Report that is relevant to the on-line method used.

C3-10a Data Generation Level

The following are the minimum requirements for raw data collection and management:

- All raw data are signed and dated in reproducible ink by the person generating it. Alternately, unalterable electronic signatures are used.

- All data are recorded clearly, legibly, and accurately in field and laboratory records (bench sheets and logbooks), and include applicable sample identification numbers (for sampling and analytical labs).

- Any changes to original data are lined out, initialed, and dated by the individual making the change. A justification for changing the original data is also included. The original data are not obliterated or otherwise disfigured so as not to be readable. Data changes are made by the individual who originally collected the data or an individual authorized to change the data.

- All data are transferred and reduced from field and laboratory records completely and accurately.

- All field and laboratory records are maintained as specified in Table C-6.

- Data are organized into a standard format for reporting purposes (Batch Data Report), as outlined in specific sampling and analytical procedures.

- All electronic and video data must be stored appropriately to ensure that waste container, sample, and associated QC data are readily retrievable. In the case of classified information, additional security provisions may apply that could restrict retrievability. The additional security provision will be documented in site procedures as outlined in the QAPjP in accordance with prevailing classified information security standards. AMWTP does not anticipate dealing with classified information, so no procedures have been developed.

Data review, validation, and verification at this level involve scrutiny and signature release from qualified independent technical reviewer(s) not involved in the generation or recording of the data under review, as specified below. Individuals conducting this data review, validation, and verification must use checklists that address all items included in this section. Checklists contain or reference tables showing the results of sampling, analytical, or on-line batch QC samples, as applicable. Checklists reflect review of all QC samples and QAO categories per criteria in Tables C3-2 through C3-9 (as applicable to the methods validated). Completed checklists are forwarded with Batch Data Reports to the project level. Analytical raw data must be available and reviewed by the data generation level reviewer. Nonconformance reports identified during data generation level validation and verification are documented per MP-Q&SI-5.4. All activities required to achieve these objectives are addressed in MP-TRUW-8.8 and CCP-TP-188, *Analytical Data Recording, Review, and Reporting*.

C3-10a(1) Independent Technical Review

The independent technical review (ITR) ensures by review of raw data that data generation and reduction are technically correct; calculations are verified correct; deviations are documented; and QA/QC results are complete, documented correctly, and compared against WIPP-WAP criteria. This review validates and verifies the work done by the originator.

One hundred percent of the Batch Data Reports receive an ITR. This review is performed by a trained and qualified individual who was not involved in the generation or recording of the data under review. This review shall be performed by an individual other than the data generator who is qualified to have performed the initial work. This review is performed as soon as practicably possible to determine and correct negative quality trends in the sampling or analytical process. However, at a minimum, the ITR is performed before any waste associated with data is shipped to WIPP, unless the data are being obtained from waste sampling and analysis as containers are being retrieved or generated after initial WSPF approval as described in Section C2-1. The reviewers release the data as evidenced by signature, and as a consequence ensure the following:

- Data generation and reduction were conducted in a technically correct manner per the method used (procedure with revision). Data were reported in the proper units and correct number of significant figures.

- Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100% check of all hand calculations. Values not verified to within rounding or significant difference discrepancies are rectified prior to completion of the ITR.

- The data were reviewed for transcription errors.

- The testing, sampling, or analytical data QA documentation for Batch Data Reports is complete and includes, as applicable, raw data, DAC and equilibrium calculations and times, calculation records, COC forms, calibration records (or references to an available calibration package), QC sample results, and copies or originals of the gas sample canister tags. Corrective action is taken to ensure all Batch Data Reports are complete and include all necessary raw data prior to completion of the ITR.

- QC sample results were within established control limits and, if not, the data were appropriately qualified per the data usability criteria. Data outside established control limits are qualified, as appropriate, assigned an appropriate qualifier flag, discussed in the case narrative, and included, as appropriate, in calculations for completeness. QC criteria that were not met are documented.

- Reporting flags (Table C3-14) were assigned correctly.

- Sample holding time and preservation requirements were met, or exceptions documented.

- Radiography tapes have been reviewed (independent observation) on a waste container basis once per testing batch, or once per day of operation, whichever is less frequent (Section C1-3). The RTR tapes are reviewed against the reported data on the radiography form to ensure the data are correct and complete.

- Field sampling records are complete. Incomplete or incorrect field sampling records are subject to resubmittal prior to completion of the ITR.

- QAOs have been met according to the methods outlined in Sections C3-2 through C3-9.

C3-10b Project Level

Data review, validation, and verification at this level involves scrutiny and signature release from the SPM or designee. MP-TRUW-8.9, *Level II Data Validation*, defines the project level validation and verification process. Any nonconformance identified during this process shall be documented on an NCR (Section C3-13).

The SPM shall ensure that a repeat of the data generation level review, validation, and verification is performed on the data for a minimum of one randomly chosen waste container quarterly (every three months). This exercise will document that the data generation level review, validation, and verification is being performed according to procedures.

C3-10b(1) Site Project Manager Review

The SPM review is the final validation that all of the data contained in Batch Data Reports from the data generation level are complete and have been properly reviewed as evidenced by signature release and completed checklists.

One hundred percent of the Batch Data Reports have an SPM or designee signature release. At a minimum, the SPM signature release is performed before any waste associated with data reviewed is shipped to WIPP, unless the data are being obtained from waste sampling and analysis as containers are being retrieved or generated as described in Section C2-1. This signature release ensures the following:

- The validity of the DAC assignment made at the data generation level based upon an assessment of the data collection and evaluation necessary to make the assignment.

- Testing batch QC checks (e.g., replicate scans, measurement system checks) were properly performed. Radiography data are complete and acceptable based on evidence of videotape review of one waste container per day or once per testing batch, whichever is less frequent, as specified in C1-3.

- Sampling batch QC checks (e.g., equipment blanks, field duplicates, and field reference standards) were properly performed, meets the established QAOs, and is within established data usability criteria.

- Analytical QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, MSDs, LCSs) were properly performed, meet the established QAOs, and are within established data usability criteria.

- On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on line control samples) were properly performed, meet the established QAOs, and are within established data usability criteria.

- Proper procedures were followed to ensure representative samples of headspace gas and homogeneous solids and soil/gravel were taken.

- Data generation level ITR, validation, and verification have been performed as evidenced by completed review checklists and by the appropriate signature releases.

- ITRs were not involved in the generation or recording of the data under review.

- Batch data review checklists are complete.

- Batch Data Reports are complete and data are properly reported (e.g., data are reported in the correct units, with the correct number of significant figures, and with qualifying flags).

- Verification that data are within established data assessment criteria and meet the applicable QAOs (Section C3-2 through C3-9).

C3-10b(2) Prepare SPM Summary and Data Validation Summary

To document the project level validation and verification described above, the SPM (or designee) prepares the Site Project Manager Summary and Data Validation Summary. These reports may be combined to eliminate redundancy. The SPM Summary includes a validation checklist for each Batch Data Report. Checklists for the SPM Summary are sufficiently detailed to validate all aspects of a Batch Data Report that affect data quality.

The Data Validation Summary provides verification that, on a per waste container or sample basis as evidenced by Batch Data Report reviews, all data have been validated per this QAPjP. The Data Validation Summary must identify each Batch Data Report reviewed (including all waste container numbers), describe how the validation was performed and whether or not problems were detected (e.g., nonconformance reports), and include a statement indicating all data are acceptable. Summaries include release signatures.

Once the data are approved through project level validation and verification or when the SPM decides the sample no longer needs to be retained, the SPM notifies the laboratories. Samples must be retained until this notification is received. Gas sample canisters may then be released from storage for cleaning, recertification, and subsequent reuse. Sample tags are removed and

retained in the files before recycling the canisters. If the SPM requests that samples or canisters be retained for future use (e.g., an experimental holding time study), the same sample identification and COC forms are used and cross-referenced to documentation specifying the purpose for sample or canister retention.

C3-10b(3) Prepare Waste Stream Characterization Package

In the event the CBFO request detailed information on a waste stream, the SPM will provide a Waste Stream Characterization Package. The SPM will ensure the Waste Stream Characterization Package (Section C3-12b[3]) will support waste characterization determinations.

C3-10c CBFO Level

Not applicable to the AMWTP; this section refers to WIPP.

C3-11 Reconciliation with Data Quality Objectives

Reconciling the results of waste testing and analysis with the DQOs provides a way to ensure data are of adequate quality to support the regulatory compliance programs. Reconciliation with the DQOs takes place at both the project and the CBFO levels. At the project level, reconciliation is performed by the SPM, and submitted to CBFO for review and approval. Reconciliation is performed as described in MP-TRUW-8.11, *Data Reconciliation.*

C3-11a Reconciliation at the Project Level

The SPM ensures all data generated and used in decision making meet the DQOs provided in Section C-4a(1). The SPM assesses whether data of sufficient type, quality, and quantity have been collected for each waste stream. The SPM determines if the variability of the data set is small enough to provide the required confidence in the results.

The SPM also determines if, based on the desired error rates and confidence levels, a sufficient number of valid data points have been determined (as established by the associated completeness rate for each sampling and analytical process). In addition, the SPM documents that random sampling of containers was performed for the purposes of waste stream characterization.

For each waste stream characterized, the SPM determines if sufficient data have been collected to determine the following WIPP-WAP-required waste parameters:

- Waste Matrix Code
- Waste material parameter weights
- If each container of waste contains TRU radioactive waste

- Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream (if applicable)

- Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and the number of samples collected for VOCs, SVOCs, and metals in the waste stream

- Whether the waste stream exhibits a TC (TCs) under 40 CFR Part 261, Subpart C

- Whether the waste stream contains listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part §261, Subpart D

- Whether the waste stream is classified as hazardous or nonhazardous at the 90% confidence level

- Whether an appropriate packaging configuration and DAC were applied and documented in the headspace gas sampling documentation, and whether the drum age was met prior to sampling

- Whether all TICs were appropriately identified and reported in accordance with the requirements of Section C3-1 before submittal of a WSPF for a waste stream or waste stream lot

- Whether the overall completeness, comparability, and representativeness QAOs were met for each analytical and testing procedure as specified in Sections C3-2 through C3-9 before submittal of a WSPF for a waste stream or waste stream lot

- Whether the PRQLs for all analyses were met before submittal of a WSPF for a waste stream or waste stream lot.

If the SPM determines insufficient data have been collected to make the determinations listed above, additional data collection efforts must be undertaken. The reconciliation of a waste stream is performed as described in Attachment C4, prior to submittal of the WSPF and CIS to CBFO for that waste stream. The AMWTP will not ship containers from a TRU waste stream for disposal until the SPM determines that the required waste parameters listed above have been met for the waste stream.

The SPM (or designee) uses MP-TRUW-8.11 as the statistical procedure (Attachment C2) to evaluate and report waste characterization data from the analysis of homogeneous solids and soils/gravel. This procedure, which calculates UCL_{90} values, assesses compliance with the DQOs in Section C-4a(1) as well as the RCRA regulations. It applies to all laboratory analytical data for total VOCs, total SVOCs, and total metals. For RCRA regulatory compliance (40 CFR 261.24), data from the analysis if the appropriate metals and organic compounds is expressed as TC

leaching procedure (TLCP) values or results are compared to the TC levels expressed as total values. These total values will be considered RTL values. RTL values are obtained by calculating the weight/weight concentration (in the solid) of a TC analyte that would give the regulatory weight/volume concentration (in the TLCP extract), assuming 100-percent dissolution.

C3-11b Reconciliation at the CBFO Level

Not applicable to the AMWTP.

C3-12 Data Reporting Requirements

Data reporting requirements define the type of information and the method of transmittal for data transfer from the data generation level to the project level and from the project level to WIPP.

C3-12a Data Generation Level

Data is transmitted by hardcopy or electronically with WTS (a hardcopy is available on demand) from the data generation level to the project level. Transmitted data includes all Batch Data Reports and data review checklists. The Batch Data Reports and checklists contain all information required by the testing, sampling, and analytical techniques described in Attachments C1 through C6, as well as the signature releases to document the review, validation, and verification described in Section C3-10. All batch data reports and checklists are in approved formats, as provided in approved procedures.

Hard copy and/or electronic Batch Data Reports are forwarded to the SPM. All Batch Data Reports are assigned serial numbers and each page is numbered. The serial number used may be the same as the batch number.

QA documentation and records, including raw data, are maintained in testing, sampling, and analytical facility files or site project files in accordance with the document storage requirements presented in Attachment C. In addition, CBFO-approved laboratories shall forward testing, sampling, and analytical QA documentation along with Batch Data Reports to the Site Project Office (SPO) for inclusion in the site project files.

C3-12b Project Level

The SPO prepares a WSPF in accordance with MP-TRUW-8.14, *Preparation of Waste Stream Profile Forms*, for each waste stream certified for shipment to WIPP based on information obtained from AK and Batch Data Reports, if applicable. In addition, the Characterization Information Summary and Waste Stream Characterization Package (when requested by the CBFO) are prepared as appropriate and transmitted to WIPP electronically or by hard copy. The SPM verifies these reports are consistent with information found in analytical batch reports. Summarized testing, sampling, and analytical data are included with the Characterization

Information Summary. The contents of the WSPF, the Characterization Information Summary, and the Waste Stream Characterization Package are discussed in the following sections.

After approval of a WSPF and the associated Characterization Information Summary, the AMWTP maintains a cross-reference of container identification numbers to each Batch Data Report.

A Waste Stream Characterization package must be submitted when requested by the CBFO.

C3-12b(1) Waste Stream Profile Form

The WSPF is prepared in accordance with MP-TRUW-8.14. The WSPF (Figure C-1) includes the following information:

- Generator/storage site name
- Generator/storage site EPA ID
- Date of audit report approval by NMED (if obtained)
- Original generator of waste stream
- Whether waste is contact-handled or remote-handled
- The waste stream WIPP identification number
- Summary Category Group
- Waste Matrix Code Group
- Waste Material Parameter Weight Estimates per unit of waste
- Waste stream name
- Description of the waste stream
- Applicable EPA HWNs
- Applicable TRUCON codes
- A listing of AK documentation used to identify the waste stream
- The waste characterization procedures used and the reference and date of the procedure
- Certification signature of SPM, name, title, and date signed.

C3-12b(2) Characterization Information Summary

The Characterization Information Summary is prepared in accordance with MP-TRUW-8.14. The Characterization Information Summary includes the following elements:

- Data reconciliation with DQOs

- Headspace gas summary data listing the identification numbers of samples used in the statistical reduction, the maximum, mean, standard deviation, UCL_{90}, RTL, and associated EPA HWNs that must be applied to the waste stream

- Total metal, VOC, and SVOC analytical results for homogeneous solids and soil/gravel (if applicable)
- TIC listing and evaluation
- Radiography and VE summary to document that all prohibited items are absent in the waste (if applicable)
- A justification for the selection of RTR and/or VE as an appropriate method for characterizing the waste
- A complete listing of container identification numbers used to generate the WSPF, cross referenced to each Batch Data Report
- Complete AK summary including waste stream name and number, point of generation, waste stream volume (current and projected), generation dates, TRUCON codes, Summary Category Group, Waste Matrix Code(s), and Waste Matrix Code Group, other TRU Waste Baseline Inventory Report (TWBIR) information, waste stream description, areas of operation, generating processes, RCRA determinations (including determination for ignitability, corrosivity, and reactivity), and radionuclide information, all references used to generate the AK summary, and any other information required by Section C4-2b
- Method for determining Waste Material Parameter Weights per unit of waste
- List of any AK Sufficiency Determination requested for the waste stream
- Certification through AK or testing and/or analysis that any waste assigned the EPA HWN of U134 (hydrofluoric acid) no longer exhibits the characteristic of corrosivity. This is verified by ensuring that no liquid is present in U134 waste.

C3-12b(3) Waste Stream Characterization Package

The Waste Stream Characterization Package, which is prepared in accordance with MP-TRUW-8.14, consists of the following elements:

- Waste Stream Profile Form (Section C3-12b[1])
- Accompanying Characterization Information Summary (Section C3-12b[2])
- Complete AK summary (C3-12b[2])
- Batch Data Reports supporting the characterization of the waste stream and any others requested by the CBFO.

- Raw analytical data requested by the CBFO.

C3-12b(4) Waste Data System/WIPP Waste Information System (WDS/WWIS) Data Reporting

The WDS/WWIS Data Dictionary contains all of the data fields, the field format, and the limits associated with the data as established by the WIPP-WAP. These data are subject to edit and limit checks performed automatically by the database, as defined in the *Waste Data System User's Manual* (DOE 2009). If a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including associated TICs for every waste container associated with the composite sample. The AMWTP coordinates the data transmission with WIPP in accordance with MP-TRUW-8.5, *TRU Waste Certification*.

C3-13 Nonconformances

The status of work and the QAPjP activities are monitored and controlled by the SPM, including nonconformance identification, documentation, and reporting. MP-TRUW-8.1, *Certification Plan for INL Transuranic Waste*, discusses specific nonconformance procedures and corrective action processes.

Nonconformances

Nonconformances are uncontrolled and unapproved deviations from an approved plan or procedure. Nonconforming items and activities are those that do not meet the WIPP-WAP requirements, procurement document criteria, or approved procedures and are addressed in MP-Q&SI-5.4. Nonconforming items are marked, tagged, or segregated and the affected personnel notified. Any waste container for which an NCR has been written will not be shipped to the WIPP facility unless the condition that led to the NCR for that container has been dispositioned in accordance with the CBFO Quality Assurance Program Document (QAPD).

Disposition of nonconforming items shall be identified and documented. MP-Q&SI-5.4 identifies the person(s) responsible for evaluating and dispositioning nonconforming items.

For each container selected for confirmation pursuant to Attachment C7, the confirmation team will examine the respective NCR documentation to verify NCRs have been dispositioned for the selected container.

Management at all levels will foster a "no-fault" attitude to encourage the identification of nonconforming items and processes. Nonconformances may be detected and identified by anyone performing WIPP-WAP activities, including:

- Project staff – during field operations, supervision of subcontractors, data validation and verification, and self-assessment

- Laboratory staff – during the preparation for and performance of laboratory testing; calibration of equipment; QC activities; laboratory data review, validation, and verification; and self-assessment
- QA personnel – during oversight activities or audits.

An NCR shall be prepared for each nonconformance identified. Each NCR shall be initiated by the individual(s) identifying the nonconformance. The NCR shall then be processed by knowledgeable and appropriate personnel. For this purpose, an NCR including, or referencing as appropriate, results of laboratory analysis, QC rests, audit reports, internal memoranda, or letters shall be prepared. The NCR must provide the following information:

- Identification of the individual(s) identifying or originating the nonconformance
- Description of the nonconformance
- Method(s) or suggestions for correcting the nonconformance (corrective action)
- Schedule for completing the corrective action
- An indication of the potential ramifications and overall usability of the data, if applicable
- Any approval signature specified in the site nonconformance procedures.

The SPM oversees the NCR process and is responsible for identifying and tracking all nonconformances and reports this information to CBFO. The SPM is also responsible for notifying project personnel of the nonconformance and verifying completion of the corrective action for nonconformances.

Nonconformance to DQOs

For any non-administrative nonconformance related to applicable requirements specified in this QAPjP, which are first identified at the SPM signature release level (i.e., a failure to meet a DQO), AMWTP will submit to CBFO a written notification within seven calendar days of identification and submit an NCR within thirty (30) calendar days of identification of the incident. The AMWTP will issue an NCR and implement corrective actions, which will be resolved prior to shipment.

C3-14 Special Training Requirements and Certifications

Before performing activities that affect QAPjP quality, all personnel receive indoctrination into the applicable scope, purpose, and objectives of the QAPjP and the specific QAOs of the assigned task. Personnel assigned to perform activities for the QAPjP have the education, experience, and training applicable to the functions associated with the work. Evidence of

personnel proficiency and demonstration of competence in the task(s) assigned is demonstrated and documented. All personnel designated to work on specific aspects of the QAPjP maintain qualification (that is, training and certification) throughout the duration of the work. Qualification requirements for personnel are documented in Individual Training Plans or qualification packages. Job performance is evaluated and documented at periodic intervals to ensure personnel maintain proficiency and record additions to training, as necessary per MP-RTQP-14.4.

Personnel involved in QAPjP activities receive continuing training to ensure job proficiency is maintained. The due date for required continued training courses and requalification shall be the end of the month of the anniversary date when the training was previously completed. Training includes both education in principles and enhancement of skills. Training records that specify the scope of the training, the date of completion, and documentation of job proficiency are maintained as QA Records. Maintenance of training records is addressed in MP-RTQP-14.19, *Training Records Administration*.

Analytical laboratory line management ensures analytical personnel are qualified to perform the analytical method(s) for which they are responsible. The minimum qualifications for certain specified positions for the WIPP-WAP are summarized in Table C3-10. Analytical laboratory personnel are trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan.*

An evaluation of personnel qualifications includes comparing and evaluating the requirements specified in the job/position description and the skills, training, and experience included in the person's current resume. This evaluation, done in accordance with MP-RTQP-14.1 and MP-RTQP-14.4, is also performed for personnel who change positions because of a transfer or promotion as well as personnel assigned to short-term or temporary work assignments that may affect the quality of the WIPP-WAP.

C3-15 Changes to Plans and Procedures

Controlled changes to WIPP-WAP related plans or procedures are made in accordance with the WIPP QAPD and managed through MP-DOCS-18.4, *Document Control*. The SPM shall review all non-administrative changes and evaluate whether those changes could impact DQOs specified in the permit. After AMWTP certification, any changes to WIPP-WAP related plans or procedures that could positively or negatively impact DQOs (i.e., those changes that require prior approval of the CBFO as defined in Section C5-2) shall be reported to the CBFO within five (5) days of identification by the project level review. The CBFO shall send NMED a monthly summary briefly describing the changes to plans and procedures identified pursuant to this section during the previous month.

Table C3-1. Waste Material Parameters and Descriptions.

Waste Material Parameter	Description
Iron-based Metal/Alloys	Iron and steel alloys in the waste excluding the waste container materials.
Aluminum-based Metals/Alloys	Aluminum or aluminum-based alloys in the waste materials.
Other Metals	All other metals found in the waste materials (for example, copper, lead, zirconium, tantalum, etc.).
Other Inorganic Materials	Nonmetallic inorganic waste, including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents.
Cellulosics	Materials generally derived from high polymer plant carbohydrates, for example, paper, cardboard, wood, cloth, etc.
Rubber	Natural or man-made elastic latex materials, for example, surgeon gloves, leaded rubber gloves, etc.
Plastics (Waste Materials)	Generally man-made materials, often derived from petroleum feedstock, for example, polyethylene, polyvinylchloride, etc.
Organic Matrix	Cemented organic resins, solidified organic liquids, and sludges.
Inorganic Matrix	Any homogeneous materials consisting of sludge, or aqueous-based liquids solidified with cement, calcium silicate, or other solidification agents; for example, waste water treatment sludge, cemented aqueous liquids, and inorganic particulates, etc.
Soils/gravel	Generally consists of naturally occurring soils which have been contaminated with inorganic waste materials.
Steel (Packaging Materials)	208-liter (L) (55-gal) drums.
Plastics (Packaging Materials)	90 mil polyethylene drum liner and plastic bags.

Table C3-2. Gas Volatile Organic Compounds Target Analyte List and Quality Assurance Objectives.

Compound	Chemical Abstract Services (CAS) Number	Precision[a] (%RSD or RPD)	Accuracy[a] (%R)	MDL[b] (ng)	PRQL (ppmv)	Completeness (%)
Benzene	71-43-2	≤25	70-130	10	10	90
Bromoform	75-25-2	≤25	70-130	10	10	90
Carbon tetrachloride	56-23-5	≤25	70-130	10	10	90
Chlorobenzene	108-90-7	≤25	70-130	10	10	90
Chloroform	67-66-3	≤25	70-130	10	10	90
1,1-Dichloroethane	75-34-3	≤25	70-130	10	10	90
1,2-Dichloroethane	107-06-2	≤25	70-130	10	10	90
1,1-Dichloroethylene	75-35-4	≤25	70-130	10	10	90
trans-1,2-Dichloroethylene	156-60-5	≤25	70-130	10	10	90
Ethyl benzene	100-41-4	≤25	70-130	10	10	90
Ethyl ether	60-29-7	≤25	70-130	10	10	90
Methylene chloride	75-09-2	≤25	70-130	10	10	90
1,1,2,2-Tetrachloroethane	79-34-5	≤25	70-130	10	10	90
Tetrachloroethylene	127-18-4	≤25	70-130	10	10	90
Toluene	108-88-3	≤25	70-130	10	10	90
1,1,1-Trichloroethane	71-55-6	≤25	70-130	10	10	90
Trichloroethylene	79-01-6	≤25	70-130	10	10	90
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	≤25	70-130	10	10	90
m-Xylene[c]	108-38-3	≤25	70-130	10	10	90
o-Xylene	95-47-6	≤25	70-130	10	10	90
p-Xylene[c]	106-42-3	≤25	70-130	10	10	90
Acetone	67-64-1	≤25	70-130	150	100	90
Butanol	71-36-3	≤25	70-130	150	100	90
Methanol	67-56-1	≤25	70-130	150	100	90
Methyl ethyl ketone	78-93-3	≤25	70-130	150	100	90
Methyl isobutyl ketone	108-10-1	≤25	70-130	150	100	90
Carbon disulfide[d]	75-15-0	≤25	70-130	10	10	90
Chloromethane[d]	74-87-3	≤25	70-130	10	10	90
1,2,4 – Trimethylbenzene[e]	95-36-3	≤25	70-130	10	10	90
1,3,5 – Trimethylbenzene[e]	108-67-8	≤25	70-130	10	10	90
Cyclohexane[e]	110-82-7	≤25	70-130	10	10	90

a. Criteria apply to PRQL concentrations.
b. Values based on delivering 10 mL to the analytical system.
c. These xylene isomers cannot be resolved by GC/MS and are reported as the m-p xylene total.
d. Chloromethane and carbon disulfide are compounds that have been added to the target list based on AK for certain waste streams.
e. These constituents have been added as target compounds on the Agilent system at the AMWTP for the purpose of supporting VOC flammability evaluations.

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
MDL = Method detection limit (maximum permissible value), for GC/MS and GC/FID equals total number of ng delivered to the analytical system per sample.
PRQL = Program required quantitation limit (ppm/volume basis)

Table C3-3. Summary of Laboratory Quality Control Samples and Frequencies for Gas Volatile Organic Compound Analysis.

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action [a]
Method Performance Samples	Seven samples initially and four semiannually	Meet method QAOs	Repeat until acceptable
Laboratory duplicates or on-line duplicates	One per analytical batch or on-line batch	RPD $\leq$ 25 [b]	Nonconformance if RPD > 25
Laboratory blanks or on-line blanks	Daily before sample analysis for GC/MS and GC/FID. Otherwise, daily prior to sample analysis and one (1) per analytical or on-line batch	Analyte amounts ≤ 3 × MDLs for GC/MS and GC/FID	Flag data if analyte > 3 × MDLs for GC/MS and GC/FID
Laboratory control samples or on-line control sample	One per analytical batch or on-line batch	70-130 %R	Nonconformance if %R < 70 or >130
Blind-audit Samples	Samples and frequency controlled by the Gas PDP Plan	Specified in the Gas PDP Plan	Specified in the Gas PDP Plan
GC/MS	BFB Tune Every 12 hours	Abundance criteria for key ions are met	Repeat until acceptable
GC/MS	Minimum 5-point intial calibration (minimum of 5 standards) Initially and as needed	%RSD of response factor for each target analyte <35	Repeat until acceptable
GC/MS	Continuing calibration every 12 hours	%D for all target analytes $\leq$30 of initial calibration	Repeat until acceptable
GC/FID	Minimum 3-point initial calibration (minimum of 3 standards) Initially as needed	Correlation coefficient $\geq$0.99 or %RSD <20 for each target analyte and the retention time of each target analyte within an acceptance criteria defined in this method	Repeat until acceptable
GC/FID	Continuing calibration every 12 hours	%RSD ≤15%	Repeat until acceptable

a. Corrective action per Section C3-13 when final reported QC does not meet the acceptance criteria.
b. Applies only to concentrations greater than the PRQLs listed in Table C3-2.
MDL = Method Detection Limit
QAO = Quality Assurance Objective
PDP = Performance Demonstration Program
PRQL = Program Required Quantitation Limit
%R = Percent Recovery
RPD = Relative Percent Difference
BFB = 4-Bromofluorobenzene
%D = Percent difference
%RSD = Percent relative standard deviation

Table C3-4. Volatile Organic Compounds Target Analyte List and Quality Assurance Objectives.

Compound	CAS Number	Precision [a] (%RSD or RPD)	Accuracy [a] (%R)	MDL[b] (mg/kg)	PRQL[b] (mg/kg)	Completeness (%)
Benzene	71-43-2	≤45	37-151	1	10	90
Bromoform	75-25-2	≤47	45-169	1	10	90
Carbon disulfide	75-15-0	≤50	60-150	1	10	90
Carbon tetrachloride	56-23-5	≤30	70-140	1	10	90
Chlorobenzene	108-90-7	≤38	37-160	1	10	90
Chloroform	67-66-3	≤44	51-138	1	10	90
1,4-Dichlorobenzene[c]	106-46-7	≤60	18-190	1	10	90
ortho-Dichlorobenzene[c]	95-50-1	≤60	18-190	1	10	90
1,2-Dichloroethane	107-06-2	≤42	49-155	1	10	90
1,1-Dichloroethylene	75-35-4	≤250	D-234 [d]	1	10	90
trans-1, 2-Dichloroethylene	156-60-5	≤50	60-150	1	10	90
Ethyl benzene	100-41-4	≤43	37-162	1	10	90
Methylene chloride	75-09-2	≤50	D-221 [d]	1	10	90
1,1,2,2-Tetrachloroethane	79-34-5	≤55	46-157	1	10	90
Tetrachloroethylene	127-18-4	≤29	64-148	1	10	90
Toluene	108-88-3	≤29	47-150	1	10	90
1,1,1-Trichloroethane	71-55-6	≤33	52-162	1	10	90
1,1,2-Trichloroethane	79-00-5	≤38	52-150	1	10	90
Trichloroethylene	79-01-6	≤36	71-157	1	10	90
Trichlorofluoromethane	75-69-4	≤110	17-181	1	10	90
1,1,2-Trichloro 1,2,2-trifluoroethane	76-13-1	≤50	60-150	1	10	90
Vinyl chloride	75-01-4	≤200	D-251 [d]	1	4	90
m-Xylene [h]	108-38-3	≤50	60-150	1	10	90
o-Xylene	95-47-6	≤50	60-150	1	10	90
p-Xylene[h,]	106-42-3	≤50	60-150	1	10	90
Acetone	67-64-1	≤50	60-150	10 [e]	100	90
Butanol	71-36-3	≤50	60-150	10 [e]	100	90
Ethyl ether	60-29-7	≤50	60-150	10 [e]	100	90
Formaldehyde[f]	50-00-0	≤50	60-150	10 [e]	100	90
Hydrazine[g]	302-01-2	≤50	60-150	10 [e]	100	90
Isobutanol	78-83-1	≤50	60-150	10 [e]	100	90
Methanol	67-56-1	≤50	60-150	10 [e]	100	90

Table C3-4. (continued).

Compound	CAS Number	Precision [a] (%RSD or RPD)	Accuracy [a] (%R)	MDL[b] (mg/kg)	PRQL[b] (mg/kg)	Completeness (%)
Methyl ethyl ketone	78-93-3	≤50	60-150	10 [e]	100	90
Pyridine [c]	110-86-1	≤50	60-150	10 [e]	100	90

a. Applies to laboratory control samples, and laboratory matrix spikes. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.
b. TCLP MDL and PRQL values are reported in units of mg/l and limits are reduced by a factor or 20.
c. Can also be analyzed as an SVOC. If analyzed as an SVOC, the QAOs of Table C3-6 apply.
d. Detected; result must be greater than zero.
e. Estimate, to be determined.
f. Required only for homogeneous solids and soil/gravel waste from Savannah River Site, if analysis is require to resolve assignment of EPA HWNs.
g. Required only for homogeneous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site, if analysis is required to resolve assignment of EPA HWNs.
h. These xylene isomers cannot be resolved by GC/MS and are reported as the m/p xylene total.

%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
MDL = Method detection limit (maximum permissible value) (milligrams per kg)
PRQL = Program required quantitation limit; calculated from the TC level for benzene assuming a 25 g sample, 0.5 L of extraction fluid, and 100% analyte extraction (milligrams per kg)
CAS = Chemical Abstract Service

Table C3-5. Summary of Laboratory Quality Control Samples and Frequencies for Volatile Organic Compound Analysis.

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action [a]
Method performance samples	Seven samples initially and four semi-annually	Meet Table C3-4 QAOs	Repeat until acceptable
Laboratory duplicate[b]	One per analytical batch	Meet Table C3-4 Precision QAOs	Nonconformance if RPDs > values in Table C3-4
Laboratory blanks	One per analytical batch	Analyte concentrations ≤3 × MDLs	Nonconformance if analyte concentrations >3 × MDLs.
Matrix spikes[b]	One per analytical batch	Meet Table C3-4 accuracy QAOs	Nonconformance if %Rs are outside the range specified in Table C3-4.
Matrix spike duplicates	One per analytical batch	Meet Table C3-4 accuracy and precision QAOs	Nonconformance if RPDs >values and %Rs outside the range in Table C3-4.
Laboratory control samples	One per analytical batch	Meet Table C3-4 accuracy QAOs	Nonconformance if %R < 80 or > 120.
GC/MS Calibration	4-bromofluorobenzene (BFB) Tune every 12 hours 5-point (pt). Initial Calibration initially, and as needed	Abundance criteria met per method Calibrate per SW-846 Method requirements: %RSD for calibration check compounds (CCCs) ≤ 30, % RSD for all other compounds < 15%. Average relative response factor (RRF) used if %RSD ≤15; use linear regression if % RSD >15; R or R^2 ≥ 0.990 if using alternative curve System Performance Check Compound (SPCC) minimum RRF per SW-846 Method; RRF for all other compounds ≥ 0.01	Repeat until acceptable
	Continuing calibration every 12 hours	%D ≤ 20 for CCC SPCC minimum RRF per SW-846 Method; RRF for all other compounds ≥ 0.01 RT for internal standard must be ± 30 seconds from last daily calibration, internal standard area count must be > 50% and < 200% of last daily calibration	Repeat until acceptable
GC/FID Calibration	3-pt. Initial Calibration initially and as needed	Correlation coefficient ≥ 0.990 or %RSD ≤ 20 for all analytes	Repeat until acceptable
	Continuing calibration every 12 hours	%D or %Drift for all analytes ≤ 15 of expected values RT ± 3 standard deviations from initial RT calibration per applicable SW-846 method	

Table C3-5. (continued)

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action [a]
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples for a given matrix ± 3 standard deviations	Nonconformance if %R is less than (average %R-3 standard deviations) or greater than (average %R+3 standard deviations).
Blind-audit samples	Samples and frequency controlled by the solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

a. Corrective Action per Section C3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedences.

b. Duplicate requirement may be satisfied using matrix spike duplicate; acceptance criteria apply only to concentrations greater than the PRQLs listed in Table C3-4.

MDL = Method detection limit
QAO = Quality assurance objective
PDP = Performance demonstration program
%R = Percent recovery
RPD = Relative percent difference

Table C3-6. Semi-Volatile Organic Compound Target Analyte List and Quality Assurance Objectives.

Compound	CAS Number	Precision[a] (%RSD or RPD)	Accuracy[a] (%R)	MDL[b] (mg/kg)	PRQL[b] (mg/kg)	Completeness %
Bis(2-Ethylhexyl)phthalate[e]	117-81-7	≤100	8-158	5	40	90
Cresols	1319-77-3	≤50	25-115	5	40	90
1,4-Dichlorobenzene[b,c]	106-46-7	≤86	20 – 124	5	40	90
ortho-Dichlorobenzene[c]	95-50-1	≤64	32 – 129	5	40	90
2,4-Dinitrophenol	51-28-5	≤119	D-172[d]	5	40	90
2,4-Dinitrotoluene	121-14-2	≤46	39 – 139	0.3	2.6	90
Fluoranthene[e]	206-44-0	≤80	26-137	5	40	90
Hexachlorobenzene	118-74-1	≤319	D-152[d]	0.3	2.6	90
Hexachloroethane	67-72-1	≤44	40 – 113	5	40	90
Nitrobenzene	98-95-3	≤72	35 – 180	5	40	90
Pentachlorophenol	87-86-5	≤128	14 – 176	5	40	90
Phenol[e]	108-95-2	≤55	5-112	5	40	90
Pyridine[c]	110-86-1	≤50	25-115	5	40	90

a. Applies to laboratory control samples, and laboratory matrix spikes. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.

b. TCLP MDL and PRQL values are reported in units of mg/l and limits are reduced by a factor of 20.

c. Can also be analyzed as a VOC.

d. Detected; result must be greater than zero.

e. Site-specific target analyte

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent Recovery
MDL = Method detection limit (maximum permissible value) (milligrams per kg)
PRQL = Program required quantitation limit; calculated from the TC level for nitrobenzene assuming a 100 g sample, 0.5 gal (2 L) of extraction fluid, and 100% analyte extraction (mg/kg)

Table C3-7. Summary of Laboratory Quality Control Samples and Frequencies for Semi-Volatile Organic Compounds Analysis.

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action [a]
Method Performance Samples	Seven samples initially and four semiannually	Meet Table C3-6 QAOs	Repeat until acceptable
Laboratory duplicate[b]	One per analytical batch	Meet Table C3-6 Precision QAOs	Nonconformance if RPDs > values in Table C3-6
Laboratory blanks	One per analytical batch	Analyte concentrations ≤ 3 × MDLs	Nonconformance if analyte concentrations > 3 × MDLs
Matrix spikes	One per analytical batch	Meet Table C3-6 accuracy QAOs	Nonconformance if RPDs >values and %Rs outside the range specified in Table C3-6.
GC/MS Calibration	Decafluorotriphenylphosphine (DFTPP) Tune every 12 hours 5-pt. Initial Calibration initially, and as needed Continuing calibration every 12 hours	Abundance criteria met per method Calibrate per SW-846 Method requirements %RSD for CCC ≤ 30, %RSD for all other compound, ≤15% Average response factor (RRF) used if %RSD ≤15, use linear regression if >15; R or R^2 ≥ 0.990 if using alternative curve SPCC minimum RRF per SW-846 Method; RRF for all other compounds ≥ 0.01 %D ≤ 20 for CCC SPCC minimum RRF per SW-846 Method; RRF for all other compounds ≥ 0.01 RT for internal standard must be ± 30 seconds from last daily calibration, internal standard area count must be >50 % and <200% of last daily calibration	Repeat until acceptable
Gas Chromatography/Electron Capture Detection (GC/ECD) Calibration	5-pt. Initial Calibration initially and as needed	Correlation coefficient ≥ 0.990 or %RSD < 20 for all analytes	Repeat until acceptable
	Continuing calibration every 12 hours	%D or %Drift for all analytes ≤ 15 of expected values RT ± 3 standard deviations from initial RT calibration per applicable SW-846 method	Repeat until acceptable
Matrix spikes duplicates	One per analytical batch	Meet Table C3-6 accuracy and precision QAOs	Nonconformance if RPDs > values and %Rs outside the ranges specified in Table C3-6.
Laboratory control samples	One per analytical batch	Meet Table C3-6 accuracy QAOs	Nonconformance if %R <80 or >120
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples for a given matrix ± 3 standard deviations	Nonconformance if %R is less than (average %R-3 standard deviations) or greater than (average %R+3 standard deviations).
Blind-audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

a. Corrective Action per Section C3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedences.
b. May be satisfied using matrix spike duplicate; acceptance criteria apply only to concentrations greater than the PRQLs in Table C3-6.

MDL = Method detection limit
QAO = Quality assurance objective
PDP = Performance demonstration program
%R = Percent recovery
RPD = Relative percent difference

Table C3-8. Metals Target Analyte List and Quality Assurance Objectives.

Analyte	CAS Number	Precision (% RSD OR RPD)[a]	Accuracy (%R)[b]	PRDL[c] (µg/L)	PRQL[d] (mg/kg)	Completeness (%)
Antimony	7440-36-0	≤ 30	80-120	100	100	90
Arsenic	7440-38-2	≤ 30	80-120	100	100	90
Barium	7440-39-3	≤ 30	80-120	2000	2000	90
Beryllium	7440-41-7	≤ 30	80-120	100	100	90
Cadmium	7440-43-9	≤ 30	80-120	20	20	90
Chromium	7440-47-3	≤ 30	80-120	100	100	90
Lead	7439-92-1	≤ 30	80-120	100	100	90
Mercury	7439-97-6	≤ 30	80-120	4.0	4.0	90
Nickel	7440-02-0	≤ 30	80-120	100	100	90
Selenium	7782-49-2	≤ 30	80-120	20	20	90
Silver	7440-22-4	≤ 30	80-120	100	100	90
Thallium	7440-28-0	≤ 30	80-120	100	100	90
Vanadium	7440-62-2	≤ 30	80-120	100	100	90
Zinc	7440-66-6	≤ 30	80-120	100	100	90

a. ≤ 30 % control limits apply when sample and duplicate concentrations are ≥ 10 × IDL for ICP AES and AA techniques and ≥ 100 × IDL for Inductively Coupled Plasma – Mass Spectometry (ICP-MS) techniques. If less than these limits, the absolute difference between the two values shall be less than or equal to the PRQL.

b. Applies to laboratory control samples and laboratory matrix spikes. If a solid laboratory control sample material that has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.

c. PRDL set such that it is a factor of 10 below the PRQL for 100% solid samples, assuming a 100 × dilution during digestion.

d. TCLP PRQL values are responded in units of mg/l and limits are reduced by a factor of 20.

CAS = Chemical abstract service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
PRDL = Program required detection limit (i.e., maximum permissible value for IDL) (micrograms per liter)
PRQL = Program required quantitation limit (milligrams per kg)

Table C3-9. Summary of Laboratory Quality Control Samples and Frequencies for Metals Analysis.

QC Samples	Minimum Frequency	Acceptance criteria	Corrective Actions [a]
Method performance samples	Seven (7) samples initially, and four (4) semiannually	Meet Table C3-8 QAOs	Repeat until acceptable
Laboratory blanks	One (1) per analytical batch	$\leq$ 3 × IDL ($\leq$ 5 × IDL for ICP-MS)[b]	Redigest and reanalyze any samples with analyte concentrations which are ≤ 10 × blank value and ≥ 0.5 × PRQL
Matrix spikes	One (1) per analytical batch	Meet Table C3-8 accuracy QAOs	Nonconformance if %R outside the range specified in Table C3-8.
Matrix spike duplicates	One (1) per analytical batch	Meet Table C3-8 accuracy and precision QAOs.	Nonconformance if RPDs > values and %Rs outside range specified in Table C3-8
ICP-MS Tune (ICP-MS Only)	Daily	4 Replicate %RSD $\leq$ 5 mass calibration within 0.9 amu; resolution < 1.0 amu full width at 10% peak height	Nonconformance if %RSD >5; mass calibrations > 0.9 amu; resolution >1.0 amu.
Initial Calibration 1 blank, 1 standard (ICP, ICP-MS), 3 standard, 1 blank (GFAA, FLAA), 5 standard, 1 blank (CVAA, HAA)	Daily	90-110 %R (80-120% for CVAA, GFAA, HAA, FLAA) for ICV solution. Regression coefficient (r) ≥ 0.995 for FLAA, CVA, GFAA, MAA	Correct problem and recalibrate; repeat initial calibration
Continuing calibration	Every 10 samples and beginning and end of run	90-110 % for continuing calibration verification solution. (80-120% for CVAA, GFAA, HAA, FLAA)	Correct problem and recalibrate; rerun last 10 samples
Serial dilution (ICP, ICP-MS)	One per analytical batch	5 × dilution must be ≤ 10 % D of initial value for sample > 50 × IDL	Flag Data if >10% and > 50 × IDL
Internal Standard Area Verification (ICP-MS)	Every Sample	Meet SW-846 Method 6020 criteria	Nonconformance if not reanalyzed at 5 × dilution until criteria are meet.
Interference Correction Verification (ICP, ICP-MS)	Beginning and end of run or every 12 hours (8 for ICP) whichever is more frequent	80-120% recovery for analytes NOTE: *Acceptance Criteria and Corrective Action apply only if interferents found in samples at levels greater than interference check standards (ICS) A Solution.*	Correct problem and recalibrate, nonconformance if not corrected

Table C3-9. (continued)

QC Samples	Minimum Frequency	Acceptance criteria	Corrective Actions [a]
Laboratory Control Samples	One (1) per analytical batch	Table C3-8 accuracy QAOs	Redigest and reanalyze for affected analytes; nonconformance if not reanalyzed
Blind-audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

a. Corrective action per Section C3-13 when final reported QC samples do not meet acceptance criteria. Nonconformance do not apply to matrix related exceedences.

b. Applies only to concentrations greater than the PRQLs listed in Table C3-8

IDL = Instrument Detection Limit
PDP = Performance Demonstration Program
PRQL = Program Required Quantitation Limit
%R = Percent Recovery
RPD = Relative Percent Difference

Table C3-10. Minimum Training and Qualification.

Personnel	Requirements[a]
Radiography Operators[c]	Site-specific training based on waste matrix codes and waste material parameters; requalification every two years.
GC Technical Supervisors[b] GC Operators[c]	B.S. or equivalent experience and six months previous applicable experience.
Gas Chromatography/Mass Spectrometry Operators[c] Mass Spectrometry Operators[c]	B.S. or equivalent experience and one year independent spectral interpretation or demonstrated expertise.
GC/MS Technical Supervisor[b] Mass Spectrometry Technical Supervisor[b] Atomic Absorption Spectroscopy Technical Supervisors[b] Atomic Absorption Spectroscopy Operators[c] Atomic Mass Spectroscopy Operators[c] Atomic Emission Spectroscopy Operators[c]	BS or equivalent experience and 1 year applicable experience
Atomic Mass Spectroscopy Technical Supervisor[b]	B. S. and specialized training in Atomic Mass Spectroscopy and two years applicable experience.
Atomic Emission Spectroscopy Technical Supervisors[b]	B. S. and specialized training in Atomic Emission Spectroscopy and two years applicable experience.

a. Based on requirements contained in US EPA Contract Laboratory Program Statement of Work for Organics Analysis (Document Number OLM 01.0) and Statement of Work for Inorganics Analysis (Document Number ILM 03.0).

b. Technical Supervisors are those persons responsible for the overall technical operation and development of a specific laboratory technique.

c. Operators are those persons responsible for the actual operation of analytical equipment.

Table C3-11.Testing Batch Data Report Contents.

Required Information	Radiography	Visual Examination	Comment
Batch Data Report Date	X	X	
Batch number	X	X	
Waste container number	X	X	
Waste stream name and/or number	O	O	
Waste Matrix Code	X	X	Summary Category Group included in waste matrix code
Implementing procedure (specific version used)	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
Container type	O	O	Drums, standard waste box, ten drum overpack, etc.
Video media reference	X	X	Reference to video media applicable to each container. For visual examination of newly generated waste, video media not required if two trained operators review the contents of the waste container to ensure correct reporting.
Imaging check	O		
Camera check		O	
Audio check	O	O	
QC documentation	X	X	
Verification that the physical form matches the waste stream description and Waste Matrix Code.	X	X	Summary Category Group included in Waste Matrix Code.
Comments	X	X	Comments
Reference to or copy of associated NCRs, if any	X	X	Copies of associated NCRs must be available.
Verify absence of prohibited items	X	X	
Operator signature and date of test	X	X	2 signatures required for Visual Verification of Acceptable Knowledge
Data review checklists	X	X	All data checklists will be identified

Legend:

X – Required in batch data report
O – Information must be documented and traceable inclusion in batch data report is optional

Table C3-12.Sampling Batch Data Report Contents.

Required Information	Headspace Gas	Solid Sampling	Comment
Batch Data Report Date	X	X	
Batch number	X	X	
Waste stream name and/or number	O	O	
Waste Matrix Code		X	Summary Category Group included in Waste Matrix Code
Procedure (specific version used)	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
Container number	X	X	
Container type	O	O	Drums, Standard Waste Box, Ten Drum Overpack, etc.
Sample matrix and type	X	X	
Analyses requested and laboratory	X	X	
Point of origin for sampling	X	X	Location where sample was taken (e.g., building number, room)
Sample number	X	X	
Sample Size	X	X	
Sample location	X	X	Location within container where sample is taken. (For HSG, specify what layer of confinement was sampled. For solids, physical location within container.)
Sample preservation	X	X	
Person collecting sample	X	X	
Person attaching custody seal	O	O	May or may not be the same as the person collecting the sample
Chain of Custody record	X	X	Original or copy is allowed
Sampling equipment numbers	X	X	For disposable equipment, a reference to the lot
Drum age	X		Must include all supporting determinative information, including but not limited to packaging date, equilibrium start time, storage temperature, and sampling date/time. If Scenario 3 is used, the packaging configuration, filter diffusivity, liner presence/absence, and rigid liner vent hole diameter used in determining the DAC must be documented. If Scenario 1 and 2 are used together, the filter diffusivity and rigid liner vent hole diameter used in determining the DAC must be documented. If default values are used for retrievably stored waste, these values must clearly be identified as such.
Cross-reference of sampling equipment numbers with associated cleaning batch numbers	O	X	As applicable to the equipment used for the sampling. For disposable equipment, a reference to the lot and procurement records to support cleanliness is sufficient
Equilibration time	X		
Verification of rigid liner venting	X		Only applicable to containers with rigid liners
Verification that sample volume taken is small in comparison to the available volume	X		Must include headspace gas volume when it can be estimated
Scale Calibration		O	
Depth of waste		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a representative sample has been taken.

Table C3-12. (continued)

Required Information	Headspace Gas	Solid Sampling	Comment
Calculation of core recovery		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a representative sample has been taken.
Co-located core description		X	For newly generated waste, if a sampling method other than coring is used, this is replaced by documentation that a QC sample has been taken.
Time between coring and subsampling		X	Only applicable to coring.
OVA calibration and reading	O		Only applicable to manifold systems. Must be done in accordance with manufacturer's specifications
Field Records	X	X	Must contain the following as applicable to the sampling method used: Collection problems, Sequence of sampling collection, Inspection of the solids sampling area, Inspection of the solids sampling equipment, Coring tool test, random location of sub-sample, canister pressure, and ambient temperature and pressure.
Reference to or copy of associated NCRs, if any	X	X	Copies of associated NCRs must be available.
Operator Signature and date and time of sampling	X	X	
Data review checklists	X	X	All data reviews checklists will be identified.

LEGEND:

X – Required in Batch Data Report.
O – Information must be documented and traceable; inclusion in Batch Data Report is optional.

Table C3-13.Analytical Batch Data Report Contents.

Required Information	Headspace Gas	Solid Sampling	Comment
Batch Data Report Date	X	X	
Batch number	X	X	
Sample numbers	X	X	
QC designation for sample	X	X	
Implementing procedure (specific version used)	X	X	If procedure cited contains more than one method, the method used must also be cited. Can use revision number, date, or other means to track specific version used.
QC sample results	X	X	
Sample data forms	X	X	Form should contain reduced data for target analytes and TICs
Chain of custody	X	X	Original or copy
Gas canister tags	X		Original or copy
Sample preservation	X	X	
Holding time		X	
Cross-reference of field numbers to laboratory sample numbers	X	X	
Date and time analyzed	X	X	
Verification of spectra used for results	O	O	Analyst must qualitatively evaluate the validity of the results based on the spectra, can be implemented as a check box for each sample
TIC evaluation	X	X	
Reporting flags, if any	X	X	Table C3-14 lists applicable flags
Report narrative	X	X	
Reference to or copy of associated NCRs, if any	X	X	Copies of associated NCRs must be available.
Operator signature and analysis date	X	X	
Data review checklists	X	X	All data review checklists will be identified

LEGEND:

X – Required in Batch Data Report.
O – Information must be documented and traceable; inclusion in Batch Data Report is optional.

Table C3-14.Data Reporting Flags.

Data Flag	Indicator
B	Analyte detected in blank (organics/headspace gases)
B	Analyte blank concentration greater than or equal to 20 percent of sample concentration prior to dilution corrections (metals)
E	Analyte exceeds calibration curve (organics/headspace gases)
J	Analyte less than PRQL but greater than or equal to MDL (Organics/Headspace gases)
J	Analyte greater than or equal to IDL but less than 5 times the IDL before dilution correction (Metals)
U	Analyte was not detected and value is reported as the MDL (IDL for metals)
D	Analyte was quantitated from a secondary dilution, or reduced sample aliquot (organics/headspace gases)
Z	One or more QC samples do not meet acceptance criteria
H	Holding time exceeded

Attachment C4.
TRU Waste Characterization Using Acceptable Knowledge

C4-1 Introduction

The RCRA regulations codified in 40 CFR Parts 260 through 265, 268, and 270, and the New Mexico Hazardous Waste Management Regulations in 20 NMAC 4.1 Subparts 100 through 600, Subpart 800, and Subpart 900, authorize the use of AK in appropriate circumstances by waste generators, or treatment, storage, or disposal facilities to characterize hazardous waste. AK is described in Waste Analysis: *EPA Guidance Manual for Facilities That Generate, Treat, Store and Dispose of Hazardous Waste*. AK, as an alternative to sampling and analysis, can be used to meet all or part of the waste characterization requirements under the RCRA.

EPA's 1994 Waste Analysis Guidance Manual broadly defines the term "acceptable knowledge" to include process knowledge, whereby detailed information on the waste is obtained from existing published or documented waste analysis data or studies conducted on hazardous waste generated by processes similar to that which generated the waste, facility records of analysis performed before the effective date of RCRA, and waste analysis data obtained from generators of similar waste that send their wastes off-site for treatment, storage, or disposal (EPA 1994). If AMWTP determines that AK alone is insufficient to accurately characterize a waste, AMWTP may use RTR and/or VE, headspace gas sampling and analysis, and homogeneous waste sampling and analysis (specified in Attachment C1) to complete the waste characterization process and satisfy the requirements of the QAPjP. AK is used in TRU mixed waste characterization activities in five ways:

- To delineate TRU mixed waste streams
- To assess whether TRU mixed wastes comply with the applicable requirements of WIPP Hazardous Waste Permit TSDF-WAC
- To assess whether TRU mixed wastes exhibit a hazardous characteristic (20 NMAC 4.1.200, incorporating 40 CFR §261, Subpart C).
- To assess whether TRU mixed wastes are listed (20 NMAC 4.1.200, incorporating 40 CFR §261, Subpart D).
- To estimate waste material parameter weights.

Sampling and analysis may be performed to augment the characterization of wastes based on AK when an AK Sufficiency Determination has not been requested by AMWTP or, if requested, has not been granted by CBFO (see Section C4-3d). Sampling and analysis consists of RTR, VE, headspace gas, and homogeneous waste sampling and analysis. TRU mixed waste streams undergo applicable provisions of the AK process prior to management, storage, or disposal of the waste at WIPP.

C4-2 Acceptable Knowledge Documentation

The AMWTP AK information is presented in a logical sequence which progresses from general facility information (TRU mixed waste management program information) to the more detailed waste-specific information (TRU mixed waste stream information). Traceability of AK information for a selected container in the audited Waste Summary Category Group(s) will be examined during the CBFO audit of AMWTP. The consistent presentation of AK documentation among sites in auditable records[c] will allow the CBFO to verify the completeness and adequacy of AK for TRU mixed waste characterization during the audit process. AMWTP will implement the AK process as specified in this QAPjP to characterize TRU mixed waste and obtain sufficient waste characterization data to demonstrate compliance with the WIPP-WAP. This AK information applies at AMWTP to both the retrievably stored and newly generated waste streams. The AK process is described in MP-TRUW-8.13. The AMWTP does not develop AK baseline documents for off-site DOE CH-TRU wastes that are characterized and certified by another certified program, such as the CCP. AMWTP also does not develop AK baseline documents for waste that is received for characterization only.

The following sections include the information required to characterize TRU mixed waste using AK. The AMWTP will augment the required AK records with additional supporting information. If the required information is not available for a particular waste, the waste stream is not eligible for an AK Sufficiency Determination as specified in Section C4-3d.

C4-2a Required TRU Mixed Waste Management Program Information

TRU mixed waste management program information clearly defines waste categorization schemes and terminology, provides a breakdown of the types and quantities of TRU mixed waste that are generated and stored at the AMWTP, and describes how waste is tracked and managed at the AMWTP, including historical and current operations. Information related to TRU mixed waste certification procedures and the types of documentation (e.g., waste profile forms) used to summarize AK is also provided.

c. "Auditable Records" are those records which allow the CBFO to conduct a systematic assessment, analysis, and evaluation of the CBFO compliance with the WAP and the WIPP RCRA Permit.

The AMWTP will be involved in characterizing stored waste generated at multiple facilities and creating newly generated TRU mixed waste in the AMWTP processing facility. For each generator of waste the following general facility information shall be included as part of the AK written record:

- A map of the site with the areas and facilities involved in TRU mixed waste generation, treatment, and storage identified.
- Facility mission description as related to TRU mixed waste generation and management (e.g., nuclear weapons research may involve metallurgy, radiochemistry, and nuclear physics operations that result in specific waste streams).
- Description of the operations that generated TRU mixed waste at the site (e.g., plutonium recovery, weapons design, or weapons fabrication).
- Waste identification and category schemes used at the site (e.g., item description code [IDC], content codes).
- Types and quantities of TRU mixed waste generated, including historical generation through future projections.
- Correlation of waste streams generated for the same building and process, as appropriate (e.g., sludge, combustibles, metals, and glass).
- Waste certification procedures for retrievably stored and newly generated wastes to be sent to the WIPP facility.

C4-2b Required TRU Mixed Waste Stream Information

AK will be used to delineate waste streams. For each TRU mixed waste stream, the AMWTP compiles all process information and data that support the AK used to characterize that waste stream. The type and quantity of supporting documentation varies by waste stream depending on the process generation the waste and the site-specific requirements. At a minimum, the waste process information on each waste stream includes the following written information:

- Area(s) and building(s) from which the waste stream was or is generated.
- The waste stream volume and period of waste generation (e.g., 100 SWBs of retrievable stored waste generated from June 1977 through December 1977).
- Waste generating process for each building (e.g., batch waste stream generated during decommissioning operations of glove boxes), including processes associated with U134 waste generation, if applicable.

- Documentation regarding how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU non-mixed waste)

- Process flow diagrams (e.g., a diagram illustrating glove boxes from a specific building to a size reduction facility to a container storage area). In the case of research/development, analytical laboratory waste, or other similar processes where a process flow diagram cannot be created, a description of the waste generating process, rather than a formal process flow diagram, may be included if this modification is justified and the justification placed in the auditable record.

- Material inputs or other information that identifies the chemical content of the waste stream and the physical waste form (e.g., glove box materials and chemicals handled during glove box operations; events or processes that may have modified the chemical or physical properties of the waste stream after generation, data obtained through VE of newly generated waste that later undergoes RTR; information demonstrating neutralization of U134 [hydrofluoric acid] and waste compatibility).

The AK written record includes a summary that identifies all sources of waste characterization information used to delineate the waste stream. The basis and rationale for delineating each waste stream, based on the parameters of interest, is clearly summarized and traceable to referenced documents. Assumptions made in delineating each waste stream also are identified and justified.

If discrepancies exist between required information, the AMWTP may consider applying all EPA HWNs indicated by the information to the subject waste stream, but must assess and evaluate the information to determine the appropriate EPA HWNs consistent with RCRA requirements. Discrepancy resolution for the AK is described in MP-TRUW-8.13.

CBFO will obtain, at a minimum, procedures that comply with the following AK requirements:

- Procedures for identifying and assigning the physical waste form of the waste.

- Procedures for delineating waste streams and assigning Waste Matrix Codes.

- Procedures for resolving inconsistencies in AK documentation.

- Procedures for headspace gas sampling and analysis, VE and/or RTR, and homogeneous waste sampling and analysis, if applicable.

- For newly generated waste, procedures describing process controls used to ensure prohibited items (specified in the WIPP-WAP, Permit Attachment C) are documented and managed.

- Procedures to ensure RTR and VE include a list of prohibited items that the operator shall verify are not present in each container (e.g., liquid exceeding WIPP Hazardous Waste Permit TSDF-WAC limits, corrosives, ignitable, reactives, and incompatible wastes).

- Procedures to document how changes to Waste Matrix Codes, waste stream assignment, and associated EPA HWNs based on material composition are documented for any waste.

- Procedures that ensure the assignment of EPA HWNs is appropriate, consistent with RCRA requirements, and considers site historical waste management.

- Procedures for estimating waste material parameter weights.

C4-2c Additional Acceptable Knowledge Documentation

Additional AK information, as appropriate, is collected to augment required information and provide any other information obtained to further delineate waste streams. Adequacy of this information is assessed during audits (Section C4-3g). This information is included in the AK written record.

All additional specific, relevant AK documentation assembled and used in the AK process, whether it supports or contradicts any required AK documentation shall be identified and an explanation provided for its use (e.g., identification of a TC). Additional documentation may be used to further document the rationale for the hazardous characterization results. The collection and use of additional information shall be assessed during site audits to ensure that hazardous waste characterization is supported, as necessary, by such information. Similar to required information, if discrepancies exist between additional information and the required information, then the AMWTP may consider applying all EPA HWNs indicated by the additional information to the subject waste stream, but must assess and evaluate the information to determine the appropriate EPA HWNs consistent with RCRA requirements. All information considered must be documented and placed in the auditable record, including applicable discrepancy resolution documentation. Discrepancy resolution for the AK is described in MP-TRUW-8.13.

Additional AK documentation includes, but is not limited to, the following information:

- Process design documents (e.g., Title II Design).

- Standard operating procedures that may include a list of raw materials or reagents, a description of the process or experiment generating the waste, and a description of waste generated and how the wastes are managed at the point of generation.

- Preliminary and final safety analysis reports and technical safety requirements.

- Waste packaging records.

- Test plans or research project reports that describe reagents and other raw materials used in experiments.

- Site databases (e.g., chemical inventory database for Superfund Amendments and Reauthorization Act Title III requirements).

- Information from site personnel (e.g., documented interviews).

- Standard industry documents (e.g., vendor information).

- Analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, routine verification sampling, or other processes that collect information pertinent to the waste stream. This may also include new information which augments required information (e.g., VE not performed in compliance with the WIPP-WAP, radiography screening for prohibited items).

- Material Safety Data Sheets (MSDSs), product labels, or other product package information.

- Sampling and analysis data from comparable or surrogate waste streams (e.g., equivalent nonradioactive materials).

- Laboratory notebooks that detail the research processes and raw materials used in an experiment.

C4-3 Acceptable Knowledge Training, Procedures, and Other Requirements

Consistency in using AK information to characterize TRU mixed waste is provided by use of the following: (1) compiling the required and additional AK documentation in an auditable record, (2) auditing AK records, and (3) WSPF approval and waste confirmation. This section specifies the qualification and training requirements, describes each phase of the process, specifies the procedures that AMWTP is required to develop to implement the requirements for using AK, and specifies the data quality requirements for AK.

C4-3a Qualifications and Training Requirements

To ensure compliance with the requirements for compiling assembling, evaluating, assessing and resolving discrepancies associated with AK, AMWTP AK personnel shall be trained in accordance with MP-RTQP-14.4.

The training requirements shall include the following subjects:

- WIPP-WAP in Permit Attachment C and the WIPP Hazardous Waste Permit TSDF-WAC specified in this QAPjP.

- State and Federal RCRA regulations associated with solid and hazardous waste characterization.

- Discrepancy resolution and reporting processes.

- Site-specific procedures associated with waste characterization using AK.

C4-3b Acceptable Knowledge Assembly and Compilation

Site-specific AK procedures address the following:

- A written procedure(s) outlining the specific methodology used to assemble AK records, including the origin of the documentation, how it will be used, and any limitations associated with the information (e.g., identify the purpose and scope of a study that included limited sampling and analysis data).

- A written procedure(s) to compile the required AK record.

- A written procedure(s) that ensures unacceptable wastes (e.g., reactive, ignitable, corrosive) are identified and segregated from TRU mixed waste populations sent to WIPP.

- A written procedure(s) to evaluate AK and resolve discrepancies. For example, if different sources of information indicate different hazardous wastes are present, then AMWTP includes all sources of information in its records and may choose to either conservatively assign EPA HWNs or assign only those numbers deemed appropriate and consistent with RCRA requirements. All information used to justify assignment of EPA HWNs must be placed in the auditable record. Further, the assignment of EPA HWNs is tracked in the auditable record to all required documentation.

- A written procedure(s) to identify hazardous wastes and assign the appropriate EPA HWNs to each waste stream. The following are minimum baseline requirements/standards that site-specific procedures include to ensure comparable and consistent characterization of hazardous waste:

  - Compilation of all of the required information in an auditable record.

  - Review of the compiled information and delineate waste streams. Delineation of waste streams must comply with the definition in Section C-0a and justify combining waste historically managed separately as TRU mixed and TRU non-mixed waste streams into a single waste stream.

  - Review of the compiled information to determine if the waste stream is compliant with the WIPP Hazardous Waste Permit TSDF-WAC.

- Review of the required information to determine if the waste is listed under 20 NMAC 4.1.200 (incorporating 40 CFR §261), Subpart D. All listed EPA HWNs are assigned unless AMWTP chooses to justify an alternative assignment and document the justification in the auditable record.

- Review of the required information to determine if the waste exhibits a hazardous characteristic or may contain hazardous constituents included in the TCs specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261), Subpart C. If a TC contaminant is identified and is not included as a listed waste, the AMWTP may evaluate available data and assign TC HWN consistent with RCRA requirements. All data examined to reach the HWN determination must be placed in the auditable record and must present a clear justification for the EPA HWN analyses.

- Review the compiled information to provide an estimate of material parameter weights for each container to be stored or disposed of at WIPP.

For newly generated wastes, procedures are implemented to characterize hazardous waste using AK prior to packaging the waste.

- Ensure that results of audits of the TRU mixed waste characterization programs at the site are available in the records.

- AMWTP will identify all process controls (implemented to ensure that the waste contains no prohibited items and to control hazardous waste content and/or physical form) that may have been applied to retrievably stored waste and/or may presently be applied to newly generated waste. Process controls are applied at the time of waste generation/packaging to control waste content, whereas any activities performed after waste generation/packaging to identify prohibited items, hazardous waste content, or physical form are waste characterization activities, not process controls. The AK record must contain specific process controls and supporting documentation identifying when these process controls are used to control waste content. See Section C-2 for programmatic requirements related to process controls.

C4-3c Criteria for Assembling an Acceptable Knowledge Record and Delineating the Waste Stream

MP-TRUW-8.13 provides an overview of the process for assembling AK documentation into an auditable record. The first step is to assemble all of the required AK information and any additional information regarding the materials and processes that generate a specific waste stream.

Procedures are implemented to establish AK records in compliance with the following criteria:

- AK information is compiled in an auditable record, including a road map for all applicable information.
- The overview of the facility and TRU mixed waste management operations in the context of the facility's mission is correlated to specific waste stream information.
- The method for documenting correlations between waste streams, with regard to time of generation, waste generating processes, and site-specific facilities are described in MP-TRUW-8.13. For newly generated waste, the rate (or schedule) and quantity of waste to be generated will be defined.
- A reference list shall be provided that identifies documents, databases, QA protocols, and other sources of information that support the AK information.

Container inventories for TRU mixed waste currently in retrievable storage can be found in the WTS. These container inventories will be delineated into waste streams by correlating the container identification to all of the required AK information and any additional AK information.

C4-3d AK Sufficiency Determination Request Contents

AMWTP may submit an AK Sufficiency Determination Request to meet all or part of the waste characterization requirements. The Determination Request shall include, at a minimum:

- Identification of the scenario for which the approval is sought (Section C-0b)
- A complete AK Summary that addresses the following technical requirements:
  - Executive Summary;
  - Waste Stream Identification Summary; including a demonstration that the waste stream has been properly delineated and meets the QAPjP definition of waste stream (Attachment C, Introduction);
  - Mandatory Program Information (including, but not limited to, facility location and description, mission, defense waste assessment, spent nuclear fuel and high-level waste assessment, description of waste generating processes, research/development [as necessary], facility support operations [as applicable], types and quantities of TRU waste generated, correlation of waste streams to buildings/processes, waste identification and categorization, physical form identifiers);
  - Mandatory Waste Stream Information (including, but not limited to, Area and Building of Generation, waste stream volume/period of generation (including, for newly generated waste, the rate and quantity of waste to be generated), waste generating activities, types

of waste generated, material input related to physical form and identification of percentage of each waste material parameter in the waste stream, chemical content information including hazardous constituents and hazardous waste identification, prohibited item content (including documented evidence that the waste meets the WIPP Hazardous Waste Permit TSDF-WAC Sections 2.3.3.1 through 2.3.3.10), waste packaging, presence of filter vents, number of layers of confinement);

- Types of additional information gathered;
- Container specific data (if available and relevant); and
- A complete reference list including all mandatory and additional information

- An AK roadmap (defined as a cross reference between mandatory programmatic and mandatory waste stream information, with references supporting these requirements)
- A complete reference list including all mandatory and additional documentation.
- Additional relevant information for the required programmatic and waste stream data addressed in the AK Summary, examples of which are presented in Section C4-2c.
- Identification of any mandatory requirements supported only by upper tier documents (i.e., there is insufficient supporting data).
- Description or other means of demonstrating that the AK process described in the QAPjP was followed (for example, AK personnel were appropriately trained; discrepancies were documented, etc).
- Information showing that the AMWTP has developed a written procedure for compiling the AK information and assigning EPA HWNs as required in Section C4-3b;
- Information showing that the AMWTP has assessed the AK process (e.g. internal audits, Section C4-3b).

The CBFO will evaluate the Determination Request for completeness and technical adequacy as specified in Attachment C.

C4-3e Requirements for Re-Evaluating AK Information

AK includes information regarding the physical form of the waste, the base materials composing the waste, and the process that generates the waste. Waste characterization sampling and analysis (i.e., RTR or VE, headspace-gas sampling and analysis, and homogeneous waste sampling and analysis) may be used to augment AK information.

The WSPF and CIS (including the AK summary) will be reviewed for each waste stream prior to CBFO approval of the WSPF. The CBFO review will ensure that the submitted AK information was collected under procedures that ensure implementation of the QAPjP, provides data sufficient to meet the DQOs in Section C-4a(1), and allow the AMWTP to demonstrate compliance with the waste analysis requirements of the QAPjP. A detailed discussion of the CBFO's waste stream review and approval process is provided in Section C-1d.

The AMWTP has established procedures for reevaluating AK if the results of waste confirmation indicate that the waste to be shipped does not match the approved waste stream, or if data obtained from RTR or VE for waste streams without an AK Sufficiency Determination exhibit this discrepancy. These procedures describe how the waste is reassigned, AK reevaluated, and appropriate EPA HWNs assigned. If the reevaluation requires that the Waste Matrix Code be changed for the waste stream or the waste does not match the approved waste stream, the following minimum steps are taken to reevaluate AK. This process is implemented in MP-TRUW-8.13.

- Review existing information based on the container identification number and document all differences in EPA HWN assignments.

- If differences exist in the EPA HWNs that were assigned, reassess and document all required AK information (Section C4-3b) associated with the new designation.

- Reassess and document all sampling and analytical data associated with the waste.

- Verify and document that the reassigned Waste Matrix Code was generated within the specified time period, area and buildings, waste generating process, and that the process material inputs are consistent with the waste material parameter identified during RTR or VE.

- All changes to AK records are recorded.

- If discrepancies exist in the AK information for the revised Waste Matrix Code, the segregation of the affected portion of the waste stream is documented, and the actions necessary to fully characterize the waste are defined.

The base materials that compose TRU heterogeneous debris (S5000) waste (e.g., lead, stainless steel, and glass) are well established and potential TCs can be determined without destructive sampling and analysis based on AK. The AMWTP will assign a Waste Matrix Code and waste stream to each container of waste using AK. The AMWTP will assign the TC HWN consistent with RCRA requirements. If a TC hazardous constituent is identified during AK, the potential assignment of an EPA HWN must be evaluated and the results placed in the AK record. Procedures describe how additions to EPA HWNs based on material composition are documented, as necessary (refer to Section C4-3b).

The AMWTP uses AK to identify spent solvents associated with each TRU mixed waste stream or waste stream lot. Headspace gas data is then used to resolve the assignment of EPA F-listed HWNs to debris waste streams when waste streams do not have an AK Sufficiency Determination approved by the CBFO. AMWTP will assign F-listed HWNs (20 NMAC 4.1.200, incorporating 40 CFR §261.31) by evaluating the average concentrations of each VOC detected in container headspace gas for each waste stream or waste stream lot using the UCL_{90}.

The UCL_{90} for the mean concentration is compared to the PRQL for the constituent. If the UCL_{90} for the mean concentration exceeds the PRQL, the AK information is reevaluated and the potential source of the solvents is determined. Documentation is provided to support any determination that F-listed organic constituents are associated with packaging materials, radioanalysis, or other uses not consistent with solvent use. If the source of the detected F-listed solvents cannot be identified, the appropriate spent solvent EPA HWN is conservatively applied to the waste stream. In the case of applicable TC VOCs and non-toxic F003 constituents, AMWTP may assess whether the head space gas concentration would render the waste non-hazardous for those characteristic and change the initial AK determination accordingly. This process is described by MP-TRUW-8.11 and MP-TRUW-8.13.

EPA hazardous wastes numbers associated with S3000 and S4000 waste streams is assigned based on the results of the Total/TCLP analysis of a representative homogeneous waste sample when waste streams do not have an AK Sufficiency Determination approved by CBFO. If the Total or TCLP results indicate that the concentration of a characteristic waste or non-toxic constituent of an F003 waste is below regulatory levels, the EPA HWN assigned initially by AK may be changed. If an F-listed waste constituent is detected the appropriate EPA HWN is applied.

If the site determines that the source of the F-listed constituent is a spent solvent used in the process or is determined to be the result of mixing a listed waste with a solid waste during waste packaging, or applicable TC constituents or non-toxic F003 wastes are present in excess of regulatory levels, then the AMWTP will either: (1) assign the applicable listed EPA HWN to the entire waste stream, or (2) segregate the drums containing detectable concentrations of the solvent into a separate waste stream and assign applicable EPA HWNs. The AMWTP documents, justifies, and consistently delineates waste streams and assign EPA HWNs as required in this QAPjP, and must consider all generator-specific waste streams and EPA HWN assignments. The AMWTP must also consider site-specific permit requirements and other state-enforced agreements in this analysis.

To determine the mean concentration of solvent VOCs, all headspace gas data or homogeneous waste data for a waste stream or waste stream lot (i.e., the portion of the waste stream that is characterized as a unit) are used, including data qualified with a 'J' flag (i.e., less than the PRQL but greater than the MDL) or qualified with a 'U' flag (i.e., undetected). For data qualified with a U flag, one-half the MDL is used in calculating the mean concentration. Because listed wastes are not defined based on concentration, the AMWTP will not remove listed EPA HWNs assigned using AK if listed hazardous constituents are not detected in the headspace gas or solids/soil analysis.

TRU mixed headspace gases and homogeneous waste matrices may contain one or two constituents (e.g., carbon tetrachloride and 1,1,1-trichloroethane) at concentrations that are orders of magnitude higher than the other target analytes. In these cases, samples shall be diluted to remain within the instrument calibration range for the elevated constituents. Sample dilution results in elevated MDLs for the constituents with elevated concentration. Only the concentrations of detected constituents will be used to calculate the mean for the purpose of assigning F-listed EPA HWNs. Because the presence or absence of F listed solvents cannot be assigned based on the artificially high MDLs that are caused by sample dilution, data flagged as 'U' and showing an elevated MDL will not be used in calculating the mean concentration. The above process is described by MP-TRUW-8.11and MP-TRUW-8.13.

C4-3f Acceptable Knowledge Data Quality Requirements

The DQOs for sampling and analysis techniques are provided in Attachment C3. Analysis results are used to augment the characterization of wastes based on AK. To ensure that the AK process is consistently applied, the AMWTP complies with the data quality requirements for AK documentation described in Attachment C3.

The AMWTP addresses QC by tracking its performance with regard to the use of AK by: (1) assessing the frequency of inconsistencies among information, and (2) documenting the results of waste discrepancies identified by AMWTP during waste characterization or the CBFO during waste confirmation using RTR, review of RTR audio/video recordings, VE, or review of VE records. In addition, the AK process and waste stream documentation is evaluated through internal assessments by AMWTP QA organizations.

C4-3g Audits of Acceptable Knowledge

CBFO will conduct an initial audit prior to certifying AMWTP for shipment of TRU mixed waste to the WIPP facility. This initial audit will establish an approved baseline that will be reassessed annually. Those audits verify compliance with the WIPP-WAP, ensure the consistent compilation, application, and interpretation requirements of AK information throughout the DOE complex, and evaluate the completeness and defensibility of site-specific AK documentation related to hazardous waste determinations.

The QA organization performs a periodic independent audit, or several small scope audits, of AMWTP activities in accordance with MP-M&IA-17.2, *Independent Assessment*. QA AK audit checklists include the elements listed below for review during the periodic audit, and the AMWTP provides information as requested by QA to satisfy the AK audit/surveillance requirements:

- Documentation of the process used to compile, evaluate, and record AK is available and implemented.
- Personnel training and qualifications are documented.
- All of the required AK documentation specified in Section C4-2 has been compiled in an auditable record.
- All the required procedures specified in Section C4-3 have been developed and implemented, including but not limited to
  - A procedure exists for assigning EPA HWNs as referenced in Section C4-3b(5)
  - A procedure exists for resolving discrepancies in AK documentation in accordance with Section C4-3b.
- Results of other audits of the TRU mixed waste characterization programs at AMWTP are available in site records.

Attachment C5.
Quality Assurance Project Plan Requirements

C5-1 Quality Assurance Project Plans

The AMWTP has developed and implemented this QAPjP to address the applicable requirements specified in the WIPP-WAP. This QAPjP will be submitted and approved by the CBFO to ensure that it includes the qualitative or quantitative criteria to ensure that waste characterization activities are being performed satisfactorily.

The AMWTP uses standard operating procedures for all activities which affect the quality of the waste characterization program elements specified in this QAPjP. For the purposes of the QA program, the term *standard operating procedure* refers to any site-specific implementing document. Compliance with standard operating procedures ensures that tasks are performed in a consistent manner that results in achieving the quality required for the QA program. Throughout this QAPjP, site-specific documents are referenced that detail how each of the required elements of the characterization program are performed.

C5-2 Document Review, Approval, and Control

The preparation, issuance, and change to documents that specify quality requirements or prescribe activities affecting quality for the transuranic mixed characterization program elements specified in this QAPjP are controlled to ensure the correct and current documents are used and referenced. QAPjPs include a document control number consisting of a unique document identification number, current revision number, date, and page number which will be placed on the individual pages of the document. Qualified and independent individuals will review all quality documents for the waste characterization program prior to approval and issuance. There will be appropriate QAPjP approval that is indicated by a signature and date page included in the front of each document. AMWTP compliance with the WIPP-WAP requirements for document review, approval, and control is defined in Section 4 of MP-TRUW-8.1 and MP-DOCS-18.4. The CBFO approves this QAPjP and other program documents defining performance criteria or data quality.

Table C5-1. Minimum requirements for review, approval, implementation, and control of QAPjP.

	RESPONSIBLE PARTY				
	Manager, CBFO QA	CBFO Director National TRU Program	DOE-ID	AMWTP SPM	AMWTP QA Manager
Review/Approval	X	X	X	X	X
Implementation				X	X
Change Approval	X	X	X	X	X
Change Control				X	X

Table C5-1 presents the minimum requirements for review, approval, and implementation of the QAPjP. The QAPjP will be reviewed for technical adequacy, completeness, and correctness, and the inclusion of requirements established by the WIPP-WAP.

Revisions to documents that implement the requirements of the QAPjP will be denoted by including the current revision number on the document's title page, the revised signature page, and each page that has been revised. Only revised pages need to be reissued although the entire document may be reissued. Changes to documents, other than those defined as editorial changes or minor changes, will be reviewed and approved by the same functional organizations that performed the original review and approval, unless other organizations are specifically designated in accordance with approved procedures. Editorial or minor changes may be made without the same level of review and approval as the original or otherwise changed document. The following items are considered editorial or minor changes:

- Correcting grammar or spelling (the meaning has not changed)
- Renumbering sections or attachments
- Updating organizational titles
- Changes to nonquality-affecting schedules
- Revised or reformatted forms, providing the original intent of the form has not been altered
- Attachments marked "Example," "Sample," or exhibits that are clearly intended to be representative only.

A change in an organizational title accompanied by a change in the responsibilities is not considered an editorial change. Changes to the text shall be clearly indicated in the document. AMWTP shall provide CBFO with the final issued QAPjP.

CBFO ensures that QAPjPs include a detailed description of the reporting and approval requirements for changes to approved QA document and SOPs, including procedures for implementing changes to these documents. All members of the AMWTP site project staff are responsible for reporting any obsolete or superseded information to the SPM. All site-specific changes are evaluated and approved by the AMWTP SPM and QA Manager before implementation. The SPM notifies the appropriate personnel and the affected documents are revised as necessary. The SPM also is responsible for notifying the DOE field office of the changes. The SPM will contact CBFO for approval prior to implementing changes that affect performance criteria or data quality, such as sample handling and custody requirements, sampling and analytical procedures, QAOs, calibration requirements, or QC sample acceptance criteria to ensure compliance with the WAP (Attachment C).

Attachment C6.
Audit and Surveillance Program

C6-1 Introduction

The CBFO Audit and Surveillance Program shall ensure that: (1) the operators of each site and CBFO-approved laboratory that plan to transport TRU mixed waste to the WIPP facility conduct sampling and analysis of wastes in accordance with the current WIPP-WAP, and (2) the information supplied by each site to satisfy the waste screening and acceptability requirements of Section C-4 of the WAP is being managed properly. The CBFO will conduct these audits and surveillances at each site and CBFO approved-laboratory performing these activities in accordance with a standard operating procedure. Only personnel with appropriate DOE clearances will have access to classified information during audits. Classified information will not be included in audit reports and records.

Deficiencies may be identified during audits. A deficiency is any failure to comply with an applicable provision of the WAP. During audit interviews or audit meetings, AMWTP or CBFO-approved laboratory personnel may be advised of deficiencies identified within their areas of responsibility to establish a clear understanding of the identified condition.

AMWTP or CBFO-approved laboratory personnel will be given the opportunity to correct any deficiency that can be corrected during the audit period. Deficiencies and observations will be documented and included as part of the final audit report. Those items that have been resolved during the audit (isolated deficiencies that do not require a root cause determination or actions to preclude recurrence), will be verified prior to the end of the audit, and the resolution will be described in the audit report. Those items that affect the quality of the program, and/or the data generated by that program, which are required by the WIPP-WAP will be documented on a CAR and included as part of the final audit report. The CAR will be entered into the CBFO CAR tracking system and tracked until closure. RCRA-related items will be uniquely identified by the AMWTP or CBFO-approved laboratory during self-audits will be evaluated during the CBFO's audit and surveillance program and tracked in the CBFO tracking systems.

If a discrepancy is identified during a CBFO audit, the audit team may prepare a CAR. The AMWTP will review the CAR, evaluate the extent and cause of the deficiency, and provide a response to CBFO indicating the remedial actions and action taken to preclude recurrence. CBFO will review the response and, if acceptable, communicate the acceptance to AMWTP. After all corrective actions have been completed, the CBFO may schedule and perform a verification visit to assure that corrective actions have been completed and are effective.

AMWTP will submit a corrective action plan to CBFO to eliminate the deficiency stated on the CAR, including a resolution of the acceptability of any data generated prior to the resolution of the corrective action.

The corrective action response will include a discussion of the investigation performed to determine the extent and impact of the deficiency, a description of the remedial actions taken, determination of root cause, and actions to preclude recurrence. This process is described in MP-Q&SI-5.4 and MP-Q&SI-5.3.

The AMWTP will respond to any deficiencies and observations within thirty days after receipt of any CARs and indicate the corrective action taken or to be taken. If the corrective action has not been completed, the response will indicate the expected date the action will be completed. CARs applicable to WAP requirements will be resolved prior to shipment.

C6-2 Internal Management Assessments and Independent Surveillances

AMWTP personnel schedule and conduct management assessments of the TRU mixed waste characterization activities in accordance with MP-M&IA-17.1, *Management Assessments*. AMWTP QA schedule and conduct formal internal independent assessment in accordance with MP-M&IA-17.2, *Independent Assessment*.

When a deficiency is identified by the audit team the assessment team member who identified the deficiency prepares a CAR in accordance with MP-Q&SI-5.3.

The corrective action response will include a discussion of the investigation performed to determine the extent and impact of the deficiency, a description of the remedial actions taken, determination of root cause, and actions to preclude recurrence.

Attachment C7.
TRU Waste Confirmation

Introduction

This section of the QAPjP describes the actions that CBFO will take to approve and accept waste for and disposal at the WIPP, including waste confirmation activities. Discussion of the CBFO actions that are relevant to AMWTP will be included here.

CBFO demonstrates compliance with the Permit by ensuring that the waste characterization processes performed by AMWTP produce data compliant with the WIPP-WAP and through the waste screening and verification processes. Verification occurs at three levels: (1) the data generation level, (2) the project level, and (3) the CBFO level. The CBFO also examines a representative subpopulation of waste prior to shipment to confirm that the waste contains no ignitable, corrosive, or reactive waste; and that assigned EPA HWNs are allowed by the WIPP RCRA Permit. The waste confirmation activities described herein occur prior to receipt of TRU mixed waste at WIPP.

C7-1 Permittee Confirmation of TRU Mixed Waste

Waste confirmation is defined in Part 1 as the activities performed by the CBFO to satisfy the requirements in Section 310 of Public Law 108-447. Waste confirmation occurs after waste containers have been certified for disposal at WIPP.

C7-1a Permittee Confirmation of a Representative Subpopulation of the Waste

CBFO will confirm that the waste contains no ignitable, corrosive, or reactive waste through RTR or the use of VE of a statistically representative subpopulation of the waste. Prior to shipment to WIPP, waste confirmation will be performed on randomly selected containers from each CH and RH-TRU mixed waste stream shipment.

Waste confirmation encompasses ensuring that the physical characteristics of the TRU mixed waste correspond with its waste stream description and that the waste does not contain liquid in excess of TSDF-WAC limits or compressed gases.

Noncompliant waste identified during waste confirmation will be managed as described in Section C7-2.

CBFO randomly selects at least 7% of each waste stream shipment for waste confirmation. This equates to a minimum of one container from each fourteen containers in each waste stream in each designated shipment.

For each container selected for confirmation, the confirmation team will examine the respective NCR documentation to verify NCRs have been dispositioned for the selected container as required in Section C3-13.

C7-1a(1) Confirmation Training Requirements

This section does not apply to the AMWTP

C7-1b Radiography Methods Requirements

This section describes the portion of the CBFO confirmation program that applies to the AMWTP.

For containers that have been characterized using RTR by the AMWTP in accordance with the method in Attachment C1, Section C1-3, the CBFO may perform confirmation by review of the AMWTP's RTR audio/video recordings.

Independent replicate scans and replicate observations of the video output of the RTR process shall be performed under uniform conditions and procedures. Independent replicate scans will be performed on one waste container per day or once per shipment, whichever is less frequent, by a qualified RTR operator other than the individual who performed the first examination. When confirmation is performed by review of audio/video recorded scans produced by the AMWTP as specified in Section C1-3, independent observations will be performed on two waste containers per shipment or two containers per day, whichever is less frequent.

C7-1c Visual Examination Methods Requirements

This section describes the portion of the CBFO confirmation program that applies to the AMWTP.

VE may also be used as a waste confirmation method by the CBFO. VE shall be conducted by the CBFO in accordance with written standard operating procedures to describe the contents of a waste container. VE shall be conducted to identify and describe all waste items, packaging materials, and waste material parameters. VE may be used by the CBFO to examine a statistically representative subpopulation of the waste certified for shipment to WIPP to confirm that the waste contains no ignitable, corrosive, or reactive waste. This is achieved by confirming that the waste contains no liquid in excess of TSDF-WAC limits or compressed gases, and that the physical form of the waste matches the waste stream description documented on the WSPF. During packaging, the waste container contents are directly examined by trained personnel. This form of waste confirmation may be performed by the CBFO at AMWTP. VE may be documented on video and audio media, or by using a second operator to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. When VE is performed using a second operator, each operator performing the VE shall observe for themselves the waste being placed in the waste container or the contents within the examined

waste container when waste is not removed. The results of all VE shall be documented on VE data forms which are used to document (1) the Waste Matrix Code, (2) that the waste container contains no ignitable, corrosive, or reactive waste by documenting the absence of liquids in excess of TSDF-WAC limits or compressed gases, and (3) that the physical form of the waste is consistent with the waste stream description documented on the WSPF.

In order to keep radiation doses as low as reasonably achievable at the AMWTP, the CBFO may use their own trained VE operators to perform VE for waste confirmation by reviewing VE data forms, waste packaging records, and may use the audio/video media. The confirmation team shall document their review of the AMWTP VE data on confirmation data forms.

If the AMWTP documents VE using audio/video media in accordance with Section C1-4, the confirmation team must use the audio/video to perform confirmation. If the waste confirmation team performs waste confirmation by review of audio/video media, the audio/video record of the VE must be sufficiently complete to confirm the Waste Matrix Code and waste stream description, and verify the waste contains no liquid in excess of TSDF-WAC limits or compressed gases. AMWTP VE video/audio media subject to review by the CBFO shall meet the following minimum requirements:

- The video/audio media shall record the waste packaging event for the container such that all waste items placed into the container are recorded in sufficient detail and shall contain an inventory of waste items in sufficient detail that a trained CBFO VE operator can identify the associated waste material parameters.

- The video/audio media shall capture the waste container identification number.

- The personnel loading the waste container shall be identified on the video/audio media or on packaging records traceable to the loading of the waste container.

- The date of loading of the waste container will be recorded on the video/audio media or on packaging records traceable to the loading of the waste container.

VE audio/video media of containers that contain classified shapes shall be considered classified information.

If the AMWTP did not document VE using audio/video media, the CBFO may use their own trained VE operators to perform VE for waste confirmation by reviewing VE data forms or packaging records prepared by the generator during their packaging of the waste. To be acceptable, the AMWTP VE data forms or packaging records must be signed by two AMWTP personnel who witnessed the packaging of the waste and must provide sufficient information for the CBFO to determine that the waste container contents match the waste stream description on the WSPF and the waste contains no liquids in excess of WIPP Hazardous Waste Permit TSDF-WAC limits or compressed gases. AMWTP VE forms or packaging records subject to review by CBFO shall meet the following minimum requirements:

- At least two generator site personnel shall approve the data forms or packaging records attesting to the contents of the waste container.
- The data forms or packaging records shall contain an inventory of waste items in sufficient detail that a trained CBFO VE operator can identify the associated waste material parameters.
- The waste container identification number shall be recorded on the data forms or packaging records.
- VE video media of containers that contain classified shapes shall be considered classified information. VE data forms will not contain classified information.

C7-2 Noncompliant Waste Identified During Waste Confirmation

This section describes the portion of the CBFO confirmation program that applies to the AMWTP.

If the CBFO identifies noncompliant waste during waste confirmation at AMWTP (i.e., the waste does not match the waste stream description documented in the WSPF or there is liquid in excess of TSDF-WAC limits or compressed gases), the waste will not be shipped.

The CBFO will suspend further shipments of the affected waste stream and issue a CAR to the AMWTP. Shipments of affected waste streams will not resume until the CAR has been closed.

As part of the corrective action plan in response to the CAR, the AMWTP will evaluate whether the waste characterization information documented in the CIS and/or WSPF for the waste stream must be updated because the results of waste confirmation for the waste stream indicated that the TRU mixed waste being examined did not match the waste stream description. AMWTP will thoroughly evaluate the potential impacts on waste that has been shipped to WIPP. The CBFO will evaluate the potential that prohibited items were shipped to WIPP and what remedial actions should occur, if any. The results of these evaluations will be provided to NMED before shipments of affected waste stream resume. If the CIS and/or WSPF require revision, shipments of the affected waste stream shall not resume until the revised waste stream waste

characterization information has been reviewed and approved by the CBFO. If AMWTP certifies noncompliant waste more than once during a running 90-day period, the CBFO will suspend acceptance of AMWTP's waste until the CBFO find that all corrective actions have been implemented and the site complies with all applicable requirements of the WIPP-WAP.

D. RECORDS PROCESSING

Record Description	Classification
MP-TRUW-8.2, Case file	Nonpermanent WIPP / ENV1-J-1 Destroy 75 years after submittal

E. REFERENCES

E-0 AMWTP Documents

INST-FOI-17, *Facility Visual Examination Operations*

INST-FOI-20, *Supercompactor and Post-Compaction Operations*

INST-OI-12, *Real-Time Radiography Operations (Drum)*

INST-OI-16, *Drum Coring Operations*

INST-OI-34, *Non-Facility Visual Examination Operations*

INST-OI-43, *HGAS Sampling and Analysis Operations*

INST-OI-73, *Manual Drum Coring Operations*

INST-OI-75, *Container-in-Container Sampling*.

INST-OI-81, *Real-Time Radiography Operations (for WIPP Certification of Boxes)*

LST-RTQP-03, *WIPP Training Requirements List*

MP-CMNT-10.5, *Calibration and Control of Measuring and Test Equipment Program*

MP-DOCS-18.2, *Records Management*

MP-DOCS-18.4, *Document Control*

MP-M&IA-17.1, *Management Assessment*

MP-M&IA-17.2, *Independent Assessment*

MP-Q&SI-5.3, *Corrective Action*

MP-Q&SI-5.4, *Identification of Nonconforming Conditions*

MP-RTQP-14.1, *Preparation and Administration of Training Plans*

MP-RTQP-14.4, *Personnel Qualification and Certification*

MP-RTQP-14.19, *Training Records Administration*

MP-TRUW-8.1, *Certification Plan for INL Transuranic Waste*

MP-TRUW-8.5, *TRU Waste Certification*

MP-TRUW-8.8, *Level I Data Validation*

MP-TRUW-8.9, *Level II Data Validation*

MP-TRUW-8.11, *Data Reconciliation*

MP-TRUW-8.13, *Collection, Review, and Management of Acceptable Knowledge Documentation*

MP-TRUW-8.14, *Preparation of Waste Stream Profile Forms*

MP-TRUW-8.17, *Co-Located Core Sampling Control Charts*

MP-TRUW-8.25, *Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis*

MP-TRUW-8.34, *WIPP Sample Transfers*

PD-CMNT-01, Nuclear Maintenance Management Program Description

E-1 CCP Analytical Laboratory Department Documents

CCP-QP-002, *CCP Training and Qualification Plan*

CCP-TP-181, *CCP Determination of Mercury by CVAA for TRU Waste Characterization*

CCP-TP-182, *CCP Determination of Metals by ICP AES for TRU Waste Characterization*

CCP-TP-183, *CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel*

CCP-TP-184, *CCP Volatile Organic Compounds by Gas Chromatography Mass Spectrometry*

CCP-TP-185, *CCP Semivolatile Organic Compounds by Gas Chromatograph Mass Spectrometry*

CCP-TP-186, *CCP Determination of Nonhalogenated Volatile Organics by Gas Chromatography*

CCP-TP-187, *CCP Sample Preparation for Semivolatile Organic Compounds*

CCP-TP-188, *CCP Analytical Data Recording, Review, and Reporting*

E-2 External References

15 USC 2601–2692, "The Toxic Substances Control Act of 1976."

20 NMAC 4.1, 2009, "Hazardous Waste Management," Title 20, New Mexico Administrative Code, Chapter 4, Part 1, Sections 200, 300, 500, and 800, March 2009.

40 CFR 240, 2010, "Guidelines for the Thermal Processing of Solid Wastes," Code of Federal Regulations, Office of the Federal Register, July 2010.

40 CFR 261, 2011, "Identification and Listing of Hazardous Waste," Code of Federal Regulations, Office of the Federal Register, July 2011.

40 CFR 262, 2011, "Standards Applicable to Generators of Hazardous Waste," Code of Federal Regulations, Office of the Federal Register, July 2011.

40 CFR 264, 2011, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Code of Federal Regulations, Office of the Federal Register, July 2011.

40 CFR 268, 2010, "Land Disposal Restrictions," Code of Federal Regulations, Office of the Federal Register, July 2010.

ASTM, 1983a, "Test Method for Chemical Composition of Gases by Mass Spectrometry," ASTM D2650-83, American Society for Testing and Materials, 1983.

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ASTM 1998, "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds," ASTM D4547-98, Annual Book of ASTM Standards, Philadelphia, Pennsylvania, American Society for Testing and Materials, 1998.

CBFO:OCT:KWW:VW:05-1164:UFC:5822, "Method for Reporting HSC in 100 Gallon Drums Containing Supercompacted 55-Gallon Drums with Rigid Liners," Carlsbad Field Office.

Connolly, M.J., et al. (Lockheed Idaho Technologies Company), 1995, *Position for Determining Gas Phase Volatile Organic Compound Concentrations in Transuranic Waste Containers*, INEL-95/0109, Rev. 1, 1995.

DOE/CAO-94-1005, "Waste Isolation Pilot Plant Transuranic Waste Baseline Inventory Report," U.S. Department of Energy- Carlsbad Area Office, Current Revision.

DOE/CBFO-94-1012, "Quality Assurance Program Document," U.S. Department of Energy-Carlsbad Field Office, Current Revision.

DOE/CBFO-95-1076, "Performance Demonstration Program Plan for Analysis of Simulated Headspace Gases," U.S. Department of Energy-Carlsbad Field Office, Current Revision.

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F. GLOSSARY

F-0 Acronyms and Abbreviations

ACL	Analytical Chemistry Laboratory
AK	acceptable knowledge
AMWTP	Advanced Mixed Waste Treatment Project
ASTM	American Society for Testing and Materials
BDR	Batch Data Report
BFB	4-bromofluorobenzene
°C	degrees Celsius
%C	percent complete
CAR	corrective action report
CAS	Chemical Abstract Services
CBFO	Carlsbad Field Office
CCC	calibration check compounds
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH	contact-handled
CH-TRU	contact-handled transuranic
CIS	Characterization Information Summary
COC	chain-of-custody
CVAA	Cold Vapor Atomic Absorption Spectrometry
%D	percent difference
DA	Data Administrator
DAC	drum age criteria
DFTPP	decafluorotriphenylphosphine
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DQO	Data Quality Objective

EPA	Environmental Protection Agency
FID	Flame Ionization Detector
FRC	Federal Records Center
FTIR	Fourier Transform Infrared Spectroscopy
g	gram
GC	Gas Chromatography
GC/ECD	Gas Chromatography/Electron Capture Detection
GC/FID	Gas Chromatography/Flame Ionization Detection
GC/MS	Gas Chromatography/Mass Spectrometry
HPLC	high pressure liquid chromatography
HSGS	headspace gas sampling
HWN	EPA hazardous waste number
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma- Mass Spectometry
ICS	interference check standards
ICV	initial calibration verification
IDC	item description code
IDL	instrument detection limit
INL	Idaho National Laboratory
INST	instruction
ITR	independent technical review
kg	kilogram
L	liter
LCS	Laboratory Control Sample
LDR	land disposal restrictions
µg/L	micrograms per liter
MDL	method detection limit
mg/kg	milligrams per kilogram
mL	milliliter
mm	millimeter
mm Hg	millimeters mercury
MP	management procedure
MSD	matrix spike duplicate

NCR	nonconformance report
NDA	nondestructive assay
NDE	nondestructive examination
ng	nanogram
NIST	National Institute of Standards and Technology
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
OLCS	on-line control sample
OSHA	Occupational Safety and Health Administration
OJT	on-the-job training
OVA	organic vapor analyzer
PCB	polychlorinated biphenyl
PDP	Performance Demonstration Program
POC	pipe overpack container
ppm	parts per million
ppmv	parts per million by volume
PRDL	Program Required Detection Limit
PRQL	Program Required Quantitation Limit
psig	pounds per square inch gauge
pt	point
QA	quality assurance
QAO	Quality Assurance Objective
QA/QC	Quality Assurance/Quality Control
QAPD	Quality Assurance Program Document
QAPjP	Quality Assurance Project Plan
QC	quality control
r	regression coefficient
%R	percent recovery
%RSD	percent relative standard deviation
RA	radioassay
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RH	remote-handled
RIDS	Records Inventory and Disposition Schedule
RPD	relative percent difference
RRF	relative response factor
RT	retention time
RTL	Regulatory Threshold Limit
RTR	real-time radiography
RWMC	Radioactive Waste Management Complex

SLB2	standard large box 2
SPCC	system performance check compound
SPM	Site Project Manager
SPO	Site Project Office
SVOC	semi-volatile organic compound
SW-846	EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
SWB	standard waste box
TC	Toxicity Characteristic
TCLP	Total or Toxicity Characteristic Leaching Procedure
TDOP	Ten-Drum Overpack
TIC	tentatively identified compound
TRU	transuranic
TRUCON	TRUPACT-II Content Codes (DOE 1992)
TRUPACT-II	Transuranic Package Transporter Model II
TSA-RE	Transuranic Storage Area-Retrieval Enclosure
TSCA	Toxic Substance Control Act
TSDF	Treatment Storage Disposal Facility
TWBIR	TRU Waste Baseline Inventory Report
UCL_{90}	upper 90% confidence level
UHWM	Uniform Hazardous Waste Manifest
VE	visual examination
VEE	Visual Examination Expert
VOA	volatile organic analysis
VOC	volatile organic compound
WAC	waste acceptance criteria
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WIPP-WAP	Waste Analysis Plan for the Waste Isolation Pilot Plant, Attachment C of the WIPP Hazardous Waste Facility Permit
WSPF	Waste Stream Profile Form
WTS	Waste Tracking System
WWIS	WIPP Waste Information System

TRU Waste Certification

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-11547)
Sue Peterman
TRU Programs Manager

09/10/12
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/29/02	All	Initial issue. DCR-1379.
1	12/10/02	11, 15-16	DCR-1790. Changed revision number from 0 to 1. Added clarification.
2	12/24/02		DCR-1841. Changed revision number from 1 to 2. Better define data gathering and documentation.
3	02/24/03	Various	DCR-1943. CBFO comment resolution and removed procedures that described WTS Certification/Transportation processes.
4	02/27/03	9	DCR-2084. Added NOTE on page 9 for closure of WIPP audit concern.
5	03/28/03	All	DCR-2163: Change effective date from "When DOE Approved Retrieval Operations" to March 28, 2003.
6	04/27/04	All	DCR-2867: Change WCO or TCO to WCO/TCO and to comply with e-TRAMPAC and WWIS operating procedures, and to implement corrective actions from CAR-4465.
7	07/12/04	Various	DCR-2994: Changes to incorporate WIPP comments and Direct Loading of Ten-Drum Overpack.
8	08/04/04	Various	DCR-4005: Incorporate CBFO comments.
9	08/12/04	9, 17, 36	DCR-3242: Incorporate CBFO comments.
10	11/4/04	Pages 13 and 19	DCR-3342. Added new Steps 4.2.2.19, 4.2.2.20, 4.3.4.19, and 4.3.4.20 to provide direction for performance of a management assessment of the waste container data report.
11	12/09/04	Various	DCR-3268. Implement WWIS Release 5.0, CH WAC (Rev 2), CH-TRAMPAC (Rev 1) requirements and editorial changes. Incorporation of DRR comments.

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Revision Number	Date Approved	Pages Affected	Description of Revision
12	01/11/05	Various	DCR-4061. Implement instruction for the use of the Off-Site Shipping Module of WTS.
13	07/07/05	Various	DCR-4258. Delete steps that are no longer required based on management review of past assessments. Incorporate FC-1, DCR-4322.
14	07/27/05	Various	DCR-4448. Minor change to correct step references.
15	10/26/05	3.3.1.2.16	DCR-4494. Incorporate FC-1 Added step for NCR checks.
16	12/14/05	All	DCR-4659. Periodic review. Entire document revised to separate the manual certification process from the OSM process. Since the entire document was changed, no change bars were used except in this table.
17	02/15/06	Various	DCR-4746. Periodic review. Remove Item #8 from the Container Data Package contents; include tare mass for a TDOP (725.6 kg). Revise Roles and Responsibilities Section to add WCCA. Revised note in 3.2.3.7.4. Minor editing and formatting corrections.
18	5/18/06	Various	DCR-4916. Added Section 3.2.8, and added various additional steps and notes to facilitate the shipping of controlled shipments. Some minor editorial clarifications in various steps.
19	06/28/06	All	DCR-5097. Added new section 3.3 and made numerous additional changes to support OSM implementation.
20	11/13/06	Various	DCR-5475. Revise to remove “Contact-Handled” from references to MP-TRUW-8.1, with various editorial changes made globally. Add steps under WCO on pages 33 and 38.
21	02/14/07	Various	DCR-5742. Revise Table 1, Item 7 to reference Forms-1597, -1598. Form-1693 no longer used.

Revision Number	Date Approved	Pages Affected	Description of Revision
22	07/24/07	ALL	DCR-6013. Cancel MP-TRUW-8.16 and incorporate into MP-TRUW-8.5.
23	03/28/08	Various	DCR-6301. Added CCP review of flammable gas analysis. Clarified steps, changed notes to steps, and incorporated resolution to internal comments.
24	09/08/08	All	DCR-7197. Eliminated AMWTP sampling allowances. Standardized logic. Made changes associated with the corrective actions for CAR 40148.
25	12/02/09	All	DCR-7689. Entire document revised. Implemented changes to accommodate the new Waste Data System. Revised roles and responsibilities. Introduced more sections to provide clarification to users. Added section on Direct Load Standard Waste Box roll-up functionality. Addressed recommended changes in MAR 36576. Made additional changes in response to CBFO comments. Periodic review.
26	02/06/12	Various	DCR-10680. Changes made to match updated WDS fields and to clarify ambiguities. Some changes related to SCR-4287. Reorganized reference section. Incorporated ITG Bluesheet 078.
27	07/03/12	Pg 3, 14, 15, 19	DCR-11010. Changed the title to Section 3.5 for clarity. Added new note 2 on page 3 for acknowledging SCR 4032 data roll-up capabilities for certifiable containers (note subsequently deleted due to QA comments during review process).
28	09/10/12	Various	DCR-11547. Added step for verification of manual ASY batch results (Change consistent with MP-TRUW-8.11).

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Appendix A – Tables A1

Appendix B – Guidelines for Determination of Manual or EV&V QA Records B1

AMWTP MANAGEMENT PROCEDURE		
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1.0 PURPOSE/SCOPE

The purpose of this procedure is to summarize the method used by the Advanced Mixed Waste Treatment Project (AMWTP) to certify waste as compliant with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and CCP-PO-003, CCP Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC), for transportation, storage, and disposal of contact-handled transuranic (CH-TRU) waste at the Waste Isolation Pilot Plant (WIPP). Certification of *payload containers* (see def.) provides confidence for both the shipper and receiver that the WIPP requirements are met.

Before submitting any certification container data to the *Waste Data System* (WDS; see def.), AMWTP submits a Waste Stream Profile Form (WSPF) for each waste stream to be sent to WIPP. The WSPFs provide summary information about each waste stream. The WDS Characterization Data Entry function accepts the container-specific data that are the basis for the summary information included in the WSPF. The characterization data submitted will be reviewed and compared to the pending WSPF by the Carlsbad Field Office (CBFO). When a WSPF has been approved and AMWTP has received a signed letter from CBFO approving the waste stream, the approval date will be entered into the WDS, which allows entry of the certification data. The *Waste Certification Official* (WCO; see def.) certifies that each waste payload container meets the certification requirements (outlined in MP-TRUW-8.1) before submitting the data to the WDS. WIPP will not accept shipments for disposal if the waste container information has not been correctly submitted and approved by a WDS Data Administrator (DA). The WDS User's Manual provides the information needed by AMWTP to perform tasks associated with transmittal of the container's characterization and certification information to WIPP.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Acceptable Knowledge Expert (AKE)	• Performs the electronic data reconciliation/characterization of the containers per MP-TRUW-8.11, Data Reconciliation.
Site Project Manager (SPM)/Designee	• Performs data reconciliation/characterization of the containers per MP-TRUW-8.11 • Reviews the site Quality Assurance Project Plan and subsequent quality assurance/quality control (QA/QC) activities • Verifies that QA requirements have been implemented • Provides guidance to the project staff on quality related matters • Reviews the WDS container data report to the actual characterization data for each container contained in the WSPF summary.
WCO	• Documents and certifies that all transuranic (TRU) waste payload containers prepared for shipment to WIPP meet all requirements specified in the Certification Plan for INL Transuranic Waste (MP-TRUW-8.1) and CCP-PO-003 (CCP CH-TRAMPAC) and transmits the waste container data to the WDS • Performs all WDS responsibilities • May function as an independent WCO to review other WCOs' work • Responsible for all necessary data entry into the Waste Container Data Entry Form (WCDEF), Offsite Shipping Module (OSM), or WDS.

Performer	Responsibilities
Subject Matter Expert (SME) (or Alternate)	• Responsible for certification and documentation of all TRU waste payload containers prepared for shipment to WIPP subject to requirements specified in the Certification Plan for INL Transuranic Waste (MP-TRUW-8.1) and CCP-PO-003 (CCP CH-TRAMPAC) • Ensures WCOs are trained adequately to execute their assigned roles • Performs evaluations on unsuccessful data conversion errors • Ensures technical accuracy of the certification process • Notifies the WIPP DA if personnel who have received access approval are no longer required to have access to the WDS, or need to change the type of access to the WDS.

NOTE: *Container issues occurring at any time in this procedure can be handled with Section 3.9.*

3.0 PROCEDURE

3.1 Prerequisites

3.1.1 Access Authorizations

NOTE: *Requests for WDS access will be handled in accordance with Section 4.0 of the WDS User's Manual.*

3.1.1.1 SME (or Alternate): Contact WDS DAs via e-mail to request, rescind, or change any access authorization.

3.1.1.2 Submit a WIPP WDS Access Request Form containing relevant user and sponsor information and signatures to the WDS DAs in order to acquire a WDS account.

3.1.2 Training

NOTE: *At a minimum, training includes initial on-the-job WDS orientation and knowledge of requirements from the following documents:*

- *MP-TRUW-8.1, Certification Plan for INL Transuranic Waste*
- *MP-TRUW-8.2, Quality Assurance Project Plan*
- *CCP-PO-003, CCP Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC).*

3.1.2.1 SME (or Alternate): Ensure that personnel receive on-the-job training (OJT) specific to the WDS.

3.1.2.1.1 Ensure that personnel receive training on the contents of the WDS User's Manual as a required reading OJT activity.

3.1.2.1.2 Ensure WCO personnel are properly trained and qualified.

3.2 Manual Characterization Data Entry and Review Using the WTS WCDEF and WDS

NOTE 1: *SPM/designee verification of container-affecting nonconformance reports (NCRs) will be documented using Form-1597, Reconciliation with Data Quality Objectives, and will be verified current and clear in TrackWise or the TrackWise NCR Quick Search before loading or submittal into the WDS.*

NOTE 2: *Data not transferred to the WDS Characterization Data Entry function using the WCDEF will be entered manually.*

NOTE 3: *Any container with unresolved discrepancies associated with hazardous waste characterization will not be managed or disposed of at WIPP until discrepancies are resolved.*

NOTE 4: *Once a WSPF is approved, additional waste container information must be submitted through the WDS Certification Data Entry function.*

NOTE 5: *The QA record will be used for data review. The QA record for manually validated batch data reports or manually generated forms will be accessed directly or through the Electronic Document Management System (EDMS). The Waste Tracking System (WTS) will be referenced to ensure the latest valid data are being reviewed. For electronic validation and verification (EV&V), the QA record will be accessed and viewed in the WTS. Appendix B contains guidelines on using manual or EV&V records.*

3.2.1 SME: Ensure the SPM/designee has provided the Waste Stream Profile information to WDS personnel for creation of the appropriate WDS reference tables so that characterization data can be submitted into WDS.

3.2.2 Obtain a list of specific containers from the SPM/designee that was used as the basis for the summary information included in the WSPF.

3.2.3 AKE/SPM/Designee: If waste stream preparation is for solid sampling, then prepare Form-1935, Solid Sampling, as the basis for data entry into the WDS.

3.2.3.1 Sign for approval.

3.2.3.2 Submit to the SME.

3.2.4 SPM/Designee: Ensure there are no open AMWTP NCRs against any container being reviewed at this level.

3.2.5 Ensure that each of the containers has been validated and reconciled in accordance with MP-TRUW-8.11.

3.2.6 WCO: Create container file folders.

3.2.7 Ensure reconciliation is complete for all containers identified.

3.2.7.1 Ensure all containers are identified on a solid or headspace gas sampling lot and notify WCOs.

3.2.7.2 Reject any containers not verified as part of an approved solid or headspace gas sampling lot.

3.2.7.2.1 Notify the SME, and create an NCR in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.

3.2.7.3 Ensure all containers listed in the *Characterization Information Summary* (CIS; see def.), including applicable inner containers, correspond with the QA record.

3.2.7.4 Ensure that all batches listed on the CIS correspond with QA record including solid sampling batches.

3.2.8 Log on to WTS, query and/or enter characterization data into the WCDEF for each container in the WSPF summary using the QA record.

3.2.9 When it is determined that all data in the WCDEF are certifiable and correspond with the QA record, perform the following:

3.2.9.1 Click the “Save All” button at the top of the WCDEF.

3.2.9.2 Print a copy and place it in the associated certification file to evaluate later during a certification review.

3.2.9.3 Sign the Container Review Statement only.

3.2.10 Transfer the data into the WDS by pressing the “Load to WDS” button, ensuring it is selected for the “Container Characterization Data Submittal” screens.

3.2.10.1 If the data transfer fails, determine the cause of the failure, attempt to resolve the problem, and retransfer the container data.

3.2.10.2 If the problem persists, give the container number/certification file to the SME for resolution.

3.2.11 Access the WDS by entering the appropriate URL into an acceptable browser (per the WDS User’s Manual) and entering your authorized username and password.

NOTE 1: *Any time after the shipper site identification (ID), waste stream profile, container number, and container type have been entered, the container record may be saved. A previously saved (but not yet submitted) container record may be queried at any time to continue data entry.*

NOTE 2: *The data in the WDS must match the most current WSPF.*

NOTE 3: *When container data is transferred, only the data needed for characterization will load into the characterization statuses.*

3.2.12 Complete container characterization data entry into the WDS.

3.2.12.1 For solid sampling, enter data from Form-1935 into WDS through the "Gas or Solid Sampling" dropdown option from the "Container Characterization Data Submittal" screen.

3.2.13 Independent WCO: Perform an independent review of container characterization data in the WDS to the QA record.

3.2.14 When it is determined that all data in the WDS are complete and correspond with the QA record, complete Form-1936, Container Data Approval, sign and date the data entry review statement and place it in the associated certification file.

3.2.15 WCO: Print the (PRESUB_CHARZ) container data report by clicking on the "View PDF" link and executing the print icon command from the tool bar.

3.2.16 Place the container data report in the associated file and notify TRU Programs that a container is available for data approval review.

3.2.17 SPM/Designee: Review the data entered into the WDS by comparing the WDS (PRESUB_CHARZ) container data report with the QA record.

3.2.18 When it is determined that all data in the WDS are complete and correspond with the QA record, then indicate approval by signing and dating the data approval statement on Form-1936 and placing the form in the associated certification file.

3.2.19 Return container certification file(s) to the certification department.

NOTE: *Characterization containers may be submitted to the WDS for characterization approval if and when authorization is given from the SPM.*

3.2.20 WCO: If notification of approval has been received from the SPM, then submit the container data to the WDS by pressing the "Submit for Approval" button.

NOTE: *The WDS provides a status for each container to the individual who performed the transfer*.

3.2.21 If a container fails submittal, then perform the following:

3.2.21.1 Attempt to resolve evaluation failures and or data transfer issues.

3.2.21.2 If the problem persists, give the container number/file and any other helpful information to the SME to work through Section 3.9.

3.2.22 Finalize container records by ensuring that the current WDS status shows approved characterization and by preparing the WDS Container Data Entry Report for the associated certification file.

3.3 WCDEF Initial Container Review

NOTE 1: *SPM/designee verification of container-affecting NCRs will be documented using Form-1597 and will be verified current and clear in TrackWise or the TrackWise NCR Quick Search before loading into the WDS. TrackWise is the QA record for NCRs.*

NOTE 2: *The QA record will be used for data review. The QA record for manually validated batch data reports or manually generated forms will be accessed through EDMS, and WTS will be referenced to ensure the latest valid data is being reviewed. For EV&V, the QA record will be accessed and viewed in the WTS. Appendix B contains guidelines on using manual or EV&V records.*

NOTE 3: *Containers showing a "MIXED" status in the "LLD Function" field in the "SCL" screen in WTS are evaluated with the Super High-Efficiency Neutron Counter (SuperHENC) analysis, manually reconciled, and indicated in a CIS with the batch number formatted as "INNDA . . ."*

NOTE 4: *Central Characterization Project (CCP) will be responsible for flammable gas sampling data and the following fields from Table 2: Shipping Category, Closure Date, Vent Date, Aspiration Method, Quantity Installed, Filter Model, and Filter Install Date.*

NOTE 5: *Candidate containers for data entry into the WDS and eventual certification review will be received through notification from the SPM office and documented with Form-1597 and Form-1598, Characterization Information Summary Report. Permit driven headspace gas sampled containers are evaluated to determine whether sample data should be entered into the WDS.*

NOTE 6: *Direct-load standard waste box (DLSWB) container reviews take into account the review of all inner containers with respect to all steps in this section.*

3.3.1 WCO: Do not enter any container certification data into the WDS or transfer data to WIPP until the associated WSPF is approved by CBFO.

3.3.2 Create container file folders.

3.3.2.1 Ensure that all containers are identified on a solid or headspace gas sampling lot by reviewing the master spreadsheets or addendums controlled by TRU Programs and then notify WCOs.

3.3.2.2 Reject any containers not verified as part of an approved solid or headspace gas sampling lot, notify the SME, and create an NCR in accordance with MP-Q&SI-5.4.

3.3.3 Perform an initial review of a candidate container for potential loading into the WDS by comparing the WCDEF data screens with the QA record.

3.3.3.1 Review all AMWTP container NCRs to investigate specific container history or issues and to ensure that no NCRs are open.

3.3.3.2 Ensure the Certification Department performed a solid and headspace gas sampling lot check for each container.

3.3.3.3 Log on to WTS and query container information into the WCDEF.

NOTE 1: *The derived radiological properties (decay heat, total ^{239}Pu fissile gram equivalence, TRU alpha activity, TRU alpha activity concentration, their associated Total Measurement Uncertainty (TMU), and the total ^{239}Pu equivalent activity) are calculated within the WCDEF. Insignificant TMU discrepancies may exist between the WCDEF and the SuperHENC Data Report. Both TMU calculations are being done in accordance with CBFO-approved algorithms.*

NOTE 2: *A discrepancy may be corrected by anyone qualified to complete the WCDEF. The form may be reprinted if necessary.*

NOTE 3: *EDMS is accessed via our internet home page in the drop-down menu, Documentation - EDMS.*

NOTE 4: *Containers used as the basis for characterization data entry or DLSWB roll-up may already have a printed copy of the WCDEF in the associated certification file to be used during the initial review for certification.*

3.3.3.4 If container has a SuperHENC data report, then manually enter radionuclides into WCDEF.

3.3.3.5 Delete container temp table information within the WCDEF, unless it is necessary to preserve previously entered data.

3.3.3.6 Ensure that the Project Level Review and reconciliation of each container is complete by checking for receipt and completeness of Form-1597 and Form-1598.

3.3.3.6.1 Ensure that all container IDs listed in the CIS, including applicable inner containers, legitimately exist and correspond with the QA record.

3.3.3.6.2 Ensure that all batch IDs listed in the CIS legitimately exist and correspond with the QA record.

3.3.3.7 Compare EDMS with WTS to ensure the most current data have been used for reconciliation.

3.3.3.8 When it is determined that all data in the WCDEF are certifiable and correspond with the QA record, click the "Save All" button at the top of the WCDEF, print (if necessary), sign and date the WCDEF, OR e-sign and save, to confirm the initial review status of the container.

NOTE: *Containers used as the basis for characterization data entry will already be loaded into WDS with initial data review completed.*

3.3.3.9 Transfer container data into the WDS by pressing the "Load to WDS" button.

3.3.3.9.1 If the data transfer fails, attempt to resolve the problem, and retransfer the container data by pressing the "Load to WDS" button.

3.3.3.9.2 If the problem persists, give the container number/file to the SME to work through Section 3.9.

3.3.4 WCO/SME: If necessary, submit DLSWB .pdf copies of the following forms to the CCP Waste Project Certification Manager or WCO for any AMWTP DLSWBs loaded into the WDS:

- Form-1219, SWB Direct-Loaded Container Data Sheet
- Form-1362, Container Integrity Inspection
- Form-1363, SWB Direct-Loaded Container
- Form-1775, SWB Direct Loading Form
- Form-2003, SWB Direct-Loaded Container in Soft-Sided Containments.

3.4 WCDEF Certification Review and Submittal to WDS

NOTE 1: *CCP flammable gas data is considered complete and accurate based on the fact that the CCP program and personnel are certified and qualified. Final container review can continue upon e-mail notification from CCP that the flammable gas data is entered into the WDS and there are no open CCP NCRs or corrective action requests (CARs) for the containers.*

NOTE 2: *In addition to the flammable gas sampling data, CCP will be responsible for the following fields from Table 2: Shipping Category, Closure Date, Vent Date, Aspiration Method, Quantity Installed, Filter Model, and Filter Install Date.*

NOTE 3: *Containers showing a "MIXED" status in the "LLD Function" field in the "SCL" screen in WTS shall be evaluated with the SuperHENC analysis, manually reconciled, and indicated in a CIS with the batch number formatted as "INNDA . . ."*

NOTE 4: *The QA record will be used for data review. The QA record for manually validated batch data reports or manually generated forms will be accessed through EDMS. WTS will be referenced to ensure the latest valid data is being reviewed. For EV&V, the QA record will be accessed and viewed in the WTS. Appendix B contains guidelines on using manual or EV&V records.*

NOTE 5: *SPM/designee verification of container-affecting NCRs will be documented using Form-1597 and will be verified current and clear in TrackWise or the TrackWise NCR Quick Search before submittal into the WDS. TrackWise is the QA record for NCRs.*

NOTE 6: *Direct-load standard waste box container reviews take into account the review of all inner containers with respect to all steps in this section.*

3.4.1 Independent WCO: Ensure container compliance with MP-TRUW-8.1 and CCP-PO-003 by comparing the WDS Container Data/Report with the QA record.

3.4.1.1 Access the WDS by entering the appropriate URL into an acceptable browser (per the WDS User's Manual) and entering your authorized username and password.

3.4.1.2 Ensure CCP NCR/CAR notification is current and clear.

3.4.1.3 Review all AMWTP container NCRs to investigate specific container history or issues and to ensure that no NCRs are open.

3.4.1.4 Ensure the Certification Department performed a solid and headspace gas sampling lot check for each container.

3.4.1.5 Ensure the Project Level Review and reconciliation of each container is complete by checking for receipt and completeness of Form-1597 and Form-1598.

3.4.1.5.1 Ensure all container IDs listed in the CIS, including applicable inner containers, legitimately exist and correspond with the QA record.

3.4.1.5.2 Ensure all batch IDs listed in the CIS legitimately exist and correspond with the QA record.

3.4.1.6 If a discrepancy is found during the review, notify the SME and inform the original reviewer of the discrepancy.

3.4.1.7 If the data are certifiable and correspond with the QA record, then sign and date (or e-sign and save) the WCDEF *Certification Statement* (see def.), and print if necessary to complete the record.

NOTE: *Data submitted to the WDS will automatically initiate the certification edit limit checks and the appropriate TRUPACT-II Authorized Methods for Payload Control (TRAMPAC) evaluation.*

3.4.1.8 Enter the certification date in WDS, and submit the container for the WDS DA's approval by pressing the "Submit for Approval" button.

3.4.1.9 If a container fails submittal, then perform the following:

3.4.1.9.1 If the error is related to CCP data, either give the container number/file to the SME to work through Section 3.9, or attempt to resolve the evaluation failures and/or data transfer issues.

3.4.1.9.2 If the problem persists, give the container number/file and any other helpful information to the SME to work through Section 3.9.

3.4.2 WCO: Finalize container records by ensuring the current WDS status shows approved or beyond and preparing the WDS Container Data Entry Report for the record.

3.4.2.1 Ensure data entry form/certification statement, CCP NCR check, and any other relevant documents generated from this procedure (as referenced in Section 6.0) are present, complete, and logical.

3.4.3 Complete Form-1044, Record Transmittal, and submit all manually generated quality records to data management.

3.5 WCDEF Product Drum Roll-up for Direct Load Standard Waste Box

NOTE: *Inner container numbers for a DLSWB are indicated on the CIS and are independently verified with the SWB planning and loading forms, which consist of AMWTP Forms-1775, -1219, -1362, and -1363. These forms are received from operations, scanned into EDMS, and are the quality record for both AMWTP and CCP to demonstrate compliance for certification.*

3.5.1 WCO: Ensure the latest data is in the temp tables for the inner containers to be rolled up by verifying the SPM-approved batch data report (BDR) information is what is populated into the WCDEF for that container.

3.5.1.1 When necessary, delete each inner container in the "Container Data" tab before performing a re-query.

3.5.2 Go to the "Roll Up Values" tab in the WCDEF via the drop down menu, Offsite Shipping, Certification, Manual WDS Certification Data Entry.

3.5.3 Enter the DLSWB container number in the "Outer Container ID" field.

3.5.4 If the SWB inner containers were evaluated with the SuperHENC, check the "SuperHENC Assayed?" box directly beside the "Outer Container ID" field.

3.5.5 Query WTS for available containers while in the "Roll Up Values" tab and verify the table populates.

3.5.6 Press the "Perform Roll Up" button and acknowledge the warning(s) and/or message(s) of the current status of the rolled up container.

3.5.7 Press "Save All" in the WCDEF and print, if necessary, for certification file.

NOTE 1: *No changes can be made to a candidate container's WCDEF radionuclides/calculations or waste material parameters from here on in the DLSWB review process, or Section 3.5 will need to be repeated.*

NOTE 2: *DLSWB containers needing certification review are received after project reconciliation through the normal notification process and are reviewed through Section 3.3 of this procedure.*

3.5.8 Notify the Reconciliation Department which DLSWB(s) are ready for reconciliation.

3.6 Offsite Shipping Module Initial Container Review

NOTE 1: *Candidate containers for data entry into the WDS and eventual certification review will be documented on the "Reconciliation with Data Quality Objectives" report located in the "DQO Reconciliation" screen in WTS. SPM/designee verification of container-affecting NCRs will be documented in the "DQO Reconciliation" screen as well. NCRs will be verified current and clear in TrackWise or the TrackWise NCR Quick Search before transfer into the WDS.*

NOTE 2: *CCP will be responsible for flammable gas sampling data and the following fields from Table 2: Shipping Category, Closure Date, Vent Date, Aspiration Method, Quantity Installed, Filter Model and Filter Install Date.*

NOTE 3: *The QA record will be accessed and viewed in the WTS.*

NOTE 4: *Direct-load standard waste box container reviews take into account the review of all inner containers with respect to all steps in this section.*

3.6.1 Do not enter any container certification data into the WDS or transfer data to WIPP until the associated WSPF is approved by CBFO.

3.6.2 WCO: Create container file folders.

3.6.2.1 Ensure that all containers are identified on a solid or headspace gas sampling lot by reviewing the master spreadsheets controlled by TRU Programs; then notify WCOs.

3.6.2.2 Reject any containers not verified as part of an approved Solid or Headspace Gas Sampling Lot, notify the SME, and create an NCR in accordance with MP-Q&SI-5.4.

3.6.3 Perform an initial review of a candidate container for entry into the WDS.

3.6.3.1 Review all AMWTP container NCRs to investigate specific container history or issues and to ensure that no NCRs are open.

3.6.3.2 Ensure the certification department performed a solid and headspace gas sampling lot check for each container.

NOTE: *The listing of containers in the OSM can be queried on Container ID number, Container Type, Item Description Code, Generator ID, and/or Waste Stream.*

3.6.3.3 Log on to WTS and select the "Offsite Shipping/Certification/Container Certification" menu to query containers.

3.6.3.4 If not already populated, type in the Waste Acceptance Criteria (WAC) revision number for which the containers are being evaluated.

3.6.3.5 Select the "Perform Edit & Limit Checks" boxes next to the containers to be certified, and perform the Edit & Limit checks.

NOTE: *Container IDs that pass the checks will turn green and those that fail will turn red.*

3.6.3.6 If a container fails the "Edit and Limit Checks," evaluate with the "Edit and Limit Errors" button and attempt to correct those errors.

3.6.3.7 If the problem persists, give the container number/file to the SME to work through Section 3.9.

3.6.3.8 View the "WIPP Comments" button within each individual container data screen to ensure that any comments that may have been previously entered are still accurate and/or add comments relevant to the container certification record.

3.6.3.9 Ensure that the Project Level Review and reconciliation of each container is complete by checking for the presence and completeness of the "Data Quality Objectives Reconciliation" screen via the WTS drop-down menu, Offsite Shipping, AK Characterization, DQO Reconciliation.

3.6.3.9.1 Ensure all container IDs listed on the CIS, including applicable inner containers, legitimately exist and correspond with the QA record.

3.6.3.9.2 Ensure all batch IDs listed on the CIS legitimately exist and correspond with the QA record.

NOTE: *E-signing for initial review status locks the container's data so that it cannot be altered and allows the data to be extracted. It does not indicate that the container data has been certified.*

3.6.3.10 If the container data are certifiable and correspond with the QA record, then sign (or e-sign and save) to complete the initial review status and quality record.

3.6.3.11 When all desired containers have been reviewed, exit the screen.

3.7 OSM Container Data Extract to the WDS

NOTE 1: *The listing of containers in OSM can be queried based on Container ID, Item Description Code, Waste Matrix Code, CH-TRUCON Code, Waste Stream Profile or Waste Stream Profile Approval date.*

NOTE 2: *A container may belong to only one Certification Data extract.*

3.7.1 WCO: Log on to WTS to access the "Extract Certification Data" screen via the drop-down menu, Off Site Shipping, Certification, Extract Certification Data and query to an available parameter.

NOTE: *All NCR searches are conducted during the container review process and are verified current and clear before any container data transfer or submittal into the WDS.*

3.7.2 Select containers to extract to the WDS by checking the select box to the left of the container numbers and pressing the "Extract Certification Data" button.

3.7.3 If data extract fails, attempt to resolve the problem, re-extract, and/or give the container number/file to the SME to work through Section 3.9.

3.8 OSM Certification Review and Submittal to the WDS

NOTE 1: *SPM/designee verification of container-affecting NCRs will be documented with the "Reconciliation with Data Quality Objectives" report located in the "DQO Reconciliation" screen in WTS, and will be verified current and clear in TrackWise or the TrackWise NCR Quick Search before copy or submittal into the WDS. TrackWise is the QA record for NCRs.*

NOTE 2: *CCP flammable gas data is considered complete and accurate based on the fact that the CCP program and personnel are certified and qualified. Final container review can continue upon e-mail notification from CCP that the flammable gas data is entered into the WDS and there are no open CCP NCRs or CARs for the containers.*

NOTE 3: *In addition to the flammable gas sampling data, CCP will be responsible for the following fields from Table 2: Shipping Category, Closure Date, Vent Date, Aspiration Method, Quantity Installed, Filter Model, and Filter Install Date.*

NOTE 4: *The QA record will be accessed and viewed in the WTS.*

NOTE 5: *Direct-load standard waste box container reviews take into account the review of all inner containers with respect to all steps in this section.*

3.8.1 Independent WCO: Ensure container compliance with MP-TRUW-8.1 and CCP-PO-003 by comparing the WDS Container Data Report with the QA record.

3.8.1.1 Access the WDS by entering the appropriate URL into an acceptable browser (per the WDS User's Manual) and entering your authorized username and password.

3.8.1.2 Ensure CCP NCR/CAR notification is current and clear.

3.8.1.3 Review all AMWTP container NCRs to investigate specific container history or issues and to ensure that no NCRs are open.

3.8.1.4 Ensure the certification department performed a solid and headspace gas sampling lot check for each container.

3.8.1.5 Ensure that the Project Level Review and reconciliation of each container is complete by checking for the presence and completeness of the Data Quality Objectives Reconciliation" screen via the WTS drop-down menu, Offsite Shipping, AK Characterization, DQO Reconciliation.

3.8.1.5.1 Ensure all container IDs listed in the CIS, including applicable inner containers, legitimately exist and correspond with the QA record.

3.8.1.5.2 Ensure all batch IDs listed in the CIS legitimately exist and correspond with the QA record.

3.8.1.6 If a discrepancy is found during the review, notify the SME and inform the original reviewer to correct the discrepancy.

3.8.1.7 If the data are certifiable and correspond with the QA record, sign and date the OSM Certification Statement and print, if necessary, to complete the record.

NOTE: *Data submitted to the WDS will automatically initiate the certification edit limit checks and the appropriate TRAMPAC evaluation.*

3.8.1.8 Enter the certification date in WDS and submit the container for the WDS DA's approval by pressing the "Submit For Approval" button.

3.8.1.9 If a container fails submittal, then perform the following:

3.8.1.9.1 If the error is CCP data related, either give the container number/file to the SME to work through Section 3.9, or attempt to resolve the evaluation failures and/or data transfer issues.

3.8.1.9.2 If the problem persists, give the container number/file and any other helpful information to the SME to work through Section 3.9.

3.8.2 WCO: Finalize container records by ensuring the current WDS status shows approved or beyond and preparing the WDS Container Data Entry Report.

3.8.2.1 Ensure data entry form/certification statement, CCP NCR check, and any other relevant documents generated from this procedure (as referenced in Section 6.0) are present, complete, and logical.

3.8.3 Complete Form-1044 and submit the quality record(s) to data management.

3.9 Container Issue Resolution Process

3.9.1 SME: Determine the reason for container issues, taking the following steps as appropriate:

NOTE 1: *Certification statement e-signatures must be inactivated before initial review e-signatures can be inactivated.*

NOTE 2: *The inactivation of any e-signature will require a comment explaining the reason for the inactivation.*

3.9.1.1 Direct the inactivation of container e-signatures, correction of container data, or initiation of rework, as necessary.

3.9.1.2 Initiate an NCR in accordance with MP-Q&SI-5.4.

3.9.1.3 Make appropriate notification to affected groups if container requires rework.

3.9.1.4 Resolve the NCR in accordance with MP-Q&SI-5.4.

3.9.1.5 After all errors and/or NCRs have been resolved, initiate rework of the containers.

3.9.1.6 Ensure that the quality record is current and/or updated.

4.0 DEFINITIONS

Certification Statement. Certification documentation required to ensure payload containers are in compliance with the certification requirements (MP-TRUW-8.1).

Characterization Information Summary. Summarized characterization information required for submittal to CBFO accompanying the Waste Stream Profile Form.

CH-TRAMPAC Evaluation Software. This software performs container and payload compliance evaluations against rules and regulations defined in the CH-TRAMPAC document. This system was previously called WTES and e-TRAMPAC.

Payload Container. The outer-most container (i.e., drum, SWB, TDOP) for TRU waste material that is placed in a reusable Type B shipping container (i.e., TRUPACT-II, HalfPACT) for transport.

Waste Certification Official. Individual designated to document and certify that all TRU waste payload containers prepared for shipment to WIPP meet all requirements specified in the Certification Plan for INL Transuranic Waste (MP-TRUW-8.1), and submits the waste container data to the WDS DA.

Waste Data System. A computerized data management system (formerly known as the WIPP Waste Information System, or WWIS) used by WIPP to gather, store, and process information pertaining to CH-TRU waste destined for disposal at the WIPP. The WDS contains functionality beyond the original scope of WWIS, but whenever this procedure refers to the WDS, it shall be known that for purposes of reporting permit information to WIPP, WWIS is within the WDS. It is AMWTP's position that steps in this procedure requiring data entry into the WDS will comply with and fully satisfy corresponding requirements that still obligate AMWTP to enter data into WWIS.

5.0 REFERENCES

NOTE: *The WIPP Quality Assurance Program Document (QAPD), Transuranic-WAC, and CH-TRAMPAC are controlled documents. The most current revisions are available for downloading from the CBFO web page at http:\\www.wipp.energy.gov/library/caolib.htm. This Internet link is provided for information purposes only and may change.*

(1) CCP-PO-003, CCP Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC), Washington, D.C., Office of Regulatory Procedures, U.S. Nuclear Regulatory Commission

(2) DOE/WIPP-09-3427, Waste Data System (WDS) User's Manual, U.S. Department of Energy, Carlsbad Area Office (DOE/CAO), Carlsbad, New Mexico

(3) DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, current revision, U.S. Department of Energy, Carlsbad Area Office (DOE/CAO)

(4) Form-1219, SWB Direct-Loaded Container Data Sheet

(5) Form-1362, Container Integrity Inspection

(6) Form-1363, SWB Direct-Loaded Container

(7) Form-1597, Reconciliation with Data Quality Objectives

(8) Form-1598, Characterization Information Summary Report

(9) Form-1775, SWB Direct Loading Form

(10) Form-2003, SWB Direct-Loaded Container in Soft-Sided Containments

(11) MP-DOCS-18.2, Records Management

(12) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(13) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(14) MP-TRUW-8.2, Quality Assurance Project Plan

(15) MP-TRUW-8.11, Data Reconciliation

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.5, Case File	Nonpermanent WIPP/ ENV1-J-1 Destroy 75 years after submittal
WDS Characterization Container Data Report	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
WDS Certification Container Data Report	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
Waste Container Data Entry Form (WCDEF)	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
OSM Container Certification Statement	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
CCP NCR e-mail notification	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
Form-1044, Record Transmittal	Same as record(s) being transmitted
Form-1935, Solid Sampling	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project
Form-1936, Container Data Approval	Lifetime WIPP/ ENV1-J-1/ Turn over to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Tables

Table 1. Volume and mass of packaging materials
Table 2. Data sources for the Waste Container Data Entry Form (WCDEF) in the WTS

Appendix B – Guidelines for Determination of Manual or EV&V QA Records

Appendix A – Tables

Table 1. Volume and mass of packaging materials

	Volume (m^3)	Tare Mass (kg)
Polyethylene rigid liner		7.3
55-gallon drum	0.208	26.81
85-gallon drum	0.321	37.73
100-gallon drum	0.378	56.82
Standard waste box (SWB)	1.88	290.3
Ten-drum overpack (TDOP)	4.50	725.6

Table 2. Data sources for the Waste Container Data Entry Form (WCDEF) in the WTS.

Field Label	Source [a]
Shipper Site ID	BN
Waste Stream Profile	The WSPF number is obtained from Form-1195, Waste Stream Profile Form. When a Waste Stream Profile is approved, its current revision can be found on Orion under EDMS.
WIPP Container Type	The value entered into the WDS to designate the manner and condition in which the container will be certified and shipped. 1 55-gallon drum 2 Standard Waste Box (SWB) 3 Ten-Drum Overpack (TDOP) 14 SWB overpack, drum - good condition 15 SWB overpack, drum - bad condition 16 55-gallon To Be Overpacked (TBO), drum debris - good condition 17 55-gallon TBO, drum debris - bad condition 18 55-gallon TBO, drum solids - good condition 19 55-gallon TBO, drum solids - bad condition 23 100-gallon product drum 28 85-gallon TBO containers.
WAC Revision Number	DOE/WIPP-02-3122, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant
Certification Site ID	WSPF or AK Summary Report
Certification Date	The date the WCO signs the WCDEF Certification Statement.
Waste Handling Code	CH = Contact Handled RH = Remote Handled
Waste Stream Baseline Inventory Report (BIR) ID	Waste Stream BIR ID number is obtained from the WSPF or the AK summary (N/A if not available)
Waste Stream Mixed Waste Inventory Report (MWIR) ID	Waste Stream MWIR ID number is obtained from the WSPF or the AK summary (N/A if not available)

Table 2. (Continued).

Field Label	Source [a]
Generator Site ID or Generator Site Item Description Code (IDC) or IDC Waste Matrix (parameter) Code or Waste Matrix Code	WSPF or AK Summary Report (N/A if not available)
TRUCON Code	Entering the TRUCON code is performed by the waste certification staff based on the waste material contents and the layers of packaging used for each container. The TRUCON code assignment is reviewed and approved by the WCO during container certification and can be found on the WSPF and AK summary.
Shipping Category [b]	CH-TRU Waste Content Codes, Summary of Approved Content Codes and Corresponding Shipping Categories for General Case. Associated with the specific TRUCON code for a given packaging configuration, filter hydrogen diffusivity, and container type.
TRU Alpha Activity TRU Alpha Activity Error TRU Alpha Activity Concentration TRU Alpha Activity Concentration Error Pu-239 Fissile Gram Equivalent Pu-239 Fissile Gram Equivalent Error Pu-239 Equivalent Activity Decay Heat Decay Heat Error	All of these values are calculated based on radionuclide activities and masses from the Radioassay BDR or appropriate WTS screens.
Layers of Packaging	VE BDR, RTR BDR, RTR/VE update or appropriate WTS screens
Fill Factor	VE BDR, RTR BDR, RTR/VE update or appropriate WTS screens
Liner Exists	VE BDR, RTR BDR, RTR/VE update or appropriate WTS screens
Liner Hole Diameter	VE BDR, RTR BDR, RTR/VE update or appropriate WTS screens

Table 2. (Continued).

Field Label	Source [a]
Process Knowledge Exists	WSPF, AK Summary Report or Headspace Gas Analytical Results
PCB Concentration	WSPF or AK Summary Report
Closure Date [b]	Real Time Radiography BDR or Visual Examination BDR, RTR/VE update, or appropriate WTS screens.
Vent Date [b]	Headspace Gas BDR, Form-1449, Sample Batch Drum Age Criteria Data Sheet, or appropriate WTS screens.
Aspiration Method [b]	Obtained from CH-TRAMPAC based on sample date, vent date, closure date, and sample location
1 Measured FGGR 2 Measured TGRR 3 Truncated GFFR Test Indicator 4 Truncated FGGR Test Period.	Gas Generation Testing BDR or appropriate WTS screens
Gross Weight Gross Weight Error	RTR BDR, RVU BDR, Radioassay BDR, or appropriate WTS screens
Alpha Surface Contamination Beta/Gamma Surface Contamination Neutron Dose Rate Beta/Gamma Dose Rate	RCT Survey Records, WTS Inspection Station Radiological Survey Report and Map
Quantity Installed [b] Filter Model [b] Filter Install Date [b]	Headspace Gas BDR, Form-1449, Sample Batch Drum Age Criteria Data Sheet, or appropriate WTS screens.
Aqueous Material	AK Summary Report, RTR BDR, RVU BDR or appropriate WTS screens
Beryllium Present Beryllium Mass < or = 100 kg Beryllium < or = 1 % by Weight	AK Summary Report, RTR BDR, RVU BDR, or appropriate WTS screens

Table 2. (Continued).

Field Label	Source [a]
Machine Compacted	WSPF or AK Summary
½ in. Separation criteria met for compacted waste	WSPF or AK Summary Y=Yes for Supercompacted Waste N=No for all other waste
PCB Waste PCB Out-of-Service Date PCB Mass PCB Concentration (ppm)	AK Summary Report, RTR BDR, RVU BDR, or appropriate WTS screens
Radionuclide Activity Radionuclide Activity Error Radionuclide Mass Radionuclide Mass Error	Radioassay BDR, or appropriate WTS screens
Waste Material Parameters Waste Material Parameter Weight	RTR BDR, Visual Examination BDR, RVU BDR or appropriate WTS screens
Assay Method Assay Method Date	Radioassay BDR or appropriate WTS screens.
Characterization Method Characterization Method Date	RTR, VE, Solid Sampling BDRs, or appropriate WTS screens
Hazardous Codes	WSPF or AK summary
Sample ID[b] Sample Type[b] Layer Number Sampled[b] Sample Date[b]	Headspace Gas BDR Sample Report and Analysis Data Sheet or appropriate WTS screens
Comment Type WIPP Comment	This is completed by the WCO if necessary and used to provide additional certification information to the WDS.

Table 2. (Continued).

Field Label	Source [a]
Headspace Gas Sample ID[b] Headspace Gas Analyte Name[b] Headspace Gas CAS Number[b] Headspace Gas Method ID[b] Headspace Gas Analyte Concentration[b] Headspace Gas Analyte Units[b] Headspace Gas Analyte Reporting Flags[b] Headspace Gas Sample Date Analyzed[b]	Headspace Gas BDR and Analysis Data Sheet, or appropriate WTS screens
Solid Sample ID Solid Sample Type Solid Sample Date	Solid Sample BDR or appropriate WTS screens
Solid VOC Sample ID Solid VOC Sample Analyte Name Solid VOC Sample CAS Number Solid VOC Sample Method ID Solid VOC Sample Analyte Concentration Solid VOC Sample Analyte Units Solid VOC Sample Analyte Reporting Flags Solid VOC Sample Date Analyzed	Solid Sample BDR or appropriate WTS screens
Solid SVOC Sample ID Solid SVOC Sample Analyte Name Solid SVOC Sample CAS Number Solid SVOC Sample Method ID Solid SVOC Sample Analyte Concentration Solid SVOC Sample Analyte Units Solid SVOC Sample Analyte Reporting Flags Solid SVOC Sample Date Analyzed	Solid Sample BDR or appropriate WTS screens

Table 2. (Continued).

Field Label	Source [a]
Solid Metals Sample ID Solid Metals Sample Analyte Name Solid Metals Sample CAS Number Solid Metals Sample Method ID Solid Metals Sample Analyte Concentration Solid Metals Sample Analyte Units Solid Metals Sample Analyte Reporting Flags Solid Metals Sample Date Analyzed	Solid Sample BDR or appropriate WTS screens
Solid NHVOC Sample ID Solid NHVOC Sample Analyte Name Solid NHVOC Sample CAS Number Solid NHVOC Sample Method ID Solid NHVOC Sample Analyte Concentration Solid NHVOC Sample Analyte Units Solid NHVOC Sample Analyte Reporting Flags Solid NHVOC Sample Date Analyzed	Solid Sample BDR or appropriate WTS screens

a. The data sources listed in this table will be used for the majority of containers to be certified. However, in some cases, other approved sources (e.g., other BDRs, WTS screens, approved forms, etc.) may be used, when appropriate, to obtain the correct information.

b. CCP is responsible for these fields when sampling is conducted for transportation purposes. However, Shipping Category, Aspiration Method, Closure Date, Vent Date, and all filter information will always be CCP's responsibility.

Appendix B – Guidelines for Determination of Manual or EV&V QA Records

For any data validated at the ITR level before May 4, 2006, the manual Batch Data Report (BDR) is the QA record, except as noted below:

- Assay Expert Technical Review (ETR) performed on a container on or after May 4, 2006, will result in a WTS QA record regardless of the original status of the BDR, as the ETR data for that container is validated in WTS only.

For most data validated at the ITR level on or after May 4, 2006, WTS is the QA record, except as noted below:

NOTE: *For both manual and electronic RVU validation, WTS will indicate "Curr Approval" at "SPM" and an "Approval Status" of "AP" in WTS.*

- RTR/VE updates (RVU) not validated electronically in WTS with the BDR and which have an analysis date prior to September 2, 2009, were required to be validated manually; the manual BDR is the QA record.

- For manual assay batch results where a more recent valid weight event exists, e.g., RVU, verify gross weight, net weight, and TAAC in WTS.

- Any data generated by an off-site laboratory or contractor (such as SuperHENC or ALD BDRs) will be manually validated, and the manual BDR is the QA record.

Level I Data Validation

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10658.*) 04/25/12

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Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/17/02	All	Initial issue. DCR-2002-1305.
1	02/13/03	All	DCR-1762: Changed revision number from 0 to 1. This revision is a total rewrite and revision bars have been omitted.
2	3/28/03	All	DCR 2163: Change effective date from "When DOE Approved Retrieval Operations" to March 28, 2003.
3	05/12/03	Various	DCR 2134: Incorporation of CBFO comments.
4	07/09/03	Various	DCR 2307: Resolve CBFO PE comments, correct form numbers, minor editorial
5	7/23/03	Page 52 Drum and Liner Configuration Table. Section 4.5.2.11	Add filter numbers NF007 and NF007S to BNFL SS and BNFL SP respectively, in the "Drum and Liner Configuration" Table for interim filters as the listed filters are not currently available. Delete "and the appropriate flag is set for isotopes less than MDA." This flag is set automatically in the WTS in the Off Site Shipping Module. It cannot be verified at the ITR Level.
6	8/28/03	Page 14	DCR 2421: Added NOTE to address weight inconsistencies on waste material parameter weights.
7	9/25/03	Various	DCR 2453: Update manual batch data reports contents, changed internal standard criteria on Forms-1418 and deleted an obsolete requirement from Form-1416. Changed the test pattern resolution check to image quality indicator check on Forms 1412 and 1414. Added Form-1494 to perform a manual replicate comparison, Reference WIPP Audit A-03-05, CBFO CAR 03-072.

Revision Number	Date Approved	Pages Affected	Description of Revision
8	03/29/04	Various	DCR-2562: Update rework process and change replicate comparison to RTR/VE comparison in VE. Added a section for a supplemental RTR Batch Data Report and the new Headspace Gas Sampling system. Changed internal standard criteria on checklist item 12 on Form-1418, deleted an obsolete requirement from Form-1416, deleted Form-1438, editorial correction of Form-1414 and 1412, and added the system number reference and comments to Form-1446. Added a new section and Form-1517, 1518, 1519, for the new HGAS Headspace Gas Sampling System. Added Step 4.6.2 for Assay supplemental batch data reports for adjusted TRU alpha activity concentration.
9	04/22/04	Various	DCR-2920: Implement Corrective Action Plan (CAP) for CAR 4634. This revision has added discussion and requirements regarding generation of Nonconformance Reports for containers that do not meet WIPP WAP or WIPP WAC requirements and allow for completion of Batch Data Report validation in recognition that there may be open NCRs against containers within the Batch that require re-characterization or treatment.
10	5/17/04	Various	DCR-2991. Editorial changes and clarification of the NCR process.
11	01/15/05	Various	DCR-3157. Streamline the validation process and update to be in compliance with WWIS data entry requirements for Radioassay. Incorporate WIPP Comments.
12	04/21/05	Various	DCR-4200. Revise throughout for clarification and efficiency. Minor editorial changes made throughout. Incorporate CBFO Comments from Revision A.
13	6/14/05	56/57	Add note regarding FGE threshold limits for drums and boxes. Add **IF THEN** statement regarding FGE amount for a given waste container. Replace logos company names, and titles to reflect organization changes.

Revision Number	Date Approved	Pages Affected	Description of Revision
14	02/10/2006	All	DCR-4432. Revised to conform to the CH-WAC, to improve efficiency of processing BDRs, and to reduce NCRs. Sequence of sections changed to comply with MP-DOCS-18.3, Rev. 2.
15	4/27/06	Various	DCR-4942. Add new steps in 3.4.1.10 to implement SCR 350. Item 1 on DCR-4942 implements a corrective action identified in CAR 16631. Additional process improvements.
16	05/16/2006	Various	DCR-5005. Revised to reflect changes in electronic data validation.
17	9/28/06	Various	DCR-5042. Removed all references to Form-1046. Modified Note 5 in Section 3.3. Revised Notes following Section 3.2.1.3.4.1 for implementation of corrective action identified from CBFO CAR 06-036, TrackWise™ CAR 23463. Made various editorial corrections.
18	1/05/07	Various	DCR-5476. Complete Rewrite to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Deleted Form-1234, -1413, -1414, -1419, -1420, -1422, -1423, -1424, -1425, -1426, -1427, -1514, -1518, and -1519 (see DCR-5496).
19	05/07/07	ALL	DCR-5707. Add new appendix to the procedure to support BDR building activities. Delete references to Form-1312. Modify Forms-1412, 1415, 1421, 1517, Cancel Form-1418. Editorial and formatting changes consistent with MP-DOCS-18.3, MP-DOCS-18.4.
20	05/22/07	Various	DCR-5957. Correcting the references to INST-OI-73 from “and” to “and/or”. Revise Form-1412 (DCR-5958) and DCR-1421 (DCR-5959) for similar change. Remove batch number from Form-1412, and switch order of Q’s 3 and 4 on Form-1421.
21	05/30/07	ALL	DCR-6004. Revert content of procedure to Revision 19, as well as reverting Form-1412 to Rev. 11, Form-1421 to Rev 10.
22	06/07/07	Various	DCR-6017. Revert content of procedure to Revision 20, as well as reverting Form-1412 to Rev. 13, Form-1421 to Rev 12.

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23	08/14/07	Pg 55, and Form-1421	DCR-6225. Add "and/or Characterization Round Sheet (Form-1602)" after "(Form-1585)" to Step 3.6.1.3.2. DCR-6224. Form-1421. Add verbiage from DCR-6225 (above) to Form-1421, Question 2.
24	01/07/08	Various	DCR-6689. Added steps required corrective action CAR # 34753 and to implement program changes.
25	01/17/08	Section 3.4.	DCR-6719. Minor change to correct cross references.
26	03/25/08	Various	DCR-6800. Made changes to support transportation transition to CCP. Implementation of container-in-container sampling and box RTR.
27	08/06/08	Various	DCR-7378. Delete "and in accordance with MP-TRUW-8.39, RTR Operator Proficiency Program" and Delete the reference to MP-TRUW-8.39
28	03/30/09	Various	DCR-7705. Clarification on coring process to close CAR # 42255. Editorial and formatting changes consistent with MP-DOCS-18.3, MP-DOCS-18.4. Added DOCS-BLUESHEET-01.
29	05/27/10	Various	DCR-9010. Changes made to clarify DGL independent technical review; clarify that RTR cannot confirm the waste stream, revise definition of "waste stream"; move Section 3.1, Description of Batch Data Reports, as Appendix C; incorporate WIPP Permit modification changes; and incorporate SCR 4077 changes.
30	12/17/10	Various	DCR-9635. Incorporate the WIPP Permit Renewal.
31	07/28/11	Various	DCR-10152. Various revisions to address CAR 61367 and to address sludge processing in AMWTF.
32	04/25/12	Various	DCR-10658. Corrected wording in Notes in Sections 3.1 and 3.4. Incorporated ITG-BLUESHEET-078.

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1.0 PURPOSE/SCOPE

This procedure implements requirements and identifies the responsibilities specified in MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and MP-TRUW-8.2, Quality Assurance Project Plan, for the data generation level (DGL) review and *validation* (see def.). Validation includes reviewing relevant documentation to evaluate technical adequacy, the suitability for intended use, and the adequacy of the quality assurance (QA) record as well as documentation of the data review.

DGL validation at the Advanced Mixed Waste Treatment Project (AMWTP) consists of a review conducted by an independent technical reviewer (ITR) who is a trained and qualified individual who was not involved in the generation or recording of the batch under review. DGL independent technical review is performed on 100% of testing (*real-time radiography* [RTR; see def.], *visual examination* [VE; see def.]) and *radioassay* [RA; see def.]; on-line (*headspace gas* [HGAS; see def.]) and sampling (homogeneous solids/soils) batches. The validation steps in this procedure require reviewers, as applicable, to complete checklists in the waste tracking system (WTS) or on controlled forms for batches that have received the appropriate signature release prior to submittal of the electronic or hardcopy batch data report (BDR) to the Site Project Office. All necessary characterization and the review, validation, and verification must be completed before a container can be shipped. Containers within BDRs that do not meet the Waste Isolation Pilot Plant (WIPP) waste analysis plan (WAP) or waste acceptance criteria (WAC) requirements, or which require further characterization or removal of prohibited items, will be documented on nonconformance reports (NCRs). NCRs shall remain open pending completion of the characterization activity, and/or subsequent validation. NCRs shall be generated on a container basis unless the condition affects the entire BDR.

The following table identifies the characterization methods subject to DGL validation, the type of BDR, the upper tier document that defines the DGL validation requirements, the required reviewers, and the facility performing the review. As indicated by the table, personnel at the AMWTP Analytical Chemistry Laboratory (ACL) will conduct DGL validation of solids analysis. This procedure, therefore, does not cover DGL validation of solids analysis BDRs.

Table 1. Characterization Methods.

Characterization Method	Report Type	Upper Tier Document	Reviews Required	Responsible Facility
Real Time Radiography	Testing Batch	MP-TRUW-8.1 MP-TRUW-8.2	ITR	AMWTP
Visual Examination	Testing Batch	MP-TRUW-8.1 MP-TRUW-8.2	ITR	AMWTP
On-Line Headspace Gas Sampling	On-Line Batch	MP-TRUW-8.2	ITR	AMWTP
Radioassay	Testing Batch	MP-TRUW-8.1	ITR ETR	AMWTP
Solid Sampling	Sampling Batch	MP-TRUW-8.2	ITR	AMWTP
Solids Analysis	Analytical Batch	MP-TRUW-8.2	ITR	AMWTP Analytical Chemistry Laboratory

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
ITR	• Ensures by review of the raw data that data generation and reduction are technically correct; calculations are verified correct; deviations are documented; and QA/quality check (QC) results are complete, documented correctly, and compared against appropriate criteria • Validates and verifies the work documented by the originator • Ensures that NCRs generated for containers are included or referenced in the BDR • Initiates the NCR using TrackWise, in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions, if the operator did not generate an NCR when required.
ITR Lead	• Approves Type-1 NCRs • Notifies SPMD and RTR SME of Type-1 NCR generation.

Performer	Responsibilities
RTR SME	• Evaluate issues associated with potential operator performance problems.
Site Project Manager Designee (SPMD)	• Review Type-1 NCRs initiated for operator performance problems.
Expert Technical Reviewer (ETR)	• The nondestructive assay (NDA) ETR provides measurement oversight, performs routine instrument qualification, calibration, and validation, and reviews and approves measurement control data.

3.0 PROCEDURE

NOTE 1: *Whenever a form is required, if an electronic equivalent of the form is available on WTS, the use of the electronic form is acceptable.*

NOTE 2: *The review will be performed by an individual other than the data generator who is qualified to have performed the initial work and who was not involved in the generation or recording of the data under review.*

NOTE 3: *Every effort should be made to have the original reviewers complete a batch, but another qualified reviewer can complete a batch if necessary. This situation should be documented in batch comments.*

NOTE 4: *Data changes will only be made by the individual who collected the data or an individual authorized to change the data.*

NOTE 5: *100% of the BDRs will receive an ITR review that will be conducted as soon as practicably possible after data collection in order to determine and correct negative quality trends.*

3.1 RTR Batch Data Report – ITR Review

NOTE 1: *No hand calculations or data transcriptions will be performed during radiography.*

NOTE 2: *RTR/VE update events on any container in the RTR BDR require a subsequent validation of the RTR/VE update event. Checklist items that do not apply will be identified as N/A.*

3.1.1 Access an operator-approved WTS RTR BDR.

NOTE: *Nonconformance reports are required for containers that fail to meet* data quality objectives *(DQOs; see def.),* quality assurance objectives *(QAOs; see def.), or which contain prohibited items.*

3.1.2 Ensure that NCRs that were generated during data generation are included or referenced in the BDR, as appropriate, and that WTS is flagged, as appropriate.

3.1.3 Complete the data review and document all concerns and comments in WTS or manually using Form-1412, Real-Time Radiography Independent Technical Reviewer Checklist, and Form-1491, Batch Data Report Supplemental Comment Form, by performing the following:

3.1.3.1 Record the testing batch number and RTR system ID on Form-1412, if necessary.

3.1.3.2 Verify that the BDR and QA documentation are complete in accordance with this procedure by verifying all of the following (manual forms identified in parentheses):

A. RTR batch report coversheet

B. Table of contents (manual review only)

C. RTR analysis reports

D. Replicate scan

E. Replicate comparison

F. Independent observation

G. ITR Checklist (Form-1412) (manual review only)

H. Batch Data Report Supplemental Comment Form (Form-1491) (manual review only)

I. Associated NCRs (referenced in WTS)

J. Audio/video (A/V) recording References.

3.1.3.3 Verify there are no more than 20 containers in the batch.

3.1.3.4 Verify there is a valid imaging quality indicator (IQI) included in the batch.

NOTE: *Oversight functions include periodic A/V reviews of accepted waste containers and are performed by qualified radiography personnel that were not involved in the original scans of the waste containers. The results of this independent verification are available to the RTR operators who performed the original scans through the RTR subject matter expert (SME).*

3.1.3.5 Verify each container references an A/V recording.

3.1.3.6 Verify there is a completed radiography data analysis for each of accepted waste containers in the batch.

3.1.3.7 Verify each RTR operator was qualified at the time of the radiography event.

3.1.3.8 Verify the data was generated in a technically correct manner using the correct revision of INST-OI-12, Real-Time Radiography Operations (Drum), or INST-OI-81, Real-Time Radiography Operations (for WIPP Certification of Boxes).

3.1.3.9 Verify the correct procedure and revisions were documented on all analysis reports.

3.1.3.9.1 If the procedure number and revision are incorrectly displayed in the WTS, verify that the operator has entered the correct procedure number and revision in the result comment section of WTS.

3.1.3.10 For each container in the batch, verify the following:

A. The E-signature history was reviewed.

B. The RTR operator has confirmed that the physical form matched the *waste stream* (see def.) description and waste matrix code (WMC).

C. The packaging weight plus the net weight equal the gross weight of the container.

D. All items entered into the waste material items are assigned to the correct waste material parameters.

(HWMA/RCRA Permit)

E. The description of rigid liners and layers of confinement are properly documented, as applicable.

3.1.3.10.1 If rework has been identified that changes the liner puncture status,
generate an NCR and notify the headspace gas sampling chemist, and ensure WTS is flagged as appropriate.

NOTE 1: *Lead is not a prohibited item but can prevent an operator from detecting the presence or absence of a prohibited item. When examining containers whose contents prevent full examination of a waste item (e.g., check weights or calorimeter cans) or of the remaining contents (e.g., an aggregate of leaded rubber gloves or dense sludge), acceptable knowledge (AK) information that may have determined a VE would not provide additional relevant information for that container may be referred to.*

NOTE 2: *Containers with lead liners (shielding) that prevent full examination of the contents to verify the absence of prohibited items will be subject to VE and rejected for lead shielding. WTS will update the exam plan to require VE of the waste.*

NOTE 3: *Wet cell batteries are prohibited items if observable liquid is contained within the battery.*

NOTE 4: *Mercury is a prohibited item if it is in excess of the WIPP WAC limits for observable liquid.*

NOTE 5: *Polychlorinated biphenyls (PCBs) are considered prohibited if there is any observable liquid in the affected container. Potential PCB items will need to be included in the waste inventory.*

F. The presence or absence of prohibited items has been properly documented.

3.1.3.10.2 If prohibited items have been identified, verify that an NCR has been generated and properly documented in WTS.

3.1.3.10.3 If an NCR was not generated, generate an NCR and ensure WTS is flagged, as appropriate.

3.1.3.10.4 Notify RTR SME, ITR Lead, and SPMD via TrackWise NCR notification system of operator performance problem for evaluation.

3.1.3.10.4.1 If the evaluation indicates a programmatic issue, then initiate a Type-1 NCR in accordance with MP-Q&SI-5.4

3.1.3.10.4.2 ITR Lead: Approve Type-1 NCR and notify the SPMD and RTR SME via TrackWise notification system

G. The containers examined between October and April are in compliance with the preheat requirements.

H. All proper units and significant figures used for reporting volumes/weights are correct.

3.1.3.11 Verify that a replicate scan was valid and performed on at least one container per day, or once per testing batch, whichever is less frequent, by a qualified radiography operator who was not involved in the original scan of the waste container.

3.1.3.11.1 If the replicate scan is not from this batch, record the appropriate batch number in the comment section in WTS or on Form-1412 and go to Step 3.1.3.12.

3.1.3.11.2 Complete the review of the RTR Replicate Comparison Report in WTS, or sign and date the hard copy of the RTR Replicate Comparison Report.

3.1.3.11.3 Record the container identification number and date of the observation in the comments section of the checklist and record any issues or concerns in the appropriate batch comment section in WTS.

NOTE: *Significant differences between original and replicate exams include those that affect the original disposition of the container, identification of the WMC, observable liquid, and compressed gases.*

3.1.3.11.4 Identify the significant differences between the RTR examination and the replicate scan.

3.1.3.11.5 If significant differences are identified, perform the following steps:

3.1.3.11.5.1 Generate an NCR.

3.1.3.11.5.2 Notify RTR SME, ITR Lead, and SPMD via TrackWise NCR notification system of operator performance problem for evaluation.

3.1.3.11.5.2.1 If the evaluation indicates a programmatic issue, then initiate a Type-1 NCR in accordance with MP-Q&SI-5.4.

3.1.3.11.5.2.2 ITR Lead: Approve Type-1 NCR and notify the SPMD and RTR SME via TrackWise notification system.

3.1.3.11.5.3 Flag in WTS, as applicable.

3.1.3.11.5.4 Demote batch to appropriate level for rework.

3.1.3.12 Verify that an independent observation was valid and performed on at least one container per day or once per testing batch, whichever is less frequent, by a qualified radiography operator who was not involved in the original scan of the waste container.

3.1.3.12.1 If the independent observation is not from this batch, record the appropriate batch number in the comment section in WTS or on Form-1412 and go to Step 3.1.3.14.

3.1.3.12.2 Complete the review of the RTR independent observation checklist in WTS, or sign and date the hard copy of the RTR independent observation checklist.

3.1.3.12.3 Record the container identification number and date of the independent observation in the comments section of the checklist and record any issues or concerns in the appropriate batch comment section in WTS.

NOTE: *Significant differences between original and independent observation include those that affect the original disposition of the container, identification of the WMC, observable liquid, and compressed gases.*

3.1.3.12.4 Identify the significant differences between the RTR examination and the independent observation.

3.1.3.12.5 If significant differences are identified, perform the following steps:

3.1.3.12.5.1 Generate an NCR.

NOTE: *The results of the independent observation will be made available to the RTR operator who performed the original scan through the RTR SME.*

3.1.3.12.5.2 Notify RTR SME, ITR Lead, and SPMD via TrackWise NCR notification system of operator performance problem for evaluation.

3.1.3.12.5.2.1 If the evaluation indicates a programmatic issue, then initiate a Type-1 NCR in accordance with MP-Q&SI-5.4.

3.1.3.12.5.2.2 ITR Lead: Approve Type-1 NCR and notify the SPMD and RTR SME via TrackWise notification system.

3.1.3.12.5.3 Flag in WTS, as applicable.

3.1.3.12.5.4 Demote batch to appropriate level for rework.

3.1.3.13 Verify the RTR QAOs were met.

- Precision: Precision is maintained by reconciling any discrepancies between two radiography operators with regard to identification of WMC, liquid in excess of WIPP WAC limits, and compressed gases through independent replicate scans and independent observations. Additionally, the precision of radiography is verified prior to use by tuning precisely enough to demonstrate compliance with QAOs through viewing an image test pattern.

- Accuracy: Accuracy is obtained by using a target to tune the image for maximum sharpness and by requiring operators to successfully identify 100% of the items required to meet the DQOs in a training container during their initial qualification and subsequent re-qualification.

- Completeness: A video and audio media recording of the radiography examination and a validated radiography data form have been obtained for 100% of the waste containers subjected to radiography. All video and audio media recordings and radiography data forms have been subjected to validation as indicated.

- Comparability: The comparability of radiography data from different operators is enhanced by using standardized radiography procedures and operator qualifications.

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re-characterization or treatment process has been completed and validated, or the action is no longer required.*

3.1.3.14 Verify that NCRs have been generated for containers that contain prohibited items or that failed to meet DQOs or QAOs, and properly documented in WTS.

3.1.3.14.1 If an NCR was not generated, generate an NCR and ensure WTS is flagged, as appropriate.

3.1.3.14.2 Notify RTR SME, ITR Lead, and SPMD via TrackWise NCR notification system of operator performance problem for evaluation.

3.1.3.14.2.1 If the evaluation indicates a programmatic issue, then initiate a Type-1 NCR in accordance with MP-Q&SI-5.4.

3.1.3.14.2.2 ITR Lead: Approve Type-1 NCR and notify the SPMD and RTR SME via TrackWise notification system.

3.1.3.15 If rework items have been identified during validation, perform the following:

3.1.3.15.1 Ensure that rework requirements have been clearly identified in WTS or on Form-1491 and/or Form-1412, as applicable.

3.1.3.15.2 Generate an NCR, when applicable, in accordance with MP-Q&SI-5.4 and ensure WTS is flagged, as appropriate.

3.1.3.15.3 Notify RTR SME, ITR Lead, and SPMD via TrackWise NCR notification system of operator performance problem for evaluation.

3.1.3.15.3.1 If the evaluation indicates a programmatic issue, then initiate a Type-1 NCR in accordance with MP-Q&SI-5.4.

3.1.3.15.3.2 ITR Lead: Approve Type-1 NCR and notify the SPMD and RTR SME via TrackWise notification system.

3.1.3.15.4 Return the batch to appropriate level to complete the rework.

3.1.3.16 If a batch has been re-promoted from rework, verify that all comments have been adequately addressed and noted in WTS or on Form-1491 and/or Form-1412, as applicable.

3.1.3.17 If the rework was addressed appropriately, add a comment that indicates that the rework was performed satisfactorily.

3.1.3.18 Add a comment in the checklist section in WTS, or on Form-1412, when validation review determines the question criteria has not been met.

3.1.3.19 If rework issues still exist, repeat Steps 3.1.3.15 through 3.1.3.15.4.

3.1.3.20 Ensure, for manual BDRs, that the completed Form-1412 and Form-1491 are attached to the BDR.

3.1.3.21 Ensure that the RTR/VE update event is complete, as applicable.

3.1.3.22 Ensure that Type-1 NCRs were initiated for identified programmatic issues prior to promoting to Level II validation.

3.1.3.23 Approve the data using the electronic signature process in WTS or print, sign, and date Form-1412 using reproducible ink.

3.2 Visual Examination Batch Data Report ITR Validation

NOTE 1: *RTR/VE update events on any container in the VE BDR require a subsequent validation of the RTR/VE update event. Checklist items that do not apply will be identified as N/A.*

NOTE 2: *The ITR for VE must be performed by a trained and qualified individual who was not involved in the generation or recording of the data under review.*

3.2.1 Access an operator-approved VE Batch Report from the manual BDR folder or WTS Data Review screen on the main menu, as applicable.

3.2.2 Select the appropriate batch type:

- VNC (Newly-Generated Waste VE Closure)
- VEC (Visual Examination of Legacy Waste Container)
- VEB (VE Boxline and Repack)
- VSC (VE Sludge Closure).

3.2.3 Ensure NCRs that were generated during data generation are referenced and flagged in WTS, as applicable.

3.2.4 Complete the data review in WTS or manually using Form-1415, Visual Examination Independent Technical Reviewer Checklist, and document all concerns and comments in the WTS, or manually using Form-1415 or Form-1491.

3.2.4.1 Record the testing batch number and method/location on Form-1415, if necessary.

3.2.4.2 Verify that the BDR and all QA documentation are complete in accordance with this procedure by verifying all of the following (manual forms identified in parentheses):

A. VE batch coversheet

B. Table of contents (manual review only)

C. VE analysis reports

D. Analytical Balance Calibration Check Sheet (Form-1215), if applicable (manual review only)

E. ITR Checklist (Form-1415) (manual review only)

F. Batch Data Report Supplemental Comment Form (Form-1491) (manual review only)

G. Associated NCRs (referenced in WTS)

H. A/V recording references, if applicable.

3.2.4.3 Verify that there are no more than 20 containers in the batch.

3.2.4.4 Verify each VE operator was qualified at the time of the VE event.

3.2.4.5 Verify a VE data form was completed for each container in the batch.

3.2.4.6 Verify the data was generated in a technically correct manner using the correct revision of INST-OI-34, Non-Facility Visual Examination Operations; INST-FOI-17, Facility Visual Examination Operations (as applicable).

3.2.4.7 Verify the correct revision of the procedure was documented on each analysis report.

3.2.4.7.1 If the procedure number and revision are incorrectly displayed in the WTS, verify that the operator has entered the correct procedure number and revision in the "Visual Exam Comment" section of WTS.

3.2.4.8 For each drum in the batch, verify the following:

A. The E-signature history was reviewed.

- For each VE event, two qualified operators agreed on the characterization of the waste as documented by manual or electronic signature.

B. Guidance from VEE is documented on the A/V medium and in WTS, as applicable.

C. Every drum has a valid A/V recording, as applicable.

- The correct A/V medium identification (ID) was recorded on the WTS record.

D. The physical form matched the waste stream description, WMC, and item description code (IDC).

E. The waste material parameters were documented correctly for the following:

- The inventory of waste containers on the material items screen in WTS, which includes the description, units, weight or volume, and the correct assignment of the waste parameters.
- The assignment of the bulk matrix including the description.
- When a liner is present, it is included in the waste material parameter summary section as plastic packaging materials.

F. The presence or absence of prohibited items has been properly identified.

3.2.4.9 Verify the descriptions of rigid liners and layers of confinement have been properly documented.

A. Review the drum age criteria (DAC) for accuracy and completeness for the following:

- Closure method(s)
- Liner puncture status
- Layers of confinement
- Closure date
- Packaging configuration
- Type and number of filters, as applicable
- Liner hole presence and diameter, as applicable.

B. Filters have been installed or removed from drum as recorded in WTS, as applicable.

C. Hand calculations and unit conversions are recorded correctly in WTS.

- The packaging weight plus the net weight equal the gross weight of the drum in the estimated waste material parameters, and for the unit conversions that are entered by volume or weight, as applicable.

D. All units and significant figures used for reporting volumes/weights are correct.

E. Verify data for transcription errors, as appropriate.

- If manual forms are used for data collection, verify that there are no transcription errors entered into WTS.

3.2.4.10 Verify the following VE QAOs:

- Precision: Precision requirement is maintained by reconciling any discrepancies between the operator and the ITR with regard to identification of WMC, liquid in excess of WIPP WAC limits, and compressed gases.

- Accuracy: Accuracy is maintained by requiring operators to pass a comprehensive examination and demonstrating satisfactory performance in the presence of the VE expert during their initial qualification and subsequent re-qualification.

- Completeness: A validated VE data form has been obtained for 100% of the waste containers subject to VE.

- Comparability: The comparability of VE data from different operators is enhanced by using standardized VE procedures and operator qualifications.

3.2.4.11 Verify each data form is signed by qualified VE operators, as applicable, per the appropriate procedure being used.

3.2.4.12 Verify that the A/V check was satisfactory, as applicable.

3.2.4.13 Verify the scale or balance check weight event was satisfactory, as applicable.

3.2.4.14 Verify the QC weight checks are within the tolerance of the scale or balance, as applicable.

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re-characterization or treatment process has been completed and validated, or the action is no longer required.*

3.2.4.15 If containers (a) contain prohibited items or (b) fail to meet DQOs or QAOs, or (c) have a physical form, WMC, or IDC that does not match the waste stream description, then verify that NCRs have been generated for such containers and verify that the NCRs are properly documented in WTS.

3.2.4.15.1 If an NCR was not generated, generate an NCR and ensure WTS is flagged, as appropriate.

3.2.4.16 If rework items have been identified during validation, perform the following:

3.2.4.16.1 Ensure that rework requirements have been clearly identified in WTS or on Form-1491 and/or Form-1415, as applicable.

3.2.4.16.2 Generate an NCR, when applicable, in accordance with MP-Q&SI-5.4 and ensure WTS is flagged as appropriate.

3.2.4.16.3 Return the batch to appropriate level to complete the rework.

3.2.4.17 If a batch has been re-promoted from rework, verify that all comments have been adequately addressed and noted in WTS or on Form-1491 and/or Form-1415, as applicable.

3.2.4.18 If the rework was addressed appropriately, add a comment that indicates that the rework was performed satisfactorily.

3.2.4.19 Add a comment in the checklist section in WTS, or on Form-1415, when validation review determines the question criteria have not been met.

3.2.4.20 If rework issues still exist, repeat Steps 3.2.4.16 through 3.2.4.16.3.

3.2.4.21 Ensure that the completed Form-1415 and Form-1491 are attached to the BDR, if applicable.

3.2.4.22 Ensure that the RTR/VE update event is complete, as applicable.

3.2.4.23 Approve the data using the electronic signature process in WTS or print, sign, and date Form-1415, using reproducible ink.

3.3 Radioassay Batch Data Report

3.3.1 ITR Validation

3.3.1.1 Create an RA batch from the WTS data review menu, as follows:

3.3.1.1.1 Select WTS screen.

3.3.1.1.2 Enter assay batching screen; build assay tab.

3.3.1.1.3 Enter desired instrument number and use query function to pull up list of available drums for an assay batch.

NOTE 1: *A daily background check (DBC) is performed once per operational day. All drums are within 24 hours of an opening DBC.*

NOTE 2: *A daily performance check (DPC) is performed at least once per operational day. All drums are within 24 hours of an opening and closing DPC.*

3.3.1.1.4 Choose DPC assays to bracket drums to be used in batch.

3.3.1.1.5 Choose drums to be batched and move into batch screen.

NOTE: *The selected opening and closing DPC, along with the selected drum assays, are now locked into an assay batch and can be accessed in WTS for the validation process.*

3.3.1.1.6 Save batch information. WTS will generate an assay batch number (e.g., ASY06-XXXXX).

NOTE: *Completion of the review is documented electronically in WTS or by signature release.*

3.3.1.2 Perform a review using the WTS or manually with Form-1416, Radioassay Independent Technical Reviewer Checklist, of 100% of the data generated for technical accuracy and completeness against the (WAC) method requirements by performing the following steps:

3.3.1.2.1 Enter testing batch number and equipment ID number on Form-1416, if applicable.

3.3.1.2.2 Verify DBCs were performed and recorded at least once per operational day.

3.3.1.2.2.1 If DBC was not performed per INST-OI-14, Drum Assay Operations, or INST-FOI-01, In Plant Drum Assay Operations, perform the following steps:

3.3.1.2.2.1.1 Generate an NCR in accordance with MP-Q&SI-5.4, stating the deficiency.

3.3.1.2.2.1.2 Flag in WTS, as applicable.

3.3.1.2.2.1.3 Suspend the data pending the completion of the NCR corrective action plan.

3.3.1.2.2.1.4 If there was a deviation flag(s) indicated, review the action taken to mitigate the deviation(s), as appropriate, and verify an acceptable background check was achieved per INST-OI-14 or INST-FOI-01.

3.3.1.2.2.1.5 If no additional DBC was acceptable, perform the following steps:

3.3.1.2.2.1.5.1 Generate an NCR in accordance with MP-Q&SI-5.4, stating the deficiency.

3.3.1.2.2.1.5.2 Flag in WTS, as applicable.

3.3.1.2.2.1.5.3 Suspend the data pending the completion of the NCR corrective action plan.

3.3.1.2.2.1.5.4 Record any comments in the comment section in WTS, on Form-1416, or on Form-1491.

NOTE: *The DPC is carried out using a 55-gallon drum containing a combustibles matrix and plutonium standards. This drum is an interfering matrix and will therefore also be used together with a suite of additional interfering matrices to comply with interfering matrix requirements.*

3.3.1.2.3 Verify DPCs were performed and recorded at least once per operational day and before and after each cycle of production drums.

3.3.1.2.3.1 If DPCs were not performed per INST-OI-14, or INST-FOI-01, perform the following steps:

3.3.1.2.3.1.1 Generate an NCR in accordance with MP-Q&SI-5.4, stating the deficiency.

3.3.1.2.3.1.2 Flag in WTS, as applicable.

3.3.1.2.3.1.3 Suspend the data pending the completion of the NCR corrective action plan.

3.3.1.2.3.1.4 If there was a deviation flag(s) indicated, review the action taken to mitigate the deviation(s), as appropriate, and verify an acceptable DPC was achieved per INST-OI-14 or INST-FOI-01.

3.3.1.2.3.1.5 If no additional DPC was acceptable, perform the following steps:

3.3.1.2.3.1.5.1 Generate an NCR in accordance with MP-Q&SI-5.4, stating the deficiency.

3.3.1.2.3.1.5.2 Flag in WTS, as applicable.

3.3.1.2.3.1.5.3 Suspend the data pending the completion of the NCR corrective action plan.

3.3.1.2.3.2 If the DPC is acceptable, select ACCEPT for the review outcome in WTS.

3.3.1.2.3.3 Record any comments in the comment section in WTS or on Form-1416.

NOTE: *The control charts are automatically plotted by Canberra's Genie-2000 Software. The technical information concerning measurement control (MC) parameters is documented in RPT-TRUW-03, Drum Assay Technical Review Report.*

3.3.1.2.4 Review the control chart data in NDA 2000 for each MC parameter for trends and bias.

3.3.1.2.4.1 Verify that the control chart data in NDA 2000 for each MC parameter has been reviewed weekly for trends and bias.

3.3.1.2.4.2 If a trend or bias is noted, notify an ETR for verification and dispositioning.

3.3.1.2.4.3 If a nonconformance condition exists, generate an NCR in accordance with MP-Q&SI-5.4, stating the deficiency and flag in WTS, as applicable.

3.3.1.2.5 Verify that all drums in the batch were assayed using the same NDA system.

3.3.1.2.6 Verify that each assay result is signed off and dated by a qualified operator.

NOTE 1: *Decay heat, fissile gram equivalents (FGEs), and plutonium-239 (^{239}Pu) equivalent activity limits vary according to configuration and container condition; therefore, compliance determination is performed in the WIPP TRAMPAC Evaluation Software (WTES). The ^{239}Pu FGE limit varies according to the beryllium content established by AK in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.*

NOTE 2: *The ^{239}Pu FGE data reported by the drum assay systems is used by criticality safety to demonstrate compliance with the criticality working requirements as documented in RPT-NFCS-01, Criticality Safety Analysis for TRU Waste Storage (EDF-0034), RPT-NFCS-07, Criticality Safety Evaluation for the AMWTF and RPT NFCS-08, Criticality Safety Evaluation for AMWTP Retrieval Operations.*

NOTE 3: *A list of the IDCs that may contain >1% beryllium by weight of the waste can be provided by the Site Project Manager (SPM)/Acceptable Knowledge Expert.*

3.3.1.3 Confirm that the following radiological attributes have been identified in the proper units for all containers in the batch:

- Decay heat and associated error identified in watts
- ^{239}Pu FGE and associated error identified in grams and the sum of ^{239}Pu FGE plus two times its associated total measurement uncertainty (TMU) (i.e., FGE limit) is identified in grams
- Transuranic (TRU) alpha activity concentration and associated error identified in Ci/g
- Total ^{239}Pu equivalent activity and uncertainty identified in curies.

NOTE: *The TRU alpha activity concentration (TAAC) is calculated by WTS using all the TRU alpha activity from the assay result and the net weight that is stored by WTS. The net weight may change as a result of re-characterization or treatment after the assay ITR is complete. This will impact the TAAC calculated by WTS. Any change associated with the net weight and the TAAC in the manual BDR is covered by Section 3.3.2 of this procedure. Revalidation of electronic BDRs is not required.*

3.3.1.3.1 Verify the reported activity for at least one TRU isotope is greater than its associated minimum detectable activity (MDA).

3.3.1.3.2 If the ^{239}Pu FGE limit is >200 FGE for IDCs that contain ≤ 1% beryllium by weight of the waste, or if the ^{239}Pu FGE Limit is >100 FGE for IDCs that contain >1% beryllium by weight of the waste up to 100 kg, generate an NCR in accordance with MP-Q&SI-5.4 and flag it in WTS as applicable.

NOTE 1: *If the reported activity for every TRU isotope is less than or equal to its associated MDA, then the lower limit of detection (LLD) (for TRU isotopes) field of the RA data sheet screen in WTS will auto-populate "Yes."*

NOTE 2: *The auto independent technical review (AITR) software is incorporated within NDA-2000 software and may be used to aid the ITR/ETR in the assessment of the assay results. The Data Review Criteria and the technical information concerning data review are documented in RPT-TRUW-03.*

3.3.1.4 Review assay results and disposition any item(s) identified as not meeting the data review criteria in WTS.

3.3.1.4.1 If review of the data indicates that the item(s) not meeting the data review criteria may have caused a bias in the reported results, then an NDA expert review is required.

NOTE: *The re-analysis described in the next step will result in the generation of a new NDA2000 report file that will be automatically saved in the "C:\GENIE2K\REPFILES\" directory.*

3.3.1.4.2 Expert Reviewer: Review the raw data associated with the item not meeting the data review criteria, involving a reanalysis using the NDA2000 software.

3.3.1.4.3 Locate the report file that was created in Step 3.3.1.4.2 and rename it using the original filename automatically generated by the drum assay system (Example: Z-211-102_20040209180510_10007475_p.rpt).

3.3.1.4.4 Open the expert technical review data transfer application by double clicking on the "ETR Data Transfer" icon.

3.3.1.4.5 Click on the SELECT AN ANALYSIS FILE BY NAME button.

3.3.1.4.6 Select the analysis report file that was renamed in Step 3.3.1.4.3 and click on the SELECT ANALYSIS FILE button.

3.3.1.4.7 Confirm that the summary data fields in the "Analysis File" section of the "Assay Analysis" window are populated and that the following data is correct for the drum that is undergoing expert technical review:

- Container ID
- Instrument ID
- Report Date
- Machine Sequence.

3.3.1.4.8 If the summary data does not populate as expected, investigate the cause of the anomaly and take corrective action as necessary.

3.3.1.4.9 Click on the SET REVIEW OUTCOME button on the "Assay Analysis" window.

NOTE 1: *At least one of the electronic signatures required to update the Review Outcome in WTS using the ETR Data Transfer utility is associated with the ETR role in WTS.*

NOTE 2: *Steps 3.3.1.4.10 to 3.3.1.4.12 may be omitted if the ETR/ITR chooses to set the review outcome to "modify" in WTS rather than by using the ETR Data Transfer utility.*

3.3.1.4.10 Ensure that two independent ITR/ETRs enter their WTS user IDs and e-signature PINs, and any comments, as required, to set the WTS review outcome to "modify" in the "Set Review Outcome" section of the "Assay Analysis" window.

3.3.1.4.11 Click on the SUBMIT button.

NOTE: *If the status message "Review Outcome Set" does not appear in the "Set Review Outcome" section of the "Assay Analysis" window, then the review outcome was not successfully set to "modify" in WTS.*

3.3.1.4.12 Investigate the cause of this anomaly and take corrective actions as required.

3.3.1.4.13 Click the RE-TRANSMIT DATA button on the "Assay Analysis" window.

3.3.1.4.14 ETR: When making the data update in WTS, enter the WTS user ID and E-signature password in the "Re-transmit data" section of the "Assay Analysis" window.

3.3.1.4.15 Click on the RE-TRANSMIT FILE ABOVE button on the "Assay Analysis" window.

NOTE 1: *There are threshold limits for both boxes and drums which, when reached, dictate specific requirements per INST-OI-11, Waste Container Handling. These threshold limits are: 200, 380 or 1,500 FGE ^{239}Pu for drums; and 325, 380, 800 or 1,500 ^{239}Pu FGE for boxes.*

(RPT-NFCS-01; CWR 7.3.1; 7.3.2; 7.3.7; 7.3.9 and 7.3.10)

NOTE 2: *Failure to immediately notify the plant shift manager (PSM) could result in a criticality safety violation if the container is upgraded to higher than 380 FGE and the container is not relocated (within the same shift) to the proper storage array.*

(RPT-NFCS-01; CWR 7.3.7)

3.3.1.4.16 If an expert technical review is done and the ETR determines that the FGE amount for a given waste container needs to have a new, corrected value which exceeds one of the threshold values, then immediately contact the applicable PSM and receive acknowledgment that they understand the change in the FGE for that particular waste container now exceeds a threshold.

(RPT-NFCS-01; CWR 7.3.7)

3.3.1.4.17 ETR: Notify the ITR when the review is complete and inform the ITR whether a new report file was generated during the ETR review.

3.3.1.4.18 ITR: Restart at Step 3.3.1.2.6.

3.3.1.4.19 If review of the data indicates that the item(s) not meeting the Data Review Criteria may have caused a bias in the reported results and acceptable results are not obtainable with the existing data, perform the following steps:

3.3.1.4.19.1 Disposition the drum as non-reportable and add comments in WTS to document the reason for the bias.

NOTE: *If a previous NCR exists for the same deficiency, it is not necessary to generate a new NCR.*

3.3.1.4.19.2 Reference the existing NCR, adding a comment to the existing NCR to document the non reportability of the container in the affected batch.

3.3.1.4.19.3 Generate an NCR, if one does not already exist, in accordance with MP-Q&SI-5.4, stating the deficiency.

3.3.1.4.19.4 Flag in WTS, as applicable.

3.3.1.4.20 If review of the data indicates that the item(s) not meeting the Data Review Criteria has not caused a bias in the reported results, then disposition the drum as "Accept" and add comments in WTS to document the rationale for accepting the data as-is.

3.3.1.5 Repeat Steps 3.3.1.3 through 3.3.1.4 for each assay event in the batch being reviewed.

NOTE 1: *To assist in the entering of comments and to provide consistency in format and content for these comments, Macro Express has been established for use by the ITR/ETR.*

NOTE 2: *Macro Express is a utility that enables the reviewer through the use of a couple of keystrokes (Hot Keys) to input repetitive comments*.

3.3.1.6 Activate Macro Express by double clicking on its icon that is located on the desk top of the data review PC.

3.3.1.6.1 Edit the comment, as appropriate.

3.3.1.6.2 Activate Hot Keys (i.e., Alt + F7) to enter appropriate comments in sections.

3.3.1.6.3 Create a new paragraph for each disposition comment.

3.3.1.6.4 Review the comment(s) to ensure that it is the desired comment before proceeding.

3.3.1.7 Print manual BDRs, if necessary, as follows:

3.3.1.7.1 Select the “Batch Data Reports” option.

3.3.1.7.2 Enter “ASY” for the Batch Type and enter the “Batch ID.”

3.3.1.7.3 For manual BDRs, select the following reports on the Batch Data Report Screen:

- Coversheet
- Analysis Report
- QC Event Report.

3.3.1.7.4 Select the printer name and “Generate” to print the report.

3.3.1.8 Confirm all changes to original data or forms are made by a single line through incorrect entry, initialed, and dated by the person making the change.

3.3.1.9 Confirm that the data changes made during expert review are adequately justified.

NOTE: *NDA-2000 software performs all calculations; however, if during re-analysis hand calculations were used, they will be verified and validated.*

3.3.1.10 Confirm that 100% of hand calculations have been verified and validated correctly.

NOTE 1: *NDA-2000 software doesn't require values to be hand entered; however, if parameter values are changed during re-analysis, they will be verified and validated correctly and noted on Form-1416.*

NOTE 2: *NDA-2000 ITR checks will verify this question based on limits set for each modality.*

3.3.1.11 Confirm that the assay measurements are within the system calibration range and technical envelope as defined in calibration reports, TMU analysis, and calculation methodologies, and that the data is reasonable.

NOTE: *The procedure number and revision are entered in the Drum Results comment field, if the procedure number and revision are noted incorrectly in the WTS.*

3.3.1.12 Confirm that the proper procedures were used to generate the data in this batch.

3.3.1.13 Confirm that the assay system successfully participated in the current performance demonstration program (PDP) cycle.

3.3.1.14 Confirm that any NCRs associated with the characterization data are identified and included or referenced in the BDR.

3.3.1.15 Verify that the BDR is complete and includes the following, as applicable:

A. A batch coversheet that contains the date of report, batch number, facility, equipment ID, batch open and closed date, and a listing of all drums in the batch

B. Table of Contents (manual review only)

C. Form-1416

D. Form-1491

E. Supplemental Batch Data Report Narrative, if applicable

F. Radioassay data sheets for each container in the batch

G. QC Event Report(s): DPC and DBC

H. Associated NCRs (referenced in WTS).

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re characterization or treatment process has been completed and validated, or the action is no longer required.*

3.3.1.16 Confirm that NCRs have been generated for containers that failed to meet DQOs or QAOs.

3.3.1.17 Record any Weekly Performance Check (WPC) data on Form-1446, Drum Assay System (DAS) WPC 6 Month Operability Range Check.

3.3.1.17.1 Include start date, assay date, and review initials for the appropriate WPC and system, as applicable.

3.3.1.17.2 If all WPCs have been assayed, complete end date, reviewed by, and send to the SPM for review.

3.3.1.18 When validation has been completed, approve and release the batch using the electronic signature process in WTS or print, sign, and date Form-1416.

3.3.2 Supplemental BDRs for Adjusted TRU Alpha Activity Concentration

NOTE: *This section applies only if a manual BDR was generated.*

3.3.2.1 Verify the revised assay analysis reflecting the TRU alpha activity concentration recalculation has been reviewed and the original analysis is supplemented with the revised analysis in the BDR.

3.3.2.2 Verify the supplemental BDRs used to correct container(s) data after container(s) in a BDR have been through the SPM for a variety of reasons, e.g., TAAC corrections, RTR VE updates (RVUs), etc.

3.3.2.3 Verify the supplemental assay batch narrative has been generated to document the inclusion of the updated container analysis in the BDR and reference the NCR number associated with the updated disposition of containers with prohibited items (e.g., liquids being absorbed) for the container(s) affected.

3.3.2.3.1 Ensure NCRs associated with re-characterization or treatment are closed prior to ITR sign off of the supplemental manual BDR.

3.3.2.4 Sign the supplemental narrative and promote the batch to SPM.

3.4 HGAS On-Line Headspace Gas Sampling and Analysis Batch Data Report ITR Validation

NOTE 1: *The following section is performed by an ITR unless otherwise specified.*

NOTE 2: *The review will be performed by an individual other than the data generator who is qualified to have performed the initial work.*

3.4.1 Data Generation Chemist: If a BDR has not been generated, generate a BDR in accordance with Appendix B, Instructions for HGAS Preparing a Batch Data Report.

3.4.2 Access an operator-approved on-line HGAS batch from the manual BDR or WTS, as applicable.

3.4.3 Complete the data review in WTS or manually using Form-1517, HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist, and document all concerns and comments in the WTS or manually using Form-1517 and Form-1491 by performing the following steps:

3.4.3.1 If performing the ITR review manually, record the batch number and equipment ID on Form-1517.

3.4.3.2 Verify the batch is complete with the following:

A. Batch cover sheet

B. Table of Contents (manual review only)

C. Case narrative

D. 4-Bromofluorobenzene (BFB) information

E. Continuing calibration information

F. On-line control sample information

G. On-line control sample duplicate information

H. On-line field blank information

I. On-line equipment blank information

J. On-line drum duplicate information

K. Drum sample information for each container

L. Temperature equilibrium charts (or WTS preheat data information)

M. Evidence of initial calibration

N. Evidence of method detection limits

O. Independent Technical Review Checklist (Form-1517)

P. HGAS Headspace Gas Sampling Data Generation Checklist (Form-1520) (for manual batches)

Q. RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP (referenced), if necessary

R. WTS Headspace Gas Report/WTS Container Movement History

S. HGAS Daily Checks (Form-1595)

T. Sample Batch Drum Age Criteria Data Sheet (Form-1449)

U. Batch Data Report Supplemental Comment Form, or batch comments in WTS, as applicable (Form-1491)

V. Associated NCRs included or referenced within the batch.

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re-characterization or treatment process has been completed and validated, or the action is no longer required.*

3.4.3.3 Confirm that NCRs are generated for containers that failed to meet DQOs or QAOs.

3.4.4 Vent and Sample Collection Prerequisites

3.4.4.1 Verify that all drums are equilibrated for a minimum of 72 hours at 18°C or higher and that the sample for each drum was collected at or above 18°C.

3.4.4.2 Verify that the appropriate DAC scenario has been recorded on Form-1449 and applied to each of the drums in the batch (see Appendix A, DAC Tables).

3.4.4.2.1 If applicable, ensure the appropriate packaging configuration group was applied.

3.4.4.2.2 Apply the appropriate DAC based on container lid filter diffusivity and rigid liner configuration (lid hole diameter, no lid, or no liner).

NOTE: *Vent dates for containers that have been previously vented by the 3,100 m^3 Project may be conservatively reported as January 1, 2003, the date that AMWTP acquired the containers.*

3.4.4.3 Verify that the correct vent date is used from the WTS Filter Event Screen, WTS Headspace Gas report, or other applicable documentation.

NOTE: *Containers meeting Scenario 1 requirements will not be sampled with the HGAS units.*

3.4.4.4 Verify from Form-1449 that the waste containers were not sampled for headspace before the DAC was met (Appendix A).

3.4.4.5 Verify that there are no NCRs generated that impact the DAC determination.

3.4.4.6 Using WTS, verify that all liner lids present were punctured prior to HGAS sampling.

3.4.4.7 If the RTR information does not confirm liner puncture, verify proper filter installation and liner configuration and verify the following:

A. If a BNFL SS filter was installed, ensure that there is no more than 1.5 in. of liner lid warping/deflection.

B. If an NF7DS filter was installed, ensure that there is no more than 2.5 in. of liner lid warping/ deflection.

3.4.4.7.1 For drums vented by the Nucfil DVS, compare the filter model code name with drum and liner type configuration data recorded in the WTS or on other appropriate documentation.

NOTE: *For drums vented by the NucFil DVS that contain a BNFL SP/LP NFT007S replacement filter and no other filters, liner puncture confirmation may be required and will be addressed on a case-by-case basis.*

3.4.4.7.2 For drums vented by all other drum venting hardware (e.g., WMF-615), ensure RTR confirmation is received.

3.4.5 Quality Control Sample Acceptance Criteria

NOTE: *The Agilent software performs both qualitative and quantitative calculation. The data is available for review via networked remote stations.*

3.4.5.1 BFB Data Review

3.4.5.1.1 Verify all drum samples were analyzed within the 12-hour BFB window.

3.4.5.1.2 Verify a BFB tune has been performed for each 12-hour shift, prior to sampling analysis.

3.4.5.1.3 Verify the BFB abundance criteria are met for key ions, per INST-OI-43, HGAS Sampling and Analysis Operations.

3.4.5.1.4 Verify that the data was reviewed, signed by analyst, and is complete.

3.4.5.2 Initial Calibration Verification

3.4.5.2.1 Verify that a valid initial calibration (ICAL) was used to quantify batch results in accordance with INST-OI-43.

3.4.5.2.2 Verify that a 5-point calibration was used for MS and a 4-point for thermal conductivity detector (TCD).

3.4.5.2.3 Verify that the % Relative Standard Deviation (RSD) of the response factor for each analyte was less than 35 for the gas chromatograph (GC)/Mass Spectrometer (MS).

3.4.5.2.4 Verify that the correlation coefficient (r2) was greater than 0.990 for TCD.

3.4.5.2.5 Verify that at least one level of the calibration of the GC/MS was below the Program Required Quantitation Limit (PRQL).

3.4.5.3 Continuing Calibration Verification

3.4.5.3.1 Verify that a continuing calibration verification (CCV) was analyzed for each 12-hour shift following a successful BFB tune and prior to analysis of any samples.

3.4.5.3.2 Verify that the retention times (RTs) of the internal standard is within 30 seconds of those in the associated ICAL.

3.4.5.3.3 Verify that the internal standard areas are within 50 to 200% of those in the associated ICAL.

3.4.5.3.4 Verify that the percent difference (%D) of each target volatile organic compound (VOC) analyte is ≤ 30% of the initial calibration.

3.4.5.4 CCV Verification for GC/TCD

3.4.5.4.1 Verify the percent recovery for the TCD is between 70 and 130%.

3.4.5.4.2 Verify the CCV data was reviewed, signed by the analyst, and is complete for each analyte.

3.4.5.5 On-Line Control Samples

3.4.5.5.1 Verify that a minimum of one on-line control sample (OCS) or OCS duplicate was collected and analyzed after the CCV for each analytical batch.

3.4.5.5.2 Verify that the OCS is second source from the initial calibration standard source.

3.4.5.5.3 Verify that the OCS contains a minimum of six VOC target analytes, hydrogen, and methane.

3.4.5.5.4 Verify that the concentration ranges of the OCS falls within 10 to 100 parts per million by volume (ppmv) for VOCs and are greater than the method detection limit (MDL) for each compound.

3.4.5.5.5 Verify that the percent recoveries (%R) for all analytes fall within the 70% to 130% acceptable range.

3.4.5.5.6 Verify the OCS data was reviewed and signed off by the analyst.

3.4.5.6 Blank Sample(s)

3.4.5.6.1 Verify that a field blank was collected and analyzed after the OCS for each sampling batch.

3.4.5.6.2 Verify that the results are less than or equal to three times the MDL value for each analyte.

3.4.5.6.3 Verify the field blank data was reviewed, and signed off by analyst.

3.4.5.6.4 Verify that an equipment blank was collected and analyzed after the OCS for each shift.

3.4.5.6.5 Verify that the results are less than or equal to three times the MDL value for each analyte.

3.4.5.6.6 Verify the equipment blank data was reviewed and signed off by analyst.

3.4.5.7 Duplicate Samples

3.4.5.7.1 Verify that a minimum of one duplicate sample was collected and analyzed per batch.

3.4.5.7.2 Verify that the sample and the duplicate sample contain at least one common compound at concentrations greater than PRQL to perform the duplicate comparison.

3.4.5.7.3 Verify that the relative percent difference (RPD) between the sample and the duplicate sample is $\leq 25\%$ for each analyte where both the sample and the duplicate sample results are greater than the PRQL.

3.4.5.7.4 If the sample/sample duplicate does not pass the RPD requirements per Section 3.4.5.7, verify that the RPDs for all analytes are $\leq 25\%$ for the OCS and OCS duplicate samples collected and analyzed.

3.4.5.7.5 If no common analytes were found in both the sample and the duplicate sample, verify that an OCS duplicate sample was analyzed.

3.4.5.7.6 Generate an NCR, if the sample/sample duplicate does not pass the RPD requirements of less than or equal to 25% for any analyte.

3.4.5.7.7 Verify that the sample duplicate data was reviewed and signed off by an analyst.

3.4.6 All Samples (including QC samples)

3.4.6.1 Verify that all reported hits have RTs within the RT windows determined by the ICAL.

3.4.6.2 Verify that the sample internal standard areas are within a factor of 2 (i.e., 50 to 200% of the CCAL).

NOTE 1: *For the qualitative analysis, analytes not calibrated by INST-OI-43 are identified by comparison of the sample mass spectrum with the reference mass spectrum within the Retention Time Window. Reference mass spectra are obtained through analysis of calibration standards and verified with a National Institute of Standards and Technology (NIST)/Environmental Protection Agency (EPA) mass spectral library search.*

NOTE 2: *Once a compound has been qualitatively identified, the quantitation of that compound will be based on the integrated abundance of the primary characteristic ion or other secondary ion(s) identified by the instrument manufacturer (e.g., acetone uses masses 43 or 58) or as appropriate for quantitation. Quantitation is performed automatically using the instrument software based on instrument responses to the analyses of internal calibration standards.*

3.4.6.3 Verify that the sample spectra for positive hits match the reference spectra.

3.4.7 Tentatively Identified Compounds

NOTE 1: *The Agilent software produces a tentatively identified compound (TIC) report, which provides values for unidentified peaks, or TICs are imported along with the target analytes. Peaks not identified as target compounds are potential TICs.*

NOTE 2: *For samples containing compounds not calibrated by INST-OI-43 that have total ion current peak area greater than 10% of the nearest (determined by RT) internal standard, a library search of a recent NIST mass spectral database is performed. The 10% area criterion is locked into the Agilent software within the method that is used to quantify samples, and is established before sample analysis begins.*

NOTE 3: *The NIST Library used must contain, at a minimum, all VOCs contained in Title 40 Code of Federal Regulations (CFR) 261, Appendix VIII.*

3.4.7.1 Verify that a NIST/EPA Mass Spectral search for TICs was conducted on each sample, sample duplicate, and field blank in the batch to report peaks with areas greater than or equal to 10% of the nearest internal standard.

3.4.7.2 Verify that all identified TICs have been quantified using the nearest Internal Standard and signed by the analyst.

3.4.7.3 Verify the TIC data exists for each sample with one or more TICs.

3.4.7.4 Verify, when more than one possible match exists, that the TIC is reported adequately according to criteria specified in INST-OI-43.

NOTE 1: *The concentration of the TICs are estimated using the internal standard analyte nearest the RT of the TIC (free of interferences).*

NOTE 2: *Quantitation uses the total ion response area and a response factor of one. Quantitation is performed by dividing the area count of the TIC by the response factor of the internal standard.*

NOTE 3: *The resulting TIC concentration(s) and CAS numbers are reported in the analytical BDR.*

NOTE 4: *If a target analyte list for a waste stream is expanded due to the presence of TICs, all future samples collected from that waste stream will be analyzed for constituents on the expanded list.*

3.4.7.5 If a TIC identification has changed for any of the reasons above, confirm that the justification has been documented in the case narrative or the sample comments form, as applicable.

3.4.7.6 Verify that the appropriate quantitation method was used consistent with the instrument used for analyses:

- All ions present in the reference spectrum at a relative intensity greater than 10% should be present in the sample spectrum.
- The relative intensities of these ions should agree within ± 20% between the sample spectrum and reference spectrum.
- Structural isomers (very similar mass spectra) should be identified separately if the height of the valley between the isomer peaks is less than 25% of the sum of the two peaks. (Otherwise, structural isomers are identified as isomeric pairs.)

3.4.7.7 Verify that the sample data was reviewed and signed off by analyst for all samples associated with this analytical batch.

3.4.8 Data Reporting

3.4.8.1 Verify that the data is generated in a technically correct manner using the current revision of INST-OI-43, and in accordance with the method and instrument used.

3.4.8.2 Verify that 100% of hand-entered data has been reviewed for transcription errors.

NOTE: *Incomplete or incorrect field sampling records will be resolved prior to the completion of the ITR review.*

3.4.8.3 Verify that field-sampling records are complete and include documentation for equipment cleaning and leak test, pressure regulation, and gauge calibration.

NOTE 1: *Data qualifying flags are automatically assigned to all samples (including QC samples) by the data review software.*

NOTE 2: *EPA-540/R-99/008, U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, may be consulted, if questions arise as to the acceptability of the HSG or QC results.*

3.4.8.4 Verify that all values less than the MDL are flagged with a "U" qualifier.

3.4.8.5 Verify that all values greater than or equal to the MDL and less than the PRQL are reported with a "J" qualifier.

NOTE: *Dilution values are automatically calculated by the analytical system.*

3.4.8.5.1 Verify that all values determined from dilutions are reported with a "D" qualifier.

NOTE: *"Z" flags could also signify one or more QC samples do not meet acceptance criteria.*

3.4.8.6 Verify that all values detected in blank analyses at concentrations greater than three times the MDL are flagged with a "Z" qualifier and documented on an NCR.

3.4.8.7 Verify all values ≥ the MDL detected in the blank analyses are reported with a "B" qualifier.

3.4.8.8 Verify that all samples having analytes detected at concentrations exceeding the calibration range are flagged with an "E" qualifier and an NCR initiated, if required.

3.4.8.9 Verify that the following hand calculations are correct:

- Equilibration time
- DAC calculations
- Drum age.

3.4.8.10 Verify that traceable standards were used.

3.4.8.11 Verify that all units and significant figures used for sample analysis and reporting are correct.

3.4.8.12 Verify all identified peaks have proper baselines and all integrations are correct.

3.4.8.13 Verify there has been an acceptable demonstration of precision, accuracy, and MDLs performed within the last 6 months.

3.4.8.14 Verify the applicable MDL and Method Performance Summary has been documented within the batch.

3.4.8.15 Verify the HSGS participated in the current PDP.

3.4.8.16 Verify the individual performing the analysis is current on their HGAS qualification.

3.4.8.17 Verify that all data was signed and dated electronically, or manually using reproducible ink.

3.4.8.18 Verify that all data was reported clearly, legibly, and accurately in field records (bench sheets, logbooks) or electronic media.

3.4.8.19 Verify that the data was reviewed for changes and adequate justification made.

3.4.8.20 Verify that changes made to the original data or forms were made by a single line through the incorrect entry, initialed and dated by the person making the change (manual batches only).

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re-characterization or treatment process has been completed and validated, or the action is no longer required.*

3.4.8.21 Confirm that NCRs are generated for containers that failed to meet DQOs or QAOs.

3.4.9 If rework items have been identified, reject the batch back to operations signature level to complete the rework.

3.4.10 Ensure that rework requirements have been clearly identified in batch or checklist comments, and when applicable, generate an NCR in accordance with MP-Q&SI-5.4.

3.4.11 If a batch has been re-promoted from operations rework, confirm that all comments have been adequately addressed and noted in the batch or checklist comments.

3.4.11.1 If the rework was addressed appropriately, perform the following:

3.4.11.1.1 Add a comment that indicates that the rework was performed satisfactorily.

3.4.11.1.2 Add a comment on the checklist when validation review determines the question criteria has not been met, as required.

3.4.11.1.3 If open issues still exist, return the batch back to the appropriate level.

3.4.12 Approve and release the data using the electronic signature process or print, sign, and date on Form-1517.

3.5 Solid Sampling Batch Data Report ITR Validation

NOTE: *The ITR will be performed by an individual other than the data generator who is qualified to have performed the initial work.*

3.5.1 Access an operator-approved Solid Sampling BDR from the manual BDR folder or WTS data review screen on the main menu, as applicable.

3.5.2 Ensure that NCRs that were generated during data generation are included or referenced in the BDR, as appropriate, and that WTS is flagged, as appropriate.

3.5.3 Complete the data review and document all concerns and comments in WTS or manually using Form-1421 or Form-1858, Independent Technical Reviewer Small Container Sampling Checklist, or Form-1491 by performing the following:

3.5.3.1 Record the testing batch number and location on Form-1421 or Form-1858, if necessary.

3.5.3.2 Verify that the BDR and QA documentation are complete in accordance with this procedure by verifying all of the following (manual forms identified in parentheses):

A. Coring Batch Cover Sheet

B. Table of Contents (manual review only)

C. Coring Analysis Reports (manual review only)

D. Chain of Custody (COC) (manual review only)

E. Refrigerator Temperature Logsheet (Form-1585) (manual review only) and/or Characterization Round Sheet (Form-1602)

F. Analytical Balance Calibration Check Sheet (Form-1215) (manual review only)

G. Solid Waste Sampling Checklist (Form-1599) (manual review only)

H. Solid Sampling Independent Reviewer Checklist (Form-1421) (manual core sampling review only)

I. Independent Technical Reviewer Small Container Sampling Checklist (Form-1858)(manual grab sampling review only)

J. Supplemental Batch Comment Form (Form-1491) (manual review only)

K. Associated NCRs (referenced in WTS).

3.5.3.3 Verify that there are no more than 20 samples in the batch, excluding QC samples, collected within 14 days of the first sample of the batch.

3.5.3.4 Verify the COC is initiated properly, filled out correctly and completely.

3.5.3.5 For each drum in the batch, verify the following:

A. Each coring operator was qualified at the time of each coring event.

B. The E-signature history was reviewed.

C. For coring, the core sample and sub sample were collected based on a random selection method using randomly selected horizontal and vertical planes.

D. For grab sample, the sample was collected based on a randomly selected inner container and grid.

E. The sample collection times and preservation requirements, listed below, were met or exceptions documented.

- Sealing of the liner prior to sampling (coring only)
- Refrigeration of the samples (cooled to 4°C).

3.5.3.5.1 If collection times and preservation requirements were not met or exceptions were not documented, generate an NCR, if not already generated, and ensure WTS is flagged as appropriate.

F. The cores or sample matrix (grab) were visually examined.

G. The co-located cores/field duplicate was visually compared to the first core or grab sample (as applicable) and the results are acceptable.

H. The units and significant figures were used for all reported volumes/weights.

I. The data has been reviewed for transcription errors and the field records are complete.

3.5.3.5.2 Confirm that all hand calculations have been verified and validated correctly.

J. The scale calibration and calibration check was performed.

K. For ONE of the following:

- The equipment used is traceable to the Certificate of Cleanliness

OR

- The equipment blanks were acceptable for the following:
  - Coring tool
  - Liners
  - Disposable sampling equipment.

L. The following inspections have been performed:

- Coring tool inspection
- Sampling equipment protective wrapper is intact
- Sampling area inspection
- Sampling tools are visually clean after unwrapping.

M. A co-located core/field duplicate sample was collected for each sampling batch, as defined in INST-OI-16, Drum Coring Operations, INST-OI-73, Manual Drum Coring Operations, and/or INST-OI-75, Container-in-Container Sampling.

NOTE: *NCRs may be open against containers within the batch because the container requires re-characterization or treatment. The NCRs will remain open until the re-characterization or treatment process has been completed and validated, or the action is no longer required.*

3.5.3.6 Verify that NCRs have been generated for containers that contain prohibited items or that failed to meet DQOs or QAOs.

3.5.3.6.1 If an NCR was not generated, generate an NCR, and ensure WTS is flagged, as appropriate.

3.5.3.7 Verify for drums that contain smaller containers, one randomly selected smaller container has been sampled, as applicable.

3.5.3.8 Verify the use of INST-OI-16, INST-OI-73 and/or INST-OI-75, sampling equipment, and measuring units has been consistent.

3.5.3.9 Verify data has been generated in a technically correct manner in accordance with the correction revision of INST-OI-16, INST-OI-73 and/or INST-OI-75.

3.5.3.10 Verify that the correct procedure and revision were documented on all analysis reports.

3.5.3.10.1 If the procedure number and revision are incorrectly displayed in the WTS, verify that the operator has entered the correct procedure number and revision in the Batch Comment section of WTS.

3.5.3.11 Verify the core samples that have been collected have a length $\geq$ 50% of the depth of the waste (coring only).

3.5.3.12 Verify if core recovery <50%, a second core location has been randomly selected, as applicable (coring only).

3.5.3.13 Verify the co-located core/field duplicate sample contains a minimum of 50 grams of sample material to provide adequate analysis.

3.5.3.14 Verify that the following solid sampling QAOs are met.

Precision:

- Co-located core/field duplicate sample collected at a frequency of once per sampling batch, as defined in INST-OI-16, INST-OI-73 and/or INST-OI-75.
- Sample batch does not exceed 20 samples (excluding QC samples).
- All samples have been collected within 14 days from the first sample in the batch.

Accuracy:

- Equipment blanks that have been collected from sampling and coring tools, liners, and disposable sampling equipment are acceptable or equipment used is traceable to the Certificate of Cleanliness.

Completeness:

- A valid sample has been collected from a randomly selected drum using randomly selected horizontal and vertical planes.
- For drums that contain smaller containers, one randomly selected smaller container has been sampled using a random grid selection methodology.

Comparability:

- The use of INST-OI-16, INST-OI-73, and/or INST-OI-75, sampling equipment and measurement units have been consistent.
- The data were generated in a technically correct manner in accordance with INST-OI-16, INST-OI-73, and/or INST-OI-75.

Representativeness:

- The coring tools and sampling equipment were verified clean prior to sampling.
- The core sample collected has a length greater than or equal to 50% of the depth of the waste.
- If the core recovery was less than 50%, a second core location was randomly selected.

3.5.3.15 If rework items have been identified during validation, perform the following:

3.5.3.15.1 Ensure that rework requirements have been clearly identified in WTS or on Form-1491, Form-1421, and/or Form-1858, as applicable.

3.5.3.15.2 Generate an NCR, when applicable, in accordance with MP-Q&SI-5.4, and ensure WTS is flagged, as appropriate.

3.5.3.15.3 Return the batch to appropriate level to complete the rework.

3.5.3.16 If a batch has been re-promoted from rework, verify that all comments have been adequately addressed and noted in WTS or on Form-1491, Form-1421, and/or Form-1858, as applicable.

3.5.3.17 If the rework was addressed appropriately, add a comment that indicates that the rework was performed satisfactorily.

3.5.3.18 Add a comment in the checklist section in WTS, Form-1421, or Form-1858 (as applicable), when validation review determines the question criteria has not been met.

3.5.3.19 If rework issues still exist, repeat Steps 3.5.3.15 through 3.5.3.15.3.

3.5.3.20 Approve the data using the electronic signature process in WTS, or print, sign, and date Form-1421 or Form-1858 (as applicable), using reproducible ink.

4.0 DEFINITIONS

Data quality objectives. Qualitative and quantitative statements derived from the outputs of the first six steps of the DQO process. DQOs: (1) clarify the study objective; (2) define the most appropriate data to collect, (3) determine the most appropriate conditions from which to collect the data, and (4) specify tolerable limits on decision errors be used on the basis for establishing the quantity and quality of data needed to support compliance decisions. DQOs are used to develop a scientific and resource-effective data collection design.

Headspace gas. For any volume contained by a container, 55-gal poly bag, or innermost layer of confinement, the total contained volume minus the volume occupied by the waste material. “Headspace” is also used to refer to the gases contained in this volume.

Quality assurance objectives. Qualitative and quantitative statements that specify WIPP program technical and quality objectives. Data characteristics of importance are accuracy, precision, completeness, comparability and representativeness.

Radioassay. Characterization method used to identify and quantify radionuclides in TRU waste.

Real-time radiography. A radiographic method that allows simultaneous remote imaging for the viewing of waste package contents.

Transuranic waste. Wastes contaminated with alpha-emitting radionuclides of atomic number greater than 92 (e.g., the radioactive isotopes of plutonium), with half-lives greater than 20 years, and are present in concentrations greater than 100 nanocuries per gram of waste.

Validation. A systematic process used to review data to ensure that the required data quality characteristics have been obtained. Results of the review may require qualifiers to be placed on the use of the data.

Visual examination. Characterization method that involves opening a container and physically examining its contents.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

5.0 REFERENCES

(1) 40 CFR 261, Identification and Listing of Hazardous Waste, Appendix VIII

(2) AMWTP HWMA/RCRA Permit

(3) EPA-540/R-99/008, U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999)

(4) Form-1215, Analytical Balance Calibration Check Sheet

(5) Form-1585, Refrigerator Temperature Logsheet

(6) Form-1595, HGAS Daily Checks

(7) Form-1599, AMWTP Solid Sampling Checklist

(8) Form-1602, Characterization Round Sheet

(9) MP-DOCS-18.2, Records Management

(10) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(11) MP-TRUW-8.2, Quality Assurance Project Plan

(12) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

(13) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(14) INST-FOI-01, In-Plant Drum Assay Operations

(15) INST-FOI-17, Facility Visual Examination Operations

(16) INST-OI-11, Waste Container Handling

(17) INST-OI-12, Real-Time Radiography Operations (Drum)

(18) INST-OI-14, Drum Assay Operations

(19) INST-OI-16, Drum Coring Operations

(20) INST-OI-34, Non-Facility Visual Examination Operations

(21) INST-OI-43, HGAS Sampling and Analysis Operations

(22) INST-OI-73, Manual Drum Coring Operations

(23) INST-OI-75, Container-in-Container Sampling

(24) INST-OI-81, Real-Time Radiography Operations (for WIPP Certification of Boxes)

(25) RPT-NFCS-01, Criticality Safety Analysis for TRU Waste Storage (EDF-0034)

(26) RPT-NFCS-07, Criticality Safety Evaluation for the AMWTF

(27) RPT-NFCS-08, Criticality Safety Evaluation for AMWTP Retrieval Operations

(28) RPT-OPS-07, On-line Headspace Gas Sample Collection and Venting at the AMWTP

(29) RPT-TRUW-03, Drum Assay Technical Review Report

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.8, Case File	Nonpermanent/WIPP ENV1-J-1/Destroy 10 years after submittal
Batch Data Report: may contain the following: • Form-1412, Real-Time Radiography Independent Technical Reviewer Checklist • Form-1415, Visual Examination Independent Technical Reviewer Checklist • Form-1416, Radioassay Independent Technical Reviewer Checklist	Lifetime WIPP/ENV1-J-1/Turnover to CBFO at end of project

Record Description	Classification
• Form-1421, Solid Sampling Independent Technical Reviewer Checklist • Form-1446, Drum Assay System (DAS) WPC 6-Month Operability Range Check • Form-1449, Sample Batch Drum Age Criteria Data Sheet • Form-1491, Batch Data Report Supplemental Comment Form • Form-1517, HGAS Headspace Gas Sampling Independent Technical Reviewer Checklist (ITR) • Form-1520, HGAS Headspace Gas Sampling Data Generation Checklist • Form-1858, Independent Technical Reviewer–Small Container Sampling Checklist	

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A –Drum Age Criteria Tables
Appendix B – Instructions for HGAS – Preparing a Batch Data Report

Appendix A – Drum Age Criteria Tables

NOTE: *Table C1-1 through Table C1-4, found in MP-TRUW-8.2, Quality Assurance Project Plan, do not address drum age criteria (DAC) and so are not mentioned in this appendix.*

Table C1-5. Headspace Gas Drum Age Criteria Sampling Scenarios.

Scenario	Description
1	A. Unvented 55-gallon drums without rigid poly liners are sampled through the drum lid at the time of venting. B1. Unvented 55-gallon drums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. B2. Vented 55-gallon drums with unvented rigid poly liners are sampled through the rigid poly liner at the time of venting or prior to venting. C. Unvented 55-gallon drums with vented rigid poly liners are sampled through the drum lid at the time of venting.
2	55-gallon drums that have met the criteria for Scenario 1 and then are vented, but not sampled at the time of venting.
3	Containers (i.e., 55-gallon drums, 85-gallon drums, 100-gallon drums, standard waste boxes (SWBs), ten drum overpacks (TDOPs), and pipe components) that are initially packaged in a vented condition and sampled in the container headspace and containers that are not sampled under Scenario 1 or 2.

a. Containers that have not met the Scenario 1 DAC at the time of venting must be categorized under Scenario 3. This requires the additional information required of each container in Scenario 3 (i.e., determination of packaging configuration), and such containers can only be sampled after meeting the appropriate Scenario 3 DAC.

NOTE: *Containers that are sampled using the Scenario 1 DAC do not require information on the packaging configuration because the Scenario 1 DAC are based on a bounding packaging configuration. In addition, information on the rigid liner vent hole presence and diameter do not apply to containers that are sampled using the Scenario 1 DAC because they are unvented prior to sampling.*

Table C1-6. Scenario 1 Drum Age Criteria (in days) Matrix.

Summary Category Group	DAC (days)
S5000	53

NOTE: *Containers that are sampled using the Scenario 2 DAC do not require information on the packaging configuration because the Scenario 2 DAC are based on a bounding packaging configuration.*

Table C1-7. Scenario 2 Drum Age Criteria (in days) Matrix.

	Summary Category Group S5000			
Filter H_2 Diffusivity [a]	**Rigid Liner Vent Hole Diameter (in) [b]**			
(mol/s/mod fraction)	0.30	0.375	0.75	1.0
1.9×10^{-6}	29	22	13	12
3.7×10^{-6}	25	20	12	11
3.7×10^{-5}	7	6	6	4

a. The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with a 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9×10^{-6} filter H_2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3(d)1), repackaging (Attachment C, Section C-3(d)1, MP-TRUW-8.2), and/or venting (Section C1-1a[4][ii], MP-TRUW-8.2), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

Table C1-8. Scenario 3 Packaging Configuration Groups.

Packaging Configuration Group	Covered S5000 Packaging Configuration Groups
Packaging Configuration Group 1, 55-gal. drums [a]	• No layers of confinement, filtered inner lid [b] • No inner bags, no liner bags (bounding case)
Packaging Configuration Group 2, 55-gal. drums [a]	• 1 inner bag • 1 filtered inner bag • 1 liner bag • 1 filtered liner bag • 1 inner bag, 1 liner bag • 1 filtered inner bag, 1 filtered liner bag • 2 inner bags • 2 filtered inner bags • 2 inner bags, 1 liner bag • 2 filtered inner bags, 1 filtered liner bag • 3 inner bags • 3 filtered inner bags • 3 filtered inner bags, 1 filtered liner bag • 3 inner bags, 1 liner bag (bounding case)
Packaging Configuration Group 3, 55-gal. drums [a]	• 2 liner bags • 2 filtered liner bags • 1 inner bag, 2 liner bags • 1 filtered inner bag, 2 filtered liner bags • 2 inner bags, 2 liner bags • 2 filtered inner bags, 2 filtered liner bags • 3 filtered inner bags, 2 filtered liner bags • 4 inner bags • 3 inner bags, 2 liner bags • 4 inner bags, 2 liner bags (bounding case)
Packaging Configuration Group 4, pipe components	• No layers of confinement inside a pipe component • 1 filtered inner bag, 1 filtered metal can inside a pipe component • 2 inner bags inside a pipe component • 2 filtered inner bags inside a pipe component • 2 filtered inner bags, 1 filtered metal can inside a pipe component • 2 inner bags, 1 filtered metal can inside a pipe component (bounding case)
Packaging Configuration Group 5, Standard Waste Box or Ten-Drum Overpack [a]	• No layers of confinement • 1 SWB liner bag (bounding case)
packaging Configuration Group 6, Standard Waste Box or Ten-Drum Overpack a	• Any combination of inner and/or liner bags that is less than or equal to 6 • 5 inner bags, 1 SWB liner bag (bounding case)
Packaging Configuration Group 7, 85-gallon drums and 100-gallon drums [a]	• No inner bags, no liner bags, no rigid liner, filtered inner lid (bounding case)b • No inner bags, no liner bags, no rigid liner

Packaging Configuration Group	Covered S5000 Packaging Configuration Groups
Packaging Configuration Group 8, 85-gallon drums and 100-gallon drums [a]	• 4 inner bags and 2 liner bags, no rigid liner, filtered inner lid (bounding case)b

a. If a specific Packaging Configuration Groups cannot be determined based on the data collected during packaging and/or repackaging, a conservative default Packaging Configuration Group of 3 for 55-gallon drums, 6 for SWBs and TDOPs, and 8 for 85-gallon and 100-gallon must be assigned provided the drums do not contain pipe component packaging. If pipe components are present as packaging in the drums, the pipe components must be sampled following the requirements for Packaging Configuration Group 4.

b. A "filtered inner lid" is the inner lid on a double lid drum that contains a filter.

Definitions:

Liner Bags: One or more optional plastic bags that are used to control radiological contamination. Liner bags for drums have a thickness of approximately 11 mils. Liner bags are typically similar in size to the container. SWB liner bags have a thickness of approximately 14 mils. TDOPS use liner bags.

Inner Bags: One or more optional plastic bags that are used to control radiological contamination. Inner bags have a thickness of approximately 5 mils and are typically smaller than liner bags.

Table C1-9. Scenario 3 Drum Age Criteria (In Days) Matrix for S5000 Waste by Packaging Configuration Group.

Packaging Configuration Group 1

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	131	95	37	24	4	4
3.7×10^{-6}	111	85	36	24	4	4
3.7×10^{-5}	28	28	23	19	4	4

Packaging Configuration Group 2

Filter H_2 Diffusivity[a] (mol/s/mol fraction)	Rigid Liner Vent Hole Diameter [b]				No Liner Lid	No Liner
	0.3-inch Diameter Hole	0.375-inch Diameter Hole	0.75-inch Diameter Hole	1-inch Diameter Hole		
1.9×10^{-6}	175	138	75	60	30	11
3.7×10^{-6}	152	126	73	59	30	11
3.7×10^{-5}	58	57	52	47	28	8

Packaging Configuration Group 3						
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Rigid Liner Vent Hole Diameter [b]**				**No Liner Lid**	**No Liner**
	0.3-inch Diameter Hole	**0.375-inch Diameter Hole**	**0.75-inch Diameter Hole**	**1-inch Diameter Hole**		
1.9×10^{-6}	199	161	96	80	46	16
3.7×10^{-6}	175	148	93	79	46	16
3.7×10^{-5}	72	72	67	62	42	10

Packaging Configuration Group 4	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Headspace Sample Taken Inside Pipe Component**
$> 1.9 \times 10^{-6}$	152

Packaging Configuration Group 5	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	15
3.33×10^{-5} (TDOP)	15

Packaging Configuration Group 6	
Filter H_2 Diffusivity [a, c] (mol/s/mol fraction)	**Headspace Sample Taken Inside SWB/TDOP**
$> 7.4 \times 10^{-6}$ (SWB)	56
3.33×10^{-5} (TDOP)	56

Packaging Configuration Group 7[d]			
Filter H_2 Diffusivity[a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol fraction)[a]**		
	7.4×10^{-6}	**1.85×10^{-5}**	**9.25×10^{-5} [e]**
3.7×10^{-6}	13	7	2
7.4×10^{-6}	10	6	2
1.85×10^{-5}	6	4	2

Packaging Configuration Group 8	
Filter H_2 Diffusivity [a] (mol/s/mol fraction)	**Inner Lid Filter Vent Minimum H_2 Diffusivity (mol/s/mol/fraction)**
	7.4×10^{-6}
3.7×10^{-6}	21

a. The documented filter H_2 diffusivity must be greater than or equal to the listed value to use the DAC for the listed filter H_2 diffusivity (e.g., a container with a filter H_2 diffusivity of 4.2×10^{-6} must use a DAC for a filter with a 3.7×10^{-6} filter H_2 diffusivity). If a filter H_2 diffusivity for a container is undocumented or unknown or is less than 1.9×10^{-6} filter H_2 diffusivity, a filter of known H_2 diffusivity that is greater than or equal to 1.9×10^{-6} filter H_2 diffusivity must be installed prior to initiation of the relevant DAC period.

b. The documented rigid liner vent hole diameter must be greater than or equal to the listed value to use the DAC for the listed rigid liner vent hole diameter (e.g., a container with a rigid liner vent hole of 0.5 in. must use a DAC for a rigid liner vent hole of 0.375 in.). If the rigid liner vent hole diameter for a container is undocumented during packaging (Attachment C, Section C-3(d)1), repackaging (Attachment C, Section C-3(d)1), and/or venting (Section C1-1a[4][ii]), that container must use a DAC for a rigid liner vent hole diameter of 0.30 in.

c. The filter H_2 diffusivity for SWBs or TDOPS is the sum of the diffusivities for all of the filters on the container because SWBs and TDOPs have more than 1 filter.

d. Headspace sample taken between inner and outer drums lids. If headspace sample is taken inside the filtered inner drum lid prior to placement of the outer drum lid, then a DAC value of 2 days may be used. Footnote e is also applicable. Packaging Configuration Group 7 DAC values apply to drums with up to two lids.

e While a DAC value of 2 days may be determined, containers must comply with the equilibrium requirements specified in Section C1-1a (i.e., 72 hours at 18°C or higher). The equilibrium requirement for headspace gas sampling shall be met separately.

Appendix B̃ – Instructions for HGAS — Preparing a Batch Data Report

NOTE 1: *Personnel must ensure that the "Enhanced Data Analysis" application is NOT running and that the HGAS_REVIEW Workstation BDR-relevant directory structures ("C:\HPCHEM\1\DATA\", "C:\HPCHEM\BATCH\", "C:HPCHEM\SDG\", "C:\HGASDATA\BATCHFOLDERS\", "C:\HPCHEM\1\METHODS\" should not have a "vocgas.m" directory present) are empty and/or devoid of any interfering files.*

NOTE 2: *For safety and traceability, in order to use the "Checkout" and "Checkin" software utilities to retrieve and return any HGAS-SERVER batch data, a chemist must have a valid username and password. An HSG chemist is to be contacted for HGAS SERVER access setup.*

NOTE 3: *Before starting work in building the Batch, the following items need to be performed to ensure the information is correct:*

- *Review Form-1449 and HSGS in WTS: AMWTP – Characterization – HSGS – Drum Age criteria. Operator must have a signature in this form.*
- *Review Daily checks in WTS: AMWTP – Characterization – HSGS – HSGS Daily checks. Operator must have a signature in this form.*
- *Review the Head Space Gas Report in WTS: AMWTP – Characterization – HSGS- Head Space Gas Report. In the HGAS report, 1) Check the heading information; 2) Verify that each container has been maintained with an environment of ≥18°C for a minimum of 72 hrs; and 3) Check that the filter information is updated.*
- *Run a NCR query of all containers sampled in the batch to determine what affect they may have on data reporting.*

1. To download the batch data from the HGAS-SERVER to the HGAS_REVIEW Workstation for processing, launch the "Checkout Batch Data" software utility.

2. Enter your valid username and password and single-left-click "Login."

3. Single-left-click "Select Batch" to select the actual drum batch data to be transferred from the HGAS-SERVER to the HGAS_REVIEW Workstation.

4. From the ensuing "Select Instrument.vi" window, select the drum batch's relevant Instrument Working directory (e.g. drum batch HS205_00022B comes from HGAS_02_Working) and single-left-click "OK."

5. From the ensuing "Select Batch for Checkout.vi" window, select the batch of interest from the listed series of .ini files (e.g. HS205_00022B.INI). If the batch has been previously processed then it will not be included in this list of unprocessed batches. Toggle the "View available processed batches." switch for accessibility to previously processed batches. When selected, single-left-click "OK."

6. Once the active window focus has returned to the "Checkout Batch Data.vi" dialog window and the "Batch" indicator field has populated, single-left-click "Checkout." The "Batch" indicator field will begin flashing red and will continue to do so until the entire batch data (except any previously generated .XLS and .CSV files) have been transferred from the HGAS-SERVER to the HGAS-REVIEW Workstation.

NOTE: *After the "Batch checkout" is complete, open BATCH folder in your desktop (Batch…..ini) and look for sampling and analysis were performed within 12 hr since the injection of their respective BFBs. If they are out of the 12 hr range, they will be Not Reported. Also check that the dup container (XXXXXXXX_DUP) has a space separation.*

7. If no transfer errors occurred (a "Batch checkout complete." confirmatory dialog box will appear); then single-left-click "OK."

8. Open Enhanced Data Analysis by double clicking on the desktop icon. Go to File/Load Data File. Double click on "Data" in the "Directories" window. Then select the desired batch folder with the proper alpha identifier. e.g. HS205_00022B.

9. Load the shift 1 BFB from the proper data file. When the window "DataFile Quantitated Using C:\HPCHEM\1\Methods\Tune.M Load?" pops up, select "YES." When the window "Save Current Method: VOCGAS.M?" pops up, select "NO."

10. Minimize Enhanced Data Analysis and right mouse click on the start menu and go to "Explore."

11. Go to folder located in C:\HGASData\BatchFolders and find the batch folder you are working on.

12. Once inside the folder right mouse click on the folder "vocgas.m" and copy.

13. Go to C:\HPchem\1\METHODS right click in the open field and paste the Vocgas.M method into the folder. Select "Yes All" when prompted. This will copy over the existing VOCGAS.M file with the one from the batch you are working on.

14. Go back to Folder located in C:\HGASData\BatchFolders and find the batch folder you are working on.

15. Right mouse click and copy the hgas.ini file and paste into the open field at C:\HPchem\HGAS. When prompted by pop-up window select "YES." This will copy over the existing hgas.ini file with the one from the batch you are working on. Close Explore window.

16. Maximize Enhanced Data Analysis.

17. Go to "Method" in the menu bar and select "Load Method" When prompted by the pop-up window, "Be Sure Changes are Saved. Load now?" Select "YES." Double click on the "vocgas.m" method in the "Directories" window.

18. Click on "HGAS" in the menu bar and click on "Reprocess old data." Ensure the correct Batch Number is identified and click "OK."

19. Minimize Enhanced Data Analysis.

20. Go to the "Excel MDL's and RTW's" folder on the desktop. Print out the MDL and MPS associated with this batch.

21. Maximize Enhanced Data Analysis.

22. Verify the method VOCGAS.M has the proper values for the MDL by comparing Page 2 of the compound database with the associated MDL. Click on "Calibrate" in the menu bar, then click on "Edit Compounds" highlight a compound such as Methanol and click "view" and click the "Page 2" button. Compare the MDL value on Page 2 with the MDL spreadsheet value. Spot check the MDL's by choosing 4 or 5 compounds to compare with Page 2 of the compound database and close the two open windows. IF MDL hasn't been updated, update MDL values manually.

23. Click on "HGAS" in the menu bar and click on "Update Form1A/1ADP." When the excel window changes to a gray color, Close the window.

24. Click on "HGAS" in the menu bar and click on "Update Form3A/3ADP." When the excel window changes to a gray color, Close the window.

25. Click on "HGAS" in the menu bar and click on "Update Form3B/C." When the excel window changes to a gray color, Close the window.

26. Minimize Enhanced Data Analysis.

27. Locate the "Batch.ini files" folder located on the desktop, and double click.

28. Open the ini file associated with your batch and note the "Good Scan" and "Background scan" numbers for both shift 1 and shift 2. Shift 2 is located towards the bottom of the page. WRITE THESE NUMBERS DOWN ON A SCRATCH PIECE OF PAPER.

29. Ensure the Shift pointer = 1. Save and close the ini file.

30. Maximize Enhanced Data Analysis and load the shift 1 BFB. When the window "DataFile Quantitated Using C:\HPCHEM\1\Methods\Tune.M Load?" pops up, select "YES." When the window "Save Current Method: VOCGAS.M?" pops up, select "NO."

31. After expanding the BFB peak, go to "Chromatogram" in the menu bar and click on "integrate." By doing this action it is easy to identify where the Background scan is (the left hand edge of the red integrate line). Double right click on the left hand side of the peak to locate the proper scan, i.e., Good Scan = 367. Then double right click on the background scan.

32. Go to "Tuner" in the menu bar and click on "Subtract."

NOTE: *"Print," "printer," or "print out," refers to printing results to an Adobe.pdf file on your local computer. The exception to this is if you are building a manual batch; in which case, you produce hard copies.*

33. Print out the scan by going to Tuner/Evaluate BFB to printer. Make sure of a passing scan. Perform an apex scan or 3 point apex scan on the BFB and print the passing scan. Identify the passing apex scan as apex or 3-point apex on the printout and file with the supplemental pages that accompany the batch.

NOTE: *If BFB does not pass either the apex scan or the 3-point apex scan then NCR the entire batch.*

34. Load the first shift CCAL. If prompted by pop-up window "DataFile Quantitated Using C:\HPCHEM\1\Methods\Vocgas.M Load?" Select "YES." If prompted by another pop-up window "Save Current Method: Tune.M?" Select "NO."

35. Click on "View" in the menu bar and select QEdit Quant Result. This will bring up the Quick QEdit window.

36. Review the CCAL data for proper identification, integration, etc… When review of all the compounds is finished then click "Exit" and then save when prompted by the window.

37. Click "HGAS" in the menu bar and click VOC "Capture." If control flags are found then review and determine the proper method was used in analysis.

38. Click on "HGAS" in the menu folder and click "Evaluate Data File as Continuing Cal to Screen," print this page out, and file with the supplemental pages that accompany the batch. IF the correct method has been loaded, THEN this screen will have no errors and %Dev is ± 30%. After the CC evaluation, and if all values are correct, the compounds: Quantitate – Generate Report – Detailed-Printer are printed to PDF.

39. Load the shift 1 LCS and perform QEdit as above. Ensure that hydrogen, methane, and the six VOC compounds are correctly identified and within limits. Click exit, and then save when prompted by the window. Click "HGAS" in the menu bar and click VOC "Capture." After the LCS evaluation and if all is correct, the compounds: Quantitate-Generate Report-Detailer-printer are printed to PDF.

40. Perform QEdit of the Equipment Blank and Field Blank as above.

41. Minimize Enhanced Data Analysis

42. Before entering into the Shift 2 BFB, the pointer in the Batch.ini file must be changed to 2. When the pointer has been changed click "File/Save" in the menu bar and close file folder.

43. Maximize Enhanced Data Analysis.

NOTE: *If BFB does not pass either the apex scan or the 3-point apex scan, then NCR the entire batch.*

44. Load Shift 2 BFB. When the window "DataFile Quantitated Using C:\HPCHEM\1\Methods\Tune.M Load?" pops up, select "YES." When the window "Save Current Method: VOCGAS.M?" pops up, select "NO." Identify the Good Scan/Background Scan for shift 2 and print the BFB. Perform an apex scan, if necessary perform the 3 point apex scan, on the BFB and print the passing scan. Identify the passing apex scan as apex or 3-point apex on the printout and file with the supplemental pages that accompany the batch.

45. Load the shift 2 CCAL. If prompted by pop-up window "DataFile Quantitated Using C:\HPCHEM\1\Methods\Vocgas.M Load?" Select "YES." If prompted by another pop-up window "Save Current Method: Tune.M?" Select "NO."

46. Click on "View" in the menu bar and select "QEdit Quant Result." This will bring up the Quick QEdit window.

47. Review the CCAL data for proper identification, integration, etc. When review of all the compounds is finished then click "Exit" and then save when prompted by the window.

48. Then click "HGAS" in the menu bar and click "VOC Capture." If control flags are found, then review and determine the proper method was used in analysis.

49. Click on "HGAS" in the menu folder and click "Evaluate Data File as Continuing Cal to Screen", print this page out, and file with the supplemental pages that accompany the batch. After the CC evaluation and if all values are correct, the compounds: Quantitate-Generate Report – Detailed-Printer are printed to PDF.

50. IF the correct method has been loaded, THEN this screen will have no errors and %Dev is ± 30%.

51. Load the shift 2 LCS and perform QEdit as above. Ensure that hydrogen, methane, and the six VOC compounds are correctly identified, integrated, and within appropriate limits. Exit, and VOC Capture.

NOTE: *The following steps may be worked in any order.*

52. Perform QEdit of drum samples.

53. Ensure the LSC parameters are set. Go to LSC in the menu bar and ensure the "include LSC Report in Quant Report" radio button is checked. Go to "LSC" in the menu bar and click on "Edit Parameters for LSC report." Ensure "Use Library Search Time Range" radio button is checked. Ensure Library Search Time is set from 0.90 to 8.75 minutes or as appropriate, and click "OK."

54. In Enhanced Data Analysis go to File/Load Data File and load the first drum.

55. Go to View/QEdit Quant result and ensure proper integration of the identified compounds and make a note of any compounds that need dilutions.

56. If co-eluting compounds have been identified, then exit QEdit and go to View/Review Peak Purity to determine if more than one peak is truly identified in the Retention Time Window.

57. Go to View/QEdit and QDel any misidentified compounds.

58. Compare non-identified peaks with the nearest Internal Standard.

59. Go to Chromatogram/Integrate then Chromatogram/Integration results.

60. Highlight the entire compound list in QEdit by clicking the left mouse button and hold while dragging the mouse curser from the top of the list to the bottom of the list. This action will turn all 36 compounds to the color blue.

61. Hold the control button down on the keyboard and left mouse click on all identified compounds.

62. Press the "QDel" button in the Quick QEdit menu. This will delete all the unwanted compounds and will help the software identify any TIC's.

63. Exit QEdit, click save when the dialog box pops up, and VOC Capture by clicking on "HGAS" in the menu bar and then clicking on "VOC Capture."

NOTE: *A pop-up window "LOL Flags found in sample" may appear after VOC Capture has been initiated. This window identifies how many compounds need dilutions in the original sample. If no dilutions are needed, the window will not pop-up.*

64. If the pop-up window "LOL Flags found in sample" appears, click "OK."

65. Double-check and ensure the LSC parameters are set.

66. Before moving on to the next drum sample or next dilution sample, Go to "Quantitate" in the menu bar and click on "Generate report." This action will identify if there are any TICs, which meet the criteria of greater than or equal to 10% of the nearest Internal Standard.

67. Quant Report Options" pop-up window, "Summary" shall be highlighted in the Style window, "Screen" radio button is checked, and "detail.xls" shall be identified in the bottom most window. Click "OK."

NOTE: *The two windows that pop-up are the raw data reports for Non-Target Peak Search Report and the Quantitation report for the particular drum file.*

68. Close both the Non-Target Peak Search Report and the Quantitation report.

69. Go to File/Load Data File or File/Next Data File to load the next sample.

NOTE: *Multiple Files for the same drum Must be QEdited in sequence. Drum…, Dilution..., Dilution.*

70. Quick QEdit the dilution files by highlighting all the compounds in the Quick QEdit window using the right mouse button.

71. Hold the control button down and click on the Internal Standards and the compound(s) needing dilution. This will ensure the dilution file contains Internal Standards and the diluted compounds only.

72. Click QEdit….Exit….Save….HGAS/VOC Capture.

73. Repeat these steps for remaining drum files and dilution files. After finishing the evaluation of all the files and dilutions, and before starting the printing, PDF needs to be changed to Ghost Printer.

74. When analysis is completed for all drum and dilution samples, Go to Reports in the menu bar and click on VOC. Ensure the proper Batch ID is listed in the pop-up window. This will start the BDR printing process. Printing the BDR is time intensive and spools very slowly…. Stay patient.

NOTE: *All the resulting Excel files will be listed in the desktop folder: VOCDATA. These results may be reviewed against the PDF raw files.*

75. Go to Tools in the menu bar and click on the Do list. In the first pop-up window click on the button "Use Configured Dolist Options" and click "OK." In the next pop-up window click on "Full Quant w/o Calculations" and click "OK."

76. The next window to appear is the Multiple File Select window. Left mouse click, hold, and drag to highlight all the data files. Hold down the Control button on the keyboard and de-select the two BFB files. Click on the arrow pointing to the "File Selected for Processing" window. This will populate the window with all of the files except for the two BFB files. Click on the "Process" button to start the Raw Data printout.

NOTE 1: *The Enter key must be held down during the spooling process to ensure all of the files are spooled and printed.*

NOTE 2: *This step is used only for manual batches.*

77. Print out the Headspace Gas Report forms from WTS for the drums contained within the Batch.

NOTE: *This step is used only for manual batches.*

78. If manual BDR, then print out the Filter Insertion Screen from WTS for the drums contained within the Batch.

79. Supplemental Batch Information may include the following:

- Retention Time Window from the ICAL
- Response Factors to screen
- Apex/3-pt Apex BFB Scan
- Shift 1 & Shift 2 "Evaluate Continuing Cal to Screen"
- Filter Insertion Screen
- Hgas.ini.

80. Cross-reference and validate all of the VOC Reports that constitute the BDR against the raw data for correctness and validity.

NOTE: *Personnel must ensure that the "Enhanced Data Analysis" application is NOT running and that none of the BDR's VOC Reports are open.*

81. To transfer the batch data (including any newly generated VOC Reports, .XLS and .CSV files) back to the HGAS-SERVER, launch the "Checkin Batch Data" software utility.

82. Enter your valid username and password and single-left-click "Login."

NOTE: *Before starting the transfer of batch data, "Enhanced Data Analysis" must be logged out of.*

83. In the ensuing "Checkin Batch Data.vi" window the "Batch" indicator field should auto-populate with the batch (e.g. HS205_00022B) currently residing on the HGAS_REVIEW Workstation; single-left-click "Checkin." The "Batch" indicator field will begin flashing red and will continue to do so until the entire batch data is transferred back to the HGAS-SERVER or an error is reported.

NOTE: *The "Server CSV File Transfer.vi" software utility can be independently launched, at a later date, to achieve the same functionality of transferring a copy of a particular batch's .CSV files from the HGAS-SERVER to RAWFS for WTS usage.*

84. If there are .CSV files on the HGAS_REVIEW Workstation, then the "Server CSV File Transfer" software utility will automatically launch with the "Batch ID for CSV Transfer" field indicator auto-populated. ONLY if the batch will be electronically completed and validated, via WTS, should you single-left-click "Transfer Files"! Otherwise single-left-click "Cancel" and proceed with the manual BDR process.

Level II Data Validation

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10153.*) 08/25/11

Enrique Torres
TRU Programs Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.9, Rev. 24	Issued: 08/29/11	Effective: 08/30/11
Level II Data Validation		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/17/02	All	Initial issue. DCR-2002-1306
1	11/21/02	A18, A27, A32, A38, A43, A47	DCR-1759: Changed revision number from 0 to 1. Added "AMWTP HWMA/RCRA Storage Permit" to note the requirement.
2	02/10/03	Various	DCR-1215: Changed revision number from 1 to 2. Added Manual validation process to procedure. Removed checklist from procedure and created forms.
3	03/28/03	All	DCR 2163: Change effective date from "When DOE Approves Retrieval Operations" to March 28, 2003
4	05/02/03	All	DCR 2199: Incorporate CBFO comments. Comments incorporated and verbally approved by CBFO on 05/02/2003.
5	09/25/03	All	DCR-2378: Incorporate additional guidance per CBFO Certification Audit A-03-05, CBFO CAR 03-072
6	04/08/04	Various	DCR-2842: Addition of form (Form-1554, Site Quality Assurance Officer – HGAS On-line HSG Sampling and Analysis Checklist) for SQAO validation of headspace gas data acquired on the new HGAS instruments; minor corrections/editorials to Form-1387.
7	04/22/04	Various	DCR-2907: New section on drum file management added to better define manual process and in response to CAR-4465 corrective actions. New text added to define NCR process with respect to WIPP-WAP and WIPP-WAC requirements in response to CAR-4634 corrective actions.
8	04/28/04	17 and 18	DCR-2976: Change Title of Technical Administrator to Waste Programs Data Management Specialist. Delete Step 4.4.5, which is redundant to steps in MP-TRUW-8.11 and includes reference to Form-1569 which will not be implemented.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.9, Rev. 24	Issued: 08/29/11	Effective: 08/30/11
Level II Data Validation		

Revision Number	Date Approved	Pages Affected	Description of Revision
9	08/12/04	4 and 14	DCR-3243: Incorporate CBFO Comments. Delete the sentence "The WAP requires AK confirmation to be performed during characterization activities, not during data validation. Inclusion of initiating an NCR if there is a problem with the batch or the DGL validation.
10	01/13/05		DCR–3353. Incorporate CH-TRAMPAC, Rev 1, and CH-WAC, Rev 2, requirements. Incorporation of CBFO DRR comments. Minor editorial changes. Incorporate WIPP Comments from Revision 10B
11	04/14/05	P2, 3, 16 Various	DCR-4225. Incorporate Summa Sampling and Analysis. Create new Forms 1620, 1621, 1622, 1623 and include in Records section. DCR-4225-B. Incorporate CBFO comments
12	02/16/06	All	DCR-4674. Incorporate numerous process improvements in this document and in associated forms.
13	05/15/06	Various	DCR-4912. Change all Core Sampling references to Solid Sampling. Other editorial clarifications throughout procedure.
14	7/10/06	9 and 11	DCR-5092. Minor change to add "for manual batches" at the end of Steps 3.1.10 and 3.2.7 and to change the order of Steps 3.2.7 and 3.2.8.
15	1/05/07	All	DCR-5474. Complete rewrite to incorporate the changes required by CBFO to reflect the WAP 311 modifications. Incorporate CBFO DRR comments.

Revision Number	Date Approved	Pages Affected	Description of Revision
16	02/20/07	Pages 1, 4 and Step 3.2.5	DCR-5741. Revise 1st paragraph of Section 1 to clarify HSGS validation requirements; Delete Step 3.1, 5th bullet which is not required as it was incorporated in Section 1 and add new Step 3.2.5 to address WTS requirement to complete a checklist before promoting to reconciliation.
17	03/25/08	Various	DCR-6033. Deleted references to MP-TRUW-8.3 being cancelled in support of CCP transition, and other editorial changes in accordance with MP-DOCS-18.3.
18	7/15/08	Page 10	DCR-7122. Revised to ensure quarterly reviews are completed.
19	07/31/08	Page 7	DCR-7367. Add information "or electronic NCR report" for clarification.
20	9/30/08	Page 7	DCR-7536. Clarify note on page 7 per audit observation (A-08-19).
21	06/07/10	Pg 2 and 7	DCR-9224. Incorporated the WIPP permit modification for liquids, VE, and NCRs.
22	07/19/10	Pg 9 Note	DCR-9409. Change "5 calendar days" to "7"calendar days" to be consistent throughout.
23	10/27/10	Various	DCR-9556. As part of AI 52095, moved "batch data report" information out of Section 3.0 to Section 4.0, Definition.
24	08/25/11	Pages 2 and 6	DCR-10153. To address CAR 61367, revised/added responsibilities for SPM in Section 2.0 and added new Steps 3.1.8 and 3.1.9. To address AI 63986, deleted some data management specialist responsibilities and deleted all of Section 3.3.

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.9, Rev. 24	Issued: 08/29/11	Effective: 08/30/11
Level II Data Validation		

1.0 PURPOSE/SCOPE

This management procedure (MP) is used to document the Project Level Data Validation performed by the Site Project Manager (SPM) at the Advanced Mixed Waste Treatment Project (AMWTP), as required by MP-TRUW-8.2, Quality Assurance Project Plan, and MP-TRUW-8.1, Certification Plan for INL Transuranic Waste. MP-TRUW-8.2 defines the requirements for validation of real-time radiography (RTR), visual examination (VE), headspace gas sampling (HSGS) and analysis, and solid sampling and analysis. HSGS validation associated with transportation requirements for volatile organic compounds and hydrogen/methane do not apply to this procedure. MP-TRUW-8.1 defines the requirements for validation of radioassay (RA), RTR, and VE in accordance with DOE/CAO-94-1012, Quality Assurance Program Document.

The validation steps in this procedure require Project Level reviewers to complete checklists in the Waste Tracking System (WTS) or on controlled checklists or forms for batches that have been validated at the Data Generation Level (Level 1). The SPM completes checklists on batches that have been approved by the Independent Technical Review (ITR). All applicable data collected shall be validated. Validation shall include reviewing relevant documentation to evaluate technical adequacy, completeness, the suitability for intended use, and the adequacy of the Acceptable Knowledge (AK) record, as well as documentation of the data review. Data validation shall be controlled to permit independent reproducibility by another qualified individual.

The SPM also reviews each container in the *batch data report* (BDR; see def.) for consistency with the assigned waste stream documentation (e.g., Environmental Protection Agency [EPA] Hazardous Waste Number [HWN] assignments, radioisotope data, and physical form). Inconsistencies are documented and incorporated into the AK record as appropriate (see MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
SPM	• Reviews 100% of the BDRs generated as a result of waste characterization activities prior to any of the associated waste being shipped to the Waste Isolation Pilot Plant (WIPP). • Verifies completion of BDRs and ensures all data are properly reported (e.g., correct units, correct significant figures and correct qualifying flags). • Verifies on-line BDR quality control (QC) checks are properly performed and meet the established Quality Assurance Objectives (QAOs) as defined in MP-TRUW-8.2, and are within established data usability criteria. • Verifies testing batch QC checks are properly performed as defined in MP-TRUW-8.2. • Verifies sampling and analytical batch QC checks are properly performed, meet the established QAOs, and are within established data usability criteria. • Verifies batch QC checks are performed, meet the established QAOs, and are within established data usability criteria. • Verifies proper procedures were followed to ensure that data was collected in a technically correct manner. • Completes the appropriate Project Level Validation and Verification Checklist. • Verifies the validity of the drum age criteria (DAC) assignment made at Level I, based upon an assessment of the data collection and evaluation necessary to make the assignment. • Generates nonconformance reports (NCRs) and Corrective Action Reports (CARs), as required. • Reviews NCRs and verifies that corrective actions have been appropriately dispositioned. • Reports non-administrative nonconformances which are first identified at the SPM review (i.e., failure to meet a data quality objective) to WIPP by written notification within 7 calendar days after identification and provides the NCR to WIPP within 30 calendar days of identification of the incident. • Responsible for nonconformance identification and documentation of all WIPP-related NCRs.

Performer	Responsibilities
SPM (cont.)	• Releases the BDRs by signature and date upon completion of reviews. • Ensures Level I quarterly review is complete.
Waste Programs Data Management Specialist	• Transfers manual BDRs and associated checklists to Records Management.

3.0 PROCEDURE

NOTE: *The SPM validation occurs for each container in the BDR. The SPM review occurs as soon as practically possible in order to determine and correct negative quality trends. The SPM and data validation summaries are combined and included as part of the BDR and SPM data review checklist.*

3.1 Validation by the SPM

NOTE 1: *This section applies to both electronic and manual validation unless otherwise specified.*

NOTE 2: *All characterization BDRs must have ITR validation complete with signature release prior to SPM review.*

3.1.1 Access an approved batch from the WTS, or obtain a manual BDR from the Waste Programs Data Management Specialist, and use the following data review checklists, as applicable:

- Form-1397, Site Project Manager RTR Data Validation Checklist
- Form-1398, Site Project Manager Visual Examination Validation Checklist
- Form-1399, Site Project Manager RA Data Validation Checklist
- Form-1400, Site Project Manager On-Line HSGS and Analysis Data Validation Checklist
- Form-1401, Site Project Manager Solid Sampling Checklist
- Form-1609, SPM Analysis of Homogenous Solids and Soils/Gravel Checklist
- Form-1859, Site Project Manager Small Container Sampling Checklist.

3.1.2 For manual BDR checklists, indicate the batch number being validated on each page of the checklist.

3.1.3 RTR, VE, and RA characterization batches require a comparison of container data with AK documentation, with the results documented on the applicable questions of the SPM validation checklists.

NOTE: *The SPM data validation summary checklists include all aspects of the BDR that affect data quality. The BDR and checklists identify the BDR number, identify a list of container numbers, and describe the validation and whether or not problems were detected (e.g., NCRs). Summaries are combined and include a signature release.*

3.1.4 Complete the data review and ensure that the BDR is complete, that data is reported properly, and that proper procedures were followed.

3.1.4.1 Complete all questions on checklist with "YES," "NO," or "N/A," as appropriate.

3.1.4.2 If a question is answered in a different way than the response by the reviewer, then evaluate the impact and enter comments as appropriate.

3.1.5 Verify that the characterization results meet the program QA/QC criteria, that instrument performance criterion have been met, and that the data quality objectives (DQOs) and QAOs for the subject characterization have been met, as referenced on the validation checklists.

NOTE: *Form-1491, Batch Data Report Supplemental Comment Form, is used for manual validation only.*

3.1.6 Document all concerns and comments using the appropriate checklists or Form-1491.

3.1.6.1 Use comments column on the applicable checklist to clarify review as appropriate, to document specific items of objective evidence used in review, and to document specific concerns.

3.1.7 Confirm through validation review that NCRs have been issued for:

- Containers with nonconforming conditions affecting data quality, instrument performance criteria, and DQOs or QAOs
- Containers found to contain prohibited items.

NOTE 1: *For any non-administrative nonconformance related to applicable requirements specified in MP-TRUW-8.2, which are first identified during SPM batch data review (i.e., failure to meet a DQO), Carlsbad Field Office (CBFO) shall receive written notification within 7 calendar days of identification in accordance with MP-Q&SI-5.4, Identification of Nonconforming Conditions.*

NOTE 2: *The confirmation team will examine NCR documentation for each container selected for confirmation to verify NCRs have been dispositioned.*

3.1.8 If characterization related QAOs/DQOs are not met, then generate an NCR in accordance with MP-Q&SI-5.4.

3.1.9 If an NCR has not been issued, notify the ITR, ITR Lead, and RTR SME and evaluate potential operator performance problems.

3.1.10 If the operator performance evaluation determines a programmatic issue, ensure that a Type-1 NCR has been generated.

NOTE: *If validation determines that an RTR analysis is invalid and rejected, an evaluation of the impact on headspace sampling must be documented on an NCR.*

3.1.11 If an NCR has been generated or a batch requires rework, then take the following steps:

3.1.11.1 Complete review of the checklist to ensure that all items requiring rework are identified before batch rejection.

3.1.11.2 Demote the batch to the ITR.

3.1.11.3 Document the NCR number or rework requirements as reasons for batch rejection using the appropriate data review checklist, batch comment, or Form-1491.

3.1.12 Confirm that all applicable NCRs and their status are documented on the manual BDR narrative or electronic NCR report.

NOTE: *For manual BDRs, any changes or corrections will be lined through, initialed, and dated by the person making the change. No data entries shall be obliterated or made otherwise illegible through writing over or other means.*

3.1.13 If a batch is demoted to Level I for changes and re-approved to the SPM level, then review all changes and confirm that corrective actions have been completed or appropriately generated for all nonconformances and that the condition that led to the NCR has been dispositioned.

3.1.14 Ensure that applicable NCRs documented in TrackWise are consistent with those identified in WTS.

3.1.15 Approve and release the data by electronic or manual signature.

NOTE: *Data Management must be notified when validation is complete for manual BDRs.*

3.1.15.1 Print, sign, and date completed checklist(s) and give batch to Waste Programs Data Management Specialist.

3.1.15.2 Waste Programs Data Management Specialist: Complete pagination of the manual BDR and all associated checklists. All pages in the BDR should be in numerical order and legible.

3.1.15.2.1 Ensure any truncated fields have been expanded to full text and are legible.

3.1.15.2.2 Verify each page in the BDR is complete, legible, and contains the correct batch number.

3.1.15.2.3 Transfer manual BDR to the SPM for final review and BDR cover page sign-off completion.

3.1.15.3 SPM: Ensure that pagination is correct and sign SPM release on the BDR cover page. Return the batch to the Waste Programs Data Management Specialist.

3.1.15.4 Waste Programs Data Management Specialist: Transfer manual BDR with all associated checklists to Records Management in accordance with MP-DOCS-18.2, Records Management.

3.2 Supplemental Batches

NOTE: *The same checklist forms used for the original batch are used for supplemental batches. Since the scope of the validation is limited to the change or update, the response to some questions will be "N/A." Comments may also be recorded on Form-1491.*

3.2.1 Access a Level I approved batch from WTS, or obtain the manual BDR and appropriate data review checklists as identified in Section 6.0, Records.

3.2.2 For manual batches, indicate the batch number with the word "Supplement" following it on each page of the checklist.

3.2.3 Indicate the response to each question, enter comments, and affix attachments as necessary.

3.2.4 For assay batches, ensure the RA Analysis sheet(s) have been updated to reflect the applicable change or update.

NOTE: *For any non-administrative nonconformance related to applicable requirements specified in MP-TRUW-8.2, which are first identified at the SPM signature release (i.e., failure to meet a DQO), CBFO shall receive written notification within 7 calendar days of identification in accordance with MP-Q&SI-5.4.*

3.2.5 Coordinate any necessary rework with Level I. Issue NCRs as necessary to document inadequacies.

3.2.6 If manual BDR, ensure that pagination is correct and sign SPM release on the BDR cover page.

3.2.6.1 Return the BDR to the Waste Programs Data Management Specialist.

3.2.7 If electronic BDR, notify Data Management BDR is complete.

3.2.8 Waste Programs Data Management Specialist: If manual, transfer BDR with all associated checklists to Records Management per MP-DOCS-18.2.

3.3 Quarterly Review

3.3.1 SPM: At least once each quarter (every three months), ensure that the Level I review, validation, and verification are repeated on the data for a minimum of one randomly chosen waste container. This quarterly review will be scheduled and reported in accordance with MP-M&IA-17.3, Quality Assurance Surveillances.

NOTE: *The SPM will review and evaluate the Level I quarterly review in Trackwise.*

3.3.1.1 Ensure Level I quarterly review is complete according to implementing procedures.

4.0 DEFINITIONS

Batch data report. The following batch types are generated for data validation, verification, and quality assurance (QA) activities:

- Testing BDRs include all data pertaining to RTR, RA, and VE batches.
  - RTR and VE batches consist of up to 20 waste containers without regard to waste matrix. These BDRs include data collection results, QC documentation, videotapes as applicable, and the appropriate data review checklists (either hard copy or electronic equivalent).
  - RA batches are defined as a suite of waste containers undergoing radioassay using the same testing equipment. The size of the testing batch will vary based on operational needs, without regard to waste matrix. BDRs consist of background and performance data for the time period of the batch, measurement results, and the appropriate data review checklists (either hard copy or electronic equivalent).
- Sampling BDRs include all sample collection data pertaining to a group of no more than 20 samples, excluding field QC samples, which were collected for chemical analysis. Sampling BDRs may include chain of custody (COC) forms, QC documentation field records, and data review checklists.

- Analytical BDRs or equivalent includes analytical data from the analysis of TRU-mixed waste for up to 20 headspace gas or homogeneous waste samples, excluding lab QC samples, within 14 days of validated time of sample receipt of the first sample in the batch. Because analytical BDRs are generated based on the number of samples analyzed, an analytical BDR for headspace gas may contain results that are applicable to more than 20 containers, depending on how many composite samples are part of the report, but may not exceed a total of 20 field samples analyzed. Headspace gas samples must contain sufficient information to identify the containers that were composited for each composite sample and the sample volume that was taken from each waste container. Analytical BDRs may also include sample results, QC sample results, raw data, and data review checklists.

- On-line BDRs or equivalent contain the combined information from the Sampling BDR and Analytical BDR relevant to the on-line method used. An on-line batch is the number of headspace gas samples collected within a 12-hr period using the same on-line integrated analysis system. On-line BDRs include sample results, raw data, QC data, and data review checklists.

- Supplemental batches are generated at Level I validation for purposes of updating the record with new characterization information obtained from solid sampling, treatment, or any other change affecting the original analysis. For RTR and VE, the new information may also be captured on the RTR/VE update (RVU) analysis sheet.

- Manual supplemental batches are also generated to correct administrative errors to batches previously validated through SPM. For these types of administrative corrections or updates, new validation checklists are not required. The supplemental batch shall include a cover page with a narrative explaining the change or update, and a signature field for each level of validation to sign and date the acknowledgement of the change or update.

5.0 REFERENCES

(1) DOE/CAO-94-1012, Quality Assurance Program Document

(2) MP-DOCS-18.2, Records Management

(3) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(4) MP-M&IA-17.3, Quality Assurance Surveillances

(5) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(6) MP-TRUW-8.2, Quality Assurance Project Plan

(7) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.9, Case File	Nonpermanent WIPP ENV1-J-1 /Destroy 10 years after being superseded.
Batch Data Report consisting of the following (as appropriate): • Form-1397, Site Project Manager RTR Data Validation Checklist • Form-1398, Site Project Manager Visual Examination (VE) Validation Checklist • Form-1399, Site Project Manager RA Data Validation Checklist • Form-1400, Site Project Manager On-Line HSGS and Analysis Data Validation Checklist • Form-1401, Site Project Manager Solid Sampling Checklist • Form-1491, Batch Data Report Supplemental Comment Form • Form-1609, SPM Analysis of Homogeneous Solids and Soils/Gravel Checklist • Form-1859, Site Project Manager Small Container Sampling Checklist	Lifetime WIPP Records/ENV1-J-1/ Turnover to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

None

Data Reconciliation

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11546.*) 09/25/12

Susan Peterman
TRU Programs Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/22/02	All	Initial issue. DCR-2002-1267
1	09/05/02	22	DCR-1467: Changed revision number from 0 to 1. Changed reference 50 CFR to "40 CFR."
2	09/26/02	Page 26	DCR-1539: Changed revision number from 1 to 2. Added information to Step 4.4.14 & Section A.2 of Appendix A
3	12/10/02	O2 & O3 of 3	DCR-1768: Changed revision number from 2 to 3. Added clarification to Purpose/Scope and corrected formula on pages O1-O2.
4	3/28/03	4, O1-O2	DCR 2163: Change effective date from "When DOE Approves Retrieval Operations" to March 28, 2003
5	05/05/03	All	DCR 2196: Edited procedure in response to CBFO comments
6	04/27/04	All	DCR-2900: Edited procedure to clarify and better define the manual reconciliation process in response to corrective action from CAR-4465.
7	08/19/04	All	DCR-2997: Clarified statement on flammability evaluation. Added in specific procedure step for DAC evaluation for clarification. Removed redundant statement in the TIC evaluation. Added in procedure steps for managing solid sampling lots. Minor editorial/format changes. Implemented corrective actions from CAR 8217 (CBFO CAR 04-033, Rev. 1) and separated the manual and the electronic data reconciliation process, which resulted in the addition of four new sections. Other sections were moved to the end of the document following the new sections. Therefore, rev bars show all the movement within the document including format/editorial changes. Added steps for lot list verification.

Revision Number	Date Approved	Pages Affected	Description of Revision
8	12/06/04	Various	DCR-3310. Added TAAC and FGE checks. Added new Steps 4.2.1.1.3 through 4.2.1.1.5 to perform checks. Incorporated CBFO Post-Audit comments. Editorial/format changes to comply with DOCS-18.3 and 18.4. Added Resolutions to CBFO review comments from 11/9/04 Conference.
9	01/05/05	Various	DCR-4057. Removed TAAC and FGE checks, which will be incorporated into MP-TRUW-8.16, WWIS Data Transfer. Steps 4.1.1.1.2 through 4.1.1.1.5 were deleted. Incorporated CBFO comment resolutions in Section 2.0 and Steps 4.2.3.2 and 4.5.4.2.
10	06/16/05	Various	Added Appendix A, instruction for compiling HSG data for supercompaction of 55-gallon drums. Introduction of new Form-1630, HSG Compilation Data Sheet. Various formatting/editorial changes.
11	01/09/06	Section 4.2.4.2.	DCR-4473. The entire document has been revised, so revision bars have NOT been used to indicate changes. Modify for 100-gallon product drum manual reconciliation. Modify to align electronic reconciliation steps with WTS. Add language to assure each container contains at least one TRU isotope above MDA. Evaluate MDL instruction for solid sampling and headspace gas sampling. Various formatting/editorial changes to comply with current version of MP-DOCS-18.3. Add use of Form-1693. Periodic review.
12	02/14/2006	3.2.12.1, 3.2.17, 3.5.15.1, and 3.5.17	DCR-4813. Clarification of appropriate actions when nonconforming conditions are found. Addition of Waste Certification organization notification when reconciliation is complete.
13	06/29/06	3.2.11.4, Various,	DCR-4952. Clarification to use Form-1598, Table 1B for independent verification. Added 2 notes for clarification of the flammability evaluation and roles. Revised per attached draft. (Includes changes specific to updates for OSM)

Revision Number	Date Approved	Pages Affected	Description of Revision
14	1/05/07	Various	DCR-5243. Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Minor editorial changes made throughout.
15	08/08/07	Various	DCR-6015. Revised to further clarify the requirements of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Minor editorial changes made throughout.
16	03/17/08	Various	DCR-6849. Added new steps for CAR 36376 that were implemented and deleted references in support of transportation transition to CCP.
17	08/11/08	Various	DCR-7388. Eliminate the use of manual drum files and add Appendix A, Guidelines for Determination of Manual or EV&V QA Records. Changes were made to satisfy the CAR# 40148 disposition.
18	09/07/10	Step 3.2.3	DCR-9009. Added RPT-TRUW-83 to step.
19	10/27/10	Step 3.2.14	DCR-9612. Changed references from “B3-2 through B3-9” to “C3-2 through C3-9” to implement the new numbering sequence from the new WIPP Permit Renewal.
20	11/1/10	Entire	DCR-9643. Revert content back to same as approved in revision 18 as changes identified for revision 19 must be held until MP-TRUW-8.2, Rev. 14 is issued.
21	11/16/10	Page 11 and 19	DCR-9649. Changed references from “B3-2 through B3-9” to “C3-2 through C3-9” to implement the new numbering sequence from the new WIPP Permit Renewal and change the definition of a waste stream.
22	03/03/11	Page 17	DCR-9777. Changes were made to satisfy CAR#57571, AI#59136 and CAR#57569.
23	07/03/12	Various	DCR-11028. Incorporated SCR-4032 and MP-TRUW-8.5 changes. Incorporated ITG-Bluesheet-073.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.11, Rev. 24	Issued: 09/26/12	Effective: 09/27/12
Data Reconciliation		

Revision Number	Date Approved	Pages Affected	Description of Revision
24	09/25/12	Various	DCR-11546. Incorporated changes for termination of Settlement Agreement and Stipulated Final Order, No. HWB 04-07 (CO). Added guidance in Appendix A for manual ASY batch results (Change incorporated into MP-TRUW-8.5). Incorporated CBFO comments.

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Appendix A – Guidelines for Determination of Manual or EV&V QA Records A1

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.11, Rev. 24	Issued: 09/26/12	Effective: 09/27/12
Data Reconciliation		

1.0 PURPOSE/SCOPE

The purpose of this procedure is to provide the policy and procedures for *reconciliation* (see def.) with the *data quality objectives* (DQOs; see def.) following data validation and verification by the Site Project Office (SPO). This reconciliation is performed at a *waste stream* (see def.) or waste stream *lot* (see def.) level.

The site project manager (SPM) reconciles data with the quality objectives following data validation and verification in accordance with MP-TRUW-8.2, Quality Assurance Project Plan. Project level reconciliation determines whether data of sufficient type, quality, and quantity have been collected for *real-time radiography* (RTR; see def.), *visual examination* (VE; see def.), nondestructive assay (NDA), *headspace* (see def.) gas sampling analytical data, and homogeneous waste sampling analytical data. These confirmation data are correlated with existing *acceptable knowledge* (AK; see def.) information to form a final definition of a waste stream or waste stream lot.

There are references in this procedure to the Advanced Mixed Waste Treatment Project (AMWTP) Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) Permit as being a source requirement. This procedure was developed specifically to meet MP-TRUW-8.2 and MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, requirements. Where AMWTP HWMA/RCRA Permit requirements are referenced, it is because the Waste Analysis Plan for the Waste Isolation Pilot Plant (WIPP WAP) and AMWTP HWMA/RCRA Permit requirements are consistent and the procedure demonstrates compliance with both permits.

The container units that will be reconciled are standard waste boxes (SWB) and drums (either 55-gallon, 85-gallon, or 100-gallon). All containers to be shipped will have to go through the DQO reconciliation process to confirm that the waste stream assignment is appropriate and that sufficient characterization has been performed. If the characterization data collected on the individual container was appropriate, the characterization on the collective container of the SWB or ten-drum overpack (TDOP) is considered to also be sufficient.

The tasks listed in this procedure must be completed to meet the intent and requirements of reconciliation; however, the tasks are not required to be completed sequentially.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
SPM or designee/Acceptable Knowledge Expert (SPM/AKE)	• The SPM/AKE is the primary person performing all sections of this procedure.
2nd SPM or designee/AKE	• Performs an independent secondary review of the data presented within the Container Information Summary report for manual reconciliation lots • Also performs an independent verification on all reconciliation lots to ensure there are no open NCRs.

3.0 PROCEDURE

3.1 Create a Waste Stream Reconciliation Lot

NOTE 1: *For purposes of efficiency, characterized waste containers from a waste stream or waste stream lot may be placed into a reconciliation lot. This reconciliation lot is solely for the purpose of reconciling waste characterization information with the DQOs for the particular waste containers.*

NOTE 2: *DQO Reconciliation can be completed for manual batch data utilizing EDMS or for electronic batch data in the Waste Tracking System (WTS) utilizing the Off-site Shipping Module (OSM).*

NOTE 3: *The quality assurance (QA) record will be utilized for data review. For manually validated batch data reports (BDR), the QA record will be accessed through the Electronic Data Management System (EDMS) and WTS will be referenced to ensure the latest valid data is being reviewed. For electronic validation and verification (EV&V) QA records, the record will be accessed and viewed in WTS. Appendix A contains guidelines for determination of manual or EV&V QA Records.*

3.1.1 SPM or designee/AKE: To group a set of containers from the same waste stream into a lot, use the criteria in the following substeps:

3.1.1.1 Access data in WTS to determine if the container is a candidate for reconciliation.

NOTE: *When performing DQO Reconciliation utilizing the OSM in WTS, only containers which have completed all characterization analyses and validation activities will be displayed for inclusion in a reconciliation lot.*

3.1.1.2 All containers that are candidates for inclusion in a reconciliation lot shall have completed all characterization analyses and validation prior to completing any reconciliation activities. At a minimum, each container shall have completed RTR or VE, assay, and as required Headspace Gas Sampling (HSGS) or solid sampling and analysis.

NOTE: *Supercompactor direct feed containers with rigid liners must be subjected to random WAP HSGS analysis prior to compaction. 100-gal product drums containing lined direct feed pucks are not required to be included on a WAP random sampling headspace lot.*

3.1.1.3 Ensure that all containers have been subjected to random sampling and are included in either a solid sampling lot or headspace gas sampling lot, as appropriate, in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

3.1.1.3.1 For 100-gallon product drums containing direct feed pucks with rigid liners, ensure that each of the pucks has been included in a headspace gas sampling lot.

3.1.1.4 Verify that the required number of random samples was collected as required by statistical evaluation in accordance with MP-TRUW-8.25.

3.1.1.5 Verify that there are no open nonconformance reports (NCRs) against containers in the lot, including associated source containers, puck drums, and batch data reports, utilizing the TrackWise database per MP-Q&SI-5.4, Identification of Nonconforming Conditions. Document this verification on Form-1597, Reconciliation with Data Quality Objectives, and/or in the OSM DQO Checklist.

3.1.1.6 Remove containers with outstanding issues, as identified in Steps 3.1.1.2 through 3.1.1.5 above, from consideration for DQO Reconciliation.

NOTE: *When performing DQO Reconciliation utilizing the OSM in WTS, a lot number will be automatically assigned. The first lot number used for a waste stream in WTS will be the same number as the Waste Stream Profile Form (WSPF) with a ".0001" affixed to the end, for example, BN510.0001 with subsequent lots being numbered BN510.0002, BN510.0003, etc. Utilizing this format will ensure reconciliation lot numbering in OSM does not duplicate previous manual reconciliation lots.*

3.1.1.7 Lots will be controlled and defined by assigning each lot a unique number.

3.1.1.7.1 The first lot from a waste stream will be assigned the same number as the WSPF with a ".01" affixed to the end. For example, for the first reconciliation lot supporting WSPF BNINW276, the lot will be numbered BNINW276.01.

3.1.1.7.2 Subsequent reconciliation lots will be assigned the next sequential available number. For example, the second reconciliation lot for a waste stream will be numbered BNINW276.02, the third lot will be numbered BNINW276.03, and so on.

3.2 Perform Data Quality Objective Reconciliation

NOTE 1: *Reconciling the results of waste testing and analysis with the DQOs ensures that data is of adequate quality to support regulatory compliance.*

NOTE 2: *All containers characterized for WIPP must be reconciled before shipment.*

NOTE 3: *If the lot is the first lot in a waste stream, Form-1195, Waste Stream Profile Form, and Form-1598, Characterization Information Summary Report, must be prepared in accordance with MP-TRUW-8.14, Preparation of Waste Stream Profile Forms.*

NOTE 4: *When performing DQO Reconciliation utilizing the OSM in WTS, the DQO Checklist in WTS must be completed. Completion of Form-1597 and Form-1598 is not necessary when utilizing OSM for a Data Reconciliation Lot.*

3.2.1 SPM/AKE: Verify that the waste characterization confirms the AK history regarding physical form of the waste, base materials composing the waste, hazardous constituents, and radioactivity present in the waste by performing the steps in this section and documenting on Form-1597 or the DQO Checklist in WTS.

3.2.2 If RTR or a VE is required, then confirm that the selected containers in the reconciliation lot have undergone the appropriate characterization technique.

3.2.2.1 Ensure that the physical form confirms the AK description of the waste and that all containers have been assigned to the correct *waste matrix code* (WMC; see def.).

3.2.2.2 Ensure that waste material parameter weights have been established for each container in the lot. Several checks are in place throughout the process to ensure that a container contains materials that are consistent with the waste stream and that the values reported are correct. Therefore, the only check required at this point in time is to confirm that the appropriate data has been collected by RTR or VE and validated with no outstanding issues, or the container averages were supplied by AK.

3.2.3 For a 100-gallon product drum, confirm each puck drum has a feedstock item description code (IDC) identified in RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510), or RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1), and all appropriate characterization data complete and validated with no outstanding issues.

NOTE: *Supercompactor direct feed containers and boxline feed containers are not required to undergo HSGS prior to compaction. However, direct feed containers with rigid liners must meet the appropriate drum age criteria (DAC) prior to compaction.*

3.2.4 For puck drums containing rigid liners, confirm that the appropriate DAC was met prior to compaction.

3.2.5 Ensure that each container in the lot contains no prohibited items.

3.2.6 Confirm that each waste container contains *transuranic* (TRU; see def.) radioactive waste.

3.2.6.1 Review the data to confirm that activities and masses (including their associated measurement uncertainties expressed in terms of one standard deviation) of ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs are established on a container basis.

3.2.6.2 Confirm each container contains at least one TRU isotope (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, or ^{237}Np) whose activity exceeds the *minimum detectable activity* (MDA; see def.) of the *radioassay* (see def.) system.

3.2.6.2.1 Ensure that any container that does not include at least one TRU isotope greater than the MDA is appropriately reported as <LLD, AND removed from consideration for DQO Data Reconciliation.

NOTE 1: *Pucks loaded into 100-gal product drums or other containers loaded into a SWB will not require an individual assay event if the product drum or SWB itself is assayed utilizing an approved method.*

NOTE 2: *Super High Efficiency Neutron Counter (Super-HENC) will be required when a 100-gal product drum shows a status of MIXED in the LLD status field on the Supercompactor loadout screen in WTS.*

3.2.6.2.2 For a 100-gallon product drum or SWB utilizing summed assay data, confirm each puck drum or inner container has at least one TRU isotope greater than the MDA.

3.2.6.3 For each 100-gallon product drum or SWB, confirm the TRU alpha activity concentration for the radioisotopic data is greater than 100 nCi/g.

3.2.7 For each 100-gal product drum or SWB, review the summation data associated with the RTR, VE or ASY characterization of the inner containers to ensure that the inner containers have been integrated into the summary.

NOTE 1: *Evaluation of WAP HSGS data is not applicable for S3000/S4000 waste.*

NOTE 2: *S5000 containers that are randomly selected for WAP HSGS analysis in a subsequent headspace gas lot can be processed through DQO Data Reconciliation once the WAP headspace data has been statistically evaluated with the existing WAP data for the waste stream in accordance with MP-TRUW-8.2. The AKE will make notification when the container is approved for release.*

NOTE 3: *S5000 containers that are randomly selected for WAP HSGS analysis in an initial headspace gas lot cannot be processed through data reconciliation until all random samples for the lot have been obtained and statistically evaluated for the waste stream in accordance with MP-TRUW-8.2. The AKE will make notification when the containers are approved for release.*

3.2.8 For containers that have been randomly selected for WAP HSGS analysis, confirm that mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and the number of samples collected for each volatile organic compound (VOC) in the headspace gas of waste containers in the waste stream lot, have been evaluated against the constituent hazardous waste number (HWN) assignments.

NOTE: *Spreadsheet of the analytical data will be subject to review and will be retained as part of the Characterization Information Summary (CIS) Report (Form-1598) data package.*

3.2.8.1 Confirm that containers randomly selected for WAP HSGS analysis have been statistically evaluated against data for the waste stream in accordance with MP-TRUW-8.2. Evaluation will occur as container data becomes available for subsequent headspace gas lots.

3.2.8.1.1 AKE: If at any time the evaluation should show a deviation from the current approved WSPF, take appropriate actions in accordance with MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation.

NOTE: *The final flammability evaluation for shipment and certification is completed by CCP utilizing the WIPP TRAMPAC Evaluation Software (WTES) as described in the WDS User's Manual, DOE/WIPP-09-3427.*

3.2.9 SPM: Confirm that potential flammability of TRU waste headspace gases has been evaluated for the lot and is acceptable.

NOTE 1: *Evaluation of WAP solid sampling data is not applicable for S5000 waste.*

NOTE 2: *S3000/S4000 containers that are randomly selected for WAP solid sampling analysis in subsequent lots can be processed through DQO Data Reconciliation once the WAP solid sampling data has been statistically evaluated with the existing WAP data for the waste stream in accordance with MP TRUW-8.2. The AKE will make notification when the container is approved for release.*

NOTE 3: *For initial solid sampling lots, evaluation will occur after all randomly selected containers in the respective core lot have been sampled and analyzed resulting in valid data. Containers in an initial solid sampling lot are not candidates for reconciliation until this evaluation has been completed.*

3.2.10 SPM/AKE: For containers randomly selected for WAP solid sampling analysis, confirm that mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and the number of samples collected for VOCs, semi-volatile organic compounds (SVOCs), and metals in the waste stream lot, have been evaluated against the constituent hazardous waste number assignments.

3.2.10.1 Confirm that containers randomly selected for WAP solid sampling analysis have been statistically evaluated against data for the waste stream in accordance with MP-TRUW-8.25.

3.2.10.1.1 AKE: If at any time the evaluation should show a deviation from the current approved WSPF, take appropriate actions in accordance with MP-TRUW-8.13.

3.2.11 SPM/AKE: Confirm that the waste stream has been assigned the appropriate D code if the waste stream exhibits a toxicity characteristic under 40 Code of Federal Regulations (CFR) Part 261, Subpart C, Characteristics of Hazardous Waste.

3.2.11.1 For each IDC, confirm that the appropriate toxicity characteristic hazardous waste numbers, as determined by the AKE and SPM and as documented on Form-1187, Waste Stream Profile Form HWN Assignment Worksheet, or on an approved waste stream profile (see MP-TRUW-8.13), have been assigned.

3.2.11.2 Review the data associated with the individual containers to confirm that all appropriate toxicity characteristic HWNs are in place.

NOTE: *On-going evaluation of WAP solid sampling and analysis data for S3000/S4000 waste and WAP HSGS analysis data for S5000 waste ensures that the waste stream has been appropriately classified as hazardous or non-hazardous at the 90% confidence level (in accordance with MP-TRUW-8.25). No further action or verification is necessary at this time.*

3.2.12 Confirm that the waste stream has been classified as hazardous or nonhazardous at the 90% confidence level.

3.2.13 Confirm that an appropriate packaging configuration and DAC have been applied and documented in the headspace gas sampling documentation.

3.2.13.1 Confirm that the DAC was met prior to sampling.

3.2.13.2 Review container data to confirm status of containers and batches.

3.2.13.3 Confirm that appropriate RTR or VE data was used in the headspace gas batch, as applicable.

3.2.14 Confirm for containers that have been randomly selected for WAP HSGS analysis or WAP solid sampling analysis, that all tentatively identified compounds (TICs) have been appropriately identified and reported for the waste stream in accordance with the requirements of MP-TRUW-8.14.

3.2.14.1 AKE: Track all TICs associated with WAP sampling and analysis in accordance with MP-TRUW-8.14.

3.2.14.1.1 If at any time a TIC is found to be reported at a frequency greater than 25%, then evaluate the TIC, and determine what additional actions, if any, need to be taken.

3.2.14.1.2 AKE: If it is determined that the TIC will need to be included as a target analyte for the waste stream, take appropriate actions in accordance with MP-TRUW-8.14.

NOTE: *Several checks are in place throughout the process to ensure data meet all of the* quality assurance objectives *(QAOs; see def.). Therefore, the only check required by the SPM/AKE during reconciliation is to confirm that the appropriate data were collected and validated with no outstanding issues.*

3.2.15 SPM/AKE: Confirm that the overall completeness, comparability, and representativeness QAOshave been met for each of the analytical testing procedures as specified in MP-TRUW-8.2, Section C3-2 through C3-9.

3.2.15.1 Review container data to confirm that all required characterization and validation is complete with no open NCRs.

NOTE: *Several checks are in place throughout the process to ensure data meet all* program-required quantitation limits *(PRQLs; see def.). The only check required by the SPM/AKE during reconciliation is to confirm that appropriate analytical data were collected and validated with no outstanding issues as indicated on data generation level and SPM level checklists.*

3.2.16 Confirm that the PRQLs for all analyses have been met for each reconciliation waste stream lot.

3.2.16.1 Review container data to confirm status of analytical batches and that all required analytical characterization were completed for the container.

3.2.17 Remove containers with open issues as a candidate for DQO Data Reconciliation and evaluate as appropriate, for any nonconforming conditions.

3.2.17.1 If it is determined that a nonconforming condition exists, then initiate an NCR in accordance with MP-Q&SI-5.4.

3.2.18 SPM: Complete, sign, and date Form-1598, in accordance with MP-TRUW-8.14.

NOTE 1: *An independent secondary verification of all NCRs and BDR status is only required for manual reconciliation lots. Reconciliation lots completed utilizing the OSM in WTS do not require a secondary verification as the software performs this action.*

NOTE 2: *Any reports generated manually in conjunction with an OSM reconciliation lot will require a secondary verification to ensure the data presented is complete and accurate.*

3.2.19 2nd SPM/AKE: Perform an independent secondary verification for the containers included in a manual reconciliation lot and ensure that any identified issues are resolved prior to completion of the lot.

3.2.19.1 Perform reviews on all data by comparing the hardcopy CIS with the QA records in WTS or EDMS, as applicable, to ensure the latest valid data is reviewed.

3.2.19.2 Confirm that there are no NCRs open for any of the containers, or associated source containers, included in the lot by independently accessing TrackWise or by use of the QA Container NCR Quick Search.

3.2.19.3 Confirm for each container in the lot that the analysis status is "Pass" and the associated batch data reports have completed SPM validation by accessing the official QA records in WTS or EDMS as applicable.

3.2.19.4 Confirm that the data presented in Form-1598 is complete and accurate by accessing the official QA records in WTS or EDMS as applicable.

3.2.19.5 Sign and date Form-1598 once verification is complete and no outstanding issues are identified.

3.2.20 SPM: When confirmation that DQOs have been met for each container in the reconciliation, complete Form-1597 and/or the DQO Checklist in WTS.

NOTE: *Signing Form-1597 and/or the DQO Checklist finalizes a lot and demonstrates that characterization information is consistent with the established WSPF (Form-1195) or can be used to support a new WSPF.*

3.2.20.1 Sign and date Form-1597 and/or e-sign the DQO Checklist in WTS.

3.2.21 SPM/AKE: Notify the TRU Waste Certification organization that data reconciliation is complete.

3.3 Electronically Define the Waste Stream in WTS by Acceptable Knowledge

3.3.1 AKE: Use the WTS to manage the data and define the waste stream in WTS.

3.3.1.1 Access the Waste Stream Summary Screen (see Exhibit 1) and confirm that IDCs, generators, container types, and closure date ranges are consistent with expectations for the waste stream.

3.3.1.1.1 If there is no information for the waste stream or if the information is inconsistent with the expectations for the waste stream, then review AK for the specific waste and determine correct parameter(s).

3.3.1.1.2 Complete and submit a System Data Change Request (SDCR) to update appropriate WTS look-up tables to reflect correct information.

3.3.1.2 Access the Waste Stream Miscellaneous Characterization Screen (see Exhibit 2) to confirm that default parameters associated with each of the IDCs is appropriate.

3.3.1.2.1 If any of the default values associated with the Waste Stream Miscellaneous Characterization Screen are incorrect, then complete and submit an SDCR to change the WTS IDC look-up table or waste profile look-up table to reflect correct information.

3.3.1.3 Access the Environmental Protection Agency (EPA) Code Assignment Screen (see Exhibit 3) to confirm EPA codes associated with each IDC are consistent with AK assignment.

3.3.1.3.1 If default EPA codes are incomplete, then add the necessary codes, based on AK for the waste stream, using the “Add EPA Code” button.

3.3.1.3.2 Assign appropriate EPA codes to each analyte based on AK for the waste stream.

3.3.1.3.3 If the WIPP Approval Date is incorrect, then enter the correct date.

3.3.1.4 After confirming that the Miscellaneous Characterization information and EPA codes for the waste stream and the WIPP Approval Date are correct, sign the EPA Code Assignment Screen.

3.3.1.5 Access the TRUCON Code Assignment Screen (see Exhibit 4) to confirm TRUCON codes associated with each IDC are consistent with AK assignment.

3.3.1.6 If default TRUCON codes are incorrect, then add or delete the necessary codes based on AK for the waste stream.

3.3.1.7 After confirming that the TRUCON codes for the IDCs in the waste stream are correct, sign the TRUCON Code Assignment Screen.

3.4 Perform Container Miscellaneous Characterization

The procedure to modify miscellaneous characterization data for a container is presented in this section. At times, containers may be run through characterization before the waste stream is fully defined in WTS (e.g., all pertinent AK information not yet entered into WTS lookup tables) or parameters may change based on initial data collection. When these events occur, it will be necessary to update the Container Miscellaneous Characterization Screens (see Exhibit 5) that have incorrect or missing miscellaneous characterization data.

NOTE: *Characterization can be performed only after the AK baseline report is complete. Newly generated wastes will be documented at the time of generation.*

3.4.1 SPM/AKE: Access the Container Miscellaneous Characterization Screen (see Exhibit 5) for the drum that needs to be updated.

3.4.2 Update the Baseline Inventory Report Identification (BIR ID), Mixed Waste Inventory Report Identification (MWIR ID), Process Knowledge Flag (e.g., a WTS “flag” indicating potential flammability issue based on PK), WMC, EPA Codes (HWNs) , PCB data, and beryllium data as necessary on the Container Miscellaneous Characterization Screen (see Exhibit 5).

3.5 Perform DQO Reconciliation Rework (Manual and/or Electronic)

At times one or more containers within a reconciliation lot may require rework or additional characterization after the lot has been finalized and the containers have been released to Waste Certification. When a container is identified that requires rework or additional characterization, the associated data reconciliation lot must be evaluated to determine if the lot itself must be revised.

3.5.1 SPM: Evaluate any rework performed after data reconciliation has been completed and finalized to determine if one or more DQOs may be affected.

3.5.1.1 Review the DQO-related questions on Form-1597 or the DQO Checklist in WTS, while performing the evaluation.

3.5.1.2 If it is determined that the rework affects how a DQO-related question listed on Form-1597 or the DQO Checklist in WTS, is answered, then revise the data reconciliation lot to either remove the affected container(s) or to correct the data for the affected container.

3.5.1.2.1 If an undocumented non-conforming condition (DQO, QAO, prohibited item, WMC, IDC, CAQ, etc.) is identified during reconciliation, an NCR will be required.

3.5.1.3 Ensure an NCR has been initiated, as appropriate, or initiate an NCR, if applicable.

NOTE: *When a DQO Data Reconciliation Lot requires revision to update data or to remove one or more containers, the original reconciliation lot will remain valid for all containers not affected by the change. Written justification for the revision should indicate the validity of the original lot.*

3.5.1.3.1 If a container is to be removed from, or information is to be updated in a reconciliation lot, Forms-1597 and -1598 will require revision and/or the container must be invalidated from the lot in WTS.

3.5.1.3.2 Clear justification for the revision (i.e., results of the DQO evaluation) must be provided in the Form-1598 narrative and/or the comments tab in WTS.

3.5.1.4 2nd SPM/AKE: Review all revised information per Step 3.2.19 to ensure the accuracy of the modified information.

3.5.1.4.1 If information is removed from a CIS, perform a secondary verification to ensure the appropriate information has been removed.

3.5.1.5 Document new reconciliation results on the WTS DQO Reconciliation Screen, and prepare a revised Form-1597 and Form-1598.

NOTE: *If a reconciliation lot is complete using the OSM in WTS and a container within that lot requires additional characterization or a 100-gal container fails the container integrity inspection, the container must be removed from the reconciliation lot in order to facilitate data changes in WTS. The data for that container will remain locked until it is invalidated from the reconciliation lot. In addition, if the lot was also completed manually, Form-1597 and Form-1598 must also be revised to remove the container from the lot.*

3.5.2 SPM: If rework is required on individual containers on a finalized reconciliation lot (DQO reconciliation performed), and recon has been completed, remove the signature from the individual container by accessing the DQO Reconciliation Screen for the lot.

3.5.2.1 Coordinate with the Waste Certification Official (WCO) if the container has been certified or is in use by the WCO.

3.5.2.2 Provide justification for signature removal.

3.5.2.3 Document removal of the container from the lot using the WTS DQO reconciliation checklist and revise Forms-1597 and Form-1598, as appropriate.

3.5.2.4 Rework container as necessary.

3.5.2.5 Reconcile reworked container with another lot.

4.0 DEFINITIONS

Acceptable knowledge. Consists of information about waste based on the material and processes that generate the waste. AK includes information relating to the physical form of the waste, the base materials composing the waste, the nature of the radioactivity present, and the historical processes generating the waste. AK includes any documentation that describes or verifies site history, mission, and operations, in addition to waste stream-specific information used to define the generating process, matrix, and contaminants (radiological and chemical).

Data quality objectives. Qualitative and quantitative statements derived from the outputs of the first six steps of the DQO Process. DQOs clarify the study objective, define the most appropriate type of data to collect, determine the most appropriate conditions from which to collect the data, and specify tolerable limits on decision errors be used as the basis for establishing the quantity and quality of data needed to support compliance decisions. DQOs are used to develop a scientific and resource-effective data collection design.

Headspace. For any volume contained by a drum, 55-gal poly bag, or innermost layer of confinement, the total contained volume minus the volume occupied by the waste material. “Headspace” is also used to refer to the gases contained in this volume.

Lot. When all waste within a waste stream is not available for sampling and analysis at one time, the waste stream may be divided into waste stream lots based on staging, transportation, or handling issues. Characterization activities are then undertaken on a waste stream lot basis. A waste stream profile form (WSPF) is not submitted for subsequent waste stream lots unless warranted by the characterization information.

Minimum detectable activity. The radioactive concentration which, if present, yields a measured value greater than the critical level with 95% probability, where the critical level is defined as that value which measurements of the background exceed 5%.

Program-required quantitation limit. Minimum level of analyte quantitation acceptable under the WIPP-WAP.

Quality assurance objectives. The characteristics of data associated with the data is ability to satisfy a given purpose or objective. The characteristics of major importance are accuracy, precision, completeness, comparability and representativeness.

Radioassay. Methods used to identify and quantify radionuclides in TRU waste. Radioassay includes non-destructive assay (NDA) and radiochemistry (RC).

Real-time radiography. A radiographic method that allows simultaneous remote imaging for the viewing of waste package contents.

Reconciliation. The process used to confirm that sufficient data has been collected to characterize a waste stream or waste stream lot.

Transuranic. Wastes contaminated with alpha-emitting radionuclides of atomic number greater than 92 (e.g., the radioactive isotopes of plutonium), with half-lives greater than 20 years, and are present in concentrations greater than 100 nanocuries per gram of waste.

Visual examination. Constitutes opening a container and performing a physical examination of the contents to verify physical form and the presence/absence of prohibited items.

Waste matrix code. The term "waste matrix code" is used throughout the WIPP WAP and pertains to collection of descriptive titles, definitions, and associated numerical codes used to classify mixed waste at Department of Energy (DOE) facilities.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

5.0 REFERENCES

(1) 40 CFR 261 Part C, Characteristics of Hazardous Waste

(2) 40 CFR 268.2, Land Disposal Restrictions, Definitions

(3) AMWTP HWMA/RCRA Permit

(4) MP-DOCS-18.2, Records Management

(5) MP-Q&SI-5.4, Identification of Nonconforming Conditions

(6) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(7) MP-TRUW-8.2, Quality Assurance Project Plan

(8) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

(9) MP-TRUW-8.14, Preparation of Waste Stream Profile Forms

(10) MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

(11) RPT-TRUW-30, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510)

(12) RPT-TRUW-83, Acceptable Knowledge Summary for Supercompacted Debris Waste (BN510.1)

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.11, Case File	Nonpermanent WIPP Records/ENV1-J-1/Destroy 10 years after being superseded
Form-1187, Waste Stream Profile Form HWN Assignment Worksheet	Lifetime WIPP Records/ENV1-J-1/ Submit RMC for long term storage and transfer
Form-1195, Waste Stream Profile Form	Lifetime WIPP Records/ENV1-J-1/ Submit RMC for long term storage and transfer
Form-1597, Reconciliation with Data Quality Objectives	Lifetime WIPP Records/ENV1-J-1/ Submit RMC for long term storage and transfer
Form-1598, Characterization Information Summary Report	Lifetime WIPP Records/ENV1-J-1/ Submit RMC for long term storage and transfer

7.0 EXHIBITS

Exhibit 1, Waste Stream Summary Screen (Example)

Exhibit 2, Waste Stream Miscellaneous Characterization Screen (Example)

Exhibit 3, EPA Code Assignment Screen (Example)

Exhibit 4, Lot Planning Screen (Example)

Exhibit 5, Container Miscellaneous Characterization Screen (Example)

8.0 APPENDICES

Appendix A - Guidelines for Determination of Manual or EV&V QA Records

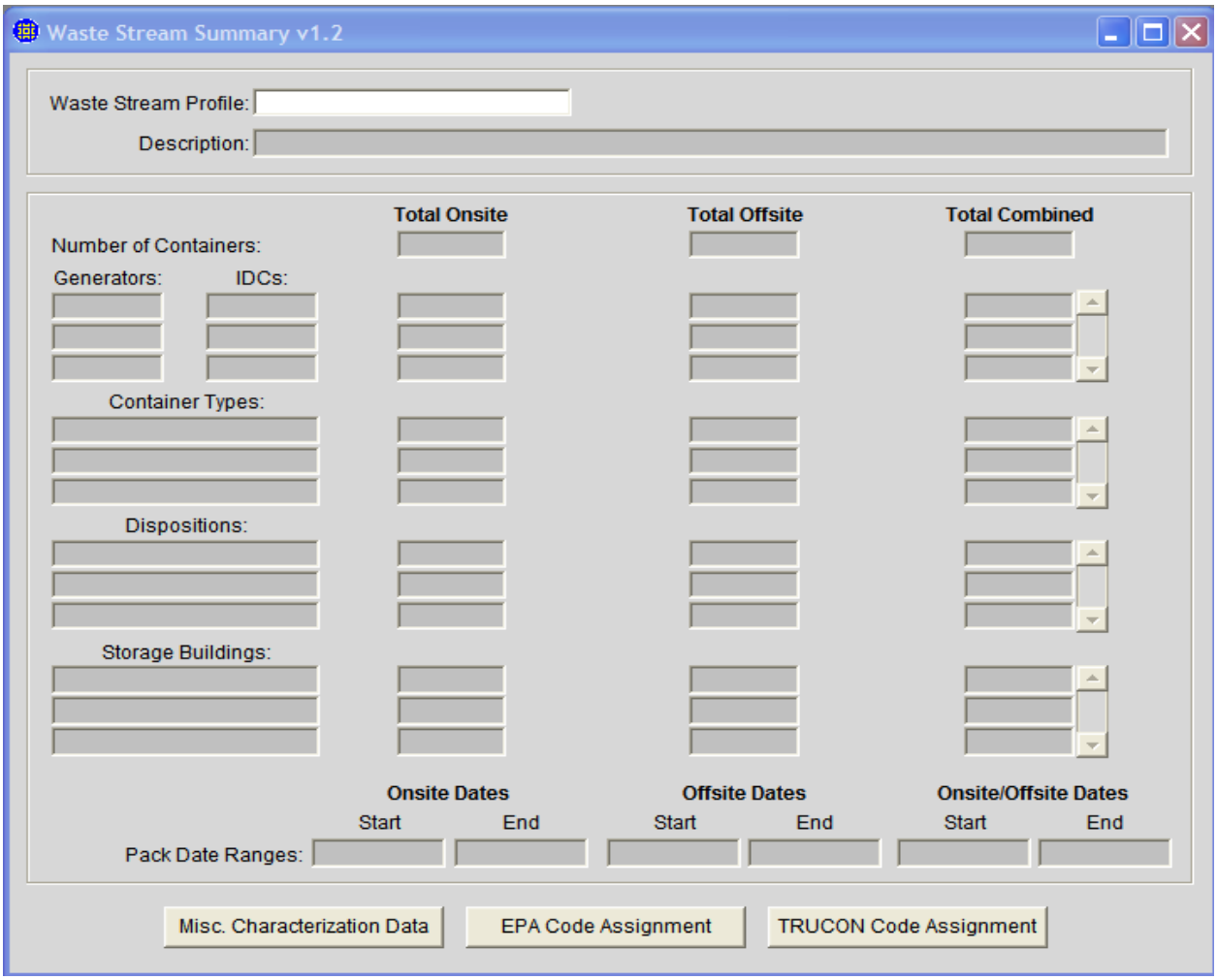

Exhibit 1. Waste Stream Summary Screen (Example).

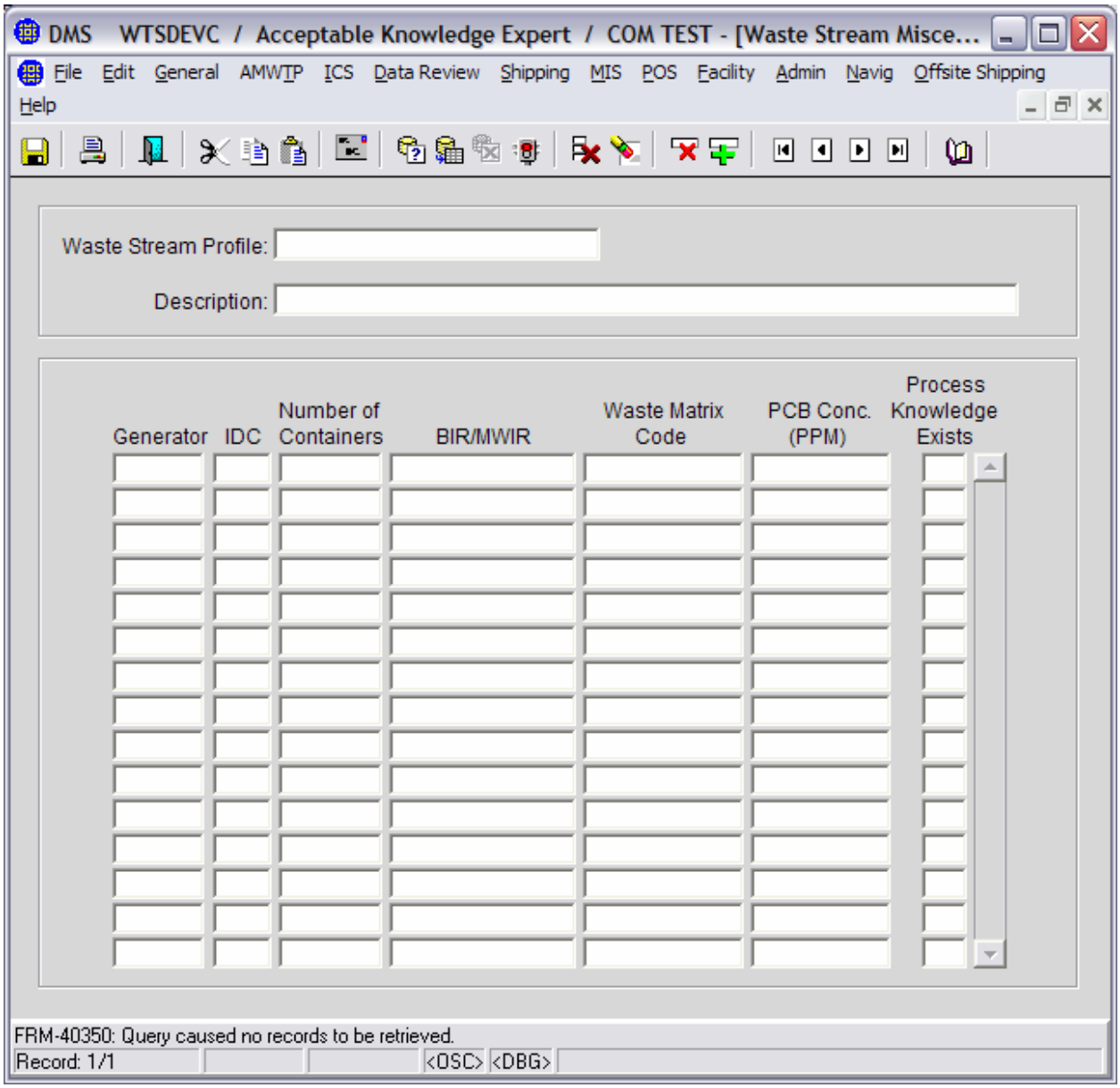

Exhibit 2. Waste Stream Miscellaneous Characterization Screen (Example).

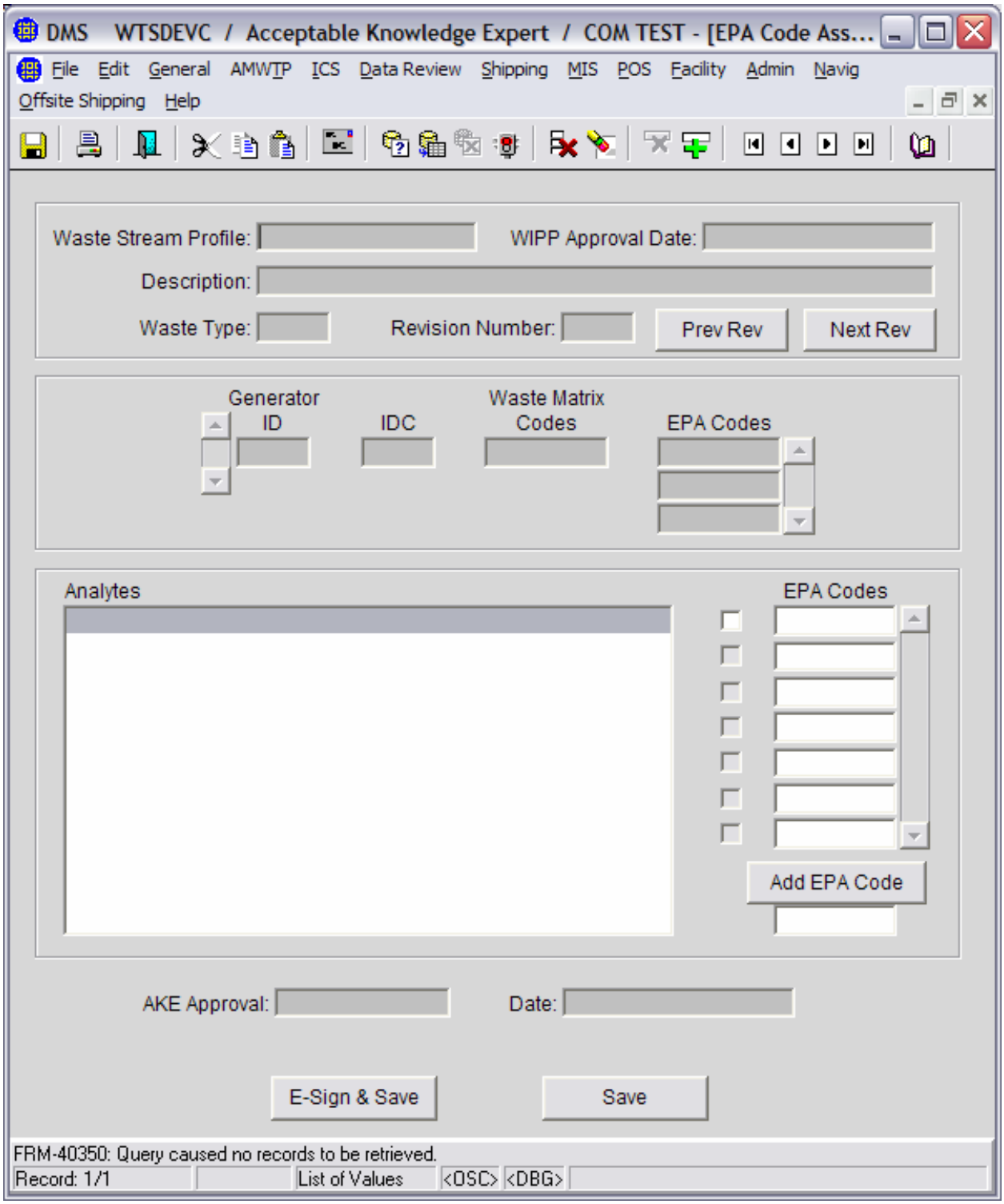

Exhibit 3. EPA Code Assignment Screen (Example).

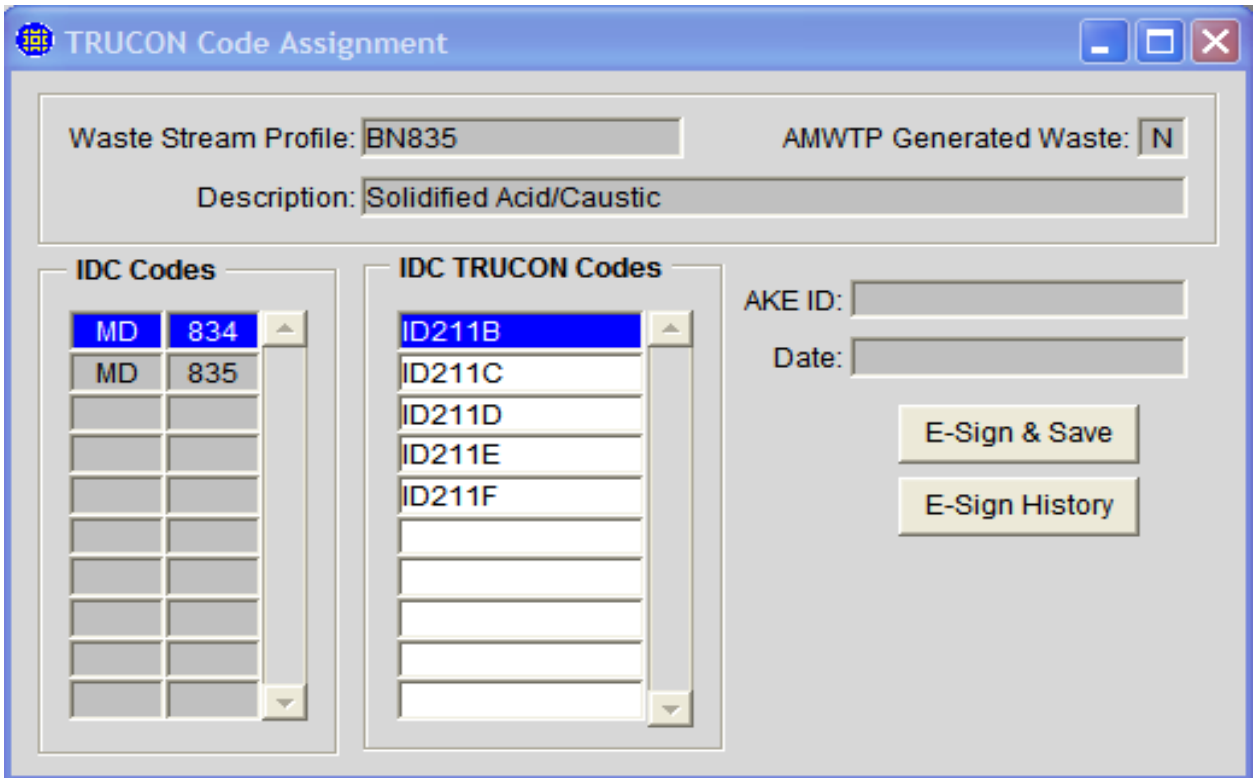

Exhibit 4. Lot Planning Screen (Example).

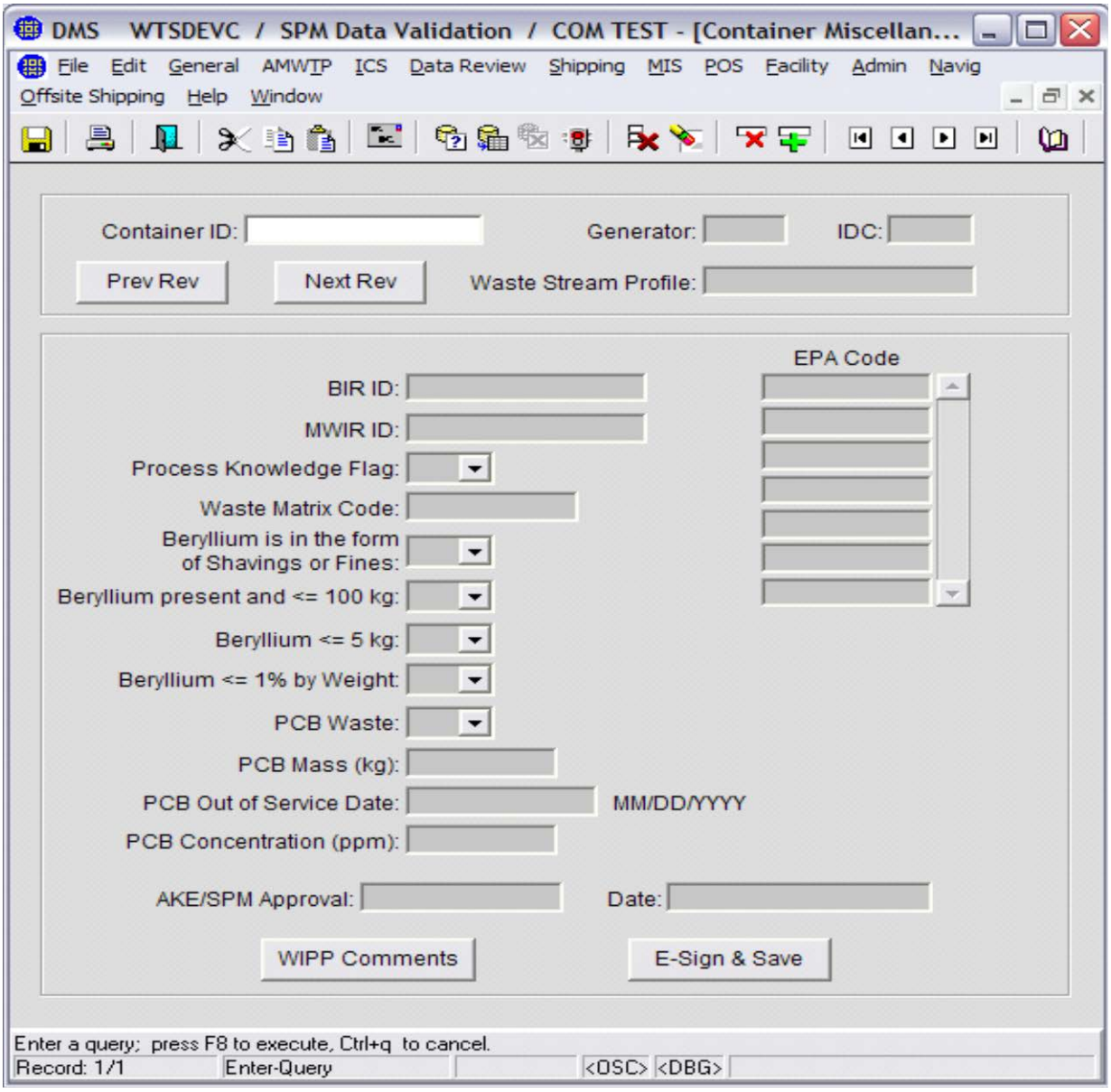

Exhibit 5. Container Miscellaneous Characterization Screen (Example).

Appendix A – Guidelines for Determination of Manual or EV&V QA Records

For any data validated at the ITR level prior to May 4, 2006, the manual Batch Data Report (BDR) is the QA Record, except as noted below:

- Assay Expert Technical Review (ETR) performed on a container on or after May 4, 2006, will result in a WTS QA Record regardless of the original status of the BDR as the ETR data for that container is validated in WTS only.

For most data validated at the ITR level on or after May 4, 2006, WTS is the QA Record, except as noted below:

- RTR/VE Updates (RVU) that were not validated electronically in WTS with the BDR were required to be validated manually; the manual BDR is the QA Record.
  - Manual RVUs will show an Approval Level at "ITR" and an Approve Status of "W" in WTS, and the manual BDR is the QA Record.
  - EV&V RVUs will show an Approval Level at "SPM" and an Approval Status of "AP" in WTS, and WTS is the QA Record.
  - For manual ASY batch results where a more recent valid weight event exits, e.g., RVU, verify gross weight, net weight, and TAAC in WTS.
- Any data generated by an off-site laboratory or contractor (such as Super-HENC or Analytical Laboratories Department [ALD] BDRs) will be manually validated, and the manual BDR is the QA Record.

Waste Receipt and Shipping Inspection

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-8937.)*
Kiki Torres
Waste Programs Manager

03/30/10
Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/01/02	All	Initial issue. DCR-1302
1	12/10/02	4, 7-10, C1	DCR-1784. Changed revision number from 0 to 1. Added clarification.
2	02/18/03	All	DCR-2051. Changed document to include WIPP adequacy review comments.
3	02/27/03	Various	DCR-2076. Changed document to reflect changes requested at WIPP Transportation audit.
4	03/20/03	All	DCR-2099. Added "Container Certification Statements" to Shipment Records Checklist.
5	3/28/03	All	DCR-2163. Changed effective date from "When DOE Approves Retrieval Operations" to March 28, 2003
6	05/01/03	Various	DCR-2172. Deleted Step 4.1.10 and reworded appropriate text in document. Revised Forms 1203 and 1204, Included CBFO comments.
7	07/08/03	6	DCR 2194. Changed Performer from SO to TCO. Minor editorial changes
8	03/30/04	Various	DCR-2845. Added use of new Form-1553. Revised Steps 4.1, 4.2.8, 4.3.18, and added additional forms to Section 5.0.
9	04/21/04	Various	DCR-2938. Revised to change record storage requirements for TCO.
10	12/09/04	Various	DCR-3349. Incorporate CH-TRAMPAC and CH WAC. Minor editorial changes Revision bars throughout document are a result of standard reformatting to MP-DOCS-18.4. Incorporate CBFO DRR 04-2264 comments, see DCR-3349-1 and DCR-3349-2.

Revision Number	Date Approved	Pages Affected	Description of Revision
11	06/16/05	Various	DCR-4173. Correct responsibilities for TRUPACT-II/ HALFpact package receipt and shipping a loaded TRUPACT-II/HALFpact and correct typographical errors in Section 4.3.3. Update document to incorporate contract transition logo changes, etc.
12	9/14/05	Pages 3 – 5	DCR-4537. Add "or designated alternate" to all steps in Section 4.1. Processed as a minor change.
13	10/24/05	All	DCR-4616. Revised page 6, steps 3.3.3 and 3.3.4 to remove the SQAO review of operations loading documents. Removed some SPM reviews. Also revised Form-1204. Formatted to comply with MP-DOCS-18.3, Rev. 2. Periodic review.
14	08/21/06	4, 6, and 10	DCR-5255. Minor change to correct references to steps in Form-1204.
15	1/08/07	Various	DCR-5275. Rewrite to allow for waste receipt from LANL and other off-site waste generators—other edits for consistency and clarification.
16	1/24/07	Pgs. 11, 12	DCR-5676. Minor change to update procedure title references in accordance with the WIPP RH 311 permit modification, and for accuracy.
17	07/24/07	All	DCR-6001. Incorporate changes in procedure to introduce new Form-1821, Shipping Checklist, to ensure DOT requirements are met.
18	03/28/08	All	DCR-6573. Revise for CCP transition effort. Remove notifications that are no longer needed. Update roles and responsibilities. Update Records section to meet MP-DOCS-18.2 requirements.
19	12/02/08	Various	DCR-7593. Changed Transportation Certification Assistant to the Shipping Assistant, changed weight limit from 78,500 to 77,500, added the Intersite Shipping Module, and edited per MP-DOCS-18.3.

Revision Number	Date Approved	Pages Affected	Description of Revision
20	07/09/09	Various	DCR-8447. Change Step 3.1.11 to read: SC or Designated alternate: If a tamper indicating seal appears to be damaged, then notify the shift supervisor and transportation certification official. Updated the periodic review date.
21	09/30/09	Various	DCR-8642. Incorporate changes to resolve CAR 44465, including revising step 3.1.11 for the Transportation Mgr. to be notified, add steps after 3.3.5 to ensure review of PCBs is performed, including ensuring a waste container data report is provided.
22	03/30/10	Various	DCR-8937. Incorporated DOCS-BLUESHEET-06. Replaced “payload number” with “TRUPACT/ HalfPACT numbers” in Step 3.2.1 and “package number” with “payload number” in Step 3.3.1. Deleted Step 3.3.17.1. Deleted “If the gross weight is above 77,500, the shipment is weighed” from the note before Step 3.3.23. Made minor editorial corrections per MP-DOCS-18.3.

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.12, Rev. 22	Issued: 03/30/10	Effective: 03/31/10
Waste Receipt and Shipping Inspection		

1.0 PURPOSE/SCOPE

This management procedure assigns responsibility and establishes Quality Assurance requirements for the receipt, inspection, and shipment for the Transuranic (TRU) Package Transporter (TRUPACT) Model–II and HalfPACT shipping packages.

The document provides instructions for routine shipping and receiving inspections and complies with the minimum requirements as specified by the Department of Transportation, Safety Analysis Reports for Packaging, Nuclear Regulatory Commission (NRC) Certificates of Compliance (C of C) (9218 and 9279, Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (DOE/WIPP-02-3122), the Central Characterization Project (CCP) Contact Handled (CH)-TRAMPAC (CCP-PO-003, Transuranic Waste Authorized Methods for Payload Control), and the CH-Packaging Operations Manual (DOE/WIPP-02-3184). The CH-Packaging Operations Manual is used in conjunction with CH-Packaging Program Guidance (DOE/WIPP-02-3183).

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Shipping Coordinator (SC) or designated alternate	• Performs the steps in this procedure unless otherwise stated.
CCP Transportation Certification Official (TCO)	• Provides documentation to the SC that is generated by the CCP program, using the Waste Data System WDS)/WIPP Waste Information System (WWIS) and build sheet if appropriate. • Ensures compliance with the CCP program requirements. • Ensures manifesting, labeling, and placarding are correct per CCP procedures in compliance with 49 Code of Federal Regulations (CFR), Transportation.

3.0 PROCEDURE

NOTE 1: *Steps in this procedure may be performed in parallel and out of sequence.*

NOTE 2: *N/A may be used if the step does not apply to the shipment.*

NOTE 3: *The word "RECORD" in this procedure means to sign on the identified form.*

3.1 Receiving a TRUPACT-II/HalfPACT Package

NOTE: *TRUPACTS/HalfPACTs loaded with offsite TRU waste will follow requirements of MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance.*

3.1.1 Initiate Form-1203, Package Receipt Checklist, by filling out the tractor number, trailer number, incoming shipment number, and TRUPACT-II/HalfPACT numbers.

3.1.1.1 Identify the loaded status of the containers and any discrepancies identified.

3.1.2 **RECORD** verification on Form-1203, Step 1.

3.1.3 Verify that the drivers are on the certified drivers list.

3.1.4 **RECORD** verification on Form-1203, Step 2.

3.1.5 Verify that shipping documents have been properly prepared and have been reviewed and signed/dated to acknowledge receipt.

3.1.5.1 If shipping document was a manifest, remove page identified as "Designated Facility to Generator" and return page to the generator within 25 days.

3.1.6 Attach shipping documents to Form-1203.

3.1.7 **RECORD** verification on Form-1203, Step 3.

3.1.8 Verify that the pre-trip and post-trip inspection reports have been obtained and are attached to Form-1203.

3.1.9 **RECORD** verification on Form-1203, Step 4.

3.1.10 If the TRUPACT-II/HalfPACTs are loaded, verify that the tamper indicating seals are intact.

3.1.11 If a tamper indicating seal appears to be damaged, notify the Transportation manager.

3.1.12 **RECORD** verification on Form-1203, Step 5.

3.1.13 Inspect TRUPACT-II/HalfPACTs for damage (except for superficial marks).

3.1.13.1 Check the nameplates to verify that packages are proper for the contents to be shipped.

3.1.14 **RECORD** verification on Form-1203, Step 6.

3.1.15 Check the inspection record on the trailer to verify that the trailer to be loaded/unloaded has a current annual safety inspection.

3.1.16 **RECORD** verification on Form-1203, Step 7.

3.1.17 Ensure trailer wheels are chocked after parking the trailer.

3.1.18 **RECORD** verification on Form-1203, Step 8.

3.1.19 Release TRUPACT-II/HalfPACTs to be loaded/unloaded.

3.1.20 **RECORD** verification on Form-1203, Step 9.

3.1.21 Attach the shipping paper, pre-trip inspection, and post-trip inspection report to the completed original Form-1203.

3.1.21.1 Retain documentation for final outbound shipment file.

3.1.22 Print the names of the performers involved in completing Form-1203.

3.2 Shipping an Empty TRUPACT-II/HalfPACT

NOTE 1: *Some steps/verifications on Form-1204, Package Shipping Checklist, are not applicable to shipping an empty TRUPACT-II/HalfPACT and should be indicated (i.e., N/A) as such on the checklist.*

NOTE 2: *Steps 1, 3, 5, 8, 11, 12 and 16 of Form-1204 are required for empty shipments.*

3.2.1 **RECORD** the shipment number, date, TRUPACT/HalfPACT numbers, the weights for each TRUPACT-II/HalfPACT container, and the loaded status (N).

3.2.1.1 Ensure the C of C nameplate is present on Form-1204, Step 1, as applicable.

3.2.2 **RECORD** verification on Form-1204, Step 1.

3.2.3 Prepare the shipping papers in accordance with 49 CFR 172, Subpart C, Shipping Papers.

3.2.4 **RECORD** on Form-1204, Step 3.

3.2.5 Mark, label, and placard the shipment in accordance with 49 CFR 172, Subpart D, Marking; Subpart E, Labeling; and Subpart F, Placarding.

3.2.6 **RECORD** verification on Form-1204, Step 5.

3.2.7 Verify that the drivers are on the certified drivers list.

3.2.8 **RECORD** verification on Form-1204, Step 8.

3.2.9 Complete Form-1437, Radioactive Material Packaging Quality Control Inspection, (or equivalent) in accordance with 49 CFR 173.475, Quality Control Requirements Prior to Each Shipment of Class 7 (Radioactive) Materials.

3.2.10 **RECORD** verification on Form-1204, Step 11.

3.2.11 Ensure the following:

- Radiation and contamination surveys (Form-1129, Radiological Survey Report and Map) (in accordance with 49 CFR 173.441, Radiation Level Limitations and Exclusive Use Provisions) of the TRUPACT-II/HalfPACT(s) have been completed
- Initial and final radiation and contamination surveys have been documented and copies have been provided to the SC for the final shipment file.

3.2.12 **RECORD** completion on Form-1204, Step 12.

3.2.13 Retain documentation as required on Form-1857, WIPP Shipment Document Control Checklist.

3.2.14 **RECORD** verification on Form-1204, Step 16.

3.2.15 Review Form-1204 and Form-1203 for completeness and ensure all documentation is included in the shipment file.

3.3 Shipping a Loaded TRUPACT-II/HalfPACT

3.3.1 Verify that shipment information, and initiate Form-1204 by filling out the following:

- Shipment number
- Date
- TRUPACT/HalfPACT numbers
- Payload number
- Loaded TRUPACT/HalfPACT weight, if loaded
- If C of C nameplate is present.

3.3.2 **RECORD** verification on Form-1204, Step 1.

3.3.3 Verify that the shipment is on the 8-week rolling schedule or a Carlsbad Field Office (CBFO)-approved schedule revision.

3.3.4 **RECORD** the verification on Form-1204, Step 2.

3.3.5 Initiate Form-1821, Shipping Checklist, and Form-1857.

3.3.6 Using information provided by the TCO or on the Intersite Shipping Module, prepare the shipping documentation (Bill of Lading or Hazardous Waste Manifest) in accordance with 49 CFR 172, Subpart C, and 40 CFR 262, Appendix, Uniform Hazardous Waste Manifest and Instructions.

3.3.6.1 Review for the presence of polychlorinated biphenyls (PCBs).

3.3.6.1.1 For direct payloads and overpacks, ensure the TCO provides the SC a payload build sheet.

3.3.7 **RECORD** on Form-1204, Step 3.

3.3.8 If this is the first shipment of a new or revised waste stream, obtain Land Disposal Restriction notification from the TCO and include it with the shipping papers.

3.3.9 **RECORD** verification on Form-1204, Step 4.

3.3.10 Provide Form-1821 and associated documentation to an independent SC for review.

3.3.11 If manifest changes are made that require new EPA manifest number (EPA Form 8700-22, Uniform Hazardous Waste Manifest), then initiate a new Form-1821.

3.3.11.1 Attach Form-1821 associated with the unused manifest number to the new Form-1821 with the new manifest number.

3.3.12 Mark, label, and placard the shipment in accordance with 49 CFR 172, Subpart D, Subpart E, and Subpart F.

3.3.13 If shipment contains PCBs, mark in accordance with 40 CFR 761.40, Marking Requirements.

3.3.14 **RECORD** verification on Form-1204, Step 5.

3.3.15 Verify that a Commercial Vehicle Safety Alliance inspection has been completed.

3.3.16 **RECORD** verification on Form-1204, Step 6.

3.3.17 Verify that the WIPP transport drivers have a copy of the Carrier's Emergency Contingency Plan (for highway route controlled shipments) and a commercial driver's license (CDL) with proper hazardous material endorsements.

3.3.18 **RECORD** verification on Form-1204, Step 7.

3.3.19 Verify that the drivers are on the certified drivers list.

3.3.20 **RECORD** verification on Form-1204, Step 8.

3.3.21 Fax a copy of the Bill of Lading or Hazardous Waste Manifest to the following:

- TRANSCOM Control Center
- WIPP Shipping Coordinator
- Idaho National Laboratory Warning Communication Center
- The receiving facility (if shipped to sites other than WIPP).

3.3.22 **RECORD** verification on Form-1204, Step 9.

NOTE: *The steering axle weight should not be greater than 12,000 lb. No single axle weight should be greater than 20,000 lb. No tandem axle weights should be greater than 34,000 lb.*

3.3.23 Verify that the maximum gross shipping weight for the loaded packages, including the tractor and trailer does not exceed 80,000 lb.

3.3.24 **RECORD** verification on Form-1204, Step 10.

3.3.25 Obtain a completed Form-1437 (or equivalent) from the TCO in accordance with 49 CFR 173.475.

3.3.26 **RECORD** verification on Form-1204, Step 11.

3.3.27 Ensure the following:

A. The initial and final radiation/contamination checks have been completed

(49 CFR 173.441)

B. The radiation and contamination surveys have been documented and copies are included in the final shipment file.

3.3.28 **RECORD** completion on Form-1204, Step 12.

NOTE: *If designated as a controlled shipment (10-day shipping period), TCO will provide SC with appropriate documentation to accompany the shipment.*

3.3.29 TCO: If designated as a controlled shipment (10-day shipping period), provide the SC with appropriate documentation to accompany the shipment.

3.3.29.1 Retain copy of documentation for shipment file.

3.3.30 **RECORD** verification on Form-1204, Step 13.

3.3.31 Contact the WIPP Central Monitoring Room by phone and obtain concurrence for the shipment departure.

3.3.31.1 Include the shipment number, tractor number, and TRUPACT/HalfPACT numbers of the shipment in the communication.

3.3.32 **RECORD** verification on Form-1204, Step 14.

3.3.33 Notify WCC by phone that the shipment is departing.

3.3.34 **RECORD** verification on Form-1204, Step 15.

3.3.35 Retain documentation as required on Form-1857.

3.3.36 **RECORD** verification on Form-1204, Step 16.

3.3.37 List all performers involved in completing Form-1204.

3.3.38 Review Forms-1203, -1204, and -1857 for completeness, and ensure all documentation is included in shipment file.

4.0 DEFINITIONS

None

5.0 REFERENCES

(1) 40 CFR 761.40, Marking Requirements

(2) 40 CFR 262, Appendix, Uniform Hazardous Waste Manifest and Instructions

(3) 49 CFR, Transportation

(4) 49 CFR 172, Subpart C, Shipping Papers

(5) 49 CFR 172, Subpart D, Marking

(6) 49 CFR 172, Subpart E, Labeling

(7) 49 CFR 172, Subpart F, Placarding

(8) 49 CFR 173, Shippers-General Requirements for Shipments and Packaging

(9) 49 CFR 173.441, Radiation Level Limitations and Exclusive Use Provisions

(10) 49 CFR 173.475, Quality Control Requirements Prior to Each Shipment of Class 7 (radioactive) Materials

(11) CCP-PO-003, CCP Transuranic Waste Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(12) MP-DOCS-18.2, Records Management

(13) MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance

(14) U.S Department of Energy, "CH Packaging Operations Manual," DOE/WIPP-02-3184, U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(15) U.S. Department of Energy, "CH Packaging Program Guidance," DOE/WIPP-02-3183, U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(16) U.S. Department of Energy, "Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)," U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(17) U.S. Department of Energy, "Safety Analysis Report for HalfPACT Shipping Package, NRC-Docket-71-9279 (current revision), U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(18) U.S. Department of Energy, "Safety Analysis Report for the TRUPACT-II Shipping Package," NRC-Docket-71-9218 (current revision), U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(19) U.S. Department of Energy, "Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant", DOE/WIPP-02-3122, U.S. Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico*

(20) U.S. Nuclear Regulatory Commission, "Certificate of Compliance," (C of C) NRC Docket-71-9218, TRUPACT-II*

(21) U.S. Nuclear Regulatory Commission, "HalfPACT Certificate of Compliance," (C of C) NRC-Docket-71-9279, TRUPACT-II*

*All WIPP documents are found at Website http://www.wipp.energy.gov/library/caolib.htm

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.12, Case file	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
TRUPACT-II Shipment Data Package • Form-1203, Package Receipt Checklist • Form-1204, Package Shipping Checklist • Form-1437, Radioactive Material Packaging Quality Control Inspection • EPA Form-8700-22, Uniform Hazardous Waste Manifest • Bill of Lading	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after life of facility
Form-1129, Radiological Survey Report and Map	Facility Operating Record/ENV2-a-1-a/Destroy 5 years after life of facility

Record Description	Classification
Form-1821, Shipping Checklist	Checklist tool only, not retained as a record.
Form-1857, WIPP Shipment Document Control Checklist	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

None

Collection, Review, and Management of Acceptable Knowledge Documentation

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-10458.*) 12/12/11

Susan Peterman
TRU Programs Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.13, Rev. 24	Issued: 12/13/11	Effective: 12/14/11
Collection, Review, and Management of Acceptable Knowledge Documentation		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/03/02	All	Initial issue. DCR-2002-1266
1	07/17/02	All	DCR-2002-1310: Changed effective date from "DOE Approves Retrieval Operations Start-up" to 07/17/02. Changed issued date to 07/17/02. Changed Revision from "0" to "1."
2	09/05/02	4, F2 of 2	DCR-1468: Changed revision number from 1 to 2. Added reference to document and clarification to Appendix F.
3	12/09/02	4, F2	DCR-1767: Changed revision number from 2 to 3. Added clarification to Purpose/Scope and Appendix F.
4	5/01/03	All	DCR-2197. Edited procedure in response to CBFO comments.
5	07/01/03	Section 4.12, Appendix H	DCR-2308. Edited procedure in response to Performance Evaluation comment.
6	10/09/03	Pages 24 & 34	DCR 2427. Edited procedure in response to CBFO Audit A-03-05, CAR 03-076.
7	02/10/04	Various Pages	DCR-2692: Edited procedure in response to EPA Inspection report, EPA-INEEL AMWTP-10.03-24
8	02/12/04	Section 4.4.3.4	DCR-2706: Re-word for clarity in response to CBFO
9	07/08/04	Sections 4.2.2 and 4.4.4.1.1	DCR-3084: Add in language to address WIPP WAC and WAP requirements for beryllium.
10	03/03/05	All	DCR-4183. Revised to update to Revision 2 of the CH-WAC. Periodic review.
11	04/27/05	Section 2.2.2.	DCR-4283 Standard editorial practice remove revision number from WAP
12	05/03/05	Section 4.4, 4.4.8.1 and 4.4.8.2	Add subsection 4.4.8 with subsections 4.4.8.1 and 4.4.8.2. Documentation of WIPP-WAC section 3.1.4.1. Incorporation of CBFO comments.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.13, Rev. 24	Issued: 12/13/11	Effective: 12/14/11

Collection, Review, and Management of Acceptable Knowledge Documentation

Revision Number	Date Approved	Pages Affected	Description of Revision
13	2/6/06	All	DCR-4517. Revise procedure to reflect changes in WAC. Revise procedure (including Appendix D) concerning AK summary report preparation to incorporate CBFO comments on individual reports. Add clarification concerning AKRs and DRs. Revise Appendix H to reflect actual practices. Update to comply with MP-DOCS-18.3. Make format and company name changes as described on DCR-4299.
14	05/22/06	All	DCR-4871. Revised for clarification of intent of procedure.
15	1/19/07	All	DCR-5244. Complete rewrite to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
16	06/28/07	E2	DCR-6125. Minor change to clarify unknown IDCs.
17	08/29/07	3.6.1	DCR-6357. Add the WAP B4-3E requirement.
18	03/11/08	All	DCR-6412. Deleted references to MP-TRUW-8.3 being cancelled in support of CCP transition, and other editorial changes in accordance with MP-DOCS-18.3.
19	08/11/08	All	DCR-7404. Update AK Hierarchy with approved flowchart. Update Appendix G.
20	08/05/09	All	DCR-8240. Revised to incorporate Rev. 6.3 of the WAC (dated 02/05/2009), clarify handling offsite waste AK, and make editorial changes. Addressed CBFO comments. Periodic review.
21	03/15/10	Various	DCR-9075. Clarified when an AK baseline is required for off-site waste that is received and AK is used for characterization of the waste. Also editorial changes.
22	12/15/10	Various	DCR-9633. Revised to incorporate WIPP WAP permit renewal changes. Updated sections throughout for consistency with AK documentation and to clarify content of AK reports. Updated Section 3.1 to reflect use of the AK Database. Updated Section 4.0 to reflect forms included WSP package submittals. Deleted Appendix F and renumbered Appendix H to become Appendix F.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.13, Rev. 24	Issued: 12/13/11	Effective: 12/14/11

Collection, Review, and Management of Acceptable Knowledge Documentation

Revision Number	Date Approved	Pages Affected	Description of Revision
23	02/07/11	Pages 9-10	DCR-9799. Steps 3.2.6 and 3.2.6.1 revised to clarify WIPP-WAP and WAC requirements for additional/supplemental AK documentation.
24	12/12/11	Various	DCR-10458. Revised Step 3.5.2.4.2 to accommodate WIPP WAP changes. Incorporated ITG Bluesheet-073.

AMWTP MANAGEMENT PROCEDURE		
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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.13, Rev. 24	Issued: 12/13/11	Effective: 12/14/11

Collection, Review, and Management of Acceptable Knowledge Documentation

1.0 PURPOSE/SCOPE

This Advanced Mixed Waste Treatment Project (AMWTP) management procedure (MP) outlines the methods and procedures for AMWTP personnel and/or subcontractors performing *acceptable knowledge* (AK; see def.) collection, review, compilation, evaluation, and management of AK documents in accordance with MP-TRUW-8.2, Quality Assurance Project Plan. Acceptable knowledge documents are prepared in support of MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC), requirements. In addition, this procedure describes the approach used to resolve discrepancies found in AK sources or between characterization data and AK and provides guidance for preparation of the AK baseline documents, AK reports, AK summary reports, and AK Sufficiency Determination Requests. Implementation of this procedure ensures that a consistent, defensible, and auditable AK record is created for the Department of Energy (DOE) sites that generated *transuranic (TRU) waste* (see def.) inventory to be characterized by the AMWTP, as well as preparing the AK for AMWTP operations. Procedural steps are performed by the AK expert (AKE) or designee unless otherwise specified.

A flowchart of the AMWTP AK documentation process is shown in Figure 1, Document hierarchy and information flow for AK.

AK source documents are collected, summarized, and recorded in the AK source document inventory per Section 3.2.

AK baseline documents are developed for each generator site from the information in the source documents per Section 3.3.

AMWTP receives waste in compliance with MP-TRUW-8.40, INL Non-AMWTP Radioactive or Mixed Waste Acceptance, and MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance. The received waste may require the following actions:

- Characterization, profiling, and certification by AMWTP for disposal at Waste Isolation Pilot Plant (WIPP)
- Characterization, profiling, and certification by another certified program (e.g., CCP for disposal at WIPP).

AMWTP develops AK baseline documents for *legacy waste* (see def.), AMWTP *newly-generated* (see def.) waste, and waste that is received from non-AMWTP generators (i.e., waste received in accordance with MP-TRUW-8.40) and that is included in an existing WIPP-approved waste stream profile form (WSPF) or developed into a new AMWTP WSPF per Section 3.3.

When offsite waste is sent to AMWTP for treatment/storage, and the waste is to be included in an existing AMWTP WIPP-approved WSPF (or developed into a new WSPF), the AK documents and process knowledge (PK) documents that are submitted for that waste in compliance with MP-TRUW-8.41 are placed into an AMWTP baseline document as outlined in Step 3.3.2.

AMWTP does not develop AK baseline documents for offsite generator and non-AMWTP generator wastes that are not profiled by AMWTP.

AK/PK source documents supporting the development of baseline and summary reports are added to the AK record as applicable. Pertinent information to support characterization is added to RPT-TRUW-05, Waste Matrix Code Reference Manual; RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste; RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge; RPT-TRUW-12, AMWTP Waste Stream Designations, and other AK documents, as appropriate.

AK reports, RPT-TRUW-05, RPT-TRUW-07, and RPT-TRUW-12, are prepared in accordance with Section 3.4. RPT-TRUW-05 and RPT-TRUW-07 are topic specific references of AK information to be used by operations and validators during characterization activities. Radionuclide specific WIPP Waste Acceptance Criteria (WAC) required information is documented in RPT-TRUW-07 to be used during AK summary report development. RPT-TRUW-12 is used to document historical and current characterization information for TRU wastes. Historical characterization information was obtained from an Idaho National Engineering Laboratory (INEL) and a British Nuclear Fuels Ltd (BNFL) engineering design file (EDF). These two EDFs (i.e., RWMC-EDF-803, Chemical Constituents in Transuranic Storage Area [TSA] Waste, and AMWTP-EDF-199, Advanced Mixed Waste Treatment Project Waste Stream) were developed to support the Resource Conservation and Recovery Act (RCRA) storage and treatment activities at the AMWTP (previously identified as the Radioactive Waste Management Complex [RWMC]). The TRU waste characterization information contained within these two EDFs is included, as applicable, into RPT-TRUW-12, which is updated as additional AK or characterization data is evaluated and when WSPFs are approved.

AK summaries for *waste streams* (see def.) or for AK sufficiency determination requests are developed in accordance with Sections 3.5 and 3.6, respectively. WIPP-Waste Acceptance Plan (WAP)/WAC required information documented in AK baseline documents, and AK reports are used to develop the AK summaries. Evaluation of characterization data and revision of the AK summary, if required, to support preparation of WSPFs is described in Section 3.8.

Preparation of WSPFs and characterization information summaries (CISs) is described in MP-TRUW-8.14, Preparation of Waste Stream Profile Forms.

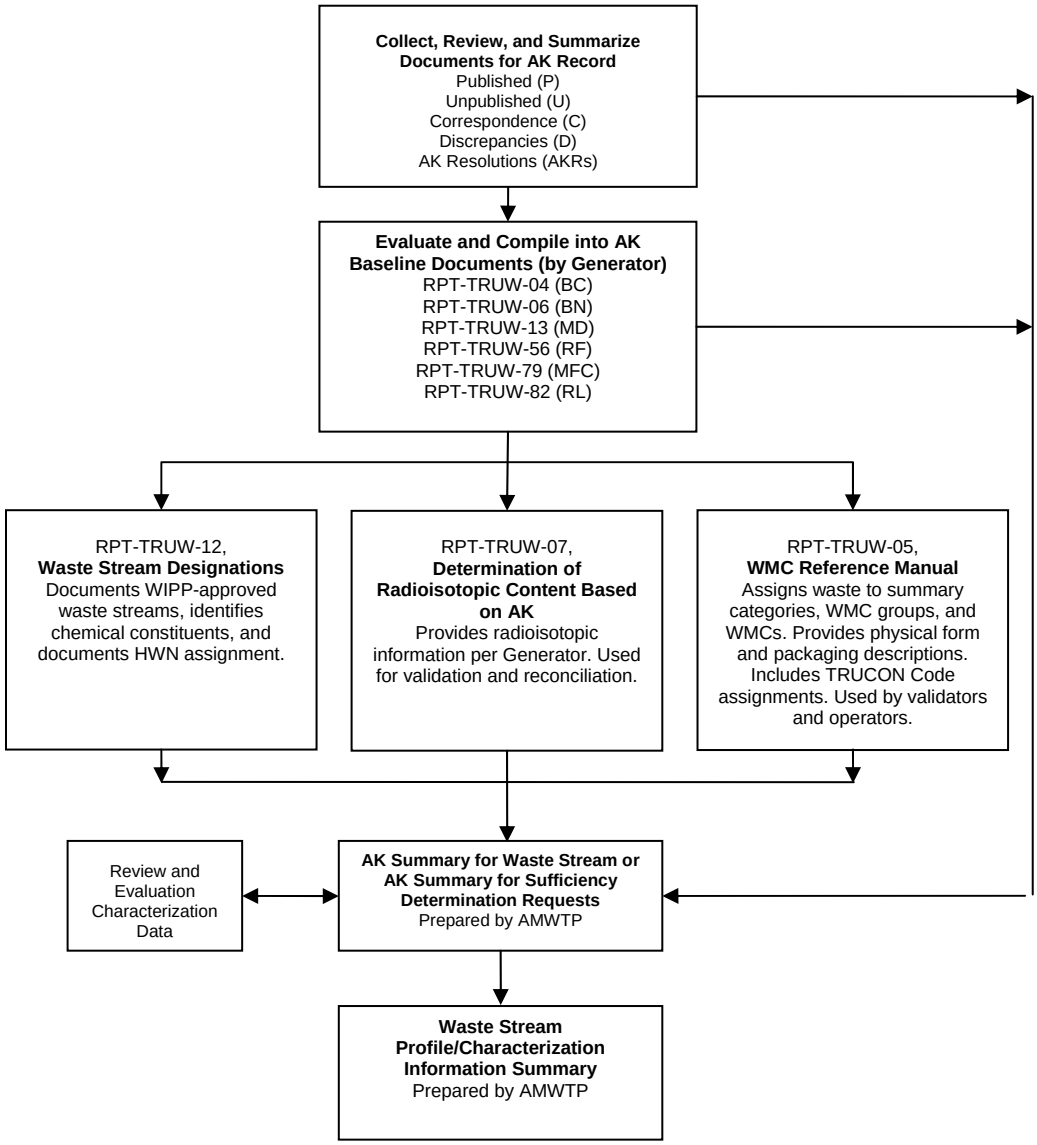


Figure 1. Document hierarchy and information flow for AK.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Acceptable Knowledge Expert (AKE)	• Ensures current versions of the references listed in Section 5.0 are available, including the WIPP-WAP and Transuranic Waste Acceptance Criteria (WAC) for WIPP. • Identifies potential sources of AK documentation, including, but not limited to, cognizant personnel, libraries, and other historical documentation sources. • Collects, reviews, and compiles AK documentation. • Maintains the unique Form-1084, *AK Source Document Reference List* (see def.), and assigns tracking numbers to new AK documents. • Reevaluates and updates/augments AK information based on characterization, new AK source documents, and updated AK information. • Resolves AK discrepancies in accordance with this procedure. • Defines data limitations of AK documentation. • Applies AK information to assign *waste matrix codes* (WMCs; see def.), recommend hazardous waste number assignments, delineate waste streams, estimate *waste material parameter* (see def.) weights, and confirm defense waste determination. • Coordinates the identification and collection of AK documentation with sites that generate/generated the TRU waste. • Prepares AK Sufficiency Determination Requests and AK summary reports. • Prepares accuracy report. • Maintains open communication with physics personnel/nondestructive assay (NDA) subject matter expert (SME) in the determination of WIPP required radionuclide information and in the resolution of acceptable knowledge discrepancies with NDA data.

Performer	Responsibilities
Site Project Manager (SPM) or Designee	• Reviews and approves this procedure and all revisions. • Notifies AKE of any inconsistencies between characterization data and AK. • Ensures that AK process information meets the *Quality Assurance Objectives* (QAOs; see def.) relating to accuracy, completeness, comparability, precision, and representativeness. • Reviews and approves U.S. Environmental Protection Agency (EPA) hazardous waste numbers recommended by the AKE.

3.0 PROCEDURE

3.1 General Information

A. Information taken from collected AK source documents is incorporated into an AK Baseline or the AK reports (RPT-TRUW-05, RPT-TRUW-07, or RPT-TRUW-12) to present AK information in a logical sequence, progressing from general TRU waste management and plant operations to more detailed, waste stream-specific information in accordance with the WIPP-WAP and the WAC. The information gathered and reviewed includes generator data, storage history, and documents that include certification and characterization activities performed by the AMWTP.

B. The AMWTP documents (procedures and reports) used to address compiling, managing, and evaluating AK information, and reporting data to WIPP to obtain approval for waste shipment and disposal, are summarized in Appendix A, TRU Waste Characterization Data Processing and Reporting by the Site Project Office (SPO).

C. This procedure is written to specifically address the WIPP-specific requirements as listed below:

- Collection, compilation, evaluation, and assembly of AK information
- Review and evaluation of AK source information
- Derivation of specific AK parameters from the AK source information
- Preparation of AK baseline documents
- Delineation of waste into waste streams

- Preparation of AK summary report for Waste Stream
- Preparation of AK Sufficiency Determination Requests
- Resolution of inconsistencies and discrepancies and reevaluation of AK
- Identification and assignment of EPA Hazardous Waste Numbers (HWNs)
- Finalization of waste stream
- Assessment of AK accuracy.

D. This procedure is also used any time AK information must be resolved or reevaluated.

NOTE: *All steps in this procedure are the responsibility of the AKE unless the step indicates otherwise.*

3.2 AK Data Collection, Review, and Evaluation

NOTE 1: *The specific method used to collect and assemble AK records—including the origin of the documentation, how it is used, and any limitation associated with the information—is described in this section. To create a coherent, auditable, and accessible record, all AK information is reviewed, categorized, filed, and controlled as described in this procedure. Information sources and any supporting historical information that will assist in future review or assessment of AK are documented per the following steps.*

NOTE 2: *PK/AK documents (e.g., AK source/reference documents, waste management program and waste stream information [such as* AK roadmaps *(see def.)], and PK/AK summary reports) addressing waste are supplied by the offsite or non-AMWTP generator and/or their representative in compliance with MP-TRUW-8.40 or MP-TRUW-8.41.*

3.2.1 Collect source documents, when feasible, for each generator site (including AMWTP) by obtaining complete documents or copies of documents.

3.2.1.1 When it is not feasible, copy applicable information along with portions of the document that define source contents, such as cover sheets, executive summaries, introductions, and table of contents, if available.

NOTE 1: *Form-1068, Acceptable Knowledge Source Document Summary; Form-1066, TRU Waste Management AK Checklist; Form-1067, TRU Waste Stream AK Documentation Checklist; and Form-1084 may be printed from the AK Document Database.*

NOTE 2: *The unique identifier in Step 3.2.2 is the next P, U, C, or D number from the AK Document Database. This identifier serves as the reference number for the AK source document in the AK source document inventory and the AK record.*

3.2.2 Assign a unique identifier (alphanumeric) to each source document collected.

3.2.2.1 Use the following convention:

- *Correspondence* (see def.) (C001A or C001S, C002A, etc.)
- *Discrepancy report* (DR; see def.) (D001A or D001S, D002A, etc.)
- *Published documentation* (see def.) (P001A or P001S, P002A, etc.)
- *Unpublished data* (see def.) (U001A or U001S, U002A, etc.).

3.2.2.2 Assign documents that can be used to address one or more of the required elements (mandatory programmatic or waste stream information [WM and WS elements]) an ‘A’ suffix with the reference number.

3.2.2.3 Assign documents that are “supporting AK documents” (i.e., documents that are not sufficient to all parts of the WM or WS elements, but do provide supporting information for one or more of the elements) an ‘S’ suffix with the reference number.

3.2.3 Complete Form-1068 for each source document added to the AK source document inventory and include in the AK record. Instructions are included with the form.

3.2.3.1 If the documentation cannot be reproduced or portions of the document copied or removed from the source (e.g., classified documents or databases), summarize AK information obtained from the review of the document and the reason the document is not included on a Form-1068.

3.2.3.2 Document information obtained during review of electronic databases such as the source, date, and type of information extracted on a Form-1068. (Database maps, dictionaries, format, history, or other supporting documentation should also be obtained if applicable and available.)

3.2.3.3 Document appropriate data limitations or discrepancies identified on the Form-1068.

NOTE: *Form-1066 provides a roadmap to AK documentation used to address mandatory program information compiled for each generator site. This checklist is updated as additional AK source documents are collected, reviewed, and the Form-1068 is completed as described in Step 3.2.3.*

3.2.4 Prepare a Form-1066 for each generator site.

3.2.4.1 When an AK baseline document is issued, print a copy of Form-1066 and submit to Records Management as described in Step 3.2.3.

NOTE: *Form-1067 provides a roadmap to AK documentation used to address mandatory waste stream information compiled for each generator waste IDC or waste stream. This checklist is updated as additional AK source documents are collected, reviewed and the Form-1068 is completed as described in Step 3.2.3.*

3.2.5 Prepare a Form-1067 for each waste Item Description Code (IDC) or waste stream.

3.2.5.1 When a WSPF is approved, print a copy of the Form-1067 and include in the WSP package as described in Step 3.8.12.

3.2.6 Collect, as appropriate, WIPP-WAP defined additional AK documentation and WAC defined supplemental AK documentation as identified in MP-TRUW-8.2 and MP-TRUW-8.1 respectively, including, but not limited to, information from the following sources:

- Process design documents (e.g., Title II Design)
- Standard operating procedures that may include a list of raw materials or reagents, a description of the process or experiment generating the waste, and a description of the waste generated and how the wastes are managed at the point of generation
- Preliminary and Final Safety Analysis Reports and technical safety requirements
- Waste packaging records
- Test plans or research project reports that describe the reagents and other raw materials used in experiments
- Site databases (e.g., chemical inventory database for Superfund Amendments and Reauthorization Act [SARA] Title III requirements)
- Information from site personnel (e.g., documented interviews)
- Standard industry documents (e.g., vendor information)
- Analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, routine verification sampling, or other processes that collect information pertinent to the waste stream. This may include new information which augments required information (e.g., visual examination [VE] not performed in compliance with the WIPP-WAP, radiography screening for prohibited items)
- Material Safety Data Sheets (MSDS), product labels, or other product information
- Laboratory notebooks that detail the research processes and raw materials used in an experiment
- Sampling and analysis data from comparable or surrogate waste streams (e.g., equivalent non-radioactive materials)
- Safeguards and Security, Materials Control and Accountability, and other nuclear materials control systems or programs and the data they generated

- Reports of nuclear safety or criticality, or accidents/excursions involving the use of special nuclear material (SNM) or nuclear material
- Waste packaging, waste disposal, building or nuclear material management area (NMMA) logs or inventory records, and site databases that provide information on the SNM or nuclear materials
- Test plans, research project reports, or laboratory notebooks that describe the radionuclide content of materials used in experiments
- Historical analytical data relevant to the isotopic distribution of the waste stream.

3.2.6.1 Include WIPP-WAP defined additional AK information as appropriate to augment required information and provide any other information obtained to further delineate waste streams and include WAC defined supplemental AK information, as appropriate, to support the waste's isotopic distribution.

3.2.6.2 Include all additional specific, relevant, acceptable knowledge documentation assembled and used in the acceptable knowledge process, whether it supports or contradicts any required acceptable knowledge documentation, and provide an explanation for its use (e.g., identification of a toxicity characteristic).

3.2.6.3 Use additional documentation, if needed, to further document the rationale for the hazardous characterization results.

NOTE: *Similar to required information, if discrepancies exist between additional information and the required information, then sites may consider applying all hazardous waste numbers indicated by the additional information to the subject waste stream, but must assess and evaluate the information to determine the appropriate hazardous* waste *numbers are consistent with RCRA requirements.*

3.2.6.4 Document and place all information considered in the auditable record, including applicable *discrepancy* (see def.) resolution documentation.

3.2.7 Document the relevant AK information resulting from meetings, telecommunications, and interviews, including interviewer name, interviewee (or attendee) name, date, and details of discussions on a Form-1069, AK Telecon/Interview Form, (instructions attached).

3.2.7.1 Summarize the information on a Form-1068 as a source document with a "C" designation and include in the AK record in accordance with Steps 3.2.2 and 3.2.3.

3.3 Prepare AK Baseline Document

NOTE 1: *Prior to developing an AK summary report for a waste stream, the available AK information is compiled into an AK baseline document for each generator site.*

NOTE 2: *PK/AK documents supplied by the offsite generator and/or their representative in compliance with MP-TRUW-8.41 are used to develop AK baseline documents per Step 3.3.2.*

NOTE 3: *AK baseline documents and AK Summary Reports are issued as AMWTP reports and address all of the mandatory waste management and waste stream information. Mandatory waste management information for the generator site common to all waste generated is primarily presented in the first general sections of the AK baseline document. Waste stream information is presented in subsequent sections for the preliminary waste groupings based on process and physical form. This is a preliminary grouping of wastes for baseline organization, and these groupings may not represent the final waste stream delineation that is determined for a WSPF. The mandatory waste stream information is presented in the AK Summary Reports in accordance with Section 3.5.*

3.3.1 Ensure that Form-1066 and Form-1067, for the generator and each waste IDC, have been compiled per Section 3.2.

3.3.1.1 For each waste group, ensure that AK information bounds the AMWTP waste inventory with regard to time of generation, area of generation, and generation process.

NOTE: *Form-1066 and Form-1067 are used to document that the mandatory management and waste stream information have been compiled for the generator and each waste IDC.*

3.3.1.2 If information compiled on the Form-1066 or Form-1067 indicates that required elements have not been adequately addressed, notify SPM.

3.3.2 Develop a baseline document that is composed of generator-supplied AK/PK documents for wastes sent to AMWTP for treatment/storage that are in compliance with MP-TRUW-8.41 and that are included in existing AMWTP WIPP-approved WSPFs or new AMWTP WSPFs.

3.3.2.1 Place these AK/PK documents into a TRU program report, along with a brief summary outlining the intent of the referenced documents within the baseline document.

3.3.2.2 Include the applicable AK source documents referenced in the AK/PK documents in the AK records.

3.3.3 Perform an assessment of operating documents to determine if the TRU waste materials at the generator site meet the definition of defense waste and are not high-level waste or spent nuclear fuel as specified in the WAC.

3.3.4 Prepare a discussion/summary of the mandatory waste management program information including the defense related assessment for each generator site in accordance with the outline provided in Appendix F, AK Baseline Document.

NOTE: *Wastes (IDCs) are initially assigned to waste groups in the AK baseline document and then delineated into waste streams based on the WIPP-WAP definition of waste stream (WIPP-WAP, Section C-0a) when the AK Summaries are prepared per Section 3.5.*

3.3.5 Delineate preliminary waste groups based on compiled AK and prepare a discussion/summary of the waste stream information for each waste group in accordance with the outline for the section(s) that describe the waste(s) as provided in Appendix F and include the following:

3.3.5.1 Review pertinent AK information, group wastes based on similarities (e.g., generation process, physical form, etc.), and develop a section in the AK baseline document for each waste group.

3.3.5.2 Include waste IDC descriptions that address the waste stream specific information as listed in Step 3.2.5 and identified in Form-1067, for each of the IDCs included in a waste group.

3.3.5.3 Document waste group basis, rationale, and assumptions used in the AK baseline document.

3.3.6 For each waste group, identify chemical compounds from the AK information that are potential waste constituents and any HWNs assigned by the generator for each waste.

3.3.6.1 Ensure that AK source documents containing HWN information are included in the AK record as described in Section 3.2.

3.3.6.2 Provide a description of the chemicals used in applicable process for each waste group in the appropriate AK baseline document section.

3.3.7 Determine the presence/absence of prohibited items.

3.3.7.1 Identify any WIPP-WAP prohibited items or conditions that may be present in waste containers for each section that describes the waste(s) or in the general section that describes the waste operations.

NOTE: *Prohibited items or conditions identified as potentially present are compiled on the waste stream specific summary checklist (i.e., WS8 element on Form-1067).*

3.3.7.2 If AK information indicates the potential presence of prohibited items in waste containers, an appropriate statement is added to the waste description in RPT-TRUW-05.

3.3.8 Determine radionuclides present in the waste.

3.3.8.1 Ensure that AK source documents containing radionuclide data are included in the AK record as described in Section 3.2.

3.3.8.2 Identify any radionuclides that may be present in waste containers and any other pertinent information needed to identify isotopic ratios and document in the appropriate general section of the AK baseline document.

3.3.9 Determine the presence/absence of polychlorinated biphenyls (PCBs).

3.3.9.1 If PCBs are identified, document the earliest date of waste generation, the estimated weight of the PCBs (in kilograms), and a description of the type of PCB(s) for waste determined to be PCB contaminated in the appropriate section in the AK baseline document.

3.4 Development of AK Reports

3.4.1 AMWTP Waste Matrix Code Reference Manual

NOTE: *RPT-TRUW-05 is a reference manual that provides physical waste form descriptions for operators and validators to ensure proper assignment of* Summary Category Group *(SCG; see def.) and WMC following best management practices at the operations level. SCGs and WMCs are verified by the operators during real-time radiography (RTR) and VE.*

3.4.1.1 Develop and update reference tables for each IDC waste as illustrated in the RPT-TRUW-05, Table 3.1, with pertinent AK information regarding waste generator, physical form, packaging, and other information to aid operators and validators in identification of wastes and correlation of the physical form and SCG and WMC assignment.

3.4.1.2 Provide information pertinent to characterization activities such as potential prohibited items, acceptable and unacceptable packaging variations, and PCB information.

3.4.1.3 Describe typical variations of waste information (e.g., waste composition, packaging, prohibited items) based on data collected during RTR and VE exams in RPT-TRUW-05, Section 3.0.

3.4.2 Waste Stream Radionuclide Information Summary

NOTE: *RPT-TRUW-07 was developed to provide the radiological composition of TRU wastes that are characterized by the AMWTP. The information provided in RPT-TRUW-07 fulfills these requirements as identified in the WIPP-WAC.*

3.4.2.1 AKE: Coordinate with the NDA SME to determine default radioisotopic ratios for those radionuclides expected based on the compiled AK as required by the WAC.

A. When feasible, the results are used to calculate activities for nuclides included in the 10 WIPP-tracked radionuclides and masses (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs).

B. Direct measurements are used to establish the isotopic ratios for use in quantifying radionuclides. Quantitative estimates for the lower limit of detection (LLD) shall not be used when calculating related radiological properties.

3.4.2.2 Summarize the radionuclide information for each generator site in RPT-TRUW-07.

3.4.2.2.1 Identify the radionuclides that may be expected to be quantifiable or calculated by NDA technique in the wastes.

NOTE: *Measured isotopic ratios for ^{241}Am may confirm existing AK by waste stream. However, it may become necessary to measure ^{239}Pu to ^{241}Am isotopic ratios on all containers in certain waste streams due to the fluctuation of ^{241}Am.*

3.4.2.2.2 Document all numerical adjustments applied to derive the materials isotopic distribution (e.g., scaling factors, decay/ingrowth correction, and secular equilibrium considerations).

3.4.2.2.3 Identify and document the two most prevalent radionuclides and their ratios in the isotopic mix for each generator site.

3.4.3 AMWTP Waste Stream Designations

NOTE: *RPT-TRUW-12 is referenced within RWMC/AMWTP permit and is used as one of the references to support safe storage/treatment.*

3.4.3.1 Update the WMC assignment (RPT-TRUW-12, Table 1), and delineation of waste into waste streams for characterization (RPT-TRUW-12, Tables 2, 3, 4, 5, and 6) as AK summaries are developed.

3.4.3.2 Identify and/or update potential hazardous waste constituent/chemical property and include generator and AK/WIPP assigned HWNs as applicable (RPT-TRUW-12, Appendix A, AK Summary Report for a Waste Stream).

3.5 Prepare an AK Summary Report

NOTE: *Section 3.5 can be completed in parallel with Section 3.8.*

3.5.1 Develop an AK summary report for the waste stream in accordance with the outline provided in Appendix B, and include the following:

3.5.1.1 Incorporate the required waste stream information as identified in Section 3.2, from the AK baseline document and AK reports, as applicable.

3.5.1.2 Ensure that the Form-1067 for the waste stream has been prepared.

3.5.1.3 Select a WMC from DOE/LLW-217, DOE Waste Treatability Group Guidance, corresponding to the predominant waste material in each waste stream as determined from the review of the AK documents.

NOTE: *Container inventory is estimated using, but is not limited to, the data sources listed below:*

- *Container inventory from the Waste Tracking System (WTS)*
- *Historical container inventories (e.g., INEL-95/0412, Waste Description Information for Transuranically-Contaminated Waste Stored at the Idaho National Engineering Laboratory, and RWMC-EDF-837, Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA for Radioactive Waste Management Complex).*

3.5.1.4 Develop a container inventory and establish waste stream volumes and time periods of generation for the waste stream, as required by the WIPP-WAP.

NOTE: *The AK information is used to support load management decisions*.

3.5.1.5 Using the best available AK information, determine the percentage of the waste stream that is ≤ 100 nCi/g.

NOTE: *Waste material parameter weights are based on historical waste generator, industry documentation, generator estimates, or characterization data.*

3.5.1.6 Prepare a memorandum to file documenting the method used to estimate waste material parameter weights for each waste.

3.5.1.7 Identify all chemical constituents based on information in the site specific AK baseline document, AK reports, or other source documents.

3.5.1.8 Document how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU non-mixed waste).

NOTE: *All HWNs indicated in the AK may be conservatively applied; but the information must be assessed and evaluated to determine the appropriate HWNs are consistent with RCRA requirements.*

3.5.2 Evaluate the applicable AK source documents and determine the appropriate HWNs that are consistent with RCRA requirements, considering previous generator assigned HWNs and site historical management of the waste according to the following steps:

3.5.2.1 Review the collected AK information to determine if the waste is a listed waste or is mixed with waste listed in 40 CFR 261, Subpart D; specifically F- and K- listed waste and P- and U- listed chemicals (e.g., F001, F002, F003, F004, F005, F007, F009, P015, and U134).

3.5.2.2 Identify all listed EPA HWNs unless justification for not assigning the HWN is documented on Form-1784, Acceptable Knowledge Discrepancy Report, in accordance with Step 3.7.3.

3.5.2.3 Review the collected AK information to determine if the documentation identifies the presence in the waste of toxicity characteristic constituents specified in 40 CFR 261, Subpart C.

3.5.2.4 Identify EPA HWNs, unless data are available to demonstrate that the concentration of the constituent is below the regulatory threshold, or the waste already carries the listed HWN for the constituent.

3.5.2.4.1 If different sources of information indicate different hazardous wastes are present, then either conservatively assign HWNs and document in the AK Summary OR assign only those HWNs deemed appropriate and consistent with RCRA requirements and document on Form-1784 in accordance with Step 3.7.3.

3.5.2.4.2 If a toxicity characteristic hazardous constituent is identified during the review of the available AK, then evaluate and document the assignment of the applicable HWNs in the AK Summary.

3.5.2.4.3 If the waste has been managed as mixed and non-mixed, then document the justification for including these wastes into one waste stream on Form-1784 in accordance with Step 3.7.3.

3.5.2.5 Document AK-determined HWNs (or non-mixed management status) in the AK summary report.

3.5.2.6 Coordinate with Environmental, Safety, and Health (ES&H) to ensure that all identified HWNs are addressed by the AMWTP HWMA/RCRA Permit.

3.5.2.6.1 The AMWTP HWMA/RCRA permit requirements and state-enforced agreements are considered in the assignment of HWNs.

3.5.2.7 Ensure all information used to justify the assignment of HWNs have been placed in the auditable record as described in Section 3.2.

3.5.2.8 Ensure that the assignment of HWNs in the auditable record to all required documentation has been tracked per the requirements described in Section 3.2.

3.5.3 Document if any of the waste in the waste stream contains PCBs in concentration equal to or greater than 50 ppm.

3.5.3.1 If present, identify the type of PCB contaminated wastes (e.g., remediation, bulk product).

3.5.4 Document if beryllium is identified as a constituent of the waste.

3.5.4.1 If present, provide an estimate of the weight percentage of beryllium present in the waste stream.

3.5.5 Document radionuclides of concern present in the waste.

3.5.5.1 Include the two most prevalent radionuclides for the waste stream (see RPT-TRUW-07).

3.5.5.2 Include the percent of the waste stream expected to be TRU <100 nCi/g if load management is applicable for the waste stream.

3.5.6 Include description of AMWTP controls which screen for prohibited items.

3.5.7 Ensure relevant documentation is consistent with AK baseline document information and other applicable AK reports (e.g., RPT-TRUW-05, RPT-TRUW-12, and RPT-TRUW-07).

3.5.8 Review the AK Resolution (AKR) ledger (See Appendix D, AK Resolution Ledger), and incorporate appropriate information from *Acceptable Knowledge Resolution (*AKR; see def.) (Form-1070, Acceptable Knowledge Resolution (AKR) Checklist), into the AK summary report.

3.5.9 Review the list of discrepancy reports (Form-1784) in the AK Record and incorporate information from applicable discrepancy reports (Form-1784) into the AK summary report.

NOTE: *In-house reviews and approvals are conducted as specified in MP-DOCS-18.4, Document Control.*

3.5.10 Distribute draft AK Summary for internal review.

3.5.11 Incorporate comments and provide final report to SPM as described in Step 3.8.10.

3.6 AK Sufficiency Determination Request Preparation

NOTE: *An AK Sufficiency Determination Request may be submitted to Carlsbad Field Office (CBFO) to meet all or part of the waste characterization requirements if the available AK information is complete and adequate to meet the requirements. The AK Sufficiency Determination Request includes the following steps, at a minimum.*

3.6.1 Evaluate the AK information available for a waste stream to determine if an AK Sufficiency Determination Request is possible or desirable.

NOTE: *Although WIPP may allow for the following scenarios, the State of Idaho Department of Environmental Quality (DEQ) and the AMWTP HWMA/RCRA Permit still require that all existing Transuranic Storage Area (TSA) waste containers go through RTR or visual examination for characterization. Concurrence from AMWTP Environmental must be received prior to submittal of Scenario 1 and Scenario 2 Sufficiency Determination Requests.*

3.6.2 Determine which AK Sufficiency Determination Request scenario applies, using the following definitions:

Scenario 1 Radiography or VE of the waste stream is not required, and chemical sampling and analysis is not required.

Scenario 2 Radiography or VE of the waste stream is not required, but chemical sampling and analysis of a representative sample of the waste stream is required.

Scenario 3 Chemical sampling and analysis is not required, but radiography or VE of 100% of the containers in the waste stream is required.

3.6.3 Establish what characterization, if any, is required based on the proposed scenario and the available AK information.

3.6.4 Prepare an AK summary report for the AK Sufficiency Determination Request as outlined in Appendix C, AK Sufficiency Determination Request-AK Summary Report.

3.6.4.1 Include the mandatory program information as required by the WIPP-WAP.

3.6.4.2 Include the information identified in Steps 3.5.1.1 through 3.5.9.

3.6.5 Provide an *AK roadmap*.

3.6.6 Provide a complete reference list including all mandatory and additional AK documentation.

3.6.7 Provide relevant additional AK information for the required programmatic and waste stream data addressed in the AK summary report, as applicable, or if requested by CBFO.

3.6.8 Identify any mandatory requirements supported only by upper tier documents (i.e., there is insufficient supporting data).

NOTE: *Current revision of this procedure demonstrates that AMWTP has developed a written procedure for compiling AK information and assigning HWNs.*

3.6.9 Describe or otherwise demonstrate that the AK process described in the WIPP-WAP was followed (e.g., AK personnel were appropriately trained, discrepancies were documented, etc.).

3.6.10 Provide information showing that AMWTP has assessed the AK process (e.g., internal *audits* [see def.]).

3.7 Resolution of Inconsistencies and Discrepancies and Reevaluation of AK Information

NOTE 1: *Appendix E, Guidelines for Common AK Discrepancies or Inconsistencies, contains guidelines for determining appropriate actions to take for the most commonly encountered AK inconsistencies or discrepancies.*

NOTE 2: *Data collected from RTR, visual examinations, and radioassay is reviewed on a container-by-container basis to verify that the contents are consistent with the AK for the waste stream.*

NOTE 3: *Data collected from HSG and solid sampling is reviewed on a waste stream basis to verify that the waste is consistent with AK for the waste stream.*

3.7.1 SPM/Designee: Notify an AKE of any inconsistencies between characterization data and AK identified during validation, characterization, or confirmation processes.

NOTE 1: *AKRs (Form-1070) written to resolve discrepant radioisotopic (assay) data are reviewed and cosigned by an AKE SME and a NDA SME.*

NOTE 2: *AKRs (Form-1070) are tracked in the AKR Ledger (See Appendix D, AKR Ledger), and maintained by Records Management.*

3.7.2 Document inconsistencies between AK and characterization data (e.g., RTR, HSG, solid sampling, radioassay isotopic or composition) on Form-1070.

NOTE: *Reassignment of WMC for a waste container includes reassignment of the IDC.*

3.7.2.1 Take the following minimum steps to reevaluate AK when the contents of a waste container identified during radiography or visual examination are inconsistent with the WMC shown in WTS (these steps are incorporated into Form-1070):

3.7.2.1.1 Review existing information based on the container identification number and document all differences in HWN assignments.

3.7.2.1.2 If differences exist in the HWN(s) assigned, reassess and document all required AK information associated with the new designation.

3.7.2.1.3 Reassess and document all sampling and analytical data associated with the waste.

3.7.2.1.4 Verify and document that the waste material to be reassigned a WMC was generated within the specified time period, area and buildings, and waste generating process, and that the process material inputs for the waste are consistent with the waste material parameters identified during radiography or visual examination.

3.7.2.1.5 Record all changes to AK records.

3.7.2.1.6 If inconsistencies are for a waste container that requires reassignment of the WMC, document the disposition of the container.

3.7.2.1.7 If discrepancies exist in the AK information for the revised WMC, document the segregation of the affected portion of the waste stream, and define the action(s) necessary to fully characterize the waste.

3.7.2.2 If *data quality objective* (DQO; see def.) reconciliation indicates that a HWN discrepancy exists, follow the steps in Section 3.8.

3.7.2.3 If Form-1070 indicates a WMC change, waste stream assignment change, or HWN change to a waste population with an approved WSPF, or identifies a noncompliance, then issue a nonconformance report(s) (NCR) if one has not already been issued.

A. If a WMC changes and noncompliant items or HWN additions are identified that potentially affect an approved waste stream, shipment of the waste stream is suspended until the discrepancy is resolved. This shall be indicated on the associated NCR.

B. An NCR shall also be issued for any Acceptable Knowledge Resolution Checklist that is issued outside of the SPM validation process (MP-TRUW-8.9, Level II Data Validation) or DQO Reconciliation process (MP-TRUW-8.11, Data Reconciliation) to ensure that containers with open AK discrepancies are not shipped.

NOTE: *Appendix E provides guidelines for updating documents for the most common inconsistency resolutions.*

3.7.2.4 Indicate on the Form-1070 any required updates to AK documentation.

3.7.2.5 Sign the Form-1070 when a resolution is determined. Required actions (document updates, etc.) need to be completed for the resolution checklist to be signed unless at least ONE of the following conditions is met:

- The resolution requires one or more minor updates to an AK document(s) and the required update(s) is being tracked in the AK Resolution Ledger
- The resolution requires one or more major updates and the required action(s) is being tracked with an NCR.

NOTE: *Any containers with open discrepancies or NCRs are not acceptable for shipment*.

3.7.2.6 Do not sign Form-1070 if the discrepancy is to be left open.

NOTE: *Depending on the significance of the revision, minor changes can be deferred as long as the item is being tracked in the AK Resolution Ledger.*

3.7.2.7 Update AK documentation as specified in Form-1070.

3.7.2.8 If the AK radionuclide information is inconclusive and/or the radioassay data is inconclusive or inconsistent with AK related to isotopics or composition, flag the associated radioassay batch for NDA SME review and disposition.

A. The proposed technical approach in this event is to use previous radio-assay (RA) data if available from containers with the same or similar waste matrix to assign radioisotopes to the waste and scale their corresponding activities.

B. In the event that previous data are not available, the flag remains unresolved on the container until sufficient related data are recorded.

C. The rationale for each review and resolution is described in detail in an AK resolution to be added to the AK record.

NOTE 1: *Form-1784 written to resolve radionuclide or assay data are reviewed and cosigned by the AKE/SME and the NDA SME.*

NOTE 2: *Instructions are provided with Form-1784.*

3.7.3 Complete a Form-1784 when a discrepancy is identified between AK source documents (including additional AK information) during AK document review or during development of AK baseline document or AK summary report. The DR should include all pertinent information, including but not limited to:

- List of AK documents with discrepant information
- List of AK documents used in resolution
- Background information pertinent to the discrepancy
- Assumptions made in determining the resolution and their basis

- Rationale and conclusions
- Resolution
- Any AK documents that need revision to include the resolution.

3.7.4 Complete a Form-1068 for the DR in accordance with Steps 3.2.2 and 3.2.3.

3.8 Evaluation of Characterization Data and Waste Stream Profile Finalization

NOTE 1: *Section 3.8 can be completed in parallel with Section 3.5.*

NOTE 2: *The steps in this section are a joint effort of the SPM and AKE. This evaluation is performed in conjunction with the preparation of the WSPF.*

NOTE 3: *Characterization data from RTR, visual examination, headspace gas (HSGS) sampling and analysis, radioassay, and solid sampling and analysis collected by AMWTP, are used to augment the AK.*

NOTE 4: *Constituents are identified by evaluating the data (e.g., UCL_{90} values exceeding program-required quantitation limits [PRQL] or tentatively identified compound [TIC] evaluation). HWNs are assigned per WIPP-WAP requirements.*

3.8.1 Identify any constituents from statistical evaluations of headspace gas or homogeneous solid waste analyses that have the potential to require the addition of HWNs to the waste stream.

NOTE: *A HWN need not be added if the statistical evaluation for the entire waste stream does not indicate that it is necessary.*

3.8.2 If the constituent identified by the statistical evaluation is from a lot with an approved waste stream profile form, reevaluate the statistics using data from the entire waste stream.

NOTE: *A listed HWN need not be added based on HSG sampling analyses data if it can be demonstrated that the detected constituent is associated with packaging materials, radiolysis, or other uses not consistent with solvent usage.*

3.8.3 If a listed waste constituent's (other than F003 constituents) UCL_{90} value exceeds PRQL, identify the appropriate spent solvent code HWN, unless justification for not assigning the HWN is documented by Form-1070.

3.8.3.1 If the source of the constituent is identified as a spent solvent (40 CFR 261, Subpart D), or if it is the result of mixing a listed waste with a solid waste (40 CFR 261.3 [iv]), or if the source of the detected solvents cannot be identified, apply the appropriate HWN.

NOTE: *F003 listed HWN does not need to be applied if the waste is no longer ignitable.*

3.8.3.2 If F003 constituent UCL_{90} value exceeds PRQL, identify the HWN unless justification is documented in the AK summary report.

3.8.4 If a toxicity characteristic contaminant (40 CFR Part 261, Subpart C) is identified by AK as present in the waste and is not a listed waste or included as a listed waste, identify the toxicity characteristic EPA HWN, unless data are available that demonstrate the concentration of the constituent in the waste is less than the toxicity characteristic regulatory level or if results of evaluation does not require assignment of EPA HWN.

3.8.5 Include summaries of statistical evaluations and a statement confirming that all containers evaluated belong to the waste stream, as applicable.

3.8.6 Coordinate with the SPM the assignment of HWNs to the waste stream based on the results of the evaluation.

3.8.6.1 Complete Form-1187, Waste Stream Profile HWN Assignment Worksheet, to document the results.

3.8.6.2 Incorporate the worksheet into the AK Record with the WSP package per the directions in Step 3.8.12.

3.8.7 If the SPM determines that a new HWN is required to be added to waste with an approved WSPF (see Appendix E for guidelines on NCR corrective actions), issue an NCR.

3.8.7.1 SPM: Document the criteria used to determine the specific circumstances under which a WSPF is revised versus when a new WSPF is required.

3.8.7.2 AKE: Document the results on Form-1070 and complete a new or revised WSPF.

NOTE: *An NCR is not required in Step 3.8.8.*

3.8.8 If the SPM determines that an HWN change is required for a waste not included in an approved WSPF, document the changes on a Form-1070 and in the AK summary report.

NOTE: *An NCR and Form-1070 are not required in Step 3.8.9.*

3.8.9 If the SPM determines that an HWN change is conservatively applied for a waste not included in an approved WSPF, document the changes in the AK summary report.

3.8.10 Submit the AK summary report with the WSPF and CIS to CBFO for approval, in accordance with MP-TRUW-8.14.

3.8.10.1 For AK Sufficiency Determination Request, attach the required information (as described in Steps 3.6.5 through 3.6.9).

3.8.11 If comments are received from CBFO, address the comments and resubmit the WSP package in accordance with MP-TRUW-8.14.

3.8.12 Complete a Form-1068 for the WSP package. The WSP package at a minimum includes, but is not limited to, the following:

- CBFO approval letter
- WSPF and CIS
- Acceptable Knowledge Summary report or AK Sufficiency Determination Request, if applicable
- WSPF transmittal letter.

3.9 Accuracy Assessments

NOTE 1: *The AKE assesses the accuracy of HWN and WMC assignments and radioisotopic content by acceptable knowledge. AK accuracy is assessed with IDCs grouped by Waste Stream Profile and with IDCs grouped by waste generator. These assessments are conducted and summarized in a letter on an annual basis. The assessments are based on reevaluation of AK necessitated by inconsistencies noted during the process of comparing AK information to characterization results. The assessments are organized by both WSP and generator. AK accuracy for WMC and HWN assignments is defined in MP-TRUW-8.2 as follows*:

- *"Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new WMC and/or designation of different hazardous waste numbers based on sampling and analysis data and discrepancies identified by the Permittees during waste confirmation will be reported as a measure of AK accuracy."*

- *The accuracy of the radioisotopic content based on AK for each site is assessed in compliance with the WIPP WAC Section A.2.1 and the MP-TRUW-8.1 requirements to confirm existing AK data and to assess comparability on a waste stream basis.*

- *As a minimum, it is necessary to compare ratios of the two most prevalent radionuclides in the isotopic mix of containerized waste to confirm existing AK data.*

(MP-TRUW-8.1)

- *Additionally, comparison of measured data with AK provides a means to assess comparability for a waste stream.*

(MP-TRUW-8.1)

NOTE 2: *If additional or different hazardous constituents are identified during characterization, this is considered an AK inaccuracy.*

3.9.1 Document differences between EPA HWN identified by AK for each waste stream and those identified as required based on characterization data.

3.9.2 Calculate the percent accuracy of HWN assignment as presented in Appendix G, Sample Formats for Accuracy Assessment.

NOTE: *A container identified during characterization activities that has the wrong IDC and wrong WMC or is assigned to a different waste stream profile based on an IDC change is considered an AK inaccuracy.*

3.9.3 Document differences between IDC/WMC assignments by AK and those identified based on characterization data.

NOTE: *The results in Step 3.9.3.1 are used to assess the accuracy of WMC assignment by AK. The resulting data are presented in the accuracy report.*

3.9.3.1 Obtain an accounting of all WMC reassignments and corresponding IDC changes recorded in WTS for the past year.

3.9.3.2 Calculate the percent accuracy as indicated in the Table G-2 footnotes presented in Appendix G.

3.9.4 Document differences between radionuclides identified for each waste stream based on AK and those measured during non-destructive assay as presented in Appendix G, Table G-3 and assessed for accuracy as follows:

NOTE: *An AK inaccuracy is either*:

A. An inconsistency between the mass fraction values for the principal radionuclides as measured and those determined from AK, or

B. A detection or estimation (based on valid NDA data) of any of the ten WIPP-tracked nuclides (^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{242}Pu, ^{233}U, ^{234}U, ^{238}U, ^{90}Sr, and ^{137}Cs), or other significant radionuclides (i.e., one or more of the nuclides that contribute to 95% of the hazard for the container) not previously identified by AK.

3.9.4.1 Track and tabulate by IDC or waste stream any AKRs issued when additional radionuclides (not previously identified by AK) were detected during NDA and identified during SPM review.

3.9.4.1.1 Calculate the percent accuracy as presented in Appendix G.

3.9.4.1.2 Results of the radioisotope accuracy assessment should be used to update the radioisotopic default values.

NOTE: *Permittees perform confirmation of a representative subpopulation of the waste per the WIPP-WAP C7-1a. The discrepancies identified by the permittees during waste confirmation are reported as a measure of acceptable knowledge accuracy.*

3.9.5 Calculate the percent accuracy for WIPP-certified containers as presented in Appendix G.

3.10 Records Management

3.10.1 AMWTP Records Management: Maintain AK files as lifetime QA records in accordance with MP-TRUW-8.2 and MP-DOCS-18.2, Records Management. QA records generated by this procedure are listed in Section 6.0.

3.10.2 Revise all controlled documents using approved processes.

3.10.3 Maintain results of internal assessments or external audits of the AMWTP AK program as records and ensure they are available during CBFO audits.

4.0 DEFINITIONS

Acceptable knowledge. Any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as data resulting from the analysis of waste, conducted prior to or separate from the waste certification process authorized by EPAs Certification Decision, to show compliance with Condition 3 of the certification decision (Appendix A of the 40 CFR 194). (Reference 40 CFR §194.2).

Acceptable Knowledge Resolution. The documented resolution of differences between AK documentation and characterization data (documented on Form-1070).

AK Source Document Reference List. Consist of a reference list of AK source documents (documented on Form-1084). Each source is assigned a unique identifier (alphanumeric) based on the AK source type. The following convention is used:

Correspondence (C001A or C001S, C002A, etc.)

Discrepancy report (D001A or D001S, D002A, etc.)

Published documentation (P001A or P001S, P002A, etc.)

Unpublished data (U001A or U001S, U002A, etc.).

Audit. A planned and documented independent assessment to determine by investigation, examination, or evaluation of objective evidence, the adequacy of, and compliance with, established procedures, instructions, drawings, and other applicable documents, and the effectiveness of implementation. An audit should not be confused with surveillance or inspection activities performed for the sole purpose of process control or product acceptance.

Correspondence. Correspondence consists of communication records relating to specific TRU waste streams or TRU waste management activities. Typically, this information consists of uncontrolled records of internal and external communications. Correspondence includes, but is not limited to, internal and external letters, memos, directives, telecommunications records, meeting minutes, personnel interview summaries, and record/document review summaries.

Data Quality Objectives. Qualitative and quantitative statements derived from the outputs of the first six steps of the DQO Process. DQOs clarify the study objective, define the most appropriate type of data to collect, determine the most appropriate conditions from which to collect the data, and specify tolerable limits for decision errors to be used as the basis for establishing the quantity and quality of data needed to support compliance decisions. DQOs are used to develop a scientific and resource-effective data collection design.

Discrepancy. A disagreement between AK sources. (Inconsistencies between AK and characterization analyses and observations performed during the AMWTP characterization processes are resolved using the AKR).

Discrepancy reports. The documented resolution of AK discrepancies between AK source documents is submitted on Form-1784.

Legacy Waste. Historically stored waste containers that comprise the 65,000 cubic meters of waste outlined in the agreement with the State of Idaho (i.e., the “Batt Agreement”).

Newly generated. For purposes of AK waste stream delineation, AMWTP newly-generated waste includes waste that is generated as a result of repackaging, treatment (e.g. supercompaction), retrieval, characterization, and/or handling of retrieved or accessibly stored primary waste or as a result of conducting maintenance activities. Newly-generated waste is an overall term and includes newly-generated secondary waste as well as primary waste within an intact original container where historical information is inadequate and whose contents can only be verified by RTR/VE at the SCG level.

Published documentation. In general, published documents represent the most defensible, reviewed, and controlled sources of information. Published documentation includes, but is not limited to, controlled documents and databases, previously controlled documents and databases, procedures, reports, and studies. For the purposes of this program, published documents also include the AK reports, engineering design files (EDFs), AK summaries, WSPFs, nonconformance reports (NCRs), etc., developed for similar wastes at the generator site. When possible, CBFO-approved AK from other sites and programs are used to characterize the AMWTP waste inventories.

Quality Assurance Objectives. The characteristics of data that satisfy a given purpose or objective. The characteristics are accuracy, precision, completeness, comparability and representativeness.

Roadmap. The AK roadmap provides a cross reference between the mandatory programmatic and waste stream information with the AK source documents supporting these requirements. At the AMWTP, this is accomplished with Form-1084, Form-1066, and Form-1067.

Summary Category Groups relate to the final physical form of the waste. *Waste Matrix Code Groups* (WMCG; see def.) are categorized into three broad Summary Category Groups as follows:

S3000 - Homogeneous solids: Homogeneous solids are defined as solid materials, excluding soil, that do not meet the New Mexico Environment Department (NMED) criteria for classification as debris (20 NMAC 4.1.800 (incorporating 40 CFR 268.2[g] and [h])). Included in the series of homogeneous solids are inorganic process residues, inorganic sludges, organic sludges, salt waste, and pyrochemical salt waste. Other waste streams are included in this Summary Category Group based on the specific waste stream types and final waste form. This Summary Category Group is expected to contain toxic metals and spent solvents. This category includes wastes that are at least 50 percent by volume homogeneous solids.

S4000 - Soil/Gravel: This Summary Category Group includes S4000 waste streams that are at least 50 percent by volume soil/gravel. This Summary Category Group is expected to contain toxic metals.

S5000 - Debris Waste: This Summary Category Group includes heterogeneous waste that is at least 50 percent by volume materials that meet the criteria specified in 20 NMAC 4.1.800 (incorporating 40 CFR §268.2 [g]). Debris means solid material exceeding a 2.36 inch or 60 millimeter particle size that is intended for disposal and that is a manufactured object, plant or animal matter, or natural geologic material. Particles smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material.

Transuranic waste. Wastes contaminated with transuranic radionuclides present in concentrations greater than 100 nanocuries per gram of waste.

Unpublished data. Unpublished data consists of information that has typically not received peer review and may not have been formally controlled. In many cases, this information consists of the raw data used during the development of published documentation. Unpublished data includes, but is not limited to; draft documents, forms, analytical data packages, logbooks, and inventory lists, in addition to internal reports, studies, and databases.

Waste material parameters. Waste material parameters are listed in the WIPP-WAP as presented in the following table. The WIPP-WAP requires the generator/storage site to estimate the relative weight of the waste material parameters per unit of waste for each waste stream.

Waste Material Parameter	Description
Iron-based Metals/Alloys	Iron and steel alloys in the waste; does not include the waste container materials.
Aluminum-based Metals/Alloys	Aluminum or aluminum-based alloys in the waste materials.
Other Metals	All other metals found in the waste materials.
Other Inorganic Materials	Nonmetallic inorganic waste including concrete, glass, firebrick, ceramics, sand, and inorganic sorbents.
Cellulosics	Materials generally derived from high-polymer plant carbohydrates (e.g., paper, cardboard, wood, and cloth).
Rubber	Natural or man-made elastic latex materials; (e.g., surgeons' gloves and leaded rubber gloves).

Waste Material Parameter	Description
Plastics (waste materials)	Generally man-made materials often derived from petroleum feedstock; (e.g., polyethylene and polyvinyl chloride.
Organic Matrix	Cemented organic resins, solidified organic liquids and sludges.
Inorganic Matrix	Any homogeneous materials consisting of sludge or aqueous-based liquids that are solidified with cement, calcium silicate, or other solidification agents; (e.g., wastewater treatment sludge, cemented aqueous liquids, and inorganic particulates).
Soils/Gravel	Generally consists of naturally occurring soils that have been contaminated with inorganic waste materials.
Steel (packaging materials)	55-gal. (208-L) drums.
Plastic (packaging materials)	90-mil polyethylene drum liner and plastic bags.

Waste Matrix Code. The term WMC is used throughout the WIPP-WAP and pertains to a collection of descriptive titles, definitions, and associated numerical codes used to classify mixed waste at Department of Energy (DOE) facilities. WMCs (synonymous with matrix parameter categories) are defined in DOE/LLW-217, DOE Waste Treatability Group Guidance.

Waste Matrix Code Groups. WMCs are further categorized into the following broad WMCGs: solidified inorganics, solidified organics, salt waste, soils, lead/cadmium metal, inorganic nonmetal waste, combustible waste, graphite, filters, heterogeneous debris waste, and uncategorized metal. WMCGs are defined in Attachment B of the Waste Analysis Plan.

Waste stream. A waste stream is waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

(MP-TRUW-8.2)

5.0 REFERENCES

(1) 40 CFR 194, Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance With the 40 CFR Part 191 Disposal Regulations

(2) 40 CFR 261, Identification and Listing of Hazardous Waste

(3) 40 CFR 268, Land Disposal Restrictions

(4) 20 NMAC 4.1.200, Adoption of 40 CFR Part 261

(5) 20 NMAC 4.1.800, Adoption of 40 CFR Part 268

(6) AMWTP-EDF-199, Advanced Mixed Waste Treatment Project Waste Stream, Rev 0, February 19,2003 (P393A R0)

(7) CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC)

(8) DOE/LLW-217, DOE Waste Treatability Group Guidance, INEL-Lockheed Idaho Technologies by Public Law 104-201, "WIPP Land Withdrawal Act," Rev. 0, January 1995 [P670A]

(9) INEL-95/0412, Waste Description Information for Transuranically-Contaminated Wastes Stored at the Idaho National Engineering Laboratory, B. D. Raivo, G. K. Becker, T. H. Smith, and G. L. Anderson, December 1995 (P365A)

(10) MP-DOCS-18.2, Records Management

(11) MP-DOCS-18.4, Document Control

(12) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(13) MP-TRUW-8.2, Quality Assurance Project Plan

(14) MP-TRUW-8.9, Level II Data Validation

(15) MP-TRUW-8.11, Data Reconciliation

(16) MP-TRUW-8.14, Preparation of Waste Stream Profile Forms

(17) MP-TRUW-8.40, INL Non-AMWTP Radioactive or Mixed Waste Acceptance

(18) MP-TRUW-8.41, Offsite DOE CH-TRU Waste Acceptance

(19) RWMC-EDF-803, Chemical Constituents in Transuranic Storage Area (TSA) Waste

(20) RWMC-EDF-837, Estimated Earthen and Geofabric Covered TRU Waste Inventory in the TSA for Radioactive Waste Management Complex, J. R. Wixson, August 24, 1995 (P364A)

(21) RPT-TRUW-05, Waste Matrix Code Reference Manual

(22) RPT-TRUW-06, AMWTP Baseline AK for Newly Generated Waste

(23) RPT-TRUW-07, Determination of Radioisotopic Content in TRU Waste Based on Acceptable Knowledge

(24) RPT-TRUW-12, AMWTP Waste Stream Designations

6.0 RECORDS

Records generated by this procedure are classified and dispositioned as follows and in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.13 Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal
WSP package submitted using Form-1068	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Records generated per this procedure and procedure MP-TRUW-8.14 but are contained in WSP package for each CBFO approved waste stream include: • CBFO Approval Letter(s) • Change Notices (if applicable) • Completed Form-1195, Waste Stream Profile Form • Completed Form-1597, Reconciliation with Data Quality Objectives • Completed Form-1598, Characterization Information Summary Report • Copy of Acceptable Knowledge Summary Report • Completed Form-1187, Waste Stream Profile HWN Assignment Worksheet • Completed Form-1067, TRU Waste Stream AK Documentation Checklist • Completed Form-1777, Land Disposal Restriction Notification • WSPF Transmittal Letter	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project

Record Description	Classification
Form-1084, AK Source Document Reference List (completed Form-1084 submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Form-1066, TRU Waste Management AK Checklist (completed Form-1066 submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Form-1068, AK Source Document Review Summary (completed forms submitted with AK source documents, WSP package, and completed Forms listed in this section)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Form-1069, AK Telecon/Interview Form (completed Form-1069 submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Form-1070, Acceptable Knowledge Resolution (AKR) Checklist	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Form-1784, Acceptable Knowledge Discrepancy Report (completed Form-1784 submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
AK Resolution Ledger (copy submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Acceptable Knowledge Sufficiency Determination Requests	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Annual Evaluation of Acceptable Knowledge Accuracy (memo submitted using Form-1068)	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
AK Baseline Document	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – TRU Waste Characterization Data Processing and Reporting by SPO

Appendix B – AK Summary Report for a Waste Stream

Appendix C – AK Sufficiency Determination Request—AK Summary Report

Appendix D – AK Resolution Ledger

Appendix E – Guidelines for Common AK Discrepancies or Inconsistencies

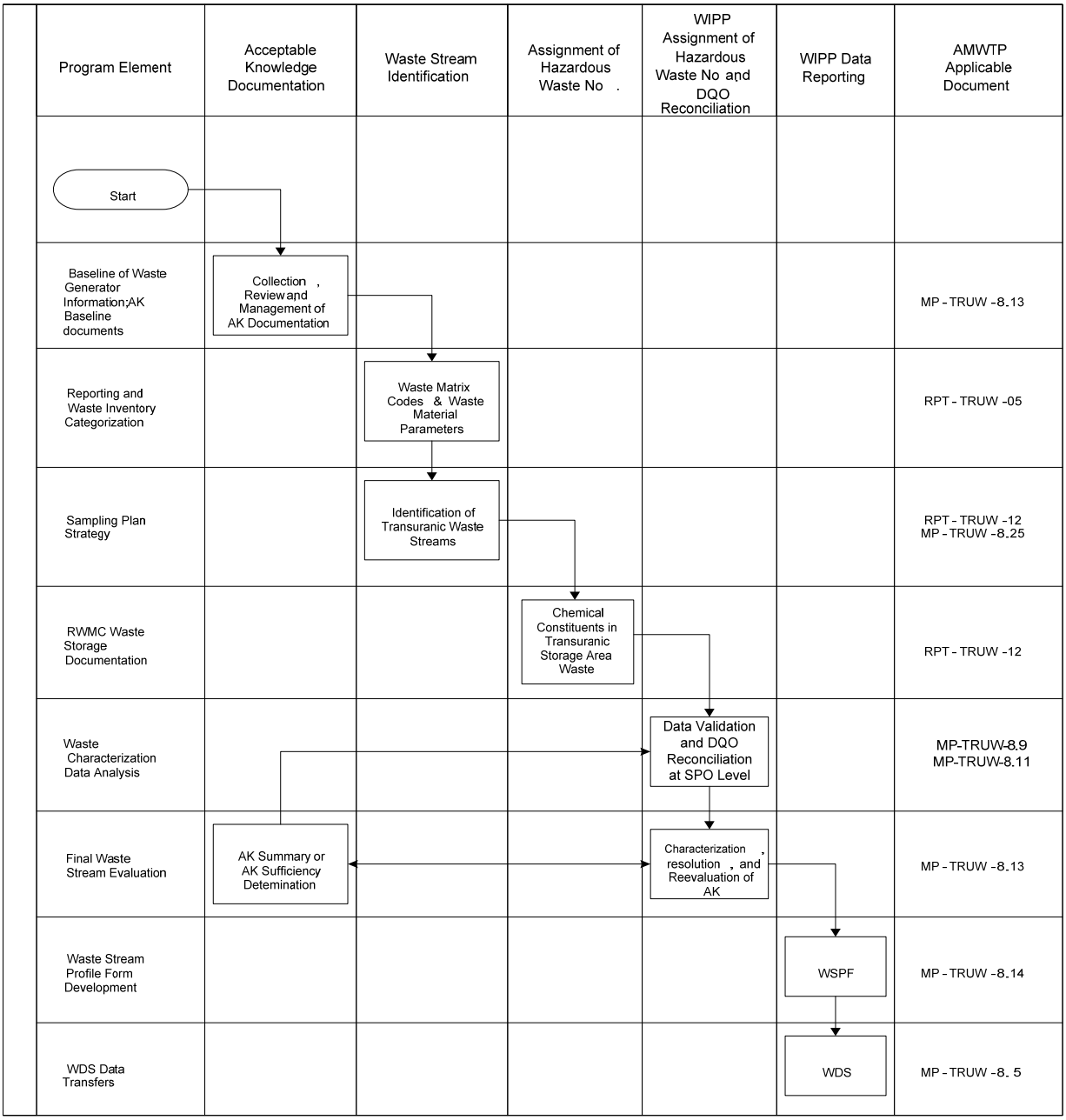
Appendix F – AK Baseline Document

Appendix G – Sample Formats for Accuracy Assessment

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.13, Rev. 24	Issued: 12/13/11	Effective: 12/14/11

Collection, Review, and Management of Acceptable Knowledge Documentation

Appendix A – TRU Waste Characterization Data Processing and Reporting by SPO



Appendix B –
AK Summary Report for a Waste Stream

An AK summary report is required to be included in the package presented to WIPP for approval of a WSPF. At a minimum, the WIPP-WAP requires the AK summary to include waste stream name, waste stream number, process and point of generation, waste stream volume, generation dates, TRUCON codes, Transuranic Waste Inventory Baseline Inventory Report (TWBIR) information, Summary Category Group, WMCG, WMC, waste stream description, generating processes, RCRA determinations, and radionuclide information.

AMWTP produces an AK summary for each waste stream to be shipped to WIPP. At a minimum the AK summary includes the following information to meet technical requirements (Section 3.2).The section headers of the AK Summary do not need to match the outline.

I. Waste Stream Level Information

A. Waste Stream Number

B. Waste Stream Name

C. Physical Waste Form (Description of final physical waste form)

a) Summary Category Group

b) WMC Group

c) WMC

d) TRUCON Codes

e) TWBIR/Annual Transuranic Waste Inventory Report (ATWIR) information (including TWBIR/ATWIR number(s) and stream description)

D. Point of Generation: (Buildings and/or areas from which waste was generated)

E. Waste Stream Volume – current and projected (estimated volume that AMWTP expects to characterize and ship for the waste stream, including estimate of percent ≤100 nCi/g if load management will be applied to the waste stream)

F. Time Period of Generation (For retrievably stored waste streams it is the time period the waste stream was generated. For newly-generated waste, it is the anticipated time period of generation)

G. Defense Determination

H. Waste Stream Description

I. Waste Generating Processes (For retrievably stored waste stream, summarize generating process or activity. For newly-generated waste stream include description of AMWTP process generating the waste stream)

J. Process Flow Diagrams (For retrievably stored waste stream, include references to applicable generator site flow diagrams, [e.g. applicable WSRIC document for RF waste]. For newly-generated waste stream include AMWTP process flow diagram)

K. Material Inputs (For retrievably stored waste stream, summarize inputs from applicable AK documents. For newly-generated waste stream, list all of the individual IDCs which will feed into the AMWTP waste stream.)

L. Identification of Waste Material Parameters & percent weight for the waste stream

M. For each waste stream, weight percent for each waste material parameter is estimated using historical waste generator, industry documentation, generator estimates, or characterization data.

N. Prohibited Items (include description of AMWTP controls which screen for prohibited items)

O. EPA Hazardous Waste Numbers RCRA Determination

a. List EPA Hazardous Waste Numbers assigned to waste stream

b. Provide a detailed hazardous waste determination including justification and rationale for the EPA HWN assignments. Include justification based on AK or testing and/analysis that the waste does not exhibit the characteristics of ignitability, corrosivity, or reactivity.

c. Address whether P, U, and K listed codes apply to the waste stream including ^{134}U, will be included in the hazardous determination portion of the Waste Stream Profile Form

d. Discuss TSCA Related Contaminants if present

e. Discuss the presence or absence of beryllium

f. Discuss how the site has historically managed the waste, including the historical regulatory status of the waste (i.e., TRU mixed versus TRU non-mixed waste).

g. Discuss other related waste stream profiles and include explanation of any characterization differences.

NOTE: *Radiological composition of a waste stream based on AK information or direct measurement is documented either in the AK summary reports for the waste characterization of waste streams or in other controlled documents (e.g., technical justifications and RA SME reviews) to be developed as needed to address this issue and included in the AK record.*

P. Radionuclides (Description of anticipated radionuclides, radiological composition, and plutonium content for each waste stream based on AK information in the RPT-TRUW-07. Identify the two most prevalent radionuclides.

Appendix C –
AK Summary Report for an AK Sufficiency Determination Request

An AK summary report is required to be included in the package presented to WIPP with an AK Sufficiency Determination Request submittal. At a minimum the AK summary shall address the technical requirements included in the following outline.

AK Summary Report
For an AK Sufficiency Determination Request

I Executive Summary

Prepare an Executive Summary that briefly describes the waste stream, the type of AK Information available, whether AK alone can be used to meet the characterization requirements or if additional characterization is required, identify the scenario proposed.

I. Proposed Scenario

II. Waste Stream Identification Summary

A. Include a demonstration that the waste stream has been properly delineated, and

B. Meets the WIPP-WAP definition of waste stream.

III. Mandatory Program Information

A. Facility location and description

B. Facility mission

C. Defense waste assessment

D. Spent nuclear fuel and high-level waste assessment

E. Description of waste generating processes, research/development [as necessary], facility support operations [as applicable]

F. Types and quantities of TRU waste generated, correlation of waste streams to buildings/processes, waste identification and categorization, physical form identifiers).

IV. Mandatory Waste Stream Information

A. Area and Building of Generation

B. Waste stream volume/period of generation (including, for newly-generated waste, the rate and quantity of waste to be generated

C. Waste generating activities

D. Types of waste generated, material input related to physical form and identification of percentage of each waste material parameter in the waste stream

E. Chemical content information including hazardous constituents, hazardous waste identification

F. Prohibited item content (including documented evidence that the waste meets the WIPP TSDF-WAC Permit Conditions II.C.3.a-h)

G. Waste packaging, presence of filter vents, number of layers of confinement.

V. Types of Additional Information Gathered

VI. Container-Specific Data (if available and relevant)

VII. A Complete Reference List

Appendix D – AK Resolution Ledger

An example AK Resolution Ledger Report has been included in this appendix. Use of this ledger ensures that AK resolution checklists are assigned unique numbers and a method for keeping track of outstanding issues that need to be incorporated into AK documentation.

AK Resolution Number: Format is as follows:

AKR-YY-X

Where: "AKR" starts all AK resolution checklist numbers

YY are the last two digits of the calendar year of the date the discrepancy is initiated.

X is the next sequential number. Numbering starts with "1" and continues upward. The numbering **will not** start at one again at the beginning of the calendar year.

Date Initiated: the date that the issue is entered into the ledger and assigned the next number or revision.

Rev: revision number.

Rev. Date: date revision initiated.

Initiator: AKE initiating the AKR.

IDC: required field that should always include the generator along with the 3-digit IDC. In the case of an IDC change, initial IDC is used.

Waste Stream or Lot Number: optional, but should be included if a waste stream has been assigned. If the discrepancy is specific to a lot reconciliation issue, the lot number shall be indicated.

Description of Discrepancy: limited to a list of the most common types of discrepancies. (See Appendix E for more detail.)

Unexpected Materials

Unexpected Packaging

Radionuclides

IDC Change

HWN

Other.

Description of Resolution: Following items should be included if applicable:

Documents to be revised or NCR describing appropriate actions

All associated NCR numbers

Newly assigned IDCs.

Date Signed: Date that AK Resolution Checklist is signed.

Action Items:

Number of Action items listed on the AKR.

Number of Action items completed.

Date when all Action items have been completed.

AK Resolution Ledger

AKR Number	Date Initiated	Rev	Rev. Date	Initiator	IDC	Waste Stream or Lot	Description of Inconsistency	Description of Resolution	Date Signed	# AIs	# AIs done	All AIs done
AKR-05-258	10/15/2005			V. Sendelweck	MD-IDC 804	BN510	Unexpected materials	Change IDC to MD802	10/20/2005	0	0	
AKR-05-259	11/12/2005			C. Abbott	RF-IDC 480	BN510	IDC change	Change IDC from 374 to 480	11/15/2005	2	2	01/05/06
AKR-05-260	12/30/2005	1	01/20/2006	C. Abbott	BN-IDC 510	BN510	Radionuclide	Use as is. No impact to WMC or HWN	05/11/2005	5	5	02/10/06
AKR-06-261	01/10/2006			V. Sendelweck	RF-IDC 372	BN161	HWN	WMC change to S5123, HWN D007 added	01/10/2006	5	4	
AKR-06-262	01/20/2006			C. Abbott	BN-IDC 510	Recon lot BN510.21	Other	Isopropyl alcohol detected >25% of lot	02/05/2006	0	0	
AKR-06-263	03/10/2006			C. Abbott	MD-IDC 836		Unexpected packaging	Drum bag identified during RTR	03/12/2006	2		

EXAMPLE ONLY

Appendix E – Guidelines for Common AK Discrepancies or Inconsistencies

The following table provides some guidelines for determining appropriate actions to take for the most commonly encountered AK discrepancies or inconsistency.

Description of Discrepancy or Inconsistency	Suggested Actions
Unexpected Materials	This inconsistency includes any materials identified by RTR or visual not included in the descriptions or material lists in the AK summary or AK baseline documents. RPT-TRUW-05 and RPT-TRUW-06 are updated with the new information. Where possible, update to include entire class of materials instead of specific objects. For example, if a wrench is identified in an IDC that did not include metals in its description, update to indicate that metal may be seen. Do not update to indicate that waste may contain wrenches.
Unexpected Packaging	This category includes any unexpected packaging configurations. (Different number of layers than expected, absorbent not as described by AK, packaging materials not described by AK, etc.) This may require an update to the applicable AK document.
Radionuclides	This refers to unexpected radionuclides or unexpected ratios of isotopes being detected in a waste stream. All containers are measured, so typically this may require a revision to the AK summary or RPT-TRUW-07, and involve coordination with physics personnel to resolve issue.
WMC Change	NCRs are issued when a change in generator assigned IDC and WMC or IDC and waste stream is required. A change to AK documents may be required if unexpected materials or packaging are identified. If the container cannot be reassigned to the recommended IDC/WMC based on HWNs, an additional NCR will be generated to address the HWN issue. Temporary or container type only IDC changes may not require an NCR or AKR for an IDC or WMC change.

Description of Discrepancy or Inconsistency	Suggested Actions
HWN	Some HWN evaluations result in the conclusion that no additional HWNs are needed. In this case neither an AKR nor NCR is required and no further action is necessary. If the evaluation indicates that a HWN needs to be added to an approved WSPF, an AKR and NCR will need to be issued. If the evaluation indicates that a HWN needs to be added to a WSPF that has not been approved, an AKR will need to be issued but an NCR is not required. If the evaluation indicates that a HWN will be conservatively added to a WSPF that has not been approved, neither an AKR nor NCR is required. Possible actions to close the AKR or NCR include: • Treat the container of waste to remove the hazardous constituent • Suspend shipment of remaining containers of the waste if the HWN affects all containers within the waste stream. • Confirm that the HWN to be added is included on the AMWTP HWMA/RCRA permits. • Create new waste stream, revise RPT-TRUW-12 as necessary, and assign container(s) to new waste stream. (A new WSPF and AK summary would not have to be created to close NCR, but would be required before containers could be shipped).
Unknown/Undefined IDC	Containers identified as unknown/undefined and assigned IDCs UN-000, PC-000, UN-00A, UN-00B, UN-00C, UN-00D are managed as described in RPT-TRUW-12, RPT-TRUW-06, and RPT-TRUW-05.
Other	Work through resolution based on requirements and severity of discrepancy.

Appendix F – AK Baseline Document

An AK baseline document is prepared for each generator site per Section 3.3. At a minimum, this document and the associated AK summary report(s) address the WIPP-WAP required information for each waste stream.

NOTE: *An AK baseline document for offsite generated waste may include PK provided by CCP.*

AK Baseline Document

I. Executive Summary

II. Introduction

III. Requirements

IV. Waste Management Level Information

A. Facility mission description (including map of site)

1. Defense determination

B. Description of operations that generated the waste

C. TRU waste management (including waste identification or categorization scheme)

D. Waste certification procedures (including generator site procedures, if available)

E. TRU waste inventory (types and quantities, may be included in sections specific to the waste)

F. Correlation of waste generated (e.g., waste groupings presented in the sections specific to the waste).

V. Waste Stream (Group) Level Information

NOTE 1: *A section is prepared for each waste group as described below.*

NOTE 2: *The following waste stream information may be addressed for each waste group in the AK baseline document; however, the mandatory waste stream information must be addressed in the AK Summary Report when a waste stream is developed. For example, if the waste volume or hazardous waste determination is not determined at the time the baseline document is written, the data is compiled and included in the AK summary report prior to completion of the applicable waste stream profile.*

A. Waste description (including physical form and time period of generation)

B. Waste generation

1. Areas and/or buildings from which the waste was generated

2. Process flow diagrams (may be reference to document)

3. Material inputs or other information that identifies the chemical content of the waste stream and the physical form.

4. Waste Volume

C. Waste packaging

D. Waste characterization based on AK (material inputs or historical management)

1. Identification of EPA Hazardous Waste Numbers, if applicable.

2. Identification of radionuclides (may be included in the general sections describing the facility)

3. Identification of prohibited items (may be included in the general sections describing the facility)

4. Identification of PCBs, if applicable

VI. References

Appendix G – Sample Formats for Accuracy Assessment

Table G-1. Accuracy of AK HWN Assignment based on Characterization Results.

WSP Number [a]	AK-Assigned HWNs [b]	Characterization-Assigned HWNs [c]	HWN Difference [d]	HWNs in WSPF [e]	Validated Containers [f]	%Accuracy [g]
Totals					[h]	
Overall HWN assignment % accuracy						[i]

a. Enter each approved WSP number.

b. Enter the HWNs assigned by AK. Use Waste Stream Profile HWN Assignment Worksheet, AMWTP Form-1187 as source.

c. Enter the HWNs assigned based only on characterization results (WSPF).

d. Enter the absolute number of different HWNs identified between columns b and c.

e. Enter the total number of HWNs that were assigned in the WSPF.

f. Enter the number of containers that have been reconciled for the waste stream. (Have DQO reconciliation signature).

g. Calculate the Waste Stream Accuracy as:

$$\left(1-\left(\frac{HWN\ Difference}{\#\,HWNs\,WSPF}\right)\right)\times 100\%$$

h. Calculate the total number of containers reconciled by summing all the waste stream values.

i. Calculate an overall percent accuracy as:

$$\frac{(Acc_1 \times N_1)+(Acc_2 \times N_2)\ldots+(Acc_n \times N_2)}{T}\times 100\%$$

Where:

Acc_1 = The percent accuracy for WSP_1

N_1 = The total number of validated containers in WSP_1

T = The total number of validated containers in all WSPs

Table G-2. Accuracy of AK WMC Assignment.

WSP Number [a]	IDC [b]	WMC [b]	Validated Containers Examined [c]	AKRs No.(s) [d]	IDC Changed Containers [e]	IDC % Accuracy [f]	WMC/WS Changed Containers [e]	WMC/WS % Accuracy [g]
Totals					[h]		[h]	
Overall percent accuracy for WMC assignment								[i]

a. Enter each WSP number.

b. Enter original IDC and WMCs.

c. Enter total number of validated containers examined to date based on WSP SPM RTR date, etc.

d. Enter the AKRs referenced.

e. Enter number of containers affected by IDC or WMC/WS change as listed on the AKRs.

f. Calculate the percent of IDC changes as the number of containers affected by the IDC changes divided by the number of validated containers examined.

g. Calculate the percent of WMC/WS changes as the number of containers affected by WMC/WS changes divided by the number of validated containers examined.

h. Sum the columns for number of validated containers and number of containers affected by IDC and WMC/WS changes.

i. Calculate overall percent accuracy for WMC/WS assignment:

$$\frac{Total\ \#\ of\ containers\ validated - total\ WMC/WS\ changes}{Total\ containers\ validated} \times 100\%$$

Table G-3. Accuracy of AK Radioisotopic Content

WSP Number [a]	IDC [b]	SPM-Validated Containers [c]	AKR Number [d]	Containers affected by AKR [e]	% Accuracy [f]
Totals		[g]		[g]	
Overall percent accuracy for radionuclide content					[h]

a. Enter each approved WSP number.
b. Enter each IDC number.

c. Enter the total number of validated WIPP acceptable containers based on SPM assay data for each IDC (and where applicable, WSP).

d. For each IDC, enter the AKR numbers(s) associated with additional radionuclides detected.

e. For each IDC, enter the number of containers included in an AKR for additional radionuclides (not identified in AK) detected.

f. Calculate the radionuclide content accuracy for each IDC as:

$$\frac{Total\ \#\ of\ containers\ validated - total\ \#\ radionuclide\ changes}{Total\ containers\ validated} \times 100\%$$

g. Sum columns c and e.

h. Calculate the overall percent accuracy as:

$$\frac{(Acc_1 \times N_1) + (Acc_2 \times N_2) ... + (Acc_n \times N_2)}{T} \times 100\%$$

Where:
Acc_1 = The percent accuracy for IDC_1
N_1 = The total number of validated containers in IDC_1
T = The total number of validated containers in all IDCs

Table G-4. AMWTP accuracy for WIPP-certified containers

WSP Number [a]	Certified Containers [b]	Confirmation-Failed Containers [c]	Confirmation % Accuracy [d]
Totals	**(e)**	**(e)**	
Overall percent accuracy for WIPP-certified containers			(f)

a. Enter each approved WSP number.

b. Enter the number of certified containers identified for AMWTP shipment to WIPP during the reporting period.

c. Enter the total number of containers that were rejected by the WIPP RTR/VE confirmation team.

d. Calculate the WIPP certification accuracy for each WSP as:

$$\frac{Total\ \#\ of\ containers\ certified - total\ \#\ failed\ containers}{Total\ containers\ certified} \times 100\%$$

e. Sum columns b and c.

f. Calculate the overall percent accuracy as:

$$\frac{(Acc_1 \times N_1) + (Acc_2 \times N_2) \ldots + (Acc_n \times N_2)}{T} \times 100\%$$

Where:
Acc_1 = The percent accuracy for WSP
N_1 = The total number of validated containers in WSP_1
T = The total number of validated containers in all WSPs

Preparation of Waste Stream Profile Forms

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-9637.*) 12/15/10

Enrique Torres
TRU Programs Manager

Date

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/09/02	All	Initial issue. DCR-2002-1268
1	3/28/02	All	DCR-2163: Changed effective date from "When DOE Approves Retrieval Operations" to March 28, 2003.
2	05/01/03	Various	DCR-2198: Response to CBFO comments
3	08/19/04	Various	DCR-3208: Revised Steps 4.1.1 and 4.1.2 to incorporate corrective actions from CAR 8217 (CBFO CAR 04-033 Revision 1). Corrected references and minor editorial corrections.
4	11/30/04	Various	DCR-3310: Revised to incorporate CBFO Post-Audit comments. Made editorial/format changes to comply with MP-DOCS-18.3 and 18.4.
5	1/25/06		DCR-4742: Revised steps 3.1.10 and 3.1.12 to clarify when transmittal letter issued. Updated Reference (13) to match Section 4.0. Corrected references and minor editorial changes.
6	06/29/06	Pages, 1, 3, and 4; Various	DCR-5023: Correct spelling on page 1. Changed line heading on page 3, section 3.1.3.6 to correlate with Form-1598, and added website for clarification on CBFO transmittal in section 3.1.10; updated to comply with Form-1728, Document and Case File QC Checklist.
7	1/05/07	Various	DCR-5473. Eliminate SPQAO function from Roles and Responsibilities and as referenced throughout the procedure. Add additional responsibilities to SPM process. Other changes in accordance with the implementation of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.14, Rev. 12	Issued: 12/28/10	Effective: 12/29/10

Preparation of Waste Stream Profile Forms

Revision Number	Date Approved	Pages Affected	Description of Revision
8	11/05/07	All	DCR-6413. General Clarifications; Periodic Review.
9	08/04/08	Step 3.1.9 and Ref. 6	DCR-7403. Replace MP-TRUW-8.16 with MP-TRUW-8.5.
10	07/14/09	Various	DCR-8422. Periodic Review. Add change notice instructions. Minor editorial corrections.
11	05/18/10	Step 3.1.6.1	DCR-9226. Inserted step to address new requirement from Section B3-12b(2) of WIPP Hazardous Waste Permit as a result of the permit modification.
12	12/15/10	Various	DCR-9637. Revised Sections 3.1, 3.3, and 4.0 to incorporate WIPP WAP permit renewal changes. Updated Section 4.0 to reflect forms included in WSP package submittals. Also made editorial changes.

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.14, Rev. 12	Issued: 12/28/10	Effective: 12/29/10
Preparation of Waste Stream Profile Forms		

1.0 PURPOSE/SCOPE

The purpose of this procedure is to provide the policy and procedures for preparation of *waste stream* (see def.) profile forms (WSPFs), the Characterization Information Summary (CIS) Report, and the Waste Characterization Package at the Advanced Waste Mixed Waste Treatment Project (AMWTP) in accordance with MP-TRUW-8.2, Quality Assurance Project Plan. Preparation of *acceptable knowledge* (AK; see def.) summaries is described in MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation. This procedure may also be used to complete the applicable forms for preparing sampling and analysis data reports for waste stream lots and for preparing applicable forms for reconciliation lots.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Site Project Manager (SPM) or Designee	• Provides oversight to the AKE, verifies data, reviews documents, and transmits documents to the Carlsbad Field Office (CBFO). • With AKE, prepares a land disposal restriction (LDR) notice.
Acceptable Knowledge Expert (AKE)	• Prepares and reviews AK summaries, WSPFs, and other documentation under the oversight of the SPM.
Shipping Representative	• Completes and signs the applicable sections of Form-1777, Land Disposal Restriction Notification.

3.0 PROCEDURE

NOTE 1: *SPM tasks may be performed by a qualified SPM designee.*

NOTE 2: *The forms referenced in this procedure are to be used as approved; however, additional lines may be added to accommodate additional analysis or tentatively identified compounds (TICs), as necessary.*

3.1 Prepare Waste Stream Profile Package

3.1.1 SPM: Verify that data for a sufficient number of containers for the waste stream or waste stream *lot* (see def.) have been validated and reconciled and, when random selection is required, included on an approved appropriate random sample selection candidate memorandum.

3.1.1.1 Verify that the number of samples collected meet the requirements as identified in MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

3.1.2 SPM: When random selection is required, verify that if a container was removed from a lot, the container was appropriately rejected and dispositioned.

NOTE: *Form-1598, Characterization Information Summary Report, is attached to Form-1195, Waste Stream Profile Form, for initial waste stream characterization.*

3.1.3 SPM: Prepare Form-1598 and ensure that the appropriate tables are completed to present debris (S5000), homogenous solids (S3000), or soil/gravel (S4000) lot characterization data.

3.1.3.1 In Table 1A, Headspace Gas Summary Data, of Form-1598, provide the *headspace* (see def.) gas summary data for the debris waste and associated Environmental Protection Agency (EPA) hazardous waste numbers (HWNs) applied to the waste stream and ensure the UCL90 tables include the transformations and a description of what test was applied for a normal distribution.

3.1.3.2 In Table 2, Metals Summary Data; Table 3A, Total Volatile Organic Compound (VOC) Summary Data; and Table 4A, Total Semi-Volatile Organic Compound (SVOC) Summary Data, of Form-1598, provide the total metal, VOC, and SVOC analytical results for homogeneous solid and soil/gravel waste and associated EPA hazardous waste numbers applied to the waste stream and ensure the UCL90 tables include the transformations and a description of what test was applied for a normal distribution.

3.1.3.3 In Table 1B, Headspace Gas Summary Data – Tentatively Identified Compounds; Table 3B, Total VOC Summary Data – Tentatively Identified Compounds; and Table 4B, Total SVOC Summary Data — Tentatively Identified Compounds, of Form 1598, provide a TIC listing and evaluation.

NOTE: *An evaluation includes a determination to add the TIC to the Target Analyte List (TAL).*

3.1.3.3.1 If the TIC evaluation includes adding a constituent to the TAL, notify the AMWTP Environmental Department, the AMWTP lead headspace gas chemist, and the solid sampling laboratory of the constituent addition.

3.1.3.3.2 Update MP-TRUW-8.2 and provide notification to CBFO in the CIS.

3.1.3.4 In Table 5, Correlation of Container Identification Numbers to Data Package, of Form-1598, provide a complete listing of all container identification numbers used, cross-referenced to each batch data report (BDR).

3.1.3.5 In Table 6, RTR/VE Summary of Prohibited Items, of Form-1598, provide the *real-time radiography* (RTR; see def.) and *visual examination* (VE; see def.) summary to document that all prohibited items are absent in the waste.

3.1.3.6 In Table 7, Correlation of Container Numbers to Sample Numbers, of Form-1598, provide the container identification numbers and the applicable headspace gas sample number or the solid sample number.

3.1.3.7 Prepare an Attachment A with the calculated "n" for waste stream lots, in accordance with Appendix A of MP-TRUW-8.25.

3.1.4 SPM: Prepare Form-1597, Reconciliation with Data Quality Objectives, in accordance with MP-TRUW-8.11, Data Reconciliation, to attach to Form-1598.

NOTE: *The AK summary includes information required by Section C4-2b of MP-TRUW-8.2.*

3.1.5 AKE: If the data are for an initial waste stream, then prepare an AK summary for the waste stream profile (WSP) or an AK summary for a sufficiency determination request in accordance with MP-TRUW-8.13.

3.1.6 AKE: If the data are for an initial waste stream, then prepare Form-1195 in accordance with the instructions attached to the form.

3.1.6.1 AKE: Include in the CIS Report, a justification for the selection of radiography and/or visual examination (VE) as an appropriate method of characterizing the waste included in the waste stream.

3.1.7 SPM/AKE: Review the forms and reports generated that are associated with a WSPF, a CIS Report, and an AK Summary to ensure adequacy and completeness.

3.1.8 SPM or Designee: Notify the Waste Isolation Pilot Plant (WIPP) Waste Data System (WDS) administrator that a new WSPF or CIS report is to be submitted.

3.1.9 SPM or Designee: Transmit drum specific information for waste stream profile or waste stream lot in accordance with MP TRUW-8.5, TRU Waste Certification.

3.1.10 SPM: Transmit a copy of WSPF, CIS Report, or AK summary to CBFO for review via e-mail at site.docs@wipp.ws.

3.1.11 SPM/AKE: Incorporate changes to a WSPF, CIS Report, or AK summary based on CBFO review, as applicable.

3.1.12 SPM/AKE: Finalize a WSPF, CIS Report, or AK summary and transmit finalized documents to CBFO.

NOTE: *Approval of a WSPF or CIS report or AK summary allows certification and shipping activities to begin on the waste stream.*

3.1.13 SPM: Upon receiving notification that a WSPF, CIS Report, or AK summary has been approved by CBFO, notify AMWTP Operations.

3.1.14 SPM/AKE: Prepare the applicable sections of Form-1777 for a new waste stream and sign and date per the form instructions.

NOTE: *Form-1777 must be included with the shipping papers.*

3.1.14.1 Provide Form-1777 to the Shipping Representative.

3.1.15 Shipping Representative: Complete the applicable sections of Form-1777 and sign and date per the form instructions.

3.1.16 AKE: Prepare and submit the WSP package to Records Management in accordance with MP-TRUW-8.13.

3.2 Prepare Waste Stream Characterization Package

3.2.1 SPM: Ensure additional or detailed information is provided at the request of CBFO, prepared as a Waste Stream Characterization Package.

NOTE: *A Waste Stream Characterization Package consists of the following information:*

- *Form-1195, Waste Stream Profile Form*
- *Form-1598, Characterization Information Form*
- *AK Summary*
- *BDRs augmenting the AK documentation and any others requested by CBFO. At a minimum, compile the data packages listed on Form-1598*
- *Raw analytical data requested by CBFO.*

3.2.2 SPM: Transmit Waste Stream Characterization Package via formal transmittal letter.

3.3 Prepare Waste Stream Profile Package Modification

3.3.1 SPM: If the WSP package must be revised, then perform the following evaluations:

3.3.1.1 If the change does not result in the addition of EPA HWNs or a change to the *Waste Matrix Code* (see def.) but does affect Form-1195 or Form-1598, then notify AKE that a change notice (CN) is required.

3.3.1.2 If the change does not result in the addition of EPA HWNs or a change to the Waste Matrix Code and does not affect Form-1195 or Form-1598 but does affect the AK summary, then notify AKE that a revised AK summary is required.

3.3.1.3 If the change results in the addition of EPA HWNs or a change to the Waste Matrix Code, then:

3.3.1.3.1 Document the criteria used to determine the specific circumstances under which a waste stream profile package is revised versus when a new waste stream profile package is required.

3.3.1.3.2 Notify AKE that a new waste stream profile package or revision to the existing waste stream profile package is required.

3.3.2 SPM: Review, approve, and submit the applicable documents to CBFO in accordance with the applicable steps in Section 3.1.

4.0 DEFINITIONS

Acceptable knowledge. Any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as data resulting from the analysis of waste, conducted prior to or separate from the waste certification process authorized by EPAs Certification Decision, to show compliance with Condition 3 of the certification decision (Appendix A of the 40 CFR 194).

(Reference 40 CFR §194.2)

Headspace. The total void volume of the waste container, including the void volumes of: liner, polyethylene container bag, and innermost layers of confinement (total container volume minus the volume occupied by waste materials).

Lot. When all waste within a waste stream is not available for sampling and analysis at one time, the waste stream may be divided into waste stream lots based on staging, transportation, or handling issues. Characterization activities are then undertaken on a waste stream lot basis. A WSPF is not submitted for subsequent waste stream lots.

Real-time radiography. A radiographic method that allows simultaneous remote imaging for the viewing of waste package contents.

Visual examination. A characterization method that involves opening a container and physically examining its contents.

Waste Matrix Code. The term Waste Matrix Code is used throughout the WIPP Waste Analysis Plan (WAP) and pertains to collection of descriptive titles, definitions, and associated numerical codes used to classify mixed waste at Department of Energy facilities. Waste Matrix Codes (synonymous with matrix parameter categories) are defined in DOE/LLW-217, DOE Waste Treatability Group Guidance.

Waste stream. Waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

5.0 REFERENCES

(1) 40 CFR 194, Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR 191, Disposal Regulations

(2) DOE/LLW-217, DOE Waste Treatability Group Guidance, T.D. Kirkpatrick, Prepared for DOE Idaho Operations Office, Rev. 0, January 1995 [P670A]

(3) MP-DOCS-18.2, Records Management

(4) MP-TRUW-8.2, Quality Assurance Project Plan

(5) MP-TRUW-8.5, TRU Waste Certification

(6) MP-TRUW-8.11, Data Reconciliation

(7) MP-TRUW-8.13, Collection, Review, and Management of Acceptable Knowledge Documentation

(8) MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

(9) NM4890139088-TSDF, Waste Isolation Pilot Plant Hazardous Waste Facility Permit, New Mexico Environment Department, Santa Fe, New Mexico

(10) RPT-TRUW-12, AMWTP Waste Stream Designations

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.14, Case File	Nonpermanent WIPP/ENVI-J-1/ Destroy 75 years after submittal
WSP package submitted using Form-1068, AK Source Document Review Summary	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Records generated per this procedure and procedure MP-TRUW-8.13 but are contained in WSP package for each CBFO approved waste stream include: • CBFO Approval Letter(s) • Change Notices (if applicable) • Completed Form-1195, Waste Stream Profile Form • Completed Form-1597, Reconciliation with Data Quality Objectives • Completed Form-1598, Characterization Information Summary Report • Copy of Acceptable Knowledge Summary Report • Completed Form-1187, Waste Stream Profile HWN Assignment Worksheet • Completed Form-1067, TRU Waste Stream AK Documentation Checklist • Completed Form-1777, Land Disposal Restriction Notification • WSPF Transmittal Letter	Lifetime WIPP/ENV1-J-1/Turn over to CBFO at end of project
Waste Stream Characterization Package (when applicable)	Nonpermanent WIPP/ENVI-J-1/ Destroy 75 years after submittal

7.0 EXHIBITS

None

8.0 APPENDICES

None

Co-Located Core Sampling Control Charts

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-7605.)

Enrique Torres
TRU Programs Manager

01/07/09
Date

Next Periodic Review: 01/31/12

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	07/11/02	All	Initial issue. DCR-2002-1271.
1	12/24/02	All	DCR-1840. Changed revision from 0 to 1. Added steps for manual data taking.
2	03/28/02	All	DCR-2163: Changed effective date from "When DOE Approves Retrieval Operations" to March 28, 2003.
3	05/01/03	Various	DCR-2118: Incorporate changes from CBFO.
4	02/14/06	All	DCR-4773. Completed periodic review. Updated formatting and revised to MP-DOCS-18.3, Developing Management Procedures, and MP-DOCS-18.4, Document Control
5	1/05/07	Various	DCR-5471. Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR). Minor editorial changes as appropriate.
6	07/11/07	Various	DCR-6192. Revised to clarify F-test used to evaluate data on a waste stream basis and control charts used to evaluate data on a WMCG basis. Added definitions for terms. Corrected format of formulas and terms.
7	01/07/08	All	DCR-7605. Remove "or more" throughout. Clarification and periodic review. Rewrite for clarity and consistency. Add "or field duplicate" after "co-located core(s)" throughout. Update references.

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.17, Rev. 7	Issued: 01/07/09	Effective: 01/08/09

Co-Located Core Sampling Control Charts

1.0 PURPOSE/SCOPE

NOTE 1: *It is important to note that the purpose of co-located core or field duplicate sampling and analysis is to evaluate the variability (inconsistency) of the solid sampling technique. That is, the F-test and control charts evaluate the combined precision of the solid sampling and the analysis processes. The statistical techniques used in this procedure neither assess the spatial homogeneity of the waste nor do they evaluate the accuracy of solid sampling and analysis.*

NOTE 2: *Waste Matrix Code Groups (WMCGs) are associated with waste streams as identified in RPT-TRUW-12, AMWTP Waste Stream Designations.*

The precision of solid sampling and analysis is evaluated using data collected from the analysis of field duplicates which are sampled once per sampling batch or once per week during sampling operations, whichever is more frequent. This procedure provides direction for the evaluation of the precision of the solid sampling and analysis techniques by the use of the F-test and/or the use of relative percent difference (RPD) control charts.

This procedure is applicable to co-located core sampling data collected in accordance with INST-OI-16, Drum Coring Operations or field duplicate sampling data collected in accordance with INST-OI-75, Container-in-Container Sampling.

Control charts compare "recently generated" values with "historical" values. During initial solid sampling, there will not be historical data for comparison. Therefore, until the necessary numbers of initial samples are taken (25-30 pairs of co-located cores or field duplicate samples), the precision of solid sampling will be evaluated using the F-test method on a waste stream basis. The F-test method is described in Section 3.1 of this procedure.

Upon collecting 25-30 co-located or field duplicate pairs across all waste streams within a WMCG, RPD control charting will be imposed. After enough data have been collected to construct the initial control charts, subsequent co-located or field duplicate sample pairs will be added to the control charts and compared with the previously collected data to determine if the sampling procedure is still "in control" (consistent with previous acceptable results). In this way, the control charts will provide a continuous means of maintaining sampling quality. The method for developing and updating RPD control charts is described in Section 3.2 of this procedure.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Site Project Manager (SPM) or Designee	• Compiles solid sampling and analysis data which will be used for statistical analysis. • Establishes the sampling precision acceptance criteria.
Statistician	• Conducts F-test statistical analysis of co-located core and field duplicate sample data. • Calculates and reports the RPD between co-located core samples and/or between field duplicate samples. • Evaluates the statistical analysis results and constructs control charts of the RPD. • Periodically evaluates and updates control charts with all available data.

3.0 PROCEDURE

3.1 F-Test for Solid Sampling and Analysis Precision Evaluation

NOTE: *Until the necessary numbers of samples are taken (25–30 pairs of co-located cores or field duplicate samples within a WMCG), F-statistics will be used to verify the sampling process is in control on a waste stream basis. The F-test compares the variance between co-located core or field duplicate samples to the overall variance on a waste stream basis. If this statistical test concludes that the co-located core or field duplicate samples are not of high quality (consistent), then the sampling procedure/process must be reviewed and analyzed for errors.*

3.1.1 SPM or Designee: Perform the following:

3.1.1.1 Compile the co-located core or field duplicate data by waste stream from validated solid sampling analysis data.

3.1.1.1.1 Include both the initial sample data and the co-located or field duplicate sample data.

3.1.1.2 Compile the solid sampling data not including co-located or field duplicate data by waste stream.

3.1.1.3 Transmit the electronic data sets to the statistician.

NOTE: *All data must be transformed to normality prior to computing variances and performing the F-test.*

3.1.2 Statistician: Perform the following:

3.1.2.1 Calculate the RPD(s) for each constituent in any new pairs of co-located or field duplicate samples as:

$$\text{RPD} = 100 \times \frac{(X_1 - X_2)}{(X_1 + X_2)/2}$$

Where

X_1 – is the concentration of a particular constituent measured in the first sample of a pair in a waste stream,

X_2 – is the concentration of a particular constituent measured in the second sample of a pair in a waste stream

3.1.2.2 Record and report the RPD(s) calculated in the above step in an interoffice memorandum to the SPM.

3.1.2.3 Determine if sufficient co-located core or field duplicate pairs (25–30 pairs of co-located cores or field duplicate samples) have been collected within a WMCG to establish RPD control charts.

3.1.2.3.1 If so, proceed to Section 3.2.

3.1.2.4 Assess the non-co-located core sample or field duplicate sample data of the waste stream for each analyte to determine if the data are normally distributed.

3.1.2.4.1 If a transformation is necessary for normality, use the transformed data throughout the process.

3.1.3 Calculate the pooled within-pair variance (these formulas assume the co-located or field duplicate samples are always in pairs, i.e., two samples) for co-located core or field duplicate samples (s_p^2) as:

$$s_p^2 = (s_1^2 + s_2^2 + s_3^2 + \ldots + s_c^2) / c$$

OR

$$s_p^2 = [(X_{1,1}-X_{1,2})^2 + (X_{2,1}-X_{2,2})^2 + (X_{3,1}-X_{3,2})^2 + \ldots + (X_{c,1}-X_{c,2})^2] / 2c$$

Where

c – is the number of co-located core or field duplicate samples for the given constituent in the waste stream,

s_1^2 – is the variance for concentrations of a particular constituent measured in the first co-located or field duplicate pair in a waste stream,

s_c^2 – is the variance for concentrations of a particular constituent measured in the cth co-located or field duplicate pair in a waste stream,

$X_{1,1}$ – is the concentration of a particular constituent measured in the first sample of the first co-located or field duplicate pair in a waste stream,

$X_{1,2}$ – is the concentration of a particular constituent measured in the second sample of the first co-located or field duplicate pair in a waste stream,

$X_{c,1}$ – is the concentration of a particular constituent measured in the first sample of the cth co-located or field duplicate pair in a waste stream,

$X_{c,2}$ – is the concentration of a particular constituent measured in the second sample of the cth co-located or field duplicate pair in a waste stream.

NOTE: *This variance must be computed excluding any data from containers with co-located cores or field duplicate samples because the test requires that the variance estimates be independent.*

3.1.4 Calculate the variance for the non-co-located core or field duplicate samples of the waste stream (s_m^2) using the standard formula for variance.

3.1.5 Compute the test statistic and determine if the initial co-located or field duplicate samples are of acceptable quality.

NOTE 1: *The test hypothesis (that the variance between co-located cores or field duplicate samples is equal to the variance measured within the waste stream) is evaluated using the F distribution and the following test statistic:*

$$f = s_p^2 / s_m^2$$

NOTE 2: *The test statistic is compared to percentiles of the F distribution to conduct the hypothesis test. If the expression* $f < F_{(1-(\alpha);\ np-1,\ nm-1)}$ *is true, it can be concluded that the variance of the co-located cores or field duplicate samples is no bigger than the waste stream variance, and therefore, the initial co-located or field duplicate samples are of acceptable quality. If the expression is not true, then it indicates that the co-located core or field duplicate sample variance is unusually large, and perhaps some error or inconsistency has occurred during solid sampling and analysis, prompting review of the sampling procedure*.

NOTE 3: *In the above expression,* np *is the number of co-located or field duplicate sample pairs for the constituent in the waste stream, and* nm *is the number of non co-located core or field duplicate samples for the constituent in the waste stream. A significance level* α *of 0.05 shall be used for this test.*

3.1.5.1 Document the results of the evaluation in an interoffice memorandum to the SPM.

3.1.5.1.1 Include attachments, as necessary, to provide detailed explanation of the evaluation.

3.2 Control Charts for Solid Sampling and Analysis Precision Evaluation

NOTE 1: *RPT-TRUW-12 delineates WMCGs by waste stream.*

NOTE 2: *WMCGs, as assigned by RPT-TRUW-12, will be used as the initial basis for evaluating co-located cores or field duplicate samples. However, if variability is too high within a WMCG, smaller groupings will be considered.*

3.2.1 Statistician: Perform the following:

3.2.1.1 Establish historical baseline for the co-located core or field duplicate data pairs collected previous to the new co-located or field duplicate pairs being assessed:

3.2.1.1.1 Calculate the RPD for each pair (X_1, X_2) as

$$\text{RPD} = 100 \times \frac{(X_1 - X_2)}{(X_1 + X_2)/2}$$

Where

X_1 – is the concentration of a particular constituent measured in the first sample of a pair in a waste stream,

X_2 – is the concentration of a particular constituent measured in the second sample of a pair in a waste stream

3.2.1.1.2 Calculate the mean of the RPDs calculated in Step 3.2.1.1.1 as

$$\overline{RPD} = \frac{1}{n}\sum_{i=1}^{n} RPD_i$$

Where

RPD_i – is the RPD between the results for the ith pair

n – is the number of pairs.

3.2.1.1.3 Calculate the standard deviation (s) of the RPDs calculated in Step 3.2.1.2.1 as

$$s = \sqrt{\frac{\sum_{i=1}^{n} \left(RPD_i - \overline{RPD}\right)^2}{n - 1}}$$

3.2.1.1.4 Construct the control charts by plotting a line representing the mean RPD and lines representing the upper control limit $\left(\overline{RPD} + 3s\right)$ and the lower control limit $\left(\overline{RPD} - 3s\right)$.

NOTE: *This establishes a new baseline, recalculates the mean and variance, and generates a new control chart.*

3.2.1.1.5 Calculate the RPDs for the new pairs of co-located cores or field duplicates and plot these points on the control chart.

NOTE 1: *If the RPDs of the new cores or field duplicates fall outside the control limits, then this may indicate that some error or inconsistency has occurred during the sampling process, and that the sampling procedure needs to be reviewed for such inconsistencies.*

NOTE 2: *As well as falling within the control limits, the distribution of the RPDs of the co-located cores or field duplicate samples should be approximately normally distributed about the mean line. Serious departures from normality (including runs of eight or more RPDs consistently above, or consistently below, the mean) should be investigated to determine if some sampling error is the cause.*

NOTE 3: *If the RPDs of the new cores or field duplicates fall within the control limits, then this indicates the sampling is "in control" and the sampling procedure is of acceptable quality.*

3.2.1.1.6 Notify the SPM and QA of the conclusion drawn in Step 3.2.1.1.5 and record and report in an interoffice memorandum.

3.2.1.1.6.1 Include attachments, as necessary, to provide detailed explanation of the evaluation.

3.2.2 SPM: If the control chart limit (three standard deviations above or below the average RPD) is exceeded, initiate a nonconformance report per MP-Q&SI-5.4, Identification of Nonconforming Conditions.

4.0 DEFINITIONS

None

5.0 REFERENCES

(1) RPT-TRUW-12, AMWTP Waste Stream Designations

(2) INST-OI-16, Drum Coring Operations

(3) INST-OI-75, Container-in-Container Sampling

(4) MP-Q&SI-5.4, Identification of Nonconforming Conditions.

6.0 RECORDS

Records generated by this procedure must be classified in accordance with the table below and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.17, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after submittal
Control Charts	Lifetime WIPP/ENV1-J-1/ Turnover to CBFO at end of project
Interoffice Memorandum	Lifetime WIPP/ENV1-J-1/ Turnover to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

None

Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

Advanced Mixed Waste Treatment Project

Approved:

(Signature on file. See DCR-9648.) 11/22/10

Enrique Torres Date

TRU Programs Manager

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.25, Rev. 18	Issued: 12/28/10	Effective: 12/29/10
Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	06/13/02	All	Initial issue. DCR-2002-1270.
1	09/05/02	4-7, 10, 13	DCR-1466: Changed revision number from 0 to 1. Added text for information and clarification.
2	09/26/02	6-9	DCR-1538: Changed revision number from 1 to 2. Deleted and added text for clarification and work flow.
3	11/21/02	1, 6-9, 11, 13	DCR-1749: Changed revision number from 2 to 3. Added "AMWTP HWMA/RCRA Storage Permit" to note the requirement.
4	02/06/03	8, 11	DCR-2003: Changed revision number from 3 to 4. Deleted NOTE for clarification.
5	03/28/03	All	DCR-2163: Changed effective date from "When DOE Approves Retrieval Operations" to March 28, 2003.
6	05/01/03	Various	DCR-2119: Incorporate changes from CBFO.
7	8/19/04	Various	DCR-3208. Incorporate corrective actions from CAR-8217 (CBFO 04-033 Revision 1). Updated references to include BNFL RPT-12 and made other minor editorial/format changes.
8	11/29/04	Various	DCR-3373. Incorporated CBFO post-audit comments. Editorial/format changes to comply with MP-DOCS-18.3.
9	03/01/05	7 and 10	DCR-4178. Minor change to correct a typo in 4.1.2.4 and 4.2.1.6 (5th bullet in both steps).
10	06/09/05	Various	DCR 4281. Incorporation of Class 1 Permit Modification Notification to Revise Language for Compacted 55-Gallon Drums With Rigid Liners, April 27, 2005 and WIPP Memorandum CBFO:OCT:KWW:VW:05-1164-UFC:5822. Incorporated the procedure to implement the UFGTP long-term objective

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.25, Rev. 18	Issued: 12/28/10	Effective: 12/29/10

Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

Revision Number	Date Approved	Pages Affected	Description of Revision
11	10/10/05	1, 3 – 5, and A1	DCR-4472. Revised to accommodate a new method of lot planning.
12	01/10/06	All	DCR-4723. Added new steps 3.1.2.1 and 3.1.2.2. Format to meet MP-DOCS-18.3.
13	06/13/06	1.0, 3.1.1.2.1, 3.1.2.2.1, 3.1.2.6, P.4 Note 2	DCR-5025. Clarification of intended purpose. Clarification for lot development.
14	1/05/07	All	DCR-5483. Complete rewrite and title change to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).
15	11/25/07	Appendix A	DCR-6387. Revise Appendix A, Statistical Evaluations; periodic review.
16	03/12/08	Pages. 6 and 14	DCR-6918. Action item 38120 from QA surveillance 37885.
17	06/04/09	Pages 1, 11 and A9	DCR-8024. Add paragraph/note for clarification of procedure. Periodic Review.
18	11/22/10	Various	DCR-9648. Incorporated changes to implement the WIPP Permit Renewal.

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Appendix C — Determination of Subsequent Samples for Headspace Gas Sampling (Example) C1

Appendix D — Solids Random Sample Selection Listing (Example) D1

Appendix E — Determination of Subsequent Samples for Solids Sampling (Example) E1

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.25, Rev. 18	Issued: 12/28/10	Effective: 12/29/10

Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis

1.0 PURPOSE/SCOPE

MP-TRUW-8.2, Quality Assurance Project Plan, requires that containers be randomly selected for sampling and analysis. This procedure describes the process the Advanced Mixed Waste Treatment Project (AMWTP) uses for random selection of contact-handled (CH) and remote-handled (RH) transuranic (TRU) waste containers for headspace gas (HSG) and solids sampling and analysis.

This procedure applies to retrievably stored and newly generated S5000 debris waste streams that require HSG sampling and analysis for waste characterization and to retrievably stored and newly generated S3000 homogenous solids and S4000 soil/gravel waste streams that require solids sampling and analysis for waste characterization.

All steps outlined in this procedure are performed by the Site Project Manager (SPM), SPM Alternate (or their designee) unless otherwise noted.

The sections within this procedure do not have to be completed in a sequential fashion.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Site Project Manager (SPM), Alternate, or Designee	• Determines population of containers in the waste stream or waste stream lot to select from for HSG and solids sampling and analysis. • Performs random selection of HSG containers to be sampled and analyzed. • Prepares and submits the Headspace Gas Random Sample Selection Memorandum. • Prepares and submits the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum. • Prepares and submits the Subsequent Headspace Gas Random Sample Selection Memorandum. • Determines population of containers in the waste stream or waste stream lot to select from for solids sampling and analysis. • Performs random selection of solids containers to be sampled and analyzed. • Prepares and submits the Solids Random Sample Selection Memorandum. • Prepares and submits the Subsequent Solids Random Sample Selection Candidate Memorandum. • Prepares and submits the Subsequent Solids Random Sample Selection Memorandum.

3.0 PROCEDURE

3.1 Determining Sampling Population for Headspace Gas Sampling and Analysis

3.1.1 Review the acceptable knowledge (AK) documentation to determine the number of containers in the waste stream that will be shippable to the Waste Isolation Pilot Plant (WIPP).

3.1.2 Identify the containers in the waste stream lot or waste stream.

3.1.2.1 If the entire population of the waste stream is accessible, go to Section 3.2.

3.1.2.2 If the entire population of the waste stream is known, and only a portion of the waste stream is accessible for HSG sampling and analysis, go to Section 3.2.

3.1.2.3 If the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, divide the waste stream into waste stream lots, and go to Section 3.3.

3.2 Container Selection for Accessible Waste Stream or Waste Stream Lot Populations for Headspace Gas Sampling and Analysis

NOTE 1: *When the waste stream population is divided into multiple waste stream lots, the steps in this section are be repeated for each waste stream lot.*

NOTE 2: *For the initial sample selection for a waste stream or waste stream lot,* n *will at a minimum equal 10. If the waste stream population is less than 10, each container is sampled once. For subsequent required samples from within the same waste stream or waste stream lot,* n *will be determined from the Upper 90 Percent Confidence Level (UCL_{90}) calculations using Appendix A, Statistical Evaluations and, at a minimum,* n *will equal 10.*

3.2.1 Using Microsoft Excel, create a spreadsheet with the title to include the waste stream ID number and waste stream lot number, if applicable.

3.2.2 Create a column within the spreadsheet containing the Container ID numbers for the waste stream or waste stream lot, excluding all containers identified in previous Headspace Gas Random Sample Selection Memoranda.

3.2.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the waste stream or waste stream lot in an adjacent column.

3.2.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where RAND() is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.2.3.2 Select and copy the column containing the generated random numbers.

3.2.3.3 Using the Edit/Paste Special/Value function, replace the column containing the generated random numbers with its fixed values.

3.2.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

3.2.5 Select the first *n* containers in the resulting Random Headspace Gas Sample Selection Listing for sampling (see Appendix B, Random Headspace Gas Sample Selection Listing).

3.2.6 Create a Headspace Gas Random Sample Selection Memorandum containing the following information:

- Form-1196, Randomly Selected Container Report
- Population size (waste stream or waste stream lot) from which containers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected container numbers that were selected by this random selection method
- Printout or listing of the correlation of randomly generated numbers selected and Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.2.7 Initial the Headspace Gas Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.2.8 Submit the Random Headspace Gas Sample Selection Memorandum per MP-DOCS-18.2, Records Management with copies to the SPM(s) and the appropriate distribution list.

3.3 Container Selection for Indeterminate Waste Stream Populations for Headspace Gas Sampling and Analysis

3.3.1 Determination of Sample Selection for First Waste Stream Lot

NOTE: *For the first sample selection for a waste stream or waste stream lot,* n *will at a minimum equal 10. For subsequent required samples from within the same waste stream or waste stream lot,* n *will be determined from the* UCL_{90} *calculations using Appendix A and, at a minimum,* n *will equal 10.*

3.3.1.1 Using Microsoft Excel, create a spreadsheet with the title to include the waste stream ID number.

NOTE: *The accessible containers in an indeterminate waste stream will be considered the first waste stream lot and must include a minimum of 10 containers.*

3.3.1.2 Create a column within the spreadsheet containing the container ID numbers for the first waste stream lot.

3.3.1.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the first waste stream lot in an adjacent column.

3.3.1.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where RAND() is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.3.1.3.2 Select and copy the column containing the generated random numbers.

3.3.1.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.3.1.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

3.3.1.5 Select the first *n* containers in the resulting Random Headspace Gas Sample Selection Listing for HSG sampling and analysis.

3.3.1.6 Create a Headspace Gas Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected container numbers that were selected by this random selection method
- Printout or listing of the correlation of randomly generated numbers selected and actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.3.1.7 Initial the Headspace Gas Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.1.8 Submit the Headspace Gas Random Sample Selection Memorandum per MP-DOCS-18.2, Records Management, with copies to the SPM(s) and the appropriate distribution list.

3.3.2 Determination of Subsequent Samples

3.3.2.1 Estimate a conservatively low minimum and a conservatively high maximum for the number of containers expected in the remaining waste stream or waste stream lot population.

3.3.2.2 Using Microsoft Excel or equivalent, create a spreadsheet with the title to include the waste stream ID number and waste stream lot number, if applicable.

3.3.2.3 Create a column within the spreadsheet containing container sequence numbers from 1 through the estimated maximum determined in Step 3.3.2.1 for the waste stream or waste stream lot, excluding all containers identified in previous Headspace Gas Random Sample Selection Memoranda.

3.3.2.4 Using the Random Number Function in Microsoft Excel or equivalent, generate a random number associated with each container sequence number in an adjacent column.

3.3.2.4.1 Use the following equation in Microsoft Excel:

RandomNumber = Rand() where *Rand()* is a Microsoft Excel function that produces a random number greater than or equal to 0 and less than 1.

3.3.2.4.2 Select and copy the column containing the generated random numbers.

3.3.2.4.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.3.2.5 Using the Data/Sort Function, sort the container sequence numbers based on the numbers in the random number column in ascending order.

NOTE: *For subsequent required samples from within a waste stream or waste stream lot,* n *will be determined from the* UCL_{90} *calculations using Appendix A and, at a minimum,* n *will equal 10.*

3.3.2.6 While preserving the sorted listing order, select the first *n* containers with sequence numbers less than or equal to the minimum number estimated in Step 3.3.2.1 as initial candidate containers for sampling.

3.3.2.7 Similarly, make a contingency selection of additional container sequence numbers to serve as additional samples if needed (e.g., to satisfy increased minimum sample size as dictated by UCL_{90} calculation results).

NOTE 1: *Selected containers occupying any of the n positions at the top of the list will never be eligible for replacement by a later sequence numbered container as the encountered population of waste stream or waste stream lot containers grows larger. Such containers are permanently assigned to the sample selection and may be sampled and analyzed immediately.*

NOTE 2: *Previously selected containers no longer contained within the first n containers on the listing with sequence numbers less than or equal to the currently received population size may be released.*

3.3.2.8 As additional containers with sequence numbers in excess of the estimated minimum are received, repeat Step 3.3.2.7 as necessary to select previously non-selected container sequence numbers as they become available.

NOTE: *Appendix C, Determination of Subsequent Samples, contains an example of the application of this selection methodology for a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although the example population is small, the methodology can be extended to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.*

3.3.2.9 Create a Subsequent Headspace Gas Random Sample Selection Candidate Memorandum, containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were determined to be eligible for selection by this random selection method, preserving the random-number-sorted order established in Step 3.3.1.3
- Description and justification of methodology used for objective assignment of sequential container numbers.

3.3.2.10 Initial the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.2.11 Submit the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

3.3.2.12 Upon completion of identification of all containers in the waste stream or waste stream lot or upon reaching the maximum number of containers estimated in Step 3.3.2.1, create a final Subsequent Headspace Gas Random Sample Selection Memorandum containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for HSG sampling and analysis
- Quantity of containers selected for HSG sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were ultimately selected for HSG sampling and analysis using this random selection method, preserving the random-number-sorted order established in Step 3.3.1.3
- Printout or listing of the correlation of randomly generated numbers selected, sequence numbers, and associated actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.3.2.13 Initial the Subsequent Headspace Gas Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.3.2.14 Submit the Subsequent Headspace Gas Random Sample Selection Candidate Memorandum per MP-DOCS-18.2, with copies to the SPM(s) and the appropriate distribution list.

3.4 Determining Sampling Population for Solids Sampling and Analysis

3.4.1 Review the AK documentation to determine the number of containers in the waste stream that will be shippable to WIPP.

3.4.2 Identify the containers in the waste stream lot or waste stream.

3.4.2.1 If the entire population of the waste stream is accessible, go to Section 3.5.

3.4.2.2 If the entire population of the waste stream is known and only a portion of the waste stream is accessible for solids sampling and analysis, go to Section 3.5.

3.4.2.3 If the population of the waste stream as a whole is indeterminate, (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, divide the waste stream into waste stream lots and go to Section 3.6.

3.5 Container Selection for Accessible Waste Stream or Waste Stream Lot Populations for Solids Sampling and Analysis

NOTE 1: *When the waste stream population is divided into multiple waste stream lots, the steps of Section 3.5 will be repeated for each waste stream lot.*

NOTE 2: *For the initial sample selection for a waste stream or waste stream lot,* n *will at a minimum equal 5. If the waste stream has fewer that five containers, one or more containers will require multiple sampling. For subsequent required samples from within the same waste stream or waste stream lot,* n *will be determined from the* UCL_{90} *calculations using Appendix A and, at a minimum,* n *will equal 5.*

NOTE 3: *For a waste stream lot where the lot size has been determined but not all containers have been assigned a container ID number, a preliminary Solids Random Sample Selection Memorandum may be generated. A final Solids Random Sample Selection Memorandum will be submitted when all containers have an assigned container ID number.*

3.5.1 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number and Waste Stream Lot Number, if applicable.

3.5.2 Create a column within the spreadsheet containing the container ID numbers for the waste stream or waste stream lot, excluding all containers identified in previous Solids Random Sample Selection Memoranda.

3.5.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the waste stream or waste stream lot in an adjacent column.

3.5.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where *RAND()* is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.5.3.2 Select and copy the column containing the generated random numbers.

3.5.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.5.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

3.5.5 Select the first *n* containers in the resulting Random Solids Sample Selection Listing for solids sampling and analysis (see Appendix D, Random Solids Sample Selection Listing).

3.5.6 Create a Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.
- Printout or listing of the randomly selected container numbers that were selected by this random selection method.
- Printout or listing of the correlation of randomly generated numbers selected and Container ID numbers.
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.5.7 Initial the Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.5.8 Submit the Solids Random Sample Selection Memorandum for the designated waste stream or waste stream lot per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

3.6 Container Selection for Indeterminate Waste Stream Populations for Solids Sampling and Analysis

3.6.1 Determination of Sample Selection for First Waste Stream Lot

NOTE: *For the first sample selection for a waste stream or waste stream lot,* n *will at a minimum equal 5. If the waste stream has fewer than five containers, one or more containers will require multiple sampling. For subsequent required samples from within the same waste stream or waste stream lot,* n *will be determined from the* UCL_{90} *calculations using Appendix A and, at a minimum,* n *will equal 5.*

3.6.1.1 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number.

NOTE: *The accessible containers in an indeterminate waste stream will be considered the first waste stream lot.*

3.6.1.2 Create a column within the spreadsheet containing the Container ID numbers for the first waste stream lot.

3.6.1.3 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container in the first waste stream lot in an adjacent column.

3.6.1.3.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where *RAND()* is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.6.1.3.2 Select and copy the column containing the generated random numbers.

3.6.1.3.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.6.1.4 Using the Data/Sort Function, sort the container numbers based on the numbers in the random number column in ascending order.

3.6.1.5 Select the first *n* containers in the resulting Random Solids Sample Selection Listing for solids sampling and analysis.

3.6.1.6 Create a Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Population size (waste stream or waste stream lot) from which containers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.

- Printout or listing of the randomly selected container numbers that were selected by this random selection method.
- Printout or listing of the correlation of randomly generated numbers selected and actual Container ID numbers.
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.6.1.7 Initial the Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alternate SPM) is distributed to other SPMs (SPM and/or Alt SPMs), the TRU Programs Manager, and the Scientific Support Manager.*

3.6.1.8 Submit the Solids Random Sample Selection Memorandum per MP-DOCS-18.2 to with copies to the SPM and the appropriate distribution list.

3.6.2 Determination of Subsequent Samples

3.6.2.1 Estimate a conservatively low minimum and a conservatively high maximum for the number of containers expected in the remaining waste stream or waste stream lot population.

3.6.2.2 Using Microsoft Excel, create a spreadsheet with the title to include the Waste Stream ID Number and Waste Stream Lot Number, if applicable.

3.6.2.3 Create a column containing container sequence numbers from 1 through the estimated maximum determined in Step 3.6.2.1 for the waste stream or waste stream lot, excluding all containers identified in previous Solids Random Sample Selection Memoranda.

3.6.2.4 Using the Random Number Function in Microsoft Excel, generate a random number associated with each container sequence number in an adjacent column.

3.6.2.4.1 Use the following equation in Microsoft Excel:

RandomNumber = RAND() where *RAND()* is a Microsoft Excel Function that produces a random number greater than or equal to 0 and less than 1.

3.6.2.4.2 Select and copy the column containing the generated random numbers.

3.6.2.4.3 Using the Edit/Paste Special/Value Function, replace the column containing the generated random numbers with its fixed values.

3.6.2.5 Using the Data/Sort Function, sort the container sequence numbers based on the numbers in the random number column in ascending order.

NOTE: *For subsequent required samples from within the same waste stream or waste stream lot,* n *will be determined from the* UCL_{90} *calculations using Appendix A, Statistical Evaluations.*

3.6.2.6 While preserving the sorted listing order, select the first *n* containers with sequence numbers less than or equal to the minimum number estimated in Step 3.6.2.1 as initial candidate containers for solids sampling and analysis.

3.6.2.7 Similarly, make a contingency selection of additional container sequence numbers to serve as additional samples if needed (e.g., to satisfy increased minimum sample size as dictated by UCL_{90} calculation results).

NOTE 1: *Selected containers occupying any of the* n *positions at the top of the list will never be eligible for replacement by a later sequence numbered container as the encountered population of waste stream or waste stream lot containers grows larger. Such containers are permanently assigned to the sample selection and may be sampled and analyzed immediately.*

NOTE 2: *Previously selected containers no longer contained within the first n containers on the listing with sequence numbers less than or equal to the currently received population size may be released.*

3.6.2.8 As additional containers with sequence numbers in excess of the estimated minimum are received, repeat Step 3.6.2.7 as necessary to select previously non-selected container sequence numbers as they become available.

NOTE: *Appendix E, Determination of Subsequent Samples, contains an example of the application of this selection methodology for a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although the example population is small, the methodology can be extended to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.*

3.6.2.9 Create a Subsequent Solids Random Sample Selection Candidate Memorandum containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for solids sampling and analysis.
- Quantity of containers selected for solids sampling and analysis.

- Printout or listing of the randomly selected candidate container sequence numbers that were determined to be eligible for selection by this random selection method, preserving the random-number-sorted order established in Step 3.6.2.4.
- Description and justification of methodology used for objective assignment of sequential container numbers.

3.6.2.10 Initial the Subsequent Solids Random Sample Selection Candidate Memorandum.

NOTE: *The correspondence from the SPM (or Alt SPM) is distributed to other SPMs (SPM and/or Alt SPMs), TRU Program Manager, and Scientific Support Manager.*

3.6.2.11 Submit the Subsequent Solids Random Sample Selection Candidate Memorandum for the designated waste stream or waste stream lot per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

3.6.2.12 Upon completion of identification of all containers in the waste stream or waste stream lot or upon reaching the maximum number of containers estimated in Step 3.6.2.1, create a final Subsequent Solids Random Sample Selection Memorandum containing the following information:

- Form-1196
- Estimated minimum and maximum population size (waste stream or waste stream lot) from which candidate container sequence numbers have been selected for solids sampling and analysis
- Quantity of containers selected for solids sampling and analysis
- Printout or listing of the randomly selected candidate container sequence numbers that were ultimately selected for sampling using this random selection method, preserving the random-number-sorted order established in Step 3.6.2.4

- Printout or listing of the correlation of randomly generated numbers selected, sequence numbers, and associated actual Container ID numbers
- Identification of all containers within the entire population of the waste stream or waste stream lot.

3.6.2.13 Initial the Subsequent Solids Random Sample Selection Memorandum.

NOTE: *The correspondence from the SPM (or Alt SPM) is distributed to other SPMs (SPM and/or Alt SPMs), TRU Program Manager, and Scientific Support Manager.*

3.6.2.14 Submit the Subsequent Solids Random Sample Selection Memorandum per MP-DOCS-18.2 with copies to the SPM(s) and the appropriate distribution list.

4.0 DEFINITIONS

None

5.0 REFERENCES

(1) MP-TRUW-8.2, Quality Assurance Project Plan

(2) MP-DOCS-18.2, Records Management

(3) MP-TRUW-8.14, Preparation of Waste Stream Profile Forms

(4) INST-OI-43, HGAS Sampling and Analysis Operation

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.25, Case File	Nonpermanent WIPP/ENV1-J-1/ Destroy 10 years after being superseded.
Headspace Gas or Solids Random Sample Selection, Subsequent, and Candidate Selection Memorandums which includes as appropriate: • Form-1196 – Randomly Selected Container Report • Form-1598 - Characterization Information Summary Report • Population size • Quantity of containers • Printout or listing of container numbers • Listing of correlation of generated numbers • Identification of all containers within entire population • Description and justification of methodology used for objective assignment of sequential container numbers.	Lifetime WIPP/ENV1-J-1/ Turnover to CBFO at end of project

7.0 EXHIBITS

None

8.0 APPENDICES

Appendix A – Statistical Evaluations

Appendix B – Headspace Gas Random Sample Selection Listing (Example)

Appendix C – Determination of Subsequent Samples for Headspace Gas Sampling (Example)

Appendix D – Solids Random Sample Selection Listing (Example)

Appendix E – Determination of Subsequent Samples for Solids Sampling (Example)

Appendix A — Statistical Evaluations

The statistical approach for characterizing retrievably stored and newly generated homogeneous solids (S3000) and soil/gravel (S4000) waste and repackaged or treated S3000 waste relies on using AK to segregate waste containers into relatively homogeneous waste streams. Using AK, the AMWTP will classify the entire waste stream rather than individual waste containers as either hazardous or non-hazardous. Individual waste containers serve as convenient units for characterizing the combined mass of waste from the waste stream of interest. Once segregated by waste stream, random selection and sampling of the waste containers followed by analysis of the waste samples shall be performed to ensure that the resulting mean contaminant concentration provides an unbiased representation of the true mean contaminant concentration for each waste stream. The SPM verifies that the samples collected from within a waste stream were selected randomly in accordance with MP-TRUW-8.25, Random Selection of Containers for Headspace Gas and Solids Sampling and Analysis.

An end use of analytical results for retrievably stored homogeneous solids and soil/gravel is for assigning the Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWNs) associated with Toxicity Characteristic (TC) waste (D-numbers) that apply to each mixed waste stream. The D-numbers are indicators that the waste exhibits the TC for specific contaminants under the Resource Conservation and Recovery Act (RCRA). The RCRA-toxicity determination is made on the basis of sampling and analysis of waste streams and on whether or not the waste stream includes F-number wastes. If a waste stream includes one or more RCRA F-numbers identified via AK, TC contaminants associated with the F-number waste(s) are not included in the RCRA-TC determination. That is, the F-numbers take precedence over RCRA-toxicity D-numbers, and the waste stream is assumed hazardous regardless of the concentration. Therefore, TC contaminants associated with F-numbers for a waste stream are omitted from all calculations for determining the number of containers to sample because these waste streams are assumed to be hazardous. In addition, each TC contaminant associated with the F-numbers is excluded from evaluation of analytical results to determine D-numbers. Contaminants of interest for the sampling, analysis, and RCRA-toxicity determination of a waste stream, then, exclude contaminants associated with F-numbers that have been assigned to the waste stream.

The sampling and analysis strategy is illustrated in Figure A1. Preliminary estimates of the mean concentration and variance of each RCRA regulated contaminant in the waste are used to determine the number of waste containers to select for sampling and analysis. Preliminary estimates will be based on a minimum of five samples selected randomly from the waste stream for totals analysis and a minimum of ten samples for headspace gas analysis. If the entire waste stream is not accessible for sampling, then the minimum number of preliminary samples will be selected randomly from the accessible population. As the rest of the waste stream is retrieved or generated, additional selected containers will be sampled as provided below. The analytical results will be reported to WIPP. Samples collected to establish preliminary estimates that are selected, sampled and analyzed using a CBFO approved laboratory in accordance with applicable provisions of the CBFO approved laboratory's Quality Assurance Project Plan may be used as part of the required number of samples to be collected. The applicability of the preliminary estimates to the waste stream to be sampled is justified and documented.

The equations used to establish the mean, standard deviation, and 90% upper confidence level (UCL_{90}) for constituent data to be used in final HWN determinations are described in this appendix. Use of the equations included in this appendix assumes normality. Unless the results for an analyte are all less than the method detection limit (MDL) or are comprised of two or fewer valid samples, normality of the data will be tested (e.g., Shapiro-Wilk test) and transformation of the data will be performed as necessary. Test for normality will be performed using a certified software package. Transformation of data and other calculations will be performed manually or with a validated or certified software package.

To perform the calculations, a data set for each analyte of interest must be generated that at a minimum has the container numbers, the field and laboratory sample numbers, analyte names, concentrations, units, and reporting flags (U, J, B, E, D). Replicate or duplicate samples and co-located core samples are not included in the data set.

To determine the mean and standard deviation, all headspace gas or totals data for a waste stream or waste stream lot (i.e., the portion of the waste stream that is characterized as a unit) will be used, including data qualified with a 'J' flag (i.e., less than the Program Required Quantitation Limit [PRQL] but greater than the MDL) and data qualified with a 'U' flag (i.e., less than the MDL). For data qualified with a 'U' flag, one-half the MDL will be used in calculating the mean and standard deviation. Samples with elevated detection limits due to dilution are excluded from the mean and standard deviation calculations. These samples have both 'U' and 'D' flags.

Elevated MDLs may be included in the calculation if you are trying to determine the applicability of adding a toxicity characteristic to the wastes being determined.

The process described below does not address headspace composite sampling because the AMWTP does not utilize composite sampling.

A.1 Calculate the sample mean ($\bar{x}$), and standard deviation (s), for each analyte.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \qquad \textbf{(A-1)}$$

$$s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2} \qquad \textbf{(A-2)}$$

Where:

$\bar{x}$ is the calculated mean.
s is the calculated concentration standard deviation.
n is the number of samples analyzed.
x_i is the concentration determined in the ith sample.
i is an index from 1 to n.

(HWMA/RCRA Storage Permit)

A.2 Calculate the Preliminary Estimated Required Sample Size for Totals Analysis

Analytes should be excluded from the sample size determination if the analyte is (a) undetected in all samples or (b) already has an F-number associated with the waste stream. The F-number takes precedence over the D-number and will not be removed based on sampling results.

Based upon the preliminary estimates of $\bar{x}$ and s for each chemical contaminant of concern, estimate the appropriate minimum number of samples (n) to be collected for each contaminant using the following formula from SW-846 (EPA 1996):

$$n = \frac{t^2_{\alpha,n_0-1}s^2}{\left(RT - \bar{x}\right)^2} \qquad \textbf{(A-3)}$$

Where:

n is the calculated minimum required number of samples.
t_{α,n_0-1} is the 90th percentile for the t distribution with n_0-1 degrees of freedom.
n_0 is the initial number of samples used to calculate the preliminary estimates.
RT is the Regulatory Threshold of the contaminant (TC limit for TC wastes, PRQL for listed wastes).

The number of samples to be collected will be based upon the largest *n* calculated for each of the contaminants of concern. The actual number of samples collected shall be adjusted as necessary to ensure that an adequate number of samples are collected to allow for acceptable levels of completeness.

Non-integer results of calculations for required sample size should be rounded up to the next integer. A minimum of five containers shall be sampled and analyzed in each waste stream. If there are fewer containers than the minimum or required number of samples in a waste stream, one or more randomly selected containers shall be sampled more than once to obtain the number of needed samples of the waste. Otherwise, any one container may be selected for sampling only once.

The calculated total number of required waste containers will then be randomly sampled and analyzed using a CBFO approved laboratory. Waste container samples used to calculate the preliminary mean and variance estimates may be counted as part of the total calculated number of required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples was identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples was identical to the analytical methodology employed for the required samples.
- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples was comparable to the validation employed for the required samples. In addition, the validated sample results shall indicate that all sample results were valid according to the analytical methodology.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage or only a portion of the waste stream has been repackaged or treated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of five randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the Waste Stream Profile Form (WSPF) and authorize the AMWTP to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream have been obtained.

The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of five randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of five randomly selected containers will be selected from within each subsequent lot. As those randomly selected containers (e.g., buried or newly generated waste containers) become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to the completion of sampling and analysis for the lot.

The AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section A.6 and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may assign HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP shall collect the required number of samples if the AMWTP intends to establish that the constituent is below the regulatory threshold.

A.3 Calculate the Preliminary Estimated Required Sample Size for Headspace Gas Analysis

Headspace gas sampling of a waste stream may be done on a randomly selected portion of containers in the waste stream. The minimum number of containers, (n_{VOC_i}), that must be sampled is determined by taking an initial VOC sample from a minimum of ten randomly selected containers. These samples are analyzed for all of the target analytes using INST-OI-43, HGAS Sampling and Analysis Operations. The standard deviation *(s)*, is calculated for each of the nine VOCs in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit. The value of n_{VOC_i} is determined as the largest number of samples (not to exceed the number of containers in the waste stream or waste stream lot) calculated using the following equation:

$$n_{VOC_i} = \frac{t^2_{\alpha,n_0-1} s^2_{e_{VOC_i}}}{E^2_{VOC_i}} \qquad \textbf{(A-4)}$$

Where:

n_{VOC_i} is the number of samples needed to representatively sample the waste stream for the VOC_i from Table 4.4.1 of the WIPP Hazardous Waste Facility Permit.

n_0 is the initial number of samples used to calculate the preliminary estimates.

t_{α,n_0-1} is the 90th percentile of the *t* distribution with n_0*-1* degrees of freedom.

$s_{e_{VOC_i}}$ is the estimated standard deviation based on the initial *n* samples for VOC_i from Table 4.4.1 of the WIPP Hazardous Waste Facility Permit.

E_{VOC_i} is the allowable error determined as one percent of the limiting concentration for VOC_i from Table 4.4.1of the WIPP Hazardous Waste Facility Permit.

As an in-house management practice only, for VOCs not listed in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit, n_{VOC_i} is calculated using the following equation:

$$n_{VOC_i} = \frac{t^2_{\alpha,n_0-1} s^2_{e_{VOC_i}}}{\left(RT_{VOC_i} - \bar{x}_{e_{VOC_i}}\right)^2} \qquad \textbf{(A-5)}$$

Where:

RT_{VOC_i} is the Regulatory Threshold (PRQL) of the contaminant.

$\bar{x}_{e_{VOC_i}}$ is the estimated mean contaminant concentration for VOC_i.

The number of samples to be collected will be based upon the largest n_{VOC_i} calculated from the analytes used in the sample size determination. Non-integer results of calculations for the required sample size should be rounded up to the next integer. A minimum of ten containers shall be sampled and analyzed in each waste stream. If there are fewer than the minimum or required number of containers in a waste stream, then each container should be sampled once.

The calculated total number of required waste containers will then be randomly sampled and analyzed. Waste container samples used to calculate the preliminary mean and variance estimates may be counted as part of the calculated total number of required samples if and only if:

- There is documented evidence that the waste containers for the preliminary estimate samples were selected in the same random manner as is chosen for the required samples.
- There is documented evidence that the method of sample collection in the preliminary estimate samples was identical to the methodology to be employed for the required samples.
- There is documented evidence that the method of sample analysis in the preliminary estimate samples was identical to the analytical methodology employed for the required samples.
- There is documented evidence that the validation of the sample analyses in the preliminary estimate samples was comparable to the validation employed for the required samples. In addition, the validated samples' results shall indicate that all sample results were valid according to the analytical methodology.

The mean and standard deviation calculated after sampling *n* containers can be used to calculate a UCL_{90} for each of the headspace gas VOCs using the methodology presented in Section A.7.

If only a portion of a waste stream is accessible for sampling (e.g., the remainder of the waste stream will be recovered from storage or only a portion of the waste stream has been repackaged or treated), the calculated number of samples will be randomly selected from the accessible portion of the waste stream. A minimum of ten randomly selected samples will be obtained and analyzed from the accessible portion of the waste stream. The CBFO may approve the WSPF and authorize the AMWTP to begin shipping the waste stream to WIPP once the analytical data for the randomly selected samples from the accessible portion of the waste stream have been obtained.

The AMWTP will also randomly select the calculated number of sample locations from the waste stream as a whole. A minimum of ten randomly selected sample locations will be selected from the waste stream as a whole. As those randomly selected locations (e.g., buried or newly generated waste containers), become accessible for sampling, samples will be obtained and analyzed.

For those waste streams where the population of the waste stream as a whole is indeterminate (e.g., continually generated waste streams from ongoing processes), or to facilitate waste processing, the AMWTP may divide the waste stream into lots. In this case, a minimum of ten randomly selected containers will be selected from within each subsequent lot. As those randomly selected containers (e.g., buried or newly generated waste containers) become accessible, samples will be obtained and analyzed. As with sampling from the waste stream as a whole, the AMWTP may ship waste from the lot being generated or retrieved prior to completing sampling and analysis of the lot.

The AMWTP will use the data to update the UCL_{90} values for the waste stream as described in Section A.7 and assign EPA HWNs as appropriate. The AMWTP will submit the analytical data from subsequent sampling to the CBFO for inclusion in the WIPP facility operating record. If changes to EPA HWNs are required as a result of subsequent sampling, the AMWTP will notify the CBFO and shipments of the affected waste stream shall be suspended until the CBFO approves a revised WSPF for the affected waste stream.

Upon collection and analysis of the preliminary samples, or at any time after the preliminary samples have been analyzed, the AMWTP may assign HWNs to a waste stream even if the calculated number of required samples is greater than the preliminary number of samples collected. For waste streams with calculated upper confidence limits below the regulatory threshold, the AMWTP shall collect the required number of samples if the AMWTP intends to establish that the constituent is below the regulatory threshold.

A.4 Randomly Sample and Analyze the Estimated Number of Waste Containers for Totals Analysis or Headspace Gas Analysis

Randomly sample and analyze the estimated number of waste containers identified in accordance with MP-TRUW-8.25.

A.5 Calculate the 90% Upper Confidence Limit for Each Analyte of Totals Analysis

Upon completion of the required sampling, final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant shall be determined. The observed sample n^* shall be checked against the preliminary estimate for the number of samples (n) to be collected before proceeding, where n^* is:

$$n^* = \frac{t_{\alpha,n-1}^2 s^2}{(RT - \bar{x})^2} \qquad \textbf{(A-6)}$$

and the right-side terms in the equation are as defined in Equation A-3.

If the observed sample n^* estimate results in greater than 20 percent more required samples than the previously calculated estimate (n), then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n^* is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between n^* and the previous sample size is less than 20 percent.

Once sufficient sampling and analysis has occurred, the waste characterization will proceed. The assessment will be made at the 90 percent confidence level. The UCL_{90} for the mean concentration of each contaminant will be calculated using the following equation from OSWER 9285.6-10 (EPA 2002):

$$UCL_{90} = \bar{x} + \frac{t_{\alpha,n-1} s}{\sqrt{n}} \qquad \textbf{(A-7)}$$

If the UCL_{90} for the mean concentration is less than the regulatory threshold limit, the waste stream is not required to be assigned the hazardous waste number for the associated contaminant. If the UCL_{90} is greater than or equal to the regulatory threshold limit, the waste stream will be assigned the hazardous waste number for the associated contaminant.

A.6 Calculate the 90% Upper Confidence Limit for Each Analyte of Headspace Gas Analysis

A UCL_{90} concentration for each headspace gas VOC must be calculated from the sample data collected. The observed sample (n^*) shall be checked against the estimate for the number of samples (n) to be collected before proceeding, where n^* is:

$$n^* = \frac{t_{\alpha,n-1}^2 s^2}{E^2} \qquad \textbf{(A-8)}$$

and the right-side terms in the equation are defined in Equation A-4. If the n* calculated using equation A-8 results in a greater than 20 percent larger number of required samples than the previously calculated estimate (n_{VOC_i}), then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of *n** is an iterative process that follows the collection and analysis of any additional samples and continues until the difference between *n** and the previous sample size is less than 20 percent. The UCL_{90} is then calculated using Equation A-7. In this case, UCL_{90} is the 90 percent upper confidence limit for the mean VOC concentration, $\bar{x}$ is the calculated sample mean VOC concentration and *s* is the calculated sample standard deviation. The value of $t_{(\alpha,n-1)}$ is found in Table 9-2 of Chapter 9 of SW-846.

As an in-house management practice only, for VOCs not listed in Table 4.4.1 of the WIPP Hazardous Waste Facility Permit, n^* is calculated using the following equation:

$$n^* = \frac{t^2_{\alpha,n-1} s^2}{\left(RT - \bar{x}\right)^2} \qquad \textbf{(A-9)}$$

Where:

RT is the Regulatory Threshold (PRQL) of the contaminant.

$\bar{x}$ is the estimated mean contaminant concentration for VOC_i.

A.7 Document Results

Report headspace gas summary data or solidified sampling data on Form-1598, Characterization Information Summary Report; see MP-TRUW-8.14, Preparation of Waste Stream Profile Forms.

As a management practice, the following table format may be used to document results of preliminary statistics performed prior to the completion of a solids or headspace gas lot. Each contaminant of interest should be included in the table.

ANALYTE	Number of Samples	Number of Samples above MDL [a]	Trans-formation Used [b]	Maximum (mg/kg)	Mean (mg/kg)	SD (mg/kg)	UCL_{90} (mg/kg)	Trans-formed PRQL	PRQL (mg/kg)	Required number of samples [c, d, e]	Comments
COMMENTS											

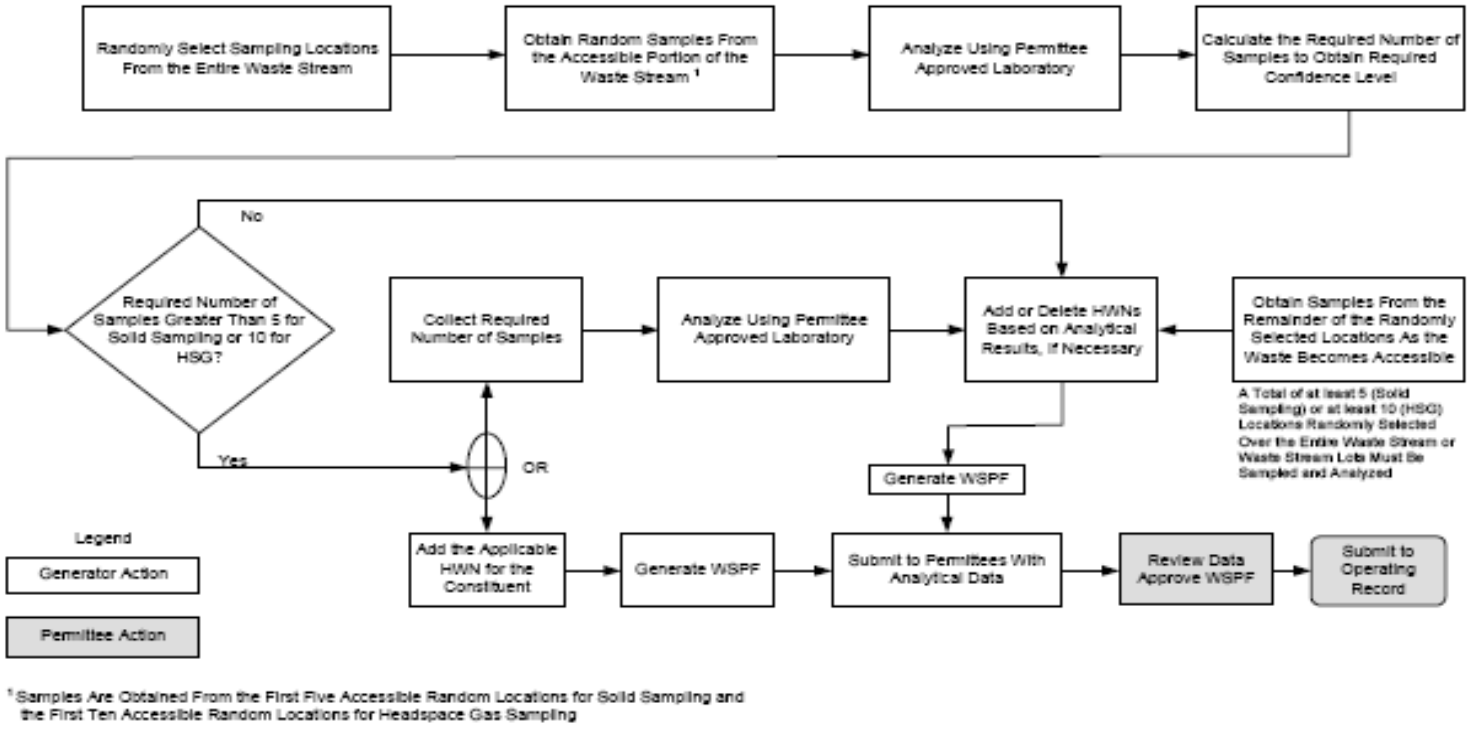

Figure A1. Approach for Solid and Heasdspace Gas Sampling and Analysis to Obtain Additional Waste Characterization Information.

Appendix B—Headspace Gas Random Sample Selection Listing (Example)

Waste Stream Number: Example **Lot Number XX** **Site Name**

Random Headspace Gas Sample Selection Listing

	Container ID	Rand Nr.	Container ID	Rand Nr.	Container ID	Rand Nr.
Selected Sample	EX20014396	0.00038619	EX20014589	0.00099735	EX20014251	0.00202669
	EX20016362	0.00038634	EX20013842	0.00105759	EX20015799	0.00224800
	EX20013982	0.00057597	EX20015951	0.00107144		
	EX20013757	0.00095693	EX20013553	0.00155148		

Container Population Listing

	Container ID	Rand Nr.		Container ID	Rand Nr.		Container ID	Rand Nr.
1	EX20013429	0.06644905	36	EX20013464	0.93462919	71	EX20013499	0.56515135
2	EX20013430	0.57662440	37	EX20013465	0.06631417	72	EX20013500	0.28778529
3	EX20013431	0.04682408	38	EX20013466	0.50355435	73	EX20013501	0.13439448
4	EX20013432	0.08989359	39	EX20013467	0.36358539	74	EX20013502	0.94838293
5	EX20013433	0.22404437	40	EX20013468	0.59705698	75	EX20013503	0.26238613
6	EX20013434	0.18676088	41	EX20013469	0.49749379	76	EX20013504	0.43790293
7	EX20013435	0.97015607	42	EX20013470	0.42540669	77	EX20013505	0.65630060
8	EX20013436	0.15363967	43	EX20013471	0.15685642	78	EX20013506	0.68974910
9	EX20013437	0.47250156	44	EX20013472	0.17495196	79	EX20013507	0.79566107
10	EX20013438	0.10609430	45	EX20013473	0.28573726	80	EX20013508	0.23924299
11	EX20013439	0.87186095	46	EX20013474	0.70689147	81	EX20013509	0.38453317
12	EX20013440	0.35027995	47	EX20013475	0.08234315	82	EX20013510	0.80453516
13	EX20013441	0.03622685	48	EX20013476	0.29275102	83	EX20013511	0.39063193
14	EX20013442	0.39604959	49	EX20013477	0.71871937	84	EX20013512	0.29766493
15	EX20013443	0.73380622	50	EX20013478	0.71877471	85	EX20013513	0.74608209
16	EX20013444	0.30174993	51	EX20013479	0.07170839	86	EX20013514	0.77879149
17	EX20013445	0.52806587	52	EX20013480	0.46294638	87	EX20013515	0.23222320
18	EX20013446	0.08311154	53	EX20013481	0.92364979	88	EX20013516	0.37917555
19	EX20013447	0.50336376	54	EX20013482	0.05004271	89	EX20013517	0.31858199
20	EX20013448	0.71813091	55	EX20013483	0.80460064	90	EX20013518	0.62172469
21	EX20013449	0.14630658	56	EX20013484	0.73522096	91	EX20013519	0.40680779
22	EX20013450	0.19039431	57	EX20013485	0.53006266	92	EX20013520	0.73645004
23	EX20013451	0.73831146	58	EX20013486	0.97641024	93	EX20013521	0.45164903
24	EX20013452	0.18498313	59	EX20013487	0.32435123	94	EX20013522	0.10267857
25	EX20013453	0.64149733	60	EX20013488	0.92635073	95	EX20013523	0.26467426
26	EX20013454	0.02140816	61	EX20013489	0.94744732	96	EX20013524	0.67504602
27	EX20013455	0.83959816	62	EX20013490	0.41546982	97	EX20013525	0.34407456
28	EX20013456	0.68293012	63	EX20013491	0.25199329	98	EX20013526	0.85784485
29	EX20013457	0.93351050	64	EX20013492	0.59623042	99	EX20013527	0.22140636
30	EX20013458	0.12072561	65	EX20013493	0.02824770	100	EX20013528	0.74741296
31	EX20013459	0.97582419	66	EX20013494	0.41428714	101	EX20013529	0.67974517
32	EX20013460	0.37510697	67	EX20013495	0.48316616	102	EX20013530	0.27265793
33	EX20013461	0.49290005	68	EX20013496	0.67194542	103	EX20013531	0.12591233
34	EX20013462	0.46493685	69	EX20013497	0.02279097	104	EX20013532	0.61117187
35	EX20013463	0.66291127	70	EX20013498	0.58477158	105	EX20013533	0.09171558

(May be continued on additional pages as necessary to identify complete population)

Appendix C —
Determination of Subsequent Samples for Headspace Gas Sampling (Example)

This example assumes a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although this example population is small, the methodology is equally applicable to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.

Following the steps in Section 3.3.2:

STEP	ACTION
3.3.2.1	Population is estimated to be at least 100 containers and at most 150 containers. For generality, the initial lot is assumed to have been identified and characterized and the population now under consideration is the subsequent 100-to-150 containers estimated to remain but as yet not encountered.
3.3.2.2	Create and title spreadsheet. (See Table 1, Indeterminate Waste Stream Lot [Example].)
3.3.2.3	Create container sequence number column. (Table 1 illustrates the columns wrapped to fit on a single page.)
3.3.2.4	Substeps 3.3.2.4.1 through 3.3.2.4.3: Random number generation and fixing of values as shown in Table 1.
3.3.2.5	Sort sequence numbers. (Shown in Table 2, Initial Selection of Candidate and Contingency Container Sequence Number.)
3.3.2.6	Selection of first 10 candidates with sequence numbers less than 101. (Indicated with dashed-line enclosed area in Table 2.) Note that since Container Sequence Numbers 100, 82, 30, 18, 78, and 59 all fall within the first 10 candidates on the listing, they will never be replaced when the waste stream exceeds 100 containers up to the maximum of 150. Therefore, those containers may be sampled as soon as encountered. The other selected candidates (50, 74, 66, and 57) should be held pending replacement by containers shown earlier in the list and encountered as the actual population grows beyond the estimated minimum.
3.3.2.7	Selection of three contingency containers. (Indicated by the lines designated “c1”, “c2”, and “c3” in Table 2.) The resulting selection of candidates is shown in the first block of Table 3, Additional Container Sequence Numbers.
3.3.2.8	As Container Sequence Numbers 105, 108, 112, 119, 125, and 126 are encountered in the waste stream, the selection is modified as shown in Table 3.

Table 1. Example Indeterminate Waste Stream Lot.

Waste Stream Number: Example **Lot Number XX** **Site Name**

Minimum Number of Drums						Possible Additional	
Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	0.795816	41	0.239170	81	0.420466	116	0.201177
2	0.493101	42	0.782071	82	0.011035	117	0.438231
3	0.390797	43	0.428539	83	0.150062	118	0.466989
4	0.884290	44	0.877716	84	0.334525	119	0.008390
5	0.139729	45	0.911383	85	0.644586	120	0.247066
6	0.338425	46	0.150631	86	0.384826	121	0.172964
7	0.982202	47	0.287346	87	0.443527	122	0.438726
8	0.583402	48	0.266979	88	0.437717	123	0.569943
9	0.169107	49	0.847502	89	0.944644	124	0.102881
10	0.519467	50	0.091949	90	0.654006	125	0.089983
11	0.126069	51	0.890286	91	0.591444	126	0.085334
12	0.162153	52	0.951984	92	0.713918	127	0.155156
13	0.329562	53	0.632342	93	0.752457	128	0.120302
14	0.366813	54	0.965497	94	0.222357	129	0.619459
15	0.944430	55	0.811906	95	0.384366	130	0.763524
16	0.404505	56	0.811917	96	0.361573	131	0.646226
17	0.151525	57	0.123857	97	0.261811	132	0.717305
18	0.038540	58	0.344866	98	0.901939	133	0.694667
19	0.268033	59	0.081956	99	0.940442	134	0.408942
20	0.780567	60	0.802073	100	0.000315	135	0.723941
21	0.606261	61	0.218626			136	0.872911
22	0.825824	62	0.843237	Possible Additional		137	0.674650
23	0.844424	63	0.767781	101	0.216513	138	0.733276
24	0.210491	64	0.387468	102	0.601331	139	0.843634
25	0.760036	65	0.362584	103	0.668950	140	0.521067
26	0.383727	66	0.123568	104	0.632926	141	0.289139
27	0.709664	67	0.312835	105	0.096839	142	0.444749
28	0.767440	68	0.979299	106	0.495670	143	0.491637
29	0.905473	69	0.510775	107	0.957712	144	0.327233
30	0.026108	70	0.405983	108	0.099083	145	0.852892
31	0.577665	71	0.424389	109	0.219925	146	0.456442
32	0.548678	72	0.605972	110	0.706972	147	0.816217
33	0.674097	73	0.394560	111	0.401395	148	0.837125
34	0.503522	74	0.096820	112	0.057195	149	0.515053
35	0.813080	75	0.190328	113	0.213647	150	0.591335
36	0.294724	76	0.877162	114	0.388150		
37	0.252494	77	0.464337	115	0.175092		
38	0.470358	78	0.050724				
39	0.944005	79	0.152187				
40	0.501722	80	0.602263				

Table 2. Initial Selection of Candidate and Contingency Container Sequence Numbers.

	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	100	0.000315	120	0.247066	118	0.466989	25	0.760036
	119	0.008390	37	0.252494	38	0.470358	130	0.763524
2	82	0.011035	97	0.261811	143	0.491637	28	0.767440
3	30	0.026108	48	0.266979	2	0.493101	63	0.767781
4	18	0.038540	19	0.268033	106	0.495670	20	0.780567
5	78	0.050724	47	0.287346	40	0.501722	42	0.782071
	112	0.057195	141	0.289139	34	0.503522	1	0.795816
6	59	0.081956	36	0.294724	69	0.510775	60	0.802073
	126	0.085334	67	0.312835	149	0.515053	55	0.811906
	125	0.089983	144	0.327233	10	0.519467	56	0.811917
7	50	0.091949	13	0.329562	140	0.521067	35	0.813080
8	74	0.096820	84	0.334525	32	0.548678	147	0.816217
	105	0.096839	6	0.338425	123	0.569943	22	0.825824
	108	0.099083	58	0.344866	31	0.577665	148	0.837125
	124	0.102881	96	0.361573	8	0.583402	62	0.843237
	128	0.120302	65	0.362584	150	0.591335	139	0.843634
9	66	0.123568	14	0.366813	91	0.591444	23	0.844424
10	57	0.123857	26	0.383727	102	0.601331	49	0.847502
C1	11	0.126069	95	0.384366	80	0.602263	145	0.852892
C2	5	0.139729	86	0.384826	72	0.605972	136	0.872911
C3	83	0.150062	64	0.387468	21	0.606261	76	0.877162
	46	0.150631	114	0.388150	129	0.619459	44	0.877716
	17	0.151525	3	0.390797	53	0.632342	4	0.884290
	79	0.152187	73	0.394560	104	0.632926	51	0.890286
	127	0.155156	111	0.401395	85	0.644586	98	0.901939
	12	0.162153	16	0.404505	131	0.646226	29	0.905473
	9	0.169107	70	0.405983	90	0.654006	45	0.911383
	121	0.172964	134	0.408942	103	0.668950	99	0.940442
	115	0.175092	81	0.420466	33	0.674097	39	0.944005
	75	0.190328	71	0.424389	137	0.674650	15	0.944430
	116	0.201177	43	0.428539	133	0.694667	89	0.944644
	24	0.210491	88	0.437717	110	0.706972	52	0.951984
	113	0.213647	117	0.438231	27	0.709664	107	0.957712
	101	0.216513	122	0.438726	92	0.713918	54	0.965497
	61	0.218626	87	0.443527	132	0.717305	68	0.979299
	109	0.219925	142	0.444749	135	0.723941	7	0.982202
	94	0.222357	146	0.456442	138	0.733276		
	41	0.239170	77	0.464337	93	0.752457		

Table 3. Additional Container Sequence Numbers.

Sample for Populations 100-104		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.00032**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
5	**78**	**0.050724**
	112	0.057195
6	**59**	**0.081956**
	126	0.085334
	125	0.089983
7	**50**	**0.091949**
8	**74**	**0.096820**
	105	0.096839
	108	0.099083
	124	0.102881
	128	0.120302
9	**66**	**0.123568**
10	**57**	**0.123857**
c1	11	0.126069
c2	5	0.139729
c3	83	0.150062

Sample for Populations 105-107		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
5	**78**	**0.050724**
	112	0.057195
6	**59**	**0.081956**
	126	0.085334
	125	0.089983
7	**50**	**0.091949**
8	**74**	**0.096820**
9	**105**	**0.096839**
	108	0.099083
	124	0.102881
	128	0.120302
10	**66**	**0.123568**
c1	57	0.123857
c2	11	0.126069
c3	5	0.139729

Sample for Populations 108-111		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
5	**78**	**0.050724**
	112	0.057195
6	**59**	**0.081956**
	126	0.085334
	125	0.089983
7	**50**	**0.091949**
8	**74**	**0.096820**
9	**105**	**0.096839**
10	**108**	**0.099083**
	124	0.102881
	128	0.120302
c1	66	0.123568
c2	57	0.123857
c3	11	0.126069

Sample for Populations 112-118		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
5	**78**	**0.050724**
6	**112**	**0.057195**
7	**59**	**0.081956**
	126	0.085334
	125	0.089983
8	**50**	**0.091949**
9	**74**	**0.096820**
10	**105**	**0.096839**
c1	108	0.099083
	124	0.102881
	128	0.120302
c2	66	0.123568
c3	57	0.123857

Sample for Populations 119-124		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
2	**119**	**0.008390**
3	**82**	**0.011035**
4	**30**	**0.026108**
5	**18**	**0.038540**
6	**78**	**0.050724**
7	**112**	**0.057195**
8	**59**	**0.081956**
	126	0.085334
	125	0.089983
9	**50**	**0.091949**
10	**74**	**0.096820**
c1	105	0.096839
c2	108	0.099083
	124	0.102881
	128	0.120302
c3	66	0.123568

Sample for Populations 124-124		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
2	**119**	**0.008390**
3	**82**	**0.011035**
4	**30**	**0.026108**
5	**18**	**0.038540**
6	**78**	**0.050724**
7	**112**	**0.057195**
8	**59**	**0.081956**
	126	0.085334
	125	0.089983
9	**50**	**0.091949**
10	**74**	**0.096820**
c1	105	0.096839
c2	108	0.099083
c3	124	0.102881

Table 3. (Cont.)

Sample for Populations 125-125		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
2	**119**	**0.008390**
3	**82**	**0.011035**
4	**30**	**0.026108**
5	**18**	**0.038540**
6	**78**	**0.050724**
7	**112**	**0.057195**
8	**59**	**0.081956**
	126	0.085334
9	**125**	**0.089983**
10	**50**	**0.091949**
c1	74	0.096820
c2	105	0.096839
c3	108	0.099083

Sample for Populations 126-150		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
2	**119**	**0.008390**
3	**82**	**0.011035**
4	**30**	**0.026108**
5	**18**	**0.038540**
6	**78**	**0.050724**
7	**112**	**0.057195**
8	**59**	**0.081956**
9	**126**	**0.085334**
10	**125**	**0.089983**
c1	50	0.091949
c2	74	0.096820
c3	105	0.096839

Continuing the illustrative example:

STEP	ACTION
3.3.2.9	Create the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum with the specified waste steam lot information and including the tabled values of Table 2.
3.3.2.10	Initial the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum, as directed.
3.3.2.11	Submit the Subsequent Random Headspace Gas Sample Candidate Container Selection Memorandum to AMWTP Records, with copies to the SPM(s).
3.3.2.12	Upon exhaustion of the waste stream lot, prepare the Subsequent Random Headspace Sample Selection Memorandum, with the specified waste stream lot information and including the tabled values of the final sample selection shown in the applicable segment of Table 3.
3.3.2.13	Initial the Subsequent Random Headspace Sample Selection Memorandum, as directed.
3.3.2.14	Submit the Subsequent Random Sample Selection Memorandum per MP-DOCS-18.2 with copies made for the SPM(s).

Appendix D —
Solids Random Sample Selection Listing (Example)

Waste Stream Number: Example **Lot Number XX** **Site Name**

Random Solids Sample Selection Listing

	Container ID	Rand Nr.	Container ID	Rand Nr.
Selected Sample	EX20014396	0.00038619	EX20013757	0.00095693
	EX20016362	0.00038634	EX20014589	0.00099735
	EX20013982	0.00057597		

Container Population Listing

	Container ID	Rand Nr.		Container ID	Rand Nr.		Container ID	Rand Nr.
1	EX20013429	0.06644905	36	EX20013464	0.93462919	71	EX20013499	0.56515135
2	EX20013430	0.57662440	37	EX20013465	0.06631417	72	EX20013500	0.28778529
3	EX20013431	0.04682408	38	EX20013466	0.50355435	73	EX20013501	0.13439448
4	EX20013432	0.08989359	39	EX20013467	0.36358539	74	EX20013502	0.94838293
5	EX20013433	0.22404437	40	EX20013468	0.59705698	75	EX20013503	0.26238613
6	EX20013434	0.18676088	41	EX20013469	0.49749379	76	EX20013504	0.43790293
7	EX20013435	0.97015607	42	EX20013470	0.42540669	77	EX20013505	0.65630060
8	EX20013436	0.15363967	43	EX20013471	0.15685642	78	EX20013506	0.68974910
9	EX20013437	0.47250156	44	EX20013472	0.17495196	79	EX20013507	0.79566107
10	EX20013438	0.10609430	45	EX20013473	0.28573726	80	EX20013508	0.23924299
11	EX20013439	0.87186095	46	EX20013474	0.70689147	81	EX20013509	0.38453317
12	EX20013440	0.35027995	47	EX20013475	0.08234315	82	EX20013510	0.80453516
13	EX20013441	0.03622685	48	EX20013476	0.29275102	83	EX20013511	0.39063193
14	EX20013442	0.39604959	49	EX20013477	0.71871937	84	EX20013512	0.29766493
15	EX20013443	0.73380622	50	EX20013478	0.71877471	85	EX20013513	0.74608209
16	EX20013444	0.30174993	51	EX20013479	0.07170839	86	EX20013514	0.77879149
17	EX20013445	0.52806587	52	EX20013480	0.46294638	87	EX20013515	0.23222320
18	EX20013446	0.08311154	53	EX20013481	0.92364979	88	EX20013516	0.37917555
19	EX20013447	0.50336376	54	EX20013482	0.05004271	89	EX20013517	0.31858199
20	EX20013448	0.71813091	55	EX20013483	0.80460064	90	EX20013518	0.62172469
21	EX20013449	0.14630658	56	EX20013484	0.73522096	91	EX20013519	0.40680779
22	EX20013450	0.19039431	57	EX20013485	0.53006266	92	EX20013520	0.73645004
23	EX20013451	0.73831146	58	EX20013486	0.97641024	93	EX20013521	0.45164903
24	EX20013452	0.18498313	59	EX20013487	0.32435123	94	EX20013522	0.10267857
25	EX20013453	0.64149733	60	EX20013488	0.92635073	95	EX20013523	0.26467426
26	EX20013454	0.02140816	61	EX20013489	0.94744732	96	EX20013524	0.67504602
27	EX20013455	0.83959816	62	EX20013490	0.41546982	97	EX20013525	0.34407456
28	EX20013456	0.68293012	63	EX20013491	0.25199329	98	EX20013526	0.85784485
29	EX20013457	0.93351050	64	EX20013492	0.59623042	99	EX20013527	0.22140636
30	EX20013458	0.12072561	65	EX20013493	0.02824770	100	EX20013528	0.74741296
31	EX20013459	0.97582419	66	EX20013494	0.41428714	101	EX20013529	0.67974517
32	EX20013460	0.37510697	67	EX20013495	0.48316616	102	EX20013530	0.27265793
33	EX20013461	0.49290005	68	EX20013496	0.67194542	103	EX20013531	0.12591233
34	EX20013462	0.46493685	69	EX20013497	0.02279097	104	EX20013532	0.61117187
35	EX20013463	0.66291127	70	EX20013498	0.58477158	105	EX20013533	0.09171558

(May be continued on additional pages as necessary to identify complete population)

Appendix E — Determination of Subsequent Samples for Solids Sampling (Example)

This example assumes a small indeterminate population of containers expected to contain between 100 and 150 containers total. Although this example population is small, the methodology is equally applicable to any larger expected population size range and ensures that all containers in the population will have equal likelihood of selection.

Following the steps in Section 3.6.2:

STEP	ACTION
3.6.2.1	Population is estimated to be at least 100 containers and at most 150 containers. For generality, the initial waste stream lot is assumed to have been identified and characterized and the population now under consideration is the subsequent 100 to 150 containers estimated to remain but as yet not encountered.
3.6.2.2	Create and title spreadsheet. (See Table 1, Indeterminate Waste Stream Lot.)
3.6.2.3	Create container sequence number column. (Table 1 illustrates the columns wrapped to fit on a single page.)
3.6.2.4.1 through 3.6.2.4.3	Random number generation and fixing of values as shown in Table 1.
3.6.2.5	Sort sequence numbers. (Shown in Table 2, Initial Selection of Candidate and Contingency Container Sequence Numbers.)
3.6.2.6	Selection of first five candidates with sequence numbers less than 101. (Indicated with dashed-line enclosed area in Table 2.) Note that since Container Sequence Numbers 100, 82, 30, and 18 all fall within the first five candidates on the listing, they will never be replaced when the waste stream exceeds 100 containers up to the maximum of 150. Therefore, those containers may be sampled as soon as encountered. The other selected candidate (78) should be held pending replacement by non-selected candidate containers (112 and 119) shown earlier in the list and encountered as the actual population grows beyond the estimated minimum.
3.6.2.7	Selection of three contingency containers. (Indicated by the lines designated “c1”, “c2”, and “c3” in Table 2.) The resulting selection of candidates is shown in the first block of Table 3, Additional Container Sequence Numbers.
3.6.2.8	As Container Sequence Numbers 112 and 119 are encountered in the waste stream, the selection is modified as shown in the applicable block of Table 3.

Table 1. Example Indeterminate Waste Stream Lot.

Waste Stream Number: Example **Lot Number XX** **Site Name**

Minimum Number of Drums						Possible Additional	
Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	0.795816	41	0.239170	81	0.420466	116	0.201177
2	0.493101	42	0.782071	82	0.011035	117	0.438231
3	0.390797	43	0.428539	83	0.150062	118	0.466989
4	0.884290	44	0.877716	84	0.334525	119	0.008390
5	0.139729	45	0.911383	85	0.644586	120	0.247066
6	0.338425	46	0.150631	86	0.384826	121	0.172964
7	0.982202	47	0.287346	87	0.443527	122	0.438726
8	0.583402	48	0.266979	88	0.437717	123	0.569943
9	0.169107	49	0.847502	89	0.944644	124	0.102881
10	0.519467	50	0.091949	90	0.654006	125	0.089983
11	0.126069	51	0.890286	91	0.591444	126	0.085334
12	0.162153	52	0.951984	92	0.713918	127	0.155156
13	0.329562	53	0.632342	93	0.752457	128	0.120302
14	0.366813	54	0.965497	94	0.222357	129	0.619459
15	0.944430	55	0.811906	95	0.384366	130	0.763524
16	0.404505	56	0.811917	96	0.361573	131	0.646226
17	0.151525	57	0.123857	97	0.261811	132	0.717305
18	0.038540	58	0.344866	98	0.901939	133	0.694667
19	0.268033	59	0.081956	99	0.940442	134	0.408942
20	0.780567	60	0.802073	100	0.000315	135	0.723941
21	0.606261	61	0.218626			136	0.872911
22	0.825824	62	0.843237	**Possible Additional**		137	0.674650
23	0.844424	63	0.767781	101	0.216513	138	0.733276
24	0.210491	64	0.387468	102	0.601331	139	0.843634
25	0.760036	65	0.362584	103	0.668950	140	0.521067
26	0.383727	66	0.123568	104	0.632926	141	0.289139
27	0.709664	67	0.312835	105	0.096839	142	0.444749
28	0.767440	68	0.979299	106	0.495670	143	0.491637
29	0.905473	69	0.510775	107	0.957712	144	0.327233
30	0.026108	70	0.405983	108	0.099083	145	0.852892
31	0.577665	71	0.424389	109	0.219925	146	0.456442
32	0.548678	72	0.605972	110	0.706972	147	0.816217
33	0.674097	73	0.394560	111	0.401395	148	0.837125
34	0.503522	74	0.096820	112	0.050724	149	0.515053
35	0.813080	75	0.190328	113	0.213647	150	0.591335
36	0.294724	76	0.877162	114	0.388150		
37	0.252494	77	0.464337	115	0.175092		
38	0.470358	78	0.057195				
39	0.944005	79	0.152187				
40	0.501722	80	0.602263				

Table 2. Initial Selection of Candidate and Contingency Container Sequence Numbers.

	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.	Seq. Nr.	Rand Nr.
1	100	0.000315	120	0.247066	118	0.466989	25	0.760036
	119	0.008390	37	0.252494	38	0.470358	130	0.763524
2	82	0.011035	97	0.261811	143	0.491637	28	0.767440
3	30	0.026108	48	0.266979	2	0.493101	63	0.767781
4	18	0.038540	19	0.268033	106	0.495670	20	0.780567
	112	0.050724	47	0.287346	40	0.501722	42	0.782071
5	78	0.057195	141	0.289139	34	0.503522	1	0.795816
C1	59	0.081956	36	0.294724	69	0.510775	60	0.802073
	126	0.085334	67	0.312835	149	0.515053	55	0.811906
	125	0.089983	144	0.327233	10	0.519467	56	0.811917
C2	50	0.091949	13	0.329562	140	0.521067	35	0.813080
C3	74	0.096820	84	0.334525	32	0.548678	147	0.816217
	105	0.096839	6	0.338425	123	0.569943	22	0.825824
	108	0.099083	58	0.344866	31	0.577665	148	0.837125
	124	0.102881	96	0.361573	8	0.583402	62	0.843237
	128	0.120302	65	0.362584	150	0.591335	139	0.843634
	66	0.123568	14	0.366813	91	0.591444	23	0.844424
	57	0.123857	26	0.383727	102	0.601331	49	0.847502
	11	0.126069	95	0.384366	80	0.602263	145	0.852892
	5	0.139729	86	0.384826	72	0.605972	136	0.872911
	83	0.150062	64	0.387468	21	0.606261	76	0.877162
	46	0.150631	114	0.388150	129	0.619459	44	0.877716
	17	0.151525	3	0.390797	53	0.632342	4	0.884290
	79	0.152187	73	0.394560	104	0.632926	51	0.890286
	127	0.155156	111	0.401395	85	0.644586	98	0.901939
	12	0.162153	16	0.404505	131	0.646226	29	0.905473
	9	0.169107	70	0.405983	90	0.654006	45	0.911383
	121	0.172964	134	0.408942	103	0.668950	99	0.940442
	115	0.175092	81	0.420466	33	0.674097	39	0.944005
	75	0.190328	71	0.424389	137	0.674650	15	0.944430
	116	0.201177	43	0.428539	133	0.694667	89	0.944644
	24	0.210491	88	0.437717	110	0.706972	52	0.951984
	113	0.213647	117	0.438231	27	0.709664	107	0.957712
	101	0.216513	122	0.438726	92	0.713918	54	0.965497
	61	0.218626	87	0.443527	132	0.717305	68	0.979299
	109	0.219925	142	0.444749	135	0.723941	7	0.982202
	94	0.222357	146	0.456442	138	0.733276		
	41	0.239170	77	0.464337	93	0.752457		

Table 3. Additional Container Sequence Numbers.

Sample for Populations 100-111		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.00032**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
	112	0.057195
5	**78**	**0.050724**
c1	59	0.081956
	126	0.085334
	125	0.089983
c2	50	0.091949
c3	74	0.096820

Sample for Populations 112-118		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
	119	0.008390
2	**82**	**0.011035**
3	**30**	**0.026108**
4	**18**	**0.038540**
5	**112**	**0.057195**
c1	78	0.050724
c2	59	0.081956
	126	0.085334
	125	0.089983
c3	**50**	**0.091949**

Sample for Populations 119-150		
Sel.	**Seq. Nr.**	**Rand Nr.**
1	**100**	**0.000315**
2	**119**	**0.008390**
3	**82**	**0.011035**
4	**30**	**0.026108**
5	**18**	**0.038540**
c1	112	0.057195
c2	78	0.050724
c3	59	0.081956

Continuing the illustrative example:

STEP	ACTION
3.6.2.9	Create a Subsequent Random Solids Sample Selection Candidate Memorandum with the specified waste stream lot information and including the table values of Table 2.
3.6.2.10	Initial the Subsequent Random Solids Sample Selection Candidate Memorandum.
3.6.2.11	Submit the Subsequent Random Solids Sample Selection Candidate Memorandum per MP-DOCS-18.2 with copies for the SPM(s).
3.6.2.12	Upon exhaustion of the lot, prepare the Subsequent Random Solids Sample Selection Memorandum with the specified waste stream lot information and including the tabled values of the final sample selection shown in the applicable segment of Table 3.
3.6.2.13	Initial the Subsequent Random Solids Sample Selection Memorandum.
3.6.2.14	Submit the Subsequent Random Solids Sample Selection Memorandum to, with copies made for the SPM(s).

Reports to Management

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on File*–DCR-5482)
Ingrid Siddoway, TRU Programs Manager

1/05/07
Date

Next Periodic Review: 11/31/09

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.26, Rev. 5	Issued: 1/23/07	Effective: 1/24/07
Reports to Management		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	8/15/02	All	Initial issue. DCR-2002-1364
1	03/28/03	All	DCR 2163: Change effective date from "When DOE Approved Retrieval Operations" to March 28, 2003.
2	04/08/03	 P.9 P.9 P.10 P.11	DCR-2180. Incorporate CBFO comments: 1. Corrected editorial error in "Note;" 2. Added sentence to Section 4.4.3.2, to identify minimum miscertification rate; 3. Added new Section 4.6.2 to clarify surveillance reporting requirements. Corrected "Records" section.
3	01/19/04	P.9	DCR-2598: Incorporate an inconsistency between the two procedures pointed out by CBFO.
4	02/14/06	All	DCR-4772. Completed periodic review. Updated formatting and revised to MP-DOCS-18.3, Developing Management Procedures, and MP-DOCS-18.4, Document Control.
5	1/05/07	All	DCR-5482. Complete rewrite in accordance with the implementation of the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR).

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.26, Rev. 5	Issued: 1/23/07	Effective: 1/24/07
Reports to Management		

1.0 PURPOSE/SCOPE

This procedure describes the process for developing and distributing required reports on the status of the Transuranic (TRU) Waste Program at the Advanced Mixed Waste Treatment Project (AMWTP) at the Idaho National Laboratory (INL) in accordance with MP-TRUW-8.1, Certification Plan for INL Transuranic Waste, and MP-TRUW-8.2, Quality Assurance Project Plan.

This procedure is limited specifically to reporting of quality-affecting activities conducted by the TRU Waste Program. This procedure applies to AMWTP management and staff who prepare, transmit, and retain Quality Assurance (QA) reports.

2.0 ROLES AND RESPONSIBLITIES

Performer	Responsibilities
Quality Assurance Representative	Issues a Semi-annual QA Report. Assesses the effectiveness of the TRU Waste QA Program. Laboratory/testing facility assessment Nonconformance Tracking Corrective Action Verification Ensures that QA plans and procedures implement the requirements of the Carlsbad Field Office (CBFO) Quality Assurance Program Document (QAPD).
Site Project Manager (SPM) or Designee	Reviews and comments on the Semi-annual QA report. Forwards a copy of the Semi-annual QA Report with comments, if applicable, to DOE-ID and the AMWTP General Manager.

3.0 PROCEDURE

3.1 Semi-Annual Quality Assurance Report Preparation and Distribution

3.1.1 Quality Assurance Representative : Issue a semi-annual report that summarizes all relevant information on the QA/quality control (QC) activities for the reporting period and submit it to the SPM in accordance with MP-TRUW-8.1.

NOTE: *The QA report will include, as appropriate, the following information*:

A. Any changes to the QAPjP (MP-TRUW-8.2)

B. Identification of any significant QA/QC problems, recommended solutions, and corrective actions

C. An assessment of QC data collected during the period, including the frequency of repeated analyses, reasons for those repeats, and corrective actions

D. Discussions of whether Quality Assurance Objectives (QAOs) have been met, and any resulting impact on decision making

E. Limitations on the use of measurement data

F. Status of Performance Demonstration Program (PDP) results

G. Results of audits and surveillances conducted during the period

H. Nonconformance report (NCR) status

I. Trend analysis information.

3.1.2 SPM: Review the report and comment, if appropriate.

3.1.3 SPM: Forward a copy of the report with comments, if applicable, to DOE-ID and the AMWTP General Manager.

3.1.4 SPM: Forward the original report with comments to AMWTP Document Control.

3.2 Independent Assessments and Surveillances

3.2.1 QA: Determine the effectiveness of the TRU Waste Program Quality Assurance Program, which is accomplished through internal reporting procedures, assessments, and surveillances performed in accordance with MP-M&IA-17.2, Independent Assessments, and MP-M&IA-17.3, Surveillances.

3.2.2 QA: Ensure that assessments and surveillances are planned, performed, documented, and reported to appropriate management personnel.

3.2.3 QA: Ensure that the Acceptable Knowledge process is consistently applied and waste stream documentation is evaluated through internal AMWTP assessments.

3.2.4 QA: Ensure that characterization facilities and analytical laboratories are assessed per MP-TRUW-8.2.

4.0 DEFINITIONS

None

5.0 REFERENCES

(1) DOE/CBFO-94-1012, Quality Assurance Program Document

(2) MP-DOCS-18.2, Records Management

(3) MP-M&IA, 17.2, Independent Assessments

(4) MP-M&IA-17.3, Surveillances

(5) MP-TRUW-8.1, Certification Plan for INL Transuranic Waste

(6) MP-TRUW-8.2, Quality Assurance Project Plan

6.0 RECORDS

Records generated by this procedure shall be classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.26, Case File	Lifetime/Quality
Semi-annual Quality Assurance Report to Management	Lifetime/Quality

7.0 EXHIBITS

None

8.0 APPENDICES

None

WIPP Sample Transfers

Advanced Mixed Waste Treatment Project

Approved:

(*Signature on file. See DCR-11190.*) 06/20/12

Susan Peterman
TRU Programs Manager

Date

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.34, Rev. 8	Issued: 06/20/12	Effective: 06/20/12 @ 1300 hrs
WIPP Sample Transfers		

REVISION LOG

Revision Number	Date Approved	Pages Affected	Description of Revision
0	08/09/06	All	Initial issue. DCR-2840: Issued for shipment of coring samples to the Analysis Laboratories Department (ALD).
1	2/9/06		DCR-4771. Implement changes as identified on DCR-4299; periodic review.
2	08/11/08	Various	DCR-7213. Changes to Step 3.1.1 and Section 6 for form number and title change, Step 3.1.1.4 for additional requirements. Changes to document classifications in Section 6. Formatting changes per MP-DOCS-18.3, Developing Management Procedures.
3	02/23/09	All	DCR-7879. Minor change to advance the periodic review date.
4	07/09/09	Various	DCR-8450. Revise Step 3.1.9.1, including correcting the performer. Editorial changes per MP-DOCS-18.3, including updating the reference section.
5	10/28/09	Various	DCR-8804. Revised to reflect onsite sample transfer and discontinued use of Form-1437.
6	12/10/09	Headers	DCR-8905. Minor change to fix title of document in headers.
7	03/29/12	Various	DCR-11030. Total rewrite to incorporate RPT-NFCS-25 requirements, remove Bill of Lading requirement, and revise roles. Incorporate ITG-Bluesheet-079. Periodic review.
8	06/20/12	Various	DCR-11190. Total rewrite of procedure to remove ACL Point-of-Contact and ACL references, clarify packaging of samples based on FGE value and provide additional packaging options, revise information required to be entered on COC comments block, and revise definitions as needed.

AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.34, Rev. 8	Issued: 06/20/12	Effective: 06/20/12 @ 1300 hrs
WIPP Sample Transfers		

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AMWTP MANAGEMENT PROCEDURE		
MP-TRUW-8.34, Rev. 8	Issued: 06/20/12	Effective: 06/20/12 @ 1300 hrs

WIPP Sample Transfers

1.0 PURPOSE/SCOPE

This procedure addresses the packaging and transfer of core *samples* (see def.) from the Advanced Mixed Waste Treatment Project (AMWTP) to the Analytical Chemistry Laboratory (ACL) for analysis. Sample packaging will be done in accordance with the Resource Conservation and Recovery Act (RCRA). A Uniform Hazardous Waste Manifest is not required, since samples are exempted from the definition of hazardous waste under RCRA.

Sampling and analysis of solidified waste forms determine concentrations of hazardous constituents and toxicity characteristics contaminates of waste in containers.

2.0 ROLES AND RESPONSIBILITIES

Performer	Responsibilities
Transportation Manager (TM) or Designee	• Prepares samples for transfer • Transfers samples to ACL.
Operations Technician (OT)	• Prepares samples for transfer.
Radiological Control Technician (RCT)	• Performs radiological and contamination surveys as necessary • Provides a copy of the survey results to the TM or Designee.

3.0 PROCEDURE

NOTE: *Steps in this procedure may be performed in parallel and out of sequence.*

3.1 Sample Packaging

3.1.1 TM or Designee/OT: Transfer the packaging material to the Drum Coring Area in Building WMF-634.

3.1.2 TM or Designee/OT: Verify that samples were uniquely identified.

3.1.3 Verify the sample tags or labels were affixed to the samples and include the following information:

- Sample ID number
- Sampler initials and organization
- Sample description
- Requested analysis
- Date and time of collection
- Quality control (QC) designation (if applicable).

3.1.3.1 If samples have lost their identity, they shall be documented as nonconforming, and shall not be used.

3.1.4 TM or Designee: Verify that all samples were taken within 7 days of the first sample in the *sampling batch* (see def.).

3.1.5 TM or Designee/OT: Verify the samples against the *sample numbers* (see def.) listed on the Waste Tracking System (WTS)-generated *chain of custody* (COC; see def.).

3.1.5.1 Ensure the COC includes the following:

A. Signature of the individual initiating custody control, along with the date and time

B. Documentation on sample numbers for each sample under custody

- Sample numbers are referenced to a specific sampling event description that identifies the sampler(s) through:
  - Signature
  - Date
  - Time of sample collection
  - Type/number of containers for each sample
  - Sample matrix
  - Preservatives (when applicable)

- Requested methods of analysis
- Place/address of sample collection
- Waste container number.

C. Designated trip blanks for each *transport container* (see def.)

D. Responsible organization

E. Signatures of custodians relinquishing and receiving custody with date and time of the transfer (if custody of samples has changed)

F. FGE value of sample batch or other applicable information recorded in comment section

G. Documentation of any discrepancies.

3.1.6 TM or Designee: Prepare the samples for transfer by performing the following:

3.1.6.1 Place double bagged sample jars inside a 1-gallon paint can (see def.).

NOTE: *The fissile gram equivalent (FGE) value of the samples in the one gallon paint can is assigned the parent drum assay FGE.*

3.1.6.2 If the FGE value of the 1-gallon paint can is ≤ 1.36 FGE, then select a 5-gallon or larger transport container (0.072 FGE/L).

3.1.6.2.1 If the FGE value of the 1-gallon paint can is > 1.36 FGE, then place the 5-gallon container (including inner 1-gal paint can) inside a 55-gal or larger transport container.

(RPT-NFCS-25, CWR 6)

3.1.6.3 Bubble wrap the 1-gallon paint can to cushion it from the 5-gallon container, then surround with cold packs (i.e., blue ice or ice in a large Ziploc bag) placed between it and 5-gallon container to maintain the preservation temperature.

3.1.6.4 Repeat Section 3.1.6 for each set of samples and trip blanks.

3.1.7 RCT: Complete a contact radiation survey of the exterior of the *package* (see def.).

3.1.7.1 Document the results on Form-1129, Radiological Survey Report and Map.

3.1.8 Complete a removable alpha contamination survey of the exterior surface of the package.

3.1.8.1 Document the results on Form-1129.

3.1.9 Provide a copy of the survey results to the TM or Designee to accompany the package.

3.1.10 OT: Sign the COC relinquishing custody of the samples with date and time of the transfer.

3.1.11 TM or Designee: Sign the COC receiving custody of the samples with date and time of the transfer.

3.1.12 TM or Designee: Prior to placing the completed COC inside the transport container, sign and date/time the COC as "Relinquished By."

3.1.12.1 If applicable, record the following in the COC comments block:

- On Site transfer
- Transfer container ID
- *Tamper-indicating device* (TID, see def.) number
- Signature and date.

3.1.13 Place the COC inside the transport container.

3.1.14 Affix a signed or numbered tamper-proof seal or TID to the transport container to ensure that sample integrity is maintained and not compromised, and is traceable to the individual who affixed the seal.

3.2 Sample Transfer

NOTE: *The transfer documentation serves to track the physical transfer of samples between the two custodians.*

3.2.1 TM or Designee: Notify the ACL to arrange for a representative to meet the TM or Designee and accept custody of the samples.

3.2.2 TM or Designee: Transfer the package, COC, and survey results to the ACL point of contact.

3.2.3 TM or Designee: Request a copy of the completed COC from the ACL once samples are received.

4.0 DEFINITIONS

Chain of custody. A set of procedures established to ensure sample and data integrity is maintained. The COC record provides a documentation trail of all persons who have custody of a given sample, including the date and time of transfer.

Package. The packaging together with its contents as presented for transfer.

Sample. A portion of material for analysis contained in a single container and identified by a unique sample number.

Sampling batch. A sampling batch can be up to 20 samples (excluding field quality assurance [QA] samples), all of which shall be collected within 14 days of the first sample in the batch.

Sample number. A unique sample identification number; appears on all sample reports that document information or results derived from that sample.

1-gal paint can. Inner container holding radioactive or mixed waste samples.

Tamper-indicating device. A device that is used on packages to reveal violations of containment integrity. All sample containers shall be affixed with signed tamper-proof seals or devices so that it is apparent if the sample integrity has been compromised, and so that the identity of the seal or device is traceable to the individual who affixed the seal. A seal shall also be placed on the outside of the container for the same reason.

Transport container. Normally a 5-gallon container if the package is NCS-exempt (per RPT-NFCS-25). Transport containers for non-NCS-exempt sample packages must be 55-gal or larger.

5.0 REFERENCES

(1) Form-1129, Radiological Survey Report and Map (Deleted from record section per markup)

(2) MP-DOCS-18.2, Records Management

(3) RPT-NFCS-25, Criticality Safety Evaluation Involving the Drum Core Sample Retrieval System

6.0 RECORDS

Records generated by this procedure are classified in accordance with the table below, and dispositioned in accordance with MP-DOCS-18.2, Records Management.

Record Description	Classification
MP-TRUW-8.34, Case File	Nonpermanent WIPP/ENV1-J-1/Destroy 10 years after submittal
WTS-Generated Chain of Custody	Facility Operating Record/ENV2-a-1-a/ Destroy 5 years after Life of Facility

7.0 EXHIBITS

None

8.0 APPENDICES

None